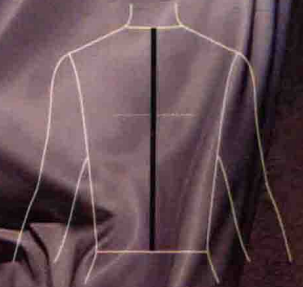
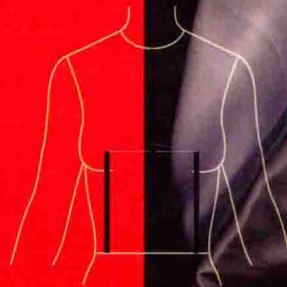
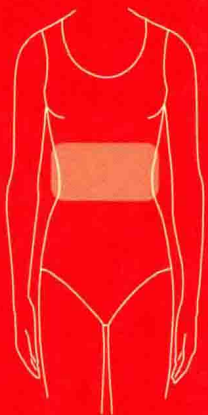


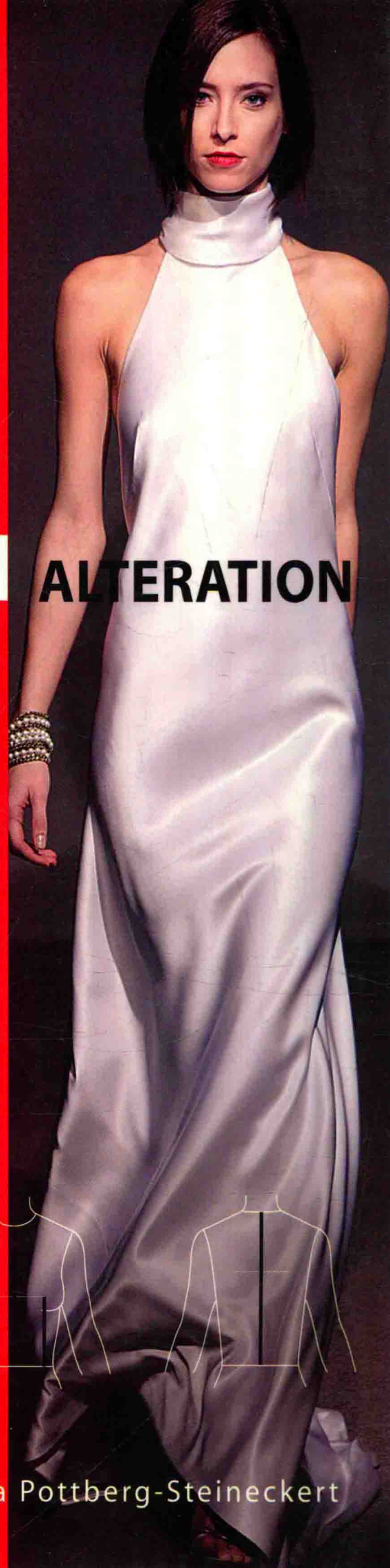
FITTING & PATTERN ALTERATION

A Multi-Method Approach
to the Art of Style Selection,
Fitting, and Alteration

Second Edition



Elizabeth Liechty • Judith Rasband • Della Pottberg-Steineckert



Fitting & Pattern Alteration: A Multi-Method Approach to the Art of Style Selection, Fitting, and Alteration, Second Edition, shows the reader how to recognize, evaluate, and correct fit for 88 figure variations. This all-inclusive guide presents proven methods of style selection, fitting, and alteration that are rooted in the elements and principles of design. The authors use a logical and easy-to-follow approach, and each procedure is clearly identified and fully illustrated. Highlights of this edition include alternative methods of figure evaluation, information about choosing the right style to enhance one's figure, and instructions for correcting garments that have multiple fit problems.

New to This Edition

- Completely revised illustrations with a second color added show the directional measuring needed to facilitate the alteration process.
- Causes of fitting problems are clearly identified in the figure variations.
- Reality Check boxes present further details on the topic at hand and reinforce the learning experience.
- Updated fashion photos give examples of actual figure variations.



SECOND EDITION

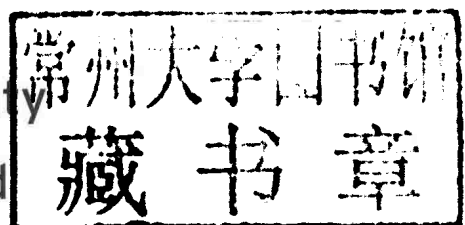
Fitting & Pattern Alteration

A MULTI-METHOD APPROACH
TO THE ART OF STYLE SELECTION,
FITTING, AND ALTERATION

Elizabeth Liechty

Judith Rasband

Della Pottberg-Steineckert



Fairchild Books
NEW YORK

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Library of Congress Catalog Card Number: 2009930999

ISBN: 978-1-56367-783-0

GST R 133004424

Printed in the United States of America

TP09, CH07

Fitting & Pattern Alteration

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PREFACE

Beautifully fitted and comfortable clothing communicates knowledge, poise, and a positive self-image. This book focuses on appropriate style selection and presents the most innovative and tested methods of fitting and alteration. All content is based on and supported by the authors' academic and industry experience in secondary, college, and university classrooms; in retail settings; in seminar locations; and in conference halls. Written for an academic market, this book will be equally valuable as an encyclopedic reference for custom fit experts, alterations professionals, and fashion sewers.

Elizabeth Liechty, Della Pottberg-Steineckert, and Judith Rasband began working on the first edition of *Fitting & Pattern Alteration: A Multi-Method Approach* in 1975 when they were on the faculty at Brigham Young University teaching fitting and alteration in the Department of Clothing and Textiles. The authors were wrestling with the challenges of traditional methods of alteration, such as simply redrawing lines or slash and lap procedures. Liechty had begun exploring the possibilities of the [then] new pivot and slide method of pattern alteration developed by Edna Bishop, and Pottberg-Steineckert originated and developed her unique "seam" method of pattern alteration. Rasband developed a full-body system of alteration using the "seam" method and set out to find if students could understand and apply it. Obtaining positive results, she recognized the need for a full text on the topic and began writing *Fitting & Pattern Alteration: A Multi-Method Approach* along with Liechty and Pottberg-Steineckert.

The first edition of the book, published in 1986, is known popularly as "the bible" on fitting and alteration and has endured as a best seller in the Fairchild line of fashion textbooks. After years of developing and testing methods for fitting even more figure variations, Rasband and Liechty have now collaborated on the book's second edition: *Fitting & Pattern Alteration: A Multi-Method Approach to the Art of Style Selection, Fitting, and Alteration*.

New to the second edition are directives for fashion style selection that can help enhance the figure, as well as alternative methods of figure evaluation, fitting, and pattern alteration in Parts One and Two. Illustrations for measuring the figure and applying these measurements to the pattern have been included in Part Three. These illustrations have been revised to include color to clarify the procedures and directional measuring to facilitate the alteration process. We hope everyone will appreciate this new development.

The new edition continues to incorporate the following valuable features of the first edition:

- Part Three is organized and intended to be used again and again as a ready reference.
- Each figure is drawn to scale. Pattern alterations were carried out in half-scale models to ensure the completeness, consistency, and accuracy of the digital reproduction.
- The cause of the fitting problem is clearly identified in each figure variation. Understanding the *what* and the *why* behind the procedure is incorporated into the explanation to reinforce learning.
- The choice of methods offered in the book allow for varying purposes and abilities.
- The use of the simplest method of pattern alteration is encouraged to increase efficiency.
- Specific alteration procedures are given for multiple variations occurring on the same figure, since most figures varying from the standard require more than one alteration.
- Alteration procedures for basic pattern pieces are also applied to fashion pattern pieces—procedures long unique to this book.
- Each alteration procedure has been developed to eliminate distorted pattern pieces and reduce necessary restorations.

Experience is essential to sharpen perception and perfect any skill. As you apply the methods and procedures set forth in this book, we are confident you will develop self-reliance and the satisfaction of knowing that you, too, can consistently achieve a fault-free, custom fit.

ACKNOWLEDGMENTS

We wish to sincerely thank Fairchild Books, a division of Condé Nast Publications, for the opportunity to revise and expand *Fitting & Pattern Alteration: A Multi-Method Approach to the Art of Style Selection, Fitting, and Alteration*, complete with extensive essential art throughout. We extend special thanks to Jaclyn Bergeron, Senior Associate Acquisitions Editor, for her continued interest and support. Thanks also to Jennifer Crane, Senior Development Editor, for her effort in keeping us on track. We so appreciate the editorial direction and artistic design of the book provided by Ron Edwards, Adrianna Edwards, and their staff at Focus Strategic Communications Inc. Their tireless efforts are responsible for the clarity of the text and page layouts in this incredibly complex project. We are grateful to Lorraine Henry for her continued involvement and teaching ability at our Fabulous Fit Retreats. We thank Lori Lambson for new fashion drawings. We are gratefully indebted to Kathy Adams of the Conselle Institute for her computer expertise, diligence, and unending patience in rendering our more than 2000 illustrations required for this book. Her ability and effort are responsible for making our words, charts, figures, and altered patterns comprehensible and enduring. Long after the words are read, you will still be "reading" the illustrations. And heartfelt thanks to our families for their long-suffering understanding of the time that this project has extracted from our lives. We are confident that our efforts and this amazing book will benefit generations to come.

Elizabeth Liechty
Judith Rasband
Della Pottberg-Steineckert

RESOURCES

The Two-Easy Measuring Tape, the Flexible Curve, a master set of Half-Scale Practice Patterns, and shoulder pads are available through the Conselle Institute of Image Management:

Address: 7052 University Station, Provo, UT 84602
Website: www.conselle.com
Telephone: 801-224-1207
Fax: 801-226-6122

If you do not find the specific fashion fabric you want and need, discover other options with a *Fabric Resource List*, available through the Conselle Institute of Image Management (see above).

Shoulder pad patterns are available from Live Guides:

Address: 10207 Marine View Drive, Mukilteo, WA 98275
Website: kathyruddy@earthlink.net
Telephone: 425-501-1801

SUGGESTED READINGS

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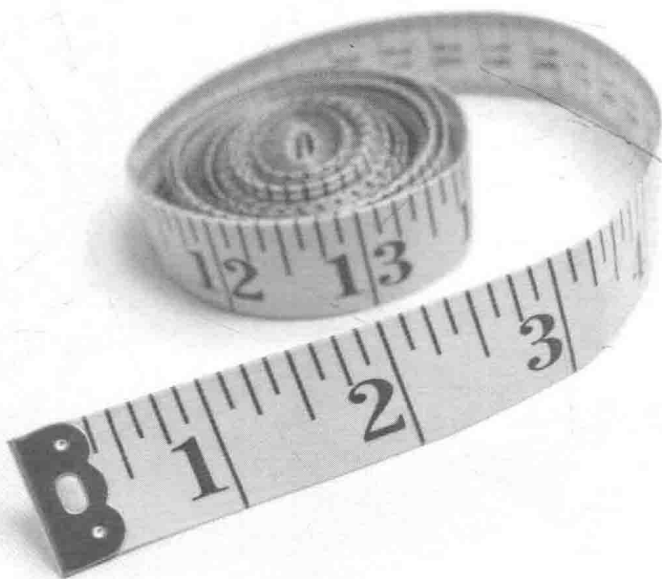
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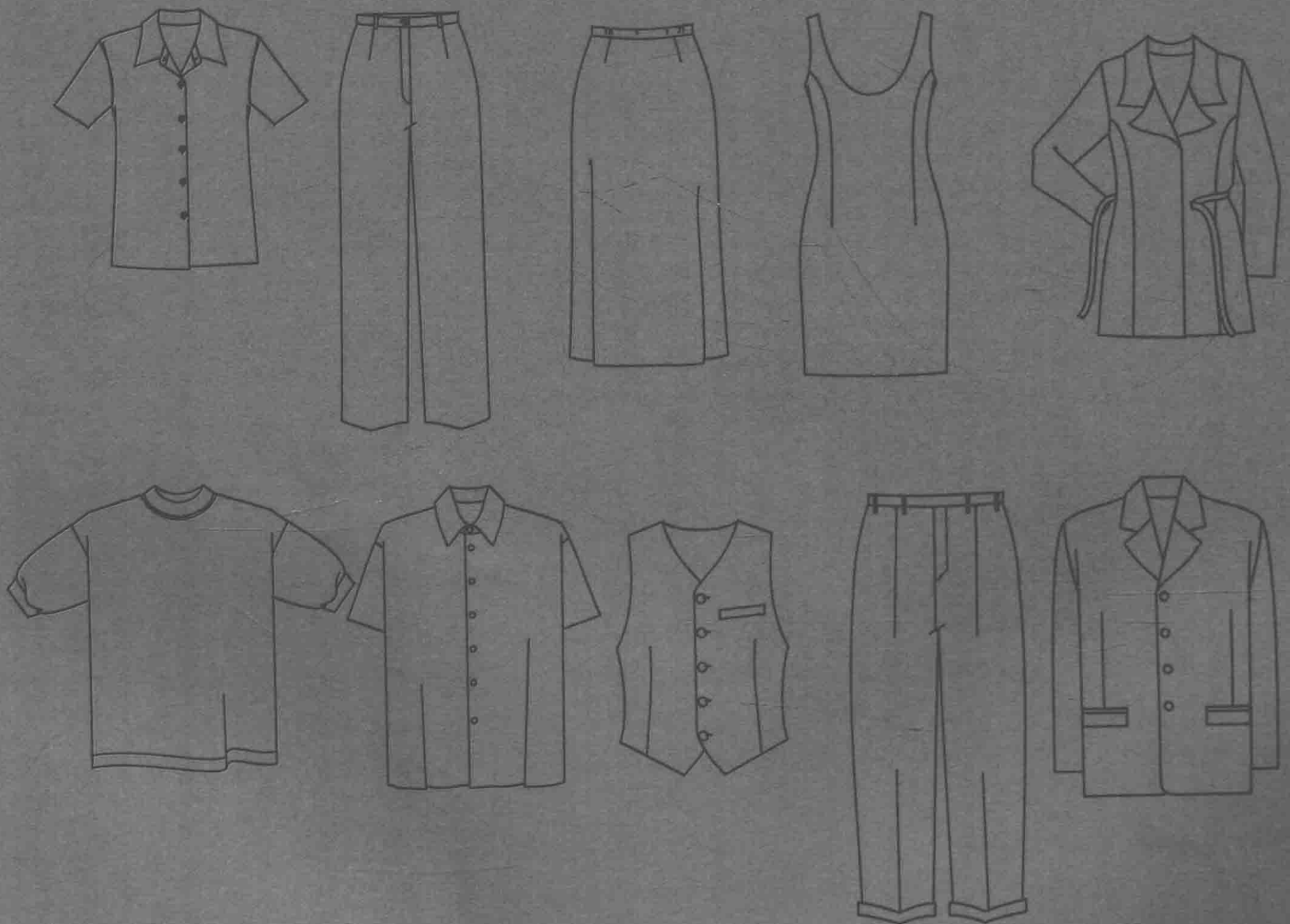
PART ONE

Get Ready



Chapter 1

Preparing for Success in Apparel Fitting and Alteration



What makes a fabulous fit? What is it about a person who is wearing a perfectly fitted dress or a crisply tailored suit that makes us sit up and take notice?

What we wear and how we look affects how we think, feel, and behave. It affects how others react to us.

When we wear perfectly fitted clothes,

- *we think positively about ourselves and our bodies*
- *we feel more confident and at ease*
- *we act with greater competence and productivity*
- *we command respect*

The clothes we wear reflect who we are. Clothes that are carefully chosen and well fitted can help us achieve our goals. The time and effort we put into finding well-fitted clothes are well invested. Everybody deserves a fabulous fit to empower and enable them in all they do—personally, socially, and professionally.

What does it take to achieve a fabulous fit? A positive attitude and a personal desire to accomplish an excellent custom fitting are keys to success. When coupled with dependable methods of selecting, fitting, adjusting the pattern, and altering clothing, a fabulous fit becomes possible (see Figure 1.1).

THE FITTING PROCESS

Achieving a fabulous fit requires a lot of work. It is not just a matter of following a few rules or taking a few measurements. Fitting is a process, with a definite beginning and end. The classic fitting process is learned. It requires understanding and good judgment. Fitting expertise comes with knowledge backed up by experience. The more you do it, the better you get, as you educate your eye to recognize all of the necessary clues and cues. The fitting process does become familiar, and parts of it may even feel automatic at times, but again, that comes with knowledge and experience—with possible trial and error.

There are several things you can do to reduce the error part of this trial-and-error process. First, you can learn the elements of design and how these affect fit. You also need to become knowledgeable about standards used in evaluating clothing fit. Then, you can move through the following well-defined fitting process each time you approach a new project:



FIGURE 1.1 Well-fitted basic tailoring is the goal, achieved in this suiting by Max Mara.

- Begin by assembling all the materials and tools you need, including the pattern.
- Evaluate the figure to be fitted; understand the body you will be fitting.
- Select and coordinate fashion styles to fit and flatter the body.
- Select the appropriate and most accommodating pattern size.
- Prepare the body, the tissue pattern, and/or the fabric for fitting.
- Fit by the measurement, pinned-pattern, or trial garment method.
- Adjust the pattern or alter the garment by the seam method, pivot method, or a newly corrected slash method.
- Construct the garment, evaluate, and refine to achieve a fabulous fit.

As you can see, an effective fitting process begins long before you make any adjustments to the pattern or alterations to the garment.

All of the steps in the fitting process are interrelated. It is essential to complete one task before moving on to the next; the success of each task affects the final fit. Any step that is done poorly, whether pattern style or size selection, fabric selection, or pattern or fabric handling, can set up a chain reaction that compounds the chance of poor fit in all succeeding steps.

Learning to fit is a never-ending lesson in recognizing figure and body types and how they change over time. There are countless variations in body shapes and sizes. Bodies vary from one individual to another, and for each individual as he or she moves from one life stage to the next. Many people are self-conscious about their bodies. Fashion and beauty articles regularly refer to figure “flaws” or “faults,” which contributes to the notion that there is shame in not having that supposed ideal figure. This is of course not true. In describing the wide array of body types, this text refers to “figure variations” or “body variations”—specifying individual areas on the body that vary from the average in a given population. For example, wider-than-average shoulders and shorter legs qualify as figure variations.

Learning to fit entails understanding how clothing style selection relates to figure variations, figure type, and fabric. As your understanding develops with time and experience, and as you refine your ability to accommodate and counterbalance, you will learn that there are more options for any figure type than you might have realized before. You will realize, however, that even the most beautiful fabric and color won’t make a garment look terrific if it doesn’t fit well.

Careful planning and preparation can go a long way toward creating a positive and productive fitting experience for you and your students or clients. A pleasant, well-equipped workspace and a professional attitude are two essentials. As you will see, attention to detail makes the difference (see Figure 1.2).

The following section describes how you can create a workspace that will set you up to achieve a fabulous fit.

THE FITTING AREA

It is important to keep the fitting area neat and well organized, with all tools put away when not in use. Other considerations include adequate space and appropriate decor, and good ventilation and lighting. Mirrors, chairs, racks, and work surfaces all play an important role in getting a proper fit.

Space and Decor

The fitting area must provide enough space to allow the person being fitted to walk several steps to and from the mirror, giving both of you a clear view of the whole garment. Adequate space allows you to check the fit from the back, front, and side while the body is in motion. Ideally, the room decor should be plain and in soft, neutral colors, so that the focus is not distracted from the garment being fitted.



FIGURE 1.2
Attention to detail in well-fitted, decorative costume clothing is achieved in this ensemble by Slava Zaitsev.

Ventilation

Proper ventilation is very important, especially when working with several individuals in the room. A supply of fresh circulating air helps prevent the person being fitted from feeling faint or nauseated when standing for long periods of time.

Lighting

Good lighting is essential for effective fitting. It can reveal fabric distortion and reduce visual strain. A source of light above or to the side of the mirror prevents glare and shadows.

Full-Length Mirror

A full-length mirror allows the person being fitted to observe the fitting process, make suggestions, and respond to questions (see Figure 1.3). The advantage of a full-length mirror over a smaller one is that it allows the effect to be evaluated on the total figure rather than on isolated areas only. When the budget allows, invest in a three-way mirror, which enables you and the person being fitted to observe the back, front, and side images simultaneously. Less expensive full-length mirrors that can be hung on the back of a door are readily available at most department and hardware stores. The person being fitted can then use a large handheld mirror, held over either shoulder, to see the fit from the back.



FIGURE 1.3 Fit to be seen.



FIGURE 1.4 An assistant facilitates the measurement process.

Work Surface

You will need a clean counter, table, or desk to work on. A fold-up cork or cardboard cutting board or table with a measurement grid imprinted on the surface would be ideal. These items are available from many fabric and sewing supply stores. A tray at a convenient standing height is useful for holding pins, pens, tape, and other small fitting tools you will use during the fitting process.

Chair

A chair allows you to observe both the figure and the garment when the person being fitted is seated. View the garment while the wearer sits in the usual positions appropriate for it. A chair also permits the fitter to sit while adjusting the fit of a skirt or pant and to see the fabric at eye level. It is easier for you, as the fitter, to recognize where change needs to be made in fabric position when you are looking straight ahead at the garment rather than looking down at it. Work progresses more quickly and with less strain on both you and the person being fitted.

Rack

It is useful to have a closet or rack close by for hanging cut fabric sections, garment units, or completed garments during fitting and construction. Wooden or padded hangers help retain the shape of garments. Cloth or plastic garment bags help keep the fabrics clean.

GET HELP

You cannot measure or fit yourself, by yourself. During the fitting process, the assistance of another person or two is

quite necessary, particularly for the beginner (see Figure 1.4). Choose an assistant—a fitting buddy—who can be available at pre-arranged times, is observant, objective, reliable in judgment, and interested in fitting. Two fitters are better than one—position one in front and one in back, one on the right side, one on the left—each analyzing what's happening. If at all possible, your assistant should also be knowledgeable about clothing construction processes. "Get a trusted friend or hire a professional to assist you," advises master fitter Lorraine Henry.

PERSONAL APPEARANCE

Personal cleanliness should be maintained at all times. When people must work closely together, breath, body, or foot odor can be offensive. Good grooming will exert a positive influence on the appearance of the garment you are fitting, setting yourself up to be more objective in your assessments.

Hairstyle

An attractive hairstyle adds to a positive self-image. Hair length, however, should not interfere with fitting. If your hair is shoulder length or longer, wear it in a style that holds it off your neck and shoulders. Apply your usual makeup. If you make your appearance as pleasing as possible, it contributes to a more positive fitting experience for all concerned.

Undergarments

Choose well-fitted undergarments. This is very important. Undergarments create a personal support system that will affect the look, feel, and fit of what goes over them. Even the finest clothes fit poorly and look out of shape—or make you look out of shape—if you wear them over undergarments that do not fit.

Well-fitted undergarments will minimize, not emphasize, figure variations; they will not create additional unnatural contours. They can comfortably lift, support, and control body areas, and improve fit.

To ensure that the undergarments fit properly, consider the effect of seams and elastic. They should not be visible through outer clothing. For fitting purposes, a waist-height panty and



✓ REALITY CHECK

Here are some more tips on selecting well-fitted undergarments:

- Overall fit should be comfortably close to the body and smooth, without binding or constriction of any sort. Elastic, bands, and straps should not cut into the body or create bulges.
- Straps and openings should allow for adjustment.
- Waist areas should allow for expansion as you move or sit down.
- Undergarments should stay in place at all times—never ride up or slide down.

one-piece slip are recommended. If bikini or hipline briefs are worn, the elastic should be soft, smooth, and wide enough to prevent a depression and bulge across the hips.

Sales personnel in many lingerie departments and specialty stores are trained to help customers choose well-fitted undergarments.

For each step in the fitting process, it is essential to wear the style of undergarments that will be worn with the finished garment. Keeping this consistent each time will help to avoid unnecessary changes in darts, waistline position, and the amount of ease needed. Certain clothing styles demand specific types of undergarments—for example, a straight or flared slip, half or full slip, strapless or long-line bra, camisole, control-top pantyhose, and so on.

Shoes

Wear shoes in the style that will be worn with the garment being fitted. The shoes should be comfortable and allow the client to stand for fairly long periods of time during fitting. Wearing shoes of the heel height and style to be worn with the finished garment help to establish pleasing garment proportions and contribute to the overall harmony between the garment and figure.

Shoe style and heel height influence the fit, hang, and attractiveness of clothes. Very often, an inch or two of heel height is just what is needed to visually lengthen the leg for better proportion and overall balance. A tapered wedge can often give needed height along with the comfort of a flat. Heavy, chunky shoes seldom flatter a skirted leg. These look better when worn with pants. T-strap shoes are for slim legs and ankles only.

FITTING TOOLS AND MATERIALS

Assemble your tools, ready to use. Quality tools facilitate a fabulous fit.

Measuring Tools

Measuring tools are needed to locate and define the points from which measurements originate and terminate. Achieving a fabulous fit depends on accurate measuring throughout the entire fitting process. Investing in quality tools will facilitate accuracy in measuring and layout.

- **Measuring tape:** The best measuring tapes are made of fiberglass or cloth specifically treated to prevent stretching, tearing, and wrinkling. Roll the tape in a slightly loose coil and store it on its edge. The new interlocking Two Easy Tape with its Inseam Companion Tape (see Figure 1.5) offers measurement options not previously available. The set of tapes is designed to measure both the inseam and crotch length from a secure point of reference.

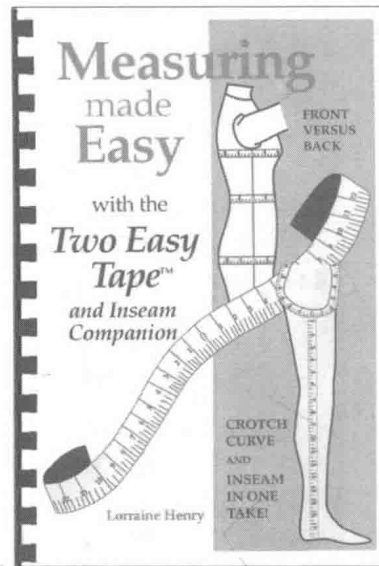


FIGURE 1.5 Measuring just got easier!

- **Flexible ruler:** A clear, plastic ruler allows you to see pattern details through it. The flexibility allows you to use the ruler in a curved shape, standing on its edge. A grid ruler facilitates grain analysis as well as measuring.
- **Seam gauge:** Use this small, adjustable tool to measure short distances while fitting and during garment construction. Store it flat and do not bend it.
- **Yardstick:** Made of smooth metal or waxed hardwood, a yardstick is best for measuring or marking long, straight lines. It should be stored flat or hanging to prevent warping.
- **French curves:** These tools are not essential, but they can be helpful for perfecting curved lines on the pattern.
- **Flexible curve:** This rubber-coated metal wire can be hand-shaped to any body curve. It is particularly effective in repeating the shape of the crotch curve for work in fitting pants.
- **Elastic:** Narrow elastic works well to define body break-points and stays in place. Other options include twill tape or grosgrain ribbon.
- **Necklace or drapery cord:** An optional item, this short, thin necklace chain or cord can be used to define the width of the front neckline and position of the back neckline.
- **Hem marker:** This is an optional item for use on bias-cut skirts.
- **Measurement chart:** A chart allows you to record measurements in an orderly format (see Chapters 8, 9, and 10).

Marking Tools

Marking tools are needed to identify points and levels on the body and to transfer pattern markings to the fabric. A well-stocked workroom will include the following items:

- **Masking tape:** This can be used to mark body break-points.

- **Scotch Brand Magic Tape (green box):** Use this translucent tape to reinforce curved edges on the pattern prior to pin-fitting.
- **Scotch Brand Magic Plus Removable Transparent Tape (blue box):** Use this easily removable tape to secure seams or areas needing change during fitting and alteration.
- **Tape dispenser:** A weighted tape dispenser aids in efficiency, allowing you to pull tape and cut it with one hand.
- **Half-scale practice patterns:** Highly recommended, these small patterns are invaluable to the process of learning to adjust patterns (see Figure 1.6). You can practice an alteration on the appropriate, easy-to-handle, half-scale sized pattern before you cut into your expensive, full-scale fashion pattern. (Quarter-scale patterns are also available, but experience has shown that these are usually too small to easily learn with.)

Choose high-quality cutting tools with sharp edges to safeguard patterns and fashion fabric. Select these tools in a weight and size comfortable for your hand and compatible with the fabric weight.

- ## Pattern Fitting and Adjustment Tools

Pattern fitting and adjustment tools make it easier to adjust the patterns and practice pattern alteration.

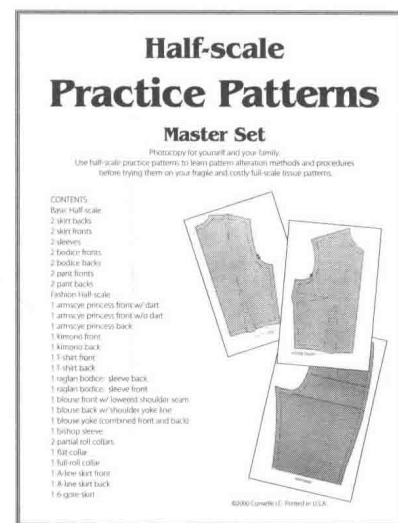


FIGURE 1.6 Half-scale practice patterns facilitate learning how to alter a pattern.

Sewing Tools

The fitting process entails very little actual sewing, so few sewing tools are needed. Basting may be all you need to be prepared for.

- **Sewing machine:** A basic, well-maintained machine is all you really need. Be sure to test your selection before you buy.
- **Fabric:** Use muslin or gingham as appropriate for the basic trial fitting garment. Use fashion fabric appropriate for the fashion garment you are fitting. For example, when making a trial fashion garment, use a muslin weight similar to your fashion fabric.
- **Needles:** Have a variety of lengths of needles, short to long, for short stitching or long basting stitches. Select needle size relative to the texture and weight of the fabric you are working with. Store these separately from pins.
- **Thread:** When working with fitting fabric, use thread in a contrasting color; when working with fashion fabric, use thread in a matching color. Choose an appropriate quality for fitting or fashion fabric.
- **Straight pins:** Select extra-fine steel dressmaker pins with colored glass or plastic heads; the advantage of glass is that it doesn't melt during pressing. Longer quilting pins are not recommended since they are heavier and more likely to leave holes or tears in the tissue pattern. Store pins in a pincushion or hard case.
- **Pincushion:** Bag, wrist, and magnetic pin holders are available and useful.
- **Thimble:** A closed dressmaker's thimble, an open-ended tailor's thimble, and leather thimbles are available. Select one according to third-finger size, preference, and ease in handling.

Pressing Tools

Specialized tools are not needed during the fitting process, and the finishing touches often require only an iron and an ironing board.

- **Ironing board:** Purchase a standard ironing board, one that can be adjusted to your height.
- **Iron:** You need only a basic iron with dry and steam settings, and variable heat settings that can be adjusted according to the fabric. Use a dry iron on paper pattern and fitting fabric that has not been pre-shrunk.

THE PATTERN

Patterns continue to be one of the best buys available when you consider the engineering that is involved in creating them, and the information and direction they provide.

The front of a pattern envelope presents an illustration or photograph of the finished garment to be made using the

✓ REALITY CHECK

Select the pattern 1) according to purpose; 2) in a fashion style that will most easily accommodate the body, taking figure type into consideration; 3) in a size corresponding to the high bust circumference or full bust circumference depending on bust size, and waist or hip circumference depending on skirt or pant style.

pattern. Commonly, this is a line illustration of a fashion figure that is lengthened in the torso and the leg. It is important to understand that this image does not represent the average body, and that the buyer should not compare herself to such an unrealistic figure. If a photographed figure is included, that should be the focus, since it is a more realistic representation of the style. Additional line drawings with styling cues are printed on the back of the pattern envelope.

We All Have Figure Variations

Begin to think seriously about figure type, clothing style, and pattern size by considering fitting problems concerning height, shoulders or bust size, waist, abdomen, or hip curve, or something else. We tend to be unkind to ourselves when considering our bodies, focusing on figure "faults" and "flaws." It is important to understand that, despite the unrealistic advertising images we are all exposed to, there is no one ideal body type to which we should all aspire. It is time to change the way we talk about ourselves and others.

Modern Feminine Figures

How times have changed! While women in the 1950s were accustomed to wearing form-fitting foundation garments, women in the 1970s quit wearing most of them. A girdle is the last thing a woman at the end of the 1990s would have considered wearing, yet a few years later we have a growing market for "body shapers," supposedly more comfortable one-piece elasticized undergarments intended to firm up the figure.

Women in the 1950s frowned on wearing padded bras; however, most women in the new millennium are wearing padded and push-up bras, which is not surprising given the number of women with larger bust measurements than women of previous generations. Research reveals that post-modern feminine figures are not much different from

✓ REALITY CHECK

Remember this—there are no such things as figure flaws, faults, liabilities, deformities, or abnormalities! What we all have are figure variations—variations from whatever is the average in a given population. It is important to avoid such negative words as "flaws" and "faults," which contribute to needless and unhealthy feelings of anxiety and low self-esteem. We need to speak kindly to ourselves and to others. Use more positive "self talk." There are no figure flaws or figure problems—only predictable fitting issues that, together, we can solve.

earlier figures with respect to neck and shoulder sizes as bone structure has not changed. Due to increased weight and slack posture, however, more women today are fuller in the bust, with a somewhat lower bust level, wider across the chest and back, wider in the waist, fuller in the abdomen and high-hip area, with forward shoulder joints, and fuller upper arms. It is no wonder that women 40 and older tend to prefer a looser fit in their clothes, while younger women appreciate the blend of elasticized fibers that are now popular.

Considering the long popularity of unisex dress in jeans and T-shirts, it may be no surprise that we now see young women countering this by wearing tight-fitting tops that emphasize their femininity. Those conditioned by what are labeled “low-rider” pants and skirts now exhibit a second indentation formed well below the natural waistline. The argument now erupts as to where the real waistline lies. Magazines now discuss the body “bumps” so commonly revealed through tight-fitting clothing—the bust bump, back or bra bump, belly bump, and baby bump. The subject of good fit has become more complicated, to be sure.

Basic Fitting Trial Garment

A basic fitting garment is recommended for the purpose of evaluating fit. The recommended garment is generally a dress with a close-fitting jewel neckline, standard armhole, waistline, straight skirt, and long fitted sleeve. Pattern pieces for a basic fitting garment include the bodice front, back, and sleeve, and the skirt front and back. Facings are not used. The basic fitting garment incorporates little more than fitting ease. It is never intended to be worn. It is made and used only to evaluate basic fit. Fashion designers and manufacturers develop their own basic patterns or “slopers” based on the figures they intend to fit. The adjusted pattern

is used for comparison to fashion patterns, and for use in flat pattern design. Basic fitting pants are also available.

Patterns available for basic fitting garments are sold by the major pattern companies. For example, Vogue Pattern #1004 is for a basic fitting dress—in theory, a duplicate of the sloper used to make all Vogue patterns. A basic fitting pant is Vogue Pattern #1003. Pattern numbers may change periodically. Availability may come and go, depending on demand. These patterns include only fitting ease or basic wearing ease in minimal amounts. Basic fitting garment patterns are available from McCalls, Butterick, Simplicity, and some independent pattern providers such as Sandra Betzina and Connie Crawford.

You may, instead, choose to work with a fashion pattern from the start, as the resulting garment incorporates somewhat more wearing or design ease and is intended to be worn. If you choose this option, you are wise to begin with simple basic styles. Of course, all future patterns will be of the fashion variety. Emphasizing the point, fashion designers and manufacturers will develop their own fitting patterns or slopers for production.

Fashion Garments

Fashion garments come in an infinite variety of styles. The extremes—basic and costume—are easy to recognize, and most people have a preference for one or the other as they relate to personal values, time available, sewing skills, personality, finances, and roles. Compare the following characteristics to recognize which are more in harmony with your personal style, and with your lifestyle and budget.

BASIC FASHION STYLES OR BASICS

Basic styles are simple in design, with little detail and no decoration (see Figure 1.7).



FIGURE 1.7 Simple basic clothing styles

- There are fewer sections and seams, and fewer design details.
- Examples include a basic shell or tank top, a camp shirt, sport shirt, smock, turtleneck, straight skirt, A-line skirt, flare skirt, flat front pants, sheath or shift dress, blazer, and sport jacket.
- Fashion basics incorporate wearing and added design or fashion ease—a little in basic flat front pants and more in pleated pants; a little in a basic straight skirt, more in an A-line skirt, and a lot more in a flared or circle skirt.
- Basics are easy to mix and match, and therefore more versatile and economical because of their simplicity.
- Because there are few design details, these garments do not conflict with one another nor go readily out of fashion.
- Basics are generally easier to fit because there are not many pattern pieces.

- Examples include a cowboy shirt, fringed vest or skirt, pinafore, cargo pants, jean jacket, safari jacket, and trench coat.
- Fashion costumes incorporate the entire range of design or fashion ease as intended by the designer.
- Costume clothes are more difficult to coordinate with other pieces, and therefore they are less versatile and economical because of their complexity. A whole wardrobe composed of costume pieces offers few options.
- Design details or decorations often fight for attention. Poorly designed costume clothes have extreme details or decorations that may go out of fashion quickly.
- Costume styles may be more difficult to fit due to the complexity of pattern pieces. Some, however, may accommodate the body or actually allow adjustments more readily—such as pleated pants over a larger abdomen and princess seamlines over a larger bust curve.

COSTUME FASHION STYLES

Costume fashion styles are more complex in design, with more design details and/or decoration (see Figure 1.8).

- There are more sections and seams, and details such as pockets, epaulets, ruffles, piping, appliqué, embroidery, and so on.

✓ REALITY CHECK

Whether working with basic or costume styling, keep in mind that very fitted styles generally require more adjustments or alterations than loose-fitting styles. The amount of design ease will vary with the designer.



FIGURE 1.8 Detailed or decorative costume styles

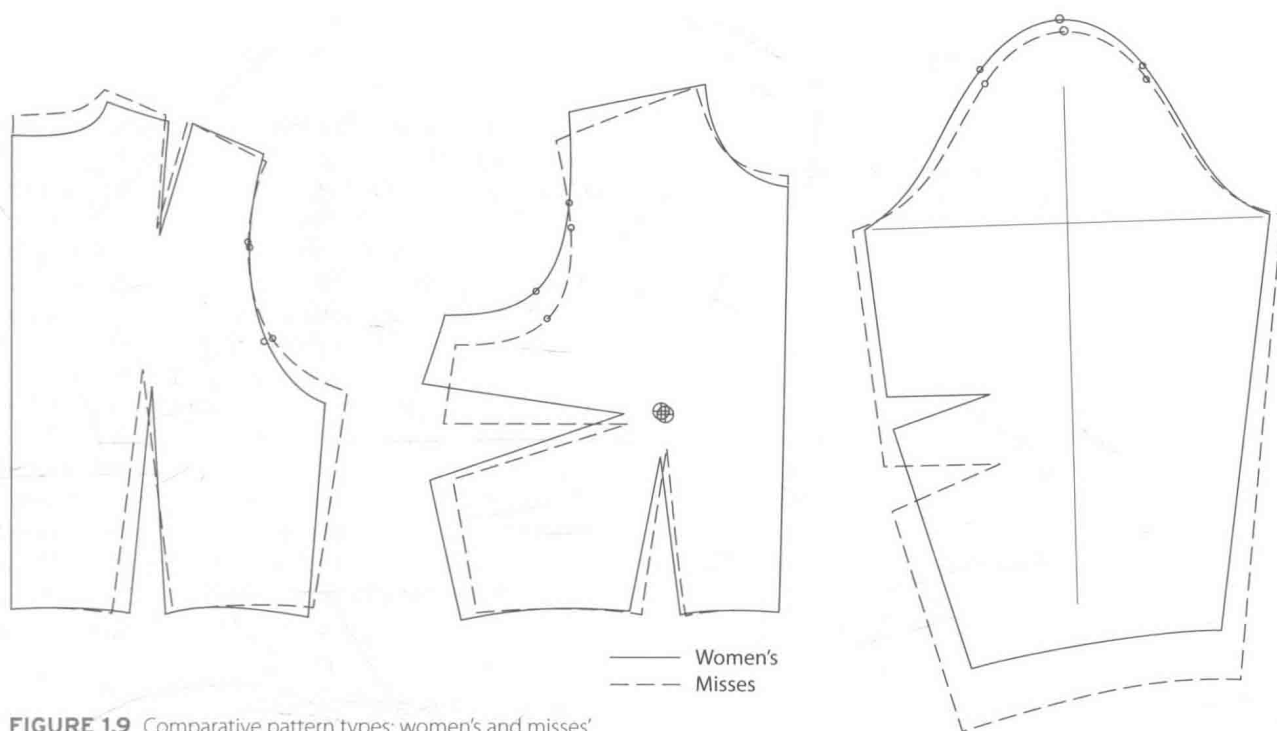


FIGURE 1.9 Comparative pattern types: women's and misses'

Pattern Size Selection

While people's ideas about what, exactly, constitutes a good fit may vary, everybody has some idea about what looks good, feels good, and is good or "right" for them. We have all worn clothing that we thought was the wrong size or that did not feel "right" for us, and we are well acquainted with the frustration that follows. Getting the right pattern, and the right size in that pattern, can lead to a more positive fitting experience.

Fashion patterns are available in a variety of types.

- **Misses' patterns:** These are sized to fit a well-proportioned woman of average 5 feet 5 inches to 5 feet 6 inches in height with a B-cup bust.
- **Women's patterns:** These patterns are sized to fit a woman of average 5 feet 5 inches to 5 feet 6 inches in height with a fuller midsection and a D-cup bust.

A comparative study between these two types of patterns is enlightening (see Figure 1.9). For example, the total circumference at the bust level of the women's pattern is 1 inch more than the misses' pattern, while the women's bodice back pattern is narrower at the armhole than the misses'. The sleeve of the misses' pattern has a longer under-arm seamline but a shorter cap height than in the women's pattern. The shortened cap height of the misses' pattern has been converted to width at the cap line, making the bicep circumference wider than in the women's pattern. Since the measurements of the pattern armhole and cap are the same for both misses' and women's patterns, the sleeve patterns could be interchanged if fullness in the arm is not a fitting factor. These variances account for some confusion and problems in the fitting process.

- **Petite or "petitable" patterns:** Women 5 feet 4 inches tall or less achieve a better fit with these patterns. The back bodice length is used as the indicator for total body height.

✓ REALITY CHECK

Patterns today are generally based on standard measurements in the bust, waist, and hip. Butterick, McCall's, Vogue, and Simplicity are essentially the same in these areas. Independent pattern makers vary to a greater degree. Measurements that are affected by height, posture, and weight distribution account for most differences in fit among pattern companies.

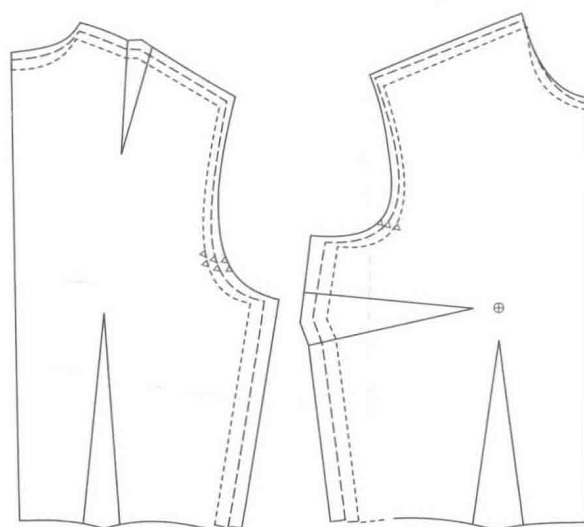


FIGURE 1.10 Comparative bodice size grading

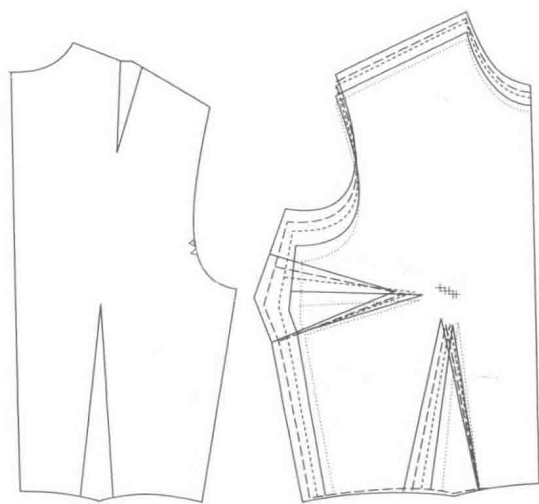


FIGURE 1.11 Comparative bra cup sizing

A comparative study of pattern grading is equally revealing in terms of fit (see Figure 1.10). For example, the length of every seamline changes, except the side seamline, which remains the same for each size. Darts lengthen or shorten, but the angle indicating dart size remains the same size regardless of pattern size.

A comparative study of dart sizing is important to understanding the alteration process that will follow (see Figure 1.11). For example, the length of all seams remains the same, except the length of the center front, which lengthens with each larger bra cup size. The size of the dart angle increases with each bra cup size from A to DD, but the dart position on the side seamline remains the same. The height and distance from center to the bust point increases with each larger bra cup size. It is important to recognize that the shape of the armhole curve rises higher and higher as the body becomes more curvaceous and the bra cup size increases.

Some pattern companies are featuring geometric figure types on the front of the pattern envelope, indicating which figure types they most easily fit and flatter. While this may seem like a useful tool, it is really more useful as a marketing tool for the pattern sellers than it is for fitters and sewers; it turns out that the advice is not always reliable. There is no substitute for experience in learning how to evaluate the figure in order to select the most appropriate pattern (see Chapter 4 for a discussion on figure evaluation).

In More Detail

- *Experience* tells us to select *all* patterns according to the measured high bust circumference, rather than using the traditional full bust circumference. (Some fitters now use chest width; however, we do not recommend it because posture can cause the measurement to vary too much.)
- For *pants and skirts*, consider bone structure, garment style, and the ease of construction as you consider size. Select a pattern for bone structure, according to the hip joint circumference. If the waist is smaller than the hip, select fuller styles according to the waist measurement,

REALITY CHECK

Patterns are designed to accommodate an average B-cup bust. In working with a basic fitting pattern, it is customary to select the pattern based on measurements for soft body tissue, according to the measured full bust circumference.

If, however, you are fitting for a C-cup bust or larger and select a pattern according to the full bust measurement, the pattern will likely be too large in the neck, shoulders, armhole, and upper chest area.

Better fit is achieved when the pattern is selected based on bone structure, according to the high bust measurement instead (see Figure 1.12). Simply substitute the high bust measurement for the full bust measurement printed on the pattern back and select the corresponding smaller size. The high bust measurement is generally smaller, corresponding to a smaller-size pattern that better fits this area and assumes that you will adjust the bust area to accommodate the larger or prominent bust. Using reliable methods, the bust measurement is relatively easy to adjust or alter. Selecting a pattern according to bone structure will minimize the need for pattern adjustments and garment alterations.

as the fullness is more likely to accommodate the hip area without adjustment. If the waist styling is complex, possibly including pleating, a placket, or a yoke treatment, select size according to the waist measurement and alter for the simpler hip area below. If the hip area is more complex or considerably larger, select size according to the hip measurement and alter for the smaller waist area. The pant legs will be proportionally larger and more pleasing in relation to large hips. The high or low level of the fullest hip circumference will also influence choice of size.

- If the body measurement falls between sizes, it is advisable to select the smaller size—unless the styling is very fitted and suggests a need for the larger size to provide adequate wearing ease.
- If upper and lower body areas require different sizes, you have the option of selecting multi-size patterns or buying the two sizes and altering at the waist for both. Again, the complexity of the style may determine the area to buy for.

It is possible that the front body and back body actually differ in size—for example, if more weight is carried on the abdomen or buttocks. In that case, the following can help to achieve a perfect fit.

- For skirt and pant patterns, measure the front hipline side to side, and the back hipline side to side. Double the measurements, as though for total circumference. Then select the pattern according to the smaller of the measurements. The pattern will fit the smaller body area and you can adjust the pattern fit the larger body area.

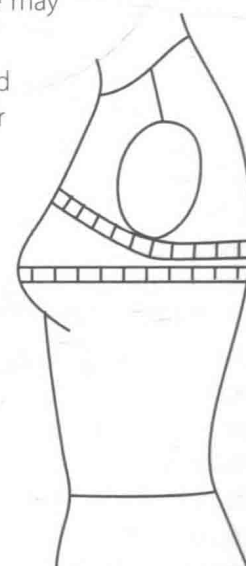


FIGURE 1.12 Full bust and high bust measurement positions

- When using multi-size patterns (discussed below), simply cut for the size larger to accommodate the larger front or back. Cut also for the higher waist level and mark the larger dart.
- Patterns are available that are made specially to accommodate this type of situation. For example, Sandra Betzina's and Connie Crawford's pant patterns are graded in ways that accommodate figures with larger buttocks.

Multi-Size Patterns

With single-size patterns, it is generally difficult to grade a pattern smaller or larger to accommodate the figure accurately and attractively. To ease the process, it is common for pattern companies to offer multiple sizes printed on a single pattern. These are called multi-size patterns. Although multi-size patterns are useful in many respects, the variety of lines on them can seem confusing at first.

You may have the choice of overlapping sizes or stepped sizes. Stepped patterns offer a separate pattern for smaller sizes, such as 8/10/12, and for larger, such as 14/16/18. More highly recommended are overlapping patterns, such as 8/10/12 and 10/12/14, wherein you get closely related sizes more likely to supply all the sizes needed to fit a given figure. Some patterns may be printed with all sizes on one sheet, so that you do not have to choose from separate multi-size patterns. But, because there are multiple sets of lines on each sheet, you have to be very careful to keep track of the size or range of sizes you need to follow during cutting.

Selecting the right pattern style and the right size in that pattern can help to ensure a more positive fitting experience.

The Pattern Envelope and Contents

In selecting a pattern, refer to the measurements on the back of the pattern envelope. Generally, the length and width of a finished garment are provided.

THE LENGTH OF THE GARMENT

- The back bodice length measurement is taken from the prominent cervical bone or vertebra at the base of the neck to the natural waistline as the person being measured looks straight ahead. The measurement given is from this standard position, even if the finished garment will have a lowered neckline. The amount the neckline has been lowered in back is usually indicated on the neckline of the pattern.
- Total garment length for a dress, blouse, shirt, or jacket is taken from the back neck position to the finished hem.
- The length measurement for a skirt is taken at center back from the natural waistline.
- The length measurement for pants is taken at the side seam from the natural waistline.

THE WIDTH OF A GARMENT

- Burda, Butterick, and Vogue discuss the fit of a garment in the description on the envelope; the finished width of the garment is printed on the pattern at the bust, waist, hip, and possibly at the bicep.
- McCall's indicates the finished width and length of the garment at the bottom of the envelope, with the finished width also printed on the pattern at the bust and hip.
- Simplicity prints the finished width of the garment on the pattern at the bust and hip.

The pattern back also includes suggestions for fabrics considered appropriate for the garment according to the design and intended use.

Inside the pattern is the guide sheet and pattern pieces. The guide sheet contains instructions, listed in order. Essential pattern pieces required for each garment style are illustrated. Basic pattern adjustments or alterations are illustrated. (These are usually rendered by the old traditional slash method. It is advisable to use instead the methods presented in Part Three of this text.) Fabric preparation and layout are also illustrated, followed by construction or sewing instructions.

Information on essential layout, cutting, fitting, and construction is provided on each pattern piece in terms of labeling and traditional markings used in the industry.

Read your pattern content to continually update your knowledge and improve your skills as new fabrics, equipment, notions, and construction techniques are developed and discussed. The format used on the envelope, pattern tissue, and guide sheet varies somewhat among the pattern companies. You will achieve better garment construction and fit if you read, understand, and apply the information on the pattern.

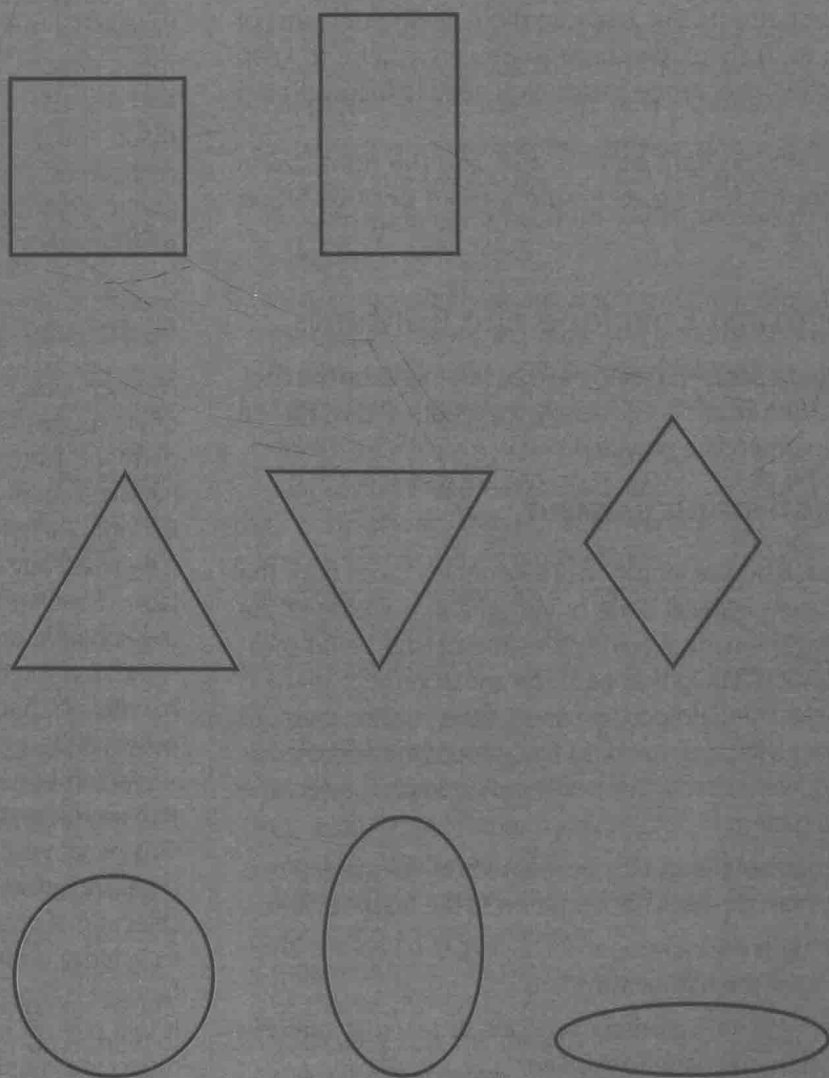
Fashion Fabric

As mentioned above, the back of the pattern envelope offers suggestions for appropriate fabrics to be used for the garment. To select the fabric, browse the fabric stores and handle a variety of fabrics that might be suitable. Standing in front of a mirror, hold the fabric up next to the body as if it were already a garment. Look at the hang or drape of the fabric. Simulate folds or soft pleats in the fabric and evaluate the apparent drape of the fabric. Note if the fabric lies flat or stands out. Do the "scrunch" test, crumpling and squeezing a handful of fabric to test for wrinkling. Request a swatch of the potential best choices and live with them for a little while.

As someone once said, "The bitterness of poor quality remains long after the sweetness of low price is forgotten." This bit of wisdom certainly applies to fabric. The money, time, and effort invested in clothing construction make the selection of quality fabrics essential. It is much more difficult to achieve a fabulous fit when working with poor-quality fabric; it is therefore advisable to use higher quality fabrics. It will pay off in terms of a more positive and successful fitting experience.

Chapter 2

Using the Elements and Principles of Design in Apparel



Consciously or unconsciously, people anticipate and appreciate an attractive, appropriate, harmonious appearance. Seldom do they consciously look for evidence of a figure variation or poorly fitted garment. They do, however, notice poor fit when they see it, whether on themselves or others.

A person wearing clothing that fits poorly, whether it be too tight, emphasizing body bulges, or too large and loose, draws negative attention from others. The clothing becomes distracting. Negative attention leads to a negative sense of self and self-consciousness. It tends to communicate a lack of attention to detail or an intentional effort to get attention from others. In contrast, a person wearing a well-fitted outfit is more likely to look and feel self-confident, reflecting competence and self-respect—and it is likely to command the respect of others.

An individual can achieve a positive, attractive, appropriate, and harmonious appearance when all the elements of clothing design are selected and coordinated to fit the body harmoniously.

- The value judgments that determine what is considered attractive, appropriate, and harmonious are personal, but they are also subject to social and cultural influences. They form the frame of reference through which the body and the garment are evaluated.
- As you look at any garment, it is essential that you recognize which design details are responsible for the appearance and the resulting fit of the garment. This effort requires thoughtful evaluation.

✓ REALITY CHECK

Viewer attention automatically goes to contrast in shape, color, line, texture, or pattern—to what therefore appears dominant on the body or the garment.

✓ REALITY CHECK

Sets of guidelines in clothing selection and coordination (known in the industry as systems) that promise instant gratification are seldom valid or reliable. They generally lead to loss of personal choice, freedom, creativity, and individuality. Achieving a fabulous fit in clothing takes thought and effort, but the results, in terms of self-confidence and the positive attention it brings, are worth it.

THE ART OF DRESS

Clothing is an art form. Consider individual items of clothing as personal pieces of wearable art. When selecting clothing styles, colors, fabrics or textures, and patterns, you step into the role of artist. When adding new garments to your wardrobe, coordinating them with clothes and accessories you already own, you are the artist. When you wear the clothes, you become part of the artistic composition. Your head and body need to appear harmonious, like they belong in the clothes as part of the visual design. Clothing that fits well contributes to that harmony.

When choosing how to use the elements of design, we need to consider their effects and what we *can* do as opposed to what we believe we *should* do. For example, too often we assume that the shorter person should appear taller and the larger person smaller. This may not be true. Taller or larger individuals may enjoy the strong sense of presence created by their size; they may choose to emphasize this presence with well-selected textured fabrics, bright colors, and bold lines. Shorter, smaller individuals, quite satisfied with their size, may choose to emphasize their petite figure through lightweight fabrics in delicate, small-scale prints. The choice is individual and everybody has options.

Visual design in dress is both *process* and *product*.

As a process, design entails planning and organizing to meet a goal, then creating or carrying out those plans according to a particular purpose.

As a product, design is the end result of an intended arrangement, the outcome of that plan and process. Clothing style selection, coordination, and construction projects will be more satisfying and successful—even profitable for professionals—with an active understanding of visual design.

Every design, no matter how modest, is an art form that contains *elements* and *principles* of design. There are five elements of design: *line, shape, color, texture, and pattern*. There are seven principles of design: *balance, proportion, scale, rhythm, emphasis, harmony, and unity*.

✓ REALITY CHECK

Categorical generalizations, such as *always* versus *never*, or *do* versus *don't*, dictate choices rather than instruct, and they seldom tell you *why*. The choice of how the elements of design will be used depends on the individual and on the answer to the question, "Why?"

✓ REALITY CHECK

Do not limit your options unnecessarily. Choosing carries with it the responsibility to evaluate the effect of each design element separately as well as in combination to achieve total harmony.

Manipulate the Elements to Achieve the Principles

| DESIGN ELEMENTS (Media) | DESIGN PRINCIPLES (Goals) |
|----------------------------|------------------------------|
| line | balance |
| shape | proportion |
| color | scale |
| texture | rhythm |
| pattern | emphasis |
| | harmony |
| | unity |

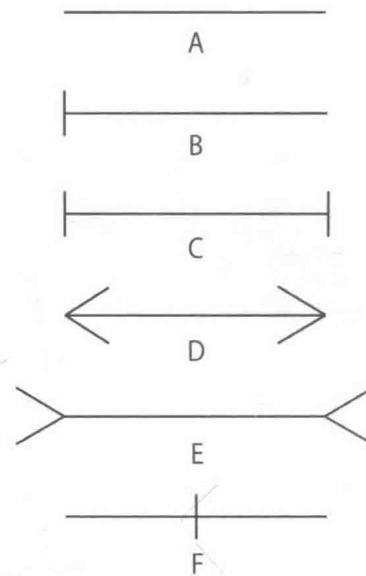


FIGURE 2.1 Horizontal lines A to F are equal in length, yet each appears a different length due to illusions created by the intersecting lines.

Any discussion of clothing selection, coordination, and fitting that does not include all elements and principles of design listed above is incomplete and ineffective. Each element or principle is essential to discussion and evaluation.

✓ REALITY CHECK

There are systems of clothing selection and fitting that focus only on *color, line, and design*, or on *grain, balance, and proportion*. Color and line are elements of design. The content leaves out the influence of shape, texture, and pattern. Grain is part of line as an element of design. Shape, color, texture, and pattern have been ignored. Balance and proportion are only two of the principles of design. Scale, rhythm, emphasis, and harmony are missing. Do not rely on incomplete discussions or systems.

The way the elements of design are used, and their resulting effects, can alter visual perception to create *illusions*. An illusion in dress is a false perception or interpretation of what we see—or what we think we see. Illusions occur as the elements of design interact. Used effectively, the elements can alter visual perception to create beautiful garment designs for virtually any figure. This is to say, there is infinite variety in visual design, the effective use of which can create positive illusions about the body, presenting the body attractively and harmoniously.

Keep in mind, however, that when you change the use of one element or design detail, you generally change the effect and the illusion. It is therefore essential to become aware of the general effects and illusions created by each element of design relative to clothing style selection, coordination, and fitting (see Figure 2.1). You must analyze and evaluate the effects continually during the design process right up to the final product. In choosing elements and details to create particular effects, you must use enough variety in the design to keep it interesting, but not so much variety as to lose functionality of the design or make it chaotic.

✓ REALITY CHECK

Continually evaluate the way in which each element of design is used and the degree to which each principle of design is achieved.

REINFORCING AND COUNTERING

The two most efficient and effective ways to control visual effects are *reinforcing* (or *repetition*) and *countering* (or *contrast*).

- *Reinforcing or repetition is the process of making something about the design more important, emphatic, or dominant.* Reinforcing an element such as a design detail can emphasize a body characteristic that is considered pleasing. For example, narrow vertical lines and spaces may be used to reinforce and emphasize slimness or height.
- *Countering or contrasting is the process of making something about the design less important, minimizing or subordinating it.* Countering an element of design or design detail can minimize or camouflage a body variation that is considered less pleasing. For example, slightly curved lines and shapes can be used to counter and camouflage the angularity of a very thin figure.

If carried to the extreme with too much contrast, the effectiveness may be lost. Basic differences become accentuated when the degree of contrast is too great. For example, very thin legs will be emphasized by a wide, bouffant skirt.

Individuals with extremes of height, weight, or shape who choose exact repetition or complete contrast of a feature they consider less desirable will emphasize the feature rather than counter it. For example, the very lightness of sheer, clingy fabric may emphasize the contrasting heaviness of a full figure while at the same

✓ REALITY CHECK

Any system of clothing selection, coordination, and fitting that includes only reinforcing or repetition is incomplete and ineffective. Countering is equally essential to achieving an attractive, harmonious appearance.

time revealing the body contours. Conversely, the opposite extreme of heavy, bulky, or stiff fabrics emphasizes the heaviness of the full figure by repetition. An intermediate degree of a specific design element—in this case, medium-weight fabric—can lessen the effect and create a more flattering result.

Wise selection in clothing design can minimize or eliminate the need for alteration. The ideal designs to choose are those that accommodate the body and create a positive illusion, effectively emphasizing the individual's best features and camouflaging any undesired figure traits and/or drawing attention to the most desired traits.

Both reinforcing and countering may be employed in a single garment to focus attention on the area where it is desired and away from where it is not. For example, narrow shoulders can be countered with moderate shoulder pads and reinforced by epaulets to draw attention up and away from broad hips and/or thighs. At the same time, a flared skirt can effectively camouflage prominent thighs. If a straight skirt is preferred, then alteration will be required for a flattering fit. Attention to the shoulder area will then serve to counterbalance the hip area to create a harmonious appearance.

Because of the interrelationship between the elements and principles, there are no hard and fast rules or absolutes. Careful consideration must be given to selection, combination, and arrangement of the design elements; the figure on which the elements are placed; and the setting in which they are viewed. Apparent height, weight, and shape are relative to each of the factors discussed above. No element or principle of design can be evaluated as an isolated entity. No matter how lovely any one part may be, the whole must also be considered in determining the result. Each new garment or outfit presents a new opportunity to analyze and evaluate in terms of the elements and principles of design.

THE ELEMENTS OF DESIGN: THE MEDIA

The elements of design are the essential components of the art form. They are relative and interdependent. As we have seen, in dress design these elements include line, shape, color, texture, and pattern. Each element of design can be discussed in terms of its many characteristics. Each element can be manipulated to create the desired effect in any given garment on any specific figure. Each element

can be analyzed or evaluated in terms of its physical and psychological effects as used in the design. This text will focus on the general physical effects as used in clothing design to achieve a fabulous fit.

Line

Clothing design begins with a point elongated into a line. The line is the most influential element of design in the presentation of the figure and in the garment fitting process. It measures and connects the distance between two points, encloses and divides space, and defines the outline or shape of the body and the finished garment. Line indicates direction and leads the eye throughout the design. Line may be seen both in the fabric and in the design of a garment. It may be structural or decorative. Line creates powerful effects and illusions about the apparent size and shape of the body.

STRUCTURAL LINES

Structural lines within fabric are created by the position or direction of the yarns as they cross each other at right angles in woven cloth or as they loop vertically or horizontally in knits. The directional lines thus formed may be observed and are commonly referred to as *grain* (see Figure 2.2).

- The lengthwise yarns or fabric grain (warp) lies parallel to the finished edges, called selvages, and falls straight down, perpendicular to the floor. Lengthwise grain has very little stretch.

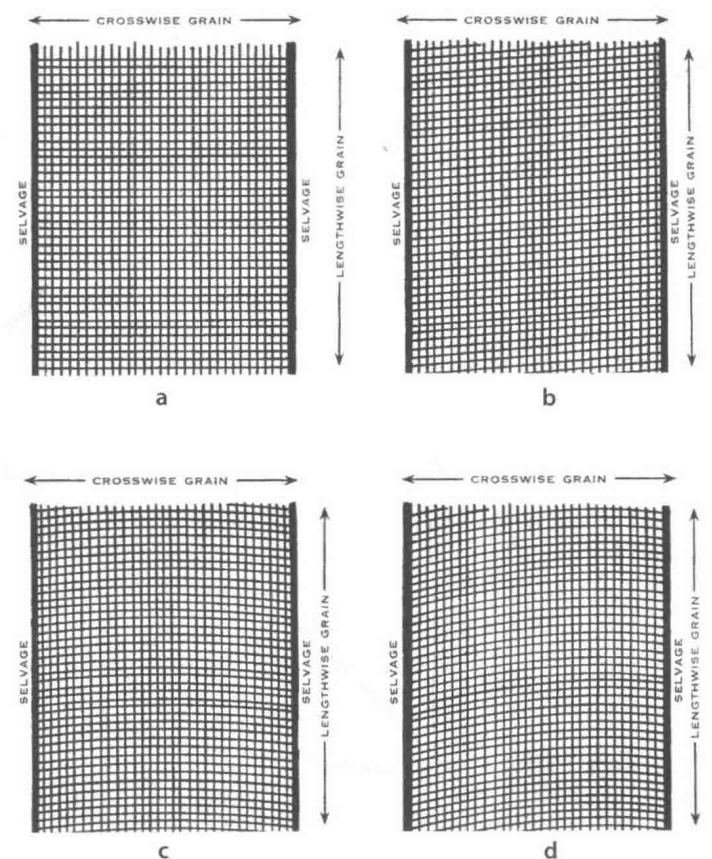


FIGURE 2.2 Examples of straight grain (a), bias grain (b), bowed grain (c), and bowed and bias grain (d)

✓ REALITY CHECK

When working with fabric, always check the grain before laying out the pattern.

✓ REALITY CHECK

During fitting and construction, check the grain for such distortions as bending, twisting, pulling, sagging, and wrinkling. If the grain is distorted due to poor garment construction, the garment will twist on the figure, resulting in poor fit. There is likely no way to correct the problem. Grain distortions caused by figure variations can be corrected by adjusting the paper pattern and altering the garment.

- The *crosswise yarns* or *fabric grain* (*weft* or *filling*) lies between or at right angles to the finished selvages and parallel to the floor. The crosswise grain generally has some stretch.
- The *bias* lies diagonal to the straight lengthwise grain. When you fold fabric so that the lengthwise grain lies exactly on top of the crosswise grain, you get a 45-degree angle on the fold. The line of the fold is called the *true bias*. The bias stretches easily.

Grain controls the way fabric hangs or drapes on the body. When the lengthwise and crosswise fabric grainlines lie at right angles to each other, the fabric is said to be *on grain* or *straight*. The resulting garment will hang straight or evenly on both sides of the body. The garment will not pull or twist on the body, but appear balanced. When the fabric grainlines do not lie at right angles to each other, the fabric is said to be *out of line* or *off grain*. The resulting garment will hang crooked, and may pull or twist on the body, especially after it is washed.

All natural fabrics without heat-set finishes can be straightened very simply by pulling the weave into alignment. This is accomplished by cutting each end along one yarn, then pulling the fabric on the true bias in the direction of the shortest corners. Some synthetic fabrics can be straightened by pressing with a steam iron while the fabric is pinned to a porous or cork-top cutting table in a grain-perfect position.

The crosswise grain tends to stretch more than the lengthwise grain, because the latter is more stable and durable. These are significant factors in garment design and fit because lengthwise areas of the garment placed on the crosswise grain may stretch or sag.

DECORATIVE LINES

Decorative lines within fabric occur as stripes, plaids, and repeating motifs created during fabric manufacture or added during the printing and finishing processes. Consider these lines in laying out the pattern pieces on the fabric and in relation to the body areas on which they will be seen.

✓ REALITY CHECK

Unless intentionally departing from the original design, it is generally smart to maintain the degree of fit intended by the designer (see Figure 2.3).



FIGURE 2.3 In a charming dress by Giuliana Teso, stress wrinkles due to the lack of intended ease distract attention from the finished garment.

OUTSIDE LINES

Outside lines or outline in garment design is established by the garment edges. Outside lines that enclose space and define the body or the garment shape are known as the *silhouette*. The garment silhouette should achieve vertical and horizontal balance and pleasing proportional relationships. The garment silhouette may or may not define the body silhouette. It should, however, avoid emphasizing a figure variation considered undesirable or distracting. Either the body silhouette or the garment silhouette will be dominant, depending on the closeness or looseness of fit according to the amount of *ease*.

Ease is the difference between body measurements and the measurements of the pattern or garment. If we were to wear clothing made according to exact measurements, we would not be able to breathe, let alone move. A garment made with no ease allowance would be skintight; ease is what allows us to move when wearing a garment. There are three types of ease to be aware of: fitting ease, basic ease, and design ease.

- *Fitting ease* is a bare minimum amount of fabric allowed; it allows the wearer to breathe, but bending or sitting would likely split a seam.
- *Basic ease* or *wearing ease* is the minimum amount of fabric allowed for comfortable body movement, including sitting. Wearing a garment that lacks basic ease can

feel miserable, as if you are being held hostage by tight-fitting clothes that block your every move. The amount of basic ease will vary according to the body area being fitted and to how much movement is needed. These variables explain why patterns or garments of the same size can measure differently. For example, a business skirt or pant needs less ease for sitting at a desk than does a skirt intended for dancing or pants to be worn to a picnic. Pull-on skirts or pants need more ease to pull up over the hip area than does a skirt or pant designed with a zipper.

- *Design ease, fashion ease, or style ease* is the amount of fabric allowed in addition to wearing ease. It is the added fullness allowed to create a specific garment style as intended by the designer. The amount of design ease will vary with differences in style line and shape, fabric used, and designer preference. A straight skirt and classic blazer jacket would not be expected to look or fit with the same amount of ease as an A-line skirt and blouson bomber jacket. Nor would a flared skirt by one designer likely look and fit with the same amount of ease as one by another designer.

The closeness of fit according to ease amounts may be categorized as *very fitted*, *slightly fitted*, *slightly loose*, *loose*, or a combination—*semi-fitted* or *partially fitted* (see Figures 2.4 to 2.8).



FIGURE 2.4 Very fitted styling



FIGURE 2.5 Slightly fitted styling



FIGURE 2.6 Slightly loose fitted styling



FIGURE 2.7 Very loosely fitted styling



FIGURE 2.8 Combination or semi-fitted styling



✓ REALITY CHECK

Regardless of cultural, social, or fashion trends, we are well advised to select only those silhouettes that present the figure harmoniously for both the individual and the occasion. For a flattering slimming effect, garment silhouette must be dominant and body silhouette subordinate. Attention is not drawn to any body bulge.

Since the fashion business depends on change to survive, garment silhouettes are constantly evolving. These modifications often mirror changes in ideas and social values. For example, in the 1960s, many people openly rebelled against established ways of doing things, including established standards of dress. Their demand for more comfort in the fit of their clothes resulted in loose, oversized clothing with added wearing ease in the 1970s and into the 1980s. In the 1990s, sizing reversed to some degree as stretch fabrics began to appear in the garment industry, and even very fitted clothes could be comfortable. Formerly established standards of fit were forgotten or never known to younger generations. By the 2000s, many young women were wearing tight-fitting clothes to reflect the values being promoted in the media at the time.

INSIDE LINES

Inside or interior lines in garment design lie within the garment itself and can be either structural or decorative. They can divert attention away from the silhouette, or they can be used to create vertical, horizontal, or diagonal eye movement. As well, they can divide the total area into pleasing proportional areas in scale with one another and with the wearer.

Structural interior lines are created by the stitched seams and darts that first serve to create the outline or silhouette. Major vertical structural seams are generally positioned at the garment center front, center back, and sides. Major horizontal seams are generally positioned at the shoulder, midriff, waist, and hip. Seamlines should intersect accurately in an appropriate position for the wearer.

Darts are generally positioned in the chest and hip areas. Dartlines should be directed toward the crown of the body bulge they are designed to fit—the bust, abdomen, hip, or buttocks, and possibly the shoulder or elbow. Structural lines can also be created in the garment by gathers, pleats, tucks, flares, or flared insets.

Decorative interior lines are incorporated into a design to create added interest. They are created by the placement of top stitching, buttons, pockets, pocket flaps, and special trim



✓ REALITY CHECK

Clothing is designed to fit, hang, and flow from the top. Jackets, coats, dresses, shirts, sweaters, and vests are designed to fit and hang smoothly from the shoulders. Skirts and slacks are designed to fit and hang smoothly from the waist or upper hip area. If anything gets “hung up” in between, it means that there is not enough ease. The garment needs to be in a larger size or a fuller style.

such as braid, lace, piping, ribbon, and so on. To recognize purely decorative lines, think in terms of removing whatever creates the line. If the buttons or lace creating the line can be removed without the garment falling apart, it is probably purely decorative.

Some seams serve both structural and decorative purposes, such as a bodice or skirt yokeline and a princess seamline in a dress. Regardless of the type, interior design lines that are well planned lead the eye throughout the garment with a smooth, rhythmic movement. They do not compete with one another for attention. Effective interior lines do not emphasize an undesired figure variation, but rather divert attention to another area considered more appropriate and attractive.

TYPES OF LINES

Types of lines are straight or curved to varying degrees, each with characteristics of their own.

- *Straight lines* are crisp, flat, and rigid. They oppose the curved lines of the body to varying degrees.
- *Curved lines* can be either restrained or fully rounded.
- *Restrained curves* are only slightly curved. They flow more easily with the curves of the body.
- *Fully rounded curves* are more circular and may impart a more decorative look to the garment. They may or may not conform to the curves of the body.

LINE DIRECTIONS

Line directions are vertical, horizontal, and diagonal, each with their own set of characteristics. Straight lines can indicate exact vertical, horizontal, or diagonal directions. Curved lines, however, can assume the direction they most closely resemble. Line direction can be created through the placement of grainline and fabric design lines, the outline or silhouette, and interior design lines.

- *Vertical lines* can be observed in a rectangular or tubular silhouette. Interior design lines that can produce a vertical direction include finished edges, seamlines, necklines, pleats, panels, tucks, folds, slash pockets, center front and back plackets, button and zipper openings, a row of buttons, and a soft or straight hanging tie. Vertical lines are also seen in prints, stripes, and plaids.
- *Horizontal lines* can be seen in a bouffant (puffed-out) silhouette. They occur at hemlines and within the interior of a garment as finished edges and seamlines such as a yokeline, waistline, and hipline. They may be observed in necklines, patch or slash pockets, pocket flaps, cuffs, bow ties, belts, and double-breasted closures.
- *Diagonal lines* can be observed in an A-line silhouette. They generally occur on the interior of the garment as lapels, panels, inserts, seamlines and finished edges, or garment openings such as surplises. In the late 1990s, designers began to feature diagonal hemlines.
- Vertical, horizontal, and diagonal lines are also seen in prints, stripes, and plaids (see Figure 2.9).



FIGURE 2.9 Straight horizontal stripes fall in softly restrained curves, adding interest to the Cavalli dress and creating vertical eye movement up and down the garment.

- *Lines in transition* form when a line changes smoothly from one direction to another without sharp angles.
- *Lines in opposition* form when vertical, horizontal, or diagonal lines intersect forming sharp angles.
- *Lines in radiation* form when lines spread or radiate from a central point or area.

Additional characteristics of lines are often expressed in terms of opposites:

- long—short
- thick—thin
- wide—narrow
- even—uneven
- jagged—wavy
- sharp—fuzzy
- solid—porous
- continuous—broken/dotted
- zigzag—scalloped
- smooth—shaped

GENERAL EFFECTS OF LINE

General effects of line on the figure and fit occur as a result of a single line or a combination of lines. It is important to remember that lines can be formed by folds in the fabric, and that the more parallel lines present, the weaker the directional effect of each line, be it vertical or horizontal (see Table 2.1).

ARRANGEMENTS OF LINES

Arrangements of lines include transitional lines, lines in opposition, and lines in radiation.

OPTICAL ILLUSIONS IN LINE

*Lines appear to create illusions in size and shape in the area where placed.
Learn to use them to create illusions in dress.*

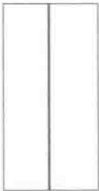


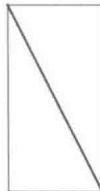
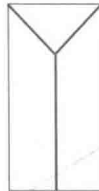




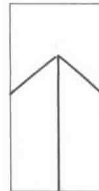


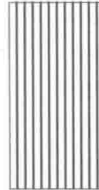


| | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
| Vertical line appears to lengthen; appears slimming as the eye moves up and down. | Horizontal line appears to shorten; appears to widen as the eye travels across. | Diagonal line appears to shorten and widen as the slant is closer to a horizontal. | Diagonal line appears to lengthen as the slant is closer to a vertical. | Extended diagonal lines appear to lengthen as the eye continues to move upward. |
|  |  |  |  |  |
| One wide vertical appears to lengthen as the eye moves up and down. | One wide horizontal line appears to shorten or widen. | Figure appears taller and top heavy. | Figure appears shorter, wider, and bottom heavy. | Reverse diagonal lines appear to shorten and widen. |
|  |  |  |  |  |
| Wide verticals appear to widen as the eye travels across. | Wide horizontals appear to add width and weight. | Many vertical lines can appear to widen as the eye travels across. | Many thin horizontal lines can appear to lengthen as the eye travels up and down. | Asymmetrical sides due to line division. |

TABLE 2.1 Optical illusions in line

Source: Judith Rasband, Conselle Institute of Image Management

- Straight lines reinforce angularity in the body and counter roundness, generally having a slimming effect due to the flatness of the line.
- Curved lines reinforce roundness in the body and counter angularity, generally adding visual weight because the line is rounded. How straight or how curved the garment lines should be will vary according to the desire to outline or camouflage the body silhouette or to create illusion in a particular area. The visual impact created by restrained curved lines is generally more subtle than that created by rigid straight lines.

Vertical Lines

- Single vertical lines generally create the illusion of increased height and slimness in the area where they are used. This is because the eye is drawn inward toward the line, then follows it upward and downward, mentally continuing the length of the line unless stopped by a horizontal intersection.
- Multiple vertical lines repeated at close intervals may carry the eye across the body from line to line, thus creating the illusion of increased width and decreased height. The illusion of width may also be created by the use of wide lines, and widely spaced lines. The eye focuses on one line and then moves across the body to the next one, thus measuring the width between.
- When correctly fitted, a tubular silhouette with obviously greater height than width can create the effect of a vertical line and elongate the figure. Vertical wrinkles caused by poor fit produce the illusion of increased height and narrowness, emphasizing the too-big appearance of the garment. Asymmetrical vertical lines can visually alter the proportional areas of the body from side to side.

Horizontal Lines

- Single horizontal lines generally create the illusion of decreased height and increased width in the area where they are used. This is because the eye is drawn to the line and follows its path from side to side, until stopped by a vertical intersection. The thicker the horizontal line, the greater the apparent width and weight. The total of the divided areas of the body appears shorter than the actual total height.
- Depending on the placement of the horizontal line, proportional body lengths can be visually increased or decreased. For example, the dropped waistline at hip level visually lengthens the upper part of the body and shortens the lower part of the body. Such divisions are important considerations in the achievement of balance, proportion, rhythm, and emphasis.
- Multiple horizontal lines repeated at close intervals may carry the eye up and down the body from line to line, thus creating the illusion of increased height and slimness. The narrower the horizontal lines, the slimmer the effect. This is particularly true if a vertical line is also present in the center front, as with a center front opening. The narrower

the vertical silhouette is to begin with, the greater the effect will be.

- Fullness in the design creates a wider silhouette and the effect of a horizontal line at the area of greatest fullness. For example, a full puff sleeve creates the effect of a horizontal line across the middle of the puff. A full bouffant skirt produces a wide horizontal line at the hem. Horizontal wrinkles caused by poor fit produce the illusion of increased body width, emphasizing the too-tight appearance of the garment. The greater the number of widely spaced horizontal divisions, the shorter the individual may appear.

Diagonal Lines

- Diagonal lines tend to increase length or width at their end points—at both ends. This is because the end points are visually compared with the opposite edge point of the silhouette. The thickness, length, and degree of slant of the diagonal influence apparent height and width. A short diagonal line appears to increase width. A long diagonal line appears to increase height. A sharply angled diagonal, lying nearly horizontal, takes on the characteristics of a horizontal line and appears to increase width. A subtle diagonal, only slightly angled and lying nearly vertical, takes on the characteristics of a vertical line and tends to increase height and slimness. The combination of length and slant of the diagonal line must be considered to determine the final effect of the line. A diagonal line increases emphasis within the area where it is placed.
- Diagonal lines in the shape of a chevron are generally assumed to increase visual width or weight at the widest end, and should point in the direction to be emphasized—not in the direction to be minimized.

Other Effects of Lines

- The actual length of a line can be measured precisely. However, the impact or visual strength of a line is less easy to measure; it is determined by the length of time the eye dwells on it. The longer the eye follows a line, the more impact the line has and the more effective it is in creating an illusion. For example, a longer lapel line tends to be more slimming than a short lapel line. A rounded hem at the opening of a jacket softens the look somewhat, while the multiple curves of a scallop hem appear very soft and feminine—with the greater possibility of adding visual weight across the hip.



REALITY CHECK

To recognize which line is dominant, try the “blink test.” Stand 5 to 10 feet away from a garment. Shut your eyes and clear your mind. Then concentrate on the presentation of lines. Because attention goes to contrast, if you are intent on seeing contrasting lines, when you open your eyes, you will quite naturally and immediately spot the dominant line in the outfit.

- Lines can be reinforced or exaggerated by construction and decorative techniques such as piping, ribbing, bands, panels, welt seams, lapped seams, topstitching, and other trims. This is particularly true when they are set onto a contrasting background. The ability of a line or lines in combination to create an illusion becomes a matter of length and strength factors, of long or short lines, of many or few lines, of raised or flat lines, and of the background on which they are placed. Zigzag lines reinforce angularity in the body and counter roundness. By contrast, scalloped lines reinforce roundness in the body and counter or soften angularity.
- Generally, the greatest emphasis occurs when a line directly repeats a line on the figure. However, a line in direct and extreme contrast to a line on the figure also emphasizes, due to the amount of difference between them. *Transitional lines* move smoothly from one direction to another without abrupt change in direction. They may be used to lead the eye to another part of the body, as seen in the transition away from a horizontal hemline, around and up the vertical front opening, to a diagonal lapel or collar line, which frames the face.
- When vertical and horizontal lines are used in combination, as in a plaid, the effect of increased body size is dependent on the spacing of the lines and on the contrast with the background. Generally, the wider the spacing of the lines and the greater the color contrast, the larger the apparent size. Conversely, decreased space between the lines and a similar-colored background minimize the effect of increased size. A greater sense of harmony is also achieved when the scale of the plaid is in proportion to the person wearing it—for example, when a petite figure wears a small- to medium-scale plaid.
- For a harmonious effect, one line in the garment or outfit must be dominant and all others subordinate.

Shape

Clothing design is defined by shape. Shape is the enclosure of space created by joining the ends of a line. It is a powerful element of design in the presentation of the figure and in the garment fitting process. Shape may be seen as the outside edge, outline, or silhouette of a garment and as the enclosed spaces that constitute the garment design. It defines and emphasizes, counters or camouflages, and minimizes the shape of the body. Shapes can be positioned to lead the eye throughout the design. It

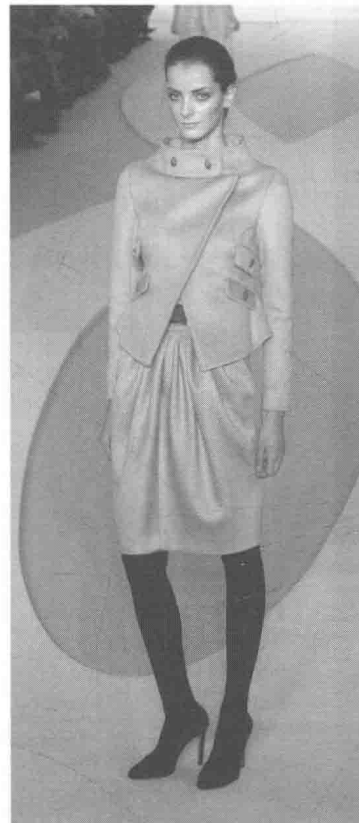


FIGURE 2.10 In this stylish wool suit with unusual pocket detailing from Karl Lagerfeld's collection for Chanel, the garment shape repeats the shape of the body. With sufficient ease, the fit is both appropriate and attractive.

may be seen in the fabric and in the design of the garment; it may also be structural or decorative. Shape creates powerful effects and illusions about the apparent size and shape of the body.

STRUCTURAL SHAPES

Structural shapes within fabric may be created by the position and direction of the yarns as they form textural shapes or patterns such as stripes, plaids, and paisleys.

DECORATIVE SHAPES

Decorative shapes within fabric occur in plaids and prints during fabric manufacture or are added during the printing or finishing process. It is essential to consider the placement of these shapes in the layout of the pattern pieces on the fabric and in relation to the body areas on which they will be seen.

OUTSIDE SHAPES

The outside shape of a garment design, the silhouette, is usually restricted to a two-dimensional area having length and width. Closely related to shape is *form*. Form generally refers to a three-dimensional object, such as the stitched sleeve, completed garment, or the body. The form of the garment encloses the form of the body. Garment forms are more traditionally called shapes or styles. Body forms are traditionally referred to as shapes or figure types.

As is true of line, either body shape/silhouette or garment shape/silhouette will be dominant. If the shape of the body and shape of the garment repeat each other, the body shape will be accentuated (see Figure 2.10).



✓ REALITY CHECK

Not all garment shapes present all body shapes attractively. To achieve harmony between the garment and the body, the body's shape, figure type, or combination of figure types must be respected (see Chapter 4).



FIGURE 2.11 The center section of this futuristic dress from Yves Saint Laurent features a structural interior shape creating a slimming effect, reinforced by the contrasting size and color of the sleeves.

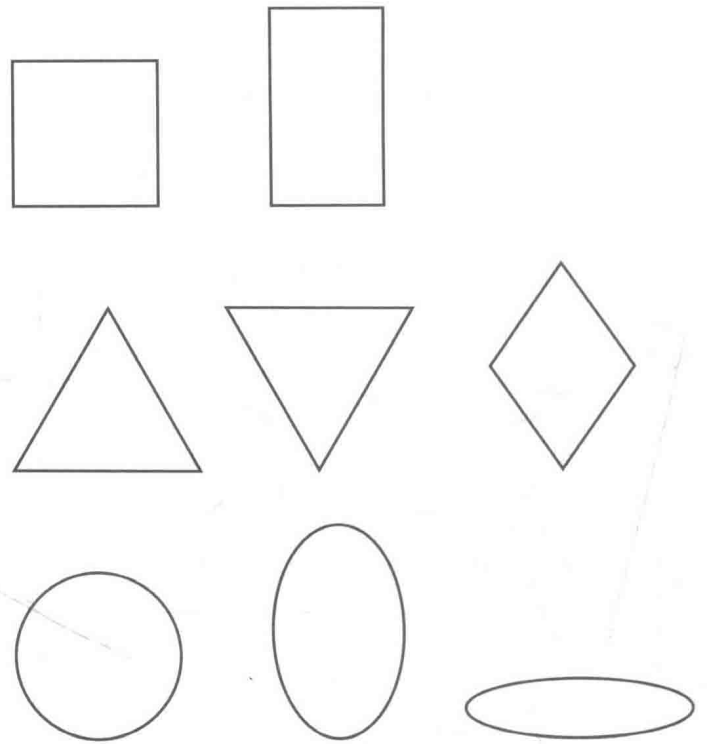


FIGURE 2.12 Lines connect to create shapes—angular shapes and circular shapes.

The closeness of fit appropriate for the body as presented in the section on line applies to shape also. Body shape can be minimized or camouflaged by a slightly loose fit in the garment.

Both figure types and garment shapes may be categorized in terms of geometric shapes—*triangle, inverted triangle, rectangle, hourglass, diamond, tubular, oval, or rounded*. It is common for an individual to be a *combination of these shapes or figure types*. Many fitting problems may be solved or eliminated with the selection of garment shapes that will accommodate the figure type in the first place. (See Chapter 4 for a detailed discussion of figure type evaluation and style selection for various figure types.)

INSIDE SHAPES

Inside or interior shapes in garment design lie within the garment itself and can be either structural or decorative. Inside or interior shapes appear as positive *foreground*, with negative *background* area or space between shapes. Inside shapes can serve several functions. They can add interest to a plain garment design, create a point of emphasis by attracting attention to a specific body area, or divert attention away from an undesired figure variation.

- *Structural interior shapes* are created by structural seam-lines as they create proportional sections within the garment (see Figure 2.11), or they may lie on the surface of the garment, as with functional pockets, collars, lapels, or cuffs.
- *Decorative interior shapes* are incorporated to create added interest within the garment. Decorative shapes include

buttons, bows, patch pockets, pocket flaps, bands, belting, and appliqué. Again, to recognize purely decorative shapes, think in terms of removing the shape detail. If the shape can be removed without the garment falling apart, it is probably decorative.

TYPES OF SHAPES

Types of shapes include angular or rounded, each with characteristics of their own (see Figure 2.12).

- *Angular shapes* are composed of straight lines connected to form angles. They include triangles, rectangles, and so on.
- *Curved or rounded shapes* are created with curved lines connected in an arc of varying degrees. Full-rounded shapes are circular or come close to being circles, such as ovals.

Because shapes are composed of straight and curved lines, the previous discussion about line applies here also.

ARRANGEMENT OF SHAPES

The arrangement of shapes refers to the number of shapes and their spacing.

- The *number of shapes* ranges from relatively few to many. Few shapes leave more empty background space, while many shapes can appear crowded and confusing with many conflicting points of interest.
- The *spacing of shapes* ranges from relatively closely spaced to widely spaced. Widely spaced shapes leave more empty background space, while closely spaced shapes can appear crowded.



FIGURE 2.13 A full bouffant skirt on this dress by Isaac Mizrahi effectively softens the angularity of a relatively thin figure.



FIGURE 2.14 This dress by Michael Kors features shapes in a print that progress from small at the neckline, to medium, and to large at the hem. The eye is drawn smoothly up and down the garment, with larger shapes at the hem balancing the puffed sleeves.

GENERAL EFFECTS OF SHAPE

General effects of shape on the figure and fit occur as a result of lines connected to create the shapes. The size and form of the surface shapes must be in harmony with the size of the area on which they appear. The arrangement of shapes, in terms of number and size, is most pleasing when they are proportionate to the amount of background space, as determined by the garment shape, structural seamlines, and the body. Wide stripes, insets, or bands, may be seen as shapes within the garment. It is important to match stripes, plaids, and motifs wherever possible to achieve a more harmonious appearance. To de-emphasize a specific area, such as the bust or buttocks, it is generally advised that the area should be left as background only.

- Angular shapes tend to emphasize the angularity of a figure by repetition, yet can be used to counter and reduce the roundness of a fuller figure.
- Rounded shapes tend to flow more easily with the body and emphasize the roundness of a figure by repetition, yet can be used to counter and soften the angularity in a thin, angular figure (see Figure 2.13).
- Interior or inside shapes can repeat and reinforce the basic outline or silhouette of the garment.
- Interior shapes can create the illusion of increased or decreased height, width, and weight, depending on the number, placement, size, and line direction. For example, empty or unbroken space within the silhouette tends to visually lengthen and narrow or slim the body. Many shapes or divided areas tend to shorten or decrease height and increase width, depending on the manner of division and line direction. Large or widely spaced shapes also tend to increase visual size.
- Interior shapes can be used to create vertical, horizontal, or diagonal eye movement.
- Foreground shapes can add visual weight in the area where they are placed. The size of interior shapes should be scaled to the size of the wearer. Small figures wearing small shapes and motifs, and thinner figures wearing small to medium shapes, may appear more in harmony. Larger figures may appear more in harmony wearing medium to larger shapes.
- To create illusions of increased or decreased height, width, and visual weight, use a gradual transition in the size of shapes—small with medium to increase, large with medium to decrease. This transition must be gradual, as a sudden jump from small to large to small is too extreme to be harmonious (see Figure 2.14).
- Interior shapes can divert attention away from the silhouette or specific points and areas on the body. For example, an eye-catching necklace can draw attention away from the outside silhouette and into the center of the body, allowing the body to appear somewhat narrower. Most people assume a woman with a larger bust cannot wear a shirt with breast pockets. However, medium-sized pockets without large button closures, positioned on or just above the breast, tend to draw attention to themselves and not to the breast beneath. A centered, inverted pleat on a breast pocket, with or without a flat-lying flap, can minimize the size of the breast. Pockets can be positioned on both sides of a larger abdomen to fill out the sides, causing the abdomen to appear flatter.

- Interior shapes can contribute to pleasing proportional areas when in scale with one another and with the wearer's body.
- For a harmonious effect, one shape in the garment or outfit must be dominant and all others subordinate.

The illusory effects of shape can be modified by the inter-related elements of design: line, color, texture, and pattern. However, it is necessary to evaluate the effects of each element on the total composition. For example, the texture of the garment fabric affects the line and shape of the silhouette. With enough ease, a firm fabric holds a specific garment shape and causes the garment to appear dominant, but a soft fabric falls closely about the figure, causing the body to appear dominant. Because of these differences in texture, the same design can appear quite different when made up in dissimilar fabrics.

Color

Clothing design is more interesting in color. Color is the most complex and stimulating of the art elements. It is the integral sensation experienced when colored light waves stimulate the eye. The eye perceives color and the brain interprets color. Color refers to the components into which white light, or the full spectrum, may be separated. An object, such as fabric, absorbs or reflects light. When all light is absorbed, the eye perceives black. When all light is reflected, the eye perceives white. The varying degrees to which light rays are absorbed or reflected accounts for the chromatic color perceived by the eye. Specific fabric dyes absorb specific light rays; the light rays not absorbed are reflected and account for the color perceived. For example, when the dye absorbs all colored light rays except red, the fabric appears red. Color creates powerful effects and illusions about the apparent size and shape of the body.

COLOR WITHIN THE FIBER OR FABRIC

Color within the fiber or fabric can be natural or dyed during yarn or fabric production, or printed, painted, or otherwise added after fabrication.

THE DIMENSIONS OF COLOR

Three dimensions of color can be observed and measured. Every color embodies all three dimensions: *hue*, *value*, and *intensity*—three separate yet integrated dimensions, recognized in both art and science. Each has the ability to create illusions about visual size and weight.

- *Hue* is the name given to a particular color family, with its integral degree of warmth or coolness (visual temperature). Warm hues, such as red, orange, and yellow, are mentally associated with fire. Cool hues, such as green, blue, and violet, are mentally associated with the sky and water. Colors "with hue" are called *chromatic* colors. A hue can be made to appear relatively warmer or cooler. Green pigment appears warmer when mixed with yellow

and cooler when mixed with blue. Black, white, and gray are "without hue" and are called *achromatic* colors. With the addition of a small amount of yellow or blue, even achromatic colors can appear warmer or cooler.

- *Value* refers to the degree of lightness or darkness of a hue (visual weight). When white is added, the hue lightens to a higher value and is called a *tint*. When black is added, the hue darkens to a low value and is called a *shade*. When gray, a combination of black and white, is added, the hue may remain the same in value or become lighter or darker, depending on the value of the original hue and the particular gray. The resulting color is also dulled slightly and may be referred to as a *tone*.
- *Intensity*, often referred to as *chroma*, is the degree of brightness or dullness of a hue (visual clarity). It is determined by the strength, saturation, or purity of the basic hue. Bright, pure, strong saturated hues, such as scarlet red or royal blue, are said to be of high intensity or full chroma. Dulled, muted, weak, grayed hues are created by the addition of the complementary opposite of the basic hue or by gray and are said to be of lower intensity—such as burgundy or smoky blue. Dulled hues are called *tones*.

REALITY CHECK

To accurately describe a color or to match and coordinate colors, it is essential to recognize the relative hue, value, and intensity of each color—the relative tint, shade, or tone.

TYPES OF COLOR

There are three types of colors: *primary*, *secondary*, and *tertiary*.

- *Primary colors* are the three hues—red, yellow, and blue—from which all other colors can be created by mixing.
- *Secondary colors* include the hues orange, green, and purple/violet. Orange is created by mixing the primary colors red and yellow. Green is created by mixing the primary colors yellow and blue. Purple (also called violet) is created by mixing the primary colors blue and red.
- *Tertiary colors* include the warmer hues red-orange, yellow-orange, and yellow-green, and the cooler hues blue-green, blue-violet, and red-violet. They are created by mixing the named primary and secondary colors.

ARRANGEMENTS IN COLOR

Arrangements in color are called *color schemes*, of which there are five: monochromatic, analogous, complementary, triad, and tetrad.

- *Monochromatic* color schemes include one hue in a variety of values (tints and shades).
- *Analogous* color schemes include several neighboring hues, hues that lie adjacent to one another on a color wheel. They all have one hue in common.



✓ REALITY CHECK

While many people may agree that a particular hue is red, due to differences in perception, they may not agree on subtle differences between warm orange-red, red, and cool blue-red, light red and dark red, or bright red and dull red.

- *Complementary* color schemes include two hues that lie opposite one another on a color wheel.
- *Triad* color schemes include three hues that lie equidistant from one another on a color wheel.
- *Tetrad* color schemes include four hues that lie equidistant from one another on a color wheel.

PERSONAL COLOR PERCEPTION

Personal color perception varies among individuals. It is dependent on the following seven factors:

- the shape of the lens in the eye
- the color of the lens in the eye
- the color of the iris in the eye
- the type of cones in the retina of the eye
- the ability of the optic nerve to transfer perception
- the ability of the brain to interpret color
- cultural and educational background as they influence color awareness, interpretation, and appreciation

It is essential to increase color awareness and maintain objectivity in color evaluation and interpretation.

SIMULTANEOUS CONTRAST

Simultaneous contrast among colors results in color illusions. Colors are seldom seen in isolation; they are perceived in combination with other colors in the clothing, the body, and the background against which they are placed. Colors have an altering effect on one another due to simultaneous contrast—colors in contrast to one another. The apparent hue, value, and intensity of a color may be manipulated according to the combination of colors with which it is used, or against which it is seen.

For example, a red-violet appears more violet next to a pure red, and more red next to a pure violet. A medium-value orange appears lighter next to brown (dark orange) and darker next to beige (light orange). A medium-intensity blue appears brighter when placed next to a dull blue and duller when placed next to a bright blue. The closer together the colors lie on the color wheel, the more apparent their basic differences become.



✓ REALITY CHECK

It is essential that you study and memorize the color wheel, so that you can visualize the relative positions of all colors and better determine the simultaneous effects of colors on one another.

GENERAL EFFECTS OF COLOR

The general effects of color on the figure and fit occur as a result of a single color or colors in combination. Knowledge of the effects of color allows us to use a specific color in a specific area to create a specific illusion.

- Warmer colors have longer wavelengths, which makes them appear to advance, thus causing shapes to appear closer, slightly larger, and more important.
- Cooler colors have shorter wavelengths, which makes them appear to recede, thus causing shapes to appear farther away, slightly smaller, and less important.
- Light colors, high-value tints (with white added), reflect the light and appear to advance, causing shapes to appear close, slightly larger, and less compact.
- Dark colors, low-value shades (with black added), absorb the light and appear to recede, causing shapes to appear slightly smaller, farther away, and more compact.
- Very light tints or very dark shades tend to outline the silhouette when it is viewed in contrast to the background against which it is seen.
- Generally, the effects of middle values and grayed tones are less obvious. Although they tend to maintain apparent size and weight, they lean more toward reduction of size and weight than magnification.
- The degree to which color creates an illusory effect depends on the background against which the value is observed. The stronger the contrast, the stronger the effect.
- Bright, saturated colors appear to advance, causing shapes to appear nearer, slightly larger, and more emphatic.
- Dull, muted colors appear to recede, causing shapes to appear farther away, slightly smaller, and less emphatic.
- The combined use of warm, light, bright hues causes the figure or body area to appear nearer, somewhat larger, and heavier.
- The combined use of cool, dark (but not to the point of black), dull hues causes the figure or body area to appear farther away, somewhat smaller, and less weighty.

The General Effects of Color

| CHARACTERISTICS | EFFECTS |
|------------------|-----------|
| warm hues | advance |
| light values | enlarge |
| high intensities | excite |
| strong contrasts | emphasize |
| cool hues | recede |
| dark values | reduce |
| low intensities | calm |
| weak contrasts | minimize |



FIGURE 2.15 Soft suiting from Stella McCartney features a light-colored top that visually lengthens the upper torso as it lifts attention upward on the body.

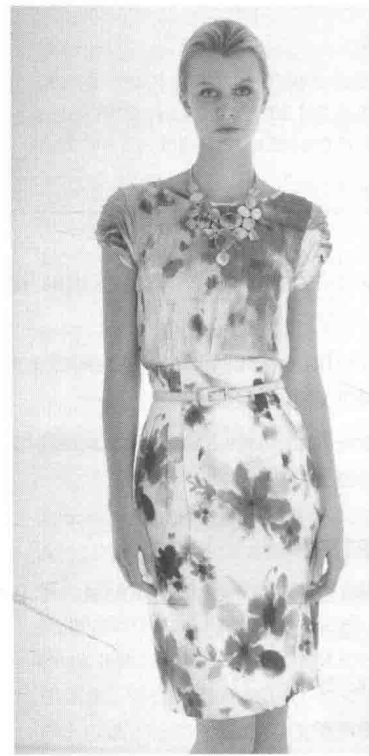


FIGURE 2.16 Contrasting dark-light values in the print motifs are positioned to draw attention upward to focus on the neck and shoulder area of this imaginative dress by Elie Tahari.

By controlling the hue, value, and intensity of a specific color, we control the effects of the color. For example, a warm red appears farther away, smaller, quieter, and less noticeable in a dark value of low, dull intensity such as burgundy. A cool blue appears closer, slightly larger, heavier, and more emphatic in a light value of a high, bright intensity such as sky blue.

- The use of one solid hue in an outfit, or combinations of close values and intensities of the same hue, appear to decrease width and weight and increase height. The figure is not divided and the eye can travel rhythmically up and down the entire length.
- The use of contrasting hues, values, and intensities in large areas in an outfit may cause the figure to appear somewhat larger and heavier. It also appears somewhat shorter. The figure is divided into shapes where the contrasting colors meet each other. The body height is broken into comparative parts, thus creating proportional divisions.
- Body proportions can be altered at the line where a color change occurs. For example, a torso considered too long can be visually shortened by a belt matched to the color of the skirt or slacks. An upper torso considered too short can be visually lengthened by a belt matched to the color of the bodice (see Figure 2.15).
- Vertical balance can be improved for the person with more weight in the lower portion of the figure by using light colors in the bodice and darker colors in the skirt or slacks. A combination of contrasting colors in the bodice area also increases the visual weight in the upper portion of the figure.

- The use of a contrasting hue, value, or intensity can call attention to a desired point of emphasis and divert the eye away from an undesired figure variation (see Figure 2.16).
- When two or more colors are used, one color must dominate; otherwise, each color competes for attention, which results in confusion.
- For a harmonious effect, one color in the outfit must be dominant and all others subordinate.

Always evaluate the use of a specific hue, value, and intensity in relation to your purpose and to the other elements of design. For example, someone wishing to de-emphasize a large figure might decide against wearing warm, bright colors (which emphasize the figure and its contours) in the daylight. However, the same colors often appear duller under artificial lighting. Made into a flattering style in a soft, matte-textured fabric, such colors could present a large figure very attractively.

✓ REALITY CHECK

The artistic selection and coordination of clothes and accessories, combined with a fabulous fit, can overcome the negative effects identified above, thus expanding the individual's color choice.

PERSONAL COLOR SELECTION

Personal color selection and coordination requires objectivity and common sense. It is important to consider and evaluate each color in relation to the other elements of design, as well as the mood and occasion, and the wearer's own hair, eye, and skin coloration. Individuals possess an infinite variety of personal coloring patterns and combinations of apparently warm- and cool-based hues.



✓ REALITY CHECK

Despite attempts to categorize people into color schemes, such as seasonal, color key, color clock, or jewel systems, most people do not fit neatly into a single category. Such systems are generally limiting, invalid, and unreliable.



✓ REALITY CHECK

People do not have only warm or cool undertones in their skin. All people possess both warm overtones as well as cool undertones. Warm orange-brown overtones are due to the melanin in the surface layers of the skin and cool bluish undertones are due to blood-flow beneath the skin. How warm or cool the resulting skin tone appears to be depends on how much melanin is present in the skin surface to mask the blue blood flow below. Even then, personal coloration is relative and appears to change depending on surrounding colors due to the effects of simultaneous contrast. In addition, personal coloring changes with age, health, and exposure to sun, wind, humidity, and cold.

Colors in combination can be used to reinforce or counter undesirable effects on personal coloring. If a selected color is perceived to present skin, hair, or eye color poorly, wearing it with another color near the face may alter negative effects and flatter instead. For example, if a navy blue is so dark that it absorbs a great deal of light and seems to drain color from the face, it can be worn in combination with a lighter color such as coral or aqua, which reflects more light and provides the needed dark/light contrast.

If a selected color is so dull that the wearer also appears dull and uninteresting, it can be worn in combination with a brighter color to give the wearer a livelier look. A color scheme in tan and taupe comes alive with the addition of red, rose, or teal blue. If a color has no relationship to the wearer's personal coloring, it can be worn in combination with one that does. *Individuals can quickly become an integral part of the color scheme of their clothes.* For example, ivory and rose in combination with black may repeat cheek and hair color. Rust and teal in combination with gray may repeat hair highlights and eye color. The appropriate use of makeup, such as mascara and blush, can introduce desirable hue and value repetition or contrast, expanding the variety of colors that can be worn beautifully.

Texture

Clothing design depends on texture to support the structural design of a garment. Texture is the element of design that describes the surface characteristics of fabric or material—the way it looks, feels, hangs or drapes, and possibly sounds when rubbed together. The texture of a fabric is determined by the fiber, yarn, method of fabrication, and applied finishes. The same style or size of garment appears and fits differently when made up in fabrics with different textural characteristics. It is essential to recognize the

difference between fiber and fabric. Texture creates powerful effects and illusions about the apparent size, shape, and weight of the body.

TEXTURE WITHIN THE FIBER

Texture within the fiber depends on the type of fiber. Fibers can be *natural*, such as cotton, linen, ramie, silk, and wool. Fibers can be *synthetic*, such as rayon, acrylic, nylon, polyester, and acetate. Cotton, linen, ramie, and wool are generally shorter staple fibers. Silk and synthetic fibers are generally long *filament* fibers, but they may be cut to *staple* lengths for effect.

- *Short, rough, staple fibers* usually produce yarns and fabrics that absorb the light and appear dull.
- *Long, smooth filament fibers* usually produce yarns and fabrics that reflect the light and are shiny.

Fibers may be stiff or pliable, which also affects the final fabric characteristics.

TEXTURE WITHIN THE YARN

Texture within the yarn varies with the type of yarn. Yarns are created by twisting fibers together, for example, as 2-ply or 4-ply. They may be twisted loosely or tightly. Stretch yarns are now available that influence textural characteristics.

- *Loosely twisted yarns* have fewer twists per inch, therefore exposing longer segments of fiber surface to light. They reflect more light and appear shiny. This effect may be changed if loosely twisted yarns are brushed to create a fuzzy nap. Loosely twisted yarns have more fiber slippage and therefore become baggier. The fit with these yarns becomes looser or baggier.
- *Tightly twisted or crepe yarns* have a greater number of twists per inch, therefore exposing only short segments of fiber surface to the light. The yarn twists cast shadows and the yarns appear duller. Tightly twisted yarns have less fiber slippage and are therefore more stable. The fit with these yarns remains more stable or constant.

TEXTURE WITHIN THE FABRIC

Texture within the fabric depends on the method of fabrication. Most fabrics are created by weaving or knitting, although others are made by crocheting, felting, or braiding, and some fabrics are extruded in sheets.

- *Woven fabrics* are created from two sets of yarns interlacing at right angles to each other. General types of woven fabrics include plain weaves, twill weaves, satin weaves, and pile weaves. Stretchability in woven fabric occurs at the intersections of lengthwise and crosswise yarns, previously defined as the *bias* of the fabric. The more closely woven the fabric—the higher the thread count—the less stretchability it has. The more loosely woven—the lower the thread count—the greater the potential there is for stretchability. Woven fabrics are now available engineered with stretch yarns for varying degrees of stretch.

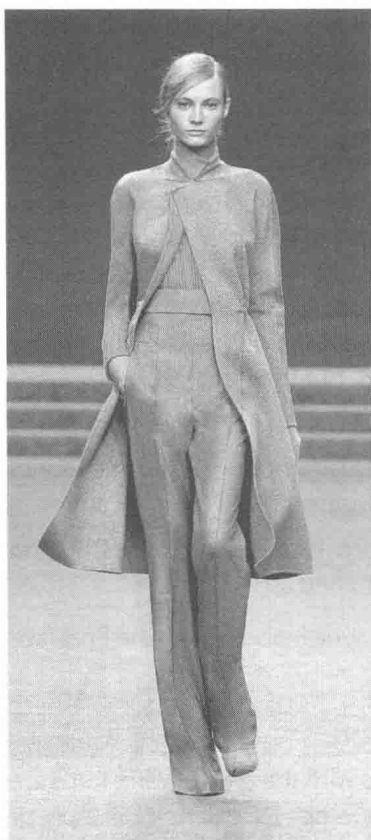


FIGURE 2.17 Stretchy fabric clings to the body in this Akris look on the runway, demanding a slim figure beneath.



FIGURE 2.18 Alessandro Dell'Acqua engineers a dramatic collar with interfacing to support its shape and curl. Shiny fabric heightens the dramatic effect.

- *Knitted fabrics* are created from one set of yarns that form interlocking loops. Types of knitted fabrics include weft or filling knits, warp knits, and pile knits. Stretchability in knit fabrics results from the loop structure of the fabric. The closer or more compact the knit, the less stretchability results. The looser or less compact the knit, the more stretch it will have. Knit fabrics are now available engineered with varying degrees of stretch (see Figure 2.17).

Don't assume that fabric made from 100 percent natural fiber—cotton, linen, silk, and wool—is necessarily better than fabric made from synthetic or blended fibers. Every fiber and fabric, natural, synthetic or blended, is available in several levels of quality. Good-quality fabric feels good, not flimsy, scratchy, or brittle. It is free of flaws and the weave holds together.

The final textural effect in a fabric is so dependent on the type of fiber and yarn used that an infinite variety is possible. For example, a silk crepe of tightly twisted yarns can be very fluid and drapable, but also dull in appearance. Cotton fabric can be as delicate as dotted Swiss or as sturdy as tent canvas. Wool fabric can be as lightweight as challis or as heavy as gabardine. The degree of stretch must be considered and possibly tested to determine the appropriate amount of ease allowed in the design of the garment.

Fabric shrinkage also can play havoc with correct fit. Natural fibers may require preshrinking according to the recommended method. If fabric is not preshrunk, it may shrink later in laundering or steam pressing. Heat-sensitive fabrics also may shrink when overheated in a dryer.

Fabrication Influences Flexibility

LESS FLEXIBLE

synthetic fiber fabric
wovens
tight weaves
straight grain
heavyweight fabric

MORE FLEXIBLE

natural fiber fabric
knits
loose weaves
bias or diagonal grain
lightweight fabric

TEXTURE DUE TO INNER LAYERS

Texture due to inner layers can alter fabric characteristics and performance. Inner layers include interfacing, underlining, interlining, and lining.

- *Interfacing* provides body and increased stability to a fashion fabric. It is applied to areas of stress and wherever a firmer shape is desired (see Figure 2.18).
- *Underlining* is cut from the same pattern as the garment pieces and is sewn as one with the fashion fabric during garment construction. It provides additional body to a fashion fabric and creates an opaque appearance.
- *Interlining* provides extra warmth in a garment. It is generally quite bulky and may interfere with the standard ease allowance. Often it is sewn as an underlining with the lining.



✓ REALITY CHECK

No characteristic should be considered intrinsically good or bad, but rather should be used as a clue to match fabric to function within the garment design and on the figure. To ignore these fabric characteristics is to invite fitting problems and a lack of harmony between garment design, fabric, and figure.

- *Lining* provides an interior finish to the garment. It is sewn as a separate unit, placed in the garment with wrong sides together, and attached at facings, neckline, waistline, and hemline. Lining fabrics are usually lightweight, soft, pliable, slippery, and opaque. They help absorb the stress of body movement and allow the garment to slide smoothly over the body or other garments.

Each of these inner layers of fabric must be compatible with the outer fashion fabric. To determine appropriateness, layer the fabrics against each other prior to buying and using them. The innermost layer, such as lining, must fit the body with appropriate ease. Each successive outer layer must be cut and made slightly larger than the last inner layer. This allows the layers to fit smoothly and comfortably over one another.

TEXTURE DUE TO APPLIED FINISHES

Texture due to applied finishes can alter the physical properties of fabric and ultimately the texture. There are two types of applied finishes: those that affect the fabric surface and those that affect its performance.

- *Finishes affecting fabric surface* include shine, glaze, smoothness, crinkle, fuzzy nap, stripe, print, embossing, and a wavy moiré pattern.
- *Finishes affecting fabric performance* include those to make them more absorbent, water-repellent, crease- or wrinkle-resistant, stain-resistant, moth-resistant, flame-retardant, mildew-resistant, anti-cling, and so on.

Consider, for example, such fabrics as flocked voile, crinkled gauze, and puckered seersucker. If the finish is not permanent, it may relax or wear off, thus leaving a new set of textural characteristics.

CHARACTERISTICS OF TEXTURE

Textural characteristics are discussed in words unique to the art and science of the industry. These include hand, drape, and scoop.

Hand refers to the tactile aspects of fabric. It describes the way fabric feels.

Drape refers to the way the fabric hangs or falls into soft or crisp folds. The weight and body of the fabric will affect the drape or hang. A stiff fabric such as taffeta will drape or hang differently than a soft jersey.

Scoop refers to the sounds that different fabrics make. For example, taffeta has a characteristic rustle when brushed against itself, while corduroy emits a swishing sound when rubbed against itself.

Characteristics of texture are often expressed in terms of opposites:

- | | |
|----------------------------|---------------------------|
| • shiny—dull/matte | • firm—pliable |
| • crisp—limp | • stiff—fluid/flowing |
| • stable—stretchy | • compact—porous |
| • opaque—transparent/sheer | • thick—thin |
| • bristly—downy | • soft—harsh |
| • heavy—light | • silky—scratchy |
| • flat—bulky | • delicate/fragile—sturdy |
| • rough—smooth | |

Such descriptive words help communicate the specific combination of characteristics belonging to a fabric. The effect of each characteristic is relative to its position on a continuum between extreme opposites. In other words, there are many degrees of softness, stiffness, sheerness, heaviness, and so forth.

GENERAL EFFECTS OF TEXTURE

General effects of texture on the figure and fit determine the suitability of a fabric for a garment style or purpose and influence the closeness of fit. Textural characteristics influence the selection of appropriate fabric for a specific figure or face. The size, weight, bulk, firmness, light absorption or reflection, and degree of opaqueness of a fabric can reveal or camouflage the body through optical illusions. The degree of luster in the fabric—shiny or dull—must also be evaluated. A few recommended fabric names and weights for a particular design are generally listed on the pattern envelope.

Estimated amounts of ease to allow are exactly that—estimates. Fabric texture, garment style, and activity level will influence the final cut and fit.

- A slippery, lightweight fabric may be very suitable as a lining but very inappropriate as a dress.
- A tailored tubular design requires a firm fabric to hold the shape.
- A draped design requires soft, pliable fabric to fall into soft folds. The more drape there is to the design, the more ease is required to prevent the draped effect from appearing skimpy. Crisp or stiff fabrics resist draped folds and tend to stand away from the body.
- Conversely, to stand away from the body, a bouffant design requires stiff, crisp fabric or under-stiffening.
- Heavier, bulky fabrics, such as those required in coat designs, must allow a greater amount of ease. If such a coat were made of a lightweight fabric using the same ease, it would be too large.
- On the other hand, designs intended for lightweight fabrics will be too tight if made using thick, heavy fabrics unless the ease is adjusted.
- Knits generally require less fitting ease due to their stretch ability. Designs intended only for stretch fabrics

have eliminated some of the usual ease; making up these designs in woven fabrics will result in garments that are too tight and unlikely to withstand the strain in bust, bicep, and hip areas.

- Bulky or loosely woven fabrics require simple designs with few seams.
- Flat, smooth, tightly woven fabrics may accommodate several seams and design details.
- The presence of each seam introduces the added bulk of seam allowances and the possibility of fraying and sagging. These factors influence the achievement of a well-fitted garment.
- Very often, medium- and lightweight fabrics with opposing characteristics can be used interchangeably in the same design. However, the resulting silhouette and drape will be considerably different, for example, with crisp fabrics versus soft fabrics. The garment style must be appropriate to the fabric used so it does not appear too heavy or too limp. Quantity of fabric and placement of grain also may need adjustment to achieve the desired effect.
- Soft, stretchy, clingy fabrics that are limp and drapable hug the body and reveal contours. The effect is unattractive when these fabrics are fitted too tightly or allowed to rest or hang on a body area such as the bust, prominent abdomen, buttocks, or thighs.
- Medium-weight, smooth, firm fabrics that hold their shape can conceal the figure without adding size and weight.
- Bulky, thick, heavy, napped, stiff, bonded, or rough- or nubby-textured fabrics and furs conceal body silhouette and contours but decrease height and increase size and weight. They may emphasize a large body through repetition (see Figure 2.19).
- On the other hand, bulky, thick, heavy fabric on a small body will overpower the wearer because of extreme contrast.
- Paradoxically, soft, flimsy, sheer, shiny, drapable fabrics can produce similar effects because they reveal body contours.
- Transparent fabrics reveal the body shape and, if crisp, add visual bulk to the figure. The effect may be poor on a figure that is considered too thin or heavy.
- Shiny fabrics appear lighter and brighter because they reflect more light. In illusion, they tend to advance, visually increasing figure size and weight somewhat and attracting attention.
- In a dull-surfaced fabric, a hue will appear darker because it absorbs more light. Such fabrics tend to recede in illusion, visually decreasing figure size and weight somewhat and minimizing attention drawn to the figure. For example, compare the shiny face of a crepe-back satin with the dull back, or compare the apparent color differences in corduroy or velveteen that result from the direction of the pile.



FIGURE 2.19 Bulky textured clothes and a fur-collared coat by Blumarine demand a tall figure to carry off the look without being overwhelmed.

- The illusion of increased height and decreased size and weight can be created by using fabrics that are light- to medium-weight, flat to medium-thick, opaque or dull, with firm, smooth, hard finishes.
- The use of one texture throughout an outfit also helps create the illusion of increased height.
- Combining different textures can also have the effect of dividing the body into several shapes, each affected by the texture used in that area. For example, a bulky cable-knit sweater can fill out a small upper body to better balance a larger lower body (see Figure 2.19, above).
- A dominant texture can draw attention from a less favored figure variation and toward a more flattering area. For example, a small amount of shiny fabric can be used as piping on a bodice yoke to draw attention away from large hips.
- The selection of smooth, fine fabrics for a person with coarse, rough skin may be unflattering because of the extreme contrast.
- Layering clothing serves to smooth the body and camouflage figure variations, influencing a positive body image.
- For a harmonious effect, one texture in the outfit must be dominant and all others subordinate.

✓ REALITY CHECK

Before using a fabric, drape it over the body in approximately the same grain, style line, and amount that will be required in the garment. Evaluate in a full-length mirror its potential effects on the garment design and on the figure.

All textural characteristics must be evaluated to determine the appropriateness of any fabric for a particular figure. For example, the visual effect of size and weight produced by a dull or shiny fabric will be relative to its bulk, softness, and firmness. Whether to use a stiff, bulky fabric will depend on its relative thickness. Embossed patterns or the length of a nap can also influence the appropriateness for a particular figure.

When combining textures for various effects, take care to ensure that textures combine harmoniously in mood, use, and care. For example, denim and chiffon in the same garment will almost certainly conflict because of extreme differences in their characteristics, expected use, and care.

As fashions change, so do preferences for specific textures as dictated by prevailing styles. However, the texture of a current fashion fabric may not be appropriate for a specific figure. For example, fake furs may be popular, but they are also overpowering on a petite figure. It is advisable to avoid fashionable textures that are inappropriate for a particular figure and focus attention on the use of fashionable colors, lines, and shapes instead.

Pattern

Clothing design may include patterns such as prints, stripes, and plaids. Pattern is the element of design created by lines and shapes in color on fabric. It adds interest and individuality to a garment. Pattern can lead the eye throughout the design. It can draw attention to itself and away from the body. Patterns can help to coordinate two or more solid-colored garments, pulling them together into a harmonious color scheme. Pattern may occur in the fiber, yarn, or in the fabric, or it may be on the fabric. It may occur all over the fabric before it is cut, or it may be in a single section after it is cut. Pattern creates powerful effects and illusions about the apparent size, shape, and weight of the body (see Figure 2.20).

PATTERN WITHIN THE FIBER

Patterns within the fiber are few, but noticeable when they do occur. The pattern might be as simple as an irregular bump such as in raw silk, or as a tiny spot of color, such as occurs in unbleached muslin.

PATTERNS WITHIN THE YARN

Patterns within the yarn are also few, but again noticeable when they do occur. Individual fibers might be of different colors or textures, creating a pattern when twisted together into yarn. There are many varieties of yarn twist.

PATTERNS WITHIN THE FABRIC

Patterns within the fabric are many. They occur as yarns of different colors or textures are interlaced to form a weave, or interlocked to form a knit. The resulting visual texture may create the appearance of a pattern, leading the eye. Lace, crochet, and macramé are other methods of fabrication that produce patterns. Resulting patterns may be softer and more subtle.



FIGURE 2.20 A powerful abstract pattern in an outfit by Kenneth Cole presents 1:1 proportional areas elongated and balanced by a black hat, tights, and shoes for an exciting visual effect.

PATTERNS APPLIED ON THE FABRIC

Many patterns are applied on the fabric. They may be printed, painted, or sprayed onto the surface of the fabric. They may also be appliquéd, embroidered, quilted, created by cutwork, or a chemical burn-out process. The resulting patterns may create sharp edges and contrasts in color, and lead the eye throughout the garment.

SOURCES OF INSPIRATION

Sources of inspiration for pattern motifs may come from *nature* or from *manmade* objects.

- *Nature* is the most common source of inspiration for a pattern motif and may include plants, small animals, birds, fish, and seashells.
- *Manmade objects* are available in endless supply and include household items, symbols, logos, and flags. Many, however, are not suitable as motifs for clothing.

TYPES OF PATTERNS

There are four basic types of patterns: *realistic* (naturalistic or photographic), *stylized*, *geometric*, and *abstract*.

- *Realistic (naturalistic or photographic) patterns* look like actual natural or manmade objects—for example, images of realistic-looking fish or bicycles. They may be distracting, as the viewer tends to focus on the pattern detail rather than the wearer. Imagine a realistic fish on photographic bicycles on a garment.
- *Stylized patterns* are designers' interpretations of reality. While a natural or manmade object is recognizable, the designer has added something of his or her own. Imagine a simplified flower and leaf motif or the village scene of a toile pattern.

- *Geometric patterns* are among the simplest and most common patterns in clothing, the result of the weaving or knitting process. Visualize stripes, plaids, and checks, or diamonds, chevrons, and scallops.
- *Abstract patterns* are among the least common type and derive from the designer's imagination. They don't look like anything we are used to seeing, but are usually seen as free-form splashes of color.

ARRANGEMENTS OF PATTERNS

There are nine arrangements of patterns in clothing design: *all-over*, *four-way*, *two-way*, *one-way*, *border*, *panel*, *bandanna*, *spaced*, and *novelty arrangements*.

- *All-over arrangements* are very methodical and rhythmic, appearing the same from all directions.
- *Four-way arrangements* are also methodical and rhythmic, but look the same from each of four directions, given a 90 degree or quarter turn.
- *Two-way arrangements* look the same from only two directions, given a 180 degree or half turn.
- *One-way arrangements* look correct from only one direction.
- *Border arrangements* look right side up from only one direction, but that location is on only one selvage edge of the fabric (see Figure 2.21).
- *Panel arrangements* have only one direction, from the bottom upward, generally, on a long, narrow panel of fabric.
- *Bandanna arrangements* position the dominant motif at the four corners of a square of fabric. These are also known as scarf arrangements.
- *Spaced arrangements* generally involve single motifs arranged widely apart.
- *Novelty arrangements* are unusual motifs in uncommon, irregular spacing.

CHARACTERISTICS OF PATTERN

Pattern characteristics include the sources of inspiration, types, and arrangements as previously discussed. Additional characteristics are generally described in terms of opposites:

- conservative/formal—creative/informal
- angular—rounded
- small-scale—large-scale
- closely spaced—widely spaced
- dull/muted hues—bright/strong hues
- strong value contrast—close value contrast
- delicate—forceful
- romantic—dramatic



FIGURE 2.21 A stylized border print by Elie Tahari puts the focus at the hem, a light-hearted effect for social occasions.

✓ REALITY CHECK

Do not let a poor-quality pattern fool you into thinking that all patterns should be avoided or that specific colors in the pattern cannot be worn attractively. Select only quality patterns. Remember that colors may appear different in relation to other colors in the pattern due to the effects of simultaneous contrast. For a flattering effect, select patterns that include attractive colors that complement the subject's hair, eye, skin, cheek, or lip coloration.

CRITERIA FOR A QUALITY PATTERN

There are five criteria for a quality pattern:

- The subject matter of motifs in a pattern must be pleasing and appropriate for clothing.
- Individual motifs must relate to one another and look like they belong together.
- There is a pleasing relationship between the sizes of the motifs. They do not jump from small to large, but instead progress naturally from relatively small, to medium, to larger scale.
- The background of the pattern, or spacing between motifs, is consistent with their size.
- The pattern looks flat and stable. It does not appear that some motifs jump or rise off the fabric.



FIGURE 2.22 Simple styling is essential in this draped design by Tracy Reese, allowing the complex mix of patterns. The successful 1:1 proportions in the dress work due to increasing width below the actual waist level.



FIGURE 2.23 Gucci's novelty arrangement of radiating shapes in strong contrasting colors draws attention to itself. Designs like this often overpower the wearer.

GENERAL EFFECTS OF PATTERN

General effects of pattern on the figure and fit depend on the combined use of lines, shapes, colors, and textures. The combinations of characteristics are endless, but use must be evaluated in terms of the intended purpose or the illusion desired.

- Single, stylized, and smaller patterns accommodate many seams, gathers, or folds in the fabric attractively and harmoniously.
- More complex, detailed, and larger patterns appear more attractive and harmonious with few seams and simple styling in the garment (see Figure 2.22).
- Apparent height and slimness can be increased with the use of small-scale patterns in cool hues with close values and intensities, in clothing styles that have vertical eye movement.
- Apparent width and weight can be increased with the use of large-scale patterns in bright, warm hues with strong value and intensity contrasts, in clothing styles that have horizontal eye movement.
- A large-scale pattern may reinforce and emphasize a large body by repetition. However, only a large body can carry a larger motif.
- A large-scale pattern can overwhelm a petite figure because of extreme contrast.
- A bold or larger pattern in the bodice or upper body can serve to balance a larger lower body.
- A bold or larger pattern in a skirt or pants can serve to balance a larger bust or shoulders.
- Vertical sections of pattern can visually lengthen the body.

- Body proportions can be altered at the line where a solid color meets a pattern. A patterned, high-waist skirt can visually shorten a long lower torso.
- A dominant pattern can be positioned to draw attention from a less favored figure variation and toward a more flattering area or point of emphasis.
- An all-over pattern can serve to camouflage the curves of the body.
- A geometric stripe or plaid may cause an asymmetrical figure variation to become noticeable, as lines in the pattern will lie at different levels as they cross the body.
- A border print or arrangement draws attention to itself and to that area of the body where it is positioned. It draws the eye in the direction of the print.
- Single and/or spaced and novelty arrangements draw attention to themselves and to the specific area of the body on which they are positioned. If poorly positioned, they can draw negative attention to the body (see Figure 2.23).
- Smaller amounts of color mix in the eye when seen from some distance, creating the illusion of a solid color. That may or may not coordinate with other colors in the garment.

MIXING OR COMBINING PATTERNS

When including a pattern in a garment design, it is necessary to ensure that the pattern combines harmoniously with the style and fabric of the garment, and that it is appropriate for the mood and occasion. When mixing patterns or using a combination of patterns, plan for the following:

- Patterns must share some color or colors in common.
- Motifs in the patterns must relate to or go with one another, such as flowers with flowers or birds, and plaids with plaids or stripes.
- Patterns must progress in size from relatively small, to medium, to larger. No two patterns should be the same size.
- For a harmonious effect, one pattern in the outfit must be dominant and all others subordinate.

THE PRINCIPLES OF DESIGN: THE GOALS

The principles of design are the goals for design of the art form. The principles of design are relative and interdependent. As we have seen, in dress design there are seven principles: balance, proportion, scale, rhythm, emphasis, harmony, and unity. They act as guides for planning and controlling, and selecting and using the elements of design and for critically evaluating the success of the composition—the outfit on the body. They have become accepted, even expected, over centuries of observation and application. Each principle of design can be analyzed or evaluated in terms of its physical and psychological effects as the result in the design. This text will focus on the general physical effects as used in clothing design to achieve a fabulous fit.

Balance

Balance refers to how the elements of design are distributed, arranged, or positioned within the composition. When there is equal distribution of actual or visual weight about a central point within the body, balance is achieved in the outfit. There is a pleasing relationship between all the parts from side to side and from top to bottom. This results in a sense of stability. When out of balance, areas within the composition are said to be lopsided or top- or bottom-heavy (see Figure 2.24).

TYPES OF BALANCE

There are two types of balance: *horizontal* and *vertical*.

- *Horizontal balance* is achieved when the visual weight of one side of the body is equal to that of the other side. The standard horizontal balance is termed *symmetrical*. There is an even distribution of weight and contour over the body frame, and both sides of the body appear identical. Both sides are equal. When the body is *asymmetrical*,



FIGURE 2.24 This well-balanced dress by Valentino is accessorized with black tights for the runway, resulting in an attention-getting bottom-heavy look.

the two sides are unequal. It is generally considered desirable to bring the body closer to visual symmetry by manipulating the elements of design in dress. Line, shape, color, and texture can be effectively used in clothing to create the illusion of increased or decreased height, width, or weight, and the dominant or subordinate character of a particular area.

Symmetrical horizontal balance is created when center lines (front and back) divide the area into visually equal parts so that both sides of the garment appear identical. Horizontal garment balance can also be asymmetrical. Asymmetrical styles do not compare body sides for identical size and shape, but they remain visually balanced. The elements of design can be manipulated to increase the visual weight and size of the smaller side, and garments can be selected that seem to contract or expand a particular area to achieve balance.

- *Vertical balance* is sometimes referred to as perpendicular balance. It is achieved when the upper and lower parts of the figure are balanced. Generally, the heavier, solid upper body should appear balanced by the longer hip and leg area of the lower body. This creates a sense of stability in the overall figure.

Vertical or perpendicular balance is one of the goals in good garment design. For example, a figure with broad shoulders can be balanced with width or fabric weight in the design of the skirt or pant.

Once again, interrelationships must be carefully evaluated. Dark hues and values appear to visually recede and to have a greater visual weight than lighter hues and values. A small area of dark color can balance a large area of light color.



✓ REALITY CHECK

Every garment design has a real or imaginary vertical center line. The eye mentally assigns a visual weight to each side of the design.



FIGURE 2.25 A relatively small-scale belt is positioned at the natural waist level in this Michael Kors sportive outfit. If seen as divided at the belt, proportions are 1:3. If seen as divided at the contrasting sweater hem, proportions are closer to 1:2.



FIGURE 2.26 A relatively medium-scale belt is positioned at a low-waist level in this Escada Sport outfit. Seen as divided at the belt, proportions are 2:1.



FIGURE 2.27 A relatively large-scale belt is positioned at a high-waist level in Celia Birtwell's outfit for Express. Seen as divided at the belt, proportions are 1:2.

Large shapes and bulky textures also influence the balance of a garment by causing the figure areas where they are used to appear heavier.

Proportion

Proportion refers to how the elements of design are used to divide the body, the garment, and the outfit into parts. This involves the relationship of one part compared to another, and compared to the whole garment and to the body, both vertically and horizontally (see Chapter 4 for a complete discussion on this subject).

The relationship between the areas can be defined in terms of numerical ratios. Generally, equal ratios of 1:1 or 3:3 are considered less interesting, even boring. Unequal ratios of 1:3, 2:3, and 3:5 are generally considered most interesting, active, and pleasing in clothing and other artistic designs. Those ratios most nearly repeat the natural body proportions, and those divisions are interesting because they are not equal or readily discernible. For example, when the division occurs at the waist, the average body ratio is 2:3—two parts above the waist and three parts below.

Structural or decorative lines create and shape the divisions in garment design. Body proportions can be visually altered by placing division lines at the shoulder for a yokeline, above the waist for a midriff line, and below the waist for

✓ REALITY CHECK

Not all fashion trends are pleasingly proportional for all figures. As has been mentioned, fashion illustrations often show unrealistically elongated figures with increased length in the lower part of the body. This accounts for the frequent and disappointing differences between fashion illustrations and the constructed garment on an actual figure.

a hip yokeline. All the various effects of design elements previously discussed can be used to bring body areas into better proportion. Shapes, colors, and textures in the design or in accessories can also visually increase or decrease the comparative height, weight, or dominance of a particular area (see Figures 2.25, 2.26, and 2.27).

When the sizes of the various garment areas are in proportion, they relate harmoniously to one another, to the whole garment, and to the figure of the wearer. Attractive garment proportions do not call attention to variations in body proportions caused by bone structure or the uneven distribution of weight on the body frame. When proportional harmony is achieved, garment proportions are flattering because they are in scale with the body proportions. When one area overpowers another or the body as a whole, it is said to be "out of proportion."

Scale

Scale is directly related to proportion and refers to the size of one shape or area compared to another. Relative differences in scale are generally described in terms of size—small, medium, and large. When appropriate scale is achieved, there is one consistent size or a gradual transition from one size to another within the garment or outfit and between the garments and the body. When sizes are similar or related, they are said to be “in scale.” For example, small prints, pockets, and collars are ideal for a small frame. When one shape or area overpowers another, it is said to be “out of scale.”

Bone structure can account for variation in the scale of different figures. The parts of the body may not be proportional to or in scale with other parts, or the body as a whole. Each area may look normal when seen as an isolated unit, but out of proportion when viewed next to an adjoining area or as a whole.

✓ REALITY CHECK

The size of body areas can be emphasized by either repetition or contrast in the scale of the garment details. That is why it is best to limit the shift from small to medium or from medium to large within one design. A shift into the medium range provides an illusory transition, reducing the comparative effect of repetition or contrast. For example, a large figure may appear even larger wearing a garment with tiny design details or a very small print because the contrast is too great. A large figure will never appear small and may very well carry a large design detail, print, or accessory attractively, making it part of personal style. Medium-scale design elements and details may harmonize, but oversized ones will probably emphasize the large figure.



FIGURE 2.28 Repetition rhythm created by shirt shoulder pleats, skirt button closure, blouse ruffles, dress pockets, and epaulets



FIGURE 2.29 Alternation rhythm created by shirt stripes, skirt tiers, and scarf points

Rhythm

Rhythm refers to how attention is led around the outfit from one design detail to another. Rhythm is used to provide a transition between areas of the outfit, to avoid conflicting areas of interest, and to identify the center of interest in the design. Rhythm may be subtle or obvious. When it is achieved, the design elements are arranged to lead the observer's eye in a given direction across the garment with a sense of smooth, organized, continuous movement from one part to another and finally to one dominant point of emphasis.

TYPES OF RHYTHM

The arrangement of the elements of design to produce rhythm can be done in several ways. However, there are five leading types of rhythm, as demonstrated in Figures 2.28 to 2.32:

- *continuous line* of stitching, color, or textural trims
- *repetition* of lines, shapes, colors, or textures
- *alternation* of lines, shapes, colors, or textures
- *gradation* in size or degree of lines, shapes, color, or texture
- *radiation* of lines, shapes, colors, or textural folds



FIGURE 2.30 Progression/gradation rhythm created by pocket sizes, skirt tiers, notched collar points, hip yokelines, and belts

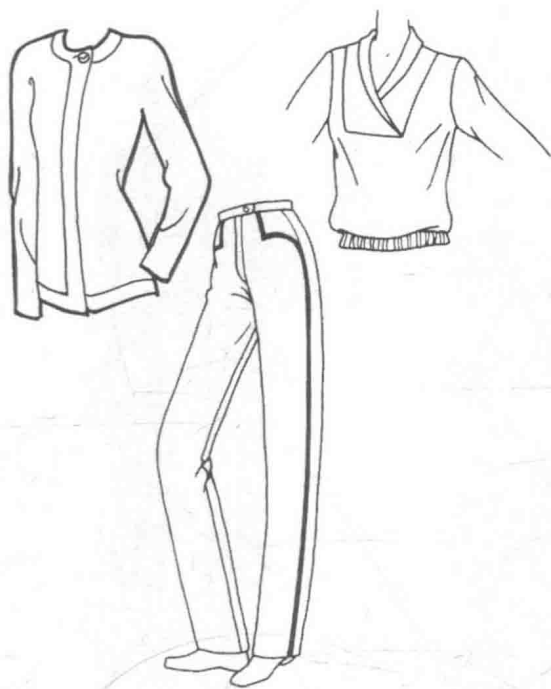


FIGURE 2.31 Continuous line rhythm created by poncho button closure, shirt shawl collar, jacket binding, and pant side stripe



FIGURE 2.32 Radiation rhythm created by surplice wrap blouse, gathered skirt below fitted hip-yoke, bodice capelet, and pant pocket fullness

In each of these illustrations, the viewer visually follows a particular path throughout the design and feels satisfaction as the pathway continues to a pleasing and dominant point of emphasis. The elements of design can be deliberately arranged to camouflage the figure, create an illusion, or divert the eye away from an undesired figure variation and toward an area considered more suitable to emphasize. When rhythmic eye movement is interrupted or chaotic, the design is said to be “spotty, choppy, or jumpy.”

Emphasis

Emphasis refers to the use of design elements to create one dominant focal point or area of interest in a garment or outfit. That center of interest is the point of contrast for the eye to rest on for a period of time. That point may be the face or some other body area as defined by the garment design. In garments with several design details, emphasis is achieved when only one detail is dominant or most important. There may or may not be subordinate points of emphasis, but these must be less important and draw less attention to themselves. They are smaller, less obvious, or less emphatic in their claim for attention. The more attention one element claims, the less the others should claim. In other words, the more dominant one element, the more subordinate the others should be (see Figures 2.33 to 2.35).

TYPES OF EMPHASIS

Types of emphasis can be created in three main ways: through *contrast*, *repetition*, or *reinforcing*:

✓ REALITY CHECK

Flat front pants are often said to make the abdomen appear flatter and slimmer, but that is not necessarily so. Flat front pants are usually designed with darts that fit and expose a rounded abdomen. Well-fitted trouser pleat pants, with pleats about 1 inch deep, will generally draw attention to themselves, and hang straight down below the abdomen, not cupping back under to expose the full stomach curve.

- *contrast* in shape, color, texture, line direction, or in type of decorative detail
- *repetition* or concentration of lines, shapes, or colors
- *reinforcement* of a design detail by trim in that same area

During the figure evaluation process, determine body areas you wish to emphasize. Generally, elemental details such as line, shape, color, texture, and pattern are used to camouflage or divert attention away from a figure variation. For example, a collar can be used to draw attention upward and away from a larger bust area.

Sometimes, a figure variation that is usually minimized is emphasized instead to make a statement of individuality and personal style—for example, a longer neck or broad shoulders. These approaches become an option if done wisely.

An outfit without a dominant point of emphasis tends to appear unfinished and uninteresting, and one with two or more dominant areas or points of emphasis may appear to be conflicting and confusing. The observer’s eye becomes overly stimulated and the effect is said to be spotty and disturbing.



FIGURE 2.33 Dominant emphasis in this dress by Nicky Hilton for Nicholai is in the upper bodice area due to repeating stripes in contrasting colors. Subordinate emphasis or attention goes to the lower sleeve stripes, and last to the narrow striped muffler.



FIGURE 2.34 For the bride, Jim Hjelen puts the focus at the bust area created by the contrasting shape of the bow.



FIGURE 2.35 Dominant attention goes to the decorative belt on this outfit by Ferragamo, with subordinate interest at the neck.

Harmony

Harmony refers to the use of the elements of design—lines, shapes, colors, textures, and patterns—in related ways. Of course, these must be appropriate for the concept or theme, mood or feeling, occasion or purpose, and the wearer. Harmony is achieved when all design details are selected and arranged to agree with one another. All individual details must relate to form a congruent whole. This is the ultimate goal in any creative effort (see Figures 2.36 to 2.38).

✓ REALITY CHECK

The key to achieving design harmony is to include enough variety to avoid monotony, but not so much as to create conflict or chaos. It is a matter of planning and controlling the following:

- the amounts of similarity and variety
- the amounts of repetition and contrast through reinforcing and countering
- the dominant and subordinate design details

The purpose of pattern, fabric, or garment selection, as well as fitting, adjustment, or alteration, is to present the figure as attractive, well balanced, and well proportioned. A garment design should be harmoniously unified among its various

parts and with the figure of the wearer. The interrelated aspects of the elements and principles of design become apparent as we evaluate the harmony of the whole.

✓ REALITY CHECK

As you attempt to camouflage or emphasize a particular part of the figure, be aware of the risk of ruining the harmonious presentation of the whole. There is also a risk of emphasizing one figure variation while attempting to camouflage another.

The illusory effects of the entire garment design must be evaluated in relation to the figure and the defined purpose. For instance, a woman might have a proportionally large bust, small waist, and large hips. She might choose a cinch belt to emphasize her small waist, but that could call attention to the largeness of the bust and hips by extreme contrast.

If the outfit is not well balanced, is out of proportion, has several spotty points of emphasis, or does not fit the wearer properly, it will not appear harmonious. If the outfit conflicts with the personality, the values, or roles of the wearer, it may actually create disharmony. Consider the use and interrelated effects of lines, shapes, colors, textures, and pattern if present, in achieving balance, proportion, scale, rhythm, emphasis, and ultimately a harmonious appearance.



FIGURE 2.36 Total harmony is achieved by Oscar in this special-occasion dress. Sheer fabric in a delicate print floats around the body, balanced by graded tiers wider at the hem and narrow at the waist, leading up to a lighter-weight look in the bodice.



FIGURE 2.37 Too much contrast is evident in this outfit by Diane Von Furstenberg, wherein a softly tailored, businesslike belted jacket is layered over an evening dress with feathered skirt. Lack of harmony reminds that "less is more."



FIGURE 2.38 When one string of beads would do, Givenchy gets away with multiple necklaces in this runway look balanced simply by long leather-clad legs. It works!

Unity

Unity is not always included separately on listings of design principles, as some designers include it with harmony. For those who acknowledge it separately, unity refers to a sense of completeness. When achieved, the harmonious mix of all the elements of design is perfectly complete. Nothing is missing from the composition, and there is nothing extraneous. The design is perfectly unified.

PUTTING IT ALL TOGETHER

Once you have gained an understanding of the elements and principles of design in creating an attractive appearance, you need not be limited to traditional selections or arrangements. The design elements can be manipulated to create a desired effect. *In the final analysis, the relative dominance of a particular element is the most important.*

- A large-scale plaid generally is assumed to add visual size and weight to a figure, but when it is presented in soft, grayed tones, it appears smaller. Color becomes the dominant element controlling the effect of the lines and shapes in the plaid.

- A small-scale floral print has traditionally been considered to be delicate and to help the larger figure appear smaller; however, this print takes on increased size and visual weight when presented in strong, intense colors. Again, the element of color becomes dominant and overpowers the ultimate effect of the shapes.
- The visual weight of a heavy, thick fabric can be modified by a simple style with few structural lines and an absence of decoration. In this case, the style and shape of the garment become dominant and control the effects of the texture.
- A clingy fabric can be made to stand slightly away from the body in a softly gathered style worn over an undergarment treated with an antistatic finish. In this case, the style and shape of the garment are combined with another treated texture to control the effects of the clingy fabric.

We must always decide on the relative dominance of the various elements of design in terms of the intended purpose.

Frequently, the fitter must adapt what is available to personal needs, adapt personal needs to preferences, or satisfy two conflicting needs at the same time. For example, if the wearer values being in fashion but the current styles do not suit her figure, she must determine how to modify the



✓ REALITY CHECK

Finalize the selection and arrangement of the design elements most appropriate for the figure. Some individuals may feel dissatisfied or emotionally uncomfortable with the choices. Although correct in themselves, they may conflict with personal preferences based on values, attitudes and interests, geographic location, personality, mood, economic means, or availability. In other words, it is essential to identify and evaluate the social and psychological interrelationships in terms of the individual and the individual's purpose.

current style lines to suit her, or update her style by selecting from other fashion details, such as color or accessories.

- If a current fashion stresses square shoulders, which may accentuate wide shoulders, the shoulder pad can be eliminated. To give the firmness and smooth appearance desired in the area, use a layer of drapery heading or two layers of a crisp fabric.
- If puffed or extended sleeves emphasize already broad shoulders, consider omitting the alteration for broad shoulders and allowing the shoulder to occupy some of the space created by the puff or extension.
- If necklines on currently popular patterns lie lower on the chest than is desirable, raise them by altering the pattern prior to cutting.
- If a ready-to-wear skirt wrinkles at the back because of a high hip curve or swayed back, evaluate the figure to know which is the variation responsible for the wrinkles. Then, alter the skirt accordingly and reset the waistband.

You can find solutions to any fitting problem once the problem is recognized, the cause understood, and the alternatives carefully weighed. Many fitting problems can be solved by simply selecting appropriately styled clothing.



✓ REALITY CHECK

All too often, sewing patterns are chosen simply because they reflect what's new in the fashion pattern book and not because they fit the person's body, lifestyle, or personal style. Patterns selected only for the sake of fashion or newness often result in clothes that become wardrobe orphans—clothes that hang unloved and unworn in the back of the closet.

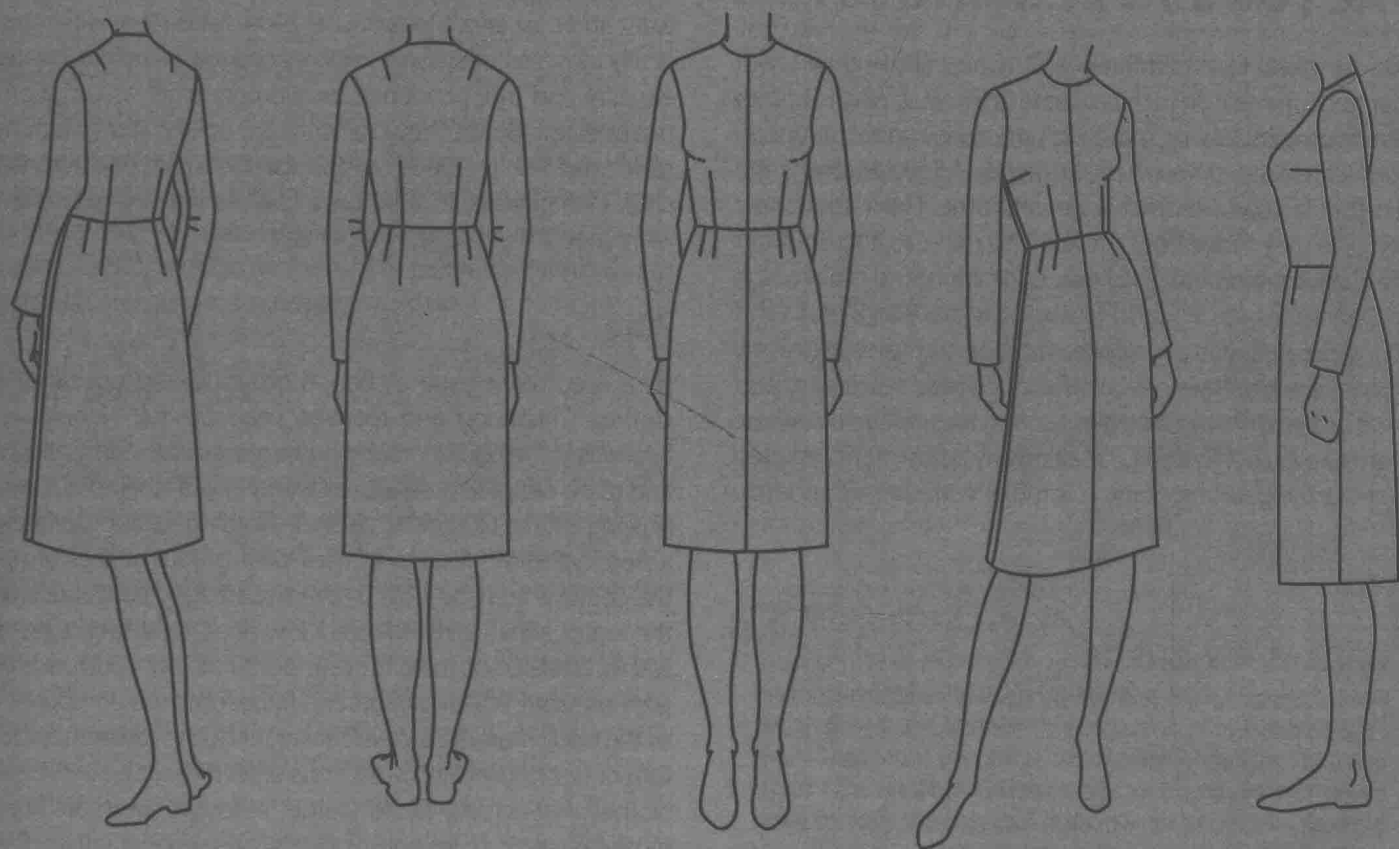
When a correct fit cannot be achieved by style selection alone, the ability to correctly fit and alter clothing and adjust patterns is essential in presenting an attractive and harmonious appearance. These topics will be discussed in the following chapters.

Remember, in each outfit, the design elements and principles can be analyzed or evaluated in terms of their physical and psychological effects. This discussion has focused on the physical effects. It is essential, however, to study the psychological effects and non-verbal cues in dress that communicate to ourselves first and then to others. Each of the elements and principles of design communicate non-verbal meaning, and these messages or moods affect the way we think, feel, and act—and they affect the way others respond to us. Our clothing choices become visible expressions of our individuality, so we need to make those choices thoughtfully.

For example, a tailored garment made up in wool gabardine may be too angular and authoritative, too firm or rigid for a casual occasion, or it may seem too solemn to be worn by someone with a light, youthful personality. On the other hand, a sheer, ruffled garment may be too delicate or fussy for a more serious role or personality. Recognizing such possible conflicts, and giving adequate thought to the matter, will ensure that we make choices that will accommodate the body, lifestyle, and personal style.

Chapter 3

Fitting Standards in Apparel



What is fit? Fit refers to the relationship between the human form and the garment form. Okay, but what is good fit?

For good fit, the contours of the garment must conform closely to the contours of the body. The expression “fits like a glove” describes the achievement of that goal.

In everyday language, the most common definition of good fit describes a garment that is comfortable to wear and allows freedom of movement. The virtue of comfort is followed by the desire for clothes that look good.

So what does “look good” mean? Clothing must lie smooth, without wrinkling, pulling, or sagging while camouflaging figure variations that would otherwise be emphasized by the wrinkling, pulling, or sagging!

It sounds simple, but it’s not.

FACTORS AFFECTING FIT

Socio-cultural factors influence fit. One culture may teach that good fit means 2 inches of ease in the seat, while another demands 4 inches or more. Still another culture may ban body-conscious silhouettes altogether. Added to that is the fact that fashion trends change with time. Think about skirt hems, as they move from the ankle to mid-calf, to just under the knee, to middle of the knee, thigh high, and higher.

Definitions, charts, and illustrations are provided in this chapter to help you consider ease amounts more objectively and to identify the positions for grainlines, seamlines, and darts in a well-fitted basic garment on an average body. Use them to evaluate fit and for making any adjustments needed to bring the garment fit into harmony with these standards.

REALITY CHECK

The leading complaint received by clothing manufacturers and retailers is that clothing “does not fit.” In frustration, people finally quit trying to find nice clothes that fit. This is a major reason why people have so willingly accepted the uniform of jeans and T-shirts or sweats, and why so many clothing and fabric manufacturers and retailers continue to go out of business.

Factors to be considered can be discussed separately, yet all are interrelated. They include ethnicity, gender, age, religion, occupation, economic influences, and fashion trends.

Ethnicity

Observing national costumes is a great way to find examples of practices or preferences in fit. The wrapped Polynesian sarong has both similarities and differences compared to the Japanese kimono. The style of a traditional garment may reflect the type of loom in use and therefore the width of fabric woven for use in the national costume. Individuals who closely identify with their culture tend to adopt the group’s standard of fit. That standard will be directly related to their values regarding their physical body build. For example, people of Germanic background tend to be proportionally broad in the shoulders and slim in the hips. Clothing is designed to fit this inverted triangular body type. Looser fit in the shoulders and tighter fit in the skirt and pants tends to be the norm. However, many people of African descent tend to have a high buttocks curve and often wear tight-fitting skirts and pants to emphasize that idealized shape.

Gender

Male and female sex roles are defined at birth; for example, in Western society, boys are dressed in blue, girls in pink. Traditionally, men were expected to wear pants and women to wear dresses or skirts. More readily seen as sex objects, women wore clothing that was form-fitting, particularly in the waist and bust area. Men’s trouser pleat slacks were worn classically loose. As traditional sex roles changed to allow greater equality and independence for women, older assumptions disappeared. By the new millennium, unisex attire, such as jeans and T-shirts, became popular for males and females alike. Nonetheless, to announce their femininity, girls often wore their T-shirts tight, without ease.

Age

Fit is a constant issue as babies grow up and out of their clothes. Childhood and teenage years are full of ongoing changes in the body, demanding increased size to fit. Children and teens can face pressures to blend in with their peers, and it is important to them that their clothing fit appropriately, according to the fashion of their peer group. At the turn of the century, teenage boys in oversized baggy pants became the norm, while girls adopted low-rider, tight-fitting jeans. Fashion style tends to be more important in our youth, due to peer pressure, while comfort and fit become more important as the body matures. Increased weight due to lower metabolism or lack of mobility often limits older individuals in finding clothes that actually fit. As we get older, we are more likely to prefer classic styles and high-quality garments rather than trendy fashions that need to be replaced every couple of years.

Religion

This factor greatly influences a person's values concerning fit. Taught early in life, perceptions formed tend to endure throughout adulthood. Modesty in terms of non-revealing clothing styles or loose fit are important issues for orthodox members of many religious groups. Fit is directly related to perceptions of wholesomeness or modesty, or of worldliness and sexually provocative dress. Very often, leaders within a religious group wear long, loose-fitting robes devoid of any fitted area calling attention to the body. Within Middle Eastern religious groups, members may also be required to wear full-flowing modest dress.

Occupation

A high-quality fit is associated with success in the business world, particularly in the case of a classic business suit for men. Stress wrinkles or drag lines evident in a badly fitted suit signal lack of attention to detail or inability to afford better quality. The higher the position in the business world, the higher the quality of fit expected as it communicates awareness and professional achievement. Standards of good fit for both men and women are often illustrated on a suit—possibly on a classic shirtwaist style dress for women. High standards of fit carry over into the political world, where a candidate's dress must be accepted by the broad spectrum of potential voters. Safety on the job is an issue that often requires a controlled fit in some parts of the body. For example, form-fitting sleeves and pant legs may be required to prevent getting caught in machinery.

Economic Influences

In times of economic abundance, it appears that many people are more willing to be seen in ill-fitting, untailored clothing as a statement reflecting some rebellion against classic clothing such as suits. However, when income drops off, there tends to be a general return to tailored suit dressing as it reflects stability and survival.

Fashion Trends

Sleeve, shirt, skirt, and pant lengths are bound to change from one fashion season to another simply for the sake of promoting a new look and therefore a new sale. In the process, fashion trends bring about changes in standard amounts of wearing ease. Fashions in the 1940s and 1950s were cut smaller, with less wearing ease than in the 1980s. Increased value for comfort in clothing led to the trend favoring oversized shirts and jackets in the 1980s. Many older adults still prefer more ease than is currently allowed in the minimalist fashions of recent years. Even so, current fashion is softer and less structured than in previous periods, with softer fabrications available even in menswear.

Women's sleeve lengths got longer in the 1990s. There is no real logic behind this trend; teens initiated it simply to appear different from adults. Many manufacturers eventually gave in to the trend and allowed overly long sleeves, including on coats and jackets. Sleeves hanging halfway down the hand appear out of proportion to the body and cause the wearer to appear naive and comical. "It's like they're wearing daddy's suit jacket," comments image specialist Janice Harper. "They get in the way, and certainly detract from a credible, capable image," she adds.

Pop culture's baggy low-hanging pants also get in the wearer's way, but were accepted by many boys and young men in the 1990s as a safe way to rebel. As men started going sockless due to rebel rules of 2000, they also shortened their pants to reveal their naked ankles—said in 2008 to be the equivalent of women's cleavage.

Exposed cleavage and tight fit were part of the media drive for sexy, revealing clothing promoted for both girls and young women in the 1990s. Not having learned about standards of ease during their teens, many young women today are quite used to the look and feel of tight-fitting clothes and find them perfectly acceptable—at whatever level they fit or hang from. For example, low-rider pants were manufacturers' attempts to avoid the need for pants to fit everyone's waist size. They became acceptable at whatever level they fit or hung from.

Says custom tailor Michael Conger, "Women are wearing shirts and skirts so tight they function more like foundation garments, revealing folds of flesh that are neither attractive nor fashionable." Public relations specialist Susan Alexander adds, "When you can see the stress wrinkles, even the stitching on the bra, you know the clothes are too tight."

Confusing the issue of fit, high-end fashion designers and manufacturers went the extra inch to flatter the customer's ego by increasing the size of their slopers or standard patterns, yet retaining the same sizing numbers. What used to



☒ REALITY CHECK

Edith Head, the famous fashion designer and image consultant to Hollywood stars in the first half of the 1900s, speaking to women said, "Clothes should be tight enough to show you're a woman and loose enough to prove you're a lady." The advice still applies today.



☒ REALITY CHECK

Retailers of women's wear could take a lesson from the menswear industry and sell clothes by key measurements listed on the hangtag. Granted, it's easier to do this with menswear as the male body has fewer body curves to accommodate. That's where figure type could be included as a factor of design to fit. Possible measurements might include neck size, bust, waist, hip, inseam, and long sleeve length, depending on garment type and styling.



✓ REALITY CHECK

When selecting pattern sizes, don't go by what fits the wearer when she buys ready-to-wear garments. These sizes are not reliable guides. Instead, buy according to the figure's actual measurements.

be a size 10 is now cut and sold as an 8. It is well known that women will pay more for a size 8 than a size 10 or 12, and manufacturers believe that if a woman is a size smaller in their garments than in the competition's, she'll surely buy theirs. In other words, the higher the price, the smaller the size you need to buy, allowing us to believe we're smaller than we really are. It's a mind game we play.

At the same time, moderate to low-priced fashion lines have allowed considerably less ease in clothes still labeled as small, medium, and large. Women accustomed to buying a size small in years past, now having gained significant weight over time, are still buying size small. They do not seem to recognize the considerable loss of ease, and are not willing to purchase the much-needed medium to larger sizes with adequate ease. And, yes, the general population is getting larger, but they are still not willing to buy the needed larger sizes. It is advisable to avoid these types of mind games about body image and self-image. Style is not a size. A well-fitted garment can make the wearer look pounds slimmer. (For related information, see *Fabulous Fit*, 2nd Edition, by Rasband and Liechty, p. 15–16, 33–38, 55–59, and 64–75.)

The problem of fit is compounded with fashion patterns. While trends favor ready-to-wear clothing cut with less ease, and women are wearing smaller sizes, fashion patterns still include the same standard amount of wearing ease. That means an individual might be buying size 8 in ready-to-wear and wearing clothing tighter, then being told to buy a pattern according to body measurement, which might mean a size 12, depending on differences in style and ease allowance. She may not like the idea of being a size 12, let alone like all the extra wearing ease she is certainly not accustomed to. It's another mind game we can't afford to play. That's where a sensitive figure and image evaluation needs to take place to update thinking.

Definitions, charts, and illustrations are provided in this chapter to help you consider ease amounts more objectively and to identify the positions for grainlines, seamlines, and darts in a well-fitted basic garment on an average body. Use them to evaluate fit and for making any adjustments needed to bring the garment fit into harmony with these standards.

BENEFITS OF A FABULOUS FIT

High quality guidelines or standards of good fit develop to free you from the ups and downs of fickle fashion trends. Standards are set forth that lead you to recognize certain

characteristics in the clothing when it is worn. However, these standards may be perceived differently from person to person, place to place, and time to time. One woman may spend hours to get her clothes perfectly custom cut to fit. Another may be happy with ready-to-wear clothes quickly altered in-store. And still another may be satisfied with clothes straight from the rack regardless of whether they fit well or not.

It is important to be aware of generally accepted guidelines or standards you can use to evaluate the fit of clothing. You can compare actual fit with a fabulous fit and pinpoint areas of poor fit. Read this material through two or three times and you'll have them firmly in mind, to use to your advantage.

You will never again be confused by a fashion magazine or catalog that features an outfit that doesn't fit, or give in to the flattery of an overzealous sales clerk who just wants to make a sale. You will know what you're looking for and how to evaluate it.

As we saw earlier, attractive clothing that fits well has many benefits:

- It draws negative attention away from areas of the body that the wearer would prefer to de-emphasize, and draws positive attention to areas of the body considered most attractive.
- It camouflages or conceals figure variations, creating flattering illusions about those variations.
- It eliminates distracting gaps, wrinkles, clinging, binding, pulling, twisting, or hiking up.
- It creates a natural relationship between the shape of the garment and the shape of the body. Garment contours and segments correspond to body contours and segments in a flattering and comfortable way—the sleeve moves with the arms, and so on.
- It adjusts naturally to body movement without strain. When not moving, the clothes relax and return to their natural position, free of wrinkles.
- It allows the wearer to be the center of attention, with the clothes subordinate. Attention goes to design details and coordination, but always comes back to the wearer.
- It enhances overall appearance, allowing the wearer to appear harmonious with the clothing.
- It increases the wearer's self-confidence and poise.
- It requires less care and attention, saving valuable time, effort, and money.
- It yields a greater dollar value; well-fitted clothing looks neater longer, and wears better longer.

Fabulous fit is a must! It is essential for someone who wants to look their personal or professional best. Plus, people can wear nearly any clothing style attractively if they get the fit right.



✓ REALITY CHECK

A garment is fitted right side out, with seams and dart folds pressed inward against the body. Fitting wrong side out, the sides of the garment are reversed on the body and the fitting is therefore wrong as well. Fit the clothing right side out.

ALTERNATIVE METHODS FOR EVALUATING FIT

As we saw in Chapter 2, a fabulous fit depends on the thoughtful and artistic application of the elements and principles of design. In this comprehensive discussion of fitting standards, attention is on the elements of line, shape, and texture as they influence the principles of balance, proportion, scale, rhythm, and emphasis. They can be discussed and examined specifically in terms of the structural outline, shape, or silhouette, the structural interior lines and shapes, the grainline, and the fabric ease. The element that is noticed first depends on which deviates the most obviously from the standard. Once you become knowledgeable, reading the clues will become almost automatic.

Blouses and shirts, vests, and jackets, dresses, and coats are intended to fit in the shoulders and flow over the rest of the body. Therefore, the garments are generally evaluated from the shoulders down. Anything that sags, drags, gaps, bows, or pulls over the body indicates a need for a larger size or a different style to begin with. Check the fit while the wearer is standing, walking, bending, and sitting, and while raising, lowering, and swinging the arms. Check to see if the garment automatically returns to its natural, smooth hang or position. If it doesn't, some area is still likely in need of a better fit. Fit sleeves last.

USING STRUCTURAL LINE TO EVALUATE FIT

Structural lines in a garment provide major clues as to the accuracy or error, success or failure, of fit. Structural lines include the outline or silhouette, interior seamlines, dartlines, closures, and the additional design lines of pleats, tucks, pockets, bands, trim or decoration, and so on. All of these become fitting lines to be evaluated (see Figure 3.1).

Structural silhouette and interior lines originate with the designer and divide the body into sections that are proportional. Viewer attention is quickly attracted to any structural line of the garment and held for a time. At the same time, the eye compares the structural lines on the two halves of the body—right and left—and to the corresponding vertical or horizontal center of the body. It looks for balanced and proportional divisions, and it identifies the garment setting level on the shoulder, waist and/or hip, and at the hem. These subconscious perceptions and comparisons quickly judge the success or failure of garment fit. Silhouette or body lines that should not be the focus of attention should be camouflaged or countered by a garment line.

Balance results from visually equal garment weight, size, or distance on either side from body center lines—vertical and horizontal. A balanced garment gives a feeling of equilibrium, stability, and calm. The viewer does not tire from trying to visually adjust the fabric to improve the balance or proportional divisions. A skirt, for example, should hang so that it extends an even distance from the legs from side to side and front to back.

When structural lines pull, sag, or drag from expected positions on the body, the viewer feels an uncomfortable sense of imbalance and instability. The greater the deviation of the structural lines, the greater the lack of balance in the

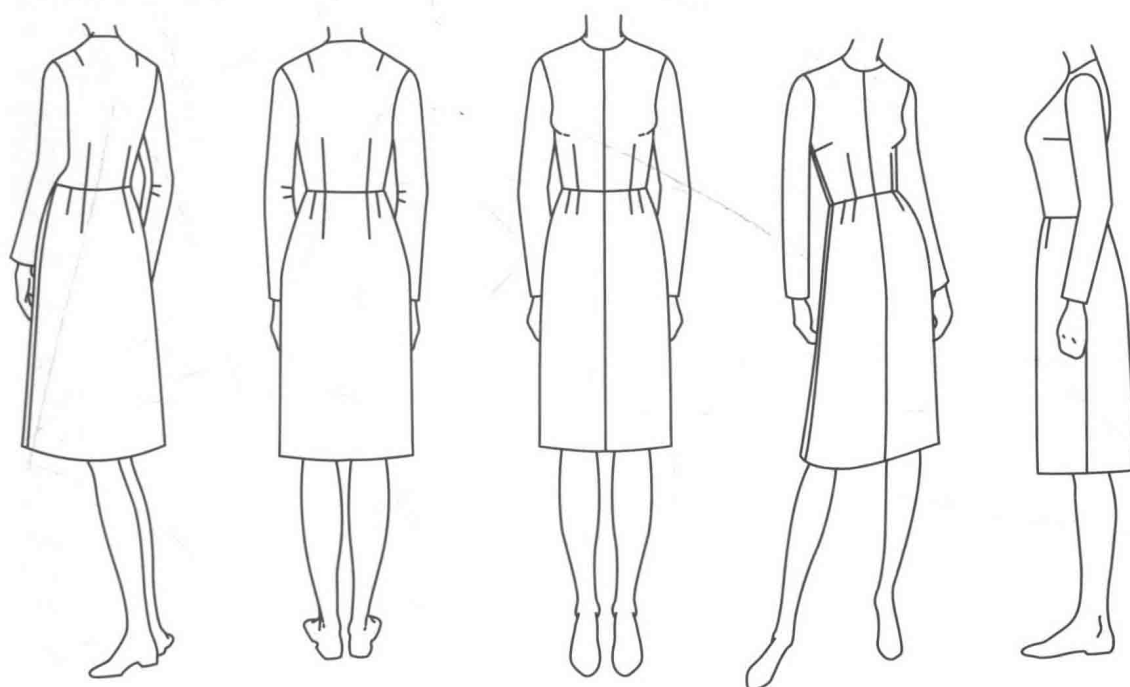


FIGURE 3.1 Correctly fitted and balanced basic garment

✓ REALITY CHECK

Recognizing accuracy or error in the position of structural lines on the body provides clues as to the success or failure of the fit. Correcting deviations in structural lines leads to a more successful, well-balanced fit. When this is achieved, both the wearer and the viewer sense visual and physical comfort. However, there is no need to be overly precise. The viewer generally doesn't notice or recognize a deviation in fit of only $\frac{1}{8}$ inch. It usually takes an amount of $\frac{1}{4}$ to $\frac{1}{2}$ inch before the deviation is even noticed or recognized and in need of change.

fit of the garment, and the stronger the viewer's sense of instability (see the discussion of structure and balance in Chapter 2).

Significant figure and postural variations affect the balance of a garment by changing the position of its structural lines. Either of these conditions affects the amount of fabric needed in length and width, and the resulting alignment between the structural lines of the garment and the body centers. Larger than average body areas strain and pull the garment fabric to the larger area, changing the position of structural lines. Smaller than average body areas allow fabric to bow or sag in loose folds, again changing the position of structural lines.

USING GRAINLINE TO EVALUATE FIT

Looking closer, grainline provides explanatory or confirming clues when evaluating the fit of a garment. Simply stated, grainline refers to the direction and position of the threads or yarns in woven cloth and the loops in knitted fabric.

Fabric grainline originates with the designer and then the patternmaker, who predetermine the way the fabric should hang on the body. Grainline position is indicated by arrows on each pattern piece, which, when followed in fabric layout, causes the fabric to hang in the intended manner (see Figure 3.2). To reproduce the intended effect in a garment, both the lengthwise and crosswise threads or yarns must lie at 90 degree angles to one another—before the pattern pieces are cut out. (See the related discussion of grainline in Chapter 2.)

Quick and easy recognition of grainline makes the entire process of fitting faster, easier, and less tiring to accomplish. Referring to a basic fitting garment, the lengthwise grain or threads should lie perpendicular to the floor at the sides, the center front, and the center back. The crosswise grain or threads should lie parallel to the floor across the chest, back, waist, hip, and hem, and at the capline of a basic sleeve.

Fabric grainline, however, can be difficult to recognize, particularly in flat or plain textured fabric and in fabric with an all-over pattern. To simplify recognizing grainline during the fitting process and in the completed garment, it is

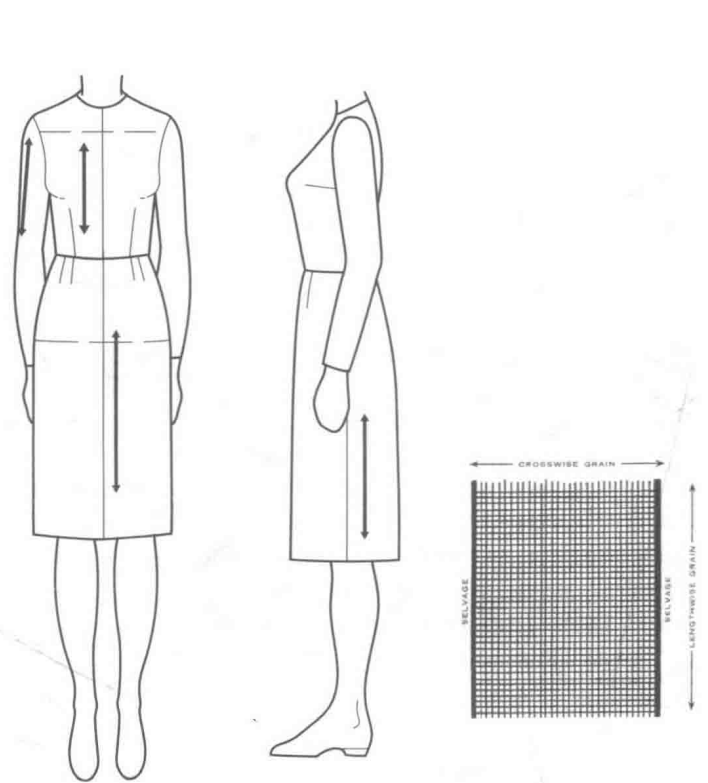


FIGURE 3.2 Garment constructed on straight grain

advisable to transfer pattern grainlines onto the fabric pieces with a marking tool such as a pencil, transfer paper, or thread, depending on the type of fabric and the use of the garment (for example, sports or formal events). With practice, your eye will quickly identify grain position on the body and recognize even subtle needs for adjustment.

When the fabric threads or yarns do not lie in the correct position, the intended effect in the completed garment is disrupted or lost. The silhouette, seamlines, or dartlines may become tilted, twisted, bowed, or pulled out of line. Even slightly poor grain alignment can produce conspicuous problems in the hang of the fabric and fit of the garment.

Again, significant figure or postural variations from the average affect the balance of the garment and require an increase or decrease in the original length or width of the fabric. Insufficient or excess fabric length or width causes tension wrinkles or loose folds as the grain lies out of line. The greater the variation from standard, the more the grainline will tilt or bow as fabric ease is pulled from one area to another.

Recognizing accuracy or error in the position of the fabric grain or marked grainlines while on the body provides clues as to the success or failure of the fit. For example, if a crosswise grain curves up or down where it should be parallel, it is due to a body bulge or hollow directly above the curve of the grain. Correcting deviations in grain can lead to a more successful, well-balanced fit. Both sides of the garment will hang evenly on both sides of the body, equally smooth, relaxed, and level. The garment appears in harmony with the body.

USING EASE TO EVALUATE FIT

Ease, or the lack of it, provides obvious clues as to the success or failure of fit. The subject of ease comes up often. Ease is the difference between the measured size of the body and the measured size of the garment as intended by the designer. This explains why an actual pattern measures larger than the body measurements listed on the pattern back. The pattern includes extra fabric beyond the size of the body so the body can move around comfortably. Ease determines how the garment will look, fit, and feel. Without ease, a garment would be skintight.

Advancing your sense of ease often takes some trial and error. The amount of ease required for comfort, movement, and an attractive appearance depends initially on the garment design and the occasion for which the clothing is going to be worn. Strapless or sleeveless bodices, halter necklines, and swimsuits require little, if any, ease. Sportswear generally requires more ease than business attire. Third-layer clothing, such as jackets, sweaters, and vests, has more ease built into it because it is intended to be worn over other garments. A sweater or vest worn directly over the body, with no intervening layers of clothing, needs less ease.

Additional factors affecting appropriate ease allowance include the fabric texture, fabric weave or knit, and body height and weight, as well as personal preference. A jacket made of silk crepe or a duster made of firm gabardine needs less ease than a thicker or heavier corduroy or fleece. For a specific project, refer to recommended fabrics listed on the pattern envelope. Support fabrics, including interfacing,



FIGURE 3.3 Halter-style wedding gown from Anna Maier is form-fitted in the bodice, but features a lot of design ease in the flared skirt.

✓ REALITY CHECK

During the fitting process, there is often an unintentional tendency for the beginner to overfit a garment. Overfitting is the process of taking out too much fabric ease—increasing the closeness or tightness of fit. This results in the loss of necessary ease.

✓ REALITY CHECK

Recognizing when there is too much or too little ease provides obvious clues as to the success or failure of the fit. Correcting the fit with sufficient amounts of ease can eliminate negative attention to body contours or bulges. The garment will hang so that it is smooth and level, in harmony with the body. It will be visually pleasing and physically comfortable.

interlining, and lining, must also be accounted for in considering the thickness and weight. Knitwear includes less ease because the fabric stretches. Slim figures need less ease and larger figures require more. The taller body can carry more fabric ease stylishly, but a shorter figure becomes weighed down by too much fabric ease. Some people simply prefer more or less room in the fit of their clothes, and the amount of ease allowed by the designer is often too little or too much to suit individual preferences.

Regardless, every garment must have enough fitting ease to allow the individual to get the garment on and to breathe. Every garment needs basic wearing ease to allow for comfortable body movement (see Figure 3.3). Walking, turning, bending, stooping, sitting, and moving the arms causes the body to expand in the areas involved. The extra fabric permits the garment to accommodate natural body movements. It should be easy to raise and lower the shoulders, and to raise the arms to a 90 degree angle to the body. Each hand should be able to cross over and easily touch the opposite shoulder. Following a body movement, the garment should resume its natural, smooth hang without needing adjustment.

When a garment lacks sufficient wearing ease, it loses its natural structural style lines and smooth hang of the fabric. It is strained. It pulls and binds uncomfortably against the body, often resulting in tension wrinkles (see Figure 2.3). The garment appears tight, emphasizing body contours that would better be played down. If a garment fits too tightly, it is often too short as well. The garment becomes figure-revealing instead of figure-flattering. No matter how attractive or beautiful the color and fabric, if the garment does not fit with enough ease, the appearance and comfort will be ruined. That garment will likely end up in the closet. And even if it is worn, the strain will lessen the durability of the garment and cause it to wear out faster.

Most people don't give much thought to how much ease they prefer in the fit of their clothes. Yet it is important to know an individual's preference before beginning to fit a garment. Knowing how the individual likes clothes to fit is the basis for achieving a fabulous fit.

PINCH TEST METHOD

A quick way of checking for ease allowance in clothing is the age-old pinch test. With ease amounts of 2 to 4 inches at bust and hip levels, you can use the traditional “pinch an inch” guideline. To determine the best preferences, do the following:

- Simply hold the sides of the garment, pinching out all extra fabric so the garment becomes skintight. You really couldn’t move if the clothes fit that tight. Look down at the amount of fabric you pinched out.
- Measure it with a seam gauge or tape measure.
- Multiply that amount by four, for the four quarters of the body—right side front and back, and left side front and back.
- If you pinched out $\frac{3}{4}$ of an inch on each side, that would equal $1\frac{1}{2}$ inches on each side, or 3 inches total ease in that area of the garment.
- Consider the wearer’s preference with respect to the look and feel of that amount of ease, and ask someone for their critique of the look. Apply the pinch test on other garments and make minor adjustments as needed. Become more aware of what works and why.

INSIDE MEASUREMENT METHOD

Another way of discovering someone’s preferred amount of ease is by actual measurement comparison. Try it out for experience.



FIGURE 3.4 Tightly fitted jeans pair with a trendy loose-fitting blouse and vest.

- Take measurements at bust, waist, and hip level.
- Try on several pieces of clothing you feel perfectly comfortable wearing.
- Try on the clothes to confirm your favorites.
- Measure their choices in the bust, waist, and hip area. Whenever possible, measure from the inside, not around the outside.
- Subtract the body measurement from the garment measurement in each of the same areas.
- The difference between the two measurements is the amount of ease preferred. Make notes. If the garment measurement is 39 inches, minus a body measurement of 36, there is a 3 inch difference. The 3 inches of extra ease allows for a comfortable and attractive fit.

With time, you’ll come to know automatically how much ease clients prefer in the fit of their clothes. This information will transfer well to future fitting experiences (see Figure 3.4).

USING WRINKLES TO EVALUATE FIT

Wrinkles are small ridges or creases on the surface of a garment’s fabric, indicating that something doesn’t fit properly. If there are wrinkles, there is either too little or too much fabric.

When you stop moving and stand still, clothing that fits will settle smoothly over your body. If the clothing settles into wrinkles, it doesn’t fit well enough and attention will be drawn to the areas of the wrinkle lines or drag lines (see Figures 3.5 to 3.17). There are fitting wrinkles of two general types, tight and loose, with three forms to watch for: horizontal, vertical, and diagonal. (Solutions to fitting problems indicated by wrinkles are listed in Chapter 5 and detailed in Part 3 of this text.)

✓ REALITY CHECK

You can’t iron out fitting wrinkles. They simply reappear. Don’t confuse fitting wrinkles with folds in the fabric that are part of the design—folds that result from flare, gathers, tucks, and so on. And don’t mistake them for wrinkles that come from moving about. Wrinkles are to be expected when you walk, bend, stoop, sit, or reach.

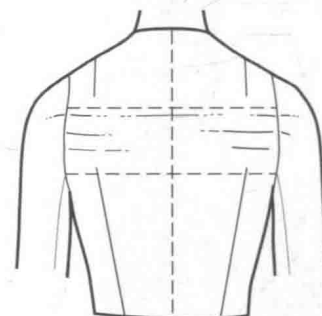


FIGURE 3.5 Wide upper back

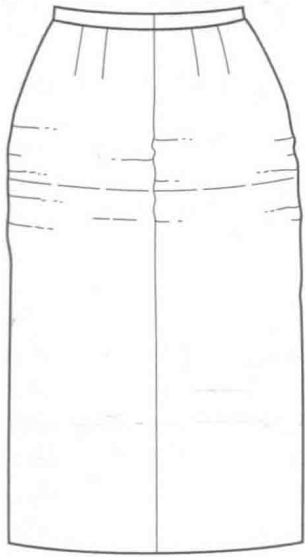


FIGURE 3.6 Wide hips

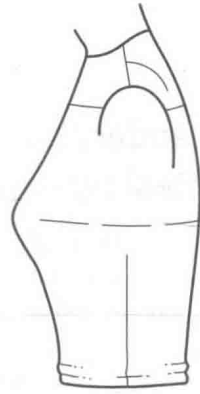


FIGURE 3.7 Long lower rib cage

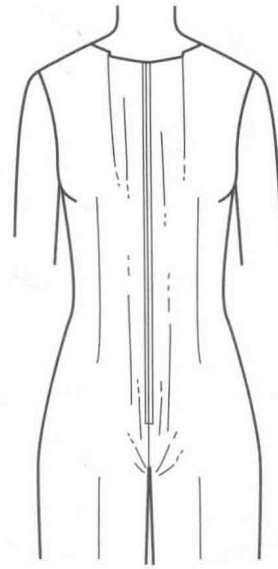


FIGURE 3.8 Long lower torso

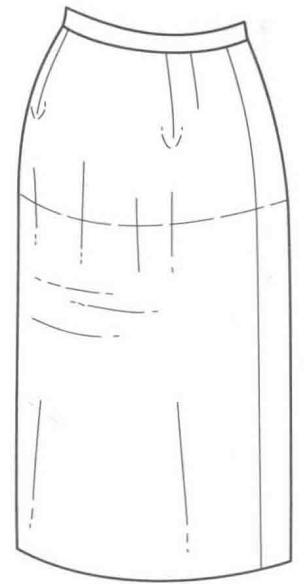


FIGURE 3.9 Flat/Smaller buttocks

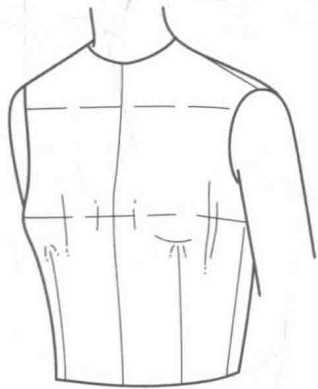


FIGURE 3.10 Small bust

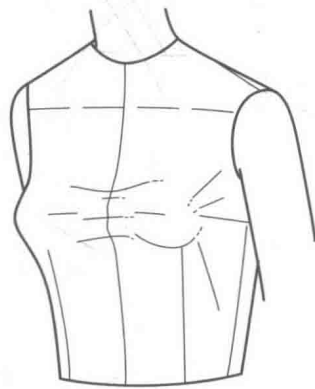


FIGURE 3.11 Large bust

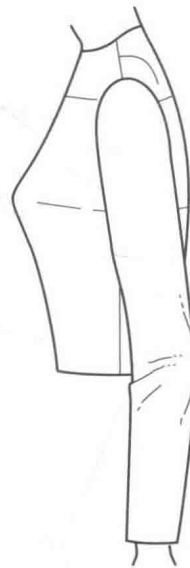


FIGURE 3.12 Large elbow

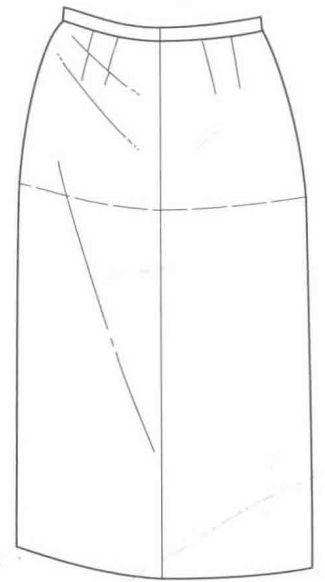


FIGURE 3.13 Single high hip

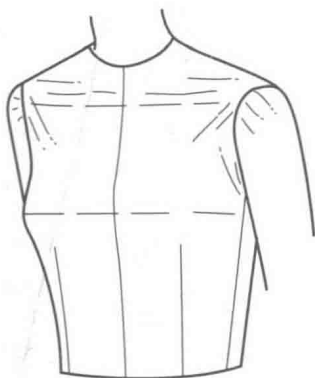


FIGURE 3.14 Broad, square shoulders

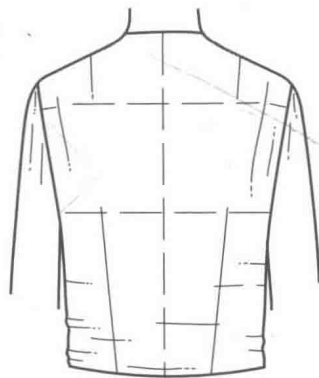


FIGURE 3.15 Narrow shoulders, broad lower back, and large waist

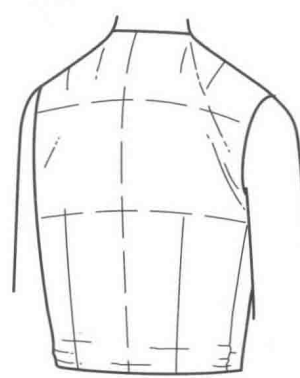


FIGURE 3.16 Rounded upper back, sloped shoulders, and large waist

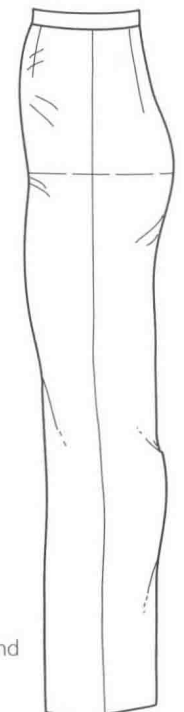


FIGURE 3.17 Protruding abdomen, full front thigh, and hyper-extended calf

Tight Wrinkles

These wrinkles form when the fabric is strained. There is not enough fabric to go around the body, and the strained fabric pulls into wrinkles. Body contours appear beneath. This may or may not be seen as attractive, but it is always distracting.

- *Tight horizontal or crosswise wrinkles* are produced when the clothes are too small around the body, when the fit is too narrow. If possible, fabric will shift to a smaller area. The garment needs to be made wider by letting out at the vertical seam(s). The fabric will relax when sufficient width has been added in the area.
- *Tight vertical or lengthwise wrinkles* usually signal that clothes are too short. Fabric is constrained by the crotch at the underarm or the crotch between the legs. Both pull from the shoulder above. The garment needs to be longer or let down at the nearest horizontal seam. The fabric will relax when length is added in the torso.
- *Tight diagonal or bias wrinkles* are a clue that the garment is too small—too narrow and/or too short—for the body bulge or contour above the wrinkles. The fabric pulls or bows upward in the direction of a body contour that is too large. The garment needs to be larger or let out at both the vertical and horizontal seams. The fabric will return to its proper position when sufficient length and width have been added in the area of the body bulge.

Loose Wrinkles

Loose wrinkles or folds form when there is sagging due to too much fabric.

- *Loose horizontal or crosswise wrinkles* or folds are produced when the garment is too long. It needs to be taken up at the horizontal seam(s).
- *Loose vertical or lengthwise wrinkles* are produced when the garment is too large around. The garment is too wide and needs to be taken in at the nearest vertical seam.
- *Loose bias folds*, droopy curves, or the downward sag of fabric usually signal the garment is both too long and too wide for the body contour above it. The body contour is small or shallow, so the garment needs to be taken in at both the horizontal and vertical seams.

REALITY CHECK

Measure the deepest part of loose wrinkles, then double the amount. This tells you approximately how much to decrease the length or width in the size of the pattern. When a garment does fit properly, attention isn't drawn to areas of distracting wrinkle lines. Viewer attention is free to go to the focal point on the outfit.

STANDARDS OF EASE

There are different standards of ease, depending on whether it is a basic garment or fashion apparel.

Standards of Ease for Fitting a Basic Garment

Ease amounts vary according to the fashion fabric used to make up a garment. Tightly woven fabrics allow little movement of the threads or yarns; they do not stretch. To be comfortable, garments made from tightly woven fabrics therefore require more ease for a slightly looser fit. Knit fabrics, whether tightly or loosely knit, include less ease because the fabric loops allow stretch. Knitwear is made to fit closer to the body.

Loosely woven fabrics require less ease because threads or yarns slip easily over one another, allowing greater freedom of movement. Too much ease with loosely woven fabric can cause the garment to hang sloppily. Spandex fibers are elastic, stretching to allow more ease in movement. A typical garment made from a blend of acetate and spandex needs less ease. Clothes made from loosely woven fabrics and from fabrics made with spandex can also be made to fit closer to the body.

Depending on the fabric, therefore, the general standard for recommended amounts of *basic wearing ease* should be within the following ranges:

- 2 to 4 inches around the chest or bust to allow for ease of movement
- ½ to 1½ inches around the waistline to allow for turning around, bending over, or raising the arms
- 2 to 4 inches around the hips to allow for walking, bending, sitting, and so on

This is the ease amount essential to avoid the feeling of being too constricted by the garment; these numbers represent the minimum amounts of fabric you should be able to pinch out at the side of a garment when it is tried it on.

Standards of Ease for Fitting Fashion Garments

All clothing is designed to fit and hang smoothly from the top. Jackets, coats, dresses, shirts, sweaters, vests, tunics, and dusters are designed to fit and hang smoothly from the shoulders. Skirts and pants are designed to fit and hang smoothly from the waist or upper hip area. Anything that gets “hung up” on the body makes a visual statement that more ease is needed—either a larger size or a larger, fuller style—and that leads to a discussion of design ease.

Design ease (also called *fashion* or *style ease*) refers to the degree of closeness, looseness, or fullness of fit necessary to create the garment style, mood, and feeling as intended by the designer. Some clothes are designed to be very closely fitted and some are intended to be only slightly

fitted. Other clothes are designed to give a slightly loose fit and still others are intended to hang very loosely on the body. Fullness beyond wearing ease can be incorporated into the bodice, skirt, pants, or sleeves. It is created by adding flare, flared insets, gathers, shirring, released tucks, or pleats—each giving different effects. Many interesting and attractive clothing designs include a combination of close and loose or full fit.

A *very fitted garment* repeats body contours exactly and will emphasize figure variations. It may include less than minimum wearing ease, allowing little ease for body movement and no design ease. It is commonly used for photographic and stage purposes and is seen in swimwear as well as some dressy day and evening wear. The body silhouette is dominant (see Figure 2.4).

A *fitted or slightly fitted garment* repeats body contours but provides standard wearing ease; it should fit the body without causing strain or constriction. The body silhouette is still dominant (see Figure 2.5).

A *slightly loose-fitting garment* only suggests body contours and stands slightly away from the body or flows loosely over it. There is wearing ease plus some added design ease. The garment silhouette tends to become dominant (see Figure 2.6).

A *very loosely fitted garment* does not define body contour at all. It includes wearing ease plus a considerable amount of design ease. The added fullness may begin at the shoulders. Fabric may stand away from the body or fall loosely in folds around the body. The garment silhouette is dominant (see Figure 2.7).

A combination of these styles may be termed *semi-fitted* or *partially fitted*. This type of garment is fitted in specific areas, such as the upper bodice, the midriff, or the upper hip area. A looser degree of fit is incorporated into the styling of other areas. Depending on the degree of fit, either the body or the garment may become dominant in specific areas (see Figure 2.8). Partially fitted designs provide the greatest potential for creating effective illusions. They work wonders at camouflaging, balancing or counterbalancing, minimizing, and flattering a wide array of figure variations.

No one has to resort to wearing tent-like styles to camouflage the body silhouette; slightly loose and partially fitted designs that make use of controlled fullness can camouflage figure variations as desired. Rather than revealing the body contours beneath, they allow the fabric to flow smoothly over the body. The garment silhouette is dominant, and the body subordinate.

✓ REALITY CHECK

The closer the fit, the slimmer the body should be for a fabulous fit—a body without extra curves or bulges. The larger the body, the looser the fit recommended—within reason. Tighter does not appear smaller. It can actually make the body look larger.

✓ REALITY CHECK

For reference, read the description on the back of the pattern envelope for details about the degree of fit, amount of ease, and fabrics recommended to accommodate the garment design.

- A dress that does not have a fitted waist is not likely to require alteration for the waist circumference.
- A flared skirt is less likely to need adjustment in the hip area.
- The more active your movements, the more comfortable you will be in loose-fitting clothes or those made from stretch fabrics.
- Fabric does make a difference in ease amounts required. More fluid fabrics generally require more ease to avoid looking limp or skimpy. They lend themselves to draped, folded fashion designs.
- In contrast, firm fabrics need less ease to avoid looking stiff or bulky. To some degree, they need darts and curved seams that follow the curves of the body. This can be good, as generally, more seams mean more places you have to work with in adjusting the fit.

Exercise: Comparison between the measurements listed on the back of the pattern and the measurements of the finished garment is carried out in much the same way as previously described for determining the preferred amounts of ease.

- Measure the total pattern piece in question (same as finished garment measurement).
- Subtract the body measurement listed on the back of the pattern from the corresponding total of the actual measured pattern piece.
- The difference between the two measurements is the amount of ease allowed. Make notes on your findings. If the actual pattern piece measurement is 38 inches, minus the listed measurement of 34, you have 4 inches difference—that is, 4 inches of extra ease allowed. How much of that 34 inches is used up by the body measurement in that area? More? Less? Is the amount left consistent with the preferred amount of ease?

In order to accommodate body measurements, you can use up some of the wearing or design ease. The challenge here is to first allow enough room to accommodate the body's measurements, plus the preferred amount of wearing ease, plus the amount of design ease still required to result in the style as intended. Then the pattern can be adjusted to restore the missing ease amount.

STANDARDS FOR FITTING A BASIC GARMENT

| UPPER TORSO AND ARMS | | LOWER TORSO AND LEGS | |
|--|--|---|---|
| Center Back and Center Front Seam or Fitting Lines: | Blade and Chest Areas: | Center Back and Center Front Seam or Fitting Lines: | Hip Area: |
| <ul style="list-style-type: none"> are centered on the body are straight lines are perpendicular to the floor | <ul style="list-style-type: none"> have horizontal and vertical grainlines that lie appropriately parallel and perpendicular to the floor lie smooth against the body between the creases of the arm allow the arms to move comfortably without strain at the shoulders or armhole | <ul style="list-style-type: none"> are centered on the body are straight lines are perpendicular to the floor | <ul style="list-style-type: none"> is controlled with correctly fitted darts to accommodate the curves grainline is parallel to the floor at the center front and center back circumference is adequate to permit fabric to relax allows for movement without straining the fabric does not gap at center front or center back when button closures are used is free from diagonal, horizontal, or lengthwise stress wrinkles or distortion |
| Side Seamlines: | Armhole: | Side Seamlines: | Hemlines: |
| <ul style="list-style-type: none"> divide the body into pleasing proportions slope forward from underarm to waist create enough ease to permit the arms to swing without pulling the sleeve | <ul style="list-style-type: none"> is in line with the back arm crease when the hands are crossed at the front is in line with the front arm crease when hands and arms are relaxed at the sides depth lies 1 inch below underarm hinge neither constricts nor cuts the body, nor pulls away from it at any area | <ul style="list-style-type: none"> divide the body into pleasing proportions appear as straight lines on the body appear to intersect the waistline at 90-degree angles are perpendicular to the floor create equal visual distances beyond the edges of the legs when the garment is viewed from front, back, or side | <ul style="list-style-type: none"> are parallel to the floor divide the body into pleasing proportions for jackets, cover prominent abdomen, buttocks, or side thigh curves for skirts and pants, lie 2 inches above, to the middle, or 2 inches below the knee, or below the fullest part of the calf, or just above, at, or below the ankle |
| Darts: | Bust: | Darts: | |
| <ul style="list-style-type: none"> point toward the crown of the curve being accommodated appear as straight lines on the body end approximately 1 inch short of the fullest part of the curve are sewn to conform the fabric to the shape of the body surface have no fabric strain, bubbles, or wrinkles at the dart tip area | <ul style="list-style-type: none"> grainlines lie appropriately parallel and perpendicular to the floor has adequate ease to permit body movement and prevent gaps at closures is free from diagonal or horizontal stress wrinkles | <ul style="list-style-type: none"> are positioned to create pleasing proportions point toward the crown of the curve being accommodated appear as straight lines on the body end approximately 1 inch short of the fullest part of the curve are sewn to conform the fabric to the shape of the body surface have no fabric stress, bubbles, or wrinkles at the dart tip area | |
| Neckline: | Sleeve: | Waistline: | |
| <ul style="list-style-type: none"> lies smooth against the base of the neck at front, sides, and back crosses near the top of the ends of the collar bone or at the base of the throat depression crosses the back of the neck through the center of the prominent vertebra does not chafe(rub) the neck | <ul style="list-style-type: none"> outer edge extends ½ inch from the outer surface of the upper arm, then drops vertically to the elbow has horizontal and vertical grainlines that lie appropriately parallel and perpendicular to the floor at the capline underarm seam is in line with center of wrist hemline maintains a pleasing relationship to the body and to other style lines | <ul style="list-style-type: none"> divides the body into pleasing vertical proportions is parallel to the floor across the front follows the body contour across the back is loose enough to allow shoulders to rise and arms to move is loose enough to allow the body to expand during sitting, breathing, and eating | |
| Shoulder Seamline: | | | |
| <ul style="list-style-type: none"> divides the neck, shoulder, and arm into pleasing proportions is inconspicuous from front and back lies close to the body without strain at any point along its length is a visually straight line from neck to armhole | | | |

CONTROLLING FULLNESS CONTRIBUTES TO A FABULOUS FIT

Darts are a surprisingly powerful means of releasing fullness over body curves—while at the same time, controlling differing degrees or amounts of looseness or fullness. In fitting larger figures, darts should not be eliminated. Popular plus-sized fitter Gale Grigg Hazen is known to say that fitting dartless garments “is more like trying to wallpaper a beach ball”—creating gaps and folds in the fabric impossible to smooth without darts or dart equivalents.

Darts, in combination with a curved seam, can shape garments to fit closer to body curves. Shaped insets are cut without actual seams or darts, their shape being built into the pattern edges. The depth of a dart is determined by the difference between the smallest and fullest part of the figure. The straighter figure with a flatter bust needs a dart that is less deep. A full bust requires deeper darts to accommodate the curve effectively and attractively.

As mentioned earlier, other means of adding and controlling fullness include released tucks, pleats, gathers, shirring, flare, or flared insets—each giving different effects that can be chosen according to personal style. While used in designing for larger figures, varying degrees of close or loose fit can be used alone or in combination to meet an infinite variety of figure needs and personal style. For example, a fitted yoke in the shoulder area can be used to control gathered fullness

released in the bodice below, needed to accommodate a larger bust. A cuff can neatly control the fullness of a bishop sleeve. A flared skirt may fit the waist and upper hip area, then flare outward to easily accommodate a larger lower abdomen, hip, or thigh area. Control can also be achieved by easing or by shrinking the fullness, such as in easing a sleeve cap into the armhole seam or easing a hem into a smaller circumference.

In the final analysis, the difference in size between fabric and figure should not be so great that it emphasizes the figure size by extreme contrast, nor so similar as to emphasize the figure by repetition. Ease amounts make the difference. Keep in mind, the wise selection of clothing silhouette or style can reduce or even eliminate the effects a figure variation has on a garment and the resulting need for alteration. Ease will be the key to a fabulous fit.

STANDARDS FOR EVALUATING DESIGN DETAILS

Basic design becomes fashion design when added fullness or style ease has been introduced somewhere in the pattern, with the intention of creating a particular mood or characteristic. The amount added is subject only to the designer's discretion. Incorporated into the bodice, skirt, pants, and sleeve sections, this fullness is held in control by gathering, tucking, pleating, flaring, and so on. It is further controlled by stitching, darts, or an appropriate adjacent garment section such as a band, yoke, collar, or cuff. Fitting standards may be used to evaluate each of these design techniques and control features regardless of their location or use in a design.

Darts

Fashion garments may feature darts that are straight or curved, and vertical, horizontal or diagonal in their positioning, such as the French or English darts. A dart or a dart-equivalent seam will be a smooth flowing line, whether it appears on the body as a straight or curved line. A single dart will point to the crown of the body bulge. Two or more darts may be placed equidistant from the bulge, or one may point to the crown while the second (usually smaller and shorter) lies nearer the outer area. Two or more narrow darts are more attractive on a large body curve than is a single large dart.

The dart should extend to within 1 to 1½ inches from the crown of the body bulge—for example, about 1 inch from the bust tip. The darts should give a feeling of buoyancy, moving the eye upward. They should not repeat or otherwise emphasize negative aspects of the body. All other standards that apply to basic darts also apply to fashion darts and their equivalents (see Figure 3.18).

✓ REALITY CHECK

Elastic is often criticized as being too bulky for use in a waistband, assuming it adds thickness. It doesn't have to. Light to medium-weight fabric responds well with narrow to medium-width elastic inserted into a back waist-band. Elastic is an excellent means of controlling the fullness to allow for an attractive and comfortable fit. Elastic is essential in fitting someone with a high hip curve.

✓ REALITY CHECK

Quality construction (sewing) and pressing are crucial factors in creating a fabulous fit. Poor-quality construction leads to poor fit. Seams or darts that pucker or twist because of the way they've been sewn draw attention to themselves and to the area of the body where they lie. The proper choice of seam types, proper interfacing, stay, and lining fabric, and proper reinforcement at points of strain affect the retention of fit. Poor-quality pressing can ruin the fit of the finest clothes. Depending on the fiber and fabric, incorrect pressing can shrink or stretch and wrinkle areas meant to be flat, or flatten areas meant to be shaped. A well-pressed garment maintains the original shape and is free of wrinkles, folds, bubbles, puckers, or pleats not intended in the design.



FIGURE 3.18 Darts and dart equivalents

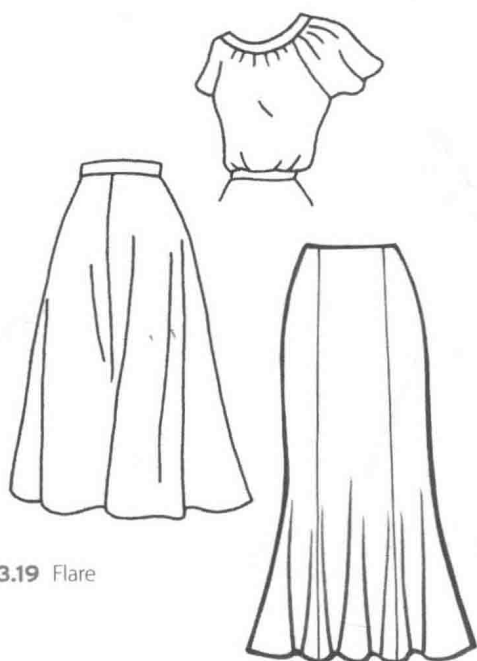


FIGURE 3.19 Flare

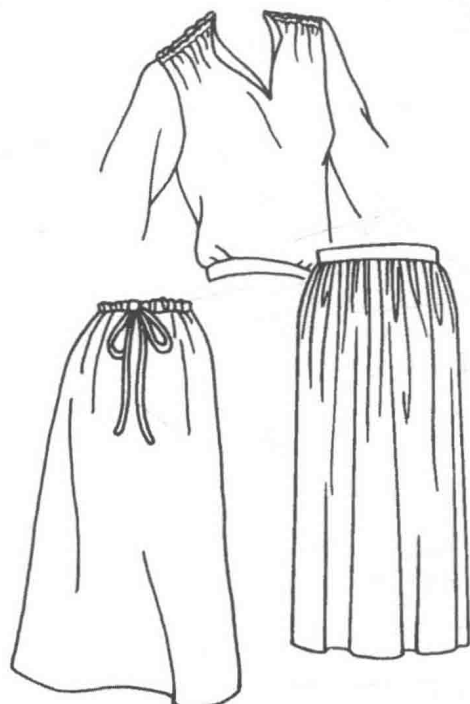


FIGURE 3.20 Straight-hanging gathers

Flare

Flare is essentially a dart equivalent, simply repositioned (see Figure 3.19). Flared garment sections are created by adding fullness into the pattern edge that hangs free on the garment, such as a hem. As flare is introduced to a garment section, the opposite edge also changes in shape. Grainline position on the pattern can be used to determine the location of flare in the garment section. Flare will occur only at a bias area of fabric. To create a more pleasing appearance, flare may be repositioned within a garment section by changing the angle of the grain on the pattern.

Flared areas should flow over the body and hang freely rather than protrude. Fabric at or above the flared area should fit in a relaxed manner. Sufficient basic ease should be present to prevent strain on the stitching. The amount of flare should be proportional to the body area. On a symmetrical design, the corresponding ripples on each side of the garment should be equal in size and begin at the same height.

A flared garment unit can be divided into panels or gores that vertically divide the body area into sections. The width of the center section is generally the same as all other sections or narrower, producing a pleasing space relationship across the body.

Gathers

Converting stitched darts to ease, gathers, open-end darts, or unpressed pleats may improve both the appearance and fit of the garment on some figures. Gathers are tiny folds that fall vertically or radiate outward from a designated point. Their purpose is to provide soft fullness to an area.

Gathers that lie against the body should fall softly over any body bulge with no large smooth areas or any appearance of tension (see Figure 3.20). When gathers are controlled from the top only, they should fall free in vertical folds. When a gathered area is controlled at both the upper and lower edges, there should be sufficient lengthwise ease to allow for body movement. Again, there should be no tension on the fabric.

Gathers that extend away from the body, such as in puffed sleeves, peasant or bishop sleeves, a blouson bodice, or a harem skirt or pants, require additional length for puffing or blousing (see Figure 3.21). This additional length may be added to the top or bottom of the garments, or both, and allows the garment to stand away from the body. The amount of added length, the contour of the edge, the ratio of gathered area to the flat control area, and the direction the gathered seam is turned determine the character of the additional fabric. The gathered area of a garment requires little pressing, while the control area requires careful pressing. All these factors need to be taken into consideration when creating the illusions about the body underneath.

Pleats, Tucks, Vents, and Slits

Pleats or tucks can be controlled by stitching along part or all of their length (see Figure 3.22). The pleat or tuck should

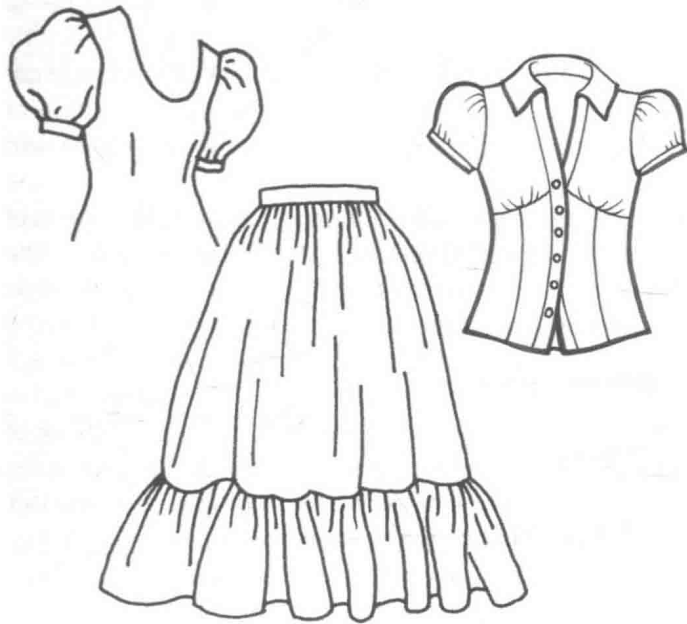


FIGURE 3.21 Full-rounded gathers



FIGURE 3.23 Drape



FIGURE 3.22 Pleats and tucks

lie smoothly against the body without tension or excess fullness in the controlled area. The unstitched portion of a pleat should hang flat when the body is in a standing position. Sufficient ease should be allowed in the garment to permit the pleats, vents, and slits to hang in a closed position, except when the person is walking or seated.

Unstitched pleats should hang free and fold in place without gaping or opening when the person is standing. When placed over a body bulge, such as the bust, an inner control panel, stay, or lining is required. The fit of pin-tucks

is evaluated like gathers when stitched only part of their length. Accordion and umbrella pleats are evaluated like flared garment sections.

Drape

The success and fit of a draped area depends on the correct amount of tension introduced into pliable fabric that is gathered, folded, or flared on the bias (see Figure 3.23). When an area of soft fabric is concentrated into gathers or folds at a given point, the lack of ease within the area creates the desirable amount of tension and causes the folds to radiate outward to the garment area diagonally opposite.

Only actual fitting of draped designs on the body during construction can ensure a custom fit. The closeness of fit may vary slightly depending on the figure type, fabric characteristics, and garment use. The shape of the pattern edge for draped designs is unique. This edge must be strictly maintained during construction. Garments must be cut accurately and matched with precision.

Collars

For fitting purposes, collars may be classified according to the way they stand or roll around the neckline: standing band, full roll, partial roll, or flat (see Figures 3.24 and 3.25).

The collar stand should fit smoothly against the back of the neck. The crease or roll line should be a smooth, continuous line. The stand of the collar should be in proportion to

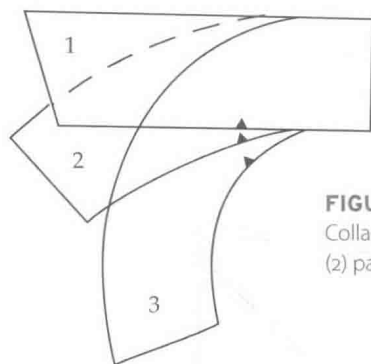


FIGURE 3.24 Comparison of Collar Neckline Curves: (1) full roll, (2) partial roll, and (3) flat

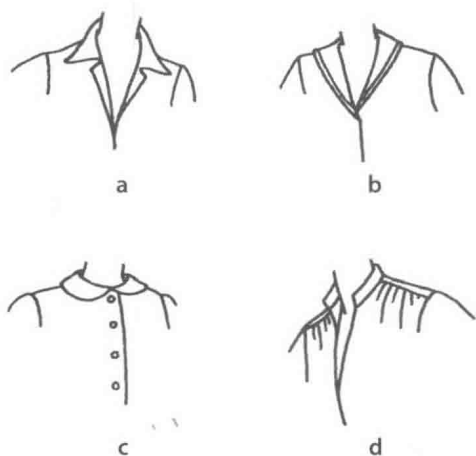


FIGURE 3.25 Collar types: (a) full roll, (b) partial roll, (c) flat, and (d) standing band

the length of the individual's neck. The outer edge of a collar should lie smoothly against the garment and should cover the seamline at the back of the garment neckline. The collar ends should lie symmetrically against the chest. The roll of a lapel should taper to the level of the top button or designated termination point. The collar and lapel should balance both horizontally and vertically on the body. Style edges and lapels should be in proportion to the body and to the garment areas on which they lie. Close-fitting collars should provide sufficient ease to lie comfortably around the neck.

When cutting out fabric for a rolled collar, the upper or outer layer of the collar and lapels should be cut slightly larger than the underlayers. During construction, the larger layer should be eased into place to prevent distortion of fabric, allowing the under collar and lapels to turn under and not be seen.

Variations in the slope of the shoulder will affect the fit of the collar (see Part Three). Changes in the curvature of the collar neckline seam may be required. If changes are made on the garment neckline or on the slope of the shoulderline during fitting, the collar also must be changed. Otherwise, it will not hug the neckline nor roll or ripple as designed. For example, on someone with uneven shoulders, the point of the collar will lie lower on the low shoulder unless the collar pattern is altered. Allowing this to occur will accent the lack of balance caused by the asymmetrical figure variation.

Pockets

Pockets may be applied to the garment surface, inserted into a slash, hidden in a seam, or designed as part of a yoke (see Figure 3.26). They may be functional, decorative, or both. They are a design detail that can be used to create a point of emphasis or to divert attention from a figure variation.

A garment must be fitted before pockets are applied. The marks for the position of the pocket are checked at the first fitting. Check placement and size of the pockets as they relate to body size, and garment balance, proportion, and scale.

Pockets should lie smoothly against the body unless designed to extend away from the body. If designed to extend away from the body, the line of the pocket should relate to the contour of the body. When placed over a body curve, the pocket should have sufficient ease to lie flat and smooth. The outer layer of lined patch pockets and pocket flaps should be cut slightly larger than the underlayers, then eased into place to prevent distortion of fabric and allow the upper layer to turn under and not be seen. There should be sufficient ease in the circumference of the garment to allow a vertical pocket opening to lie closed, or to prevent the outline of an interior pocket from being visible.



FIGURE 3.26 Pockets

STANDARDS FOR EVALUATING THE GARMENT

The fit of all construction details is evaluated in relation to the body sections or segments, and to the *breakpoints*, sometimes called checkpoints. Body breakpoints refer to those areas on the body where the body curvature changes in direction or angularity. They are transition points. Breakpoints include the angle at the neck base, shoulder tip, underarm crease, bust tip, waist, high or low hip curve, crotch, thigh, knee, ankle, elbow, and wrist (see Figures 3.27, 3.28, and 3.29).

Assuming excellent construction of the garment, there must be adequate ease in all areas. The shoulder, including the nearby neckline or attached collar, is the foundation for the entire garment. Clothes are designed to fit the shoulder

and flow smoothly over the body—over all breakpoints without wrinkles or bulges. When you squeeze the body between the breakpoints, as occurs with a tight-fitting bra, soft body tissue is pushed out above and/or below the squeeze point, drawing undue attention to the bulges.

Fit a jacket or coat over a garment or an outfit of the type that would usually be worn under it, with enough ease for comfortable movement without binding. When fitting an outfit, fit all second-layer pieces first and the third-layer jacket last. If a zip-out lining is to be included in an outerwear jacket or coat, fit it first with the lining attached. Insert it into the jacket or coat for final fitting.

In the case of ready-to-wear, do not get overly enthusiastic because of an eager sales person, a sale price, or the latest so-called “must have” of the season, allowing yourself to overlook poor fit. High standards pay off with good looks and longer wear life.

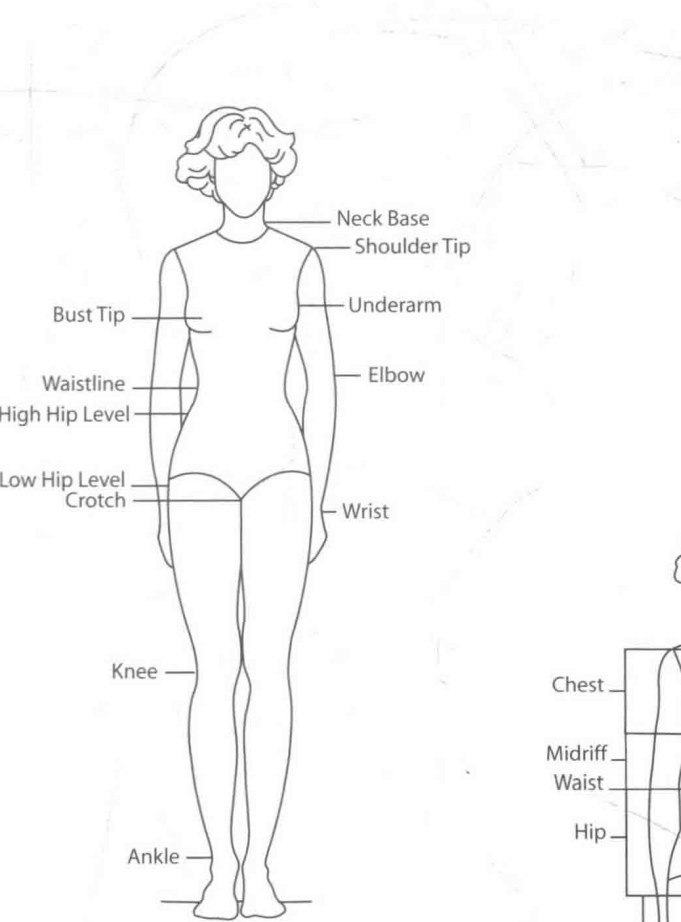


FIGURE 3.27 Body breakpoints

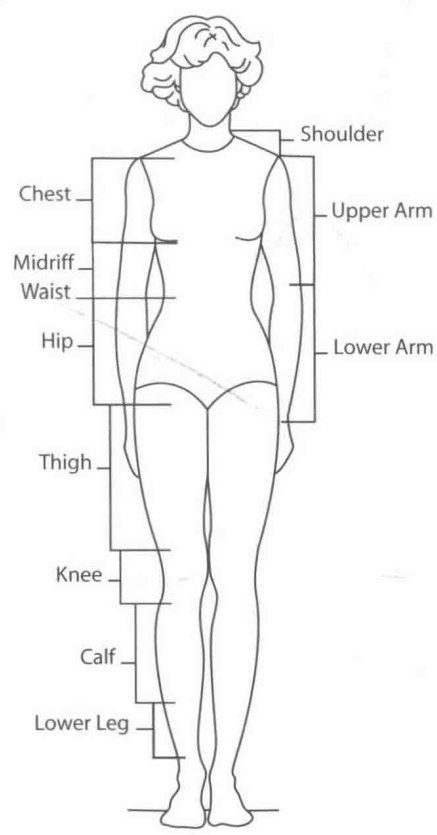


FIGURE 3.28 Body areas (front view)

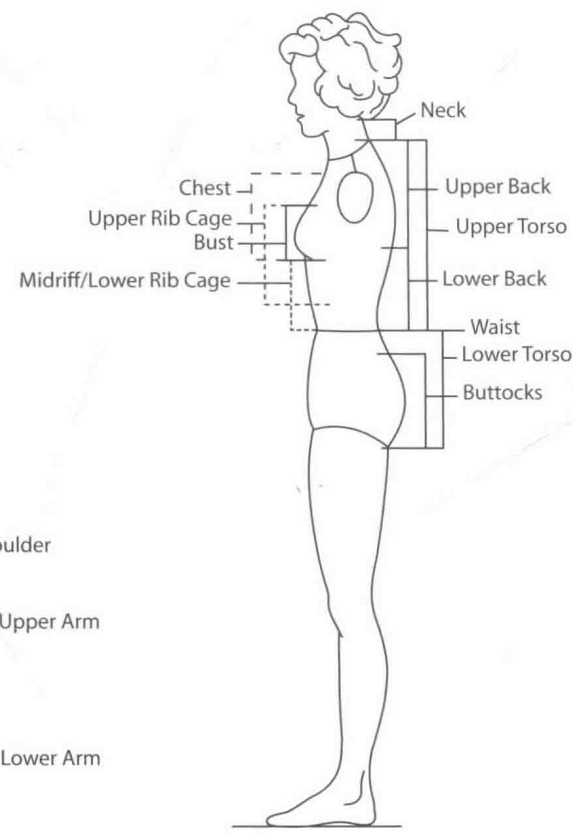


FIGURE 3.29 Body areas (side view)

STANDARDS OF FIT: CUSTOM SEWN AND READY-TO-WEAR CLOTHING

The following chart summarizes the standards of fit described in this chapter.

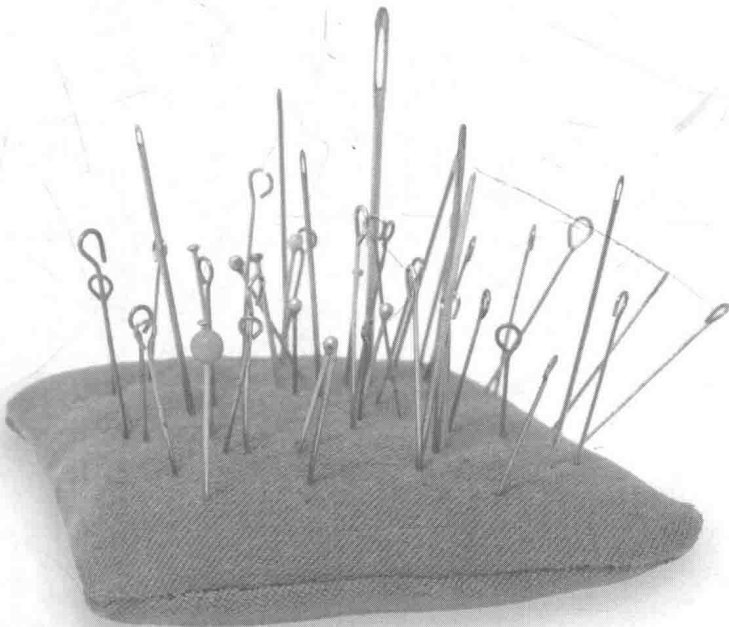
| Clothing Area or Type | Standards of Fit |
|-----------------------------|---|
| Underwear | <ul style="list-style-type: none"> is not visible bands and straps do not cut into the body or show through clothes |
| Neckline | <ul style="list-style-type: none"> fits around the curve at the base of the neck, unless designed to do otherwise does not cut into the neck, wrinkle, or gap a wide or lowered neckline lies flat and snug to the body |
| Collar or neckband | <ul style="list-style-type: none"> lies flat and fits the neck comfortably; fits snugly unless designed to do otherwise when buttoned at the neck, two fingers can fit easily into a shirt collar a suit collar reveals about ½ inch of a shirt collar at center back the outer edge of the suit collar just covers the neckline seam |
| Lapels | <ul style="list-style-type: none"> lie flat and symmetrical without gapping open do not curl or twist |
| Seams | <ul style="list-style-type: none"> lie flat and smooth without pulling, puckering, or twisting |
| Shoulder seams | <ul style="list-style-type: none"> lie in a straight line on top of the shoulder; appear to bisect the neck and shoulder end at the top of the shoulder tip bone or joint unless designed to do otherwise |
| Shoulder pads | <ul style="list-style-type: none"> are well placed and appear natural—not thick, large, or lumpy raglan-style shoulder pads are recommended for general purposes, creating a smoother transition into the curvature of the arm main purpose is as fitting tools, not fashion trends |
| Armhole seamlines (armscye) | <ul style="list-style-type: none"> cross the shoulders at the shoulder joint unless designed to do otherwise appear as smooth curves in line with the back arm crease a jacket armhole seam may extend ½ to 1 inch beyond the shoulder joint; a coat armhole seam may extend 1 to 1 ½ inches beyond |
| Armholes | <ul style="list-style-type: none"> are large enough to allow for easy movement without cutting into the arm, binding, or gapping the lowest underarm point lies 1 to 2 inches below the underarm (armpit) unless designed to do otherwise |
| Upper back | <ul style="list-style-type: none"> fabric lies smooth, without wrinkles or strain, at the armscye seam when arms are forward there is no horizontal wrinkle, bubble, or bulge below the collar |
| Darts | <ul style="list-style-type: none"> taper as they point toward and end about 1 to 1 ½ inches from the fullest part of the body curve being fitted there are no wrinkles or puckers, and no dimple at the dart tip the larger the curve, the larger (deeper) the dart must be to accommodate the curve, and vice versa |
| Center front and back seams | <ul style="list-style-type: none"> centered on the body and falling straight down, perpendicular to the floor do not shift or pull to the side |
| Closures | <ul style="list-style-type: none"> hang straight and smooth, without wrinkles or gapping across the chest, bust, back, abdomen, or hip area a front button closure needs a button positioned at bust or chest level, with all other buttons placed in a pleasing relationship |

| Clothing Area or Type | Standards of Fit |
|--|---|
| Side seams | <ul style="list-style-type: none"> • extend from the center of the underarm straight down to the center of the waist at the side • divide the body into pleasing proportions and do not shift or pull to the front or back • appear to intersect the waistline at a 90 degree angle |
| Lengthwise grain (vertical fabric threads) | <ul style="list-style-type: none"> • falls or hangs straight down the center front or center back, perpendicular to the floor, unless the fabric is cut on the bias (diagonal grain) • also hangs down the center of a sleeve above the elbow, and down the crease of pants, slacks, or trousers |
| Crosswise grain (horizontal fabric threads) | <ul style="list-style-type: none"> • parallel to the floor at the bust, upper back, waist, hip, upper arm, and hem unless cut on the bias (diagonal grain) |
| Set-in sleeve cap | <ul style="list-style-type: none"> • lies at the end of the shoulder and curves smoothly around the armhole, without drag lines, puckers, or wrinkles • fullness is evenly distributed, front and back |
| Sleeves | <ul style="list-style-type: none"> • large enough to lie smooth around the arm with about 1 ½ inches of ease; ease at the elbow is sufficient to allow the arm to bend without binding • elbow darts or fullness are centered over the end of the bone when the arm is bent upward from the elbow |
| Short sleeve length | <ul style="list-style-type: none"> • appears attractive in proportion to the chest or bust and to the total arm length, with sufficient ease allowed • one or two fingers can fit easily under a short sleeve hem • camp shirt-style sleeves are hemmed just above the bend in the elbow |
| Long sleeve length | <ul style="list-style-type: none"> • ends at the wrist bone when the arm is bent upward at the elbow; when arms are down at the sides, long sleeves hang no longer than the bend of the wrist at the top of the thumb • shirtsleeve cuff shows about ½ inch below a suit or sport jacket sleeve |
| Long sleeve cuffs | <ul style="list-style-type: none"> • fit snugly enough to maintain the drape of the sleeve, yet are loose enough to allow the arm to extend, generally ending at the wrist bone when the arm is bent upward at the elbow |
| Pockets | <ul style="list-style-type: none"> • lie closed and flat against the body unless styled to extend away • fit the hand |
| Waistbands and waisted dresses | <ul style="list-style-type: none"> • fit comfortably snug at the natural waistline when standing, yet remain comfortable when sitting • two fingers can slip easily inside a waistband • waistbands with elastic are sized to slide easily over the hip area |
| Gathers | <ul style="list-style-type: none"> • are tiny and evenly spaced, with no bulges or spaces • fall straight down or radiate evenly from a seamline |
| Vents, slits, pleats, and tucks | <ul style="list-style-type: none"> • hang straight to the hem, flat, closed, and smooth against the body when the person is standing; do not gap or pull open; open only with movement and when sitting |
| Zipper | <ul style="list-style-type: none"> • lie flat; stitching is straight and smooth, without puckers |
| Jackets | <ul style="list-style-type: none"> • suit jackets and sport coats are expected to cover the seat of men's pants; women's garments can similarly be proportioned to cover a proportionally larger abdomen, buttocks, or side thighs • when fastened, do not pull tight around the abdomen, hips, or thighs • fit loosely enough to ease comfortably over a shirt, blouse, or sweater without strain |
| Coats | <ul style="list-style-type: none"> • sleeves hang no longer than the bend of the wrist at the top of the thumb • fit loosely enough to ease comfortably over a jacket or suit worn underneath, without pulling across the back and shoulders |

| Clothing Area or Type | Standards of Fit |
|-----------------------------|--|
| Skirts | <ul style="list-style-type: none"> fit loosely enough for fabric to relax and lie smooth on the body; there is at least 2 to 3 inches of ease to prevent the skirt from "riding up" traditionally allow enough ease to "pinch an inch" on each side no horizontal fold or crease around the waist, below the waist at center back, or at the hip joint (break in the leg) appear to fall straight down below the abdomen and hipline, do not cup or curve under the abdomen, buttocks, or thighs |
| Pants, slacks, and trousers | <ul style="list-style-type: none"> fit smoothly over the abdomen, buttocks, and thighs, with 2 to 3 inches of ease do not sag, bag, nor hang noticeably below or cut up into the crotch area for slacks, there is adequate seat fullness and crotch length without wrinkles that radiate from the crotch area there is no horizontal fold around the waist or below the waist at center back pants should appear to fall straight down below the abdomen and hipline; they do not cup or curve under the abdomen, buttocks, or thighs |
| Linings | <ul style="list-style-type: none"> fit smoothly and comfortably loose without bulk or twist |
| Hems | <ul style="list-style-type: none"> form an even line all around and parallel to the floor, unless designed to do otherwise the folds of circular, flared, or draped skirts fall into place in an even line |
| Blouse and shirt hems | <ul style="list-style-type: none"> if intended to be tucked in, tops are longer, likely to the hip joint but not below the crotch |
| Skirt hems | <ul style="list-style-type: none"> do not end at the widest or fullest part of the calf; are in proportion to the entire figure and flatter the leg (Mid-calf length skirts are said to appear "dowdy" looking.) classic skirt lengths include middle of the knee and 2 to 2 ½ inches below the center of the knee, just above the curve at the top of the calf (This position is generally slimmer than mid-calf. Skirt lengths longer or shorter are considered fashion lengths or statements.) to appear appropriate and attractive, skirt length depends on the shape of the leg, the occasion, skirt style, fabric choice, and heel height of the shoe |
| Pant and trouser hems | <ul style="list-style-type: none"> in front, pants brush the top of the shoe in back, pants are hemmed to the top of the heel or taper slightly lower in back, unless designed to do otherwise |
| Coat hems | <ul style="list-style-type: none"> coat sleeves fit about 1 inch below the wrist bone when the elbow is bent upward extend past the trouser seat or below; hang about 1 inch longer than skirts for women |

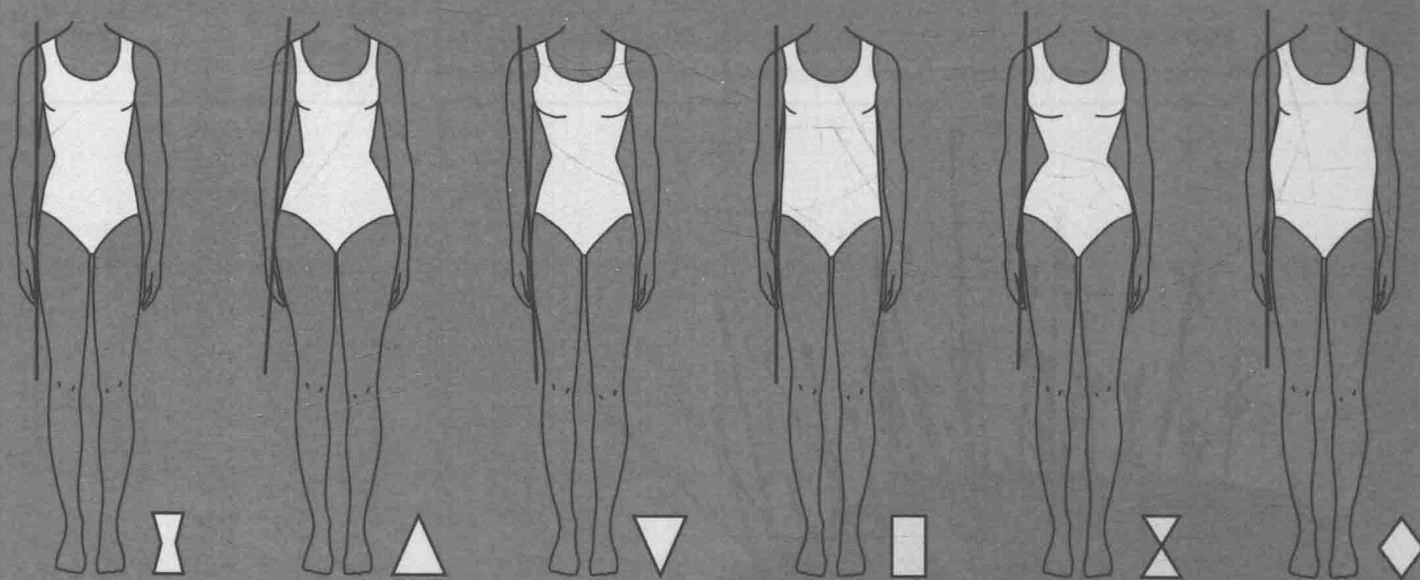
PART TWO

Get Set



Chapter 4

Alternative Methods of Figure Evaluation and Style Selection



Essential to an objective and effective figure evaluation is basic knowledge of body structure or anatomy—that three-dimensional form over which clothing must fit. People not involved in fashion sewing tend to think fashion design, style selection, pattern work, and sewing is easy—a soft science, so to speak. It's not. You might call it a matter of geometry over anatomy, and both are classified as among the hard sciences.

An individual's figure is similar to a standard figure insofar as it is a human figure. We all have a trunk or torso—the chest, referred to as the upper torso, and the pelvis, referred to as the lower torso. We all have a head and neck, two arms and two legs forming the appendages. We all vary, however, from the standard figure in one or more body areas in terms of height or length, width, depth, and circumference. Personal figure variations from the standard are the result of heredity, ethnic origin, growth patterns, and posture. Diet, disease, and injury, however, can influence or change the reality. Figure variations cause fitting problems in both ready-to-wear and custom clothing—and fitting problems *can* be solved as set forth in this text.

To determine personal figure variations, you must conduct an objective evaluation of the entire figure. An accurate awareness of figure variations will do the following:

- enable selection of clothing styles that accommodate the figure or body, balancing it and enhancing its appearance
- enable you to relate a fitting problem to its anatomical cause for correction
- alert you to the need for possible pattern adjustment and/or garment alteration
- save you effort, time, money, and frustration in shopping for fashion patterns and ready-to-wear clothing
- ensure that there is clothing in the closet that will fit and flatter—a fabulous wardrobe that really works

OVERCOME UNREALISTIC BODY IMAGE

Everyone has issues with their bodies. Everything we have ever heard, read, or experienced about our appearance throughout life contributes to the mental perception we have of our bodies. That perception is called “body image.”

Our body image is influenced by the perception and feedback we receive from

- family, peers, and other people
- the media, including TV, movies, and advertising
- the entertainment and fashion industries

We tend to accept everything we heard or read in our youth as truth—without question. As adults, we may or may not begin to question; however, the information continues to influence our body image and resulting self-image, which affects our level of self-acceptance, self-esteem, and self-confidence.

What does this have to do with fit? An inaccurate or negative body image can lead to the selection of clothing styles that expose or otherwise emphasize figure variations we'd really prefer to play down. As people respond negatively to our choices, the result is often self-consciousness, low self-confidence, and low self-esteem.

Prior to an objective figure evaluation, some people assume they have a pleasingly proportioned and balanced body; many others, however, believe they have awful figure flaws bordering on deformities. Neither assumption is realistic. We must make an effort to examine the beliefs and barriers that contribute to our body image and eliminate those that stand in the way of achieving a fabulous fit. We must endeavor to see the body or figure as it is, not as we might imagine or would like it to be.

To be effective, a figure evaluation must be objective and realistic. Standard, average, or ideal figure traits as well as figure variations must be recognized. This is a surprisingly difficult task for people who continue to feel dissatisfied with their individual body build, particularly in comparison to a statistical standard, average, or ideal.

Learning to recognize body areas that reflect the average and contribute to proportional balance is every bit as important as recognizing figure variations. Interestingly, if we were to look at our own bodies objectively, as if they were someone else's, we would discover that we are far less critical. When selecting styles for ourselves, it is necessary first to accept our bodies and figures as they are. Then, with a view to fitting the body as it is (rather than the body as we imagine it to be, or as we would like it to be), we can select the most appropriate styles and decide on any necessary pattern adjustments and clothing alterations that will effectively and artfully accommodate and camouflage or minimize figure variations as they bring the body into visual balance and harmony.

✓ REALITY CHECK

Clothing is generally designed with a standard body or figure in mind, is based on the statistical average of many figures, or more often, what someone considers an “ideal” figure with proportions, contours, symmetry, and posture that are considered perfect according to cultural norms. Standard figures vary, therefore, according to the designer, company, or country of origin.

A person's life cycle stage is an important consideration in deciding when to carry out a figure evaluation.

- Early teen years may be too soon for some, because they are too self-conscious; the exception could be the simple yardstick exercise (see the observation method of evaluation discussed below).
- Late teens or early twenties may be better for a complete figure evaluation as the body nears or reaches physical maturity. Even then, the number of figure variations checked may be shortened, depending on the interest of the individual being evaluated.
- Adults, skilled in the art of fashion sewing, benefit from a complete evaluation as it will relate directly to custom fitting experiences.
- Child-bearing can be expected to affect a woman's body, as both bone structure and body weight may change to some degree.
- Body metabolism may slow down by middle age, leading to increased weight and a larger shape.
- Menopause, including pre- and post-menopause, is accompanied by hormonal changes that also affect weight.
- Postural changes may occur with the aging process. (See Figure 4.1.)

General figure type may not change significantly with large changes in weight. Inherited bone structure, proportional body lengths, and specific areas of weight distribution remain essentially the same regardless of weight. Circumferences over the whole body may be increased or reduced similarly. With weight gain or loss, the tubular and oval/rounded figure types may be assumed to experience the greatest change in general figure type, while in reality, some individuals retain the same figure type, regardless. Also, don't assume that someone who carries a lot of weight necessarily has an oval or rounded figure type. With the exception of the tubular figure type, it's possible the person may be any of the other figure types. (See Figure 4.2.)

Alternative Methods of Figure Evaluation

Methods of evaluating the figure vary depending on the situation, equipment, and assistance available, and on the goal to be accomplished. It is essential that the person being fitted not wear restrictive or bulky clothing during the figure evaluation as it compacts or distorts the natural body shape. For example, jeans shouldn't be worn because the thick flat-felled seam around the high hip level constricts that body curve, making it nearly impossible to see or feel. (For a discussion of appropriate undergarments to wear for a fitting, see Chapter 1.)

Identify the natural waistline and neckline before beginning a figure evaluation.



FIGURE 4.1 An extremely rounded upper back, with no dowager curve at the base of the neck. Note the 6-inch rise in the jacket hem at center back. Yoke-style shirts and jackets are recommended to facilitate needed length alteration, allowing the hem to hang evenly.



FIGURE 4.2 This figure is heavier than the average ideal weight range. Nonetheless, it is not considered oval or rounded, but triangular in shape.

- Tie a narrow (1/4-inch) elastic comfortably around the midsection—not tightly.
- Wiggle around. The elastic will automatically migrate to the natural waistline.
- Place another 1/4-inch elastic or short narrow chain necklace around the neck.
- Roll the head around, side to side, front and back—the elastic will automatically position itself at the natural neckline side to side.

Of the alternative methods of figure evaluation listed below, the last three also serve as methods of fitting (see Chapter 5). With each method, compare, determine, and list the figure variations that appear to be present, as well as the composite figure type.

Observe the Body

This method requires an eye for detail and an objective mindset. It also requires a knowledge of standard averages—of what you're looking for. If you don't know what you're looking for, you won't know how the body you're looking at compares. This knowledge comes with study, observation, and experience.



FIGURE 4.3a Checking for weight deposit typical of a wider upper back, but not present on this figure.



FIGURE 4.3b Experienced hands can feel the difference between proportionally longer, average, and shorter shoulder joints.

Hands-on experience is the very best, as you not only see the body contours, but feel them under your hands. Gradually, you get so you can close your eyes, yet recognize the presence of a specific figure variation beneath your hands. It's a never-ending learning experience and each individual presents a different set of variations (see Figure 4.3a and b).

Unless already experienced, allow yourself a half hour to carry out a short-form figure evaluation (for 30 to 40 figure variations), and an hour or more to accomplish a complete or long-form figure evaluation (for about 70 figure variations).

- Observe front, side, and back views of the figure in a full-length mirror.
- Compare each area of the body as it relates to another and to the whole, or total body height and width. Examine body breakpoints, inward and outward.
- Compare specific traits about the figure to the variety of figure variations discussed and illustrated in this chapter and in Part Three.

✓ REALITY CHECK

It needs to be said that many people no longer know where their waist really is. Having gotten used to wearing low-rider pants over several years, many people think that where their low-rider pants sit is their waist. This is not generally so. Your waist is at the level where you bend, side-to-side and forward or backward. Also, the navel is not generally positioned at the waist. It is generally positioned an inch or so below the waist. The whole idea behind low-rider pants is that they don't have to fit anyone at any specific place. Depending on styling, low-rider pants sit at the widest point below the waist. Until they are tried on, it isn't obvious where they will sit. Experience shows that with time, many bodies develop two indentations in the waist-hip area—one at the waist and another below, at whatever level the individuals wear their pants, tightly cinched with a belt. Depending on the garment, the two indentations conflict with one another, making it difficult to impossible to achieve a harmonious, proportional fit.



FIGURE 4.4 Use customized forms for recording figure variations as they are identified during an evaluation.

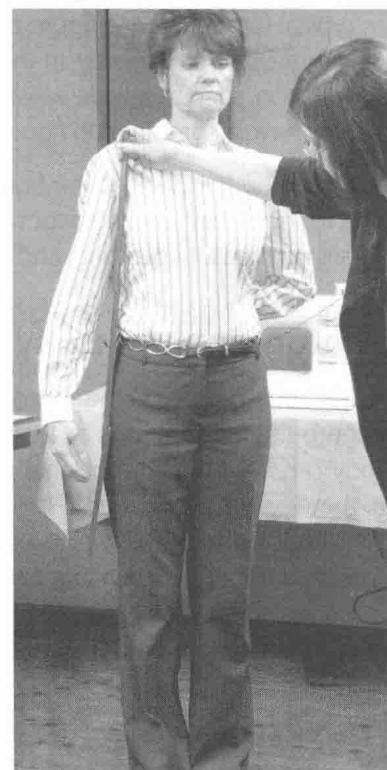


FIGURE 4.5 Use a yardstick to visually confirm general figure type easily, in this case, a triangular figure type.

- Record your observations as you go along, using an appropriate form (see Figure 4.4).
- As the final step of any figure evaluation, use a yardstick to identify the general figure type (see Figure 4.5). At the side of the body, line up the yardstick between the tip of the shoulder bone and the dominant curve—be it high, medium, or low hip level, bust level, or waist level (see Figure 4.6). Check both sides of the body for asymmetry.

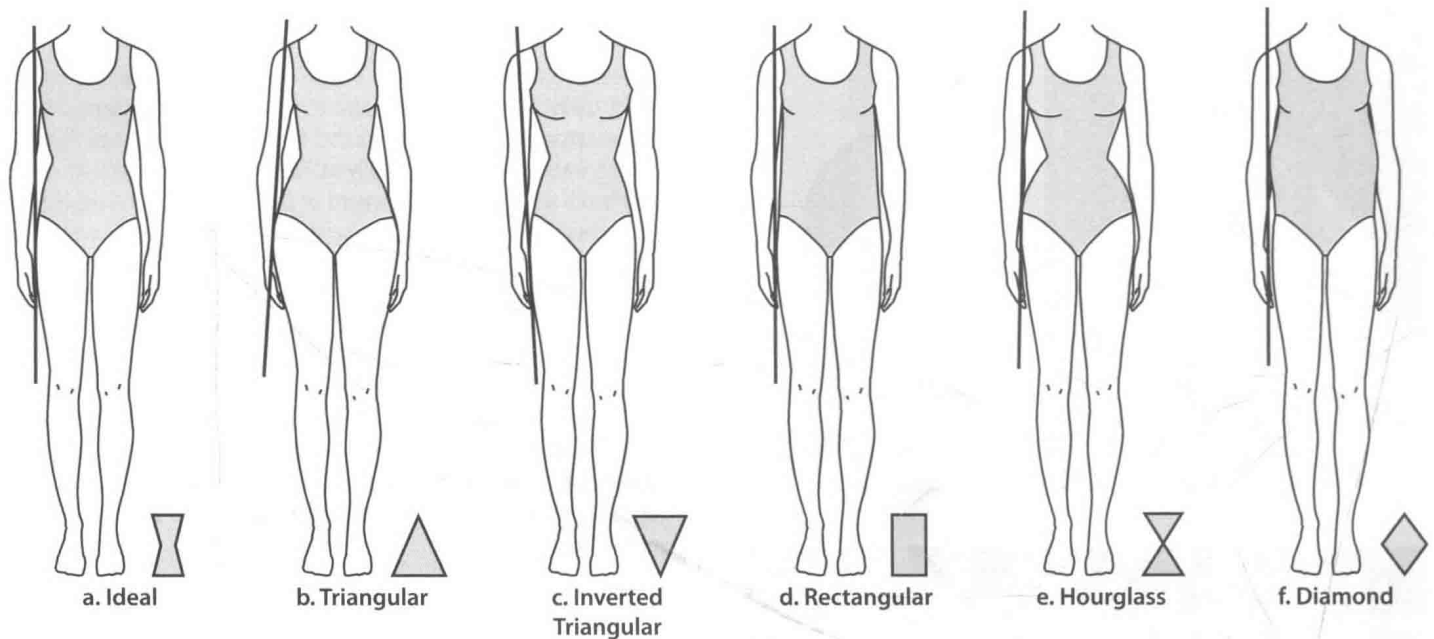


Figure 4.6 (a–f) Correctly positioned, a yardstick reveals general figure types. Check both sides for symmetry.

- To reinforce your conclusions, review the figure variations typical for the general figure type. They should correlate, but maybe not perfectly. In the case of an atypical figure variation, such as a wide waist or full bust, the individual may have a combination figure type.

Once you know what the figure variations are, you can refer to the corresponding pages in Part Three of this text for details on measuring, fitting, and alteration.

Photograph the Body

Ideally, the person being photographed should wear a smooth-fitting body suit or leotard. A photograph of the body can be a terrific tool, enabling a more objective look at the figure—simply because you're not looking right at the person in front of you. You are able to feel somewhat detached from the individual because it's only a flat photo you're looking at (see Figure 4.7), a photo that has captured the shape of the unique figure. Today's digital cameras are perfect for the job.

- Photograph the front, back, and side views of the full-length figure. Enlarged 5-by-7-inch prints are ideal to work with. You can obscure the face to maintain anonymity if you prefer.
- Place a tiny bullet point at each body breakpoint, inward and outward. Using a ruler, draw horizontal lines connecting corresponding body breakpoints, comparing for symmetry.
- Evaluate the body you see in the photo in relation to the discussion and illustrations in this chapter and in Part Three.



FIGURE 4.7 This photographic figure evaluation reveals an inverted triangular figure with slightly asymmetrical shoulders.

- Using a colored pencil, draw the traditional positions for "eight head lengths" or body quarters and compare to the body breakpoints. (Body proportions are discussed below, under the heading "Proportional Body Areas.")
- Using a different-colored pencil and ruler, connect the shoulder points, with dominant hip curve point and compare the angle of these lines to determine figure type.

If fashion sewing is to follow, you still need to apply a fitting method (see Chapter 5).

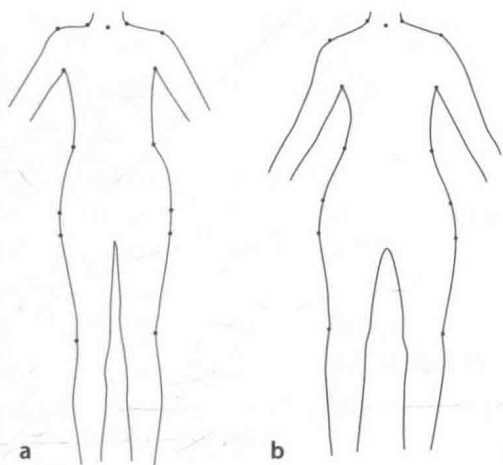


FIGURE 4.8a Body tracing used for evaluation reveals asymmetrical high shoulder on the individual's right side with fuller high hip curve on the left. There is good vertical balance between upper and lower body.

FIGURE 4.8b Body tracing used for evaluation reveals slightly higher shoulder on the individual's left side, proportionally wide hips, and a triangular figure type.

Trace the Body

Like a photograph, a body tracing allows a relatively objective look at the body. In this method, the full-length body silhouette is traced, both front *and* side views, onto paper.

- You need two lengths of paper a few inches longer than the height of the body to be traced. Butcher paper, or another firm white paper will serve this purpose well.
- Fold one length of the paper in half lengthwise and crease it to position the center of the body. Unfold.
- Use masking tape to secure the paper to a wall or door, preferably in a room without carpet. Then crease the paper at the bottom, even with the floor.
- The person being traced faces forward, standing with feet together, buttocks against the paper, and head and body centered along the crease line. The head is held level, eyes looking straight ahead. Shoulders are relaxed and the arms hang down in a natural manner.
- Position a marking pen close to the outside edge of the body and perpendicular to the paper, then carefully trace the contours of the body silhouette.
- Place a bullet point at each body breakpoint, inward and outward. The shoulder breakpoint is the tip end of the shoulder bone.
- Using another length of paper, have the person stand sideways to the paper, shoulders and arms relaxed, head level. Trace the side view or profile.
- When finished, draw horizontal lines connecting corresponding body breakpoints (see Figure 4.8a and b).

While the tracing itself is completed fairly quickly, your evaluation of the tracing still takes time. Compare the traced

views to the variety of figures illustrated and discussed in this chapter and in Part Three of this text. For comparison, the body tracing can be folded in the traditional "eight head lengths" or body quarters. Using a colored pencil and ruler, connect the shoulder points with dominant hip curve point. Compare the angle of these lines to determine figure type. If fashion sewing is to follow, you still need to apply a fitting method (see Chapter 5).

Ribbon Test

This method makes use of gift wrapping ribbon to identify a variety of body lengths for comparison.

You will need ribbon cut into four or five lengths as follows:

- a length equal to the total height (100 percent of the height)
- a length equal to $\frac{1}{2}$ (50 percent) of the height
- a length equal to $\frac{1}{4}$ (25 percent) of the height
- a length equal to $\frac{1}{8}$ (12.5 percent) of the height
- an optional length equal to $\frac{1}{16}$ (6.25 percent) of the height
- Holding each length of ribbon up to the body, one by one, compare it to appropriate parts of the body. (See a list of standard ideal body divisions in this chapter in the section on Proportional Body Areas, page 73.)

This is an interesting little exercise, but yields information about proportional divisions only. Another means is needed to evaluate body contours.

Measuring the Body by Laser Scanner

This method requires cutting-edge technology—a booth set up with surface sensors (see Figure 4.9) that scan the body. The scanner creates a three-dimensional model of

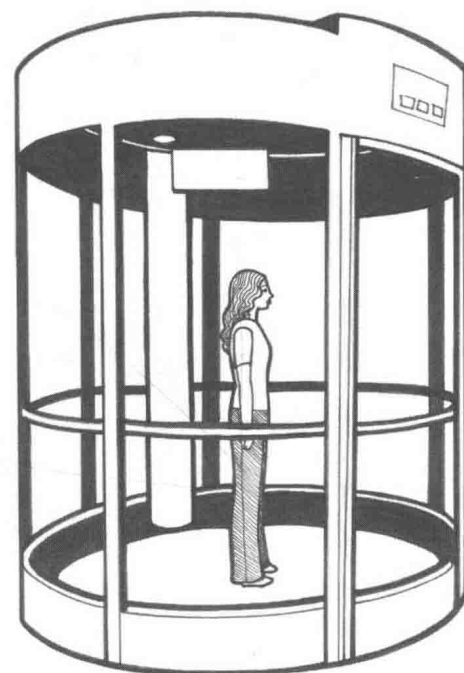


FIGURE 4.9 This drawing illustrates a laser scanner booth set up to measure the body discreetly.

the body, and software then converts the images (a series of dense map points across the body) into measurements. Measurements may be used independently, or they can be transmitted to a pattern computer-assisted design (CAD) system and used to alter a pattern or cut a garment automatically. Think of it—made-to-measure apparel on demand. While still in its infancy, the process is continually improving. Some programs or systems are sure to be better than others. As a consumer, you must do your homework and choose carefully before you invest in the service. Even so, remember that you only get a set of measurements and still must evaluate what those measurements mean in terms of fitting and alteration of the pattern or garment.

Measuring the Body by Tape Measure

For this method, it is preferable for the person being fitted to wear well-fitted undergarments as it tends to be the least obtrusive or constricting. A high quality measuring tape will facilitate the procedure. Poor quality tapes tend to stretch.

- First, measure the body (see Figures 4.10 and 4.11).
- Take vertical measurements relatively taut, and horizontal measurements relatively snug. Record the measurements. In a later process, you will add the minimum basic wearing ease where the body moves or expands—chest or bust and back, waist, abdomen, and buttocks, hip and thigh, and upper arm. Experience reveals the need for less ease than recommended in years past.
- Then measure a tissue pattern in corresponding locations and compare. Differences in body measurements as compared to pattern measurements identify specific figure traits that vary from the standard and require alteration (see Chapter 5 and Part Three).



FIGURE 4.10 Body breakpoints and levels are identified to facilitate accurate measurements.

Trial Fitting Pattern

This method requires a commercial pattern and plenty of time to work.

- First, reinforce the paper pattern with lightweight fusible interfacing dry-ironed onto the back of the pattern. This will help to prevent tearing the pattern when it is tried on.
- Trim the pattern pieces and pin them together as though they were a garment.
- Carefully put the pinned pattern on the body to check the fit. Pin-fit the pattern. Areas of the body that do not fit the trial pattern identify specific figure traits that vary from the standard used in the pattern (see Chapter 5).

Converting pin-fit pattern adjustments to a flat-pattern state for cutting or making a sloper demands great care and must be done very accurately (see Chapter 5 for details).

Trial Fitting Garment

This method requires real dedication and time, a pattern and fabric, and a careful hand at the sewing machine. Only simple straight stitching is needed, but it must be done very accurately.

- First, cut the tissue pattern out of medium-weight, firmly woven fabric such as muslin or gingham check.
- Mark the fabric as instructed in Chapter 5.
- Construct the trial garment.
- Put the trial garment on the body to check the fit (see Figure 4.12.) Pin-fit the trial garment as needed (see illustrations in Part Three of this text). Again, areas of the body that do not fit the trial garment identify specific figure



FIGURE 4.11 A fitting band tends to settle into the actual waist level for an accurate measurement.



FIGURE 4.12 Making adjustments at waist level in a trial fitting garment

traits that vary from the standard used in the garment pattern (see Chapter 5).

- Carry out the needed adjustments to the fitting garment.
- Carefully transfer garment adjustments to the flat pattern using methods illustrated in Part Three of this text.

Stitching pinned adjustments into the fabric requires great care. Transferring adjustments from the trial fitting garment to the flat tissue paper also demands great care and must be done perfectly (see Chapter 5 for more details).

WHERE TO BEGIN THE EVALUATION

You can begin evaluating the figure at the neck and move down the body, in a natural, continuous direction. It is often thought that the eye should not jump back and forth to various body areas, but should proceed smoothly down the figure. Experience has taught the authors that different approaches with the various methods has merit (see Chapter 5). Whatever your approach, observe front, back, and side views repeatedly to detect all figure variations present. It is certainly possible that as you notice one variation, you miss something else. Multiple turns or views are essential.

- Make note of height and weight.
- Determine the general body frame or bone structure in relation to height and weight. Body frame can be small, medium, or large.
- Evaluate the proportional relationship of each area, front and back and side to side, to the previous area and to the whole.
- Identify figure areas that may be larger or longer, smaller or shorter than the average or ideal—body length, arm length, hip width, bust, and buttocks, and so forth.
- Observe body conformation. You can determine the degree of angularity or curvature by the comparative amount and distribution of body weight.
- Identify specific variations that may influence overall garment appearance—angular hip bones, protruding abdomen, shallow chest, and so forth. If you observe a variation in one area, examine other areas of the figure for a corresponding or related variation such as rounded upper back and resulting shallow chest or recessed collarbone, prominent shoulder blade—on one side or both, and a high left shoulder in combination with a high right hip. The latter two examples likely relate to scoliosis, a condition of the backbone.
- Identify postural type, as posture influences the alignment of the body frame and body parts relative to one another.

Every body is unique. Establish an accurate mental image of the figure and posture. This will alert you to the need for selection of appropriate clothing styles, fitting, and alteration procedures to achieve a fabulous fit.

CHARACTERISTIC DIFFERENCES AMONG FIGURES

As you evaluate a figure or body, you will discover there are seven general ways in which all bodies vary from one another. These include differences in height, bone structure, weight, proportional body areas, contour or weight distribution, symmetry, and posture. These characteristics are interrelated as each affects the others. The genes we inherit determine our height, bone size or structure, proportional areas, and the pattern of weight distribution. They remain generally the same or constant throughout life. Weight, symmetry, and specific contours can change to some extent throughout life, depending on diet, exercise, and posture. Foundation undergarments (such as body shapers) can mold body contours pleasingly and comfortably if well selected. Unhealthy lifestyle factors such as smoking and excessive alcohol consumption, lack of sleep, extreme sports, and continual snacking can take a negative toll on the body.

Height, Weight, and Bone Structure

As reported by the U.S. Department of Health and Human Services in 2004, between the early 1960s and 2002, average height has increased approximately 1 inch for most ages for both men and women. The average height for women in the United States is 5 feet 4 inches. The average height for men in the United States is 5 feet 9 inches.

The following are general height categories as related to weight tables:

| Category | Height |
|----------------|------------------------------------|
| Shorter/Petite | under 5 feet 4 inches |
| Medium/Average | 5 feet 4 inches to 5 feet 7 inches |
| Taller | over 5 feet 7 inches |

Height influences proportion and scale in clothing design. Simply said, shorter individuals need to scale down their clothes so that garment seamlines and hemlines lie in proportionally the same place they do on taller individuals—not longer. So they don't overwhelm the shorter figure, fabric weights need to be light to medium-weight—not heavyweight fabric. Taller individuals easily wear medium- to larger-scale clothing and a greater variety of fabric weights. Pattern companies have created "petitable" patterns that can be shortened in proportional areas as needed. Some clothing manufacturers, but not all, put out petite-sized ready-to-wear clothing.

Also reported by the U.S. Department of Health and Human Services, both men and women gained on average more than 24 pounds between the early 1960s and 2002. The average weight of men aged 20 years and over is almost 190 pounds; the average weight for women is 163 pounds. When the subject of being overweight or underweight comes up, one might wonder over or under what weight? To answer that question, we turn to survey results carried out by the Metropolitan Life Insurance Company, the U.S. military, and the U.S. Department of Health and Human Services.

Traditionally, average/ideal weight is determined in relation to the size of the skeletal bone structure or body frame. The bone size was determined by wrist circumference. (See related discussion in *Fabulous Fit*, pages 20–22.) Recently, however, the Metropolitan Life Insurance company has published a new approach based on elbow breadth.

We can determine an individual's ideal weight range by measuring the elbow breadth. To do this, have the subject extend an arm in front, palm up. Then, bend the arm at the elbow, with the forearm raised upward and the palm of the hand facing the subject. Place the thumb and index finger of the other hand on the two prominent bones on either side of the elbow. Using a ruler, measure the space between the fingers. Compare the elbow breadth measurement with the Metropolitan Life elbow breadth chart below.

| Height | Small Frame | Medium Frame | Large Frame |
|-------------------------------------|----------------------|-------------------|----------------------|
| 4 feet 10 inches to 5 feet 3 inches | less than 2 ¼ inches | 2 ¼ to 2 ½ inches | more than 2 ½ inches |
| 5 feet 4 inches to 5 feet 11 inches | less than 2 ¾ inches | 2 ¾ to 3 inches | more than 3 inches |
| 6 feet | less than 2 ½ inches | 2 ½ to 2 ¾ inches | more than 2 ¾ inches |

Next, find your height on the Metropolitan Life weight-range chart. Follow across to locate your body frame type. Your weight should fall somewhere between the ideal weight range given on the chart. If these weights seem a little heavy, realize they are based on women ages 25 to 29 wearing 1-inch heels and three pounds of clothing, with muscles in top condition. Lower the range by five pounds if muscles are flaccid.

| | | Weight Chart | | |
|--------|--------|--------------|-------------|------------|
| Height | | Small Bone | Medium Bone | Large Bone |
| Feet | Inches | Frame | Frame | Frame |
| 4 | 10 | 102–111 | 109–121 | 118–131 |
| 4 | 11 | 103–113 | 111–123 | 120–134 |
| 5 | 0 | 104–115 | 113–126 | 122–137 |
| 5 | 1 | 106–118 | 115–129 | 125–140 |
| 5 | 2 | 108–121 | 118–132 | 128–143 |
| 5 | 3 | 111–124 | 121–135 | 131–147 |
| 5 | 4 | 114–127 | 124–138 | 134–151 |
| 5 | 5 | 117–130 | 127–141 | 137–155 |
| 5 | 6 | 120–133 | 130–144 | 140–159 |
| 5 | 7 | 123–136 | 133–147 | 143–163 |
| 5 | 8 | 126–139 | 136–150 | 146–167 |
| 5 | 9 | 129–142 | 139–153 | 149–170 |
| 5 | 10 | 132–145 | 142–156 | 152–173 |
| 5 | 11 | 135–148 | 145–159 | 155–176 |
| 6 | 0 | 138–151 | 148–162 | 158–179 |

Courtesy of Metropolitan Life Insurance Company

If weight varies noticeably from the average/ideal, the underweight individual is generally less limited than the overweight individual in the selection of clothing. A thin figure is less obvious beneath attractive and well-fitted clothing. The variety of styles available is larger. There is also the possibility of layering clothing to provide the appearance of added weight. However, weight loss can be carried to an extreme, and a gaunt, emaciated appearance is generally considered unattractive—even unhealthy. In such cases, nutritional intake should be examined; health may be affected by poor nutrition, posture may become

slumped or permanently impaired, and a poor fit in clothing will result.

Coupled with good muscle tone and posture, excess weight that is evenly distributed over the body frame may require only a change in garment or pattern size. Excess weight that is distributed unevenly may require several additional fitting adjustments and style selection becomes more limited. The strain from excess weight can lead to a breakdown of muscle tissue and support in the arms, chest, abdomen, buttocks, and thighs. Correct posture is difficult to maintain when the figure is overweight because of the increased effort required to maintain an erect alignment. The weight is not balanced over both feet from front to back. As the body parts are forced out of alignment, figure variations are introduced and fitting problems increase. Weight loss may eliminate some or all of these figure variations.

Proportional Body Areas

Proportion is defined as the relationship of each part of the body compared to every other part and to the relationship of each part to the total height and mass of the body (see also Chapter 2). The goal is to achieve proportional areas that are harmonious or pleasing to look at in length and width, one part as compared to another. Body breakpoints identify proportional areas for comparison—points where the body silhouette changes in direction and creates an inward angle at the narrowest point such as at the waist, or an outward angle at the widest point such as the outward curve of the hips. Breakpoints are often synonymous with body joints—shoulder joint, elbow joint, hip joint, knee joint, and so on. With this in mind, we can discuss proportion in terms of vertical proportions and horizontal proportions.

Vertical proportions describe the area from neck to shoulders as one lengthwise or vertical proportional area. Back-neck to waist is one example and bust to waist is another. The length of these areas can be compared to one another, to the entire upper body, or to total height.

Using the shoulder, elbow, and wrist joints as breakpoints, the upper arm from shoulder to elbow can be compared to the lower arm from elbow to wrist, and the entire arm can be compared to the entire upper body or to total height. Using the hip joint at center as a breakpoint (see illustration in Chapter 5), the head plus upper torso length can be compared to total leg length.

Classic Greek vertical proportions are expressed in *ratios* and have been considered ideal in Western cultures for centuries. Ideal body proportions are expressed in a comparative *ratio* of 2:3. That is, the total body height can be divided into five equal parts, ideally with two parts or sections from head to waist and three parts from waist to feet (see Figure 4.13). Few people fit this ideal. In theory, total body height divides into five equal parts or sections, with two sections above the waist and three sections below for excellent vertical balance. In reality, this figure does not conform. The top two fifths fall below the waist.

In comparison to the ideal, this figure is short in the torso and short in the legs.

Vertical proportions are often expressed in *fractional* amounts. Standard or average/ideal proportions generally suggest one-half the total body length is above the hip joint and one-half below (see Figure 4.14). In theory, the elbow joint divides the arm into halves, with the elbow tip at about waist level. The knee joint divides the leg into halves.

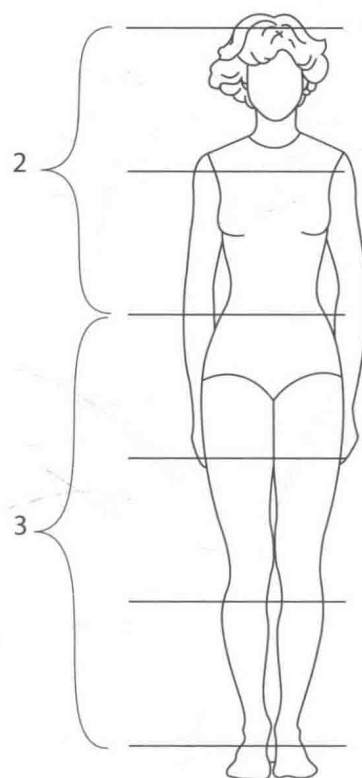


FIGURE 4.13 Ideal vertical proportions in ratios—figure does not conform

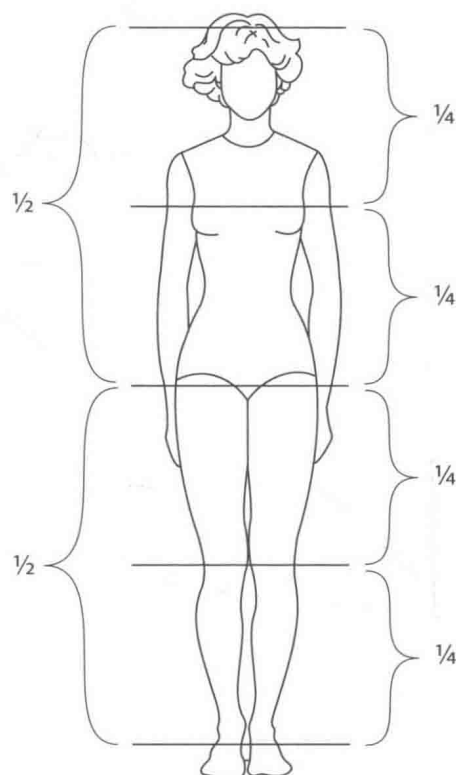


FIGURE 4.14 Ideal vertical proportions in fractions—figure conforms

The body can also be divided into quarters, the upper first quarter of the body extending from the top of the head to the underarm. In theory, the second quarter extends from the underarm to the hip joint. The third quarter extends from the hip joint to the knee joint, and the fourth quarter begins at the knees and ends at the bottom of the foot on the floor. In addition, the wrist bone hangs even with crotch level and the fingertips hang to about the middle of the thigh. It is with this information that you can use your body photograph or tracing for relative comparison. The paper can be folded or divided with a pencil into the traditional quarters to see how closely the body proportions relate. Not everyone fits this ideal. In theory, total body height divides in half at crotch level and into quarters at approximately the underarm, crotch level, and the knees.

Vertical proportions for contemporary fashion figures or models are usually expressed in *head lengths*, referring to the number of times the measured head length could fit into the total body length. They assume a taller figure that can be exactly divided into eight sections equal in length, having three sections above the waist and five below, usually allowing more length in the thigh (see Figure 4.15). In theory, the distance between the collarbone to the navel is two head lengths, and the distance from the top to bottom of the buttocks is one head length. Again, it is with this information that you can use your body photograph or tracing for relative comparison, this time using the traditional “eight head lengths” as the measurement amount. Keep in mind that most people don’t measure up exactly. In reality, the average individual is seven to seven and a half heads tall. In theory, total body height divides into eight equal head lengths. The proportional ratio of this figure is actually 3:5.

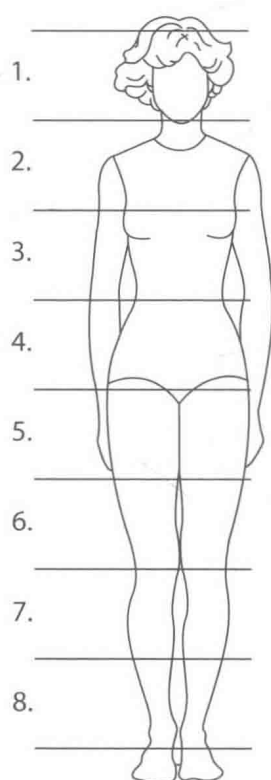


FIGURE 4.15 Ideal vertical proportions in head lengths

Horizontal proportions can be discussed in terms of the widths or circumference of the shoulders, bust, waist, hip, and hemline. Ideally, width across the shoulders is equal to, or slightly wider than, the width across the hips. Body circumference—a horizontal measurement around the body—can be compared. In theory, the ideal bust circumference is equal to the circumference of the hips, while waist circumference is generally 10 inches smaller. Both vertical and horizontal proportions are included in some comparisons. For example, length from the base of the neck to the waist at the center back is equal to or slightly less than the width across the shoulders. *Horizontal proportions* can also be expressed in terms of head lengths. For example, the width from shoulder tip to shoulder tip is three head lengths across.

Like ideal weight ranges, proportions for the average or ideal figure reflect the values of a particular culture and are subject to change according to the whims of fashion within the culture. While very few individuals conform to the average or ideal proportions or divisions, sizing for patterns and ready-to-wear clothing are based on these types of proportional divisions. To achieve a balanced, well-proportioned appearance, it is important to know how a body’s proportions compare to the standard average or ideal, to know where it is disproportionate—proportionally shorter or longer, narrower or wider. Many people have proportionally narrower shoulders compared to a wider hip and thigh area. Some people have a proportionally shorter upper torso and a longer lower torso—or vice versa. Others have proportionally longer limbs but may more or less conform to the ideal everywhere else. Each of these is disproportionate in some body area. That’s where the beauty of clothes comes in. With smart selection, we can arrange the divisions of our clothes to present their bodies in perfect proportions.

Contour and Weight Distribution

Skeletal bone structure forms the overall framework for the figure or body. The inherited distribution of muscles and fat on the framework creates the outer shape, contours, or curves of the body (see related discussion in *Fabulous Fit*, pages 23–24). During puberty, differentiation in men and women occurs for the future purpose of reproduction.

✓ REALITY CHECK

Not everybody should make a habit of tucking their shirt in. Only balanced bodies with weight evenly distributed top and bottom can get away with it. Any body that has a noticeable size difference between top and bottom weight draws attention exactly there when the shirt is tucked in. It’s smart to wear a terrific looking shirt or blouse on the outside, or to tuck and layer with a jacket, sweater, vest, tunic, or duster creating a smooth transitional line so the difference in size isn’t noticed.

Changes in muscle mass and fat distribution are due to differences in male and female hormone levels. While posture, exercise, and diet influence changes in body shape throughout life, the specific areas of genetic fat distribution remain the same. Throughout life, one individual may notice that fat deposits are evident or naturally build up on the chest, upper arm, midriff, abdomen, and high hip area—typical of inverted triangle, rectangle, and diamond figure types. Another individual may notice that fat deposits are obvious or naturally build up on the low hip area, buttocks, and thighs—typical of the triangular figure type. During a figure evaluation, even on very slim figures, soft fatty tissue naturally deposited on the high hip or low hip can be easily felt. Increased weight can be expected to be deposited on those areas first.

Recognizing the specific areas on the body where fatty tissue deposits tend to occur is one key to recognizing figure type. Recognizing our figure type or combination of types is the key to smart clothing style selection. Unless figure variations are extreme, it's better to rely on smart clothing style selection to accommodate and counterbalance the body rather than expensive and risky cosmetic surgery. Clothing does wonders to enhance the appearance of body shape, contours, or curves and create the illusion of a more nearly ideal figure, altering clothing only as needed for a fabulous fit (see Figure 4.16). As mentioned earlier, with good muscle tone and posture, excess weight that is evenly distributed over the body frame may require only a change in garment or pattern size. Excess weight that is distributed unevenly depends on clothing style selection according to figure type and may require alterations.



FIGURE 4.16 This trench coat by Miguel Adrover is designed to create the appearance of a well-balanced, well-proportioned figure.

Symmetrical Figure Variations

As you begin an evaluation of the figure, each half of the body, from side to center, is usually expected to be symmetrical, or as mirror images. In other words, the figure is assumed to be horizontally balanced, side to side.

A careful evaluation of the figure may reveal one or more *symmetrical figure variations* from the standard, average, or ideal figure. These variations occur identically on both sides of the body, front or back. Symmetrical figure variations can occur singly or in combination with another variation.

Single Symmetrical Figure Variations (Arranged from head to toe)

| | |
|-----------------------------------|-------------------------------------|
| head—forward | dowager curve |
| longer neck | shorter neck |
| high neck base | low neck base |
| larger or wider neck | smaller or narrower neck |
| broad shoulders | narrow shoulders |
| square shoulders | sloped shoulders |
| large arm joints | small arm joints |
| prominent shoulder blades | flat shoulder blades |
| longer upper rib cage | shorter upper rib cage |
| wider chest | narrower chest |
| rounded chest | shallow chest |
| prominent collar | prominent sternum |
| rounded upper back | overly erect upper back |
| wider back | narrower back |
| bust—high | bust—low |
| bust—larger | bust—smaller |
| bust—prominent | wide bust span |
| cylindrical rib cage | oval-shaped rib cage |
| wider rib cage | narrower rib cage |
| flared lower rib cage | midriff bulge |
| longer lower rib cage/low waist | shorter lower rib cage/high waist |
| larger waist | smaller waist |
| longer lower torso | shorter lower torso |
| prominent abdomen | flat abdomen |
| high abdomen | dropped abdomen/apron |
| prominent pubic area | recessed pubic area |
| high hip curve (square/heart) | low hip curve (sloped) |
| wider/larger hips | narrower/smaller hips |
| hip bones—prominent | |
| sway back (forward-tilted pelvis) | sway front (backward-tilted pelvis) |
| high buttocks contour | dropped buttocks |
| larger buttocks | smaller/flatter buttocks |
| longer legs | shorter legs |
| larger legs | thin legs |
| larger thighs at front | larger thighs at side |
| larger thighs at inside | shallow thighs at inside |



✓ REALITY CHECK

The average viewer usually doesn't notice a fitting deviation of less than ¼ of an inch. It takes amounts of ½ an inch or more before most people will recognize that there is a problem.

Single Symmetrical Figure Variations (Arranged from head to toe) (continued)

| | |
|---------------------------------------|--|
| knees—inward rotation (knock-knee) | knees—outward rotation (bowed legs) |
| flatter calves | larger calves |
| calves—hyperextended | |
| long arm joint | short arm joint |
| forward arm joint | posterior/backward arm joint |
| longer arms | shorter arms |
| larger arms | thin arms |
| larger upper arms | larger forearms |
| outward rotation of the elbows | inward rotation of the elbows |
| larger elbows | |
| larger wrist | smaller wrist |

Whenever clothing style selection can be used to camouflage or minimize the variation, the need for alteration is reduced. The whole purpose of a figure evaluation is to accurately identify the anatomy responsible for a fitting problem. By using appropriate anatomical terms, you know right where to go to solve the fitting or alteration problem. Referring to a particular weight deposit as “fluff,” “stuffing,” or “pillows” may sound cute, but doesn’t tell you where or what the source of the fitting problem is. Knowing that you’re dealing with a genetic high hip curve directs you right to the place needing added style ease or alteration. Directional measuring will point you to the specific seam where an alteration needs to be carried out.

A symmetrical high hip curve is often confused with a sway back. In both cases, the fitting problem may become obvious due to a fold of fabric around the skirt or pant back, just below the waist (see Part Three). Both result from a body curve just below, pushing fabric upward to a smaller area. These folds are not, however, exactly alike. The fold that results from a sway back pushes fabric up in center back, tapering to nothing at the side seam. The fold that results from a high hip curve pushes fabric up at the side-back positions first—at, and just behind the side seam—not at center back unless extreme. Interestingly, the alteration for a sway back *removes* length, while the alteration for the high hip *adds* length and width. It is not surprising the garment doesn’t fit properly when altered for the wrong figure variation. When both variations are combined, the lengthwise alterations essentially cancel one another out. What remains

to be altered is width. Elastic at center back or across the back often serves to control waistline fullness without further alteration.

Another set of figure variations often confused are the dowager curve and the rounded upper back (see Part Three). Some refer to the dowager curve as “just an extreme version of the rounded upper back.” That is not so. The dowager curve—and yes, we do need a better name for it—occurs high on the spine and involves the first three to five vertebrae at the base of the neck, at center back. The rounded upper back occurs somewhat lower and extends across the entire width of the back. It is entirely possible for somebody to have a dowager curve but not a rounded upper back, and vice versa (see Figure 4.1). Both variations require added length, but dart shaping is positioned at the shoulder seam for the rounded upper back and at the neckline for the dowager curve.

Part Three of this text describes and illustrates the cause and appearance of 88 different figure variations, with fitting solutions. Combination variations are also presented in Chapters 6 and 7.

Symmetrical figure variations come in many predictable combinations. Combinations involving only two figure variations are the simpler ones to solve. Narrow shoulders and a narrow back are common. An overly erect back often forces a sway back. A prominent bust may come in combination with a small midriff and waist, just about as often as a large bust comes in combination with a large midriff and waist.

Regardless of the combination, alterations to achieve a fabulous fit must merge one into another (see samples, Chapter 6). Thin legs and flatter buttocks are typical of the inverted triangle and elderly figure types. A typical combination of three might include a long lower torso, larger side thighs, and large buttocks. Add in a small waist and you’ve got a challenging set of alterations to make on skirts and pants. Some of the more complex combined figure variations add up to what we recognize as typical postures and as figure types.

Asymmetrical Figure Variations

As the figure evaluation progresses, it may be determined that the halves of the figure, side to center, are not identical. In other words, the size and conformation of the right side of the figure may vary considerably from the size and conformation of the left side—the sides are uneven. When this happens, the figure is termed “asymmetrical.” *Asymmetrical figure variations* may have been present at birth, or they may have resulted from illness, poor posture, or some specific activity. An asymmetrical figure is the most common of all variations from the standard ideal. Asymmetry may or may not have been detected previously, depending on the degree of variation, the awareness level of the individual, and the style of clothing regularly worn. A conscious effort to correct poor posture can minimize or eliminate the variation.

Related variations can also occur from front to back. They, too, may be the result of disease, such as the rotation that occurs with scoliosis, or they may be postural attempts by the body to achieve a counterbalance, such as raising a shoulder to counter weight carried on the opposite hip.

Asymmetrical Figure Variations
(Check for differences from side to side)

| | |
|-----------------------|---------------------------------|
| neck base width | neck base slope |
| shoulder level/height | shoulder width |
| chest length | chest width |
| collarbone level | collarbone size and contour |
| back length | back width |
| shoulder blade level | shoulder blade size and contour |
| bust level | bust size and contour |
| midriff length | midriff width |
| waist level | waist width |
| hip level | hip width |
| thigh length | thigh circumference |
| knee level | knee circumference |
| calf level | calf circumference |
| ankle level | ankle circumference |
| upper arm length | upper arm circumference |
| lower arm length | lower arm circumference |
| elbow level | elbow circumference |
| wrist level | wrist circumference |

Multiple asymmetrical figure variations are common. A combination high shoulder, high breast, high hip, and long leg can occur on the same side of the body (see Figure 4.17). A high shoulder can occur on one side of the body in combination with a high hip on the opposite side of the body (see Figure 4.18). Both a wide or full back and a wide or full front can occur on the one side of the body, but a wide or full back can occur on one side of the body in combination with a wide or full front occurring on the opposite side of the body. (One shoulder blade protrudes while the other appears almost depressed; one breast is fuller than the other.)

Asymmetrical figure variations can account for fitting problems and discomfort wearing certain clothing styles. Knowing the effects of various styles allows individuals to select those suited to the figure and thus eliminate time-consuming fitting and alteration procedures; however, dependence on these styles can be too limiting. Whenever other garment styles are selected, pattern alterations should be made to improve the fit and create a balanced, more symmetrical appearance.

Expect form-fitting clothing styles to reveal asymmetry in the body. Styles with soft or draped fullness are more likely to camouflage asymmetry. Symmetrical plaids and stripes are often to be avoided as they may tilt on the body revealing asymmetry. Contrasting piping or bands at the neckline, waistline, and hemline can be expected to reveal asymmetry in the body.

REALITY CHECK

Well-fitted, even custom-made, shoulder pads do wonders to adjust the final fit of a garment and thus camouflage or counterbalance a figure variation, often eliminating the need for some alterations. It is smart to think of shoulder pads as fitting tools, not fashion trends.

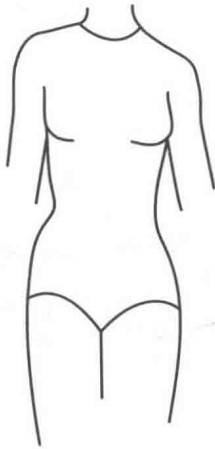


FIGURE 4.17 Asymmetrical figure with a high shoulder and fuller, high hip on the same side of the body

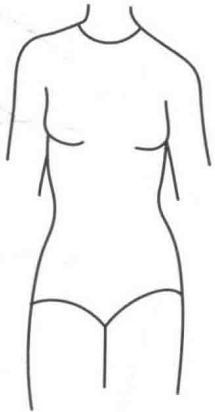


FIGURE 4.18 Asymmetrical figure with a high shoulder and fuller, high hip on opposite sides of the body



FIGURE 4.19 Extremely asymmetrical figure variation

Asymmetrical clothing styles may introduce design details that draw attention away from the asymmetrical figure variation. Layering clothing over an asymmetrical figure is one of the most effective ways to camouflage the variation and reduce or eliminate the need for alteration (see Figure 4.19). Camouflage extremely asymmetrical figure variations by selecting skirts, pants with layered jackets and dusters, and custom fitted shoulder pads to better balance the entire body.



✓ REALITY CHECK

Proper diet and exercise may produce the figure you want, but if you do not carry it correctly, your body will never look terrific. Even an ideal figure can appear unbalanced and out of proportion if posture is poor.

POSTURE

Posture refers to the alignment of body parts and to the manner in which the body frame is carried. It has direct bearing on both mental and physical health. Our posture reflects our self-image—how we think and feel about ourselves. It communicates facets of an individual's personality, moods, and attitudes.

Posture is learned and is a changing cultural phenomenon. In decades past, people stood and sat with a relatively erect spine. Moving into the twenty-first century, fashion seems to favor a curved, slouched spine. Poor posture is becoming the norm, which is unfortunate. In addition to severe health consequences, poor posture can reduce physical attractiveness and the attractiveness of clothing. It can introduce needless figure variations and fitting problems. Slumped, slouched, rounded, and swayed posture causes shoulders to slope, breasts to sag, stomach and buttocks to protrude. Poor health and a host of fitting problems follow.

Posture is a major factor in the alignment of fabric grain and the structural line of garments as they relate to proportional areas and the contours of the body. Often, improved posture, coupled with a weight change when needed, can eliminate many or all figure variations discovered in the evaluation of a figure. Therefore, evaluating posture is worthwhile even before becoming involved with fitting. It is best to evaluate posture in front of a full-length, three-way mirror or with the aid of a photograph.

Plumb Line Method

A plumb line—a weighted string that hangs perpendicular to the floor—can be used to evaluate body alignment. Hang the line from the top of the mirror or draw it on the photograph. The edge of a door can also function as a plumb line.

Turn sideways to the string or door edge and assume a relaxed but normal stance, with weight evenly distributed over both feet—front to back and side to side. Don't attempt to correct the posture at this point. For an accurate evaluation, a realistic stance is required. Ideally, on a standard figure, the string or door should line up with the middle of the earlobe, neck, shoulder, and arm at the elbow, pass just to the back of the wrist, line up with the middle of the hip joint and knee, and finally pass slightly in front of the center of the ankle.

The Wall Method

You can also check posture by standing up next to a wall, with heels about an inch away from the wall. Assume a

normal stance with the back against the wall. Again, the weight should be evenly distributed over both feet. Good posture is evident if the back of the head, shoulders, shoulder blades, and buttocks touch the wall. You should be able to insert your hand in the space between the wall and the small of the back at the waist.

If only the shoulders touch the wall, the posture is overly erect. If only the shoulder blades touch the wall, the posture is rounded. If only the buttocks touch the wall, the posture includes a sway back. (An exception to this would be the individual with large buttocks.) If both shoulder blades and buttocks touch the wall and there is a large space between the waist and the wall, the posture is probably slumped.

Correct Posture

Correct posture assumes the balanced alignment of each body section correctly with the others (see Figure 4.20).

- The head and neck should be centered over the shoulders with the chin level with or parallel to the floor.
- With a straight back, the shoulders should be pulled slightly back, not up.
- The chest should be lifted slightly.
- Buttocks muscles are contracted slightly and tucked under, both sides parallel to the floor.
- Abdominal muscles should be pulled in tight.
- Hips should be level, not tilted forward or back.
- The arms should hang relaxed at the sides, with elbows bent slightly forward.
- The knees should be straight but relaxed, neither flexed (bent) nor hyper-extended (locked).
- The feet are parallel and somewhat apart, with toes pointing straight ahead and the ankles joining the feet at right angles.

GENERAL TYPES OF POSTURE

Incorrect alignment causes the body to counterbalance itself in order to remain upright.

Overly Erect Posture

Overly erect posture can be recognized by an exaggerated lift of the chest, which in turn creates an arch in the upper back (see Figure 4.21). The head may also be pulled back to an extreme, which will cause the plumb line to pass in front of the ear. The knees are often hyper-extended to the back and they are locked into place. Such a stance places stress on the back and legs. A prominent bust, shortened upper back length, and an increased chest length from neck base to bust tip may result. Other possible results are squared shoulders, widened chest, and a narrowed back. The position of

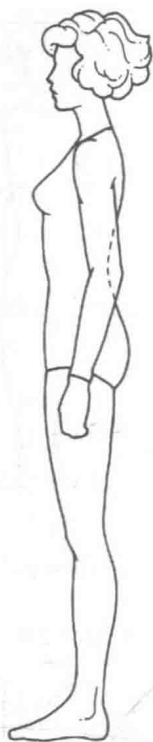


FIGURE 4.20
Correct, ideal
posture

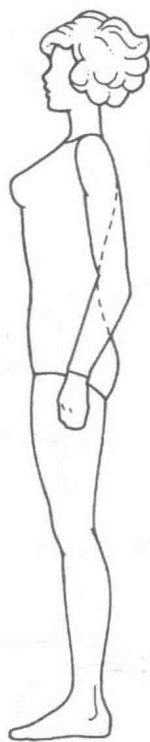


FIGURE 4.21
Overly erect
posture



FIGURE 4.22
Rounded upper
back posture

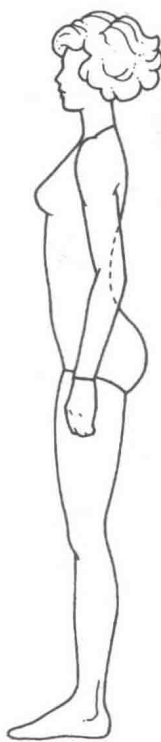


FIGURE 4.23
Sway back
posture



FIGURE 4.24
Slumped posture,
forward head



FIGURE 4.25
Sway front posture,
forward head

the shoulders is particularly important in fitting, as clothing hangs from the shoulders. If shoulders are incorrectly positioned, all garment areas below will drape or fit incorrectly.

Rounded Upper Back Posture

Rounded back posture can be recognized by an overly curved upper back, a forward curve in the shoulders, a hollow chest, and a forward-tilted head (see Figure 4.22). The plumb line will pass behind the ear. Breathing may be hampered because of pressure on the lungs; the oxygen supply to the body will be reduced, and chronic fatigue may result. Among the figure variations introduced may be found a shortened—possibly hollow and narrowed—chest length, increased upper back length and width, and prominent neck cords.

Sway Back Posture

Sway back posture is very common, particularly in women. A sway back is evident in the forward tilt of the pelvis and an increased length between buttocks and crotch. A prominent abdomen and protruding buttocks come in combination (see Figure 4.23). The abdominal curvature also will increase, as will the angle at the groin. Another probable figure variation includes a shortened upper back length between waist and hip.

Slumped Posture

A slumped posture is common; it results in a rounded upper back and shoulders, hollow chest, and forward head, in

combination with a swayed back and prominent abdomen (see Figure 4.24). In addition to all the other figure variations that result from poor posture, it also may lead to the accumulation of excess weight at the base of the neck, commonly referred to as a dowager's curve. Slumped posture typically results in fatigue and backache, with discomfort increasing in the event of pregnancy. (A short-term counterbalance effect can be expected during pregnancy; as the bust and the abdominal area extends, the shoulders become overly erect and the arch in the back is increased.

Sway Front Posture

Sway front posture is relatively uncommon, but easily recognized or remembered when you see it. A sway front is evident in the backward tilt of the pelvis that pulls the waist area back and thrusts the hip joint and thigh forward (see Figure 4.25). The buttocks are tucked under and knees may appear in a slightly bent position. The front abdominal curve will increase and the curve of buttocks curve will decrease, along with decreased length between the buttocks and crotch. The individual appears to lead with the hips when walking. Other characteristic figure variations include a forward head, forward arm joint, rounded upper back, shallow chest, and lower bust—an upper body curvature assumed in the effort to maintain vertical balance.

Develop a Positive Attitude

We must commit ourselves to the regular practice of correct posture and to allow our body parts to align themselves

in proper position. It may feel a little awkward at first and will take practice, but practice makes perfect. First thing in the morning is a good time to practice. Stand next to a wall or door casing and assume correct posture. Then walk away from the wall and hold this posture for a minute. Think about how it feels. Visualize how perfect posture looks and feels as you stand, walk, bend, and sit. Any figure can appear more nearly ideal simply by standing and sitting correctly. Fitting problems and alterations can often be greatly improved or eliminated if you simply stand up straight.

Anyone who is insecure about her body should remember the following:

- The first step toward looking terrific is to become familiar with your figure and the ways it varies from the average or ideal.
- The second step is to accept those variations that you can't change, such as large bones, a proportionally long midriff, or wide thighs at the side.
- A third step is to change those variations you can, such as your posture or weight—making sure you really follow through.
- Fourth, be grateful you don't have all 88 figure variations. Nobody does. Appreciate the places you do appear more nearly average or ideal.
- Finally, depending on what shape you're in, determine your figure type or combination of types and prepare to present yourself to your best advantage through smart clothing style selection and accurate garment or pattern alteration.

VERTICAL FIGURE TYPES

The universal dilemma of clothing style selection for the figure depends on an objective awareness of the figure or body type. Figure or body types can be discussed in terms of the top to bottom *vertical* type and the side to side *horizontal* type. Everyone has both a vertical type and a horizontal type. The value of recognizing figure types becomes evident in clothing style selection and coordination for the figure or body.

Vertical figure type is determined by the individual's skeletal frame or body frame and where it bends. Vertical figure types compare the length of the upper half of the body to the lower half, with the halfway point being crotch level—the dividing point between the torso and legs. There are three vertical figure types, generally illustrated on a vertical rectangle divided by the approximate waistline level.

Balanced Torso and Leg Length

Total head and torso length is approximately equal to total leg length. Waist level is assumed to be ideal (see Figure 4.26).

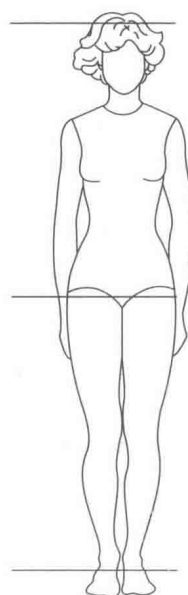


FIGURE 4.26
Vertical figure type
with equal torso
and leg length—
balanced

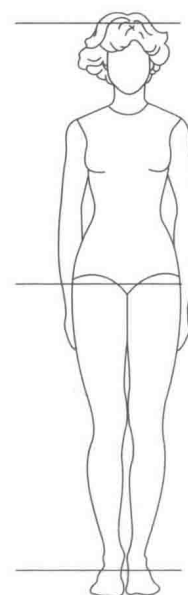


FIGURE 4.27
Vertical figure
type with shorter
torso and longer
legs—unbalanced

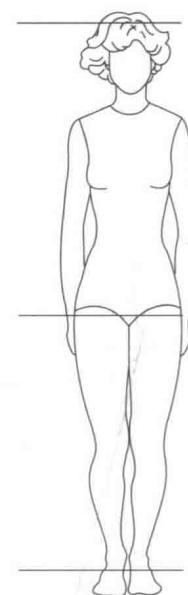


FIGURE 4.28
Vertical figure
type with longer
torso and shorter
legs—unbalanced

Shorter Torso and Longer Legs

Head and torso length is shorter as compared to leg length, which is longer. Waist level is said to be short, although "high-waisted" is the more correct term (see Figure 4.27).

Longer Torso and Shorter Legs

Head and torso length is longer as compared to leg length, which is shorter. Waist level is said to be long, although "low-waisted" is the more correct term (see Figure 4.28).

HORIZONTAL FIGURE TYPES

Horizontal figure type is determined by the body frame *and* the individual's natural pattern of weight distribution over the body. Horizontal figure types compare the relative widths or contours of the body. Shoulder-chest width, waist width, and hip width are body contours that determine the general horizontal figure type, although the relationship between each body area is more important than actual size. Each figure type is further defined by a set of stereotypical figure variations.

There are eight horizontal figure types, but it should be remembered that *not every body conforms exactly to one particular figure type*. For any given figure type, an individual may have a singular figure variation, such as narrow shoulders or a high waist, that is not typical for the horizontal type. Bust size and waist width may vary according to type, resulting in a combination figure.

Viewed from the front, horizontal figure types may be represented as geometrical shapes in terms of their relative similarity to easily recognized geometrical shapes (see Figures 4.29 and 4.30).

The body torso tends to be wider where the geometric shape is wider, and narrower where the geometric shape is also narrower. To quickly select a clothing style that fits, we must each discover the geometric shape that most nearly represents our body. Consider this geometric shape your “two-dimensional twin,” giving you clues to both figure variations and clothing styles that will fit and flatter the body.

With experience, we learn that the dominant hip curve is often key to recognizing a stereotypical figure type—or to suspecting a combination of figure types.

- The triangular figure type tends to have a dominant low hip curve.
- The inverted, rectangular, and diamond figure types tend to have a dominant high hip curve.
- The ideal and the hourglass figure types tend to have both high and low hip curves that blend one into the other.
- The tubular and oval figure types are varied, tending to be one of the other figure types, but with less or more weight carried on the bone structure. If they gain or lose weight, respectively, their genetic figure type may become more obvious.

Study the following description for each geometric figure type. Visualize the body build described.

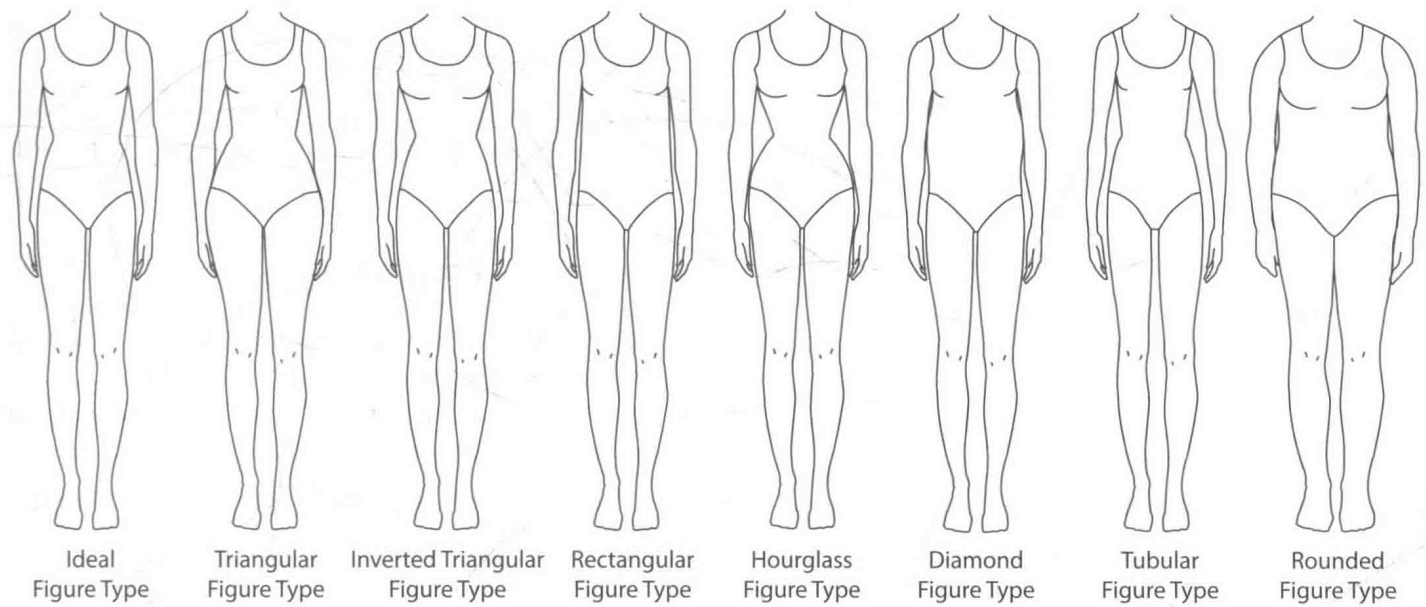


FIGURE 4.29 Horizontal figure types seen in comparison to one another

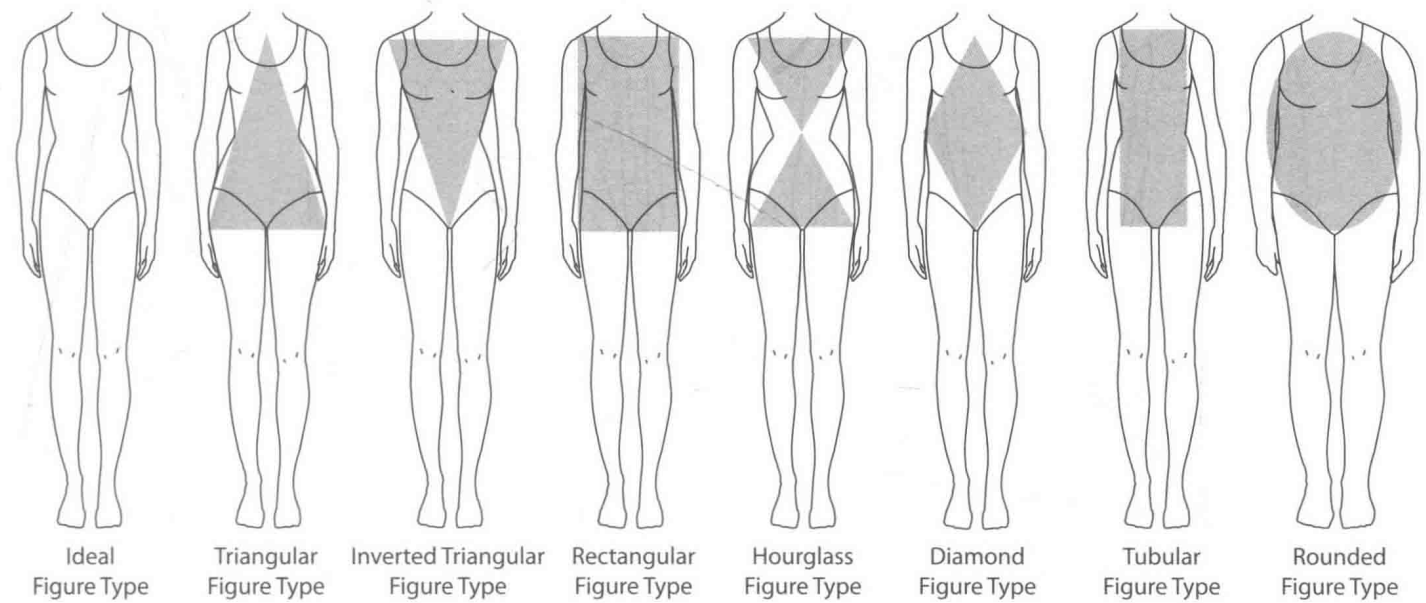


FIGURE 4.30 Horizontal figure types, each identified by their corresponding geometrical shape

Ideal Female Figure Type

- The ideal is a balanced figure. Average body weight is balanced evenly between the upper and lower torso (see Figure 4.31).
- Seen from the front, shoulder and hip widths are relatively equal, with a narrower waist between.
- High and low hip curves blend smoothly together.
- Seen from the side, the bust and buttocks curves are average and balance one another nicely.
- Average bra cup size is a B-cup.
- The abdomen is relatively flat.
- Arms and legs are relatively slim.

Triangular Figure Type

- The triangular figure is not balanced. There is more body weight in the lower torso—the buttocks and side-thighs, giving the “saddlebag” effect. The figure is often said to be bottom-heavy (see Figure 4.32).
- Seen from the front, shoulders are narrower than hip-thigh width, with a relatively narrow waist.
- Seen from the side, the bust is relatively smaller—an A-cup bra size.
- The abdomen is relatively flat, with larger than average buttocks.
- A longer lower rib cage positions the waist lower, in combination with shorter legs.
- A low hip curve is typical.
- Added weight goes first on the lower torso and side-thighs.
- With age, the waist and abdominal area become thicker and heavier.

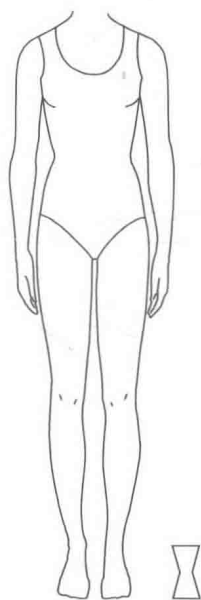


FIGURE 4.31
Ideal figure type

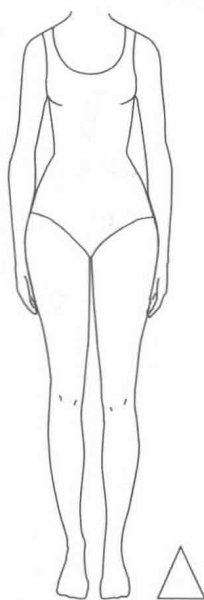


FIGURE 4.32
Triangular figure type

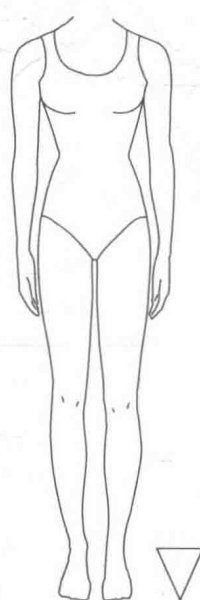


FIGURE 4.33
Inverted triangular figure type

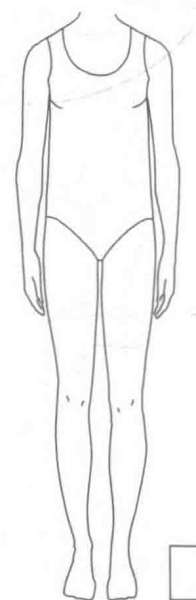


FIGURE 4.34
Rectangular figure type

Inverted Triangular Figure Type

- The inverted triangular figure is not balanced. There is more body weight in the upper torso and arms. This figure is often said to be top-heavy (see Figure 4.33).
- Seen from the front, shoulders are wider than hip-thigh width, with a relatively wider waist.
- Seen from the side, the bust is relatively larger—a C-cup or D-cup bra size and larger.
- The abdomen is often larger, with smaller or flatter buttocks.
- A shorter rib cage positions the waist higher, in combination with longer legs.
- A high hip curve is typical, with lower hips and side thighs flatter or straighter in line—occasionally referred to as heart-shaped hips.
- Added weight goes first on the upper torso, arms, and high hip area.
- With age, weight may build up around the neck, chest, and shoulders, including a fatty deposit next to the arm hinge, front and/or back.

Rectangular Figure Type

- The rectangular figure type is balanced, but without much indentation at the wider waist (see Figure 4.34).
- Seen from the front, shoulder, waist, and hip widths are similar or identical—more nearly straight up and down.
- A high hip curve is common, leading to so-called square hips.
- Side thighs are generally the same width as hips.
- Seen from the side, bust size varies.
- Buttocks curve may vary, but is often smaller to flatter.

- Added weight gain tends to be fairly evenly distributed over the body.
- With age, the midsection generally becomes wider and more weight goes to the arms. This figure type, however, often comes in combination with a larger bust, and is therefore a combination rectangular-hourglass figure. With age, weight may increase in the shoulder and bust area, decreasing in the low hip and legs—resulting in a more inverted triangular figure type.

Hourglass Figure Type

- The hourglass figure is balanced, with noticeably narrow waist indentation (see Figure 4.35).
- Seen from the front, shoulders and larger bust width balance the larger hip width. The hourglass figure is often called full-figured.
- The rib cage and upper hips taper to a smaller waist.
- Seen from the side, the bust is relatively larger—a D-cup bra size and larger. Larger hips and buttocks are smoothly rounded, generally having both high and low hip curves, smoothly rounded.
- The typical hourglass figure is not considered ideal because the larger bust and smaller waist do not fit average sizing in most clothing.
- Weight gain remains fairly evenly distributed above and below the waist, with bust size remaining larger than average.

Diamond-Shaped Figure Type

- The diamond figure type is not balanced in the typical sense, but appears out of balance due to weight concentrated around the middle of the body (see Figure 4.36).

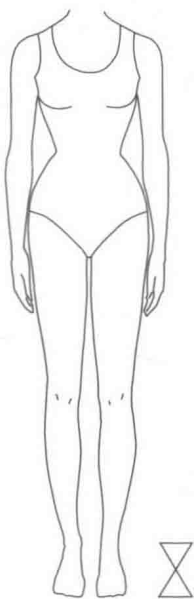


FIGURE 4.35
Hourglass figure type

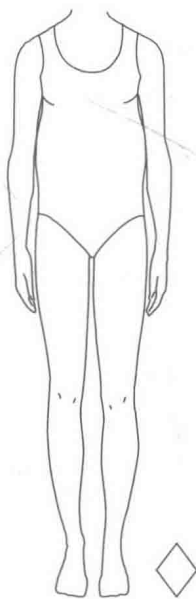


FIGURE 4.36
Diamond figure type

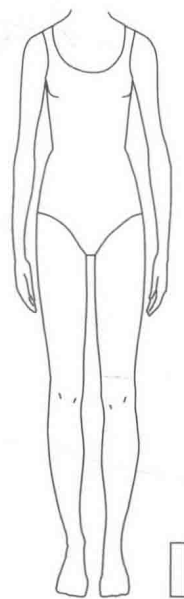


FIGURE 4.37
Tubular figure type

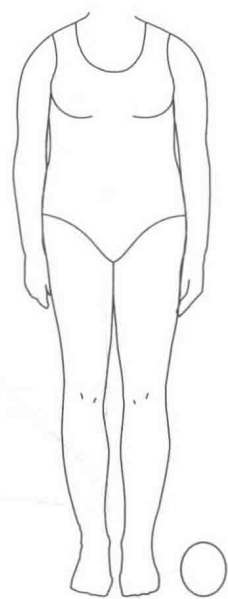


FIGURE 4.38
Oval/rounded figure type

- Seen from the front, shoulders and hips are relatively narrow in combination with a wide midsection. More than average weight is deposited on the lower rib cage, waist, and high hip area.
- Hips are straight or taper inward at the side thighs—often referred to as heart-shaped hips.
- Seen from the side, the bust is often smaller and buttocks flatter.
- Arms and legs may be relatively thinner.
- Added weight goes to the midriff, waist, abdomen, and high hip area.

Tubular Figure Type

- The tubular figure may be balanced or not, but has less than average body weight distributed over its bone structure (see Figure 4.37).
- Seen from the front, a tubular figure may be similar to the rectangular figure, but with bone structure more visible.
- Shoulders and hips are narrow; bust, waist, and buttocks are small; arms and legs are usually thin.
- With weight gain, this figure may become more like the ideal or another genetic figure type.

Oval or Rounded Figure Type

- The rounded or oval figure may be balanced or not, but has more than average body weight distributed over its bone structure (see Figure 4.38).
- Seen from the front, with weight added on the upper arm, the shoulders tend to lose their angularity.
- The bust, midriff, waist, abdomen, buttocks, hips, and upper legs are larger and rounding.

- Attention goes around the outside of the upper arm, under the abdomen, then up around the other shoulder in an oval eye movement.
- Carrying added weight does not automatically mean the body is oval. Often, you simply recognize a full-figured triangular, rectangular, diamond, even hourglass figure. Combinations of those types also develop.
- With weight loss, the oval figure may become more like the ideal or another genetic figure type.

Clothing Style Selection to Suit Figure Type

Select clothing styles or shapes that make visual sense for the figure or figure type—styles you can expect to accommodate the figure, camouflage predictable figure variations, balance or counterbalance the figure, and create the illusion of more perfect proportions. This is a lot to comprehend all at once, so go back to the first—to the idea of visual sense in clothing style selection for the figure.

To achieve visual sense between the body and the clothing style selected to wear, you are striving for a sense of visual harmony, with nothing about the body distracting attention from the silhouette of a well-designed garment. The clothing style selected allows or causes the body to appear well-balanced and well-proportioned. It features design details that create rhythmic eye movement throughout the outfit, leading to one dominant focal point or point of emphasis, a point that is attractive to the body within. Achieving this end goal demands that the concepts of both repetition to accommodate the body and countering to balance or counterbalance the body must be applied.

Unless an individual has an ideal figure type, clothing styles need enough ease to allow the fabric to flow smoothly over proportionally larger areas of the figure, and extra fullness or fabric to fill out proportionally smaller or narrow areas. The goal is to create a natural or logical and aesthetic relationship between the shape of the body and the shape of the garment—between the body silhouette and garment silhouette, *plus* fitting and/or design ease. In all cases, either the body shape or the garment shape will

be dominant—one or the other. Unless working with an nearly ideal figure type, it is smart to choose a dominant garment shape and allow the body shape to be subordinate beneath—clothing shape dominant, body subordinate. This takes attention away from variations about the body, creates the illusion of a more ideal figure, and if carried out purposely, can be used to lead attention up to the face for better communication.

To accommodate the figure, the general guideline is to rely on fashion styles or silhouettes that essentially repeat the figure type *plus* essential ease. For a *quick fit*, this entails looking for shapes or silhouettes in dress that most nearly match the general figure type—wherein the garment style is wider where the body is wider—plus plenty of ease for the garment to hang smoothly over the body (see Table 4.1). The clothing silhouette is dominant and the body silhouette is subordinate. Attention is free to go up to the face. Using this concept, you are likely to have less need to adjust or alter.

Again, look for clothing styles with transitional lines that fall or drape easily over the body. Anything that gets “hung up” on a body curve or bulge creates unwanted contrast in line and shape, leading to drag lines or stress wrinkles. They draw attention to the body bulge and signal a need for a larger size or a larger, looser style. If a larger size won’t give the desired look, select a looser style with more fashion ease or added fullness. The look can be tailored, softly tailored, casual-tailored, or untailored according to personal style preferences.

Rectangular garments are generally the easiest for most people to work with. They are more likely to provide a *quick fit* because the rectangular shape is wider through the waist area and therefore likely to accommodate several figure variations positioned between the shoulders and hips. Little alteration may be required.

Hourglass-shaped garments are the most difficult to work with, due to standard B-cup sizing and a relatively small waist. If the garment fits in the bust, the waist is too big. If it fits in the waist, the bust area is too small. Wearing a fully form-fitting garment, the bust and buttocks curvatures are emphasized and can become distracting. If that is not the intent, blousing the garment at the waist will create a softer transition and minimize the effect.

✓ REALITY CHECK

Line and shape are the elements of design that combine to create the style of a garment. Many people do not relate clothing style directly to figure type; they do not realize that clothing styles or silhouettes come in most of the same shapes as figure types—triangular, inverted triangular or wedge, rectangle, hourglass, diamond, and tubular; they do not recognize, for example, that a triangular garment will easily accommodate the triangular figure type as the triangular shaped skirting angles outward exactly where the body angles outward at the hip/thigh area. The rectangular garment will easily accommodate the rectangular figure type as it is wide exactly where the body is also wide at the waist area.

✓ REALITY CHECK

“Universal” dress-slim design details are those that benefit most figure types in one way or another. For example, flat-lying breast pockets serve to visually fill out a small-busted body but also serve to camouflage a large-busted figure. Blousing at the waist serves to camouflage a midriff bulge while at the same time make the body below appear somewhat slimmer.

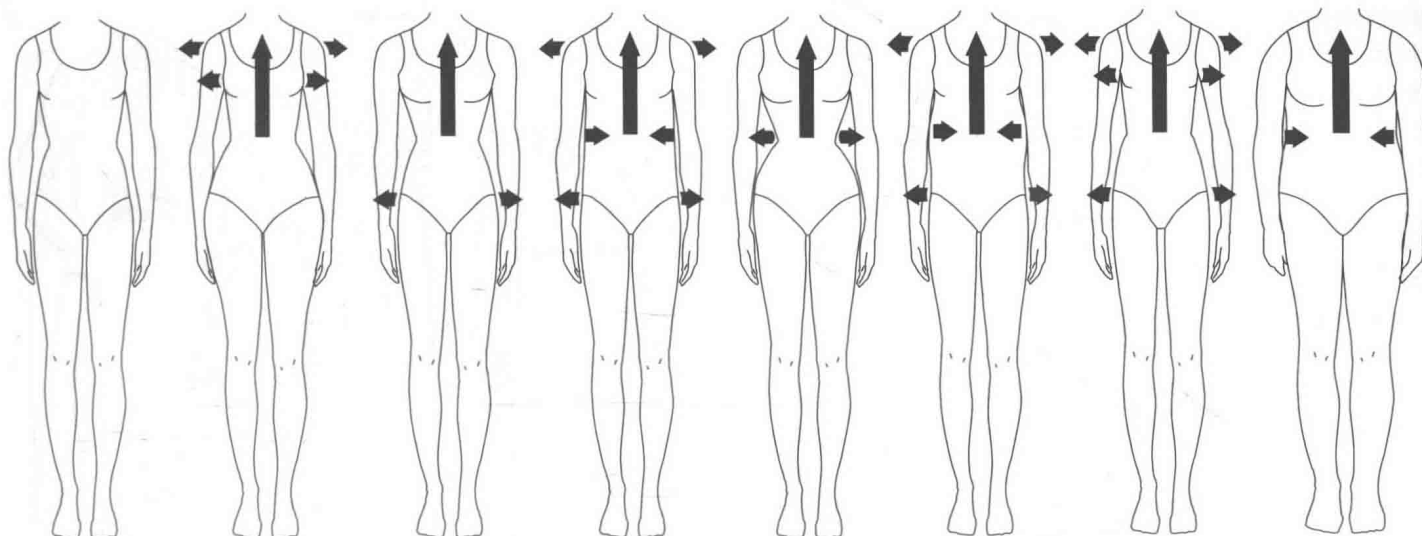


FIGURE 4.39 Arrows indicate where attention needs to be directed to balance the figure for a smart fit. The process is called counterbalancing.

To balance or counterbalance size in any area of the body, select styles or design details that lead attention in the opposite direction. This means that the garment design must be fuller and lead attention outward in areas that are proportionally narrower and lead attention inward where the body is proportionally wider (see Figure 4.39). This will create the illusion of a more balanced and slimmer figure. This is the idea behind *counterbalancing* for a *smart fit* (see Chapter 2 for a discussion of reinforcing and counterbalancing in dress).

Consider also *alternative fit* silhouettes (see Tables 4.1–4.7). When carefully selected, triangle-, inverted triangle-, rectangle-, and even some hourglass-shaped garments may offer additional style options to select from—providing they include appropriate wearing ease or design ease to counterbalance the figure as needed, and likely requiring some alteration. When it comes to dressing rounded oval-shaped bodies, there are very few actually round clothing silhouettes. One of the few examples is a full-rounded cocoon coat. *Alternative-fit* styles must be adapted to fit the oval or rounded figure.

Involved in style selection is the concept of *layering*—lightweight layering in warmer climates. We're talking about third- and fourth-layer jackets, shirt-jacs, sweaters, vests, tunics, and dusters. That outer-layer garment can camouflage and/or balance figure variations as needed. Clothes are wonderful tools, and layering is an option overlooked by many people.

It's Time to Get Dressed

What can we do to feel terrific about our bodies and how we look? Get dressed. Wisely chosen, clothes are a wonderful transforming resource. Some of the best things clothes can do—besides provide warmth, protection, and a creative outlet—is to camouflage or draw attention away from, and create attractive illusions about, figure variations we'd prefer to de-emphasize. These are traditionally

the goals of fashion designers, image consultants, and smart dressers the world over. People with beauty, good taste, and personal style seldom have ideal bodies. It's the knowledge and ability of the designer, consultant, or dresser who knows what they're doing that makes them look so terrific.

Take a lesson from the menswear industry. Women would benefit by wearing jackets long enough to cover their seat. This equates with a jacket hemmed at about crotch level—covering the bust, midriff, high and low hip curve, abdomen, and buttocks. Men have benefited by this classic, basic garment style for centuries. While the proportions of jacket to pant is 1:1, you don't read or hear anyone panning the look as dowdy or dumpy on men. In fact, women are known to state loudly, "Put a man in a suit or sport coat and he always looks better!"

For generations, it is women who have taken flak about their bodies, making us, finally, paranoid. No wonder. Women traditionally have worn dresses—dresses that revealed at least the bust and waist curvature. A jacket covers all that. Women of the 1930s and 1940s knew how to wear a jacket, with options for a lift in hairstyle and heel height to elongate the look for a slimming effect. We lost that knowledge and practice in the 1950s. It wasn't until the 1980s that more tailored suit dressing came back into fashion for women.

✓ REALITY CHECK

So often we hear or read, "Women with large busts can't wear collars." Not so. Women with large busts benefit by wearing collars to lift attention from the bust and up to the face. We also hear, "Don't hem your vest or jacket at your widest hip level." Also not so. Sweaters, vests, and jackets actually need to be hemmed at the widest level to camouflage a proportionally large curve in the hip, thigh, buttocks, or stomach; then skirt or pant fabric must fall straight down or flare below the curve, and not "cup" back under to reveal the "bump."

Women's favorite piece of clothing, they discovered, became their new jacket—and no wonder. A jacket didn't put the focus on the figure. Clothing silhouette dominant, body silhouette subordinate.

CLOTHING STYLE SELECTION FOR VERTICAL FIGURE TYPES

Study the following style selection advice for each geometric figure type. Focus on the geometric shape most nearly like the figure you are fitting—the two-dimensional twin—and visualize the advice provided.

Style Selection for Balanced Torso and Leg Length

Delightfully, people with a vertically balanced figure and ideal waist level can wear clothing divisions at virtually any level they like. This allows them to take advantage of high-, natural-, or low-waisted clothing styles, according to or regardless of the fashion trends. Width at whatever level may need to be altered.

Selection for Shorter Torso and Longer Legs

High-waisted people will likely enjoy a *quick fit* wearing high-waisted clothing styles (see Figure 4.40). To create the illusion of a longer torso and/or shorter legs, people will achieve a *smart fit* by wearing the following:

- low-waisted or drop-waisted clothing styles, including skirt yoke lines

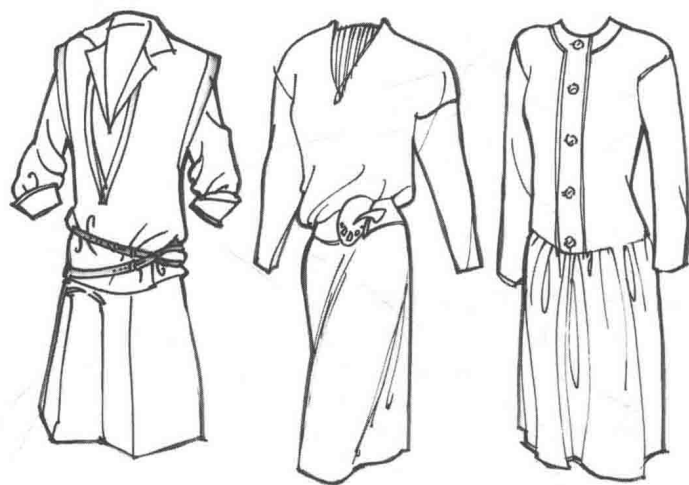


FIGURE 4.40 Fashion styling selection to visually lengthen a proportionally shorter torso



FIGURE 4.41 Fashion styling selection to visually shorten a proportionally longer torso

- styles without any horizontal seam or break across the torso
- tops and third-layer jackets, sweaters, vests, or tunics that flow smoothly over the midriff-waist area, with a lower hemline that ranges between mid-hip or crotch level to mid-thigh or fingertip level
- belts in the same color as the bodice or top and low-slung belts

Style Selection for Longer Torso and Shorter Legs

Low-waisted people will likely enjoy a *quick fit* wearing low-waisted clothing styles (see Figure 4.41). To create the illusion of a shorter torso and/or longer legs, people will achieve a *smart fit* by wearing the following:

- high-waisted or raised waistline clothing styles, including empire waistlines and midriff yoke lines
- styles with horizontal seams or breaks across the torso
- tops tucked in, and third-layer jackets, sweaters, and vests with a higher hemline
- belts in the same color as the skirt or pants

Shoe color can be tricky. Shoes the same color as the top may draw attention quickly downward, visually lengthening the torso and legs—or not. Shoes the same color as the skirt or pants can be expected to visually lengthen the legs. View the look in a full-length mirror to recognize the effect. Many fashion styles are available suitable for high-, natural-, or low-waisted figures (see Figure 4.42).



FIGURE 4.42 Fashion styles suitable for high-, natural-, and low-waisted figures—fabric weight, hem length, and heel height still matter.

CLOTHING STYLE SELECTION FOR HORIZONTAL FIGURE TYPES

Style Selection for the Ideal Female Figure Type

In theory, the ideal female figure can wear virtually any clothing shape or style beautifully and comfortably. It remains to choose well-designed garments with enough ease that will present the ideal figure ideally.

Style Selection for the Triangular Figure Type

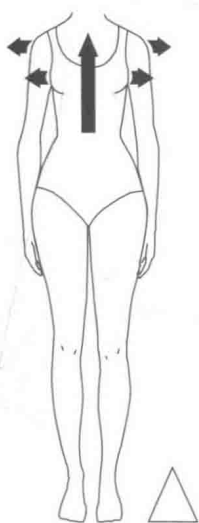


FIGURE 4.43 Counter balancing the triangular figure type

- For a *quick fit*, accommodate a triangular figure with triangular or flared garment styles. The flared skirt serves

to camouflage and minimize the larger lower body—the abdomen, hips, side-thighs, and buttocks. Cut on the bias or with several gores, the skirt will likely flow easily over the larger lower body areas with a soft, fluid ripple distributed all around. Viewers assume the loosely fitted lower body beneath is as slim as the more fitted upper body.

- For a *smart fit*, bodice styling includes some width or added fullness above the fitted waist, particularly in the shoulders. This fills out the smaller, narrower upper torso to counterbalance the wider, larger body below and creates the illusion of more balanced proportions. This includes added flare, gathers, tucks, and/or pleats in the shoulders, sleeves, or bodice area.
- For a slimming effect, *smart fit* recommends that style lines and design details in the outfit lead or draw attention inward and upward, away from the wider or larger area below. This includes the use of princess seamlines, a center front or back closure, and breast pockets.
- Neckline detail or décor draws attention upward toward the face. Wide necklines, open collars, and tops bloused at the waist actually fill out the appearance of the upper torso as do extended shoulders, moderate shoulder pads, shoulder yokes, drop shoulders, and epaulettes.
- Horizontal stripes are a plus when worn to visually fill out the appearance of the upper torso.
- Longer tops, jackets, sweaters, vests, tunics, and dusters, as well as A-line, flared, and straight-hanging dirndl skirts and loose-fitting pants are styled to flow easily over and camouflage the larger lower torso.
- With enough ease and worn open, third-layer shirt-jacs, jackets, sweaters, vests, tunics, and dusters draw attention inward to the center front vertical line created for a slimming effect. Color contrast between second- and third-layer garments reinforce the effect.
- Beyond safe, consider *alternative fit* silhouettes in inverted triangular, rectangular, and hourglass styles—with alterations as needed.
- What not to wear? Short fitted tops and jackets, worn with tight skirts or pants emphasize the proportional difference between the larger lower body and the smaller upper body, and expose body bulges below. (See Table 4.1.)

Style Selection for the Inverted Triangular Figure Type

- For a *quick fit*, accommodate an inverted triangular figure type with inverted triangular or wedge-shaped garment styles. The larger bodice area will likely float easily over the larger upper torso area, camouflaging the larger bust and back areas. Viewers assume the loosely fitted upper body beneath is as slim as the more fitted lower body. (See Table 4.2.)

4.1 Garment Style Selection: *Repetition and Countering*—Triangle Figure Type

Figure Type/ Shape

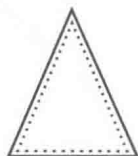
Narrower Upper Body
Wider Lower Body



Triangle

Quick Fit

Repetition of figure type/shape,
plus ease,
accommodates the body



Smart Fit

Countering of figure
type/shape creates a
Dress Slim look

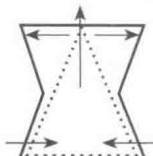


Figure Type/ Shape

Quick Fit

Smart Fit

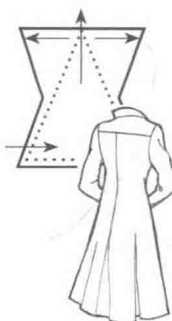
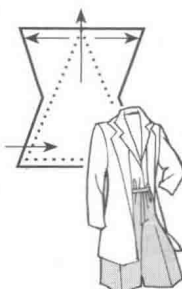
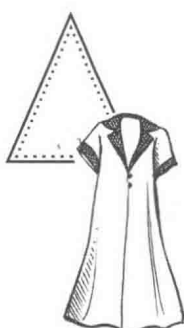
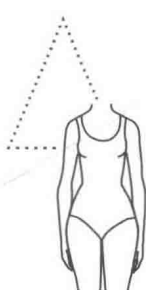


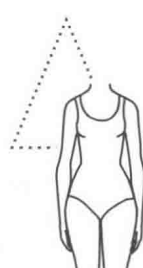
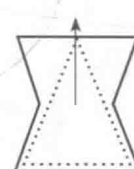
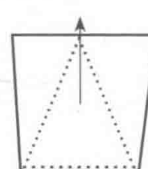
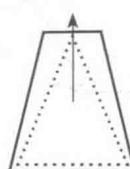
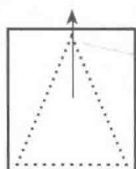
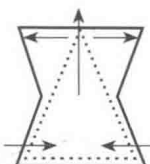
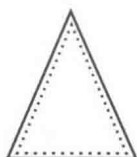
Figure Type/ Shape

Quick Fit

Smart Fit

Alternate Fit Options

Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

4.2 Garment Style Selection: *Repetition and Countering*—Inverted Triangle Figure Type

Figure Type/ Shape

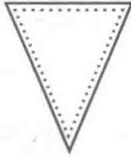
Wider Upper Body
Narrower Lower Body



Inverted
Triangle

Quick Fit

Repetition of figure type/
shape, plus ease,
accommodates the body



Smart Fit

Countering of figure
type/shape creates a
Dress Slim look

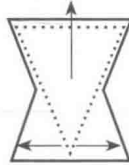
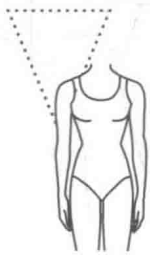


Figure Type/ Shape



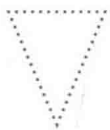
Quick Fit



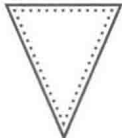
Smart Fit



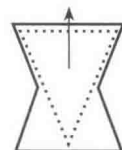
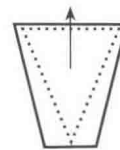
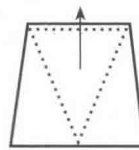
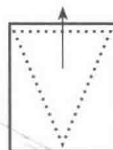
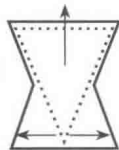
Figure Type/ Shape



Quick Fit

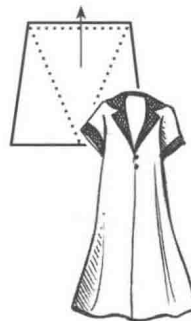
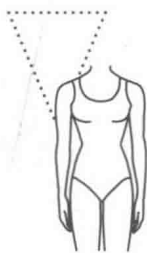


Smart Fit



Alternate Fit Options

Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

✓ REALITY CHECK

Gone are the days when women wanted their shoulders to appear narrower to appear more feminine. Women today feel equal with men, and fitness is in style; many women play up a broad-shouldered look. The look of broad shoulders is therefore an option and can be a fashion asset. If preferred, however, design detail can certainly be used at the center front neckline to draw attention inward from the shoulders.

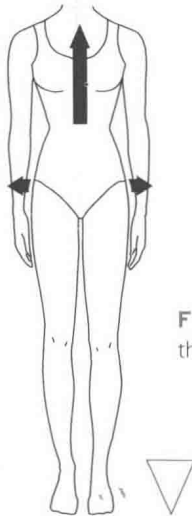


FIGURE 4.44 Counter balancing the inverted triangular figure type

- For a *smart fit*, skirt or pant styling includes some width or added fullness below the waist. This fills out the smaller, narrower lower torso somewhat, counterbalancing the wider, larger body above the waist, and it creates the illusion of more balanced proportions. This technique includes added flare, gathers, tucks, and/or pleats in the skirt or pants.
- For a slimming effect, *smart fit* recommends that style lines and design details in the outfit lead or draw attention inward and downward, away from the widest or largest area above. This includes the use of a center front or back closure, skirt and pant yokes, gores, gathers, pleats, and pockets.
- Waist and hip detail or décor draws attention downward. Soft fullness in the way of flare, gathers, or pleats in skirts and pants fills out the appearance of the lower torso and legs. That doesn't mean going to the extreme of bubble and bouffant shapes unless preferred.
- If the bust and back are wider and larger yet the shoulders are narrower, moderate shoulder pads serve to counterbalance the bust and lift the fabric so it flows more smoothly over the bust and back.
- With enough ease and worn open, third-layer shirt-jacs, jackets, sweaters, vests, tunics, and dusters draw attention inward to the center front vertical line for a slimming effect. Color contrast between second- and third-layer garments reinforce the effect. The longer tunics and dusters also serve to fill out the leg area slightly.

- Beyond "safe," consider *alternative fit* silhouettes in triangular, rectangular, and hourglass styles—with alterations as needed.
- What not to wear? Big or bulky tops and leggings, tights, or tight skirts and pants emphasize the proportional difference between the larger upper body and the smaller buttocks and thin legs. Tight tops and low-rider pants expose the body bulges above. Very wide or bouffant skirt styles emphasize thin legs due to extreme contrast, unless floor-length.

Style Selection for the Rectangular Figure Type

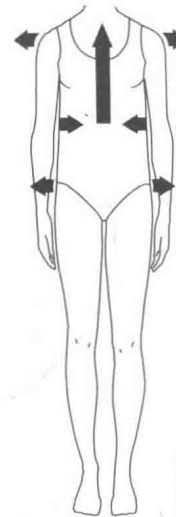


FIGURE 4.45 Counter balancing the rectangular figure type

- For a *quick fit*, accommodate a rectangular figure type with rectangular or straight-hanging shift- and chemise-style garments. The loose-fitting or partially fitted styling serves to flow easily over the larger mid-body area, camouflaging the wider midriff, waist, and abdomen.
- For a *smart fit*, garment styling includes some design detail that draws attention inward at the center front waistline. This counters apparent width to create the illusion of a smaller, narrower mid-body area. If designed with some blousing above the waist or added fullness above and below the waist, the minimizing effect is reinforced and creates the illusion of an indented waist. A shirtwaist-style dress creates this effect.
- For an even greater waist-slimming effect and a *smart fit*, use style lines or design details that lead attention outward at the shoulder and/or the hem. This includes the use of moderate shoulder pads, a shoulder yoke, puff or pleated sleeve caps, epaulettes, and full or flared skirts and pants.
- Neckline detail or décor, collars, and scarves draw attention upward and away from a wide waist. A decorative hem area draws attention downward and away from a wide waist. Loose-fitting tops, overblouses, and tunics flow easily over a wider waist area. (See Table 4.3.)

4.3 Garment Style Selection: Repetition and Countering—Rectangular Figure Type

Figure Type/ Shape

Wider waist/
less indentation



Rectangle

Quick Fit

Repetition of figure type/
shape, plus ease,
accommodates the body



Smart Fit

Countering of figure
type/shape creates a
Dress Slim look

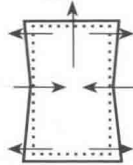
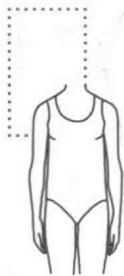


Figure Type/ Shape



Quick Fit



Smart Fit

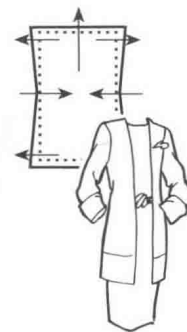
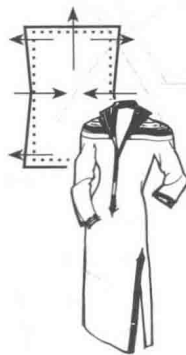


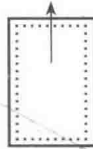
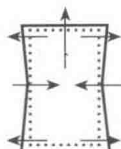
Figure Type/ Shape



Quick Fit

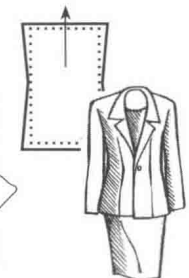
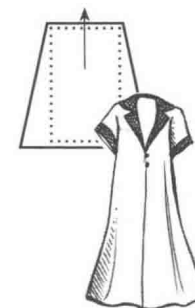
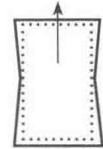
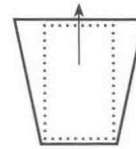
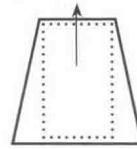


Smart Fit



Alternate Fit Options

Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

- With enough ease and worn open, third-layer shirt-jacs, jackets, sweaters, vests, tunics, and dusters draw attention inward to the center front vertical line created for a slimming effect. Color contrast between second- and third-layer garments reinforces the effect.
- A loose-fitting belt worn under a third-layer garment can reinforce the look of a narrower waist. Belts with color or textural contrast in the buckle or center front area strengthen the effect. Viewers haven't a clue what the actual width of the waist is, but assume it is narrower.
- Beyond "safe," consider *alternative fit* silhouettes in triangular, inverted triangular, and slightly hourglass styles—with alterations as needed.
- What not to wear? Cinch belts, low-rider pants, and anything that gets "hung up" on the midriff, abdomen, or high hip area emphasize width and weight.

Style Selection for the Hourglass Figure Type

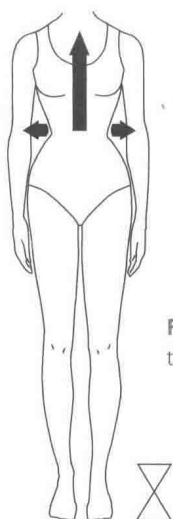


FIGURE 4.46 Counter balancing the hourglass figure type

- There is no *quick fit* garment style that automatically accommodates an hourglass figure. Even hourglass-shaped clothing styles are generally designed for a B-cup bust and are fitted in the waist and often in the skirt or pant. There is seldom enough ease or added fullness in the bodice and skirt or pant to accommodate a D-cup bust or full-rounded hips and buttocks. While an inverted triangular garment shape may accommodate a full bust, it is generally too tightly fitted in the hips and buttocks.
- *Smart fit* design is required to accommodate an hourglass figure with an hourglass garment style. For a *smart fit*, the hourglass garment must be designed to accommodate a moderate shoulder pad to provide enough fabric width at the shoulder to flow easily over the full bust below. Blousing the bodice a little serves to counter the smaller, narrow waist and minimize the obvious difference in size between the bust and waist. Some fullness or flare in skirts

creates a more subtle transition between waist and hips or buttocks. For a more tailored, fitted look, be sure to include enough fitting ease for comfort and without drawing undue attention to the body, depending on the occasion.

- Despite the pop culture's exploitation of a small waist and large breasts, design lines and details that draw attention up toward the face are recommended for business and leadership roles. Collars lift the look away from a larger bust or hips.
- Flat-lying breast pockets can lift attention and camouflage the breast curvature itself.
- With enough ease and worn open, third-layer shirt-jacs, jackets, sweaters, vests, tunics, and dusters camouflage the larger bust and draw attention inward to the center front vertical line for a slimming effect. Color contrast between second- and third-layer garments is an option to evaluate.
- Beyond "safe," consider *alternative fit* silhouettes in triangular, inverted triangular, and rectangular styles—with moderate shoulder pads and alterations as needed.
- What not to wear? Tight-fitting tops and bottoms or a cinch belt expose and draw attention to the body, emphasizing the larger bust and buttocks by extreme contrast to the small waist, making them appear even larger and more out of proportion than they actually are. (See Table 4.4.)

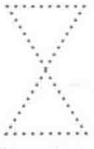
Style Selection for the Diamond-Shaped Figure Type

- A *quick fit* for the diamond-shaped figure is also unlikely since there are no diamond-shaped garments. Even if there were, they would likely appear unbalanced, with dominant width and weight in the middle. It is generally easier to accommodate a diamond figure type with inverted-triangular or rectangular garment styles that feature some added fullness above and/or below the waist—in the way of soft pleating, controlled gathers, or flare. They are most likely to flow easily over and camouflage the wider, larger mid-body, and high hip area.
- For a *smart fit*, garment styling includes design lines and details that draw attention outward at the shoulders to counter proportionally narrow shoulders. Design details that lead attention inward at the waist counter width and create the illusion of a smaller mid-body area. Styling that fills out skirts and pants slightly can be expected to counterbalance proportionally narrow hips and thin legs.
- High-waisted Empire styling as well as flared, tent, and float dresses or jumpers feature added fullness to camouflage the larger mid-body area. Blouson tops and loose-fitting drop-waisted dresses also serve to camouflage the larger mid-body area.
- Tie a knot at the bottom center front of a camp shirt or sport shirt. The knotted shirttails draw attention to themselves instead of to the body.

4.4 Garment Style Selection: *Repetition and Countering*—Hourglass Figure Type

Figure Type/ Shape

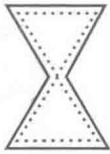
Full upper and
lower body with
smaller waist



Hourglass

Quick Fit

Repetition of figure type/
shape, plus ease,
accommodates the body



Smart Fit

Countering of figure
type/shape creates a
Dress Slim look

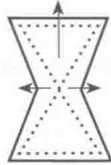


Figure Type/ Shape

Quick Fit

Smart Fit

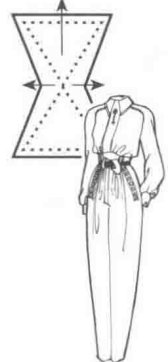
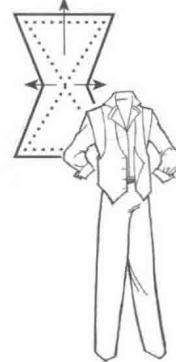
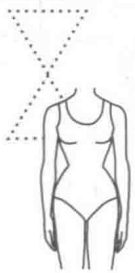


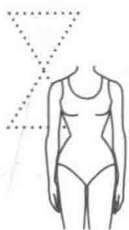
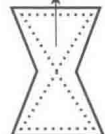
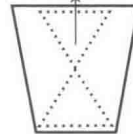
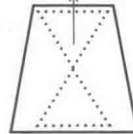
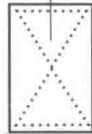
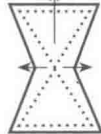
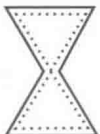
Figure Type/ Shape

Quick Fit

Smart Fit

Alternate Fit Options

Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

✓ REALITY CHECK

Darts don't easily accommodate or fit the immediate curve of a high hip curve or high buttocks contour. Controlled gathers or flare more easily accommodate the short curve. Better yet are skirts and pants with elastic in the waistband. Elastic allows the fabric to expand more quickly, and blousing the top makes the curve below appear somewhat smaller. If preferred, you can keep the front waistband flat and tailored looking, with elastic in the back only.

- Light- to medium-weight layered looks are highly recommended. Vests are terrific for this figure type.
- With enough ease and worn open, third-layer shirt-jacs, jackets, sweaters, vests, tunics, and dusters camouflage the larger bust and draw attention inward to the center front vertical line for a slimming effect. Color contrast between second- and third-layer garments is an option to evaluate.
- Beyond "safe," consider *alternative fit* silhouettes in triangular, rectangular, and some few oval shapes—with moderate shoulder pads and alterations as needed.
- What not to wear? Anything form-fitting over the mid-body area draws negative attention to the body. Don't try to cinch in the body at the waist. You'll look stuffed-in and feel miserable. A bouffant skirt will emphasize the larger mid-body area by repetition yet emphasize thin legs due to extreme contrast. (See Table 4.5.)

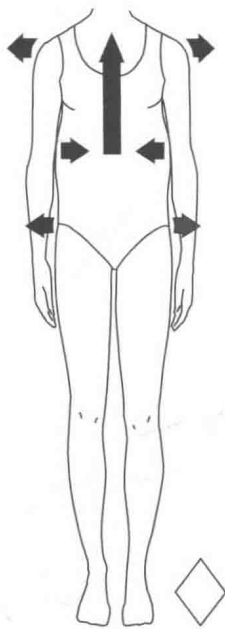


FIGURE 4.47 Counter balancing the diamond-shaped figure type

Style Selection for the Tubular Figure Type

- For a *quick fit*, nearly all garment shapes will accommodate a relatively thin, tubular figure type. It's not so much about

✓ REALITY CHECK

Learn to use moderately sized shoulder pads. A well-shaped shoulder pad can fill out a shallow chest, camouflage prominent collarbones and a forward shoulder joint, balance a larger neck and upper arms, and so on. A raglan sleeve style supported by a shoulder pad seldom requires any alteration to fit.

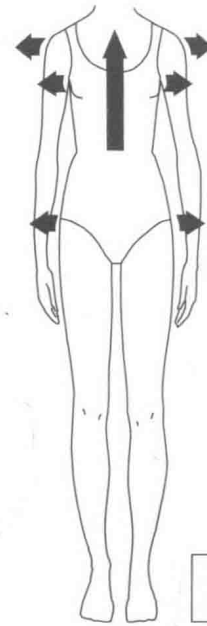


FIGURE 4.48 Counter balancing the tubular figure type

finding the style, as it is about finding the size. Finding something small or narrow enough for a tubular figure can be almost as much a problem as finding something large or wide enough for an oval figure.

- For a *smart fit*, garment-styling includes some curved lines and moderate fullness to fill out the figure nicely—to counter the angularity and create the illusion of soft curves on the body.
- This is the woman who can really have fun with horizontal stripes, pockets, and a little puff to the sleeve if it's part of her personal style.
- Alterations on some styles may still be needed to accommodate bone structure harmoniously.
- Medium-weight fabric adds some softness to the body. Volume in sheers can be beautiful. Medium-scale decorative detail can add visual weight to the outfit that serves to counter thinness.
- What not to wear? Form-fitting tubular and strapless styles expose and emphasize thinness. Oversize tops and stiff or heavy-weight fabrics tend to overpower a thin, tubular figure. (See Table 4.6.)

4.5 Garment Style Selection: Repetition and Countering—Diamond Figure Type

Figure Type/ Shape

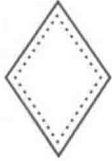
Larger mid-body,
thinner limbs



Diamond

Quick Fit

Repetition of figure type/
shape, plus ease,
accommodates the body



Smart Fit

Countering of figure
type/shape creates a
Dress Slim look

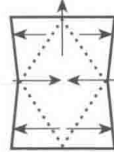
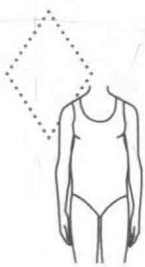


Figure Type/ Shape



Quick Fit



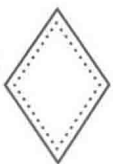
Smart Fit



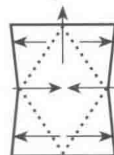
Figure Type/ Shape



Quick Fit

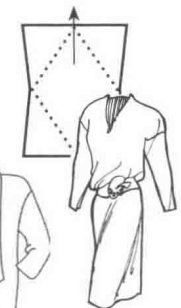
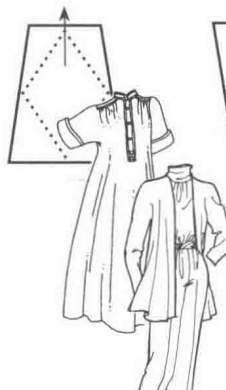
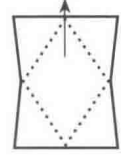
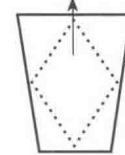
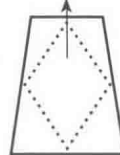
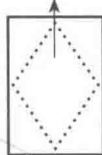


Smart Fit



Alternate Fit Options

Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

4.6 Garment Style Selection: *Repetition and Countering*—Tubular Figure Type

Figure Type/ Shape

Below average/ideal
weight range, thin



Tubular

Quick Fit

Repetition of figure type/
shape, plus ease,
accommodates the body

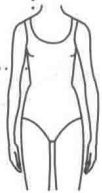


Smart Fit

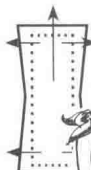
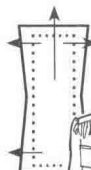
Countering of figure
type/shape creates a
Dress Slim look



Figure Type/ Shape



Quick Fit



Smart Fit

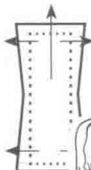
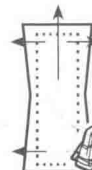
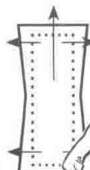


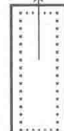
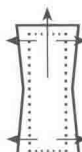
Figure Type/ Shape



Quick Fit

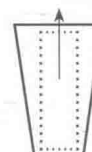
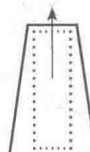


Smart Fit



Alternate Fit Options

Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

Style Selection for the Oval/Rounded Figure Type

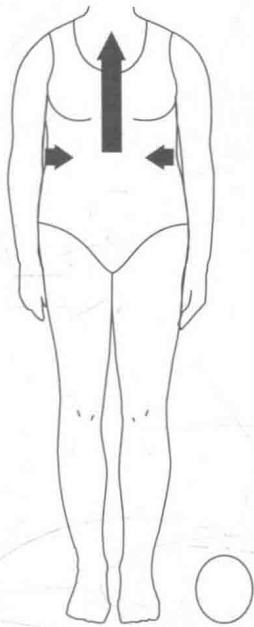


FIGURE 4.49 Counter balancing the oval/rounded figure type

- A *quick fit* for the oval or rounded figure is less likely since there are few oval or rounded garments. Even if there were, most would likely make the body appear bulkier and heavier. It is generally easier to accommodate an oval or rounded figure with rectangular garment styles that feature enough ease to flow over the body and camouflage body bulges. Design ease may be added with attractively controlled flare, gathers, tucks, and/or pleats. A cocoon coat is one of the few rounded garments that can flatter the rounded figure.
- For a *smart fit*, garment styling includes added width at the shoulders to accommodate a moderate shoulder pad. This fills out the area to counter proportionally narrow shoulders and counterbalance larger upper arms. Design details that lead attention inward serve to counter width and weight, creating the illusion of a smaller, narrower figure.
- For a slimming effect and a *smart fit*, use style lines and design details in the outfit lead or draw attention inward and upward toward the face, away from the widest or largest area of the body. This includes the careful use of center front and/or back closures, vertical seamlines, collars, yokes, gores, gathers, pleats, and pockets.
- Choose sleeves that are cut larger to begin with. These can include camp-shirt, sport-shirt, bishop, raglan, dolman, or kimono sleeves.

- With enough ease and worn open, third-layer shirt-jacs, jackets, sweaters, vests, tunics, and dusters camouflage the larger bust and draw attention inward to the center front vertical line for a slimming effect. Color contrast between second- and third-layer garments is an option to evaluate.
- Worn under a third-layer garment, comfortably fitted belts, generally with a contrasting buckle, can surprise and delight by creating the illusion of a narrower waist.
- Beyond “safe,” consider *alternative fit* silhouettes in triangular, inverted triangular, and subtle hourglass styles—with moderate shoulder pads and alterations as needed.
- What not to wear? Gaping necklines, collarless garments, and anything tight-fitting expose the body to negative attention. The use of sheer fabric and tiny patterns can actually emphasize larger size due to the greater contrast in size.

The concept of countering also works to create the illusion of better vertical balance and proportion. In the case of a proportionally shorter chest, midriff, lower torso, or legs, the idea is to draw attention in the direction that will visually lengthen those areas, and vice versa if the need is to visually shorten those areas.

If it is not obvious how a style might fit or relate to a figure, the individual could find a similar style and try it on. It may look terrible, but then again, it may look terrific. You can't always tell how great a dress will look until you get it off the hanger and on the body. Many fabrics are designed to drape beautifully on the body. All they really need are hips and shoulders to give them shape. At the same time, it is important to remain open to new looks or new lengths and think about how they might be adapted to work for a particular figure.

Remember, the standard figure for which any pattern or garment is sized is an imaginary one. It has unvarying proportions and contours, perfect posture, and symmetrical body segments. It's not real. Virtually every body varies in some way from the standard ideal.

We must understand that body shape or figure type does not eliminate the fact that our figure shape will naturally change during the course of our lives—due to diet, exercise, child-bearing, illness, and the aging process. Regardless of figure type or combination of types at any given time, our advice is to use our clothing as a resource to present the body attractively and harmoniously. It's a life skill for everybody. (See Table 4.7.)

4.7 Garment Style Selection: *Repetition and Countering*—Oval Figure Type

Figure Type/ Shape

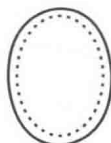
Above average/ideal
weight range, rounded



Oval

Quick Fit

Repetition of figure type/
shape, plus ease,
accommodates the body



Smart Fit

Countering of figure
type/shape creates a
Dress Slim look

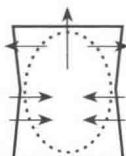
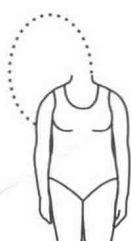


Figure Type/ Shape



Quick Fit



Smart Fit

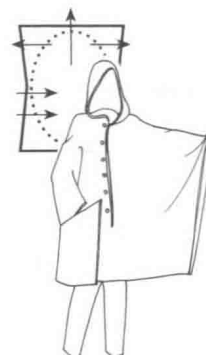
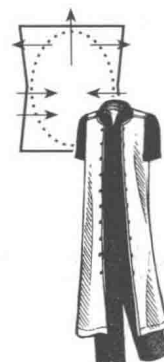
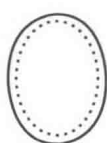


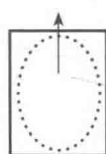
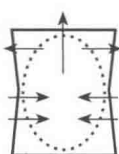
Figure Type/ Shape



Quick Fit

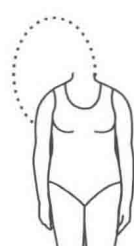
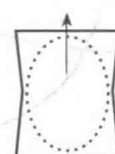
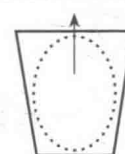
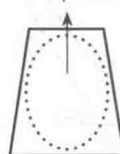


Smart Fit



Alternate Fit Options

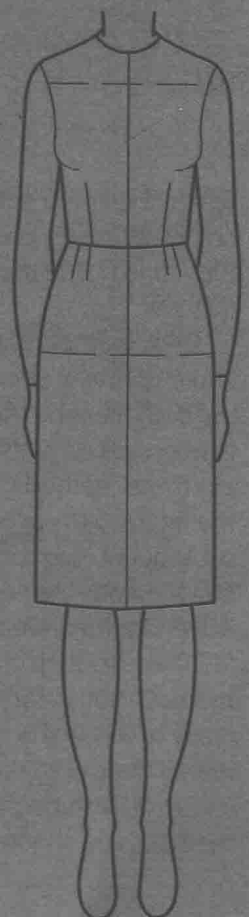
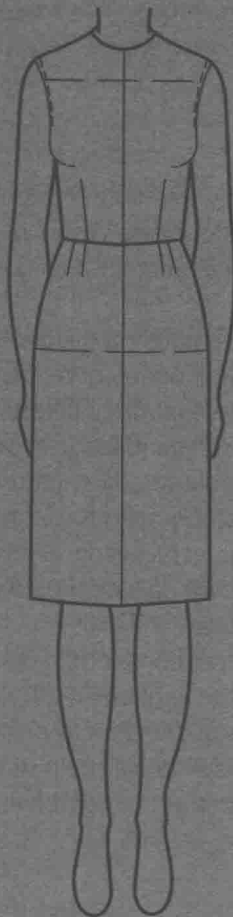
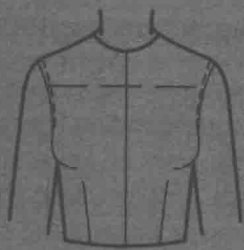
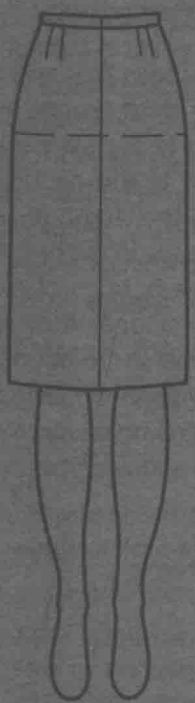
Attention into the center and
up to the face for a Dress Slim effect



Source: Judith Rasband, Conselle Institute

Chapter 5

Alternative Methods of Fitting



The most common frustration faced by a tailor, dressmaker, or home sewer is the problem of how to go about achieving a fabulous fit. You've got to start somewhere, with something, to solve the problem. Where the "somewhere" is, is up to you, and the "something" is a standard, average, basic fitting dress pattern. There's not much detail to the dress, as it simply follows the outline or silhouette of the average human body, with only minimal fitting ease allowed.

For the lucky few whose measurements match perfectly with those of the basic pattern, the garment can be made up with no need to adjust the pattern. It will look just as the designer intended it to look, and feel comfortable when worn. Seldom, however, does even a basic pattern fit the figure perfectly, even when the pattern style accommodates the body or figure type. It's more likely that body measurements will differ in one or more areas of the basic pattern. It's likely that the pattern will fit well in some areas, but less well in other areas, and possibly not at all in still others. The challenge is to discover where the pattern differs from the body.

To test the fit of a pattern, there are three time-tested methods of fitting to choose from—the *measurement method*, the *pinned pattern* or *tissue method*, and the *trial garment method*.

Each method may be used separately throughout the entire garment or combined as you prefer, depending on the body area and the pattern piece. A fabulous fit results in a harmonious composition of body, style, and fabric. In mastering these methods, you may be able to adjust patterns to the figure with such accuracy that the need for fitting and subsequent garment alteration is very nearly eliminated. The methods are equally effective for adjusting patterns or slopers for men, women, and children.

After reading the following sections outlining each method, but before beginning the process, read and be ready to follow the general points of direction as presented in Part Three of this text. These guidelines will help steer you successfully through whichever method or combination of methods you choose.

GUIDELINES APPLIED TO THE FITTING PROCEDURE

A fitting procedure is really a process that can involve several sessions over a period of time. It is best to keep individual sessions short, and the best way to achieve that is to be prepared and work quickly. It is best to work from the simple to the complex and from the top to the bottom of each garment unit. In all cases, assistance is essential.

Schedule Short Fitting Sessions

Schedule short fitting sessions at close intervals to ensure continuity in the fitting procedure. This also helps avoid undue mental, emotional, or physical fatigue, and prevents loss of interest in the project.

Work Quickly

Standing still too long often causes fainting because the blood circulation is inhibited. Locking the knees will increase the possibility of fainting. To help prevent people who are being fitted from feeling faint, advise them to wiggle their toes and relax their knees occasionally. When the garment is on the body, pin-baste the adjustment only enough to indicate the problem areas and the amounts of change required. The complete adjustment can be made more quickly and accurately when the pattern or garment unit is already on the work surface.

Make the Math Work for You

When the length of one stitching line changes, the length of corresponding lines on adjoining parts must change an equal amount. For example, if a garment neck opening is made smaller, make the same reduction in the neckline of the facing and the collar. A change in the length of an armhole requires the same amount of change in the height of the sleeve cap or an adjustment in the position of the top-of-cap mark. When the adjustment of one stitching line involves only a change in position or in shape but not in length, the adjoining stitching line requires no length change. For example, an adjustment for sloping or squared shoulders only changes the pitch of the shoulderline and



REALITY CHECK

The measurement method involves *two-dimensional* pattern adjustment based on comparison of body and pattern measurements, while both the pinned pattern method and the trial garment method rely on *three-dimensional* fitting directly on the body. Procedures in each method will produce a fabulous fit when you understand and apply them correctly.



✓ REALITY CHECK

One adjustment or alteration can affect another. In most cases, follow the order supplied in the text. A logical awareness of the whole body may allow you to have some intuitive input as to what is needed to solve the fitting problem. In addition, multiple figure variations may require alterations to blend naturally one into the other. In some cases, a single alteration procedure may correct several fitting problems. In other cases, such as altering for a large abdomen and high hip curve, one alteration may cancel part of the other—with one alteration solving both fitting problems.

height of the underarm. It does not change the size of the armhole; therefore, no sleeve adjustment is needed.

Attempt to solve each fitting problem on the basis of a few underlying principles. Apply similar adjustment procedures to similar problems. *Choose the simplest, neatest procedure that corrects a problem without causing additional ones.*

Work from the Simple to the Complex

Begin fitting with the garment section for the area of the body that has the least complicated contours. This is usually a skirt, since the lower torso has fewer pronounced curves and contours and the corresponding pattern has fewer pieces. Pants are next in a logical fitting sequence. Principles and procedures for fitting skirts apply directly and proceed naturally to pants. Pants require the same adjustments as the skirt and for the same reasons. Additional fitting areas include the inseam and crotch seam.

Learning to fit pants at the crotch area has a direct relationship to fitting the bodice armholes. Fitting principles that apply to adjusting the length and shape of the crotch curve and the depth from front to back also apply to adjusting the fit of the sleeves. Proceeding from the simple to the complex makes the fitting of the armholes a review instead of a new challenge.

To check the fabric adequacy for the lower and upper torso, use the following guidelines:

- Measure the circumference of the waist, hip, and bust.
- Subtract the personal body measurements from the corresponding standard measurements on the pattern envelope chart.
- Divide the difference between each set of measurements by four (four seam edges are involved).
- Add or subtract the divided difference parallel to the side seam of the pattern or garment.
- Measure the arm circumference of the biceps and add 1 inch to 2 inches for ease. Subtract this from the sleeve pattern about 2 inches below the capline. Divide the difference by two and add or subtract this amount parallel to the underarm seam of the pattern or garment.

Fit the garment right side out since this is how the finished garment will be worn. (If the garment is fitted wrong side out, asymmetrical alterations will be on the wrong half of the body when the garment is worn, right side out.) Place the garment on the body carefully to avoid stretching the unfinished edges. Pin the closure together accurately. Match garment center lines or other closure markings. All seam allowances and dart folds should lie smoothly against the body, and the fabric surface should be free from any distracting construction. (An exception is when the dart-folds on a fashion garment lie on the outside for design interest.)

Once the garment is on and closed, fitting problems involving length should be adjusted first, before those involving circumference so that garment shaping is level with the appropriate body contour.

Anyone being fitted should stand several feet away from the mirror but look straight ahead into it. Stand erect with body weight balanced in a natural stance. This posture should be assumed during each fitting. A change in posture always produces a change in fit. If the person being fitted turns to watch the fitting process, the body automatically becomes asymmetrical. However, there may be a need to adjust the garment for asymmetry even if the person is standing straight.

Work from the Top Down on the Tissue and the Fitting Garment

In general, when fitting, work from the top to the bottom of *each garment unit*. Progress toward the lower edge. The myriad of minor problems seen at first may become insignificant or disappear altogether as your work progresses logically.

Always keep the garment centers in line with body centers and work from side to side within the same area to achieve balance. It also prevents incorporating too much ease on one side of the garment.

To achieve the illusion of pleasing figure proportions, *work from the front to the back* of the garment. The *position* of the side or shoulder seamline can be changed without increasing the total size of the garment. To make the front appear smaller, move the seamline forward by letting out the back and taking up the front an equal amount. Reverse the procedure to make the back appear smaller. Portions that are more nearly equal create a feeling of balance.

Look for Related Figure Variations

Look for related variations, side to side, front to back, and top to bottom. The body usually counterbalances itself. If an individual has rounded shoulders, the chest is usually shallow. A high hip on one side may be accompanied with a high shoulder on the opposite side of the body. If the figure is asymmetrical, determine which side of the body is causing the most distortion in the fabric; adjust only that side of the garment when the figure differences of the two sides are

slight. If the figure difference is more extreme, adjust each side of the garment as needed.

Adjust the position of the garment hemline last. Body contour, frame, and build help determine the appropriate positions that will enhance appearance. The adjustment in hem length is made as an even amount at the hem edge of the various garment pieces. Unevenness of a hemline is a signal that adequate fit has not been accomplished, unless bias fabric areas are involved.

MEASUREMENT METHOD OF FITTING

In fitting with the measurement method, *first measure the body*. (Remember that assistance is essential in this procedure.) Add basic wearing ease to the measurements where the body moves or expands. Then measure the tissue pattern in corresponding locations and compare. According to the differences in body measurements compared to pattern measurements, make needed adjustments on the paper pattern. *Directional measuring* identifies the seam on which the adjustment should be carried out. Use the adjusted tissue pattern to cut out fashion fabric. Construct the fashion garment and put it on the body to check the fit. Make any needed refinements to the fashion garment. Make equivalent final adjustments on the paper pattern.

Advantages and Disadvantages of the Measuring Method

| Advantages | Disadvantages |
|--|---|
| <ul style="list-style-type: none">• Measurements can be taken relatively quickly.• Body variations in length and width can be detected for symmetrical and asymmetrical figures with minimal cost in time and money.• Beginners and professionals can cut to fit with little or no refined fitting needed.• Measurements can be recorded and used until there is a change in the figure.• Pattern alterations can be automatic if the pattern used is from the same company. | <ul style="list-style-type: none">• Practice in taking body measurements is needed for accuracy.• When a minimal number of body measurements are taken, more refined fitting is usually required.• The person being measured may move, causing inaccuracies.• Comparing the body measurement to the pattern measurement may be time-consuming—the more complex the pattern, the more time required. Advanced knowledge of comparative positions on a complex pattern is also required. |

REALITY CHECK

The body is slightly smaller in the morning than in the afternoon, resulting in differing measurements. Some bodies vary more than others in this respect.

Preparing the Body for Taking Measurements

1. Wear the usual undergarments, a slip, a fitted leotard, swimsuit, or halter and tights—anything that does not add extra inches. Anything with elastic that cuts into the back, waist, or thighs must be avoided.
2. Put on a necklace, chain, or cord. It will settle into the natural breakpoint in the neck/shoulder curve—at the most prominent vertebrae at the back of the neck, and at the sides of the neck at the shoulders. The front of the neckline on a jewel neckline curves from the shoulder across the top of the collarbones, usually crossing over the indentation at center front.
3. Tie a narrow tape or elastic around the bust, around the waist, around the fullest hip curve, and around the fullest part of each thigh. Do not tie the tape or elastic so tightly that it cuts into the body. Wiggle and bend at the waist if necessary, allowing the elastic to settle into the natural waistline. Elastic should lie level and parallel with the floor. (If the waistline is not parallel in front—but rides higher or lower—place the elastic parallel to the floor and measure up or down, recording the inches of change needed from parallel.)
4. Mark the body and the clothes the person is wearing as described below. For the body, mark dots using a water-soluble pen; for fabric, use tiny pieces of transparent tape (see Figure 5.1). Alternatively, you can place narrow ($\frac{1}{8}$ - to $\frac{1}{4}$ -inch) masking tape at center front and center back locations, shoulder seams, and side seams. Then,

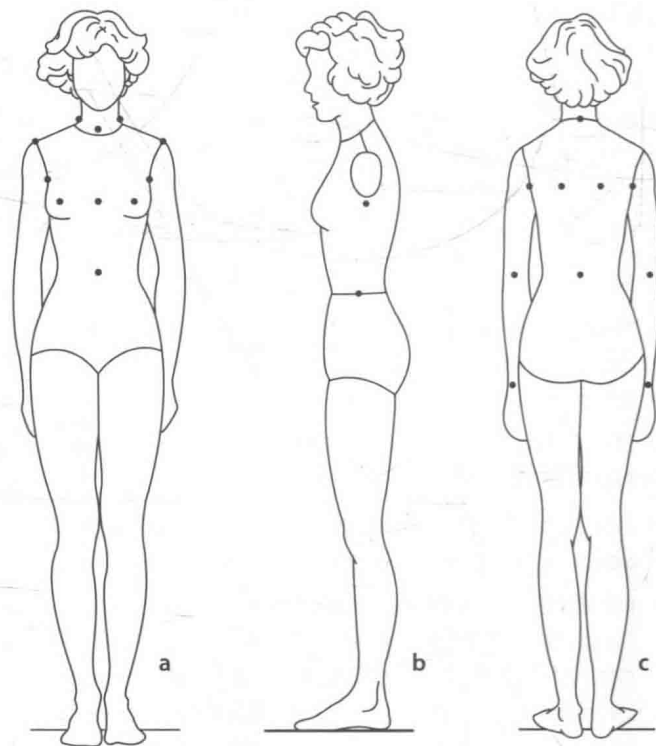


FIGURE 5.1 (a–c) Breakpoints marked on the body with a water-soluble pen are easily removed.



✓ REALITY CHECK

The measurement method of fitting really does work! If it hasn't worked for you in the past, it's likely you haven't recognized 1) the correct figure variation responsible for the fitting problem, or 2) exactly where to take the measurements on the body or the pattern, or 3) the correct direction in which to take the measurement. It all makes a difference. You likely won't have to take all the possible measurements—only those that pertain to those figure variations discovered during the figure evaluation.

mark the breakpoints on these pieces of tape. Mark the following breakpoints:

- neck, at sides where the necklace or cord crosses the shoulder
 - shoulders, on top at outside edge or tip of shoulder bone
 - center front, at the indentation on the neck—top of the collarbones, at full bust level, and at waist level (If not sure of the waist location, have the person bend side to side and front to back. The crease line formed in bending is usually the waist line. The navel is seldom at waist level, but 1 to 2 inches below.)
 - center back, at neck base or prominent vertebrae, at full back level, and at waist level
 - high bust, level at front armhole crease
 - shoulder blade, level at back armhole crease
 - armhole level, on the underarm, $\frac{3}{4}$ to 1 inch below arm hinge
 - armhole level, on the side of the body, $\frac{3}{4}$ to 1 inch below arm hinge
 - side high, on elastic at bust level
 - side low, on elastic at waist level
 - bust tip point, exactly at fullest point of the bust
 - shoulder blade point, exactly at fullest point of the shoulder blade
 - elbow, on the bone tip
 - wrist, at prominent side bone
5. Stand barefoot or in very flat shoes or sandals on a hard-surface floor. Carpet padding can cause significant difference in length measurements. The body must be erect, in a natural, relaxed position, looking straight ahead.

Taking and Recording Body Measurements

It is logical to measure the lower torso first, particularly if you are a beginner at taking measurements, as there are fewer complicated curves or body bulges (see Figure 5.2). If experienced and because it generally takes longer to measure or fit the upper torso or bodice, consider working on that section first, while still feeling relatively fresh (see Figure 5.3).



FIGURE 5.2 Professional/assistant and student/client involved in the measurement process—pant side seam length from the floor



FIGURE 5.3 Professional/assistant measuring student/client full bodice length. Note the variety of measurement aids.



✓ REALITY CHECK

Lengthwise measurements are somewhat easier and more reliable because they involve bone structure and body breakpoints. Take lengthwise measurements with measuring tape taut but not stretched. Crosswise measurements are more difficult because they involve more soft body tissue. Take crosswise measurements with the measuring tape wrapped snugly; otherwise, the pattern will be larger than expected.

Regardless of where you begin, work quickly and accurately so the person being measured does not become tired. If necessary, rest for a time after the lower torso has been measured. (Check the position of waistline tape and other tapes before measuring is resumed.) Take another rest if needed before the arm is measured.

Remember to record the body measurement *plus* any indicated ease amount. Illustrated forms for recording measurements are found in Part Three of this text. Measurements needed for bodice fitting are first, followed by relevant figure variations; measurements needed for fitting the sleeve are second, along with relevant figure variations; and measurements needed for fitting skirts and pants are last, along with relevant figure variations. Detailed discussions and directions accompany each section, preparing you to progress through the section in a logical and efficient order.



✓ REALITY CHECK

Bodies often come in different sizes from top to bottom, but also from front to back, and side to side. If you discover this to be the case, horizontal or circumference measurements should be taken in halves or quarters, rather than as an entire circumference.



✓ REALITY CHECK

Knowing the *order* and *direction* to take the measurement is often the key to recognizing and understanding the results of the measurement. For example, to determine neck size, first take the shoulder tip width measurement, then use that to check and locate the tip of the shoulder on the full pattern. Then measure the shoulder length, starting from the tip position and measuring to the neck breakpoint. The body shoulder length will then show you whether the neck is larger or smaller than what is allowed on the pattern. While the direction you take the measurement on the body does not generally matter, it is essential when you take the measurement on a pattern for comparison.



✓ REALITY CHECK

Some tape measures can stretch with time and use, especially those that are not of a very high quality. You can check the markings on your tape measure against a ruler from time to time to ensure that it remains accurate.

Preparing the Pattern for Measurement

1. Cut the pattern pieces apart, leaving generous margins along all seam allowances. These margins will be useful when the pivot method of adjustment is used. Basic patterns often have seamlines printed with extra-wide margins, seam allowances, or “outlets.”
2. Select the necessary pattern pieces. Using a basic garment pattern, you can plan for a center front opening to facilitate the fitting process.
3. Using a dry iron set at wool to prevent water drops from shrinking the tissue, press the pattern pieces flat and wrinkle free.

Comparing the Pattern to Body Measurements

1. Work with a smoothly pressed, untrimmed pattern, the body measurement chart, the tape measure used in taking body measurements, or a long ruler.
2. Use the body measurements-plus-preferred ease amount at the *corresponding location* on the pattern, in the *direction illustrated*, and in the *sequence indicated* in the illustrated instructions provided in Part Three.
 - Position the measuring tape around the appropriate level on the body, holding the ends together in exactly the amount the pattern measures. Slip the tape measure back and forth around the body to simulate a garment of that size. Is it comfortable—the amount preferred? Adjust the amount as needed.
 - Do not include in the pattern measurements the seam or hem allowances, button closures, or other

extensions beyond the center. Do not include the area enclosed in the darts, stitched pleats, and tucks, or other similar details. Extra width must be allowed in addition to the body measurement for gathering, unstitched pleats, released darts or tucks, and flare.

- When measuring the pattern, mark with a pencil where the body measurements end or where they extend beyond the pattern edge. Add tissue to extend the pattern edge if necessary.
 - Differences of $\frac{1}{4}$ of an inch or more indicate potential fitting problems and likely need to be adjusted for. Re-measure often, at any time you are concerned about the accuracy of the measurement. Momentary changes in posture, breathing, or body swelling may cause changes in a measurement.
3. Using the most efficient method of adjustment, transfer all adjustment amounts to the tissue pattern so it may be used again.
 4. Perfect all grainlines and stitching lines. When working with a basic pattern, you may permanently fuse pattern backing or thin, fusible interfacing to the adjusted pattern. The fusing agent on interfacing and pattern backing will adhere better if a strip of aluminum foil is placed under the covering of the pressing board. This reflects the heat back into the pattern materials.
 5. Use the adjusted-to-fit basic pattern to
 - compare with fashion patterns for adjustment
 - check tissue fit, and/or
 - cut the basic trial garment

Measuring the Crotch Curve

The crotch curve is the most difficult seam to fit well. That's where the body curves and goes between the legs. No wonder it's hard to measure and shape. Add to that, the body often slopes from front to back, particularly if the buttocks have dropped. Measurements could be exactly the same for larger, average, or smaller bodies, but the shapes may be very different, as experience will show.

Speed-fit the crotch curve using a flexible curve—flex-curve to copy the actual shape of the crotch area. The flex-curve is made of rubber surrounding a sturdy metal rod inside. You can bend and shape it easily, yet if careful in handling it, the flex-curve will hold the body curve. Use it to establish the exact curve of the upper back, upper arm, hip, and, in this case, the crotch area.

1. Prepare a 24-inch square of tracing paper on a table nearby. Heavy transparent velum paper works well. It is generally available at art supply stores.
2. Slide a small rubber band onto the flex-curve, moving it to approximately the middle. It will be positioned precisely during the shaping process. Slide another small rubber band onto each end of the flex-curve to use in marking the waistline position, front and back.



FIGURE 5.4 Professional/assistant positions the flex-curve to duplicate the shape of the body crotch curve.

3. Position the flex-curve between the legs. Gently bend and press the flex-curve, shaping it to conform to the full crotch curve—from center front waist down over the abdomen, through the legs, and upward through the buttocks to the center back waist position. Do not pull the flex-curve tight, into the body crevice. The flex-curve should just touch the body slightly (see Figure 5.4).
4. Slide the rubber band in front to the waist level position. Do the same in back, sliding the rubber band into the small of the back at the center back waist level position.
5. Slide the center rubber band to the mid-body point—the position where the inseam would touch the flex-curve. You can also use a pen or piece of transparent tape to mark the position.
6. When correctly positioned and shaped, tilt the ends of the flex-curve to the side and slide it partially down the leg. Step out carefully so as not to disturb the curvature.
7. Carefully lay the shaped flex-curve on its side on the tracing paper.
8. On the inside of the flex-curve, trace the curve onto paper, as it duplicates the crotch curve. You can now see the shape of the crotch curve from the side view. You can make a second copy and cut out the entire shape to use as a template for comparison (see Figure 5.5).

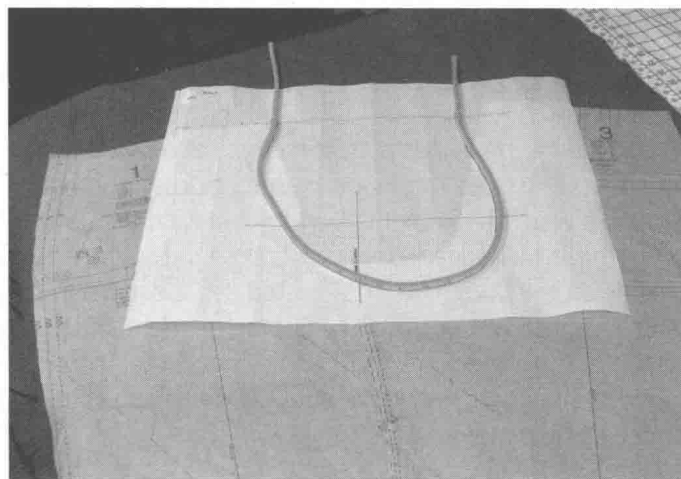


FIGURE 5.5 Trace onto transparent vellum. The shape of the flex-curve is molded to duplicate the body crotch curve.

9. Mark the waist levels, front and back, and the inseam mid-point. The front portion of the crotch curve is normally somewhat shorter than the back, due to the full-curve of the buttocks.
10. For this step, use the measurements taken during the body measurement process. Measure from the inseam, along the curve, to the hip joint level in front, and place a mark. Repeat for the back. Draw the hip joint level by connecting the front and back hip joint level marks. Draw the crotch depth line perpendicular to the hip joint level and through the inseam mark. The intersection of this line and the hip joint level lines must be at right angles (see Figure 5.6). These lines will be used to compare your traced crotch curve to the crotch curve of your pant pattern, and to make pattern alterations with outstanding results (see Chapter 6).

To use the new crotch-curve illustration, start by placing front and back pant pattern pieces together at the inseam location, with the leg inseams aligned downward for several inches. (Be aware that the total length of the leg seam will not line up because of the curve in the leg pattern.) This placement will allow you to evaluate the overall differences in shape between the crotch curve and the pattern crotch curve—length, depth, and width. You can use the crotch-curve tracing to adjust the pant pattern with outstanding results.

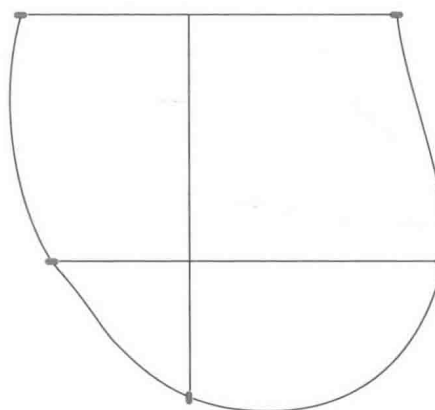


FIGURE 5.6 Using measurements taken of the body crotch curve length, locate and draw the hip joint level on the crotch curve tracing.

PINNED PATTERN/TISSUE METHOD OF FITTING

In fitting with the *pinned pattern method*, also called tissue-fitting, you first pin the tissue pattern pieces together as though it were the garment. You then put it on the body to check the fit. Make needed adjustments on the tissue pattern directly on the body. Use the adjusted tissue pattern to cut out fashion fabric. Construct the fashion garment and put it on the body to check the fit. Make any needed refinements to the fashion garment. Make equivalent final adjustments on the tissue pattern.

Advantages and Disadvantages of Pinned Pattern Method

| Advantages | Disadvantages |
|--|--|
| <ul style="list-style-type: none">• Pinning the pattern together can be done relatively quickly and easily, particularly for easy-to-fit figures and simple or loose garment styles.• A preliminary check of basic wearing ease and fashion or design ease can be made quickly.• You can see and evaluate the silhouette on the body with fairly reliable results.• The adjusted pattern can again be pin-fitted for further evaluation.• Pattern adjustments are made before cutting and sewing a trial or fashion garment.• Seeing the fashion design in a pinned pattern motivates completion of the garment.• The fashion fabric is not over-handled during the fitting process.• The sequence of construction is learned indirectly as the pattern is pinned together, often speeding up garment construction. | <ul style="list-style-type: none">• An assistant is needed.• The person being fitted must stand very still to prevent tearing the paper pattern.• Upper arms must be held away from the body to prevent moisture damage and the tissue from tearing.• Pinning details such as gathers, pleats, and tucks is very involved and can be difficult.• The amount of available ease may be difficult to recognize, especially by a beginner.• The asymmetrical figure requires a duplicate pattern to fit right and left sides, then to be fitted separately.• Tissue and fabric have different draping qualities, creating differences in the look of the pinned paper and the finished fabric garment.• Complex pattern adjustments may cause distortions in grain and fit. |

Preparing the Pattern for Fitting

1. Cut the main pattern pieces apart along the cutting lines for the selected size, leaving generous margins along the shoulder, side, and waist seam allowances. Basic patterns often have seamlines printed with extra-wide margins, extensions, or "outlets." If so, mark stitching lines on the basic pattern to prevent mistaking their position.

2. Select the necessary pattern pieces. Using a basic garment pattern, you can plan for a center front opening to facilitate the fitting process. There is no need for facings, collars, cuffs, bands, or pockets. If the body is relatively symmetrical, you can work with the traditional half-pattern. If, however, the body is noticeably asymmetrical, you must make a copy of the pattern, using the copy to fit the other side of the body.
3. Using a dry iron set at wool to prevent water drops from shrinking the tissue, press the pattern pieces flat and wrinkle-free.
4. If desired, reinforce the tissue pattern pieces with pattern backing or thin, fusible interfacing. The fusing agent on the interfacing and pattern backing will adhere better if a strip of aluminum foil is placed under the covering of the pressing board. This reflects the heat back into the pattern materials.
5. Trim the excess pattern tissue from the neckline, armhole, and crotch seam allowances. Pre-trimming on the cutting line prevents mistakes later when cutting out fabric. If the pattern has not been reinforced with fusible backing, apply removable tape to stabilize all curved seam allowances. Carefully clip curved seam allowances up to the stitching line so they will lie flat during fitting.
6. Mark a vertical, lengthwise fitting reference line at the center of each pattern piece (see Figure 5.8). These lines help you maintain an accurate frame of reference for any lines that provide clues during fitting. These lines are generally perpendicular to the floor. (Asymmetrical figure variations will be more easily recognized.)
 - On a sleeve, fold the portion *above the elbow* in half lengthwise. Extend the crease straight for the full length of the pattern. Mark the crease.
 - On pants, fold the leg portion in half *at the knee*. Extend the crease on the grain the full length of the pant leg. Mark the crease.
 - On basic bodices, vests, skirts, and jackets, mark the center front and center back, particularly when the marked lines or seamlines are not at these positions.
7. Mark the horizontal crosswise fitting reference lines across the bust/chest, shoulder blade, waist, hip, and sleeve capline. These lines help you maintain an accurate frame of reference for any lines that provide clues during fitting. Again, these lines help you maintain an accurate frame of reference for any lines that provide clues during fitting. These lines are generally parallel to the floor.
8. Fold darts closed. Pin through all thicknesses of paper near the base of the dart. Pin the dart stitching line, including the dart tip.
9. Fold hems and pin in place.
10. Join seam allowances for the bodice, sleeve, and skirt unit in one of the following ways:
 - Overlap the seam allowances with stitching lines matched in the middle—seamline on seamline. Clip



✓ REALITY CHECK

Do not join seam allowances facing each other in the usual manner. Pinned with seam allowances on the inside, the pattern can appear tighter than it really is. Pinned with seam allowances on the outside and extended, the degree of fit is less obvious and the body appears larger than it really is.

curved seams only if needed to lie flat. Units lie more smoothly on the body and are easily reversed to try on either half of the body.

- Fold one seam allowance to the inside, clipping it if needed to lie flat. Lap it over the seam allowance on the matching pattern piece, with stitching lines matched (see Figure 5.7).

11. Pin along the seamline every 3 to 6 inches, leaving seam junctions free to give a little during the try-on process. For safety and efficiency, place pins parallel to the stitching line with the tips pointing downward to avoid jabbing (see Figure 5.9). If you like, use Scotch Brand Removable Magic Tape (blue label) to further secure the seamlines. Some fitters prefer to use removable tape and no pins at all.
 - Pin the bodice front and back together at the shoulders and sides.
 - Pin the sleeve together, leaving space at the bottom for the hand to slip through.
 - Pin the skirt front and back together at the sides.
 - Pin the pant front and back together at the sides.

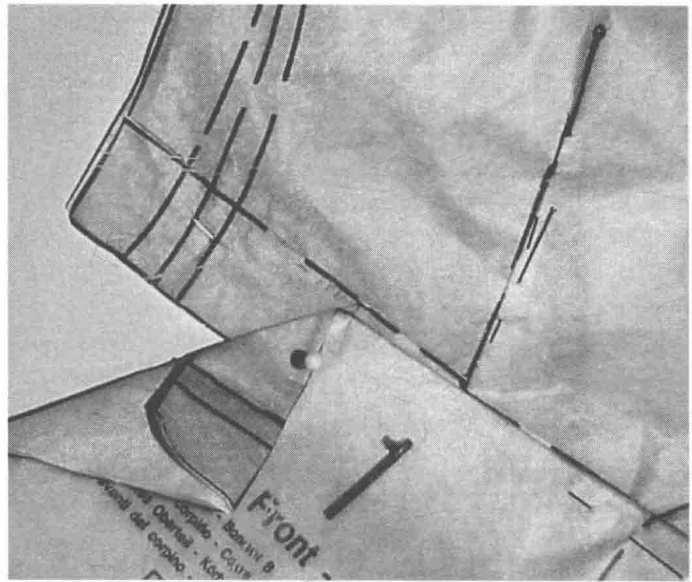


FIGURE 5.7 To facilitate the pinned pattern/tissue-fitting process, overlap seam allowances, matching stitching lines.

Preparing the Body for Pin-Fitting the Pattern

1. To ensure a fabulous fit in fashion garments, undergarments should be similar to those that will be worn with the finished fashion garment. When pin-fitting a vest, jacket, or duster, put it on over a top in the style most likely to be worn under it.
2. To mark the neck base or jewel neckline, you can put a necklace or cord around the person's neck.

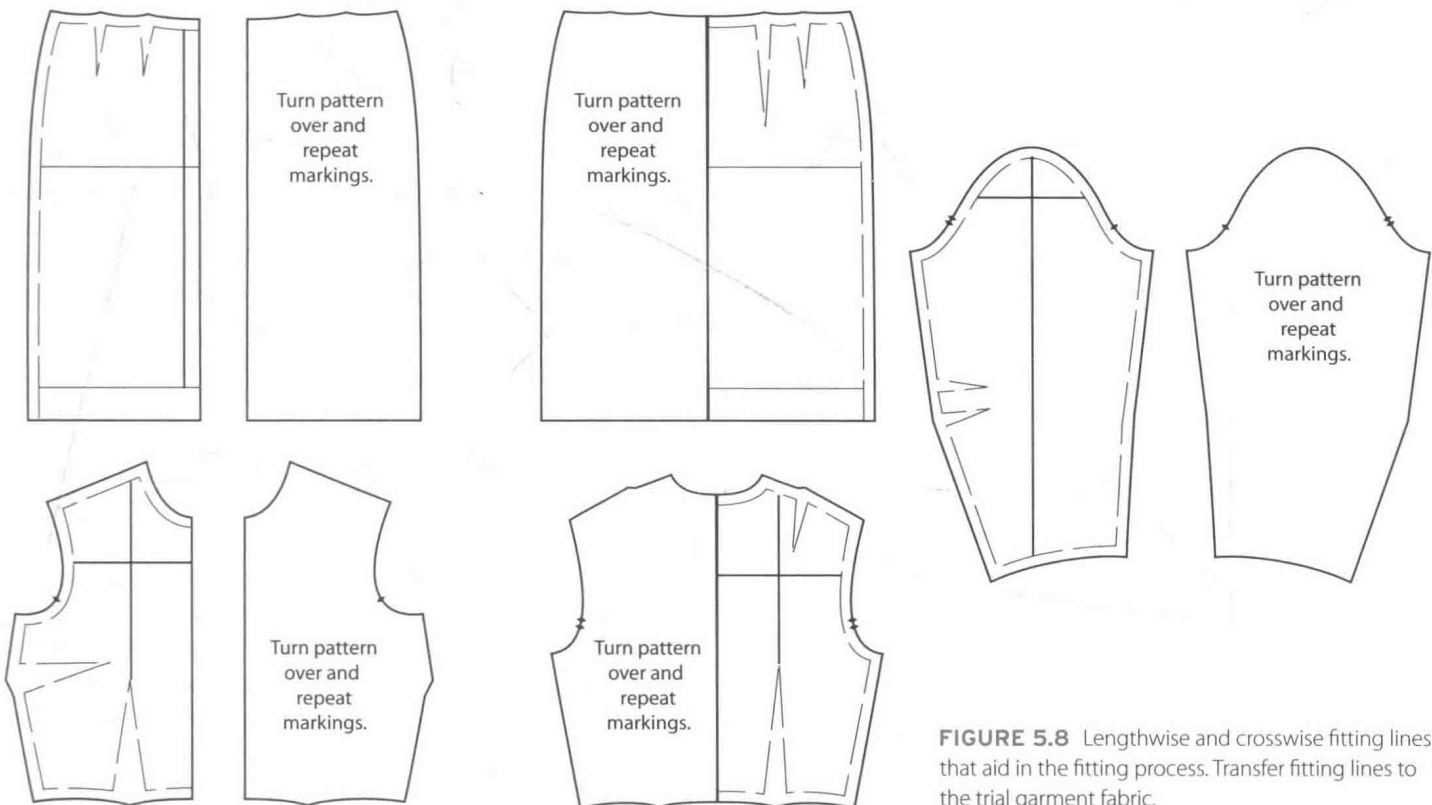


FIGURE 5.8 Lengthwise and crosswise fitting lines that aid in the fitting process. Transfer fitting lines to the trial garment fabric.

FIGURE 5.9
Interfaced tissue
pattern pieces
joined and ready
to try on to
evaluate fit.

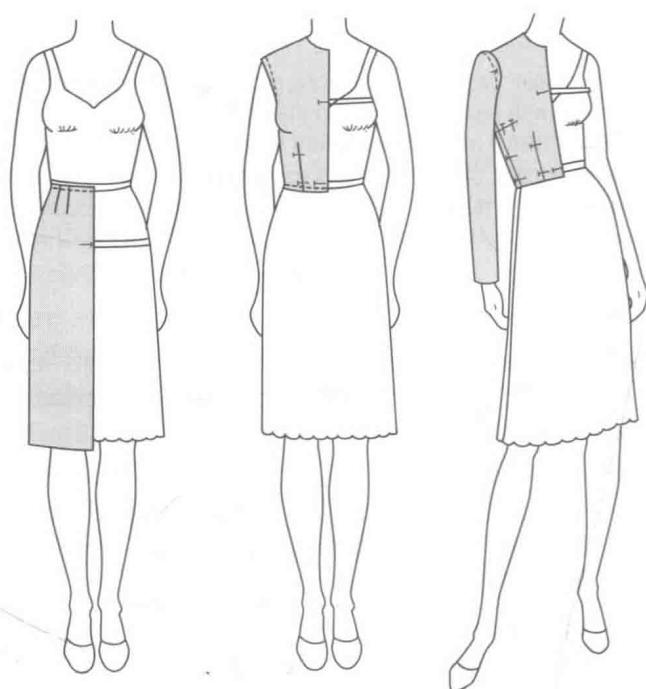
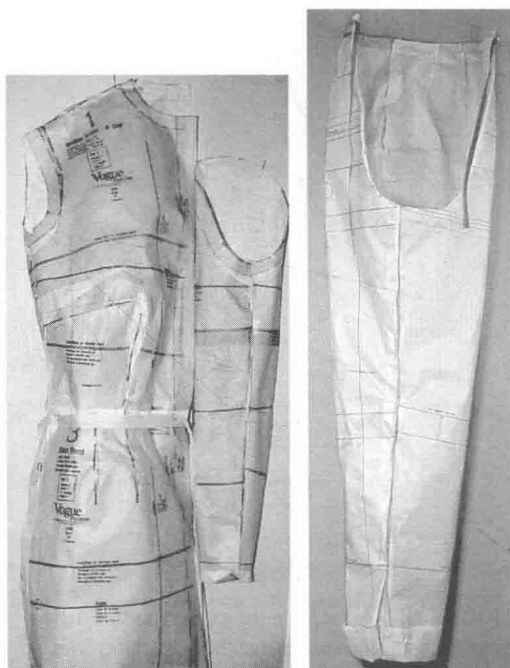


FIGURE 5.10 Tissue pattern pieces pin-fit and adjusted for half the body

3. Place a narrow elastic or narrow fitting band snugly around the body, just below the underarm hinge and above the bust (high bustline), at the waistline, and at the fullest hipline, as needed for the unit you are fitting.
 - Pin elastic or bands together at center front, mark and label "CF" for center front.
 - Remove the elastic or bands and fold in half, mark and label "CB" for center back.
 - Replace the elastic or bands on the body in the appropriate location. Align the marks with the body at center back and center front. Fasten elastic or bands to underclothing to keep them from slipping while the pattern is being fitted.
4. When pin fitting, the person being fitted stands barefoot or in very flat shoes or sandals on a hard-surface floor. Carpet padding can cause significant difference in length measurements. The body should be erect in a natural, relaxed position, and looking straight ahead.

General Fitting Procedures for Each Unit

1. Put on the pinned pattern unit (see Figure 5.10). When fitting two or more units, fit the skirt first, then the bodice, vest, or jacket, and the sleeve last. The fitting will then proceed from the less difficult to the more complex.
 - On *skirts and pants*, pin the center back and center front to the corresponding marks on the fitting elastic or bands at waist and hip. The waist stitching line should lie even with the *bottom* of the fitting band.
 - On the *bodice*, slide the arm through the pattern armhole. To hold the upper arms away from the body, the hands can rest on the hips, on the back of a chair, or a cane, or they can be cupped under the chin.
2. Evaluate the fit of the pinned pattern in a full-length mirror. For personal fitting without an assistant, use a hand-held mirror to see the back. Determine the fitting adjustments needed. Use one or more of the following procedures to mark or make temporary adjustments to the pattern while the unit is on the body.
 - Mark the position and amount of change needed with a pencil or a pin.
 - Remove excess length or width by pinning a tuck through the interior of the affected pattern area.
 - Increase pattern size, in length or width, by unpinning seam allowances and adjusting at the edges (seam), or cut through a too-small area and insert tissue for extra length or width (slash). See Part Three for each figure variation. When cutting is necessary, slash as near to the closest seamline as possible to prevent distortions in the pattern. Use removable tape to hold the increased adjustments in place, or pin the



✓ REALITY CHECK

Fabric cuts larger than tissue. Fit the tissue pattern somewhat snugly, then the fabric garment will likely fit with sufficient basic ease. Adjustments in *even amounts* of change can be made for virtually any amount needed—2 inches and more. Adjustments for *uneven amounts* of change generally cannot be so large—up to 1 inch or so. Beyond that, a larger size pattern may be recommended. Generally, the simpler the style, the larger the amounts of change can be.

cut edges directly to underclothing. Make a note to indicate the location and amount of adjustment.

- Evaluate hemline position, ensuring that it is at an attractive level on the leg.
 - Coordinate hemlines on all pinned units. Adjust as needed to create pleasing proportions for the entire garment in relation to the body.
3. When properly fitted, the garment will incorporate appropriate fitting standards (see Chapter 3).
 4. Remove the adjusted garment units from the body and separate the pattern pieces. Press smooth.
 5. Using the most efficient method of alteration, transfer all adjustment amounts to the tissue pattern.
 6. If needed, pin the pattern pieces together again and have them put on to re-evaluate the adjustments made. Adjust again if needed.
 7. Perfect all grainlines and stitching lines. On basic garment patterns, permanently fuse pattern backing or fusible interfacing to the adjusted pattern.
 8. Use the adjusted-to-fit basic pattern to
 - cut the basic trial or fashion garment
 - compare with fashion patterns for adjustment

TRIAL GARMENT METHOD OF FITTING

There are two types of trial garments, also referred to as toile fitting. The most common is the *trial basic garment* and the other is a *trial fashion garment*. The trial basic garment is used to determine differences between the body and the standard basic pattern, and to adjust as needed for figure variations, while the trial fashion garment is used to determine the drape and hang of the fashion fabric for a generally more complex fashion style.

In fitting with the *trial basic garment method*, you first cut the tissue pattern out of firmly woven fabric such as muslin or gingham check. You then construct the trial garment and put it on the body to check the fit. Make needed adjustments on the trial garment directly on the body, making equivalent adjustments on the paper pattern. Use the adjusted tissue pattern to cut out fashion fabric. Construct the fashion garment and put it on the

body to check the fit. Make any needed refinements to the fashion garment. Make equivalent final adjustments on the paper pattern.

In fitting with the *trial fashion garment method*, it is generally assumed that you have already created a trial basic garment and have a previously adjusted pattern to guide you in adjusting the new fashion pattern. Regardless of the pattern you start with, you cut the tissue pattern out of trial fabric that most nearly duplicates the fashion fabric, and proceed as before.

Advantages and Disadvantages of the Trial Garment Method

| Advantages | Disadvantages |
|---|---|
| <ul style="list-style-type: none">• Inexpensive muslin or gingham fabric can be used without fear of ruining fashion fabric, allowing you to practice and perfect the fit before cutting the fashion fabric.• Since fabric is more flexible than pattern tissue and “gives” with the body, the required amounts of ease or added fullness are more easily determined or recognized.• Figure variations cause the fabric grainline and garment structural lines to tilt, bow, sag, or strain, thus revealing the areas of the garment areas that need adjustment.• Stitching lines are easily changed or moved to provide an increase or decrease in length or width.• When finished, the fashion garment lies on the body in the same way as the fitted trial garment.• If you lose or gain weight, or your weight shifts on the body, the changes are quickly noticed when wearing the finished trial garment, and you are reminded to make adjustments in the pattern to accommodate the changes.• While working with a trial garment takes more time in the beginning, it actually saves you time, effort, and frustration once you begin working with the fashion fabric garment. | <ul style="list-style-type: none">• Extra time and effort are required. Some practitioners require multiple trial garments before getting a perfect fit.• Extra expense is often involved, as in the case of multiple trial garments.• The exact grainline must be transferred from the trial garment to the fashion garment or the garment will not fit properly.• The exact amounts of change on the trial garment must be transferred to the pattern and the fashion garment or the garment will not fit properly.• If the adjusted trial garment is taken apart to create a pattern, a new trial garment must be constructed to test for body changes in size or weight distribution. |

A trial basic garment requires trial fabric in a quality plain-weave, pliable enough to flex and fold, yet firm enough to

withstand handling without distortion during the fitting process. A light-colored gingham check, muslin, or similar ecology cloth are obvious choices. The trial basic garment is cut without any pattern adjustments. The changes or adjustments in the trial basic garment will later be used to adjust the pattern. It is never intended to be worn as a finished garment, nor to be washed or cleaned.

A trial fashion garment needs to have trial fabric with a texture and draping characteristics similar to those of the fashion fabric. Check your fabric stash for leftover scrap fabric or purchase less expensive fabric with the required characteristics. The pattern for the trial fashion garment is adjusted before cutting the trial fabric, thus eliminating unnecessary handling of the fabric. The refined fitting effort that goes into a trial fashion garment will give you confidence to cut into and work with the more expensive fashion fabric.

Preparing the Pattern for a Trial Garment

1. Cut the main pattern pieces apart along the cutting lines for the selected size. Trim the excess pattern tissue from the neckline, armhole, and crotch seam allowances. Pre-trimming on the cutting line prevents mistakes later when cutting out fabric. Some practitioners like to cut 1-inch seam allowances as a safeguard.
2. Select the necessary pattern pieces. Using a basic garment pattern, you can plan for a center front opening to facilitate the fitting process. For the purpose of fitting, you do not need to use facings, bands, pockets, collars or cuffs.
3. Using a dry iron set at wool to prevent water drops from shrinking the tissue, press the pattern pieces flat and wrinkle free.
4. Mark a vertical, lengthwise fitting reference line at the center of each pattern piece (see Figure 5.8). These lines help you maintain an accurate frame of reference for any lines that provide clues during fitting. These lines are generally perpendicular to the floor. (Asymmetrical figure variations will be more easily recognized.)
 - On a sleeve, fold the portion *above the elbow* in half lengthwise. Extend the crease straight for the full length of the pattern. Mark the crease.
 - On pants, fold the leg portion in half *at the knee*. Extend the crease on the grain the full length of the pant leg. Mark the crease.
 - On basic bodices, vests, skirts, and jackets, mark the center front and center back, particularly when the marked lines or seamlines are not at these positions.
5. Mark the horizontal crosswise fitting reference lines across the chest, shoulder blade, waist, hip, and sleeve capline

(see Figure 5.8). These lines help you maintain an accurate frame of reference for any lines that provide clues during fitting. Again, these lines help you maintain an accurate frame of reference for any lines that provide clues during fitting. These lines are generally parallel to the floor.

Preparing the Fabric for a Trial Garment

1. Straighten or “block” the fabric grain with the yarns crossing at 90 degree angles.
 - Fold the fabric in half lengthwise. (Place the right sides of the fabric inward if a fashion fabric is being used.)
 - Match the cut edges at one end so the fabric edges form 90 degree angles at the corners and lie parallel to the table edges.
 - Match the selvages in a straight line perpendicular to the pinned end and parallel to the table edge.
 - Match the fabric edges at the other end. Pull taut so the fabric corners form 90 degree angles. If the table has a porous surface, pin the fabric to the table.
 - Using a steam iron, press the fabric smooth while following the *lengthwise* grain. Work from the selvages toward the fold. Do not press a crease at the fold.
2. Pin the pattern pieces on grain. Point pins diagonally toward the pattern edges. This prevents bubbling of the pattern, which could result in cut fabric pieces that are smaller than the original pattern pieces. If the table has a porous covering and you do not plan to use a rotary cutter, you may insert pins vertically through the pattern and fabric into the covering. Place pins about 2 inches away from the pattern cutting line to keep them out of the way of the shears.
3. Cut around pattern pieces smoothly and accurately.

✓ REALITY CHECK

In dealing with an asymmetrical figure, if the difference is minimal, create a “flap” version of the appropriate side and tape to the pattern. If the difference occurs on the entire side, cut two sides of the pattern—a right and left side. Cut it large enough to fit the largest side of the body. Mark the different sides with different-colored ink.

✓ REALITY CHECK

Tearing or cutting along one crosswise thread or one row of knit does not straighten the grain; it only makes the ends follow a single row of weave or knit. Fabrics made with polyester, nylon, or acetate *cannot* be straightened because the threads or yarns have been heat set into place. They also have “memory” that allows them to return to their original position no matter how many times you attempt to straighten them.



✓ REALITY CHECK

It is not necessary to preshrink the trial garment fabric, as it will never need to be washed.



✓ REALITY CHECK

As noted earlier, many fabrics cut larger than tissue paper. The exception is crepe, which seems to pull away from the scissors. In either case, cut with care.

4. Markings are vital in the trial garment method, helping you distinguish the location and amounts of adjustment needed while the garment is on the figure.
 - Plan the marked surface as the *outside* of the garment to facilitate fitting on the body.
 - On a basic pattern, use contrasting pen or pencil on trial fabric to clearly transfer all grain and construction markings—vertical and horizontal grainlines, center front and center back markings, darts and seamlines to the face of the fabric.
 - Use thread bastings on fashion fabric to clearly transfer grain and construction markings, as well as additional marks and lines for trimmings, casings, and other design details.
 - If pockets are used in the design, mark their location to evaluate placement.

Join the Fabric Units of a Trial Garment

Use either the *unit method* or the *assembly-line method* of garment construction.

In the *unit method*, each garment section such as the skirt is constructed independently. The completed units are then joined to one another.

In the *assembly-line method*, a specific construction technique such as darting is completed on all garment pieces before progressing to the next technique.

1. Baste adjoining fabric pieces exactly on the stitching lines. Depending on the purpose of the garment, the complexity of the style, and the desired construction procedure, fabric sections may be *pin-basted* as in custom production, *hand-basted* as in couture production, or *machine-basted* as in mass production.
 - Stitching lines must match no matter which basting method is used.
 - Use needles, pins, and thread of the correct size and good condition to prevent fabric slippage or damage.
 - Use white thread or a contrasting pastel thread to

prevent dye from crocking (rubbing off) onto the fabric.

Pin-basting is quick for simple styles with only a few large sections, often preferred for the first fitting. To pin-baste, fold the fabric along one dartline and lay the fold even with the other dartline. Pin through folded fabric. Fold one seam allowance under along the stitching line (preferably the non-darted or outwardly curved edge) and align it with the seamline on the adjoining fabric section. Pin through the folded fabric.

Hand-basting is recommended for more complex styles, for styles with several small pattern pieces, and for garments with seamlines that require easing to produce the desired shape. To hand-baste, first pin as above. Then slip-baste along the folded edge of fabric. Hand-basting is easily and safely removed if fastening stitches with long thread ends are used in place of knots. To remove, cut thread in short lengths to prevent stitch marks from developing.

Machine-basting takes special care, especially on fashion garments. To machine-baste, first pin dartlines and fabric sections together so the fold or seam allowances lie inside the garment. Machine baste using the longest stitch. Begin sewing darts and seams at the intersecting seamline. Do not allow the fabric to feed into the machine unevenly. This distorts the grain, and the ends of the seams will curve away from the eased side of the fabric. Do not backstitch. Leave 2- to 3-inch thread ends to facilitate removal later.

Hand- or machine-basting, rather than using pins, is recommended for the final fitting.

2. Pressing is a vital part of fitting. To maintain accuracy and a pleasing appearance, lightly press all darts and seams before crossing them with an additional line of stitching. On some fabrics, “finger pressing” may be all that is needed for the first fitting. Heavy pressing can leave permanent crease lines in fashion fabrics, which are impossible to remove in subsequent alterations. Final pressing produces a smooth garment and enhances its overall appearance. Leave the basic garment basted together so it may be stored for future fittings as they become necessary.

Preparing the Body for Fitting a Trial Garment

1. Undergarments should be similar to the style to be worn with the finished garment when fitting a trial garment. (When pin-fitting a vest, jacket, or duster, put it on over a top in the style most likely to be worn under it.)
2. When fitting a trial garment, the person stands barefoot or in very flat shoes or sandals on a hard-surface floor. Carpet padding can cause significant difference in length measurements. Stand with erect posture, erect in a natural, relaxed position, looking straight ahead.
3. When fitting a fashion garment, wearing shoes like those worn with the finished garment is advised.

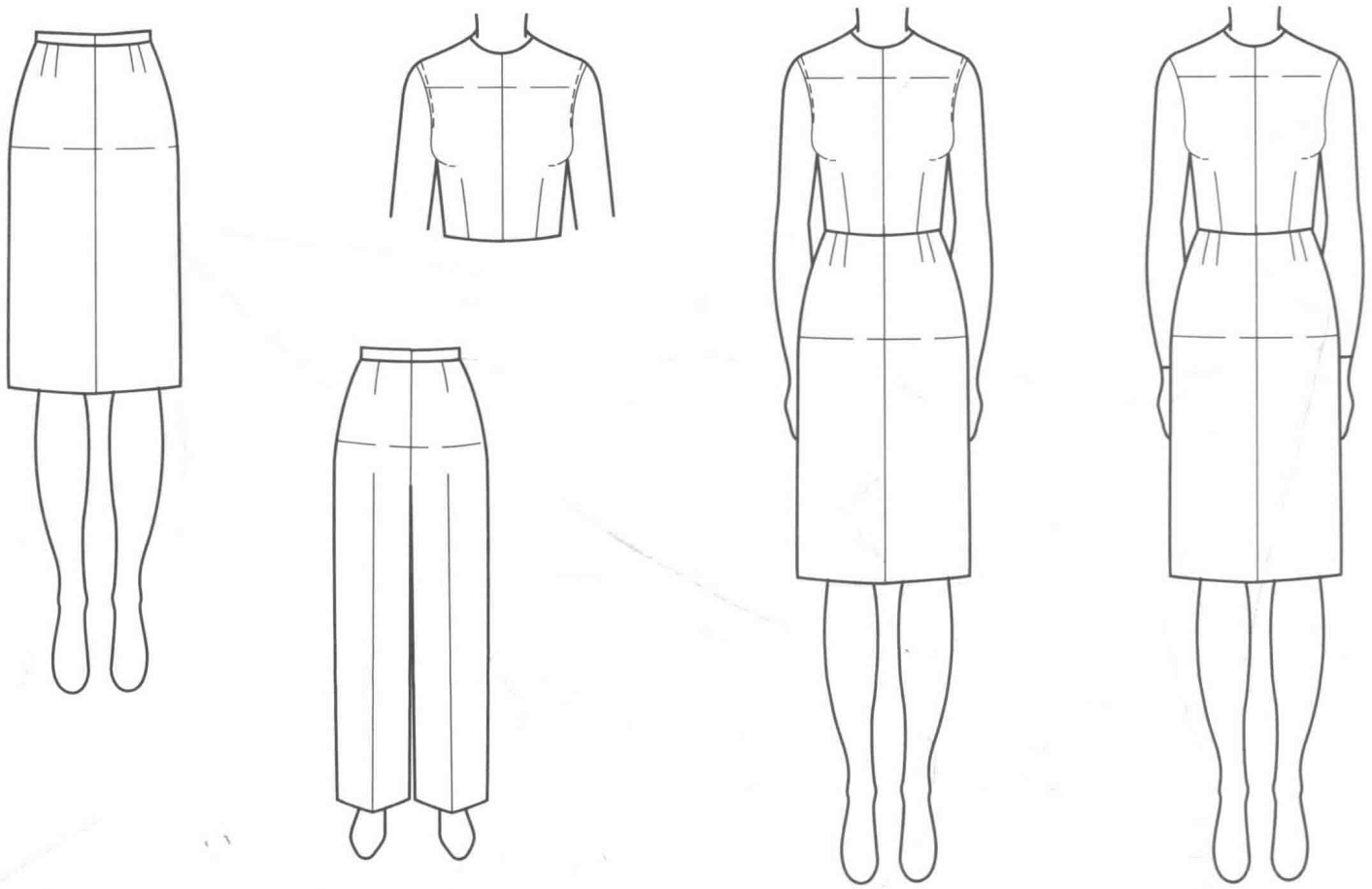


FIGURE 5.11 Trial garments are always fit right side out. Fitting lines are level, the goal of a successful fitting process.

Fitting a Trial Garment

1. Put the garment on right side out for fitting, never wrong side out (see Figure 5.11). Start fitting at the top of a unit, adjusting length first, then width.
2. Beginning with the simplest unit, fit each unit separately. Refine the fit of each unit as needed before joining to another unit. Details for fitting are given in Part Three. Unless absolutely necessary to assess the fit, do not clip or trim seam allowances in the trial garment. At some point in the fitting process, you may need to alter those seams.
3. Mark or make temporary alterations while the unit is on the body. Depending on the use of the garment, choose an appropriate alteration method from procedures described below.
 - By seam/pivot methods, remove stitching from an area that is too loose or too tight. Take seams in or let seams out. Increase or decrease dart size. Seam or pivot method can also be used for altering a pinned pattern. (For highly visual case studies using the seam method to alter both the pattern and trial garment, see Shirley L. Smith, *The Art Of Sewing: A Custom Fit*, Sewing Arts Inc., 2000.)
 - By slash method, cut along the grain through a too-small area. Cut near the garment edge to allow the garment to increase in size. Insert a wide strip of scrap fabric under the slash. Allow the area to spread as necessary and pin the slashed edges to the inserted fabric. Pin tucks through the interior of the garment to remove excess length or width. Tucks made on the outside must be accurately transferred to the wrong side of the trial garment.
4. Stitch the fitted separate units together, then refine the fit of the total garment—as in slight changes in the angle, length, or shape of darts, or changes in seam and sleeve cap placement. To achieve the best fit, you may want to curve the shoulder, waist, or hip darts to fit the contours of the body. Coordinate the hem with horizontal seam positions to create pleasing, interrelated proportions (see Figures 5.12 and 5.13).
5. When it is properly fitted, the garment will incorporate the appropriate fitting standards (see Figure 5.14 and review Chapter 3).
6. Using the most efficient method of alteration, transfer each trial garment adjustment amount to the tissue pattern.



FIGURE 5.12 Instructor lifts pant back at the waist, revealing strain on the back crotch curve due to dropped buttocks. A simple alteration will follow, lowering the pant back crotch curve to better accommodate the buttocks.



FIGURE 5.13 Side view reveals diagonal stress wrinkles between a prominent abdomen, full front thigh, and hyper-extended calf. Appropriate alterations will follow.



FIGURE 5.14 Fitting lines, dartline, waistline, and hemline are level, allowing for the forward arm movement; ease appears adequate. The individual appears pleased with her fitting experience.

THE THREE METHODS OF FITTING

Professionals in the field should gain some experience with each of the three methods of fitting discussed in this chapter: measurement, pinned pattern, and trial garment. Some may decide to use a combination of these methods—to measure the fashion pattern and adjust as needed, then to pin the adjusted pattern to check the fit and making any final adjustments in the pattern, and finally to use the adjusted pattern to cut and fit the fashion garment (see Table 5.1.)

Table 5.1 Methods of Fitting

| Measurement Method | Pinned Pattern Method | Trial Garment Method |
|---|---|--|
| 1. Measure the body. | 1. Pin pattern together. | 1. Cut out garment trial fabric. |
| 2. Measure the pattern. | 2. Check fit on body. | 2. Sew trial garment. |
| 3. Adjust the pattern. | 3. Adjust pattern on body. | 3. Check fit on body. |
| 4. Cut fashion fabric. | 4. Cut fashion fabric. | 4. Adjust fabric on body. |
| 5. Sew fashion garment. | 5. Sew fashion garment. | 5. Adjust the pattern. |
| 6. Check fit on body. | 6. Check fit on body. | 6. Cut fashion fabric. |
| 7. Refine fit. | 7. Refine fit. | 7. Sew fashion garment. |
| 8. Final adjustment to pattern and garment. | 8. Final adjustment to pattern and garment. | 8. Check fit on body. |
| | | 9. Refine fit. |
| | | 10. Final adjustment to pattern and garment. |

Source: Judith Rasband, Conselle Institute

QUICK REFERENCE GUIDE TO FITTING PROBLEMS

Even the most perfect clothing style, selected to accommodate and balance the figure, may not look perfect if it doesn't fit. And regardless of the style, a well-fitted garment may look terrific. Remember there are no figure problems, only fitting problems. And we can solve those! (See Figure 5.15 to 5.17.) Any blame for poor fit should be put on the garment, not on the body.

7. Perfect all grainlines and stitching lines. Permanently fuse pattern backing or fusible interfacing to the adjusted pattern.
8. Use the adjusted-to-fit basic pattern to
 - compare with fashion patterns for adjustment
 - cut a fashion garment

Some individuals who prefer to use the trial garment may choose to make up a trial garment for every fashion garment project.

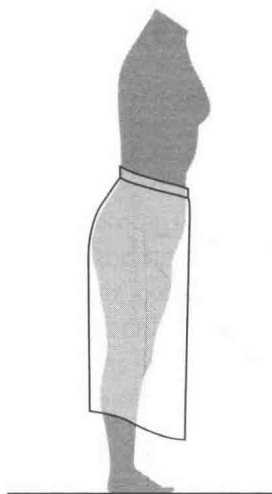


FIGURE 5.15 Postural variations affect the hang of the skirt. This body slants forward. To correct the hemline, lower the skirt back or raise the skirt front—or use a combination of both.

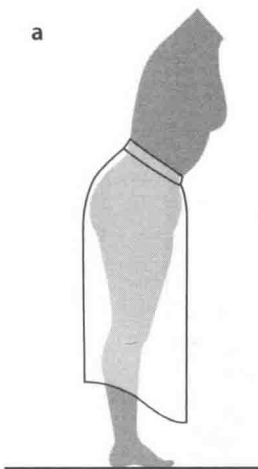


FIGURE 5.16a Posture allows this body to slant forward from the hip, tilting the waistline down in front. To correct, lift the skirt front at the waist or let down the skirt back at the waist—or use a combination of both, still on grain.

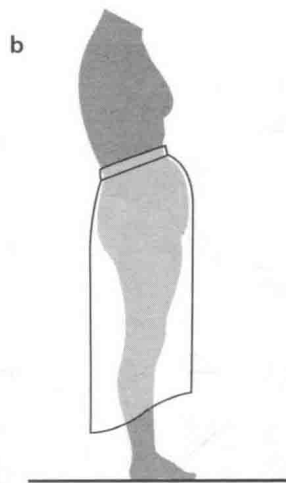


FIGURE 5.16b Posture allows this body to slump, tilting the waistline down in back. To correct, lift the skirt back at the waist or let down the skirt front at the waist—or use a combination of both.

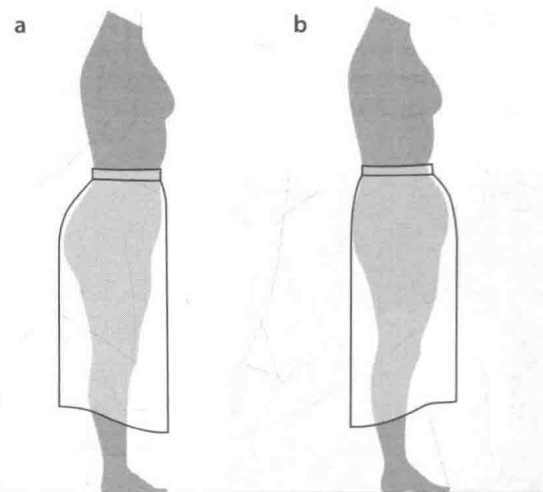


FIGURE 5.17a Large buttocks lift skirt fabric in back. Let down the skirt in back and/or lift the skirt front to level at the waist, thus correcting the hemline, still on grain.

FIGURE 5.17b A prominent abdomen lifts skirt fabric in front. Let down the skirt in front and/or lift the skirt back to level at the waist, thus correcting the hemline, still on grain.

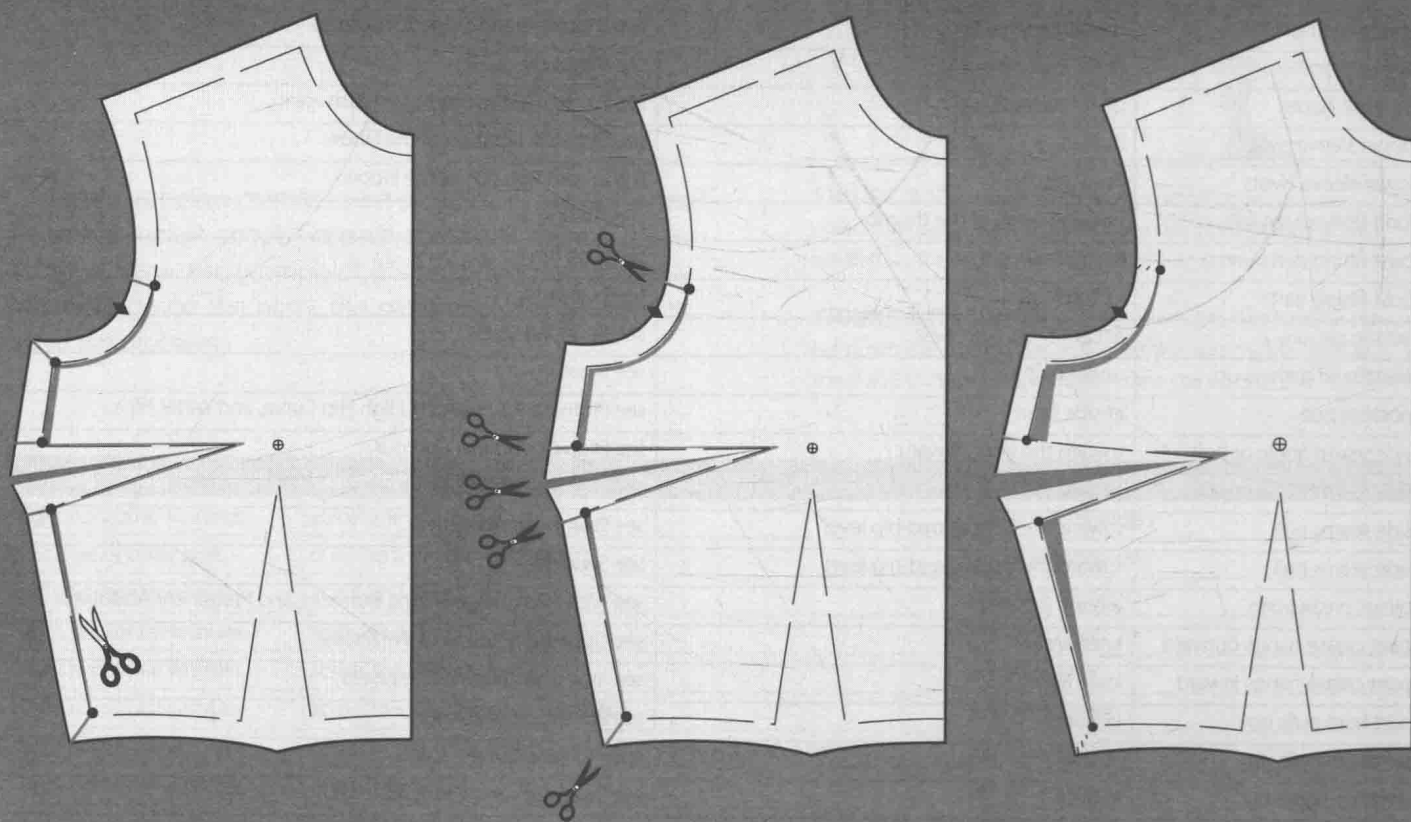
The chart below contains a list of typical fitting problems people complain about. For each complaint there is a solution; to address each complaint, it is essential to know exactly where to go on the body, the pattern, or the garment to solve the problem.

| Fitting Problem | Location | Figure Variation/Solution |
|---------------------------|--|--|
| tight horizontal wrinkles | across the shoulders | see Broad Shoulders |
| neckline or collar pulls | outward toward the shoulders | see Broad Shoulders |
| tight horizontal wrinkles | across the sleeve cap | see Large Upper Arm |
| tight horizontal wrinkles | across the chest | see Wide Chest |
| tight horizontal wrinkles | across the upper back | see Wide Back |
| tight horizontal wrinkles | across the midriff and/or waistline | see Larger Waist |
| tight horizontal wrinkles | across the high hip area in back (often confused with a sway back) | see High Hip Curve |
| tight horizontal wrinkles | across the hipline | see Wide Hips |
| tight horizontal wrinkles | across the low hipline | see Low Hip Curve |
| tight horizontal wrinkles | across the thighline | see Large Thighs at Sides |
| tight horizontal wrinkles | below the crotch in back | see Cylindrical Torso and Drooped Buttocks |

| Fitting Problem | Location | Figure Variation/Solution |
|------------------------------|-----------------------------------|--|
| tight vertical wrinkle forms | to the outside of bust | see Larger Bust |
| tight vertical wrinkles | down center back | see Dowager Curve and Rounded Upper Back |
| neckline may pull | downward in back | see Dowager Curve and Rounded Upper Back |
| tight vertical wrinkles | at the crotch of a jumpsuit | see Long Lower Torso |
| tight diagonal wrinkles | leading upward to the shoulder | see Square Shoulders |
| tight diagonal wrinkles | leading upward to the bust | see Large or Prominent Bust |
| tight diagonal wrinkles | below and leading up to the hip | see High Hip Curve |
| tight diagonal wrinkles | at the crotch in front | see Long Lower Torso |
| tight wrinkles radiate | around the bust | see Large or Prominent Bust |
| tight wrinkles radiate | around the abdomen | see Prominent Abdomen |
| tight wrinkles radiate | around the buttocks | see Large Buttocks |
| loose vertical folds | at the sides of the chest | see Narrow Chest |
| loose vertical folds | down the bodice back | see Narrow Back |
| loose vertical folds | down the bodice front | see Small Bust |
| loose vertical folds | down the skirt back | see Small Buttocks |
| loose vertical bulge | at the side seams | see Narrow Hips |
| loose horizontal fold | below the neckline in back | see Erect Back and Low Neck Base |
| loose horizontal folds | in the chest area | see Shallow Chest |
| loose horizontal folds | above the waist in back | see Sway Back |
| loose horizontal folds | below the waistline | see Sway Back |
| loose horizontal folds | below the crotch | see Short Lower Torso |
| loose droopy folds | at the underarm | see Sloped Shoulders |
| loose droopy folds | below the crotch | see Short Lower Torso |
| loose diagonal folds | down the back of the leg | see Small Buttocks |
| neckline gapes | in front | see Shallow Chest and Narrower Chest/Upper Back |
| neckline too wide | at sides | see Smaller Neck and Low Neck Base at Side |
| collar drops back | in back | see High Neck Base at Side and Wider Back |
| straps keep falling off | the shoulder(s) | see Shoulders and Sloped Shoulders |
| sleeve drops | at the capline | see Narrow Shoulders |
| armhole gapes | on sleeveless tops | see Prominent Bust and Short Arm Joint |
| upper sleeve twists | inward | see Outward Rotation of the Elbow |
| lower sleeve twists | outward | see Inward Rotation of the Elbow |
| long sleeve hem falls | below the top of the thumb | see Short Arm |
| bust-fitting darts | lie too low | see High Bust |
| bust-fitting darts | lie too high | see Low Bust |
| button closure | at center front of chest | see Rounded Chest |
| waistband gathers up | under belt | see Small Waist |
| pockets pull | at side front | see Prominent Abdomen, High Hip Curve, and Wider Hips |
| side seams angle or pull | toward the front at waist | see High Abdominal Contour |
| side seams angle or pull | toward the back at waist | see High Buttocks Contour |
| side seams pull | toward the front at mid-hip level | see Prominent Abdomen |
| side seams pull | toward the back at mid-hip level | see Sway Back |
| pleats break open | around hip area | see Wide Hips, Large Thighs, Buttocks, and Prominent Abdomen |
| pant crease hangs outward | knee area | see Outward Rotation of the Knees |
| pant crease hangs inward | knee area | see Inward Rotation of the Knees |
| skirt hem pulls up | in front | see Prominent Abdomen |
| skirt hem pulls up | at side | see High Hip Curve |
| shirt hem pulls up | in back | see Sway Back and Large Buttocks |

Chapter 6

Alternative Methods of Pattern Alteration



Once the fitting process is understood and completed, it is relatively easy to convert the amounts of change into pattern alterations—if you use correct methods and procedures. The alteration of a pattern is a fundamental step in achieving clothing that fits well. Success depends on using an efficient and effective method of alteration.

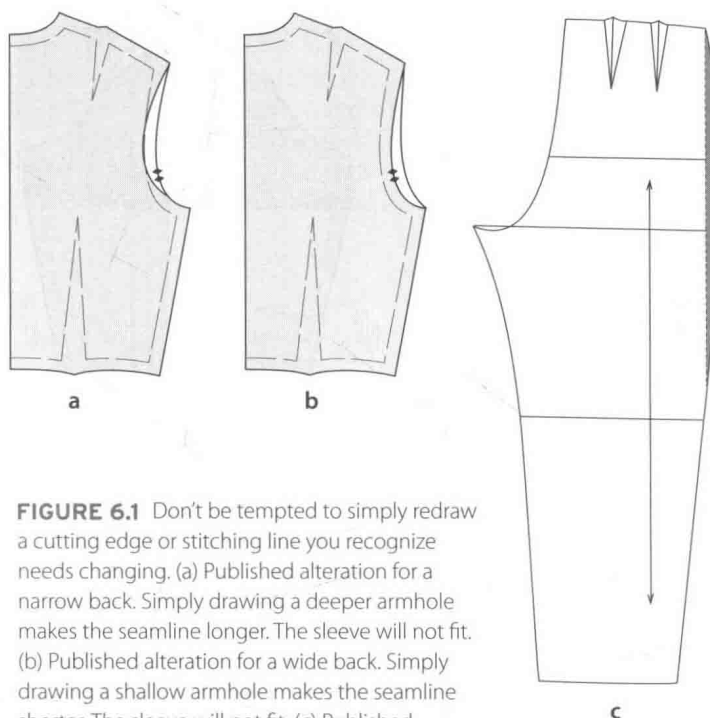


FIGURE 6.1 Don't be tempted to simply redraw a cutting edge or stitching line you recognize needs changing. (a) Published alteration for a narrow back. Simply drawing a deeper armhole makes the seamline longer. The sleeve will not fit. (b) Published alteration for a wide back. Simply drawing a shallower armhole makes the seamline shorter. The sleeve will not fit. (c) Published alteration for flat buttocks. The flattened side seam is shorter, will not fit the adjoining pant front seam, and likely will not fit hip and leg length. The flat buttocks have not been altered for. Loose wrinkles will still form below the buttocks.

✓ REALITY CHECK

If pattern alteration hasn't worked for you in the past, it's likely you have been redrawing outside pattern lines or working with the old traditional slash method, with procedures handed down from decades past without correction. With both methods, the pattern becomes distorted and the garment will not fit properly. (See Figure 6.1a–c.)

Fitting expert Jan Minott wrote on this very topic in 1978, in her text *Fitting Commercial Patterns*. In Chapter 5 she wrote, "Most of the familiar pattern 'alteration' methods handed down from book to book over the years have served to lower the standards of educational clothing courses. They produce poorly fitted garments and are a hindrance to the teacher who tries to make them work When alterations that perform poorly continue to be taught, surely it is an injustice to the student."

Previous to Minott, Catherine M. Doerr, back in 1967 in her book *Smart Sewing*, pointed out that traditional [slash] methods of pattern alteration lead to the loss of style lines. "One change usually leads to several others and you become confused and discouraged."

Minott agreed with Doerr, asserting in 1969 in her book *Coordinated Pattern Fit* that traditional "slash and spread or lap methods create a chain reaction of new problems, a comedy of errors that cannot be resolved ... when most of the old ways propose to solve problems, it is rank deception!" (See Figure 6.2a and b.)

Nancy Zieman, in 1994 in *Sewing Express*, recognized dislike for pattern alteration by fashion sewers and their lack of success at it "in the past, using techniques they learned long ago ... [procedures] that tend to create as many problems as they solve, because they usually distort the seamlines and change the grain orientation on the altered pattern piece." (See Figure 6.3a and b.)

Most fashion sewers and many professionals are still using the old traditional slash method of pattern alteration for both even and uneven amounts of change. A pattern altered for an even or equal amount of change cuts through the

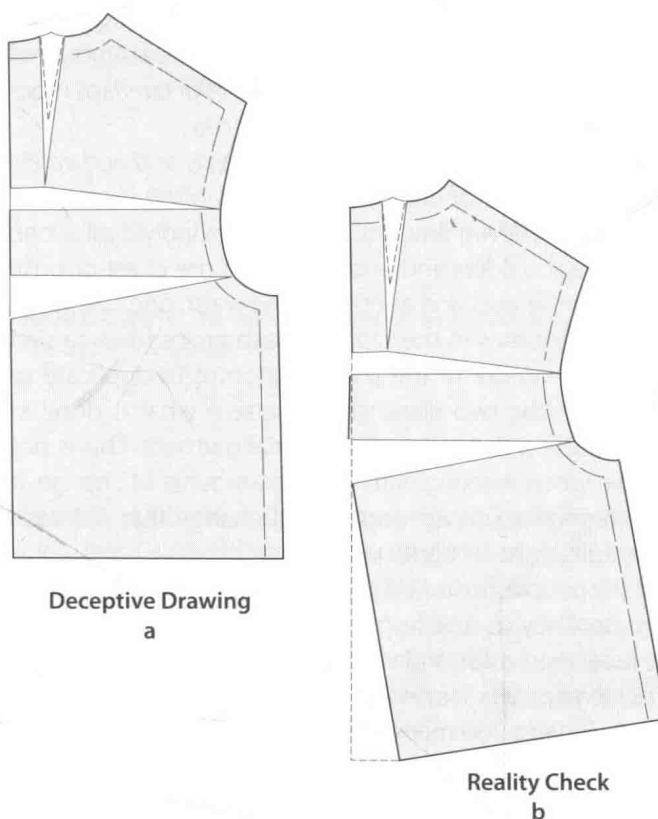


FIGURE 6.2 (a) Published alteration for a rounded upper back. While adding a neck dart straightens the upper center back, the lower center back is misrepresented. (b) This figure illustrates the angle the lower center back will really assume as a result of the slash and spread manipulation. Restoration adds inches of extra width across the back.

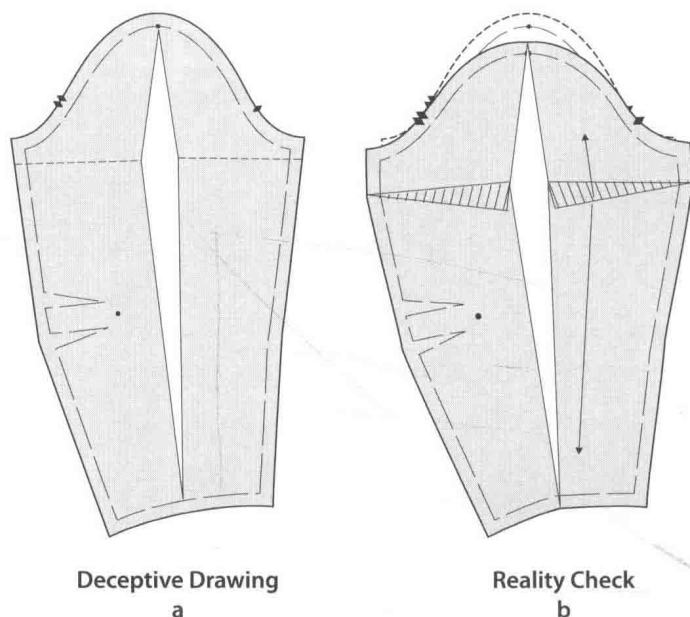


FIGURE 6.3 (a) Published alteration for a large upper arm. A white diamond appears to lie on a sleeve to represent a slash and spread procedure, with horizontal lines representing an overlap. Paper cannot be manipulated as illustrated and lie flat or without distortion. (b) Reality check illustrates the slash and spread procedure at center, forming a tuck or an overlap on each side. Side seamlines are distorted. Dotted line represents cap height lost by the alteration.

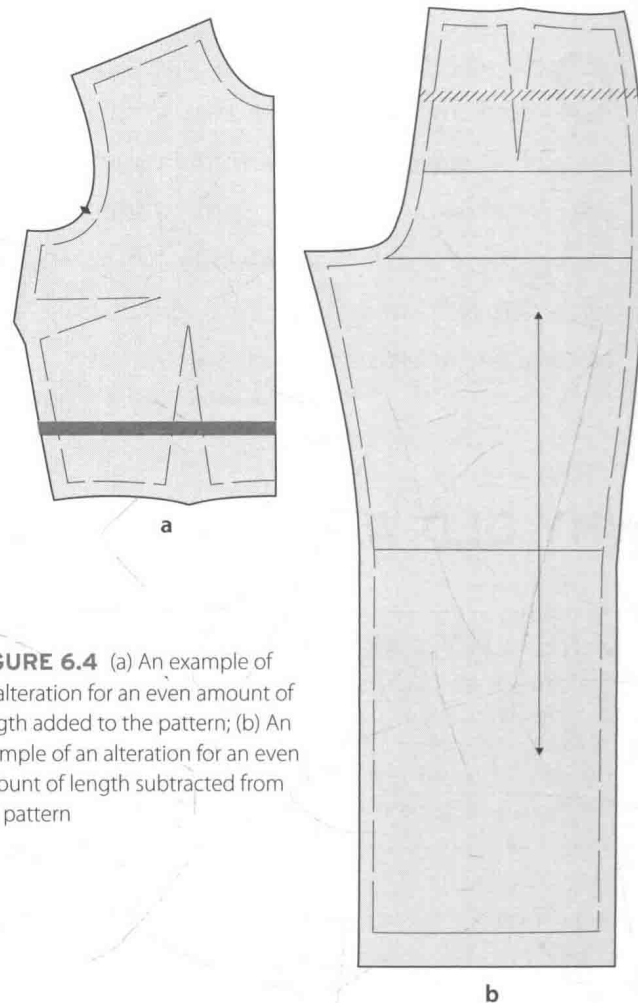


FIGURE 6.4 (a) An example of an alteration for an even amount of length added to the pattern; (b) An example of an alteration for an even amount of length subtracted from the pattern

entire pattern, which is then spread or overlapped an even amount—with edges parallel to one another (see Figure 6.4a and b). A pattern altered for an uneven or unequal amount of change cuts through a pattern but spreads or overlaps more at one end than at the other (see Figure 6.5).

While the slash method does work easily and accurately for even amounts of change, our bodies often increase or decrease an uneven amount. So often, an individual is one size in the shoulders and another size in the chest or bust; one size in the bust and another at the waist; one size in the waist and another in the hip. Old slash procedures carried out on the interior of the pattern attempt to duplicate or re-create in the two-dimensional pattern what is done in altering to fit a three-dimensional trial garment. This is not possible when working with uneven amounts of change. It is in altering for uneven amounts of change that old slash procedures must be corrected.

Many people, frustrated with not getting a good fit, have given up. They've quit fashion sewing—and because they love fabric and color, and still want to sew, they've switched to quilting or crafts. It's no wonder the fashion sewing industry is dwindling. Too many professionals have not mastered pattern design, fitting, or alteration. Too many consumers cannot find ready-to-wear clothing that fits and flatters. They, too, have given up and given in to T-shirt dressing. It's no wonder the fashion industry is shrinking.

Minott further charged, "Those involved in higher education should evaluate the results and take action toward improvement." (See Figure 6.6a–c and Figure 6.7a and b.) To improve the methods of alteration, this text will present

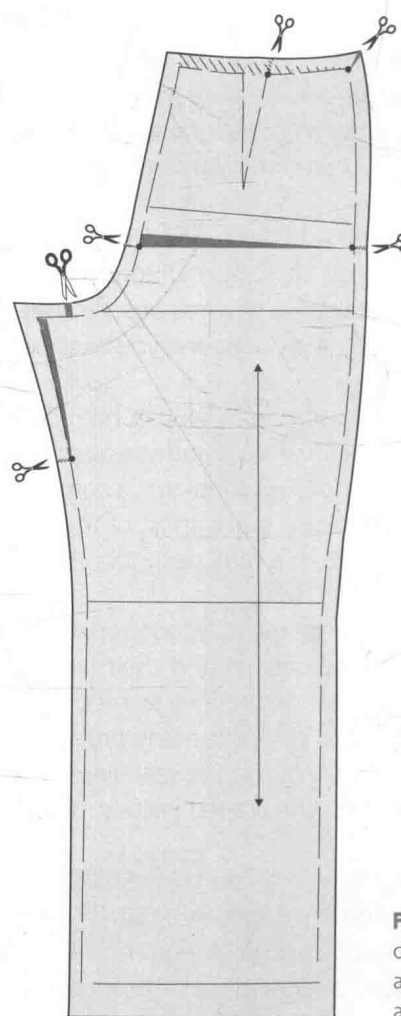


FIGURE 6.5 An example of an alteration for uneven amounts of length and width added to the pattern

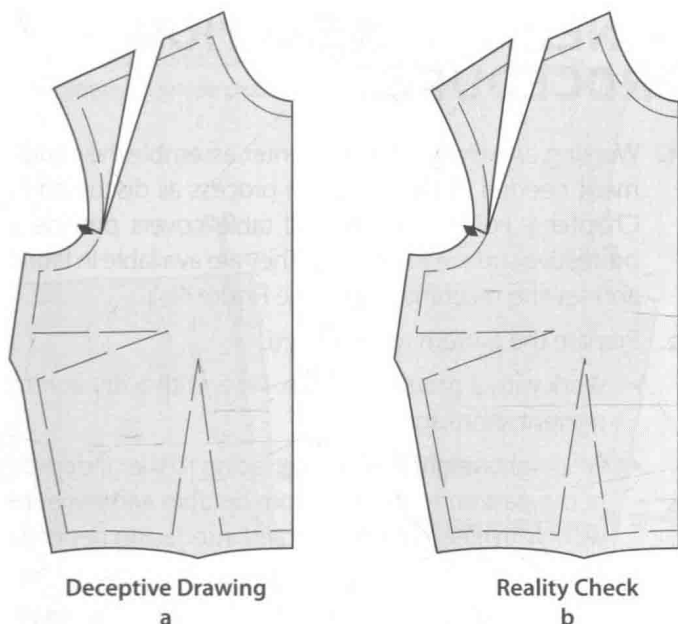


FIGURE 6.6 (a) Published alteration for broad shoulders. The slash and spread procedure illustrated is misrepresented. (b) Reality check illustrates the distortion that really occurs at the shoulder. Restoration remains to level the shoulder.

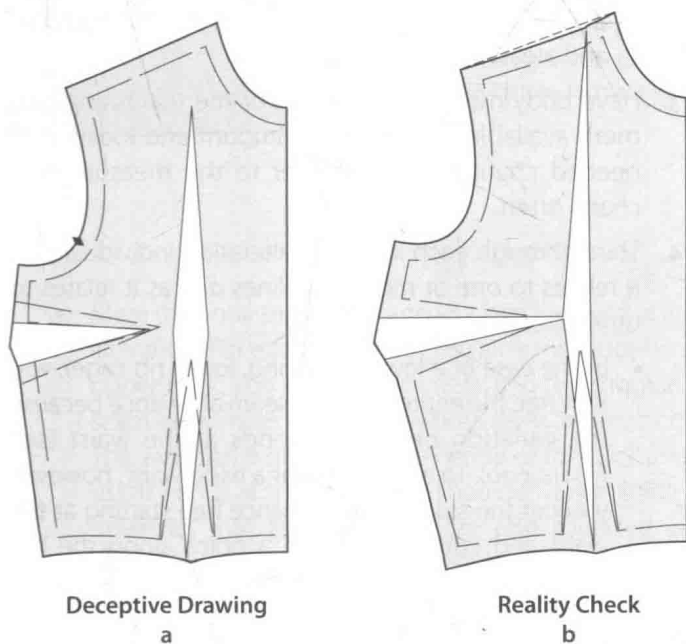


FIGURE 6.7 (a) Published alteration for a large bust. A white diamond appears to lie on a bodice front to represent a slash and spread procedure, with a white triangle to represent a slash and spread within the bust dart. Paper cannot be manipulated in this way and lie flat or without distortion. (b) Reality check illustrates an extended dart required for the pattern to lie flat, and distortion at the shoulder that would result.

alternative methods of pattern alteration to choose from—the *seam method*, the *pivot method*, and the *slash method* with corrected procedures for uneven amounts of alteration—providing something for everyone, options for a more successful fitting and alteration experience!

Relatively fewer fashion sewers and professionals have discovered the innovative seam method and/or mastered the pivot method of pattern alteration. Both the seam and

✓ REALITY CHECK

Regardless of the method used, it is ultimately the outside stitching and cutting lines that are changed in size and shape. When used correctly, all methods produce identical results—as they should (see Figure 6.8a–c).

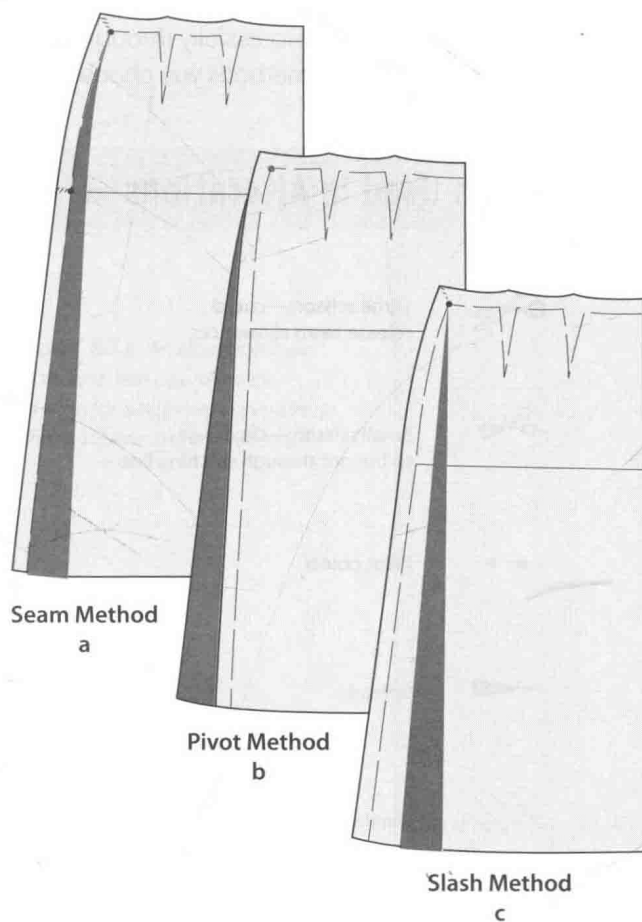


FIGURE 6.8a–c The same alterations carried out correctly by seam, pivot, and slash method are identical.

the pivot methods position alterations at the stitching line, where there is little to no distortion from the original. Changes in dart size and shape are simple and accurate.

Each method of alteration may be used separately or combined as you prefer, depending on the body area and the pattern piece. The methods are equally effective for altering patterns for men, women, and children.

While each method is capable of producing a fabulous fit when used correctly, formal testing revealed the seam method to be the simplest, least frustrating method for students to understand and apply. Upon learning how the seam method works, those experienced with the pivot method report that they see the direct relationship between the two methods and better understand the pivot procedures they have been using.

Fabulous Fit, 2nd edition (Rasband and Liechty) presents only the seam method of alteration because this method is generally accurate, quick, and easy for both beginners and experienced professionals to learn. Even if you do not intend to alter patterns yourself, you can share the seam method and procedures that apply to your figure with the alterations professional you plan to work with.

After reading the following sections outlining each method, but before beginning the process, read and be ready to follow the general points of direction as presented in Part Three. These will help guide you successfully through whichever method or combination of methods you choose.

6.1 Symbols Used in Alterations



Large scissors—cut to release seam allowances



Small scissors—clip hinge, to but not through stitching line—



Pivot points



Spread



Overlap



Tuck



Clip and spread hinge



Clip and overlap hinge



Pivot in direction of arrow



Slide in direction of arrow



Parallel—new seam to old seam or dart legs same length

GENERAL ALTERATION PROCEDURES

1. Working on a clean table or counter, assemble the equipment needed in the alteration process as discussed in Chapter 1. Fold-out cardboard table covers provide a protective surface to work on. They are available in fabric and sewing machine stores (see Figure 6.9).
2. Prepare the pattern to be altered.
 - Work with a pressed pattern. Press with a dry iron to prevent shrinkage.
 - Press lightweight fusible interfacing to the underside of the pattern to make it more durable and easier to work with. Keep both paper and interfacing perfectly smooth.
 - Carefully cut out the pattern. Cutting a wider seam allowance is an option.
 - Work with the pattern right side up—print side up and on top of alteration paper.
 - Draw alteration points and lines in red to focus attention on them. (Do not confuse this with the red lines and areas in this textbook.)
3. Have body measurements and/or the trial fitting garment available to review the amount and location of needed change. You will refer to the measurement charts often.
4. Think through each intended alteration individually, as it relates to one or more seamlines *and* as it relates to other alterations.
 - In the case of a low waist (long, lower rib cage), you may free the entire waistline seam allowance because the variation begins and ends at the waist (see Figure 6.10). To alter a skirt for a wide waist, however, you cut the side seam allowance free starting at the waist and cutting down to a point along the hip where the variation ends—a point where the body is again “average” or fits the pattern (see Figure 6.11).

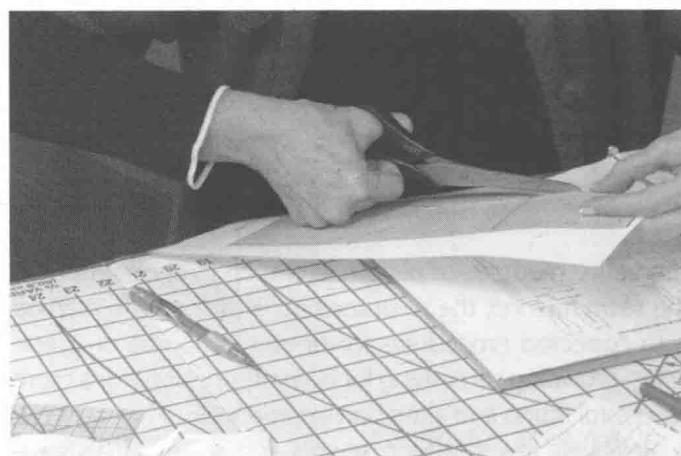


FIGURE 6.9 A fold-out table cover protects the table top beneath and provides measurement guides.

FIGURE 6.10 An even amount of change may be carried out across the entire pattern, a simple procedure.

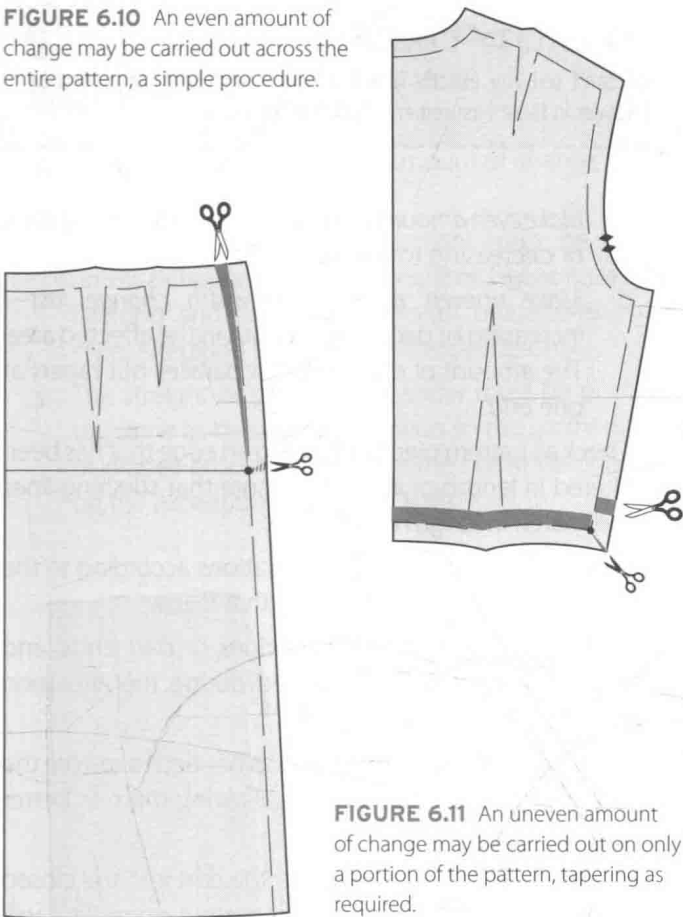


FIGURE 6.11 An uneven amount of change may be carried out on only a portion of the pattern, tapering as required.

FIGURE 6.12 An alteration may affect more than one seamline. Alteration for a high hip curve affects both the hipline and the waistline.

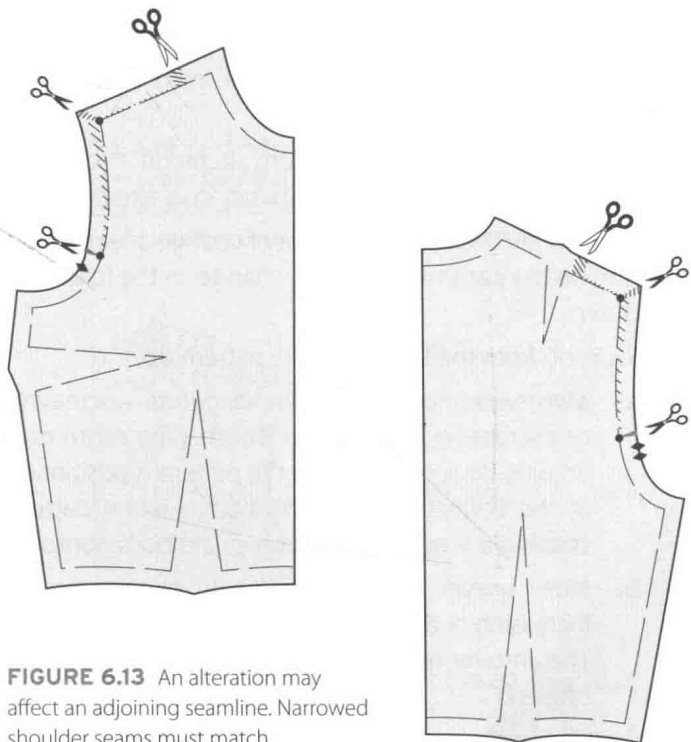
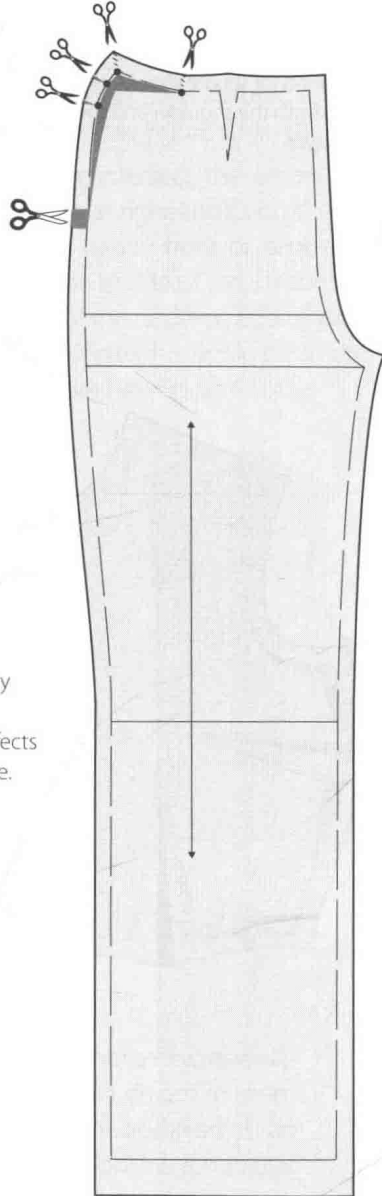


FIGURE 6.13 An alteration may affect an adjoining seamline. Narrowed shoulder seams must match.

- More than one seam allowance is often involved in an alteration. For example, when you alter for a rounded upper back, you cut the back neck and the shoulder seam allowances free because both areas are affected. The variation is greatest at the center of the back and usually ends at the end of the shoulder. It is possible, however, that the shoulders are also rounded or sloped. If so, you also cut the armhole seam allowance free (see Figure 6.12). That is the beauty of the seam method. You can alter for combined figure variations easily and without changing the original length of the stitching line unless you need to (see Figure 6.12).
- One alteration may affect an adjoining stitching line on another pattern piece, requiring a matching alteration. For example, the alteration for narrow shoulders or a forward head affects both the bodice front *and* back shoulder seams (see Figure 6.13). The alteration for a smaller waist affects both the bodice *and* skirt or pant pattern pieces, front and back. The alteration for a larger neck requires the same alteration on the neck facing.
- An alteration may require a compensating alteration. For example, when you alter for square shoulders, you cut the shoulder seam allowance free from the end of the shoulder to the neckline seam, because the variation ends at the neck. The alteration raises the shoulder seam and you have to cut the armhole seam

FIGURE 6.14 An alteration may require a compensating alteration. Alteration for square shoulders raises both the shoulder and the side seam.

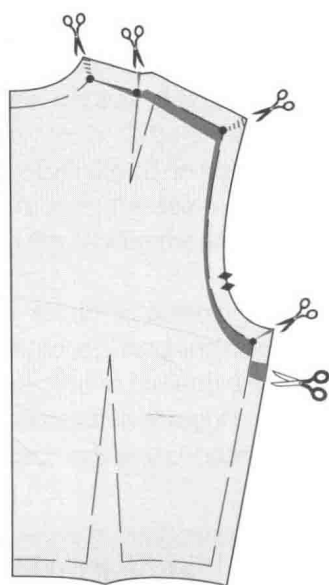
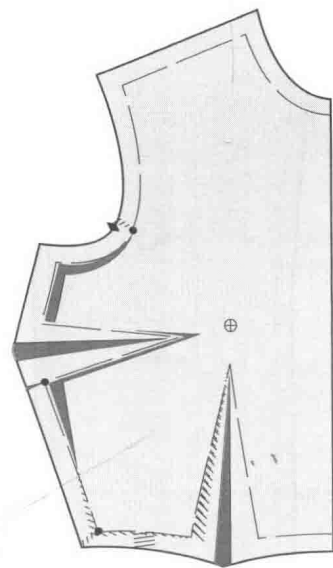


FIGURE 6.15 An alteration for two or more figure variations may be blended one into the other, smoothly. Here, the larger bust alteration on the side seam blends naturally into the narrow waist alteration.

allowance free for a compensating alteration. Because more of the rib cage is exposed, the underarm seam has to be raised an equal amount to retain the original size of the armhole (see Figure 6.14).

- Multiple alterations on a single pattern piece may blend one into another. For example, the alteration for a smaller waist may blend into the alteration for a larger bust. The alterations for a larger waist, hip, and side thigh will blend smoothly one into the other (see Figure 6.15).
5. Choose the most efficient pattern alteration method for a particular alteration or a combination of alterations.
 6. Incorporate the correct amount of change at each location on the pattern requiring a change, in the following order:

Working from the bottom of the pattern up:

- a. *Make even amounts of length change first*—increasing or decreasing total pattern length. (The width may actually be accurate when the pattern is positioned at the correct level on the body—when pattern shaping is level with the appropriate body contour.)
- b. *Make uneven amounts of length change next*—increasing or decreasing length in the affected area. The amount of change is not parallel, but tapers at one end.

Working from the top of the pattern down:

✓ REALITY CHECK

We can't tell you exactly how much to alter. That's up to you to discover in the measurement and fitting process.

- c. *Make even amounts of width change next*—increasing or decreasing total pattern width.
 - d. *Make uneven amounts of width change last*—increasing or decreasing length in the affected area. The amount of change is not parallel, but tapers at one end.
7. Check all pattern pieces adjoining an edge that has been altered in length or width to ensure that stitching lines will match in length and shape.
 8. Evaluate the accuracy of all alterations according to the Standards for Pattern Alteration that follow.
 9. Restore any needed pattern edges or dart ends, and any original markings disturbed during the alteration process (see Figure 6.16).
 - Use rulers and French curves as needed to restore the accuracy of lines and edges, allowing them to better fit the curves of the body.
 - When a dart is changed, fold the dart into the closed position then cut along the pattern edge. This will automatically shape the dart base correctly.
 10. Label the alteration on the pattern. Note the name of the figure variation and the amount of change.

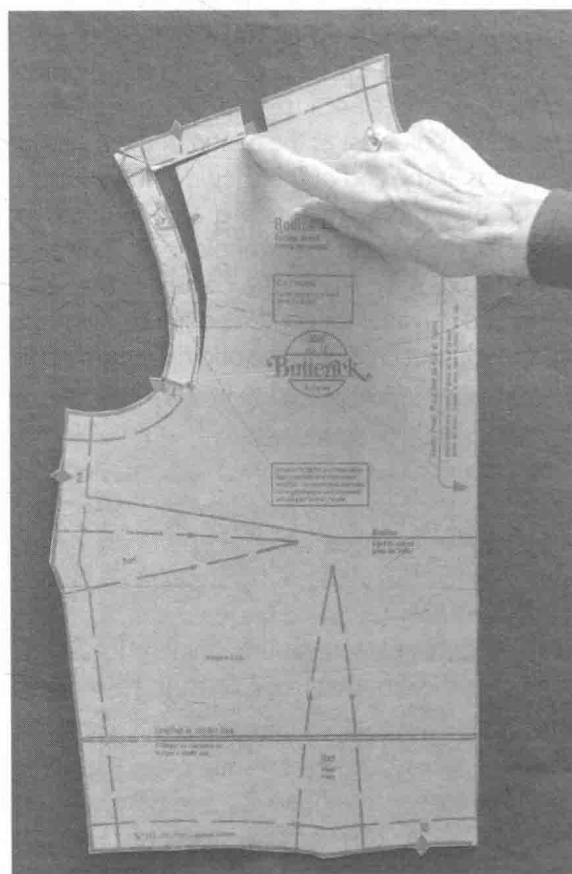
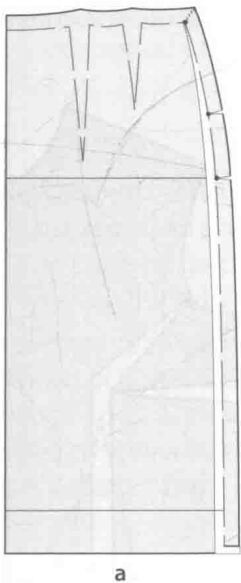


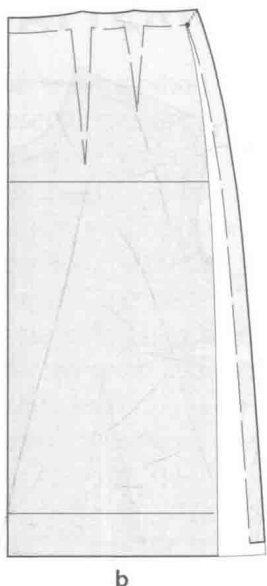
FIGURE 6.16 Most restorations are easily accomplished.

STANDARDS FOR PATTERN ALTERATION

- 1. The location and measured amount of change must be correct.
- 2. The original style of the garment must be retained, unless a change was intentional (see Figure 6.17a and b). Drafting and flat pattern design procedures change style. Alteration procedures change size only.
- 3. The straight-of-grain line or arrow must be positioned the same as before the alteration so the garment hangs or drapes properly. Only extreme figure variations may be the exception (see Figure 6.18).



a



b

FIGURE 6.17 (a) This alteration to accommodate wider hips retains the straight skirt style. (b) This alteration to accommodate wider hips changes the style to an A-line skirt.

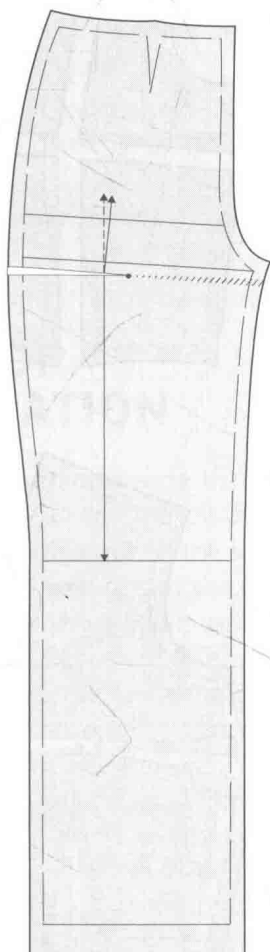
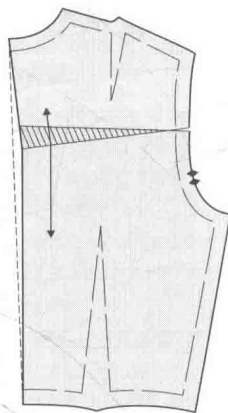
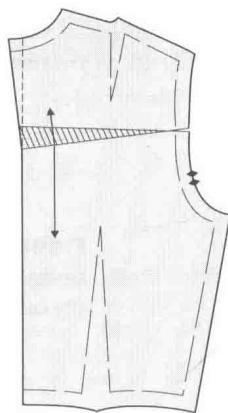


FIGURE 6.18 Alteration for bow legs requires the straight-of-grain arrow to be restored.

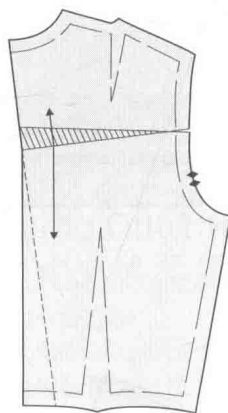
- 4. Center front and center back fold lines, and seamlines on a basic pattern must remain straight, on grain, so the garment hangs or drapes as intended. Darts are used to create curved shaping in these areas (see Figure 6.19a–d).
- 5. Fold lines or seamlines that intersect the center front, center back, or sides must lie at right angles on the basic pattern. Length changes at center front or center back must remain level for the span of at least 1 to 3 inches from center—often for the span of the neckline, bust, shoulder, or waistline darts. The exception to this would be an alteration for an asymmetrical figure (see Figure 6.20).



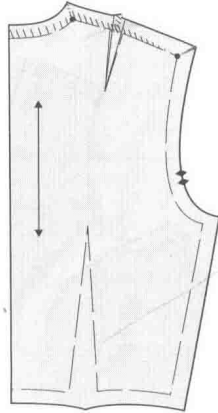
a



b



c



Recommended
d

FIGURE 6.19 (a–c) Published slash alterations for an erect upper back distort the center back and grainline. Various ways of “trueing” the center back foldline leads to further distortion. (d) This simple seam method alteration leaves the center back straight, with no restoration needed.

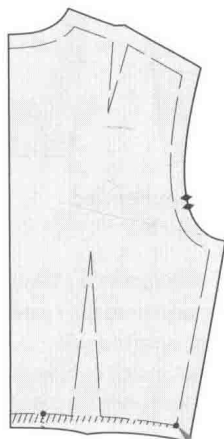


FIGURE 6.20 An alteration must remain level at center back or front for a distance of at least 1 inch.

6. The hem corners on basic pattern pieces must form right angles or the hemline will be uneven.
7. Curved seamlines must curve smoothly (see Figure 6.21).
8. Adjoining seam stitching lines must match (see Figure 6.22a–b).
9. Dart stitching lines must match (see Figure 6.23).
10. The illustrated pattern alteration procedure must be complete. Unfinished, you don't know how the alteration really turns out (refer back to Figure 6.6a–b).
11. The alteration procedure must *not* change something you did not intend to change. If the alteration changes anything you did not intend to change, the procedure will not work (see Figure 6.24a–d).

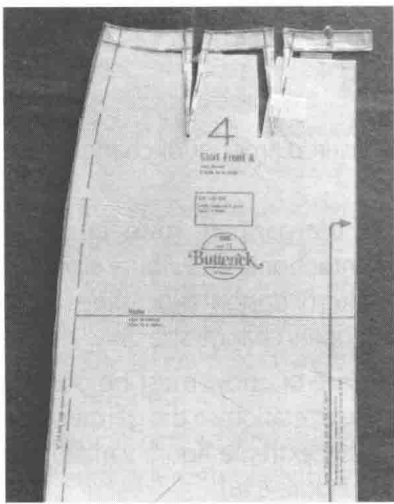


FIGURE 6.23 This alteration for a larger abdomen illustrates darts leveled at the waist so stitch lines will match.

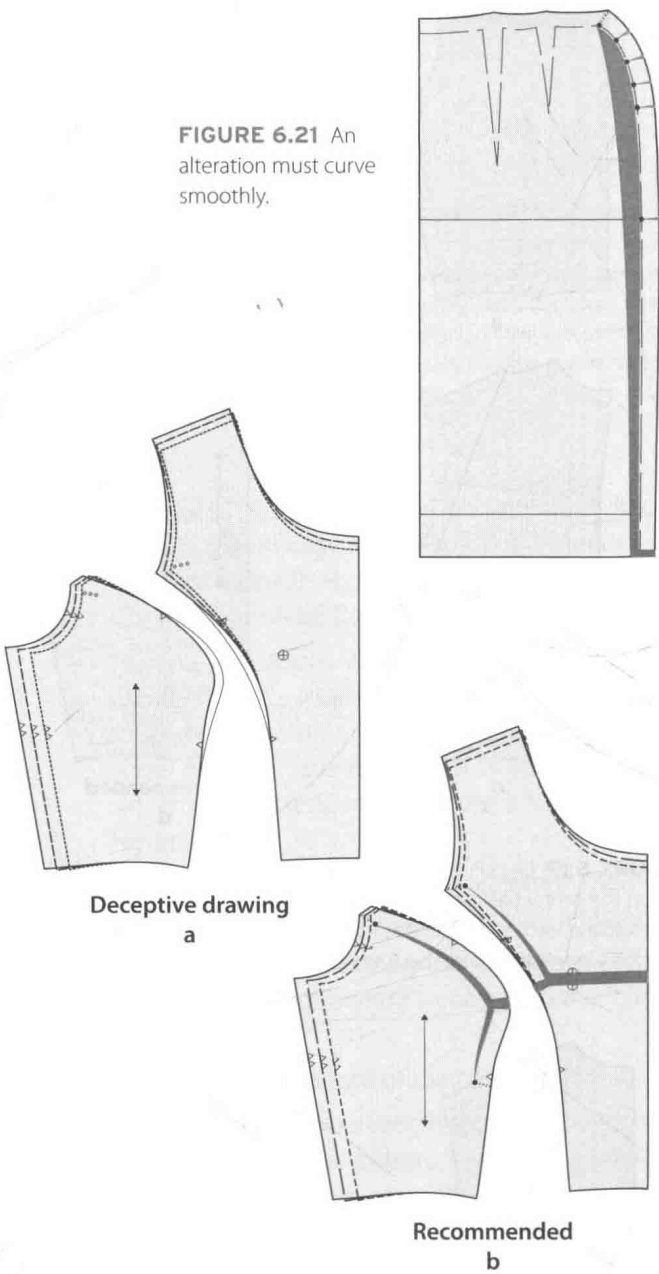


FIGURE 6.22 Look closely at the published alterations for a larger bust in a princess-style bodice. (a) Extra width drawn onto the center section shortens the seamline. Extra width drawn onto the side section lengthens the seamline. Seamlines will not match or fit well. (b) Combined seam and slash methods result in seamlines that will match and fit the full bust beautifully.

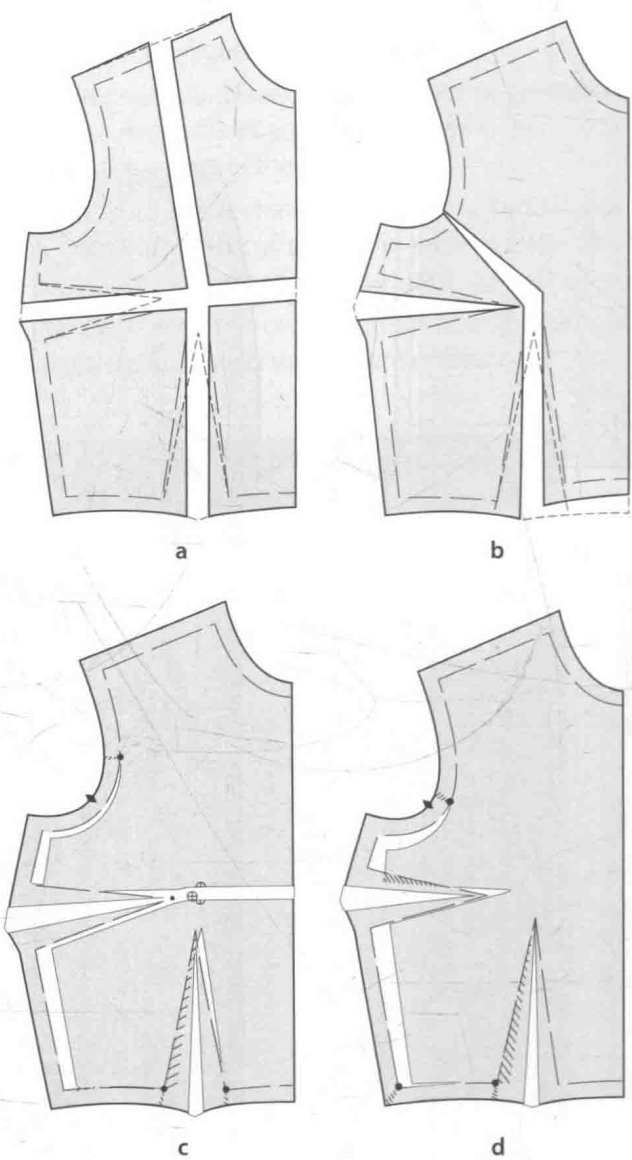


FIGURE 6.24 Added width and a larger dart are needed for the larger bust alteration. (a) Published alteration for a larger bust also adds extra width in the upper bodice and length at center front. (b-c) Published alterations for a larger bust add length at center front, more appropriate for a prominent bust. (d) Published alteration for a larger bust changes nothing else about the pattern.

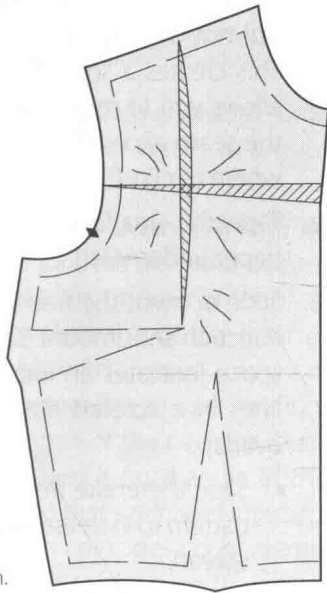


FIGURE 6.25 Published alteration for a shallow chest will not lie flat. The pattern will pucker and distort all edges. Whatever method is used, the pattern must lie flat after the alteration.

12. A pattern lies flat *before* an alteration. The pattern must lie flat *after* an alteration. It's that simple! There must be no puffiness, puckers, or wrinkles in the paper pattern, making the pattern smaller (see Figure 6.25).

In the case of an extreme amount of change and/or a combination of alterations, the finished pattern may look quite out of the ordinary. This is not unusual. If the alterations were carried out correctly, the pattern should still lie on grain and work out accordingly.

SEAM METHOD OF PATTERN ALTERATION

The seam method is based on the knowledge that the closer the alteration is made to the seamline, the less distortion there will be in the pattern. Carried out on the seamline, there is virtually no distortion. In altering by the *seam method*, you first locate the point where a figure variation begins and the point where it ends. Between these points is where the pattern does not measure to fit the body. These points may be called end points or *pivot points*. The affected seam allowance is then cut free between these points. Next, the seam allowance is spread away from the pattern to increase size, or overlapped onto the pattern to decrease size. This changes the size and/or the shape of the affected area. While you see the change at the seamline edge of the pattern, the alteration is incorporated within the area where it is needed. This is due to the strategic placement of the end points or pivot points. In the case of multi-sized patterns without marked seam allowances, simply cut the pattern out with the traditional $\frac{5}{8}$ inch amount, then carry out the alteration at the printed seamline. Tape measures are generally $\frac{5}{8}$ of an inch wide. Lay a tape measure next to the cutline and trace stitching line.

Seam Method: Advantages and Disadvantages

| Advantages | Disadvantages |
|--|--|
| <ul style="list-style-type: none"> • The alteration procedure is carried out easily by the beginner. • Alterations for single and multiple figure variations can be quickly accomplished. • Alterations for multiple figure variations blend naturally, one into the other. • There is little to no distortion. Grainline, darts, and edges remain smooth and flat as original. • Tucks, pleats, and other interior construction details remain undisturbed. • The interior of the pattern remains uncut and the original seam allowance is retained. • The altered pattern does not look appreciably different from the original, and is hence, more pleasing to the person being altered for. • Looking at the altered pattern piece, you can easily identify what figure variation the alteration was done for. | <ul style="list-style-type: none"> • If not done carefully, small pieces of seam allowance may be lost or misplaced during the alteration process. • No references other than <i>Fabulous Fit</i> (Rasband & Liechty) and this text contain directions for these newly developed procedures. |

Carrying Out the Seam Method

Carry out the seam method of pattern alteration in the following sequence:

1. Locate the appropriate stitching line(s) to be altered, the one(s) affected by the figure variation.
2. Establish end or pivot points on the pattern stitching line as necessary (see Figure 6.26a):

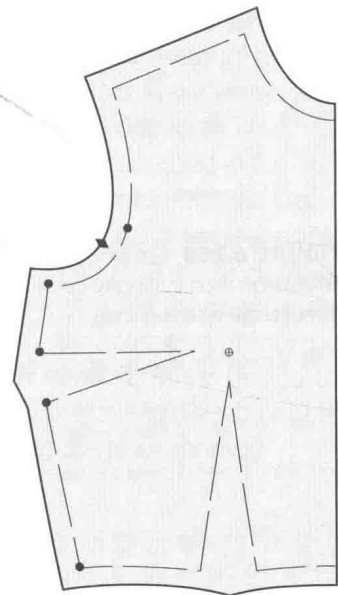


FIGURE 6.26a Establish pivot points on the pattern stitching line to alter for the larger bust.

- at the point where the figure variation begins (often a corner or breakpoint)
 - at the point where the figure variation ends (often a corner or breakpoint)
 - at the point or points in between—where the figure variation is greatest, changes from an even to an uneven amount, or begins to taper into the original stitching line; the greater the curve, the more pivot points may be needed to maintain a smooth stitching line
 - at the base of darts affected by the alteration, on one or both sides of the dart, depending on the variation
3. Draw clip lines across the seam allowance at each pivot point (see Figure 6.26b).
 4. Place alteration paper under the affected area.
 5. Cut the affected seam allowance free from the pattern, cutting just inside the stitching line. Larger scissors indicate where to begin cutting. Cut carefully (see Figure 6.26c).

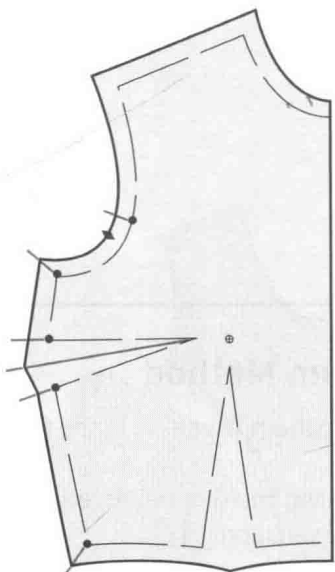


FIGURE 6.26b Draw clip lines and dart cut line.

6. Clip the lines drawn across the seam allowance. Clip to, but not through, the pivot point on the stitching line. This creates a sort of “hinge” at the stitching line that allows you to move the seam allowance in or out, and the seam allowance to lie flat. Smaller scissors indicate where to clip. Clip carefully (see Figure 6.26d).
7. Tape the unaffected pattern edges to the alteration paper underneath.
8. Slide or pivot the free seam allowance in the required direction and amount (see Figure 6.26e). Open or colored space indicates an increase in size—spread. Diagonal lines in a colored area indicate a decrease in size—overlap.
 - Slide the entire free seam allowance away from the pattern to increase length or width an *even* amount—spread.
 - Slide the entire free seam allowance onto the pattern to decrease length or width an *even* amount—lap.

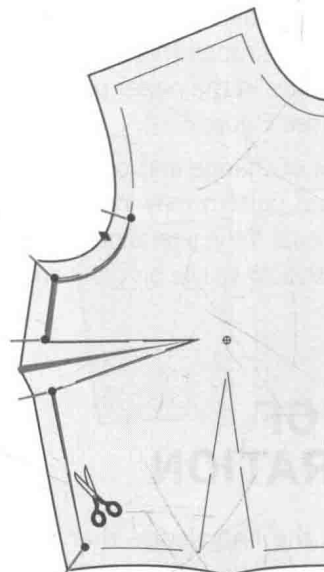


FIGURE 6.26c Cut seam allowances away from the pattern.

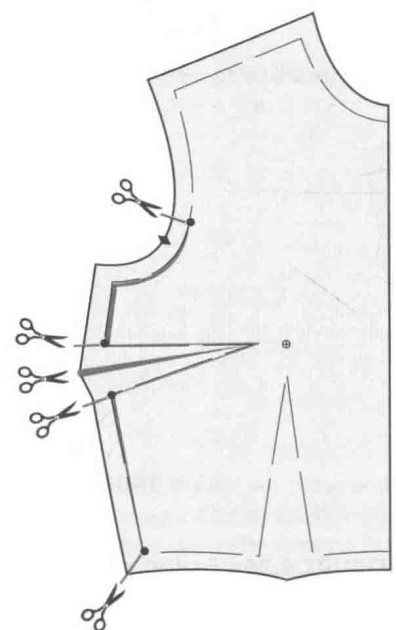


FIGURE 6.26d Clip hinges across seam allowance, cutting to but not through the stitching line.

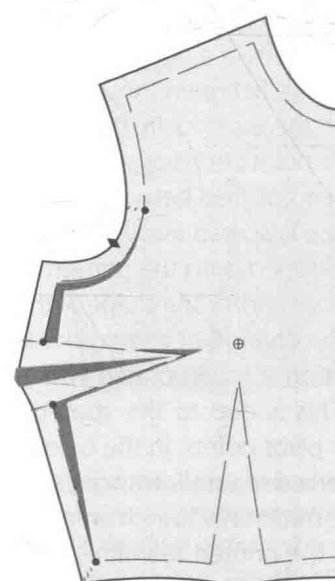


FIGURE 6.26e To increase width and enlarge the dart, slide seam allowances away from the pattern the amount needed.

- Slide/pivot the free end of the seam allowance away from the pattern to increase length or width an *uneven* amount—spread.
- Slide/pivot the free end of the seam allowance onto the pattern to decrease length or width an *uneven* amount—lap.
- Slide then pivot the free seam allowance away from or onto the pattern to alter for both even and uneven amounts. When you make an uneven amount of change in length that involves the center front or center back, you must begin with an even amount of change for a distance of between 1 to 3 inches from the center—often for the span of the neckline, bust, or waistline darts. This ensures a right angle at the center front or center back so that seamlines intersect correctly. This distance often coincides conveniently with a dart. You can then taper or blend the remaining distance into the original stitching line. The exception applies to asymmetrical figures.

9. Tape the altered seam allowances securely in place.
10. Restore dart stitching lines, cutting lines, seam stitching lines, notches, marks and symbols disturbed by the alteration. Use an appropriate ruler to aid you in blending any lines.
 - Use a ruler and/or French curve to draw straight and curved lines accurately.
 - If you are unsure about dart ends, fold the dart and turn it in the finished direction. Cut the dart base off according to the overlapping pattern cutting line. This will automatically restore the correct end shape.
11. Alter any pattern pieces that join an altered pattern piece so that seamlines match when sewn together—front, back, sleeve, collar, facing, etc.

Exercise: To develop your own alteration skill with the seam method, use the bodice illustrated in Figure 6.26a–d, for example, and practice the pattern alteration procedures on a half-scale pattern. Assume a $\frac{3}{8}$ inch amount of change for half-scale practice (see Figures 6.27 and 6.28).

PIVOT METHOD OF PATTERN ALTERATION

The pivot method is based on the knowledge that regardless of where or how a pattern or garment is altered, it is the contour of the outer edge that ultimately changes. In altering by the *pivot method* or pivot and slide method, you

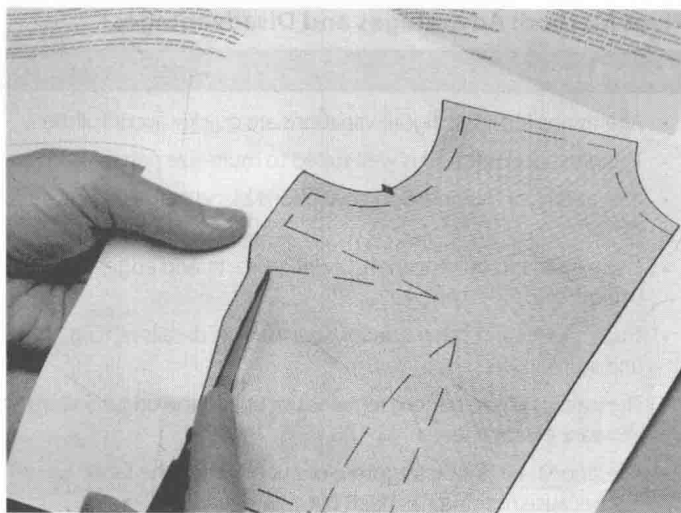


FIGURE 6.27 Use half-scale patterns to practice cutting seam allowances free just inside the stitching line.

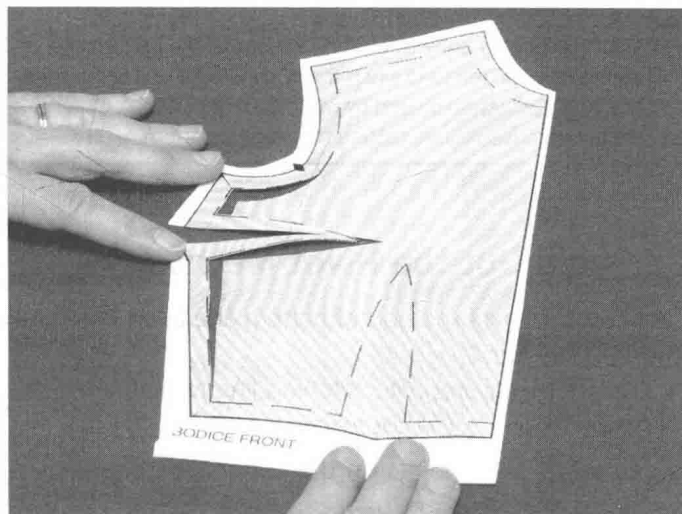


FIGURE 6.28 Working with half-scale practice patterns will increase your ability and confidence in working with fashion patterns.

first locate the point where a figure variation begins and the point where it ends. Between these points is where the pattern does not measure to fit the body. These points are called pivot points. The affected area of the pattern is then traced to make a duplicate. Next, the original pattern is pivoted or slid over the tracing in the outward direction to increase size and inward to decrease size, and retraced in the new position. (Tracing is usually visible through the pattern tissue.) This changes the size and/or the shape of the affected area. While you see the change at the seamline edge of the pattern, the alteration is incorporated within the area where it is needed. This is due to the strategic placement of the end points. Multi-sized patterns are incredibly easy to adjust using the pivot method.

Pivot Method: Advantages and Disadvantages

| Advantages | Disadvantages |
|---|---|
| <ul style="list-style-type: none">• Alterations for single figure variations are quickly accomplished.• This alteration method is well suited to multi-size patterns.• Alterations for multiple figure variations blend naturally, one into the other.• There is little to no distortion. Grainline, darts, and edges remain smooth and flat as original.• Tucks, pleats, and other interior construction details remain undisturbed.• The interior of the pattern remains uncut and the original seam allowance is retained.• Alterations will not be forgotten or cut off when the fabric is cut out because nothing has been cut.• The altered pattern does not look appreciably different from the original, and is hence, more pleasing to the person being fitted.• The process can be used to alter the pattern before the fabric is cut, during the cutting process, during the construction process on the garment, or on ready-to-wear garments that have adequate seam allowances.• Since the tracing is the new working edge of the pattern, the pattern may be retraced when the body weight or size changes, or when the pattern is used by more than one person. Only decreased areas require cutting the original pattern. | <ul style="list-style-type: none">• The shape of the cut edge may be difficult to trace accurately because of the flimsy texture of commercial patterns. It is smart to reinforce the pattern.• Multiple alterations, or alterations that involve darts, are relatively advanced for beginners.• Alterations may be unnoticed and habit may cause you to cut on the original cutting edge of the pattern—unless you use a contrasting color for the new cutting line. |

Carrying Out the Pivot Method

Carry out the pivot method of pattern alteration in the following sequence:

1. Locate the appropriate stitching line to be altered, the one affected by the figure variation.
2. Establish pivot points on the pattern stitching line as necessary (see Figure 6.29a):
 - at the point where the figure variation begins (often a corner or breakpoint)
 - at the point where the figure variation ends (often a corner or breakpoint)
 - at the point or points in between—where the figure variation is greatest, changes from an even to an uneven amount, or begins to taper into the original stitching line; view carefully, the illustrated guide in Part Three of this text
 - at the base of darts affected by the alteration, on one or both sides of the dart, depending on the variation
3. Place tracing paper underneath the pattern, although some people prefer to work with tracing paper over the pattern.
4. Trace the affected area of the pattern to be altered, making a duplicate. Use a black pencil or pen for the tracing (see heavier red outline in Figure 6.29b). For relocation purposes, mark pivot points on the traced duplicate. Mark the amount of change.
5. Pivot or slide the pattern area the needed amount and in the appropriate direction. Trace the new cutting line

with a colored pencil or pen. The garment fabric will be cut according to the corrected colored tracing. Take your time so you don't over-pivot or under-pivot (see Figure 6.29c).

- To *increase* an *even* amount of length or width, slide the pattern away from the duplicate or traced area.
- To *decrease* an *even* amount of length or width, slide the pattern over, onto the duplicate or traced area.
- To *increase* an *uneven* amount of length or width, use the pivot point(s) along the stitching line and pivot the duplicate away from the pattern or traced area (see Figure 6.29d and e).
- To *decrease* an *uneven* amount of length or width, use the pivot point(s) on the stitching line and pivot the pattern over the duplicate or traced area.
- To accomplish alterations of even and uneven amounts, slide and trace the pattern onto the duplicate in the area to be altered the even amount. Then pivot and trace as needed to alter the uneven amount.
- To accomplish alterations of an even and uneven amounts, make the even change first by sliding the pattern away from or onto the duplicate or tracing.

REALITY CHECK

The greater the curve, the more pivot points may be needed to create or maintain a smooth stitching line.

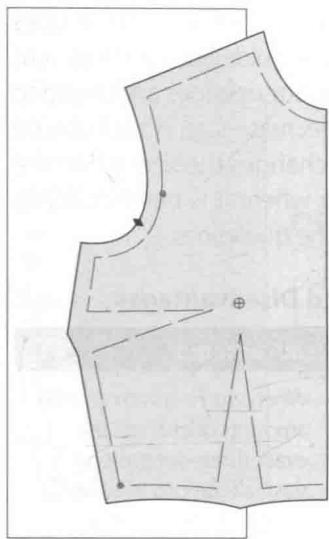


FIGURE 6.29a Establish pivot points on the pattern stitching line to alter for the larger bust.

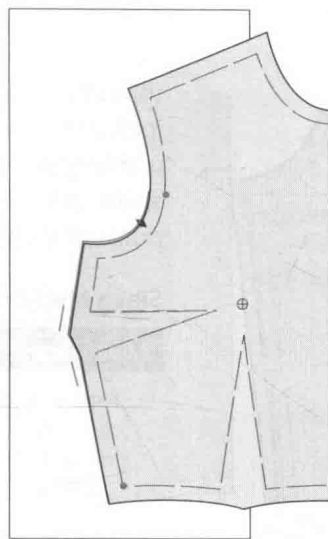


FIGURE 6.29b Trace affected seamlines and mark amount of change.

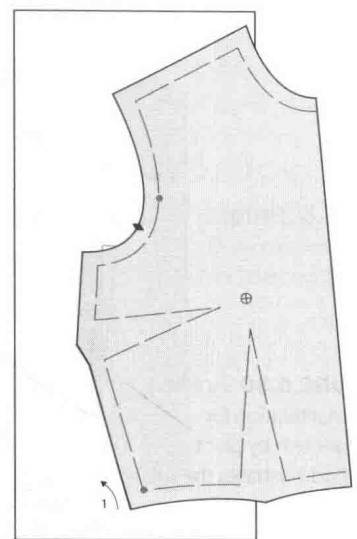


FIGURE 6.29c From pivot point 1, pivot in outward direction to the mark and trace.

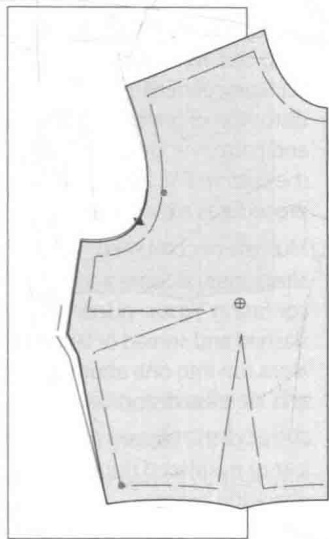


FIGURE 6.29d Return pattern to original position (as indicated by the asterisk in front of 2 in Figure 6.29e).

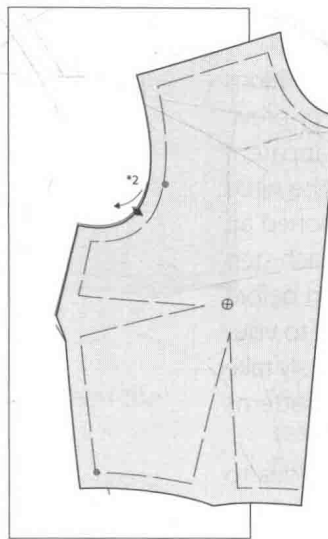


FIGURE 6.29e From pivot point 2, pivot in outward direction to the mark. Trace.

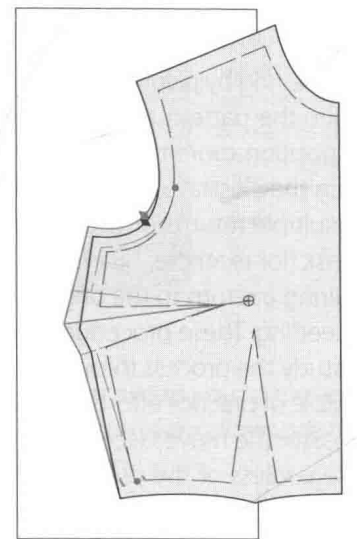


FIGURE 6.29f Return pattern to original position. Gray fill illustrates the finished pattern.

Then pivot and trace the pattern until the seams and darts are aligned. In many alterations, the pattern must be returned to the original position midway in the process, allowing a reverse pivot necessary to bring new lines together. Mark the position of notches and the ends of the dartlines when tracing the altered area. When you make an uneven amount of change in length that involves the center front or center back, you must begin with an even amount of change for a distance of about 1 to 3 inches from the center. This ensures a right angle at the center front or center back so that seamlines intersect correctly. This distance often coincides conveniently with a dart. You can then pivot to taper and blend the remaining distance into the original stitching line.

6. If a tracing was used, tape the tracing to the original pattern. Match the first traced line (black) with the cutting line on the original pattern.
7. Restore the pattern edges to make the necessary restoration (see Figure 6.29f).
 - Use a ruler and/or French curve to draw straight and curved lines accurately.
 - If you are unsure about dart ends, fold the dart and turn it in the finished direction. Cut the dart base off according to the overlapping pattern cutting line. This will automatically restore the correct end shape.
8. Alter any pattern pieces that join an altered pattern piece so that seamlines match when sewn together—front, back, sleeve, collar, facing, etc.

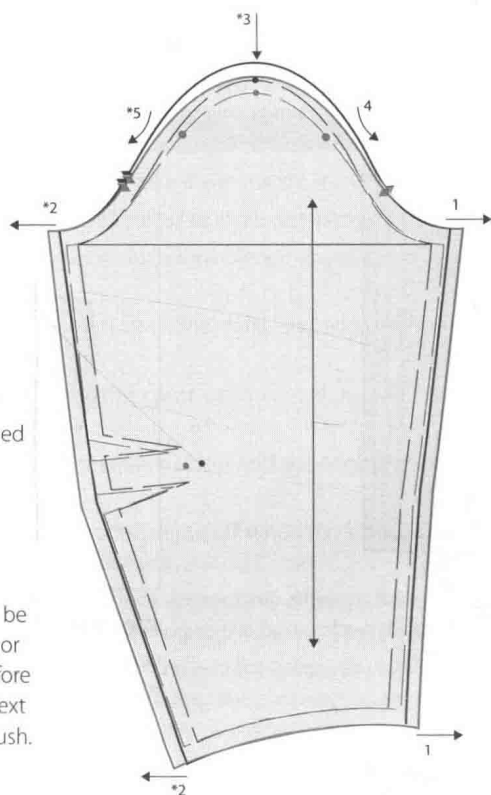


FIGURE 6.30 Finished sleeve alteration for a larger arm by pivot method illustrates the use of the asterisk in front of each step that requires the pattern to be returned to its original or a previous position before proceeding with the next pivot or slide. Do not rush.

In altering by pivot method, more than 30 figure variations require the pattern to be returned to the original or previous position more than once. The returns are not apparent within the illustrated pivot process. To alert you to the need for multiple returns of two or more, we have positioned an asterisk (for example, *3) in front of the number of each step requiring a return to the original or previous position before proceeding. These procedures generally require you to visually study the process through in your mind. It will likely take a couple of practice efforts with a half-scale practice patterns to master the moves (see Figure 6.30).

Regardless of the preferred method, it is a good idea to look at and compare all three illustrated procedures for any specific variation. You will come to better understand any one method by studying all three.

Exercise: To develop your own alteration skill with the pivot method, use the bodice illustrated in Figures 6.29a through 6.29e, for example, and practice the pattern alteration procedures on a half-scale pattern. Assume a $\frac{3}{8}$ inch amount of change for half-scale practice.

Within the area of these guidelines is where the pattern does not measure to fit the body. The guidelines are then cut through—end to end. Next, the pattern edges are spread to increase size or overlapped to decrease size. A tuck can be used in place of an overlap. This changes the size and/or the shape of the pattern at the area where it is needed. This is due to the strategic position of the guidelines.

Slash Method: Advantages and Disadvantages

| Advantages | Disadvantages |
|---|---|
| <ul style="list-style-type: none"> • Pattern adjustments are similar to slash adjustments in the trial fitting garment. • Alterations for even amounts of change are quickly accomplished. • Alterations will not be forgotten or cut off when the fabric is cut out because the change has been made in the interior of the pattern. • The original seam allowances remain intact on the pattern edge. | <ul style="list-style-type: none"> • When working with uneven amounts of change, the exact three-dimensional slash alterations in a trial fitting garment cannot be carried out in a two-dimensional paper pattern. Paper on a flat surface behaves differently than fabric on the body. • When altering for uneven amounts of change, the altered pattern becomes distorted. To maintain accuracy, eliminate distortion of grainline, darts, and pattern edges, and keep the pattern flat, additional procedures are required. • Multiple or combined alterations become a confusing “jigsaw puzzle” as slashed and spread or lapped areas run into one another and increase distortion. • Pieces of the pattern may be lost or misplaced during the alteration process. • The slashed appearance of altered patterns is discouraging or disturbing to many people. |

Carrying Out the Slash Method

Carry out the slash method of pattern alteration in the following sequence:

1. Locate the appropriate area to be altered, the one affected by the figure variation.
2. Establish guidelines and pivot points (see Figure 6.31a) on the pattern for slashing the area.
 - When an even amount of change is to be made in the length or width, the guideline will extend through the entire area to be altered, crossing both pattern edges.
 - When the length of only one seamline is adjusted, one alteration line crosses the seam to be changed and extends to another stitching line at the point where the figure variation tapers to nothing; an additional

CORRECTED SLASH METHOD OF PATTERN ALTERATION

The traditional slash method is based on the assumption that pattern alterations should lie in the same area on the pattern as the area of the body being altered for. In altering by the *slash method*, you first establish guidelines within the interior of the pattern that identify where the figure variation occurs.

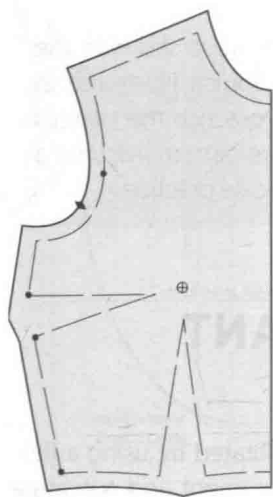


FIGURE 6.31a
Establish pivot
points on the
pattern stitching
lines to alter for the
larger bust.

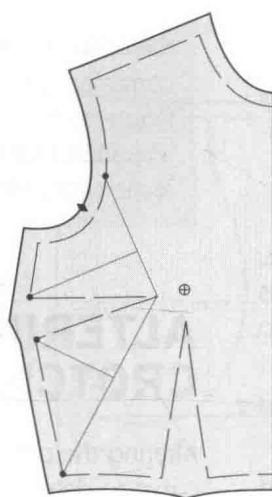


FIGURE 6.31b
Draw interior
slash guidelines.

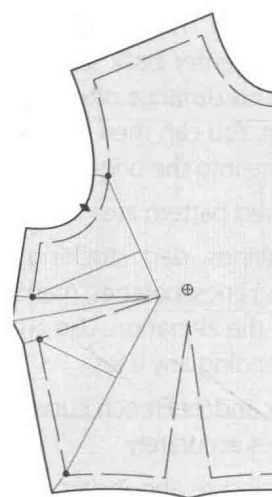


FIGURE 6.31c
Draw clip lines
and dart cut line.

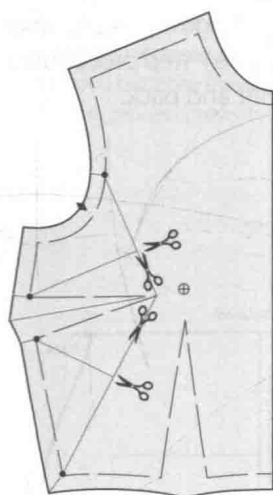


FIGURE 6.31d
Cut along interior
guidelines.

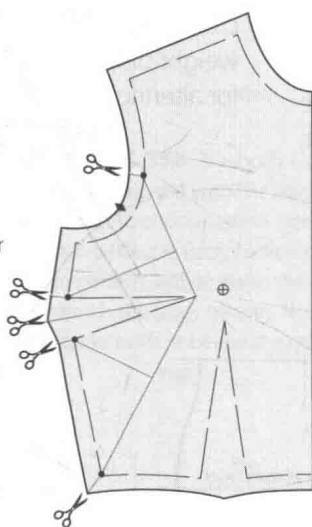


FIGURE 6.31e
Clip hinges
across seam
allowance,
cutting to but
not through the
stitching line.

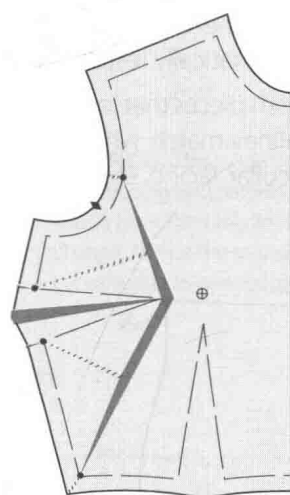


FIGURE 6.31f
To increase width
and enlarge the
dart, slide seam
allowances away
from the pattern
the amount
needed.

line is made to the corner in the area between the two affected points.

- When only the interior is adjusted without changing the length of any seamline, a line will extend from one stitching line to another within the affected area; additional lines are made as necessary to a corner, where the figure variation is the greatest, and through the center of the darts in the area (see Figure 6.31b).
 - When the adjustment involves both an even and uneven amount of change, one line will extend through the pattern edge needing a length change and will end at another stitching line or corner where the figure variation tapers to nothing. Lines are made to the corner where the variation changes from an even to an uneven amount in addition to the one through the center of darts in the area.
3. Draw clip lines across the seam allowance at the end of each guideline (see Figure 6.31c).
 4. Place alteration paper under the affected area if pattern size is to be increased.
 5. Cut (slash) the pattern along the established guidelines to, but not through, the stitching line (see Figure 6.31d).
 6. Clip the lines drawn across the seam allowance. Clip to, but not through, the stitching line. This creates a sort of

“hinge” at the stitching line that allows you to move the seam allowance in or out, and the seam allowance to lie flat. Clip carefully (see Figure 6.31e).

7. Tape the unaffected pattern edges to the alteration paper underneath.
8. Spread or overlap the cut edge in the required direction and amount. Open or colored space indicates an increase in size—spread. Diagonal lines indicate a decrease in size—overlap (see Figure 6.31f).
 - Slide the free pattern area apart or outward to increase length or width an even amount—spread.
 - Slide the free pattern area onto or inward to decrease length or width an even amount—overlap.
 - Slide/pivot the free pattern area apart or outward to increase length or width an uneven amount—spread.
 - Slide/pivot the free pattern area onto or inward to decrease length or width an uneven amount—lap.
 - Slide then pivot the free pattern area away from or onto the pattern to alter for both even and uneven amounts of change. When you make an uneven amount of change in length that involves the center front or center back, you must begin with an even amount of change for a distance of about 1 to 3 inches

from the center. This ensures a right angle at the center front or center back so that seamlines intersect correctly. This distance often coincides conveniently with a dart. You can then taper or blend the remaining distance into the original stitching line.

9. Tape the altered pattern area securely in place.
10. Restore grainlines, dart stitching lines, cutting lines, seam stitching lines, notches, marks, and other symbols disturbed by the alteration. Use an appropriate ruler to aid you in blending any lines.
 - Use a ruler and/or French curve to draw straight and curved lines accurately.
 - If you are unsure about dart ends, fold the dart and turn it in the finished direction. Cut the dart base off according to the overlapping pattern cutting line. This will automatically restore the correct end shape.
11. Alter any pattern pieces that join an altered pattern piece so that seamlines match when sewn together—front, back, sleeve, collar, facing, etc.

Exercise: To develop your own alteration skill with the corrected slash method, use the bodice illustrated in Figure 6.31a–e as an example and practice the pattern alteration procedures on a half-scale pattern. Assume a $\frac{3}{8}$ inch amount of change for half-scale practice.

ALTERING THE PANT CROTCH CURVE

Altering the pant crotch curve is facilitated by using a flex-curve to determine the body measurement and curvature (see Chapter 5, Figure 5.4). Compare the following body crotch curves for differences in torso length, posture, and weight distribution. Then study the step-by-step procedures for altering the pant crotch curves, front and back.

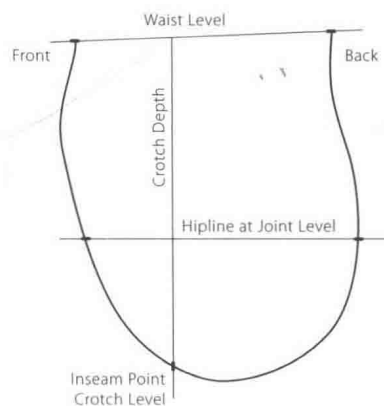


FIGURE 6.32a The body crotch curve illustrates a longer lower torso.

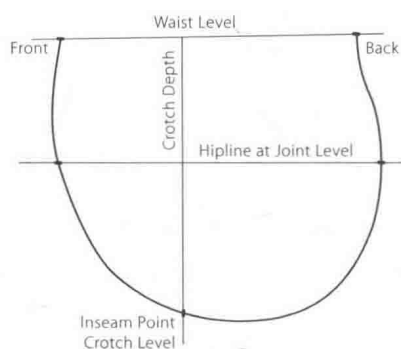


FIGURE 6.32b The body crotch curve illustrates a shorter lower torso.

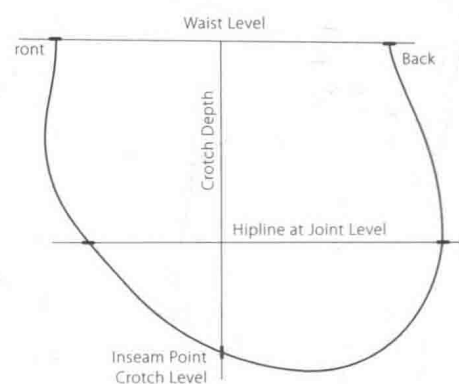


FIGURE 6.34 The body crotch curve illustrates a typical prominent abdomen in relation to the angled recessed pubic area below.

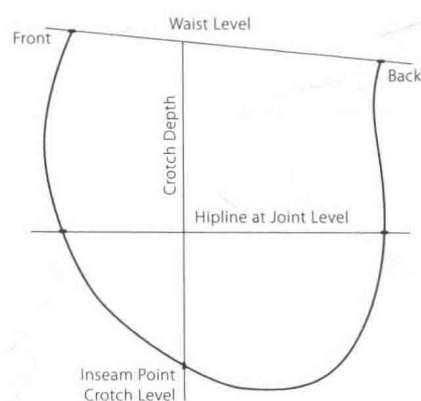


FIGURE 6.33a The body crotch curve illustrates flatter buttocks and tilted waistline due to slumped or sway front posture.

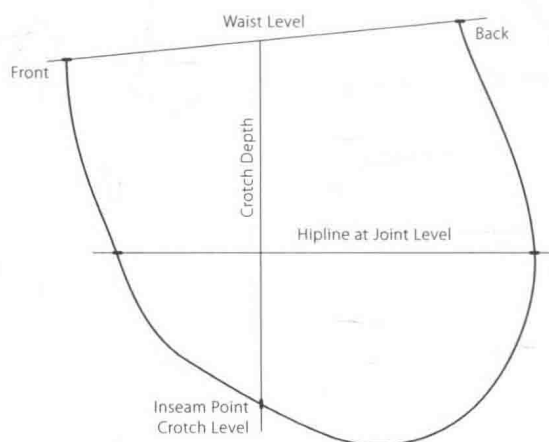


FIGURE 6.33b The body crotch curve illustrates larger buttocks and tilted waistline due to sway back posture.

FIGURE 6.35a–h Alteration procedures on front pant pattern—average figure

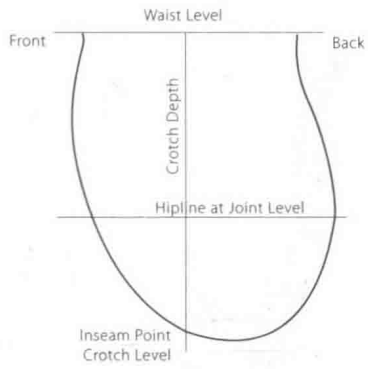


FIGURE 6.35a The body crotch curve reflects a figure that is average in weight but with a somewhat larger abdomen, a relatively recessed pubic area, and dropped buttocks. (Review the flex curve shaping process presented in Chapter 5.)

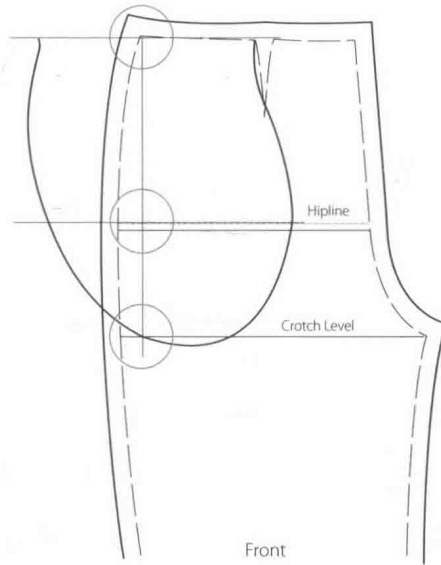


FIGURE 6.35b The body crotch curve tracing is aligned with the front pant pattern at the waist to check pattern crotch depth. They match perfectly. Body hipline or level is higher than pattern hipline. Raise the pattern hipline to match the body tracing. Notice the dropped buttocks evident below the crotch line or level.

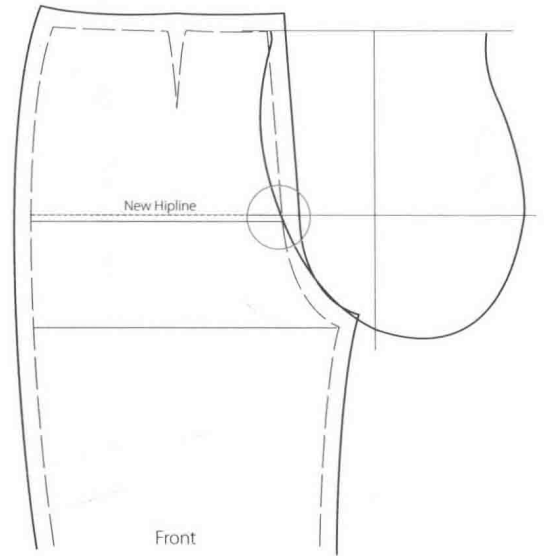


FIGURE 6.35c Slide the tracing right. Align tracing and pattern hiplines at pattern center front stitching line. Waist level needs no change. Notice the roundness of the abdominal curve, a clue to needed alteration.

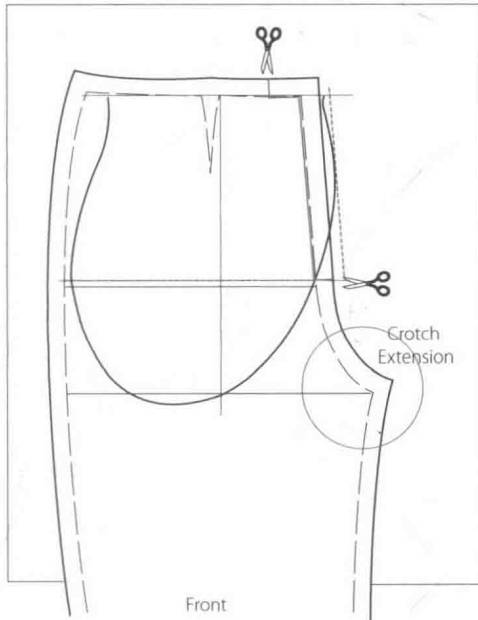


FIGURE 6.35d Flip the tracing over. Begin alteration above the hipline. Align tracing and pattern hiplines at pattern center front stitching line. Draw on tissue a line at the fullest part of the abdomen and running parallel to the pattern center front. This is where the center front seam needs to be moved to, increasing the width of the pattern to accommodate the fuller abdomen—dashed line. Release center-front seam allowance between hipline and waist, including one to two inches on the waistline to maintain a right angle at center front. Note, if center front length needs to be increased, release the waistline seam past the dart to execute the change, clipping hinges where needed.

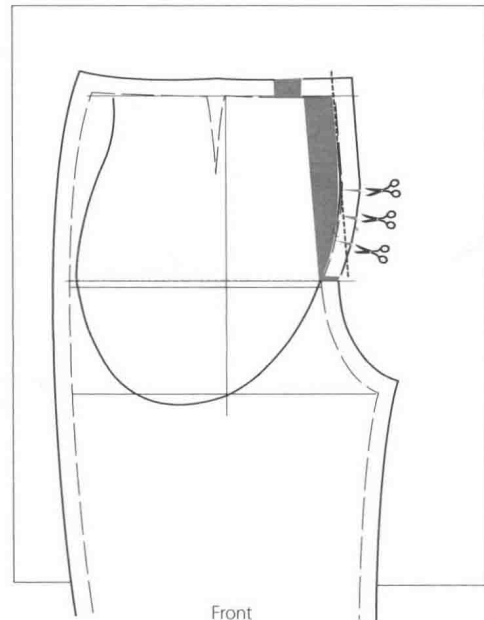


FIGURE 6.35e Move original center front seam to new center front seam position—dashed line. Curve the lower end of the seamline, clipping hinges as needed to angle back into the original seamline at the hipline. The newly curved center front seamline will be slightly longer. Alteration above the hipline is now complete.

FIGURE 6.35a–h Alteration procedures on front pant pattern—average figure (*continued*)

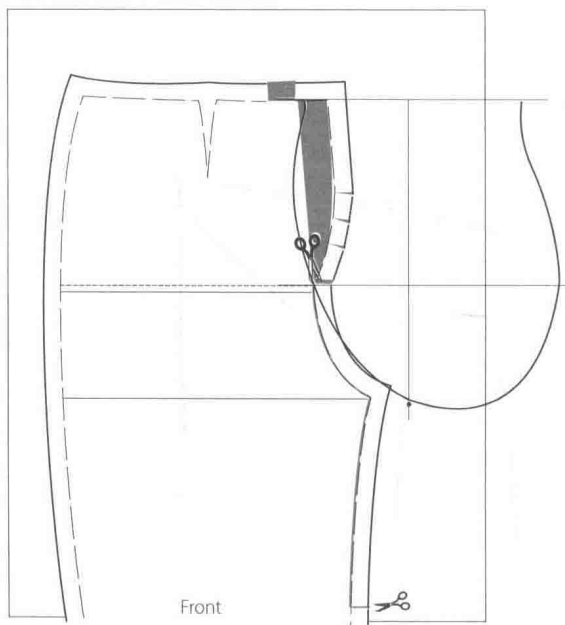


FIGURE 6.35f Flip the tracing over again, matching hiplines at center front seam. Proceed with alteration below the hip line. On the underlying tissue paper, place a dot just below the crotch curve tracing at the inseam point. Release the seam allowance between the hip line and the inseam point, then down the inseam for some distance. How far you release the seam allowance depends on the amount of change in width in the crotch extension. The greater the change, the farther down the inseam you need to release the seam allowance. Clip a hinge at the bottom of the released inseam allowance.

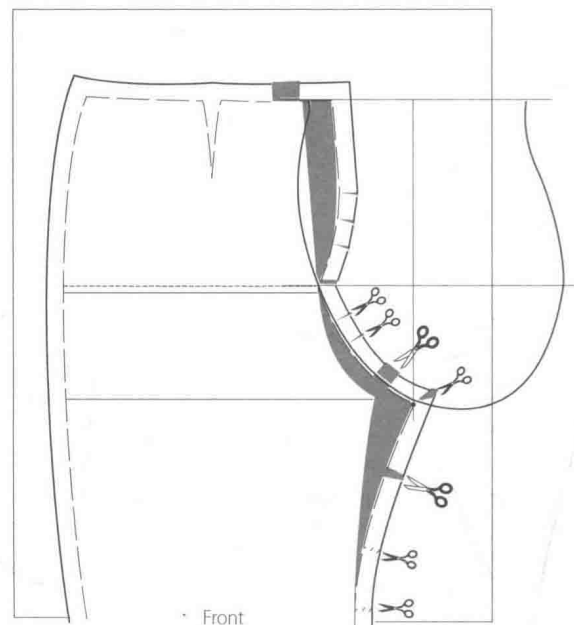


FIGURE 6.35g Move the crotch extension outward to the inseam point. Clip the crotch extension seam allowance as necessary to follow the curve of the body tracing. As the crotch extension becomes wider or narrower, you may need to lengthen or shorten the inseam by cutting through the seam allowance and spreading or overlapping as needed. Note: Remember to lengthen or shorten the adjoining inseam on the pant back also.

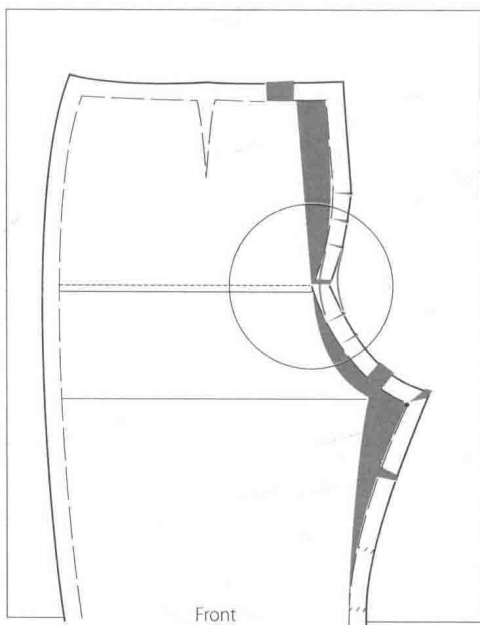


FIGURE 6.35h Optional step. If you prefer your pant to fit closely at the hip line, leave the pattern shaped as is. (The indented area is essentially a dart equivalent, facilitating the fit.) Clip the seam allowance after sewing the seam. If, however, you prefer a smoother transition between waist and inseam, smooth the seamline and cutting line as illustrated.

FIGURE 6.36a-h Alteration procedures on corresponding back pant pattern—average figure

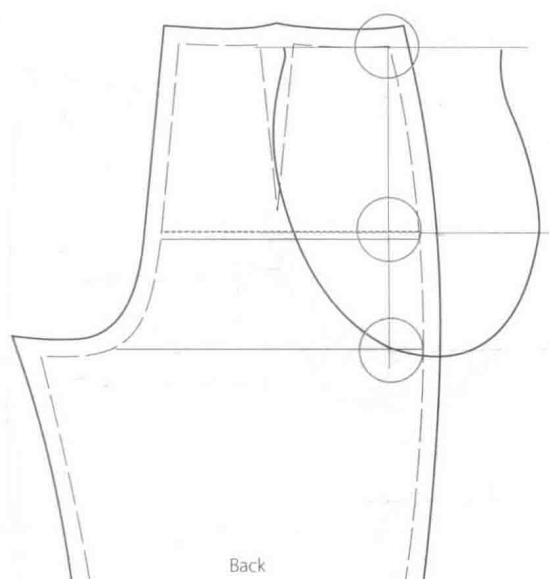


FIGURE 6.36a The body crotch curve tracing is aligned with the back pant pattern at the waist to check pattern crotch depth. They match. Body hipline or level is higher than pattern hipline. Raise the pattern hipline to match the body tracing. The dropped buttocks are evident below the crotch line or level.

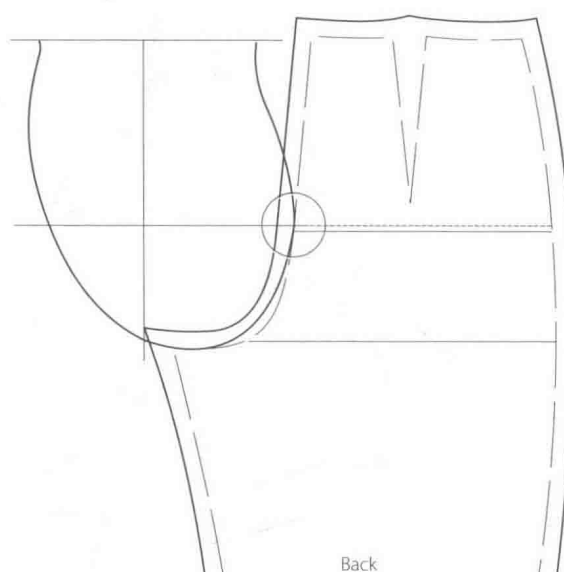


FIGURE 6.36b Slide the tracing left. Align tracing and pattern hiplines at pattern center back stitching line. Waist level may need to be lowered. Notice the similarity between the tracing crotch curve and the back pattern crotch curve.

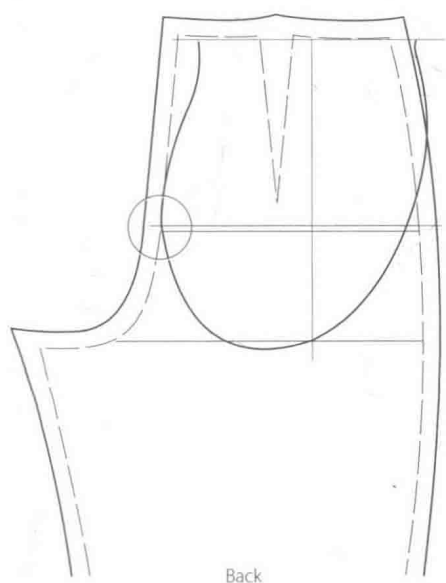


FIGURE 6.36c Flip the tracing over. Begin alteration above the hipline. Align tracing and pattern hiplines at pattern center back stitching line. Notice the difference in the angle of the tracing center back and pattern center back at the waist, a clue to needed alteration.

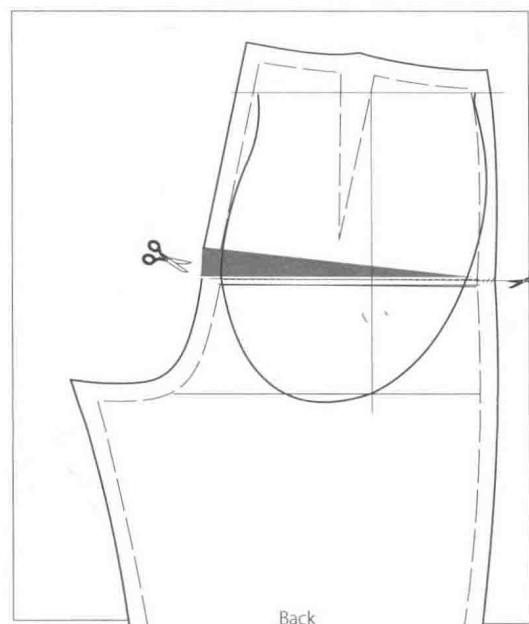


FIGURE 6.36d Slash through the pattern at hipline, to but not through the side seamline. Clip the hinge. Raise the pattern section above the hipline until the angle of the pattern center back more nearly matches the angle of the tracing center back. The pattern waistline will rise above the tracing waistline.

FIGURE 6.36a–h Alteration procedures on corresponding back pant pattern—average figure (continued)

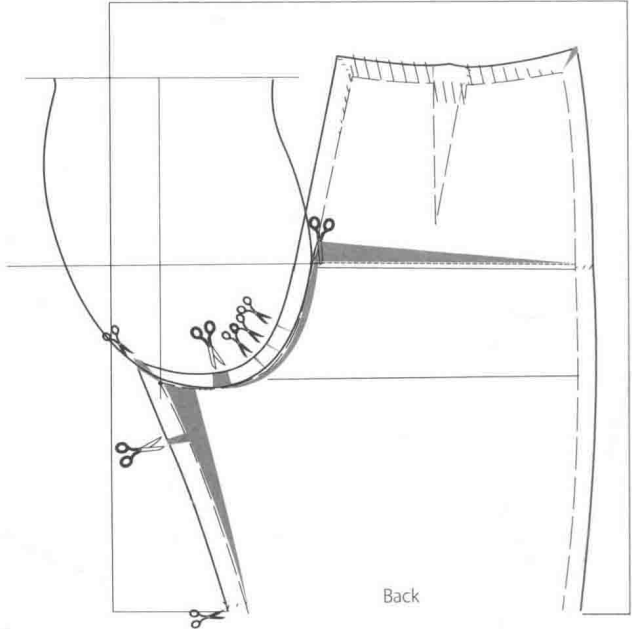
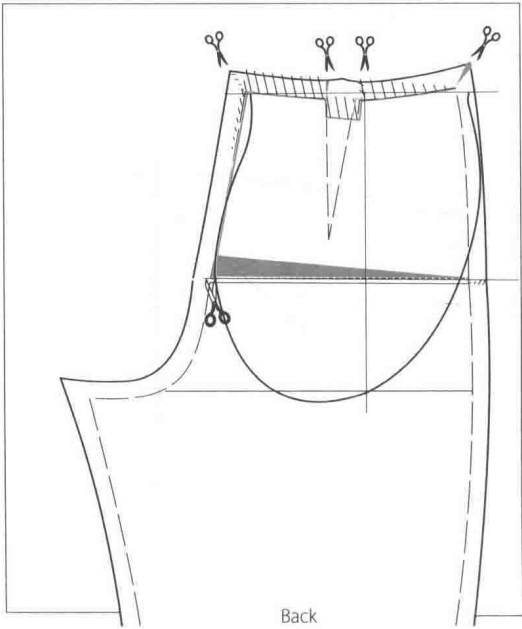


FIGURE 6.36e Release the seam allowance at center back between the hipline and waist, then across the waist to the side seam. You may also cut around the back dart or into it a short way to facilitate realignment later. Clip hinges at the corners and the ends of dart stitching lines. To lower the back waistline to the tracing waistline, overlap the pattern seam allowance at center back and taper to zero at the side seam. These procedures serve to change the angle of the pattern center back seam above the hipline, without increasing the length of the center back seam. (This essentially creates a dart at center back to accommodate the curve of the buttocks.)

FIGURE 6.36f Flip tracing over again, matching hiplines at center back seam. Proceed with alteration below the hipline. On the underlying tissue paper place a dot exactly on the inseam point. Release the seam allowance between the hipline and the inseam point, then down the inseam for some distance, depending on the amount of change in width of the crotch extension. Move the corner of the crotch extension outward to the inseam point. Clip the crotch extension seam allowance as necessary to follow the curve of the body tracing. (Note for future reference: As the back crotch extension becomes wider or narrower, you may need to lengthen or shorten the inseam by cutting through the seam allowance and spreading or overlapping as needed. Make sure adjoining back and front inseams match.)

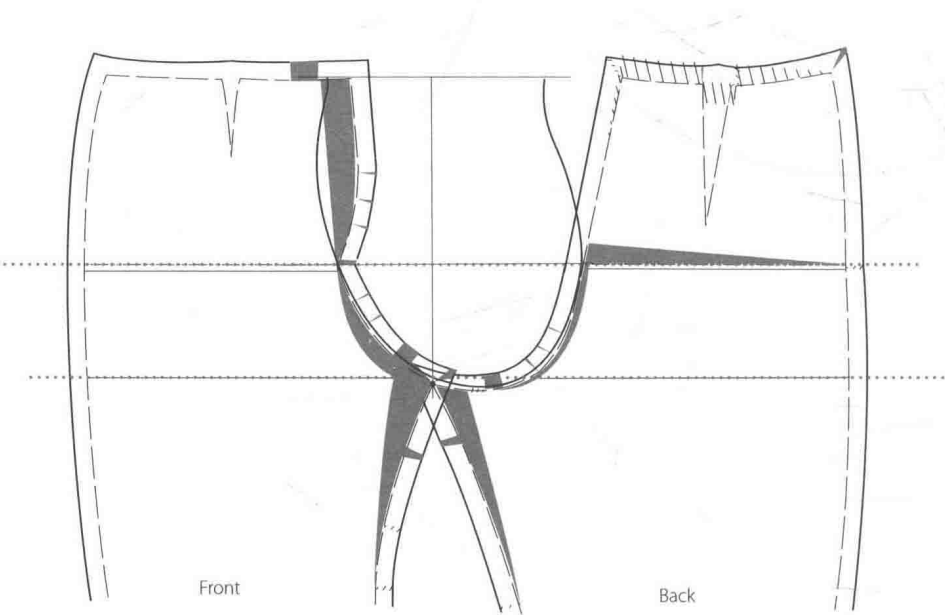


FIGURE 6.36g To check the final result of the alterations, match inseam points on crotch extensions. Make sure the hiplines and crotch depth lines are level. Overlay the body crotch curve tracing matching hiplines at center front and center back seams. Check to see how well the entire body crotch curve fits into the pant pattern crotch curve. Very nice!

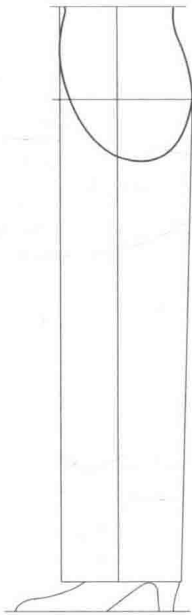


FIGURE 6.36h Cross-section view of a well-fitted pant

FIGURE 6.37a-d Alteration procedures on front pant pattern—full figure

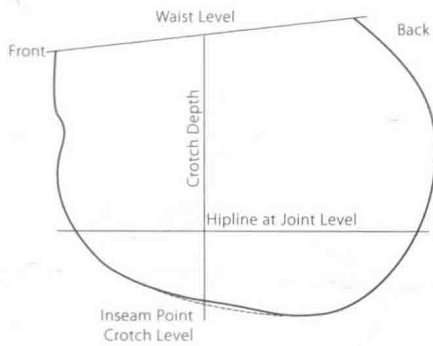


FIGURE 6.37a The body crotch curve reflects a figure that is above the average/ideal weight range, that is proportionally shorter in the lower torso, with a full curve in the abdomen and buttocks, a sway back, and slightly dropped buttocks. The dashed line illustrates how you would smooth the crotch curve without altering for the rise in the middle.

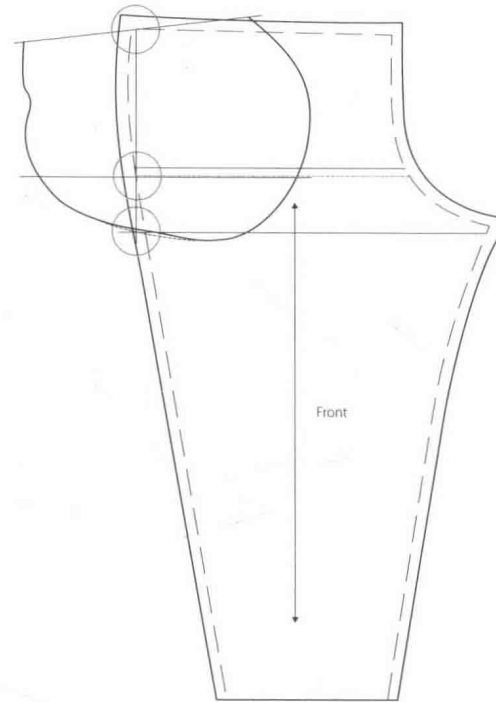


FIGURE 6.37b The body crotch curve tracing is aligned with the front pant pattern at the waist to check pattern crotch depth. Body hipline or level is lower than pattern hipline. Lower the pattern hipline to match the body tracing—dashed line. Notice the slightly dropped buttocks evident below the crotch line or level.

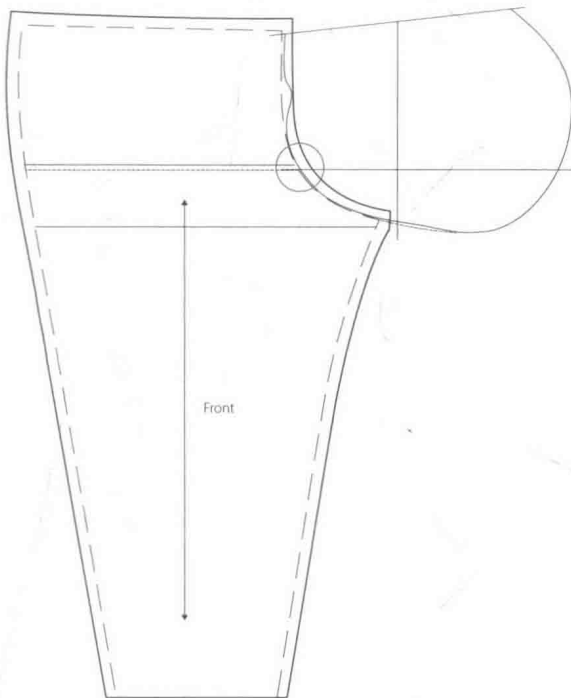


FIGURE 6.37c Slide tracing right. Align tracing and pattern hiplines at pattern center front stitching line. Waist level may need change. Notice that the tracing crotch curve and pattern crotch curve match closely at center front, except for the length of the crotch extension. In this case, no alteration is necessary above the hipline. Terrific!

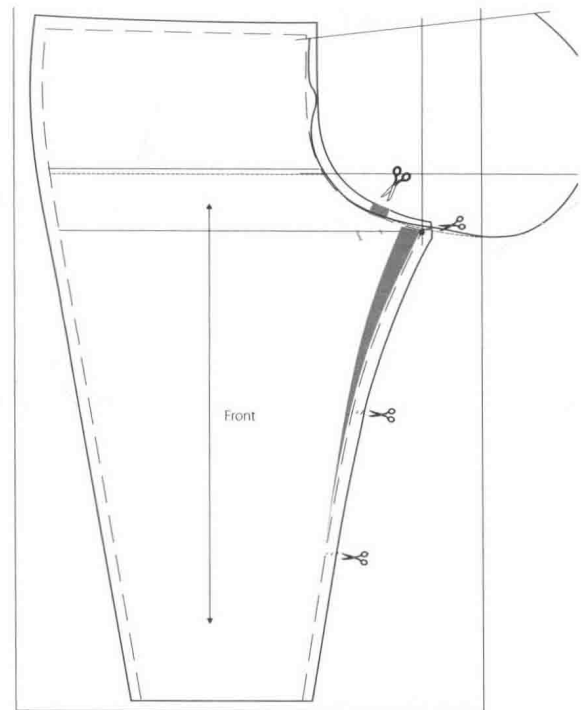


FIGURE 6.37d Proceed with the alteration below the hipline. On the underlying tissue paper, place a dot just below the crotch curve tracing at the inseam point for later use. On the pattern, release the seam allowance between the hipline and the crotch extension, then down the inseam for some distance. How far you release the seam allowance depends on the amount of change in width in the crotch extension. Clip a hinge at the bottom of the released inseam allowance. Move the corner of the crotch extension outward to the inseam point. Clip the inseam seam allowance as necessary to follow the curve of the body tracing. (You think you are now finished with the front, but you're not. Read on.)

FIGURE 6.38a-i Alteration procedures on corresponding back pant pattern—full figure

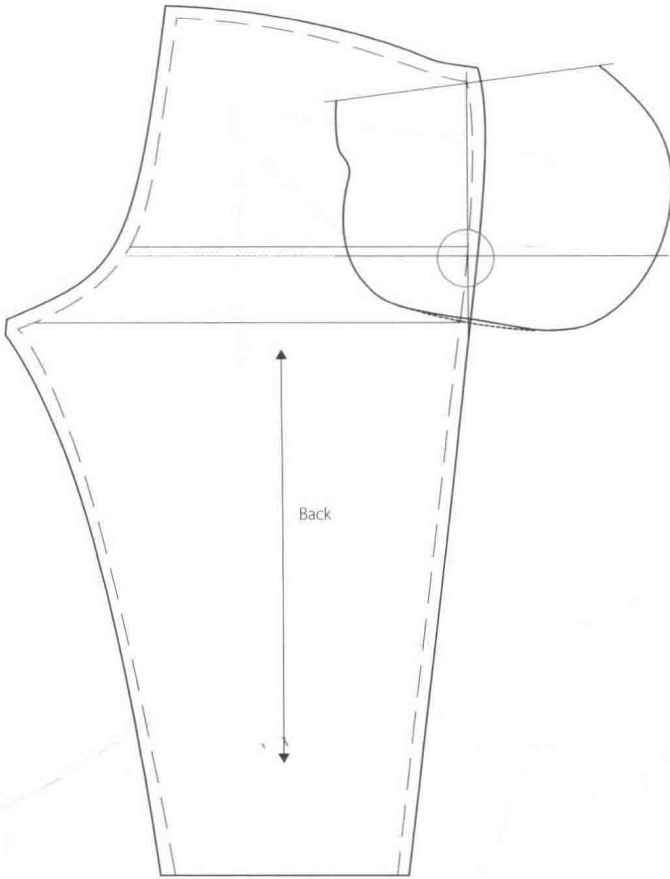


FIGURE 6.38a The body crotch curve tracing is aligned with the back pant pattern at the waist to check pattern crotch depth. They match. However, the body hipline or level is lower than pattern hipline. Lower the pattern hipline to match the body tracing. This drop should be the same amount of change as on the front pattern. The dropped buttocks are evident below the crotch line or level.

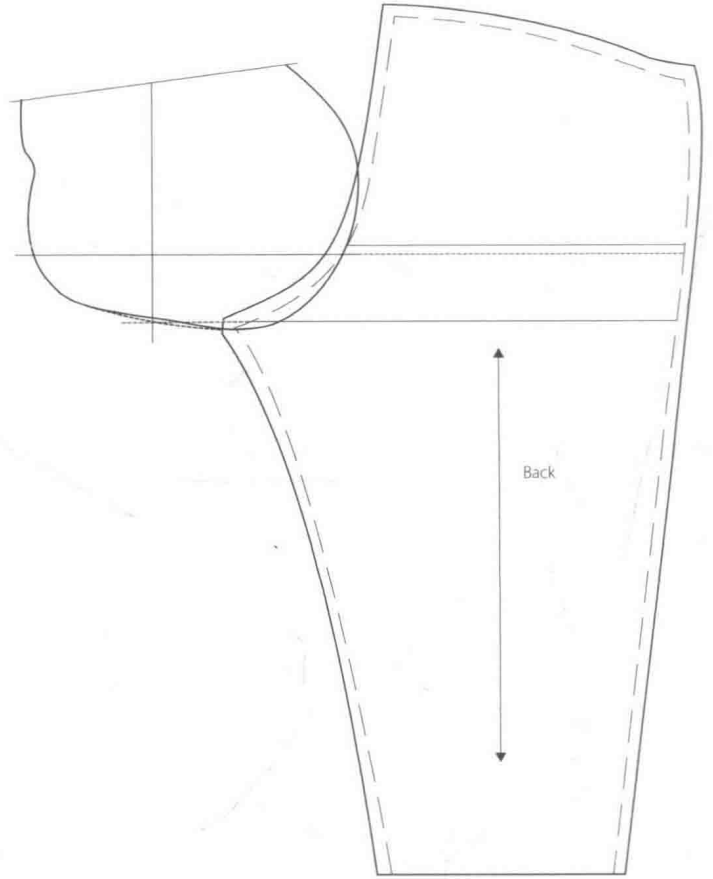


FIGURE 6.38b Slide tracing left. Align tracing and pattern hiplines at pattern center back stitching line. It appears that the waist level will need to be lowered. Notice the similarity between the tracing crotch curve and the back pattern crotch curve. By extending the crotch line (red dashed line), we can see that the tracing and pattern crotch levels match. We also see that the buttocks drop below crotch line or level.

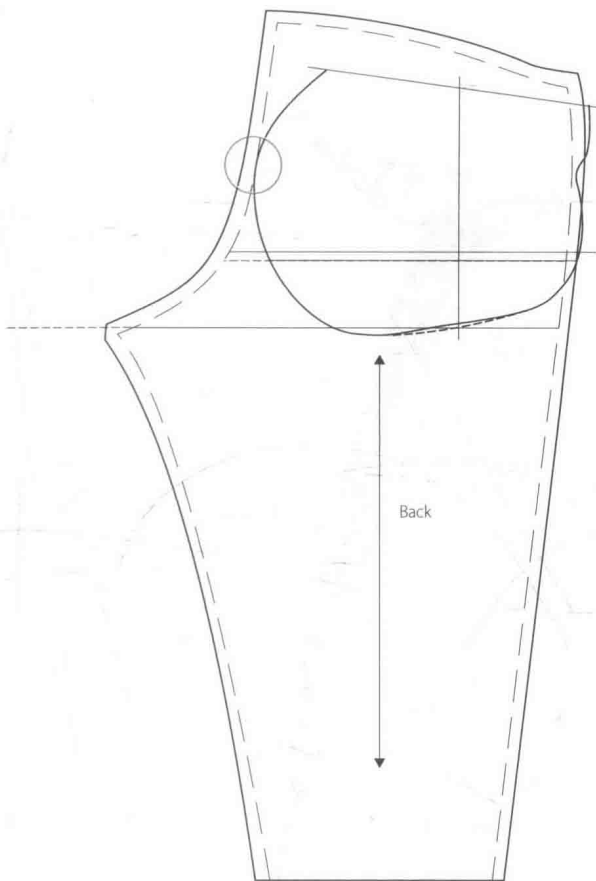


FIGURE 6.38c Flip the tracing over. Begin alteration above the hipline. Align the tracing and pattern hiplines at pattern center back stitching line and the fullest part of the buttocks contour. (In the previous example, that occurred at the hipline. In this example the fullest part of the buttocks is several inches above the hipline.) Notice the width difference between the tracing center back and pattern center back at the waist, a clue to needed alteration. There is extra fabric above the fullness and up into the waistline area. The center back seam could be angled from this point as in the previous example if this were a fitted waistline pant. This pant, however, is designed with an elastic waistband. The extra fabric at the waist will be gathered in with the elastic. Remember, with an elastic waist/pull-on pants, everything above the fullest part of the lower torso, including the waist, must be at least as wide as the fullest part so pants can be pulled on past that point.

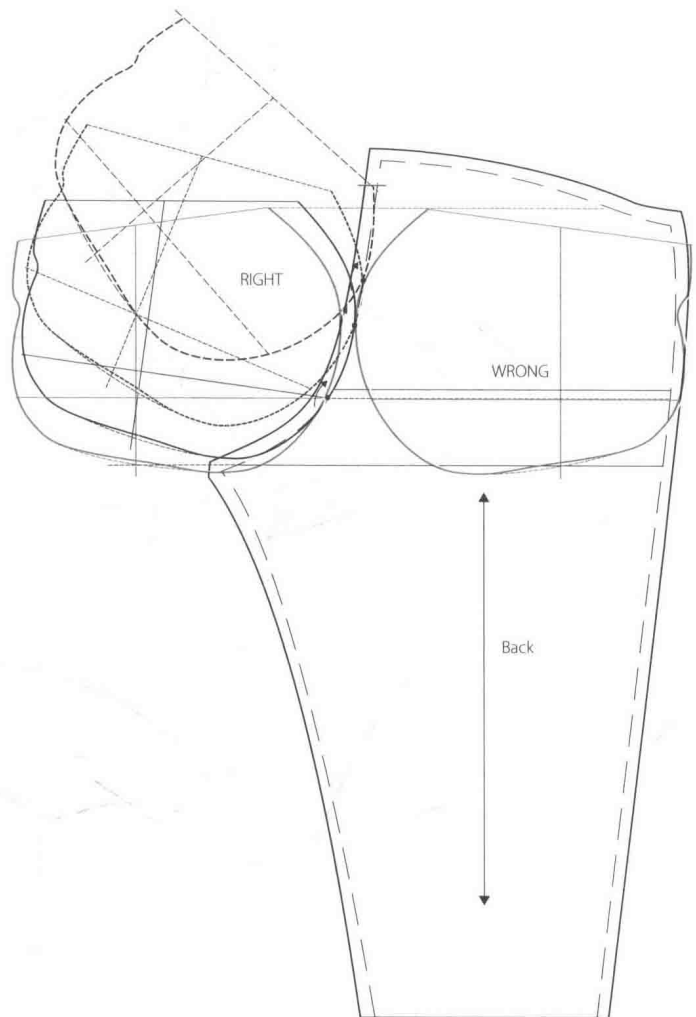


FIGURE 6.38d With as much curvature as this figure has, it is relatively easy to determine the needed length of the center back seam above the hipline. Starting with the body crotch curve tracing matched at the pattern hipline and the center back seamline, pivot, “walk,” and roll the tracing up the pattern center back to waistline mark in red, along the seamline as illustrated. Mark on the pattern where the waistline needs to be. (See red mark on sample.) As an alternative, use the edge of your measuring tape to measure the length of the same area on the tracing and use that measurement to mark where the waistline needs to be positioned. Notice, from the tracing in red on the right, that if we simply draw a line parallel to the hipline at the top of the center back seam we would lose a significant amount of needed length in the center back seam.

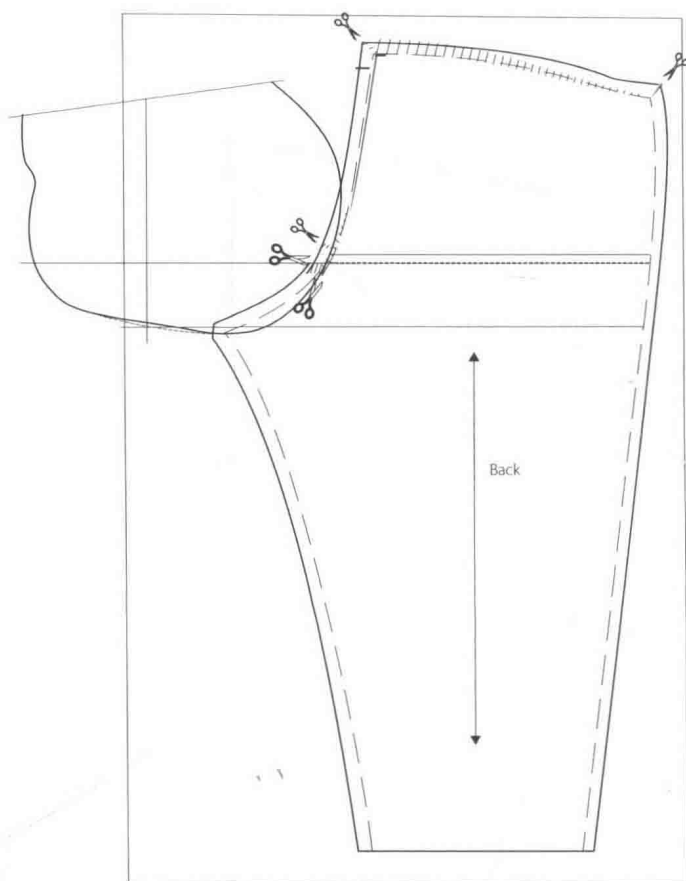


FIGURE 6.38e To alter the pattern crotch curve above the hipline, release the seam allowance along center back between the hipline and waist, then across the waist to the side seam. Clip hinges at the corners. To lower the back waistline to the waistline mark on center back, overlap the waist seam allowance at center back and taper to zero at the side seam. The hipline end of the lowered seam allowance will automatically overlap below the hipline the same distance as the waist was overlapped at the waistline. Curve as needed by making hinge clips near the end to follow the contour of the body tracing. Also, knowing that we need to lower the crotch curve to accommodate the dropped buttocks, we will leave the end overlapping the seam allowance below the hipline. (See next step.)

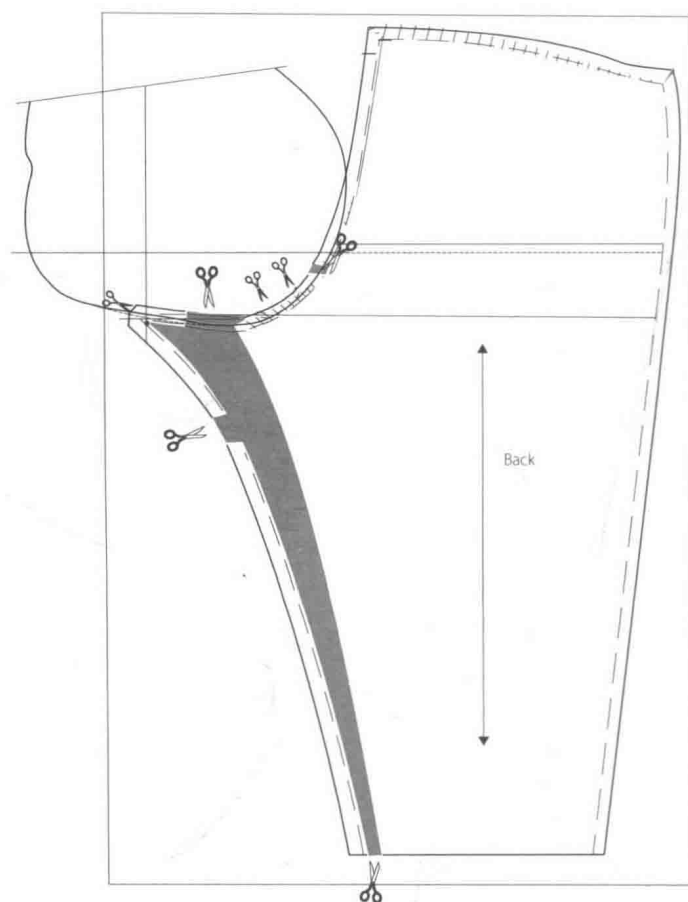


FIGURE 6.38f Proceed with alteration below the hipline. On the underlying tissue paper, place a dot just below the crotch curve tracing at the inseam point. Release the seam allowance between the hipline and the inseam point, then down the inseam to the hemline due to the extreme addition needed in the crotch extension. Hinge clip the crotch extension seam allowance as necessary to follow the curve of the body tracing. Cut through the seam allowance where length/width must be added to the crotch extension. Move the crotch extension outward to the inseam point, spreading the seam allowances to accommodate the buttocks contour and then taper to zero at the hemline. (You think you're now finished with the back, but you're not. Read on.)

FIGURE 6.38a–i Alteration procedures on corresponding back pant pattern—full figure (*continued*)

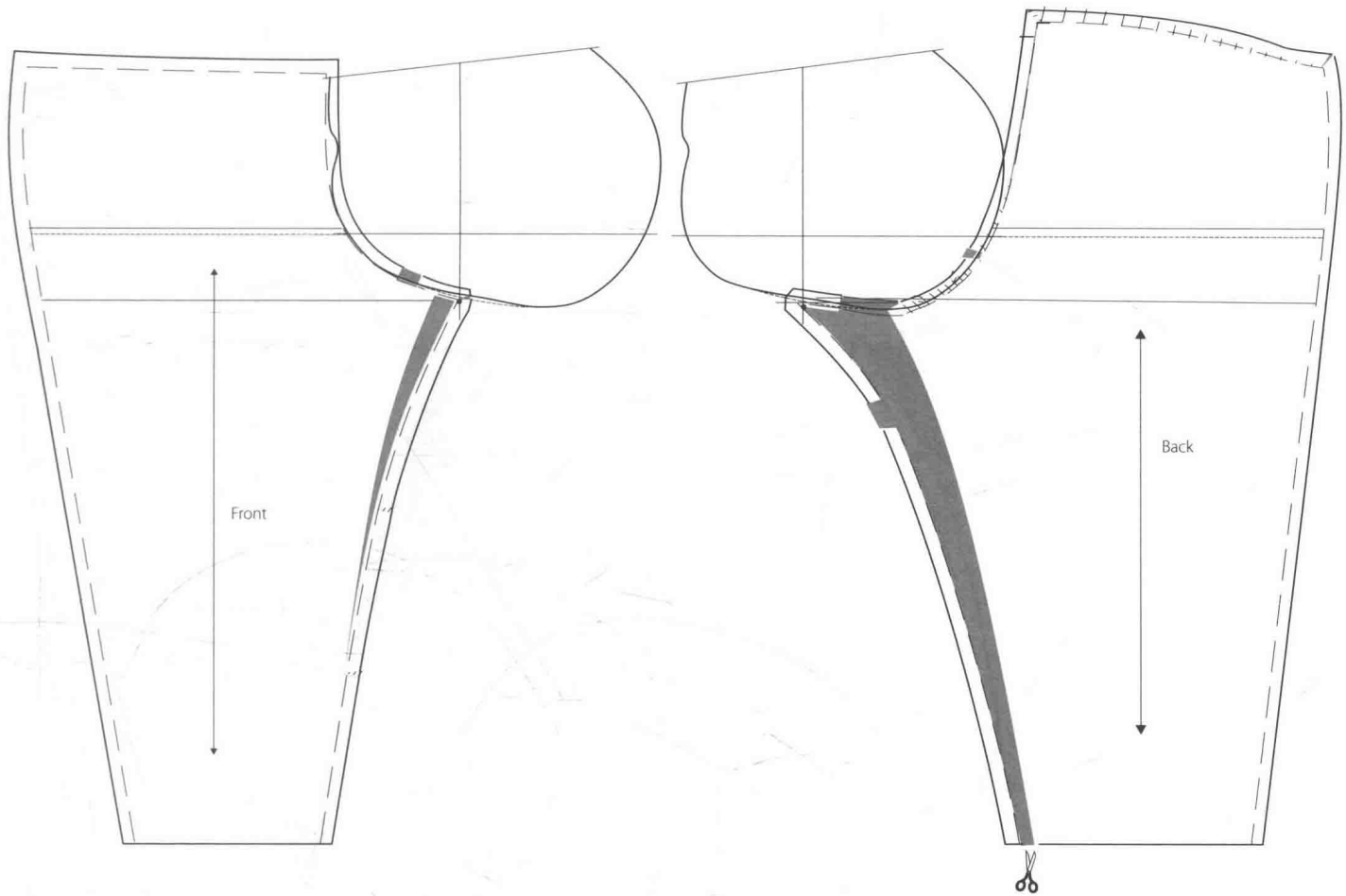


FIGURE 6.38g Compare the “finished” front and back patterns. Due to the extreme amount of length change in the back crotch extension, the front and back inseams are no longer the same length. They don’t match. They cannot be sewn together correctly. To remedy this situation, we need to balance the length of both inseams.

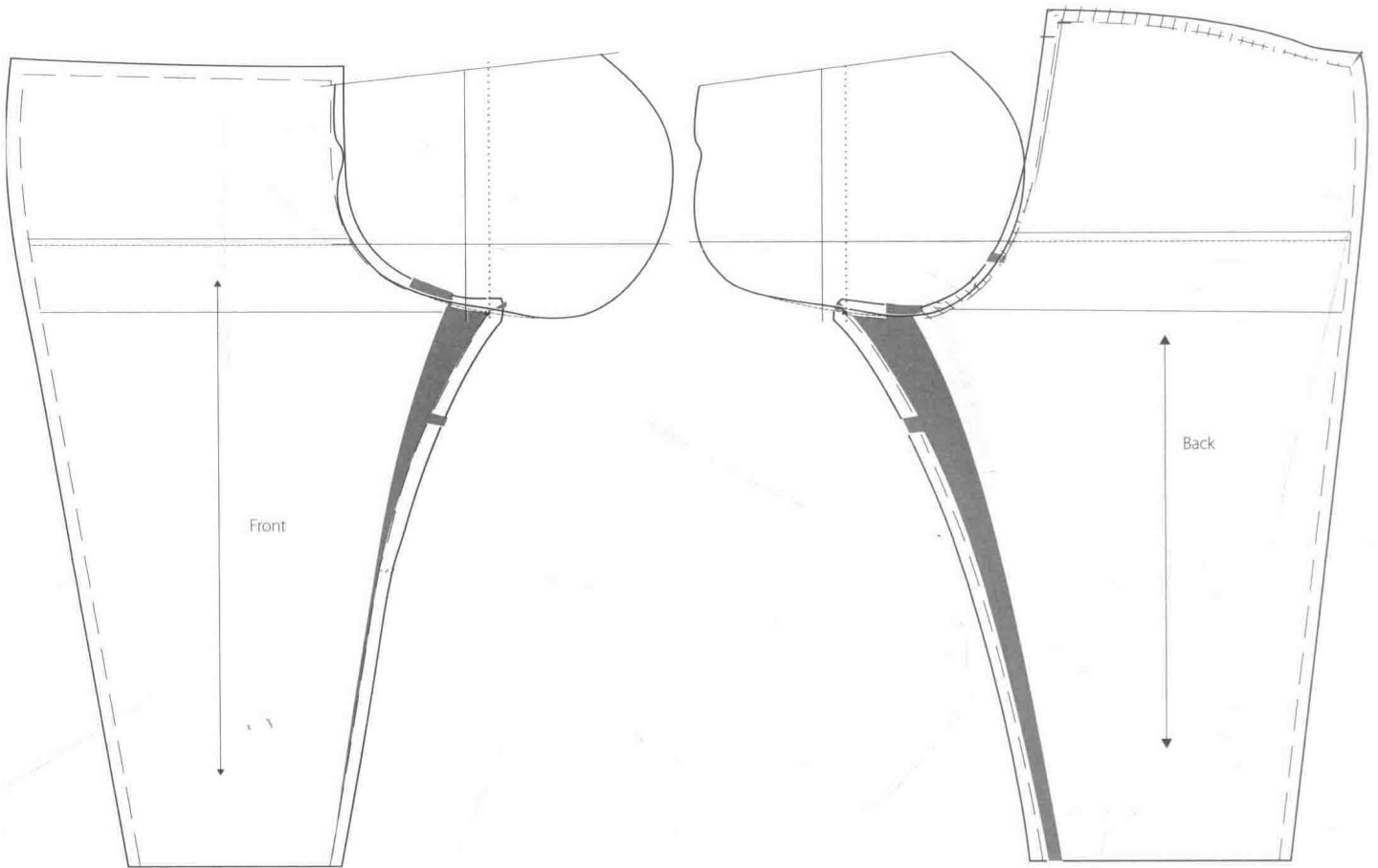


FIGURE 6.38h We need to transfer some of the width from the back crotch extension to the front crotch extension. On the front pattern, clip through the inseam at about the same point as was done on the pattern back, allowing the inseam to be lengthened as you increase width of the front crotch extension. On the back, shorten the inseam as you decrease the amount of width of the back crotch extension. Be sure the width transferred from the back to the front is the same. You will know you have increased/decreased them the right amount when the length added to both inseams is the same. In doing this, we have artificially moved the inseam point farther back on the body. (See red dotted lines on the tracing.) Now you are finished.

FIGURE 6.38a-i Alteration procedures on corresponding back pant pattern—full figure (*continued*)

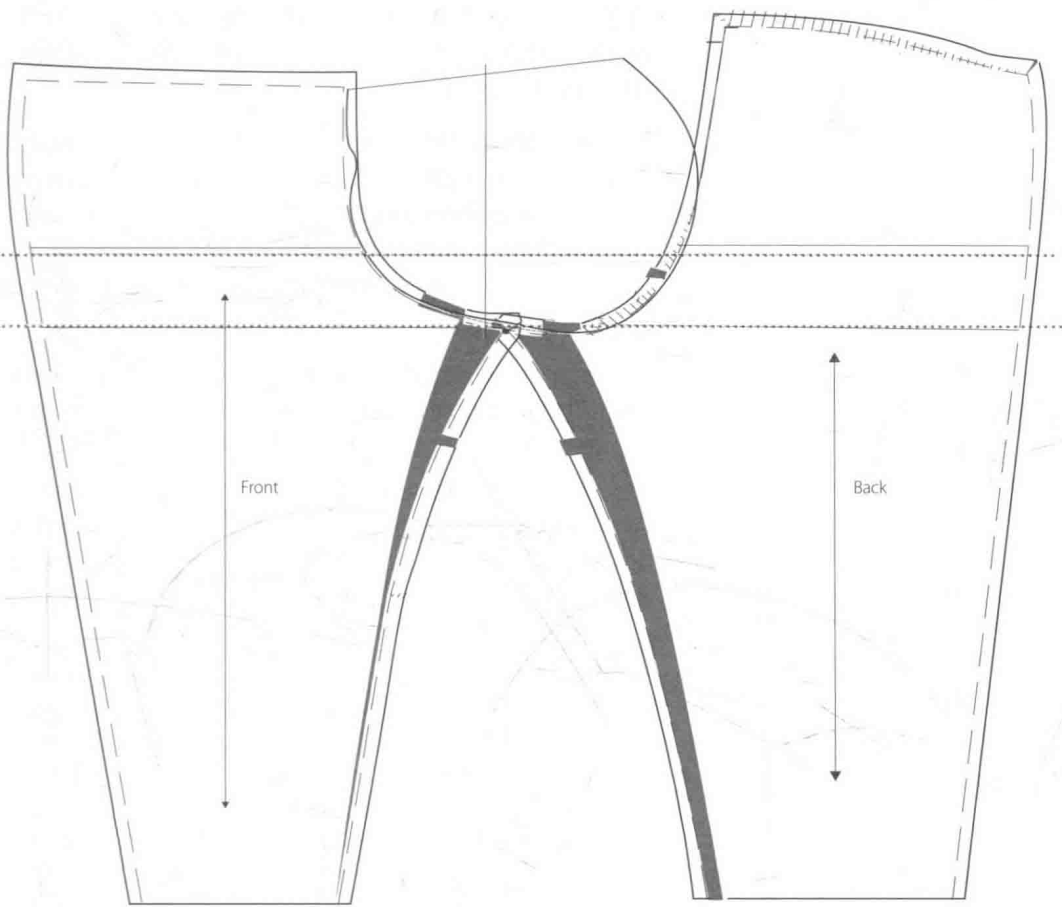


FIGURE 6.38i To check the final result of the alterations, match inseam points on crotch extensions. Make sure the hiplines and crotch depth lines are level. Overlay the body crotch curve tracing matching hiplines at center front and center back seams. Check to see how well the entire body crotch curve fits into the pant pattern crotch curve. It fits. Well done! (You have seen only two samples of this intricate procedure in pant alteration. Every body will be somehow different. You will likely need to practice, practice, practice! Have fun!)

REALITY CHECK

Many ready-to-wear pants are designed with a more angled center back seam as compared to commercial pant patterns that tend to be straighter. The change in the angle of the back pant pattern allows fashion fabric to shape smoothly around the buttocks and eliminates wrinkling under the buttocks. Because the larger, more rounded buttocks require more length, you may find that when you add length at the waistline as the angle changes, you will not need to add as much at the inseam location. Also, you may not have to drop the curve below the crotch level. When stitched together, the center back pant seam forms the equivalent of a dart to fit the curved shape of the body above the hip joint level. The size of the buttocks determines the needed size of the dart equivalent and the resulting angle at the center back of the pant pattern. A figure with smaller, flatter buttocks needs less angle, and one with larger, rounder buttocks needs more angle. This angle must often be altered to fit.

ALTERATIONS FOR ASYMMETRICAL VARIATIONS

When the left side of the body differs significantly from the right side, the fitting pattern must be duplicated (traced or photocopied), thus creating a pattern for each side of the body. Each side is then altered separately, as necessary (see Figure 6.39).

Specific alteration procedures for all possible asymmetrical figure variations are not presented in this text due to space limitations. The alteration procedures are essentially the same as for alterations on the symmetrical figure, just confined to the appropriate side of the pattern in the appropriate amounts of change.

In altering for the asymmetrical figure, you must still meet the standards for pattern alteration presented previously in this chapter. Delightfully, the seam and pivot methods of alterations eliminate dart distortion even on an asymmetrical figure.

The following standard has particular meaning in executing asymmetrical alterations: Fold lines or seamlines that intersect the center front, center back, or sides must lie at right angles on the basic pattern. Length changes at center front or center back must remain level for the span of at least 1 inch from center, or for the span of the neckline, bust, or waistline darts.

Therefore, when altering only one side of a pattern, the increase or decrease in size must be tapered to blend into the original at the center back or center front so it may be joined at a right angle with the unaltered side.

Depending on the body and the pattern being fitted:

- The original pattern may fit one side of the body correctly, while the other side requires change. Only one side of the pattern must be altered.
- The original pattern will fit neither side of the body correctly. Each half or side of the pattern must be altered separately, and differently, as needed.

The two halves of the patterns must be identical in length at center front and center back. The changes in width are tapered to blend into each other at or near the center back and center front, forming a straight line (see Figure 6.40).

Do the following to create a feeling of being level and balanced:

- Ensure that the dart tips on both sides of a front or back pattern are kept the same height from the floor (see Figure 6.41).
- Ensure that the waistline dart tips and dart base seamlines are kept the same distance from the center front or center back. Only a significant difference in the size of one breast or shoulder blade would cause exception to this instruction.
- Be aware of related alterations. For example, waistline height added to the skirt side seam to accommodate a high hip may require a reduction in the length of the bodice side seam.

When the pattern for an asymmetrical figure is cut from fabric, you may save time and prevent frustration by cutting duplicate garment pieces that correspond to the larger side of the body (see Figure 6.42). After cutting, mark and trim the garment pieces for the smaller side according to its corresponding pattern.

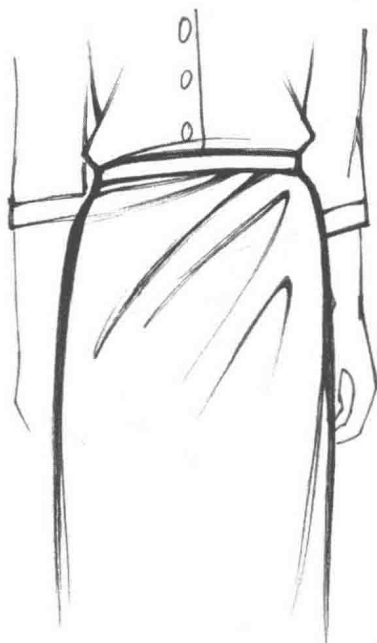


FIGURE 6.39 Diagonal wrinkles draw attention to an asymmetrical figure variation—a high hip curve.

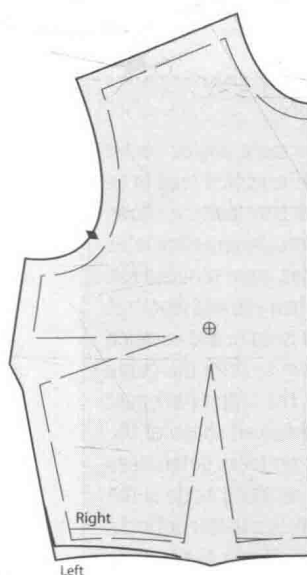


FIGURE 6.40 Blend asymmetric alterations to zero an inch before pattern center.

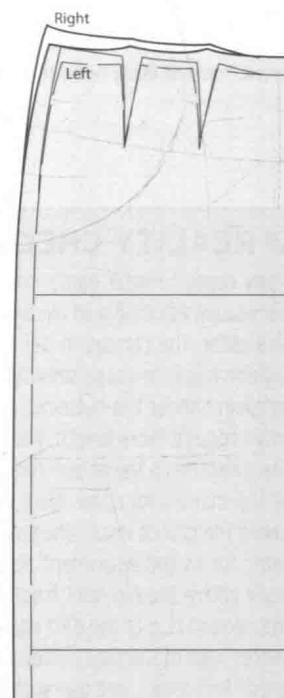


FIGURE 6.41 On asymmetric alterations, waist dart tips remain the same height from the floor.

Even though more time and effort is involved in altering for the asymmetrical figure, the results are worthwhile. The illusion of symmetry is generally the goal. When alterations are accomplished correctly, the wearer's comfort is certain to improve. Differences between the right and left sides of the figure are less easily detected, or at least minimized,

depending on the degree of variation. The greater or more obvious the amount of asymmetrical variation, the greater the need to select flattering clothing styles. With smart style selection plus the correct alteration, the illusion of symmetry may then be realized to the greatest degree.

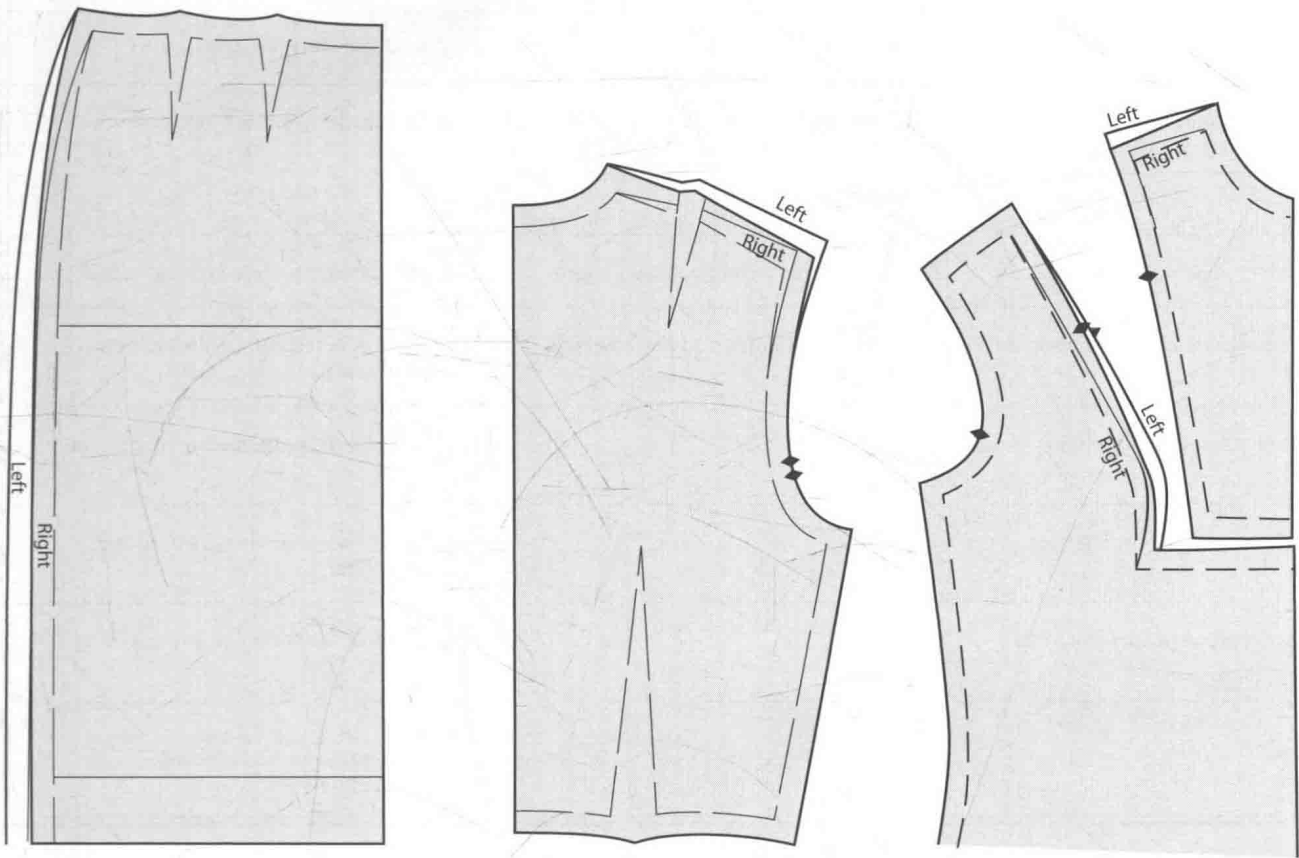


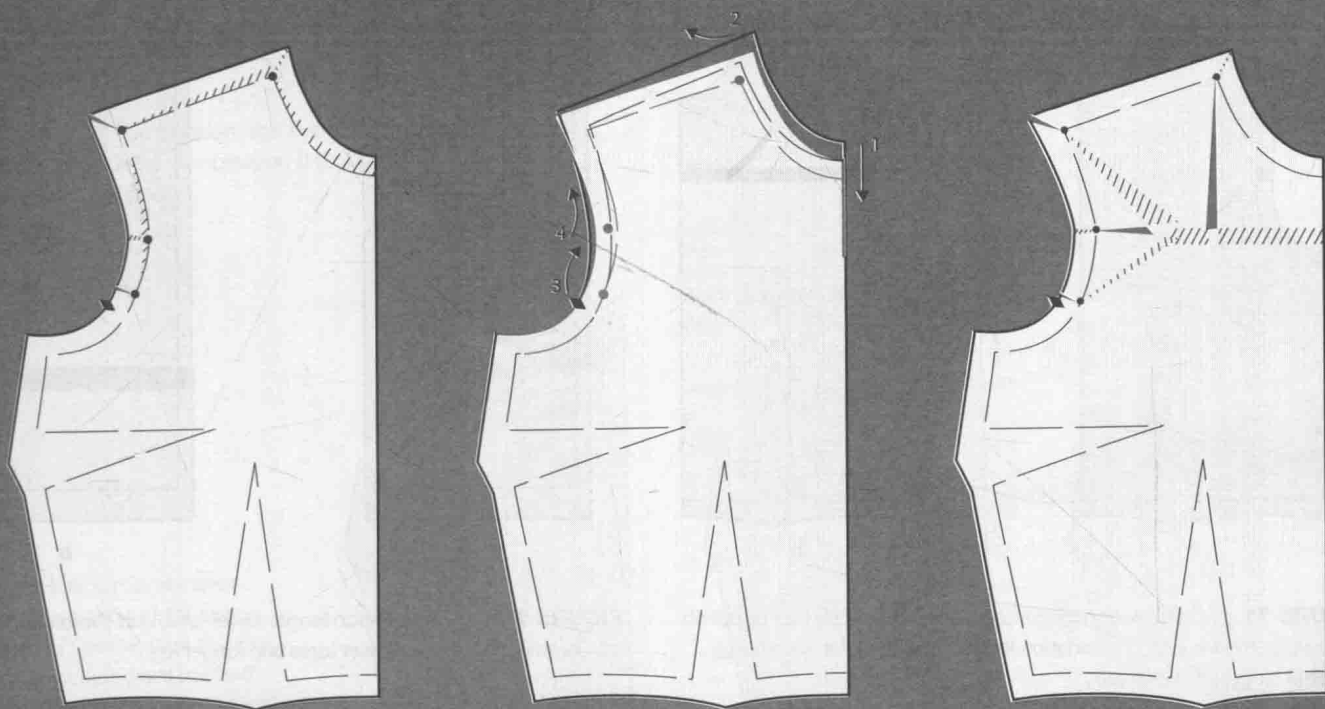
FIGURE 6.42 On asymmetric alterations, dart tips and base seamlines are equal distances from the center.

METHOD OF PATTERN ALTERATION

| SEAM METHOD | PIVOT METHOD | NEW CORRECTED SLASH METHOD |
|--|---|---|
| 1. Locate the stitching line to be altered. | 1. Locate the stitching line to be altered. | 1. Locate area to be altered. |
| 2. Establish end points and clip lines. | 2. Establish pivot points. | 2. Establish guide lines and clip points. |
| 3. Cut to release affected seam allowance(s). | 3. Trace original. | 3. Slash pattern on guide lines. |
| 4. Cut clip lines to make hinges. | 4. Slide or pivot pattern to new positions(s) and trace new lines(s). The alteration may require repeating the procedure one or more times. | 4. Cut clip lines to make hinges. |
| 5. Tape unaffected pattern edge to tissue. | 5. Tape altered area to original pattern. | 5. Tape interior pattern edge to tissue. |
| 6. Move seam allowance to new position(s). | 6. Check for alteration on any adjoining seams. | 6. Move affected pattern area to new position(s). |
| 7. Tape altered seam allowance(s) in position. | | 7. Tape altered pattern edges in position. |
| 8. Restore any seamlines, cutting lines, or dart ends. | | 8. Restore any seamlines, cutting lines, or dart ends.* |
| 9. Check for alteration on any adjoining seams. | | 9. Check for alteration on any adjoining seams. |
| | | * Using traditional slash procedure for uneven amounts of change requires extensive corrective restoration. |

Chapter 7

Personalized Patterns and Slopers



Regardless of which fitting method you choose—measurement, tissue, trial garment, or a combination—you must alter the basic pattern according to the needed amounts of change, thus personalizing the item.

As we know, both postures and figure types come in predictable combinations of figure variations that may require multiple or combined alterations. There are many other double and triple combination variations that do not seem to fit into any mold or model, but often occur. They come loaded with frustration because the alterations must blend in with one another.

The seam method proves to be the most efficient method to handle combined alterations effectively. Whatever the combination of figure variations used, you must learn to blend one figure variation in one part of a pattern into another figure variation in another part of the pattern, thus personalizing the pattern. Study Figures 7.1 to 7.15 for alterations carried out as described.

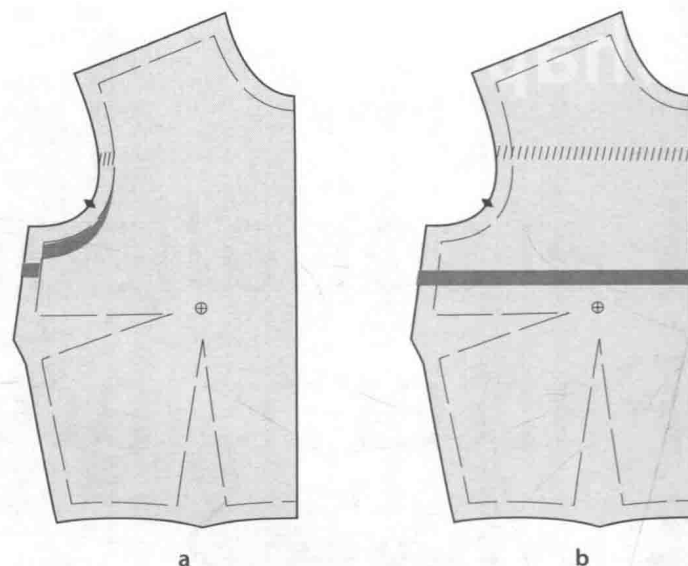


FIGURE 7.2 (a) Combination shorter shoulder joint and longer upper rib cage: seam method; (b) Combination shorter shoulder joint and longer upper rib cage: slash method

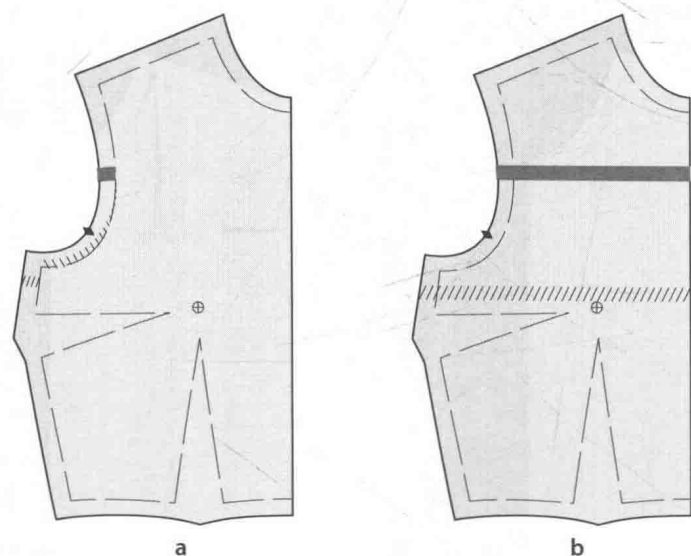


FIGURE 7.1 (a) Combination longer shoulder joint and shorter upper rib cage: seam method; (b) Combination longer shoulder joint and shorter upper rib cage: slash method

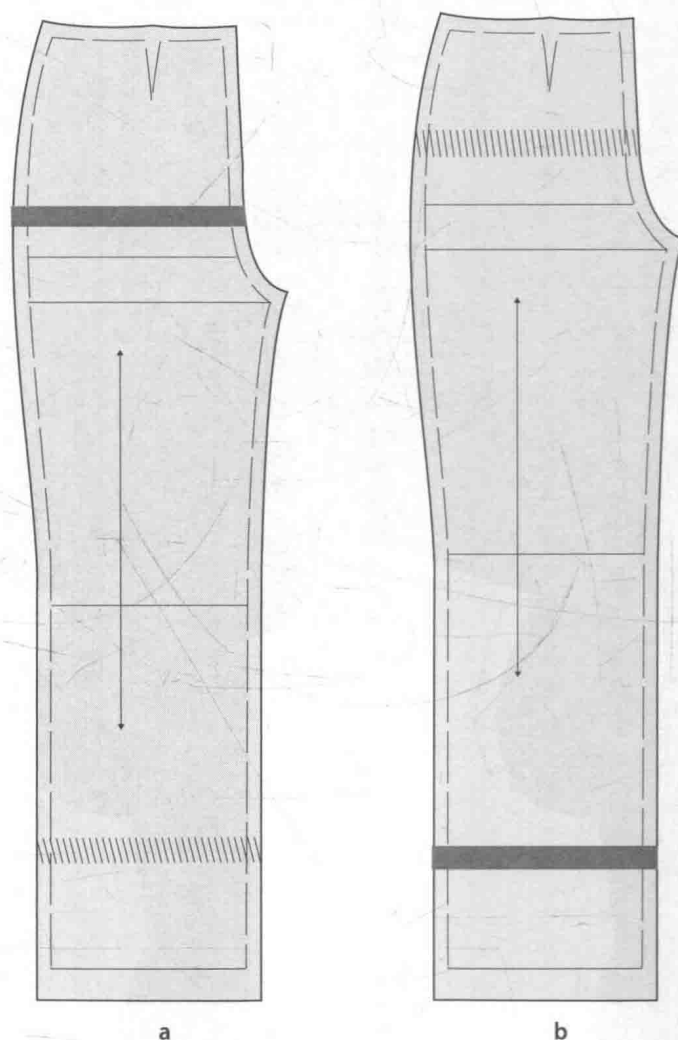


FIGURE 7.3 (a) Combination longer lower torso and shorter leg; (b) Combination shorter lower torso and longer leg

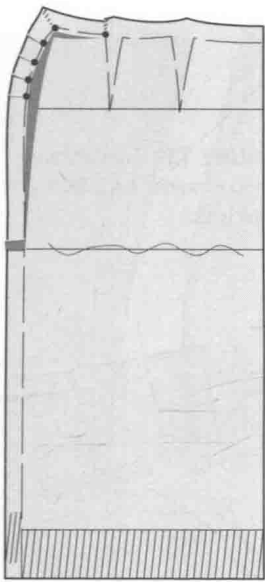


FIGURE 7.4 Combination shorter lower torso and high hip curve

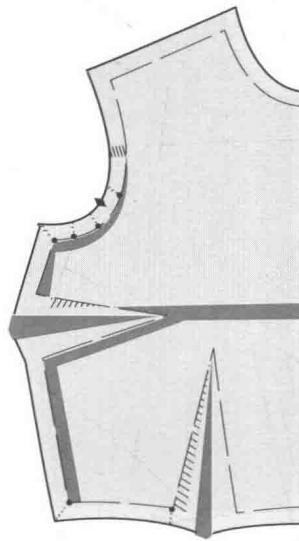
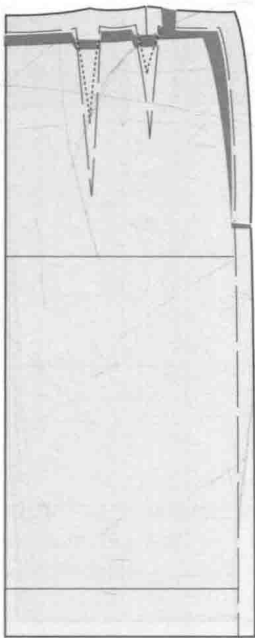
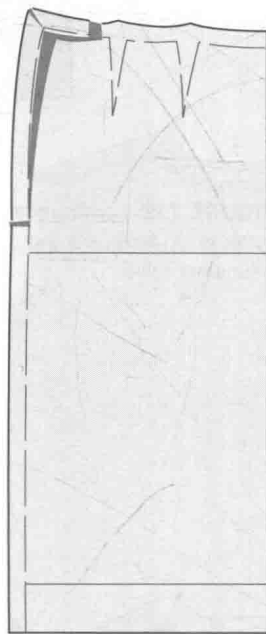


FIGURE 7.7 Combination prominent bust and posterior shoulder joint



a



b

FIGURE 7.5 (a) Combination high buttocks contour and wide high hip: skirt back; (b) Combination high buttocks contour and wide high hip: skirt front

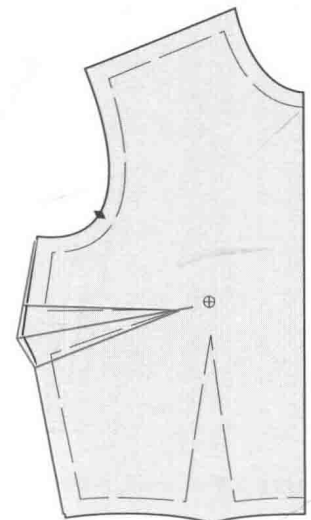
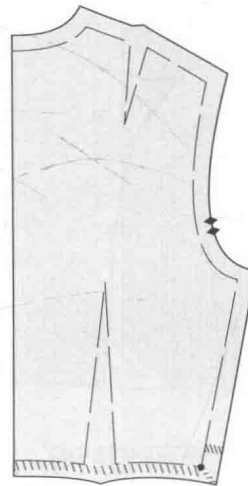
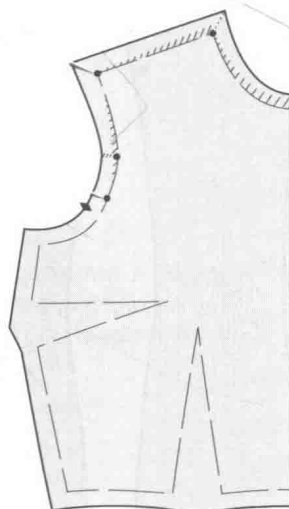
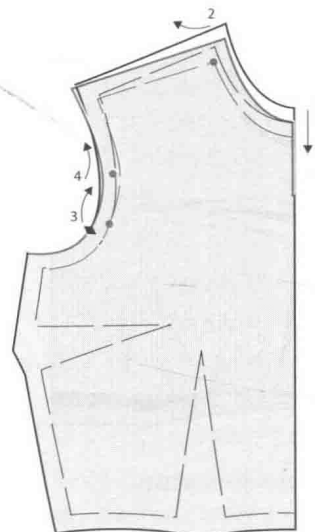


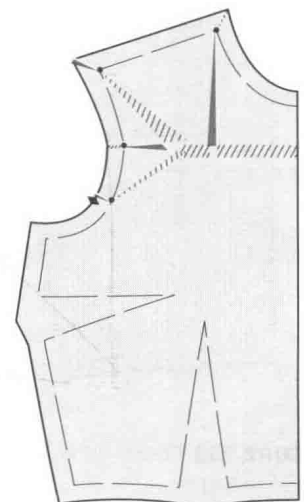
FIGURE 7.8 Combination short back and large bust



a



b



c

FIGURE 7.6 (a) Combination shallow and narrow chest: seam method; (b) Combination shallow and narrow chest: pivot method; (c) Combination shallow and narrow chest: slash method

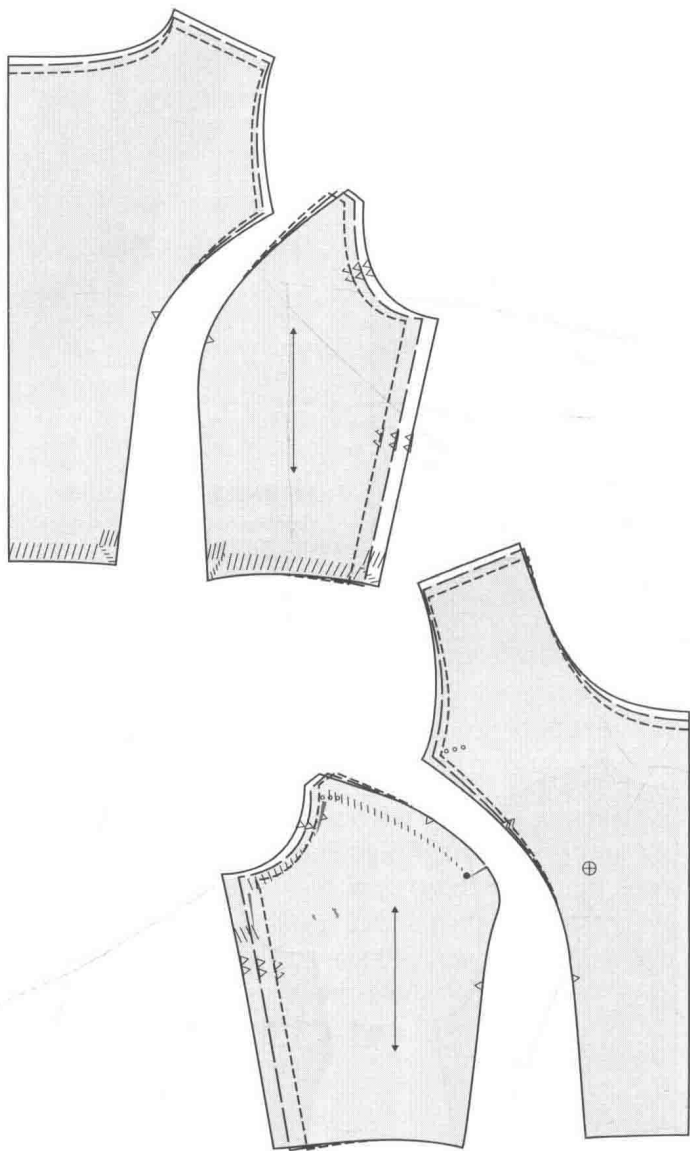


FIGURE 7.9 Combination short back and large bust: princess style

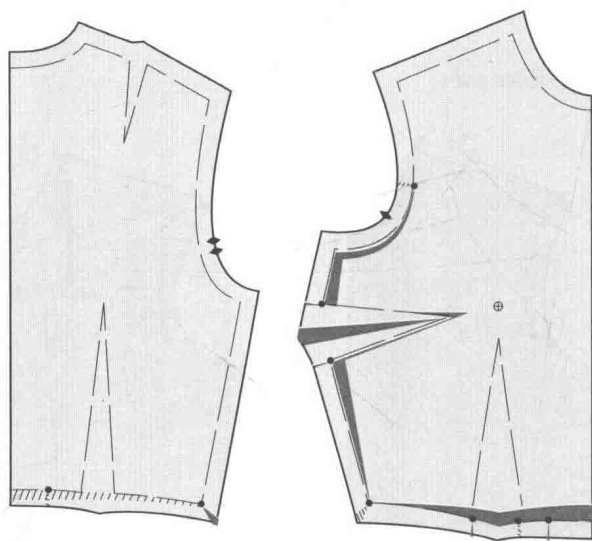


FIGURE 7.10 Combination short back and prominent bust

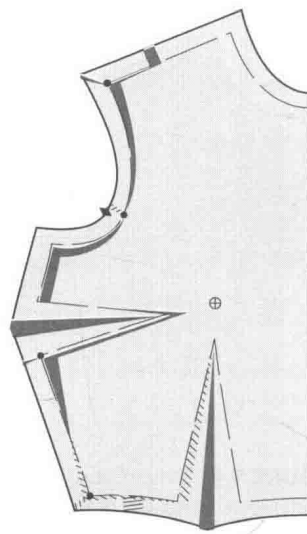


FIGURE 7.11 Combination broad shoulder, large bust, and small waist

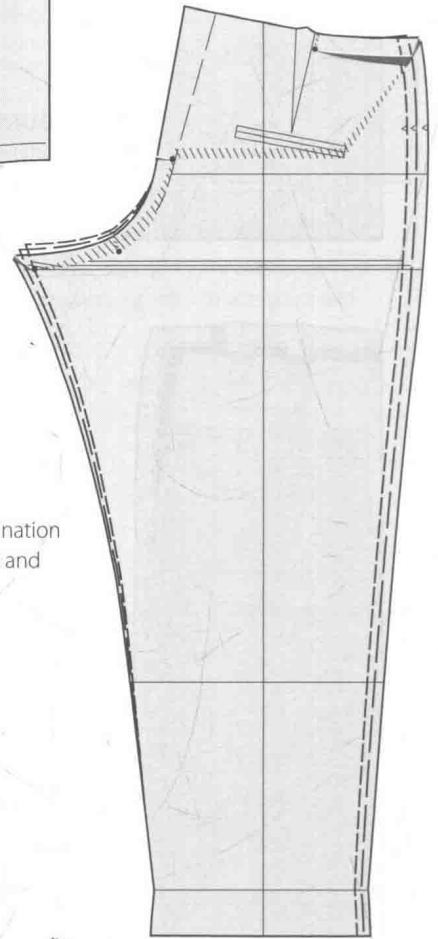


FIGURE 7.12 Combination hyper-extended knees and prominent calves

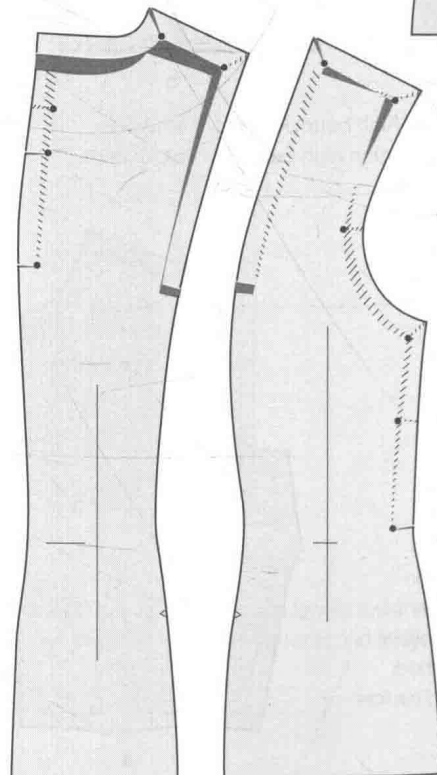


FIGURE 7.13 Combination narrow and rounded upper back: princess style

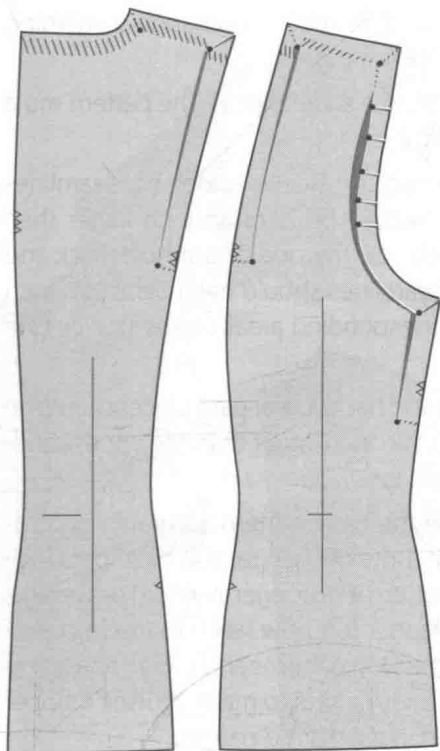


FIGURE 7.14
Combination erect
and broad upper back:
princess style

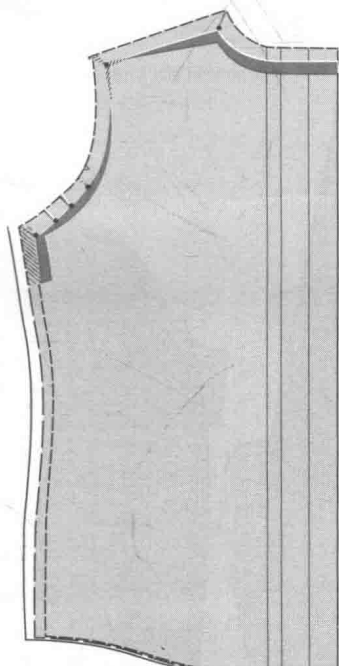


FIGURE 7.15 Combination
prominent chest and
abdomen (male)

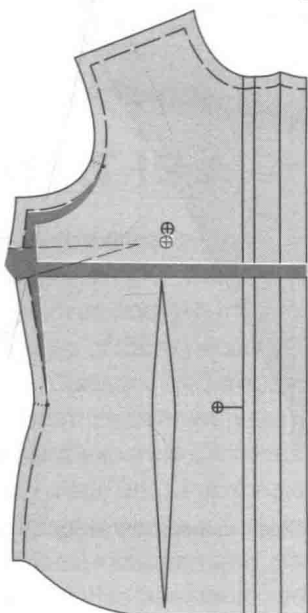


FIGURE 7.16 A dart has
been added to a basic jacket
without changing the style of
the jacket.

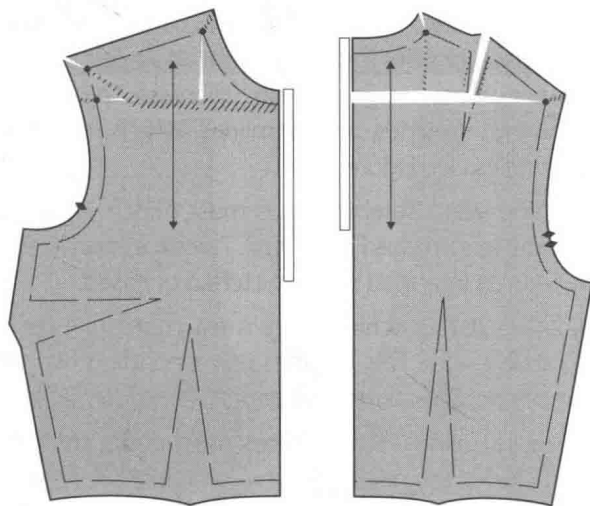


FIGURE 7.17 The patterns have been successfully altered, maintaining
the grainline.

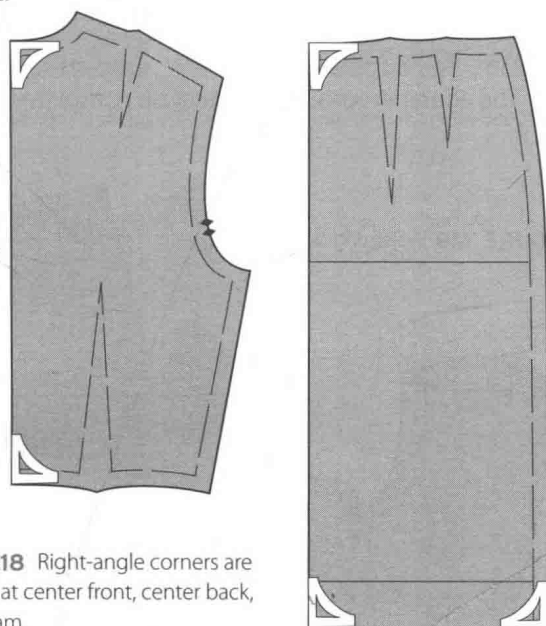


FIGURE 7.18 Right-angle corners
are maintained at center front, center back,
and side seam.

CHECK THE FINISHED PATTERN FOR ACCURACY

Basic patterns are only as effective as their internal accuracy permits. Inaccuracy in the pattern will be duplicated in each altered or self-designed fashion pattern. To prevent mistakes, review the following standards for pattern alteration:

1. The location and measured amount of change must be correct.
2. The original style of the garment must be retained, unless a change was intentional (see Figure 7.16).
3. The straight-of-grain line or arrow must be positioned the same as before the alteration so the garment hangs or drapes properly (see Figure 7.17).
4. Center front and center back fold lines and seamlines on the basic garment must remain straight—on grain—so the garment hangs or drapes as intended (see Figures 7.17 and 7.18).

5. Fold lines or seamlines that intersect the center front, center back, or sides must lie at right angles on the basic garment unless designed to do otherwise. This includes necklines, waistlines, and hemlines, which must form right angles (see Figure 7.18).
6. Adjoining seam stitching lines must match—must be the same length (see Figure 7.19). The exception is when one seam is intended to be stretched or eased.
7. Adjoining dart stitching lines must match—must be the same length. This includes corresponding waistline seams in bodices, skirts, and pants (see Figure 7.20).
8. Curved seamlines and dartlines must curve smoothly. This includes the neckline curve, armhole curve, waistline curve, hip curve, and crotch curve in pants (see Figures 7.21 and 7.22).
9. The degree of flare on the skirt side seam below the fullest body bulge must be identical on front and back (see Figure 7.20).
10. The alteration procedure must be complete.
11. The alteration procedure must not change something you did *not* intend to change.
12. A pattern lies flat before an alteration. The pattern must lie flat after an alteration.
13. The spaces between the sleeve underarm seamlines and the notches should be $\frac{1}{8}$ of an inch larger than corresponding areas on the bodice armhole. Back and front sleeve cap seamlines should each be $\frac{3}{4}$ to 1 inch larger than the corresponding areas on the bodice (see Figure 7.23).
14. Waistlines of front and back skirt or pant pieces should be approximately $\frac{1}{4}$ of an inch larger than the corresponding waistband areas (see Figure 7.24).

Once you have altered the basic pattern accurately according to the needed amounts of change, you have personalized the pattern. The pattern is no longer standard or average, but individual and personal. It is now ready to use in checking the potential fit of fashion patterns and for simple design projects. In either case, it is helpful to make yourself a sloper replicating your altered, personalized pattern.

FIGURE 7.19 Adjoining side seams match.

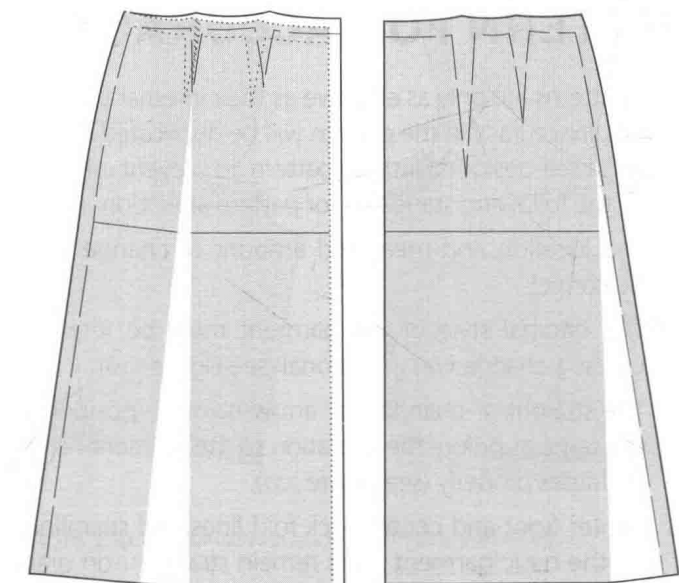
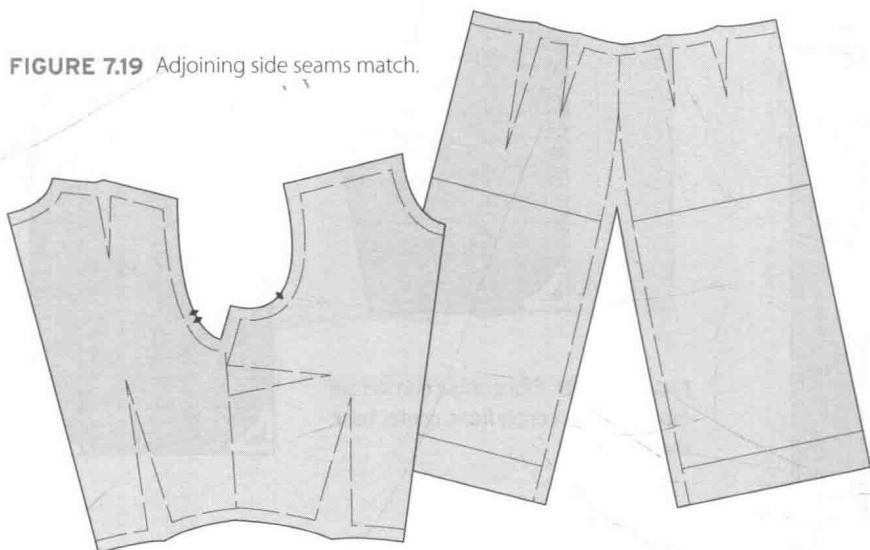


FIGURE 7.20 Seams and darts match; the amount of flare is identical.

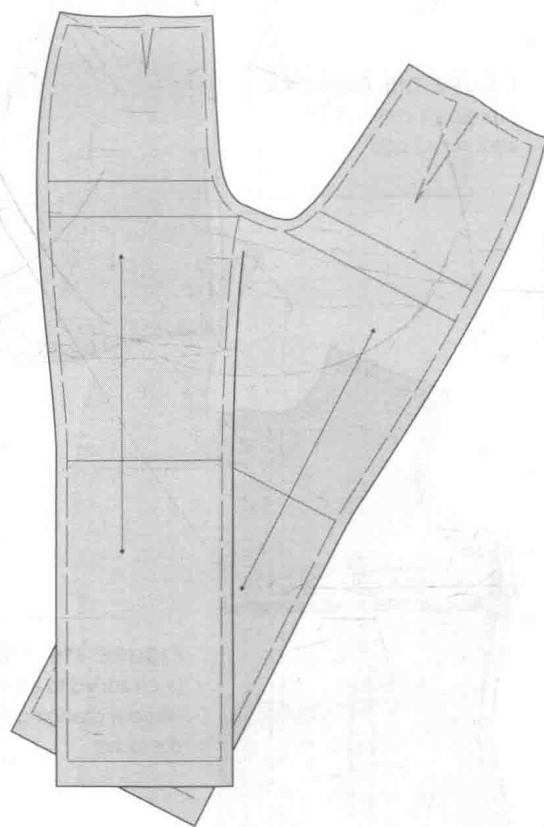


FIGURE 7.21 The curved pant crotch seam comes together smoothly.

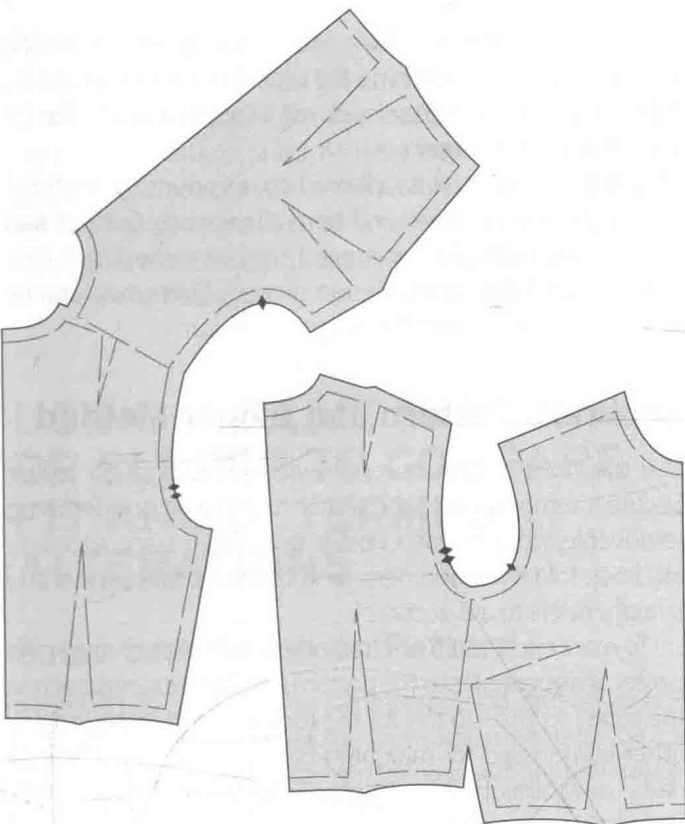


FIGURE 7.22 Shoulder seams match and armhole seams join smoothly.

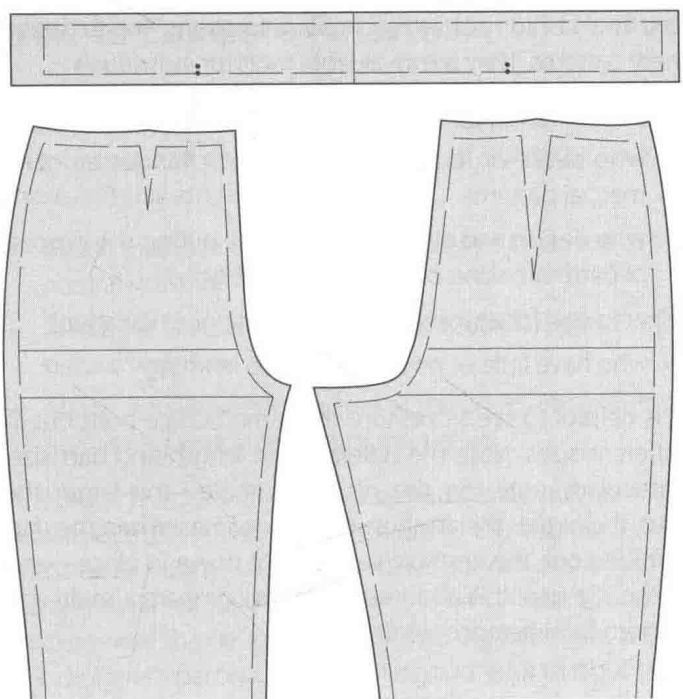


FIGURE 7.24 The waistband is appropriately shorter than the waistline.

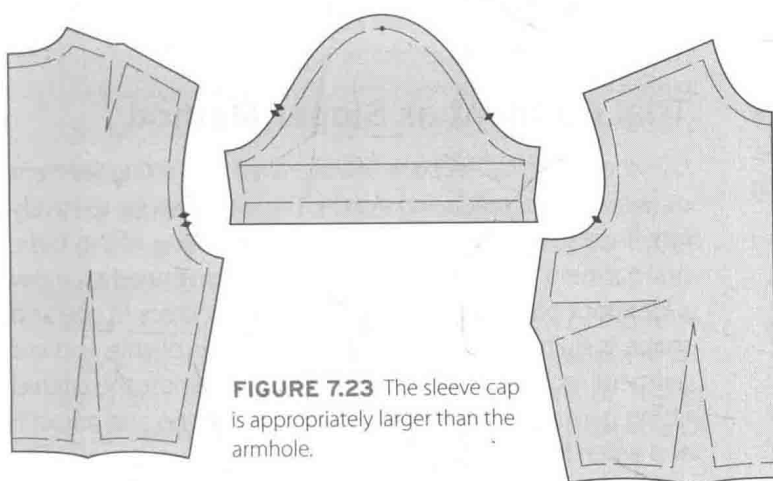


FIGURE 7.23 The sleeve cap is appropriately larger than the armhole.

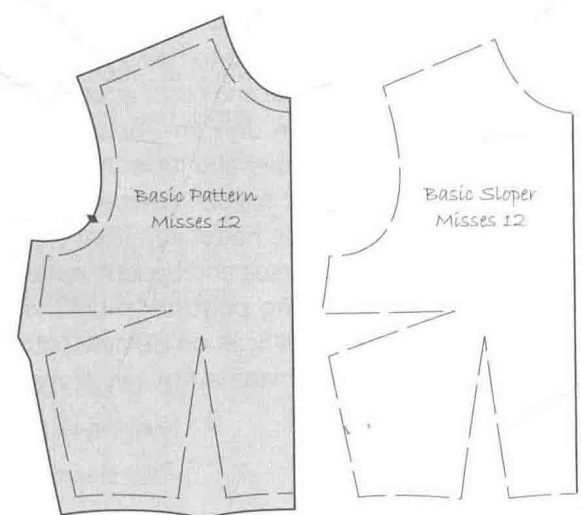


FIGURE 7.25 A standard basic pattern and a standard basic sloper represent an average figure.

WHAT IS A SLOPER?

For more extensive design work, a *sloper* is needed. A sloper (master or block) is a basic pattern with seam allowances, hem allowances, and dart interiors removed (see Figure 7.25). *The cut edges of the sloper are equivalent to stitching, fold, or hem lines.* A personalized sloper can be obtained only through a custom clothier with personalized fitting service—a rare find and expensive. A personalized sloper, however, can be easily made from a *personalized basic pattern*.

Personalized basic patterns and slopers provide a record of individual measurements, size, and shape with a minimum of ease included (see Figure 7.26). They may be used to compare

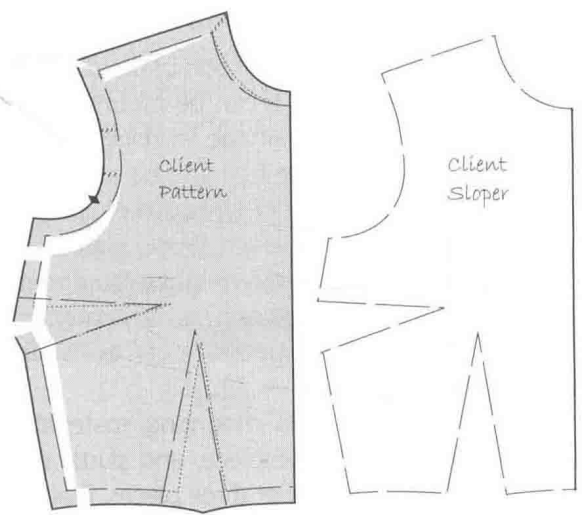


FIGURE 7.26 A personalized basic pattern and a personalized basic sloper have been altered to fit the figure of a specific individual.

the fit of fashion patterns, to make alterations, and to design new patterns. They are invaluable tools for individuals

- who have a creative interest in clothing design
- who desire or require simple design changes on commercial patterns
- who design and alter simultaneously during the process of patternmaking or cutting from fabric
- who sew for anyone with significant figure variations
- who have little or no access to help in fitting

It is helpful to see slopers for the same bodice front but in different sizes. Note the difference in length and dart size. Particularly note the rise of the armhole—the larger the dart, the higher the armhole curve becomes. When the dart is folded out, the armhole settles right down in place—and without a gap! It is also interesting to compare a multi-size pattern for differences in size.

Preserving a Personalized Pattern

If the personalized pattern has not been previously reinforced, do so now to preserve it for future use. Consider a fusible material and/or medium-to-heavy plastic lamination, depending on storage space and cost. Pattern pieces should be pressed flat. Use a warm, dry iron—only warm, as excess heat and steam shrinks paper and tape. Do not touch tape with the iron at all. Apply fusible material on the back of the pattern, pressing with a hotter iron from the back only. Test a sample of pattern tissue and backing material first, as backing material containing polyester shrinks with excess heat. Laminating can be difficult on delicate pattern tissue. Reinforcing with a fusible material first can allow laminating to proceed more efficiently.

METHODS FOR MAKING A SLOPER

Basic Pattern as Sloper Method

Use the *basic pattern as an integral part of the sloper*. There are many options in materials it can be mounted on. The material chosen should not damage working surfaces or fabric. It should remain wrinkle-free and be able to retain the shape of the edges. Consider tagboard or lightweight cardboard, heavyweight nonwoven fabric, wallpaper lining, window-shade backing, heavyweight wrapping paper, craft paper, smooth grocery bags, and plastic-coated freezer paper with two layers fused together. It can be laminated even after mounting.

Use sheets of your chosen mounting material large enough to cut bodices in one piece, and skirts, sleeves, and pants in no more than two or three pieces. When large pattern pieces are divided, leave a $\frac{1}{16}$ inch space between the separated sections. Adhere a pliable, strong tape along

the joint on *both* sides of the material. This permits folding without tearing or loosening the tape. A material that can be rolled is useful only if the sloper will also unroll and lie flat for use time and time again.

Once the pattern is adhered to a mounting material, carefully cut away seam and hem allowances. Cut out dart interiors with straight, not curved lines, as curved lines cannot be folded during the design process. Darts may later be stitched as curved lines during construction.

Separate Pattern and Sloper Method

Use the *basic pattern as a pattern separate from the sloper*. Secure it temporarily to the sloper material—consider using removable, double-sided Post-It tape. Then trace all stitching lines, fold lines, and hem- and dartlines. Use curved and straight rulers to aid accuracy.

To mark each notch on the sloper, draw a line through the center at right angles to the pattern edge and extend it across the stitching line. Do this for the top-of-sleeve mark and any other marks used for matching garment sections. Draw all darts using straight lines. Check sloper tracings for accuracy and restore any crooked lines. Make short, very narrow slits at each notch location on the stitching lines, if desired.

Exercise: Choose one of the above methods to make a personalized sloper.

Trial Garment as Sloper Method

Use the *separated sections of the altered trial fitting garment as templates for producing slopers*. The work can be relatively fast since you progress directly from the fitting of the basic trial garment to making the sloper. You don't need to know a lot about pattern alteration. However, accuracy in size and shape is quite difficult to maintain. Fabric is pliable and cut garment sections are easily distorted. In addition, the altered fitting garment is no longer available to put on and adjust if and when figure changes occur.

Use a pencil to mark seam and dart stitching lines, center front, center back, and hemlines on each garment section. (The hemline may be left stitched in place if desired. The folded edge is the finished hemline.)

Cut the sections apart exactly on all marked lines, or carefully remove the basting stitches. Do not pull or stretch the fabric. Carefully press the separated fabric sections on the lengthwise grain. Again, do not pull or stretch the fabric off grain. Anchor the pressed fabric section, right side up, to the material used to create the sloper. Complete the slopers as instructed above.

Finished Slopers

Label each completed sloper section. Record the location and amount of each alteration on the appropriate sloper.

This information is particularly helpful when altering a fashion pattern that is identical in brand, size, and figure type.

Store slopers flat, folded, or standing, depending on the backing material used. As wear and tear appear on the edges of a sloper, make a new working copy—keeping the original basic pattern for reference. As figure changes occur, adjust the fitting garment, basic pattern, and slopers to reflect the changes.

USING A BASIC PATTERN OR SLOPER TO COMPARE FIT AND DETERMINE ALTERATIONS

Same Brand Fashion Pattern

If the fashion pattern is the same brand, size, and figure type as your basic pattern, make the same adjustments in size and location. This retains the fashion fullness and design lines the designer intended.

- Analyze design lines and edges, such as the armhole and neckline.
- If they are different from the basic pattern for reasons other than style, alteration may be needed in these areas. For example a lowered neckline eliminates the need to alter for a low neck base at center or for full collarbones. A widened neckline may eliminate alteration for a high or low neck base. The fashion neckline depth may require raising or lowering for personal preference.
- If the armhole depth has been lowered, check the sleeve capline and bodice bustline width for enough design ease for a loose fit.
- If the shoulder tip width appears too narrow or too wide, check the fashion description for puffed sleeves or an extended shoulderline. The shoulder tip will be higher to accommodate the thickness of shoulder pads—check the notion list on the pattern envelope.

Different Brand Fashion Pattern

If the fashion pattern differs from your basic pattern in brand, size, or figure type, compare the two and alter the fashion pattern to conform to the measurements of the basic pattern or sloper at specific body locations. Be sure to allow for added fashion ease. Study the fashion pattern picture and the written information on the pattern to help with comparison.

- Analyze the design to determine how much fashion fullness the designer used and where it was placed.
- Analyze design lines and edges, such as the neckline or armhole. If they vary from the basic pattern, alterations may be necessary in those areas as described above.

How to Compare Patterns

To compare the sizing of the two patterns, lay the fashion pattern on top of the personalized basic pattern or sloper (see Figures 7.27 and 7.28). Begin with the pattern back to make comparison simpler.

- Match the bodices at center front, center back, and at the natural waistline.
- Match the skirts at the center front, center back, and at the natural waistline.
- Match the sleeve cutting lines at the underarm extension and at the vertical centers of the sleeve.

The outside edges of the two patterns may not coincide. However, the following specific areas of the fashion pattern must be at least as large as the basic pattern or the fashion garment will not be large enough. Pattern areas beyond the sloper reveal the design ease built into the pattern as well as the designer's perception of what is good fit for that garment:

- Width from center back or center front to shoulder tip
- Shoulder slope
- Chest and blade width
- Length and width at bust level
- Armhole depth and width
- Back and front waist lengths
- Waist circumference
- Hip circumference
- Crotch depth and length
- Thigh circumference
- Skirt and pant length
- Elbow dart position
- Long sleeve length

When a single basic pattern piece is compared to a fashion pattern with two or more pieces in the same area, match the corresponding stitching lines at the bustline, hipline, and sleeve capline and check circumference. Manipulate pattern pieces to match each other for further comparison. Some patterns will not compare well (see Figure 7.27a and b), but others do (see Figure 7.28a–g). These latter patterns compare well. The fashion patterns can be cut out.

Exercise: Using an old pattern on hand, press it flat. Lay your new personalized sloper on top and follow through with a comparison in the areas listed above. Practice this on several old patterns for experience.

FIGURE 7.27 (a) Fashion pattern overlaid on the basic sloper does not fit. The fashion pattern is too short (see shoulder seam). The fashion pattern is too narrow (see side seam and underarm). (b) The fashion pattern has been altered to fit. Very difficult to see, the princess style side front and front pattern have added width at the bust, executed by the seam method. The side front bust seam is longer. Length is added in the front pattern, carried out by the slash method. The altered patterns will now fit the body.

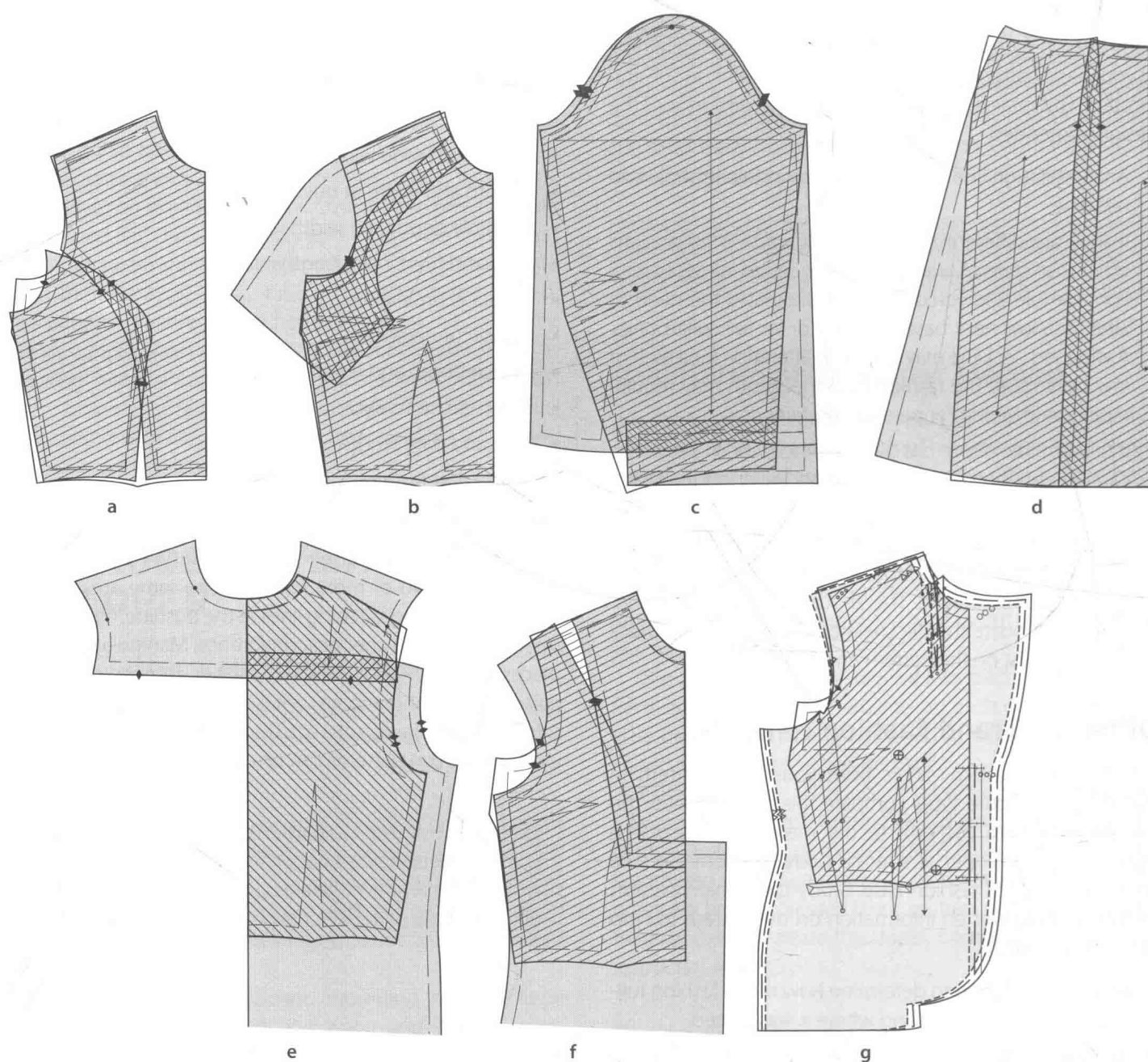
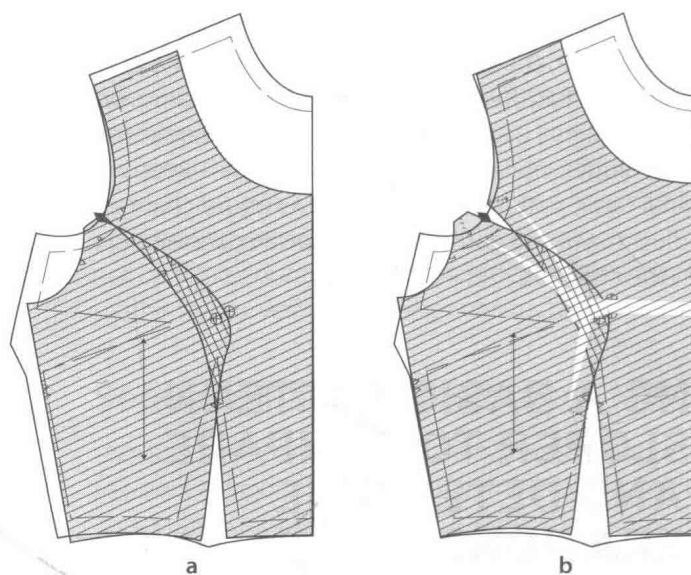


FIGURE 7.28a-g Fashion patterns overlaid to compare to the personalized basic or sloper: basic pattern only (clear), fashion pattern only (gray), fashion and basic overlap, fashion pattern overlap (narrow lines)

USING A BASIC PATTERN OR SLOPER TO DESIGN NEW PATTERNS

A basic pattern or sloper can be used as a tracing template to create new patterns according to personal style and need. Design features that can be easily incorporated into the pattern are described below.

Dart Changes

- Move darts from one seamline to another.
- Release a dart for a looser fit.
- Convert a darted area into gathers, unpressed tucks, or pleats.
- Convert darts to design seamlines, such as yokes or princess seamlines.

Added Fullness

- Add flare at lower edges.
- Add extra fullness for gathers, unpressed or pressed pleats, or for tucks.

Finishing Details

- Add design facings, collars, yokes, pockets, and belts.

Exercise: To pretest a new design, make a small-scale pattern and construct a small-scale garment. If available, critique the finished garment on a small-scale mannequin. A disappointing design in small scale is more easily corrected or forgotten than a full-scale version. A successful design viewed in small scale may provide the motivation to produce a full-scale version.

PART THREE

Go!



INTRODUCTION

Guide Organization

The following guide presents measurement, fitting, and alteration procedures on the bodice, sleeve, skirt, and pants for the most comprehensive collection of identified figure variations ever assembled in a textbook. Chapter 8 presents the procedures on the upper torso and bodice. Chapter 9 presents the procedures on the arm and sleeve. Chapter 10 presents the procedures on the lower torso and legs, and on the skirt and pants.

Throughout the guide, the written information has been limited to essentials. Realistic illustrations clarify written material. Each illustration is a reproduction of an original that was first drawn to scale and then photographically reduced in size. With study and experience, the illustrations will become generally self-explanatory.

Learn to evaluate the fit of the garment unit in relation to the body structure. To determine whether a need for improvement in fit exists, be observant and think analytically in terms of cause, effect, and solution.

REALITY CHECK

Figure variations are arranged in a unique manner. Within each section, the first variation to be presented is the first that needs to be altered if the entire fitting process is to be successful. In Chapter 8, *Measuring for the Bodice*, the first three figure variations that need increased length are presented (1, 2, 3). The second three opposite figure variations that need decreased length are presented next (4, 5, 6). The remaining figure variations are arranged according to their approximate vertical position on the body, starting from the neck and moving downward. Where appropriate, opposite figure variations will be treated following one another, as causes and solutions are essentially reversed. The larger variation will generally be presented first, followed by the smaller variation.

There are multiple methods of pattern alteration to choose from; one is sometimes easier than another. There is a direct relationship between garment adjustment and pattern alteration. The newer and innovative seam method of pattern alteration involves moving the seam allowance to accomplish the change. The slash and pivot methods are accomplished in the same manner on the pattern as on the garment. In many cases, the slash method has been corrected as compared to traditional presentations still used in many other fitting books. Review advantages and disadvantages in Chapter 6 of this text.

Basic pattern alterations are illustrated and discussed for each method. Major steps required to execute the alteration are outlined as simply as possible. Fashion pattern alterations are included with selected figure variations and carried out in the simplest method. They detail alterations on a variety of garment styles, including princess styles,

raglan and kimono styles, and some jackets. Selected collar alterations are also illustrated.

As you study each figure variation, do not rely on the illustrations alone. Read all printed information and instructions accompanying each figure variation. This information is essential to your understanding. Thereafter, you may rely on the illustrations to refresh your memory and guide your work.

Carry out alterations as outlined and illustrated on a half-scale practice pattern. Use the illustrations to check your finished alteration. Whenever you need to improve your understanding, review the basic alteration guidelines found in Chapter 6.

On each of these facing pages, you will find the numbered figure variation that heads the page. The presentation then includes the following, from the top down, and left to right:

- Figure Evaluation
- Fitting Problems
- Ready-to-Wear Alteration
- Trial Garment Alteration
- Body Measurement Positions
- Pattern Measurement Comparison
- Seam Method
- Pivot/Slide Method
- Slash Method
- Fashion Patterns

Figure Evaluation

In this section, the body structure contributing to the figure variation is identified and illustrated in terms of where it occurs, how it may appear, and variations in size. The accompanying caption describes the figure variation. For example, "The arm bones are longer than average. Increased length can occur in the upper arm or lower arm, or it can be distributed between both upper and lower arm."

Seldom do figure variations occur in isolation; more often they are combined with other related figure variations, which will be identified. When applicable, the related figure type in which the variation commonly occurs is identified. For example, "Narrow shoulders can appear in combination with wide thighs at the side, typical of the triangular figure type."

Analyze the body structure to determine the anatomical cause of an incorrectly fitted pattern or garment area.

Fitting Problems

In this section, the fitting problem is identified and illustrated in terms of the fabric length and/or width and shape, and how it appears on the body when poorly fitted over a specific figure variation. It provides a good basis for comparison between body and garment as illustrated by wrinkle formation and grainline. The section concludes by indicating

where length or width will need to be added to the garment and pattern. For example, "There is not enough fabric width to fit across the shoulders. Fabric is tight across the upper chest, shoulder, and upper sleeves. The armhole seamline pulls in. The garment and the pattern need more fabric width to fit across wide or broad shoulders."

Analyze the need for change in garment measurements. If a garment and pattern have the same measurement and shape as the body plus enough ease for natural body movement, the garment and pattern will fit smoothly. No change is needed. If a garment and pattern have a different measurement or shape than the body plus ease, some part of the garment and pattern must change in length and/or width.

In a garment fitted without enough ease, seamlines and hemlines pull or drop out of position. Watch for stress wrinkles or drag lines, visual clues to poor fit that can help you identify the figure variation and the fitting problem. In a relatively form-fitted basic garment, tight and loose wrinkles will form, exposing or drawing attention to the figure variation causing the wrinkles.

Make frequent opportunities to evaluate the fit of your own clothing as well as the clothing of others, looking for wrinkles as signs or clues to poor fit. For example, "In pants, there is too much fabric in the crotch area. The crotch seam hangs away from and too far below the body area. The garment needs less fabric between the waist and the crotch to position the hip and crotch shaping higher on the body."

Locate the wrinkles and identify their direction and character. If a garment area is too large, either loose horizontal or vertical folds form, the garment stands away from the body, or sags against it depending on the fabric texture. If a garment is too small, tension wrinkles form horizontally, vertically, or diagonally over the tight area. Learning to evaluate wrinkles is a beginning step in learning to fit. Removing wrinkles by preventing their formation is the fitter's goal.

- When horizontal tension wrinkles form, the garment circumference is smaller than the body circumference at or below the wrinkled area.
- When loose horizontal folds or soft wrinkles form, the garment is longer than the body at the area of the fold or wrinkle.
- When vertical tension wrinkles form, the garment is shorter than the body area underneath the wrinkled area.
- When loose vertical folds, diagonal folds, or puffs form, the garment length or width is excessive over a body bulge. The accommodating size dart is too large and wide.
- When tight diagonal wrinkles form, the garment length and width is too small over the body bulge at the top of the wrinkles. The accommodating size dart is too small and narrow.
- Not infrequently, combined directional wrinkles form.

When a flat piece of paper or fabric is formed into a tube and placed on the body, the excess fabric lying at the edge of each body bulge or hollow forms a dart. A dart-equivalent seam forms along each body slope, such as the shoulders, sides of the rib cage, and hips. Dart-equivalent seams also join fabric sections at natural body divisions. Darts and dart-equivalent seams add the dimension of depth to the length and width of the garment. A darted garment area that requires a change in length and/or width nearly always requires a change in the size of the dart. The larger the body bulge or the greater the body slope, the larger or wider the fitting dart must be.

When the two halves of the body are asymmetrical, the lengths and widths of the garment and pattern sections and the corresponding width of the dart must differ accordingly. The tips of the corresponding dart end on a line parallel to the floor and the same distance from the garment and pattern center line.

When expressing needed changes in a garment area, use terms that describe the size or shape of the body area. For example, "To fit larger-than-average shoulder blades, increase the length and width of the fabric over the shoulder blade area." Using descriptive words in logical sequence simplifies pattern alteration and future fitting.

Multi-section fashion styles demand unique applications of the alteration procedures. Selected fashion patterns are included at the end of each figure variation presentation. Loose-fitting clothing, having added ease, may not expose a figure variation beneath and therefore generally requires no alteration. For this reason, fitting and alteration instructions for loose-fitting clothing styles are not included in this textbook.

Fashion style selection advice is not provided for each figure variation in this text. For fashion styles to fit and flatter, see *Fabulous Fit* by Rasband and Liechty. There you will find a list of design details and fashion styles in classic clothes and accessories that, when well fitted, can be expected to flatter the figure. The list includes enough items to get you thinking in terms of styles that lead the eye in a desired direction, and camouflage or counter to create attractive illusions about the specific figure variation.

Ready-to-Wear Alteration

Ready-to-wear clothing has become very difficult to alter in recent years due to very narrow seam allowances—indeed, there are no seam allowances unless you're working with higher quality or custom-fitted clothing. It is a well known fact that not all figure variations can be altered for in a finished garment. Nonetheless, in this section, illustrations and discussion will treat the fitting problem as though seam allowances are present. It relates directly to the seam method of pattern alteration. Captions will note alterations in terms of which seam(s) to release and alter. In most cases, instructions to re-stitch seams will not be stated, but are assumed.

Trial Garment Alteration

Traditionally, the slash method is used to alter trial fitting garments wherein the interior of the garment is cut and increased with an inserted strip of fabric, or made smaller by stitching a tuck to remove the excess. In this section, captions identify where to slash and spread, lap, or tuck. The seam/pivot methods involve moving the stitching line and can be used in fitting trial or fashion garments as well. In most cases, instructions to stitch in fabric strips, stitch tucks in place, or re-stitch seams will not be stated, but are assumed.

Evaluate the total fit of the completed garment. The person being fitted should move as she/he would when the garment is in use—standing, sitting, walking, bending, and stooping. She/he should swing her/his arms, and raise and lower them. When the person is standing in her/his usual posture, the garment should relax and return to a correctly fitted position without help. Refine the fit as needed on any questionable area.

Body Measurement Positions

New to this edition, this section leads you through the process of taking body measurements, in the order recommended to facilitate success. Measurements may be taken from any direction. Captions list the sequence in which the measurements are to be taken. Black line body measurements indicate that the measurement as compared to the pattern is correct. Red line body measurements indicate that the measurement as compared to the pattern is not correct and alteration will be required to fit the body.

Pattern Measurement Comparison

Also new, pattern measurements are taken in locations corresponding directly to locations on the body, again in the recommended order. On the pattern, however, measurements are taken directionally to facilitate success. An arrow indicates the direction in which to take the measurement. Black line pattern measurements indicate that the measurement as compared to the body is correct. Red line pattern

measurements indicate that the measurement as compared to the body is not correct and alteration will be required to fit the body. In most cases, the alteration should be carried out on the seam that the arrow points toward. For each figure variation, the results of the pattern measurement will be listed in the caption.

Seam Method

Alterations are carried out at the seamline and thereby avoid distorting the pattern. Initial captions will identify which seam allowances to release, where to hinge, directions in which to move seam allowances to increase or decrease length and/or width, and which cutting lines to restore. As a whole, the authors find this method to be the easiest.

Pivot/Slide Method

Alterations are carried out at the seamline and thereby avoid distorting the pattern. Initial captions will identify which cutting lines to trace and directions in which to pivot or slide the pattern to increase or decrease length and/or width. In each case, following alteration, restore the pattern to its original position. Attach the pattern to the tissue paper. For better visibility, transfer any new lines that are under the pattern to the pattern. Cut the pattern using the new cutting lines.

Slash Method

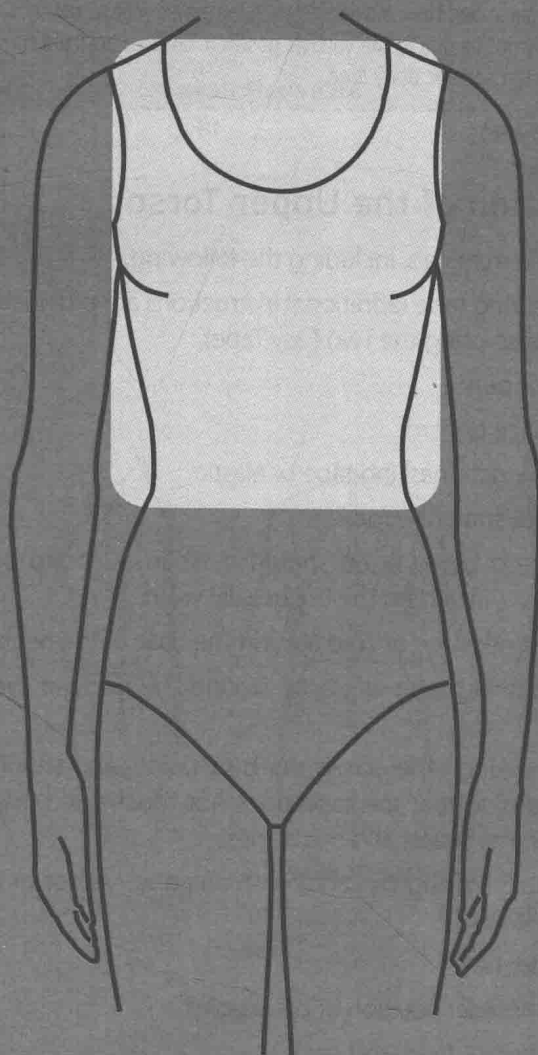
Alterations are carried out on the interior of the pattern, correlating closely with alterations on a trial garment. Traditional procedures for altering uneven amounts of change have been corrected to avoid distorting the pattern. Captions will identify where to slash, hinge, and spread, lap, or tuck to increase or decrease length and/or width, and which cutting lines to restore.

Fashion Pattern Alterations

Captions will be limited to identifying the fashion style being altered. Illustrations should be self-explanatory. In some cases, multi-size patterns will be used.

Chapter 8

Bodices



MEASURING FOR THE BODICE

This chapter presents measurement, fitting, and alteration procedures on the upper torso and bodice.

Before beginning to measure, establish the level of the waistline on the body as it may not be level due to body conformation. The level or slope must be established before measurements can be taken accurately.

Also before beginning to measure, extend the vertical center front line on the pattern upward through the neckline 2 to 3 inches. Square a horizontal line from the center through the shoulder tip. Use this line to establish the shoulder tip width and draw a short vertical line above and below the horizontal line (see Table 8.1).



REALITY CHECK

The even length of the pattern is adjusted first, beginning at the bottom of the pattern piece, then moving up the body. Uneven lengths are then adjusted at the top, so the pattern or garment is level on the body. The widths of the pattern are adjusted beginning at the top of the pattern piece and then moving down. Lengthwise measurement amounts may not be due to the vertical position, but to a horizontal curvature in the specific body area.

Preparation of the Upper Torso

1. Assemble materials, including the following:
 - measuring tape (additional instructions are provided for those using the Two Easy Tape)
 - pen or pencil
 - necklace or cord
 - $\frac{1}{8}$ or $\frac{1}{4}$ inch masking tape or elastic
 - ruler or straight edge
2. The person being fitted should dress in a leotard or underwear, including the bra usually worn.
3. Place the necklace or cord around the base of the neck.
4. Place masking tape or elastic around the body at the waist.
5. Place masking tape across the bust points and shoulder blades so that the tape does not touch the body between the breast and the blades.
6. Mark the following positions with an adhesive dot or a washable ink X:
 - shoulder tip
 - neck-shoulder position or breakpoint
 - neck centers, front and back
 - sides at the underarm
 - sides at the waist
 - waist at centers, front and back

Note: All basic ease measurements given are for a fitted bodice. Fashion ease is in addition to basic ease.

Lengths on the Bodice

See Table 8.1.

1. *Side seam length*: Place a ruler or $\frac{3}{4}$ to 1 inch wide at the underarm. Measure from the bottom of the ruler, down the sides of the body to the waistline. Record right side, left side.
2. *Bust point height*: Measure up from the waist to the bust point on both sides. Record right side, left side.
3. *Full bodice length*: On the front, measure up from the waist over the bust to the neck-shoulder position. Add $\frac{1}{4}$ inch ease each side. Record right side, left side. On the back, measure up from the waist over the shoulder blade to the neck-shoulder position. Add $\frac{1}{4}$ inch ease each side. Record right side, left side.
4. *Centers*: On the front, measure up from the center of the waist, over the tape to the center of the collarbones/indentation at the base of the neck. Add $\frac{1}{4}$ inch ease. Record center front length. On the back, measure up from the center of the waist, over the tape to the large cervical bone at the base of the neck. Add $\frac{1}{4}$ inch ease. Record center back length.
5. *Shoulder slope*: On the front, measure from the center of the waist diagonally up over the bust to the shoulder tips. Record right side, left side. On the back, measure from the center of the waist diagonally up over the blades to the shoulder tips. Record right side, left side.

Widths and Circumferences on the Bodice

See Table 8.2.

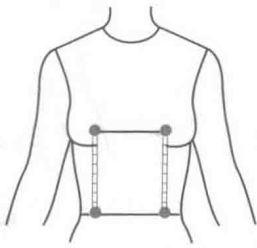
1. *Shoulder tip width*: On the front, measure across the chest from shoulder tip to the opposite shoulder tip. Add $\frac{1}{2}$ inch ease. Record front shoulder tip width. On the back, repeat and record back shoulder tip width.
 - If using a Two Easy Tape, place the 0 at center front and measure center to shoulder tip, each side. Add $\frac{1}{4}$ inch ease each side. Record right side, left side. Repeat on the back and record right side, left side.
2. *Shoulder length*: Measure from the shoulder tip dot or X to the neck-shoulder position. Record shoulder length right side, left side.
3. *Chest and back width*: On the front, measure across the chest from arm hinge to the opposite arm hinge. Add $\frac{1}{2}$ inch ease. Record chest width. On the back, repeat and record back width.
 - If using a Two Easy Tape, place the 0 at center front and measure center to arm hinge, each side. Add $\frac{1}{4}$ inch ease each side. Record chest width right side, left side. Repeat on the back and record right side, left side.

UPPER TORSO LENGTHS



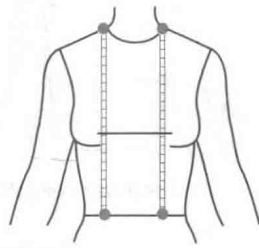
Side

Rt _____
Lt _____



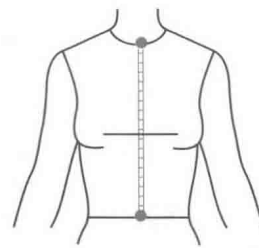
Bust Height

Rt _____
Lt _____

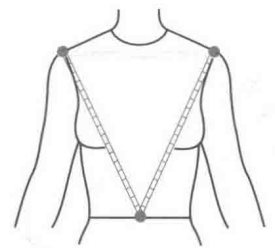


Full Bodice Front

Rt _____
Lt _____

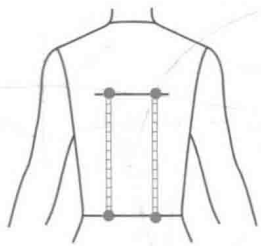


Center Front



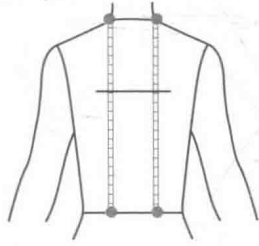
Shoulder Slope Front

Rt _____
Lt _____



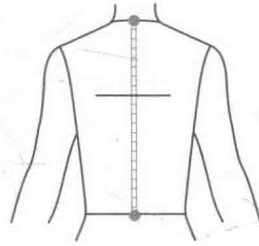
Shoulder Blade Height

Rt _____
Lt _____

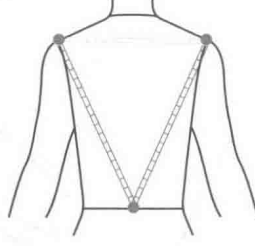


Full Bodice Back

Rt _____
Lt _____



Center Back



Shoulder Slope Back

Rt _____
Lt _____



Mid-Shoulder to Under Bust

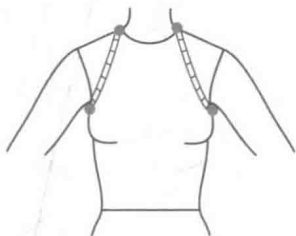
Rt _____
Lt _____

Optional Supplementary Measurements



Arm Joint Length

Rt _____
Lt _____



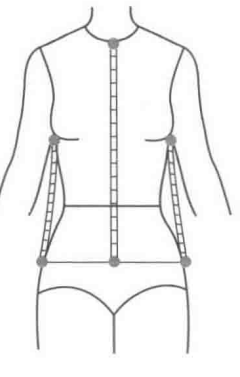
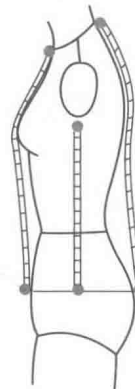
Strap Front

| | Body | Min.Ease | Total |
|-------|-------|----------|-------|
| Right | _____ | 1/2-3/4" | _____ |
| Left | _____ | 1/2-3/4" | _____ |



Strap Back

| | Body | Min.Ease | Total |
|-------|-------|----------|-------|
| Right | _____ | 1/2-3/4" | _____ |
| Left | _____ | 1/2-3/4" | _____ |

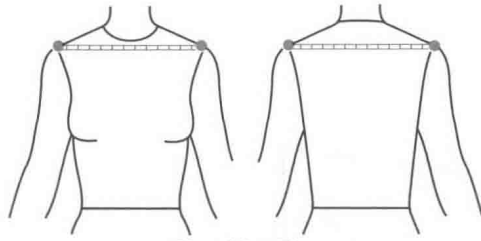


Semi-Fitted Blouse

Front _____ Rt _____
Back _____ Lt _____

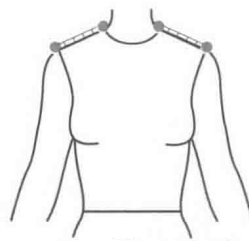
Table 8.1: Upper Torso Lengths

UPPER TORSO WIDTHS



Shoulder Tips

| Body | Min. Ease | Total |
|------------------|-----------|-------|
| Frt: Total _____ | 1/2" | _____ |
| Rt Side _____ | 1/4" | _____ |
| Lt Side _____ | 1/4" | _____ |
| Bk: Total _____ | 1/2" | _____ |
| Rt Side _____ | 1/4" | _____ |
| Lt Side _____ | 1/4" | _____ |



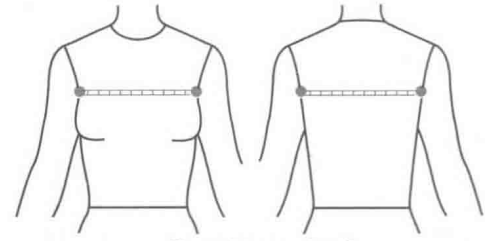
Shoulder Length

Rt Side _____
Lt Side _____



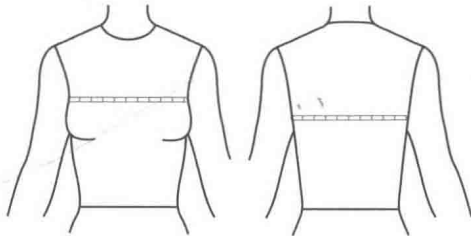
Neck Circumference

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 1/2" | _____ |
| Front _____ | 1/4" | _____ |
| Back _____ | 1/4" | _____ |



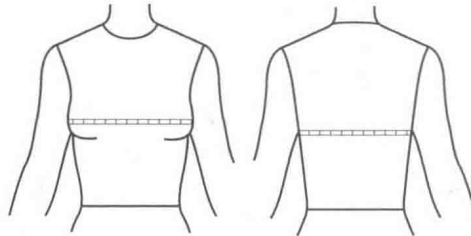
Chest/Upper Back

| Body | Min. Ease | Total |
|------------------|-----------|-------|
| Frt: Total _____ | 1/2" | _____ |
| Rt Side _____ | 1/4" | _____ |
| Lt Side _____ | 1/4" | _____ |
| Bk: Total _____ | 1/2" | _____ |
| Rt Side _____ | 1/4" | _____ |
| Lt Side _____ | 1/4" | _____ |



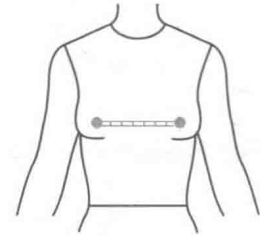
High Bust/Underarm Level

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 3" | _____ |
| Frt: Total _____ | 1 1/2" | _____ |
| Rt Side _____ | 3/4" | _____ |
| Lt Side _____ | 3/4" | _____ |
| Bk: Total _____ | 1 1/2" | _____ |
| Rt Side _____ | 3/4" | _____ |
| Lt Side _____ | 3/4" | _____ |



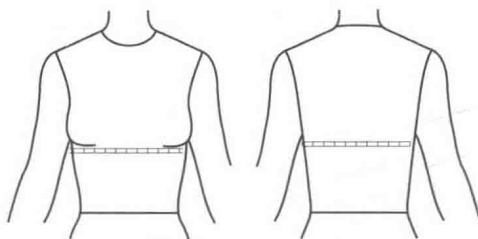
Full Bust Level

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 3" | _____ |
| Frt: Total _____ | 1 1/2" | _____ |
| Rt Side _____ | 3/4" | _____ |
| Lt Side _____ | 3/4" | _____ |
| Bk: Total _____ | 1 1/2" | _____ |
| Rt Side _____ | 3/4" | _____ |
| Lt Side _____ | 3/4" | _____ |



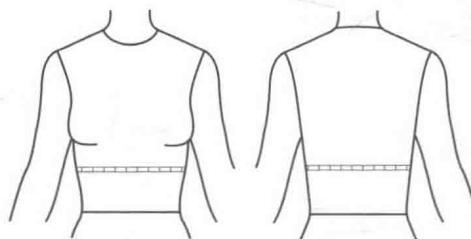
Bust Point Spread

Total _____
Rt Side _____
Lt Side _____



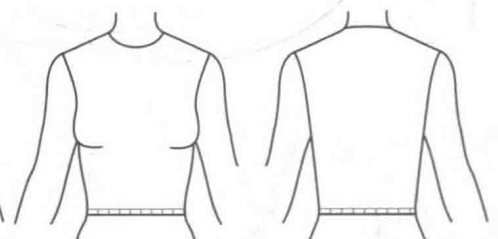
Under Bust Level

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 3" | _____ |
| Frt: Total _____ | 1 1/2" | _____ |
| Rt Side _____ | 3/4" | _____ |
| Lt Side _____ | 3/4" | _____ |
| Bk: Total _____ | 1 1/2" | _____ |
| Rt Side _____ | 3/4" | _____ |
| Lt Side _____ | 3/4" | _____ |



Midriff Level

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 2" | _____ |
| Frt: Total _____ | 1" | _____ |
| Rt Side _____ | 1/2" | _____ |
| Lt Side _____ | 1/2" | _____ |
| Bk: Total _____ | 1" | _____ |
| Rt Side _____ | 1/2" | _____ |
| Lt Side _____ | 1/2" | _____ |



Waist Level

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 1" | _____ |
| Frt: Total _____ | 1/2" | _____ |
| Rt Side _____ | 1/4" | _____ |
| Lt Side _____ | 1/4" | _____ |
| Bk: Total _____ | 1/2" | _____ |
| Rt Side _____ | 1/4" | _____ |
| Lt Side _____ | 1/4" | _____ |

Table 8.2: Upper Torso Widths

4. *High bust widths:* On the front, measure across at armhole level from side to side. Add 1 ½ to 2 inches for ease. Record front high bust width. On the back, repeat and record back width at high bust level.
 - If using a Two Easy Tape, place the **0** at high bust center front and measure center to sides. Add ¾ to 1 inch ease each side. Record high bust width right side, left side. Repeat on the back and record right side, left side.
 - *High bust circumference:* Measure across the front at armhole level, continuing around and across the back. Keep tape level. Record high bust circumference for pattern size selection.
5. *Full bust width:* On the front, measure across at full bust level from side to side. Add 1 ½ to 2 inches for ease. Record front full bust width. On the back, repeat and record back width at full bust level.
 - If using a Two Easy Tape, place the **0** at center front and measure center to sides. Add ¾ to 1 inch ease each side. Record full bust width right side, left side. Repeat on the back and record right side, left side.
 - *Full bust circumference:* Measure across the front at full bust level, continuing around and across the back. Keep tape level. Record full bust circumference for pattern size selection only if the bust is smaller.
6. *Midriff/lower rib cage width:* On the front, measure across at midriff level from side to side. Add 1 inch ease. Record front midriff width. On the back, repeat and record back width at midriff level.
 - If using a Two Easy Tape, place the **0** at midriff center front and measure center to sides. Add ½ inch ease each side. Record midriff width right side, left side. Repeat on the back and record right side, left side.
7. *Waist width:* On the front, measure across at waist level from side to side. Add ½ inch for ease. Record front waist width. On the back, repeat and record back width at waist level.
 - If using a Two Easy Tape, place the **0** at waist center front and measure center to sides. Add ¼ inch ease each side. Record waist width right side, left side. Repeat on the back and record right side, left side.
 - *Waist circumference:* Measure across the front at waist level, continuing around and across the back waist. Record waist circumference for fashion skirt or pant pattern size selection only.

NOTES ON MEASUREMENT METHOD OF FITTING THE BODICE PATTERN



✓ REALITY CHECK

Bodice patterns and other patterns that fit the upper torso are best selected by the high bust circumference. Patterns are designed for a figure with a B cup bust generally with 3 inches (¾ inches x 4) of ease allowed at the bustline.

Length Measurements on the Bodice

Take measurements on the pattern in the following sequence from the bottom up and in the direction indicated so that alterations may be made where needed (see Table 8.3).

1. *Side seam length:* Underarm to waist
2. *Bust point height:* Waist to bust point
3. *Full bodice length:* Waist to neck/shoulder
4. *Center front and back length:* Waist to neckline
5. *Shoulder slope:* Center of waist, diagonal to shoulder—to vertical line positioned on shoulder tip width
 - Measure the pattern back side seam length from underarm to waistline. If the body waistline is not level as determined by observation and measurement, make a duplicate pattern so the two sides may be altered to fit.

Even/Parallel Amounts of Length Change on Bodice Front and Back

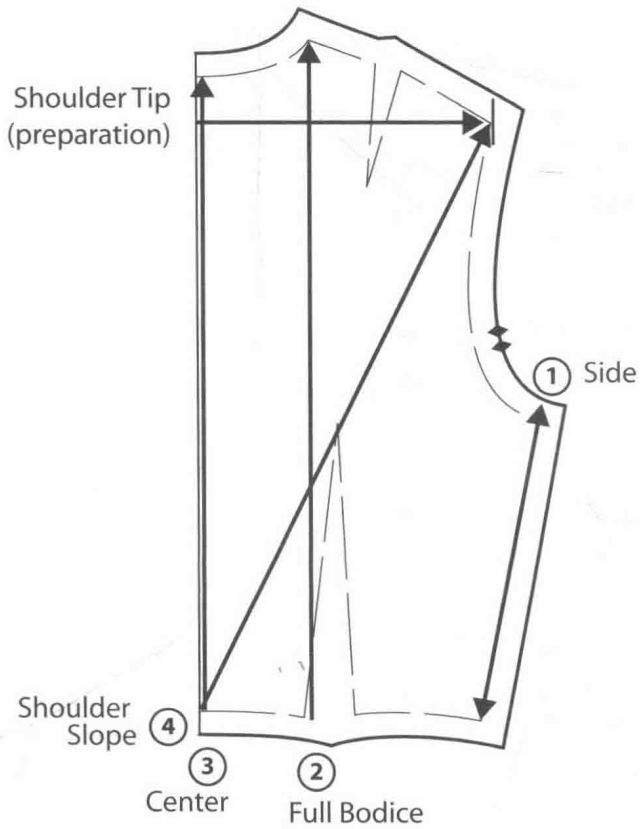
Measure the side seam, bust height, full bodice, and center lengths as illustrated on Table 8.3. If the side seam length of the pattern is long or short, the problem may be corrected in one of the following ways:

- If the bust point height is long or short, adjust length evenly below the bust. See #1 Longer Lower Rib Cage/Low Waist or #4 Shorter Lower Rib Cage/High Waist.
- If the bust point height is correct, but the full bodice length and center front length are long or short, adjust length evenly above the bust and below the armhole. See #2 Longer Upper Rib Cage/Low Waist or #5 Shorter Upper Rib Cage/High Waist.
- If the pattern full bodice length and center back length are long, adjust the length evenly across the back below the armhole. Then increase the size of the front side dart to match the length of the back seam.

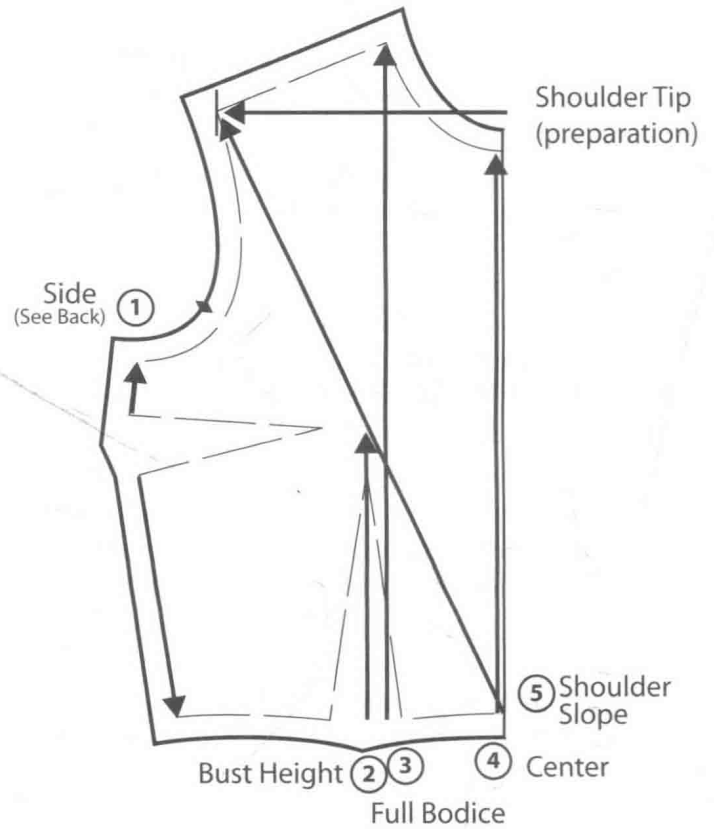
BODICE MEASUREMENT SEQUENCE AND POSITIONS

LENGTHS

Bodice Back

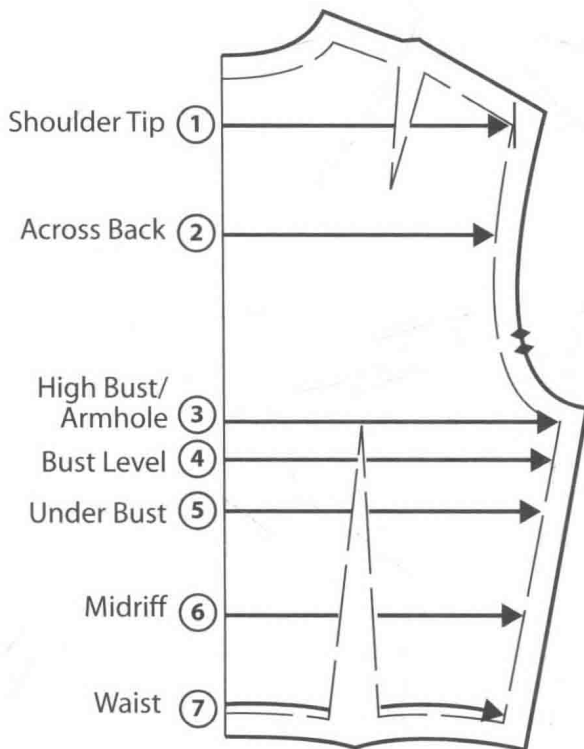


Bodice Front



WIDTHS

Bodice Back



Bodice Front

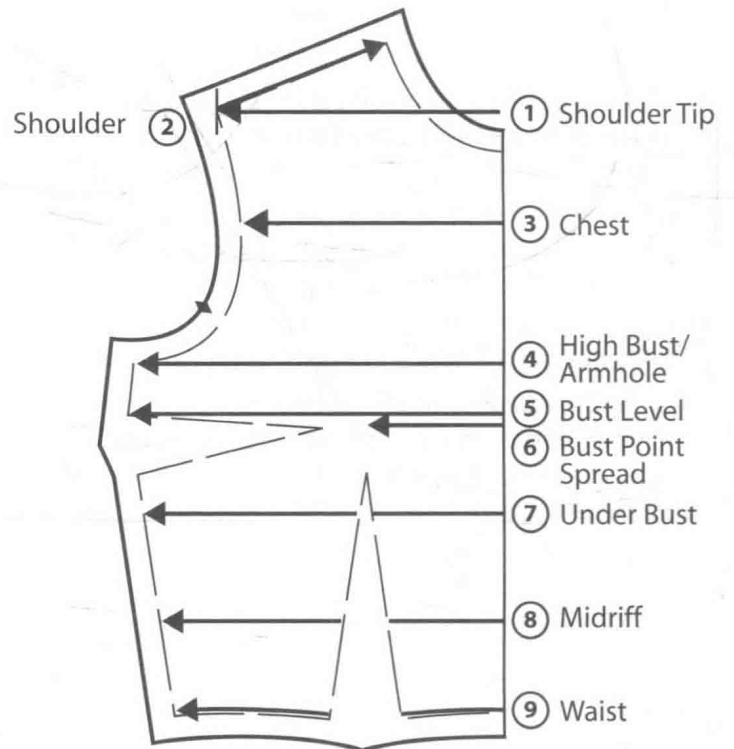


Table 8.3: Bodice Measurement Sequence and Positions

- If the pattern full bodice length, center front length, and shoulder slope are long or short and the side seam is correct, adjust the length evenly through the armhole of the bodice and the sleeve cap. See #3 Longer Shoulder Joint or #6 Shorter Shoulder Joint.
- If these lengths vary only on the front of the bodice, see #33 Prominent Bust or #34 Smaller Bust.

Uneven Amounts of Length Change on Bodice Front and Back

Measure the shoulder slope.

- If the pattern side seam is long or short and the bust height and center front length are correct, check the shoulder slope for square or sloped shoulders. Alter the position of the armhole by raising or lowering it and the shoulder seam. See #7 Square Shoulders or #8 Sloped Shoulders.
- If the pattern full bodice length is long or short and the center length and side seam length are correct, alter by raising or lowering the shoulder position at the neckline tapering to 0 at the shoulder tip. See #13 High Neck Base or #14 Low Neck Base.
- If the pattern back shoulder slope is short and the front shoulder slope is long, yet the side seam length is correct, raise the back shoulder tip and lower the front shoulder tip. This will effectively lengthen the back armhole and shorten the front armhole. See #9 Forward Shoulder Joint. This requires a change in the shoulder position and shape of the armhole. It usually requires a change on the shape of the sleeve cap, with the back becoming flatter or more sloped, and the front more rounded to accommodate the forward shoulder bone.
- *Front only:* If the center and full bodice lengths and the shoulder slope are long or short, yet the side seam length is correct, an even amount of length change is made across the chest going through the side dart to increase or decrease its size. See #33 Prominent Bust or #34 Smaller Bust.
- On a princess-style center panel, length is increased or decreased evenly at the bust level. The corresponding edge of the side panel is increased or decreased in width and length over the bust area by seam or pivot method. See #33 Prominent Bust or #34 Smaller Bust.
- *Back only:* If the center and full bodice lengths are long or short, lengthen or shorten at the neckline an evenly parallel amount, then taper to the shoulder tip. See #21 Rounded Upper Back or #22 Erect Upper Back.

Width Measurements on the Bodice

Take measurements on the pattern in the following sequence from the top down and in the direction indicated so that alterations may be made where needed (see Table 8.3). Minimum ease allowance is also indicated.

1. *Shoulder tip width:* Center to shoulder tip plus $\frac{1}{4}$ inch ease
2. *Shoulder length:* Shoulder tip to neck plus $\frac{1}{4}$ inch ease
3. *Chest and back width:* Center across to armhole plus $\frac{1}{4}$ inch ease
4. *High bust width:* Center across to side at underarm, front and back, plus $\frac{3}{4}$ inch ease per pattern piece; total ease amount is 3 to 4 inches
5. *Full bust width:* Center to side at bust level front and back, plus $\frac{3}{4}$ inch ease per pattern piece; total ease amount is 3 to 4 inches
6. *Under-bust width:* This is an optional measurement used for empire waist designs. It is taken just under the bust and on the pattern center to side at the waist level of the empire waist garment, plus $\frac{1}{4}$ inch ease per pattern piece.
7. *Midriff width:* Center to side, midway between the waist and bust point plus $\frac{1}{2}$ to $\frac{3}{4}$ inch ease per pattern piece
8. *Waist width:* Center to side seam plus $\frac{1}{4}$ inch ease per pattern piece

Uneven Amounts of Width on the Bodice

- If the pattern shoulder tip width is long or short, alter at the armhole for broad or narrow shoulders. See #28 Wider/Broad Shoulders or #29 Narrower Shoulders.
- If the pattern shoulder seam length from tip to neck is long or short, alter at the neck for a larger or smaller neck size. See #25 Larger Neck or #26 Smaller Neck.
- If the pattern at chest or back width is wide or narrow at about 3 to 4 inches down from the neckline on front or back, alter at the armhole. See #30 Wider Chest/Upper Back or #35 Narrower Chest/Upper Back; #16 Rounded Chest or #17 Shallow Chest.
- If the pattern high bust or full bust width plus $\frac{3}{4}$ inch per pattern piece is wide or narrow, alter at the side seam to increase or decrease width and dart size. Pivot from the armhole just above the notch outward or inward as needed to make the change. The armhole will be more or less curved than originally. See #32 Larger Bust, #33 Prominent Bust, or #34 Smaller Bust.
- If the pattern under-bust is wide or narrow on an empire waistline, alter at the side and/or dart. See #38 Wider Rib Cage, #39 Narrower Rib Cage, or #76 High Abdominal Curve.
- If the pattern midriff plus ease is wide or narrow, alter at the side seam and/or dart. See #38 Wider Rib Cage, #39 Narrower Rib Cage, or #76 High Abdominal Curve.
- If the pattern waistline plus ease is wide or narrow, alter at the side seam and/or dart. See #41 Larger Waist, #42 Smaller Waist, or #76 High Abdominal Curve.

1. Longer Lower Rib Cage/Low Waist

FIGURE EVALUATION (A)

- The body is longer between the bust and waist than average/ideal.
- The bones forming the rib cage are larger and/or more widely spaced than average/ideal.

FITTING PROBLEMS (B)

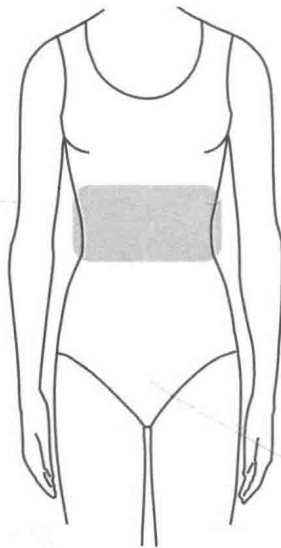
- The bodice is too short between the bust and waist.
- The side darts lie at bust level.
- Tight horizontal wrinkles form just above the waist, pulling the garment waist higher.
- The bodice needs more fabric length between the bust and waist.

READY-TO-WEAR ALTERATION (C)

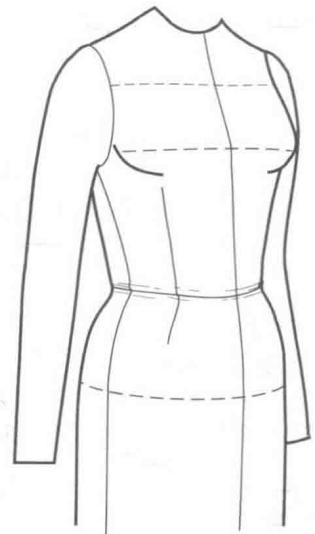
- Release the waist and side seam as needed.
- To lengthen the bodice, lower the waistline evenly.

TRIAL GARMENT ALTERATION (D)

- Slash around the bodice about 2 inches above the waistline.
- Insert and attach a fabric strip to increase length evenly.



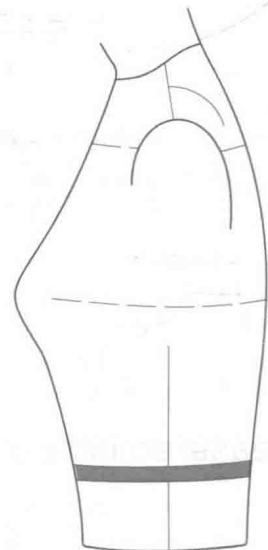
A



B

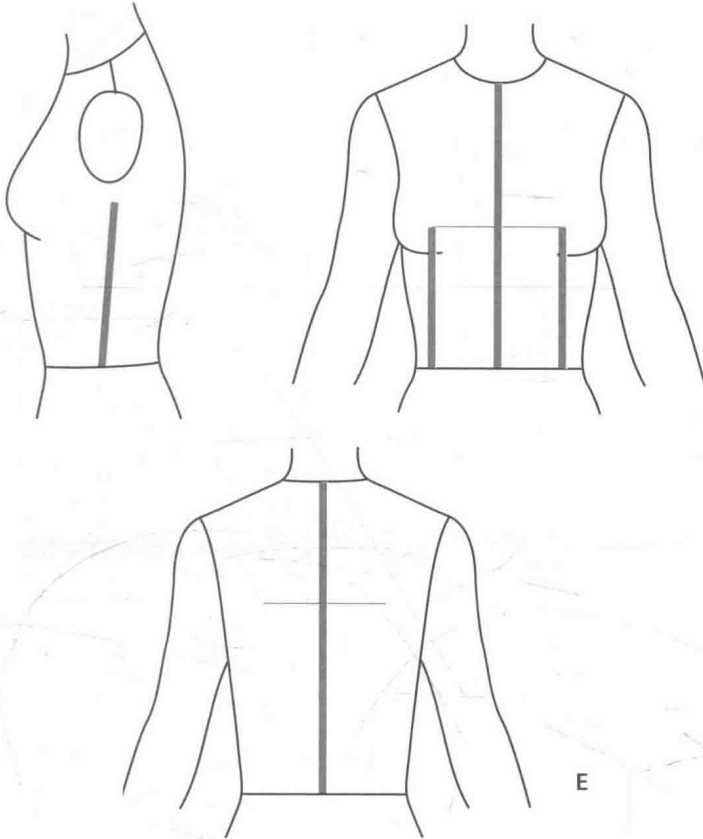


C



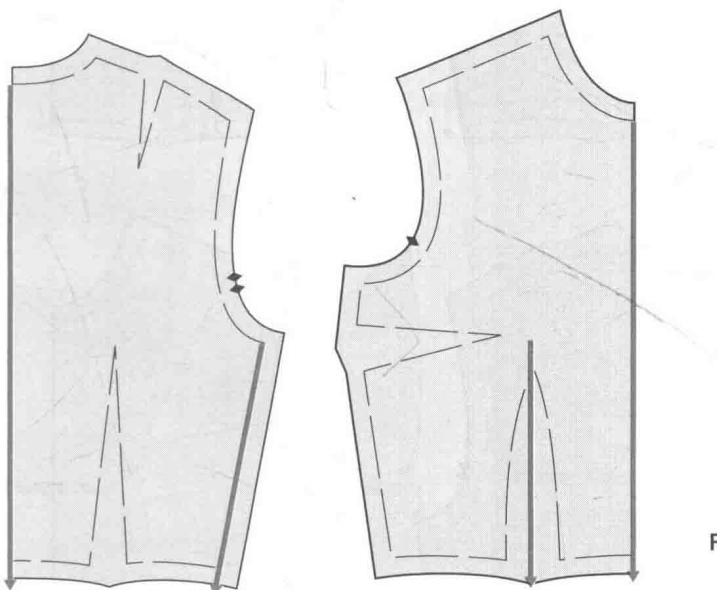
D

1. Longer Lower Rib Cage/Low Waist



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Center front and back, waist to neckline



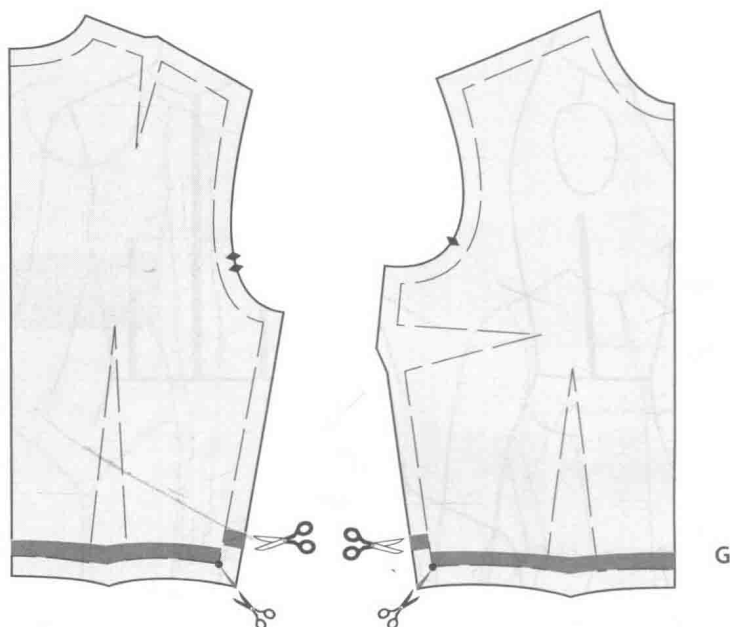
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam too short
- Pattern waist to bust point too short
- Pattern center front and back too short

1. Longer Lower Rib Cage/Low Waist

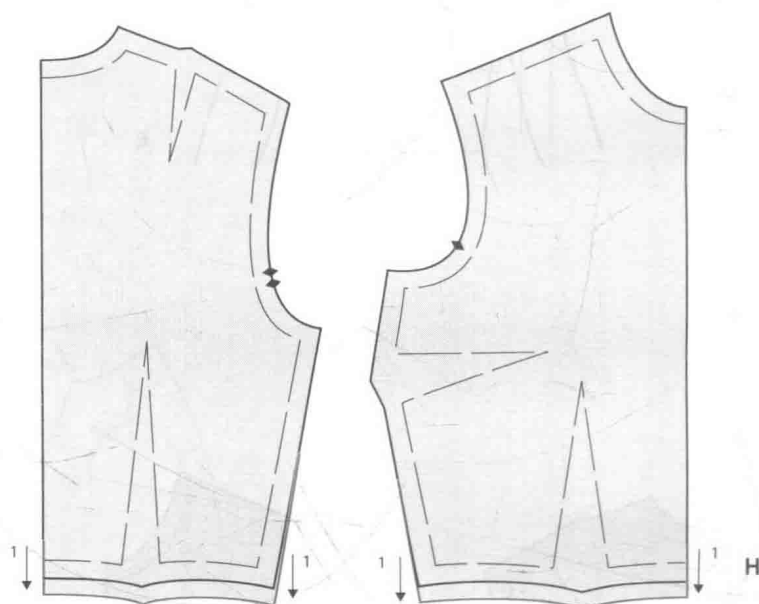
SEAM METHOD (G)

- Cut across side seam allowance and release waistline seam allowance.
- To increase length between bust and waist, lower seam allowance evenly.
- Tape seam allowance in place.
- Restore side seam.



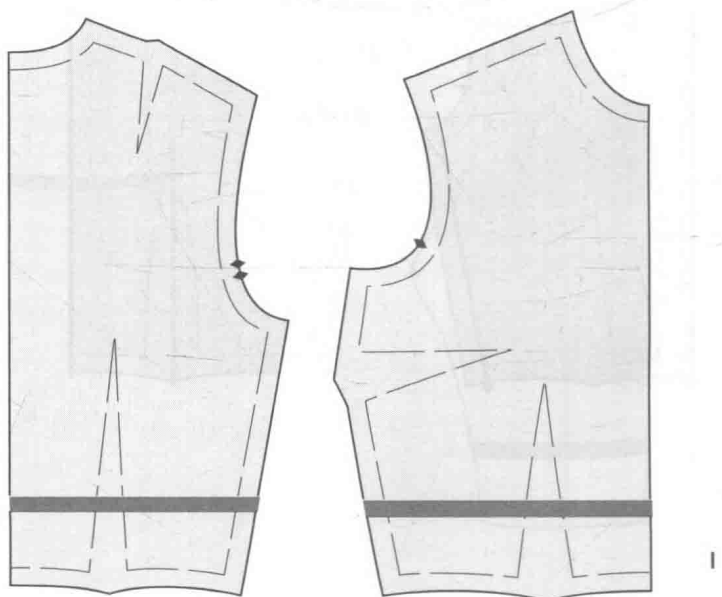
PIVOT/SLIDE METHOD (H)

- Trace pattern waistline and a short distance up side and center onto tissue paper.
- To increase length between bust and waist, slide pattern down evenly.
- Trace new waistline, side, and center lines.
- Restore pattern to its original position.
- Attach pattern to tissue paper.



SLASH METHOD (I)

- Slash across pattern near waistline.
- To increase length between bust and waist, lower waistline section evenly.
- Tape pattern pieces in place.
- Restore side seam.

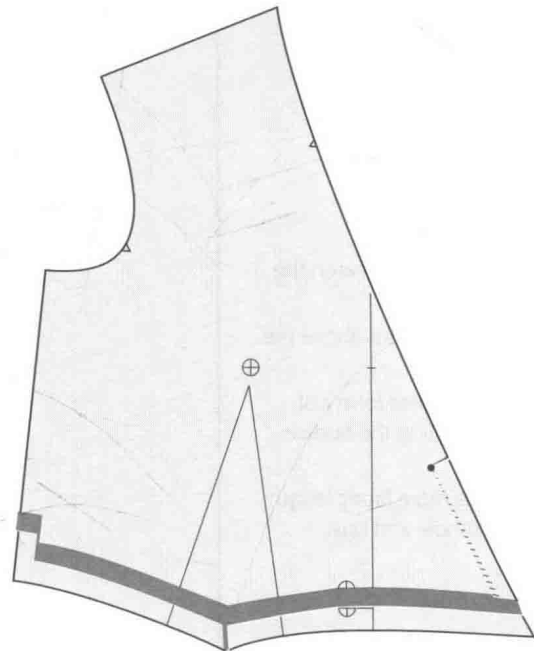


1. Longer Lower Rib Cage/Low Waist

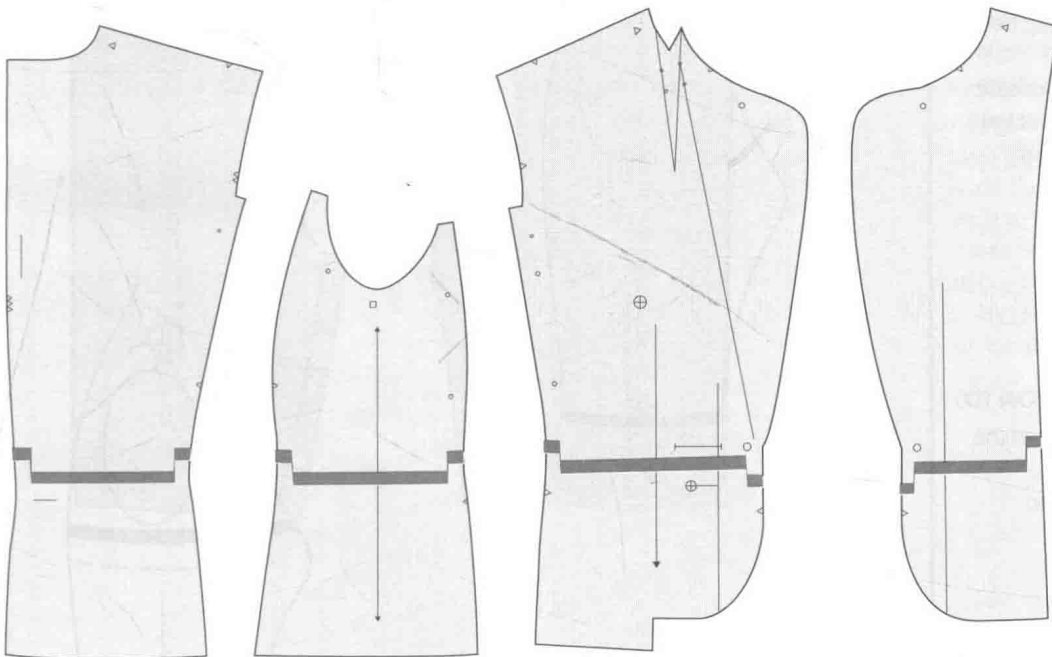
FASHION PATTERNS



Princess—Multi-Size Pattern



Surplice

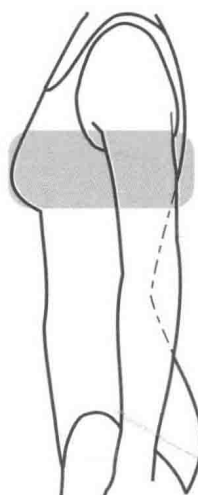


Tailored Jacket

2. Longer Upper Rib Cage/Low Waist

FIGURE EVALUATION (A)

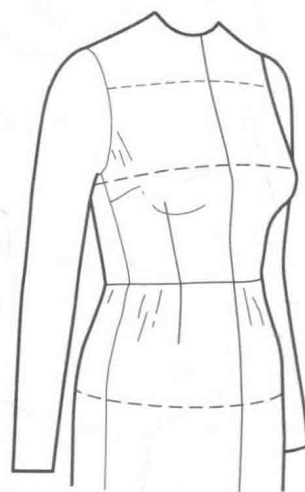
- The body is longer between the arm hinge and the bust than average/ideal.
- The bones forming the rib cage are larger and/or more widely spaced than average/ideal.



A

FITTING PROBLEMS (B)

- The bodice is too short between the armhole and bust.
- The bust dart shaping rises above the crown of the bust.
- Tight horizontal wrinkles form just above the waist, pulling the bodice higher.
- The bodice needs more fabric length between the armhole and bust.

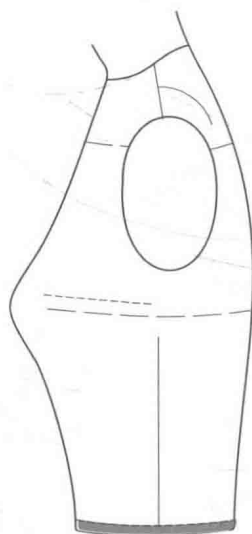


B

READY-TO-WEAR ALTERATION (C)

- Release the waist and side seams as needed.
- Lower the waistline evenly.
- Reposition the side dart shaping below and parallel to the original.

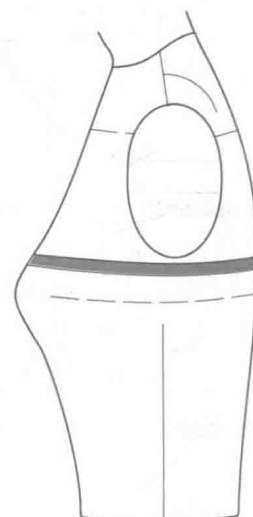
Note: For princess dart shaping, release the seam over the bust and let out the side panel to adjust the level of the shaping.



C

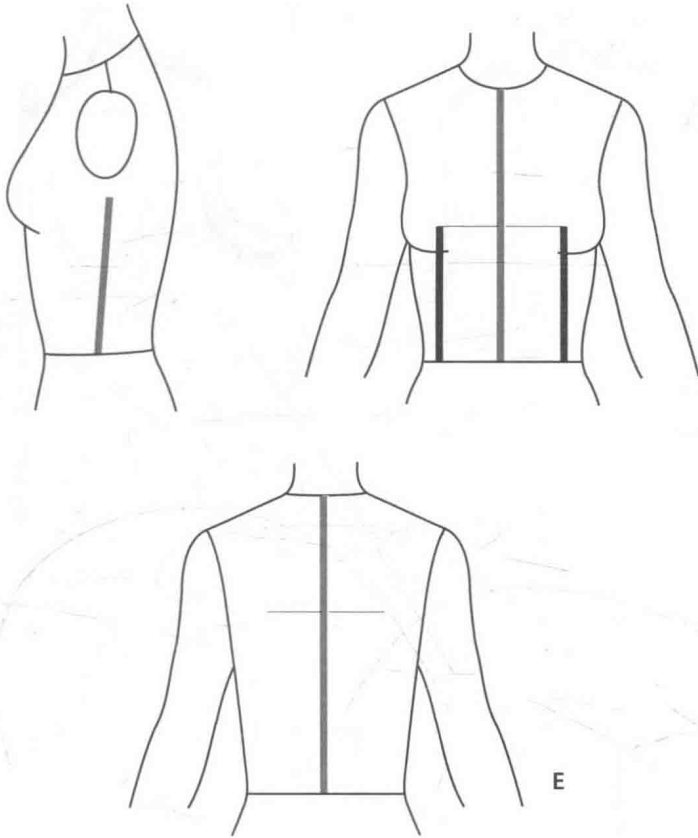
TRIAL GARMENT ALTERATION (D)

- Slash around the bodice between the armhole and bust.
- Insert and attach a fabric strip to increase length evenly.



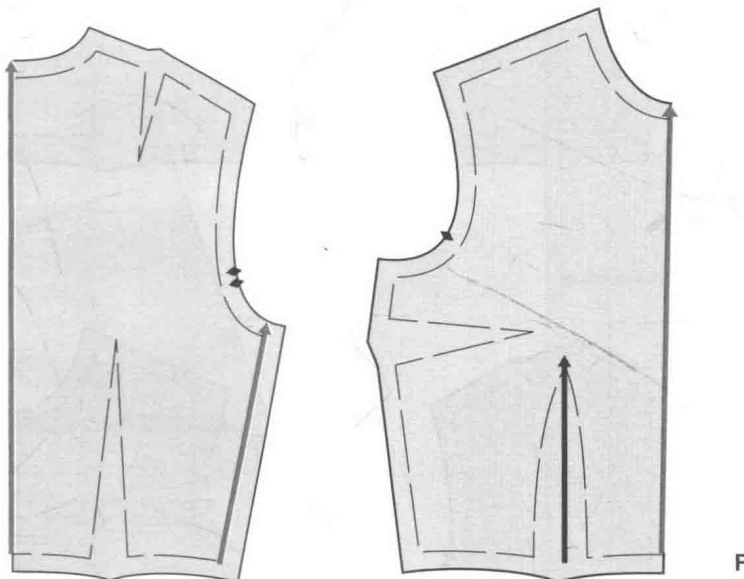
D

2. Longer Upper Rib Cage/Low Waist



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Center front and back, waistline to neckline



PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length too short
- Pattern bust height correct
- Pattern bust to armhole too short
- Pattern center front and back too short

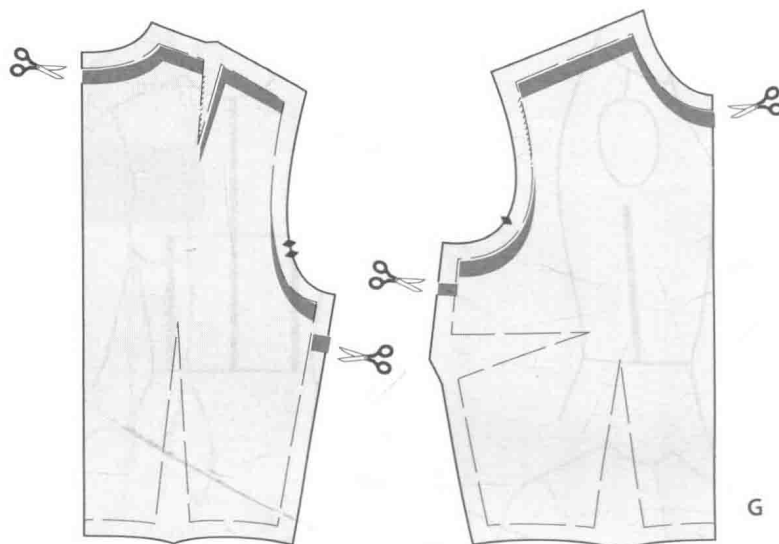
Note 1: If the pattern side seam length is too short but both the centers and waist to bust point are correct, see #7 Square Shoulders.

Note 2: If the pattern side seam length is correct but the full bodice and center front are too short, see #33 Prominent Bust.

2. Longer Upper Rib Cage/Low Waist

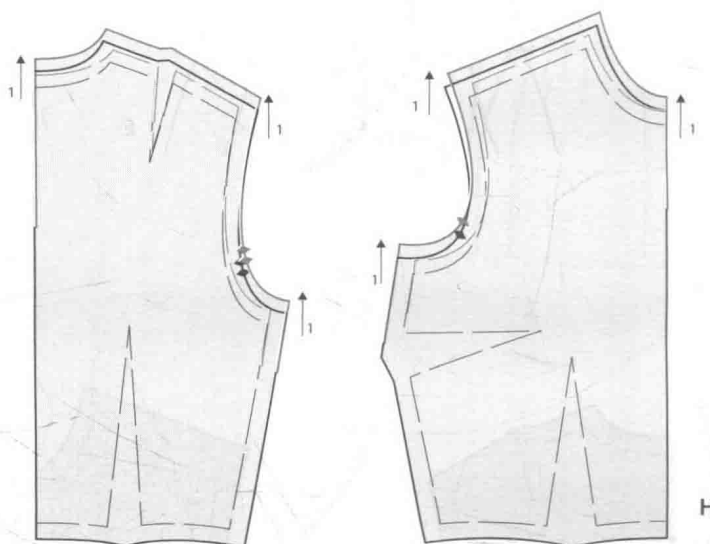
SEAM METHOD (G)

- Cut across side seam allowance and release armhole, shoulder, and neckline seam allowances.
- To increase length above the bust, raise armhole, shoulder, and neckline seam allowances evenly.
- Tape seam allowances in place.
- Restore side seam.



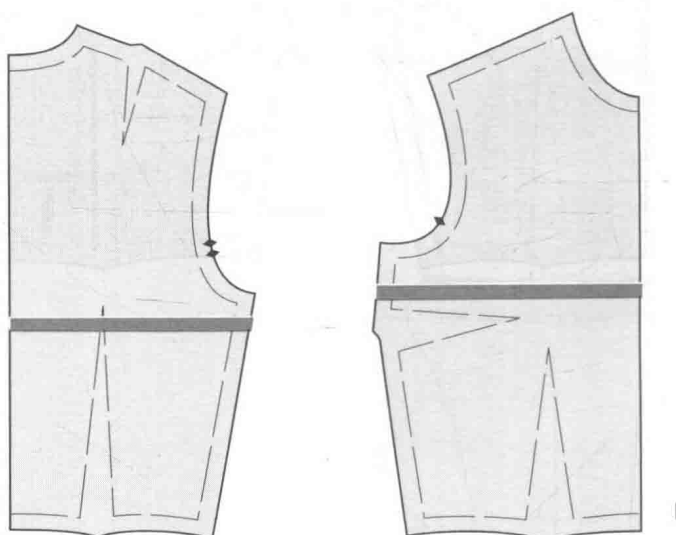
PIVOT/SLIDE METHOD (H)

- Trace pattern neckline, shoulder, armhole, and a short distance down side and center on tissue paper.
- To increase length between armhole and bust, slide pattern up evenly.
- Trace new neckline, shoulder, armhole, and side lines.
- Restore pattern to its original position.
- Tape tracing in place.



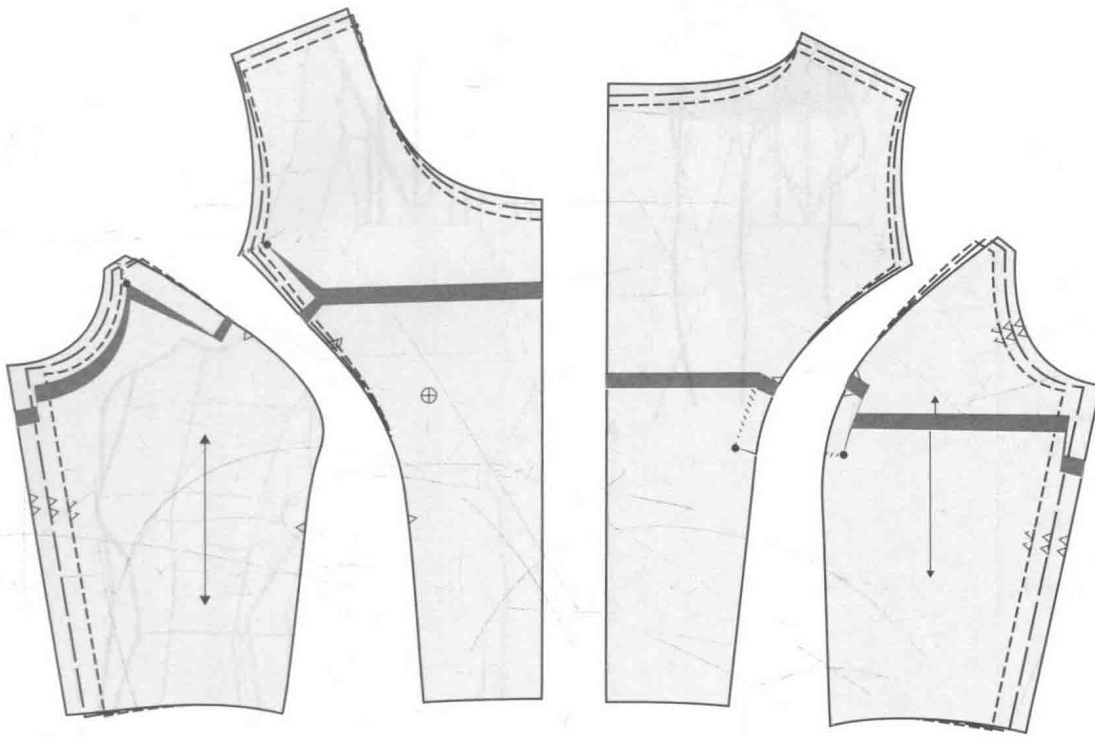
SLASH METHOD (I)

- Slash across the pattern between armhole and bust dart.
- To increase length between the armhole and bust dart, lower bust section evenly.
- Tape pattern pieces in place.
- Restore side seam.

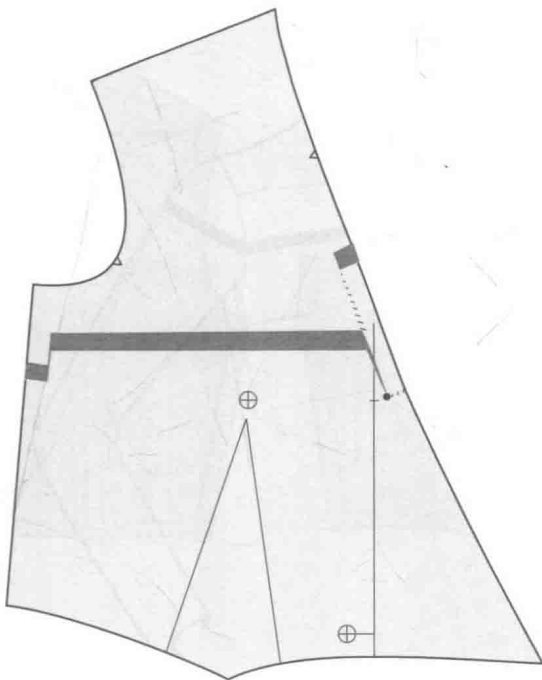


2. Longer Upper Rib Cage/Low Waist

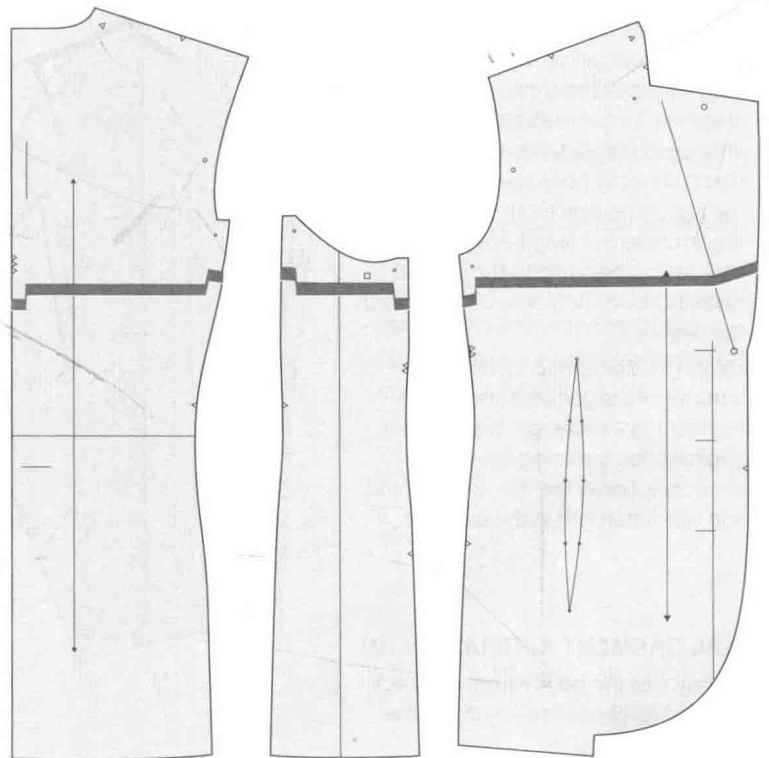
FASHION PATTERNS



Princess—Multi-Size Pattern



Surplice



Tailored Jacket

3. Longer Shoulder Joint/Low Waist

FIGURE EVALUATION (A)

- The body is longer between the shoulder and arm hinge than average/ideal.
- The bones that form the shoulder joint are larger or longer than average/ideal.
- The flesh that forms the arm hinge may be fuller than average at the arm joint.

FITTING PROBLEMS (B)

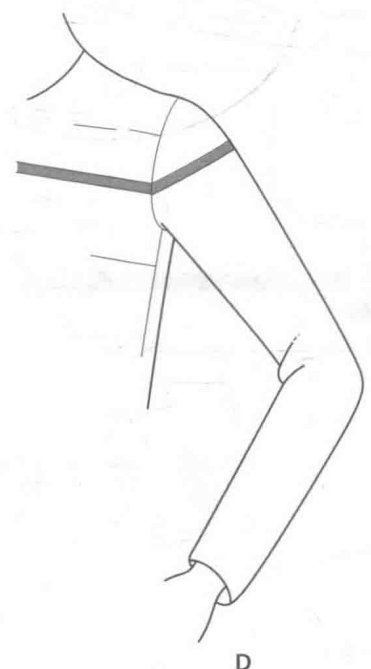
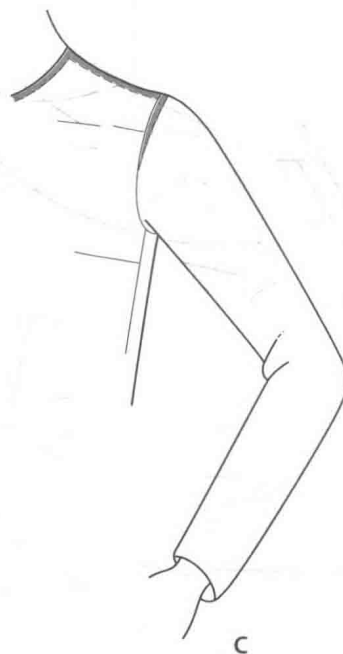
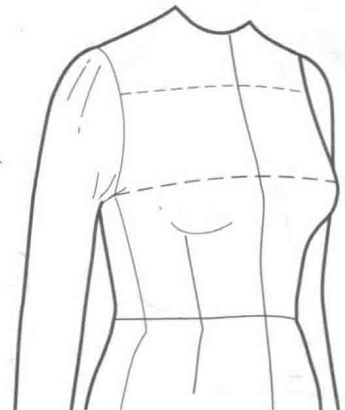
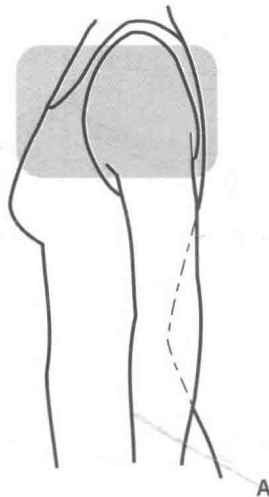
- The bodice is too short between the shoulder and the arm hinge.
- Wrinkles radiate from the top of the sleeve cap down toward the armhole front and back.
- The bodice armhole is too short/high, binding up against the arm hinge.
- The dart shaping rises above the crown of the bust.
- The bodice waistline rises above the body waistline and is therefore tight.
- The armhole, chest, and upper back need more fabric length.

READY-TO-WEAR ALTERATION (C)

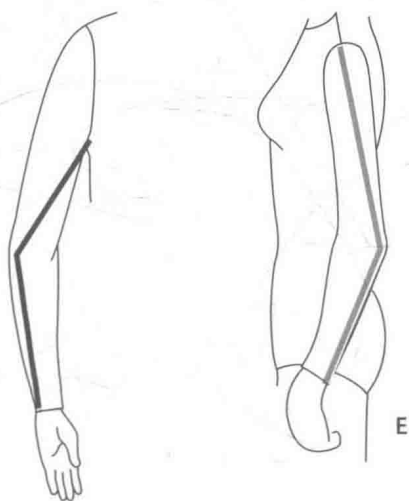
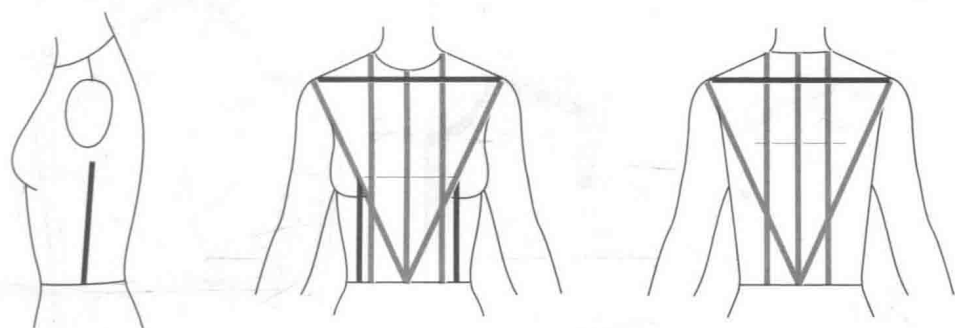
- Option 1: Release the bodice neckline, shoulder, and sleeve seams about midway down the armhole. To lengthen, let out the bodice until the armhole is comfortable and the bust dart is correctly positioned. Lengthen the top of the sleeve cap the amount the armhole was lengthened. Stitch new seams, blending to the original midway down the sleeve cap. Re-attach the sleeves.
- Option 2: To lengthen, lower the armhole of the garment and sleeve by stitching a new seam below the original, then trimming the seam allowance. Lower the dart shaping and add needed length at the waistline.

TRIAL GARMENT ALTERATION (D)

- Slash across the bodice front and back and sleeves about midway down the armhole.
- Insert fabric strips and spread to lengthen the bodice and sleeves evenly.

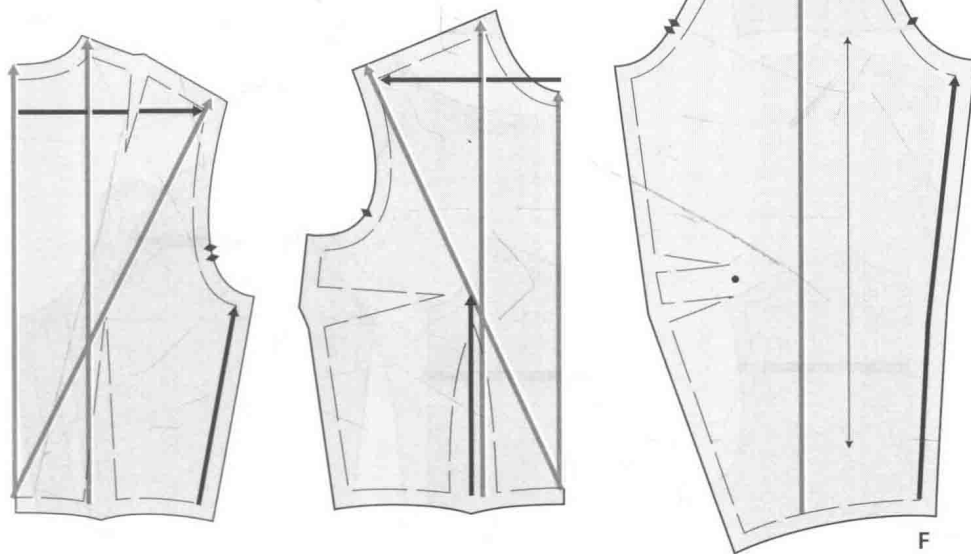


3. Longer Shoulder Joint/Low Waist



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Full bodice front and back, waist to neck at shoulder
- Center front and back, waist to neckline
- Shoulder tip width front and back, center of neck to tip
- Shoulder slope front and back, waist center to shoulder tip
- Underarm, from 1 inch below arm hinge to wrist
- Overarm, wrist to shoulder tip



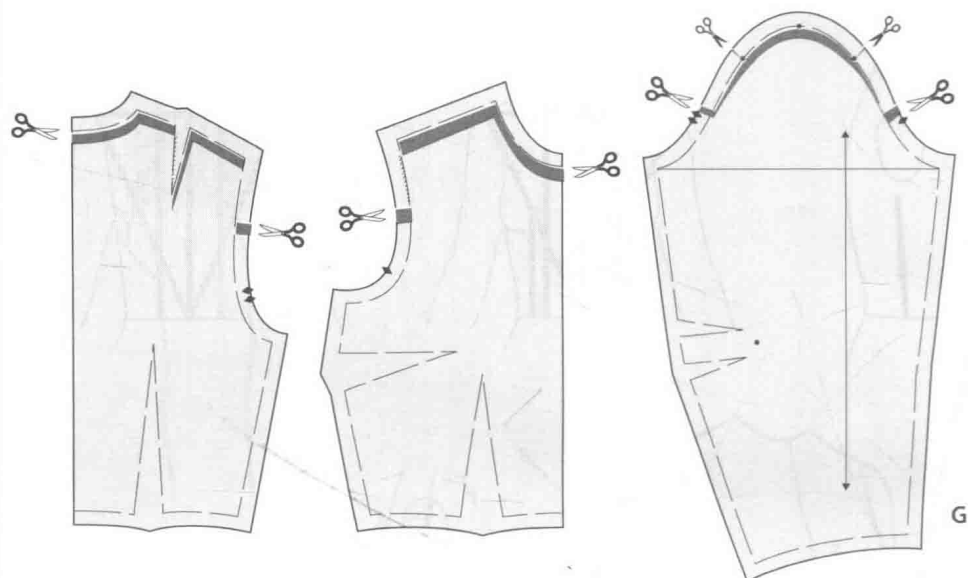
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length and bust height correct
- Pattern full bodice and center lengths too short
- Pattern shoulder tip width correct
- Pattern shoulder slope too short
- Sleeve pattern underarm seam length correct or adjusted
- Sleeve pattern overarm length too short

3. Longer Shoulder Joint/Low Waist

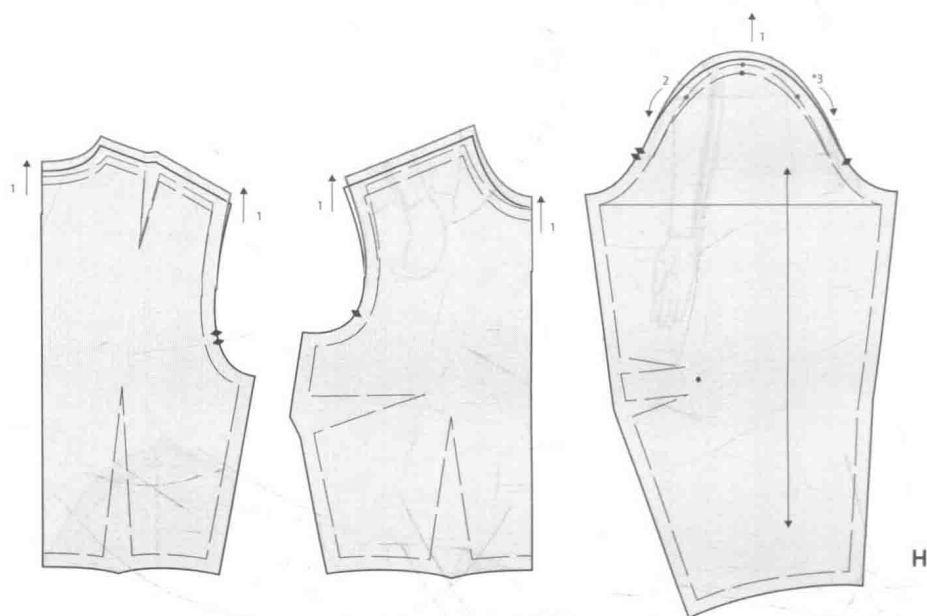
SEAM METHOD (G)

- Cut across armhole seam allowance midway up and release seam allowances of armhole, shoulder, and neckline.
- To increase length, raise neckline, shoulder, and armhole seam allowances evenly.
- Tape seam allowances in place.
- Cut across sleeve cap seam allowance midway down the cap and release seam allowance over the cap.
- Clip hinges.
- To increase length, raise sleeve cap seam allowance the amount the armhole was lengthened.
- Tape seam allowances in place.



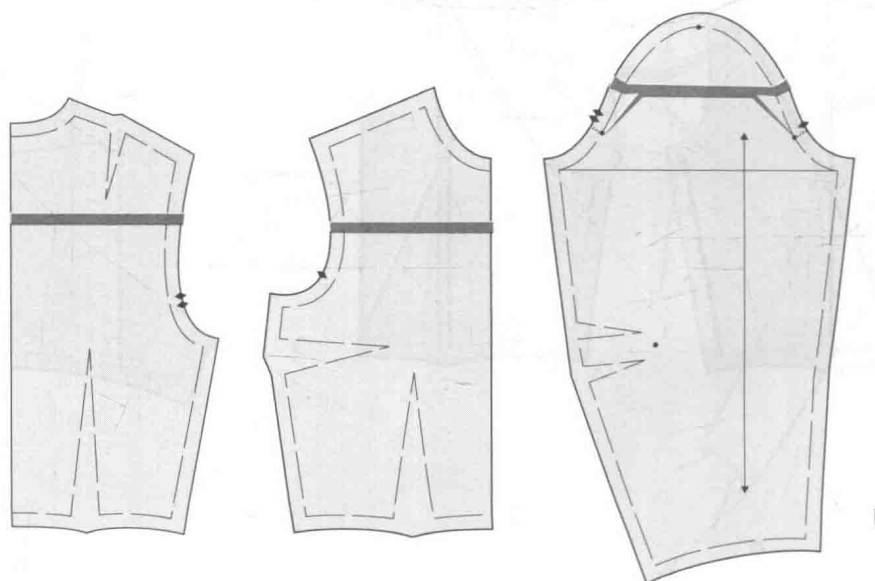
PIVOT/SLIDE METHOD (H)

- Trace bodice neckline, shoulder, and midway down the armhole onto tissue paper.
- To increase length, slide pattern up evenly and trace new neckline, shoulder, and armhole lines.
- Restore pattern to its original position.
- Tape tracing in place.
- Trace sleeve cap above notches onto tissue paper.
- Slide pattern up the amount the armhole was lengthened.
- Pivot and trace to taper into original sleeve caplines.
- Restore pattern to its original position.
- Tape tracing in place.



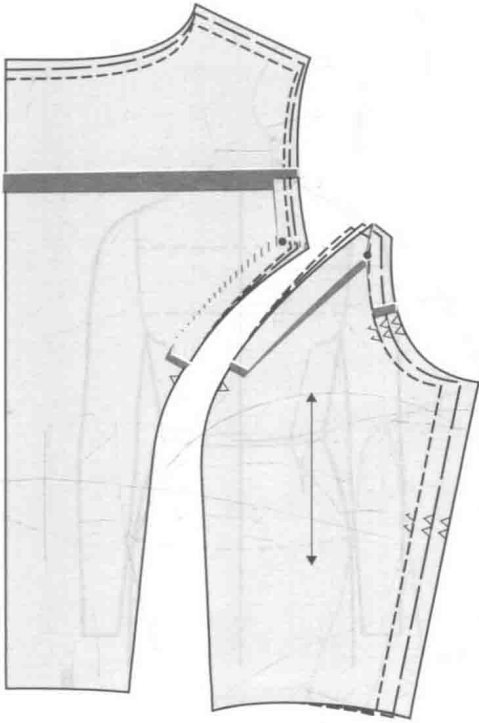
SLASH METHOD (I)

- Slash pattern front and back midway through the armhole.
- Increase length evenly between pattern pieces.
- Tape pattern pieces in place.
- Restore seamlines.
- Slash sleeve cap midway up.
- Clip hinges.
- Increase sleeve cap the amount the armhole was lengthened.
- Align seam allowances
- Tape pattern pieces in place.

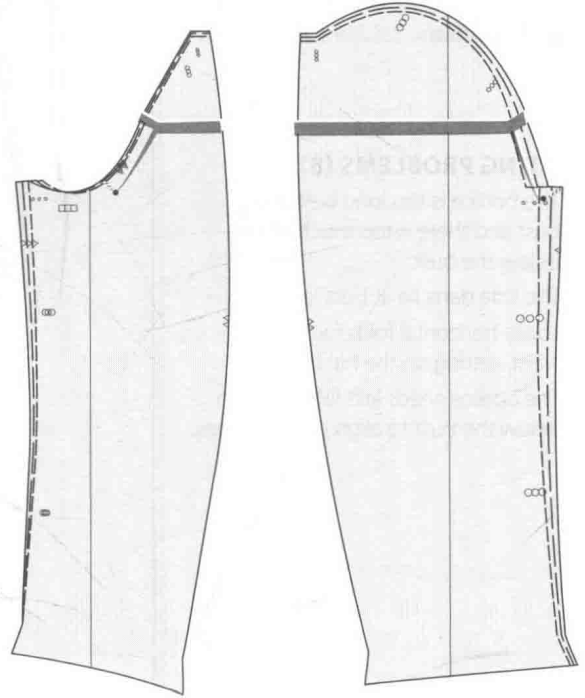


3. Longer Shoulder Joint/Low Waist

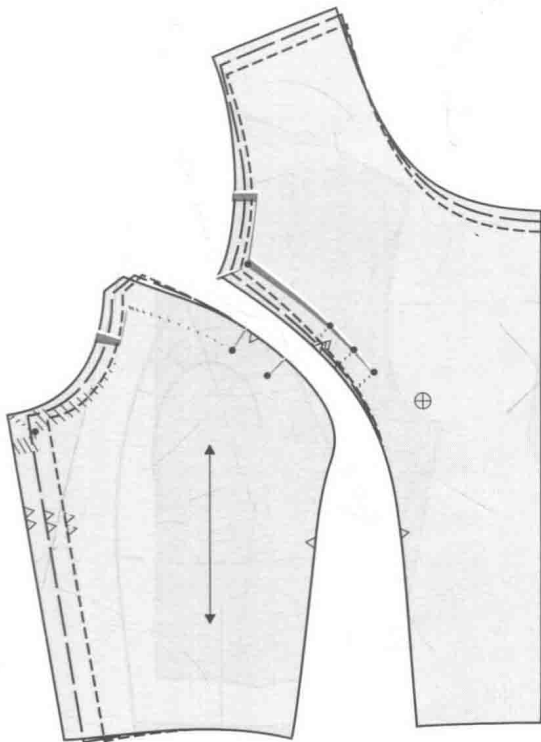
FASHION PATTERNS



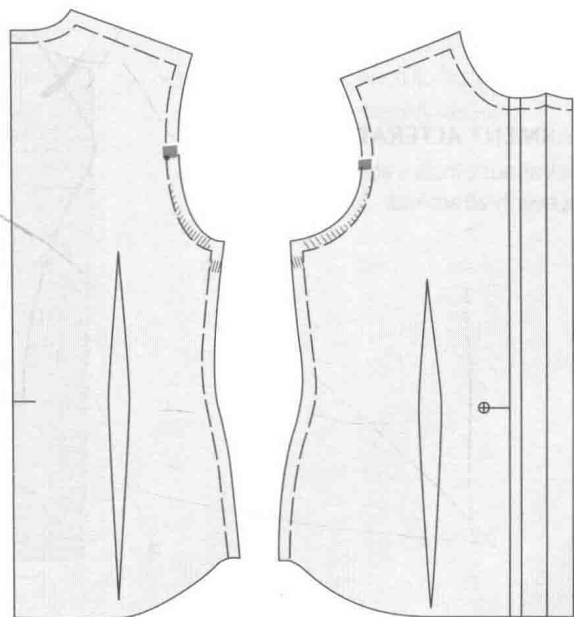
Princess—Multi-Size Pattern



Two-Piece Sleeve



Princess—Multi-Size Pattern Alternative—
Longer Shoulder Joint only

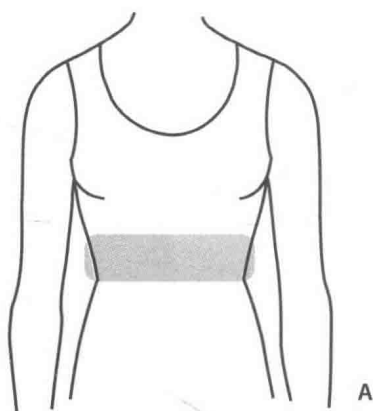


Basic Shirt Alternative—Longer Shoulder Joint only

4. Short Lower Rib Cage/High Waist

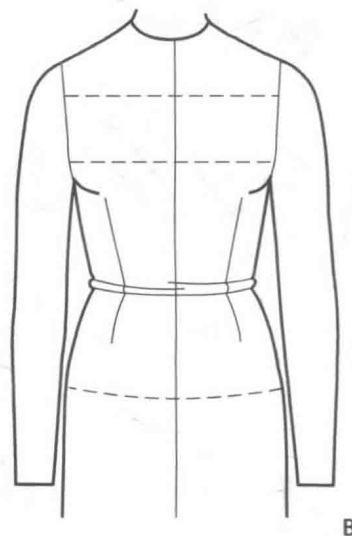
FIGURE EVALUATION (A)

- The body is shorter between the bust and waist than average/ideal.
- The bones forming the rib cage may be smaller and more closely spaced than average/ideal.



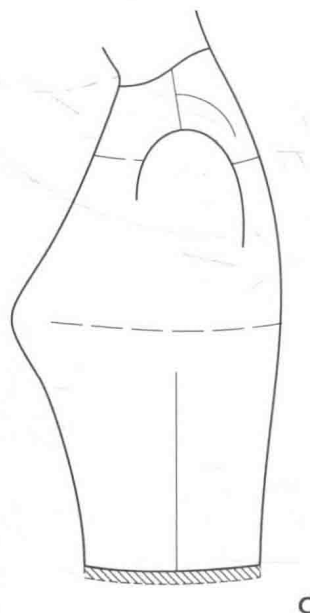
FITTING PROBLEMS (B)

- The bodice is too long below the bust and there is too much fabric below the bust.
- The side darts lie at bust level.
- Loose horizontal folds form at the waist, resting on the hip bones.
- The bodice needs less fabric length below the bust to align the waistlines.



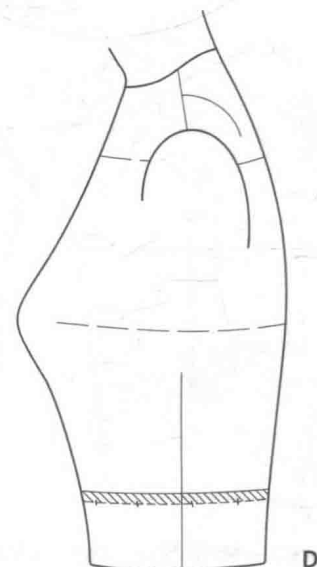
READY-TO-WEAR ALTERATION (C)

- Release the waistline seam and side seam as needed.
- To shorten the bodice, raise the waistline seam evenly.

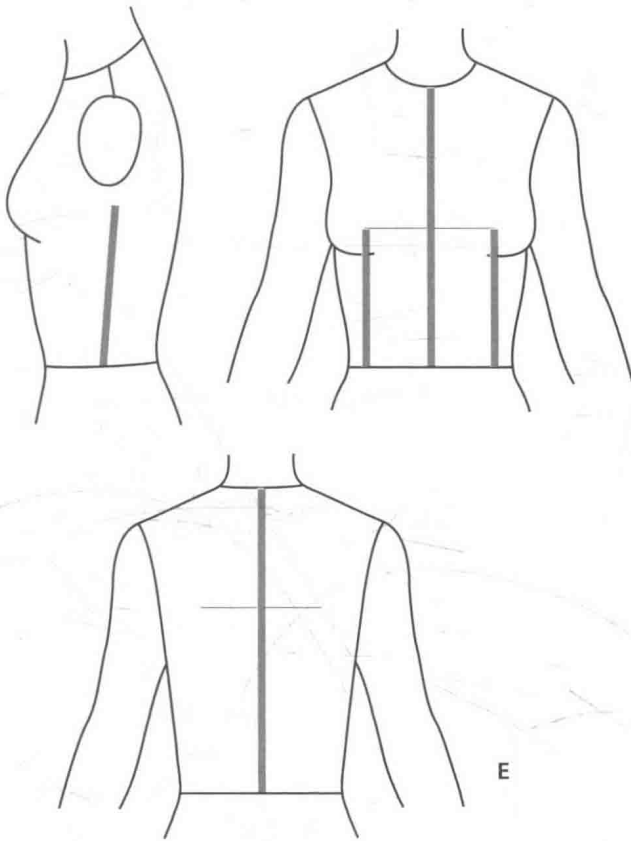


TRIAL GARMENT ALTERATION (D)

- Fold a tuck about 2 inches above the waistline, evenly all around.

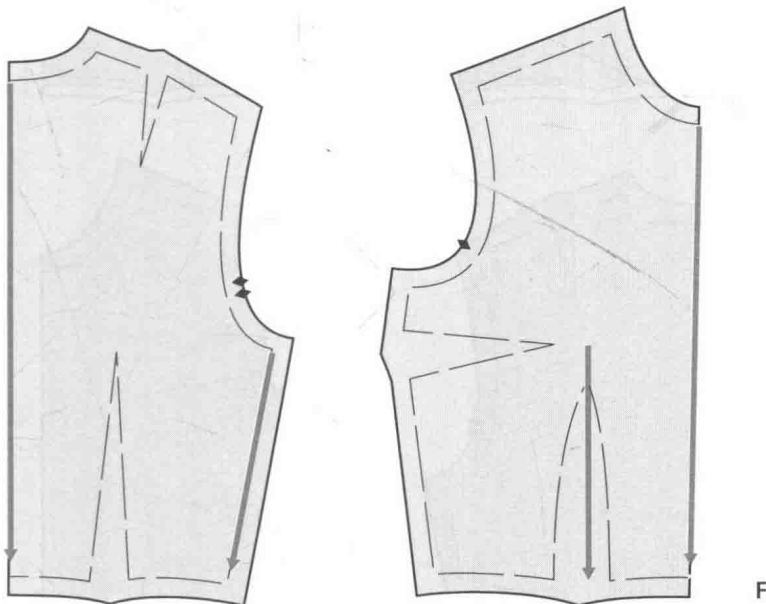


4. Short Lower Rib Cage/High Waist



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Center front and back, waist to neck



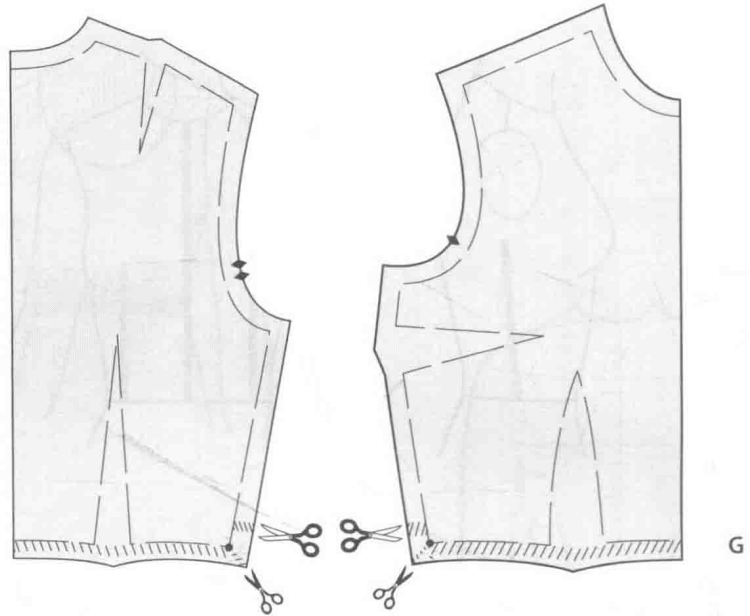
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam too long
- Pattern waist to bust point too long
- Pattern centers too long

4. Short Lower Rib Cage/High Waist

SEAM METHOD (G)

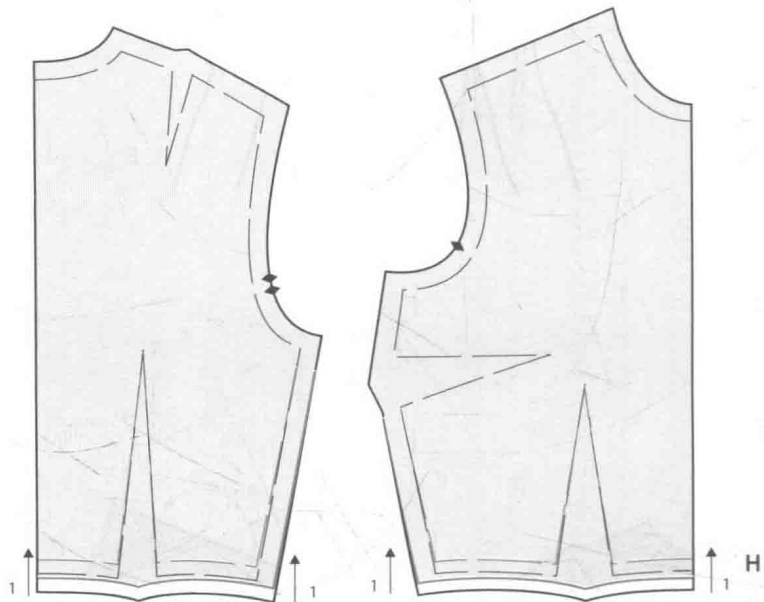
- Cut across side seam allowance and release waistline seam allowance.
- To decrease length evenly, overlap seam allowance on the pattern.
- Tape seam allowances in place.
- Restore side seam.



PIVOT/SLIDE METHOD (H)

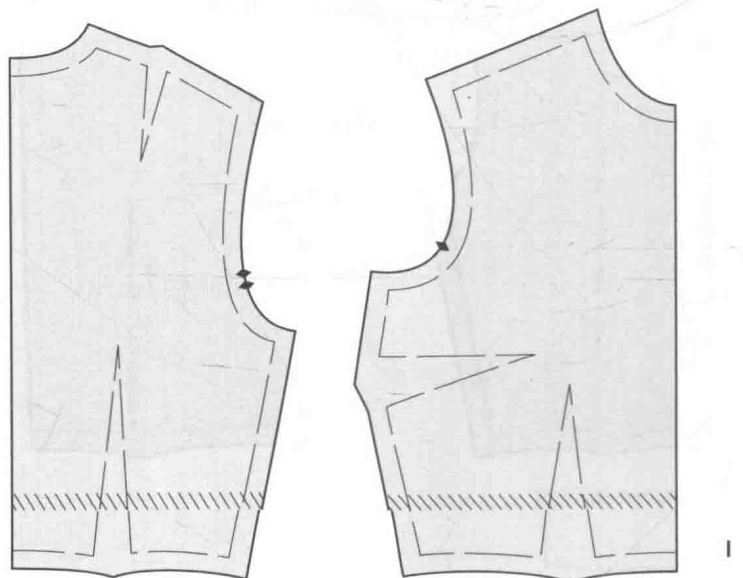
- Trace pattern waistline and a short distance up side and center onto tissue paper.
- To decrease length between waist and bust, slide pattern up evenly.
- Trace new waistline, side, and center lines.
- Restore pattern to its original position.
- Tape tracing in place.

Note: For better visibility, transfer any new lines that are on the tracing to the pattern.



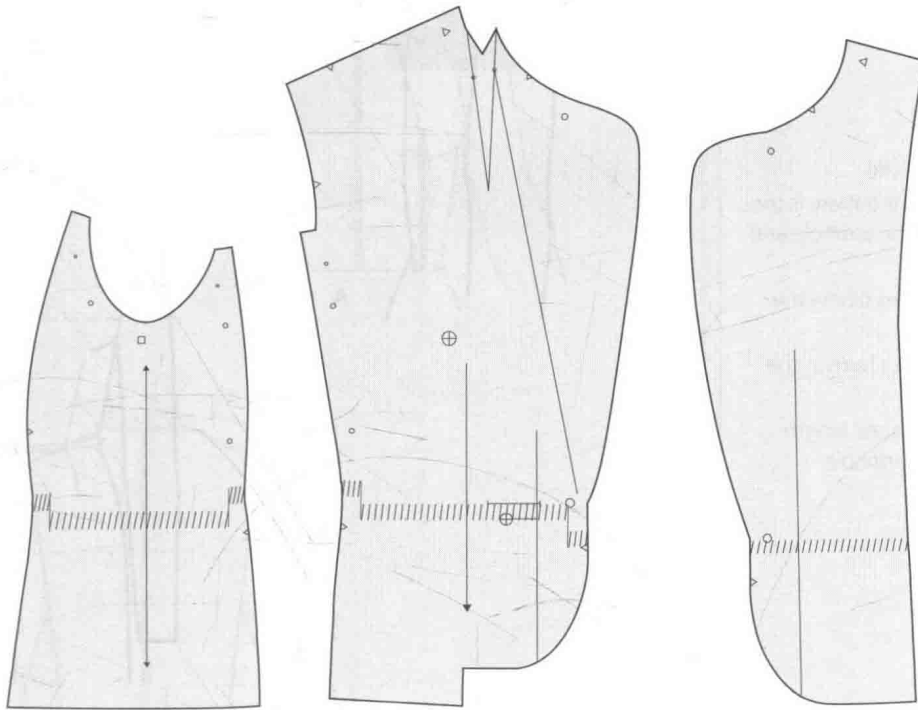
SLASH METHOD (I)

- Slash across the pattern just above waistline.
- To decrease length, overlap area between waist and bust evenly.
- Tape pattern pieces in place.
- Restore side seam.



4. Short Lower Rib Cage/High Waist

FASHION PATTERNS

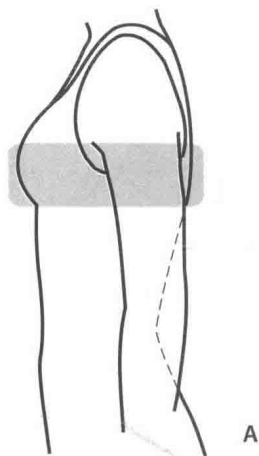


Tailored Jacket

5. Short Upper Rib Cage/High Waist

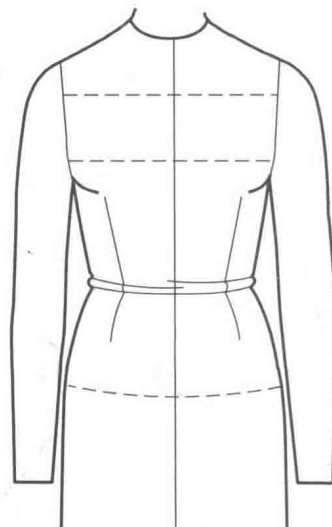
FIGURE EVALUATION (A)

- The body is shorter between the arm hinge and the bust than average/ideal.
- The bones forming the rib cage are shorter or smaller and more closely spaced than average/ideal.



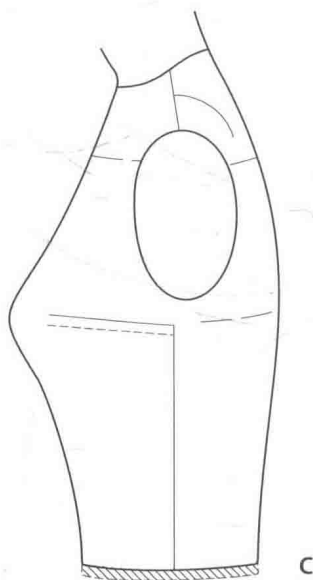
FITTING PROBLEMS (B)

- The bodice is too long and there is too much fabric between the armhole and waistline.
- The bust dart shaping lies below the crown of the bust.
- Loose horizontal wrinkles form at the waistline.
- The bodice needs less fabric length between the bust and armhole.



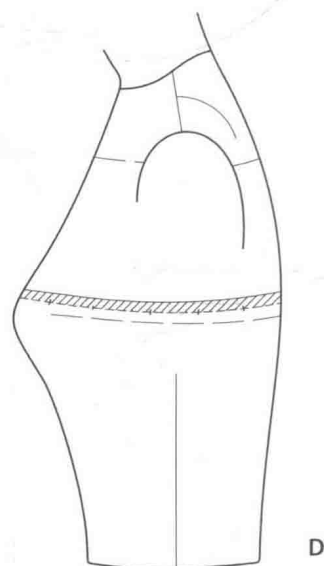
READY-TO-WEAR ALTERATION (C)

- Release the waistline seam and side seam as needed.
- To shorten the bodice, raise the waistline seam evenly.
- Raise the position of the bust dart.

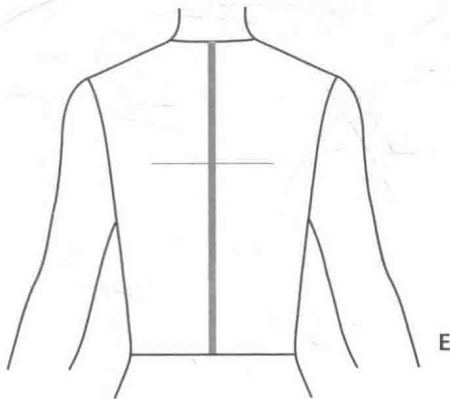
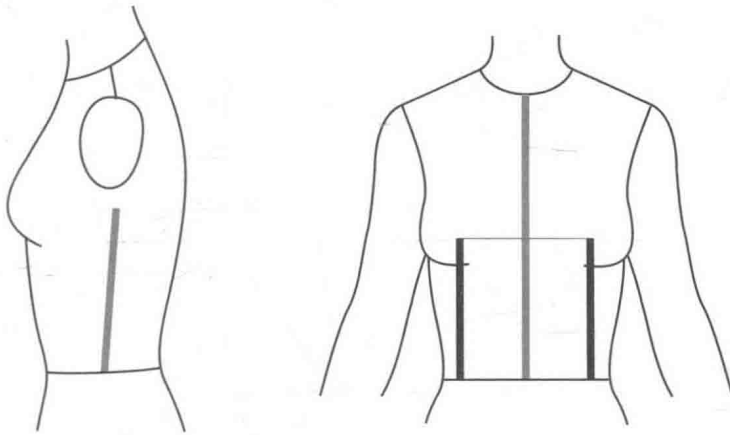


TRIAL GARMENT ALTERATION (D)

- Fold a tuck around the garment between the armhole and the bust to decrease length evenly.

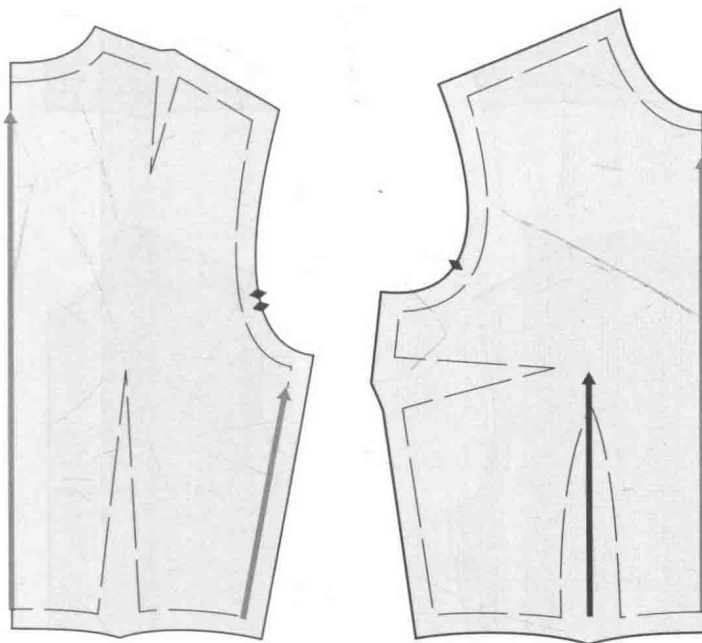


5. Short Upper Rib Cage/High Waist



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Center front and back, waist to neckline



PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length too long
- Pattern bust height correct
- Pattern center lengths too long

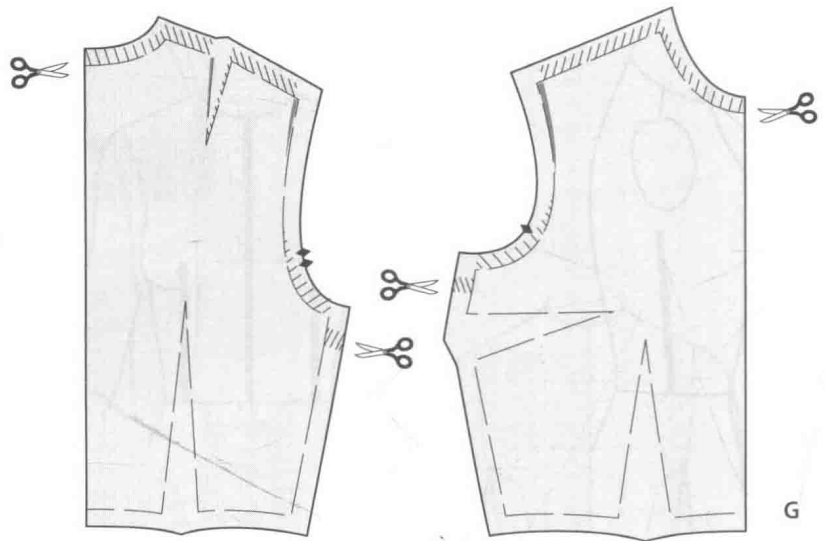
Note 1: If the pattern side seam is too long, but the waist to bust point and centers are correct, see #8 Sloped Shoulders.

Note 2: If the pattern side seam is too long but the front lengths are correct, shorten the back evenly and increase the front side bust dart size.

5. Short Upper Rib Cage/High Waist

SEAM METHOD (G)

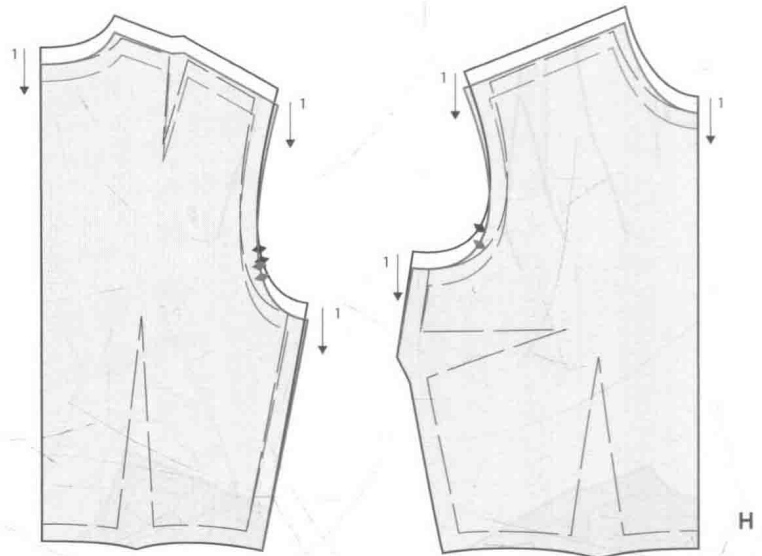
- Cut across side seam allowance and release armhole, shoulder, and neckline seam allowances.
- To decrease length above bust, overlap seams allowances evenly.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

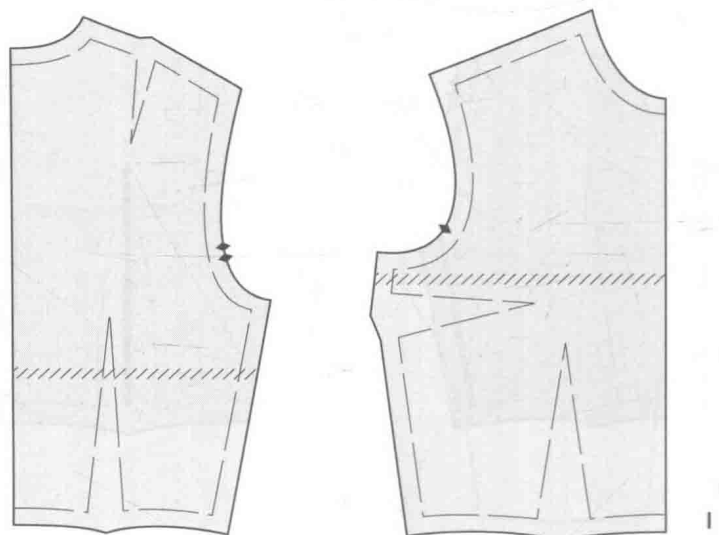
- Trace pattern neckline, shoulder, armhole, and a short distance down side and center onto tissue paper.
- To decrease length, slide pattern down evenly.
- Trace new neckline, shoulder, armhole, and side lines.
- Restore pattern to its original position.
- Tape tracing in place.

Note: For better visibility, transfer any new lines that are on the tracing to the pattern.



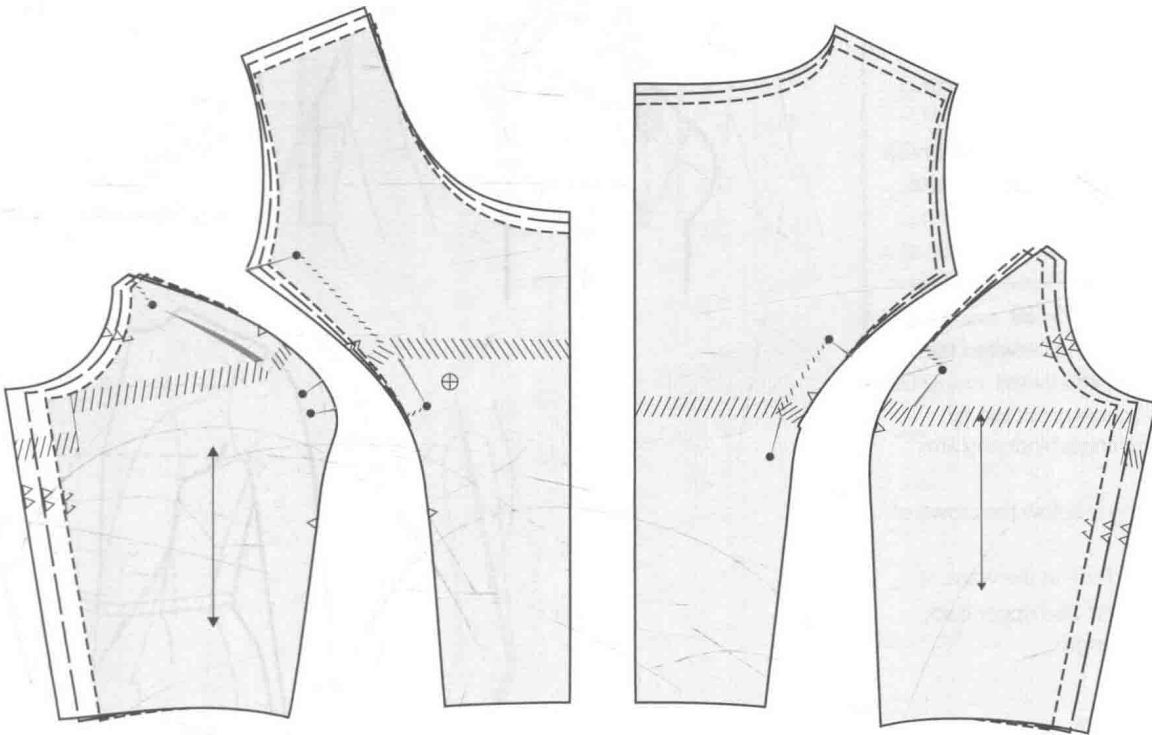
SLASH PATTERN ALTERATION (I)

- Slash across pattern between armhole and bust dart.
- To decrease length, overlap pattern pieces evenly.
- Attach pattern sections together.
- Restore side seam.

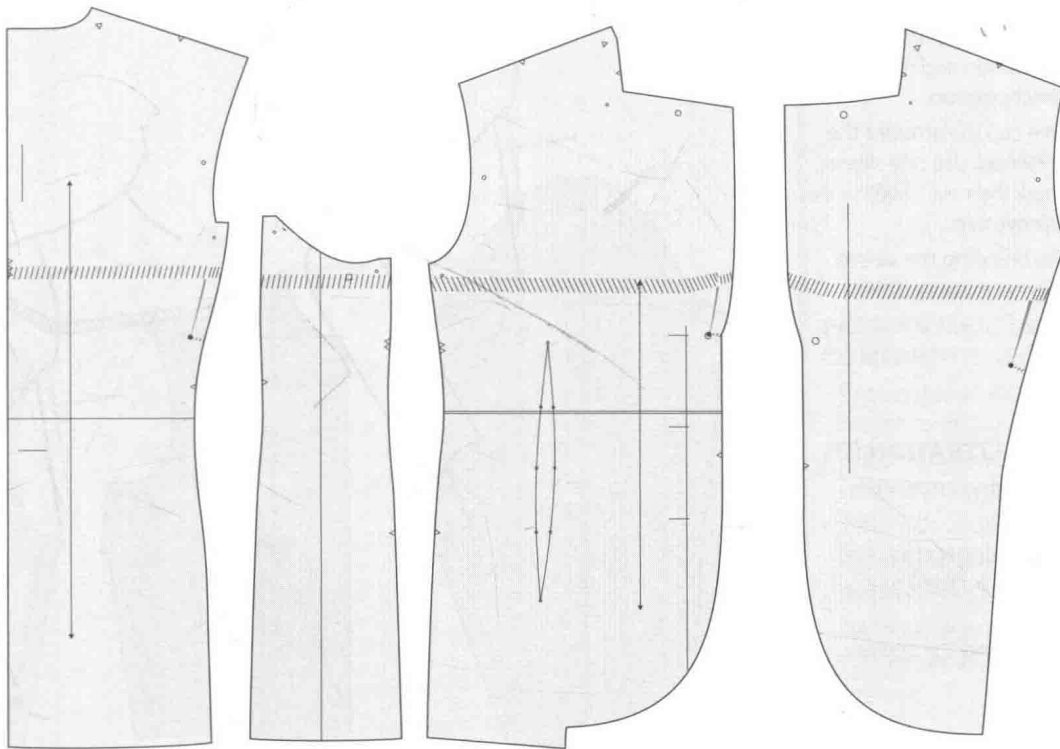


5. Short Upper Rib Cage/High Waist

FASHION PATTERNS



Princess—Multi-Size Pattern

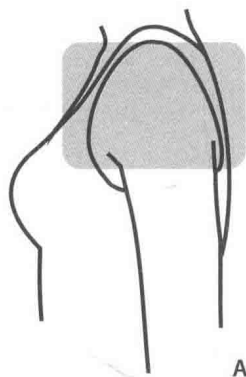


Tailored Jacket

6. Shorter Shoulder Joint/High Waist

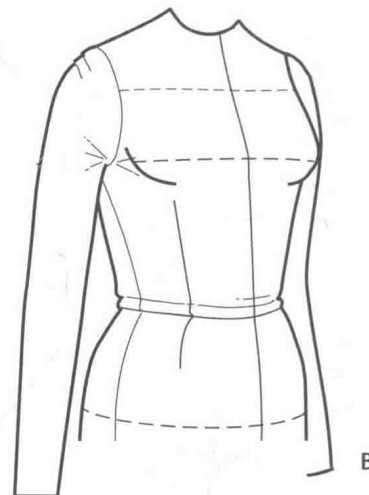
FIGURE EVALUATION (A)

- The body is shorter between the shoulder and arm hinge than average/ideal.
- The bones that form the shoulder/arm joint may be smaller or shorter than average/ideal.
- The flesh that forms the arm hinge may be closer to the bone at the arm joint.



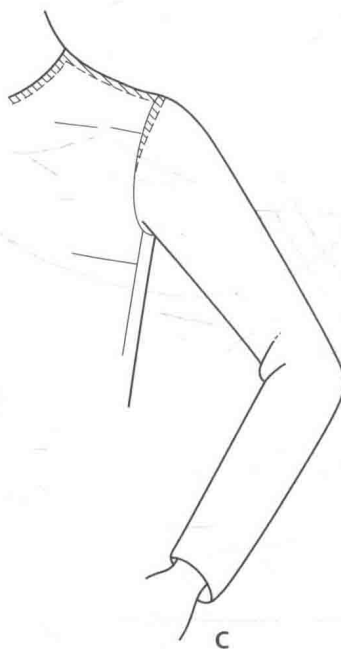
FITTING PROBLEMS (B)

- The bodice is too long between the shoulder and the arm hinge.
- The bodice armhole drops too far below the arm hinge, hindering arm movement.
- The dart shaping is below the crown of the bust.
- Loose folds may form at the waist.
- The armhole, chest, and upper back need less fabric length.



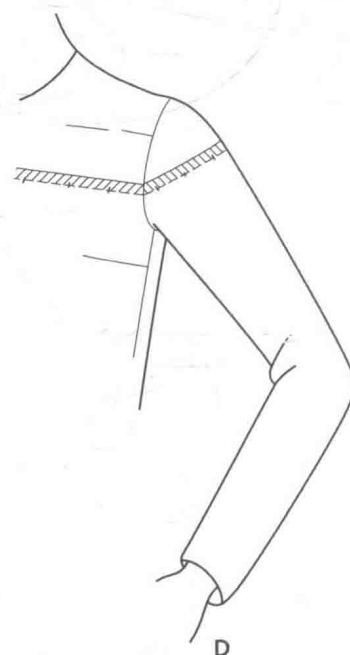
READY-TO-WEAR ALTERATION (C)

- Release the neckline, shoulder, and sleeve seams midway down the armhole.
- Take up the bodice until the armhole is in a comfortable position and the bust dart is in the correct position.
- Shorten the sleeve cap the amount the armhole was shortened. Use one sleeve as a pattern to mark the new lower position on the sleeve cap.
- Stitch new seams, blending the sleeve seam into the original midway down the sleeve cap.

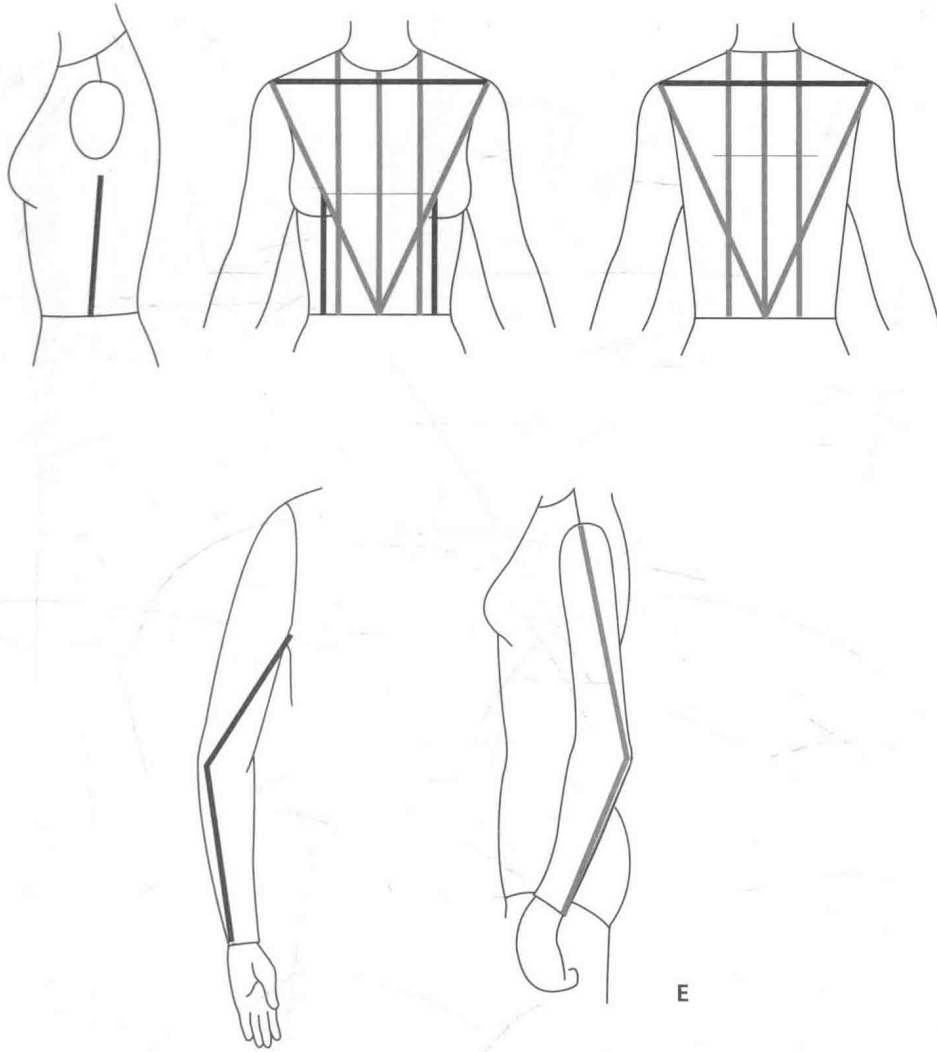


TRIAL GARMENT ALTERATION (D)

- Release the sleeve midway down the sleeve cap.
- Fold a tuck across the upper chest and back until the armhole is raised to a comfortable position.
- Fold a similar tuck around the sleeves.

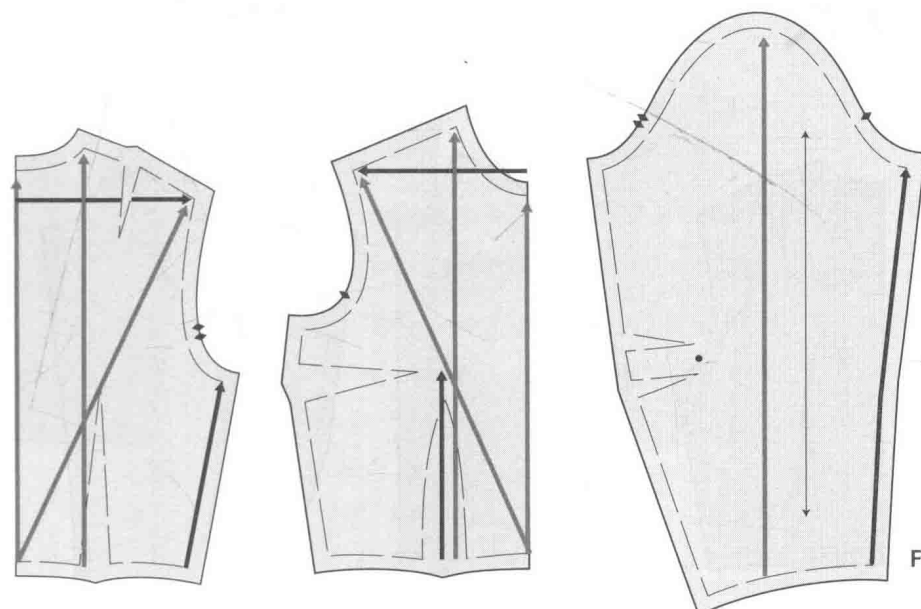


6. Shorter Shoulder Joint/High Waist



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Full bodice front and back, waist to neck at shoulder
- Center front and back, waist to neckline
- Shoulder tip width front and back, center of neck to shoulder tip
- Shoulder slope front and back, waist center to shoulder tip
- Underarm, from 1 inch below arm hinge to wrist
- Overarm, from wrist to shoulder tip



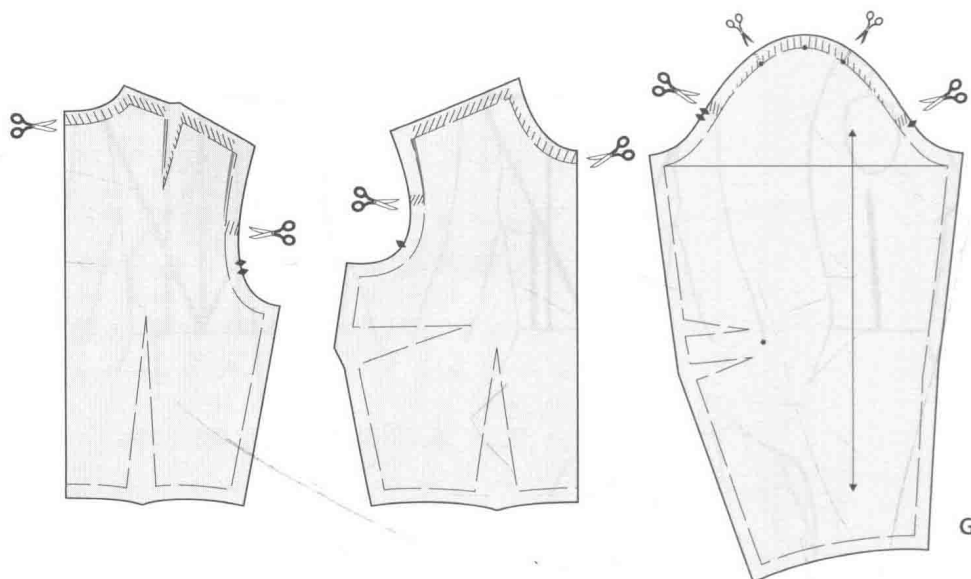
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length and bust height correct
- Pattern full bodice lengths and center lengths too long
- Pattern shoulder tip width correct
- Pattern shoulder slope too long
- Pattern sleeve underarm length correct or adjusted
- Pattern sleeve overarm length too long

6. Shorter Shoulder Joint/High Waist

SEAM METHOD (G)

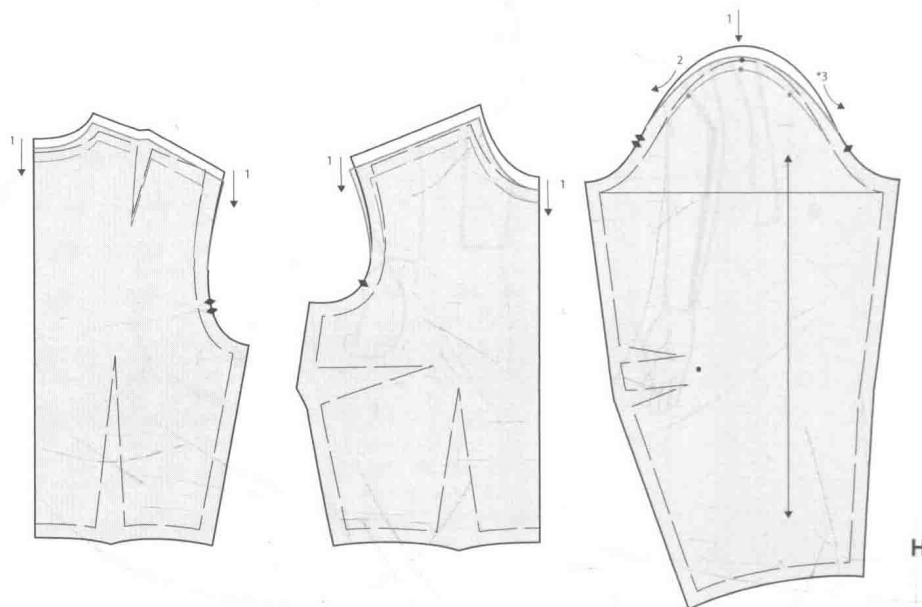
- Cut across armhole seam allowance midway up and release seam allowances of armhole, shoulder, and neckline.
- To decrease length, overlap neckline, shoulder, and armhole seam allowances evenly.
- Tape seam allowances in place.
- Cut across sleeve cap seam allowance midway down the cap and release seam allowance over cap.
- Clip hinges.
- To decrease length, lower sleeve cap seam allowance the amount armhole was shortened.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

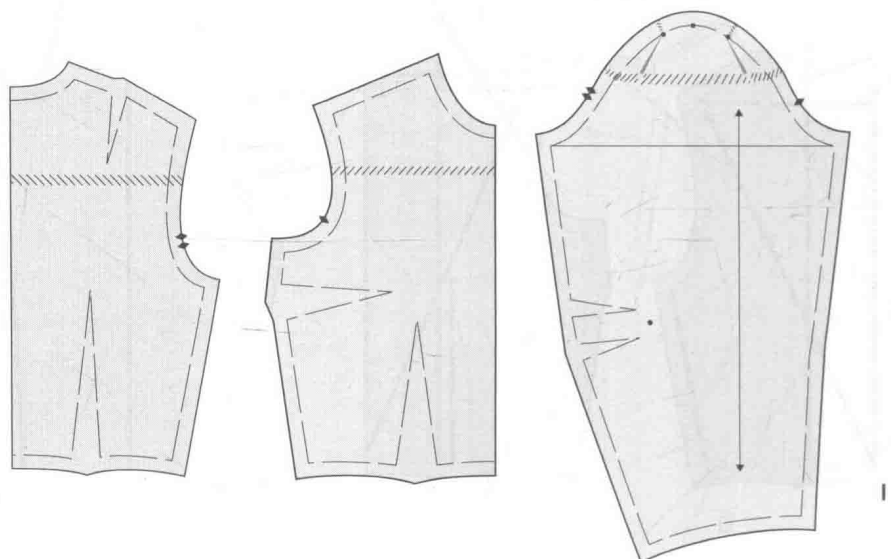
- Trace bodice neckline, shoulder, and midway down the armhole onto tissue paper.
- To decrease length, slide pattern down evenly and trace new neckline, shoulder, and armhole lines.
- Restore pattern to its original position.
- Tape tracing in place.
- Trace the sleeve cap between notches onto tissue paper.
- Slide pattern down the amount the bodice was shortened.
- Pivot and trace to taper into original sleeve caplines.
- Restore pattern to its original position.
- Tape tracing in place.

Note: For better visibility, transfer any new lines that are on the tracing to the pattern.



SLASH METHOD (I)

- Slash the pattern front and back midway through the armhole.
- Overlap pattern sections evenly to decrease length.
- Tape pattern pieces in place.
- Slash sleeve midway up the cap.
- Clip hinges.
- Overlap sleeve cap the amount the armhole was shortened.
- Align seam allowances.
- Tape pattern pieces in place.

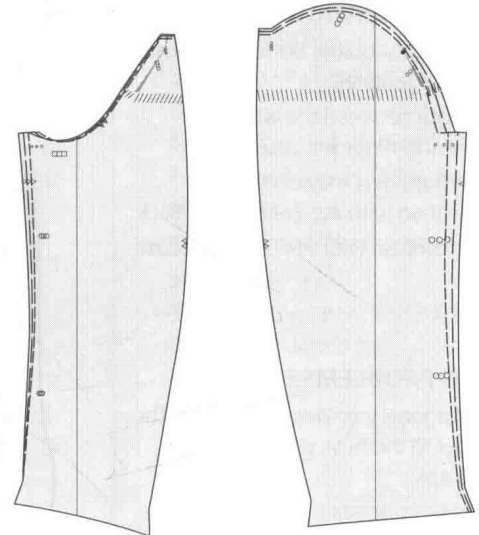


6. Shorter Shoulder Joint/High Waist

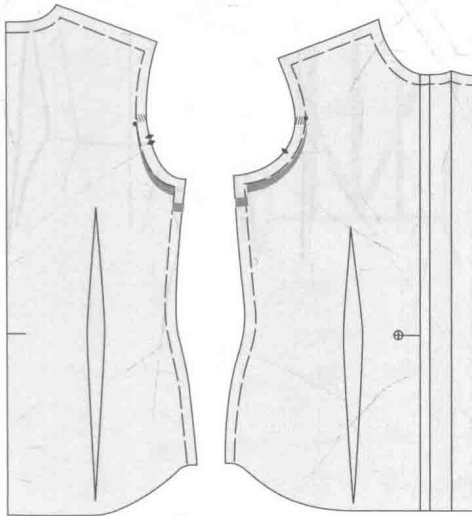
FASHION PATTERNS



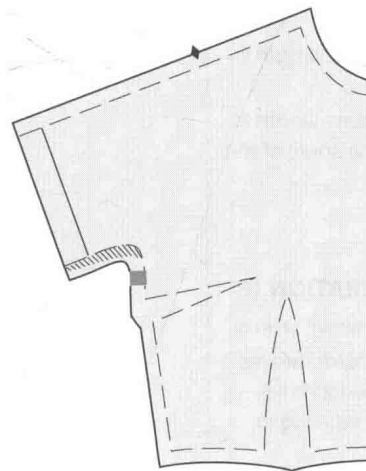
Princess—Multi-Size Pattern



Two-Piece Jacket Sleeve



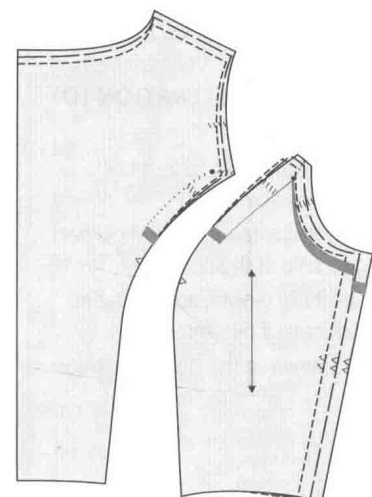
Basic Shirt Alternative—
Shorter Shoulder Joint only



Kimono Alternative—
Shorter Shoulder Joint only



Raglan Alternative—
Shorter Shoulder
Joint only



Princess—Multi-Size Pattern Alternative—
Shorter Shoulder Joint only

7. Square Shoulders

FIGURE EVALUATION (A)

- The collar or shoulder bones slope less than average/ideal.
- The length between the waist and the arm hinge increases.
- Square shoulders may occur in combination with #22 Erect Upper Back.
- Do not confuse with #14 Low Neck Base at Side.

FITTING PROBLEMS (B)

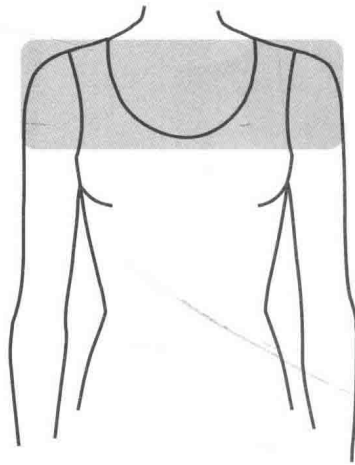
- Tight diagonal wrinkles radiate from the shoulder to the bust, shoulder blade, and biceps.
- The bodice side seam, waist to armhole, is too short.
- The horizontal fitting lines of chest and back rise near the armhole.
- The capline of the sleeve rises at the center and the sleeve may appear too short.
- The bodice needs more fabric length in the side seam.
- The bodice needs more fabric length at the shoulder tip to raise the angle of the shoulder.

READY-TO-WEAR ALTERATION (C)

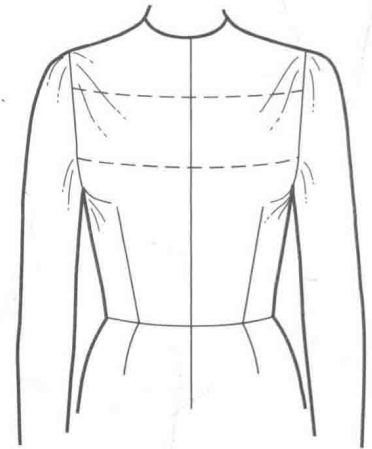
- Release the shoulder and sleeve seams.
- To lengthen, let out the shoulder seams at the tip as able or until the fabric lies smooth over the shoulder, tapering to zero at the neck.
- Raise the armhole the amount the shoulder was let out, increasing the side seam length.
- Re-attach the sleeves at the higher position.

TRIAL GARMENT ALTERATION (D)

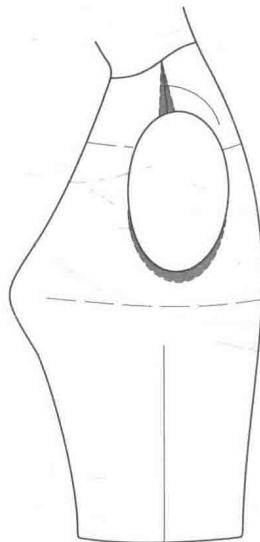
- Remove the sleeves.
- Slash from the armhole to, but not through, the neckline.
- Insert fabric strips to raise the shoulders, tapering to zero at the neckline.
- Restore armhole length, adding fabric at the underarm if needed.
- Re-attach sleeves at the higher position.



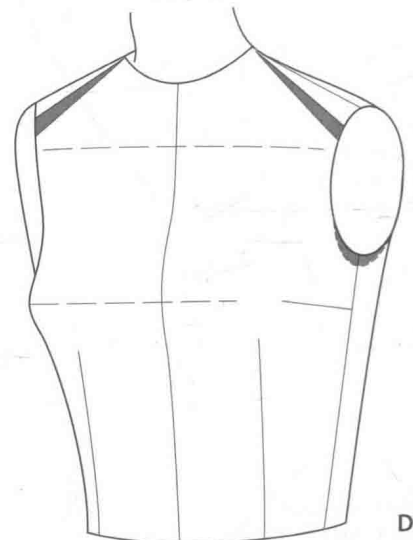
A



B

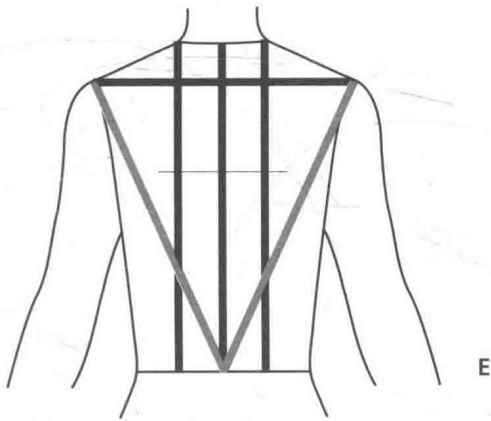
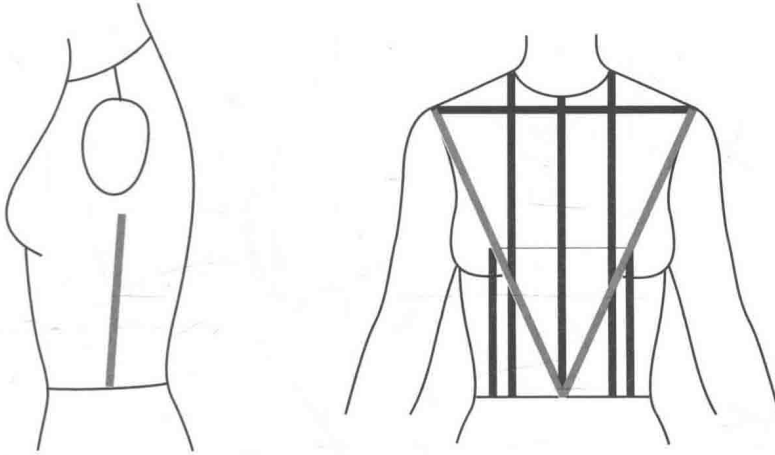


C



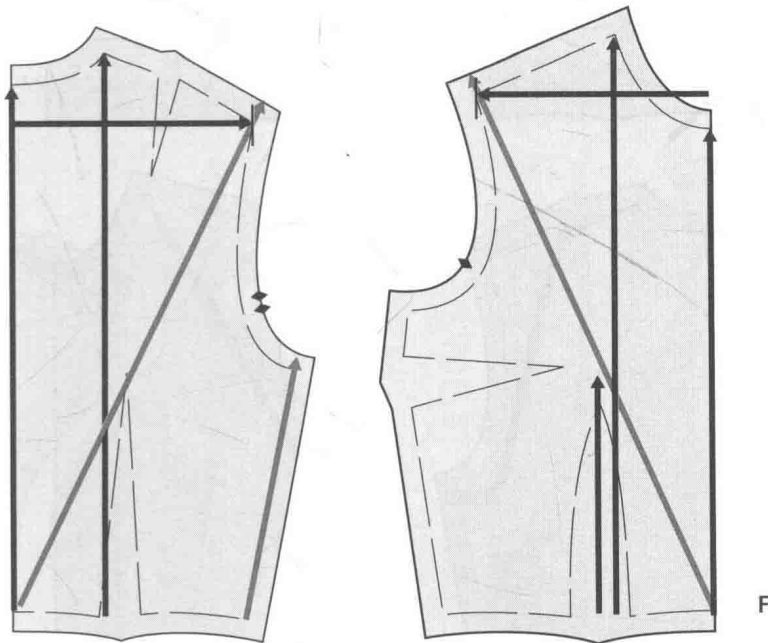
D

7. Square Shoulders



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Full bodice front and back, waist to neck at shoulder
- Center front and back, waist to neckline
- Shoulder tip width
- Shoulder slope front and back, waist center to shoulder tip



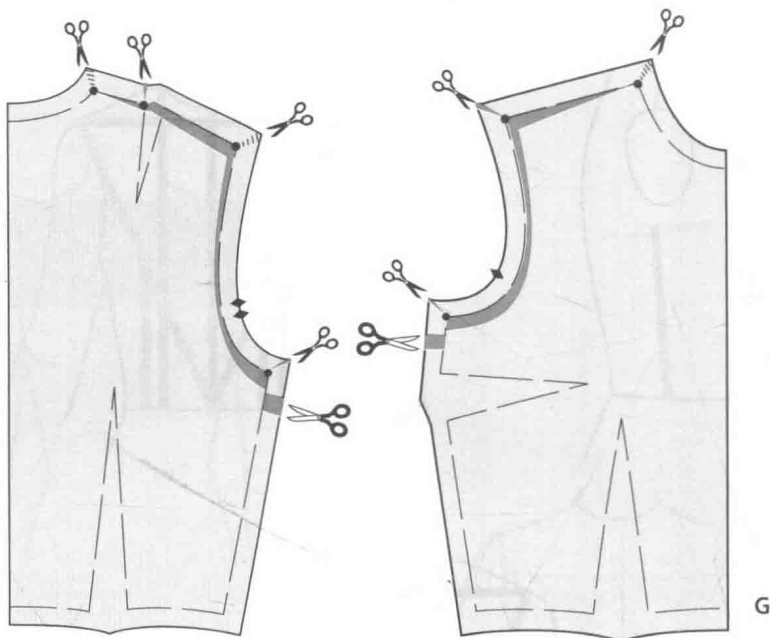
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length too short
- Pattern bust height correct
- Pattern full bodice and center lengths correct
- Pattern shoulder tip width correct or adjusted
- Pattern shoulder slope too short/low

7. Square Shoulders

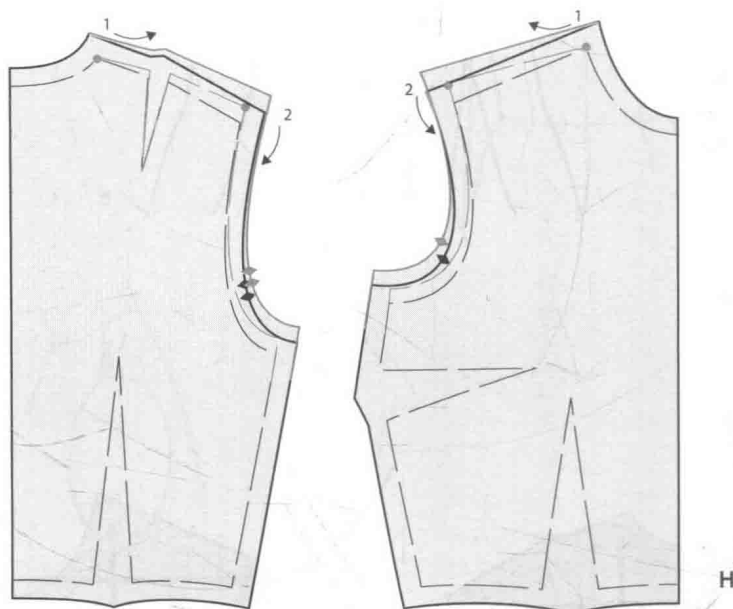
SEAM METHOD (G)

- Cut across side seam allowance and release armhole and shoulder seam allowances to the neckline.
- Clip hinges.
- To increase length between waist and underarm and decrease shoulder slope, raise shoulder and armhole seam allowances.
- Insert tissue paper and align side seam.
- Tape seam allowances in place.
- Restore side seam.



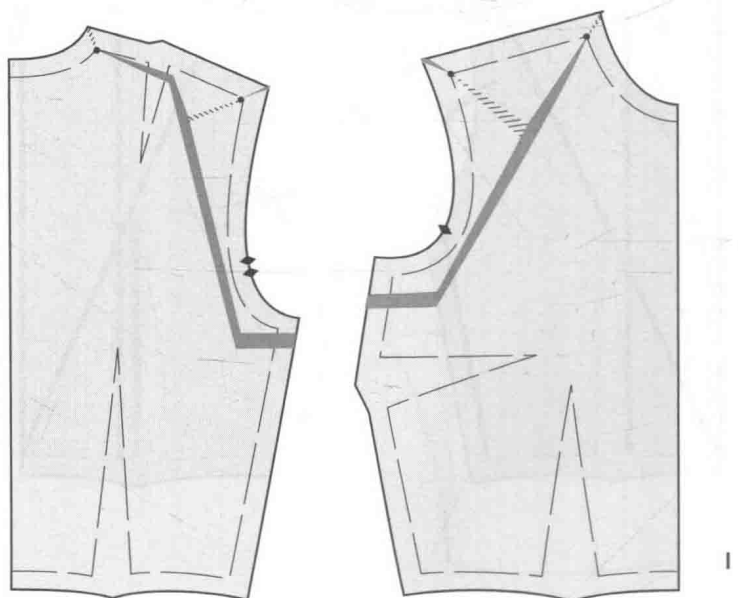
PIVOT/SLIDE METHOD (H)

- Trace pattern shoulder, armhole, and a short distance down the side seam.
- Pivot pattern at neck, upward to raise shoulder tip, then trace.
- Pivot pattern at new shoulder tip, downward to realign armhole at side seam, then trace.
- Restore pattern to original position.
- Tape tracing in place.
- Note: For better visibility, transfer any new lines that are on the tracing to the pattern.



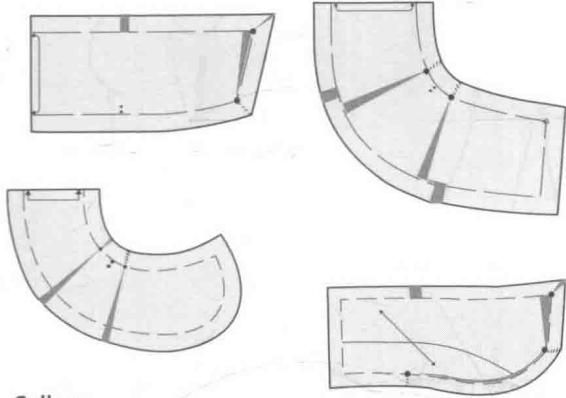
SLASH METHOD (I)

- Slash across side, then up to the shoulder area and across to the neck.
- Clip hinges.
- To increase side seam length and decrease shoulder slope, raise the shoulder and armhole.
- Tape pattern pieces in place.
- Restore side seam.

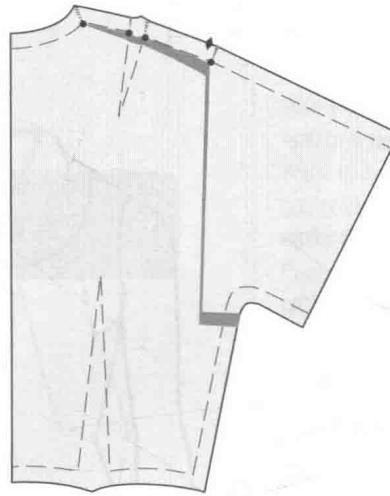


7. Square Shoulders

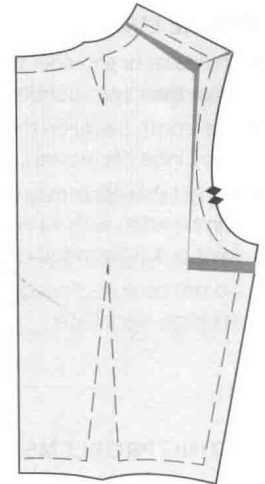
FASHION PATTERNS



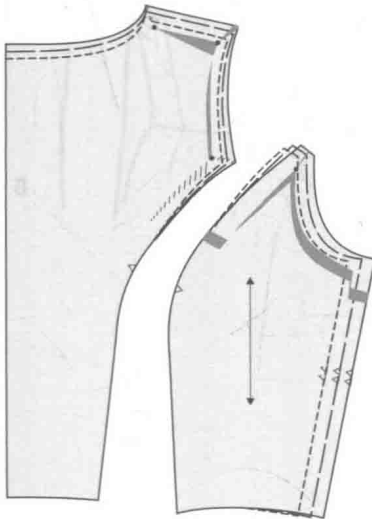
Collars



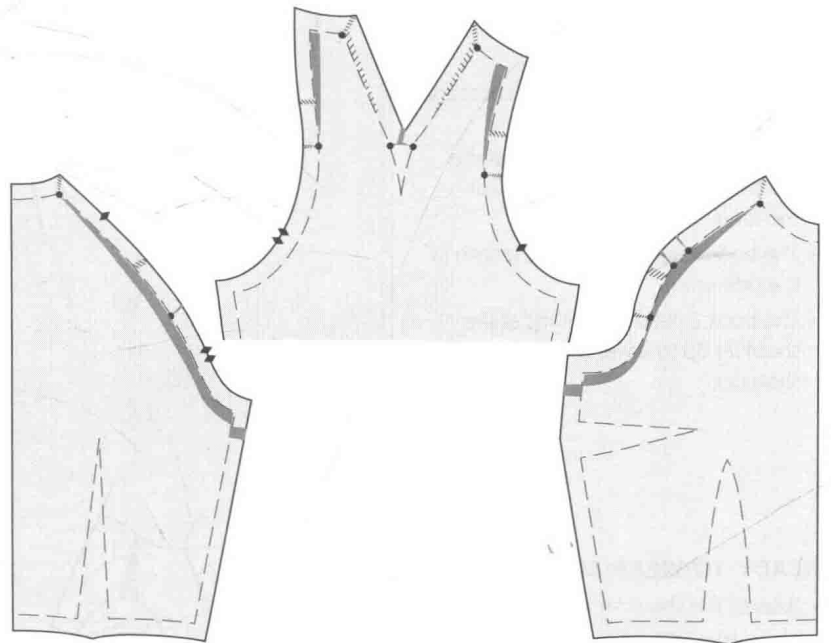
Kimono



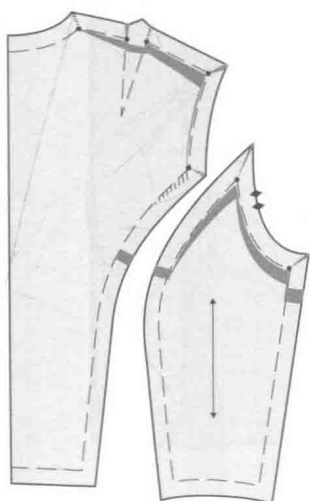
Lower Neckline



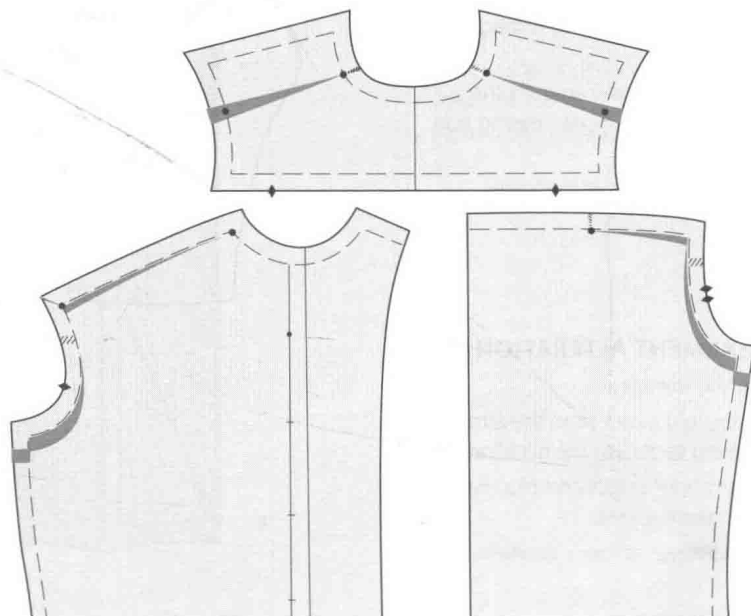
Princess—Multi-Size Pattern



Raglan



Princess

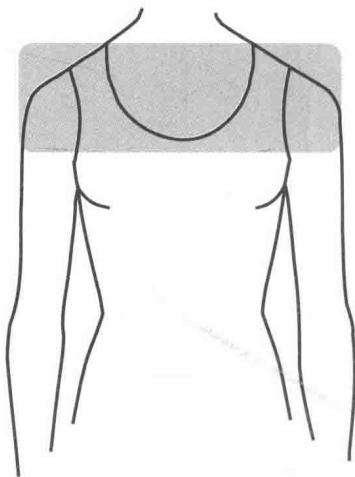


Shirt With Yoke

8. Sloped Shoulders

FIGURE EVALUATION (A)

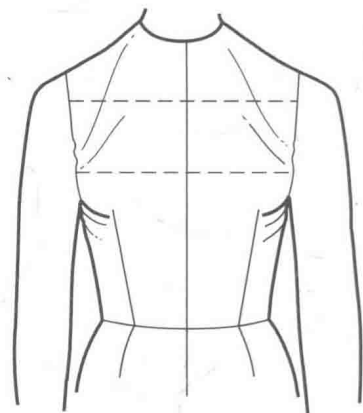
- The collar or shoulder bones slope more than average/ideal.
- The length between the waist and the arm hinge decreases.
- Sloped shoulders may occur in combination with #9 Forward Shoulder Joint or #21 Rounded Upper Back.
- Do not confuse sloped shoulders with #13 High Neck Base.



A

FITTING PROBLEMS (B)

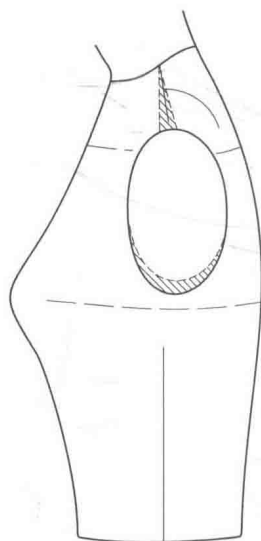
- Loose diagonal folds form between the neck and underarm as fabric sags below the shoulder tip.
- The bodice side seam, waist to armhole, is too long.
- The horizontal fitting lines of chest and back droop near the armhole.
- The capline of sleeves droops at the center and the sleeve may appear too long.
- The bodice needs less fabric length in the side seam.
- The bodice needs less fabric at the shoulder tip to lower the angle of the shoulder.



B

READY-TO-WEAR ALTERATION (C)

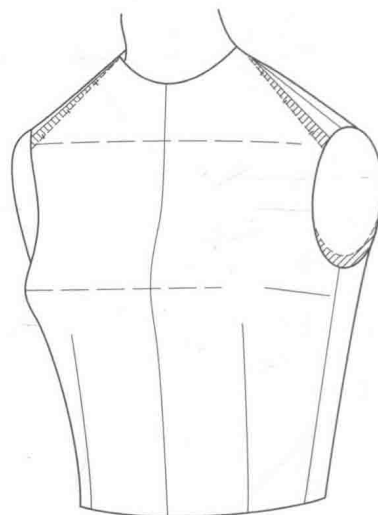
- Release the shoulder and sleeve seams.
- To shorten, take shoulder seams at the tip until the diagonal wrinkles are removed and the fabric lies smooth over the shoulder, tapering to zero at the neck.
- Lower the armhole the amount the shoulder was taken up, decreasing side seam length.
- Re-attach the sleeves at the lower position.



C

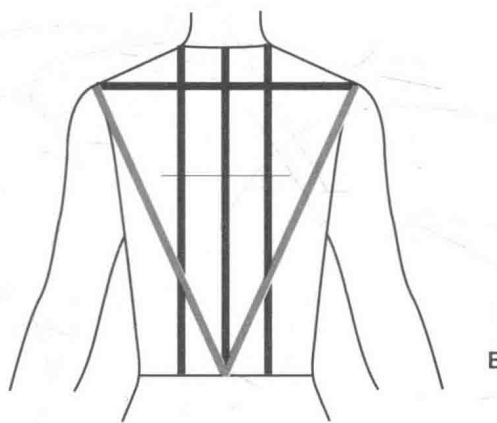
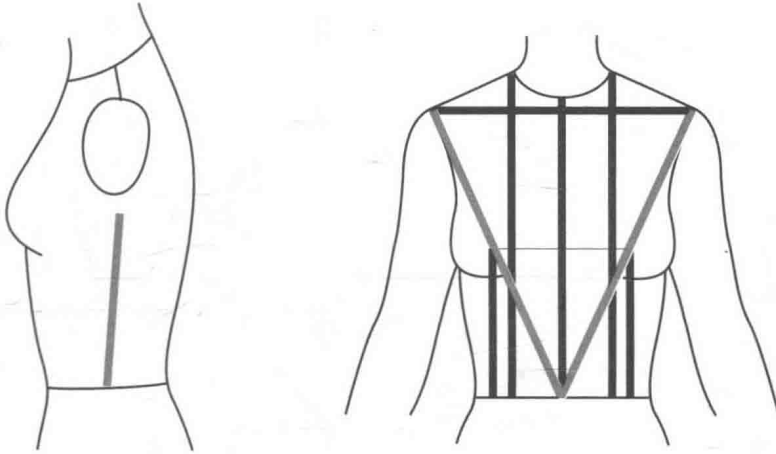
TRIAL GARMENT ALTERATION (D)

- Remove the sleeves.
- To shorten, fold a tuck from the armhole and tapering to zero at the neckline.
- Restore armhole length and clip the underarm seam allowance.
- Re-attach sleeves at lower position.



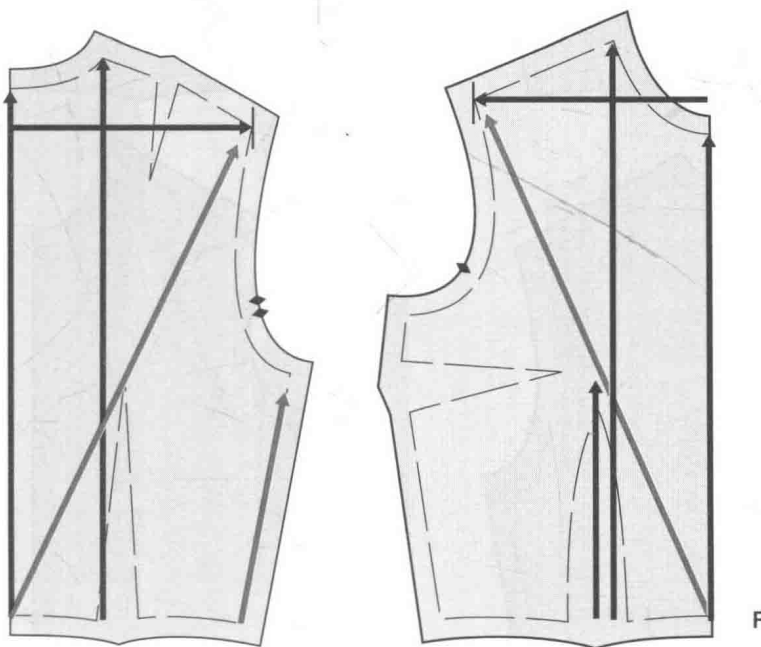
D

8. Sloped Shoulders



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Waist to bust point
- Full bodice front and back, waist to neck at shoulder
- Center front and back, waist to neckline
- Shoulder tip width
- Shoulder slope front and back, waist center to shoulder



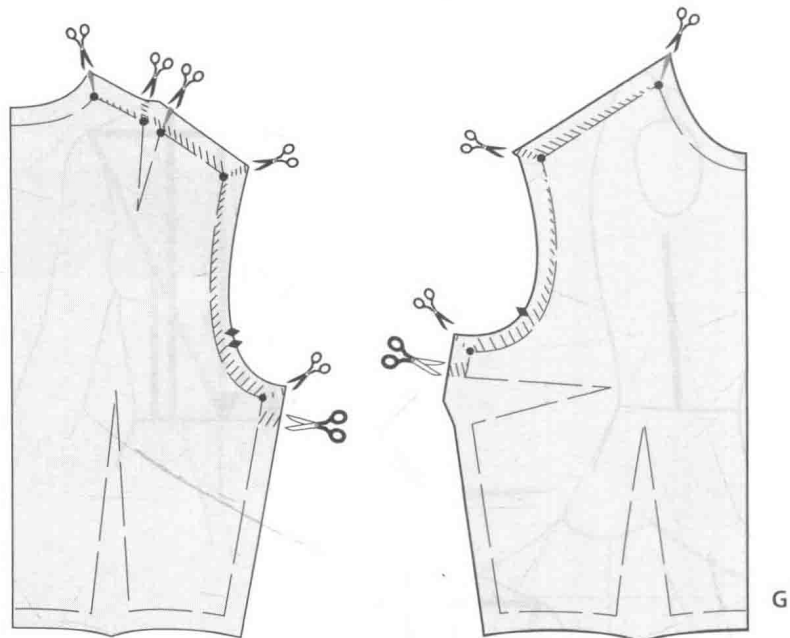
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam too long
- Pattern waist to bust point correct
- Pattern full bodice and center lengths correct
- Pattern shoulder tip width correct or adjusted
- Pattern shoulder slope too long/high

8. Sloped Shoulders

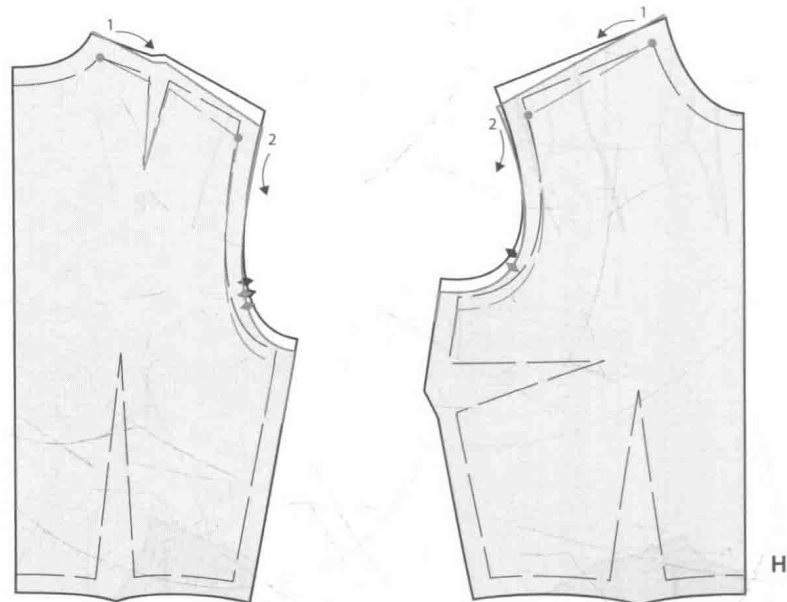
SEAM METHOD (G)

- Cut across side seam allowance and release armhole and shoulder seam allowances to the neckline.
- Clip hinges.
- To decrease length between waist and underarm and increase shoulder slope, lower shoulder and armhole seam allowances.
- Align seam allowances.
- Tape seam allowances in place.



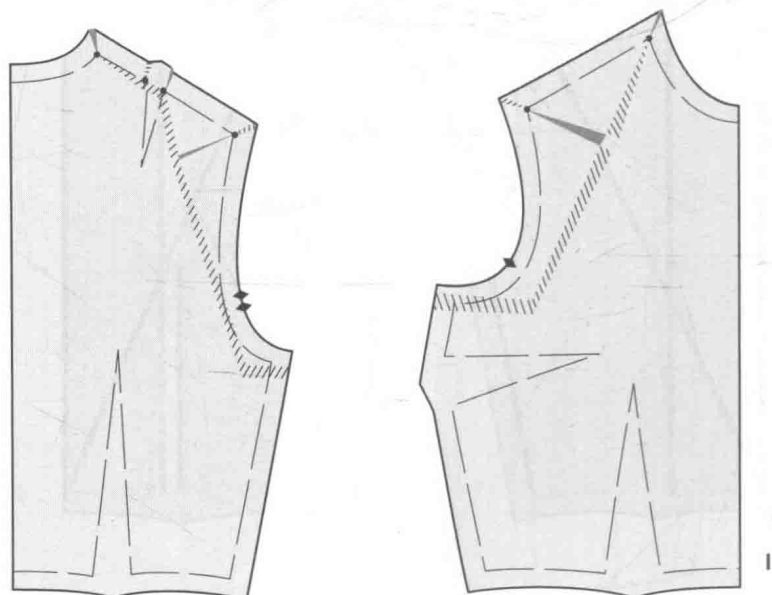
PIVOT/SLIDE METHOD (H)

- Trace shoulder and armhole.
- Pivot pattern at the neck, downward to lower the shoulder tip, then trace.
- Pivot pattern at the new shoulder tip, upward to realign armhole at side seam.
- Restore pattern to original position.
- Tape tracing in place.
- Note: For better visibility, transfer any new lines that are on the tracing to the pattern.



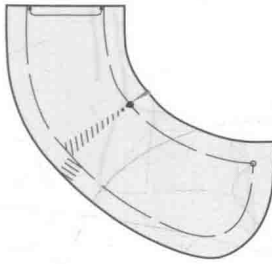
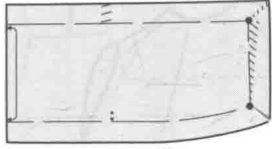
SLASH METHOD (I)

- Slash across the side, then up the neck and across to the shoulder.
- Clip hinges.
- To decrease side seam length and increase shoulder slope, overlap to lower the shoulder and armhole area.
- Align seam allowances.
- Tape pattern pieces in place.

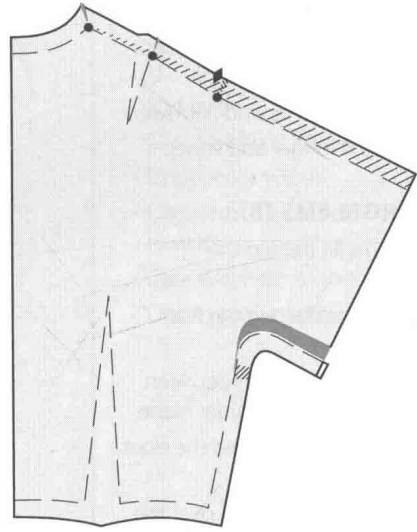
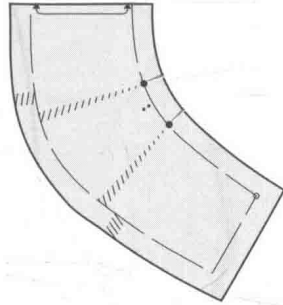


8. Sloped Shoulders

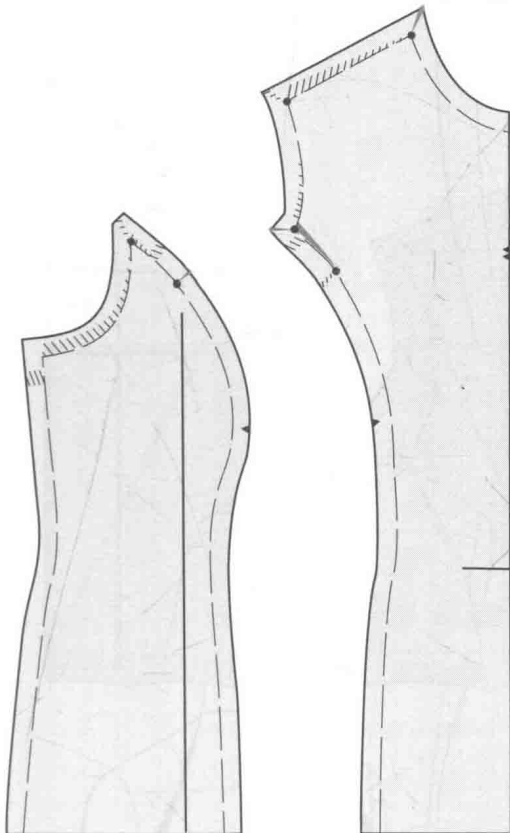
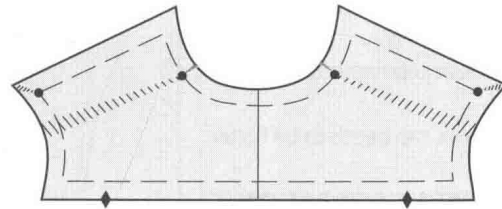
FASHION PATTERNS



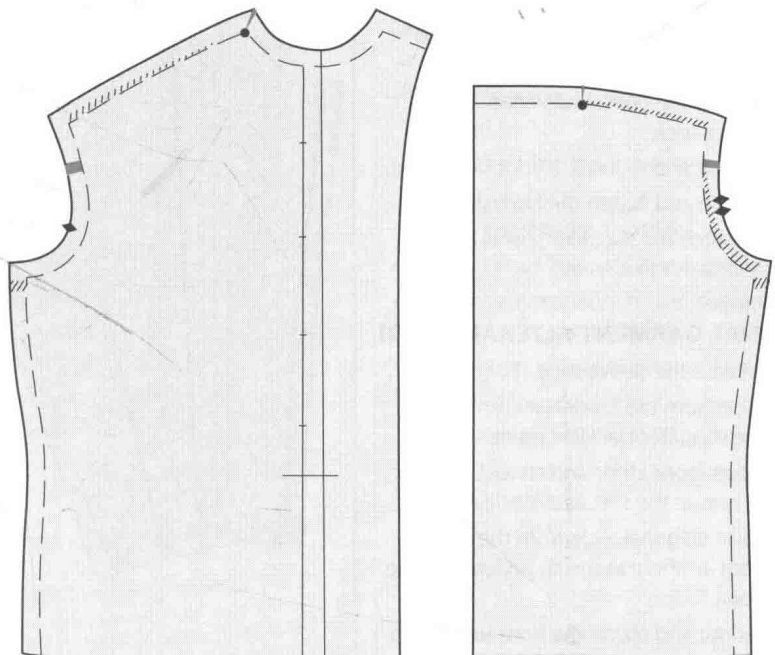
Collars



Kimono



Princess Jacket



Shirt With Yoke

9. Forward Shoulder Joint

FIGURE EVALUATION (A)

- The shoulder joint rotates forward from the average/ideal.
- The collarbone bows forward at the shoulder joints more than average/ideal.
- The shoulder joint is rounded in front and sloped in back.
- The chest area is shorter and narrower.
- The blade area is longer and wider.

FITTING PROBLEMS (B)

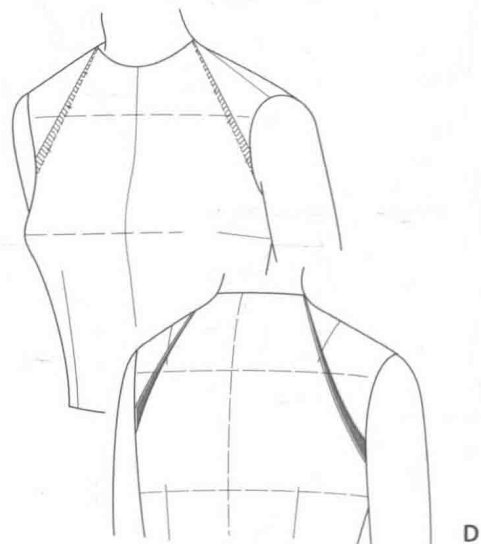
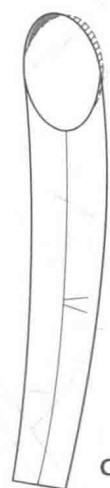
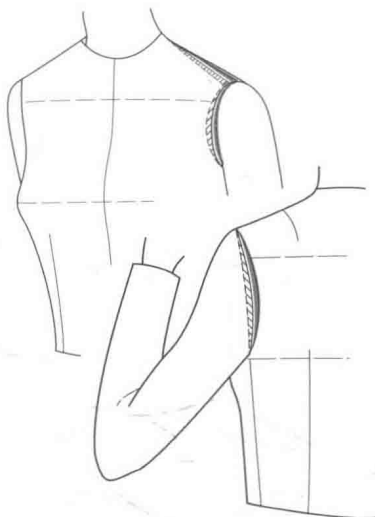
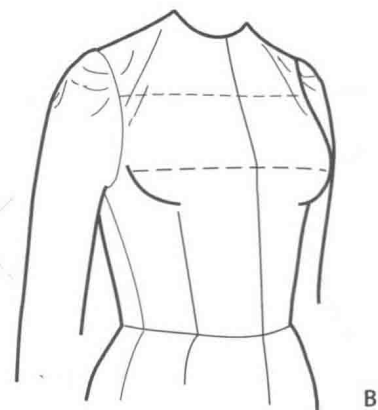
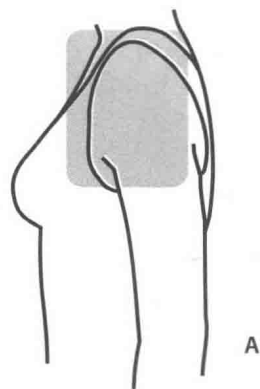
- Shoulder seams lie behind the shoulder tip.
- Loose wrinkles form along the front armhole.
- Tighter stress wrinkles form between the back armhole and shoulder blade.
- The sleeve cap is tight around the front of the shoulder.
- The sleeve cap is loose, puffy, over the back of the shoulder.
- The shoulder seam needs to be moved forward.
- The bodice front needs less fabric width at the armhole.
- The bodice back needs more fabric width at the armhole.
- The front sleeve cap needs to be more rounded.
- The back sleeve cap needs to be flatter.

READY-TO-WEAR ALTERATION (C)

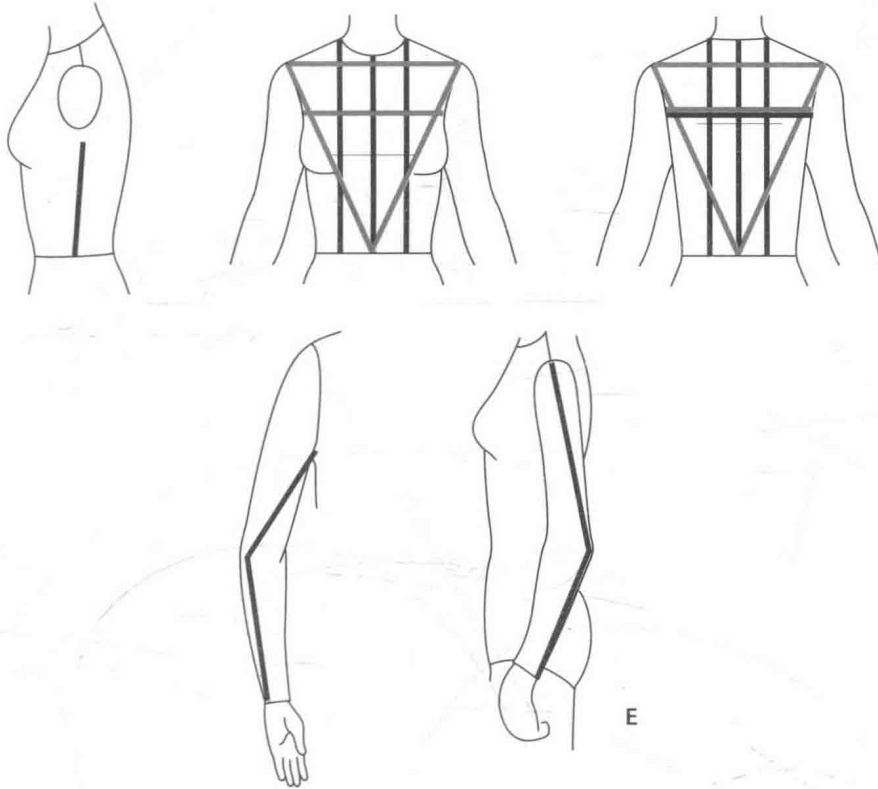
- Release the sleeve and shoulder seams.
- Let out the back shoulder seam and take up the front shoulder seam.
- Narrow the chest and widen the upper back.
- Let out and round the front sleeve cap.
- Take in and flatten the back sleeve cap.
- Re-stitch the shoulder seams and re-attach the sleeves.

TRIAL GARMENT ALTERATION (D)

- Release the sleeve caps.
- Slash from the lower back armhole to the shoulder/neckline point.
- Insert fabric strips and spread, tapering to zero at the shoulder/neckline point.
- Form diagonal tucks from the lower front armhole to the shoulder/neckline point.
- Let out and round the front sleeve cap.
- Take in and flatten the back sleeve cap.
- Re-stitch the shoulder seams and re-attach the sleeves.

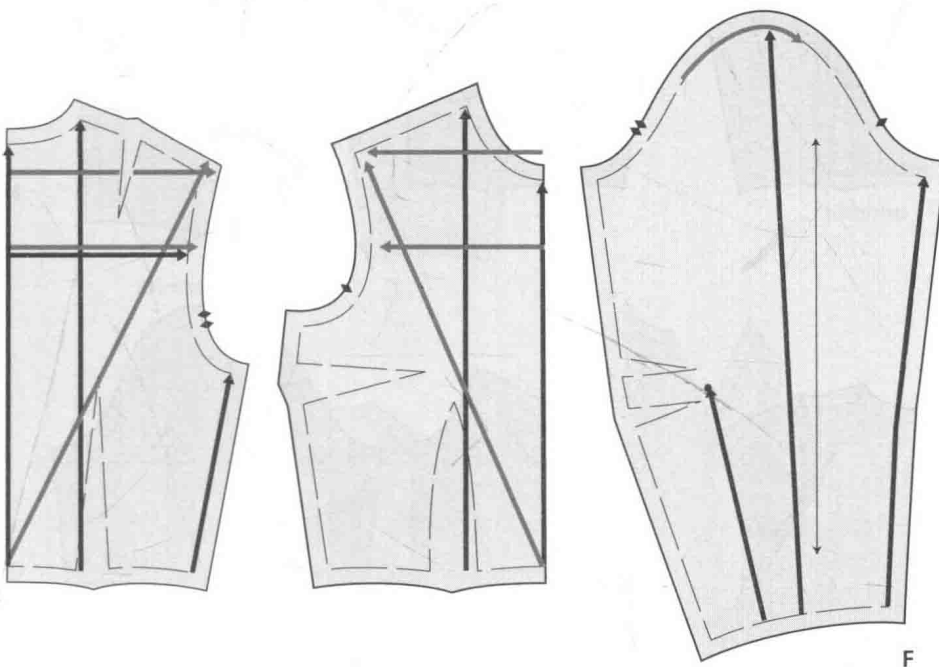


9. Forward Shoulder Joint



BODY MEASUREMENT POSITIONS (E)

- Side, full bodice and center, front and back
- Shoulder tip, center to tip front and back
- Shoulder slope, waist center to tip front and back
- Chest width at hinge
- Upper back width
- Underarm, 1 inch below arm hinge to wrist
- Overarm, wrist to shoulder tip
- Observation of shoulder joint position



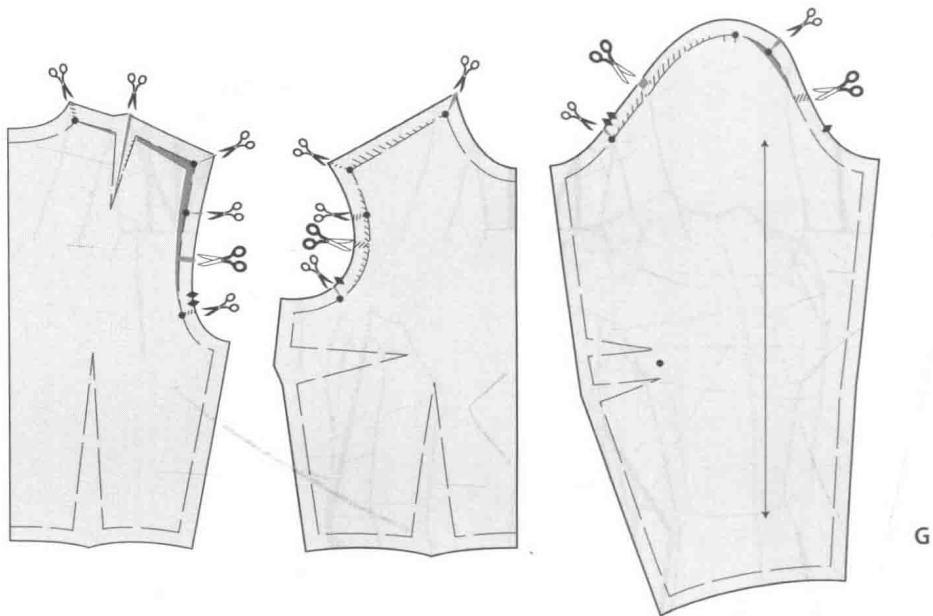
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side, full bodice, and centers correct
- Pattern shoulder tip width correct or adjusted
- Pattern shoulder slope too long in front, too short in back
- Pattern chest width too wide
- Pattern upper back width too narrow
- Pattern sleeve underarm and overarm lengths correct or adjusted
- Observation, shoulder joint rounds forward

9. Forward Shoulder Joint

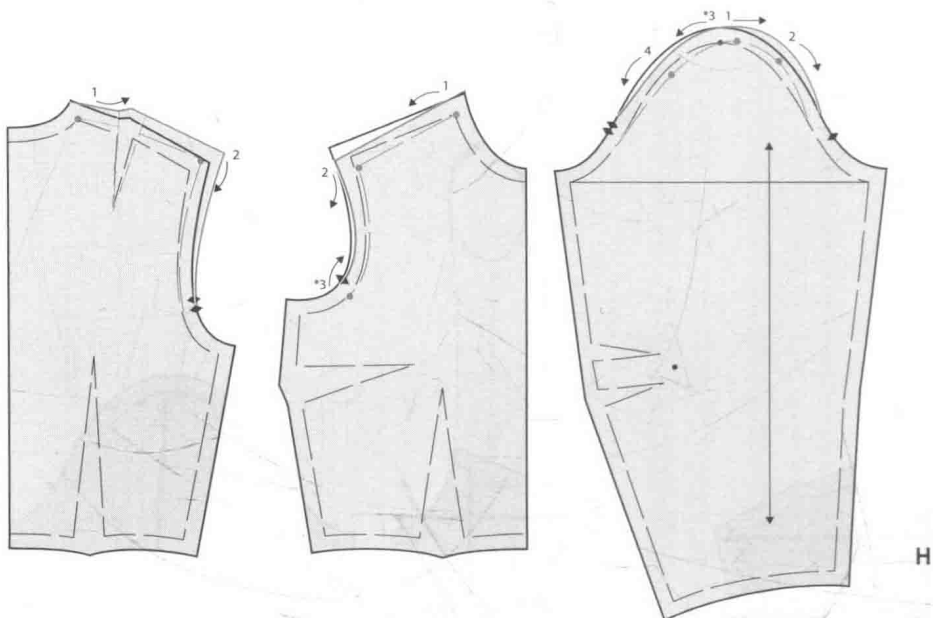
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



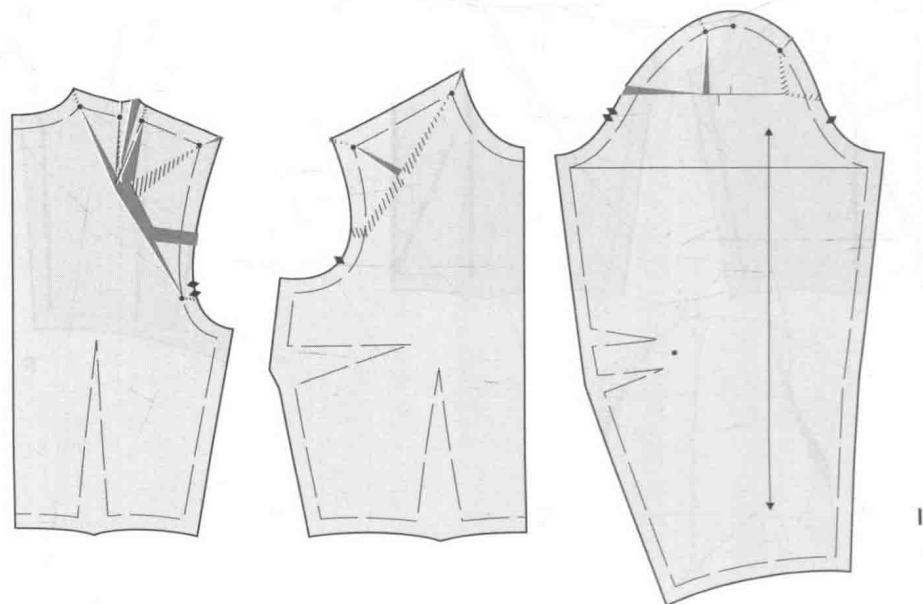
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



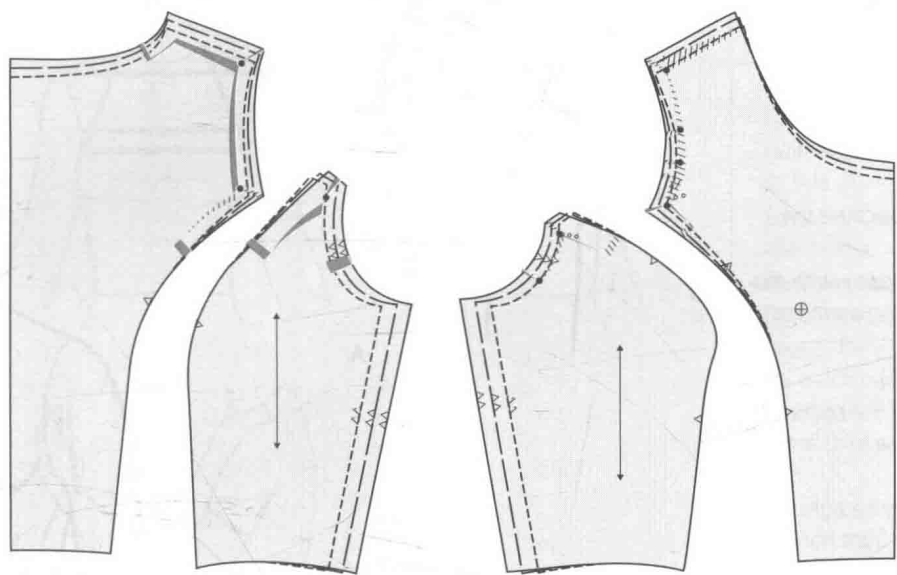
SLASH METHOD (I)

- Slash through affected areas.
- Clip hinges.
- Manipulate patterns as illustrated.
- Tape pattern pieces in place.

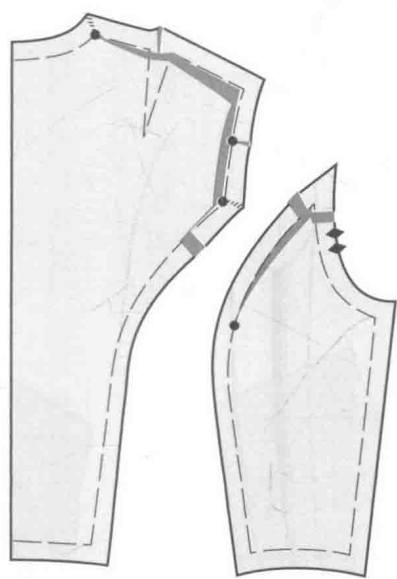


9. Forward Shoulder Joint

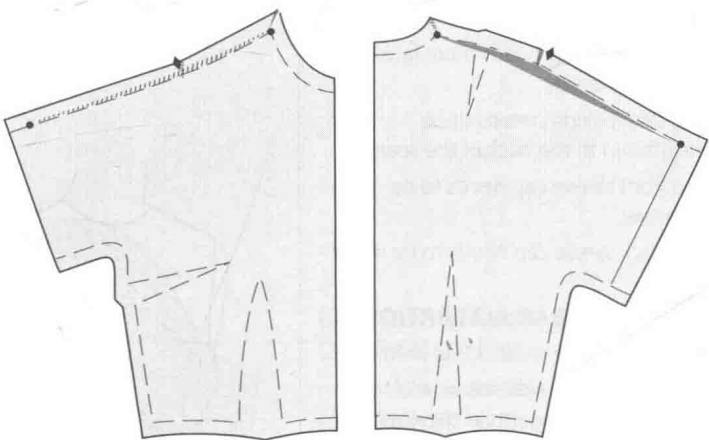
FASHION PATTERNS



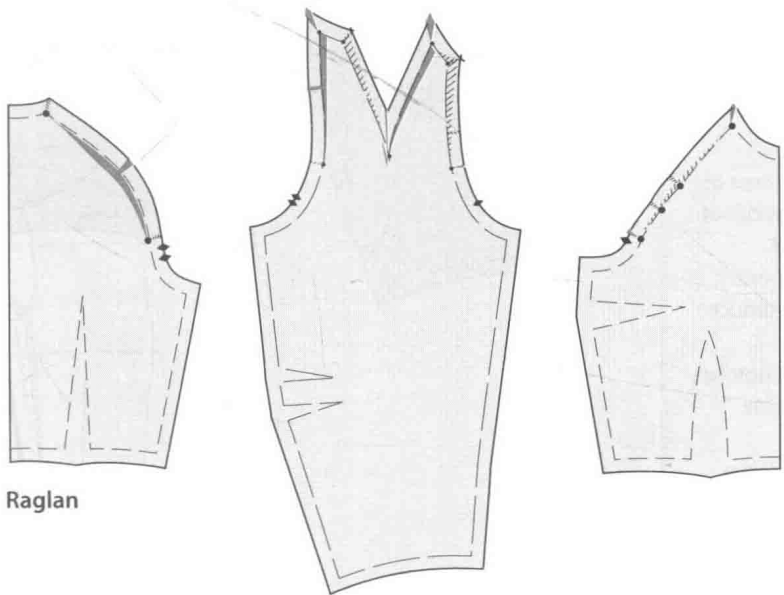
Princess-Multi-Size Pattern



Princess



Kimono



Raglan

10. Posterior Arm Joint

FIGURE EVALUATION (A)

- The collarbone is flatter/straighter than average/ideal.
- The position of the shoulder joint is farther back than average/ideal.
- The front arm hinge slopes forward from the shoulder.
- The back appears broad because the arms align with the back.
- A posterior arm joint may occur with #22 Erect Upper Back or #33 Prominent Bust.

FITTING PROBLEMS (B)

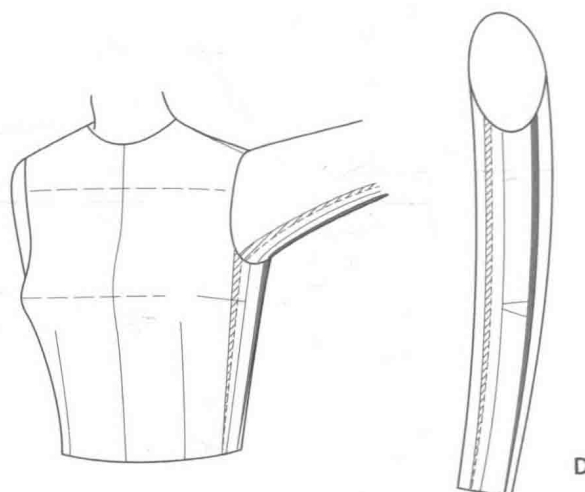
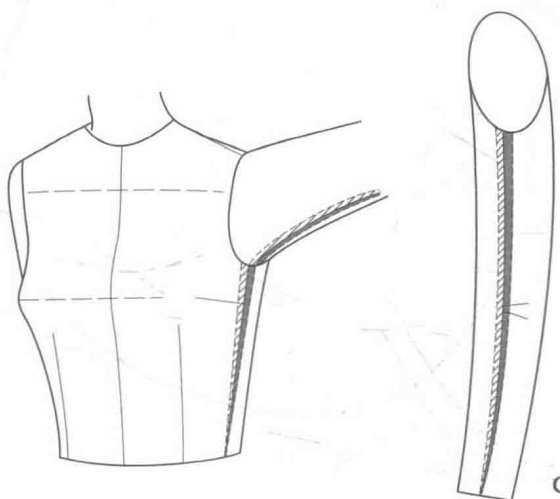
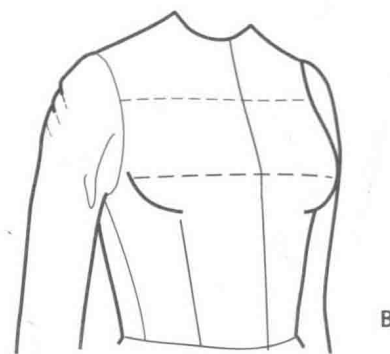
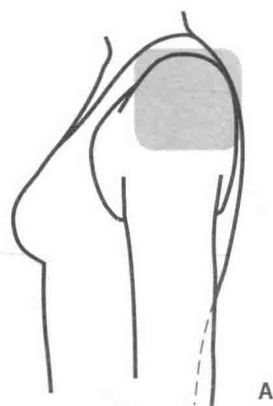
- The sleeve is tight against the back of the arm and hangs in loose folds at the front.
- The bodice side seam may be tight and pull to the back while the front hangs loose at the armhole.
- The armhole curve needs to be narrower in front and wider in back—the reverse of standard.
- The bodice front needs less fabric width at the side.
- The bodice back needs more fabric width at the side.
- The sleeve width needs to be transferred to the back of the seam.
- The front sleeve cap needs to be narrower.
- The back sleeve cap needs to be wider.

READY-TO-WEAR ALTERATION (C)

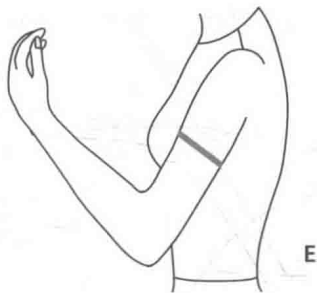
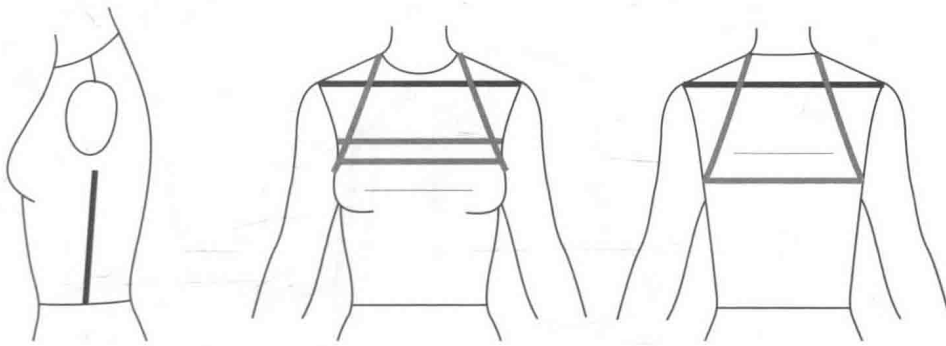
- Release the sleeves and side seams.
- Let out the back side seams and take in the front side seams at the armhole, tapering to the waist.
- Rotate the sleeve so the underarm seam is back of the bodice side seam about $\frac{3}{4}$ of an inch. This narrows the front sleeve and adds width to the sleeve back.

TRIAL GARMENT ALTERATION (D)

- Remove the sleeves.
- Slash from the back armhole notch to the waist. Insert fabric to add width at the armhole, taper to the waist.
- Make a vertical tuck from the front armhole notch to the waist to reduce width; taper to the waist.
- Slash the back sleeve from the notches to the wrist. Insert fabric the same width as the garment.
- Make a vertical tuck from the sleeve front notch to the wrist to reduce width to that of the garment.
- Re-attach the sleeves.



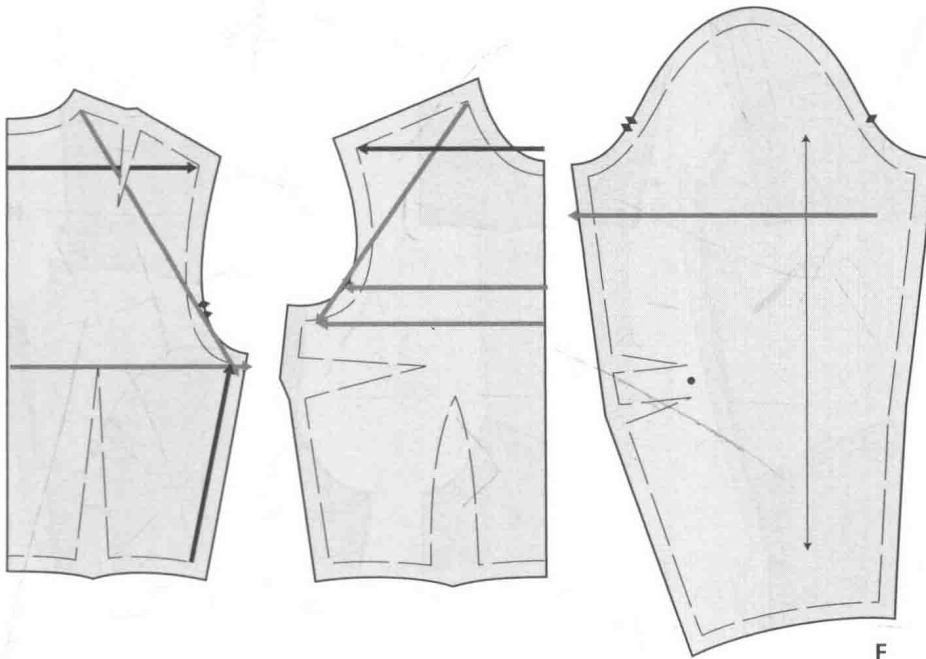
10. Posterior Arm Joint



BODY MEASUREMENT POSITIONS (E)

- Shoulder tip width front and back, center neck to shoulder tip
- Chest width, center to arm hinge
- High bust width front and back, center to side
- Strap front and back, neck to side at armhole
- Arm circumference at bicep

Note: Observation of a standard garment sleeve is the easiest way to determine how much needs to be removed and moved to the back of the sleeve.



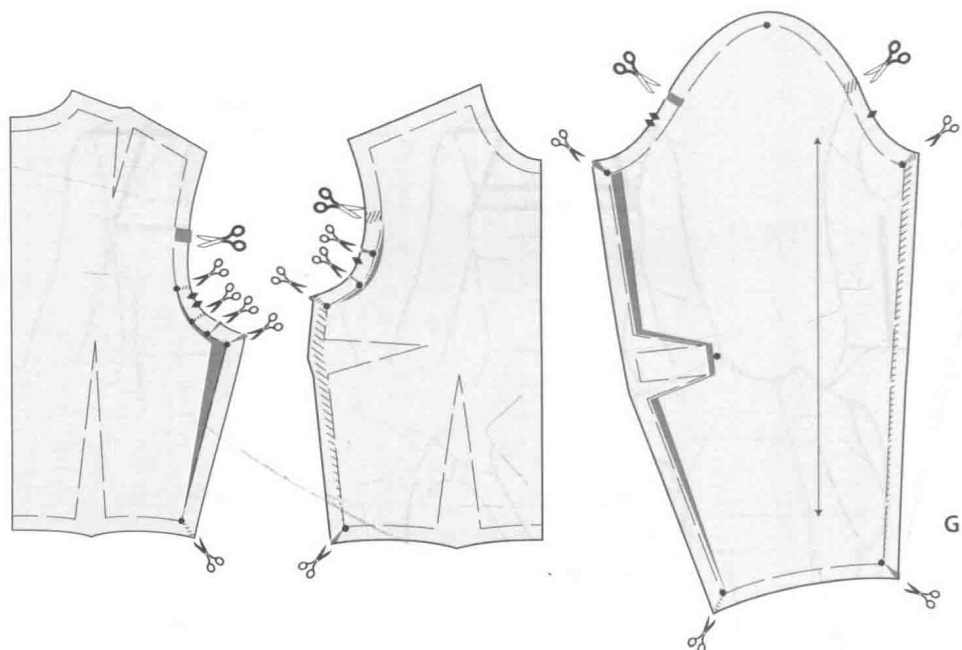
PATTERN MEASUREMENT COMPARISON (F)

- Pattern shoulder tip width correct
- Pattern chest width correct
- Pattern high bust front too wide
- Pattern high bust in back too narrow
- Pattern front strap too wide
- Pattern back strap curve too narrow/shallow
- Pattern sleeve circumference correct but not in the correct position

10. Posterior Arm Joint

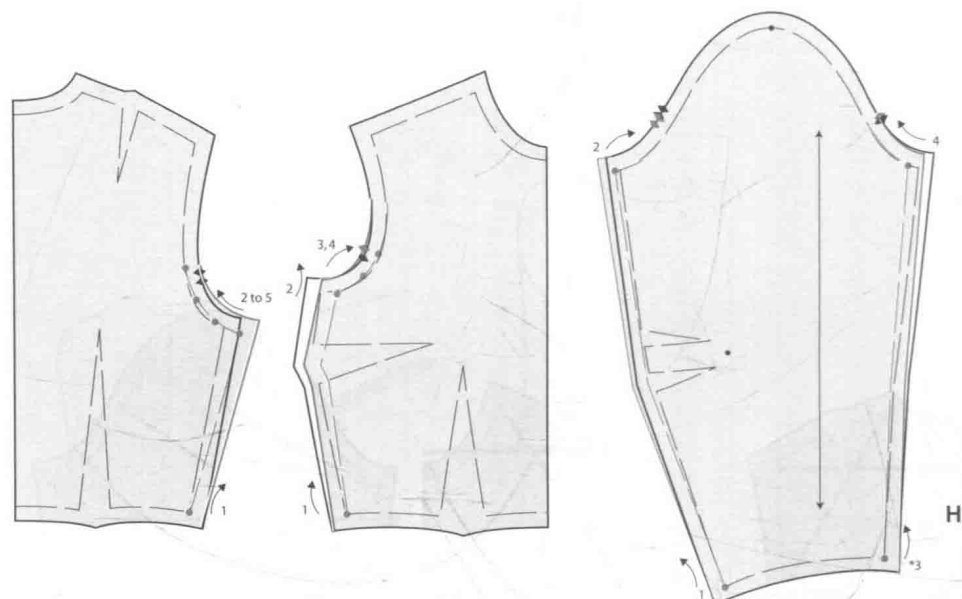
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



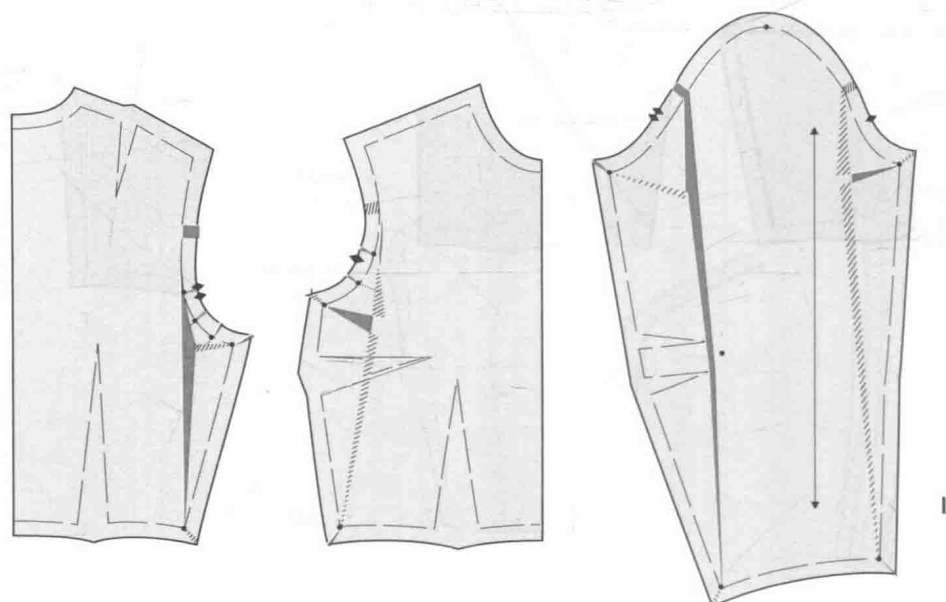
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



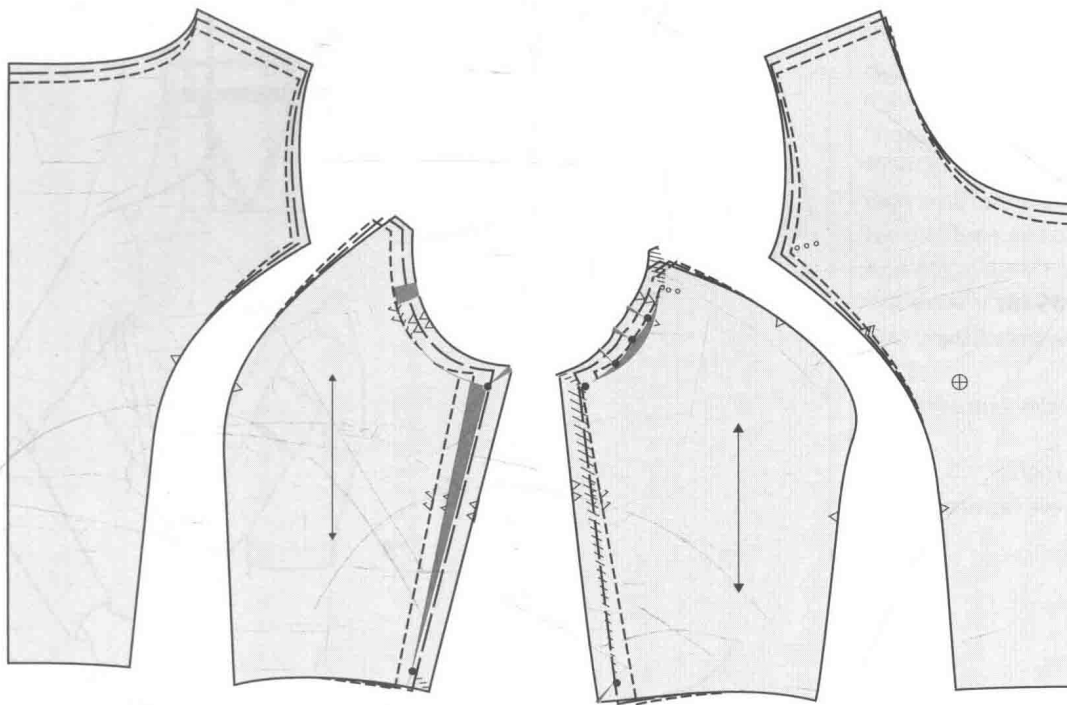
SLASH METHOD (I)

- Slash through affected areas.
- Clip hinges.
- Manipulate patterns as illustrated.
- Tape pattern pieces in place.

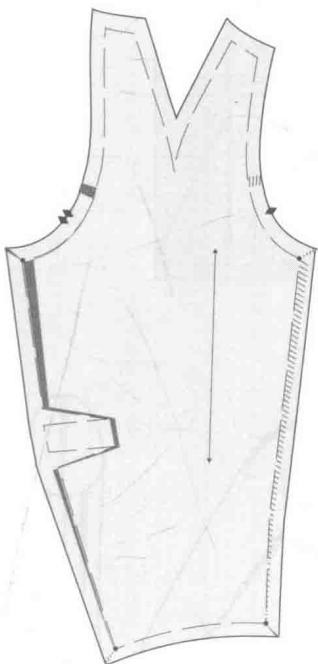


10. Posterior Arm Joint

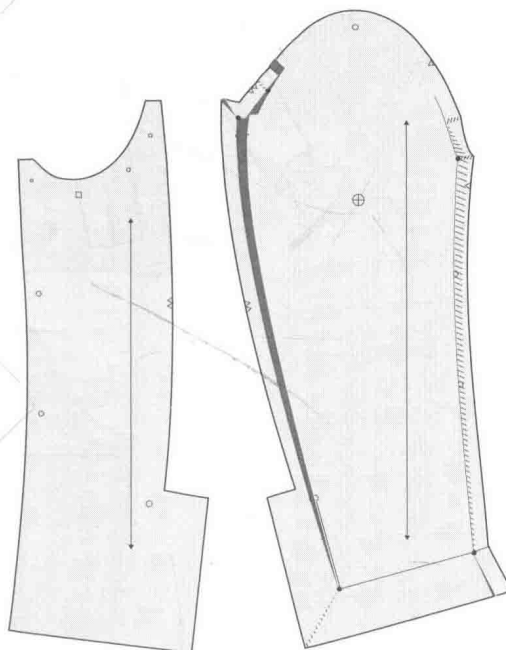
FASHION PATTERNS



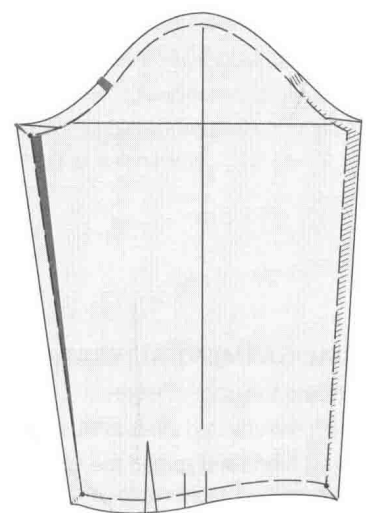
Princess-Multi-Size Pattern



Raglan Sleeve



Two-Piece Sleeve



Basic Shirt Sleeve

11. Larger Shoulder Joint

FIGURE EVALUATION (A)

- The bones forming the shoulder joint are larger than average/ideal.
- The surrounding muscles may be more developed.
- The circumference of the shoulder area is larger.
- Large shoulder joints may occur with #36 Cylindrical Torso.

FITTING PROBLEMS (B)

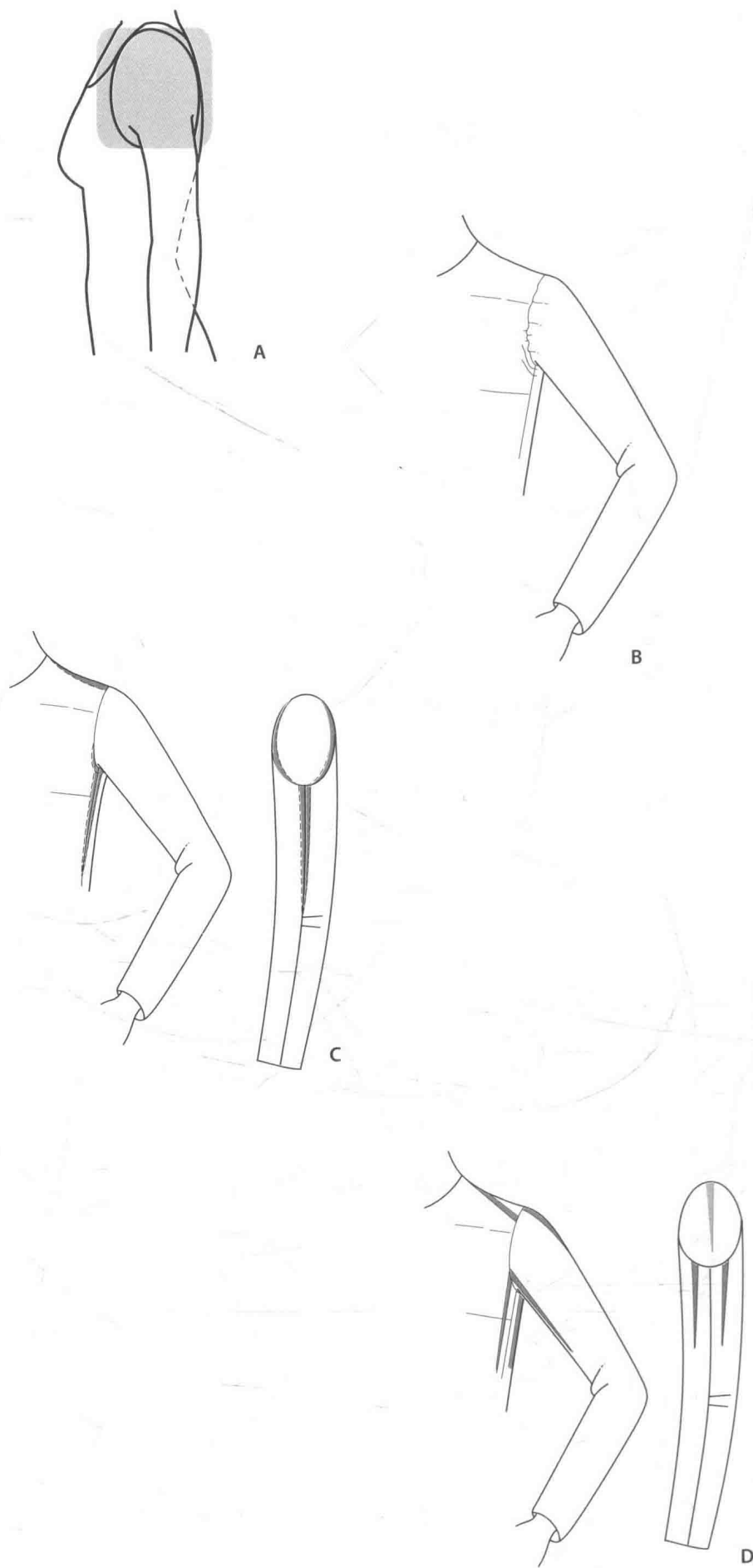
- The armhole tightens around the shoulder joint.
- Tight horizontal wrinkles form across the armhole seams.
- The sleeve cap is too tight.
- The armhole and sleeve cap need to be larger.

READY-TO-WEAR ALTERATION (C)

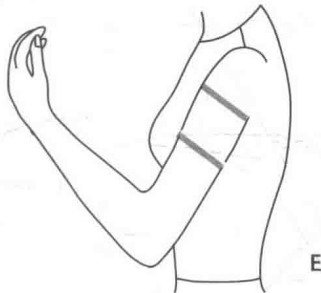
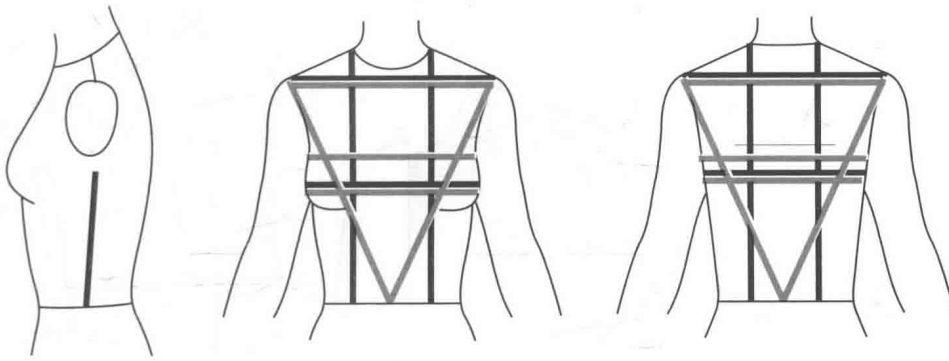
- Release the upper sleeves and shoulder seams.
- To enlarge the armhole and sleeve, let out seams as illustrated.
- Re-attach the sleeves.

TRIAL GARMENT ALTERATION (D)

- Release the upper sleeves.
- Slash the affected areas as illustrated.
- Insert fabric and spread the edges as illustrated, tapering to zero where illustrated.
- Re-attach the sleeves.

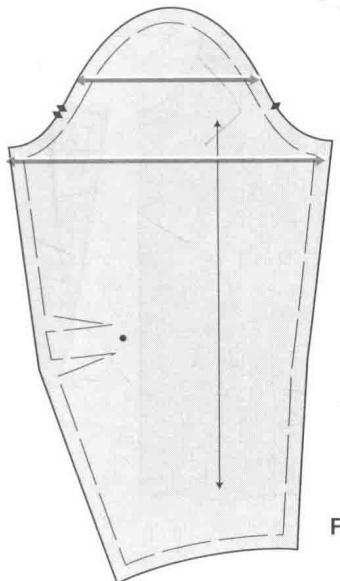
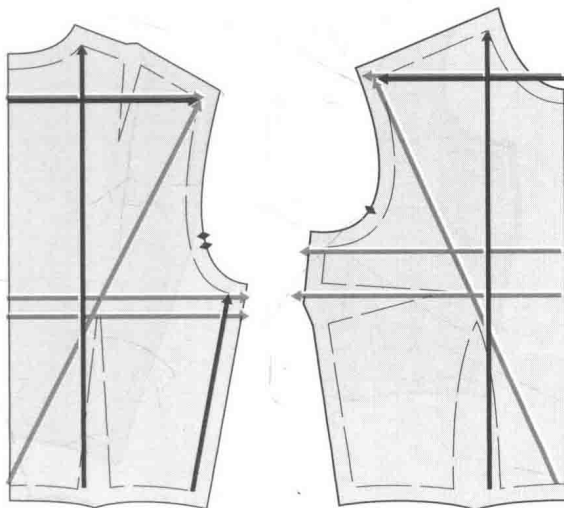


11. Larger Shoulder Joint



BODY MEASUREMENT POSITIONS (E)

- Side, 1 inch below arm hinge to waist
- Full bodice length, waist to shoulder/neckline front and back
- Shoulder tip width, center to shoulder tip
- Shoulder slope, waist center to shoulder tip
- High bust, front and back
- Full bust front, and back
- Arm width, above hinge (additional measurement)
- Arm circumference at bicep



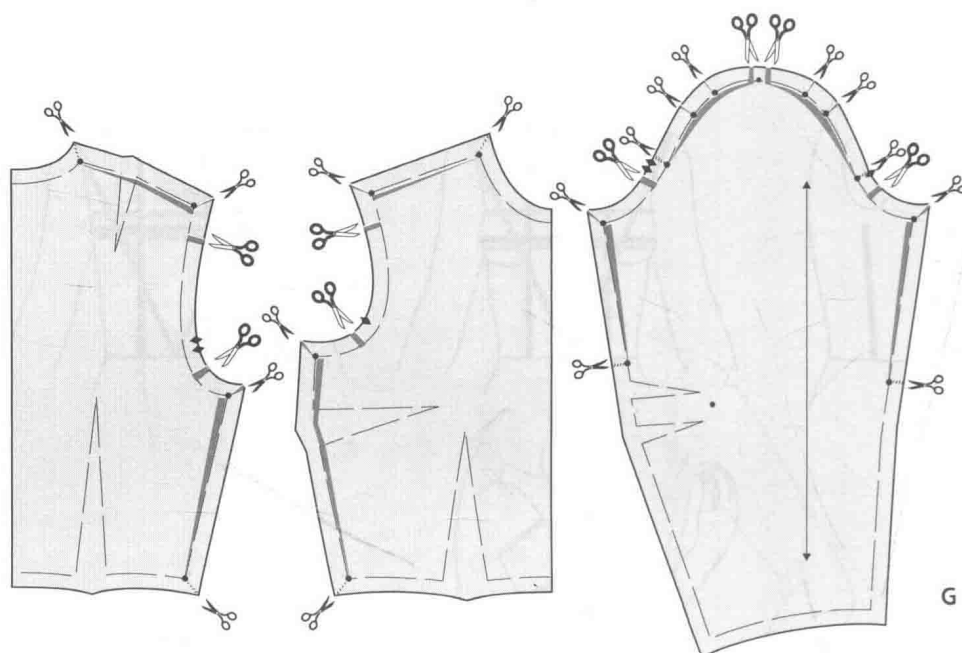
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam and full bodice correct
- Pattern shoulder tip width correct or adjusted
- Pattern shoulder slope too short
- Pattern high bust and full bust correct
- Pattern sleeve cap width too narrow
- Pattern sleeve bicep circumference may be correct or too narrow

11. Larger Shoulder Joint

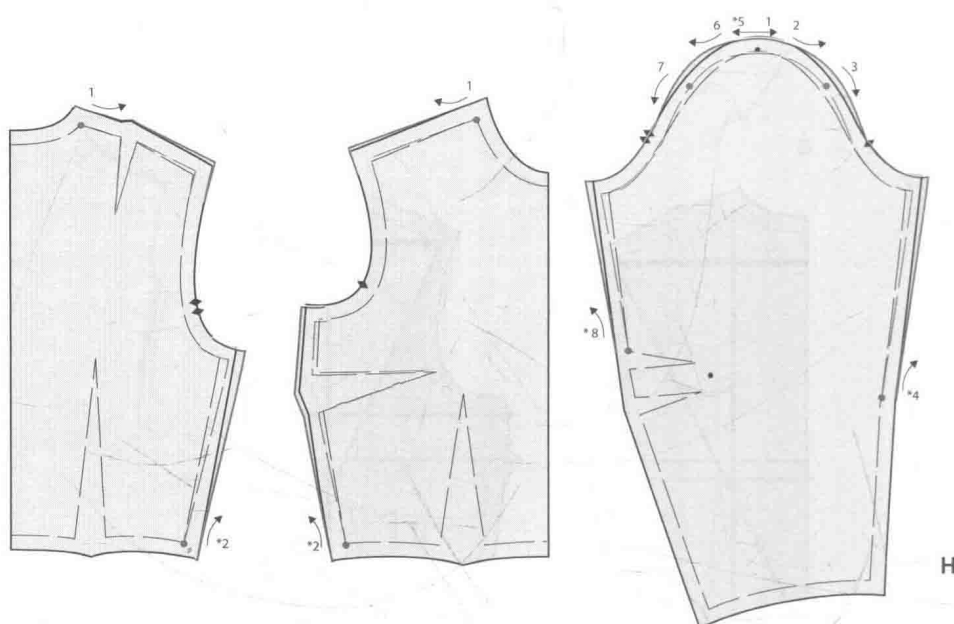
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



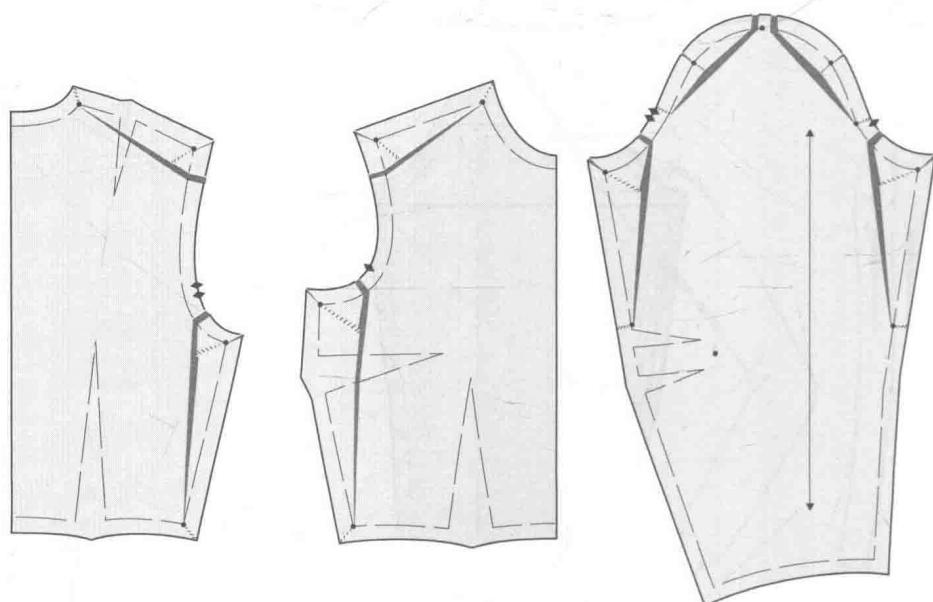
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Restore pattern to original position.
- Tape tracing in place.

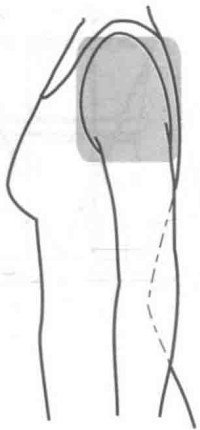


SLASH METHOD (I)

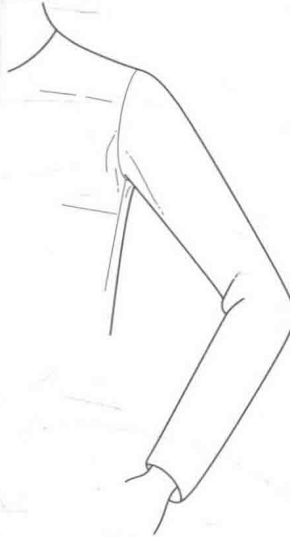
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate patterns as illustrated.
- Tape pattern pieces in place.



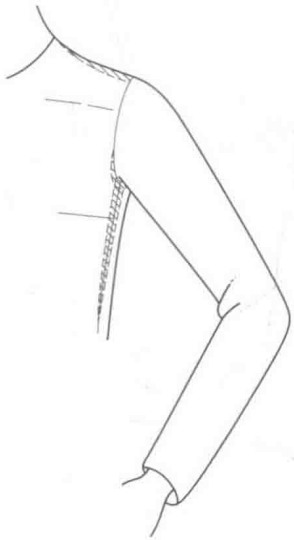
12. Smaller Shoulder Joint



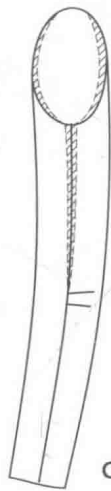
A



B



C



D

FIGURE EVALUATION (A)

- The bones forming the joint are smaller than average/ideal.
- The surrounding muscle is less developed.
- The circumference of the shoulder area is smaller.
- Small shoulder joints may occur with #37 Oval-Shaped Torso.

FITTING PROBLEMS (B)

- The armhole is too loose around the shoulder joint.
- Fabric hangs in loose vertical wrinkles at the armhole.
- The sleeve cap is too loose.
- The armhole and sleeve cap need to be smaller.

READY-TO-WEAR ALTERATION (C)

- Release the upper sleeves and shoulder seams.
- To reduce the size of the armhole and sleeve, take in the seams as illustrated.
- Re-attach the sleeves.

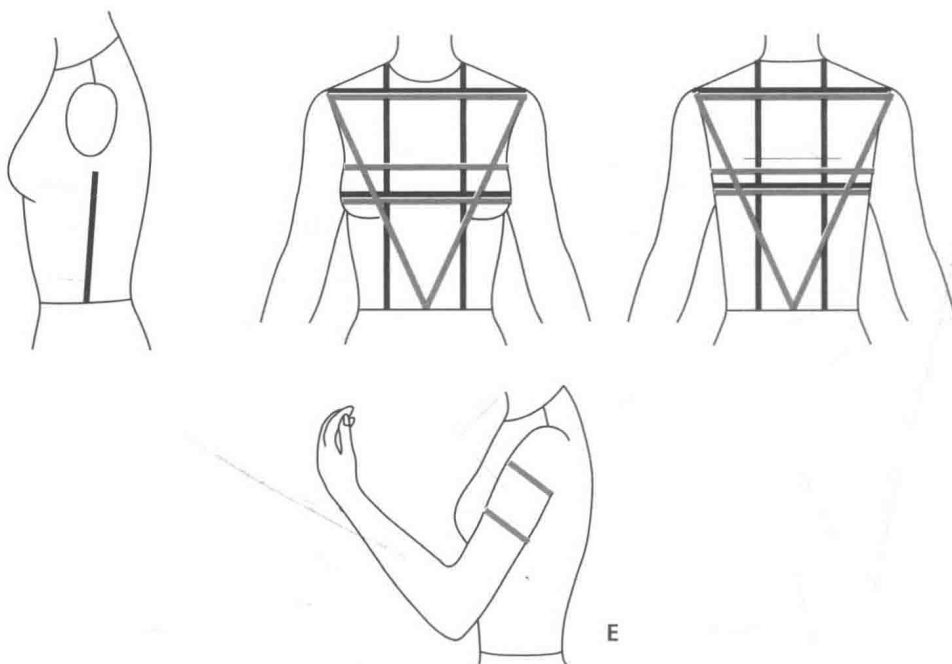
TRIAL GARMENT ALTERATION (D)

- Release the upper sleeves.
- Tuck the bodice and sleeves as illustrated, tapering to zero where illustrated.
- Re-attach the sleeves.

12. Smaller Shoulder Joint

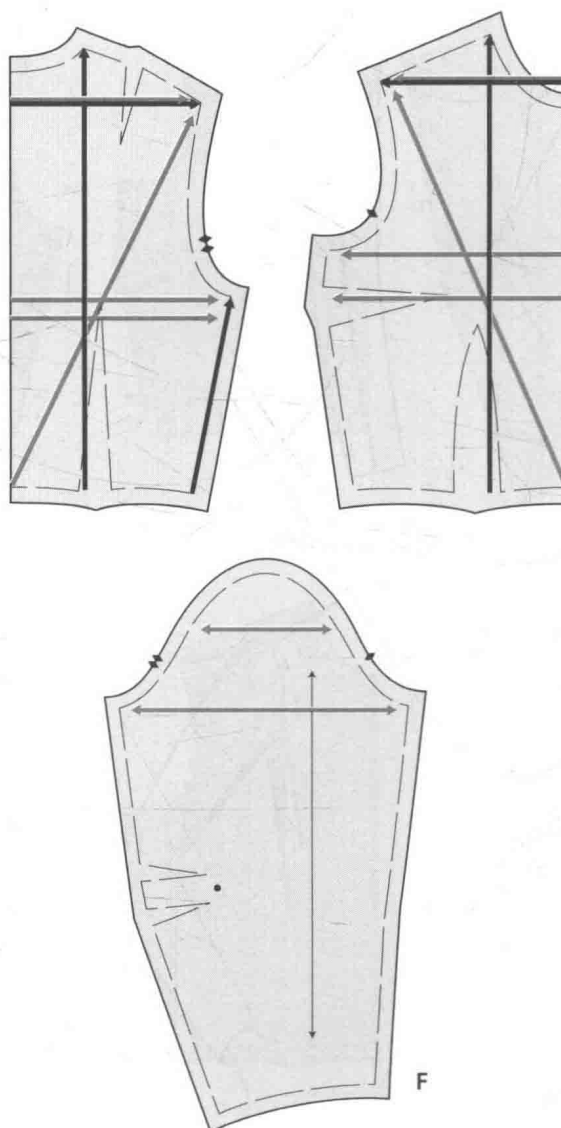
BODY MEASUREMENT POSITIONS (E)

- Side, 1 inch below arm hinge to waist
- Full bodice length, waist to shoulder/neckline front and back
- Center front and back, waist to neckline
- Shoulder tip width, center to shoulder tip
- High bust, front and back
- Full bust, front and back
- Arm width above hinge (additional measurement)
- Arm circumference at bicep

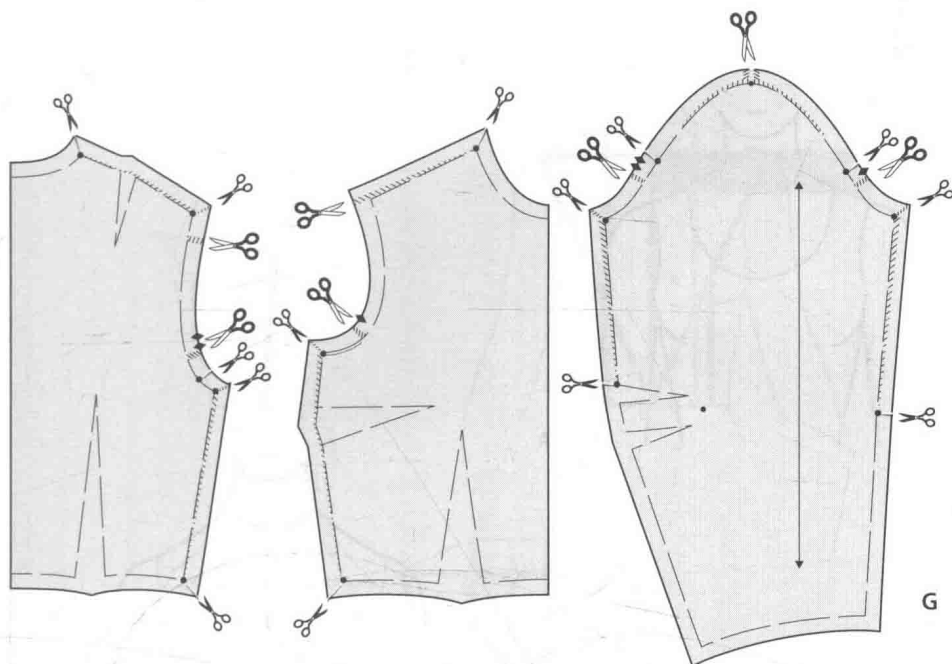


PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam, full bodice, and centers correct
- Pattern shoulder tip width correct or adjusted
- Pattern shoulder slope too long
- Pattern high bust and full bust too wide
- Sleeve pattern cap too wide
- Sleeve pattern bicep circumference may be correct or too wide

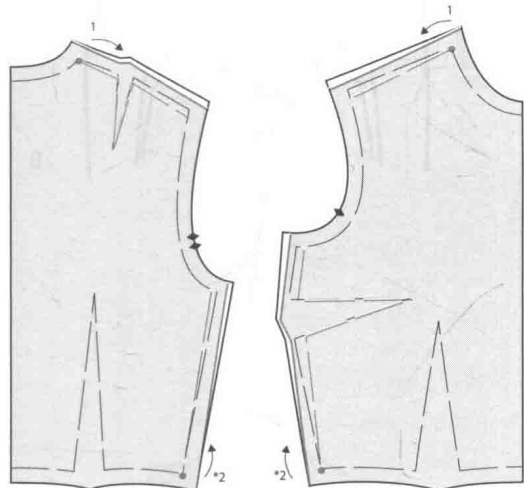


12. Smaller Shoulder Joint



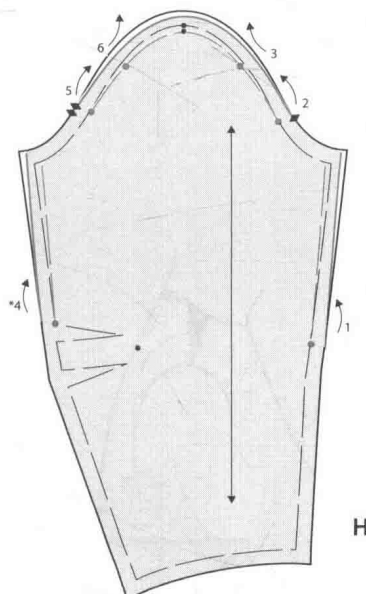
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



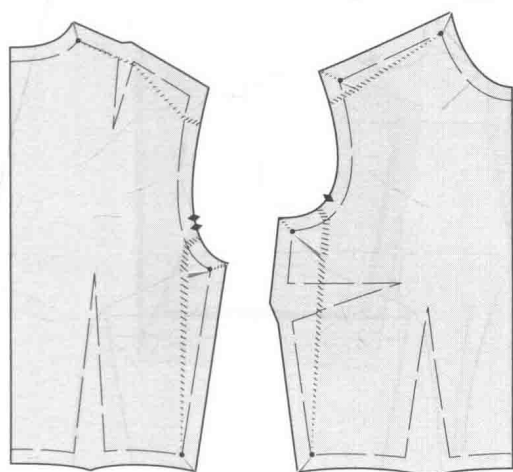
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Restore pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

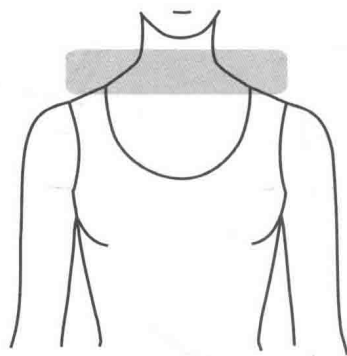
- Slash as illustrated in affected areas.
- Manipulate patterns as illustrated.
- Tape pattern pieces in place.



13. High Neck Base

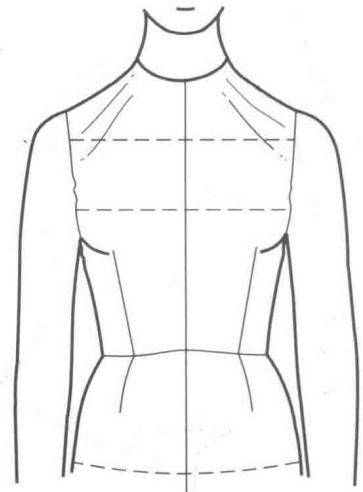
FIGURE EVALUATION (A)

- There is less angularity where the neck blends into the shoulder due to greater muscle development.
- The slope may extend to the end of the collarbone, then flatten at the shoulder.
- A high neck base should not be confused with #8 Sloped Shoulders due to bone structure.



FITTING PROBLEMS (B)

- A fitted neckline is uncomfortably tight, rising to seek a smaller circumference.
- Diagonal stress wrinkles form between the neck base and armhole.
- Chest and blade fitting lines rise at center front and back.
- The armhole seam may ripple.
- The sloped neck needs a larger neckline, and more length at center back.



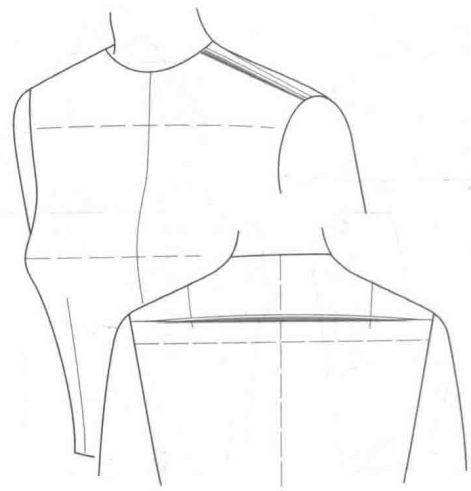
READY-TO-WEAR ALTERATION (C)

- Release the shoulder and back neckline seams.
- Let out the shoulder seams, tapering to zero at the shoulder tip.
- Raise the back neckline equal to the change at the shoulder.
- Re-stitch the seams.

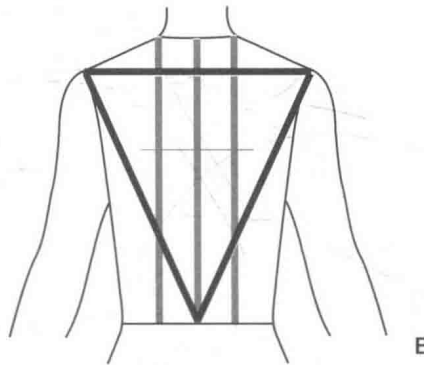
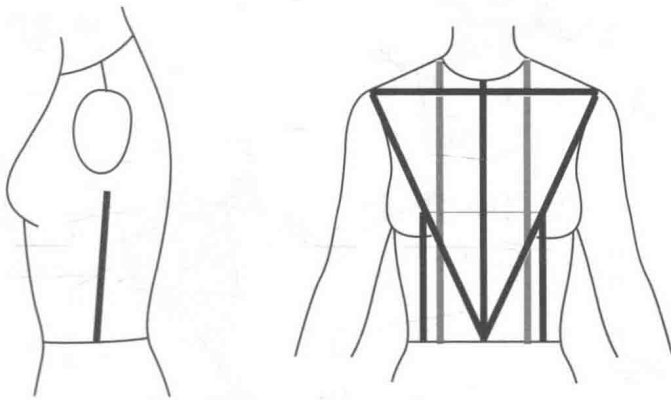


TRIAL GARMENT ALTERATION (D)

- Slash the bodice front between the neck and armhole near the shoulder seam.
- Insert fabric strips and spread, tapering to zero at the armhole.
- Slash across the upper back from shoulder tip to shoulder tip.
- Insert fabric strips and spread, equal to the change at the shoulder, tapering to zero at the armhole.

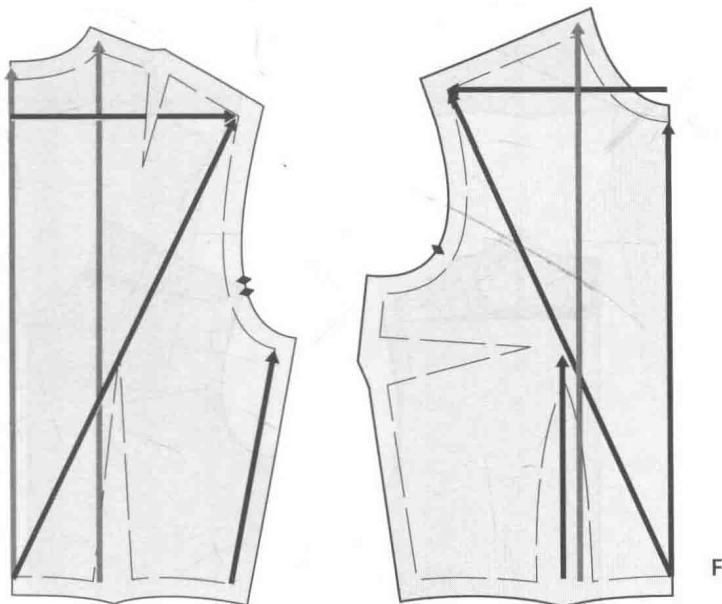


13. High Neck Base



BODY MEASUREMENT POSITIONS (E)

- Side, 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Full bodice, waist to shoulder/neckline
- Center front and back, waist to neckline
- Shoulder tip width, center to shoulder tip
- Shoulder slope, waist center to shoulder tip



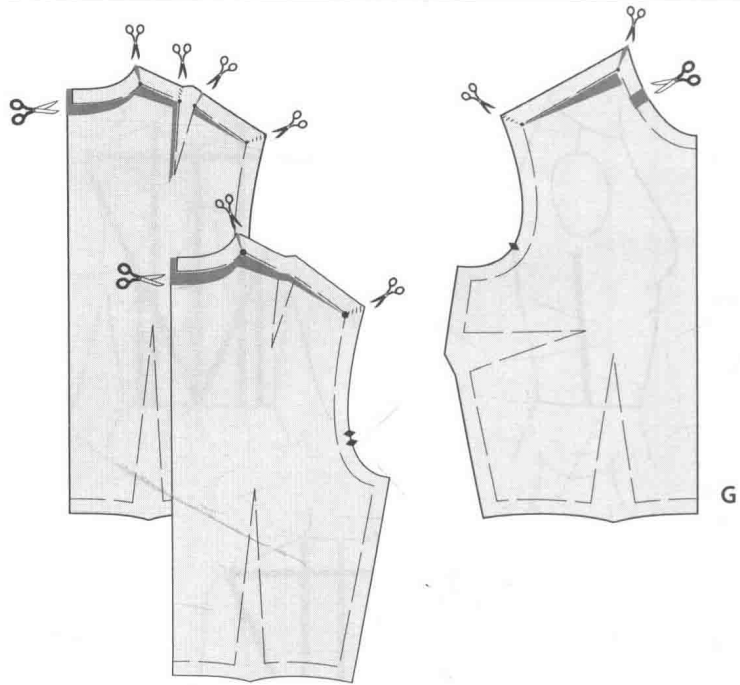
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length correct
- Pattern bust height correct
- Pattern front full bodice length too short
- Pattern center front length correct
- Pattern back full bodice and center length too short
- Pattern shoulder tip width and slope correct
- Pattern neckline circumference too small

13. High Neck Base

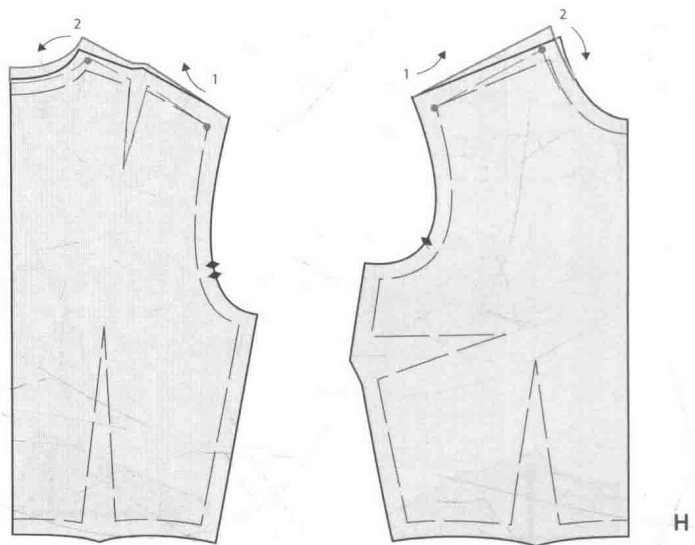
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



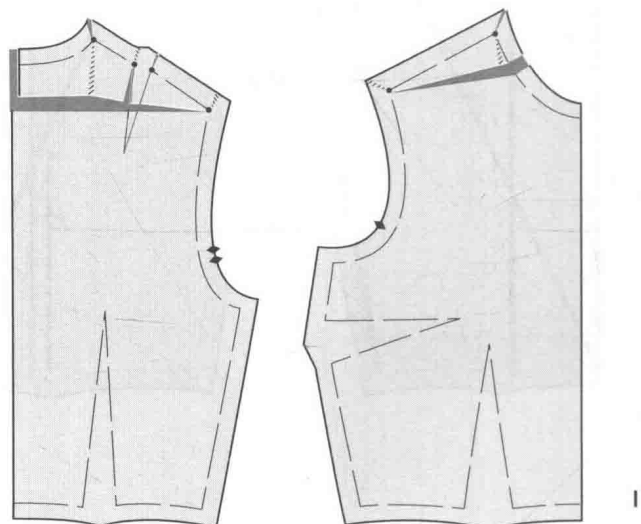
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Restore to original position.
- Tape tracing in place.



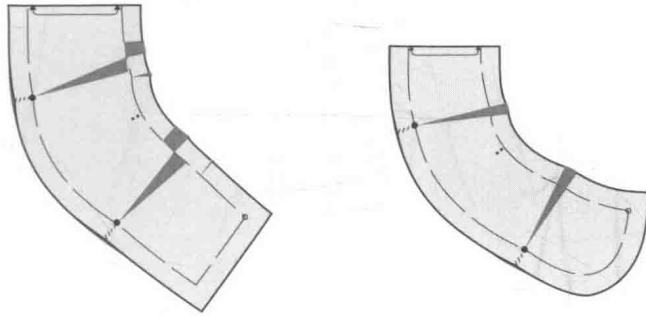
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate patterns as illustrated.
- Tape pattern pieces in place.

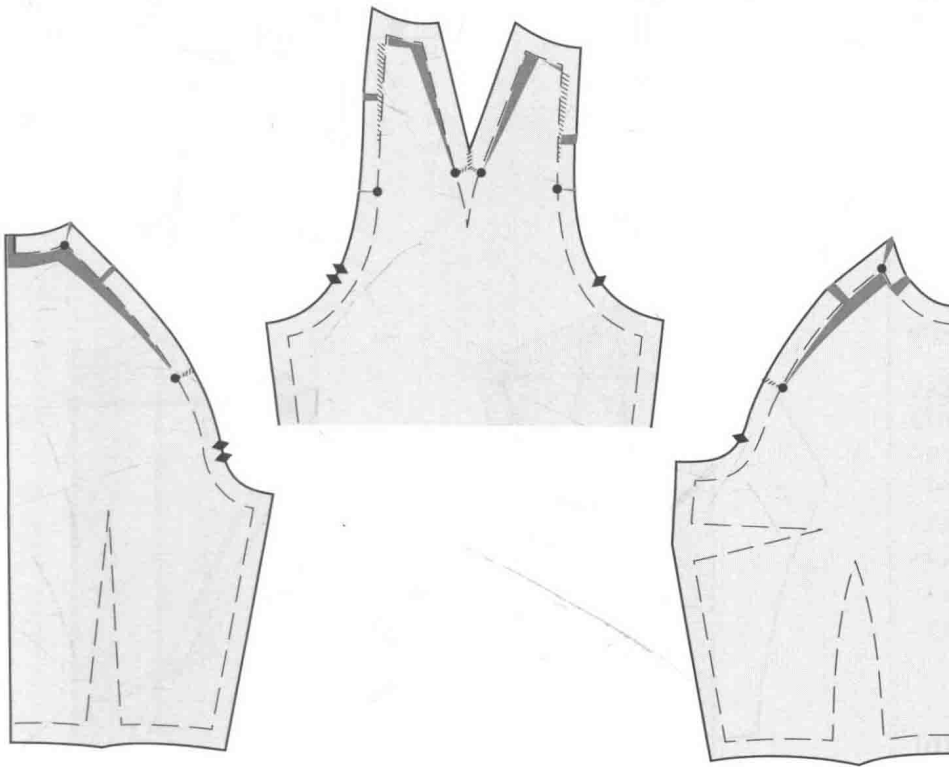


13. High Neck Base

FASHION PATTERNS



Collars

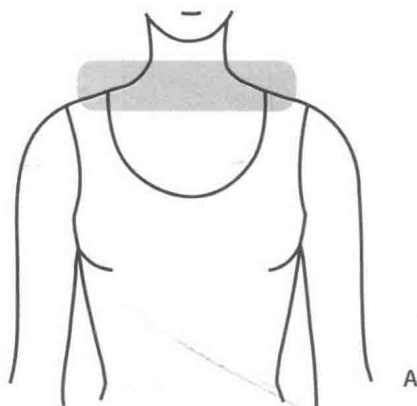


Raglan

14. Low Neck Base

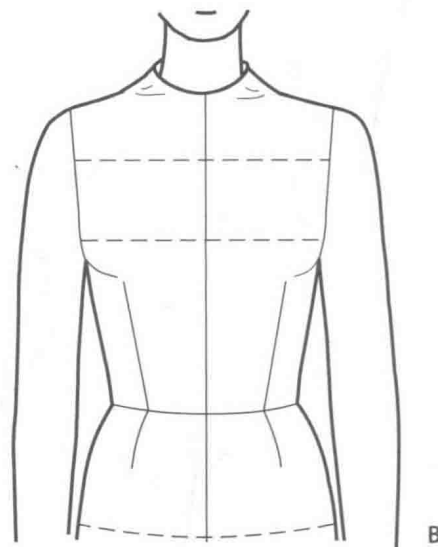
FIGURE EVALUATION (A)

- The neck meets the shoulder at a sharper angle than average/ideal.
- The shallow neck appears to sink into the shoulder due to less muscle development.
- A low neck base should not be confused with #7 Square Shoulders due to bone structure.



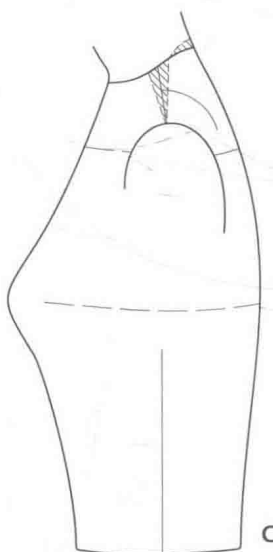
FITTING PROBLEMS (B)

- The neckline is loose and may sag at center front.
- The neckline may instead stand slightly away from the shallow neck.
- The shallow neck needs a smaller neckline and less length at center back.



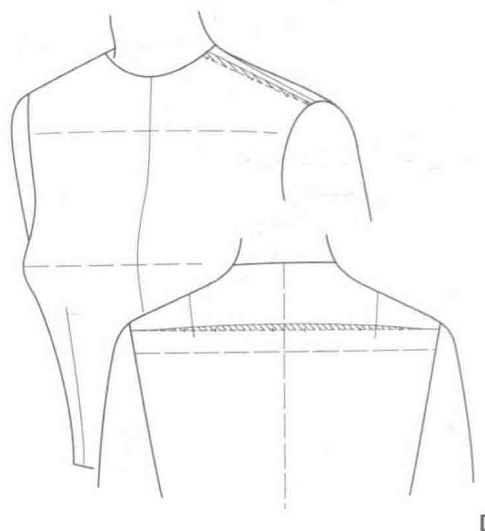
READY-TO-WEAR ALTERATION (C)

- Release the shoulder and back neckline seams.
- Take up the shoulder seams, tapering to zero at the shoulder tip.
- Lower the back neckline equal to the change at the shoulder.
- Re-stitch the seams.

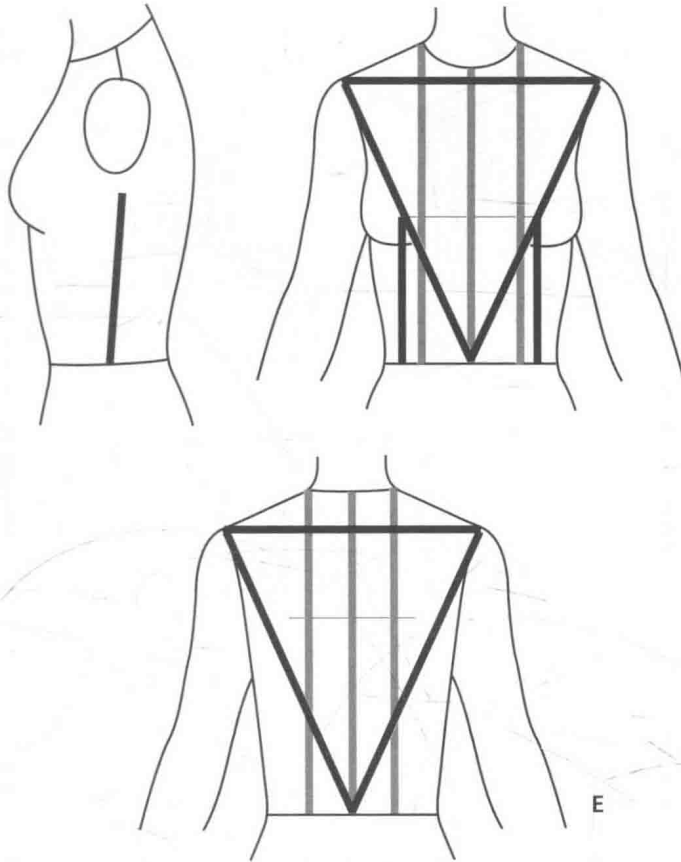


TRIAL GARMENT ALTERATION (D)

- Fold a tuck on the bodice front, between the neck and armhole near the shoulder seam, tapering to zero at the shoulder tip.
- Fold a tuck across center back, equal to the change at the shoulder, tapering to zero at shoulder tips.

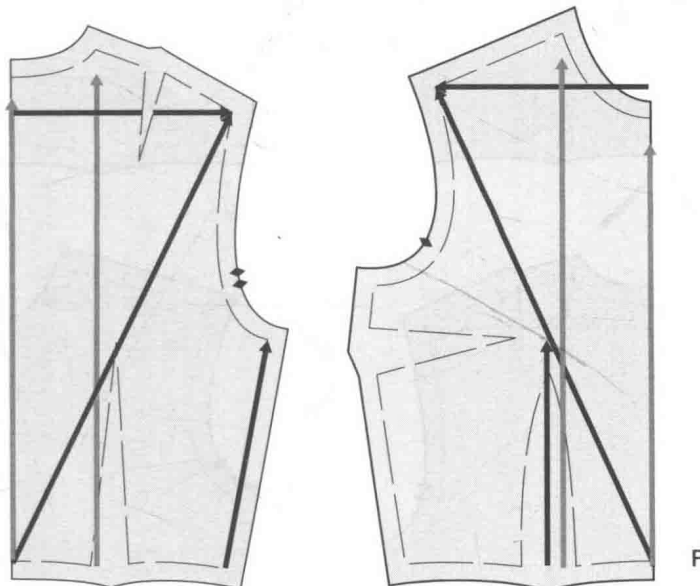


14. Low Neck Base



BODY MEASUREMENT POSITIONS (E)

- Side, 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Full bodice front and back, waist to shoulder/neckline
- Center front and back, waist to neckline
- Shoulder tip width, center to shoulder tip
- Shoulder slope, waist center to shoulder tip
- Shoulder length, shoulder tip to neckline



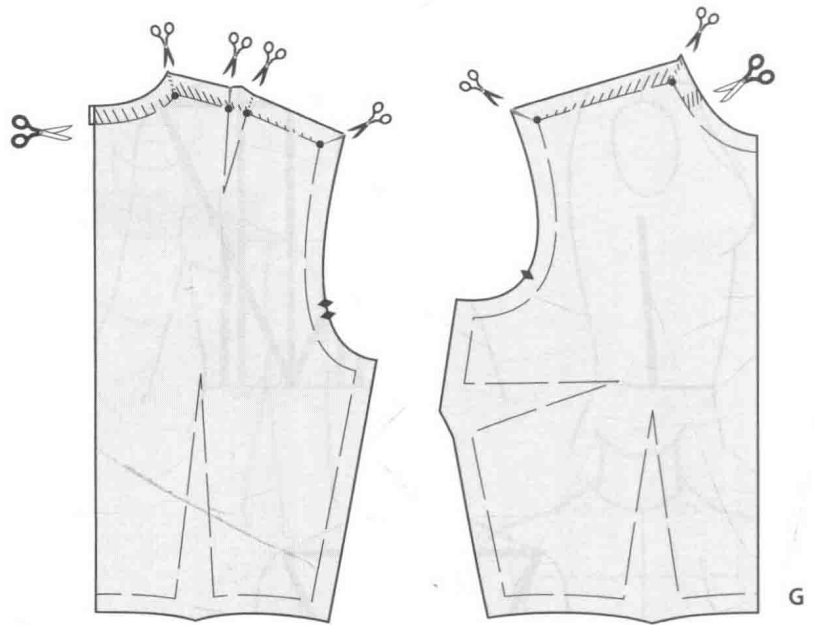
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length and bust height correct
- Pattern full bodice too long
- Pattern center front and back too long
- Pattern shoulder tip width correct
- Pattern shoulder slope correct

14. Low Neck Base

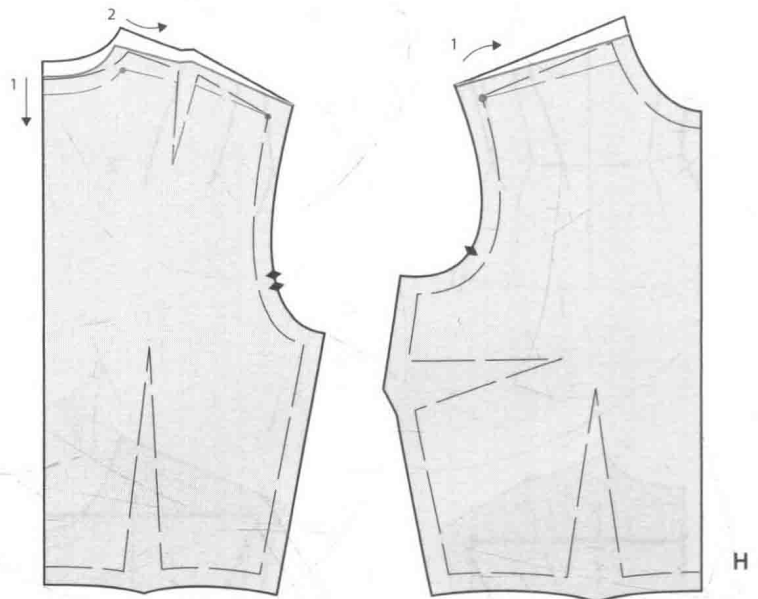
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



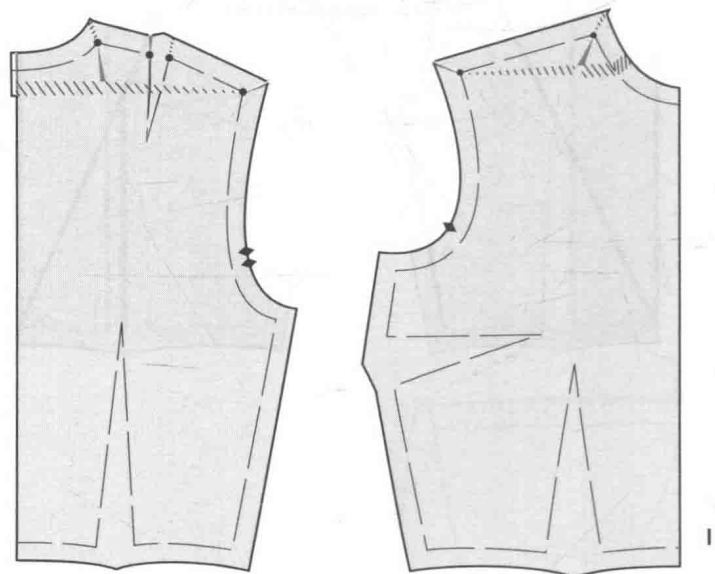
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Restore pattern to original position.
- Tape tracing in place.



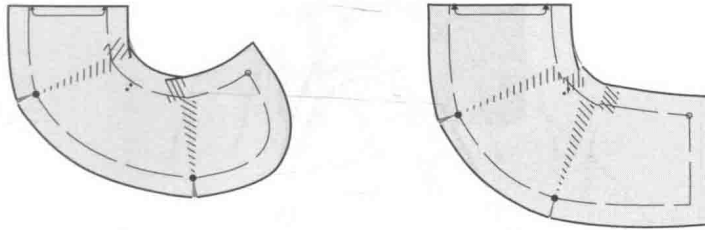
SLASH METHOD (I)

- Slash as illustrated in affected area.
- Clip hinges.
- Manipulate patterns as illustrated.
- Tape pattern pieces in place.

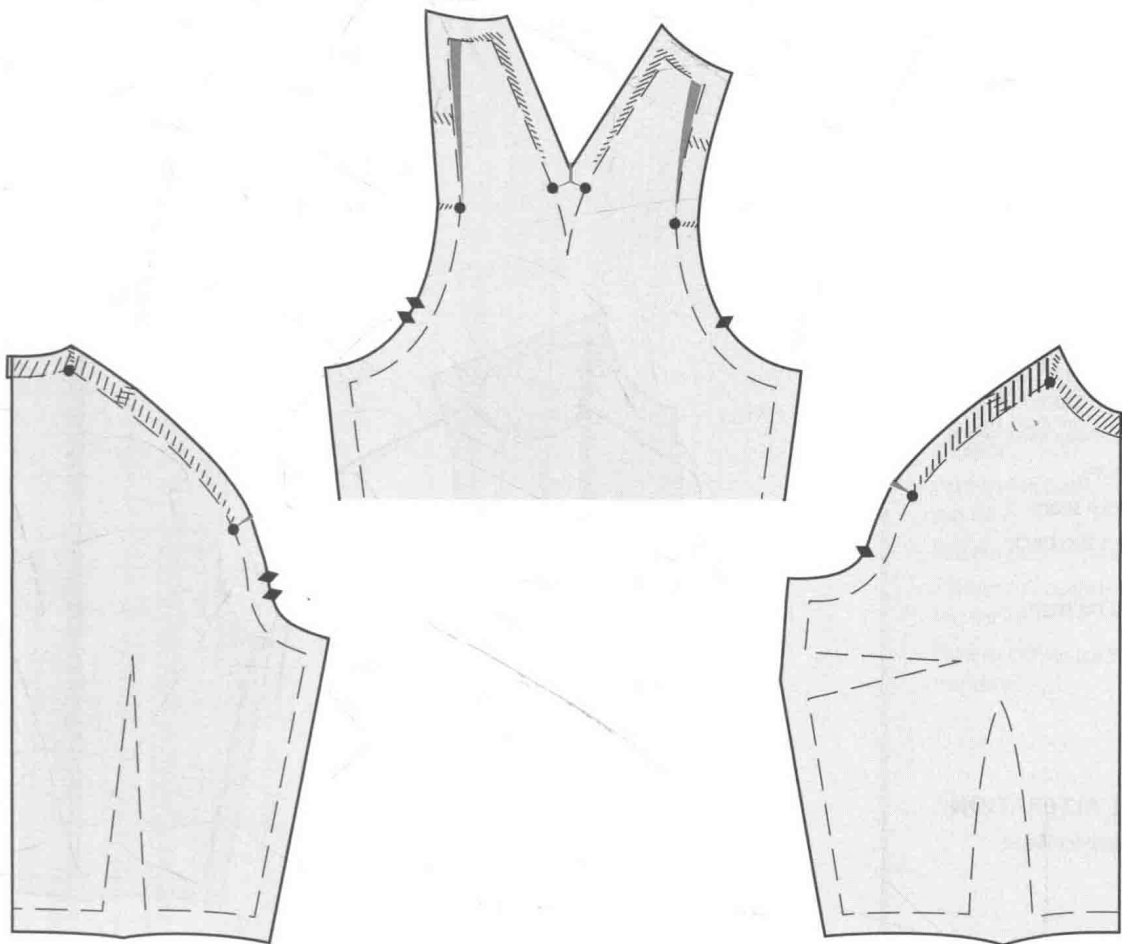


14. Low Neck Base

FASHION PATTERNS



Collars

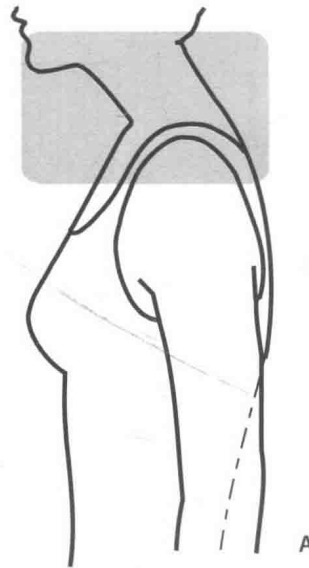


Raglan

15. Forward Head

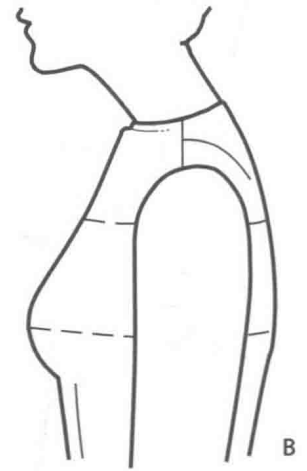
FIGURE EVALUATION (A)

- The head is thrust forward over the chest.
- The angle where the neck meets the chest becomes sharper, deeper than average/ideal.
- The neck becomes longer at center back.



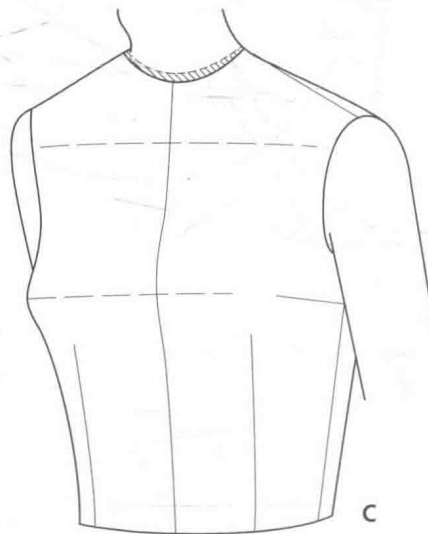
FITTING PROBLEMS (B)

- Form-fitting necklines and collars are too high in front, forced into a tight circular wrinkle.
- Shoulder seams are pulled forward at the neck.
- The back neckline may be pulled higher, raising the blade fitting line in back.
- The bodice front neckline needs to be deepened.
- The bodice back shoulder seam needs to be raised at the neck.
- A lower neckline or open collar eliminates the need for alteration.



READY-TO-WEAR ALTERATION (C)

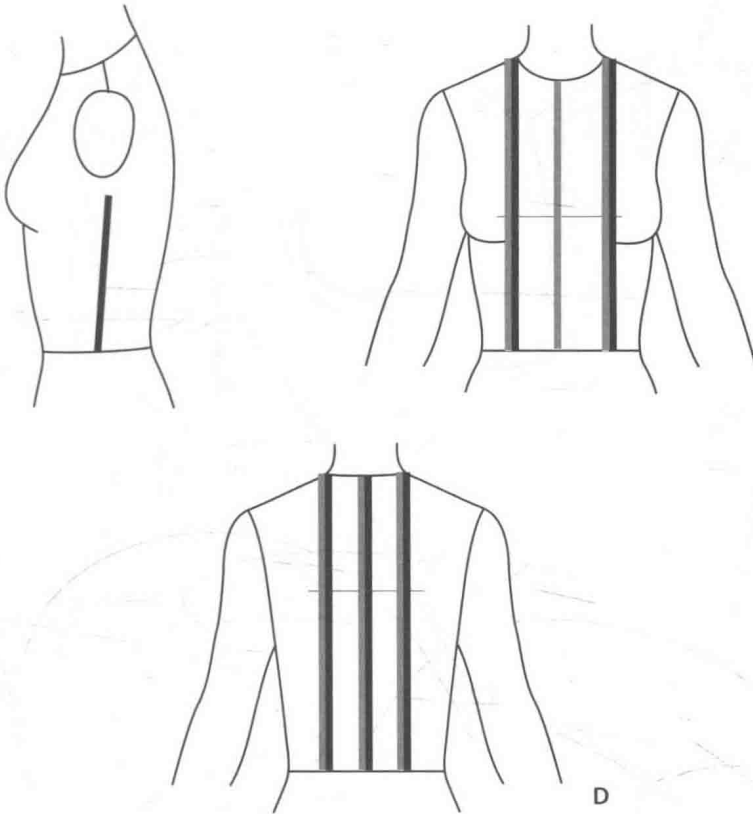
- Release the neckline seam in front.
- To shorten, lower the neckline seam.
- Clip seam allowances.
- Release the shoulder seam.
- To lengthen, let out the back shoulder seam.
- Re-stitch the neckline seam.



TRIAL GARMENT ALTERATION

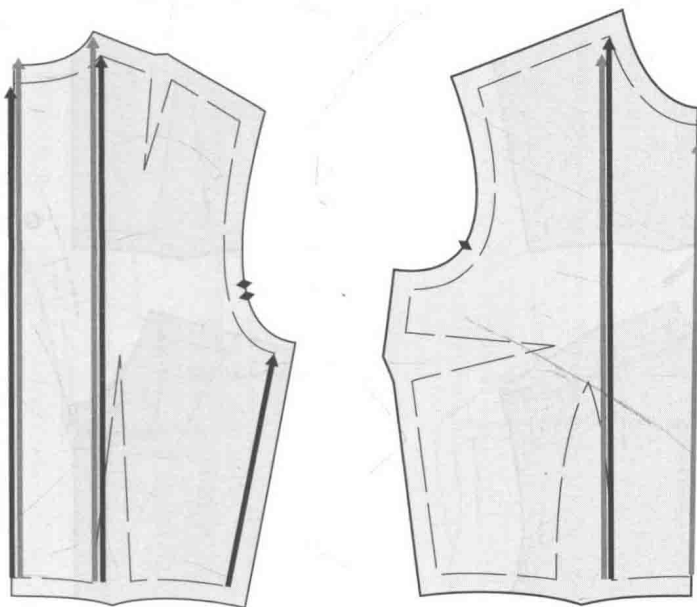
- Proceed as for Ready-to-Wear.

15. Forward Head



BODY MEASUREMENT POSITIONS (D)

- Side, from 1 inch below arm hinge to waist
- Full bodice front and back, waist to neck at shoulder
- Center front and back, waist to neckline



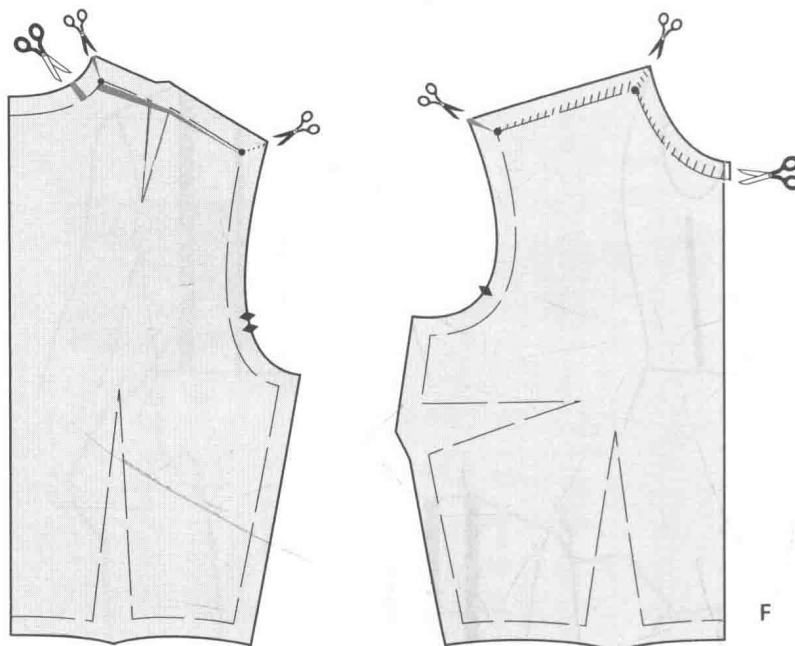
PATTERN MEASUREMENT COMPARISON (E)

- Pattern side seam and bust height correct
- Pattern full bodice front correct or too long
- Pattern center front too long
- Pattern full bodice back correct or too short
- Pattern center back correct or too short

15. Forward Head

SEAM METHOD (F)

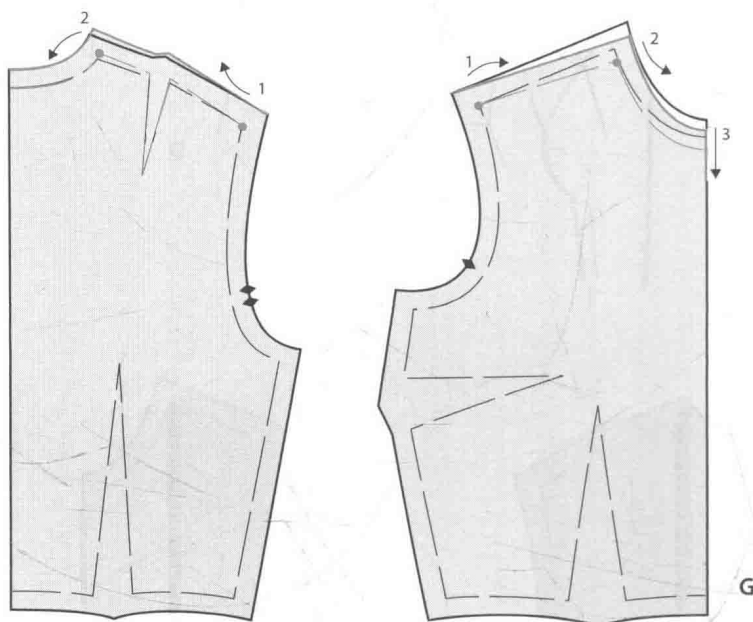
- Release front neckline seam allowance to center front.
- Clip hinges.
- To lower front neckline, overlap neck seam allowance at center front.
- Restore front neckline seam.
- Tape seam allowance in place.
- Release back neckline and shoulder seam allowances.
- Clip hinges.
- To lengthen back neckline, raise shoulder seam.
- Restore back neckline seam.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (G)

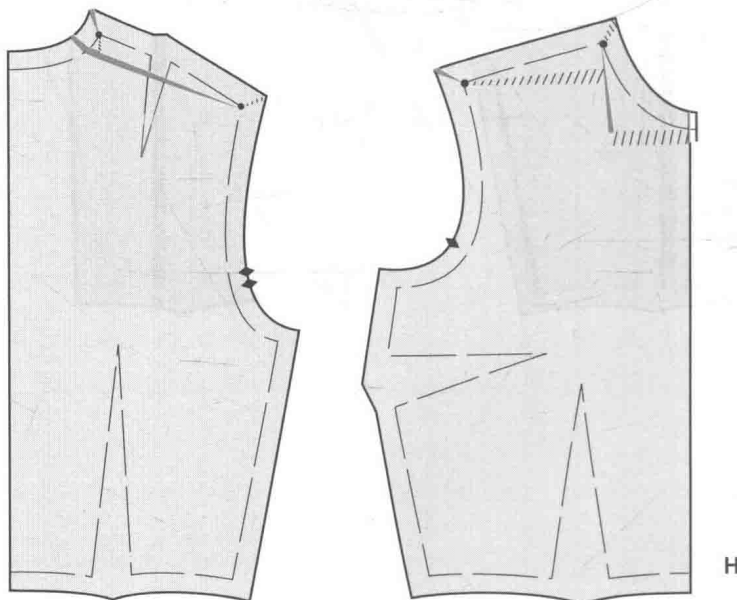
- Trace front shoulder and neckline, and a short distance down center front.
- To lower neckline, slide pattern down.
- Trace new lower neckline at center front only.
- Pivot upward to align seamline at shoulder, then complete tracing.
- Return pattern to original position.
- Tape tracing in place.
- Trace back shoulder and neckline onto tissue paper.
- To raise shoulder seam, pivot pattern upward from shoulder tip.
- Trace new shoulderline.
- Pivot pattern downward at neckline to realign neckline.
- Return pattern to original position.
- Tape tracing in place.

Note: For better visibility, transfer any new lines on the tracing to the pattern.

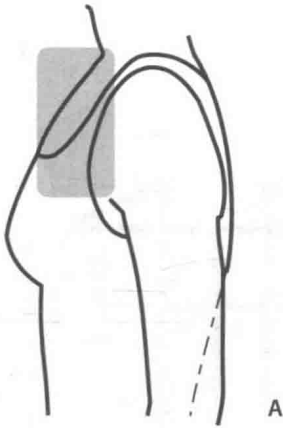


SLASH METHOD (H)

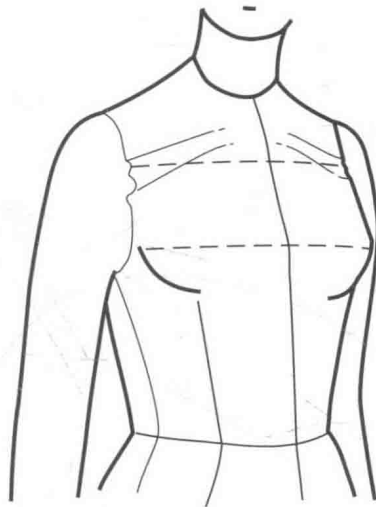
- Slash across front neckline, then up to just below shoulder.
- Cut across neckline seam allowance near shoulder.
- To lower neckline, lap neckline section straight down over pattern.
- Clip hinge.
- Align and restore front neckline seam.
- Tape pattern pieces in place.
- Slash across back neckline to shoulder tip.
- Clip hinges.
- To lengthen back neckline, raise shoulder seam.
- Align and restore back neckline seam.
- Tape pattern pieces in place.



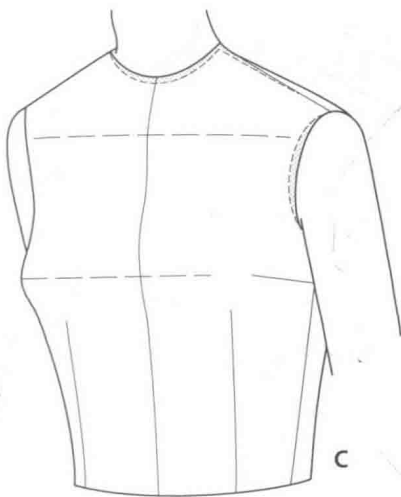
16. Rounded Chest



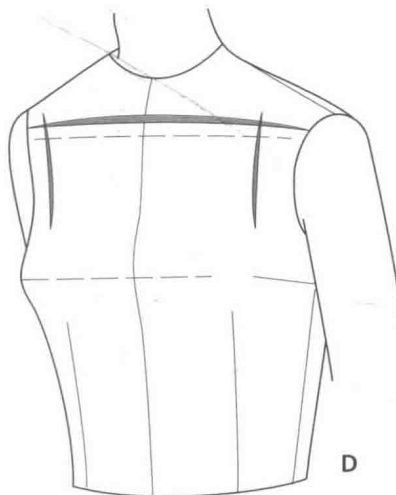
A



B



C



D

FIGURE EVALUATION (A)

- The sternum is larger than average/ideal and protrudes.
- The chest rounds outward.
- Length and width increase across the upper chest.

FITTING PROBLEMS (B)

- A front opening garment does not meet at center.
- Fabric pulls tight across the chest.
- Diagonal stress wrinkles form between the neckline and armhole.
- The chest fitting line may rise at center.
- The bodice needs more fabric length and width between the chest and neck.

READY-TO-WEAR ALTERATION (C)

- Release the front neckline, shoulder, and armhole seams.
- To lengthen, let out the neckline and shoulder seams.
- Re-stitch the neckline and shoulder seams.
- To widen, let out the armhole seam when re-attaching the sleeves.

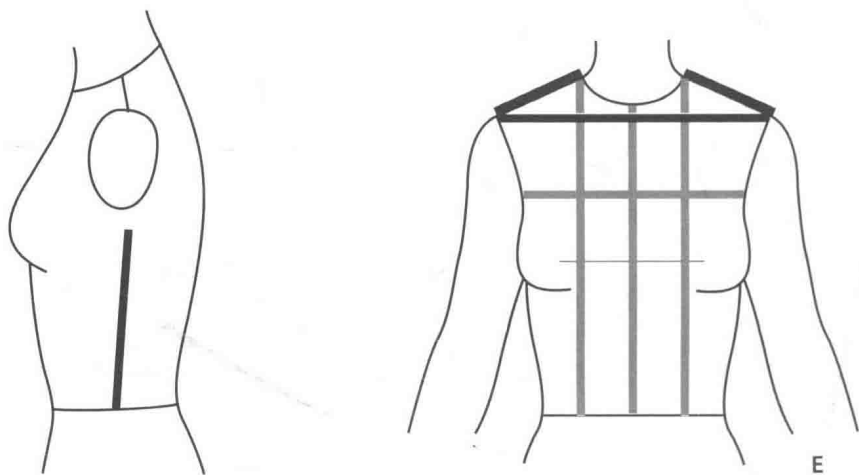
TRIAL GARMENT ALTERATION (D)

- Slash across the garment chest, armhole to armhole.
- To lengthen, insert a fabric strip.
- Spread until the chest fitting line is level.
- The opening will be parallel at center front, tapering to zero at the armhole.
- To widen, slash and spread near the armhole, as illustrated.

16. Rounded Chest

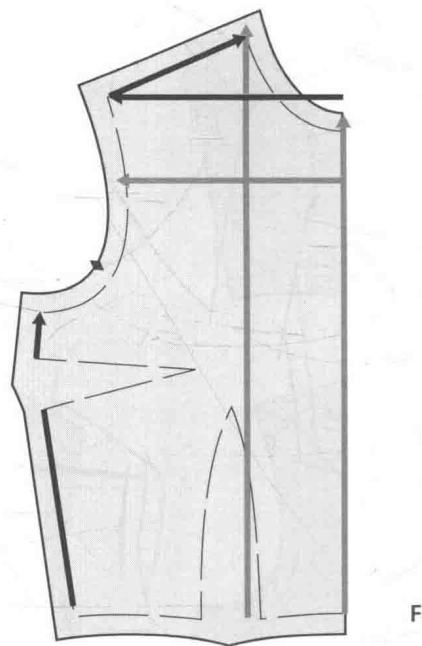
BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Full bodice front, waist to neck at shoulder
- Center front, waist to neckline
- Shoulder tip width, center of neck to tip
- Shoulder length, tip to neckline
- Chest width from center to arm hinge

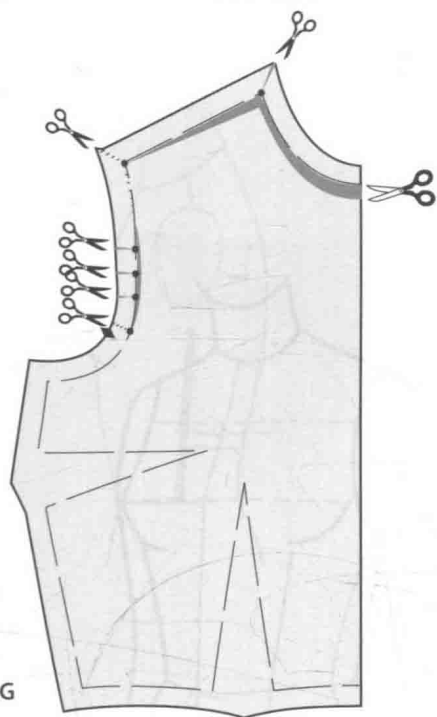


PATTERN MEASUREMENT COMPARISON (F)

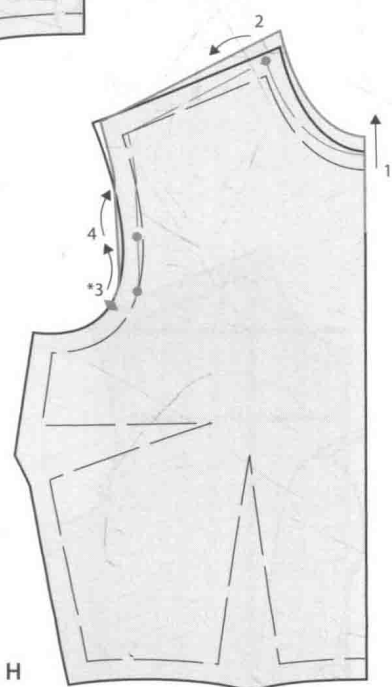
- Pattern side seam length correct
- Pattern front full bodice length too short
- Pattern center front length too short
- Pattern shoulder tip width and shoulder length correct
- Pattern chest width too narrow



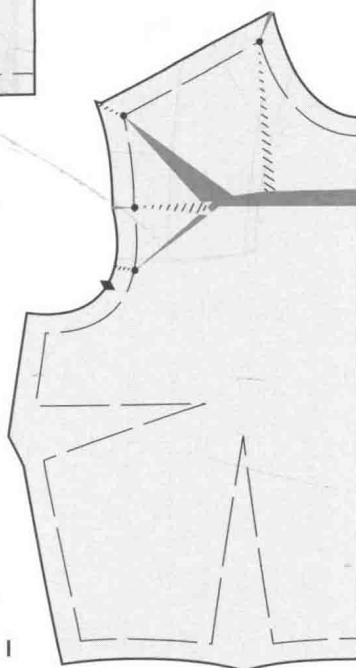
16. Rounded Chest



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

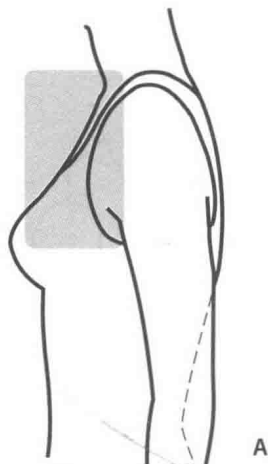
SLASH METHOD (I)

- Slash pattern in affected area as illustrated.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

17. Shallow Chest

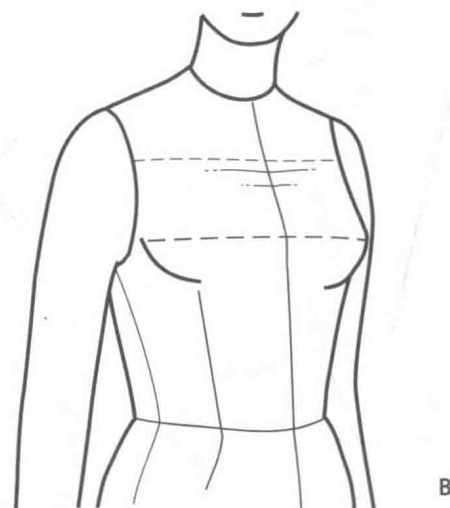
FIGURE EVALUATION (A)

- The chest is concave or flatter than average/ideal.
- Chest muscle development is minimal.
- Length decreases across the upper chest.
- A shallow chest may occur in combination with #21 Rounded Upper Back and #9 Forward Shoulder Joint.



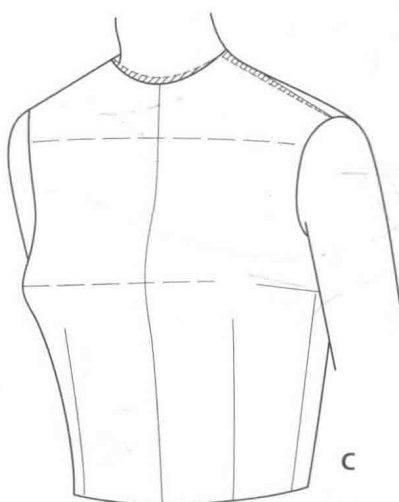
FITTING PROBLEMS (B)

- Excess fabric sags into loose horizontal wrinkles between the neckline and bust.
- The chest fitting line may droop at center.
- The bodice needs less fabric length between neckline and bust.
- If the bodice needs less fabric width across the chest, see #31 Narrower Chest.



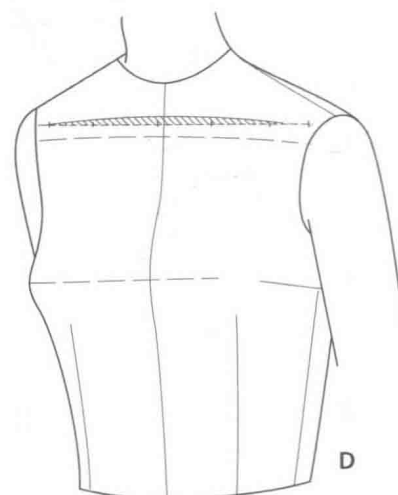
READY-TO-WEAR ALTERATION (C)

- Release the front neckline and shoulder seams.
- Clip around the neckline to allow the neckline to rise.
- To shorten, take up the front neckline and shoulder seams, tapering to zero at the shoulder tip.
- Re-stitch the neckline and shoulder seams.

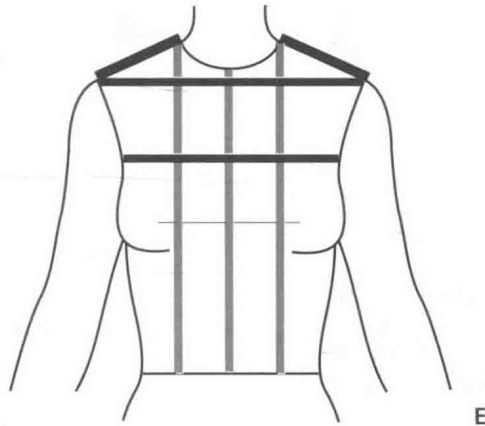
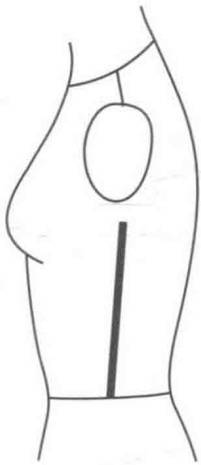


TRIAL GARMENT ALTERATION (D)

- To shorten, fold a tuck across the chest until the chest fitting line is level.
- The tuck will be parallel or even at center front, tapering to zero at the armhole.



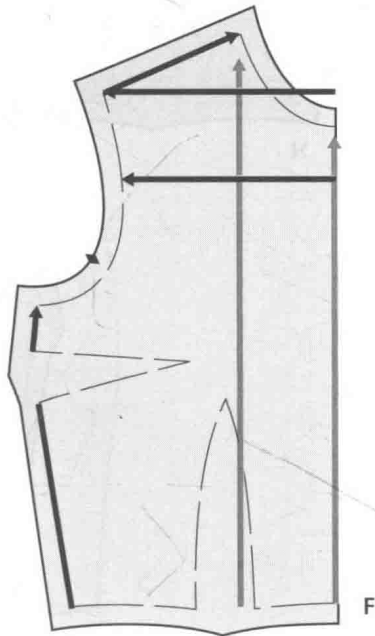
17. Shallow Chest



E

BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Full bodice front, waist to neck at shoulder
- Center front, waist to neckline
- Shoulder tip width, center of neck to tip
- Shoulder length, tip to neck
- Chest width, from center to arm hinge



F

PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length correct
- Pattern full bodice length too long
- Pattern center front length too long
- Pattern shoulder tip width correct
- Pattern shoulder length correct
- Pattern chest width correct

17. Shallow Chest

SEAM METHOD (G)

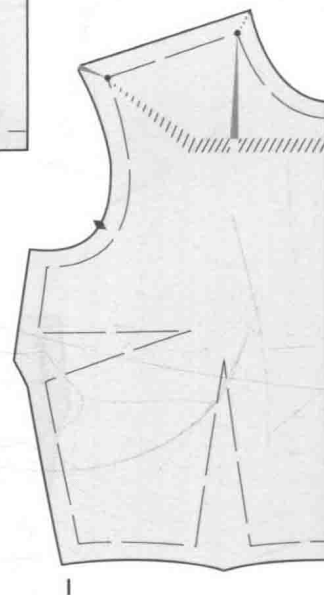
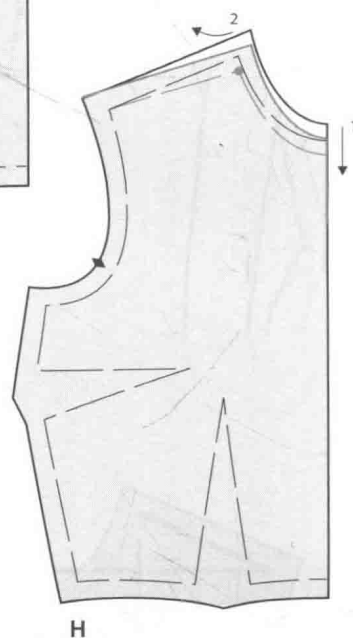
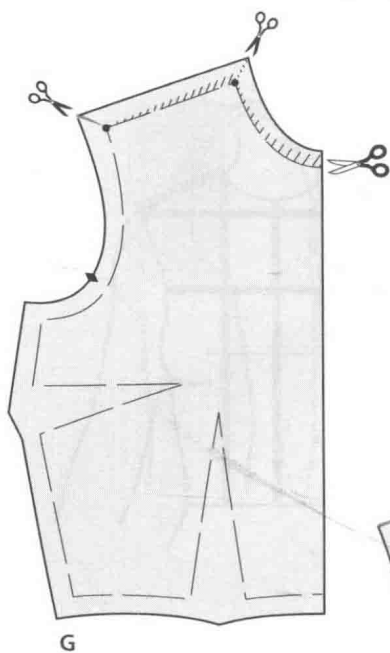
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

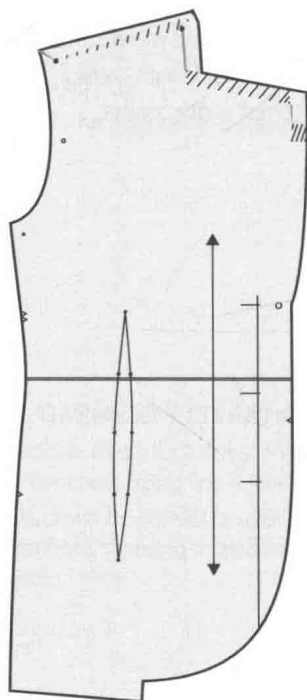
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash in affected area as illustrated.
- Clip hinges.
- Manipulate pattern as illustrated.
- Taper pattern pieces in place.



FASHION PATTERN



Fashion Jacket

18. High Bust Position

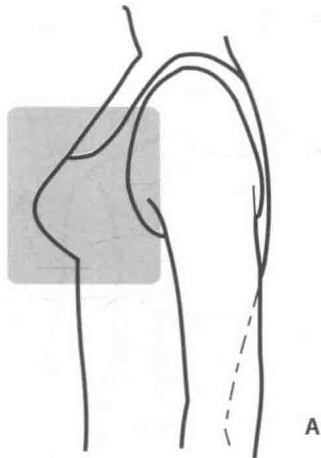
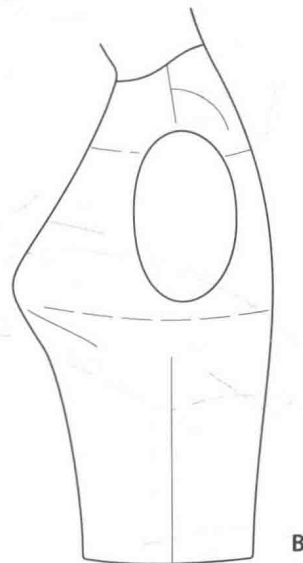


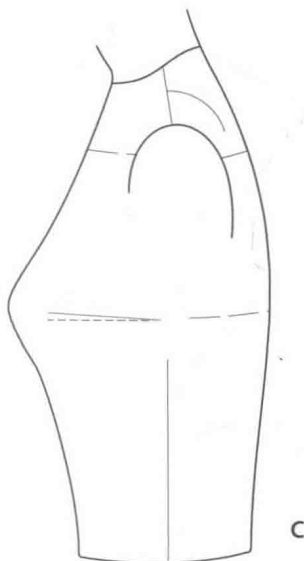
FIGURE EVALUATION (A)

- Breast tissue is higher and firmer than average.
- The distance from shoulder to bust is shorter, and longer from waist to bust.
- The high bust is characteristic of a youthful figure and/or erect posture.



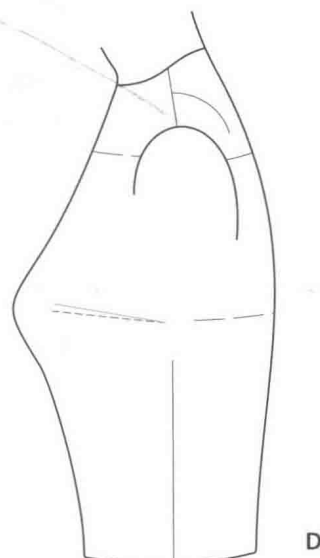
FITTING PROBLEMS (B)

- Dart shaping lies below the bust contour.
- Fabric is tight across the bust and loose below the dart.
- The bodice front bust dart needs to be raised to accommodate the bust contour.



READY-TO-WEAR ALTERATION (C)

- Release the bust dart and side seam as needed.
- Raise the dart tip the angle of the dart.
- Lengthen the waistline dart.
- For a princess bodice, let out the side panel at bust level and take in below the bust.



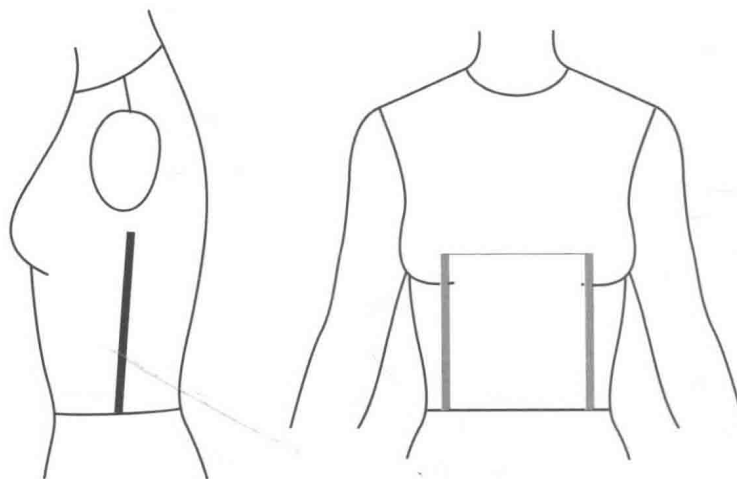
TRIAL GARMENT ALTERATION (D)

- Release the bust dart and side seam as needed.
- Raise the dart tip the angle of the dart.
- Restore the cut edge of the dart base.
- Lengthen the waistline dart.

18. High Bust Position

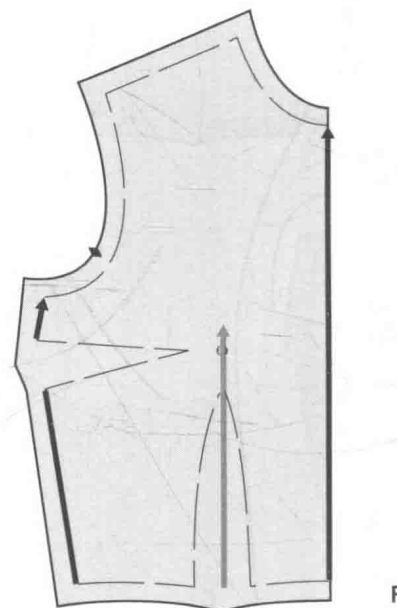
BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Bust tip width, center to bust point

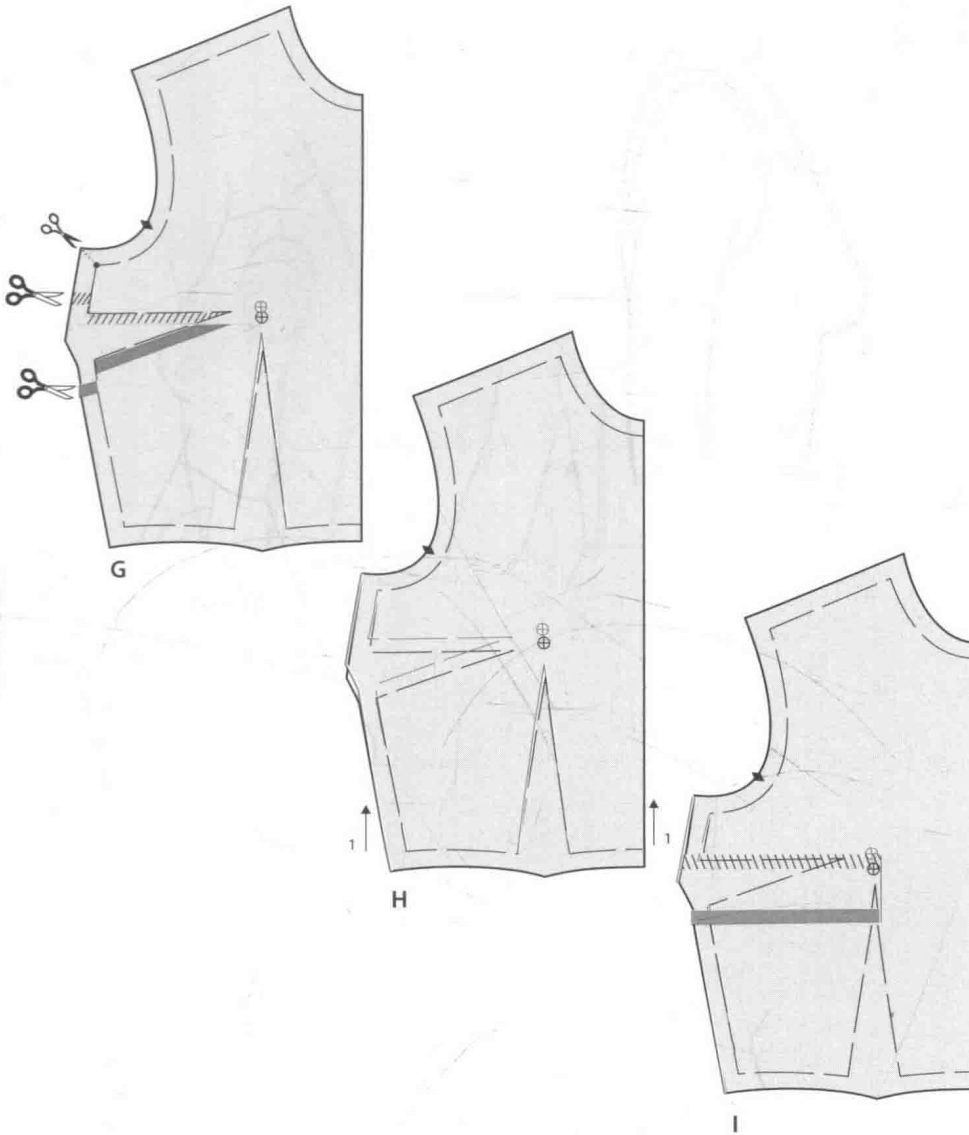


PATTERN MEASUREMENT COMPARISON (F)

- Pattern overall length and width measurements may be correct
- Pattern bust height too short
- Pattern bust tip width correct



18. High Bust Position



SEAM METHOD (G)

- Release bust dart.
- Raise bust dart evenly, or raise dart tip position.
- Tape dart in place.
- Restore waist-fitting dart legs.

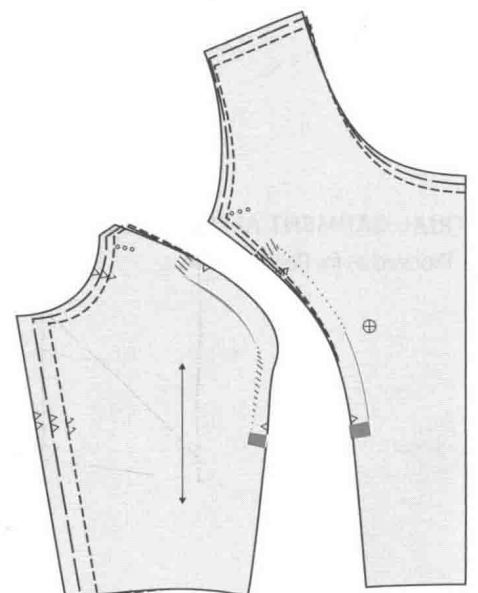
PIVOT/SLIDE METHOD (H)

- Draw bust dartlines parallel above original dart legs, or raise dart tip position.
- Lengthen waist-fitting dart legs.

SLASH METHOD (I)

- Slash across front side seam and remove dart area.
- Raise bust dart evenly or raise dart tip position.
- Tape pattern piece in place.
- Restore waist-fitting dart legs.

FASHION PATTERN

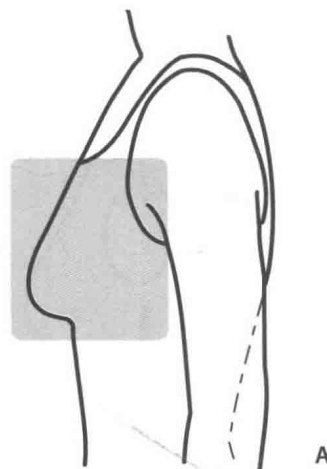


Princess-Multi-Size Pattern

19. Low Bust Position

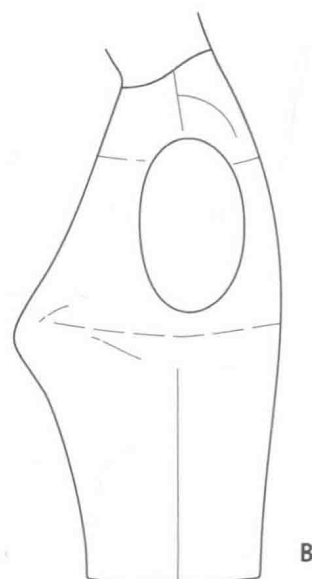
FIGURE EVALUATION (A)

- Breast tissue rests lower or is positioned lower on the body than average/ideal.
- The distance from shoulder to bust is longer and shorter from waist to bust.
- The low bust is associated with poor posture, an aging figure, and/or loss of muscle tone.



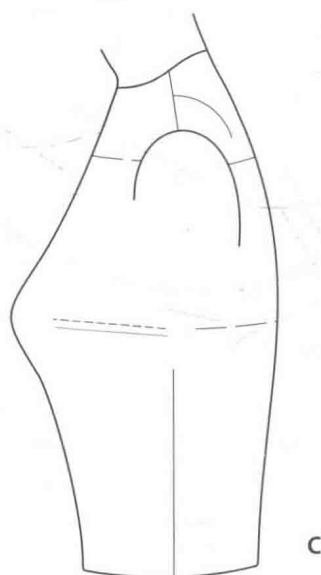
FITTING PROBLEMS (B)

- Dart shaping is too high.
- Fabric is tight across the bust and loose above the dart.
- Tight horizontal wrinkles form across the waist-fitting darts.
- The bodice front bust dart needs to be lowered to accommodate the bust contour, or transferred to the waistline in the form of added ease, tucks, or gathers.



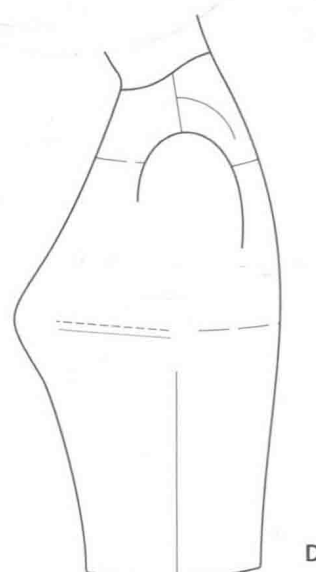
READY-TO-WEAR ALTERATION (C)

- Release the bust dart and side seam as needed.
- Lower the bust dart.
- Shorten the waistline dart and, if needed, narrow the dart width.
- For a princess bodice, let out the side panel at bust level and take in above the bust.

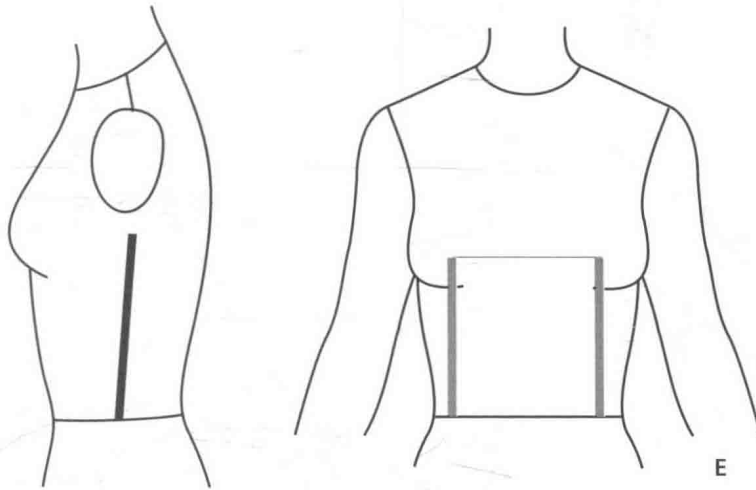


TRIAL GARMENT ALTERATION (D)

- Proceed as for Ready-to-Wear.

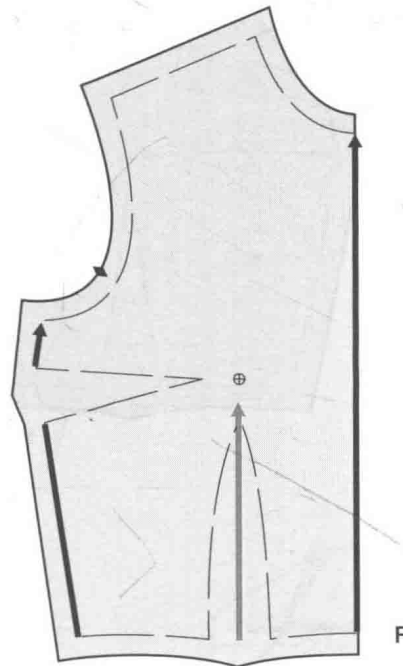


19. Low Bust Position



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Bust tip width, center to bust point



PATTERN MEASUREMENT COMPARISON (F)

- Pattern overall length and width measurements may be correct
- Pattern bust height too long
- Pattern bust tip width may be too narrow or correct

19. Low Bust Position

SEAM METHOD (G)

- Release bust dart.
- Lower bust dart evenly.
- Tape dart in place.
- Shorten waist-fitting dart legs, narrowing dart if needed.

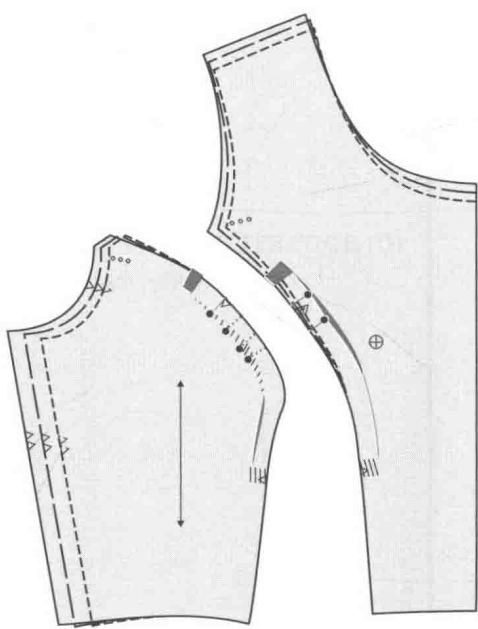
PIVOT/SLIDE METHOD (H)

- Draw bust dartlines parallel below original dart legs.
- Shorten waist-fitting dart legs, narrowing dart if needed.

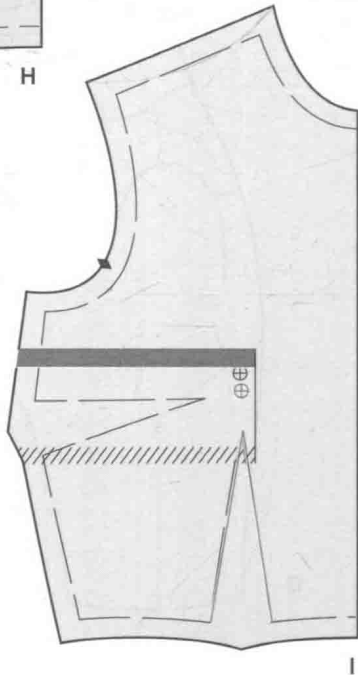
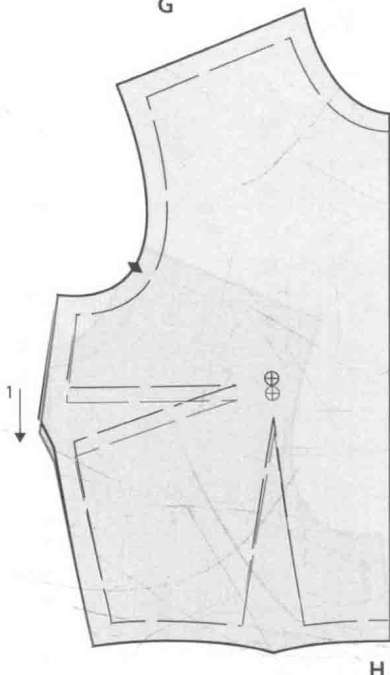
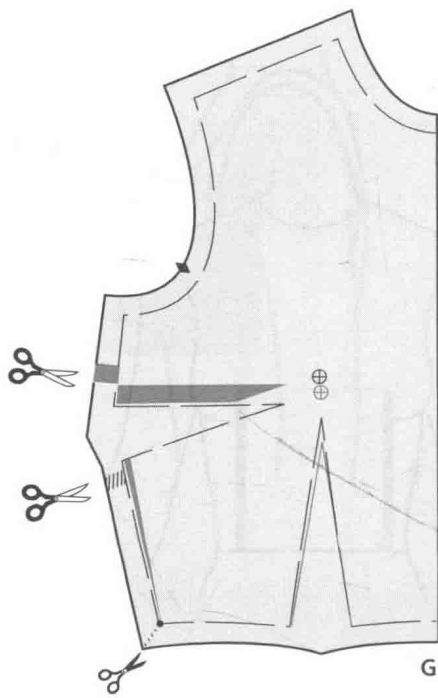
SLASH METHOD (I)

- Slash across front side seam and remove dart area.
- Lower bust dart evenly.
- Tape dart section in place.
- Restore waist-fitting dart legs.

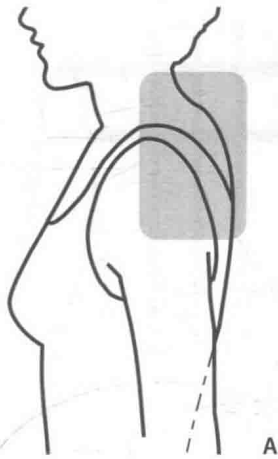
FASHION PATTERN



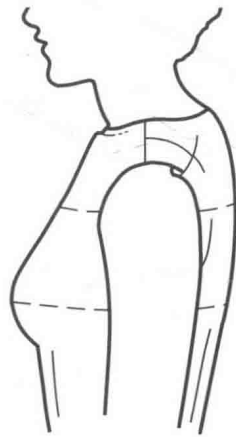
Princess–Multi-Size Pattern



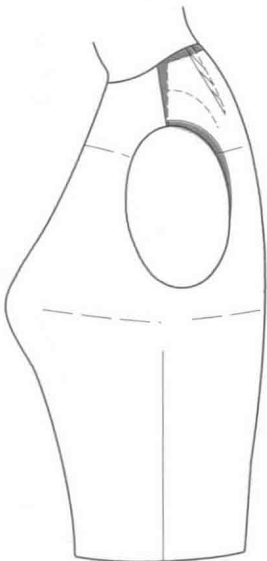
20. Dowager Curve



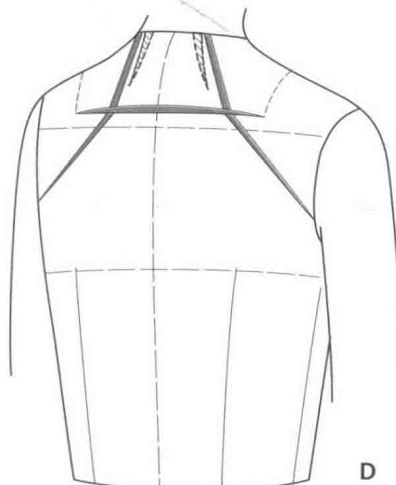
A



B



C



D

FIGURE EVALUATION (A)

- The top vertebrae of the spine curve or angle outward at the base of the neck. Fatty tissue may develop.
- Length and width at the base of the neck have increased.
- When extreme, a crease forms between the neck and dowager curve.
- The so-called "dowager" curve develops with age.
- The dowager curve may contribute to #15 Forward Head and possibly #17 Shallow Chest.
- The dowager curve may or may not occur with #21 Rounded Upper Back.

FITTING PROBLEMS (B)

- The neckline is tight across the back of the neck.
- Form-fitting necklines and collars are too high in front, forced into a tight circular wrinkle.
- The edge of the back armhole may ripple.
- The blade fitting line and back waistline may be pulled upward.
- The bodice back needs more fabric length and possibly width at the neckline.
- The bodice back needs a half-dart transfer from shoulder to neckline, with the remaining half eased into the shoulder seam.

READY-TO-WEAR ALTERATION (C)

- Release the back neckline, shoulder, shoulder dart, and armhole seams.
- To lengthen and widen, let out the neckline, shoulder, and armhole seams until the blade line is level and there are no ripples at the armhole.
- Transfer shoulder darts to the mid-point of the neckline, diagonally to accommodate the curve.
- Re-stitch darts and seams, with some ease across the shoulder if needed.

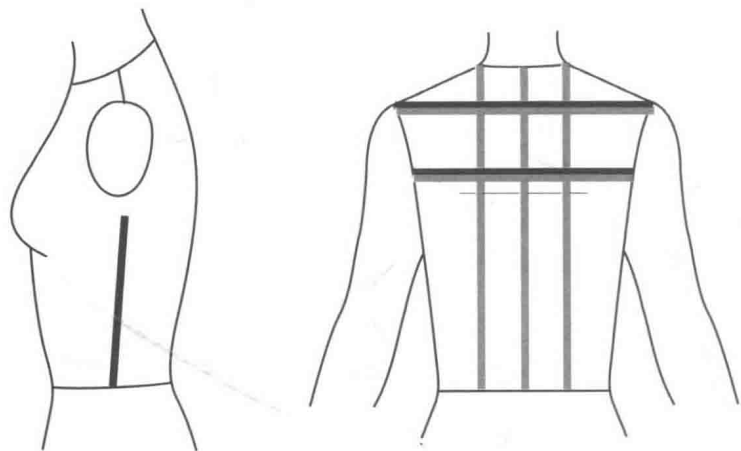
TRIAL GARMENT ALTERATION (D)

- Release the shoulder dart.
- Slash across the bodice back between dart tips.
- Slash diagonally between the neck and armhole.
- To lengthen and widen, insert fabric strips and spread until the blade line is level and there are no ripples at the armhole.
- Transfer shoulder darts to the mid-point of the neckline, diagonally to accommodate the curve.
- Re-stitch darts and seams, with some ease across the shoulder if needed.

20. Dowager Curve

BODY MEASUREMENT POSITIONS (E)

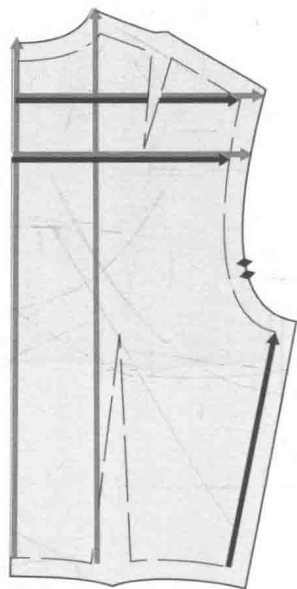
- Side, from 1 inch below arm hinge to waist
- Full bodice back, waist to neck at shoulder
- Center back, waist to neckline
- Shoulder tip width, center of neck to tip
- Upper back width, center to arm hinge



E

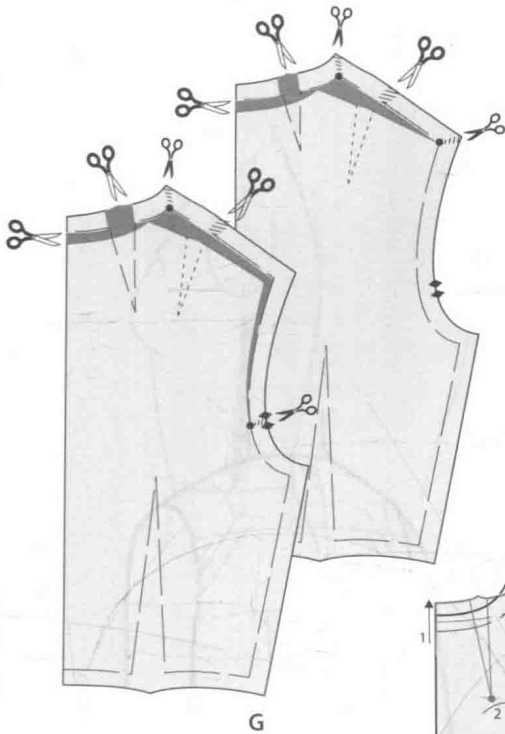
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length correct
- Pattern back full bodice length too short
- Pattern back center length too short
- Pattern back shoulder tip width correct or too narrow
- Pattern across upper back correct or too narrow



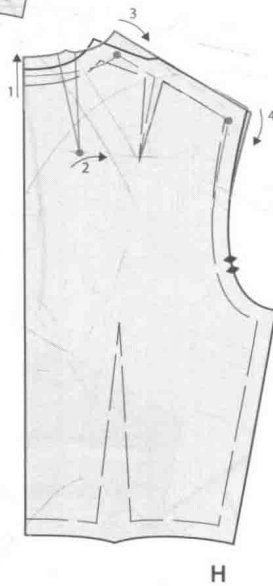
F

20. Dowager Curve



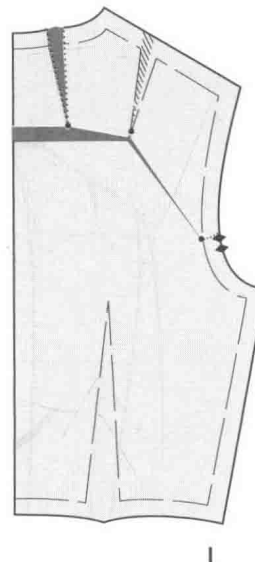
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

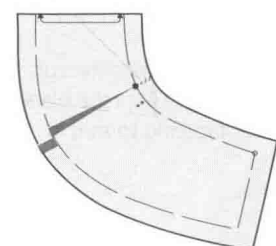
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

FASHION PATTERN

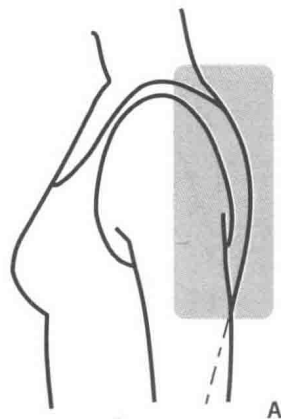


Collar

21. Rounded Upper Back

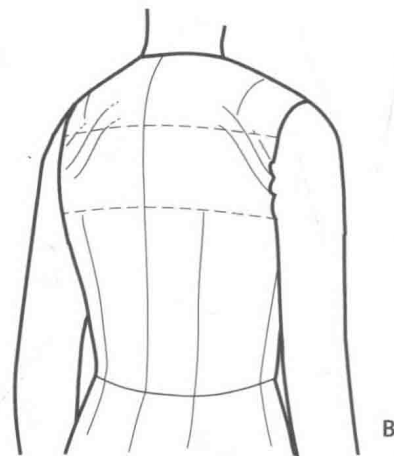
FIGURE EVALUATION (A)

- The upper back curves outward more than average/ideal.
- Center back length increases between the neck and mid-back level.
- A forward head may develop.
- The rounded upper back often occurs in combination with #9 Forward Shoulder Joint and/or #17 Shallow Chest.



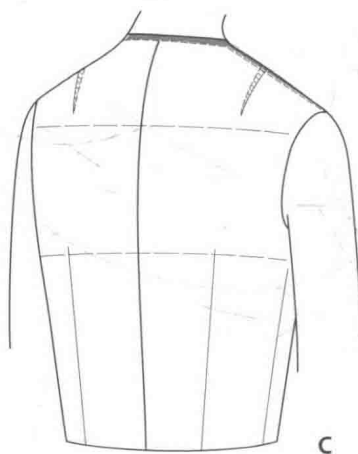
FITTING PROBLEMS (B)

- The back neckline pulls down and the waistline rises since there is not enough fabric length over the back curve.
- Diagonal wrinkles form between the neck and the armhole.
- The blade fitting line may be pulled upward at center back.
- The bodice back needs more fabric length and a wider dart.
- If the center front is too long, see #17 Shallow Chest.
- If width is needed, see #30 Wider Upper Back.



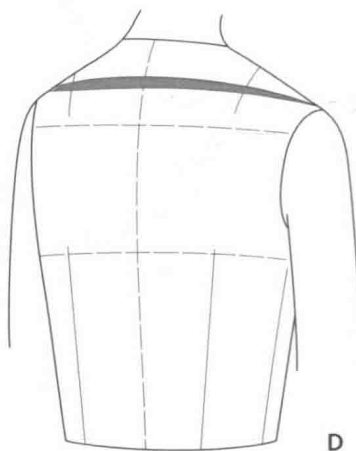
READY-TO-WEAR ALTERATION (C)

- Release the neckline, shoulder, and shoulder dart seams.
- Lengthen by letting out the back neckline and shoulder seams.
- Increase dart shaping.
- Re-stitch the neckline, shoulder dart, and shoulder seams.

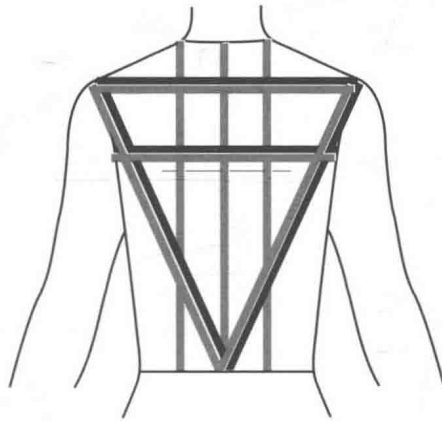
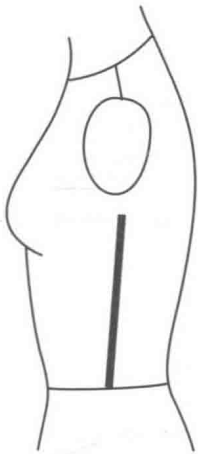


TRIAL GARMENT ALTERATION (D)

- Slash across the bodice back from shoulder tip to shoulder tip.
- Insert a fabric strip and spread the cut edges to increase length until the blade fitting line is level, tapering to zero at the shoulder tip.



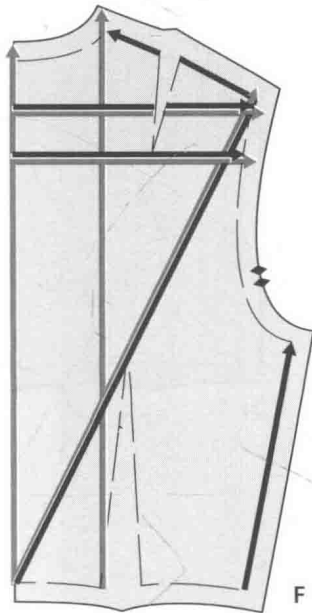
21. Rounded Upper Back



E

BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Full bodice back, waist to neck at shoulder
- Center back, waist to neckline
- Shoulder tip width, center back to shoulder tip
- Shoulder slope, waist center to shoulder tip
- Shoulder length, shoulder tip to neckline
- Across upper back, center to arm hinge



F

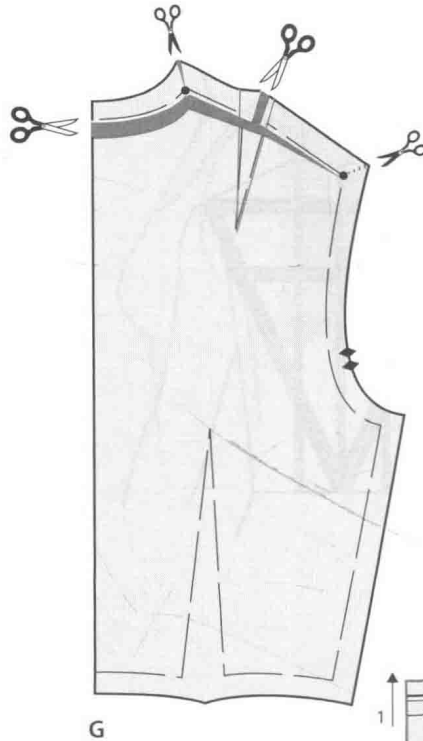
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length correct
- Pattern full bodice length too short
- Pattern center length too short
- Pattern shoulder tip width correct or short
- Pattern shoulder slope may be correct or too short
- Pattern shoulder length correct
- Pattern across back may be correct or too narrow

21. Rounded Upper Back

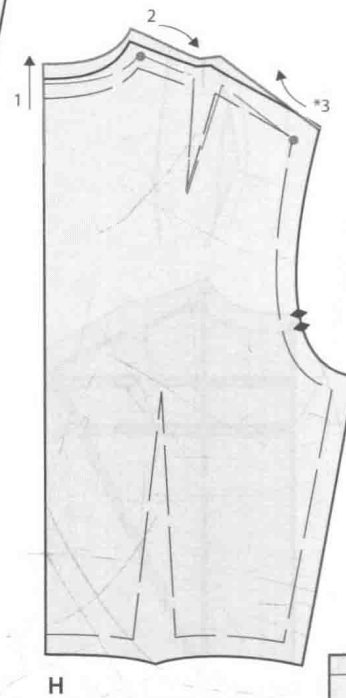
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



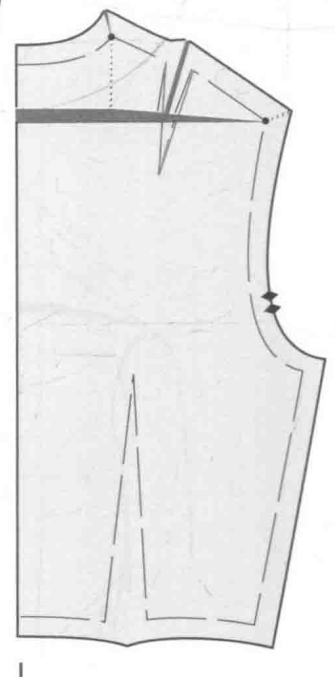
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



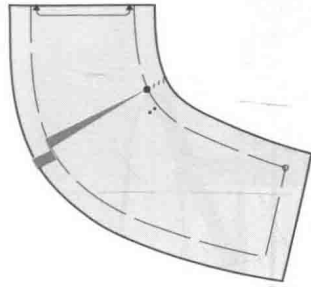
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

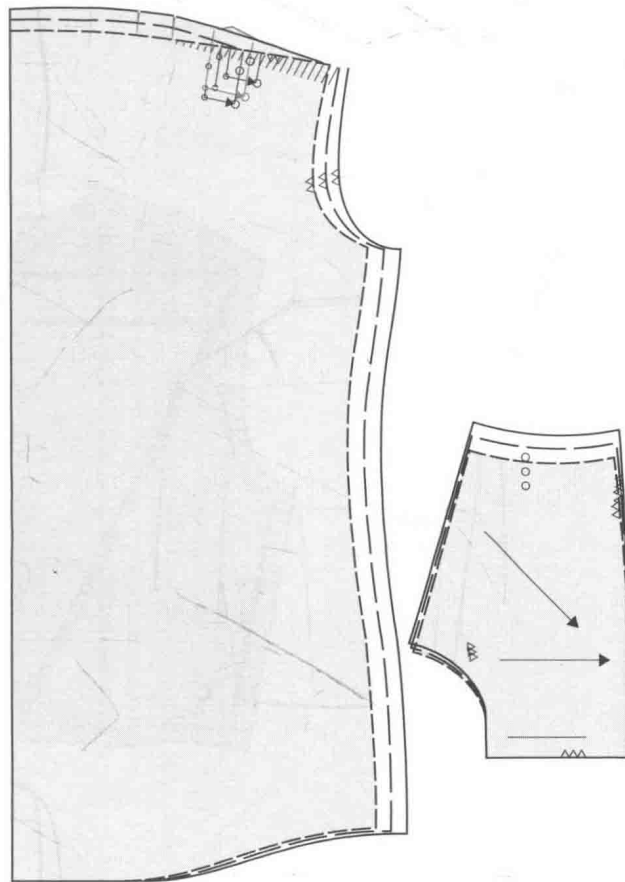


21. Rounded Upper Back

FASHION PATTERNS



Collar

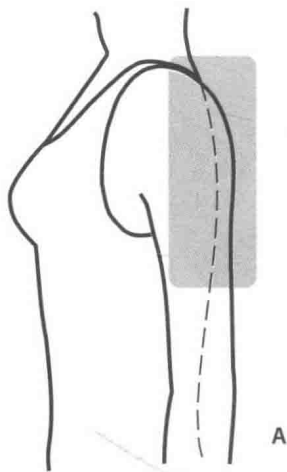


Shirt With Yoke

22. Erect Back

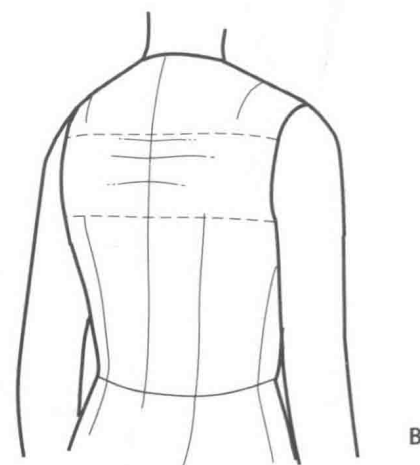
FIGURE EVALUATION (A)

- The upper back is flatter than average/ideal.
- Center back length decreases between the neck and mid-back level.
- This variation is generally the result of overly erect posture.
- The erect back may occur in combination with #10 Posterior Arm Joint, #7 Square Shoulders, and/or #33 Prominent Bust.



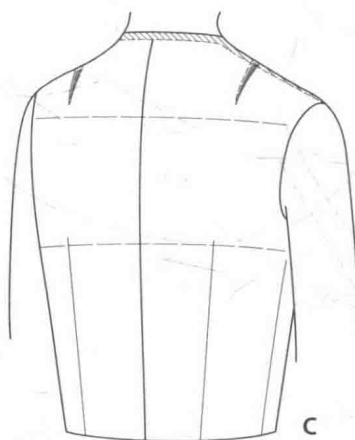
FITTING PROBLEMS (B)

- Excess fabric sags into loose horizontal wrinkles across the upper back.
- The flatter contour of the back needs less dart shaping.
- The bodice back needs less length and narrower darts.
- If less width is needed, see #31 Narrower Upper Back.



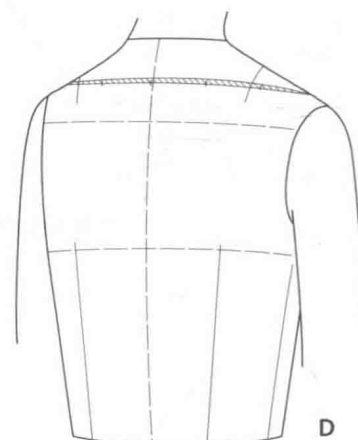
READY-TO-WEAR ALTERATION (C)

- Release the back neckline and shoulder seams.
- To shorten, take up the back neckline and shoulder seams, tapering to zero at the shoulder tip.
- Let out the shoulder dart by half.
- Re-stitch the neckline and shoulder seams.

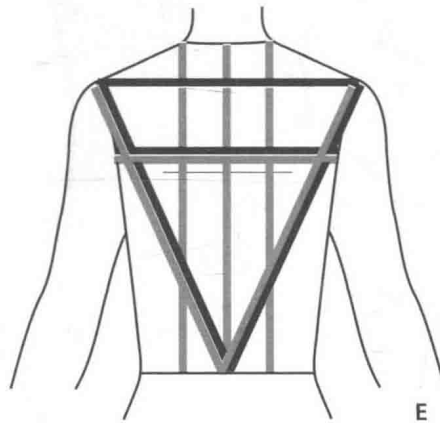
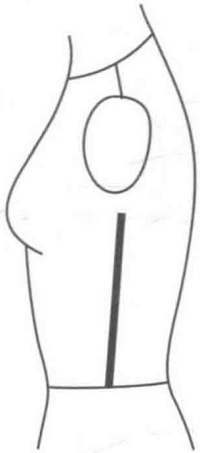


TRIAL GARMENT ALTERATION (D)

- Fold a tuck across the back from shoulder tip to shoulder tip.
- The tuck will be parallel or even below the neck, tapering to zero at the armhole.

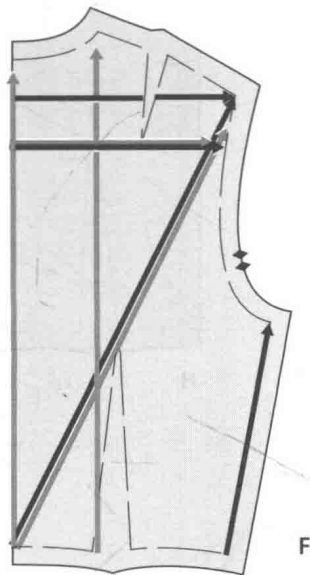


22. Erect Back



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Full bodice back, waist to neck and shoulder
- Center back, waist to neckline
- Shoulder tip width, center back to tip
- Shoulder slope, waist center to shoulder tip
- Across upper back, center to arm hinge



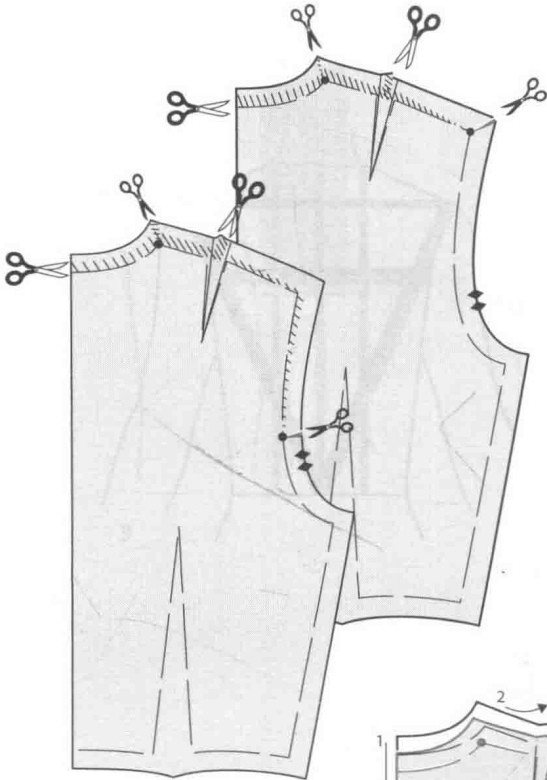
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side seam length correct
- Pattern full bodice back too long
- Pattern center back too long
- Pattern shoulder tip width correct
- Pattern shoulder slope correct or too long
- Pattern across upper back correct or too wide

22. Erect Back

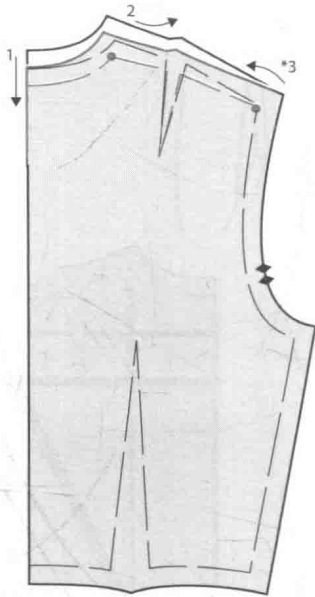
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



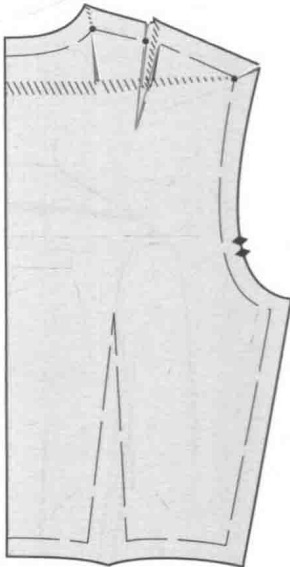
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

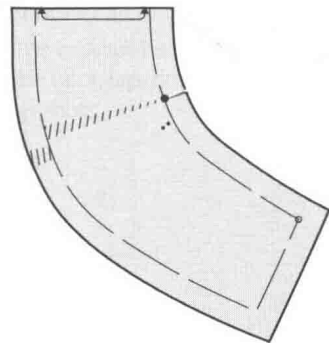


SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

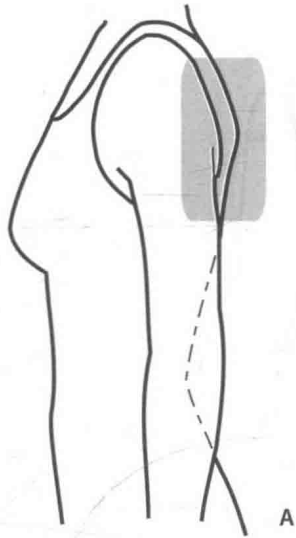


FASHION PATTERN

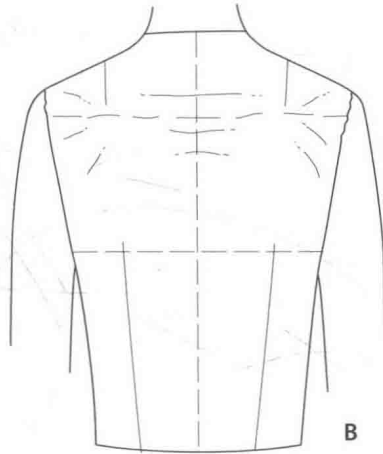


Collar

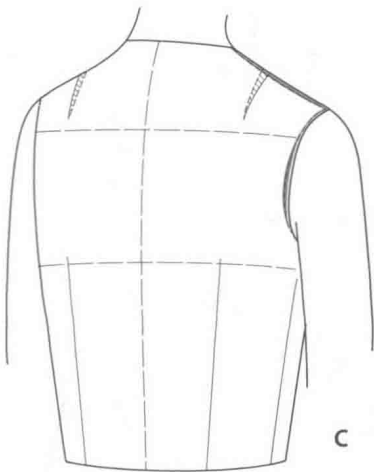
23. Prominent Shoulder Blades



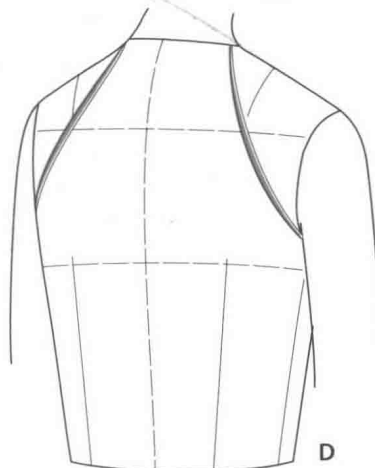
A



B



C



D

FIGURE EVALUATION (A)

- The shoulder blades are larger and protrude more than average/ideal.
- The spine is recessed by comparison.
- The width across mid-back is wider than average/ideal.
- The back may appear to be rounded.
- Asymmetrical figures may have one flat and one prominent shoulder blade.

FITTING PROBLEMS (B)

- Tight horizontal wrinkles form in the fabric between the blades.
- Diagonal wrinkles radiate from each blade toward the armhole.
- Sleeve caps pull toward the back.
- A sleeveless top may ripple at the armhole.
- The bodice back needs more fabric width.
- The shoulder dart needs to be wider.

READY-TO-WEAR ALTERATION (C)

- Release the shoulder and back armhole seams.
- Let out the back armhole until tension is released.
- Widen the shoulder dart.
- Re-stitch seams.

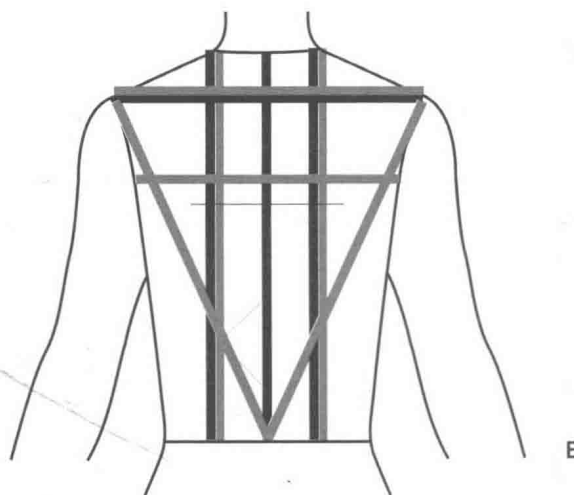
TRIAL GARMENT ALTERATION (D)

- Slash diagonally from the back neck over the shoulder blade to the armhole hinge area.
- Insert fabric strips and spread the cut edges over the blade, tapering to zero at each end.

23. Prominent Shoulder Blades

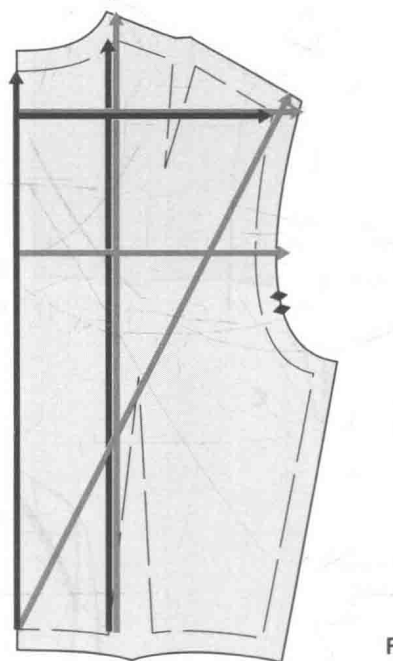
BODY MEASUREMENT POSITIONS (E)

- Full bodice back, waist to neck at shoulder
- Center back, waist to neckline
- Shoulder tip width back, neck center to shoulder tip
- Across back, center to arm hinge
- Shoulder slope back, waist center to shoulder tip

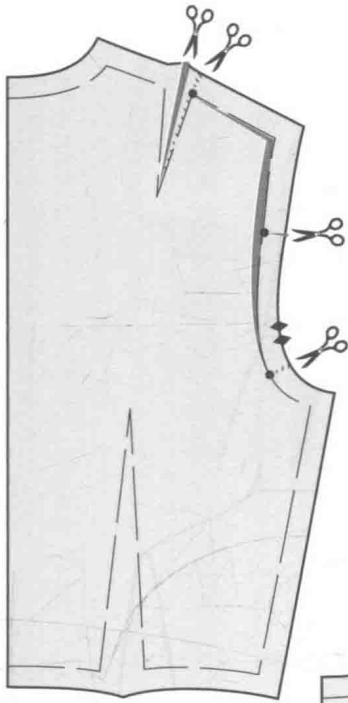


PATTERN MEASUREMENT COMPARISON (F)

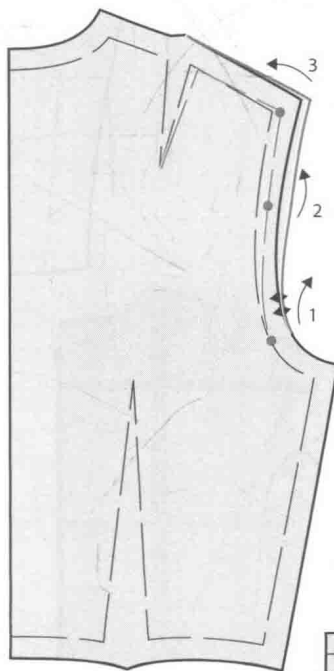
- Pattern full bodice back, and center may be correct or too short
- Pattern shoulder tip width may be correct or too narrow
- Pattern across upper back too narrow
- Pattern dart shaping too small
- Pattern length over dart area may be too short
- Pattern shoulder slope too short



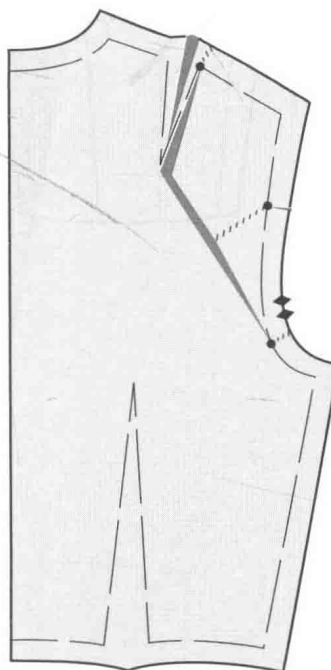
23. Prominent Shoulder Blades



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

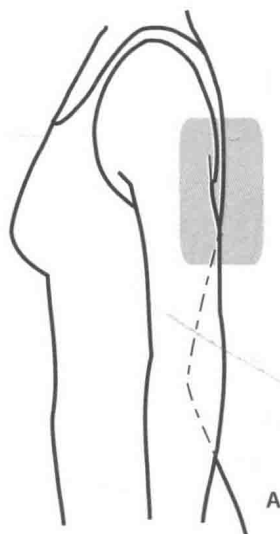
SLASH METHOD (I)

- Slash as illustrated in affected area.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

24. Flat Shoulder Blades

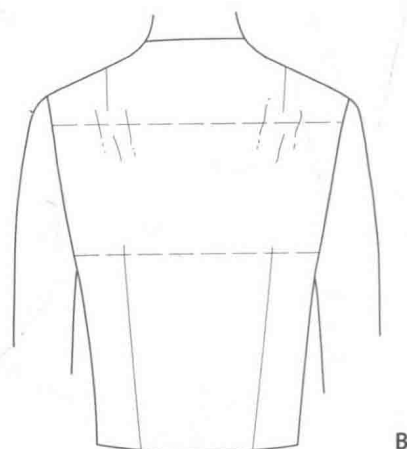
FIGURE EVALUATION (A)

- The shoulder blades are flatter than average/ideal.
- The width across mid-back is narrower than average/ideal.
- The back may appear to be overly erect.
- Asymmetrical figures may have one prominent and one flat shoulder blade.



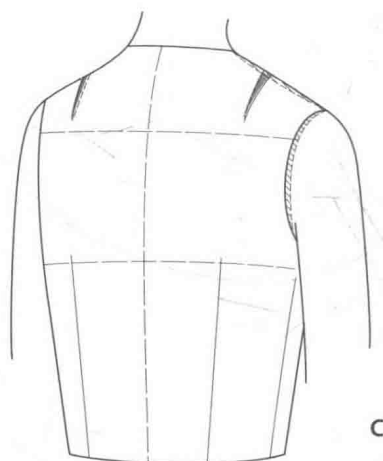
FITTING PROBLEMS (B)

- Loose vertical wrinkles form over the shoulder blades.
- The bodice back armhole may extend over the back of the arm.
- The bodice needs less fabric width.
- The shoulder dart needs to be narrower.



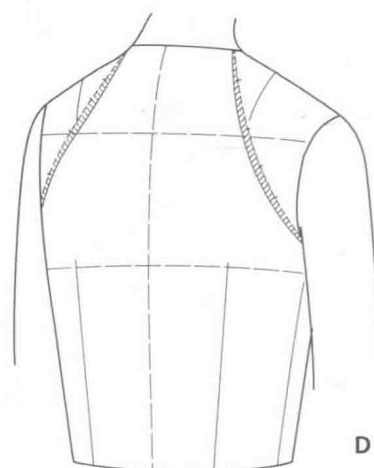
READY-TO-WEAR ALTERATION (C)

- Release the shoulder, shoulder dart, and back armhole.
- Decrease the dart shaping at the shoulder.
- Lap the front shoulder over the back shoulder line.
- Decrease the width over the blade area by marking a new armhole in from the original.

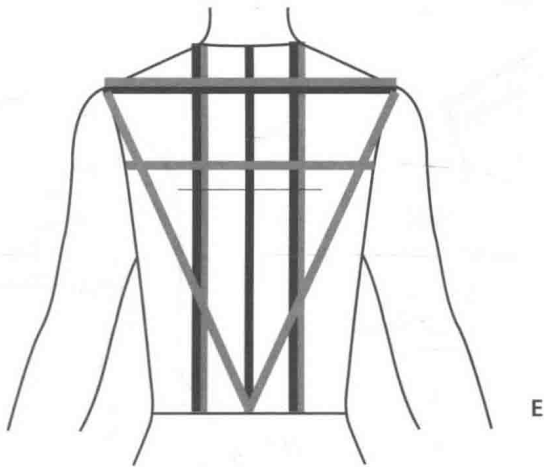


TRIAL GARMENT ALTERATION (D)

- To decrease width and some length, make diagonal tucks from the neck across the blades to the armholes.
- Taper the tucks to zero at the neck and armhole.

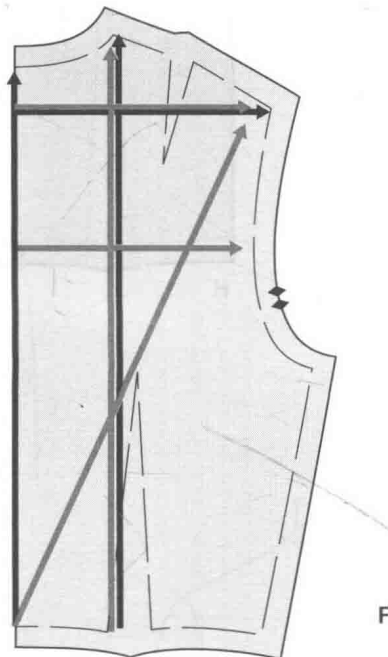


24. Flat Shoulder Blades



BODY MEASUREMENT POSITIONS (E)

- Full bodice back, waist to neck at shoulder
- Center back, waist to neckline
- Shoulder tip width back, center to tip
- Shoulder slope back, waist center to shoulder tip
- Across back, center to arm hinge



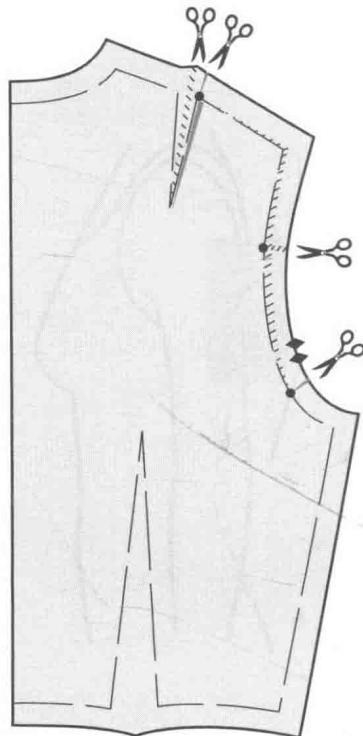
PATTERN MEASUREMENT COMPARISON (F)

- Pattern full bodice and center correct
- Pattern tip width may be correct or too wide
- Pattern shoulder slope may be correct or too long
- Pattern across back too wide

24. Flat Shoulder Blades

SEAM METHOD (G)

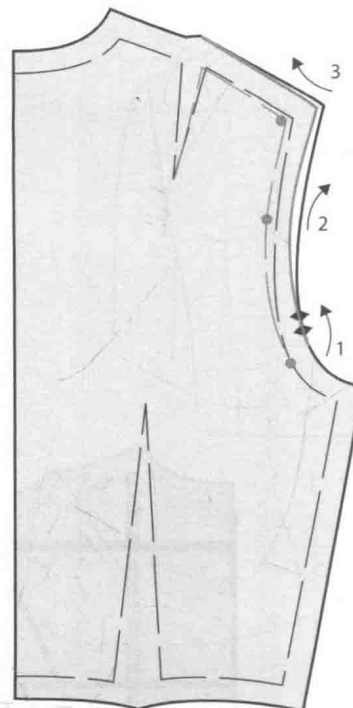
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



G

PIVOT/SLIDE METHOD (H)

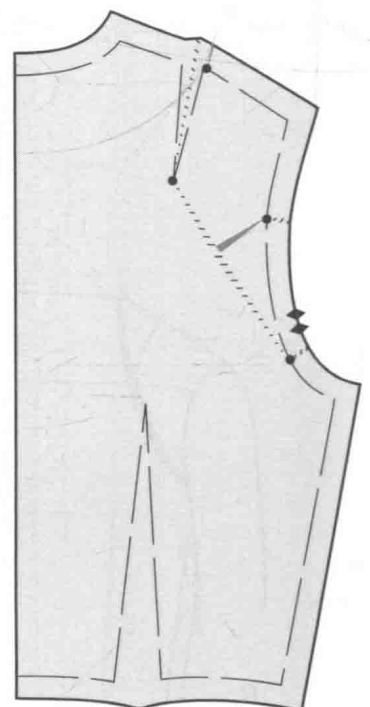
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



I

25. Larger Neck

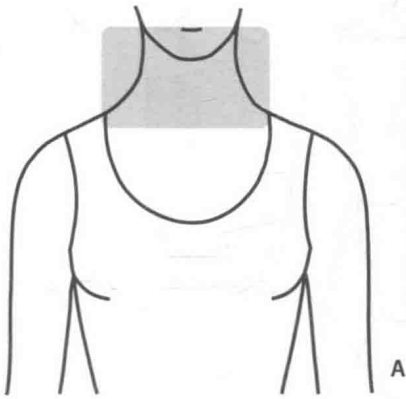
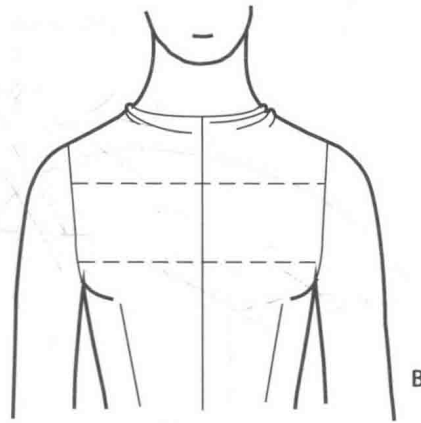


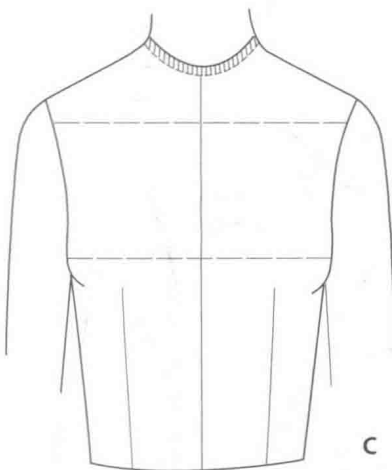
FIGURE EVALUATION (A)

- The neck circumference is larger or heavier than average/ideal.
- The neck muscles are more highly developed than average.
- Bones in the neck may be larger than average.



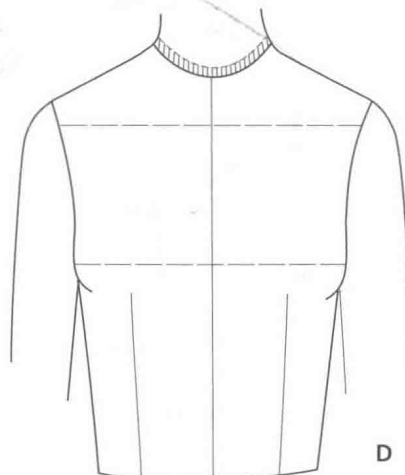
FITTING PROBLEMS (B)

- Form-fitting necklines and collars are too high all around, forced into tight circular wrinkles.
- The armhole may be pulled up against the arm hinge.
- The bodice needs a larger neck opening.



READY-TO-WEAR ALTERATION (C)

- Release the neckline.
- To enlarge the neck opening, move the neckline seam as illustrated.
- Clip around the neckline seam allowance.



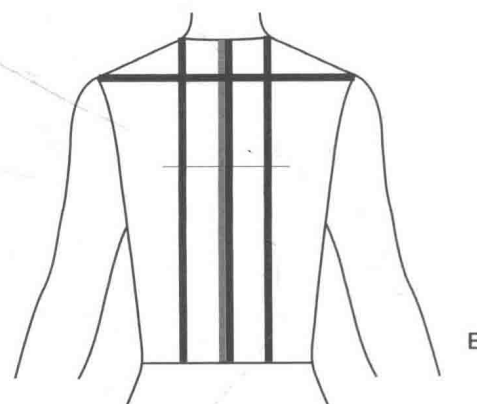
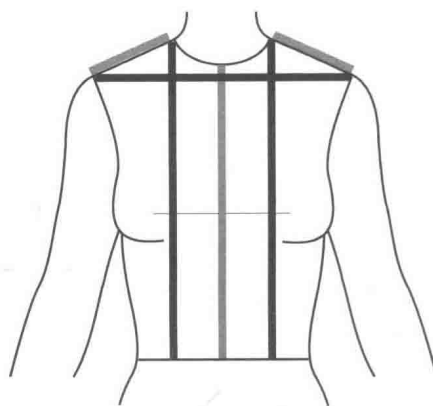
TRIAL GARMENT ALTERATION (D)

- Proceed as for Ready-to-Wear.

25. Larger Neck

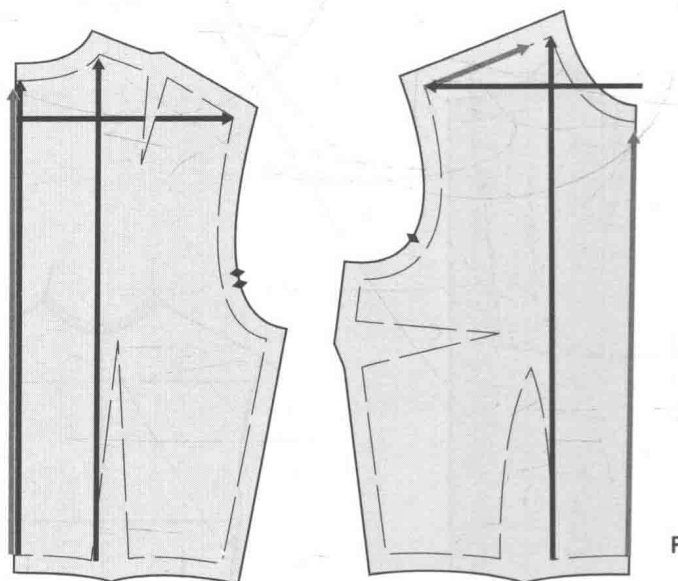
BODY MEASUREMENT POSITIONS (E)

- Full bodice front and back, waist to neck at shoulder
- Center front and back, waist to neckline
- Shoulder tip width front and back, neck center to tip
- Shoulder length, shoulder tip to neck

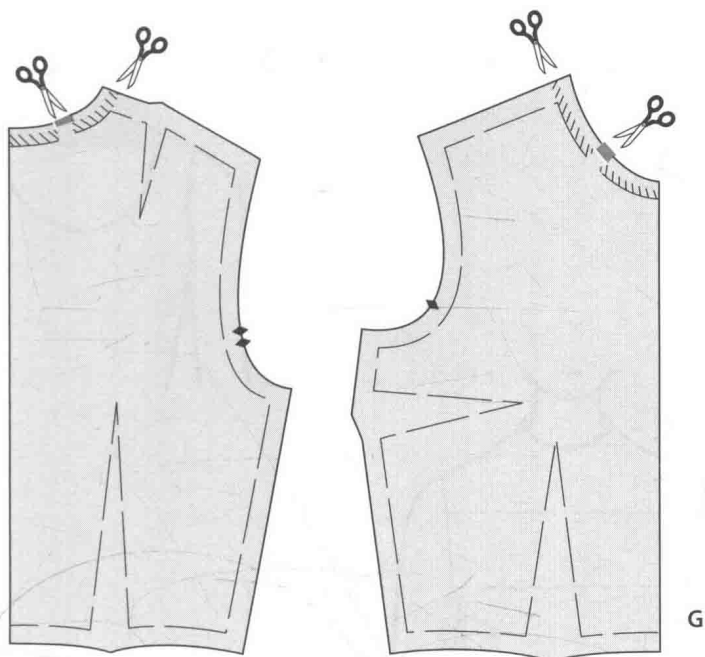


PATTERN MEASUREMENT COMPARISON (F)

- Pattern full bodice front and back may be correct or slightly long
- Pattern center lengths too long
- Pattern shoulder tip width correct or adjusted
- Pattern shoulder length too long

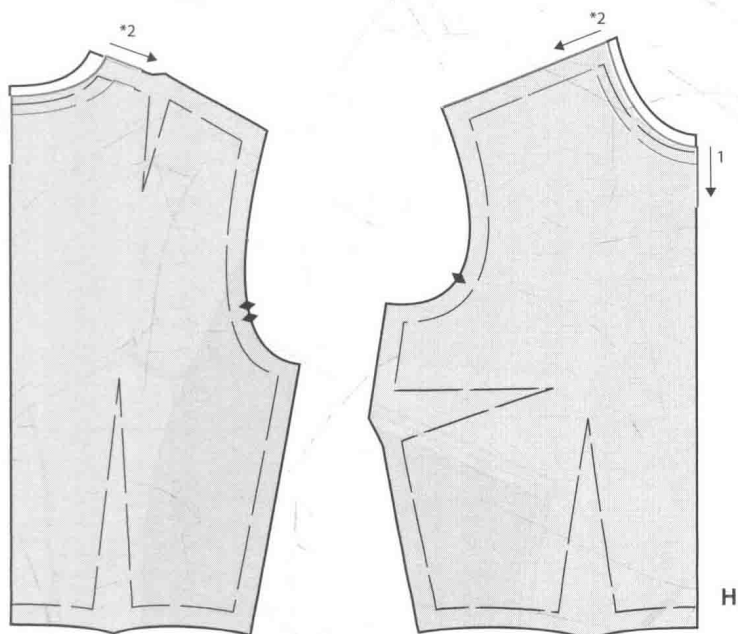


25. Larger Neck



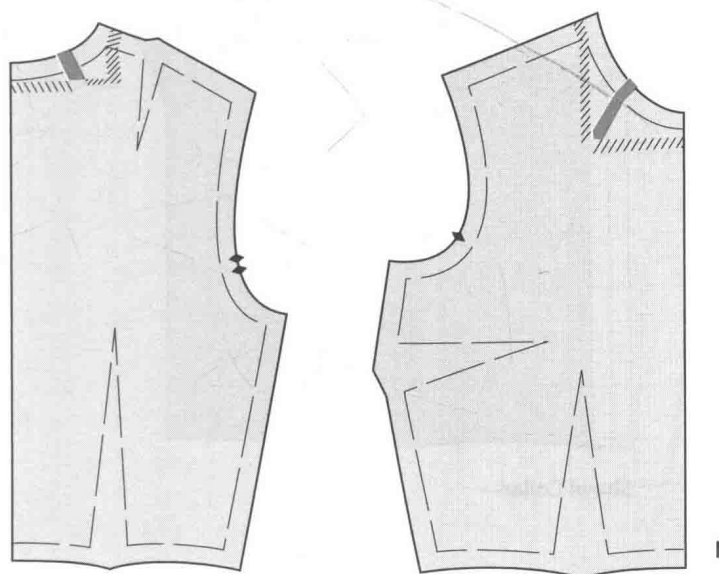
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, slide, pivot, and trace patterns as illustrated in sequence and direction.
- Return pattern to original position.
- Tape tracing in place.

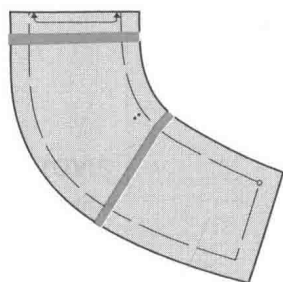
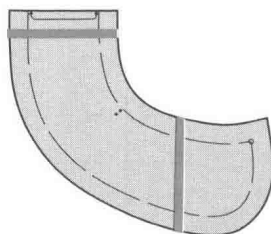
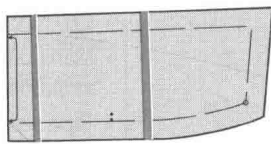


SLASH METHOD (I)

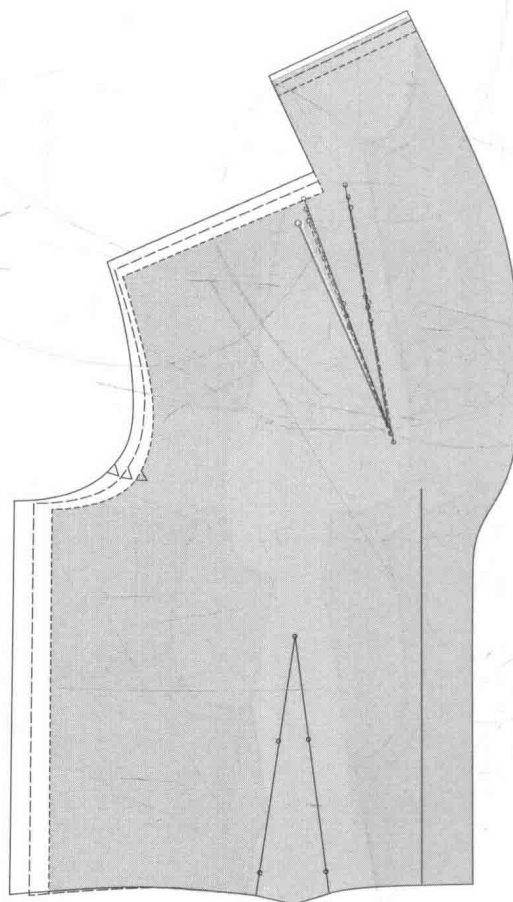
- Slash pattern in affected area as illustrated.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

25. Larger Neck

FASHION PATTERNS



Collars



Shawl Collar

26. Smaller Neck

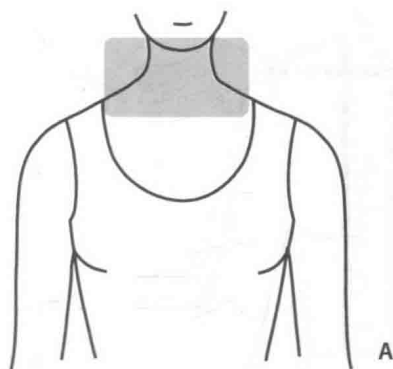
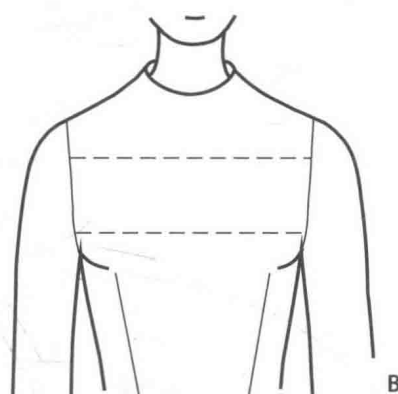


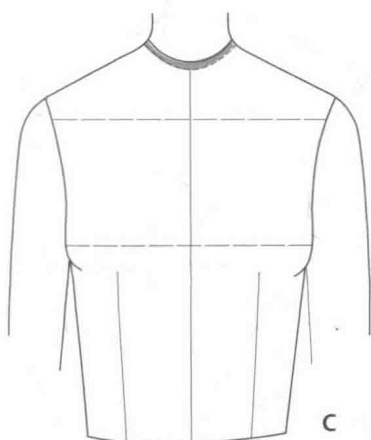
FIGURE EVALUATION (A)

- The neck circumference is smaller or thinner than average/ideal.
- The neck muscles are less well developed than average.
- Bones in the neck may be smaller than average.



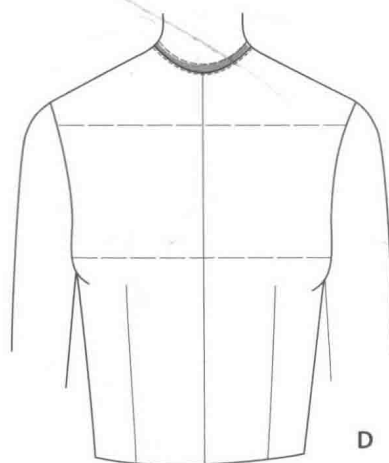
FITTING PROBLEMS (B)

- Form-fitting necklines and collars do not reach the neck base.
- The loose, low neckline gaps or stands away from the neck.
- The bodice needs a smaller neck opening.



READY-TO-WEAR ALTERATION (C)

- Release the neckline seam.
- To reduce the neck opening, move the neckline seam as illustrated.
- A fabric insert is another option.



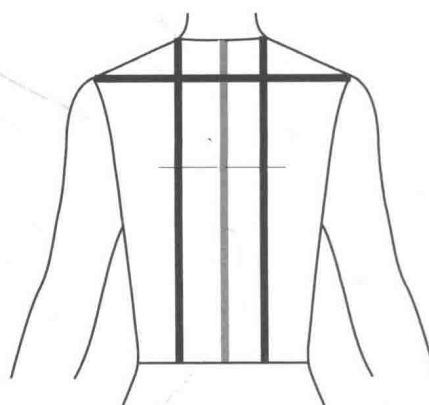
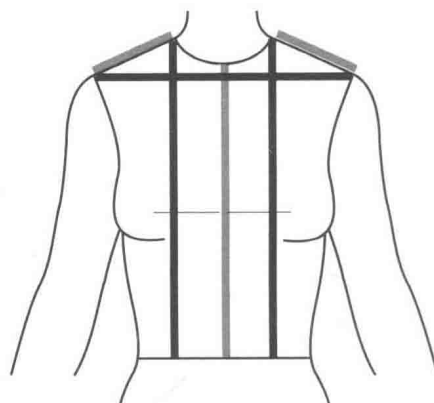
TRIAL GARMENT ALTERATION (D)

- Proceed as for Ready-to-Wear.

26. Smaller Neck

BODY MEASUREMENT POSITIONS (E)

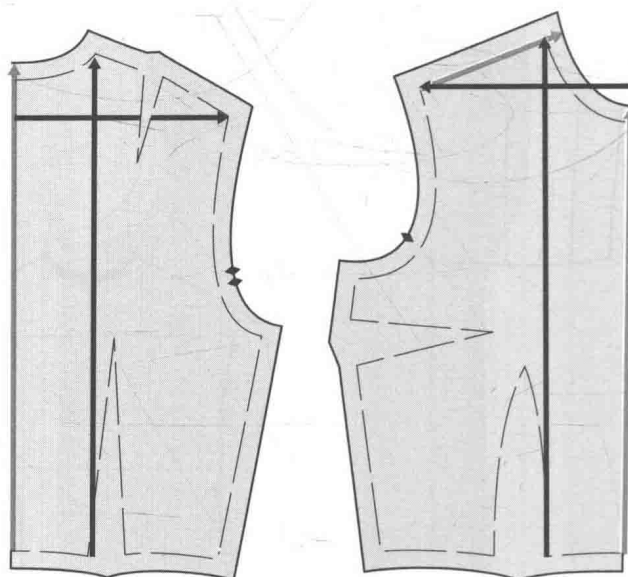
- Full bodice length front and back, waist to neck at shoulder
- Center length front and back, waist center to neckline
- Shoulder tip width front and back, center to tip
- Shoulder length, tip to neckline



E

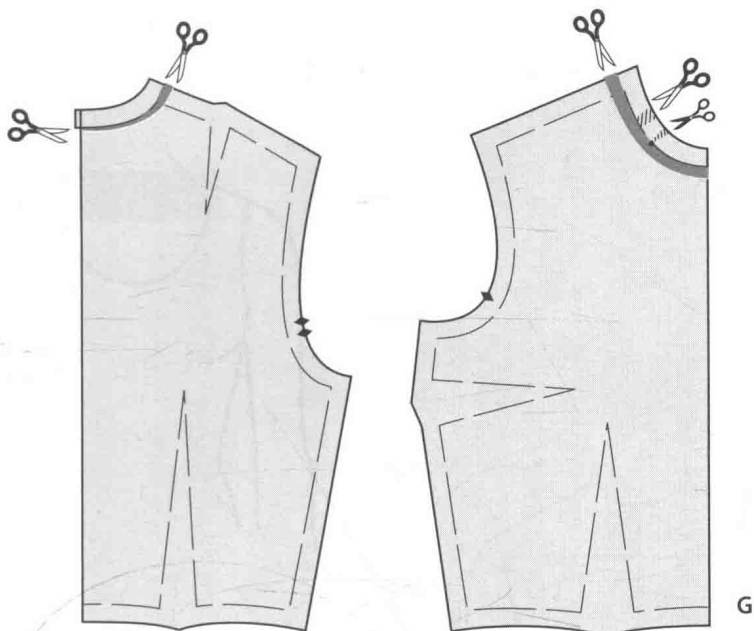
PATTERN MEASUREMENT COMPARISON (F)

- Pattern full bodice lengths front and back correct
- Pattern center lengths short
- Pattern shoulder tip widths correct or adjusted
- Pattern shoulder length too short



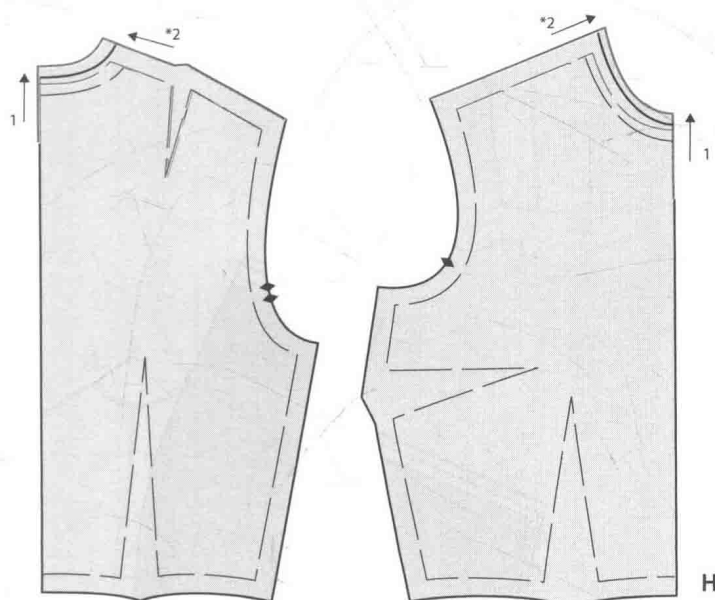
F

26. Smaller Neck



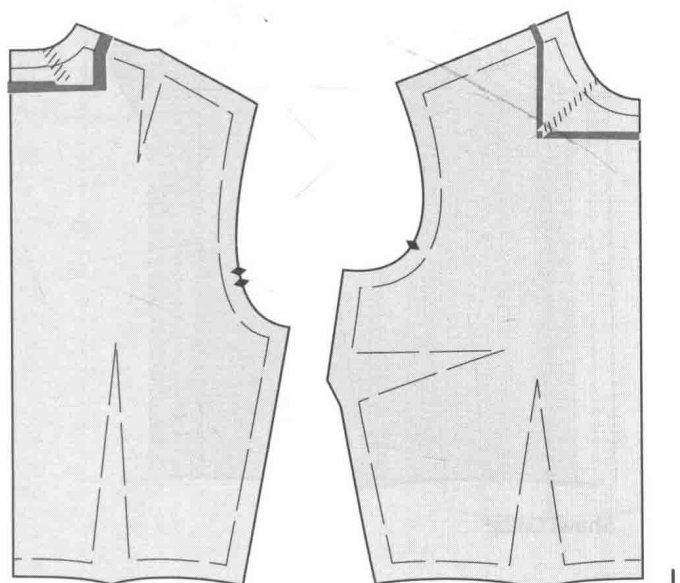
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, slide, pivot, and trace patterns as illustrated in sequence and direction.
- Return pattern to original position.
- Tape tracing in place.

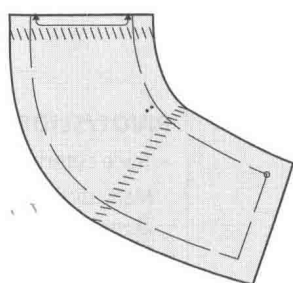
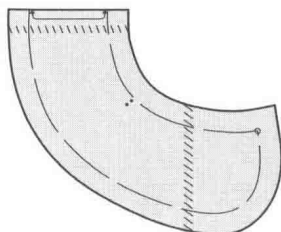
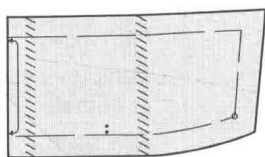


SLASH METHOD (I)

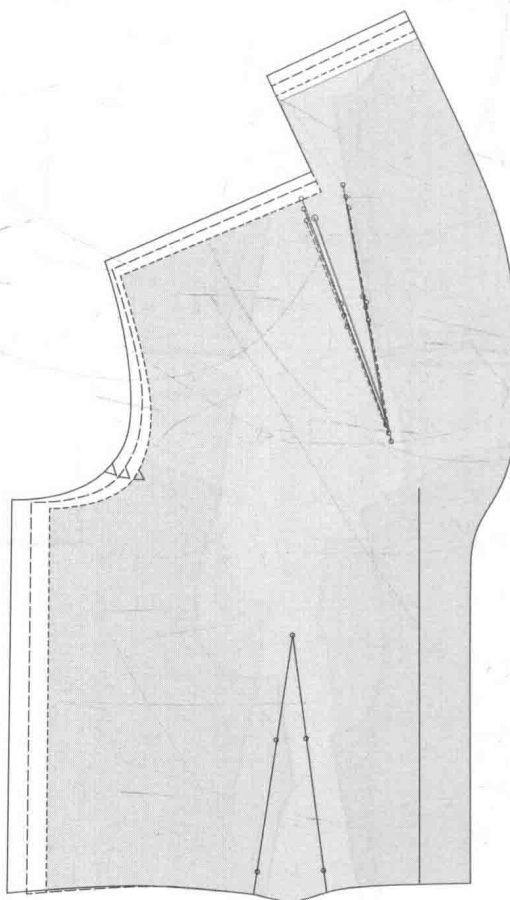
- Slash pattern in affected area as illustrated.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

26. Smaller Neck

FASHION PATTERNS



Collars



Shawl Collar

27. Prominent Collar Bone

FIGURE EVALUATION (A)

- The collarbones are larger and round out more than average/ideal.
- The upper chest width increases slightly.
- Prominent collarbones are typical in triangular and tubular figure types.

FITTING PROBLEMS (B)

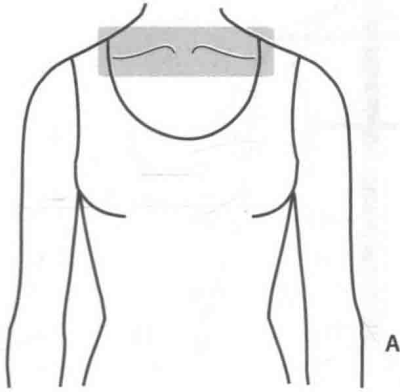
- Form-fitting tops are tight across the center front just below the neck.
- Front closures do not meet at the neckline.
- The bodice needs more fabric width across the upper center front.

READY-TO-WEAR ALTERATION (C)

- Release the front neckline and shoulder seams midway down the armhole.
- Increase the neckline width at the shoulder.
- Restore shoulder length by letting out the shoulder seam at the armhole.
- Re-attach the sleeve.

TRIAL GARMENT ALTERATION (D)

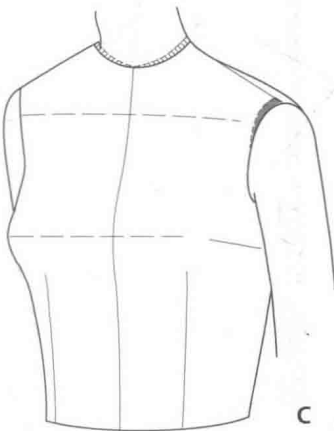
- Option 1: Proceed as for Ready-to-Wear.
- Option 2: Let out center front at the neckline, tapering to zero at the waistline.



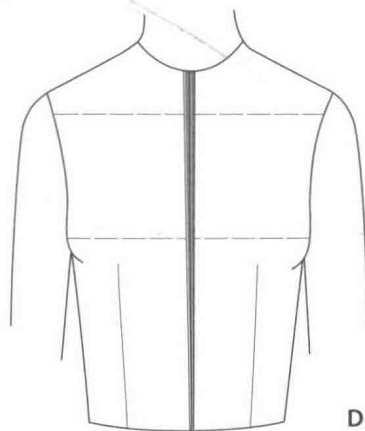
A



B



C

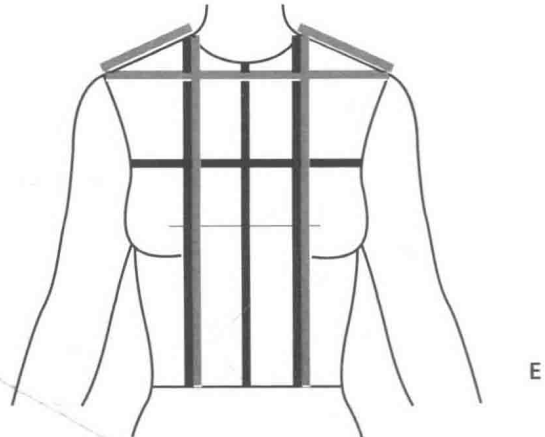


D

27. Prominent Collar Bone

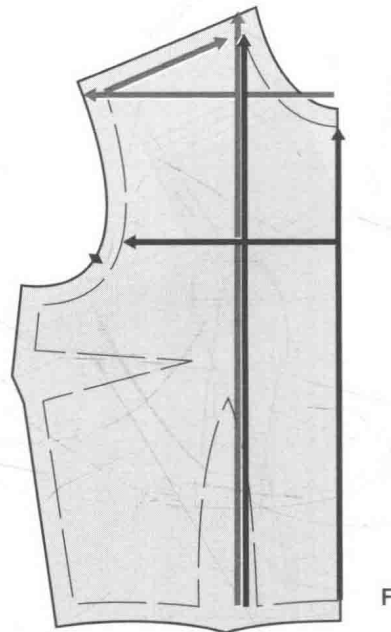
BODY MEASUREMENT POSITIONS (E)

- Front full bodice, waist to neck at shoulder
- Center front, waist to neckline
- Shoulder tip width, center to tip
- Shoulder length, shoulder tip to neck

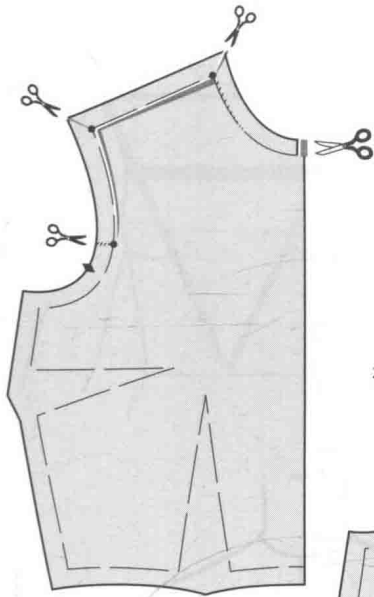


PATTERN MEASUREMENT COMPARISON (F)

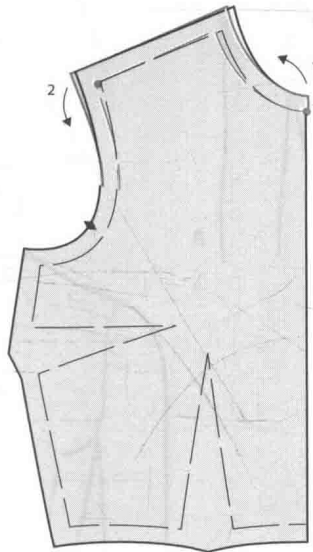
- Pattern front full bodice length may be correct or too short
- Pattern center front length correct
- Pattern shoulder tip width too narrow
- Pattern shoulder length correct but needs to be repositioned



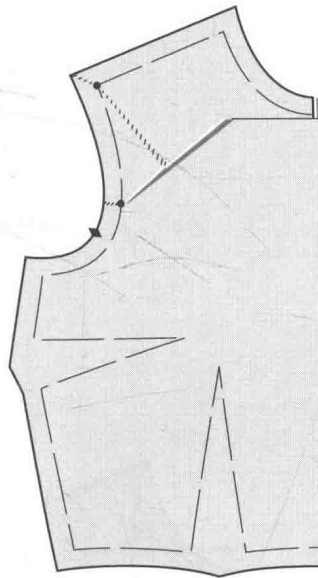
27. Prominent Collar Bone



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

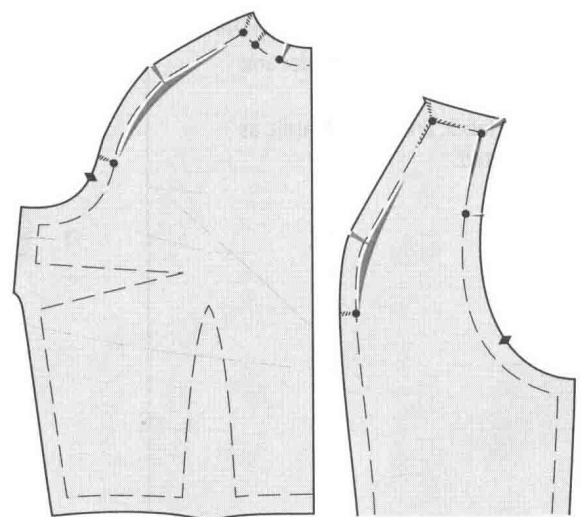
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash pattern in affected area as illustrated.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

FASHION PATTERN

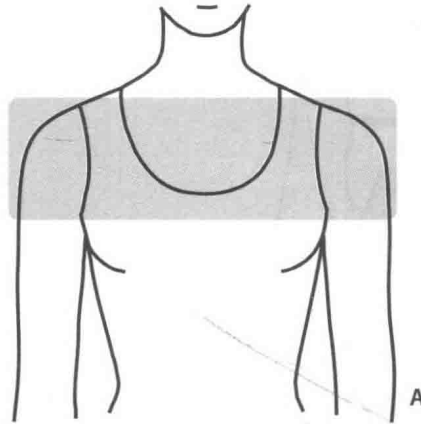


Raglan

28. Wider/Broad Shoulders

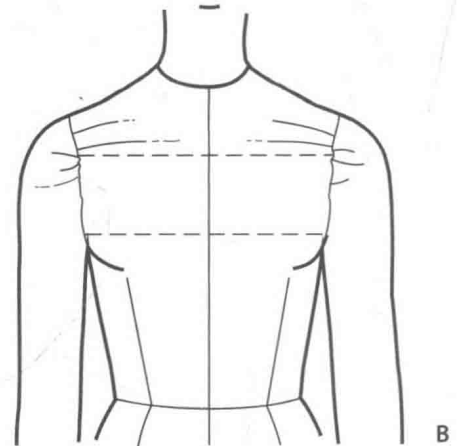
FIGURE EVALUATION (A)

- The shoulder and/or collarbones are longer than average/ideal.
- Shoulder bone structure is larger than average.
- Wider shoulders are characteristic of an inverted triangle figure type.



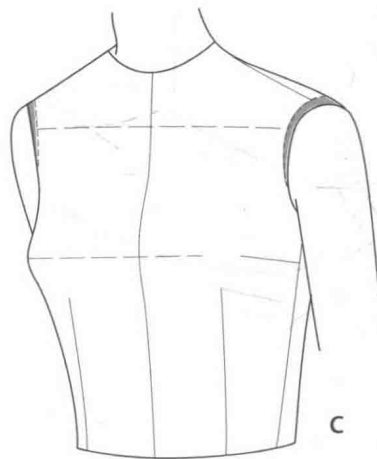
FITTING PROBLEMS (B)

- Horizontal stress wrinkles form across the upper chest and armhole seams.
- Short, tight wrinkles may radiate from the armhole seam.
- Armhole seamlines pull inward.
- The bodice needs more width across the broad shoulders.



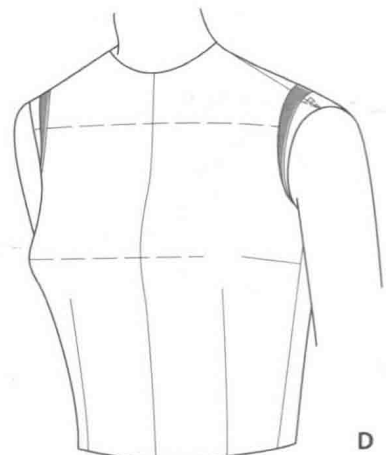
READY-TO-WEAR ALTERATION (C)

- Release the sleeves.
- Let out the armhole seams at the shoulder.
- Re-attach the sleeves.

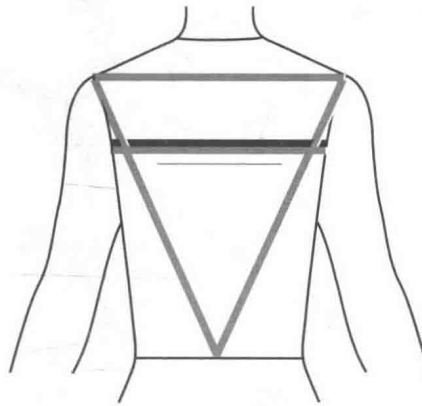
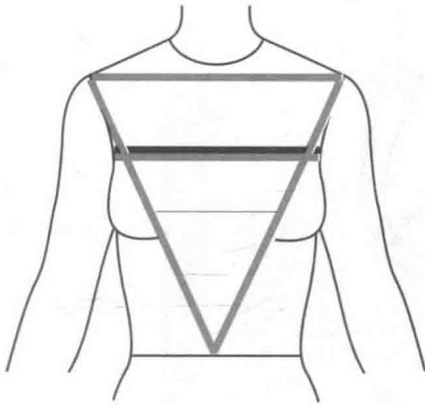


TRIAL GARMENT ALTERATION (D)

- Slash between the shoulder and arm hinge.
- Insert fabric and spread fabric as illustrated.



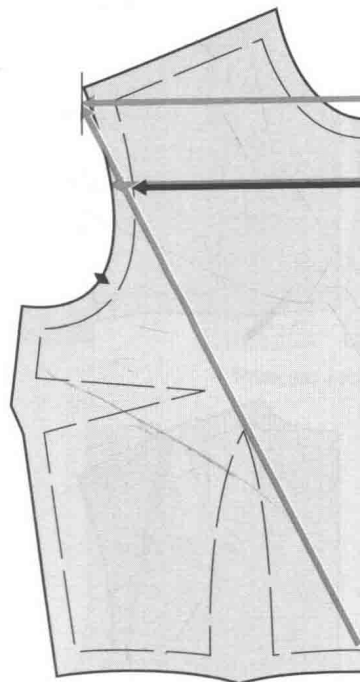
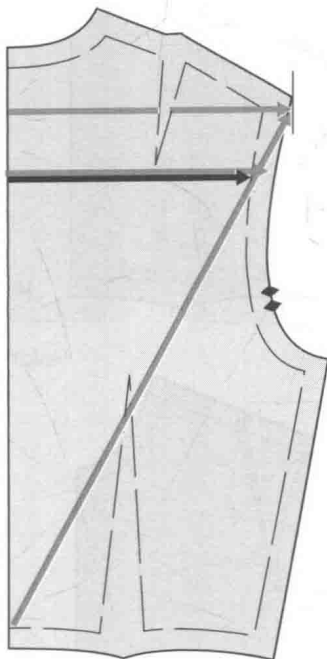
28. Wider/Broad Shoulders



E

BODY MEASUREMENT POSITIONS (E)

- Shoulder tip width front and back, center to tip
- Shoulder slope front and back, waist center to shoulder tip
- Chest and across back, center to arm hinge



F

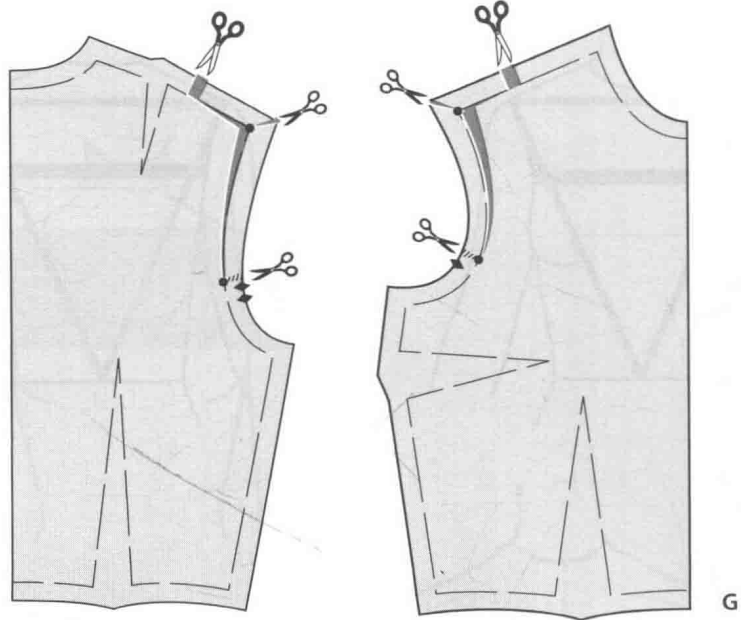
PATTERN MEASUREMENT COMPARISON (F)

- Pattern shoulder tip width too narrow
- Pattern shoulder slope too short
- Pattern chest and across back may be correct or too narrow

28. Wider/Broad Shoulders

SEAM METHOD (G)

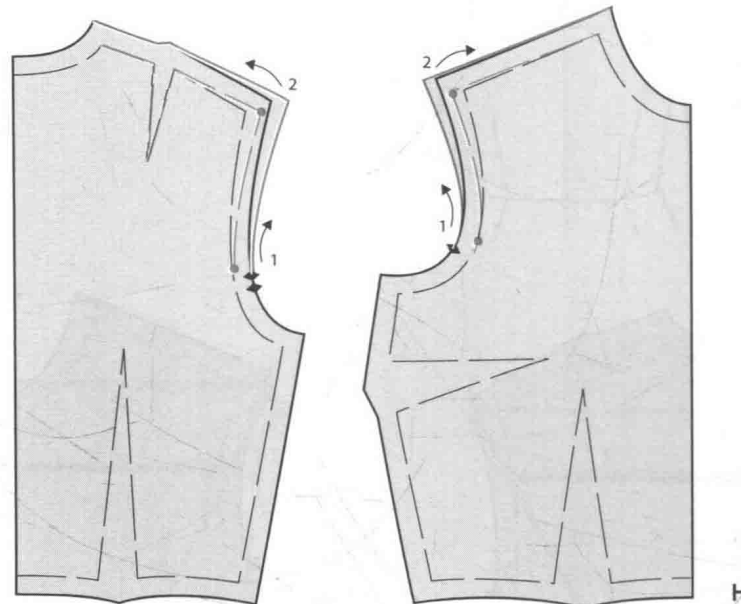
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



G

PIVOT/SLIDE METHOD (H)

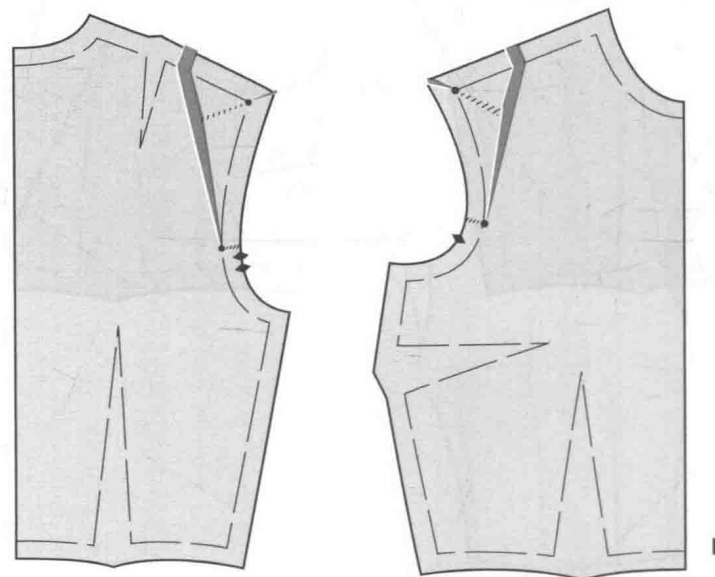
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H

SLASH METHOD (I)

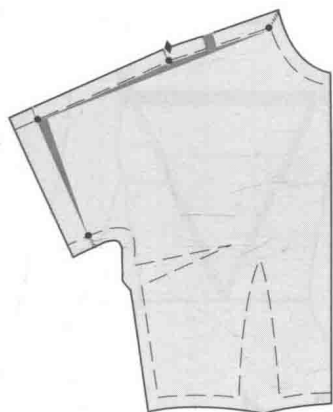
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



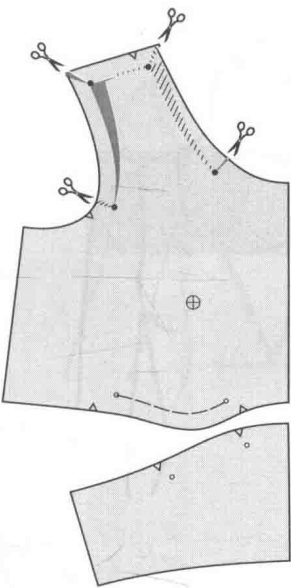
I

28. Wider/Broad Shoulders

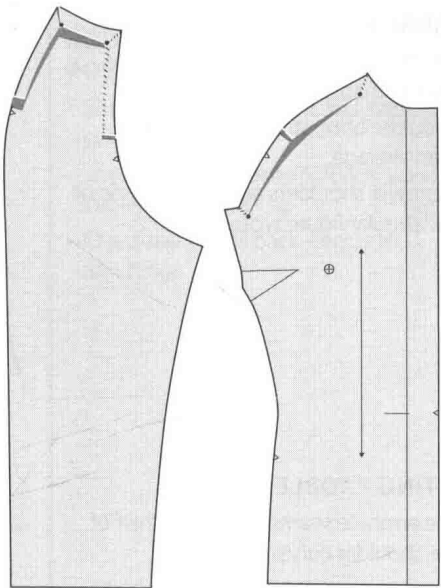
FASHION PATTERNS



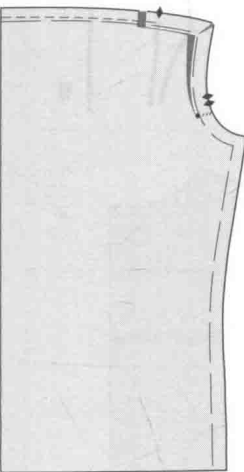
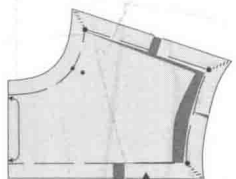
Kimono



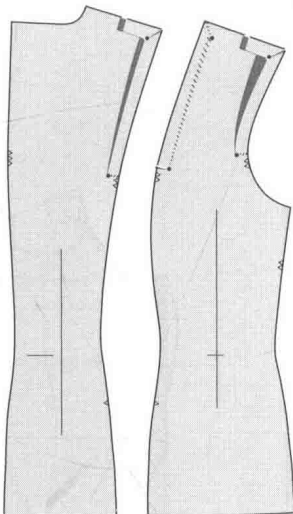
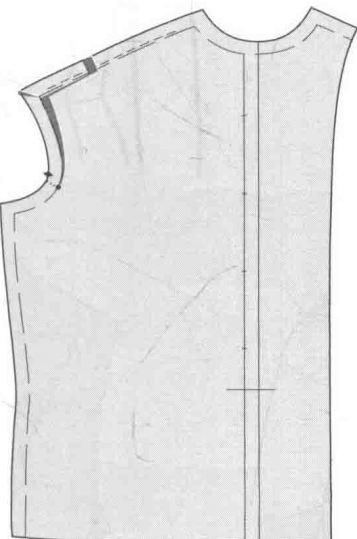
Empire Waist



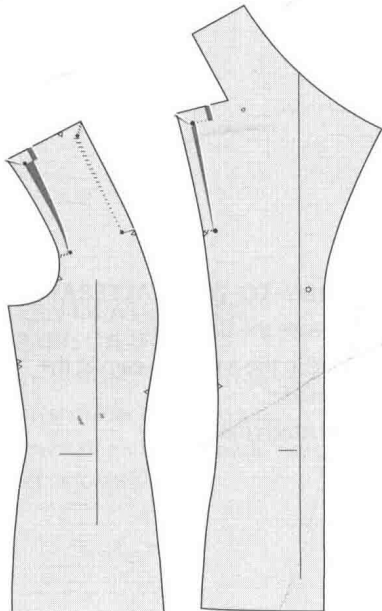
Raglan Jacket



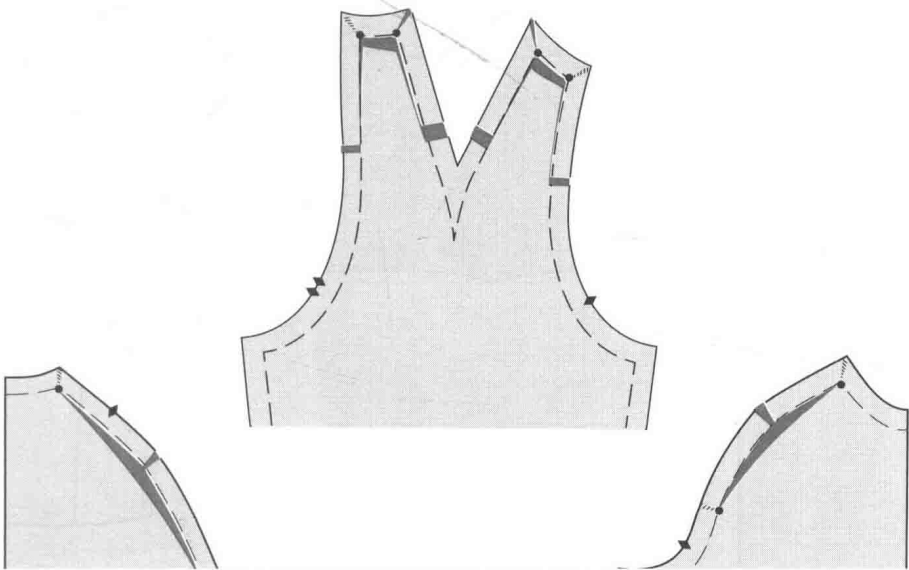
Shirt With Yoke



Princess Jacket



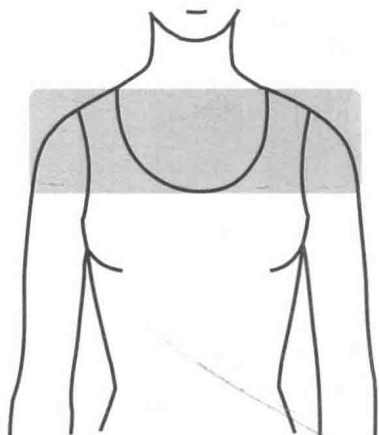
Raglan



29. Narrower Shoulders

FIGURE EVALUATION (A)

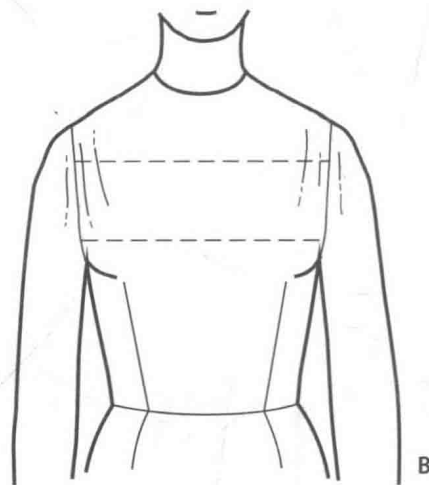
- The shoulder and/or collarbones are shorter than average/ideal.
- Shoulder bone structure is smaller than average.
- Narrower shoulders are characteristic of a triangular figure type.



FITTING PROBLEMS (B)

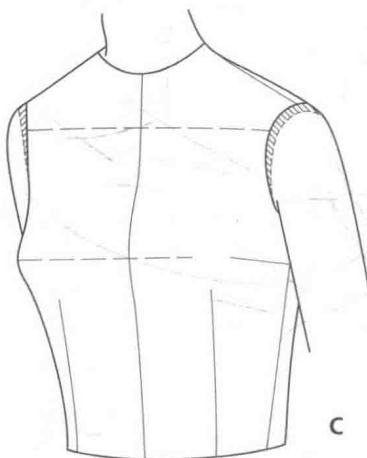
- The armhole seams fall off the crest of the shoulder curve.
- Loose vertical folds form at the chest edge and on the sleeve cap.
- The bodice needs less width across the shoulders.

A



READY-TO-WEAR ALTERATION (C)

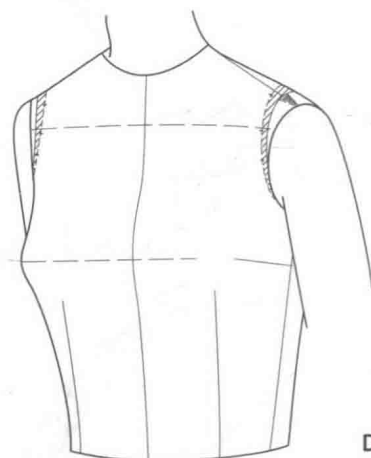
- Release the sleeves.
- Take in the armhole seam at the shoulder.
- Re-attach the sleeves.



C

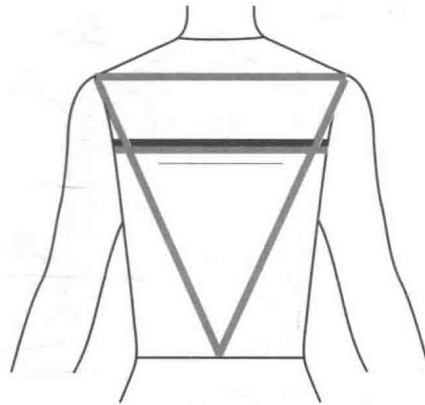
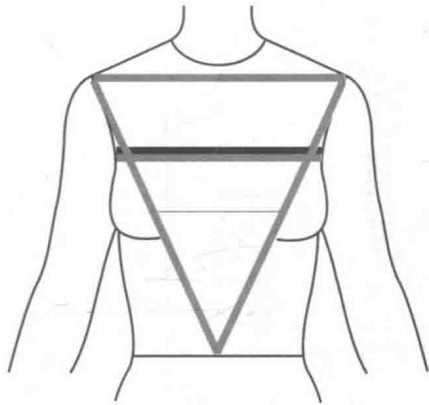
TRIAL GARMENT ALTERATION (D)

- Form a tuck over the shoulder, tapering to zero at the arm hinge.
- Stitch the tuck in place.



D

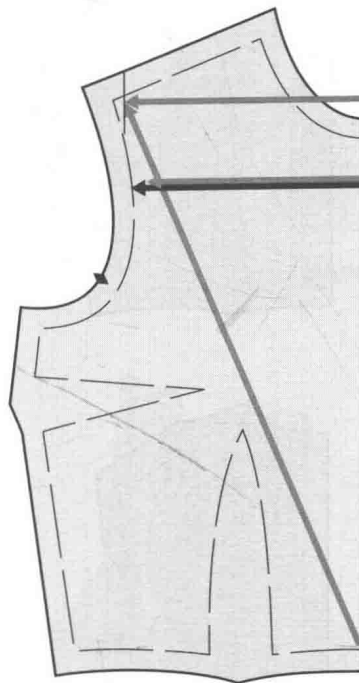
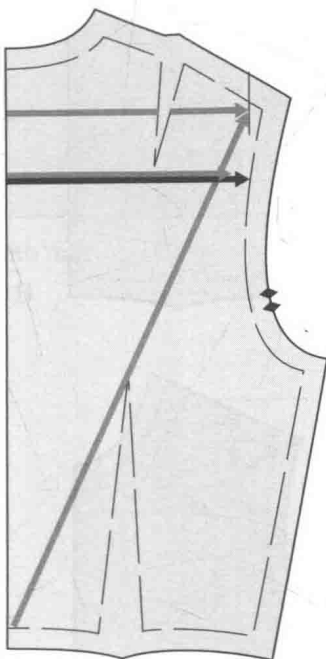
29. Narrower Shoulders



E

BODY MEASUREMENT POSITIONS (E)

- Shoulder tip width front and back, center to tip
- Shoulder slope front and back, waist center to shoulder tip
- Chest and across back, center to arm hinge



F

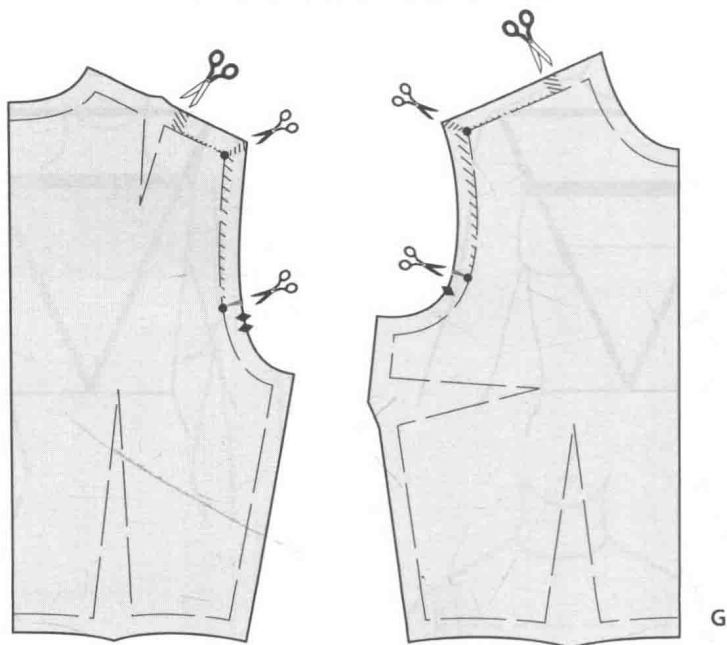
PATTERN MEASUREMENT COMPARISON (F)

- Pattern shoulder tip width too wide
- Pattern shoulder slope too long
- Pattern chest and across back may be correct or too wide

29. Narrower Shoulders

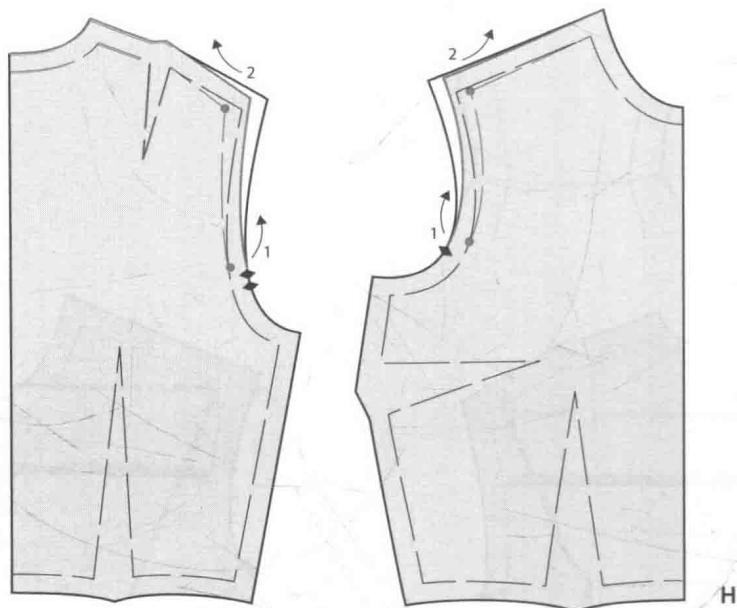
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



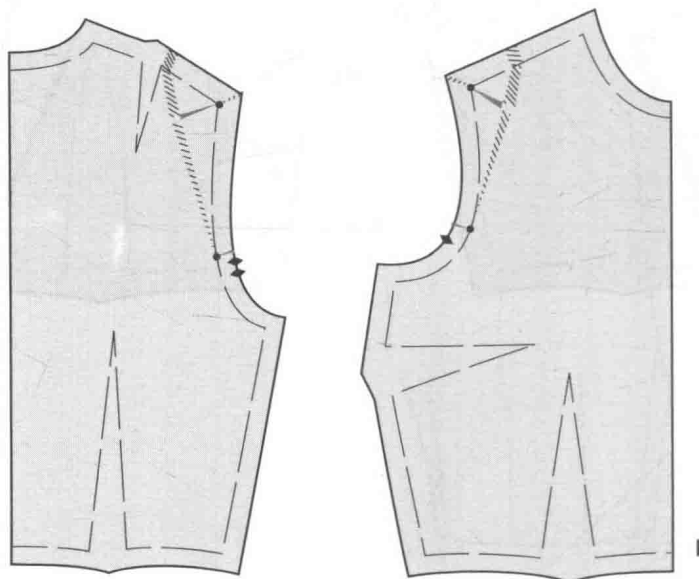
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



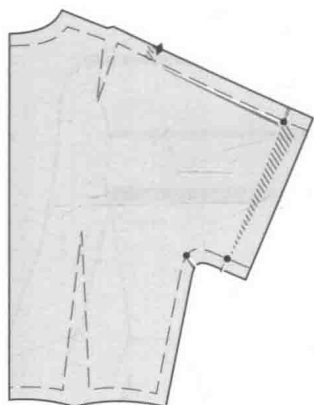
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

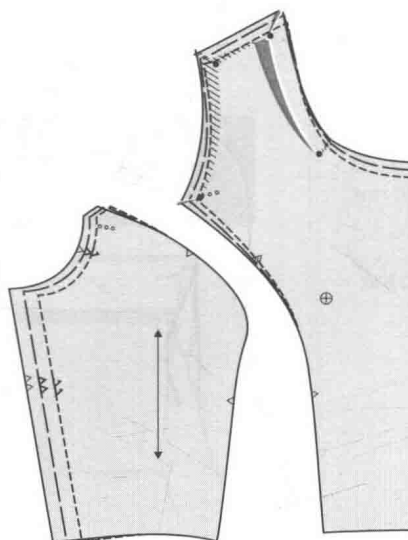


29. Narrower Shoulders

FASHION PATTERNS



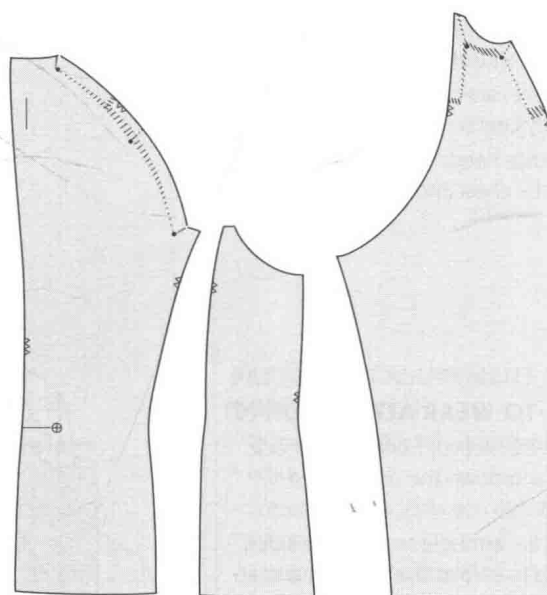
Kimono



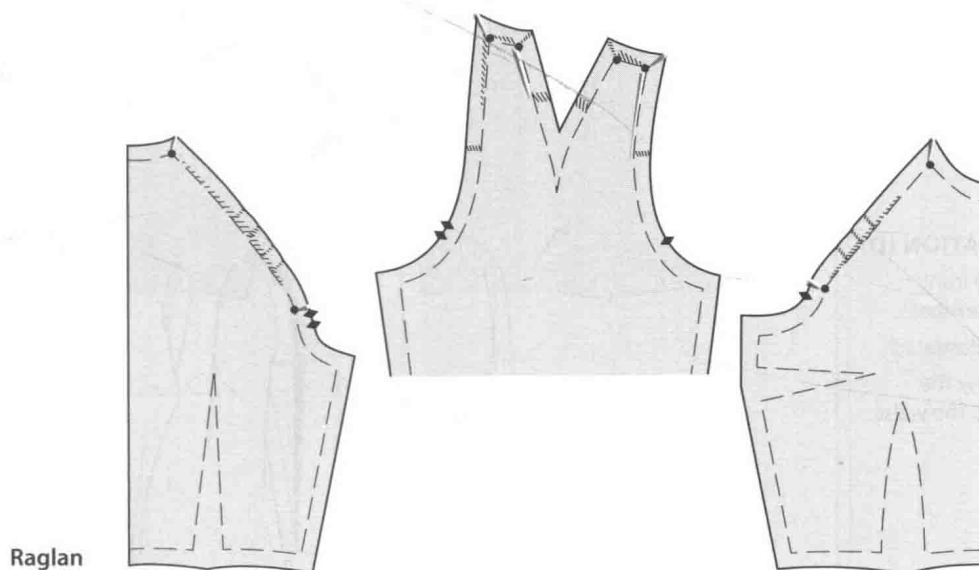
Princess



Shirt With Yoke



Raglan Jacket

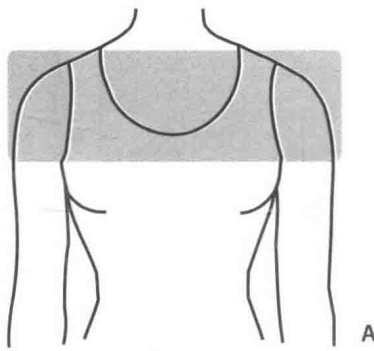


Raglan

30. Wider Chest/Upper Back

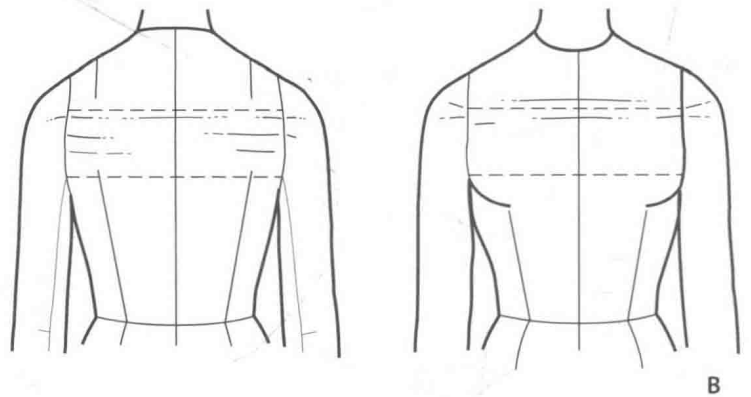
FIGURE EVALUATION (A)

- The chest and/or upper back is wider than average/ideal.
- The chest and/or upper back muscle is more highly developed.
- Width increases across the chest and/or back.
- Weight deposits build up next to the arm hinge.



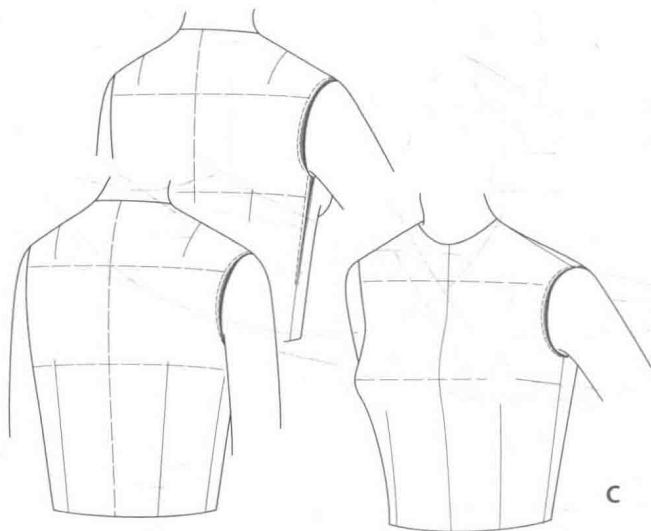
FITTING PROBLEMS (B)

- Fabric is tight between the armholes.
- Horizontal stress wrinkles form across the chest and/or back.
- The sleeves are pulled inward toward the body center.
- The bodice needs more fabric width across the chest and/or upper back.



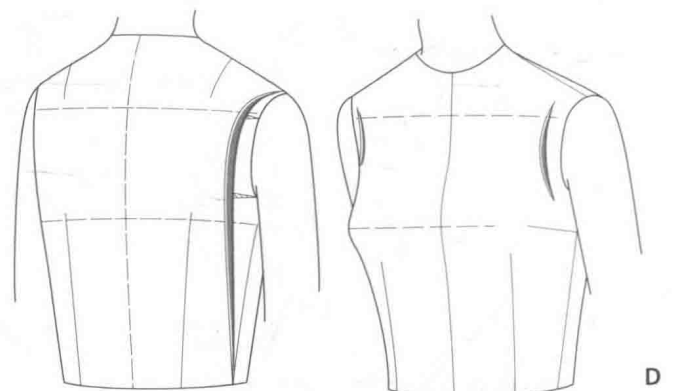
READY-TO-WEAR ALTERATION (C)

- Release the sleeves front and/or back, continuing down the side seam if needed.
- Let out the armhole seam at the sides, tapering to zero at the shoulder and at the base of the armhole.
- If the variation extends below the armhole, let out the side seams.
- Re-attach the sleeves.

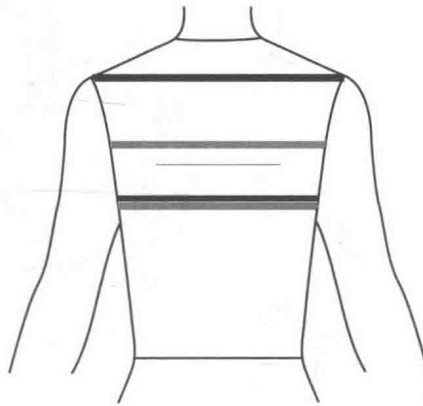
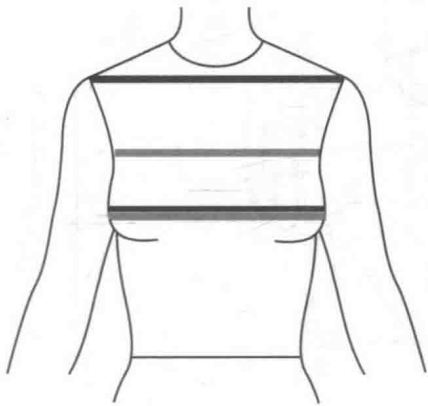


TRIAL GARMENT ALTERATION (D)

- Make vertical slashes on the front and/or back just inside the armhole.
- Insert fabric and spread as illustrated.
- If the variation extends below the armhole, extend the slash to the waist as illustrated.



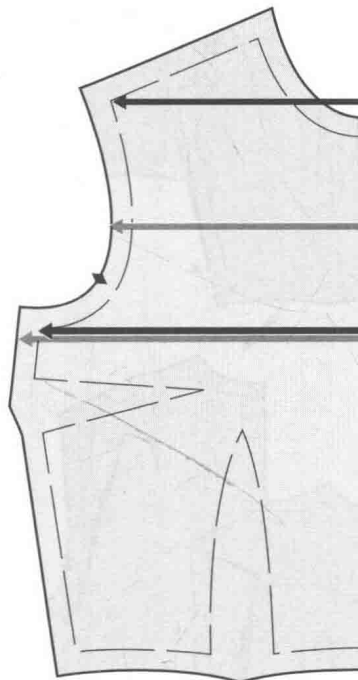
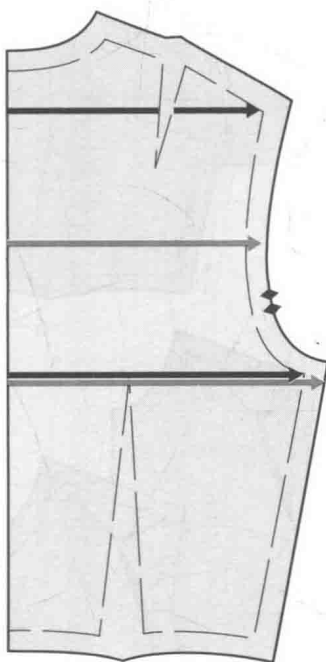
30. Wider Chest/Upper Back



E

BODY MEASUREMENT POSITIONS (E)

- Shoulder tip width front and back, center to tip
- Chest and/or back width, center to arm hinge
- Full bust front and back, center over full bust or back at bust level to side



F

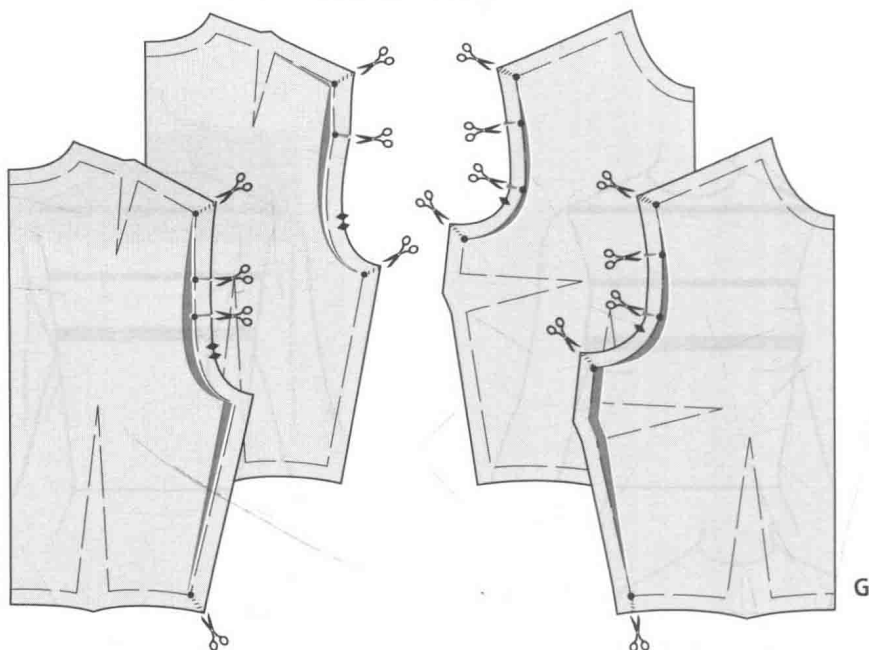
PATTERN MEASUREMENT COMPARISON (F)

- Pattern shoulder tip width is correct or adjusted
- Pattern chest and/or across back is too narrow
- Full bust level front and/or back may be correct or too narrow

30. Wider Chest/Upper Back

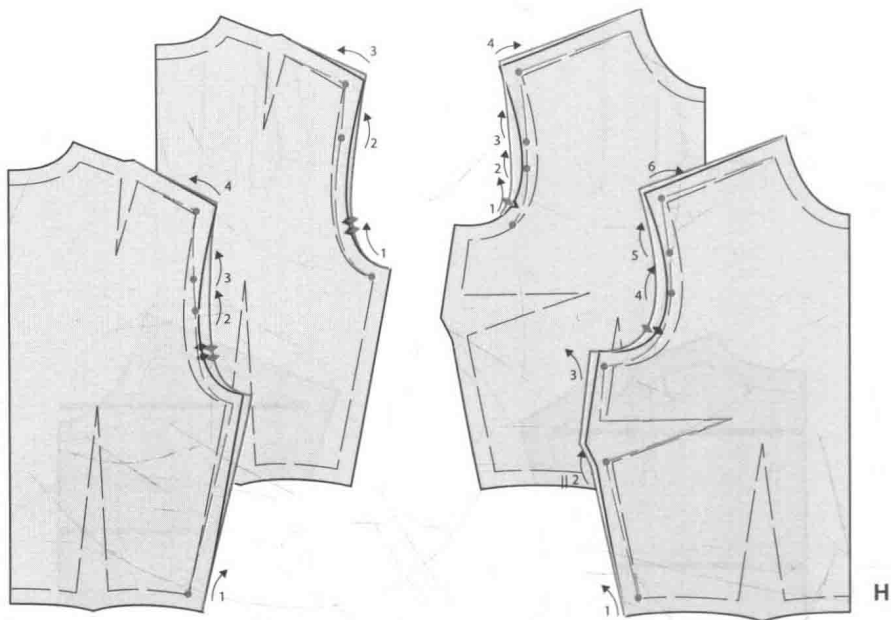
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



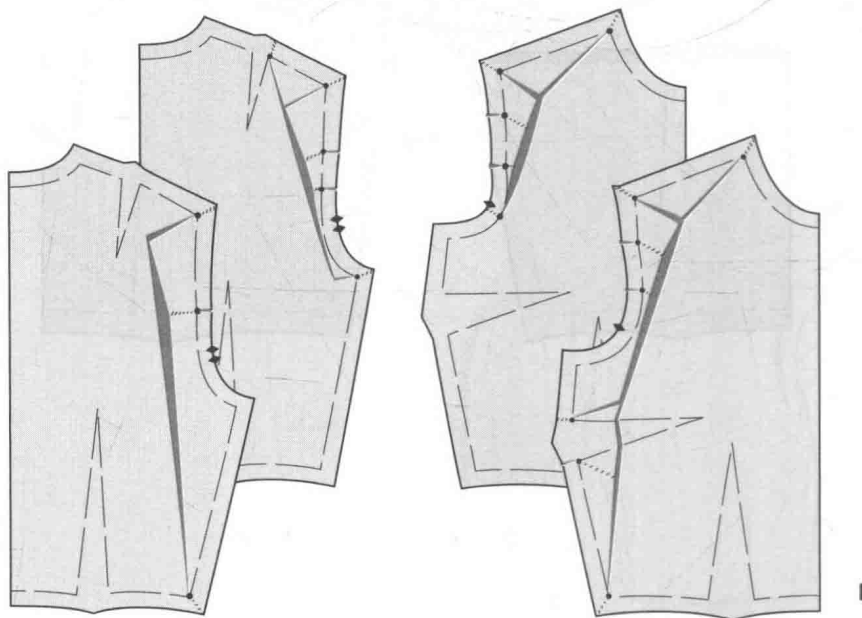
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

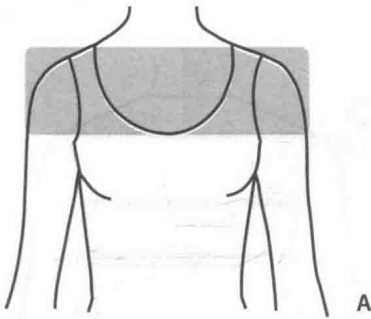


SLASH METHOD (I)

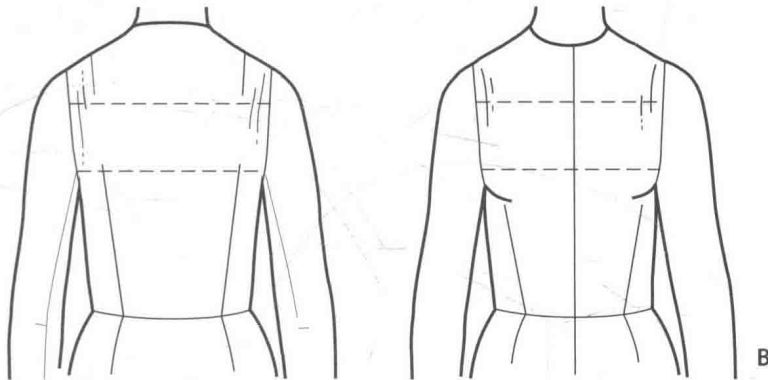
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



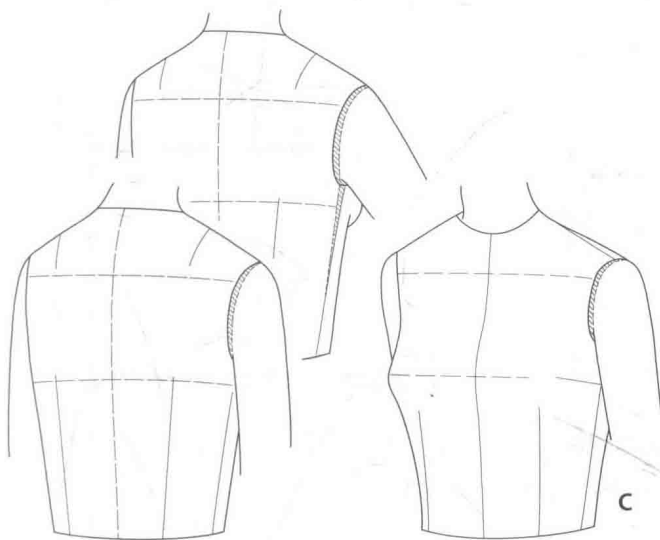
31. Narrow Chest/Upper Back



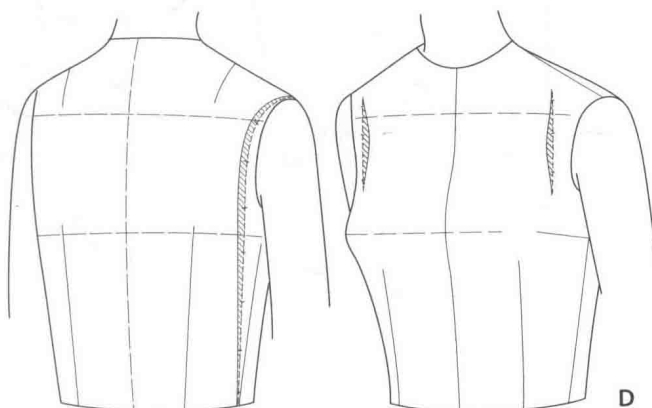
A



B



C



D

FIGURE EVALUATION (A)

- The chest and/or upper back is narrower than average/ideal.
- The chest and/or upper back lack muscle development.
- There is less width across the chest and/or back.
- The back may appear to be erect.

FITTING PROBLEMS (B)

- Fabric is loose at the edge of the chest or upper back and underarm area.
- Loose vertical wrinkles form at the sides.
- Movement is restricted when the arms are raised.
- Less fabric width is needed across the chest or upper back.

READY-TO-WEAR ALTERATION (C)

- Release the sleeves front and/or back, continuing down the side seams if needed.
- Take in the armhole seam at the sides, tapering to zero at the shoulder and at the base of the armhole.
- If the variation extends below the armhole, take in the side seams as illustrated.
- Re-attach the sleeves.

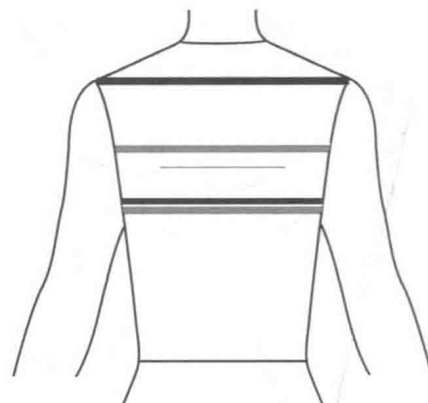
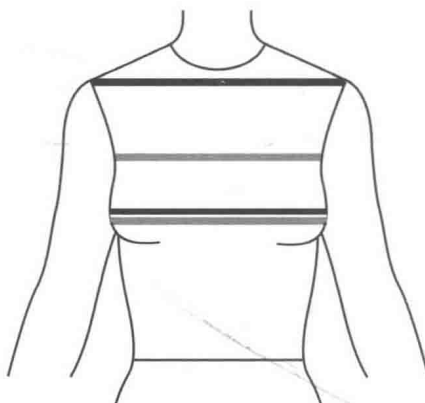
TRIAL GARMENT ALTERATION (D)

- Make vertical tucks on the front and/or back, just inside the armholes, tapering as illustrated.
- If the variation extends below the armhole, extend the tuck to the waist as illustrated.

31. Narrow Chest/Upper Back

BODY MEASUREMENT POSITIONS (E)

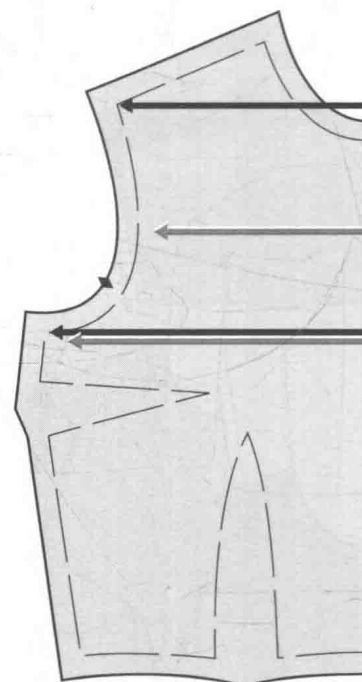
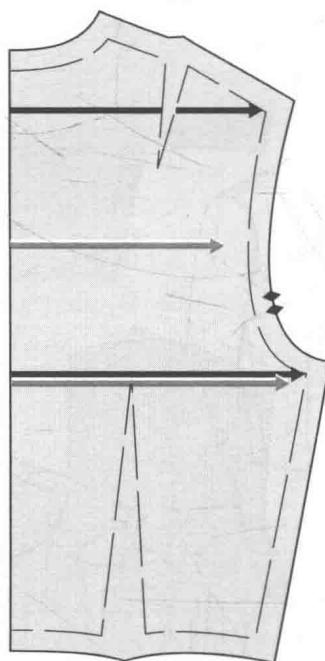
- Shoulder tip width, center to tip
- Chest and across back, center to arm hinge
- Full bust front and back, center over full bust or back at bust level



E

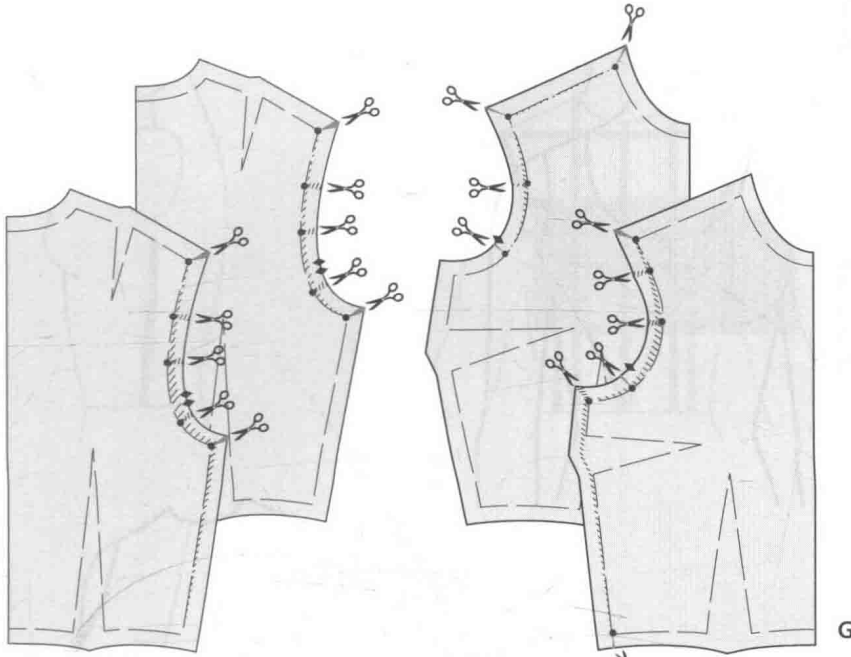
PATTERN MEASUREMENT COMPARISON (F)

- Pattern shoulder tip width correct
- Pattern chest and/or across back too wide
- Pattern full bust level front and/or back may be correct or too wide



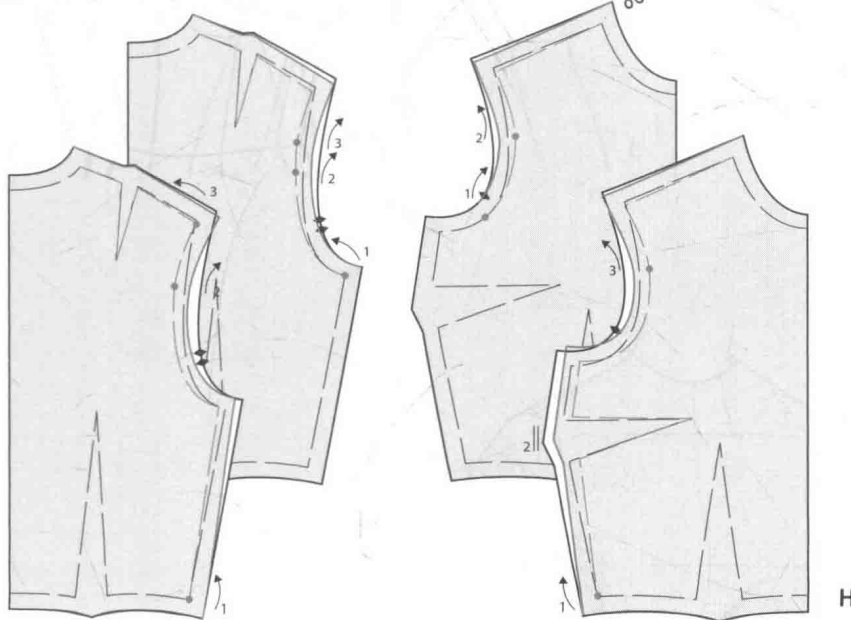
F

31. Narrow Chest/Upper Back



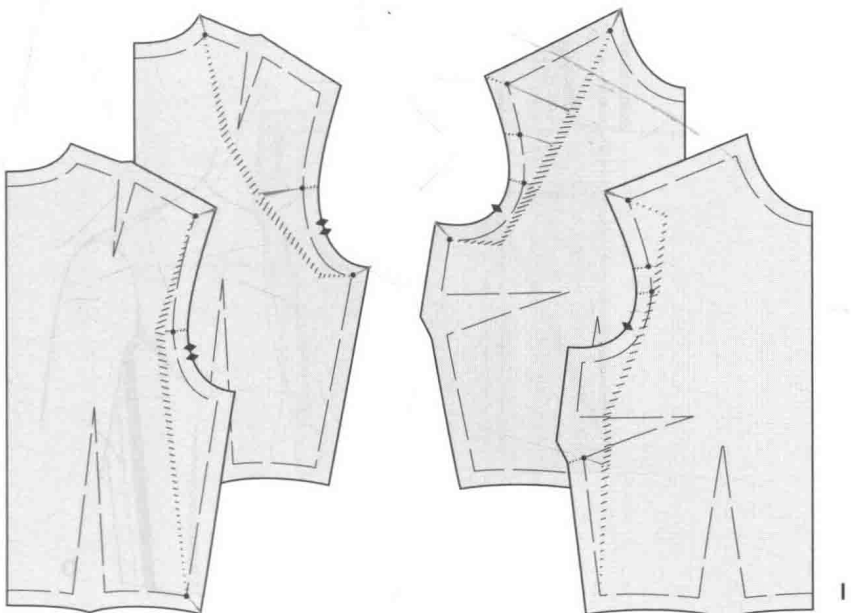
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



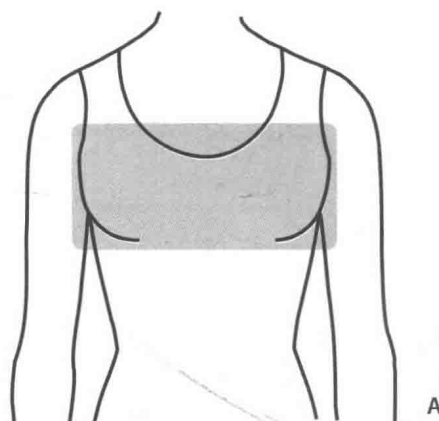
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

32. Larger Bust

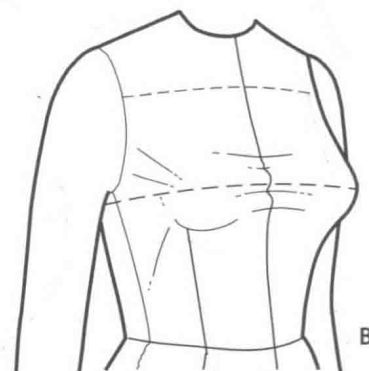
FIGURE EVALUATION (A)

- Bust development is larger than average/ideal, assuming a B cup is average.
- Width increases across the bust.
- If length is also affected, see #33 Prominent Bust.
- A larger bust is characteristic of an inverted triangle and an hour-glass figure type.



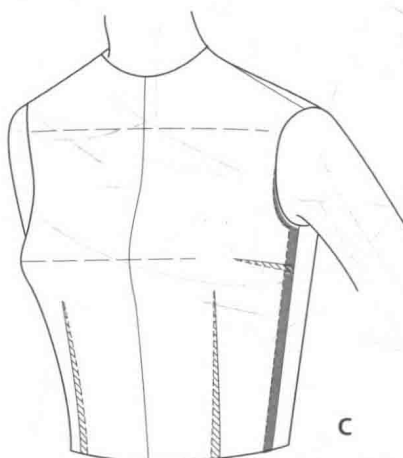
FITTING PROBLEMS (B)

- Fabric is tight across the bust.
- Diagonal wrinkles radiate from the bust curves to the garment edge.
- Horizontal wrinkles may form between the breasts, and a buttoned closure will gap.
- The bodice side seam is pulled forward, positioning the side dart near or over the bust tip.
- The bodice needs more fabric width across the bust and a larger dart.



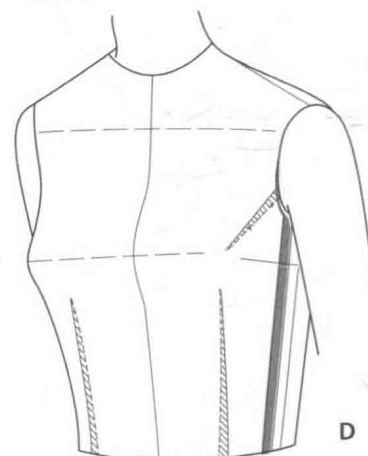
READY-TO-WEAR ALTERATION (C)

- Release the side seam, side dart, and midway up the armhole.
- Let out the front armhole and side seam.
- Make the side dart larger—take in a larger dart.
- If more fullness is needed, release the waistline seam and take in the waist-fitting dart.

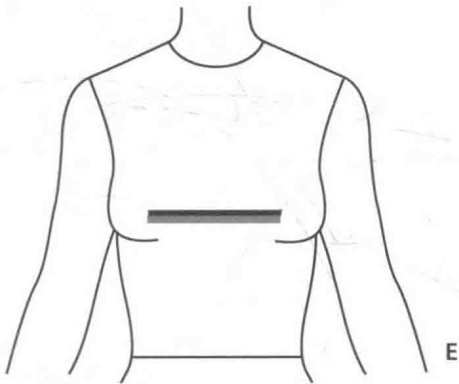
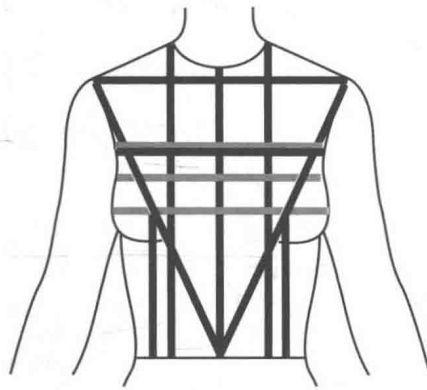
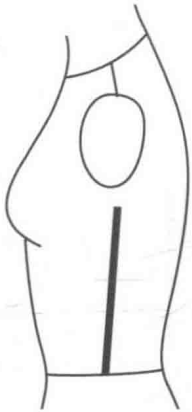


TRIAL GARMENT ALTERATION (D)

- Release the side seam and waistline seam.
- Near the front side seams, slash from the armhole to the waistline.
- Insert a fabric strip and spread as illustrated.
- To restore the armholes and waist to the original size, make the waist dart larger and create a dart at the armhole notch.

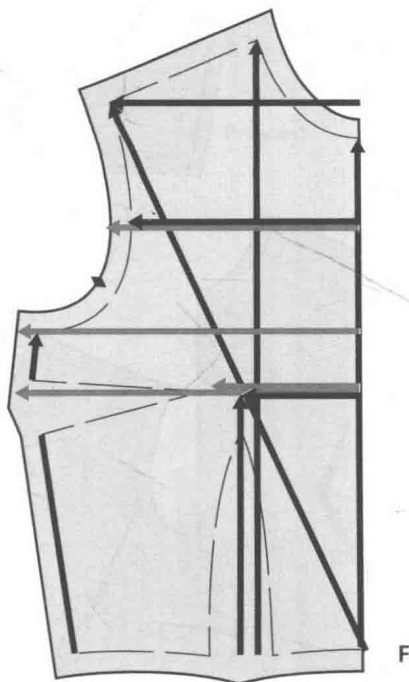


32. Larger Bust



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below the arm hinge to waist
- Bust height, waist to bust point
- Front full bodice length, waist to neck at shoulder
- Center front, waist to neckline
- Shoulder tip width, center to tip
- Shoulder slope, waist center to shoulder tip
- Chest width, center to arm hinge
- High bust, center to side at armhole level
- Front full bust length, center to side at bust level
- Bust span, center to bust tip



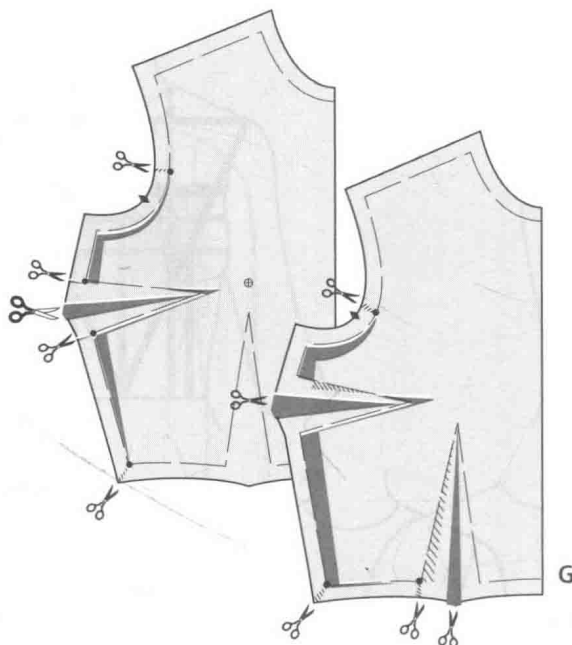
PATTERN MEASUREMENT COMPARISON (F)

- Pattern lengths at side, bust point, full bodice, and center correct
- Pattern shoulder tip width and slope correct
- Pattern chest width may be correct or too narrow
- Pattern high bust and full bust too narrow
- Pattern bust span may be correct or too narrow

32. Larger Bust

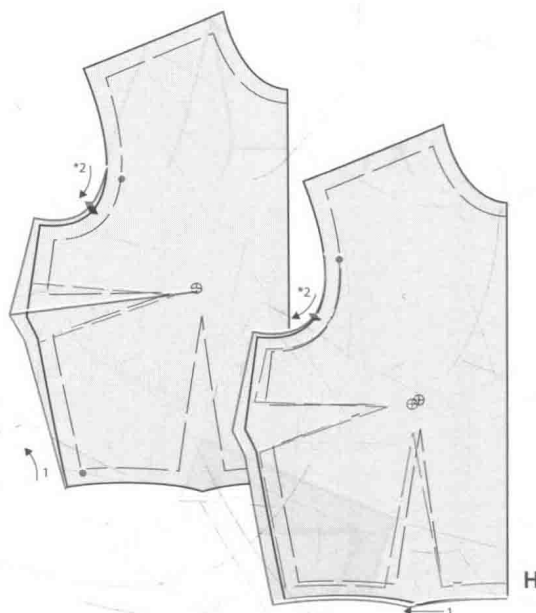
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



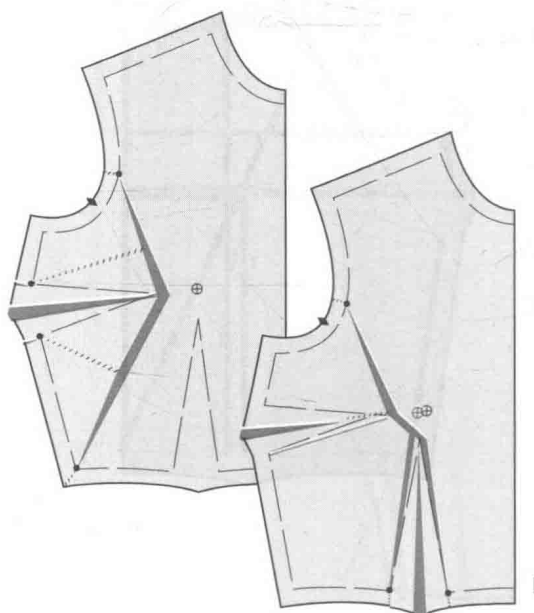
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



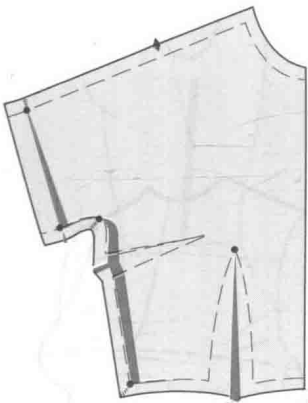
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

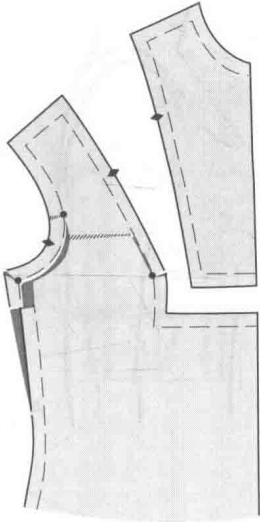


32. Larger Bust

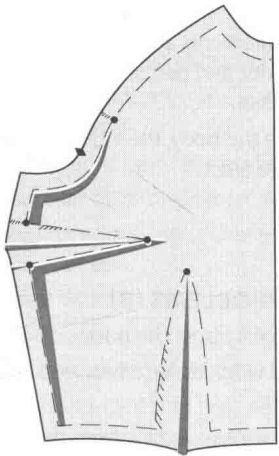
FASHION PATTERNS



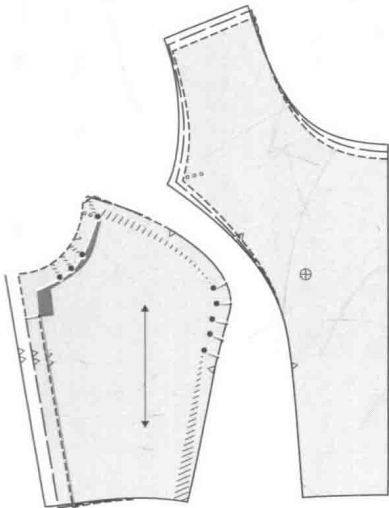
Kimono



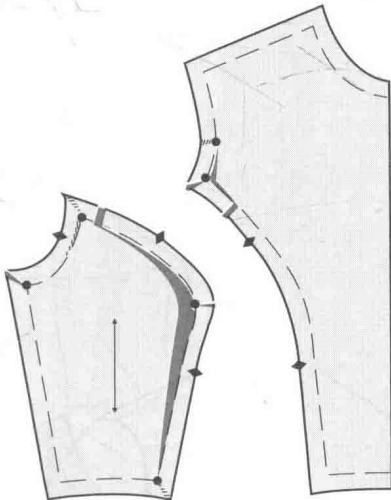
Bib Yoke



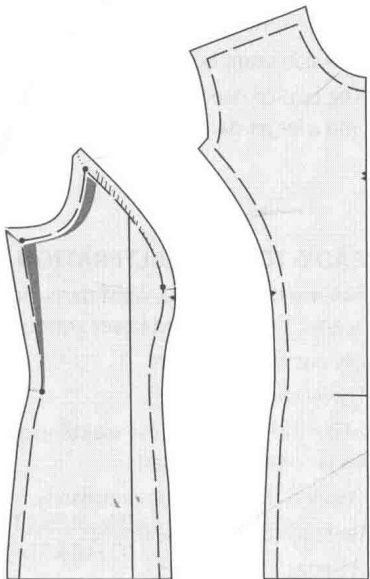
Raglan



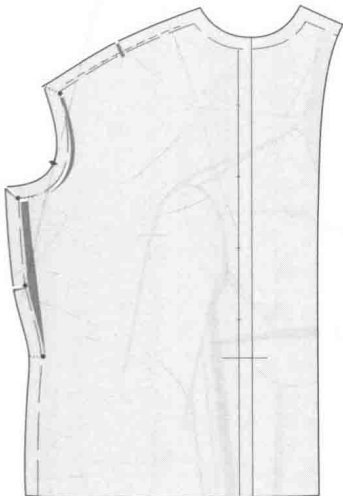
Princess—Multi-Size Pattern



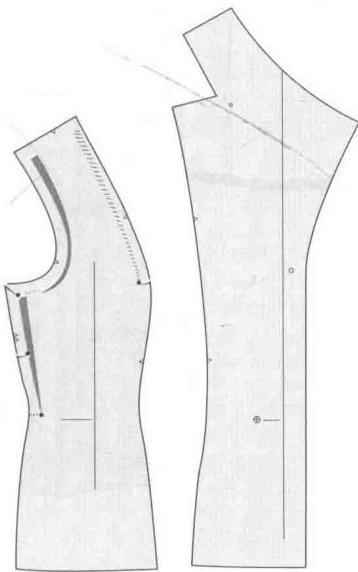
Princess



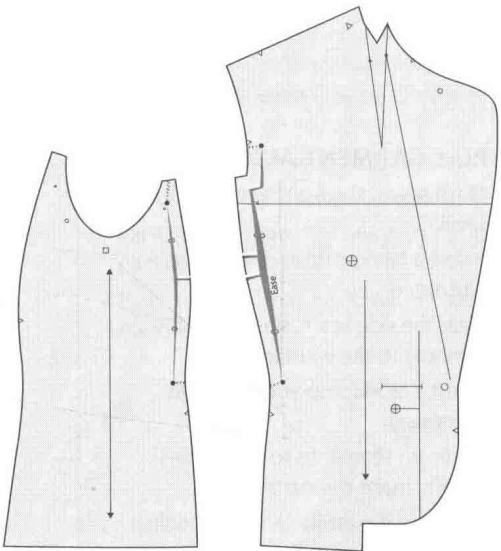
Princess Jacket



Basic Shirt



Princess Jacket

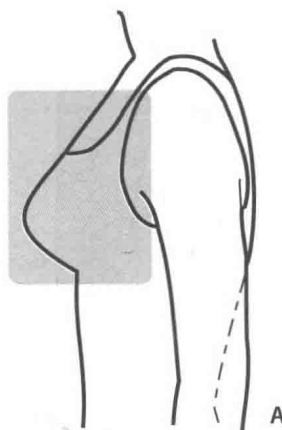


Tailored Jacket

33. Prominent Bust

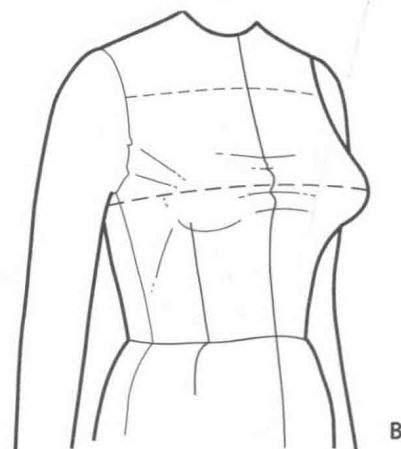
FIGURE EVALUATION (A)

- The breast forms a lifted conical shape.
- The cup size is usually C or larger.
- The measurements at bust level are longer, wider, and deeper than average/ideal.
- To balance the body, the individual may stand more erect.



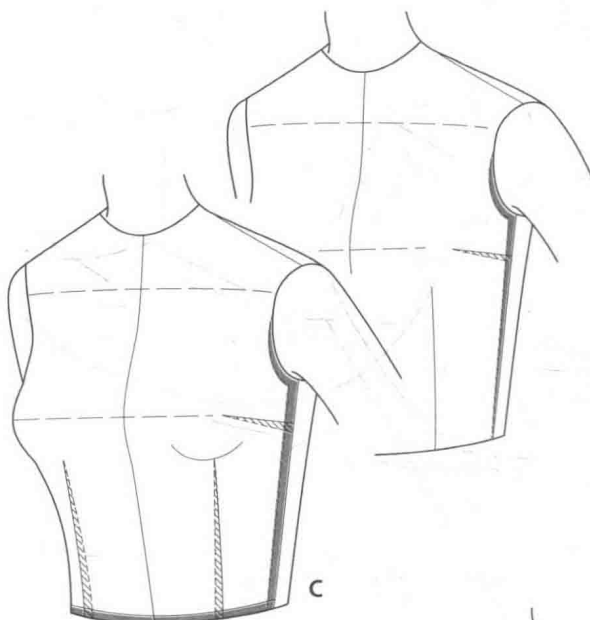
FITTING PROBLEMS (B)

- Fabric is tight across the bust.
- Horizontal wrinkles form between the breasts.
- Diagonal wrinkles radiate from the bust to the garment edges.
- The waistline and/or hemline rise across center front.
- The side seam bows toward the front.
- The bodice needs more length, width, and a larger dart.



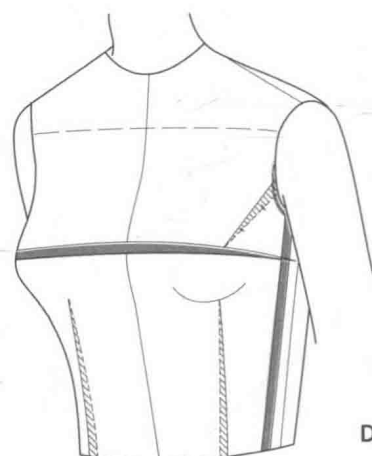
READY-TO-WEAR ALTERATION (C)

- Release the waistline, waist darts, side seams, side darts, and lower armholes.
- Let out the side seam.
- Lower the waistline.
- Make the side seam and waistline darts larger—take in the darts.
- Position the dart tip appropriately.
- Re-stitch darts and seamlines.
- Re-attach the sleeves.

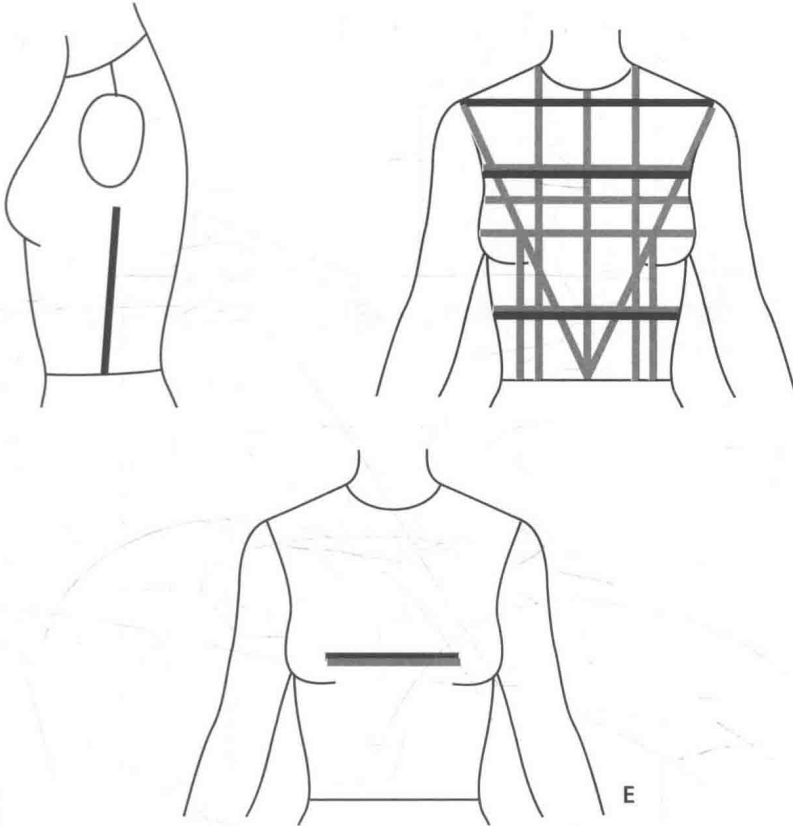


TRIAL GARMENT ALTERATION (D)

- Slash across the front bodice at bust level.
- Insert a fabric strip and spread as illustrated.
- Near the side seam, slash from the armhole to the waistline.
- Insert a fabric strip and spread as illustrated.
- To return seamlines to the original length, make the darts larger.
- To return the armhole to the original size, form a dart at the lower armhole.

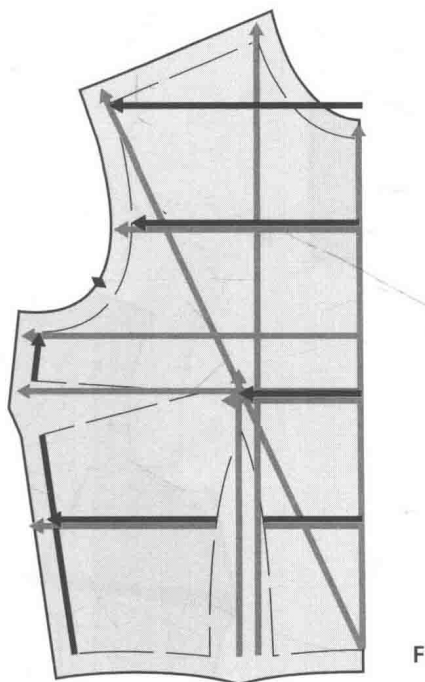


33. Prominent Bust



BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge to waist
- Bust height, waist to bust point
- Front full bodice length, waist to neck at shoulder
- Center front, waist to neckline
- Shoulder tip width, center at neck to tip
- Shoulder slope, waist center to shoulder tip
- Chest width, center to arm hinge
- High bust width, center to side
- Full bust width, center to side
- Bust span, center to bust point
- Midriff width, center to side



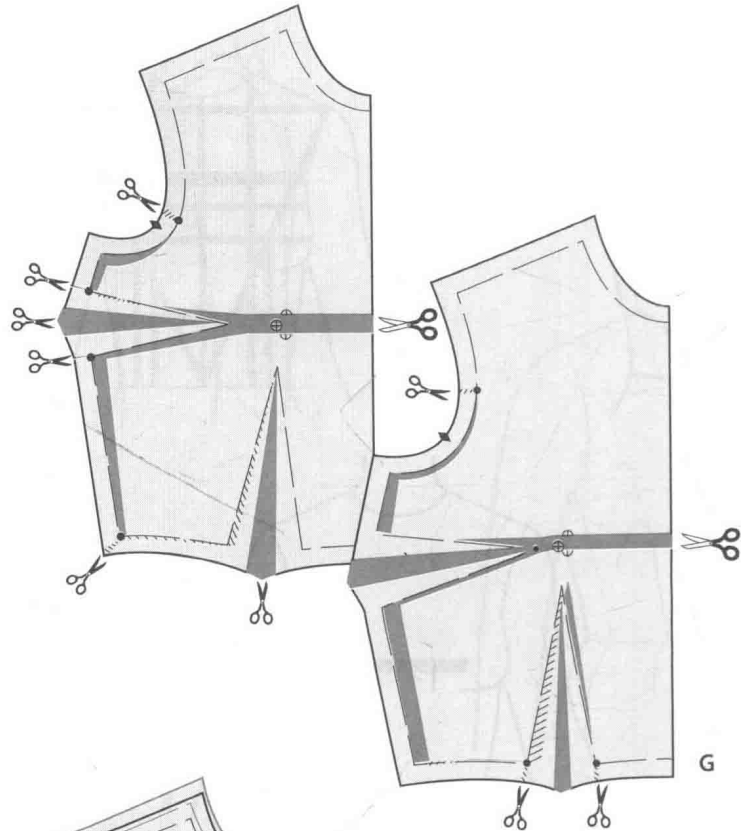
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side length correct
- Pattern bust height, full bodice length, and center too short
- Pattern shoulder tip width may be correct or adjusted
- Pattern shoulder slope too short
- Pattern chest width may be correct or too narrow
- Pattern high bust width too narrow
- Pattern full bust width too narrow
- Pattern bust span may be correct or too narrow
- Pattern midriff may be correct or too narrow

33. Prominent Bust

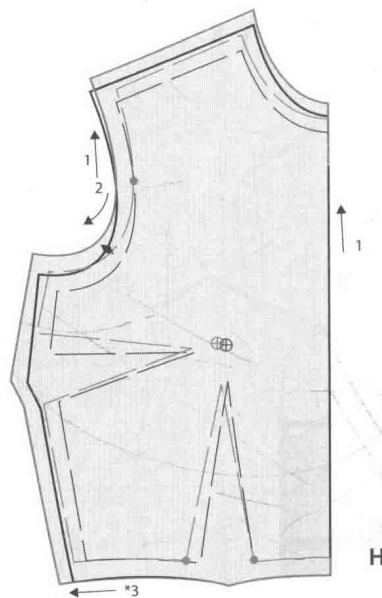
SEAM METHOD (G)

- Cut across center front at bust level to and through the center of side bust dart.
- Cut and release dart legs, seam allowances at side, armhole to above notch, and waistline. Cut through center of waist dart.
- Hinge at armhole above notch, and waist dart ends.
- To increase length, attach tissue paper and spread pattern evenly at bust level.
- Increase width and dart shaping by extending side seam allowance and darts.
- Tape seam allowances in place.



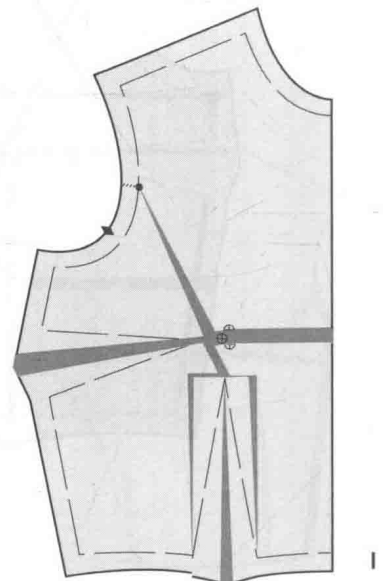
PIVOT/SLIDE METHOD (H)

- On tissue paper, trace the bodice.
- Mark length increase above center neckline.
- Mark width increase at side out from dart ends.
- Slide the pattern up center to increase length evenly above tracing.
- Trace center, neckline, shoulder, and armhole to above notch.
- Pivot pattern out from armhole above notch until side meets width increase.
- Trace lower armhole and side to center of dart. Mark end of side dart leg.
- Return pattern to original position.
- Slide pattern out along waistline to meet width increase at bust. Mark end of waist and side dart leg.
- Rule a new side dart from marked dart ends to original dart tip or shorter as needed.
- At waist dart tip, mark out half the waist width increase. Rule a new waist dart from marked dart end to new dart tip. Waist dart tip may need to be raised.
- Use tracing as pattern.



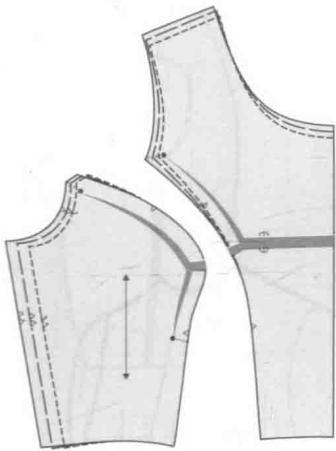
SLASH METHOD (I)

- Slash across from center at level of bust to dart, then through center of dart.
- Slash from dart tip to armhole above notch. Hinge at armhole.
- Slash to waist dart tip, then down on each side of dart. Cut through center of dart. Hinge at dart ends.
- Increase length and side bust shaping by spreading center evenly.
- Increase width and waist dart shaping by extending side sections out.
- Tape pattern pieces in place.

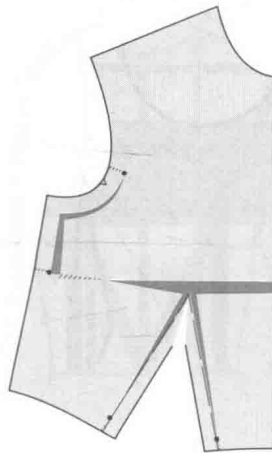


33. Prominent Bust

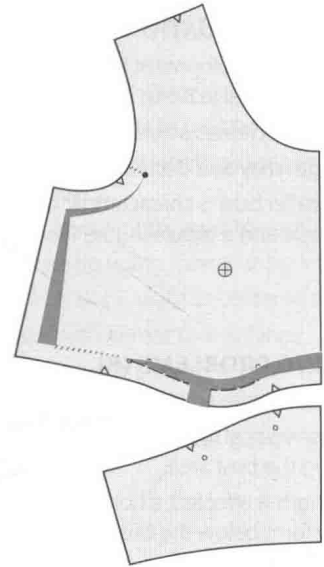
FASHION PATTERNS



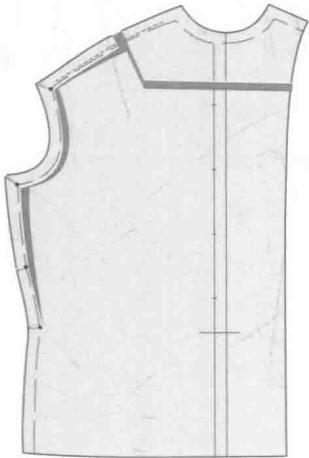
Princess—Multi-Size Pattern



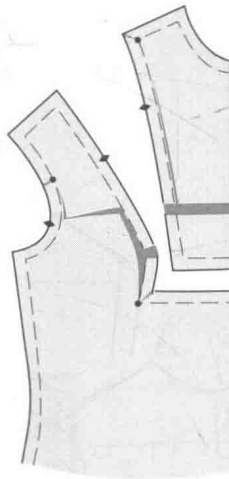
Bodice—Transfer Side Dart to Waist Dart



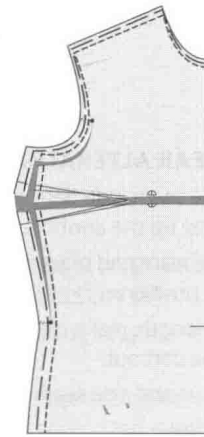
Empire Waist



Basic Shirt



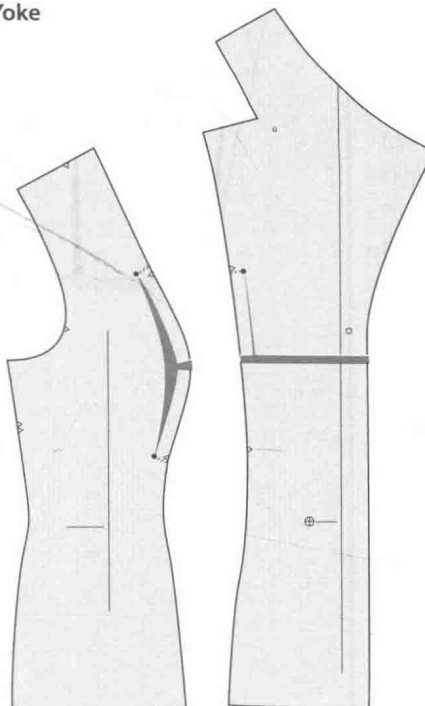
Bib Yoke



Blouse



Raglan Jacket



Princess Jacket

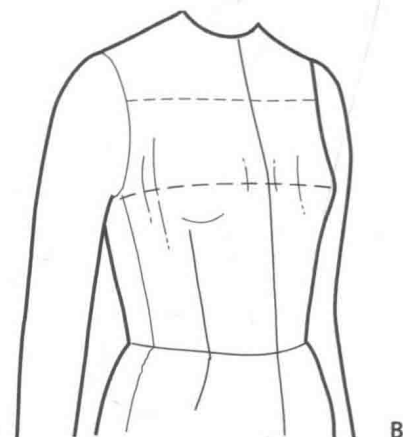
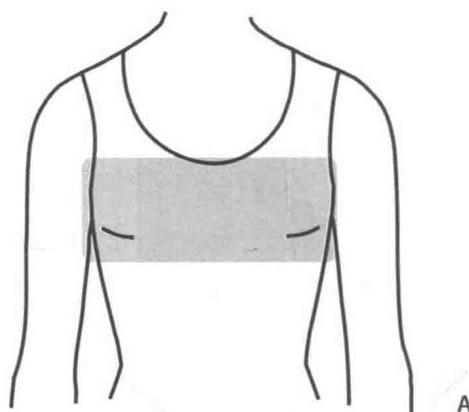
34. Smaller Bust

FIGURE EVALUATION (A)

- The bust development is smaller than average/ideal (a B cup is average).
- Width decreases across the bust.
- Length may also decrease.
- A smaller bust is characteristic of a triangle and a tubular figure type.

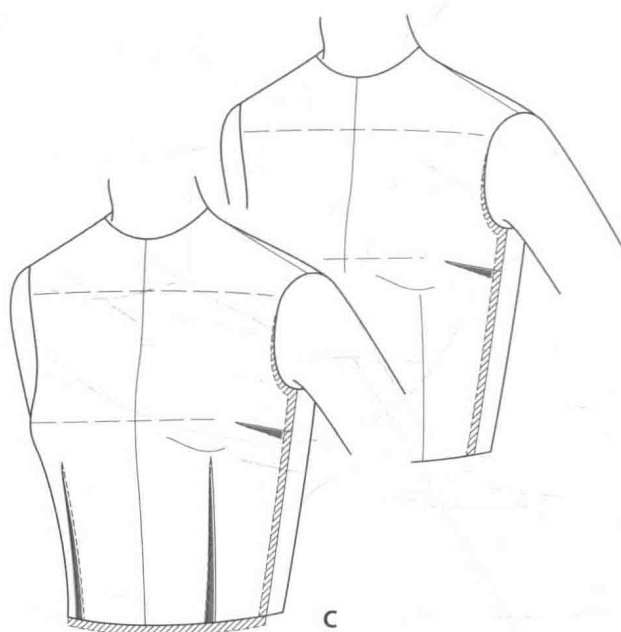
FITTING PROBLEMS (B)

- Fabric is loose across the bust.
- Loose vertical folds form at the side along the bust area.
- If length is affected, a horizontal fold may form below the bust.
- The bodice needs less fabric width across the bust and a smaller dart.
- The bodice may need less length.



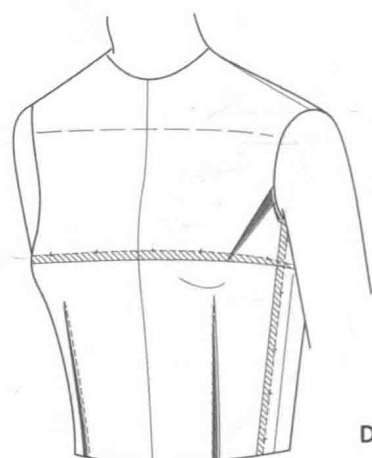
READY-TO-WEAR ALTERATION (C)

- Release the side seam, side dart, and armhole midway up the armhole.
- Take in the side seam and mark the new lower armhole position.
- To restore side length, make the dart smaller—let the dart out.
- Re-stitch the dart and side seam.
- Re-attach the sleeve.

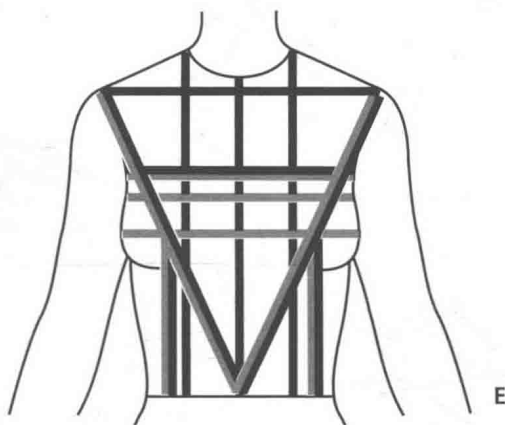
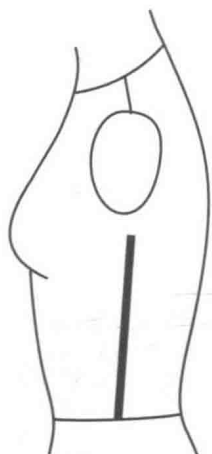


TRIAL GARMENT ALTERATION (D)

- Form a parallel tuck from waistline to armhole.
- If less length is needed, form a horizontal tuck at bust level.
- Decrease the waist dart size to restore the waistline circumference.
- Slash from the arm hinge area toward the bust.
- Insert a fabric strip and spread as illustrated to restore the armhole circumference.



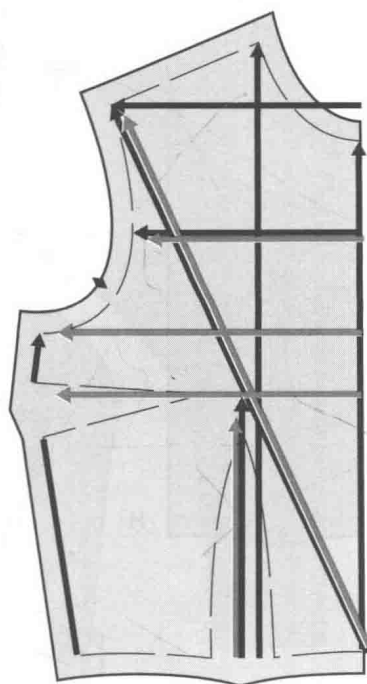
34. Smaller Bust



E

BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge
- Bust height, waist to bust point
- Front, full bodice length, waist to neck at shoulder
- Center front length, waist to neckline
- Shoulder tip width, center at neck to tip
- Shoulder slope, waist at center to tip
- Chest width, center to arm hinge
- High bust width, center to side
- Full bust width, center to side
- Bust span, center to bust point



F

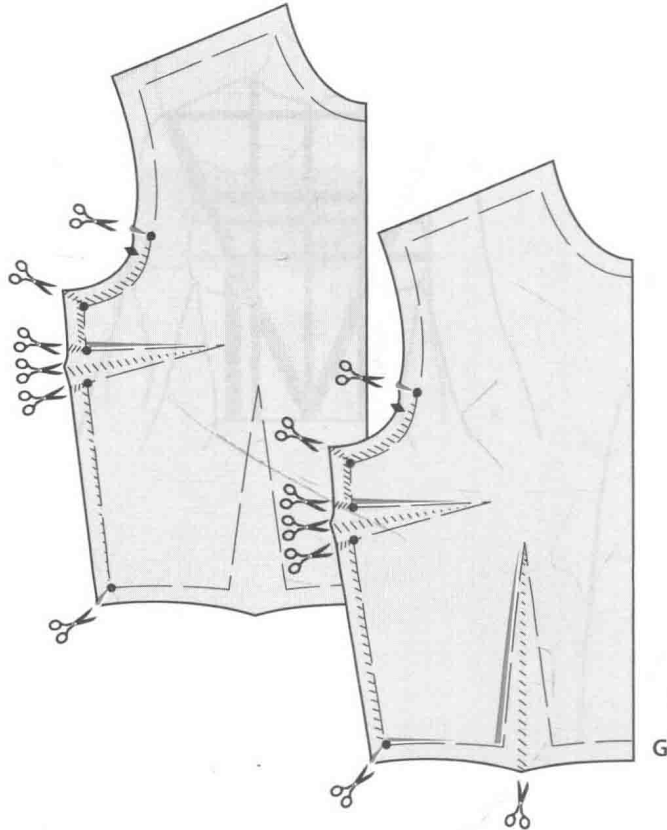
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side length, and bust height correct
- Full bodice and center lengths may be correct or too long
- Shoulder tip width correct or adjusted
- Shoulder slope may be correct or too long
- Chest width may be correct or too wide
- High bust width too wide
- Full bust too wide
- Bust span may be correct or too wide

34. Smaller Bust

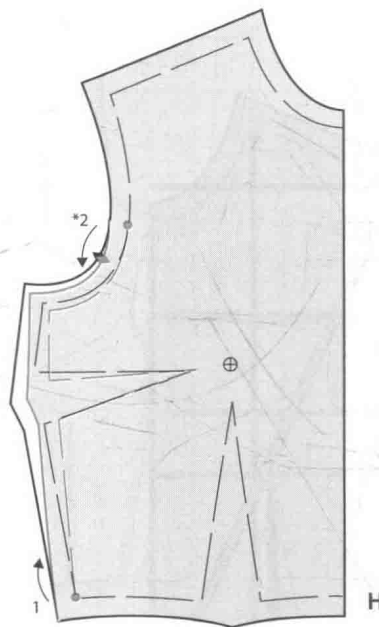
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



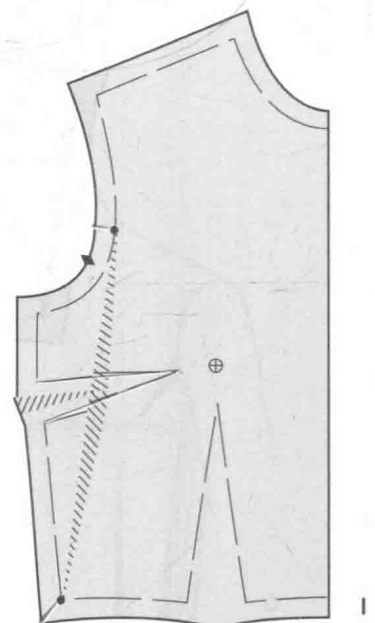
PIVOT/SIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



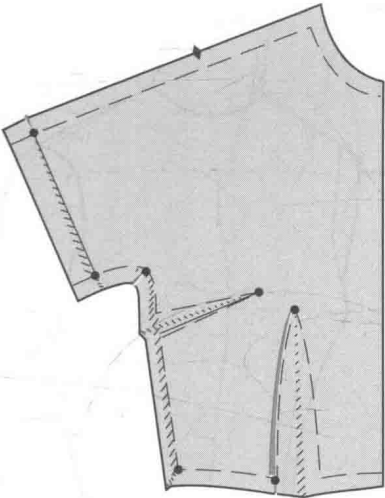
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

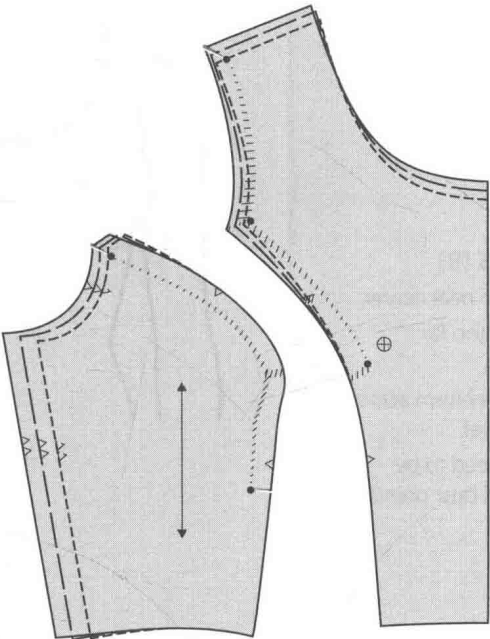


34. Smaller Bust

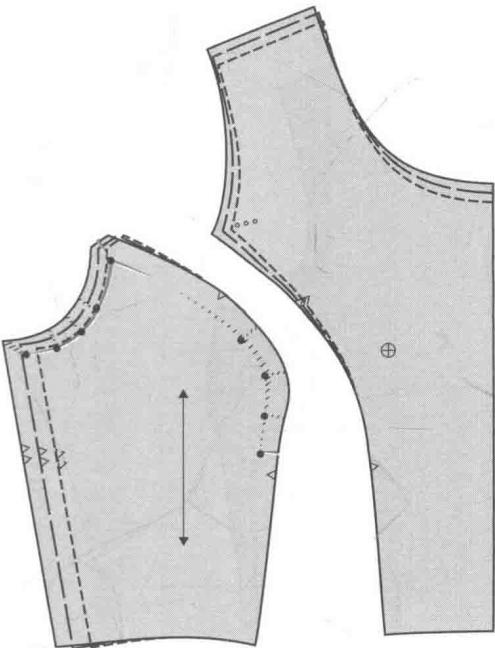
FASHION PATTERNS



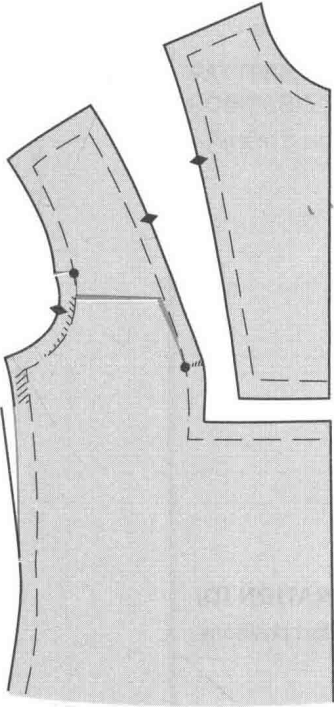
Kimono



Princess—Multi-Size Pattern, Option 1



Princess—Multi-Size Pattern, Option 2

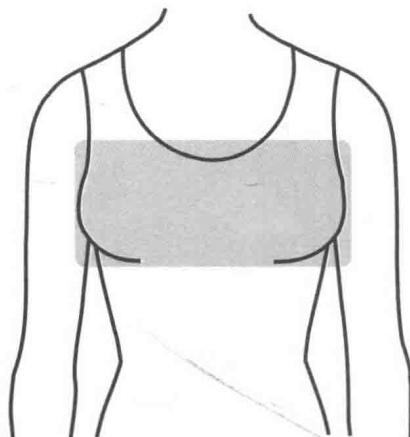


Bib Yoke

35. Wide Bust Span

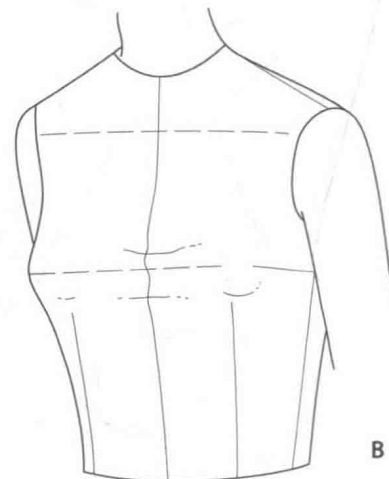
FIGURE EVALUATION (A)

- Bust points are farther apart than average/ideal.
- This may be associated with a larger bust.



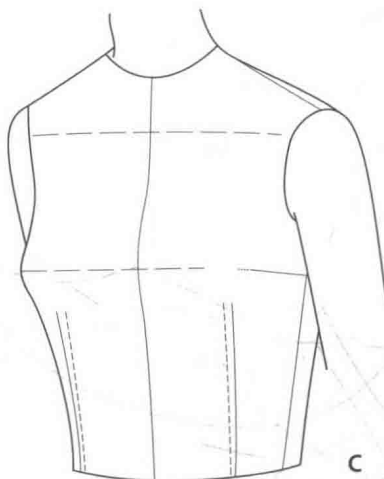
FITTING PROBLEMS (B)

- The waist darts are too near center.
- The side darts extend too far toward center.
- Horizontal wrinkles may form across center front at bust level.
- Waist and side darts need to be positioned in line with bust points.



READY-TO-WEAR ALTERATION (C)

- Release the waist and side darts.
- Move waist darts farther from the center. Shorten side darts.

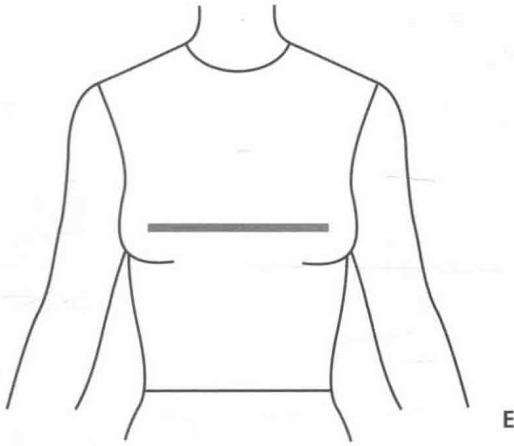


TRIAL GARMENT ALTERATION (D)

- Mark new waist and side dart positions.

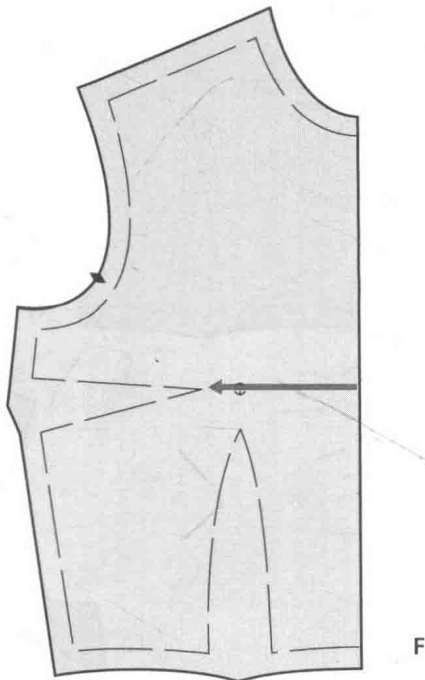


35. Wide Bust Span



BODY MEASUREMENT POSITION (E)

- Bust span, center to bust point



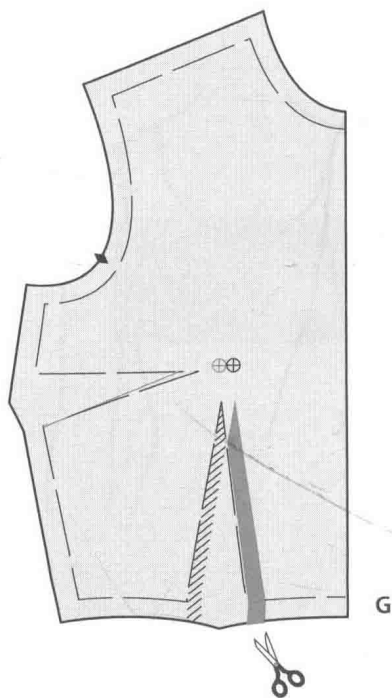
PATTERN MEASUREMENT COMPARISON (F)

- Pattern bust span too narrow

35. Wide Bust Span

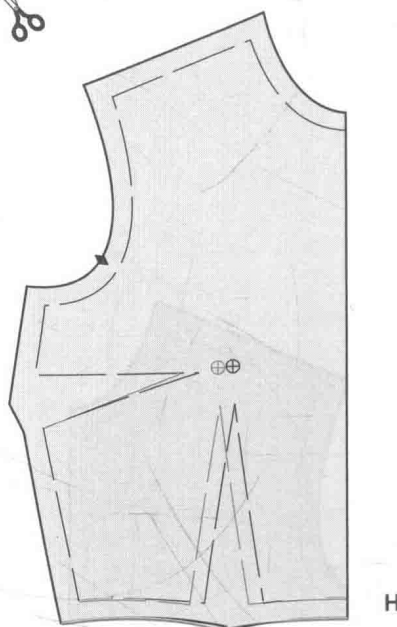
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



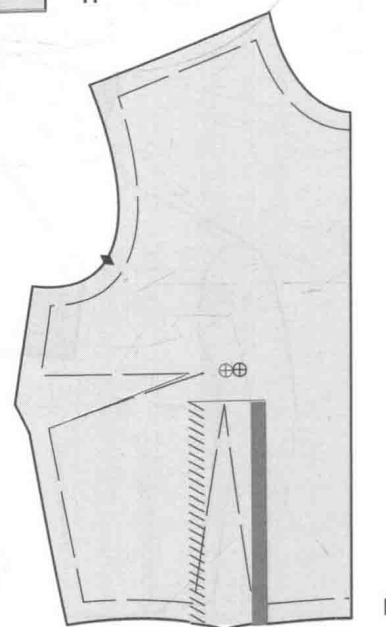
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



36. Cylindrical Upper Torso

FIGURE EVALUATION (A)

- The bones of the arm joint are larger than average/ideal.
- The arm joint has more weight deposit or muscle development than average/ideal.
- Body depth, front to back, is deeper and the rib cage is more round than average/ideal.

FITTING PROBLEMS (B)

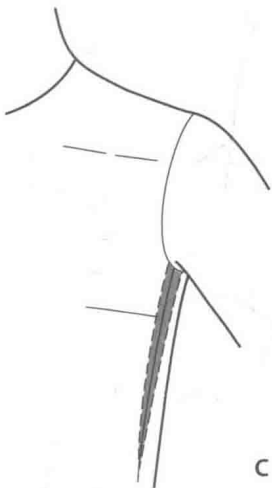
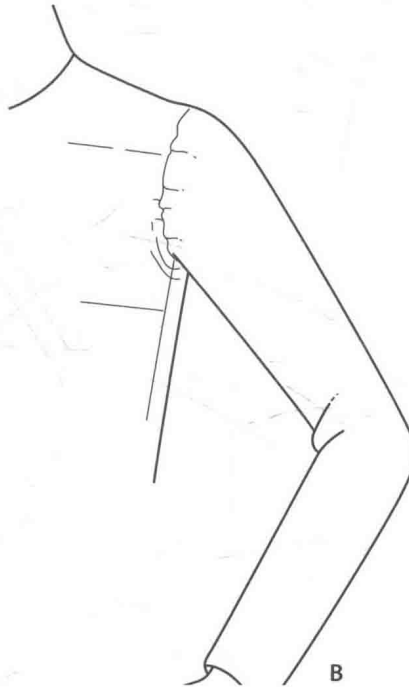
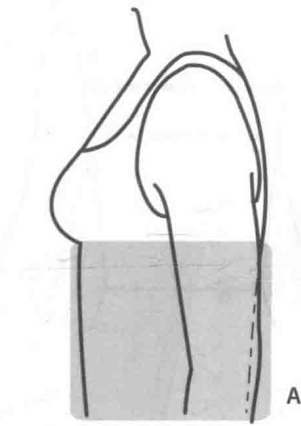
- The armholes rise and are too tight against the underarm.
- Folds form below the underarm.
- Horizontal wrinkles form across the armhole.
- Sleeves are too tight over the cap.
- More fabric width is needed at the underarm of both bodice and sleeve.

READY-TO-WEAR ALTERATION (C)

- Release the sleeves and bodice side seam.
- Let out the side seam, tapering to the waist.
- Release the sleeve underarm seam.
- Let out the sleeve underarm seam, tapering to the elbow or wrist as needed.

TRIAL GARMENT ALTERATION (D)

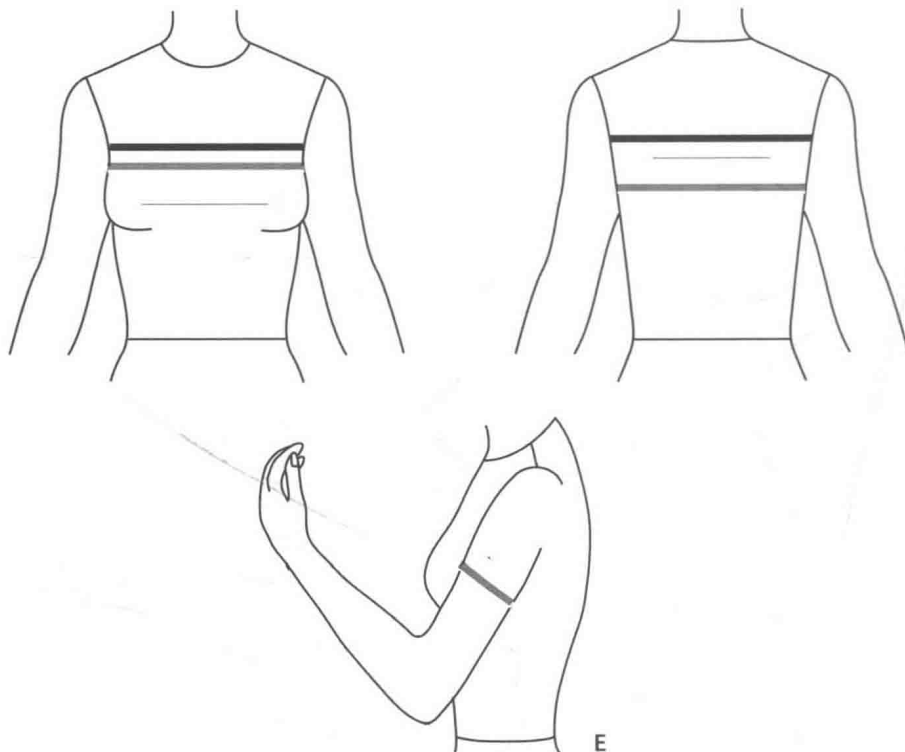
- Release the sleeves.
- At the bodice underarm, slash down to the waistline.
- Insert fabric strips and spread as illustrated.
- At the sleeve underarm, slash down to the elbow or wrist as needed.
- Insert fabric strips and spread as illustrated.



36. Cylindrical Upper Torso

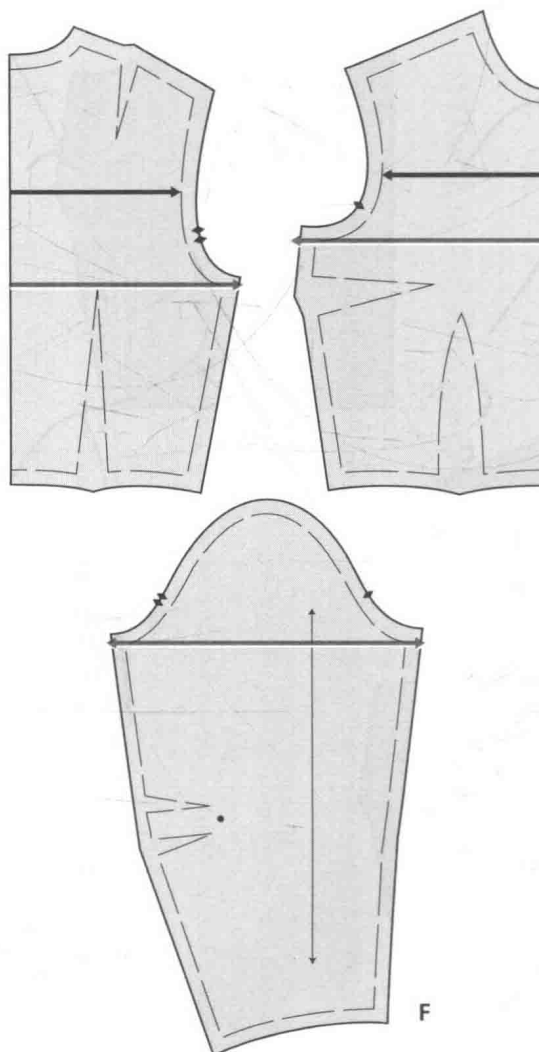
BODY MEASUREMENT POSITIONS (E)

- Chest and across back, center to arm hinge
- High bust, at underarm level, center to side
- Bicep, 1 inch below arm hinge

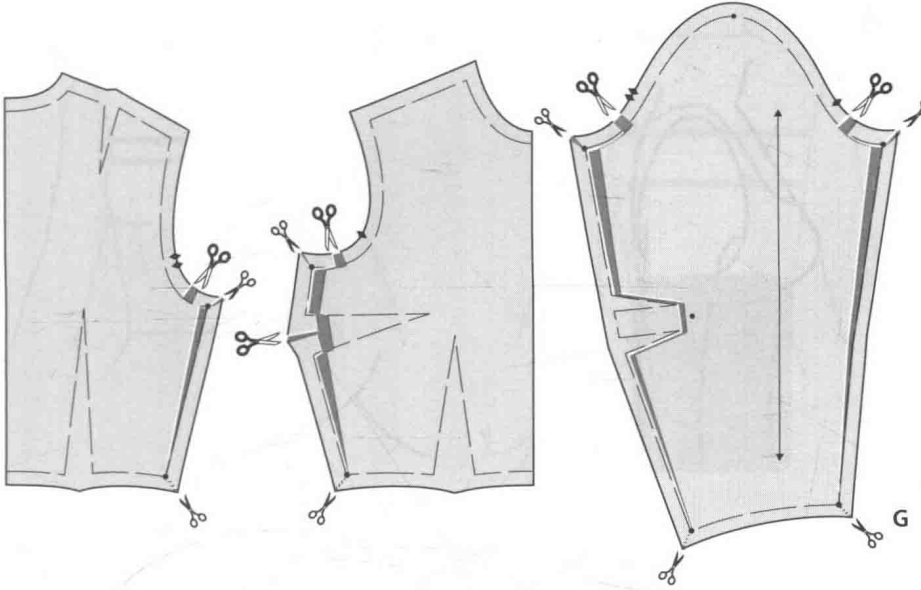


PATTERN MEASUREMENT COMPARISON (F)

- Pattern chest and across back correct
- Pattern high bust at underarm level too narrow
- Pattern bicep width too narrow

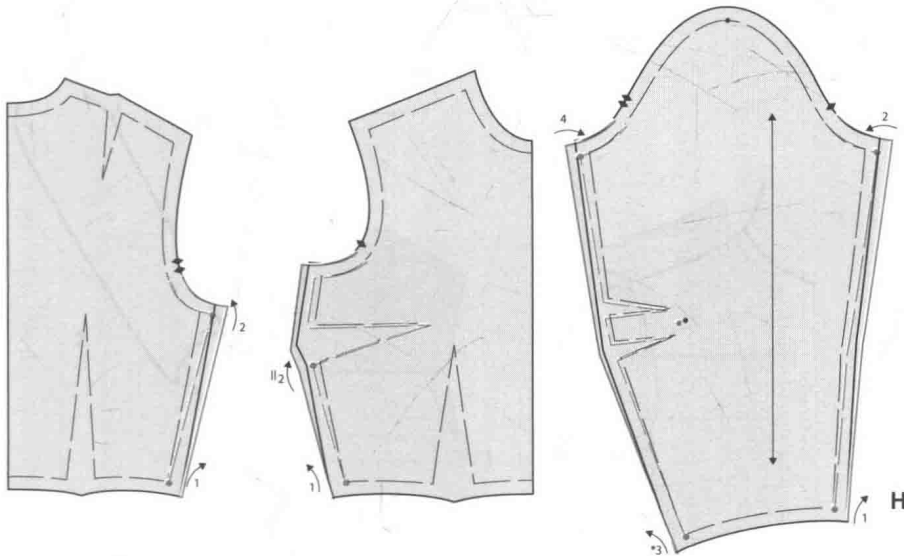


36. Cylindrical Upper Torso



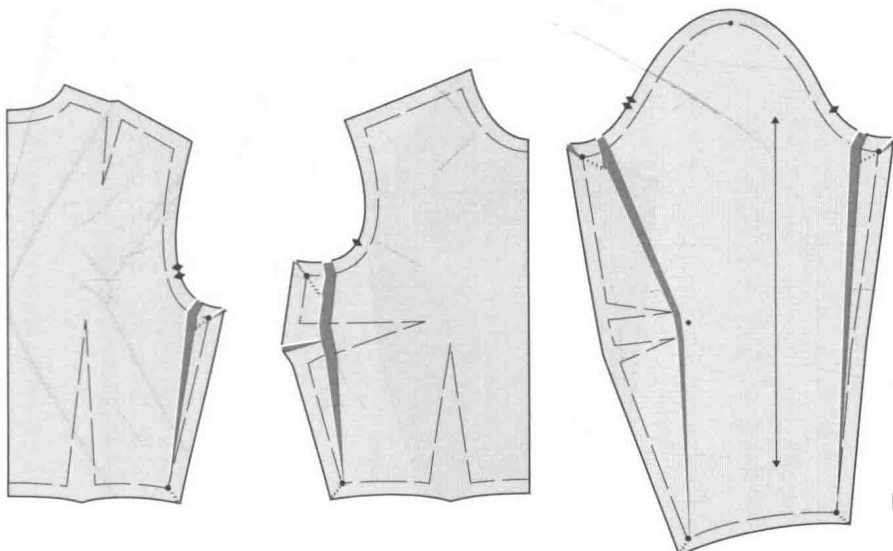
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

37. Flatter Oval-Shaped Upper Torso

FIGURE EVALUATION (A)

- The bones of the arm joint are smaller than average/ideal.
- The arm joint has less weight deposit or muscle development than average/ideal.
- Body depth, front to back, is narrower and the rib cage is flatter than average/ideal.

FITTING PROBLEMS (B)

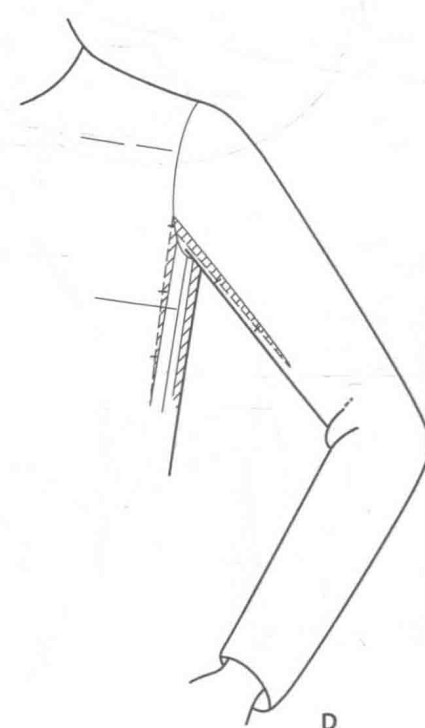
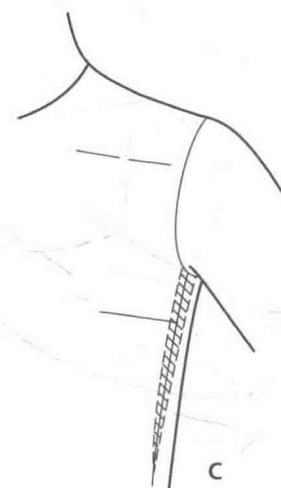
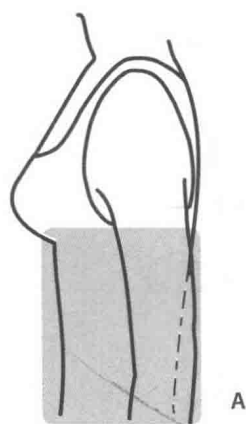
- Loose vertical folds form near the underarm seam.
- The sleeves are too loose.
- Less fabric width is needed at the underarm of both bodice and sleeve.

READY-TO-WEAR ALTERATION (C)

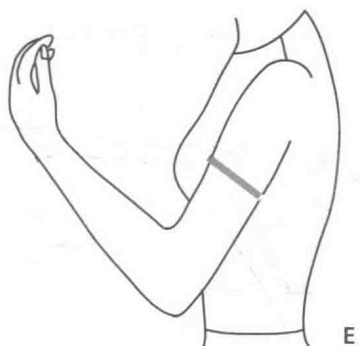
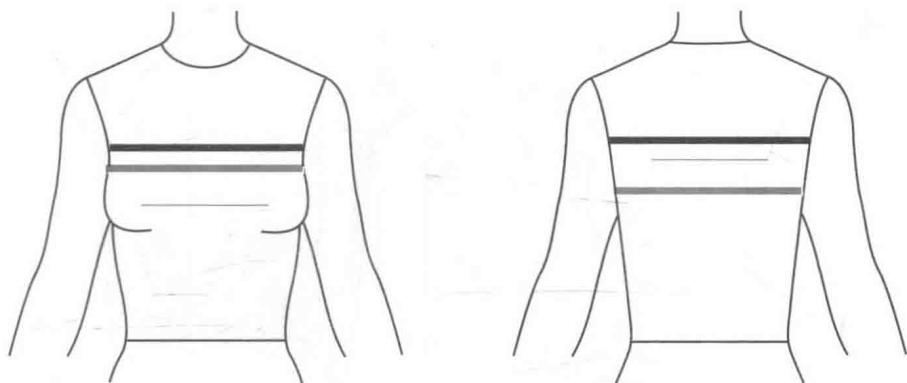
- Release the sleeves and bodice side seam.
- Take in the side seam, tapering to the waist.
- Release the sleeve underarm seam.
- Take in the sleeve underarm seam, tapering to the elbow or wrist as needed.

TRIAL GARMENT ALTERATION (D)

- Release the sleeves.
- At the bodice underarm, make a vertical tuck from armhole to waistline.
- At the sleeve underarm, make a vertical tuck to correspond to the bodice tuck.

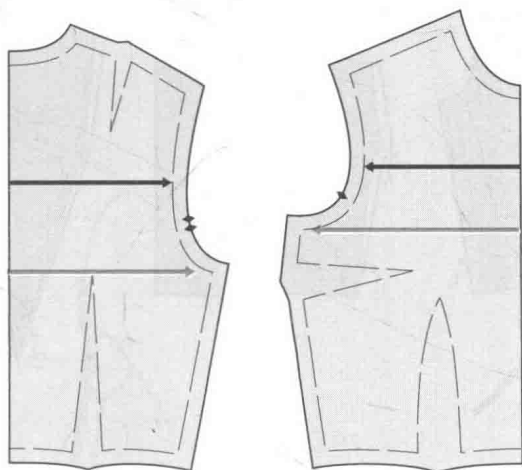


37. Flatter Oval-Shaped Upper Torso



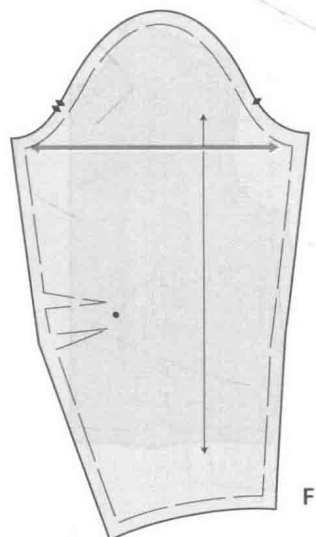
BODY MEASUREMENT POSITIONS (E)

- Chest and across back, center to arm hinge
- High bust, at underarm level, center to side
- Bicep circumference, 1 inch below arm hinge



PATTERN MEASUREMENT COMPARISON (F)

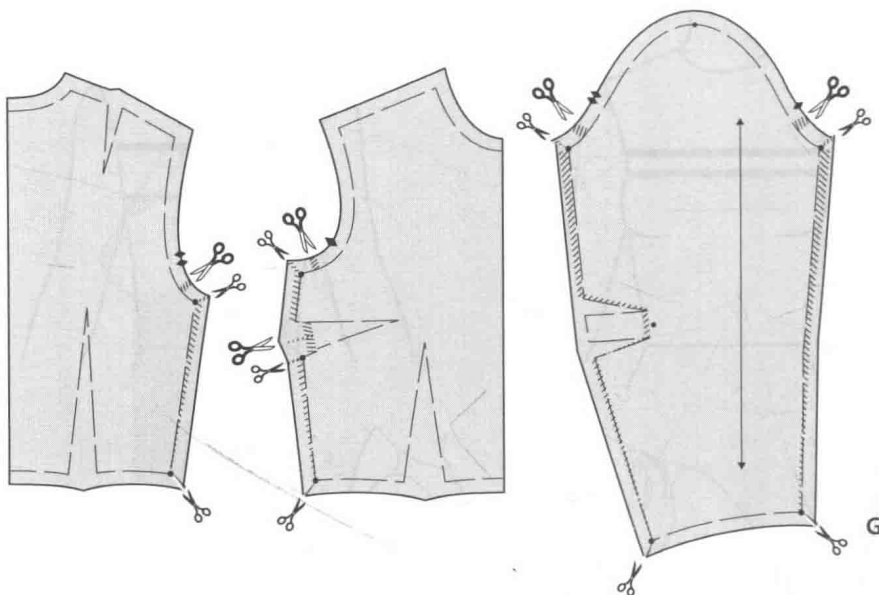
- Pattern chest and across back correct
- Pattern high bust at armhole too wide
- Pattern bicep too wide



37. Flatter Oval-Shaped Upper Torso

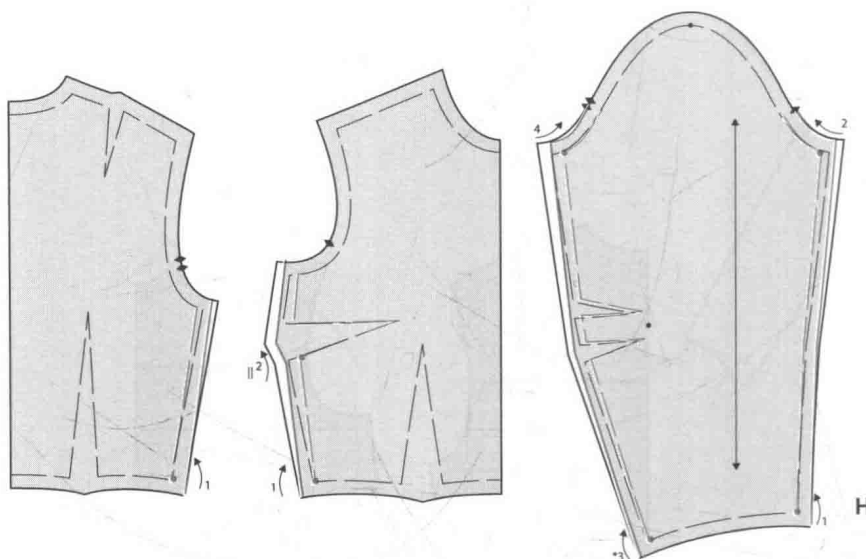
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



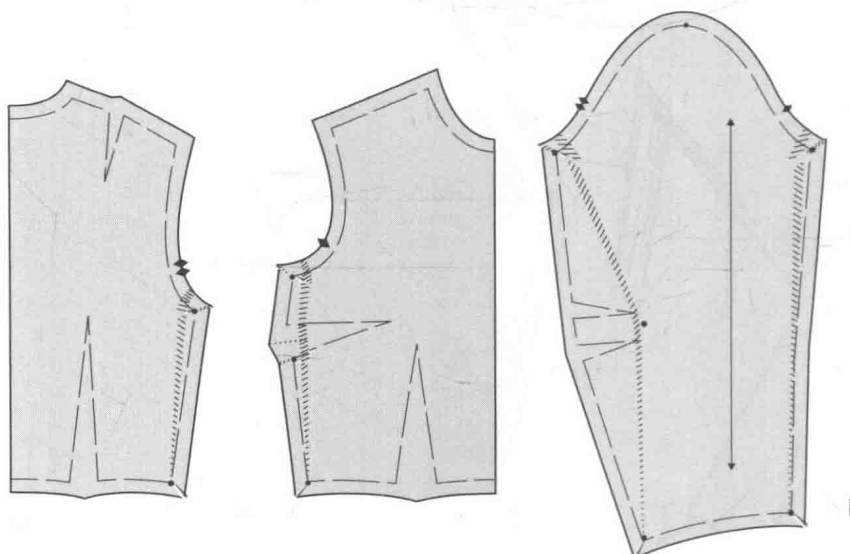
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

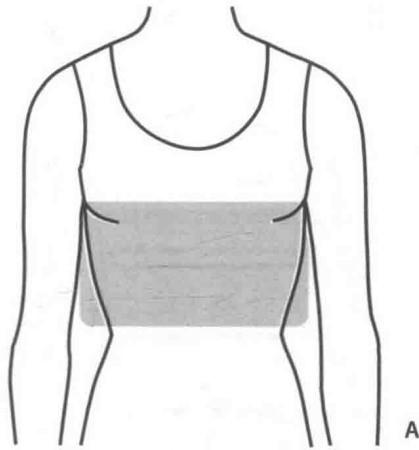


SLASH METHOD (I)

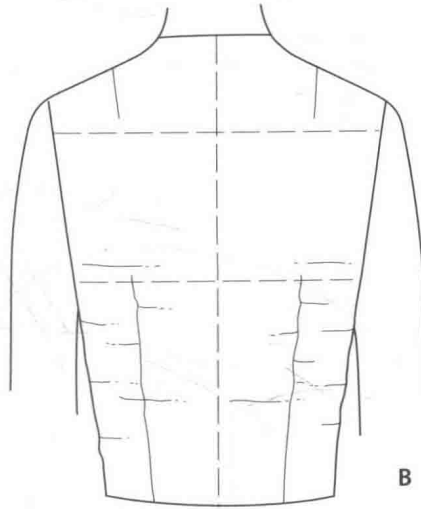
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



38. Wider Rib Cage



A



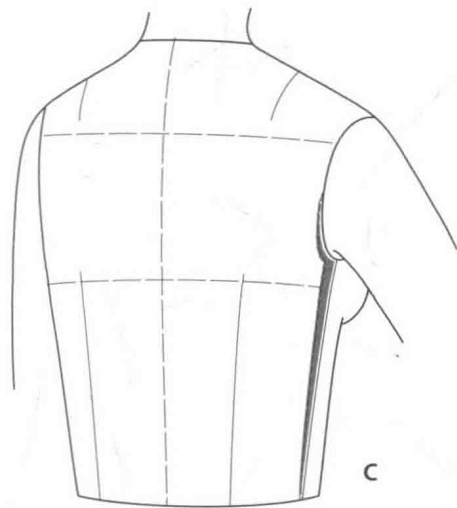
B

FIGURE EVALUATION (A)

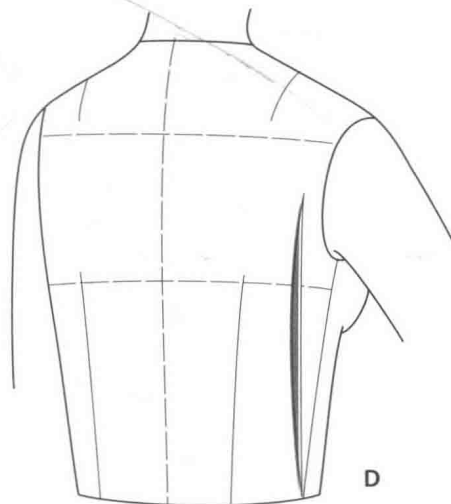
- The rib cage is wider than average/ideal.
- There may be more weight deposit or muscle development than average/ideal.
- The greater angle at the side increases the length between underarm and waist.
- Typical of the hourglass figure type.

FITTING PROBLEMS (B)

- Horizontal stress wrinkles form under the arms.
- The bust area is too tight.
- More fabric width is needed beginning near the chest level, continuing over the bust, and tapering to the waistline.



C



D

READY-TO-WEAR ALTERATION (C)

- Release the side seam and the lower armhole.
- Let out the armhole and side seam as illustrated.
- The adjustment may be needed in front, in back, or both.

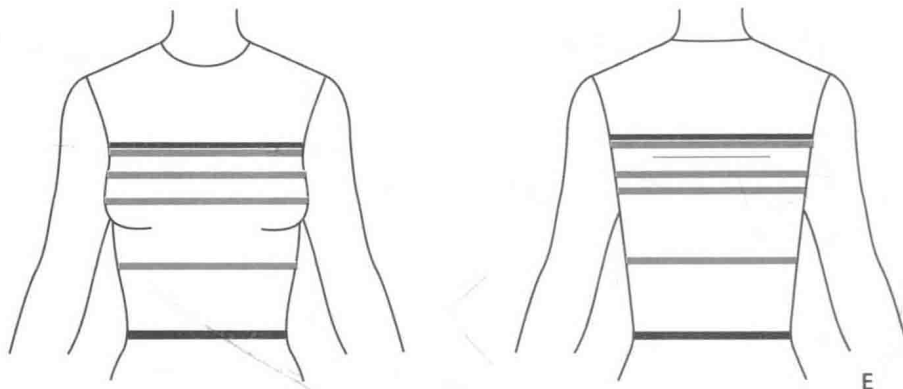
TRIAL GARMENT ALTERATION (D)

- Near the armhole, slash down from chest/back level to waistline.
- Insert fabric strips and spread as illustrated.

38. Wider Rib Cage

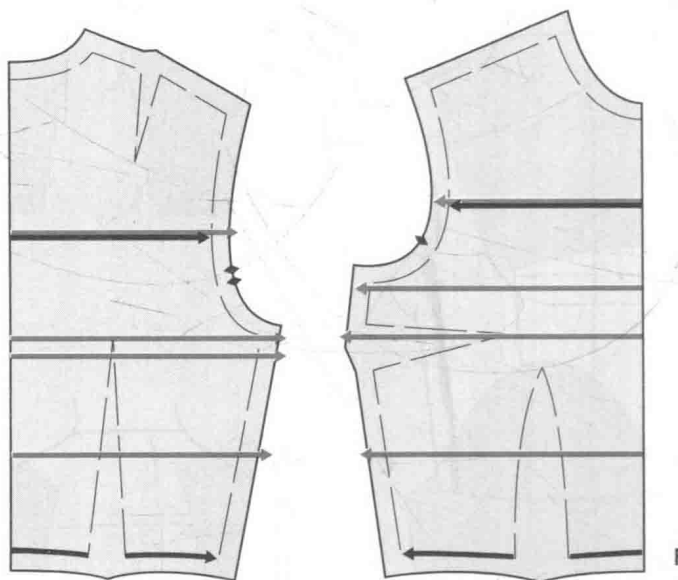
BODY MEASUREMENT POSITIONS (E)

- Chest and across back, center to arm hinge
- High bust, at armhole level, front and back
- Full bust, front and back
- Midriff, front and back
- Waist, front and back

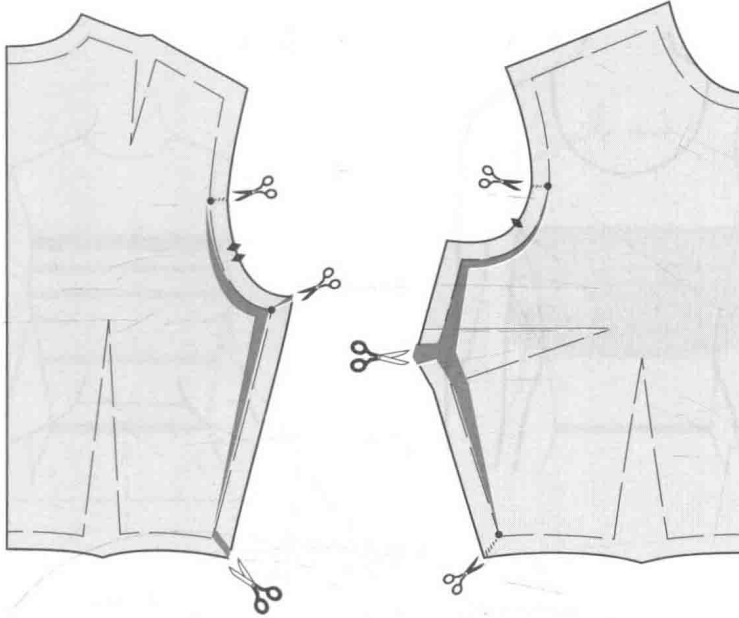


PATTERN MEASUREMENT COMPARISON (F)

- Pattern chest and across back may be correct or too narrow
- Pattern high bust, front and back, too narrow
- Pattern full bust, front and back, too narrow
- Pattern midriff, front and back, too narrow
- Pattern waist, front and back, correct



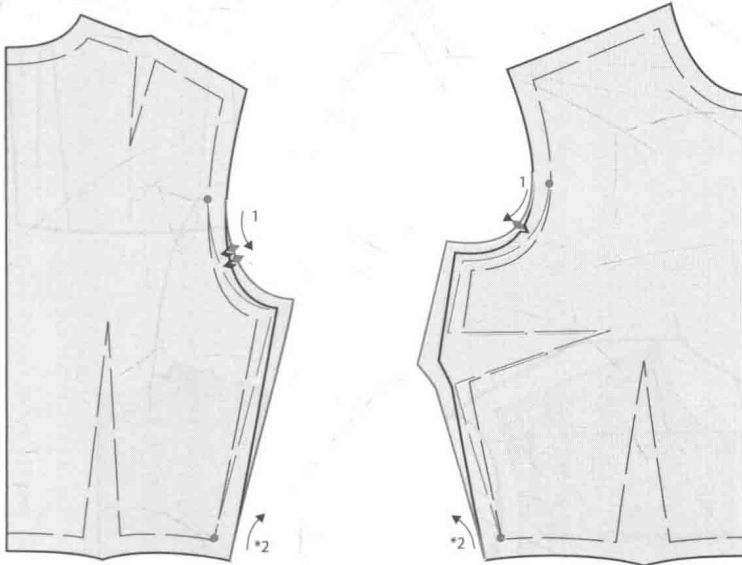
38. Wider Rib Cage



G

SEAM METHOD (G)

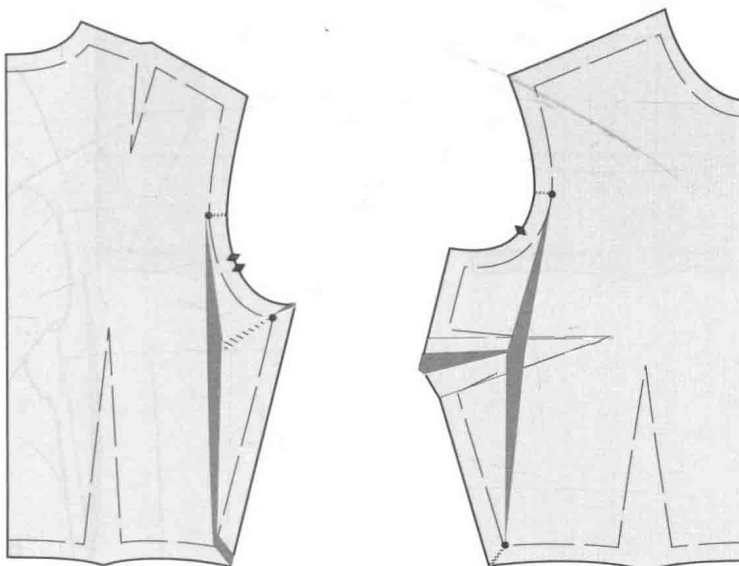
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



H

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



I

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

39. Narrower Rib Cage

FIGURE EVALUATION (A)

- The rib cage is narrower than average/ideal.
- There may be less weight deposit or muscle development than average/ideal.
- The straighter angle at the side shortens the length between underarm and waist.
- Typical of the tubular figure type.

FITTING PROBLEMS (B)

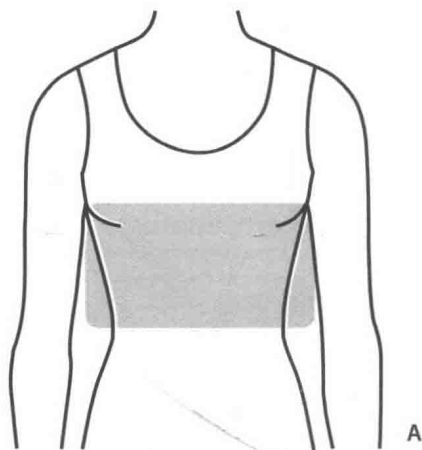
- Vertical folds form under the arms.
- The excess garment width inhibits arm movement.
- Less fabric width is needed beginning near the chest level and tapering to the waist.

READY-TO-WEAR ALTERATION (C)

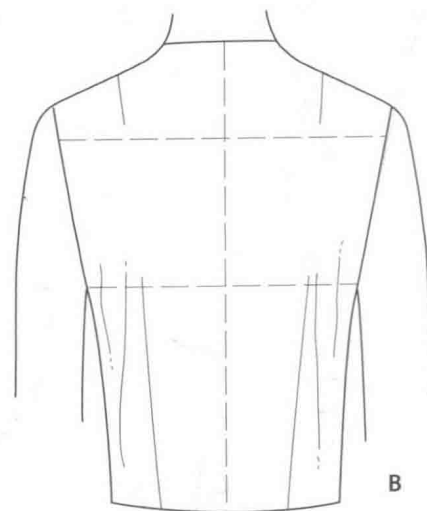
- Release the side seam and the lower armhole.
- Take in the armhole and side seams as illustrated.
- The adjustment may be needed in front, in back, or both.

TRIAL GARMENT ALTERATION (D)

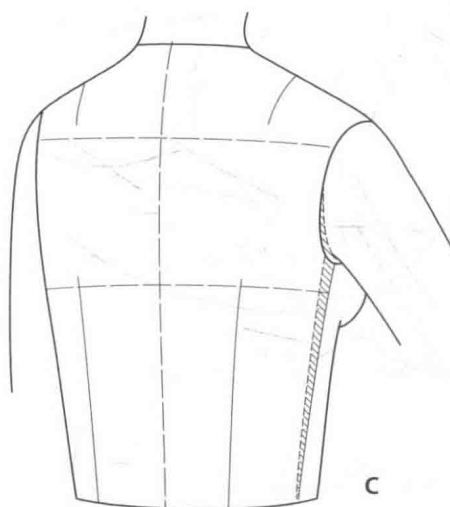
- Near armhole, make a tuck, tapering at both ends as illustrated.



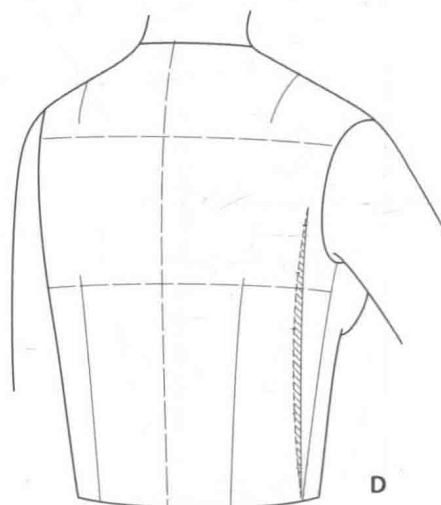
A



B



C

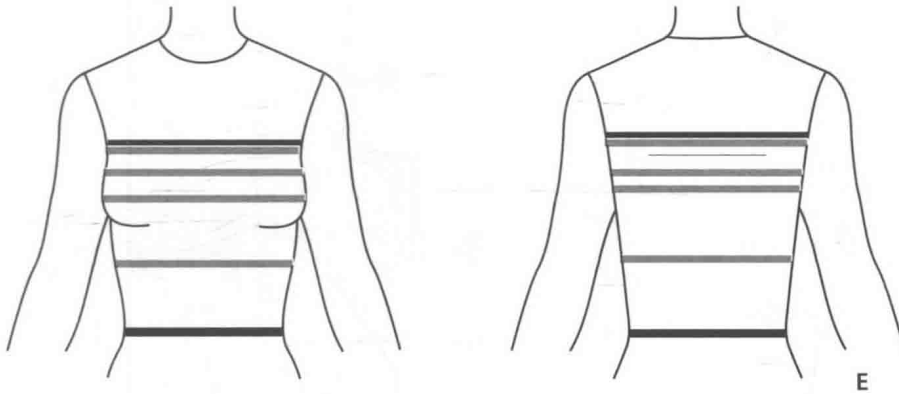


D

39. Narrower Rib Cage

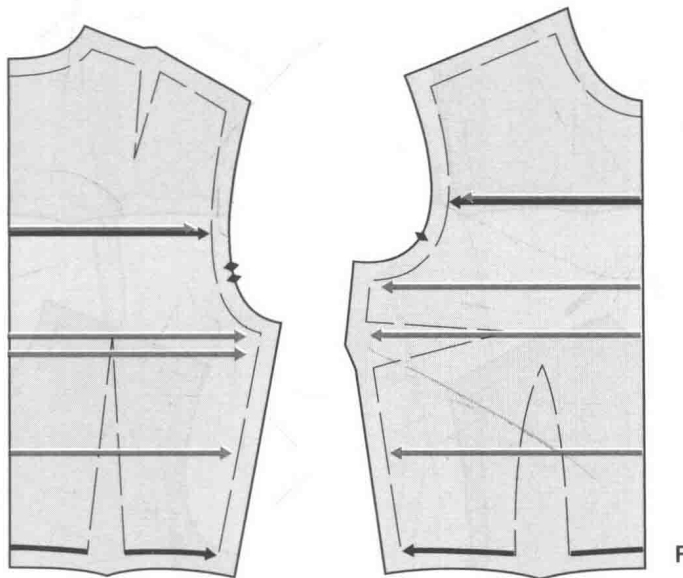
BODY MEASUREMENT POSITIONS (E)

- Chest and across back, arm hinge to arm hinge
- High bust, front and back
- Full bust, front and back
- Midriff, front and back



PATTERN MEASUREMENT COMPARISON (F)

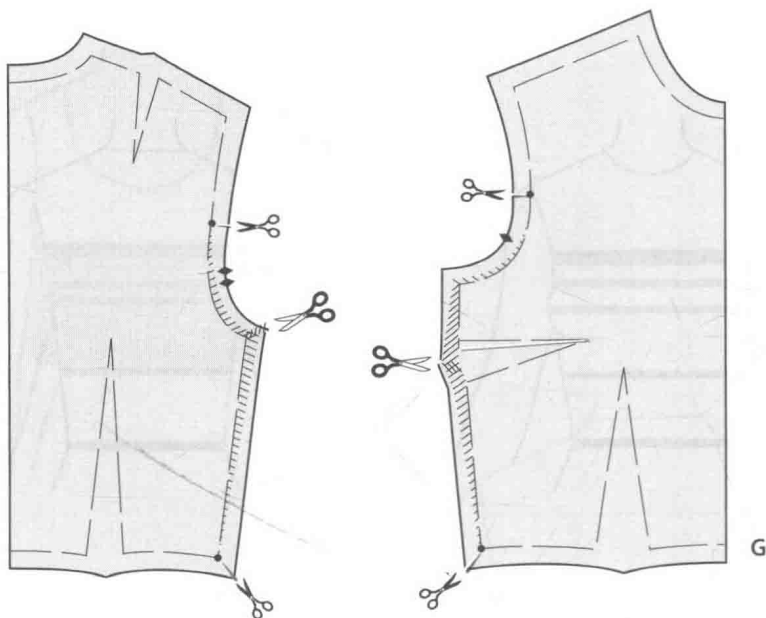
- Pattern chest and across back may be correct or too wide
- Pattern high bust, front and back, too wide
- Pattern full bust, front and back, too wide
- Pattern midriff, front and back, too wide
- Pattern waist, front and back, correct



39. Narrower Rib Cage

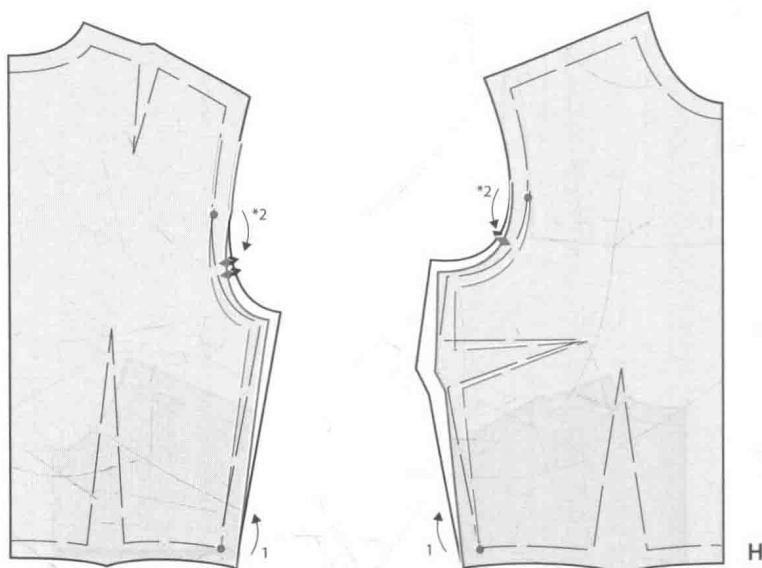
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



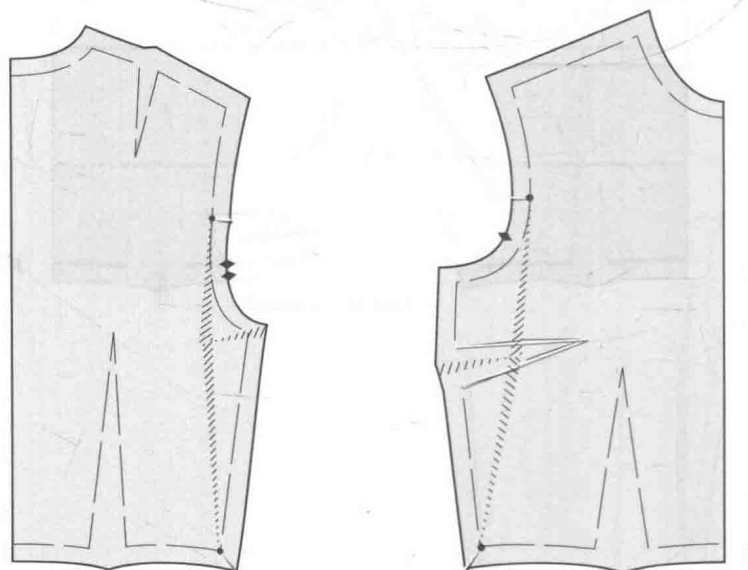
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

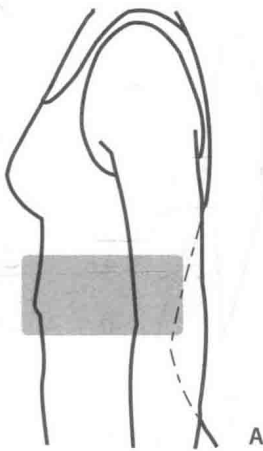


SLASH METHOD (I)

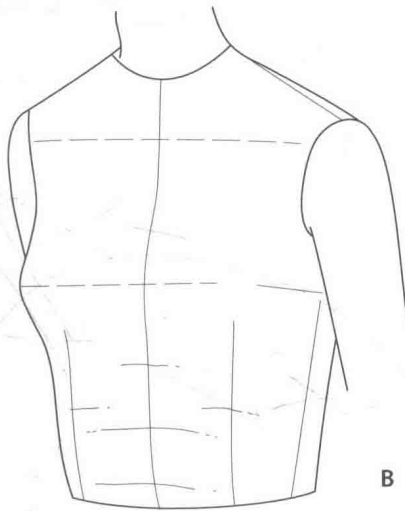
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



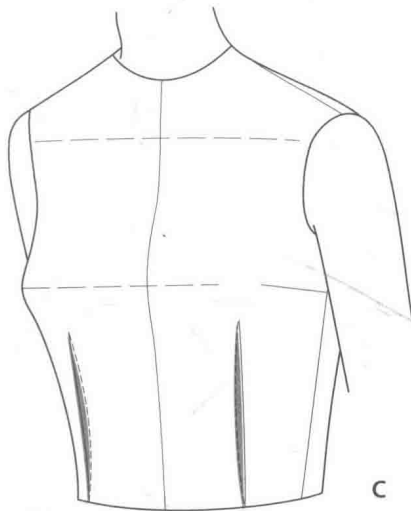
40. Flared Lower Ribs



A



B



C

FIGURE EVALUATION (A)

- The front of the rib cage angles outward from the chest to the lower edge.
- The lower rib protrudes more than average/ideal.
- The area over the diaphragm may be recessed.

FITTING PROBLEMS (B)

- The fabric is tight across the lower part of the rib cage.
- Horizontal stress wrinkles form at center front.
- The waist darts bow toward center.
- The bodice mid-front needs more fabric width.

READY-TO-WEAR ALTERATION (C)

- Release the front waist darts.
- Option 1: Narrow the waist darts.
- Option 2: Convert the darts to gathers.

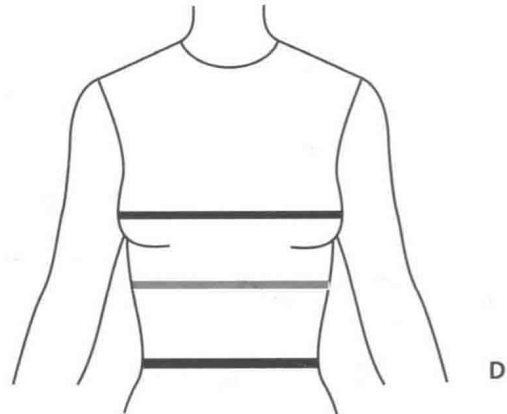
TRIAL GARMENT ALTERATION

- Proceed as for Ready-to-Wear.

40. Flared Lower Ribs

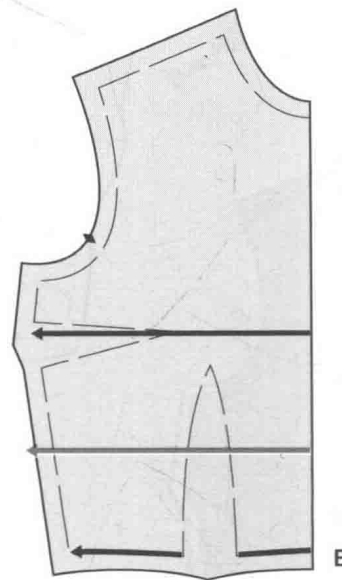
BODY MEASUREMENT POSITIONS (D)

- Full bust, front
- Midriff, front



PATTERN MEASUREMENT COMPARISON (E)

- Pattern full bust front correct
- Pattern at midriff front too narrow



SEAM METHOD (F)

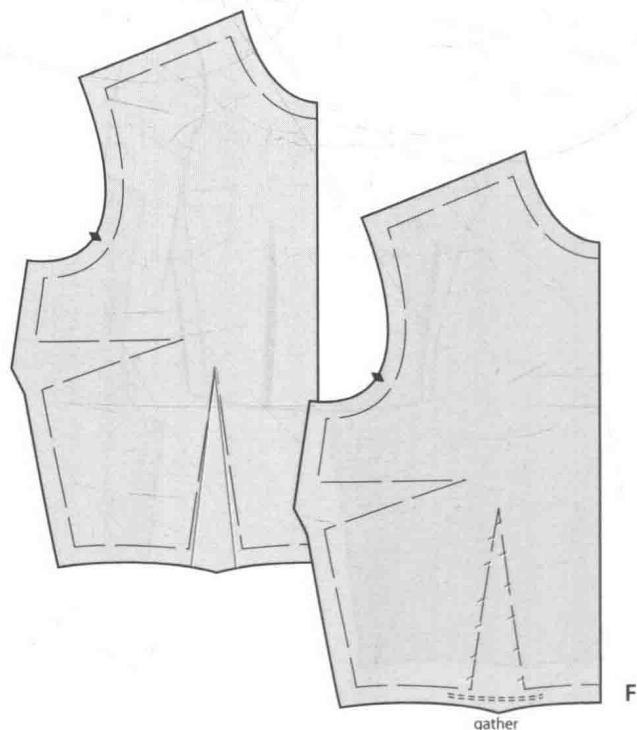
- The alteration is accomplished by simply narrowing front waist dart(s) as illustrated or by converting dart(s) to gathers.

PIVOT/SLIDE METHOD

- Proceed as for Seam Method.

SLASH METHOD

- Proceed as for Seam Method.



41. Larger Waist

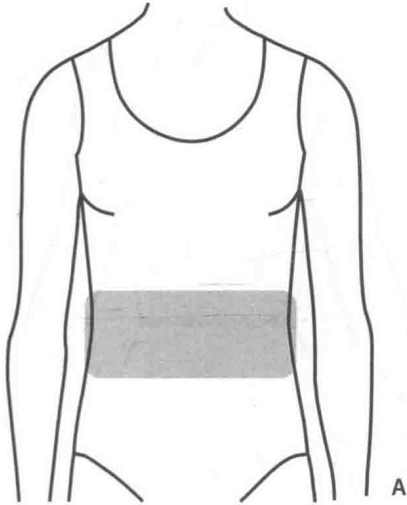
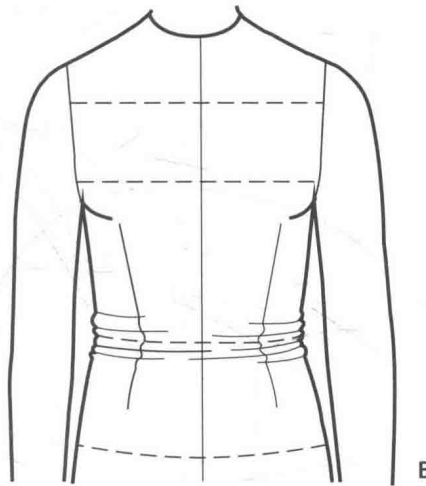


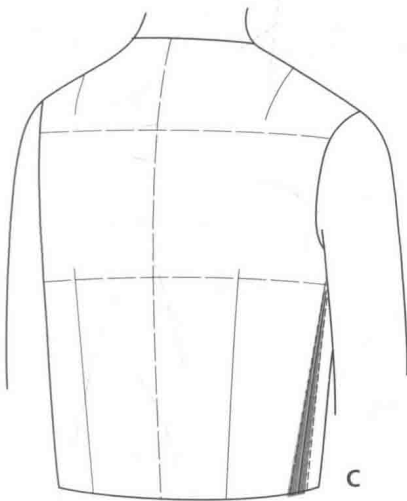
FIGURE EVALUATION (A)

- The waist indents less than average/ideal.
- The sides of the body are straighter than average/ideal.



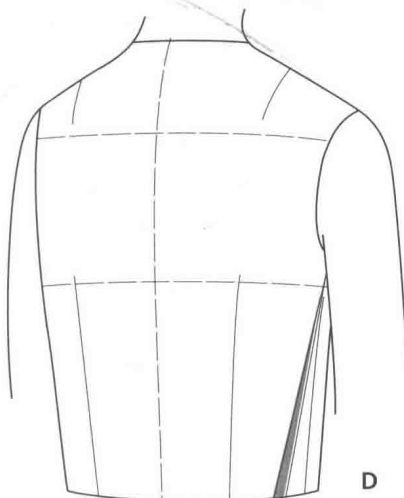
FITTING PROBLEMS (B)

- Horizontal stress wrinkles form near the waist.
- The waistline may rise, giving the appearance it is too long.
- The waistline needs more fabric width.



READY-TO-WEAR ALTERATION (C)

- Release and let out the side seams tapering to the armhole.



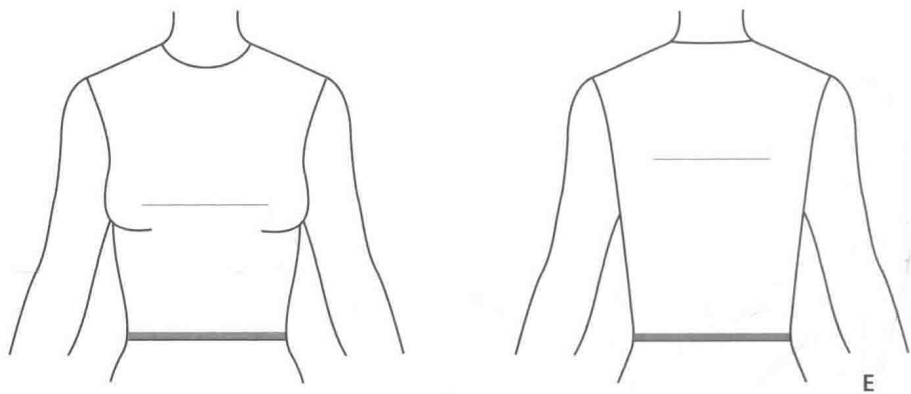
TRIAL GARMENT ALTERATION (D)

- Slash from waistline to armhole at the side.
- Insert fabric strips and spread as illustrated.

41. Larger Waist

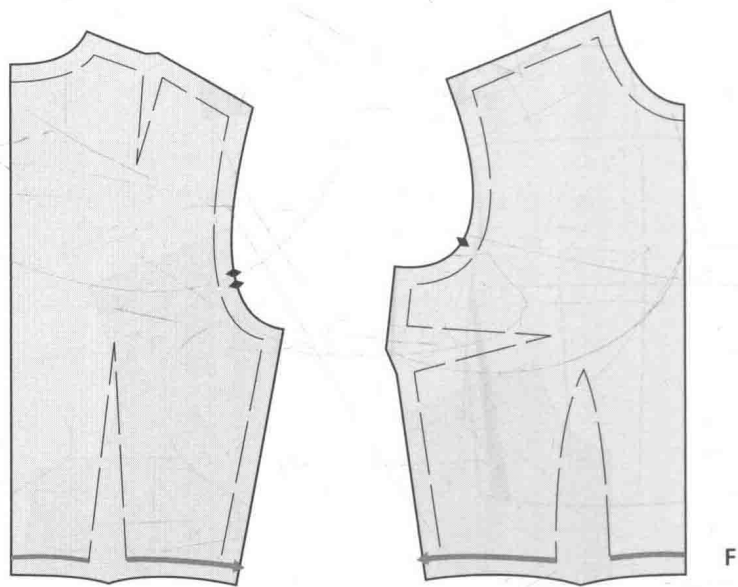
BODY MEASUREMENT POSITIONS (E)

- Waist, front and back

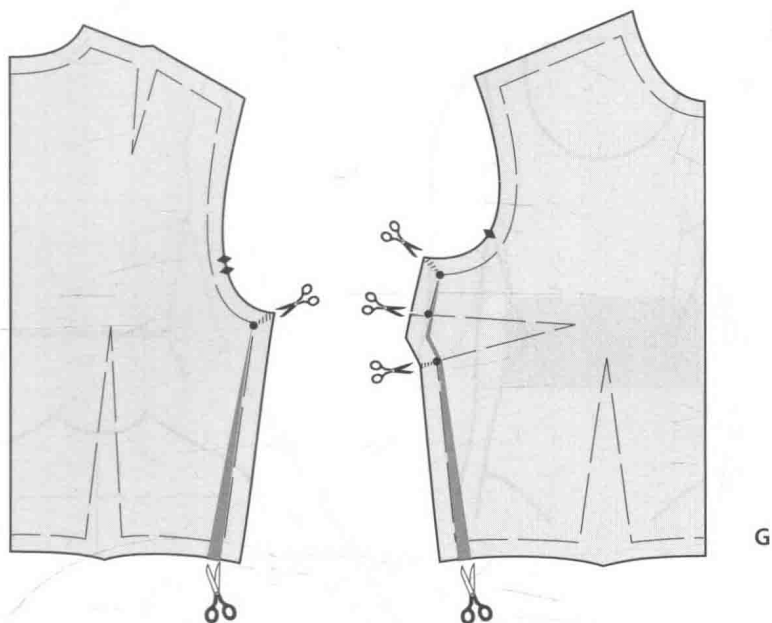


PATTERN MEASUREMENT COMPARISON (F)

- Pattern waist, front and back, too narrow



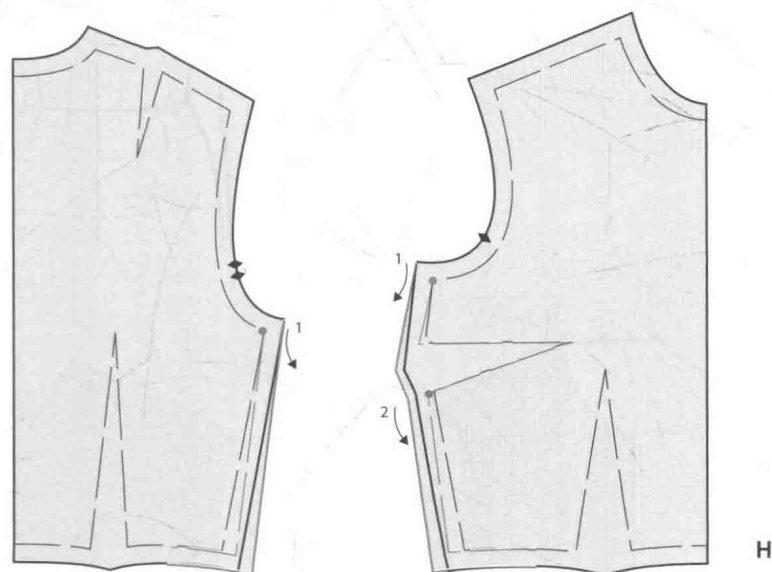
41. Larger Waist



G

SEAM METHOD (G)

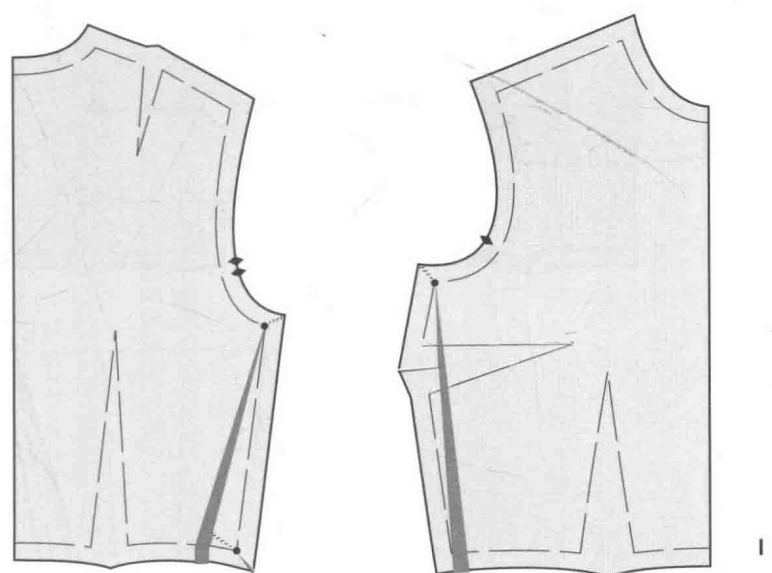
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



H

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



I

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

42. Smaller Waist

FIGURE EVALUATION (A)

- The waist indents more than average/ideal.
- The sides of the body slope more than average/ideal.

FITTING PROBLEMS (B)

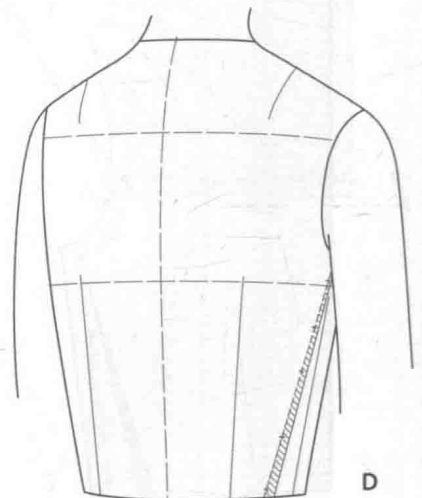
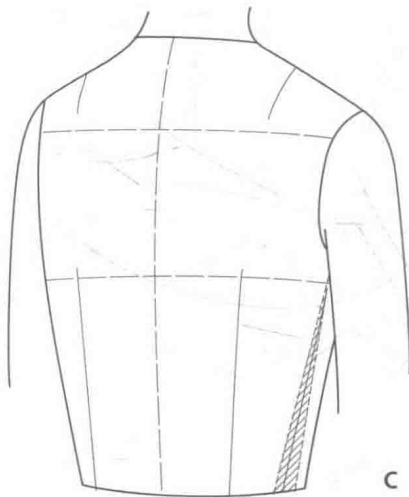
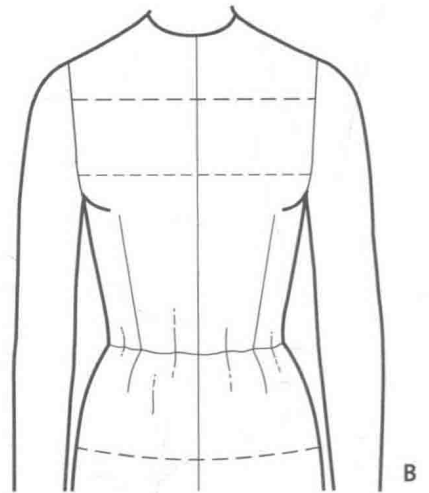
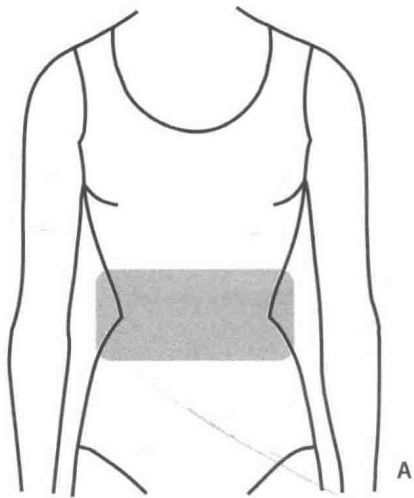
- The waist needs less fabric width.

READY-TO-WEAR ALTERATION (C)

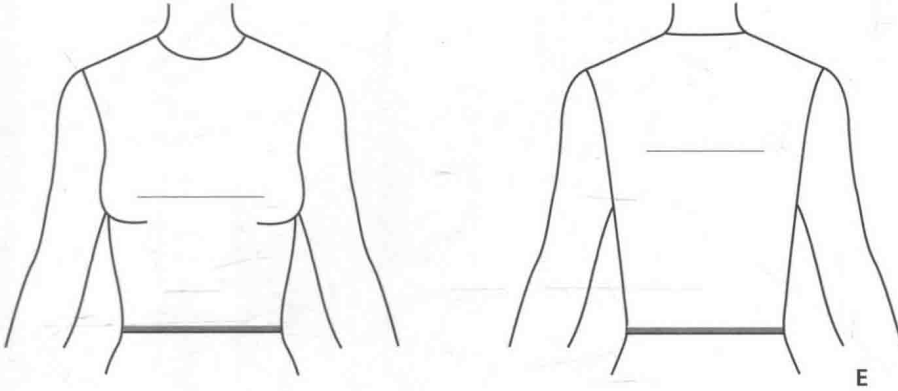
- Release the side seams.
- Take in the side seams at the waistline, tapering to the armhole.

TRIAL GARMENT ALTERATION (D)

- Form tucks at the waistline near the side seam; taper to the armhole.

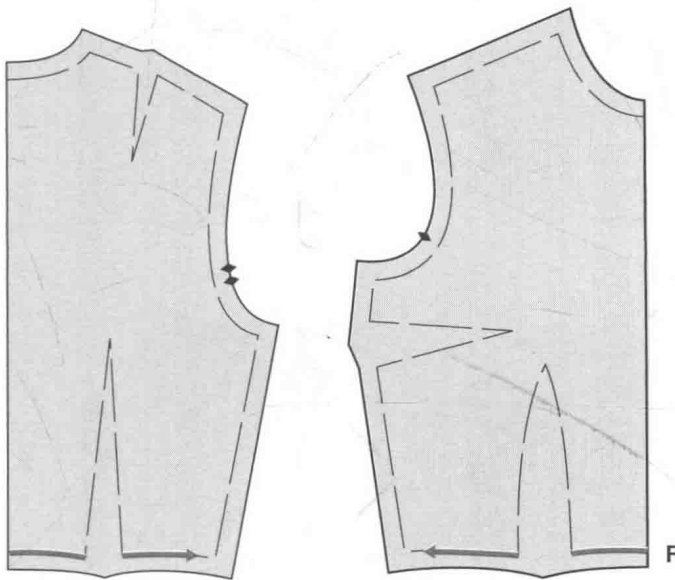


42. Smaller Waist



BODY MEASUREMENT POSITION (E)

- Waist, front and back



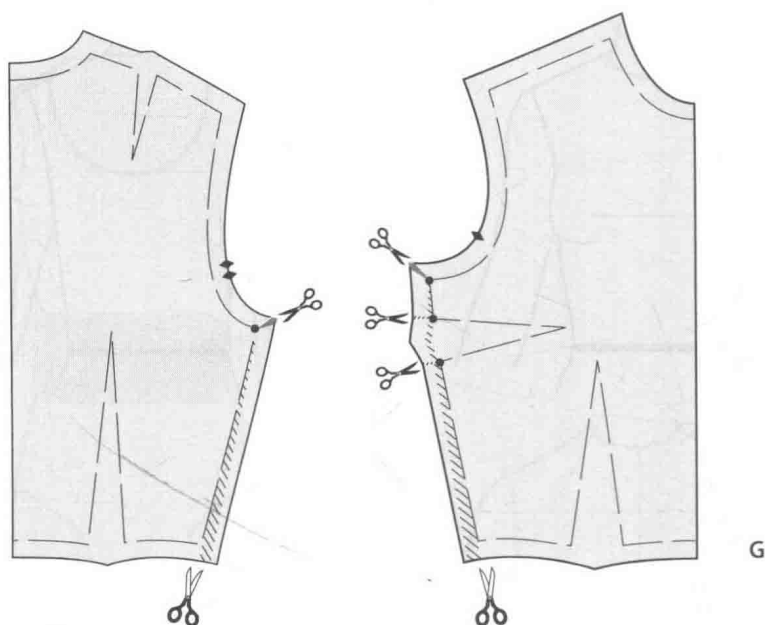
PATTERN MEASUREMENT COMPARISON (F)

- Pattern waist, front and back, too wide

42. Smaller Waist

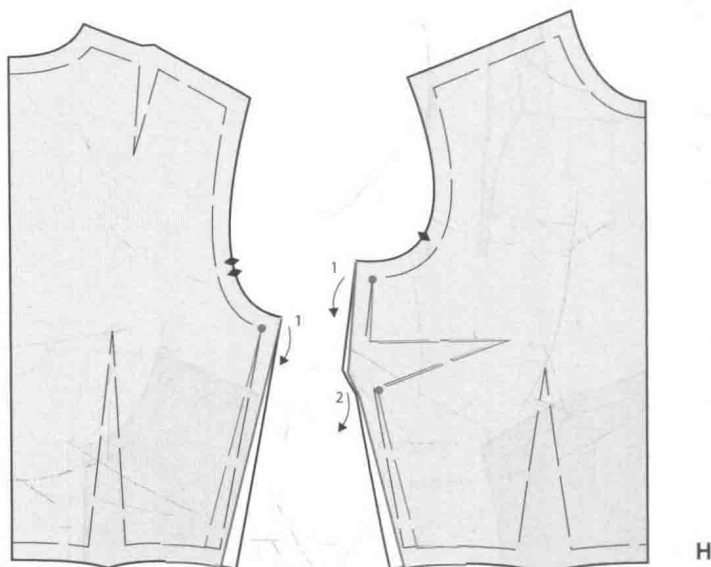
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



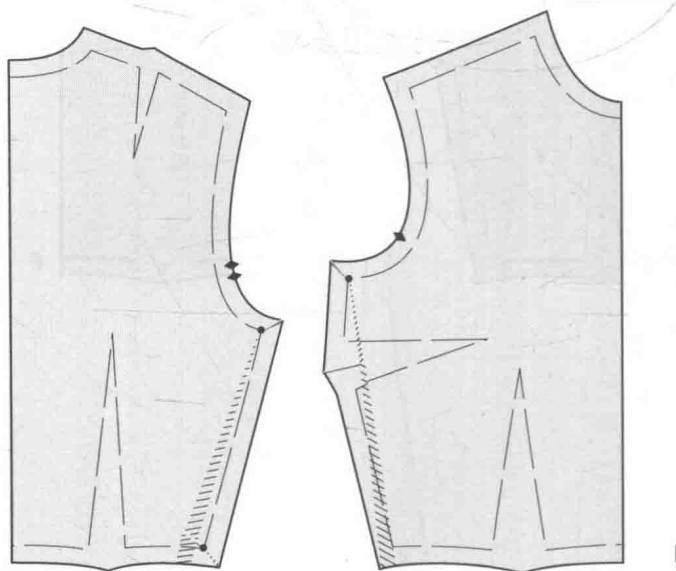
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



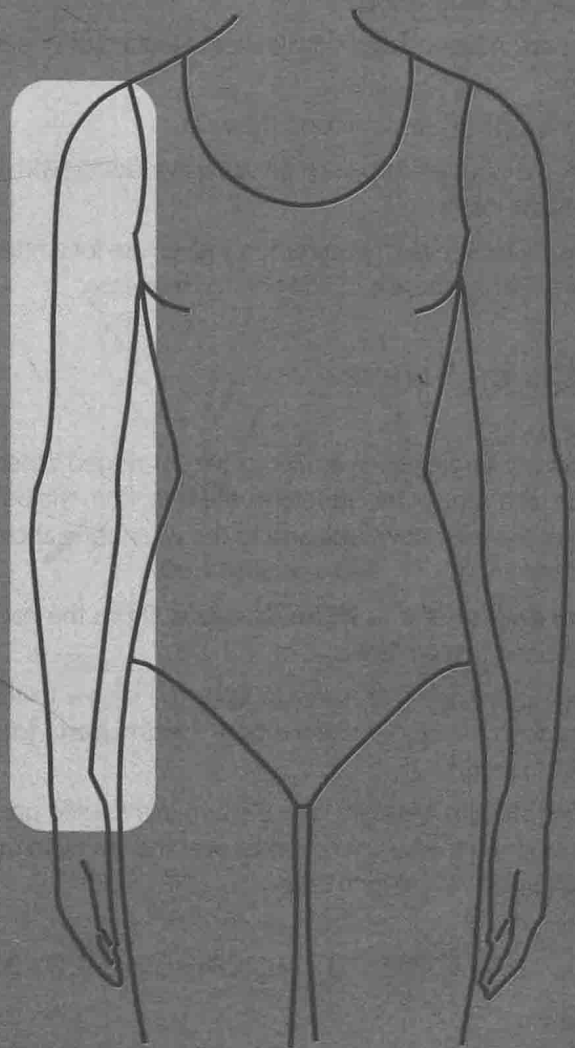
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



Chapter 9

Sleeves



MEASURING FOR THE SLEEVE

This chapter presents measurement, fitting, and alteration procedures on the arms and sleeves. Use this chapter as a ready-reference to fitting problems occurring in sleeves.

✓ REALITY CHECK

The even length of the sleeve pattern is adjusted first, beginning at the bottom of the pattern piece, then moving up the arm. Uneven lengths are then adjusted at the top, so the pattern or sleeve is level on the body. The widths of the sleeve pattern are adjusted beginning at the top of the pattern piece and then moving down.

Preparation of the Arms

1. Assemble the following:
 - measuring tape (Two Easy Tape)
 - pen or pencil
 - tape or elastic
 - ruler or straight edge
2. The person being fitted should wear a leotard or underwear.
3. Place a tape or elastic around the wrist.
4. Mark the shoulder tip with an adhesive dot or with a washable ink X.

Note: All basic ease measurements given are for a fitted sleeve. Fashion ease is in addition to basic ease.

Lengths on Sleeves

See Table 9.1.

1. *Underarm length:* Place a ruler or similar ridged object $\frac{3}{4}$ to 1 inch wide at the underarm. Measure from the bottom of the ruler down the arm to the wrist bone above the little finger.
2. *Elbow height/elbow to wrist:* Measure up from the back wrist bone to the elbow.
3. *Elbow to shoulder:* Measure up from the elbow to the shoulder tip—or, subtract elbow height from total overarm length.
4. *Overarm length:* Measure with the arm in a relaxed position, up from the back wrist bone, over the elbow to the shoulder tip. Add $\frac{1}{2}$ inch ease.

Widths and Circumferences on Sleeves

See Table 9.1.

1. *Arm joint:* Measure around the arm joint at the arm crease. Add 1 inch ease.
2. *High arm level:* Measure midway between the shoulder and arm hinge. Add 1 inch ease.

3. *Biceps:* Measure around the biceps. Add $1\frac{1}{2}$ to 2 inches ease.
4. *Elbow:* Measure around the elbow in a bent position. If relaxed, add $1\frac{1}{2}$ to 2 inches ease.
5. *Wrist:* Measure around the wrist bone. Add 1 inch ease.
6. *Hand:* Measure around the hand at the base of the thumb.

NOTES ON MEASUREMENT METHOD OF FITTING THE SLEEVE PATTERN

Length Measurements on Sleeves

Take measurements on the pattern in the sequence as illustrated so that alterations may be made where needed. (See Table 9.2.)

- Measure the pattern underarm length on the front underarm seam, from the stitching line of the capline down to the stitching line of the wrist.
- All other length measurements on the pattern are taken from the stitching line of the wrist up—because the sleeve is leveled at the top.
- *The pattern length is adjusted beginning at the bottom and proceeding to the top of the pattern.*
- Make each length adjustment before proceeding to the next measurement.

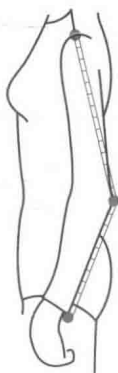
Even/Parallel Amounts of Length Change on Sleeves

- If the underarm length is too long or short, measure the height of the elbow from the quarter position on the wrist to the elbow.
- If the elbow height is also too long or short, adjust the length below the elbow.
- If the elbow height is correct, adjust the length above the elbow.
- If the underarm measurement is correct, check the height of the elbow and adjust below and above as needed to correctly position the elbow dart or ease.
- Measure the overarm length from the center of the wrist to the shoulder position.
- If the bodice armhole was adjusted in length, make an equal length adjustment on the sleeve.
- If sleeves are usually too tight or loose, wait to adjust the cap height—because width can be borrowed from length and length can be borrowed from width.
- If the overarm measurement is too long or short, adjust the height of the sleeve cap evenly, midway up the cap.

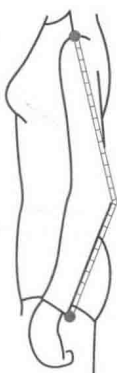
ARM LENGTHS AND WIDTHS



Underarm Length
Rt _____ Lt _____



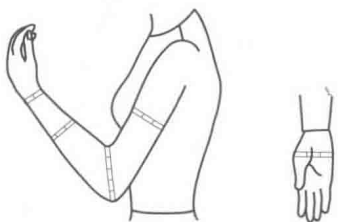
| Overarm Segment Lengths | | | |
|-------------------------|-------|------|-------|
| Body | Min. | Ease | Total |
| Elbow to Shoulder | | | |
| Rt | _____ | 1/2" | _____ |
| Lt | _____ | 1/2" | _____ |
| Elbow to Wrist | | | |
| Rt | _____ | 0" | _____ |
| Lt | _____ | 0" | _____ |



| Overarm Total Lengths | | | |
|-----------------------|-------|------|-------|
| Body | Min. | Ease | Total |
| Overarm Total | | | |
| Rt | _____ | 1/2" | _____ |
| Lt | _____ | 1/2" | _____ |



| High Arm Level Width | | | |
|----------------------|-------|------|-------|
| Body | Min. | Ease | Total |
| Rt | _____ | 1" | _____ |
| Lt | _____ | 1" | _____ |



| Arm Circumferences | | | | |
|--------------------|----|-------|------|-------|
| Body | | Min. | Ease | Total |
| Bicep | Rt | _____ | 2" | _____ |
| | Lt | _____ | 2" | _____ |
| Elbow | Rt | _____ | 1" | _____ |
| | Lt | _____ | 1" | _____ |
| Forearm | Rt | _____ | 1" | _____ |
| | Lt | _____ | 1" | _____ |
| Wrist | Rt | _____ | 1" | _____ |
| | Lt | _____ | 1" | _____ |
| Hand | Rt | _____ | 1" | _____ |
| | Lt | _____ | 1" | _____ |

Table 9.1: Arm Lengths and Widths

Width Measurements on Sleeves

- Width measurements are taken and adjusted beginning at the top of the pattern and proceeding to the bottom.
- Measure across the cap about midway down. Add 1 inch for ease to the body measurement.
- Take all circumference measurements before adjusting the sleeve pattern.
- Measure around the biceps width 1 inch below the capline. Add 2 inches for ease to the body measurement; 1 ½ inches is the minimum amount of ease allowed at the biceps.
- The cap can be lowered to increase width at a ratio of 1:2, or raised at the same ratio to decrease width.
- Measure around the elbow in a bent position or add 2 inches for ease, so the elbow can bend comfortably.
- Measure around the wrist and add 1 inch for ease to allow free movement.

Observations

- If the sleeve rubs against the back of the arm but the front hangs loose, see #10 Posterior Arm Joint. At the quarter position on the cap, adjust the width by overlapping the front and spreading the back. The width of the sleeve itself is not changed.
- If the cap of the sleeve is tight at the front and falls loose at the back, see #9 Forward Shoulder Joint. Move the top of the cap forward above the balance points. The top front cap requires a rounded shape and the back is flattened.
- At the wrist, if the sleeve seam is not centered but is forward, see #48 Inward Rotation of Elbow. The underarm seam is moved forward beginning at the elbow. The size of the dart is increased.
- At the wrist, if the sleeve seam is back of center, see #49 Outward Rotation of Elbow. The underarm seam is moved back, beginning at the capline.

SLEEVE MEASUREMENT SEQUENCE AND POSITIONS

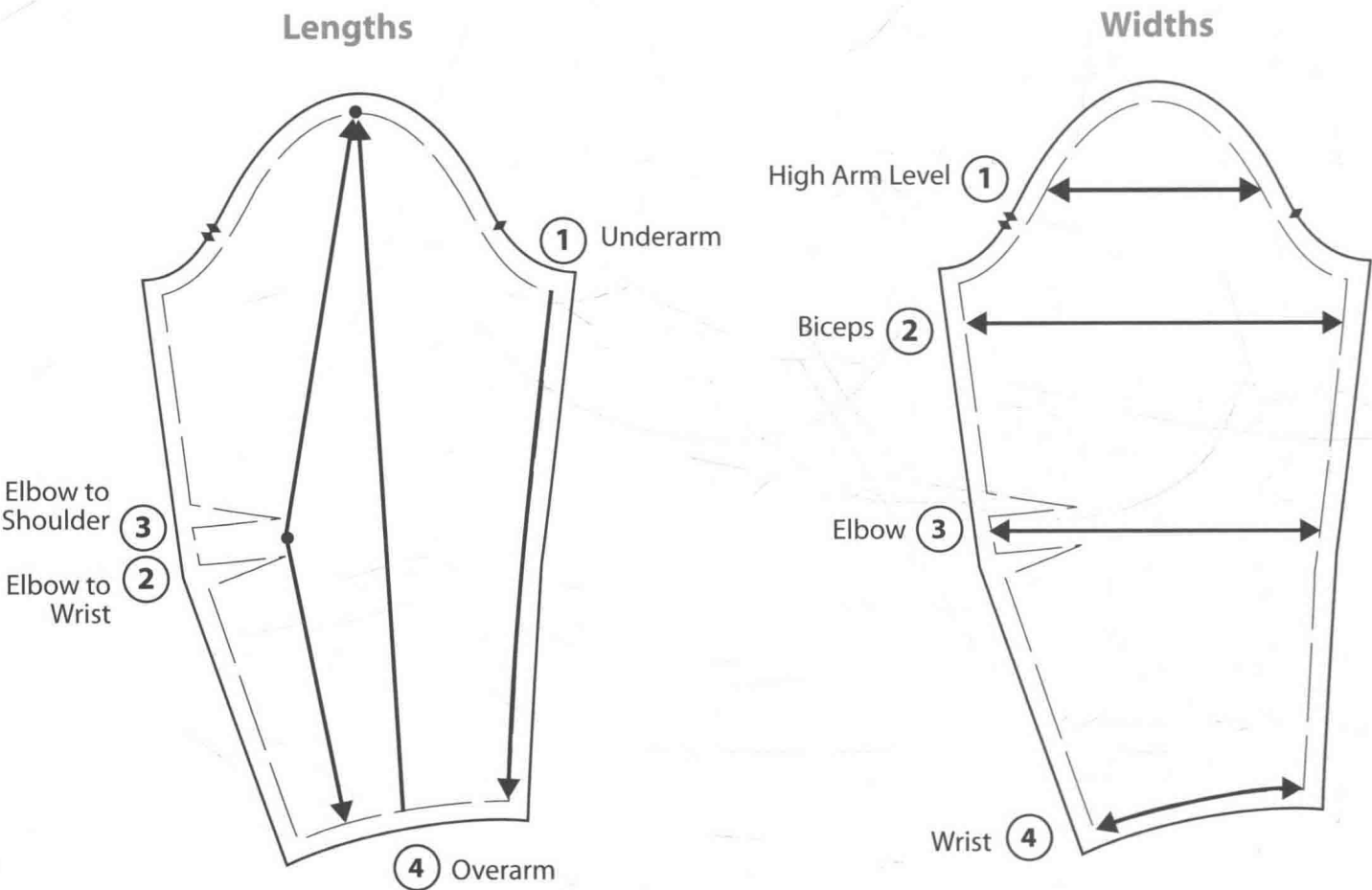


Table 9.2: Sleeve Measurement Sequence and Positions

43. Longer Arms

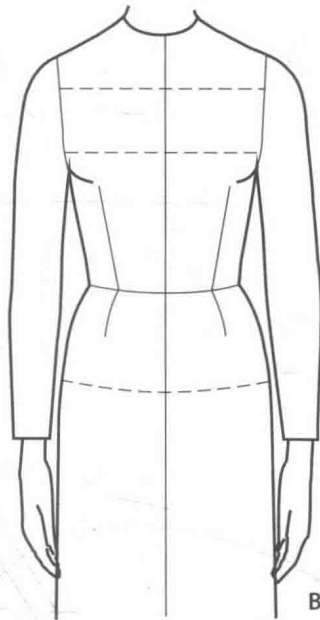
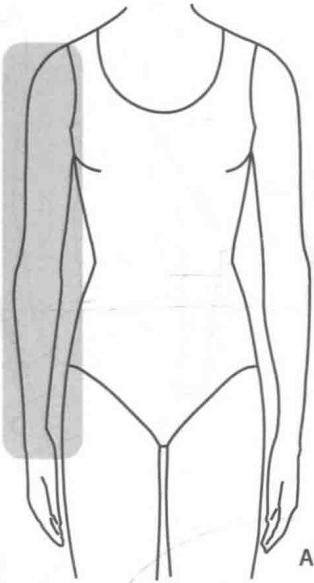
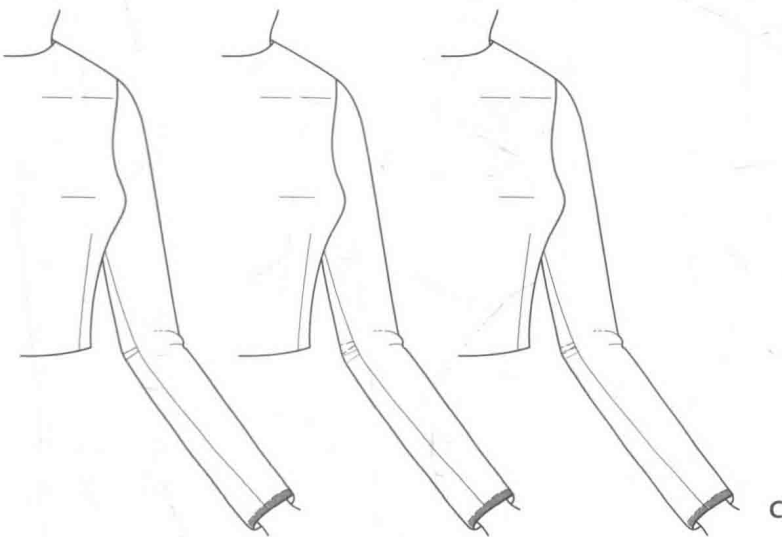


FIGURE EVALUATION (A)

- The bones of the upper and/or lower arm are longer than average/ideal.
- The total length may or may not be longer. The length variation may occur in the upper arm, the lower arm, or both.
- The elbow position determines upper and lower length variations.

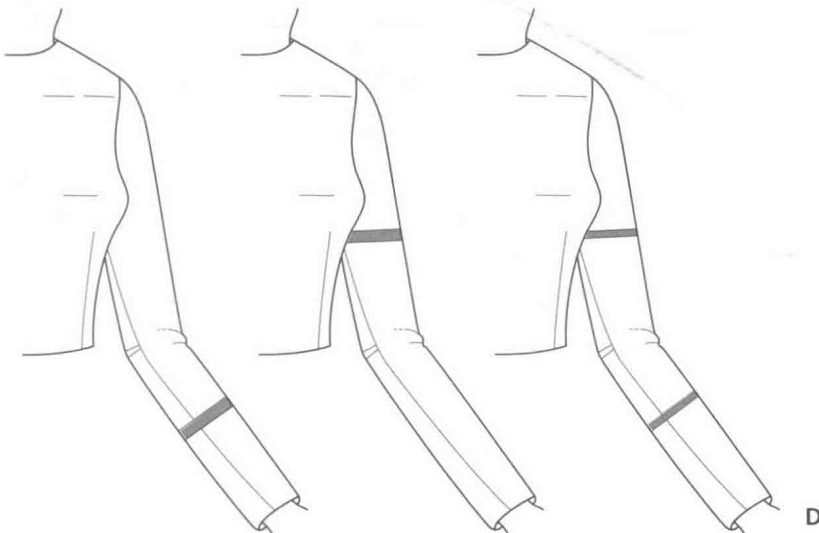
FITTING PROBLEMS (B)

- The center of the elbow dart or ease area should align with the elbow.
- A longer lower arm needs more length between wrist and elbow.
- A longer upper arm needs more length between elbow and capline.
- When both upper and lower arm are longer, more fabric length is needed below and above the elbow.



READY-TO-WEAR ALTERATION (C)

- Release the sleeve underarm seam and hem.
- Reposition the underarm dart or ease as needed.
- Let down the hem.



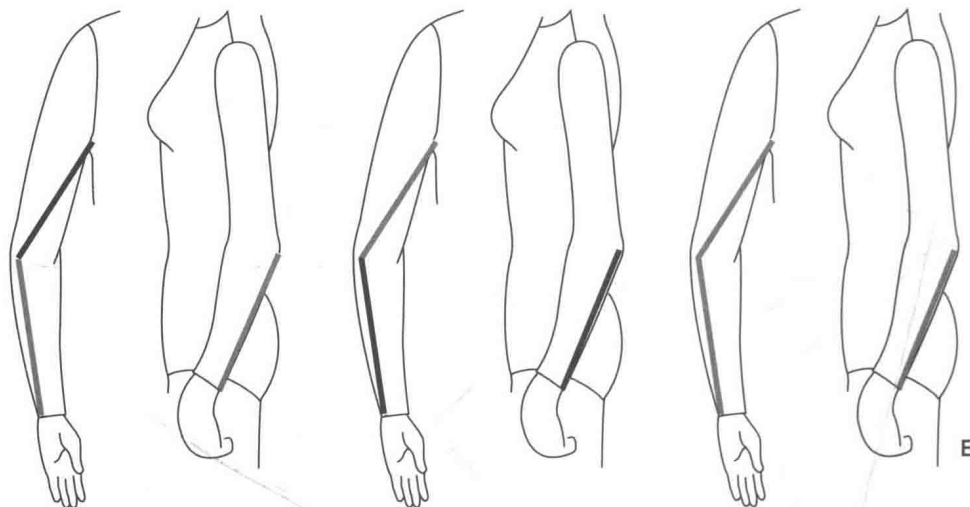
TRIAL GARMENT ALTERATION (D)

- Slash below and/or above the elbow as needed and reposition elbow dart/ease.
- Insert fabric strips and spread as illustrated.

43. Longer Arms

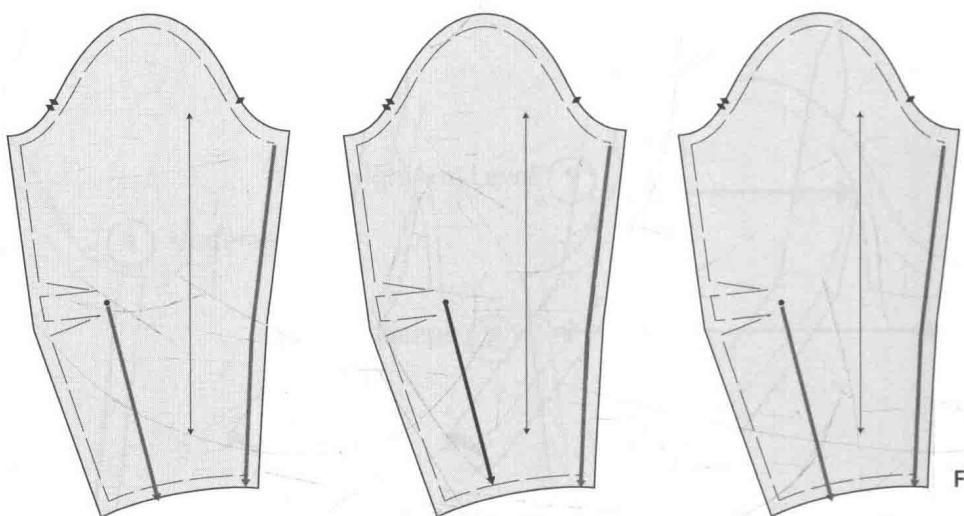
BODY MEASUREMENT POSITIONS (E)

- Sleeve underarm, 1 inch below arm hinge to wrist bone
- Elbow height, wrist bone to elbow

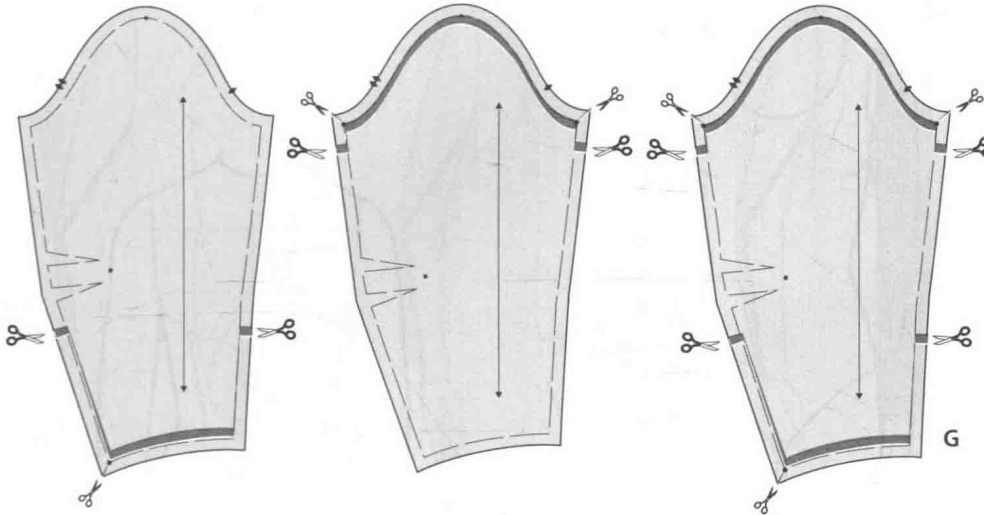


PATTERN MEASUREMENT COMPARISON (F)

- Pattern sleeve underarm, armhole to wrist, correct or too long
- Pattern elbow height, elbow dart or ease to back quarter of wrist correct or too long

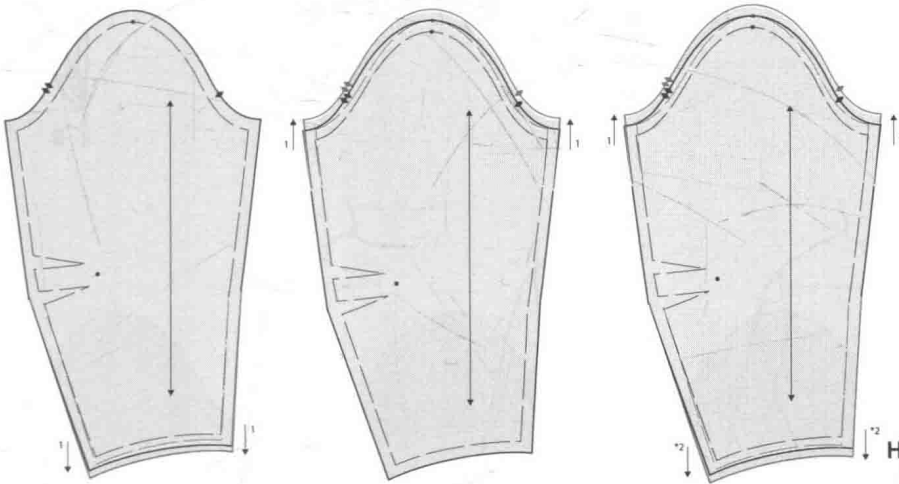


43. Longer Arms



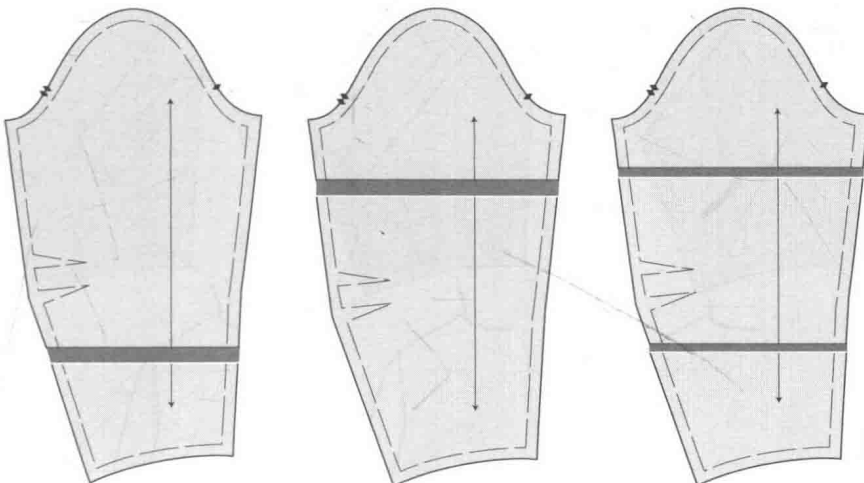
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

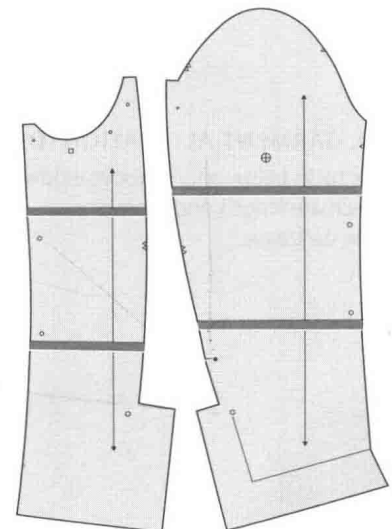
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

FASHION PATTERN

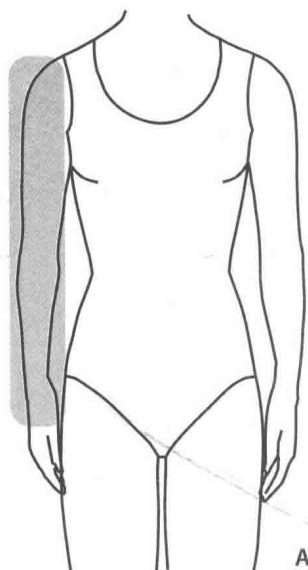


Two-Piece Sleeve

44. Shorter Arms

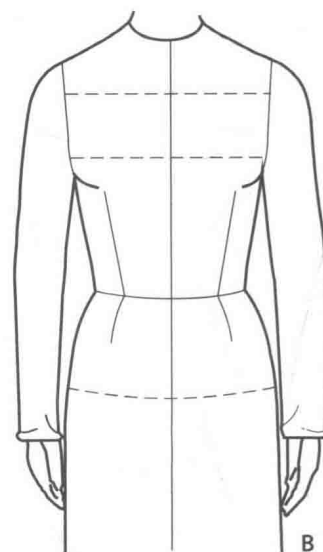
FIGURE EVALUATION (A)

- The bones of the upper and/or lower arm are shorter than average/ideal.
- The total length may or may not be shorter. The variation may occur in the upper arm, the lower arm, or both.
- The elbow position determines upper and lower length variations.



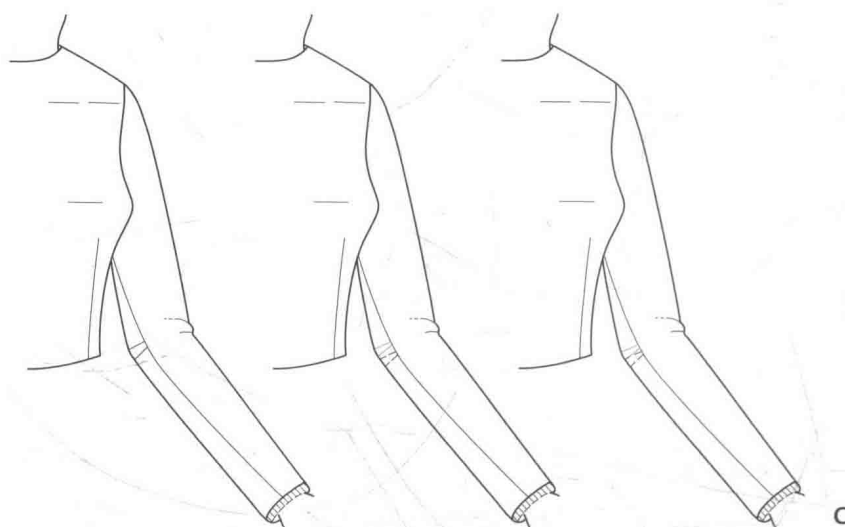
FITTING PROBLEMS (B)

- The center of the elbow dart or ease area should align with the elbow.
- A shorter lower arm needs less length between elbow and wrist.
- A shorter upper arm needs less length between elbow and armhole.
- When both lower and upper arm are shorter, less fabric length is needed below and above the elbow.



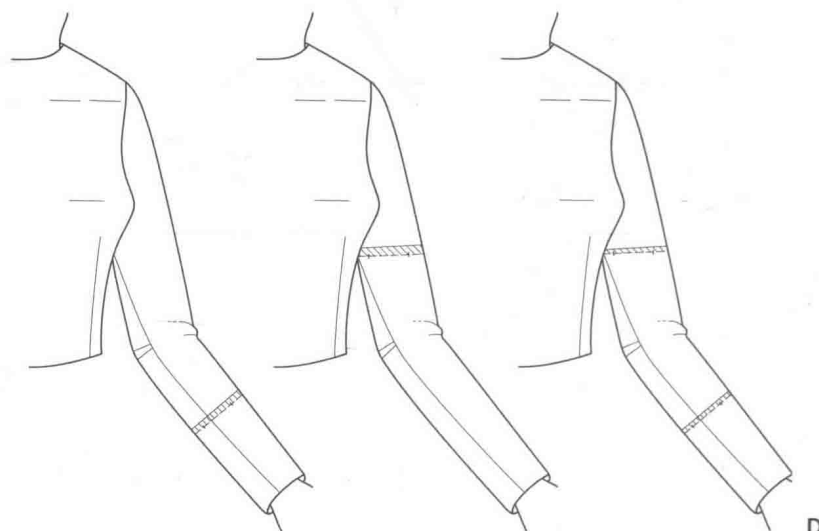
READY-TO-WEAR ALTERATION (C)

- Release the underarm seam, dart, and hem.
- Reposition the dart as needed.
- Take up the hem. Hem width may also need to be decreased.

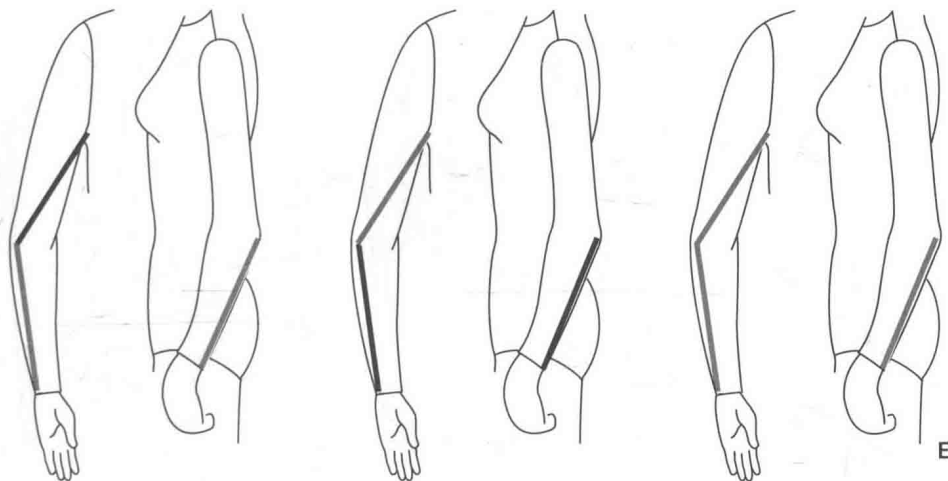


TRIAL GARMENT ALTERATION (D)

- Make tucks below and/or above elbow to decrease length, and reposition elbow dart/ease.

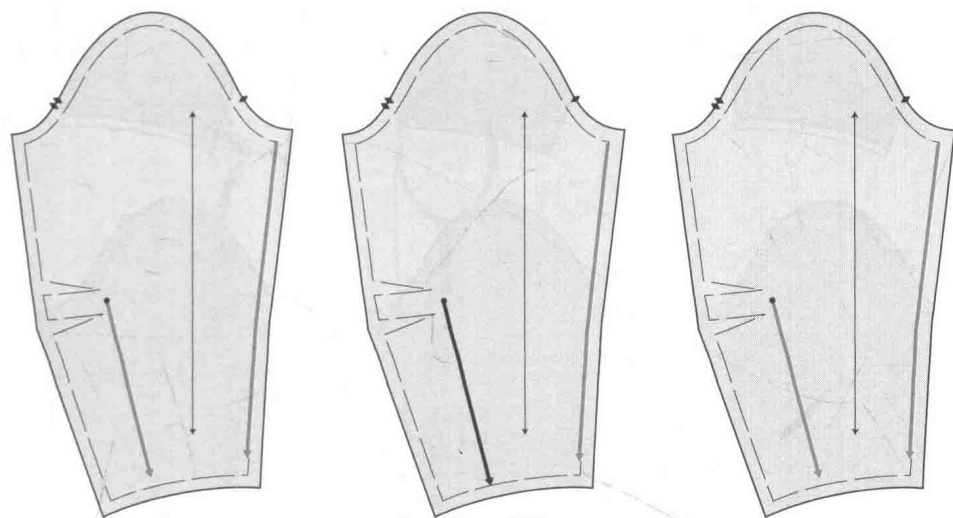


44. Shorter Arms



BODY MEASUREMENT POSITIONS (E)

- Sleeve underarm, 1 inch below arm hinge to wrist bone
- Elbow height, wrist bone to elbow



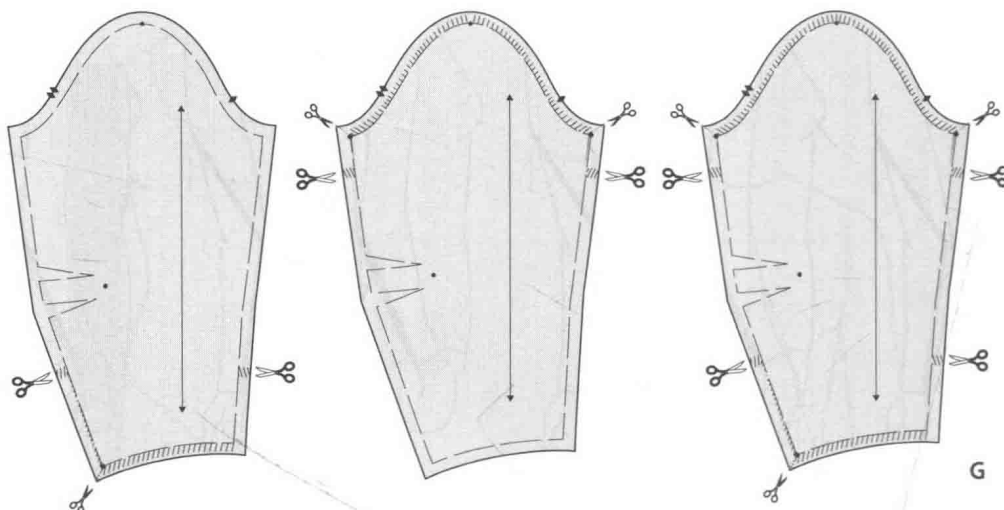
PATTERN MEASUREMENT COMPARISON (F)

- Pattern sleeve underarm, armhole to wrist, correct or too short
- Pattern elbow height, elbow dart or ease to back quarter of wrist correct or too short

44. Shorter Arms

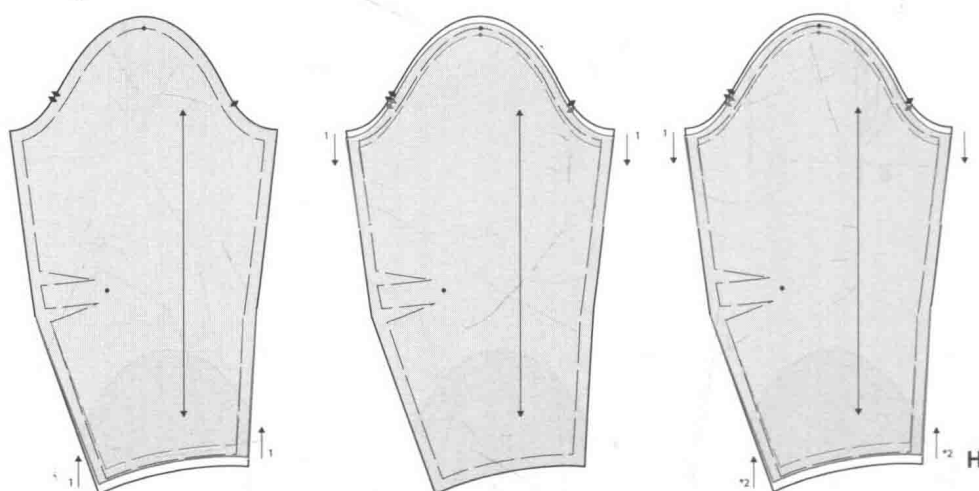
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



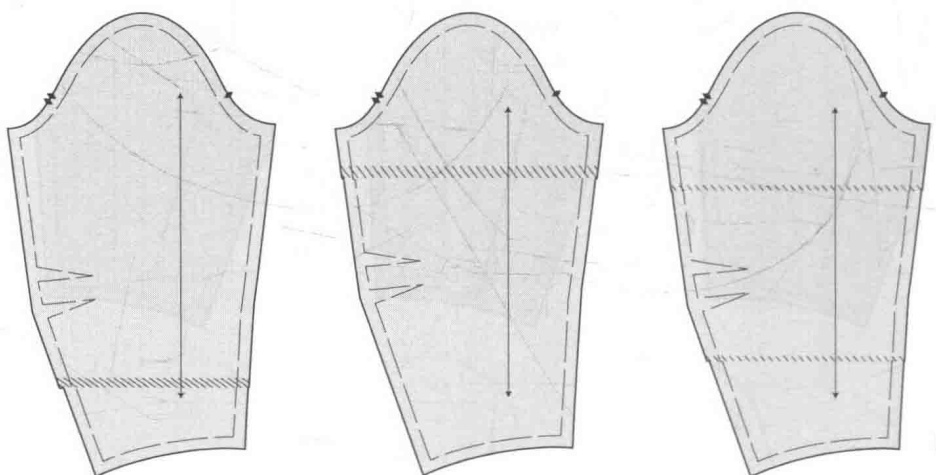
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

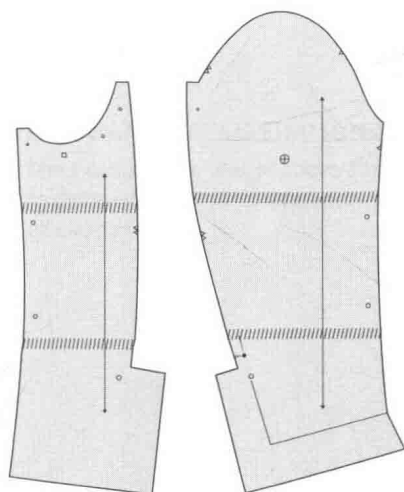


SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

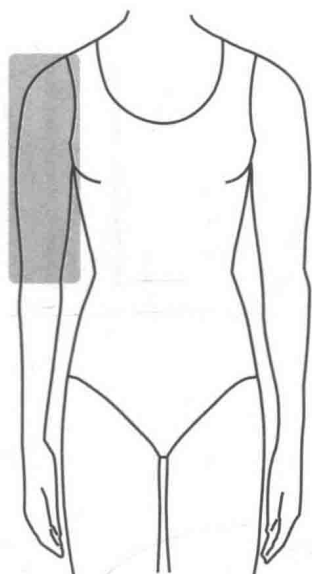


FASHION PATTERN

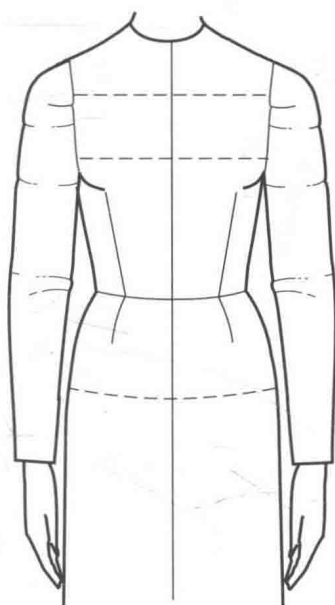


Two-Piece Sleeve

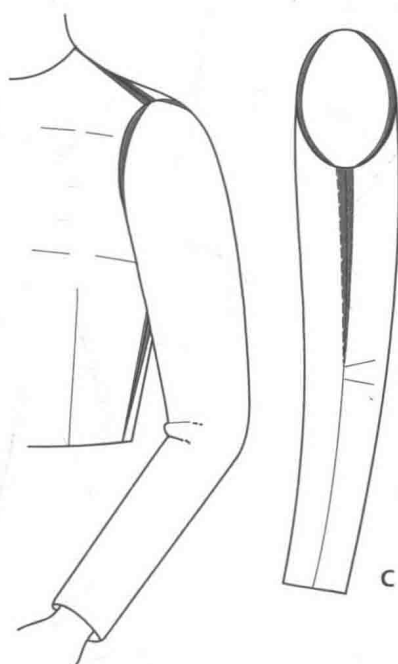
45. Larger Upper Arm



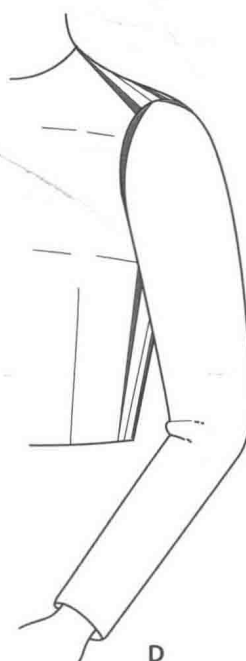
A



B



C



D

FIGURE EVALUATION (A)

- The bones of the upper arm are larger than average/ideal.
- There may be more weight deposit and/or muscle development than average/ideal.

FITTING PROBLEMS (B)

- Horizontal stress wrinkles form across the cap and around the upper sleeve.
- Arm movement is restricted and the sleeve rises up.
- The upper arm and cap need more fabric width.

READY-TO-WEAR ALTERATION (C)

- Release the sleeves, shoulders, and side seams.
- Let out the shoulder seam, tapering to the neck.
- Let out the side seam, tapering to the waist.
- Release the sleeve underarm seam.
- Let out the sleeve underarm seam, tapering to the elbow.
- Mark a new stitching line adding width to the sleeve cap.

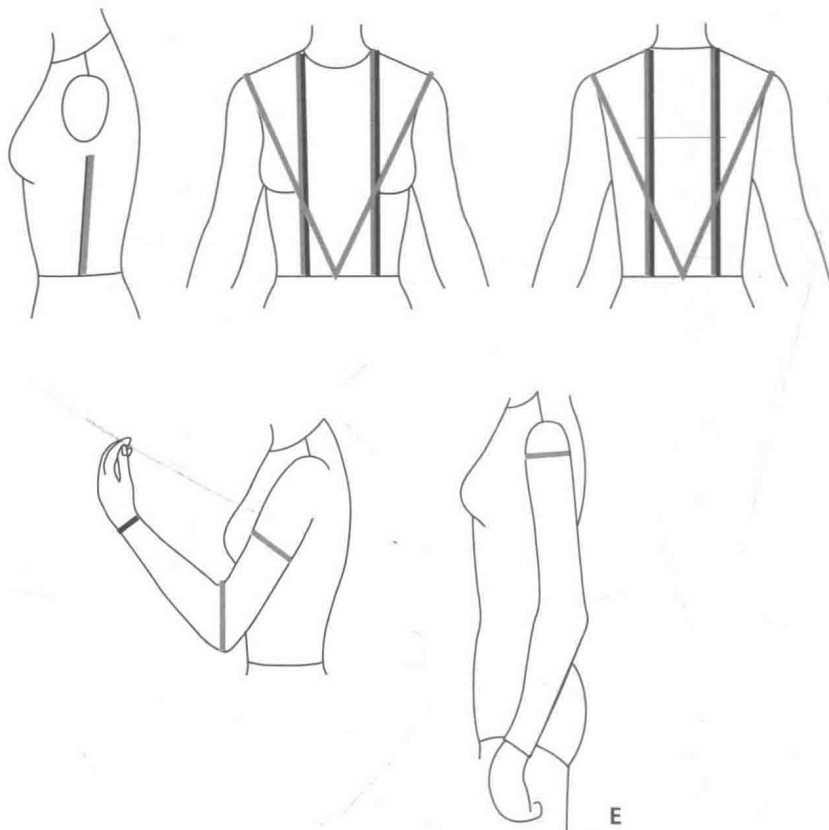
TRIAL GARMENT ALTERATION (D)

- Remove the sleeves.
- Slash the bodice from armhole to neckline near the shoulder.
- Slash the bodice side from armhole to waistline near the side seam.
- Slash the sleeve from armhole to elbow.
- Add width to the sleeve cap.
- Insert fabric strips and spread as illustrated.

45. Larger Upper Arm

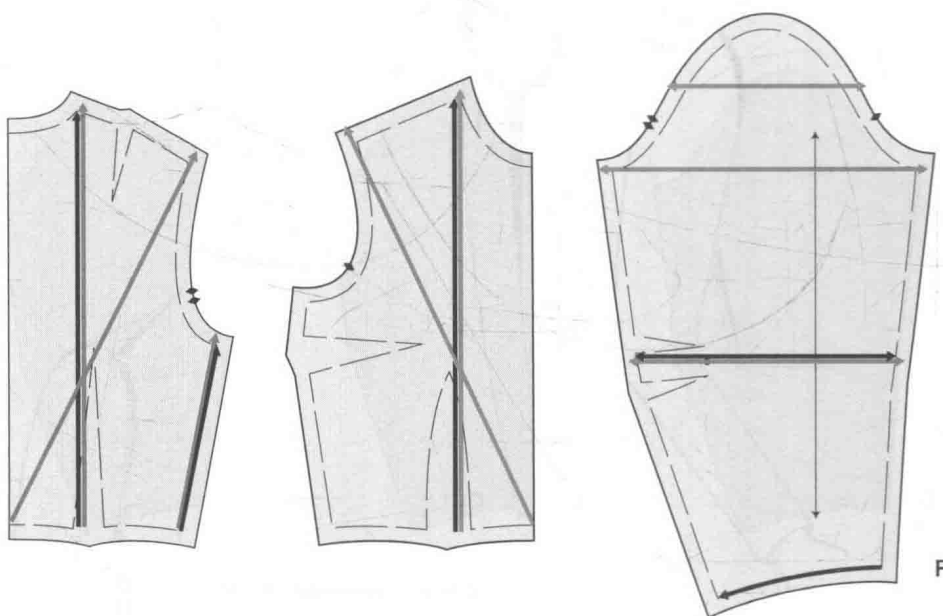
BODY MEASUREMENT POSITIONS (E)

- Side, from 1 inch below arm hinge
- Full bodice, front and back, waist to neck at shoulder
- Shoulder slope, front and back, waist center to shoulder tip
- Sleeve cap, high arm level, arm hinge to arm hinge
- Bicep, 1 inch below arm hinge
- Elbow, with bent elbow
- Wrist

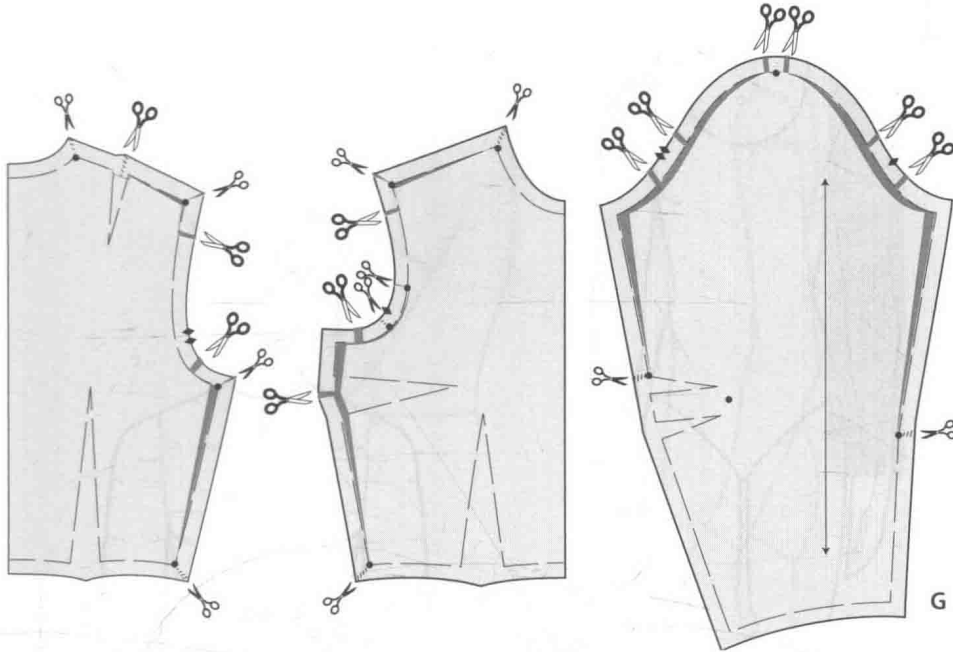


PATTERN MEASUREMENT COMPARISON (F)

- Pattern side and full bodice correct or too short
- Pattern shoulder slope too short
- Pattern sleeve cap and bicep too narrow
- Pattern elbow correct or too narrow
- Pattern wrist correct

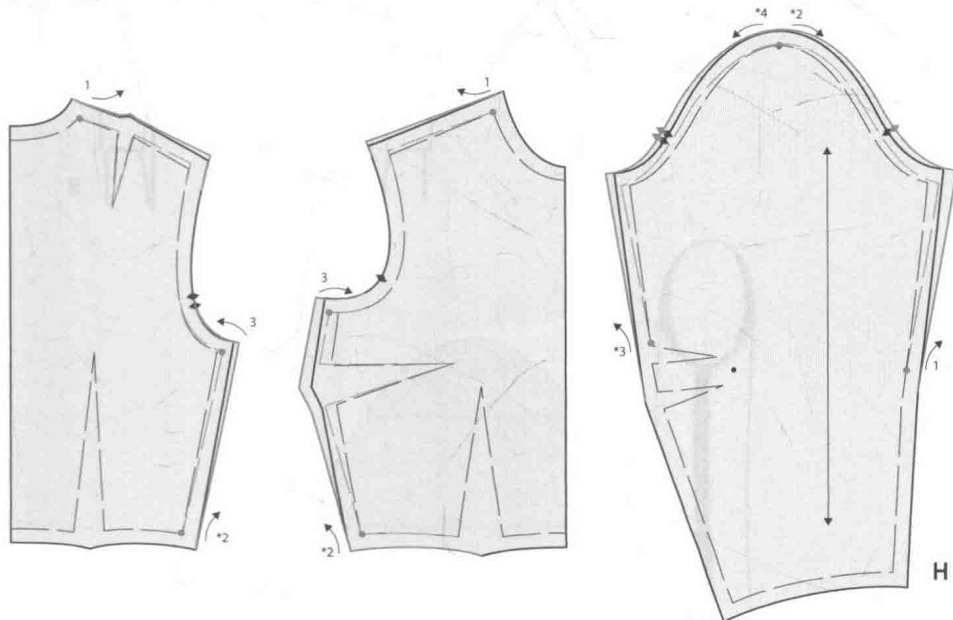


45. Larger Upper Arm



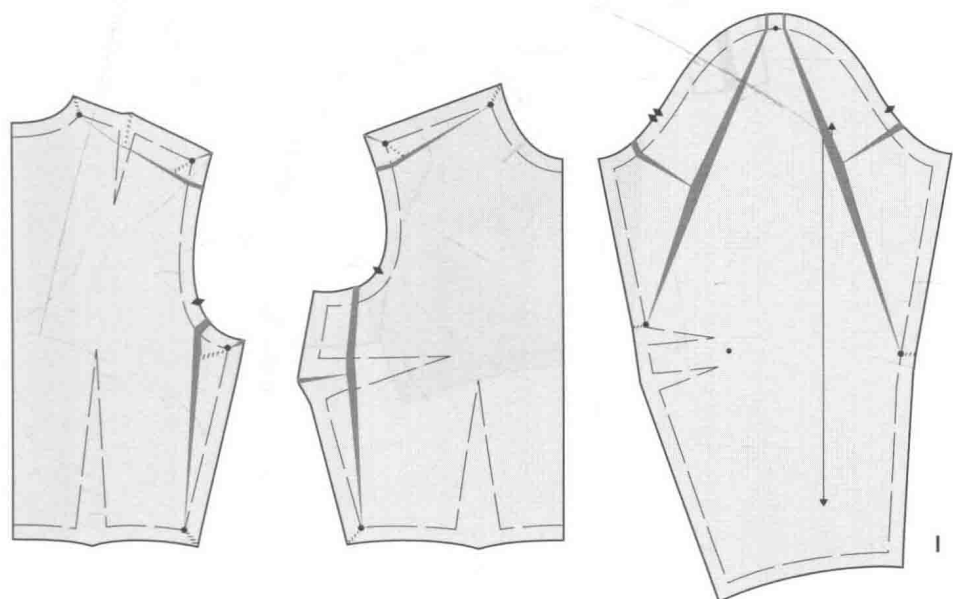
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



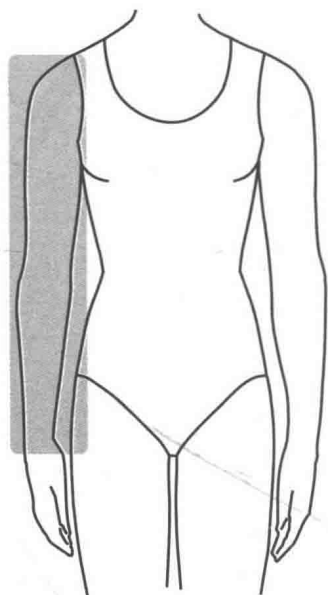
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

46. Larger Arm

FIGURE EVALUATION (A)

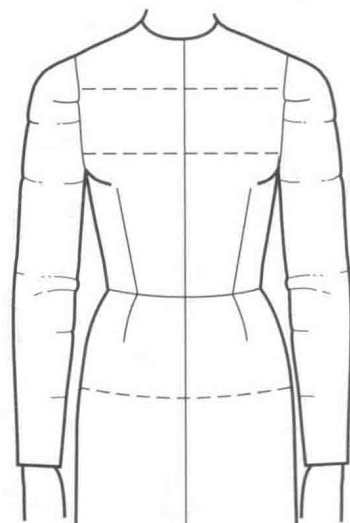
- The bones of the upper arm are larger than average/ideal.
- There may be more weight deposit and/or muscle development than average/ideal.



A

FITTING PROBLEMS (B)

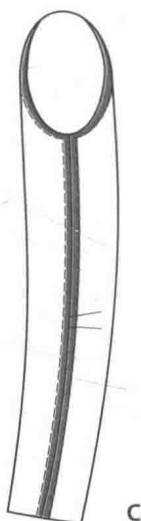
- The entire sleeve pulls taut around the arm restricting movement.
- Horizontal stress wrinkles form across the sleeve cap and around the arm.
- The front and back armhole seems to pull toward the arm.
- The sleeve rises and may appear too short.
- The sleeve needs more fabric width from cap to wrist.



B

READY-TO-WEAR ALTERATION (C)

- Remove the sleeves and release the underarm.
- Let out the underarm seams.
- Mark a new stitching line adding width to the sleeve cap.
- Lower the cap height if needed to maintain the cap circumference.



C

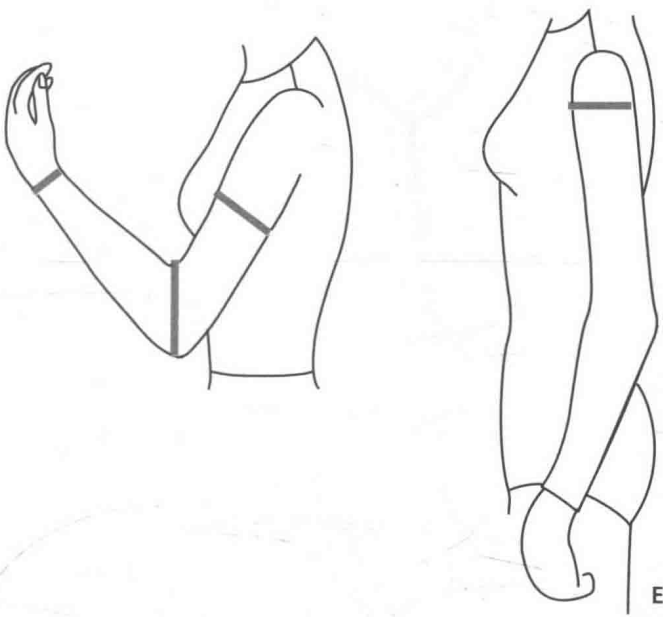
TRIAL GARMENT ALTERATION (D)

- Slash from the shoulder to the wrist.
- Insert fabric strips and spread as illustrated.
- Taper to zero at the shoulder.



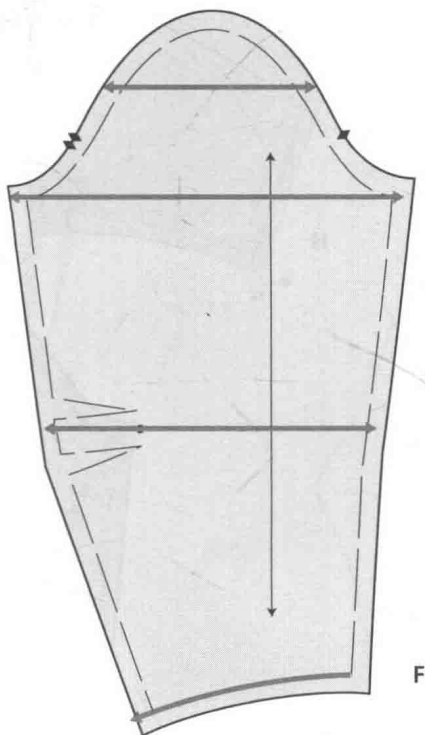
D

46. Larger Arm



BODY MEASUREMENT POSITIONS (E)

- Sleeve cap, high arm level
- Bicep, from 1 inch below the arm hinge
- Elbow, with elbow bent
- Wrist



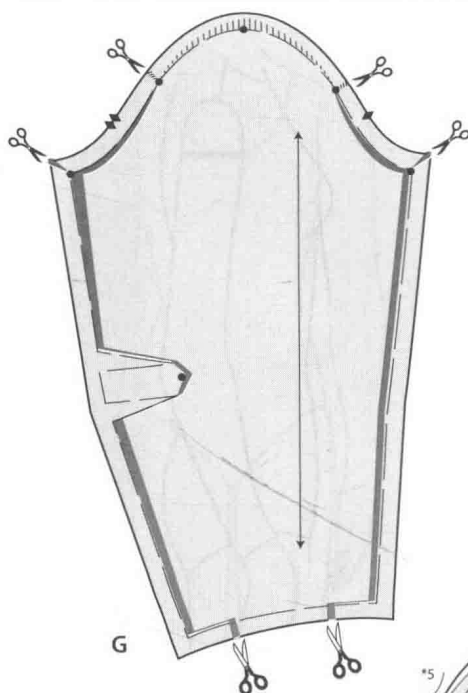
PATTERN MEASUREMENT COMPARISON (F)

- Pattern sleeve cap too narrow
- Pattern capline too narrow
- Pattern elbow too narrow
- Pattern wristline too narrow

46. Larger Arm

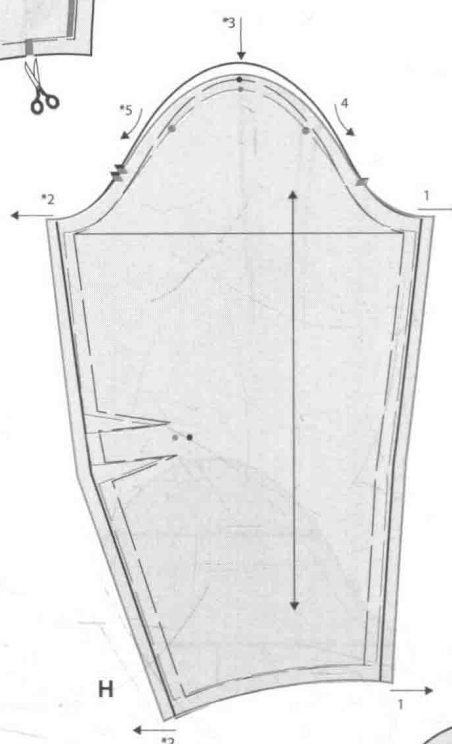
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



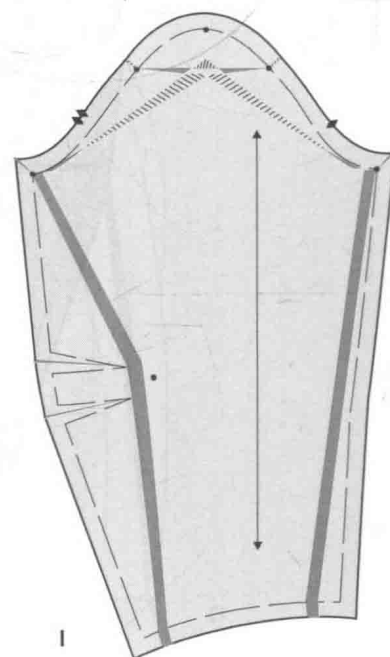
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

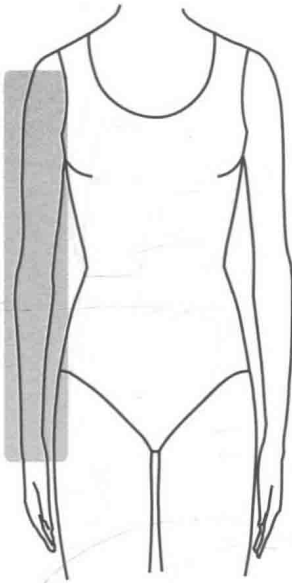


SLASH METHOD (I)

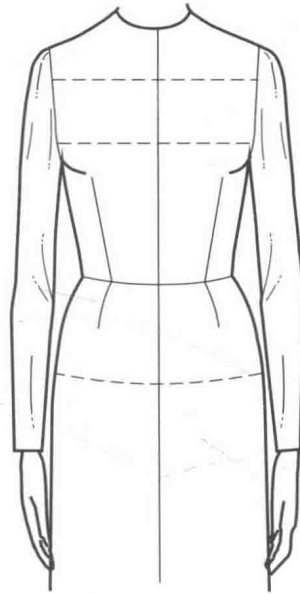
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



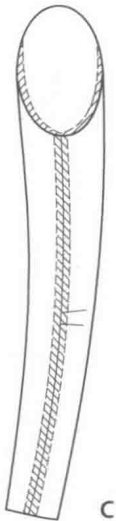
47. Smaller Arm



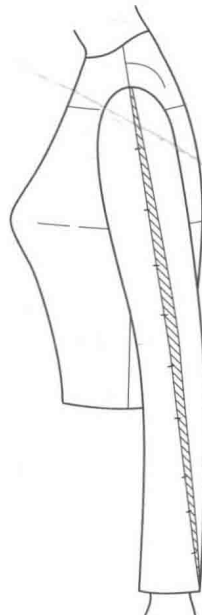
A



B



C



D

FIGURE EVALUATION (A)

- The bones may be smaller than average/ideal.
- There may be less weight deposit and/or muscle development than average/ideal.

FITTING PROBLEMS (B)

- Loose vertical folds form from the sleeve cap to the wristline.
- The sleeve is too loose and may appear to be too long.
- The sleeve needs less fabric width from cap to wristline.

READY-TO-WEAR ALTERATION (C)

- Remove the sleeves and release the underarm seams.
- Take in the underarm seams.
- Take in the sleeve cap width, tapering from the top to mid-cap.
- Raise the sleeve cap if needed to maintain the cap circumference.

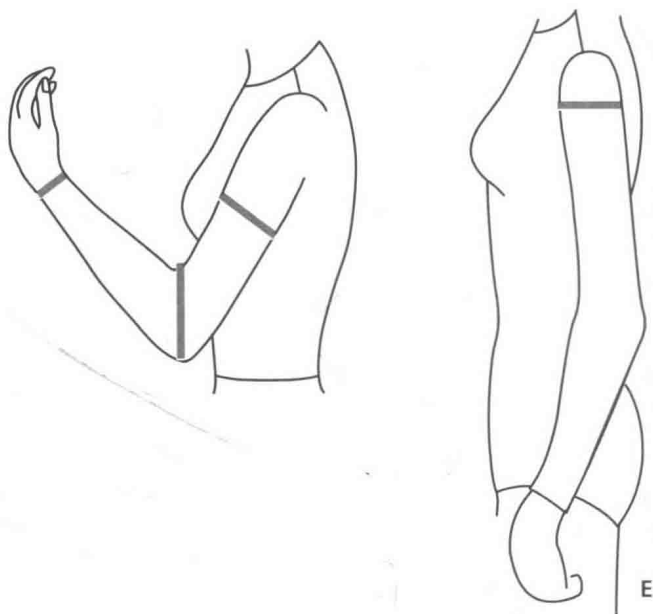
TRIAL GARMENT ALTERATION (D)

- Make a vertical tuck from the wrist, tapering to zero at the shoulder.

47. Smaller Arm

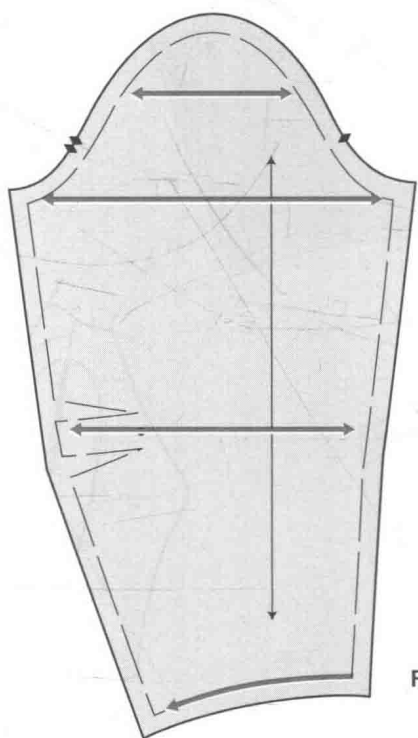
BODY MEASUREMENT POSITIONS (E)

- Sleeve cap, high arm level, hinge to hinge
- Bicep, from 1 inch below hinge
- Elbow, with elbow bent
- Wrist

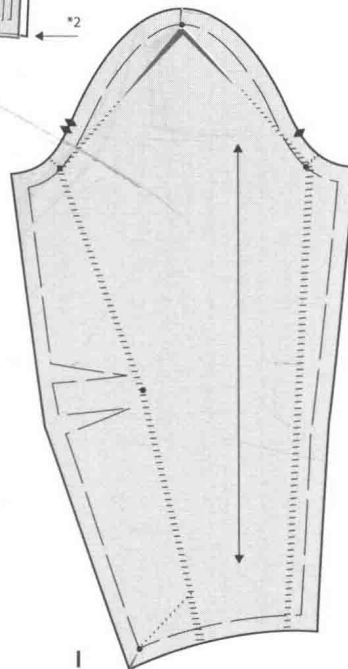
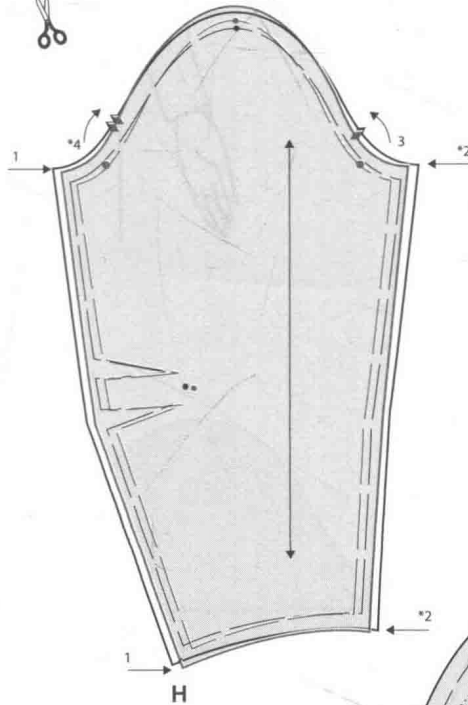
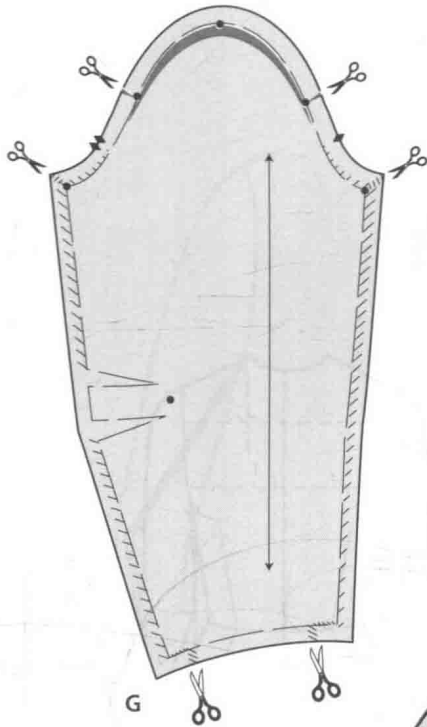


PATTERN MEASUREMENT COMPARISON (F)

- Pattern mid-cap too wide
- Pattern capline too wide
- Pattern elbow too wide
- Pattern wristline too wide



47. Smaller Arm



SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

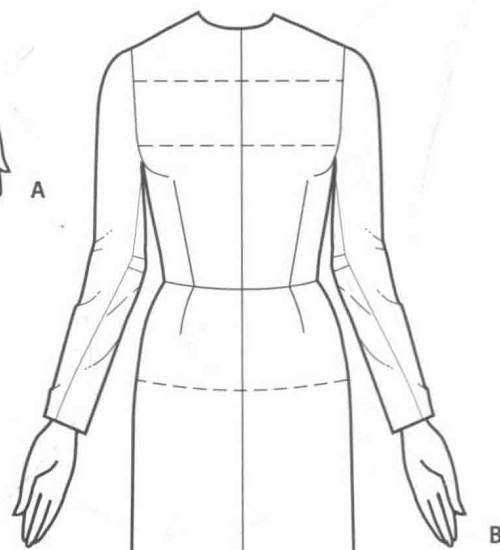
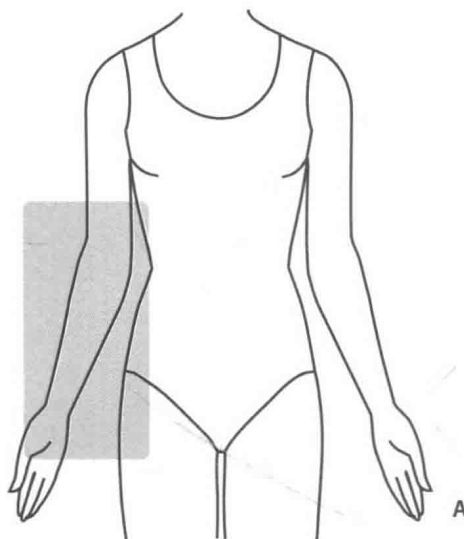
48. Inward Rotation of Elbow

FIGURE EVALUATION (A)

- When the arms hang relaxed at the side, the elbows turn in toward the body and the hands extend away from the body, palms forward.

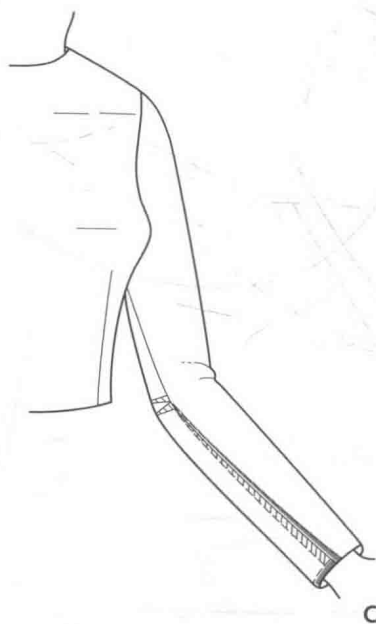
FITTING PROBLEMS (B)

- A long sleeve twists and the underarm seam aligns with the thumb rather than with the center of the wrist.
- The sleeve is tight across the elbow.
- The sleeve needs more fabric width over the elbow.
- The underarm seam from elbow to wrist needs to be repositioned.



READY-TO-WEAR ALTERATION (C)

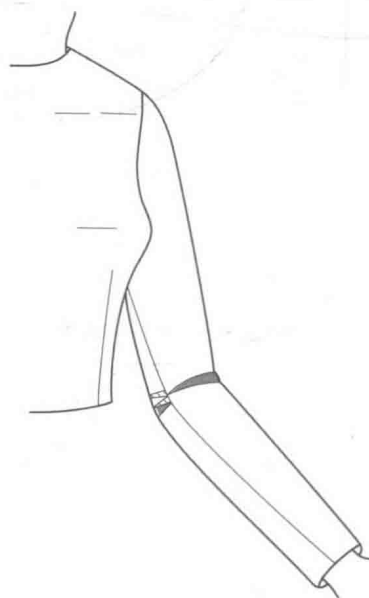
- Wide seam allowances are needed to alter for this variation.
- Mark the sleeve at the center of the wrist.
- Remove the sleeves and release the underarm seam.
- Let out the front underarm seam the distance the wrist center was away from the seam.
- Take in the back underarm seam the same amount.
- Adjust the hem length around the sleeve.



C

TRIAL GARMENT ALTERATION (D)

- Slash across the sleeve at the elbow position.
- Insert fabric strips to increase back length over the elbow, tapering to zero at the front.
- Increase elbow dart(s) to restore underarm length.
- Width increase at the elbow may be minimal with repositioning of the seam.



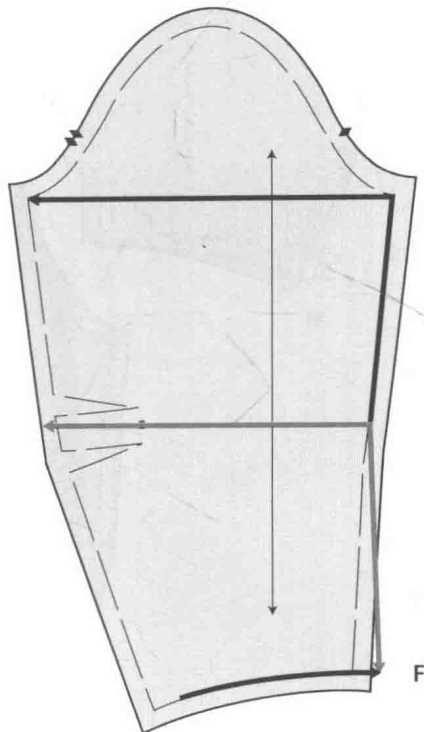
D

48. Inward Rotation of Elbow



BODY MEASUREMENT POSITIONS (E)

- Observation of elbow and hand position
- Bicep, from 1 inch below arm hinge
- Elbow, with elbow bent
- Wrist



PATTERN MEASUREMENT COMPARISON (F)

- Pattern underarm seam is more than $\frac{1}{2}$ inch forward of wrist center
- Pattern bicep at capline correct
- Pattern elbow too narrow
- Pattern wrist correct

48. Inward Rotation of Elbow

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

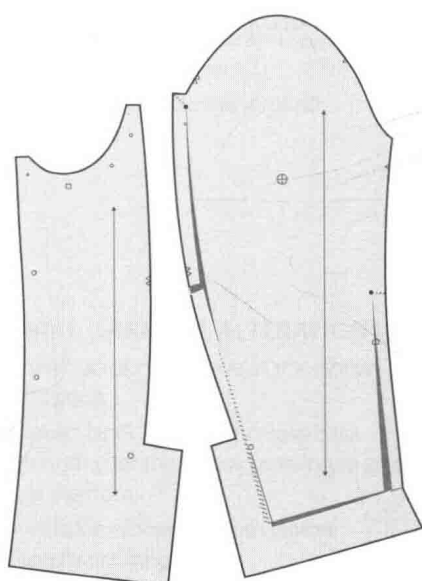
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

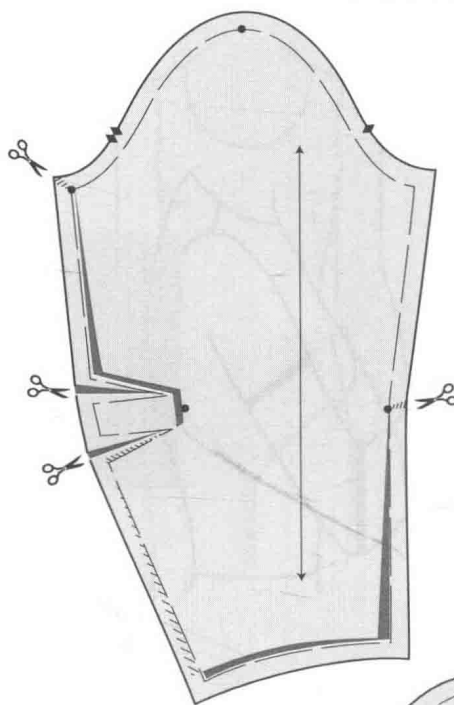
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

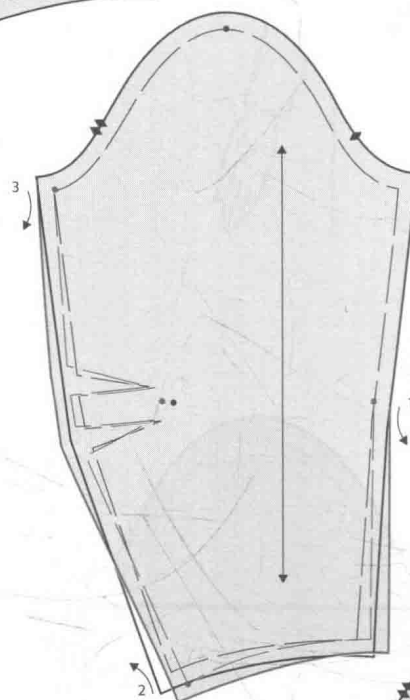
FASHION PATTERN



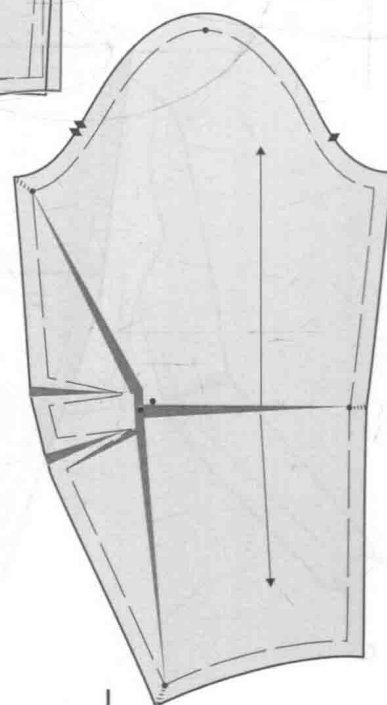
Two-Piece Sleeve



G



H



I

49. Outward Rotation of Elbow

FIGURE EVALUATION (A)

- When arms hang relaxed at the side, the elbows extend out and the hands lie in front of the body, palm backward.

FITTING PROBLEMS (B)

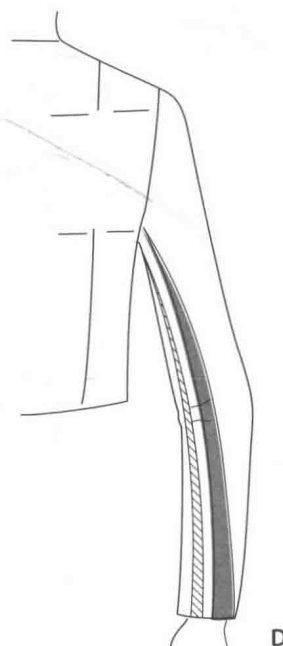
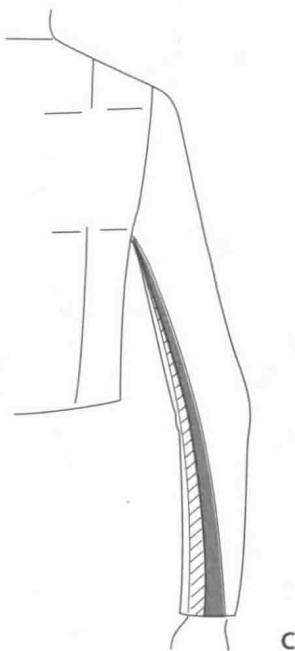
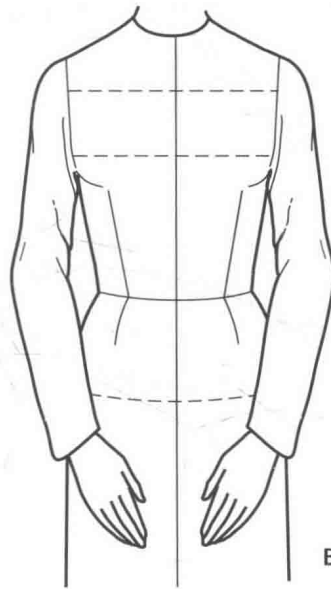
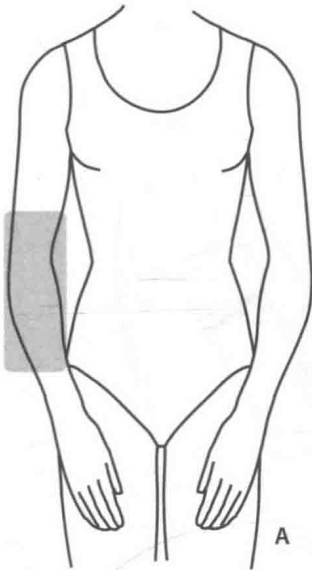
- A long sleeve twists from capline to wrist and the seam aligns with the forefinger rather than with wrist center.
- The sleeve may be tight over the elbow.
- The sleeve may need more fabric width over the elbow.
- The underarm seam from elbow to wrist needs to be repositioned.

READY-TO-WEAR ALTERATION (C)

- Wide seam allowances are needed to alter for this variation.
- Mark the sleeve at the center of the wrist.
- Remove the sleeves and release the underarm seam.
- Let out the back seam the distance the seam was away from center.
- Take in the front seam the same amount.

TRIAL GARMENT ALTERATION (D)

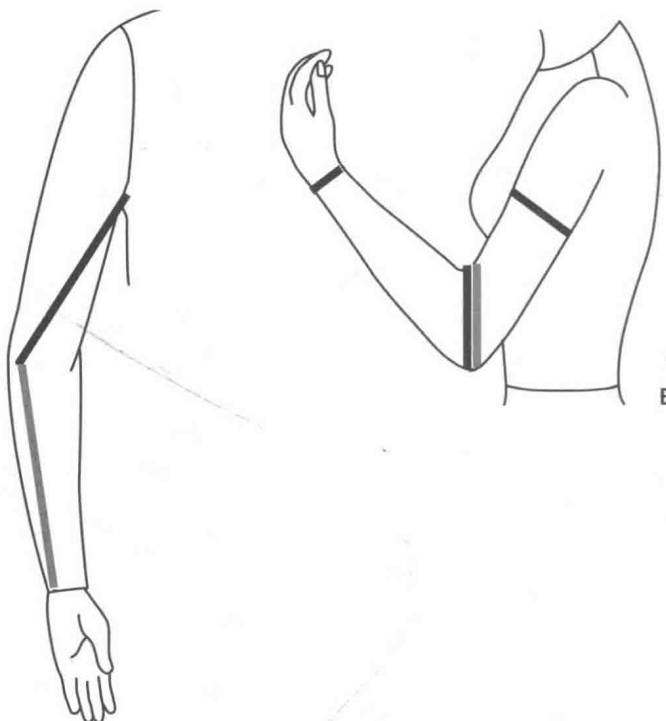
- Slash the sleeve back from wrist to underarm.
- Insert fabric and spread as illustrated.
- Make a tuck at the sleeve front the same amount as the spread in back.



49. Outward Rotation of Elbow

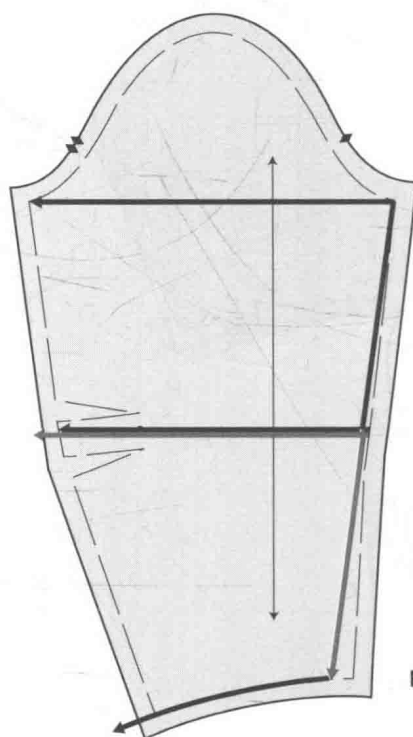
BODY MEASUREMENT POSITIONS (E)

- Observation of elbow and hand positions
- Bicep, from 1 inch below arm hinge
- Elbow, with elbow bent
- Wrist

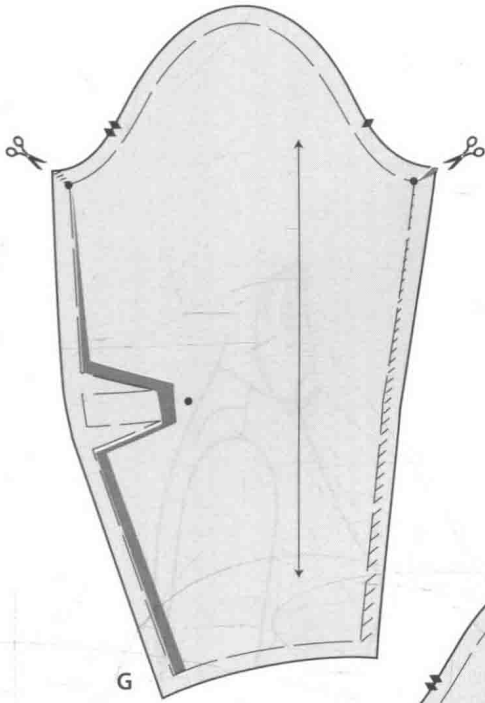


PATTERN MEASUREMENT COMPARISON (F)

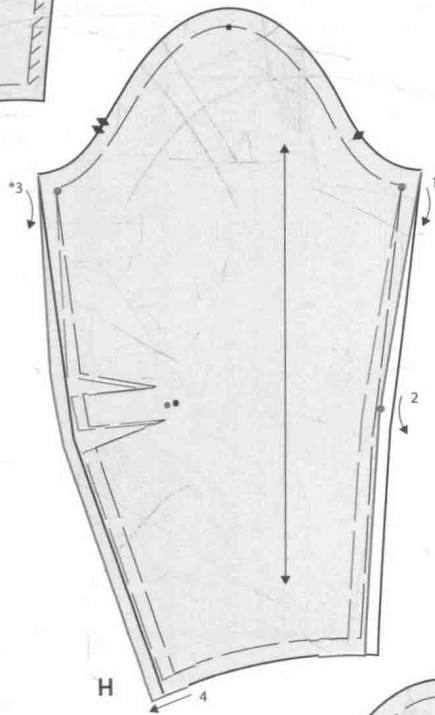
- Pattern underarm seam is more than ½ inch back of wrist center
- Pattern bicep correct
- Pattern elbow correct or too narrow
- Pattern wrist correct



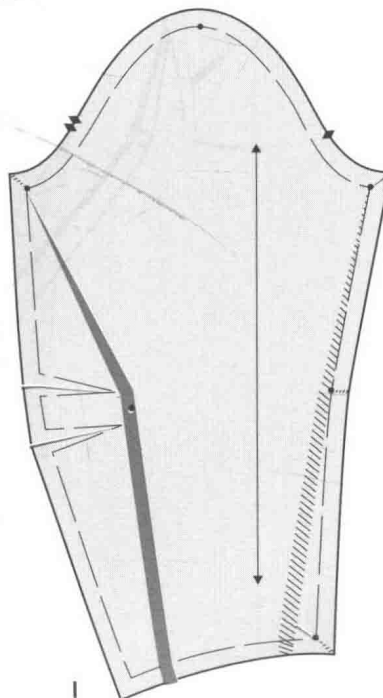
49. Outward Rotation of Elbow



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

50. Larger Elbows

FIGURE EVALUATION (A)

- The bones of the elbow joint may be larger than average/ideal.
- There may be more weight deposit and/or muscle development than average/ideal.

FITTING PROBLEMS (B)

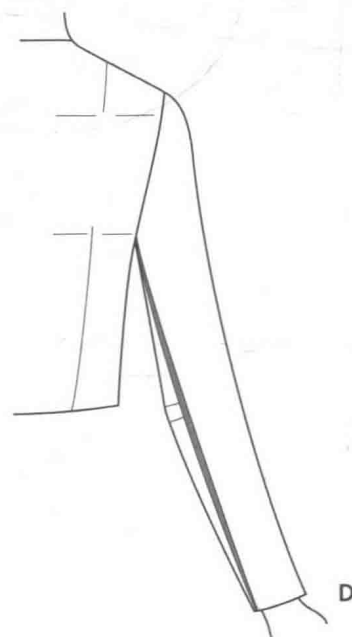
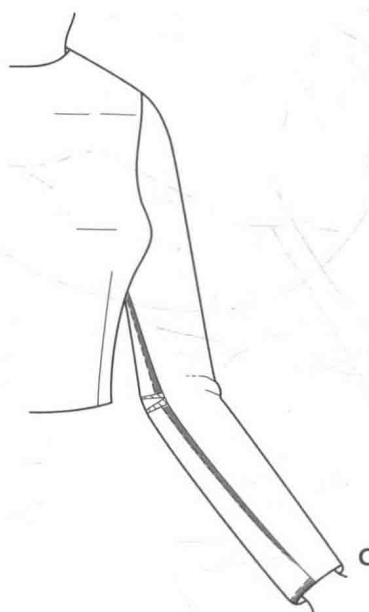
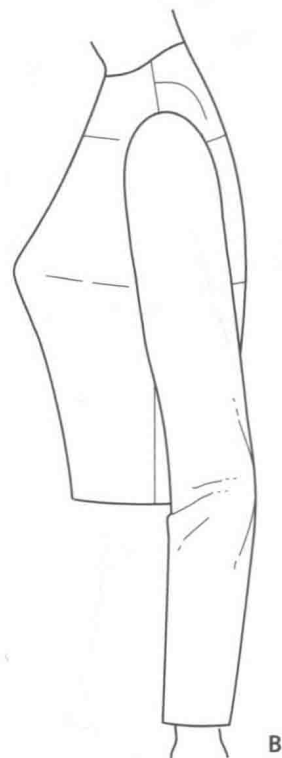
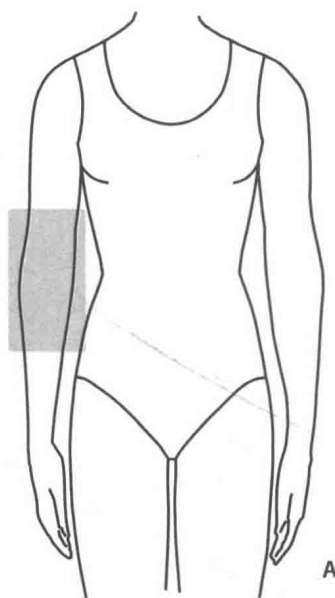
- The sleeve is tight around the elbow.
- Diagonal wrinkles radiate toward the front of the sleeve.
- The sleeve may rise making the sleeve appear too short.
- The sleeve needs more fabric width and larger dart/ease over the elbow.

READY-TO-WEAR ALTERATION (C)

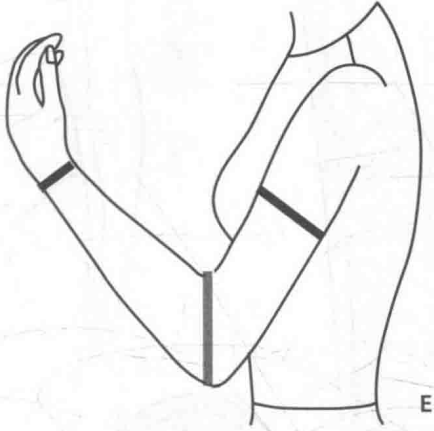
- Remove the sleeve and release the underarm seam.
- Let out the back underarm seam at the elbow, tapering to the armhole and wrist.
- Restore the underarm seam length by increasing the dart size.

TRIAL GARMENT ALTERATION (D)

- Slash from wrist to cap.
- Insert fabric and spread as illustrated.

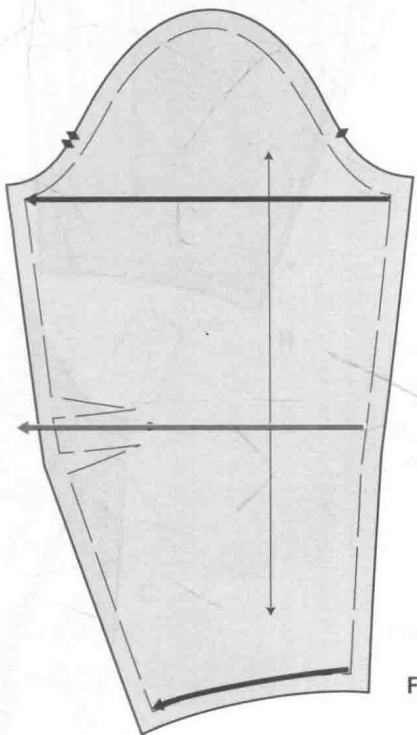


50. Larger Elbows



BODY MEASUREMENT POSITIONS (E)

- Bicep, 1 inch below arm hinge
- Elbow, with elbow bent
- Wrist



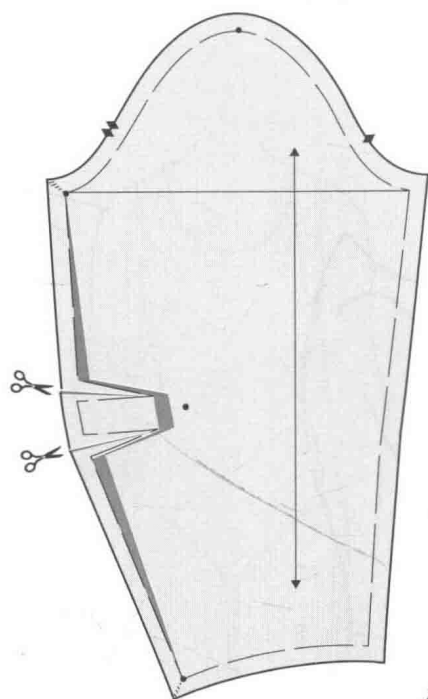
PATTERN MEASUREMENT COMPARISON (F)

- Pattern at capline correct
- Pattern elbow too narrow
- Pattern wrist correct

50. Larger Elbows

SEAM METHOD (G)

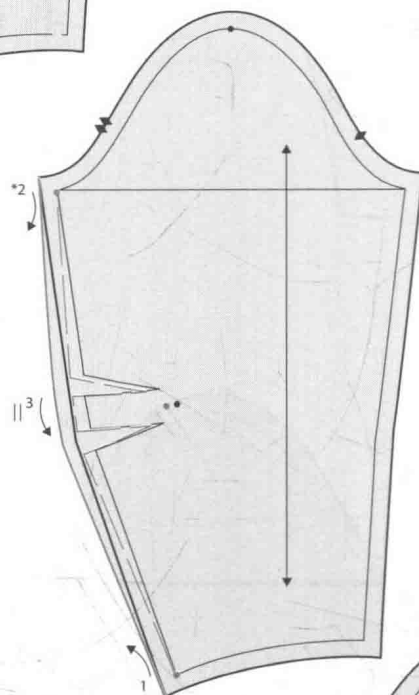
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



G

PIVOT/SLIDE METHOD (H)

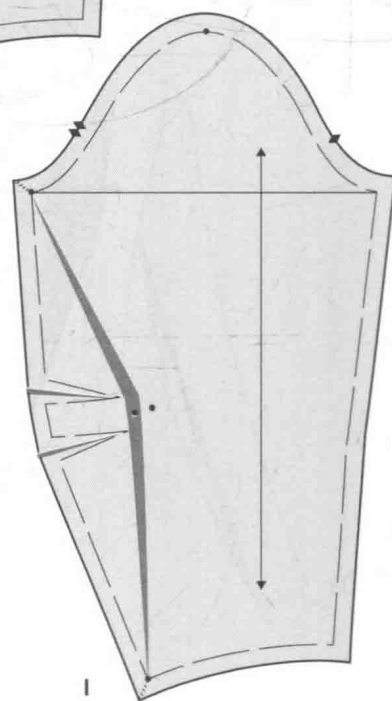
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H

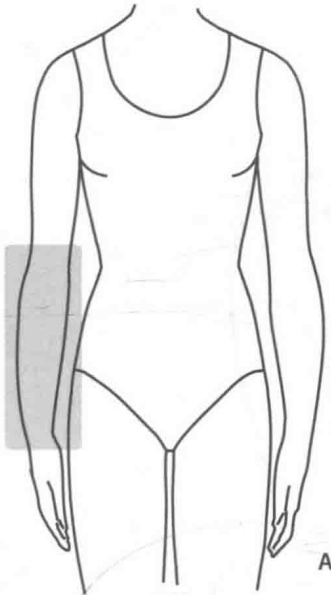
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



I

51. Larger Forearm



A



B

FIGURE EVALUATION (A)

- The bones of the forearm may be larger than average/ideal.
- There may be more weight deposit and/or muscle than average/ideal.

FITTING PROBLEMS (B)

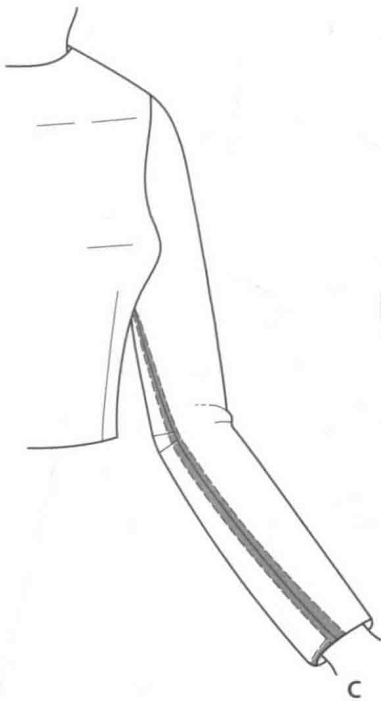
- Sleeve fabric is tight below the elbow.
- Horizontal stress wrinkles form in the fabric.
- The fabric may pull the upper sleeve down, preventing the arm from bending.
- The sleeve needs more fabric width below the elbow.

READY-TO-WEAR ALTERATION (C)

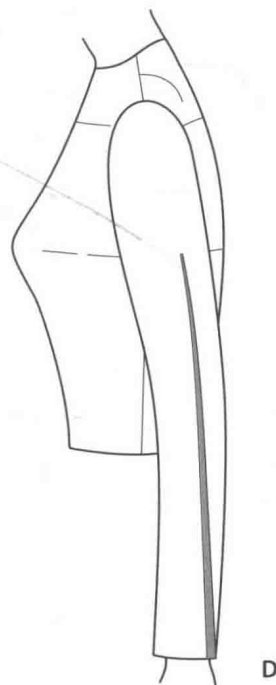
- Release the sleeve underarm seams.
- Let out the seam front and back, tapering from wrist to armhole as illustrated.

TRIAL GARMENT ALTERATION (D)

- Slash from the wrist to above the elbow.
- Insert fabric strips and spread as illustrated.



C

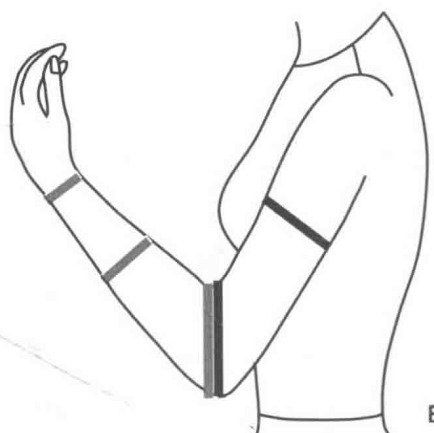


D

51. Larger Forearm

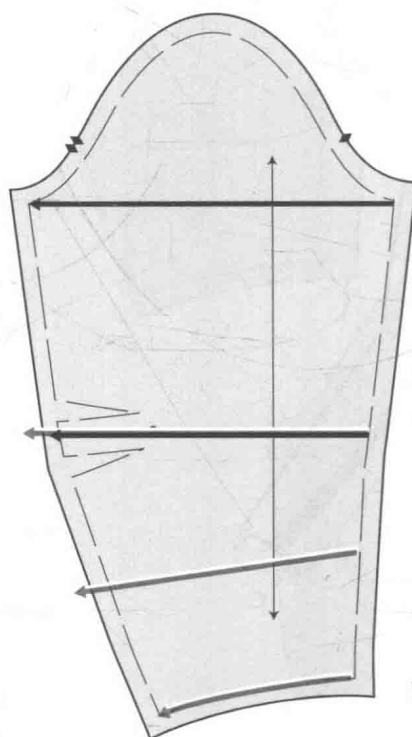
BODY MEASUREMENT POSITIONS (E)

- Bicep, 1 inch below arm hinge
- Elbow, with elbow bent
- Forearm, midway between elbow and wrist
- Wrist

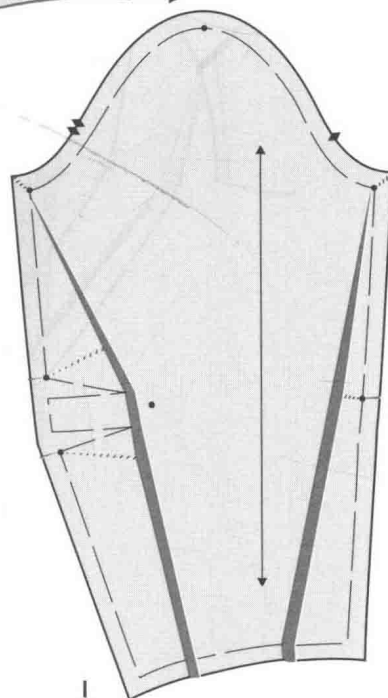
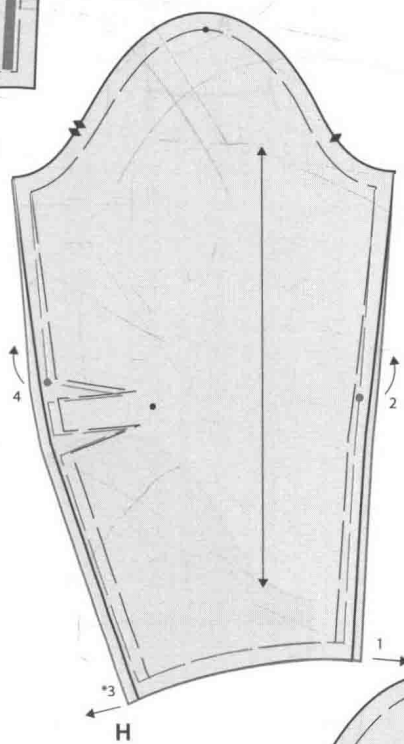
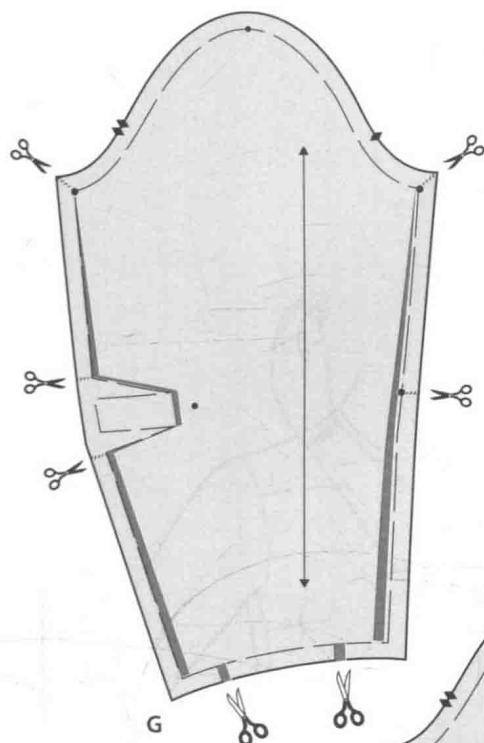


PATTERN MEASUREMENT COMPARISON (F)

- Pattern bicep width correct
- Pattern elbow width may be correct or too narrow
- Pattern forearm width too narrow
- Pattern wrist width too narrow



51. Larger Forearm



SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

52. Larger Wrist

FIGURE EVALUATION (A)

- The bones of the wrist joint may be larger than average/ideal.
- There may be more weight deposit and/or muscle than average/ideal.

FITTING PROBLEMS (B)

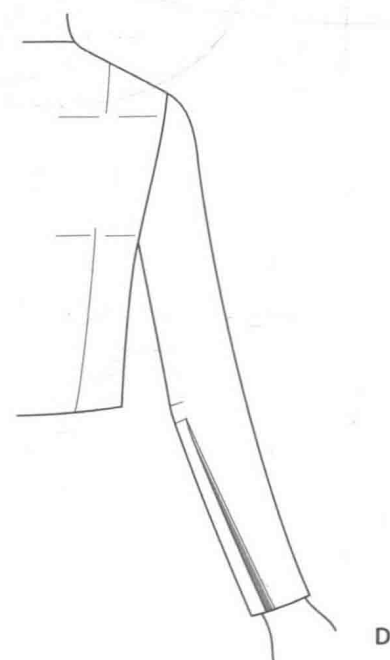
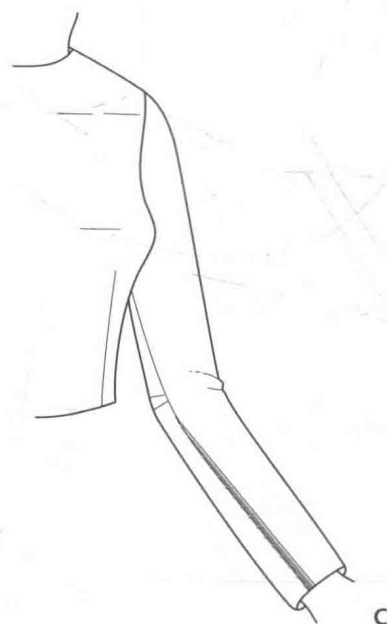
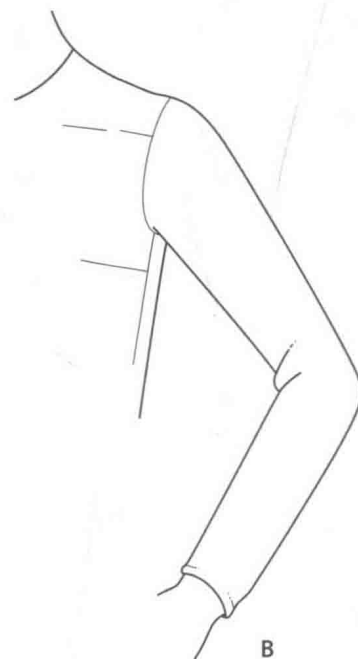
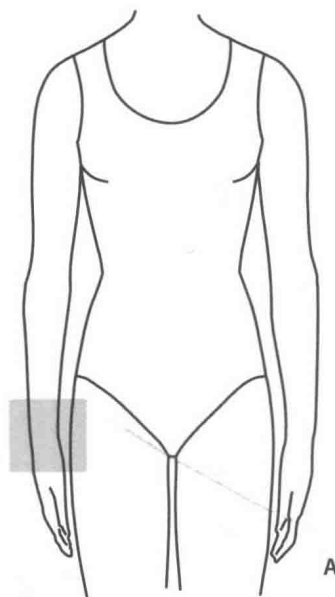
- The sleeve is too tight at the wrist.
- When the arm is bent, the wristline rises and binds against the arm.
- The wristline remains in a raised position after the arm is straightened.
- The sleeve needs more fabric width at the wristline.

READY-TO-WEAR ALTERATION (C)

- Release the sleeve underarm seam from the wrist to above the elbow.
- Let out the back seam allowance as illustrated.

TRIAL GARMENT ALTERATION (D)

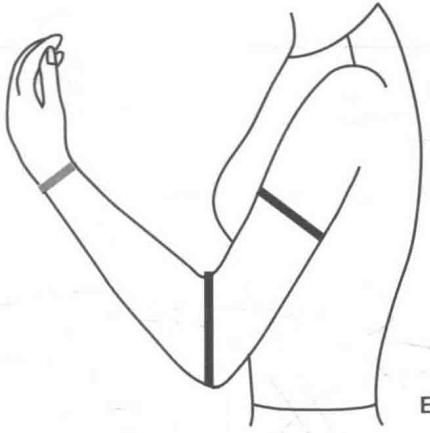
- Slash from the back wrist to the elbow.
- Insert the fabric strips and spread as illustrated.



52. Larger Wrist

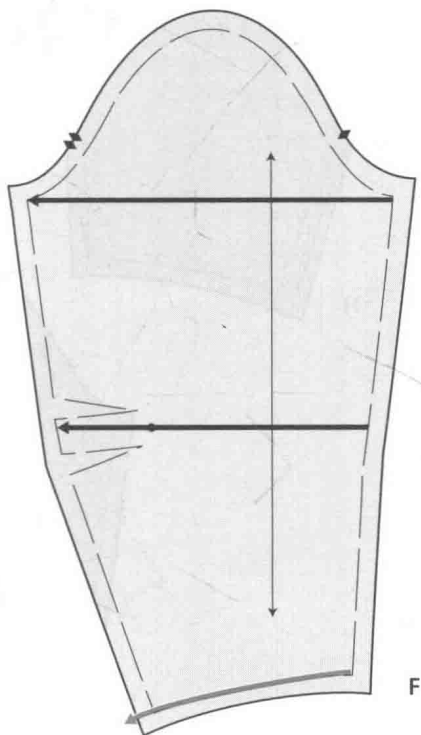
BODY MEASUREMENT POSITIONS (E)

- Bicep, 1 inch below arm hinge
- Elbow, with elbow bent
- Wrist



PATTERN MEASUREMENT COMPARISON (F)

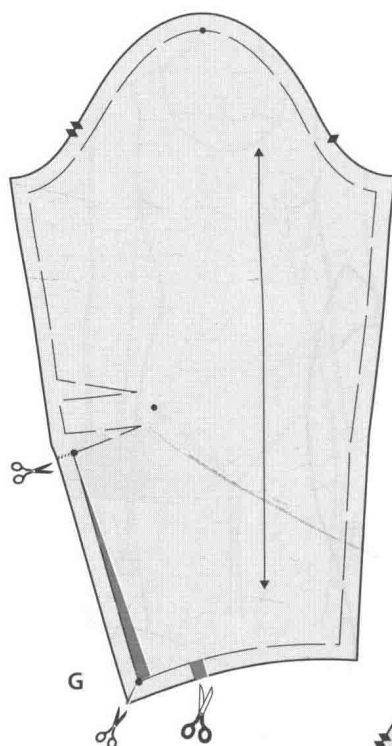
- Pattern bicep width correct
- Pattern elbow width correct
- Pattern wrist width narrow



52. Larger Wrist

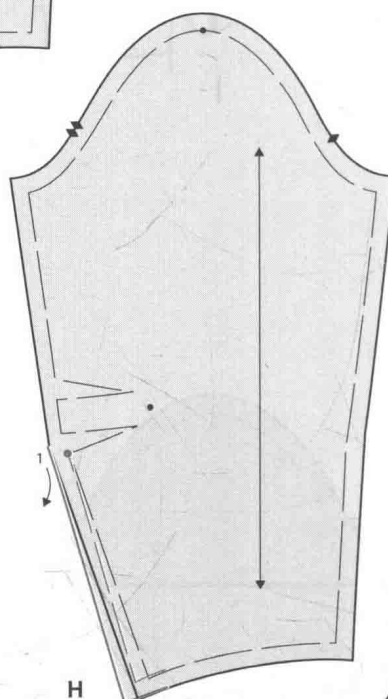
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



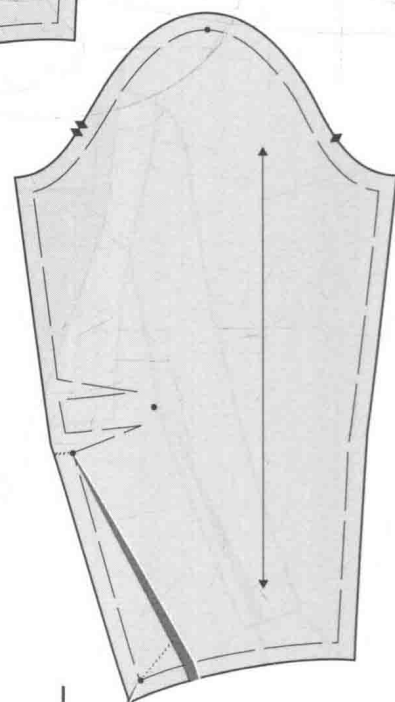
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

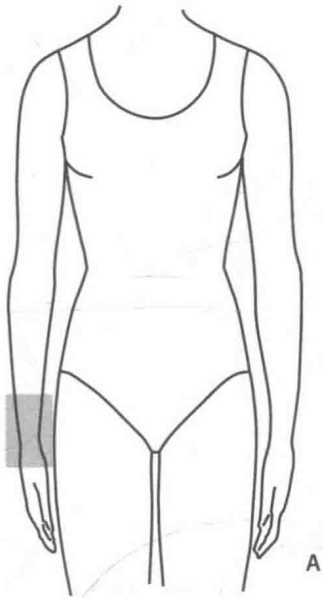


SLASH METHOD (I)

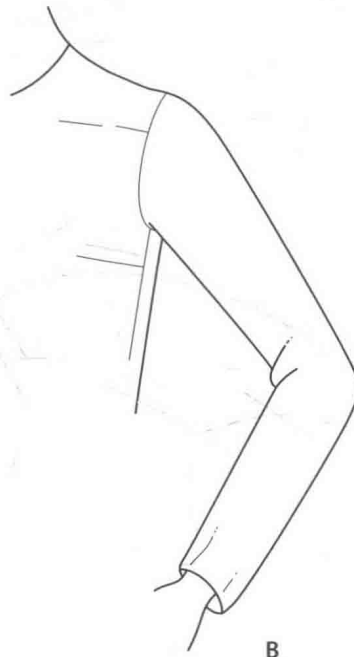
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



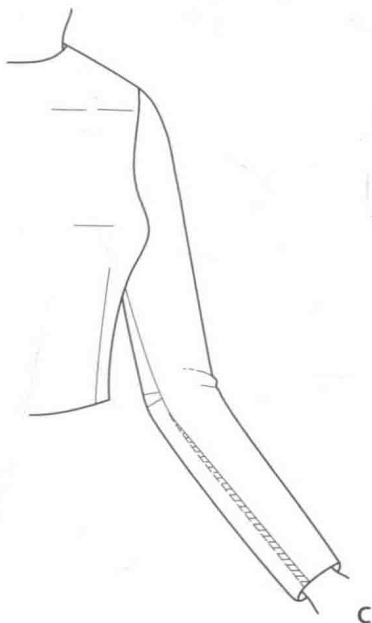
53. Smaller Wrist



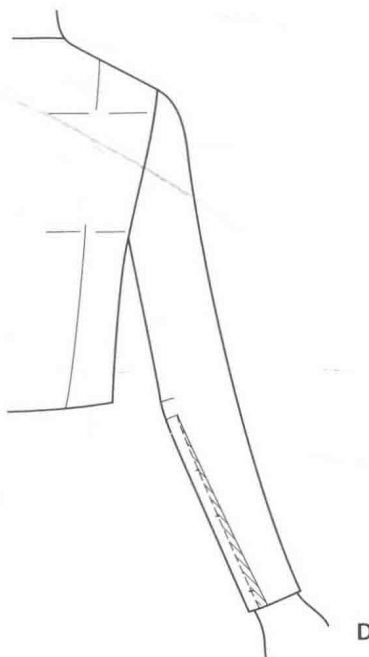
A



B



C



D

FIGURE EVALUATION (A)

- The bones of the wrist joint may be smaller than average/ideal.
- There may be less weight deposit and/or muscle than average/ideal.

FITTING PROBLEMS (B)

- The sleeve is too loose at the wrist.
- The sleeve needs less fabric width at the wristline.

READY-TO-WEAR ALTERATION (C)

- Release the sleeve underarm seam from the wrist to the elbow.
- Take in the back underarm seam as illustrated.

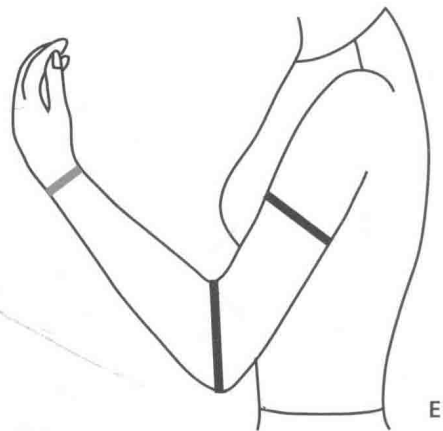
TRIAL GARMENT ALTERATION (D)

- Make a tuck as illustrated.

53. Smaller Wrist

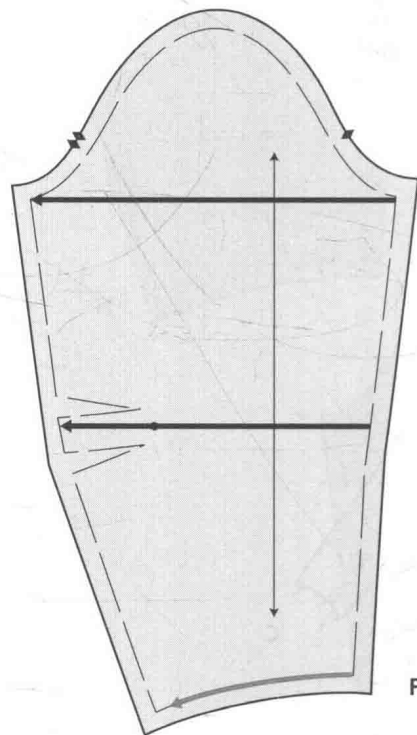
**BODY MEASUREMENT
POSITIONS (E)**

- Bicep, 1 inch below arm hinge
- Elbow, with elbow bent
- Wrist

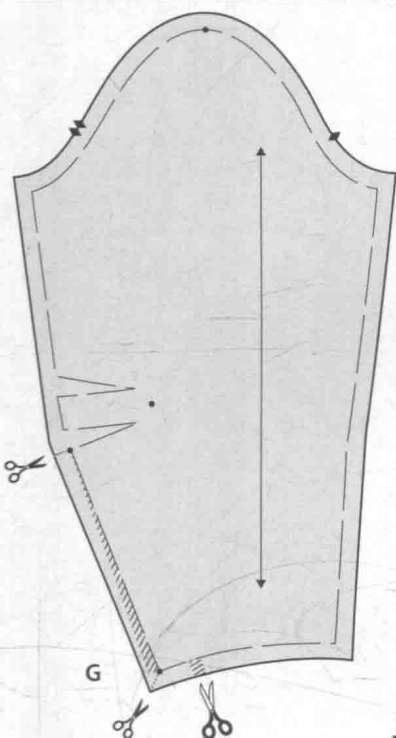


**PATTERN MEASUREMENT
COMPARISON (F)**

- Pattern bicep width correct
- Pattern elbow width correct
- Pattern wrist width too wide

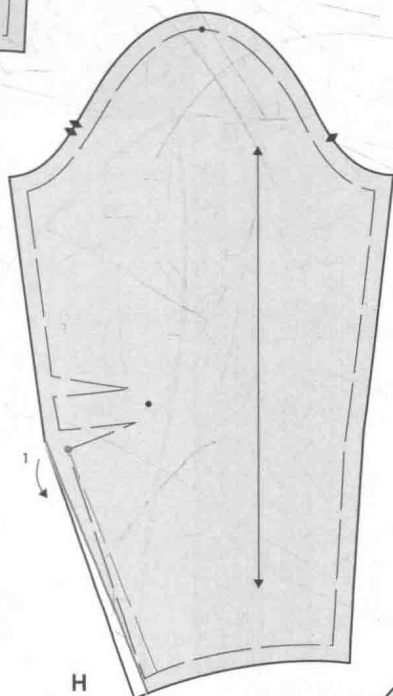


53. Smaller Wrist



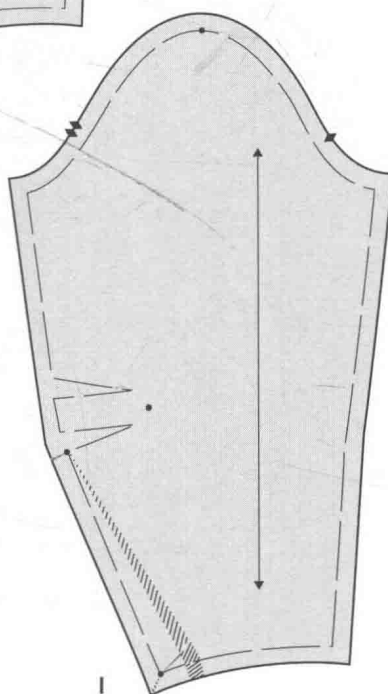
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

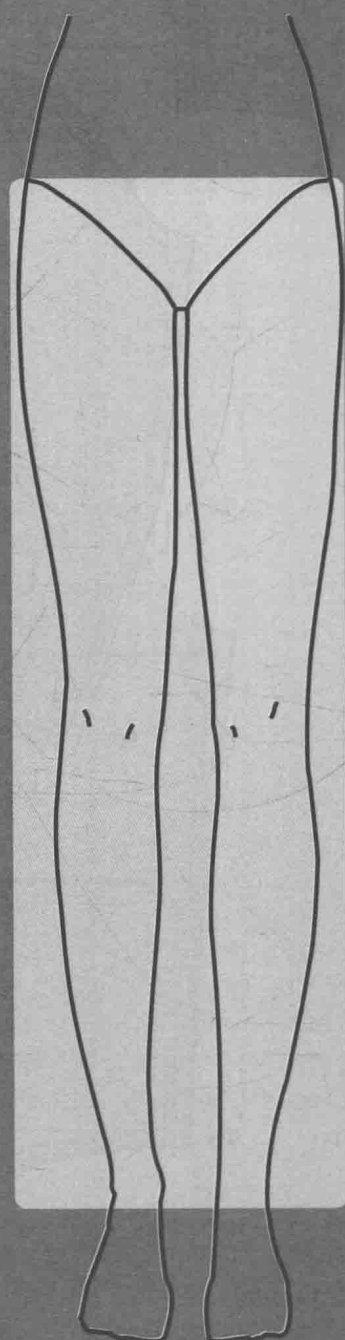


SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

Chapter 10

Skirts and Pants



MEASURING FOR SKIRTS AND PANTS

This section presents measurement, fitting, and alteration procedures on the lower torso, legs, skirts, and pants. Use this section as a ready-reference to fitting problems occurring in skirts and pants.



REALITY CHECK

The even length of the skirt or pant pattern is adjusted first, beginning at the bottom of the pattern piece, then moving up the legs and lower torso. Uneven lengths are then adjusted at the top, so the pattern or skirt and pant is level on the body. The widths of the skirt or pant pattern are adjusted beginning at the top of the pattern piece and then moving down.

Preparation of the Lower Torso

1. Assemble the following:
 - measuring tape (Two Easy Tape)
 - pen or pencil
 - $\frac{1}{8}$ to $\frac{1}{4}$ inch masking tape or elastic
 - ruler or straight edge
2. The person being fitted should wear a leotard or underwear.
3. Place a tape or elastic around the waist.
4. Place a tape or elastic around the body at hip level.
5. Mark the following positions with an adhesive dot or a washable ink X:
 - Side seams
 - Centers on front and back at the waist
 - High hip
 - Low hip

Note: All basic ease measurements given are for a fitted basic skirt or darted flat front pant. Fashion ease is in addition to basic ease.

Lengths on Skirts and Pants

See Table 10.1.

1. *Inseam*: Measure down from the crotch at the inseam position, straight down to the floor.
 - If using a Two Easy Tape, this measurement may be taken in conjunction with the crotch length measurement.
2. *Side seam*: Measure up from the floor over the hip curve to the bottom of the waist tape—synonymous with waist level. Record right side, left side.
3. *Centers*: On the front, measure from the floor, up and over the abdomen at center front to the bottom of the waist tape—synonymous with waist level. Record center

front length. On the back, measure from the floor, up over the buttocks at center back to the bottom of the waist tape. Record center back length.

4. *High hip level*: On the front, measure from the floor up to the fullest curve below the waist and above the hip joint level. Record center front, center back, right side, left side.
5. *Hip joint level/hipline/hip depth*: Measure down from the bottom of the waist tape to the hip joint in the middle of the leg. Record center front, center back, right side, left side.

Note: Hipline is not an arbitrary measurement such as 7 inches, 9 inches, or 10 inches below the waist, nor the fullest point. To ensure that the procedures and fit will be reproducible, the hip joint level is the equivalent of what is traditionally termed the "hipline." Terms may be used interchangeably.

6. *Low hip level*: On the front, measure from the floor up to the fullest curve just below the hip joint level. Record center front, center back, right side, left side.
7. *Crotch level/crotch depth*: This is generally synonymous with the low hip level; or subtract the inseam measurement for side seam-to-waist measurement.
8. *Crotch length*: Measure from the bottom of the waist tape at center front, through the crotch, and up to the bottom of the waist tape at center back. Separate this measurement at the inseam position. Add $\frac{1}{2}$ inch to the front half and $\frac{1}{2}$ inch to the back half for ease.
 - If you are using a Two Easy Tape, place the 0 of the tape at the inseam position.
 - A flexible curve may be used to duplicate the crotch, abdominal, and buttocks curves. Transfer the resulting front and back crotch curves to the tissue pattern. (See discussion and presentations in Chapters 5 and 6.)
9. *Knee position*: Measure up from the floor to the middle of the knee.

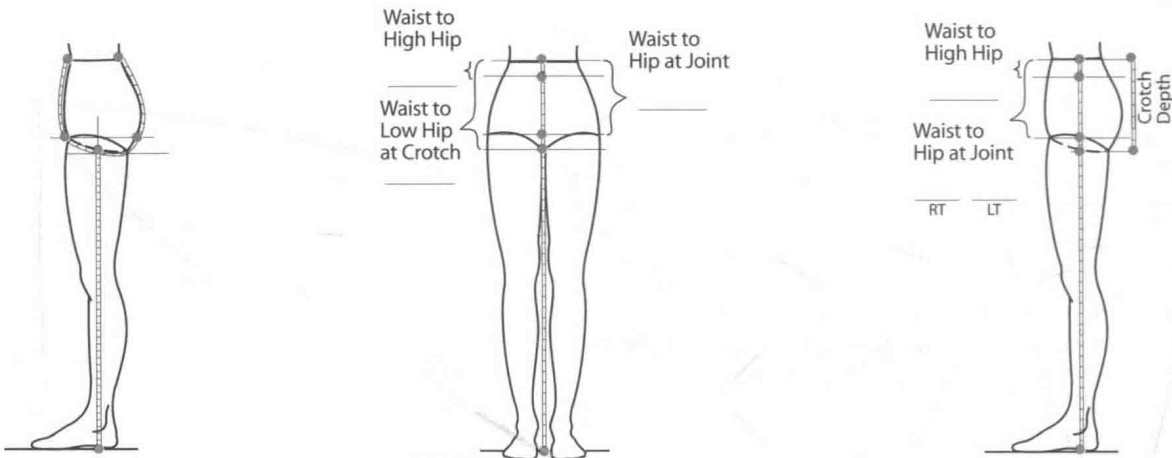
**Optional*: For hemline levels, measure from the floor to the ankle, the lower calf, below the knee, mid-knee, and above the knee. Record all.

Widths and Circumferences on Skirts and Pants

See Table 10.2.

1. *Waist width*: On the front, measure across at waist level from side to side. Add $\frac{1}{2}$ inch for ease. Record front waist width. On the back, repeat and record back width at waist level.
 - If using a Two Easy Tape, place the 0 at waist center front and measure center to sides. Add $\frac{1}{4}$ inch ease each side. Record waist width right side, left side. Repeat on the back and record right side, left side.

LOWER TORSO LENGTHS



Inseam from crotch
to floor _____

Center Front from floor
to Waist Level

Side Seam from floor
to Waist Level

Rt _____
Lt _____

Crotch Curve Length

Frt _____
Bk _____

High Hip Level

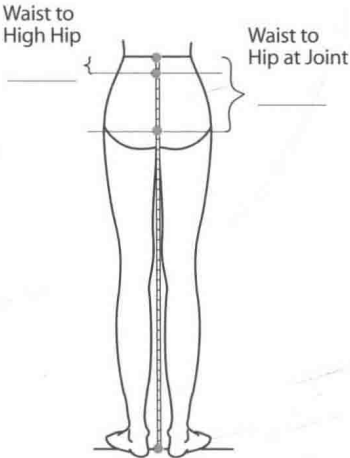
Hip Level at Joint

Low Hip Level at Crotch

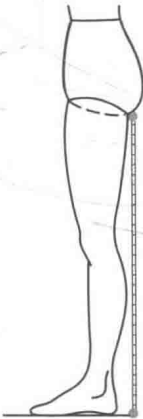
Crotch Depth _____

(Subtract inseam measurement from
side seam floor to waist measurement)
If side seam lengths are different, use the
shorter length to calculate crotch depth
and then correct for higher hip curve on
the longer side.

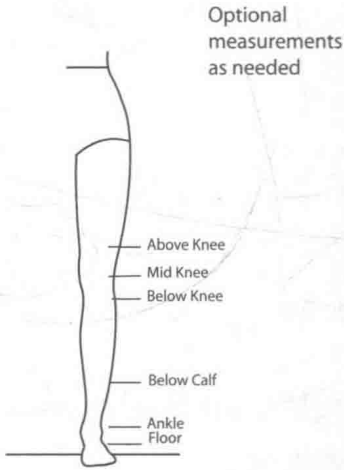
Inseam to Hip **Hip to Waist**
(along crotch curve) (along crotch curve)
Frt _____ Frt _____
Bk _____ Bk _____



Center Back from floor
to Waist Level



Buttocks Level from floor
Rt _____
Lt _____

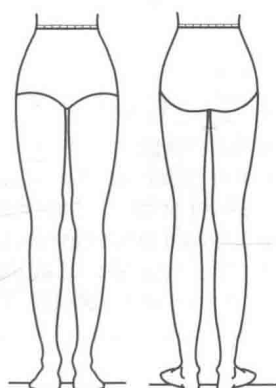


Hem Lengths from floor **From Waist**
Above Knee _____
Mid Knee _____
Below Knee _____
Below Calf _____
Ankle _____
Floor _____

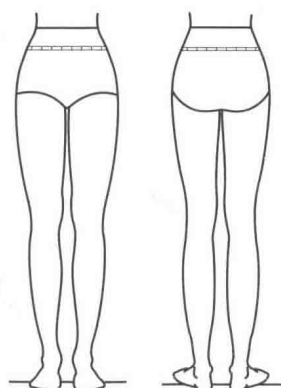
(Calculate
Mathematically)

Table 10.1: Lower Torso Lengths

LOWER TORSO WIDTHS

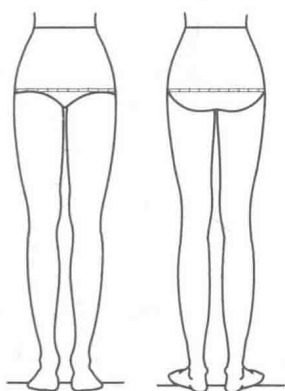


| Waist Level | | |
|---------------------|-----------|-------|
| Body | Min. Ease | Total |
| Total Circum. _____ | 1" | |
| Frt: Total _____ | 1/2" | |
| Rt Side _____ | 1/4" | |
| Lt Side _____ | 1/4" | |
| Bk: Total _____ | 1/2" | |
| Rt Side _____ | 1/4" | |
| Lt Side _____ | 1/4" | |



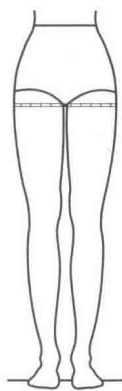
High Hip Level @ _____ " from floor
(@ _____ " from waist)

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 2" | |
| Frt: Total _____ | 1" | |
| Rt Side _____ | 1/2" | |
| Lt Side _____ | 1/2" | |
| Bk: Total _____ | 1" | |
| Rt Side _____ | 1/2" | |
| Lt Side _____ | 1/2" | |



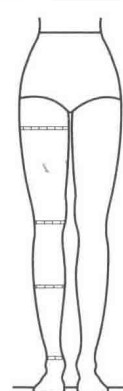
Full Hip Level at Joint @ _____ " from floor
(@ _____ " from waist)

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 3" | |
| Frt: Total _____ | 1 1/2" | |
| Rt Side _____ | 3/4" | |
| Lt Side _____ | 3/4" | |
| Bk: Total _____ | 1 1/2" | |
| Rt Side _____ | 3/4" | |
| Lt Side _____ | 3/4" | |



Low Hip Level at Crotch @ _____ " from floor
(@ _____ " from waist)

| Body | Min. Ease | Total |
|---------------------|-----------|-------|
| Total Circum. _____ | 3" | |
| Frt: Total _____ | 1 1/2" | |
| Rt Side _____ | 3/4" | |
| Lt Side _____ | 3/4" | |



Optional measurements as needed



Leg Circumferences

| Body | Min. Ease | Total |
|------------------|-----------|-------|
| Thigh Rt _____ | 3/4" | |
| Lt _____ | 3/4" | |
| Knee Rt _____ | 3/4" | |
| Lt _____ | 3/4" | |
| Calf Rt _____ | 3/4" | |
| Lt _____ | 3/4" | |
| Ankle Rt _____ | 3/4" | |
| Lt _____ | 3/4" | |
| Instep Rt. _____ | 1/2" | |
| Lt. _____ | 1/2" | |

Table 10.2: Lower Torso Widths

- *Waist circumference:* Measure across the front at waist level, continuing around and across the back waist. Record waist circumference for fashion skirts or pant pattern size selection only.
2. *High hip widths:* On the front, at the fullest level between the waist tape and hip joint level, measure across the body from side to side. Add $\frac{3}{4}$ to 1 inch for ease. Record front high hip width. On the back, repeat and record back width at high hip level.
 - If using a Two Easy Tape, place the 0 at center front and measure center to sides. Add $\frac{1}{2}$ inch ease each side. Record high hip width right side, left side. Repeat on the back and record right side, left side.
 - *High hip circumference:* Measure across the front at high hip level, continuing around and across the back. Keep tape level. Record high hip circumference for fashion patterns size selection only.
 - A flexible curve may be used to duplicate the side curve of the high hip. Transfer the resulting high hip curve to the tissue pattern.
 3. *Low hip widths:* On the front, at the fullest/widest level below the hip joint level, measure across the body from side to side (generally level with the crotch). Add 1 to 1 $\frac{1}{2}$ inches for ease. Record front low hip width. On the back, repeat and record back width at low hip level.
 - If using a Two Easy Tape, place the 0 at center front and measure center to sides. Add $\frac{1}{2}$ to $\frac{3}{4}$ inch ease each side. Record low hip width right side, left side. Repeat on the back and record right side, left side.
 4. *Low hip circumference:* Measure across the front at low hip level, continuing around and across the back. Keep tape level. Record low hip circumference for pattern size selection.
 - A flexible curve may be used to duplicate the side curve of the low hip. Transfer the resulting low hip curve to the tissue pattern.
 5. *Thigh circumference:* Measure around the fullest part of a single upper leg/thigh. Record right side, left side. Note the silhouette and contour of the thigh. Do the inner thighs touch or is there extra space between? Does the thigh extend beyond the abdomen at front, or beyond the hip at the sides?
 6. **Knee circumference:* Measure around the knee while in a seated position. Record right side, left side. Note whether the knees touch or are bowed farther apart than average/ideal.
 7. **Calf circumference:* Measure around the fullest part of the lower leg/calf, just below the knee. Record right side, left side. Note whether the leg bows to the back or to the side.
 8. **Heel-instep circumference:* With the toes pointed, measure around the foot from the heel over the instep. Record right side, left side.

*Optional

NOTES ON MEASUREMENT METHOD OF FITTING THE SKIRT AND PANT PATTERN



✓ REALITY CHECK

Purchase basic skirt and pant patterns by the hip measurement. If the hip area front or back is larger or smaller than average, use the measurement of front or back, whichever is nearer average, then double that measurement to purchase the pattern. There is generally 1 inch ($\frac{1}{4}$ inch x 4) of ease allowed at the waistline and 3 inches ($\frac{3}{4}$ inches x 4) at the hipline of a basic skirt or pant.

Length Measurements on Skirts and Pants

See Table 10.3 and Table 10.4.

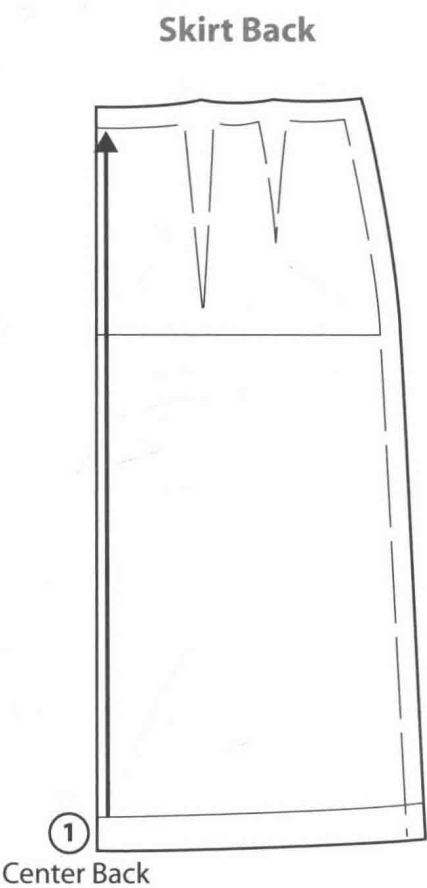
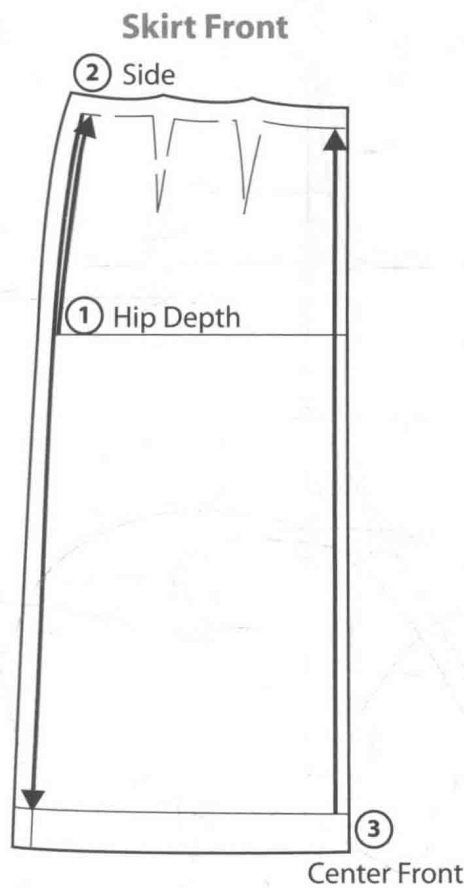
- Measure the *front inseam* of the pant pattern from crotch stitching line to hemline.
- All other length measurements on the pattern are taken from the hemline up—because skirts and pants are leveled at the waistline.
- *Pattern length is adjusted beginning at the bottom and proceeding to the top of the pattern.*
- Make each length adjustment before proceeding to the next measurement.

Even/Parallel Amounts of Length Change on Front and Back

- If the pattern inseam length is too long or short, make the length adjustment at the hemline of straight leg pants.
- If the leg of the pant pattern is tapered or flared, measure the height of the knee from the hemline. The knee height position on a full-length pant pattern measured from the hemline is half the inseam length plus 1 inch for most patterns. If the knee height position is too long or short, make the change at the hemline.
- If the knee height position is correct, make the leg length adjustment above the knee.
- After adjusting the leg length, all other length measurements are taken from the new hemline up.
- If the pattern side length is too long or short, adjust the torso length change at the hipline.
- Adjust the length of a skirt at the hem, except for a pegged skirt that is adjusted immediately below the hip.
- If a skirt flares abruptly at the knee level, adjust the length so the flare is correctly positioned over the knee.

SKIRT MEASUREMENT SEQUENCE AND POSITIONS

LENGTHS



WIDTHS

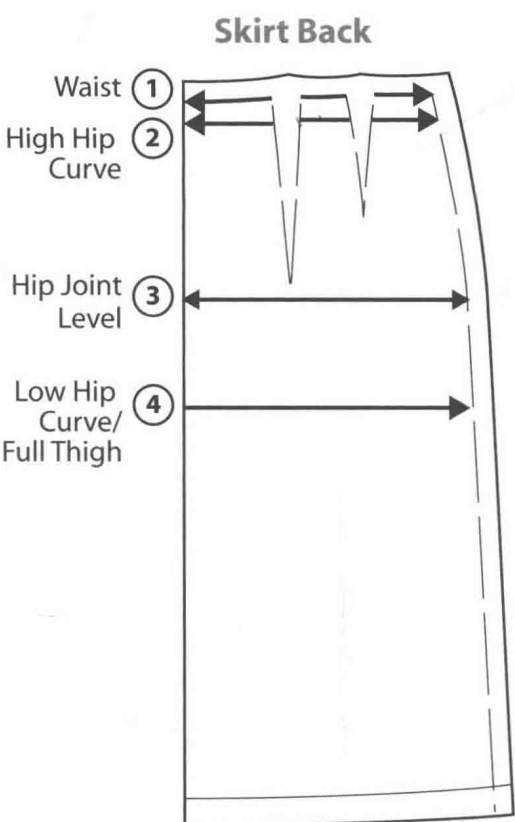
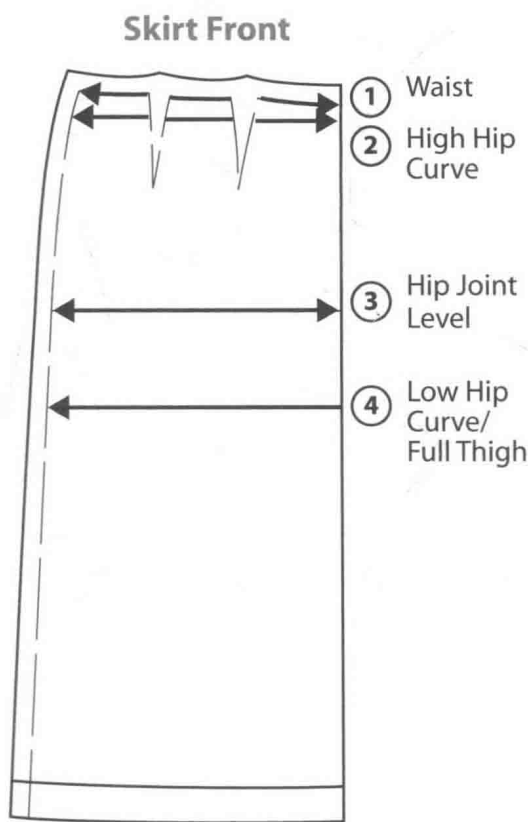
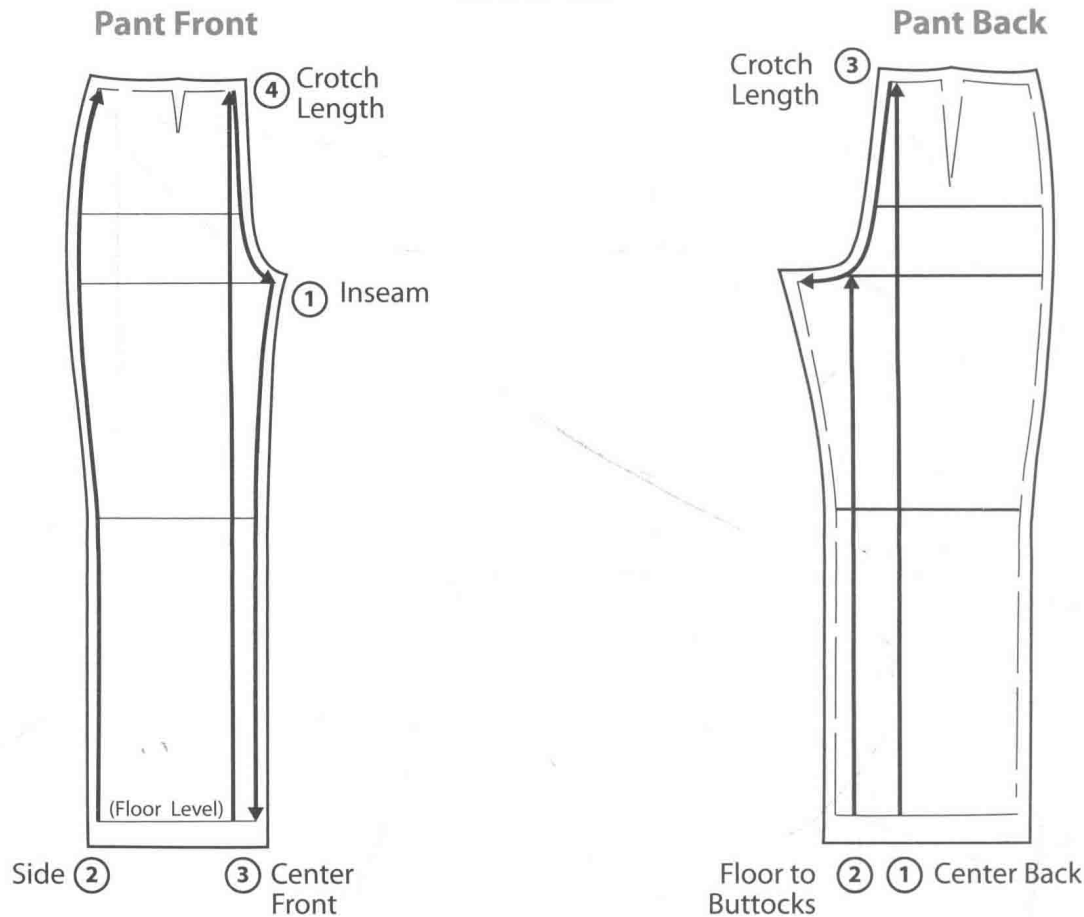


Table 10.3: Skirt Measurement Sequence and Positions

PANT MEASUREMENT SEQUENCE AND POSITIONS

LENGTHS



WIDTHS

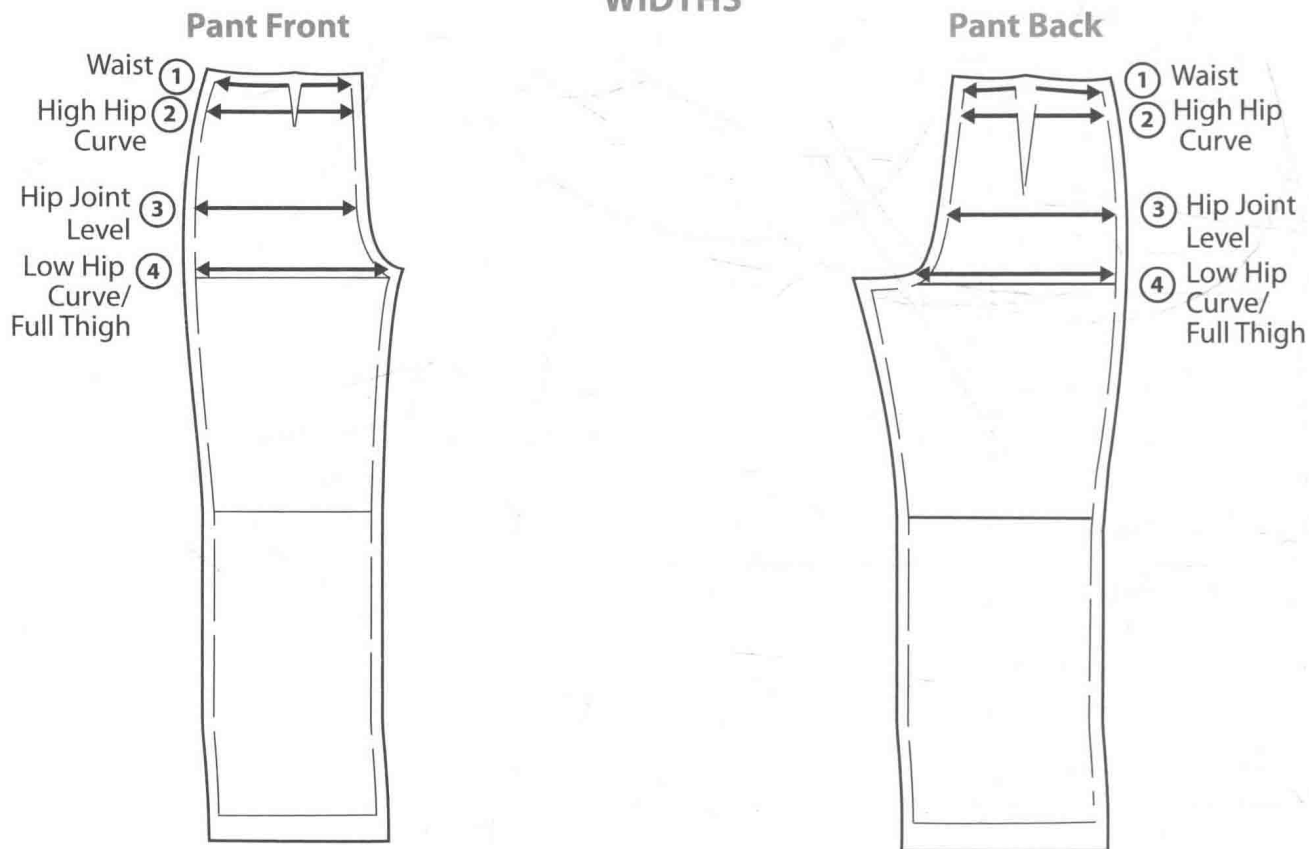


Table 10.4: Pant Measurement Sequence and Positions

Uneven Amounts of Length Change of Front or Back

- If the pattern side seam is correct *but* the center front length is too long or short, make the length adjustment evenly at the waist center front to the dart, tapering to the side.
- If the pattern center length is correct *but* the side length is too long or short, a change in the shape of the upper hip curve may be required to increase or decrease length—because as the curvature increases, so will the length.
- If the pattern back length from hip to waist is too long, *but* the length through the crotch is short, see #63 Sway Back, the center back length of a skirt or pant is shortened at the waistline—evenly to the dart, then tapered to the side seam. The pant pattern back crotch length is then restored below the hipline by a narrow wedge, creating a larger dart equivalent at the center back seam. The back crotch extension is also lengthened to accommodate buttocks depth.
- If the pattern crotch length is too long or short, adjust at the crotch extensions. (A cylindrical figure requires a longer extension. A flat oval figure requires a shorter extension.)
- If the pattern back crotch length is too short and the measurement from floor to buttocks is shorter than the inseam, lower the back crotch curve the amount of the difference. Measure the crotch length again and adjust at the extension.

Width Measurements on Skirts and Pants

See Table 10.3 and Table 10.4.

- *Pattern width measurements are taken and adjusted beginning at the top of the pattern and proceeding to the bottom.*
- If the pattern waistline is too narrow or wide, make the width change at the side, center, and/or at the darts.
- If the pattern width at the high hip is too narrow or wide, or the hip curve is more or less curved than average, make the width change at the side. Changing the curve at the side will shorten or lengthen the seam length.
- If the pattern is too narrow or wide only at hip level front or back, but not both, make a parallel width change at the pattern center for prominent abdomen or larger buttocks. Use a flexible curve to record the body contour of a prominent abdomen on pants.
- If the pattern width at front thigh level is too narrow, adjust the front only. For skirts, transfer half the waist dart to the hipline, then add width evenly to the hemline. For pants, transfer half the waist dart to the hipline, then to the center and inseam before tapering to zero near the knee.

Observations

- If the knees of the body bow in or out, see #58 Inward Rotation of Knee or #59 Outward Rotation of Knee. Adjust the leg of the pant pattern just below the crotch, pivoting from the center of the pattern leg to lengthen one side while shortening the other to accommodate the body. The grain of the pant leg is used, because the way the leg hangs is more important than the altered grain across the hip.

54. Longer Legs

FIGURE EVALUATION (A)

- The bones of the legs are longer than average/ideal.
- The increased length may occur above and/or below the knee.

FITTING PROBLEMS (B)

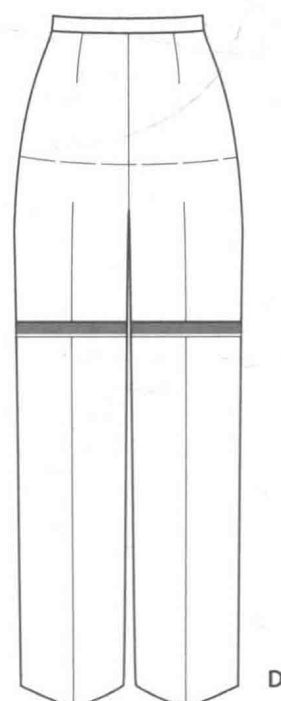
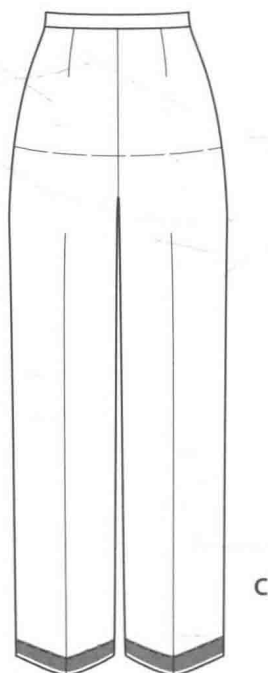
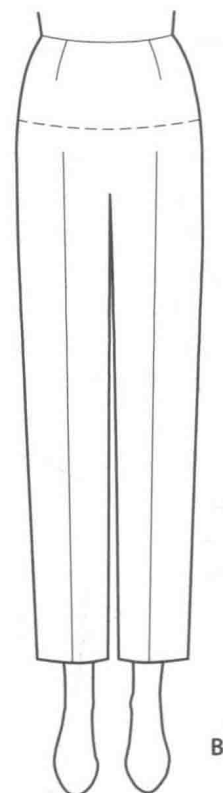
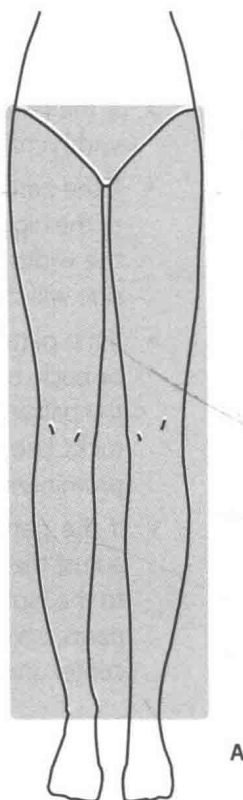
- The pant or skirt hem position is higher than desirable.
- The leg needs more fabric length above the knee and/or below the knee.

READY-TO-WEAR ALTERATION (C)

- Release and let down the hemline.

TRIAL GARMENT ALTERATION (D)

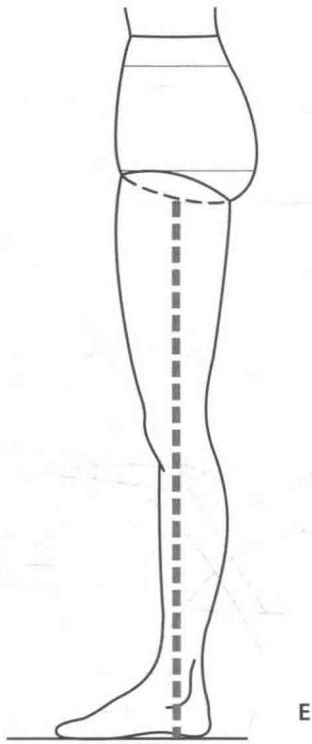
- Cut around the pant legs above the knee and/or below the knee.
- Insert fabric strips and spread as illustrated.



54. Longer Legs

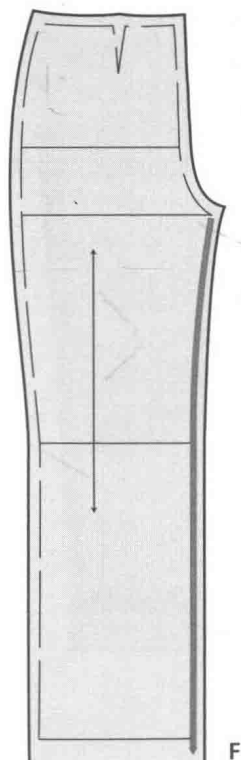
BODY MEASUREMENT POSITIONS (E)

- Inseam length, crotch to floor



PATTERN MEASUREMENT COMPARISON (F)

- Pattern inseam too short



54. Longer Legs

SEAM METHOD (G)

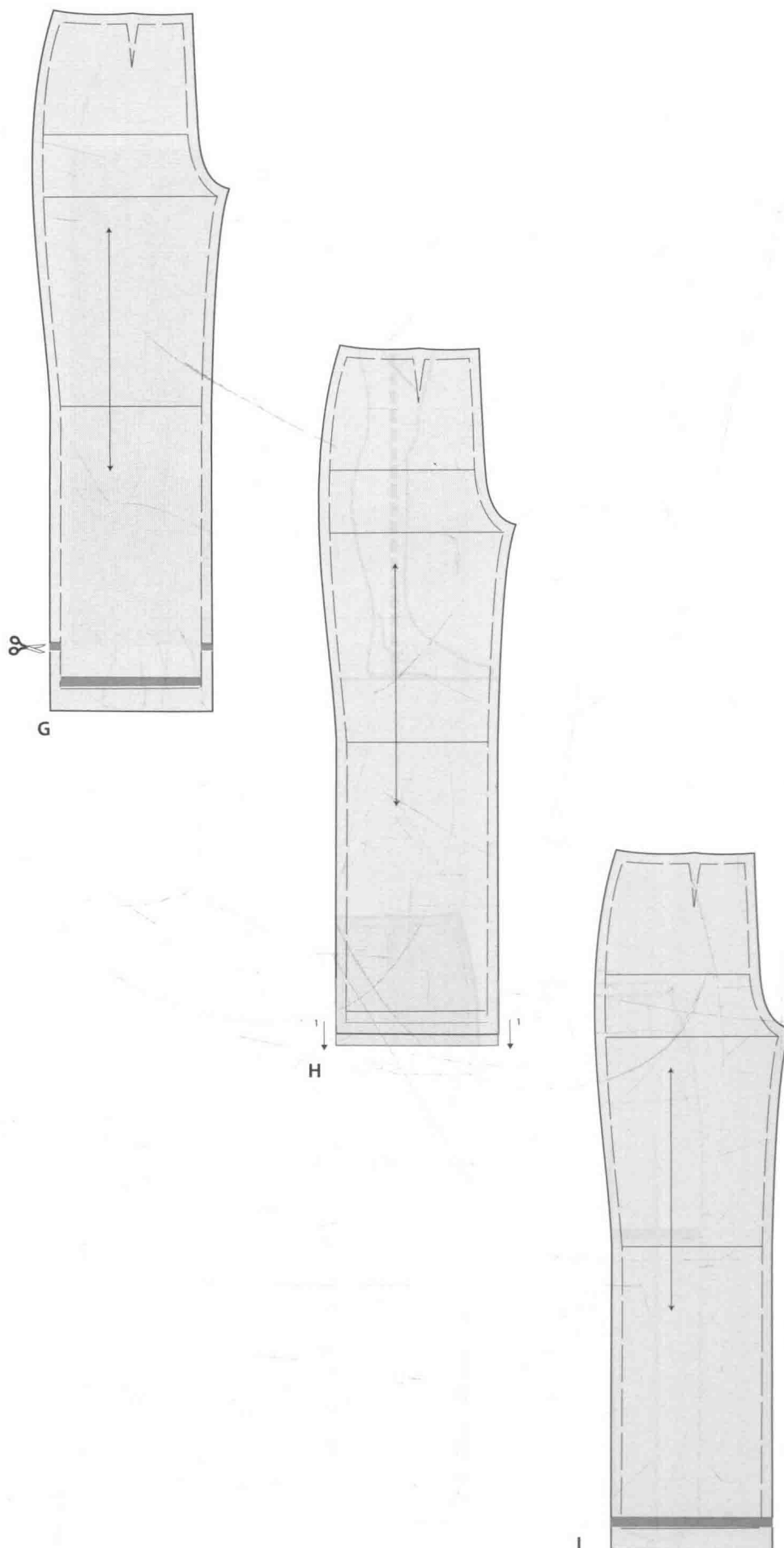
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

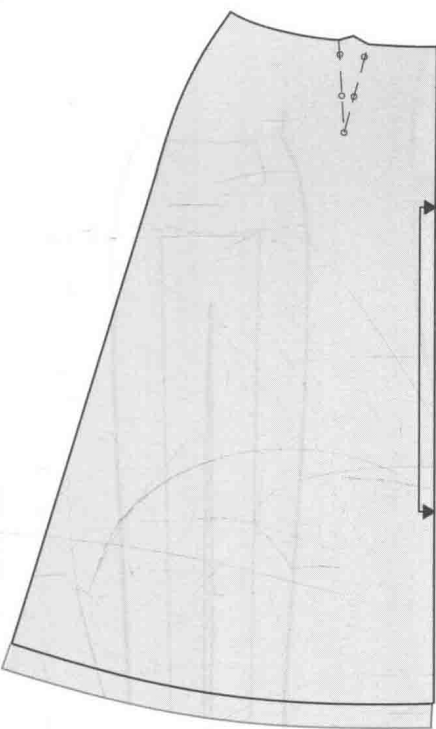
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

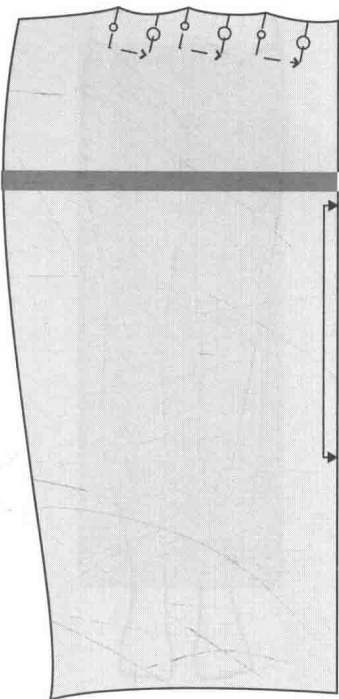


54. Longer Legs

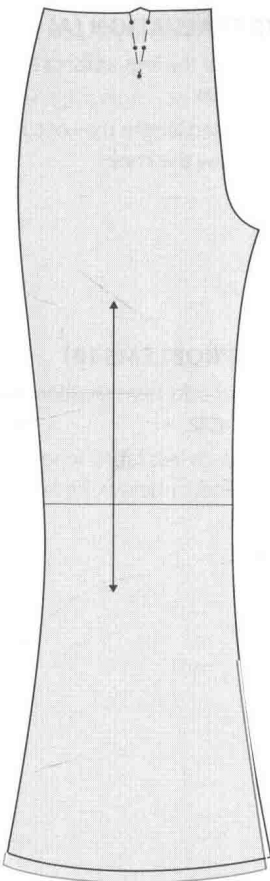
FASHION PATTERNS



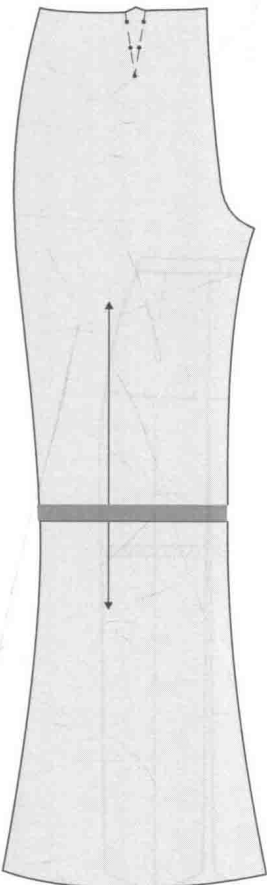
A-line Skirt



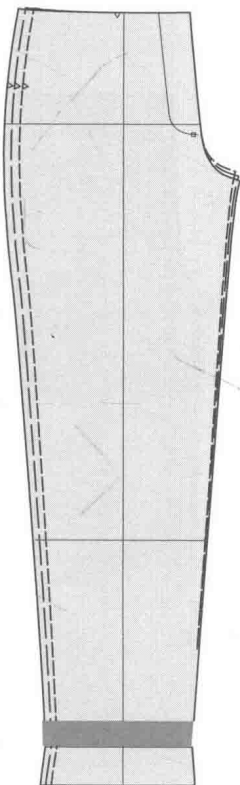
Tapered Skirt



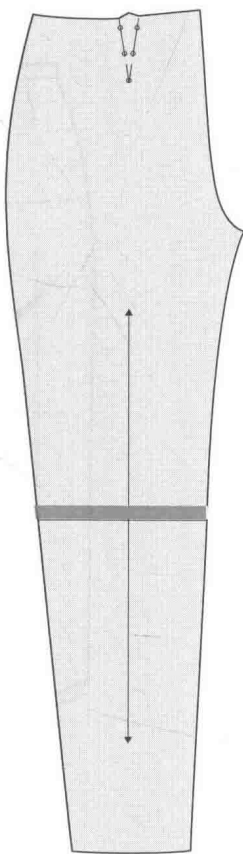
Flare Pant, Option 1



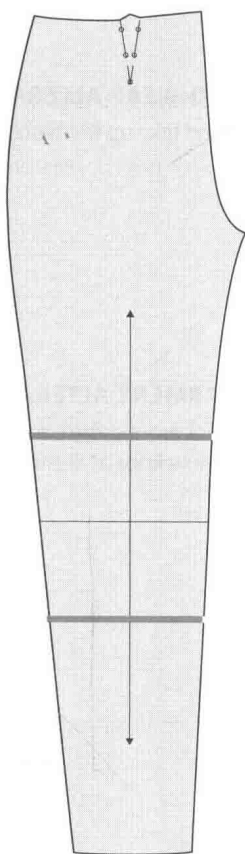
Flare Pant, Option 2



Tapered Pant, Option 1



Tapered Pant, Option 2



Tapered Pant, Option 3

55. Shorter Legs

FIGURE EVALUATION (A)

- The bones of the legs are shorter than average/ideal.
- The decreased length may occur above and/or below the knee.

FITTING PROBLEMS (B)

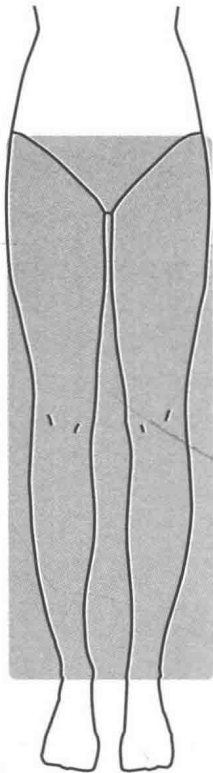
- The pant or skirt hem position is lower than desirable.
- The leg needs less fabric length above the knee and/or below the knee.

READY-TO-WEAR ALTERATION (C)

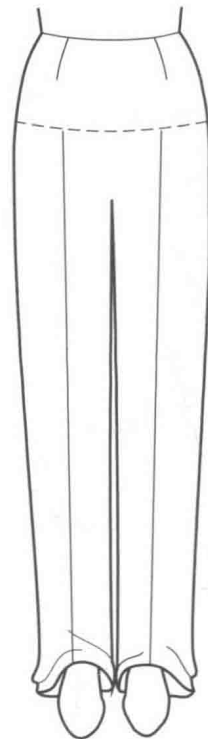
- Release and take up the hem.

TRIAL GARMENT ALTERATION (D)

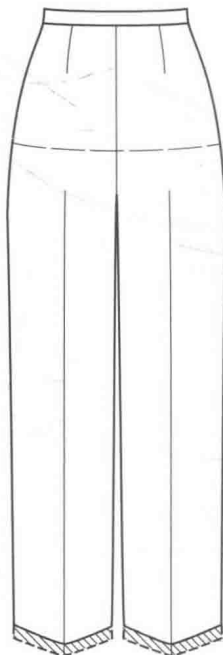
- Make a tuck around the pant legs above and/or below knee as illustrated.



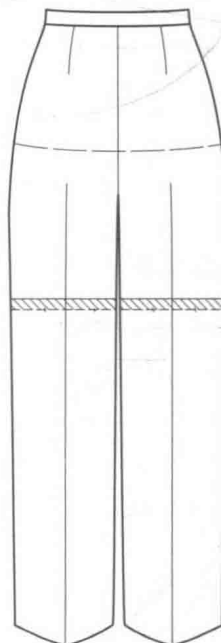
A



B



C

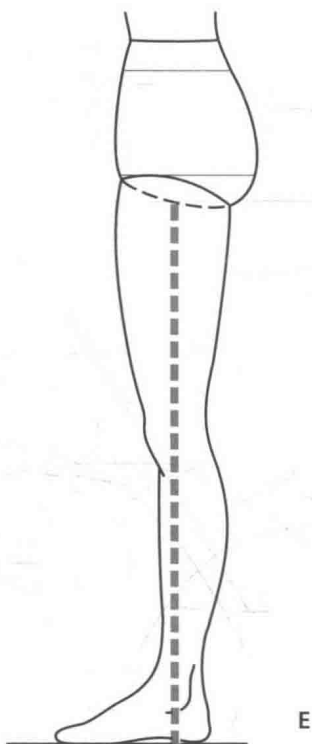


D

55. Shorter Legs

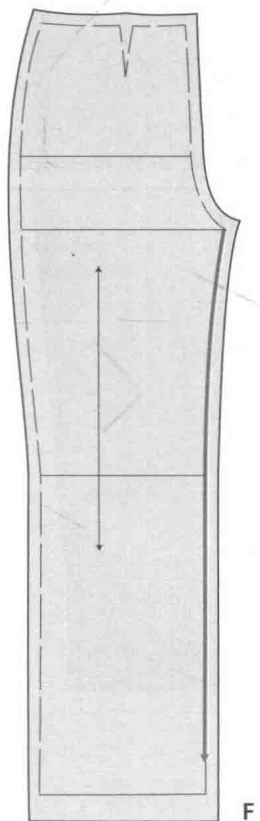
BODY MEASUREMENT POSITIONS (E)

- Inseam length, crotch to floor



PATTERN MEASUREMENT COMPARISON (F)

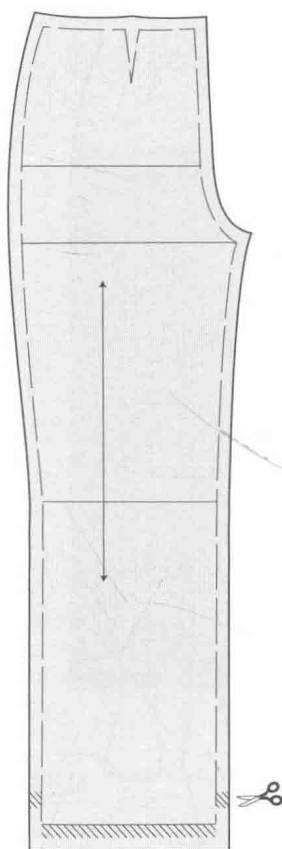
- Pattern inseam too long



55. Shorter Legs

SEAM METHOD (G)

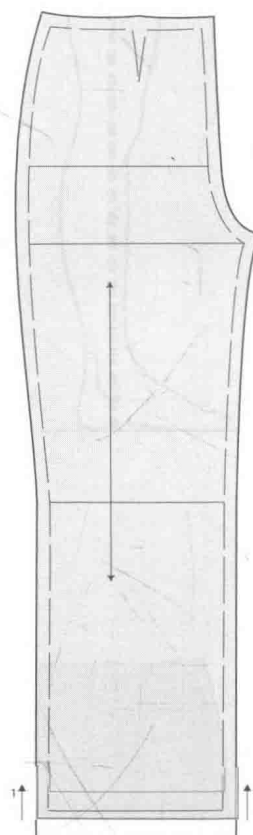
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



G

PIVOT/SLIDE METHOD (H)

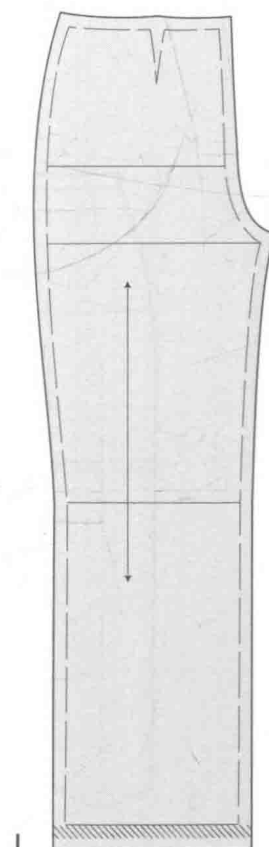
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H

SLASH METHOD (I)

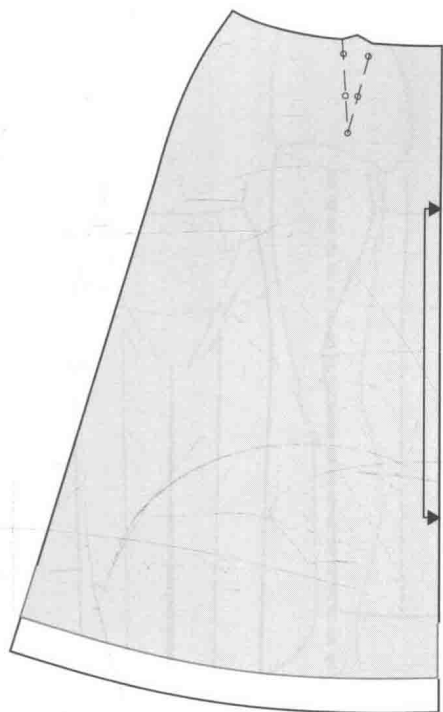
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



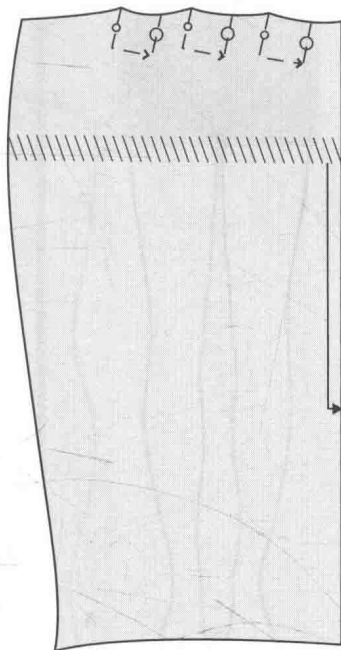
I

55. Shorter Legs

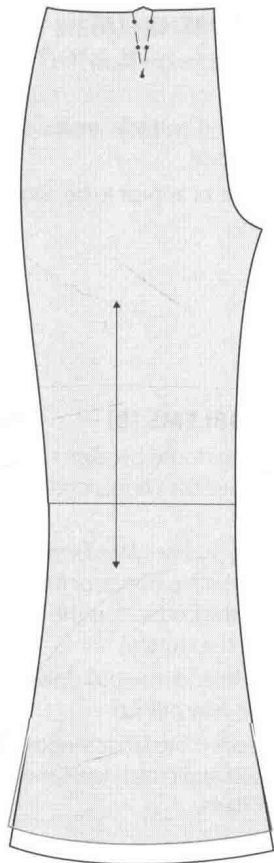
FASHION PATTERNS



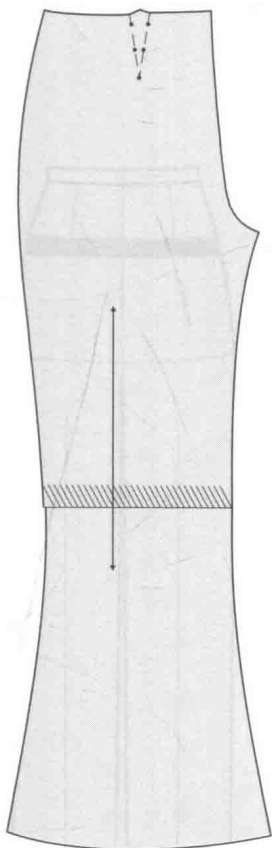
A-line Skirt



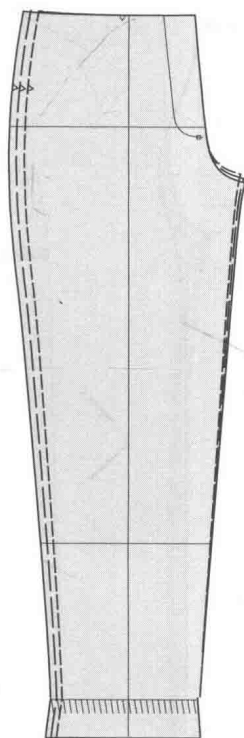
Tapered Skirt



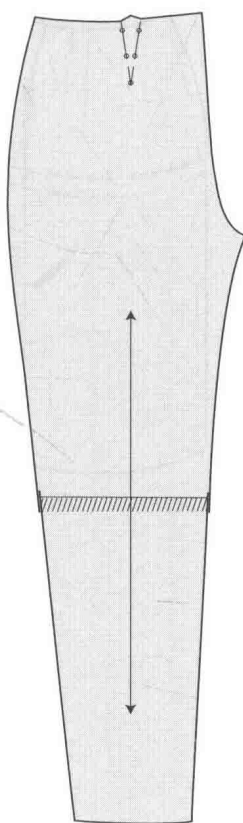
Flare Pant, Option 1



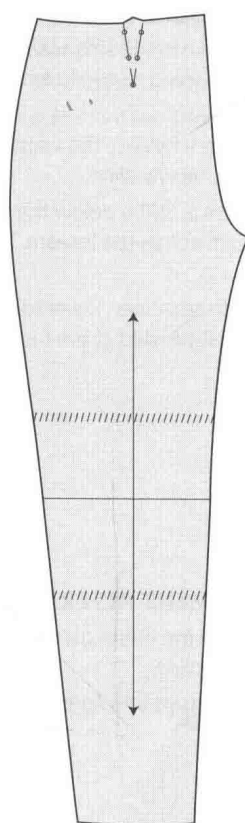
Flare Pant, Option 2



Tapered Pant, Option 1



Tapered Pant, Option 2



Tapered Pant, Option 3

56. Longer Lower Torso

FIGURE EVALUATION (A)

- The pelvic area is longer than average/ideal.
- The hip curve and buttocks are lower than average/ideal.
- The legs can be, or appear to be, shorter in proportion.

FITTING PROBLEMS (B)

- The fabric hangs loose because the shaping is above the corresponding body curves.
- On pants, diagonal wrinkles form from the crotch to the hip bones, or from the crotch to the buttocks as the fabric binds against the crotch.
- The pant waistband may pull down or the back hem may pull up.
- The torso needs more fabric length between waist and crotch level and longer back darts.

READY-TO-WEAR ALTERATIONS (C)

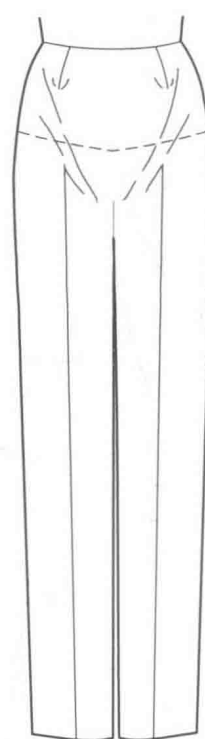
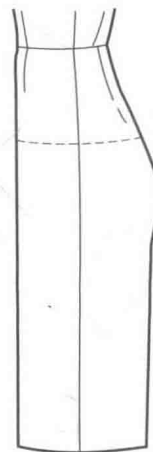
- On a skirt, take in the side seams to lower the shaping to conform to body contours.
- Pants option 1: Release the waistband, and let out the waistline.
- Pants option 2: Stitch below the original crotch seam across the inseam. Trim the seam.
- If the crotch seam was lowered, restore leg length as needed at the hem.

TRIAL GARMENT ALTERATION (D)

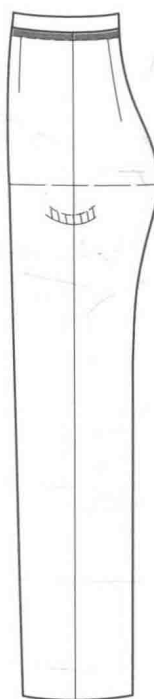
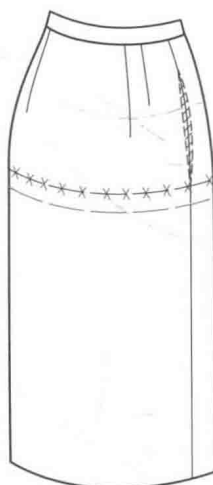
- Slash around the entire garment above the hipline.
- Insert fabric strips and spread as illustrated.



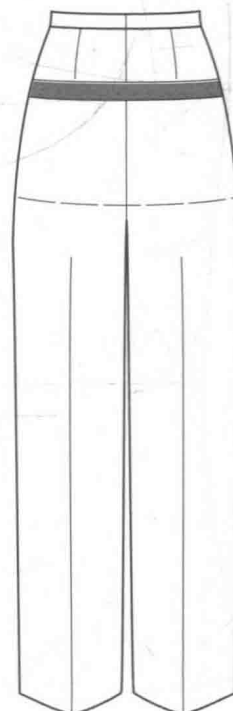
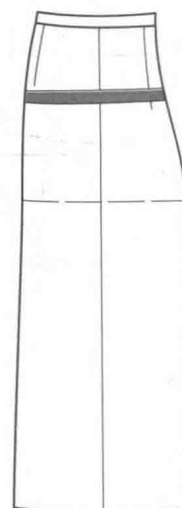
A



B

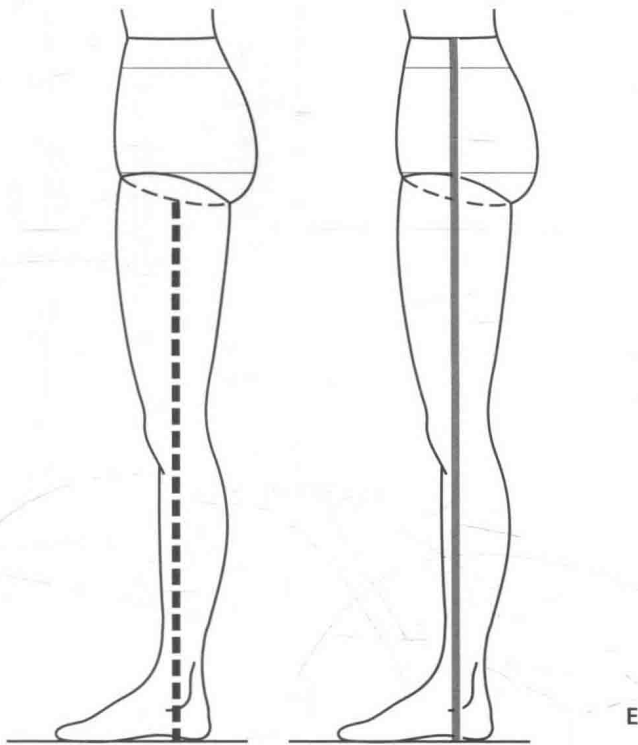


C



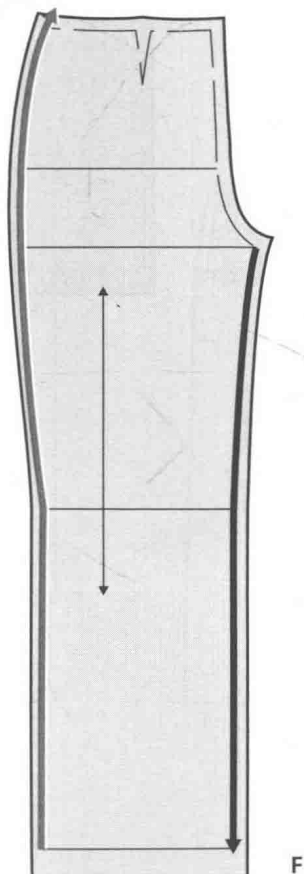
D

56. Longer Lower Torso



BODY MEASUREMENT POSITIONS (E)

- Inseam, crotch to floor
- Side length, floor to waist



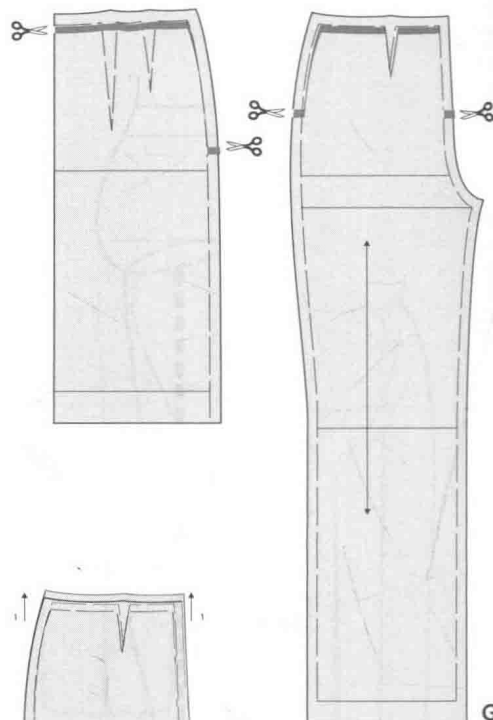
PATTERN MEASUREMENT COMPARISON (F)

- Pattern front inseam correct
- Pattern side seam too short

56. Longer Lower Torso

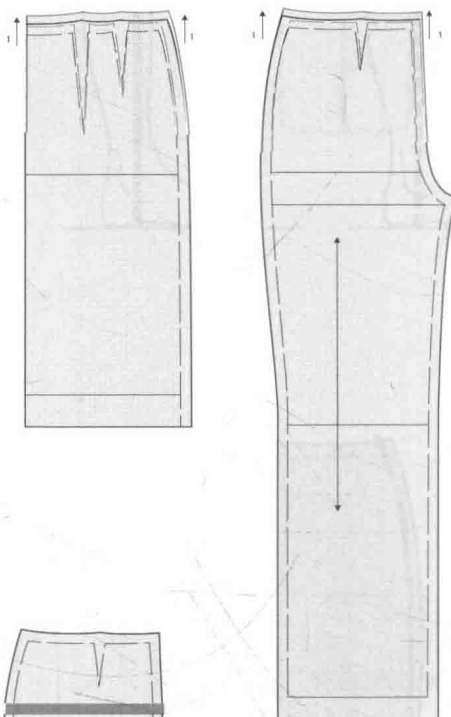
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



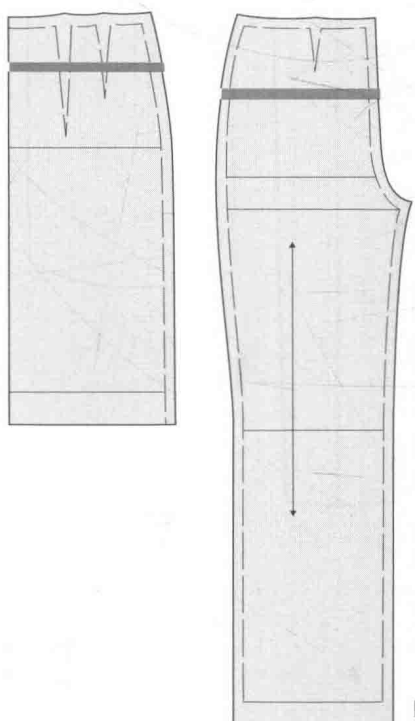
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

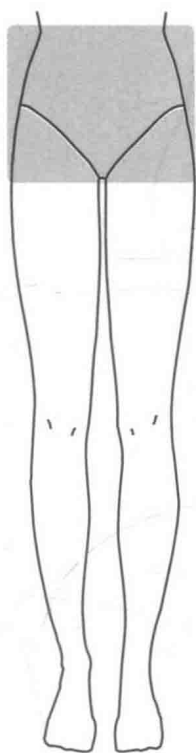


SLASH METHOD (I)

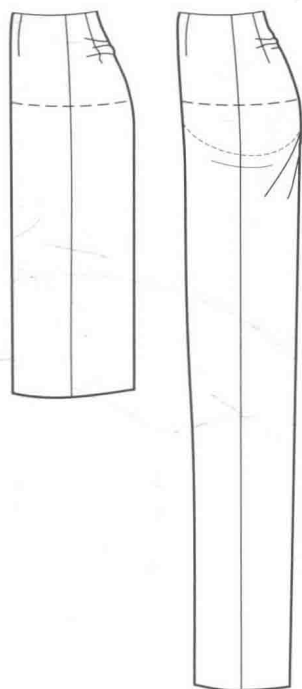
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



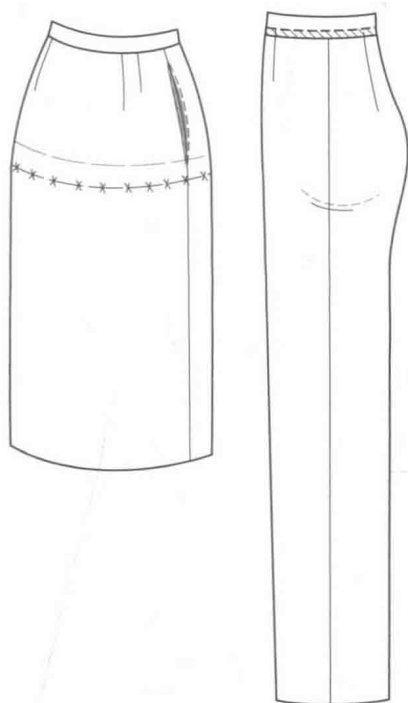
57. Shorter Lower Torso



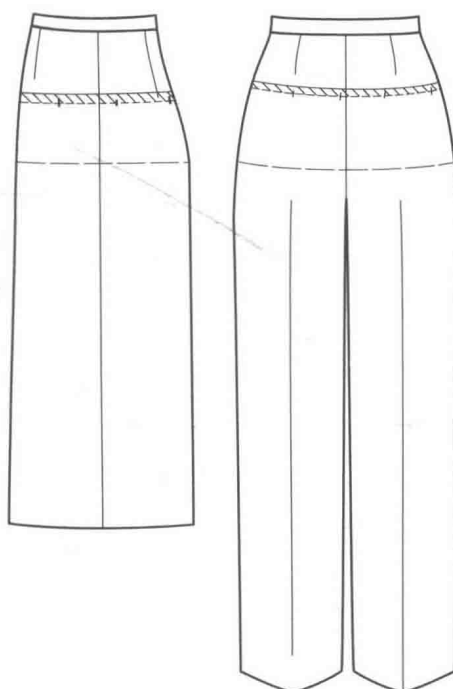
A



B



C



D

FIGURE EVALUATION (A)

- The pelvic area is shorter than average/ideal.
- The hip curve and buttocks shaping is higher than average/ideal.
- The legs can be, or appear to be, longer in proportion.

FITTING PROBLEMS (B)

- The fabric is snug at the hip and side because the shaping is below the corresponding body curves.
- Horizontal wrinkles may form across the back darts.
- On pants, the crotch inseam is below the body level.
- The torso needs less fabric length between the waist and buttocks, and shorter back darts.

READY-TO-WEAR ALTERATION (C)

- On a skirt, let out the side seams to raise the position of the shaping.
- On pants, release the waistband, and take up the waistline seam.

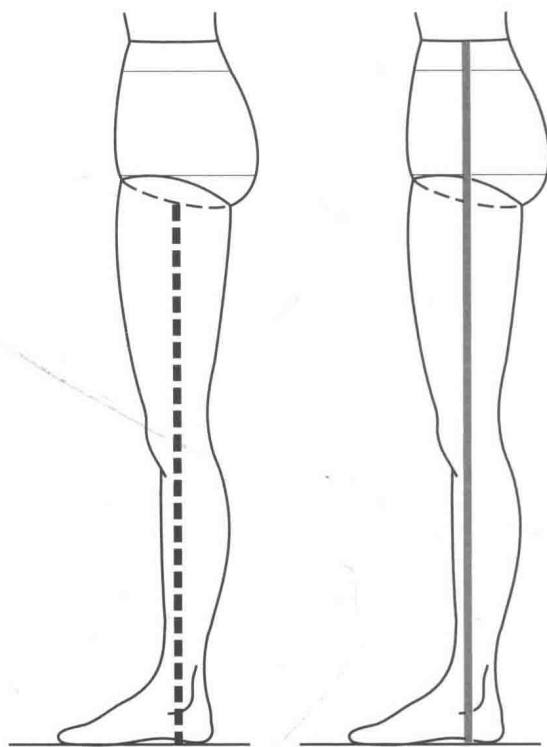
TRIAL GARMENT ALTERATION (D)

- Make a tuck around the entire garment just below the front darts.

57. Shorter Lower Torso

BODY MEASUREMENT POSITIONS (E)

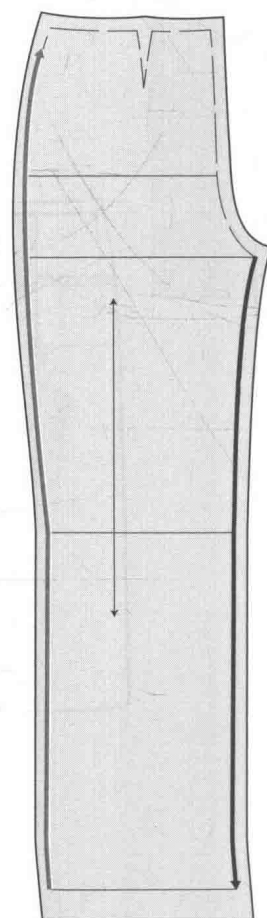
- Inseam, crotch to floor
- Side length, floor to waist



E

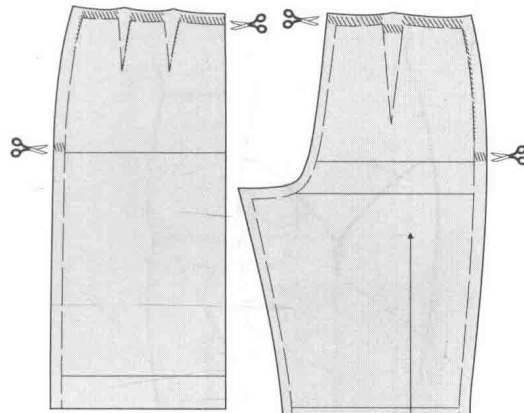
PATTERN MEASUREMENT COMPARISON (F)

- Pattern front inseam length correct
- Pattern side seam too long



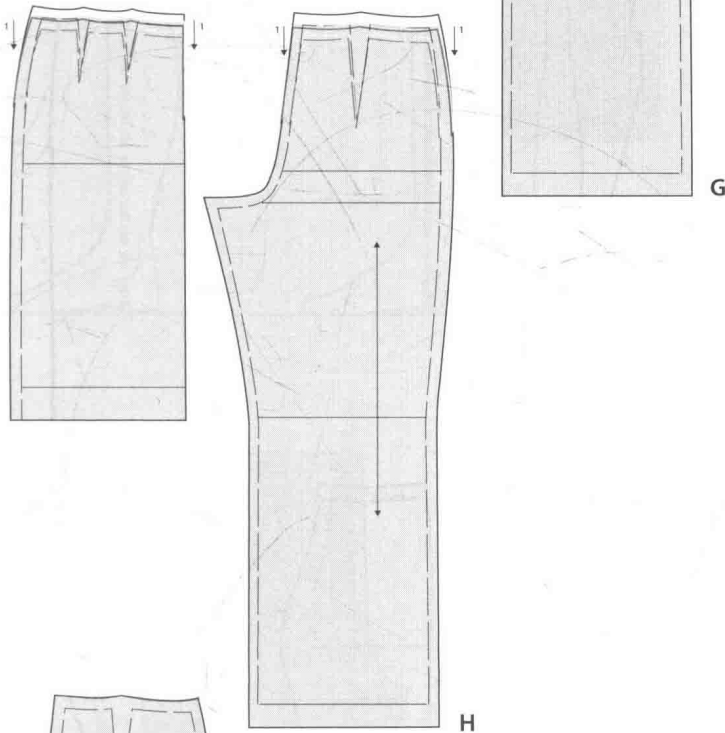
F

57. Shorter Lower Torso



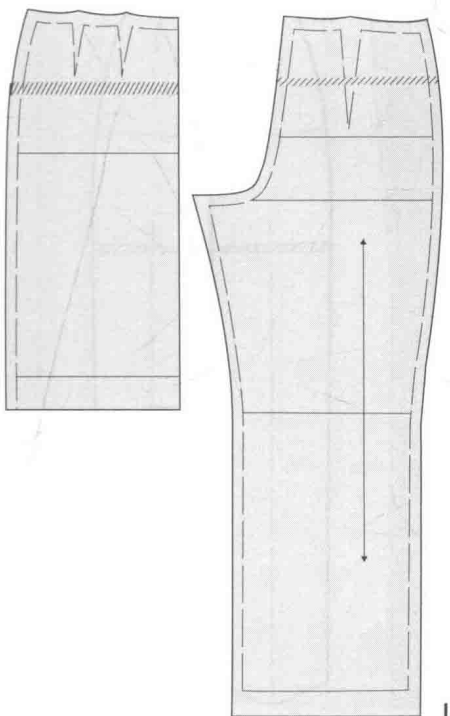
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

58. Inward Rotation of Knee

FIGURE EVALUATION (A)

- The leg bones bow in toward the knee.
- The toes often point outward to improve balance.
- Leg length increases on the inside of the leg and decreases on the outside.

FITTING PROBLEMS (B)

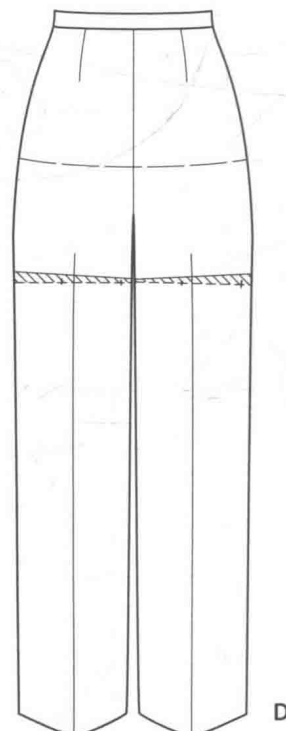
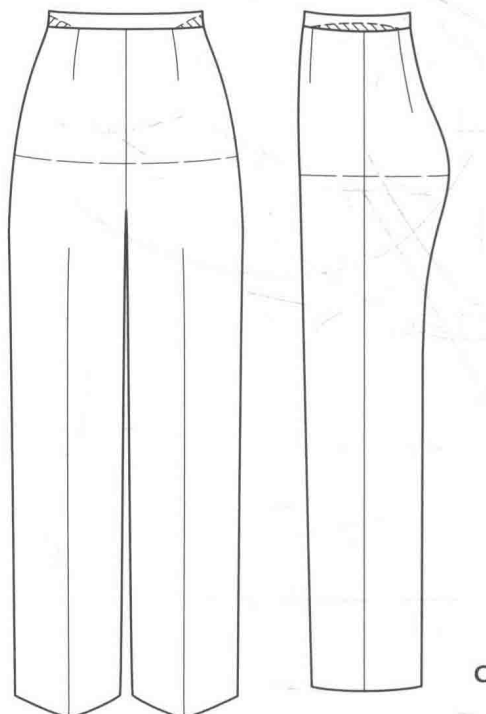
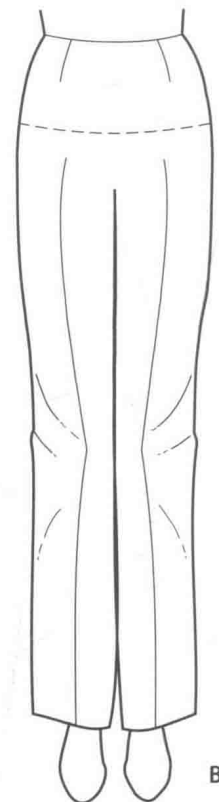
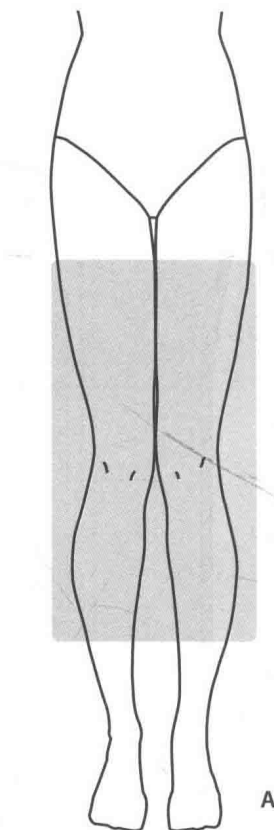
- Fabric at the knee is tight at the inseam and loose at the side seam.
- Diagonal wrinkles form across the side seam above and below the knee.
- The hemline may rise at the inseam.
- More fabric length is needed at the inseam and less at the side seam.

READY-TO-WEAR ALTERATION (C)

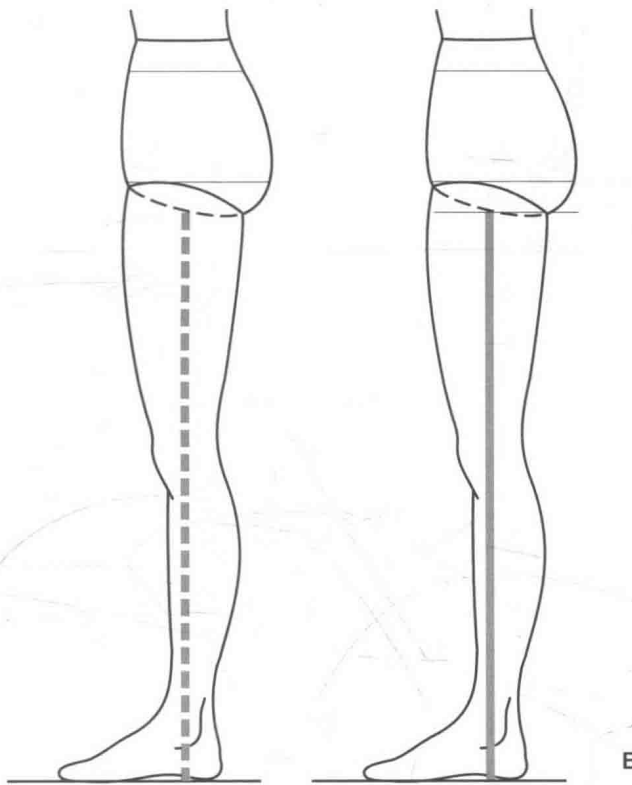
- Release the waistband at the sides from front dart to back dart.
- Lift/take up the side waistline seams until the grainline hangs plumb.

TRIAL GARMENT ALTERATION (D)

- Make a tuck at the side seam as illustrated, until the grainline hangs plumb.

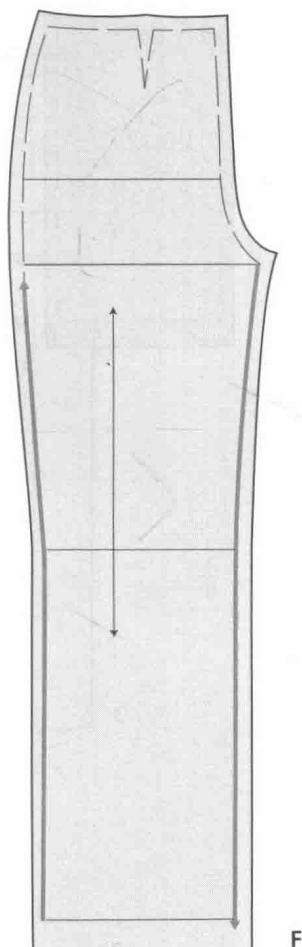


58. Inward Rotation of Knee



BODY MEASUREMENT POSITIONS (E)

- Inseam length, crotch to floor
- Side length, floor to crotch level (unique measurement)



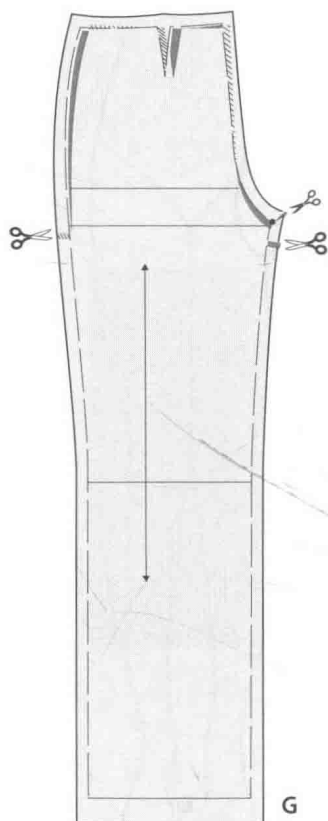
PATTERN MEASUREMENT COMPARISON (F)

- Pattern front inseam too short
- Pattern side seam to crotch level too long

58. Inward Rotation of Knee

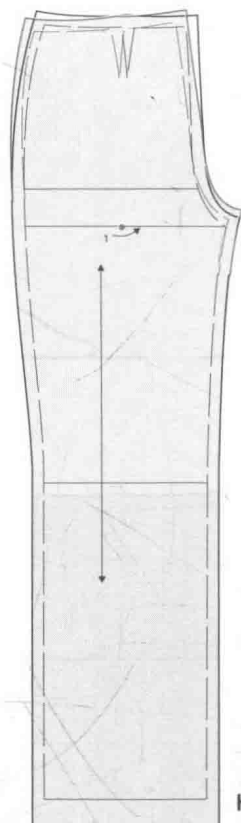
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



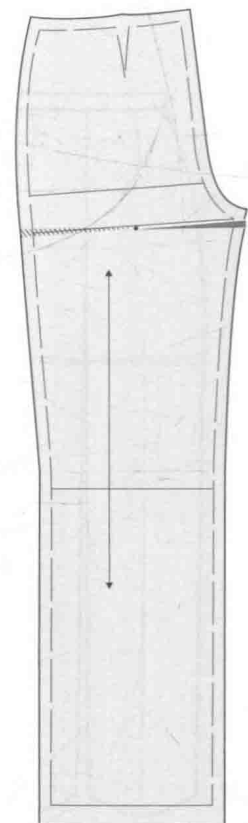
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

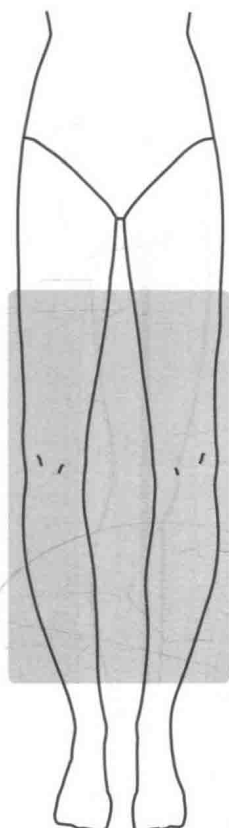


SLASH METHOD (I)

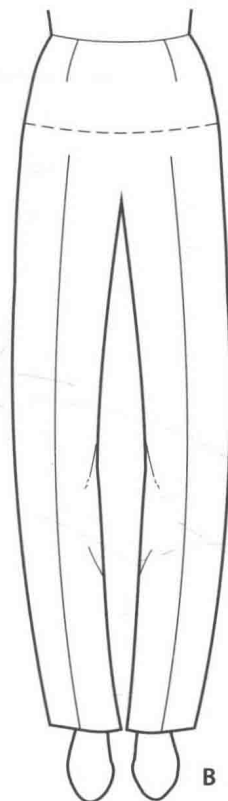
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



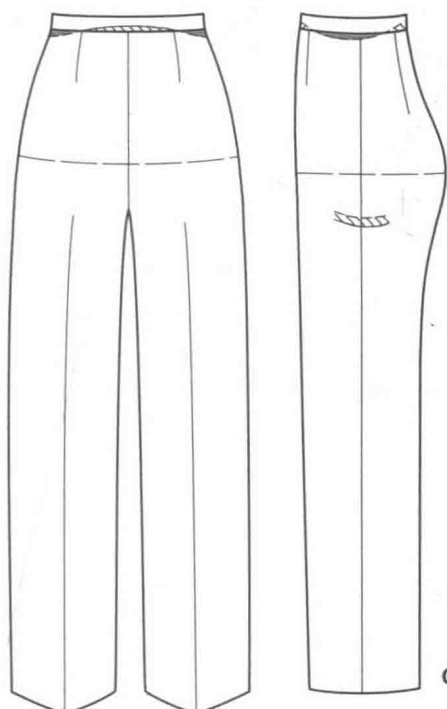
59. Outward Rotation of Knee



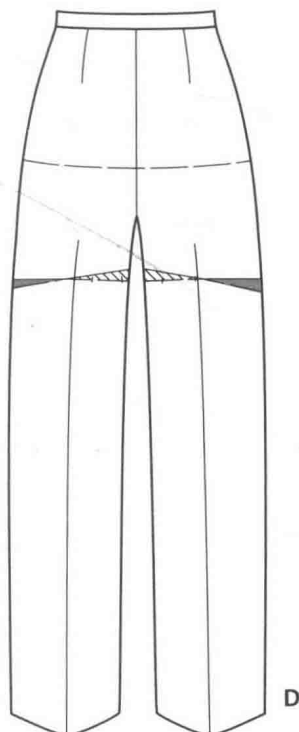
A



B



C



D

FIGURE EVALUATION (A)

- The leg bones bow outward at the knee and/or calf.
- The toes often point inward to improve balance.
- Leg length decreases on the inside of the leg and increases on the outside.

FITTING PROBLEMS (B)

- Usually, only the fit of pants is affected. A long slim skirt may be an exception.
- Fabric at the knee/calf is tight at the side seam and loose at the inseam.
- Diagonal wrinkles may form across the inseam in the knee/calf area.
- The hemline may rise at the side.
- More fabric length is needed at the side seam and less at the inseam.

READY-TO-WEAR ALTERATION (C)

- Release the waistband across center front and back.
- Take up the waistline seam at centers until the grainline hangs plumb.
- If needed, lower the crotch seam at the inseam.

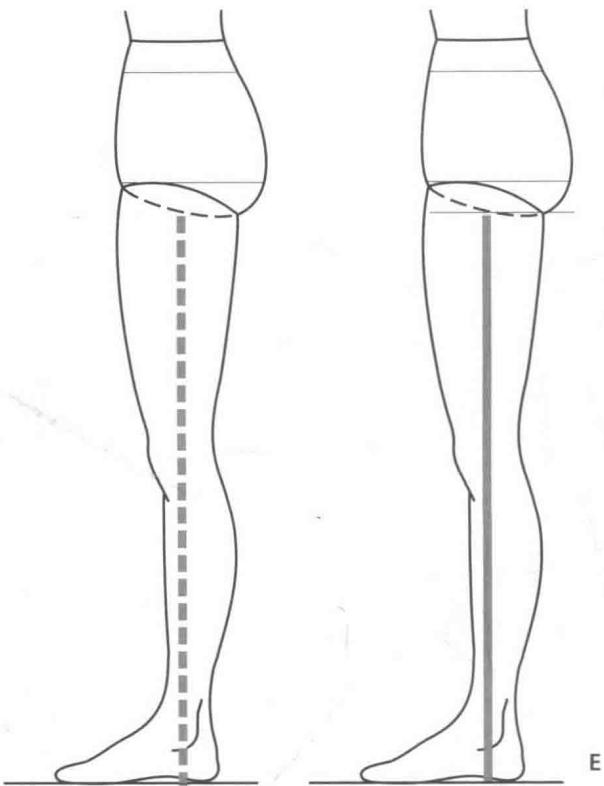
TRIAL GARMENT ALTERATION (D)

- Slash across the side seam just below the crotch to the crease line.
- Insert fabric strips and spread as illustrated.
- Make a tuck at the inseam as illustrated until the grainline hangs plumb.

59. Outward Rotation of Knee

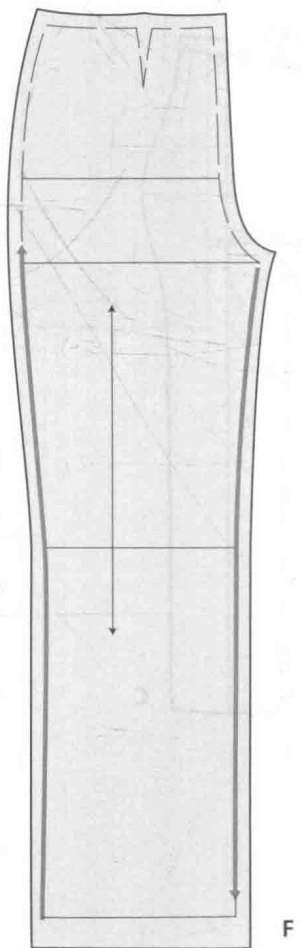
BODY MEASUREMENT POSITIONS (E)

- Inseam, crotch to floor
- Side, floor to crotch level (unique measurement)

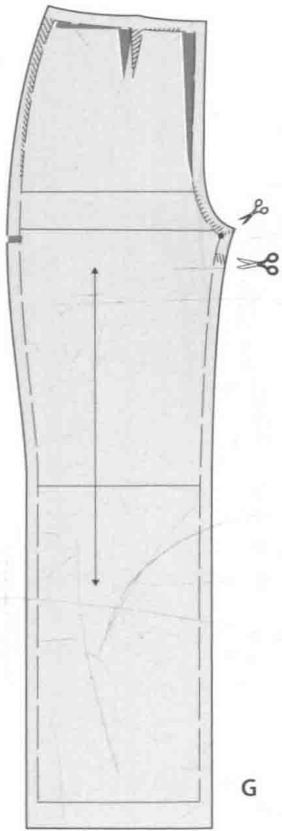


PATTERN MEASUREMENT COMPARISON (F)

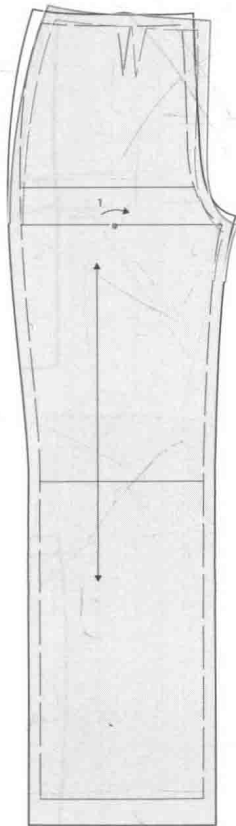
- Pattern inseam too long
- Pattern side seam to crotch level too short



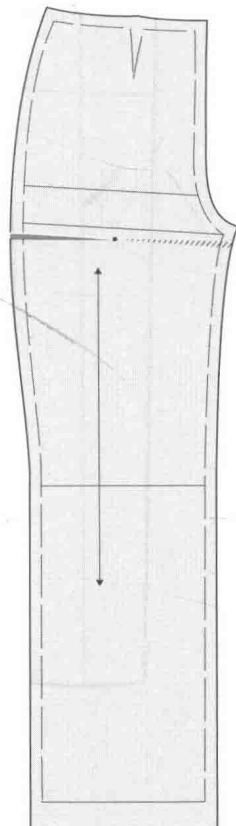
59. Outward Rotation of Knee



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

60. Hyperextended Knees/Prominent Calves

FIGURE EVALUATION (A)

- The bones of the lower leg appear to bow backward.
- There may be more weight deposit and/or muscle development than average/ideal.
- May be due to "locked"/hyperextended knees.
- The prominent calves are more apparent in combination with flat buttocks.

FITTING PROBLEMS (B)

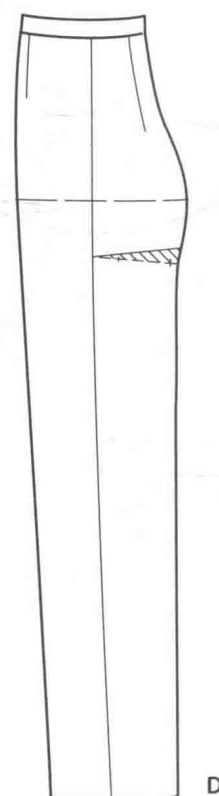
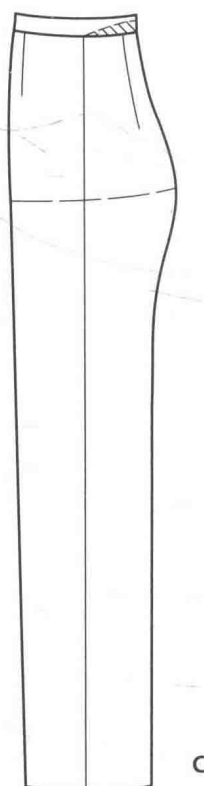
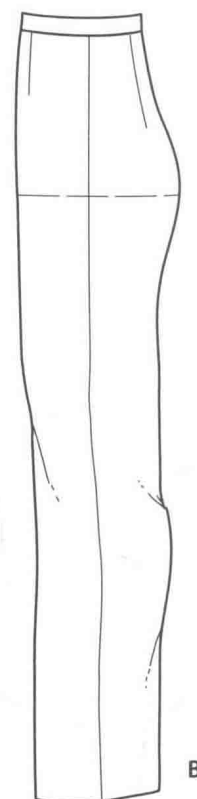
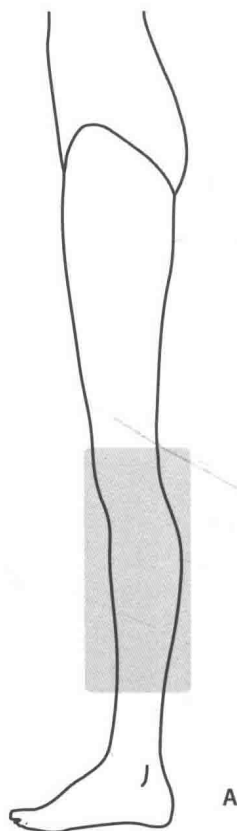
- Pants and some slim long skirts are affected.
- A horizontal fold forms above the calves.
- The side seam may bow toward the back at the calves.
- Less fabric length is needed from buttocks to calves.
- A deeper back crotch curve is needed.

READY-TO-WEAR ALTERATION (C)

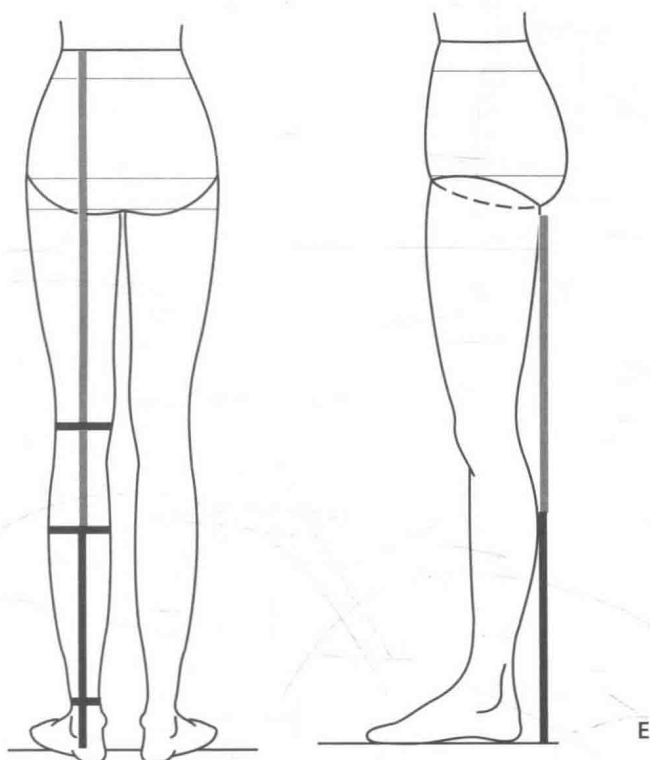
- Release and take up the waistband across the back.
- The fold at the calf shows the approximate amount to take up.
- Deepen the back crotch, decreasing length from buttock to calf.
- Restore width at the waist by returning darts to the original size at the new waistline.

TRIAL GARMENT ALTERATION (D)

- Make a tapered horizontal tuck under the buttocks to decrease excess length.
- Fabric should hang vertically over calves.

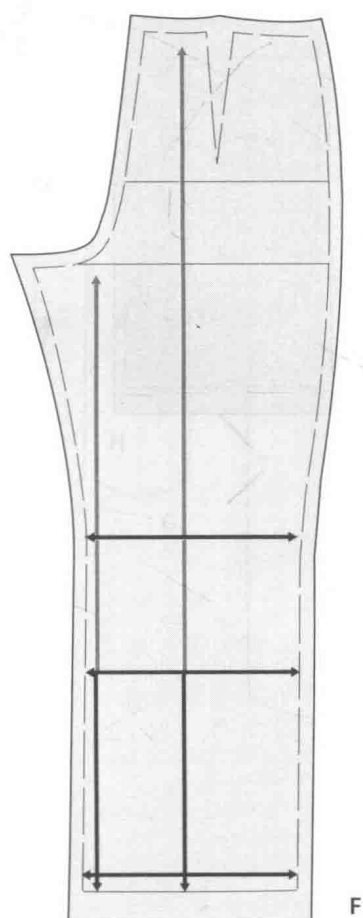


60. Hyperextended Knees/Prominent Calves



BODY MEASUREMENT POSITIONS (E)

- Back length, waist over buttocks and calves to floor (unique measurement)
- Calf height, floor to calf
- Crotch height, floor to crotch level
- Knee
- Calf
- Ankle



PATTERN MEASUREMENT COMPARISON (F)

- Observation is important to this variation
- Pattern back length along leg center hem to waist too long
- Pattern calf height correct
- Pattern crotch height, hem to crotch curve too long
- Pattern knee correct
- Pattern calf correct
- Pattern ankle correct

60. Hyperextended Knees/Prominent Calves

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

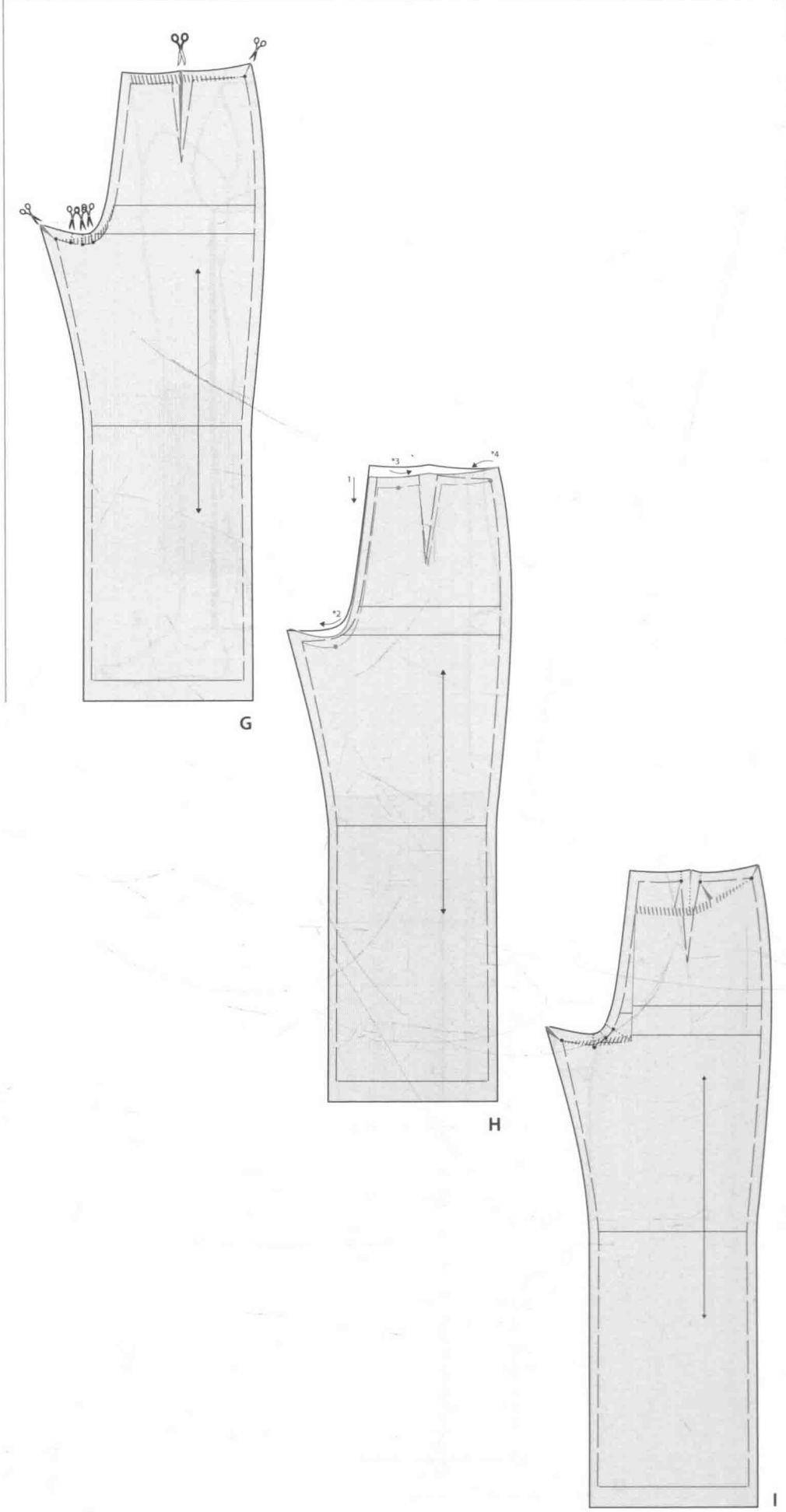
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

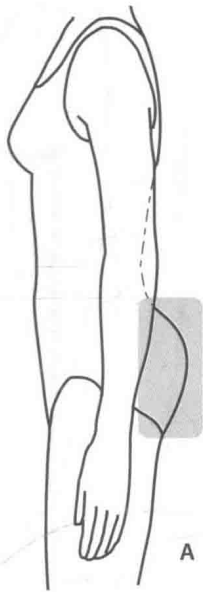
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

FASHION PATTERN

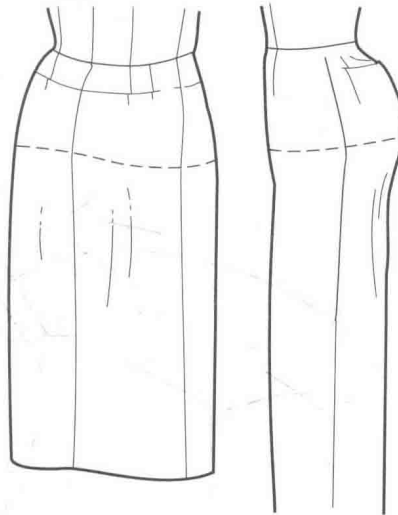


Men's pant

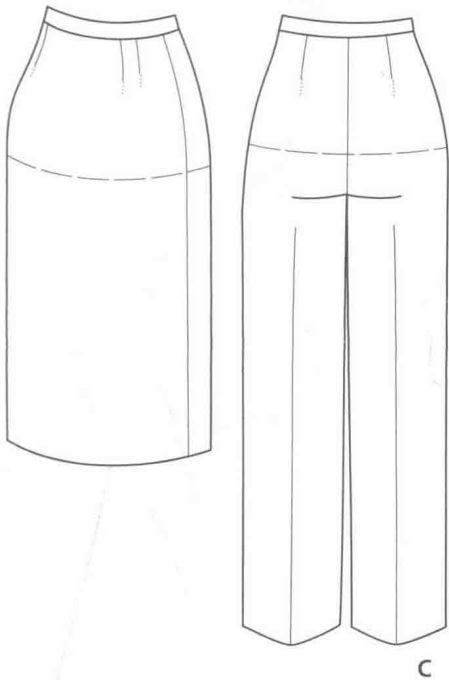
61. High Buttocks Contour



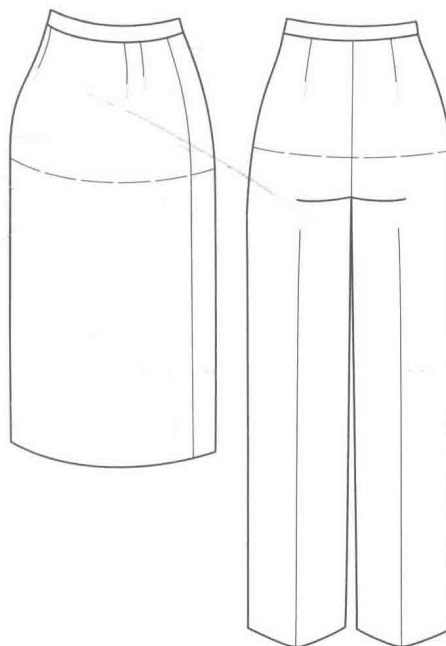
A



B



C



D

FIGURE EVALUATION (A)

- The buttocks contour is higher and more prominent than average/ideal.
- The distance from the crown of the buttocks to the waist is shorter than average/ideal.

FITTING PROBLEMS (B)

- Less fabric is needed between the waist and the crown of the buttocks.
- A tapered horizontal wrinkle forms below the waistline.

READY-TO-WEAR ALTERATION (C)

- Release the back waistline darts.
- Shorten darts to correctly position them above the buttocks.
- If the hip crown is too high for darts, convert the darts to gathers.

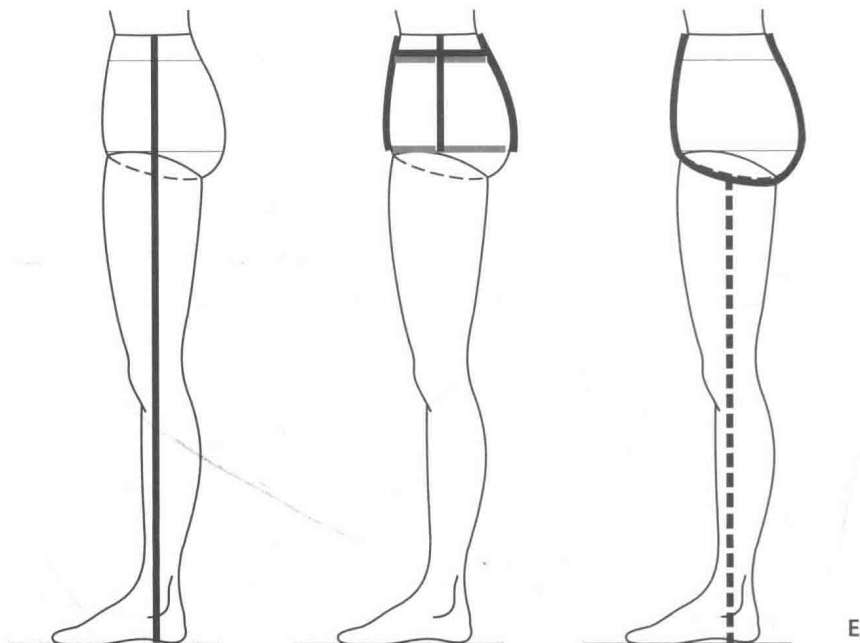
TRIAL GARMENT ALTERATION (D)

- Proceed as for Ready-to-Wear.

61. High Buttocks Contour

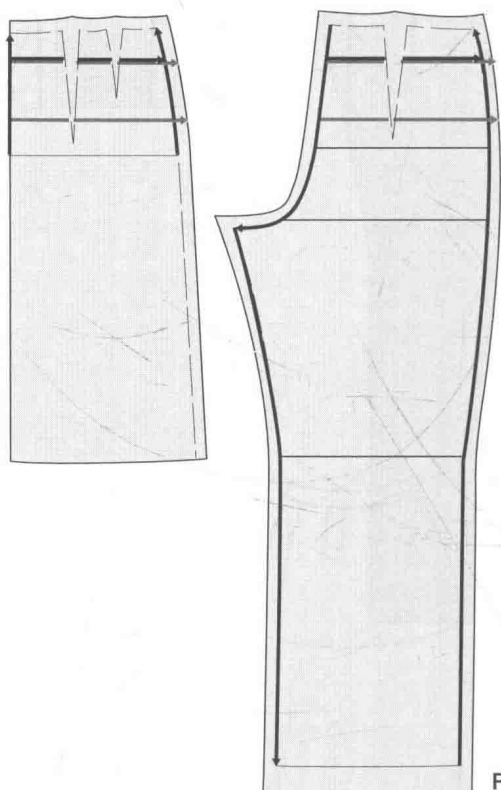
BODY MEASUREMENT POSITIONS (E)

- Side length, floor to waist
- Hip depth, waist at side center front, and center back to hip joint level
- Inseam, crotch to floor
- Crotch curve, front and back
- High hip, front and back, 1 to 3 inches below waist
- Hip, width front and back, at fullest width (may be higher than joint level)



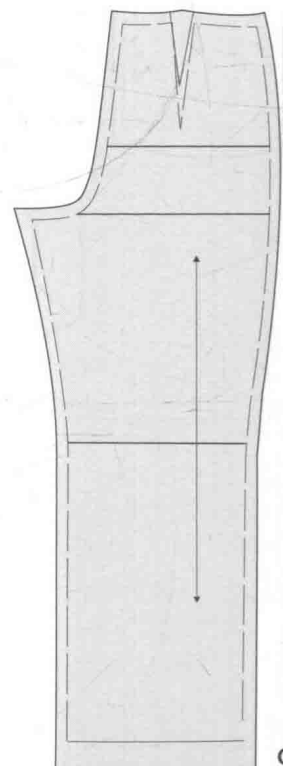
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side length correct
- Pattern inseam correct
- Pattern hip depth too long/low
- Pattern high hip correct or too narrow
- Pattern hip width at fullest position too narrow



SEAM METHOD (G)

- The alteration is accomplished by simply shortening the back dart(s) as illustrated or by converting the dart(s) to gathers.



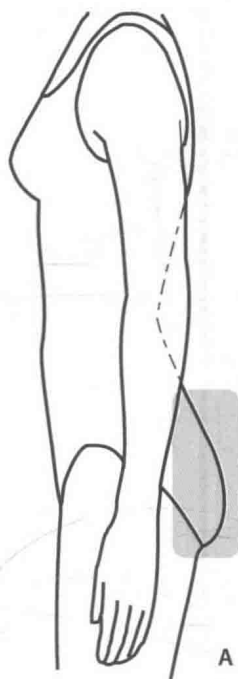
PIVOT/SLIDE METHOD

- Proceed as for Seam Method.

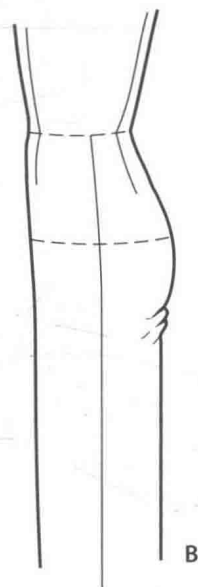
SLASH METHOD

- Proceed as for Seam Method.

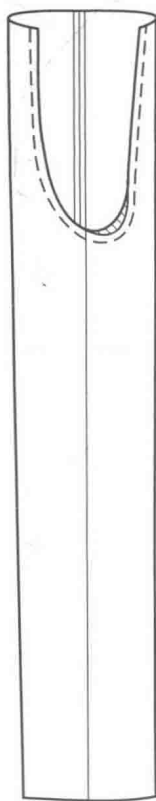
62. Low Buttocks Curve



A



B



C

FIGURE EVALUATION (A)

- The buttocks contour is lower than average/ideal and drops below the crotch of the body.
- There may be more weight deposit and/or less muscle tone than average/ideal.

FITTING PROBLEMS (B)

- Only the fit of pants is affected.
- Horizontal wrinkles form below the buttocks.
- The waistline and hip fitting line drop at center back.
- The back crotch seam may pull into the body.
- Pants need a deeper back crotch curve and a shallower front crotch curve to conform to the body.

READY-TO-WEAR ALTERATION (C)

- The wrinkle below the buttocks indicates the amount the crotch seam needs to be lowered.
- Re-stitch the crotch curve seam from back to front hiplines, deepening the curve in back and narrowing in front.

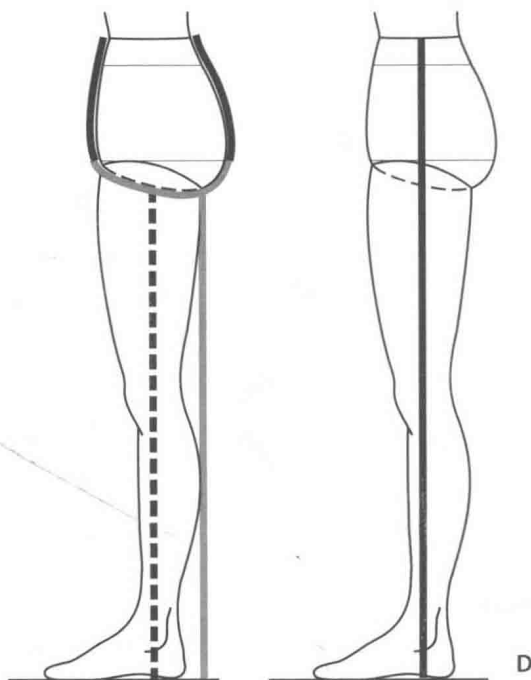
TRIAL GARMENT ALTERATION

- Proceed as for Ready-to-Wear.

62. Low Buttocks Curve

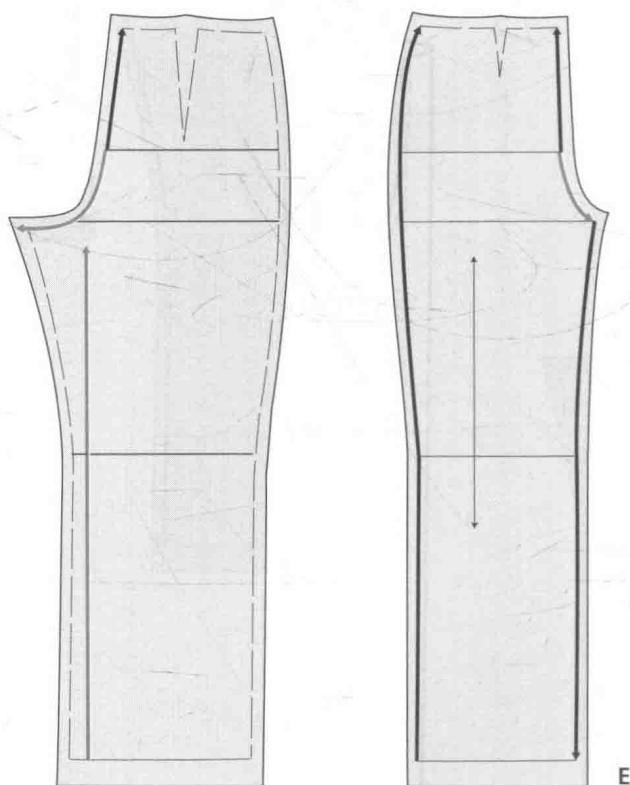
BODY MEASUREMENT POSITIONS (D)

- Inseam, crotch to floor
- Side, floor to waist
- Buttocks height, floor to buttocks
- Crotch length from inseam to hipline, and to waist, front and back

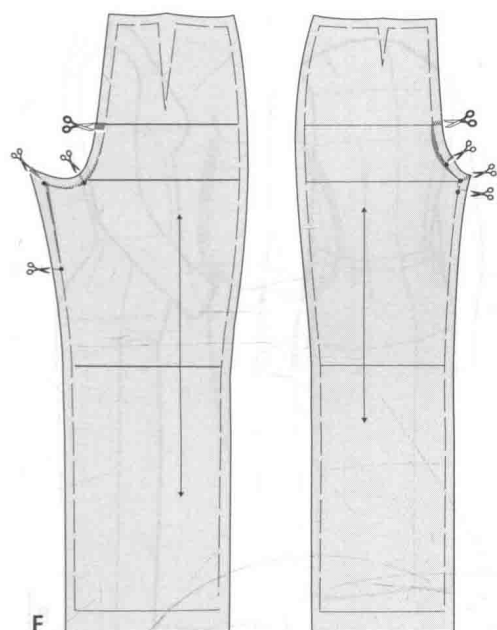


PATTERN MEASUREMENT COMPARISON (E)

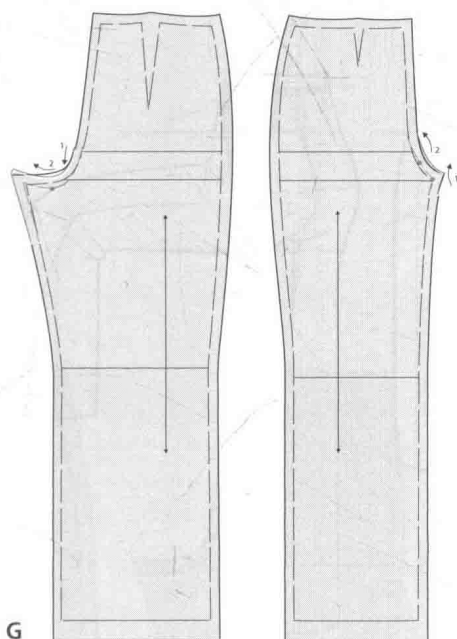
- Pattern front inseam correct
- Pattern side correct
- Pattern buttock height too high/long
- Pattern back crotch length too short between inseam and hipline
- Pattern front crotch length correct but too curved



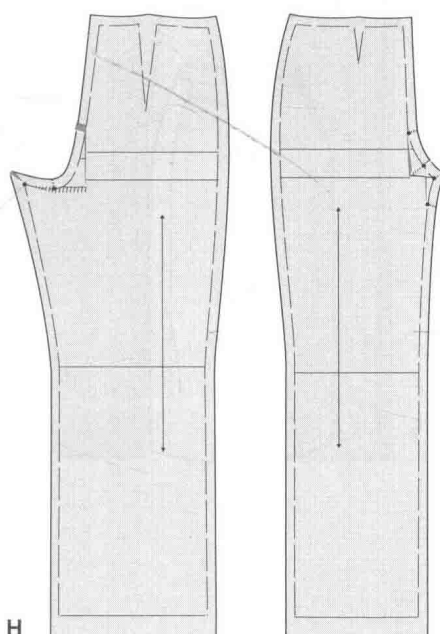
62. Low Buttocks Curve



F



G



H

SEAM METHOD (F)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (G)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (H)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

63. Sway Back

FIGURE EVALUATION (A)

- The top of the pelvis tilts forward, lifting the buttocks up and outward, and increasing depth through the body.
- The groin area indents more than average/ideal.
- The distance from the waist to the upper curve of the buttocks decreases.
- Improved posture may lessen or eliminate sway back.

FITTING PROBLEMS (B)

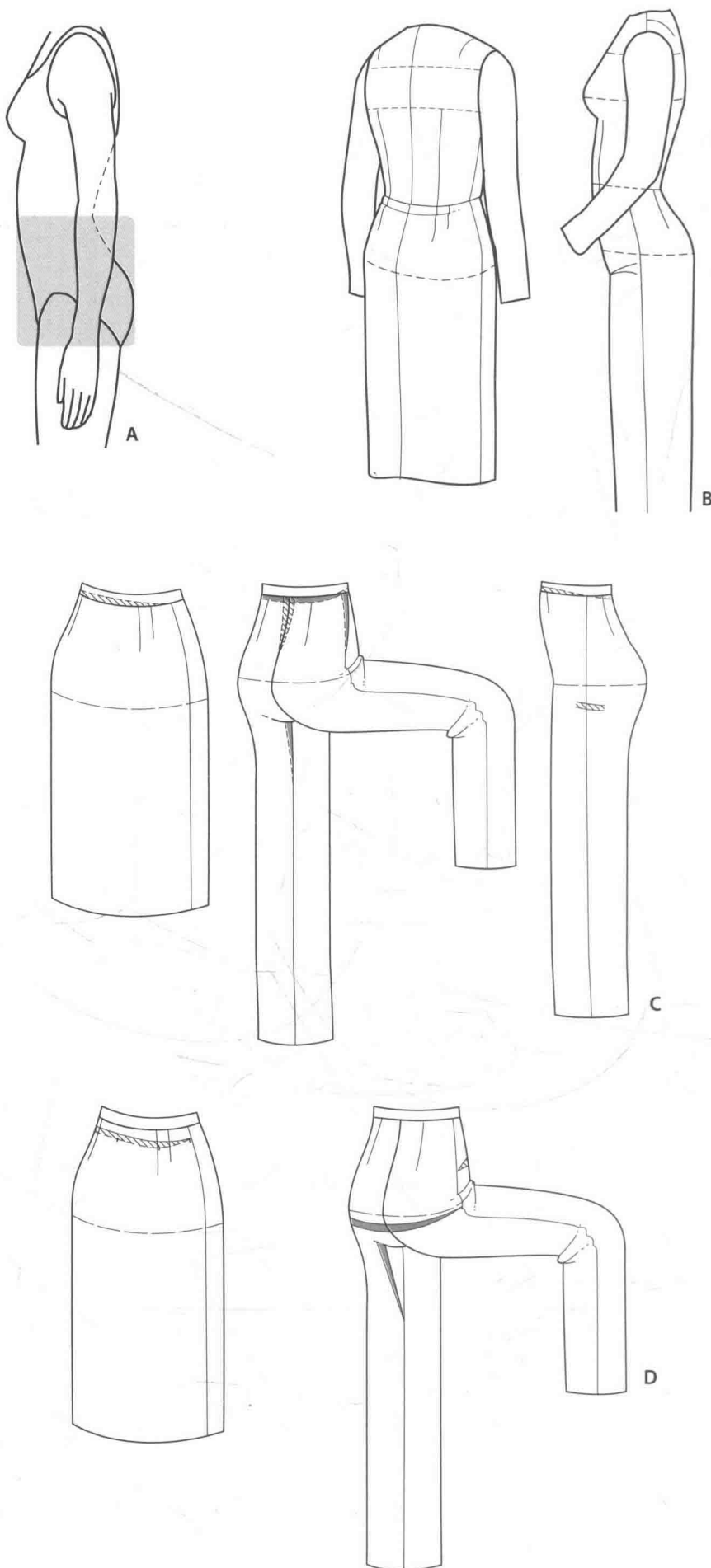
- On a skirt, the back needs less fabric between the waist and the hip.
- A horizontal fold forms below the waist center back.
- The hemline rises and extends outward from the body.
- On pants, fabric binds against the crotch and pulls tight under the buttocks.
- Diagonal wrinkles may form radiating from the front crotch/inseam.
- The waistband may be pulled down at center back.
- More width is needed in the crotch extensions.

READY-TO-WEAR ALTERATION (C)

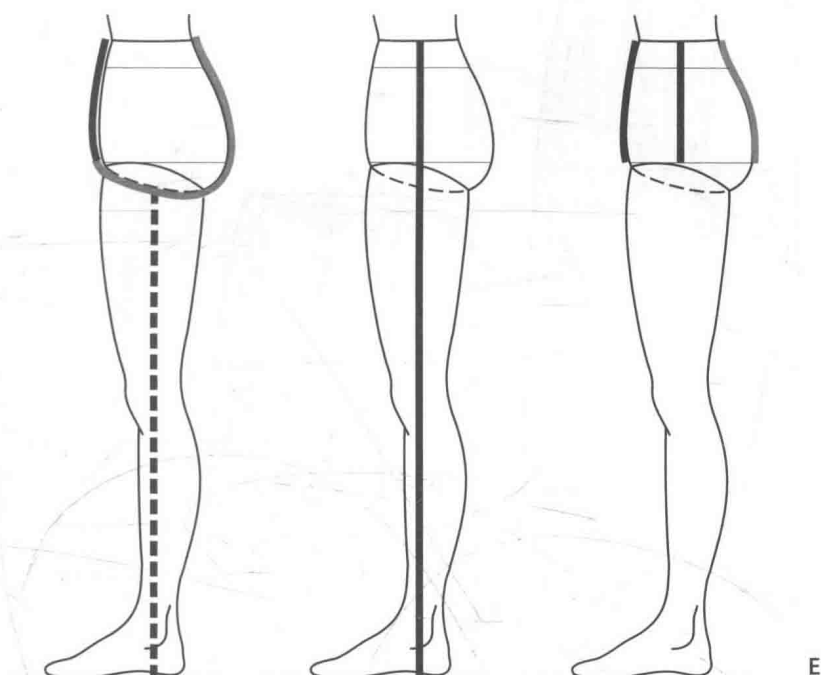
- On a skirt, release the back waistband.
- Take up the waistline in back, and taper to the sides.
- If the hemline rises at center back, release the side seams and let out over the hips before adjusting the waistline level.
- On pants, release the crotch seam and down the inseam.
- Let out the inseam, tapering to mid-thigh.
- For additional length, let out the waistline, then let out the sides and center back seam to restore needed width at the waist and high hip.
- If more length is needed, drop the crotch curve seam, tapering into the original near the hipline, front and back.

TRIAL GARMENT ALTERATION (D)

- On a skirt, make a horizontal tuck, just below the waist in back.
- If the hemline rises in back, release the side seams and adjust the width.
- On pants, if pants pull down at center back, slash below the hip.
- To increase the width of the back crotch extension, slash from crotch to inseam.
- Insert fabric strips and spread as illustrated.

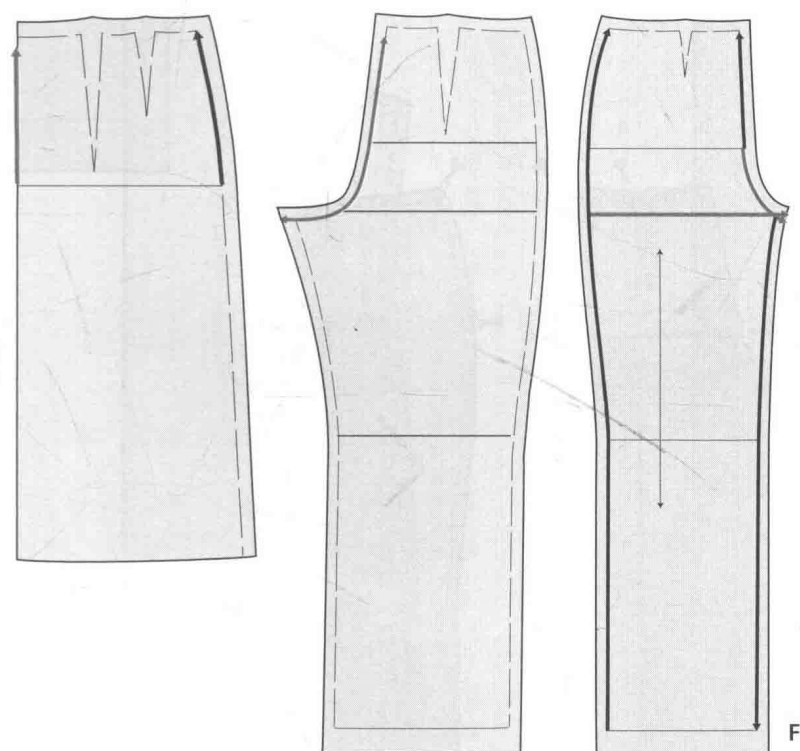


63. Sway Back



BODY MEASUREMENT POSITIONS (E)

- Inseam, crotch to floor
- Side, floor to waist
- Hip depth, waist to hip at side, center front, and center back
- Crotch length, front back, inseam to hip



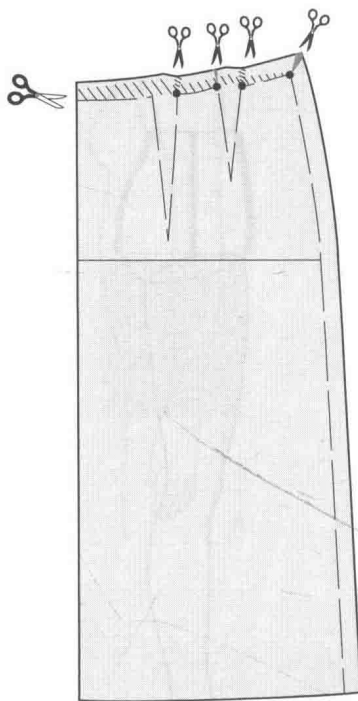
PATTERN MEASUREMENT COMPARISON (F)

- Pattern inseam correct
- Pattern hip depth at side and center front correct
- Pattern hip depth at center back too long
- Pattern back crotch, inseam to hip, too short
- Pattern front crotch, inseam to hip, correct or slightly short

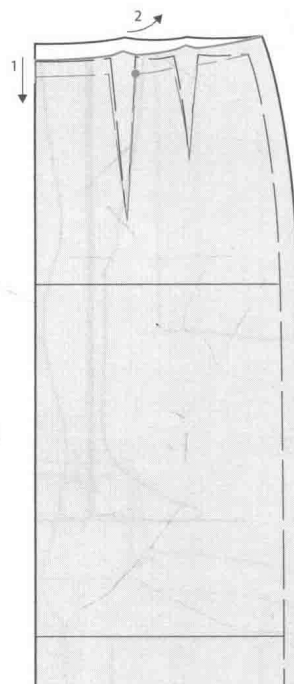
63. Sway Back

SEAM METHOD (G)

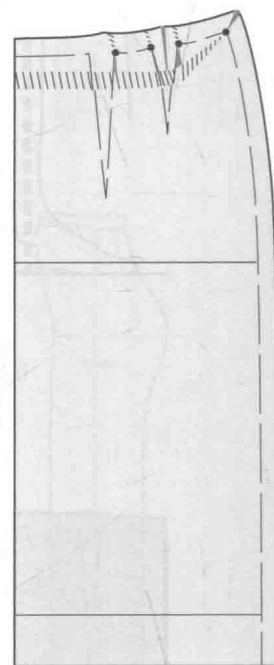
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.
- Note (J): On pants, back and front, a combination of Seam and Slash Methods were used to execute this alteration. See illustrations.



G



H



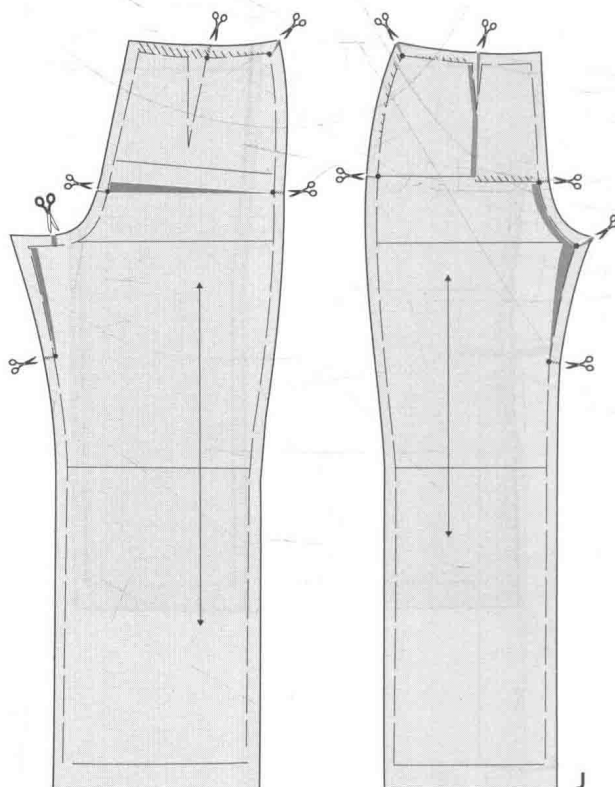
I

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

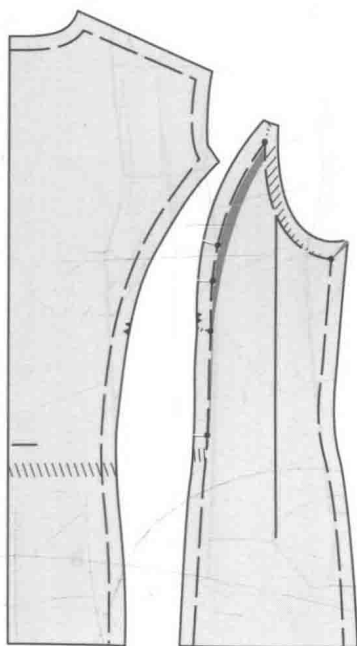
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



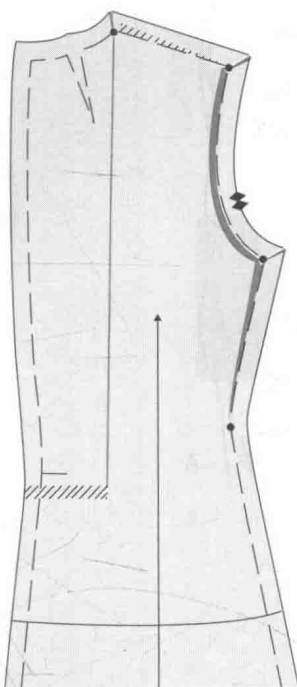
J

63. Sway Back

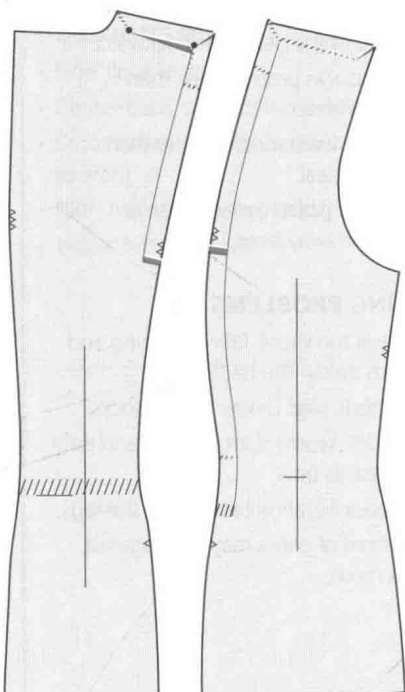
FASHION PATTERNS



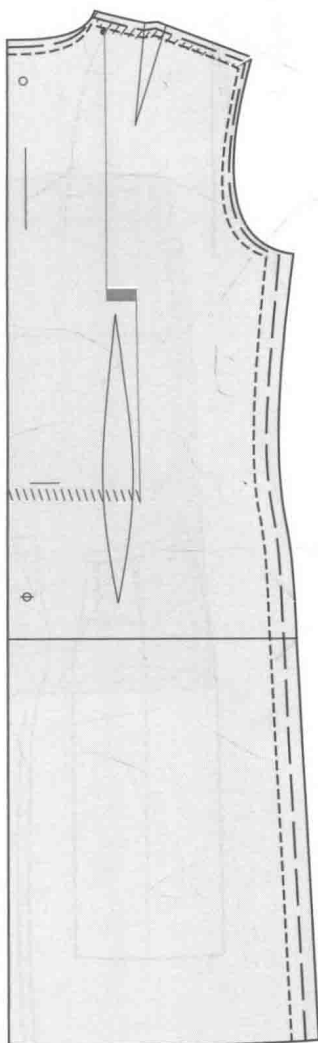
Princess Jacket



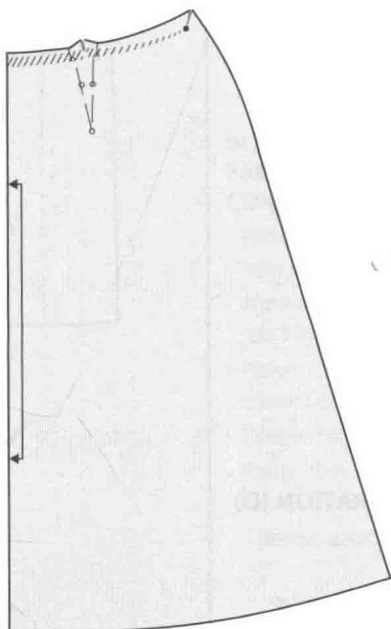
Tailored Jacket



Princess Jacket



Shift



A-line Skirt

64. Sway Front

FIGURE EVALUATION (A)

- The top of the pelvis tilts backward.
- The buttocks protrude less than average/ideal.
- The front waist indents more than average/ideal.
- Improved posture may lessen or eliminate sway front.

FITTING PROBLEMS (B)

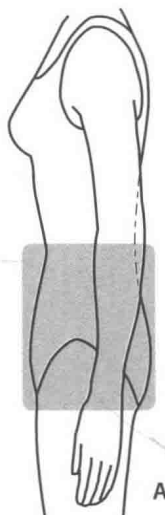
- There is too much fabric shaping and length below the back darts.
- The fabric sags below the buttocks.
- Skirt side seams slant forward and pant side seams bow.
- The back hemline lies against the legs.
- The front of pants may bind against the crotch.

READY-TO-WEAR ALTERATION (C)

- Release the back waistband, darts, and side seams to hip level.
- Take up the waistline and take in the side seams.
- Let out darts to decrease buttocks shaping and restore waist width.
- On pants, the crotch curve may need to be deepened to restore crotch length.
- This may occur with #80 Prominent Pubic Area.

TRIAL GARMENT ALTERATION (D)

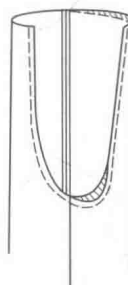
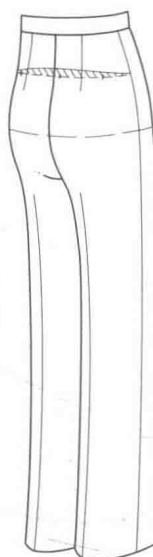
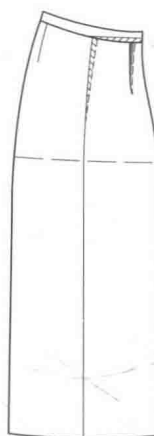
- Make a horizontal tuck across center back as illustrated.
- Near the side seams, make tapered vertical tucks to decrease width.
- The crotch curve of pants may need to be deepened in back to restore crotch length.



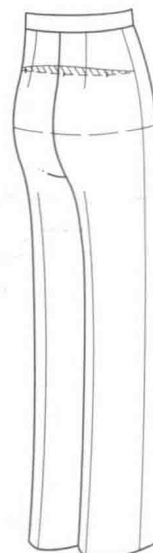
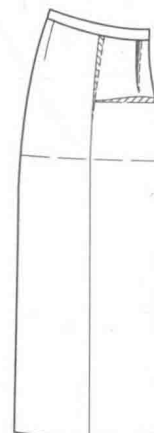
A



B

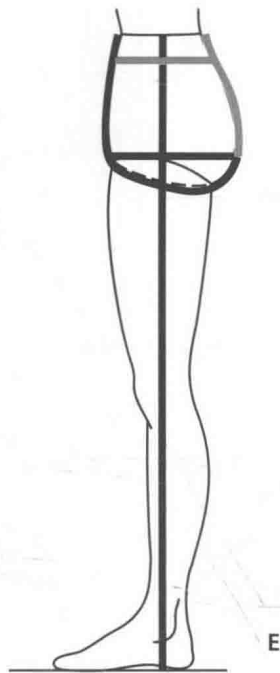


C



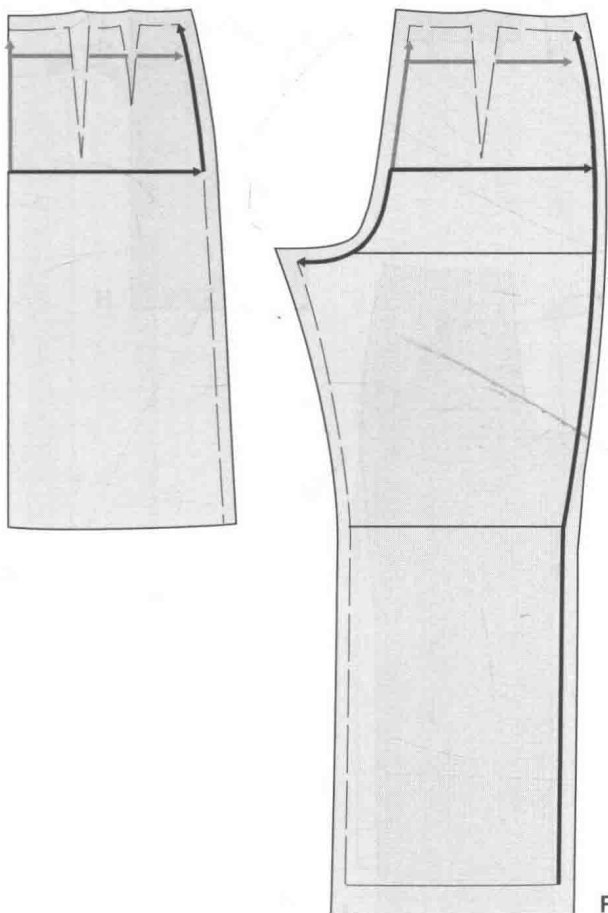
D

64. Sway Front



BODY MEASUREMENT POSITIONS (E)

- Side, floor to waist
- Center back, waist to hip level
- Crotch length, front and back, inseam to waist
- High hip, 1 to 3 inches below waist
- Hip, at hip joint level



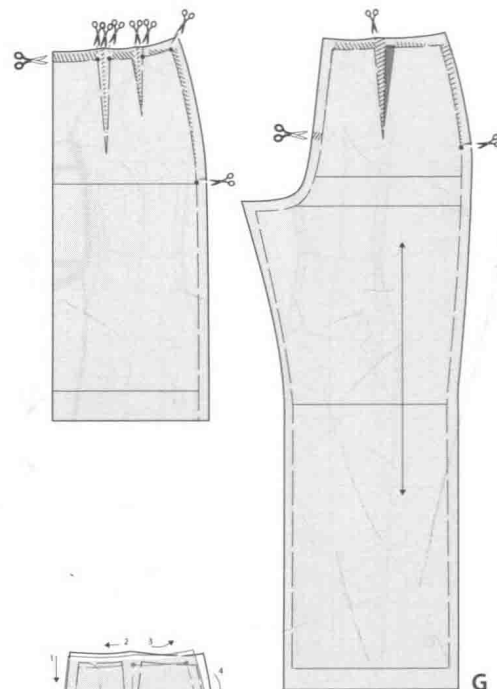
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side from waist to floor or hip joint correct
- Pattern center back waist to hip level too long
- Pattern back crotch length may be correct or too short
- Pattern high hip width too wide
- Pattern hip width correct

64. Sway Front

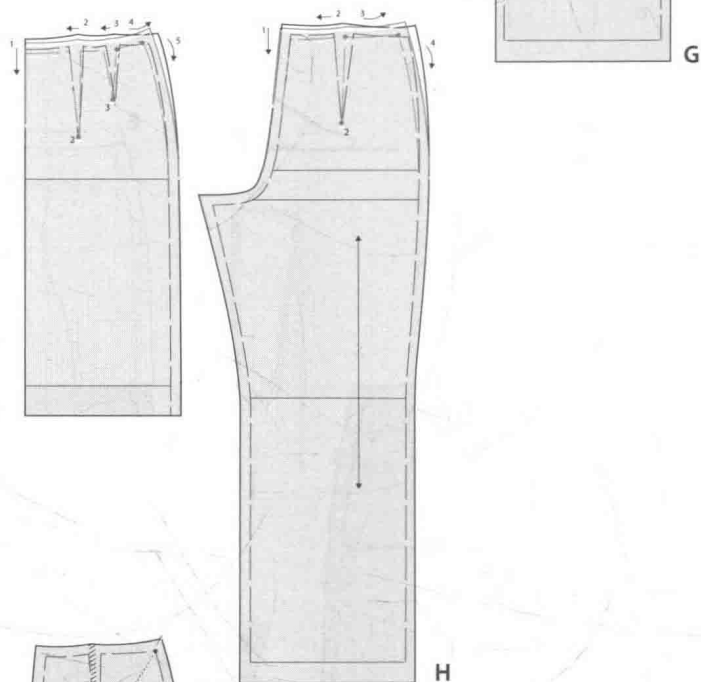
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



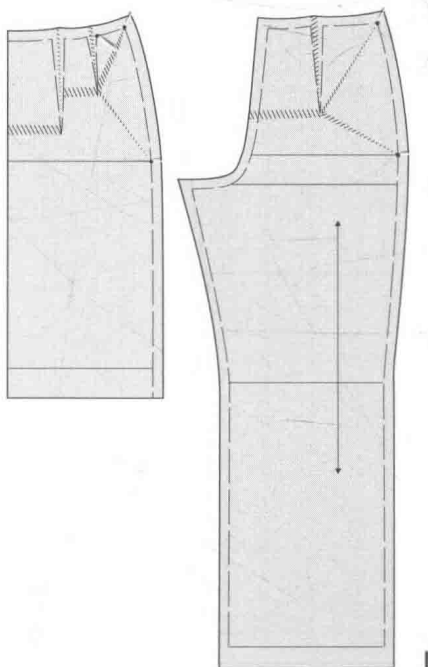
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

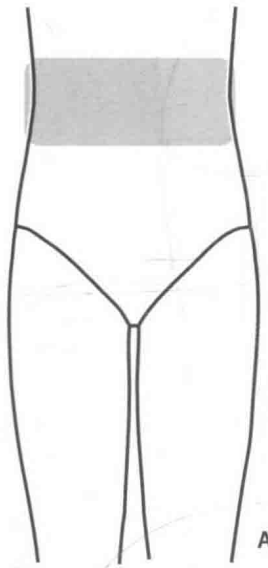


SLASH METHOD (I)

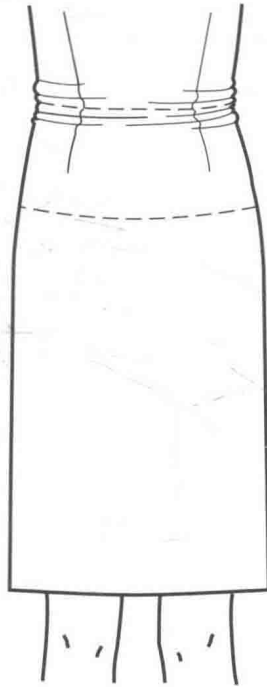
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



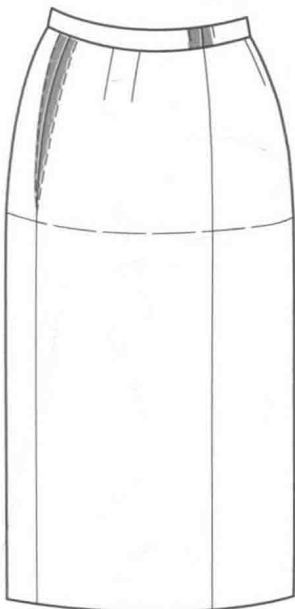
65. Larger Waist/Lower Torso



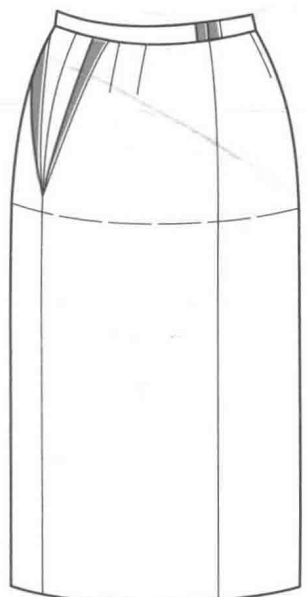
A



B



C



D

FIGURE EVALUATION (A)

- The waist indents less than average/ideal.
- There may be more weight deposit than average/ideal.
- The sides of the body are straighter than average/ideal.

FITTING PROBLEMS (B)

- On skirts, horizontal stress wrinkles form near the waist.
- On pants, the fabric binds against the crotch.
- The waistline needs more fabric width.

READY-TO-WEAR ALTERATION (C)

- Release the waistband and side seams to hip level.
- Let out the side seams and the waistband.

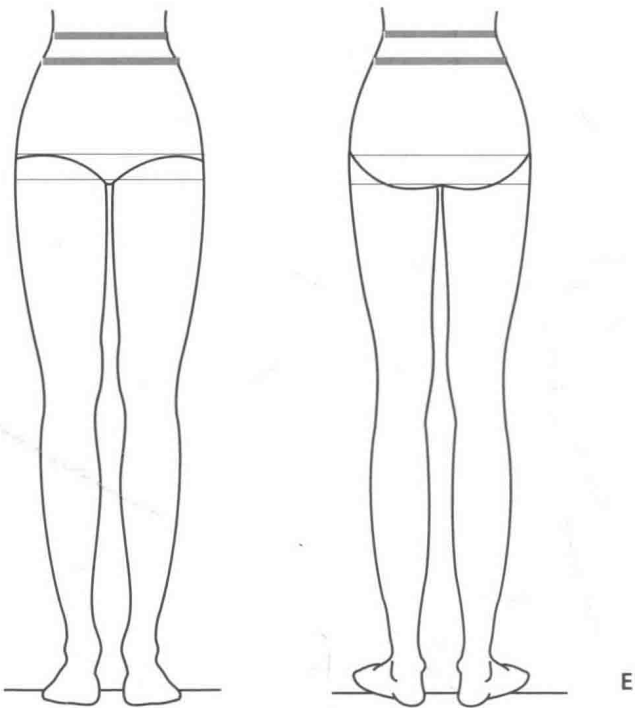
TRIAL GARMENT ALTERATION (D)

- Release the waistband.
- Slash down to hip level on each side of the side seam.
- Insert fabric strips and spread as illustrated.
- Let out the waistband.

65. Larger Waist/Lower Torso

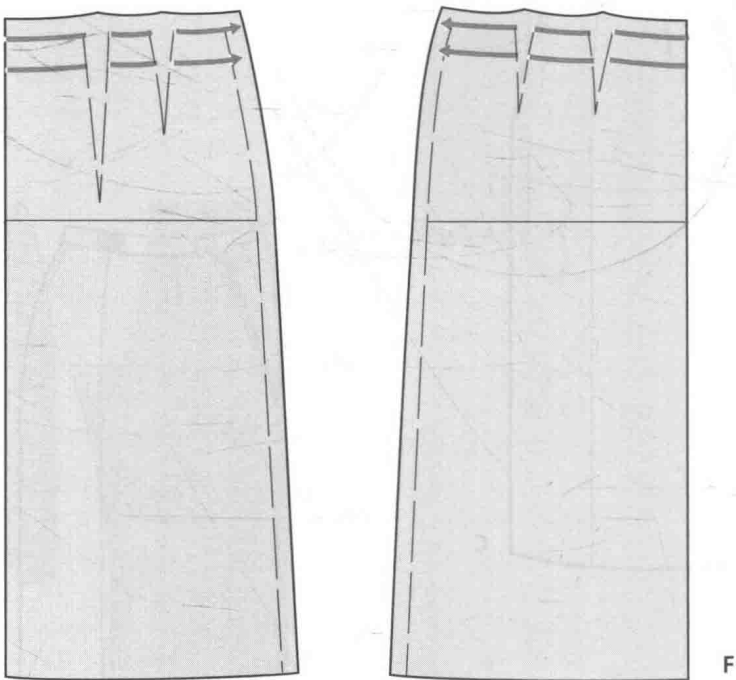
BODY MEASUREMENT POSITIONS (E)

- Waist, front and back

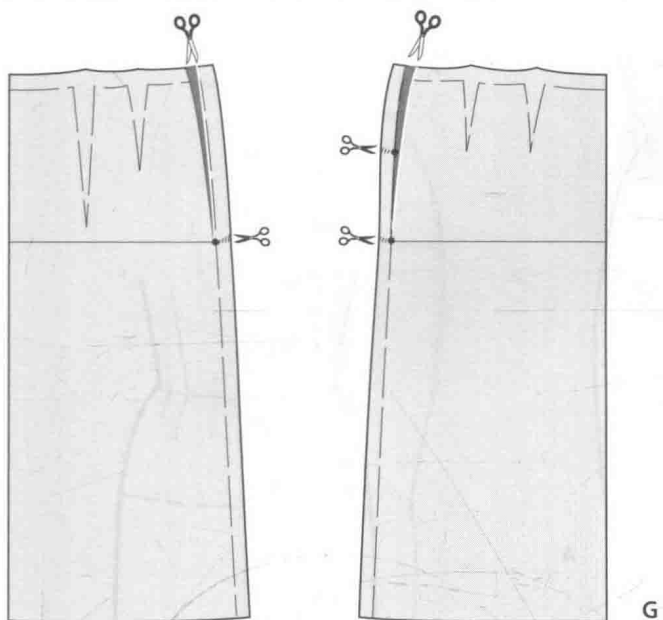


PATTERN MEASUREMENT COMPARISON (F)

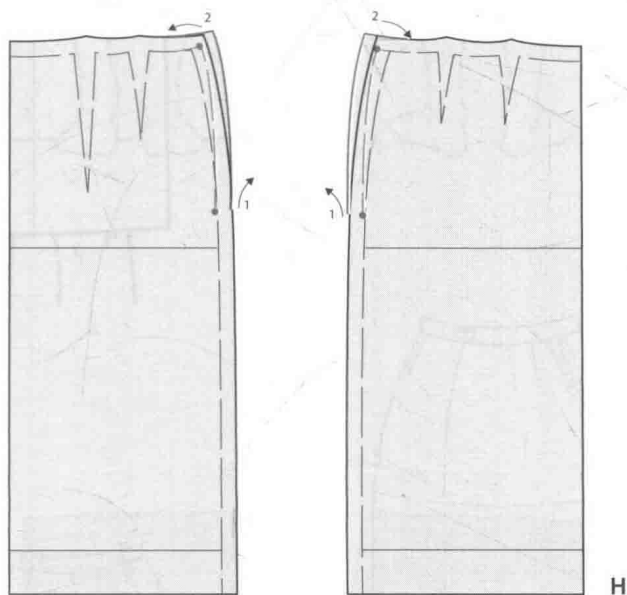
- Pattern waist front and back too narrow



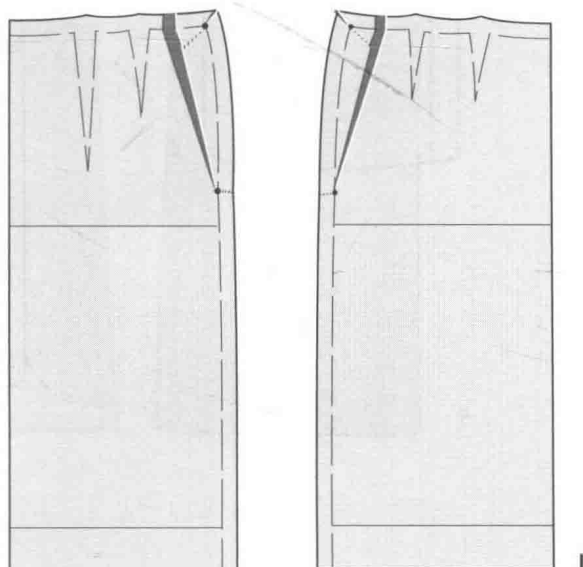
65. Larger Waist/Lower Torso



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

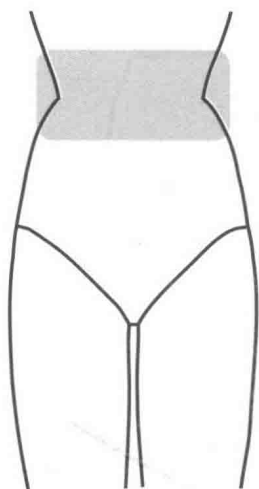
66. Smaller Waist/Lower Torso

FIGURE EVALUATION (A)

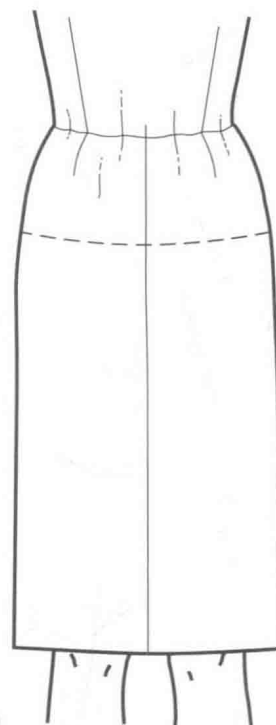
- The waist indents more than average/ideal.
- There may be less weight deposit than average/ideal.
- The waist may be average/ideal, but smaller in proportion to larger hips.

FITTING PROBLEMS (B)

- The fabric hangs loose around the body.
- The waistline sits below the body waist.
- On pants, the waistline may sit below the waist, dropping the crotch curve.
- The smaller waist needs less fabric width at the waistline.



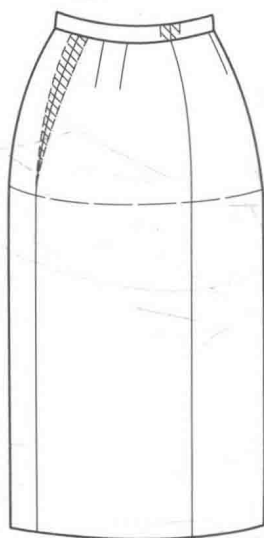
A



B

READY-TO-WEAR ALTERATION (C)

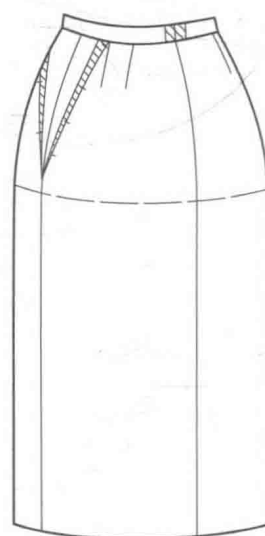
- Release the waistband and the side seams to the hip.
- Take in the side seams and the waistband.



C

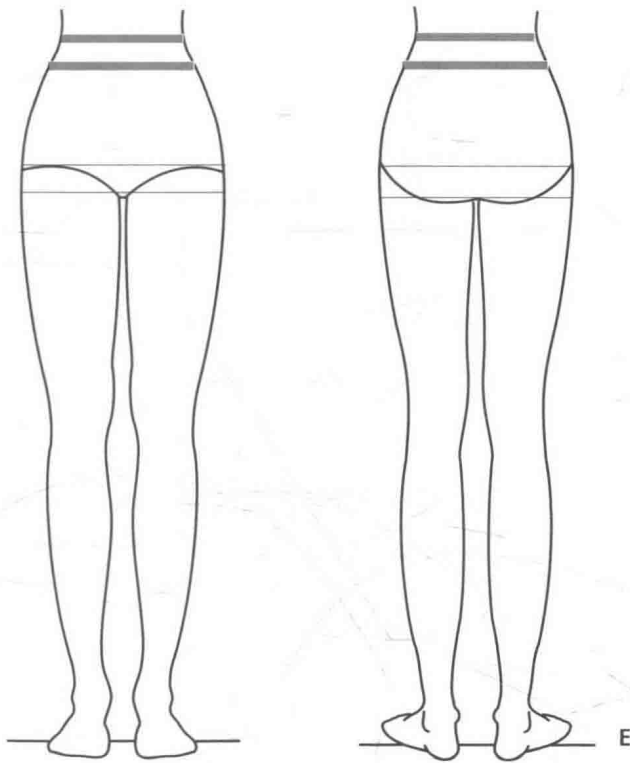
TRIAL GARMENT ALTERATION (D)

- Release the waistband.
- Make a tuck at the waist as illustrated.
- Take in the waistband.



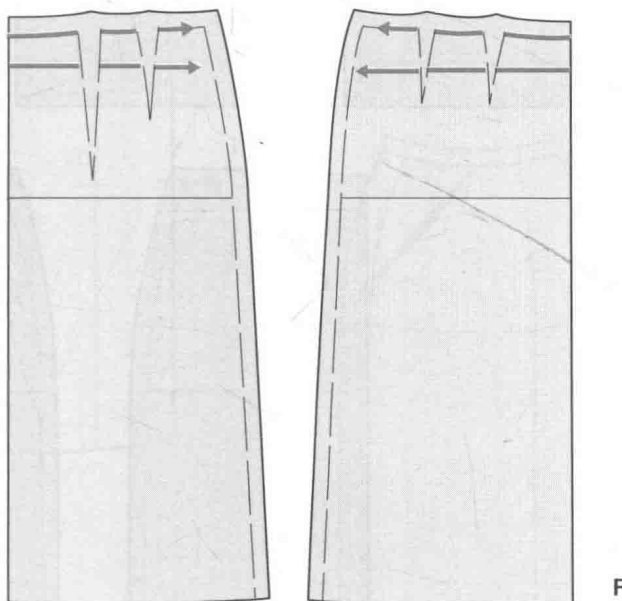
D

66. Smaller Waist/Lower Torso



BODY MEASUREMENT POSITIONS (E)

- Waist, front and back
- High hip, front and back, 1 to 3 inches below waist



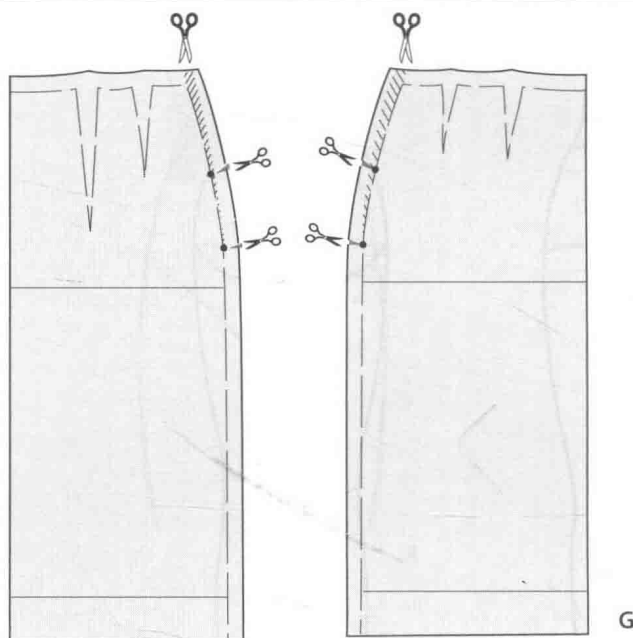
PATTERN MEASUREMENT COMPARISON (F)

- Pattern waist, front and back, too wide
- Pattern high hip width, front and back, too wide

66. Smaller Waist/Lower Torso

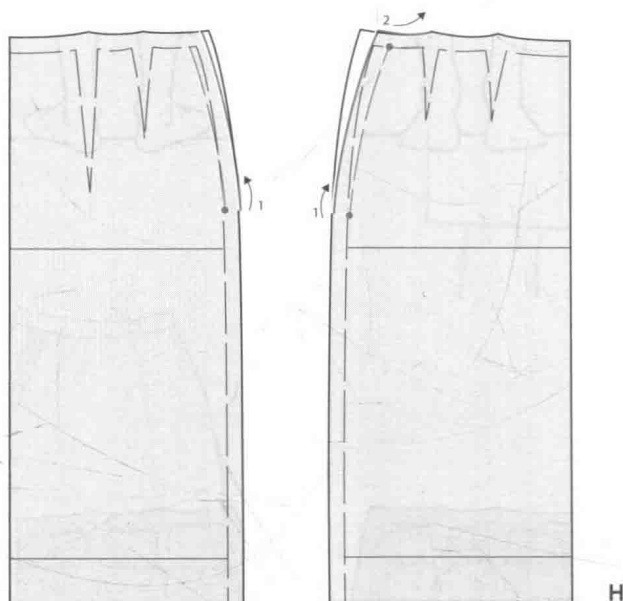
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



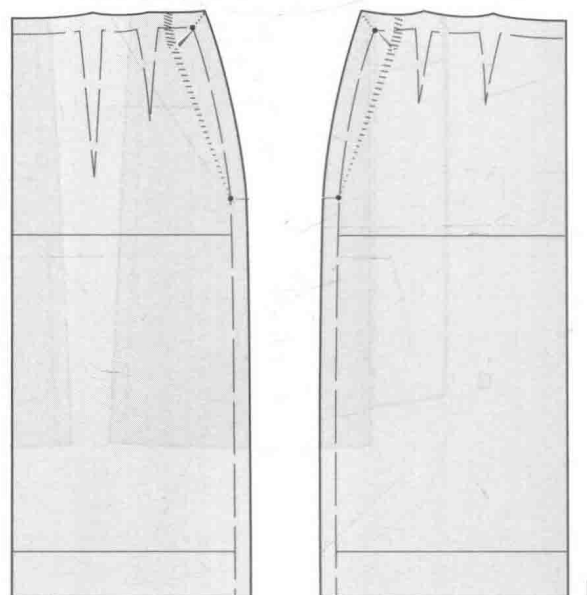
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

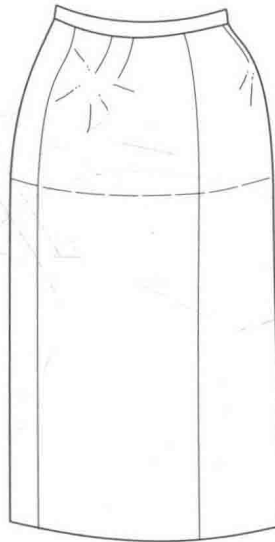
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



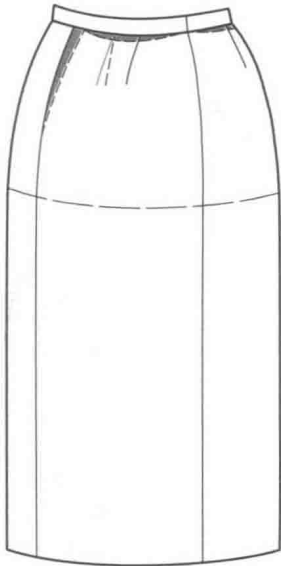
67. Prominent Hip Bones



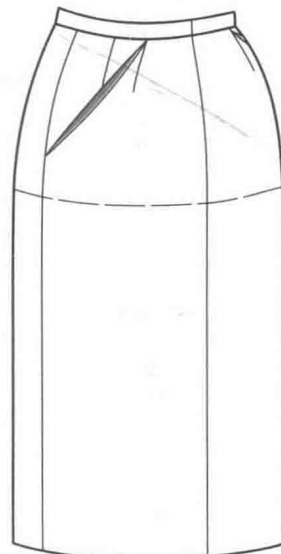
A



B



C



D

FIGURE EVALUATION (A)

- The hip bones protrude more than average/ideal.
- The bones may be larger/more angular than average/ideal.
- There may be less weight deposit than average/ideal.
- The abdominal area may appear to indent.

FITTING PROBLEMS (B)

- The fabric is tight over the hipbone.
- Radiating wrinkles form due to the strain over the hipbone.
- The high hip area needs more fabric width and shaping.

READY-TO-WEAR ALTERATION (C)

- Release the front waistline dart and down the side seam.
- Let out the waistline and side seam as illustrated.
- Increase dart size to restore waist width.

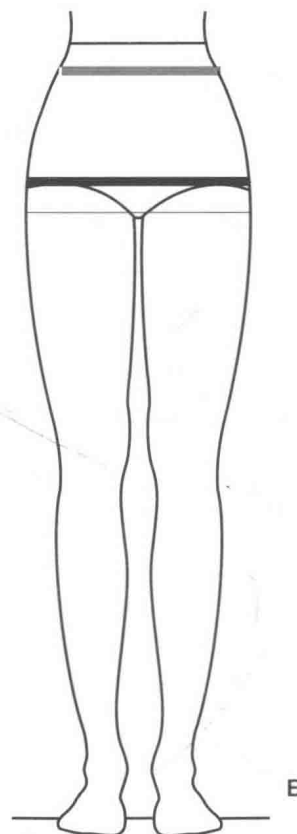
TRIAL GARMENT ALTERATION (D)

- Clip at the waistline near the center dart. Then slash diagonally to the side seam.
- Insert fabric strips and spread as illustrated.

67. Prominent Hip Bones

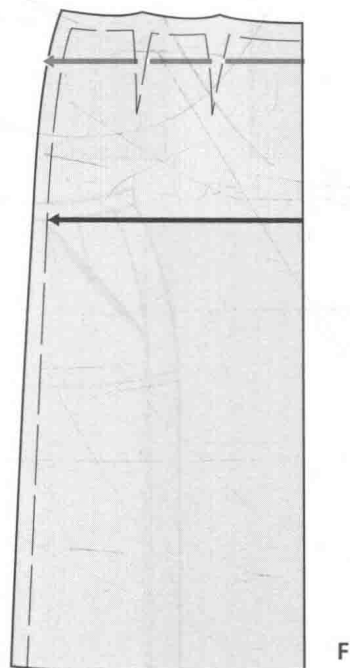
BODY MEASUREMENT POSITIONS (E)

- High hip, front, 1 to 3 inches below waist
- Hip, front, at hip joint level

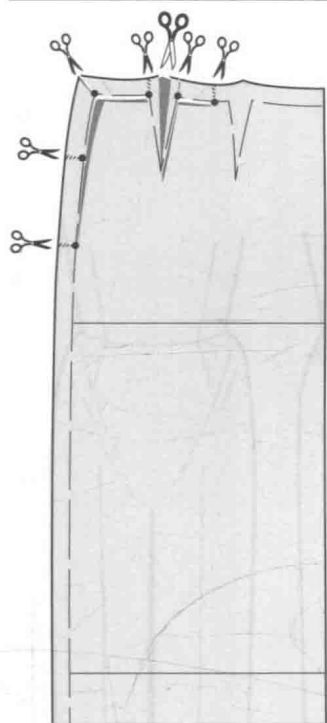


PATTERN MEASUREMENT COMPARISON (F)

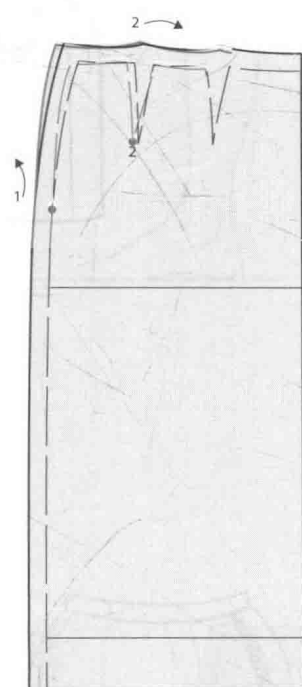
- Pattern front high hip too narrow
- Pattern front hip correct



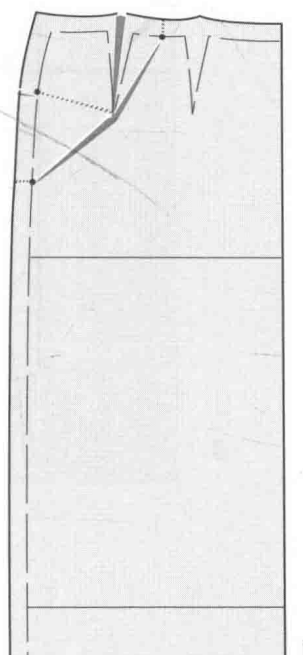
67. Prominent Hip Bones



G



H



SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

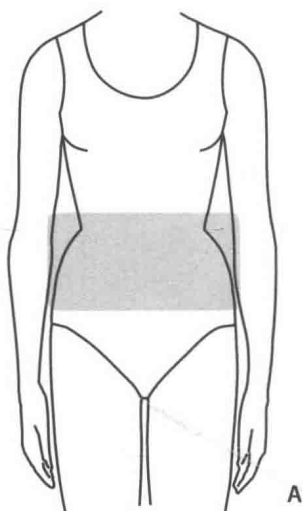
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

68. High Hip Curve

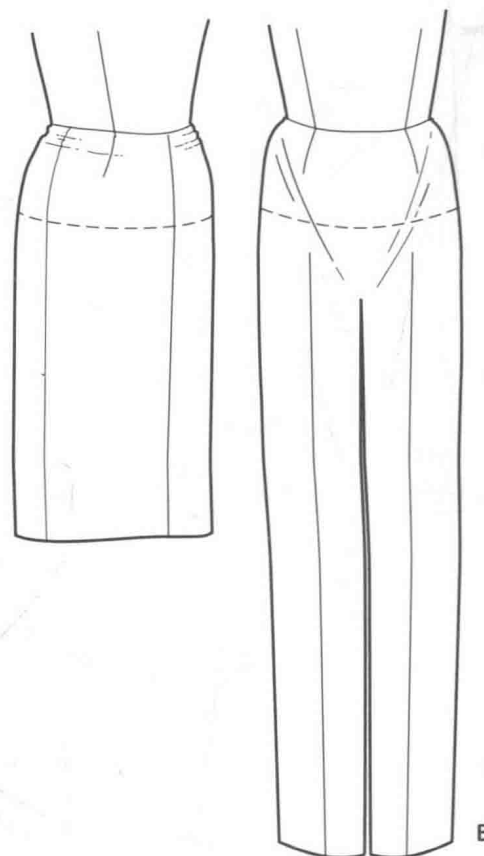
FIGURE EVALUATION (A)

- The upper hip curve extends out abruptly a little below the waist, then becomes almost straight below.
- The bone structure may be higher than average/ideal.
- There may be more weight deposit than average/ideal.
- The longer straight line from the high curve may give the appearance of longer legs.



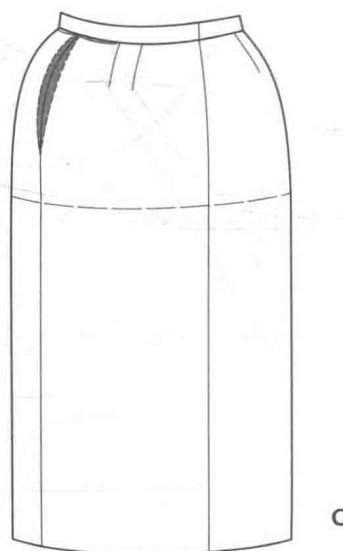
FITTING PROBLEMS (B)

- Fabric is tight over the upper hip area.
- On a skirt, horizontal wrinkles form above the hip curve as the fabric seeks a smaller circumference.
- On pants, diagonal wrinkles form as the fabric is pulled into the crotch.
- The hem may rise at the side.
- The high hip curve needs more fabric width and length.



READY-TO-WEAR ALTERATION (C)

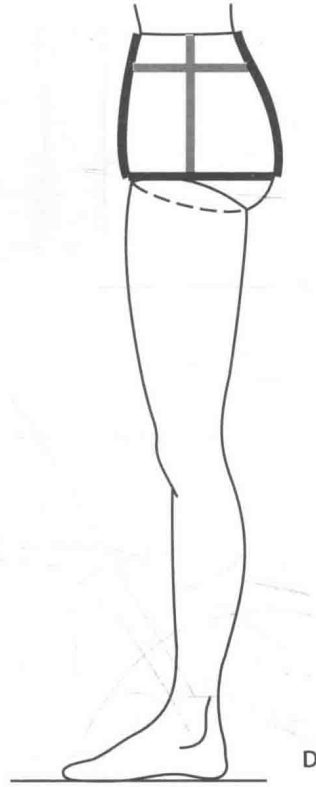
- Release the waistband at the side and the side seam to the hip level.
- Let out the side seams to increase width.
- Let down the waistline at the side seam.



TRIAL GARMENT ALTERATION

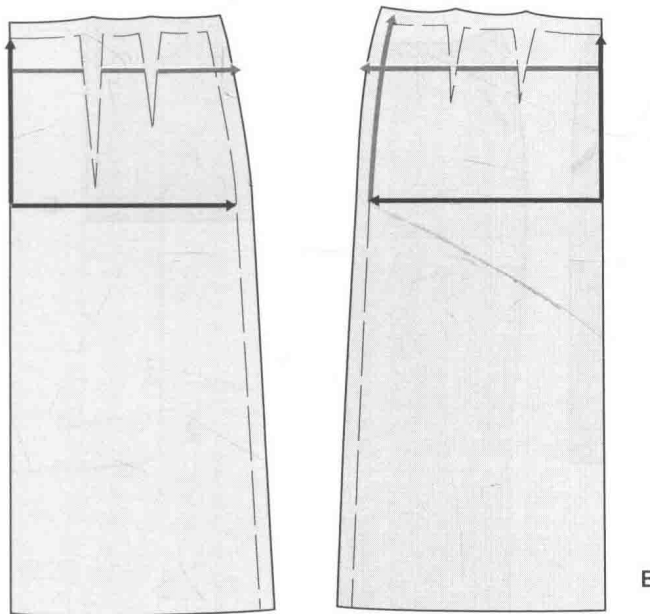
- Proceed as for Ready-to-Wear.

68. High Hip Curve



BODY MEASUREMENT POSITIONS (D)

- Hip depth, waist to hip, at side, center front, and center back
- High hip, front and back, at widest area near waist
- Hip, front and back, at hip joint level



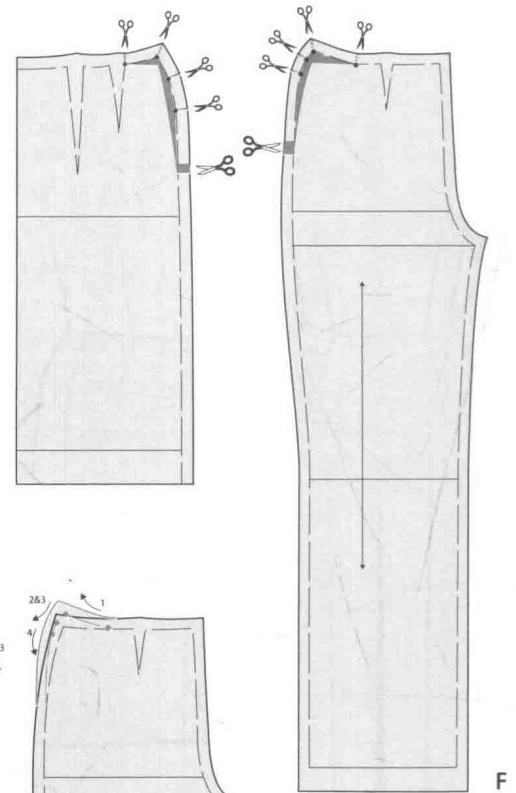
PATTERN MEASUREMENT COMPARISON (E)

- Pattern side, hip to waist, too short
- Pattern center lengths, front and back, hip to waist correct
- Pattern high hip, front and back too narrow
- Pattern hip, front and back, correct

68. High Hip Curve

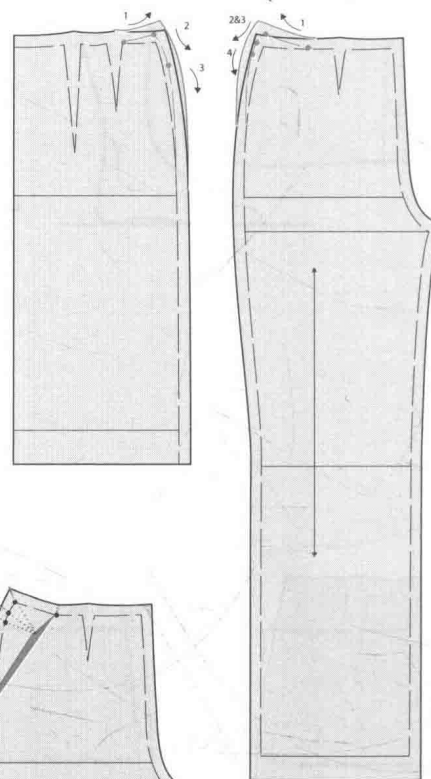
SEAM METHOD (F)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



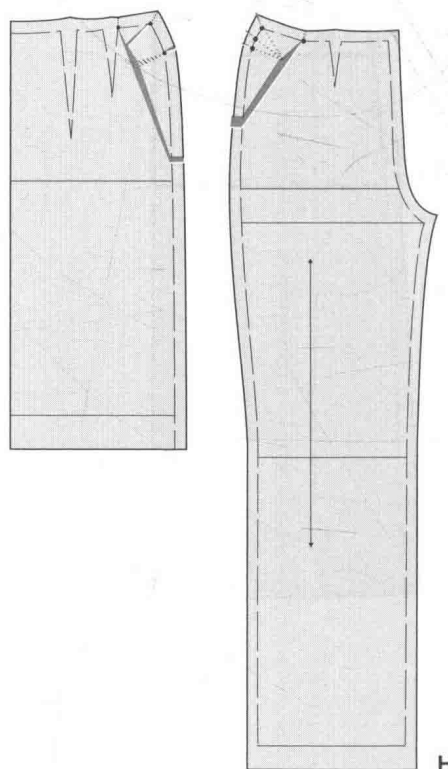
PIVOT/SLIDE METHOD (G)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (H)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



69. Low Hip Curve

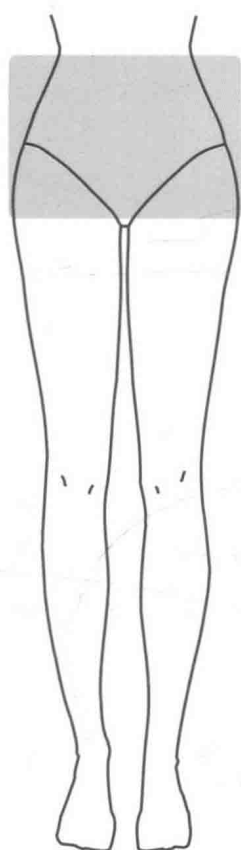
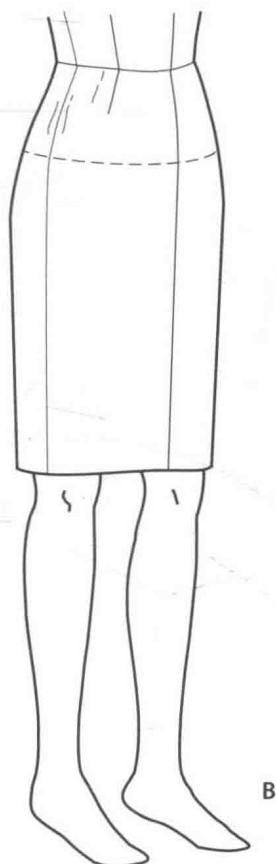


FIGURE EVALUATION (A)

- The upper area of the pelvis is narrower than average/ideal.
- The hip curve is lower than average/ideal.
- The sides of the torso slope rather than curve from the waist.
- There may be more weight deposit at hips and thighs at side.
- The lower curve may give the appearance of shorter legs.

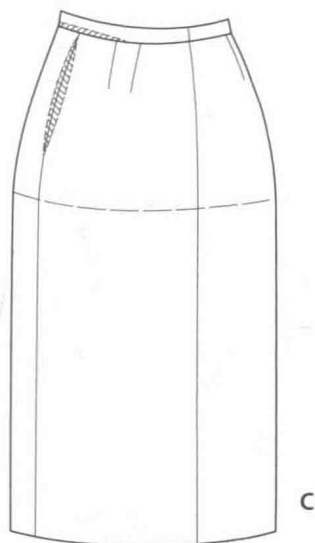
FITTING PROBLEMS (B)

- Fabric is loose at the side above the hipline.
- Loose vertical folds may form in the upper hip area.
- Above the hipline needs less fabric length and width.



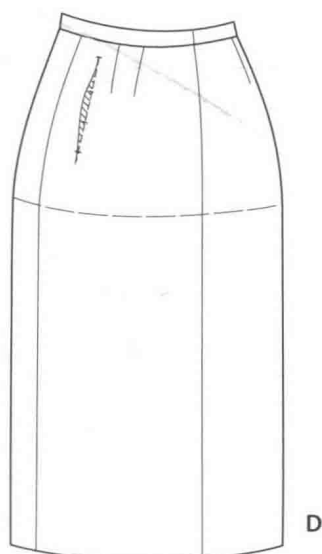
READY-TO-WEAR ALTERATION (C)

- Release the waistband across the side seam and the side to the hip.
- Take in the side seams to conform to the slope of the hip.
- Take up the waistline.



TRIAL GARMENT ALTERATION (D)

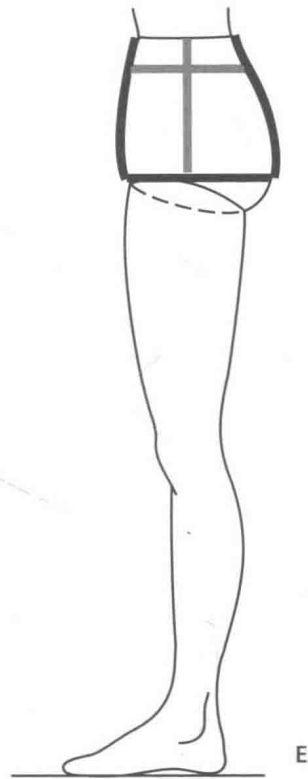
- Make a vertical tapered tuck near the front and back side seams as illustrated.



69. Low Hip Curve

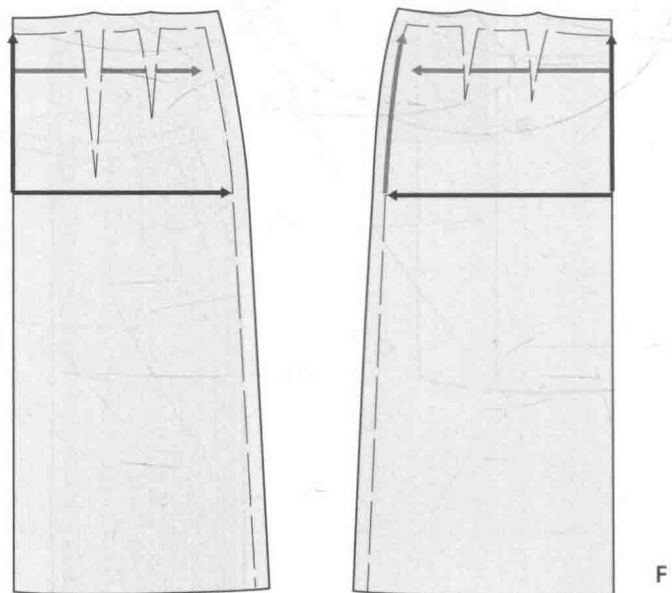
BODY MEASUREMENT POSITIONS (E)

- Hip depth, hip to waist at side, center front, and center back
- High hip, front and back, below waist at narrowest area
- Hip, front and back, at hip joint level

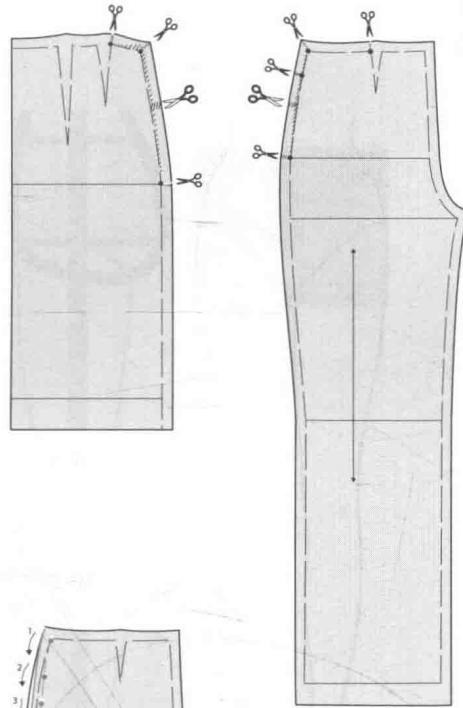


PATTERN MEASUREMENT COMPARISON (F)

- Pattern side, hip to waist too long
- Pattern center, front and back, hip to waist, correct
- Pattern high hip, front and back, too wide
- Pattern hip, front and back, correct

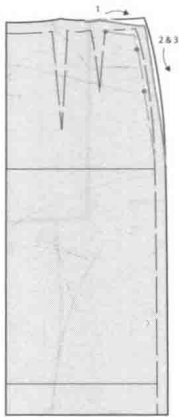


69. Low Hip Curve



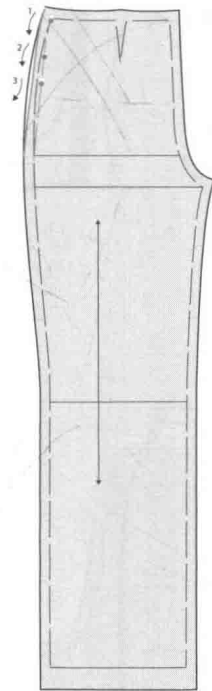
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



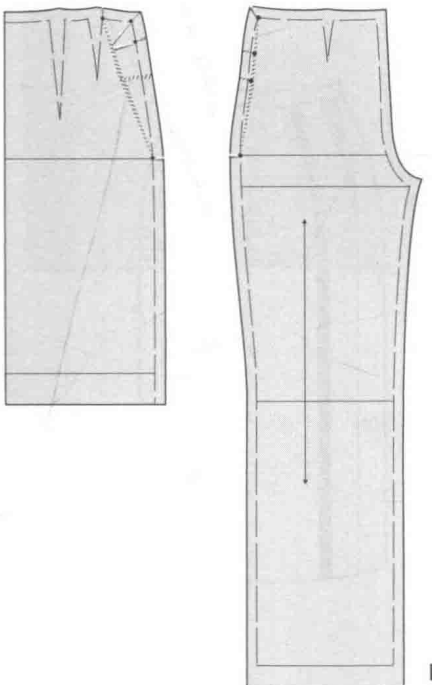
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



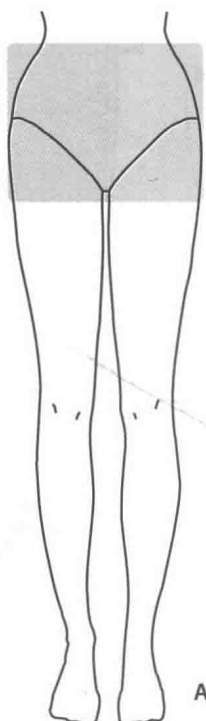
70. Larger/Wider Hips

FIGURE EVALUATION (A)

- The bones of the pelvis and hip joints may be larger than average/ideal.
- There may be more weight deposit and/or muscle development than average/ideal.

FITTING PROBLEMS (B)

- Fabric is tight and horizontal stress wrinkles form around the hips.
- Skirts may ride up above the hipline; on pants, the crotch seam holds the centers in place.
- Ready-made garments that fit at the hip are too large at the waistline.
- The hips need more fabric width.



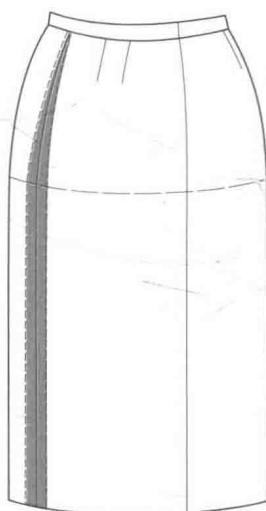
A



B

READY-TO-WEAR ALTERATION (C)

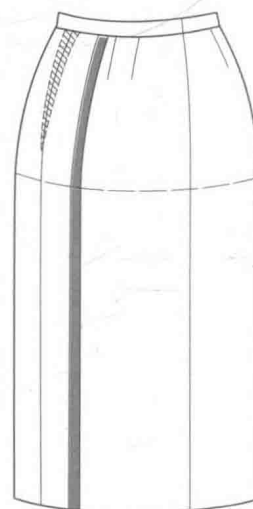
- Release the side seams.
- Let out the side seams, tapering to the waist as illustrated.



C

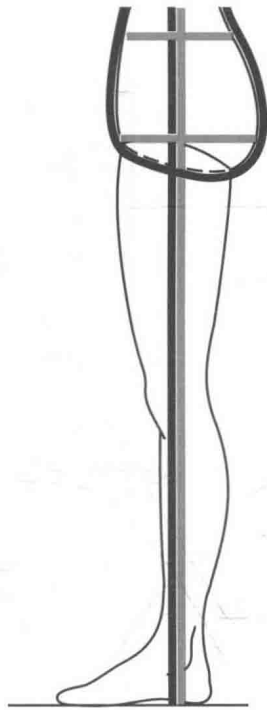
TRIAL GARMENT ALTERATION (D)

- Release the waistband over the side area.
- Slash from waistline to hem; insert a parallel strip of fabric as illustrated.
- Take in the side seam, tapering from waist to hip.



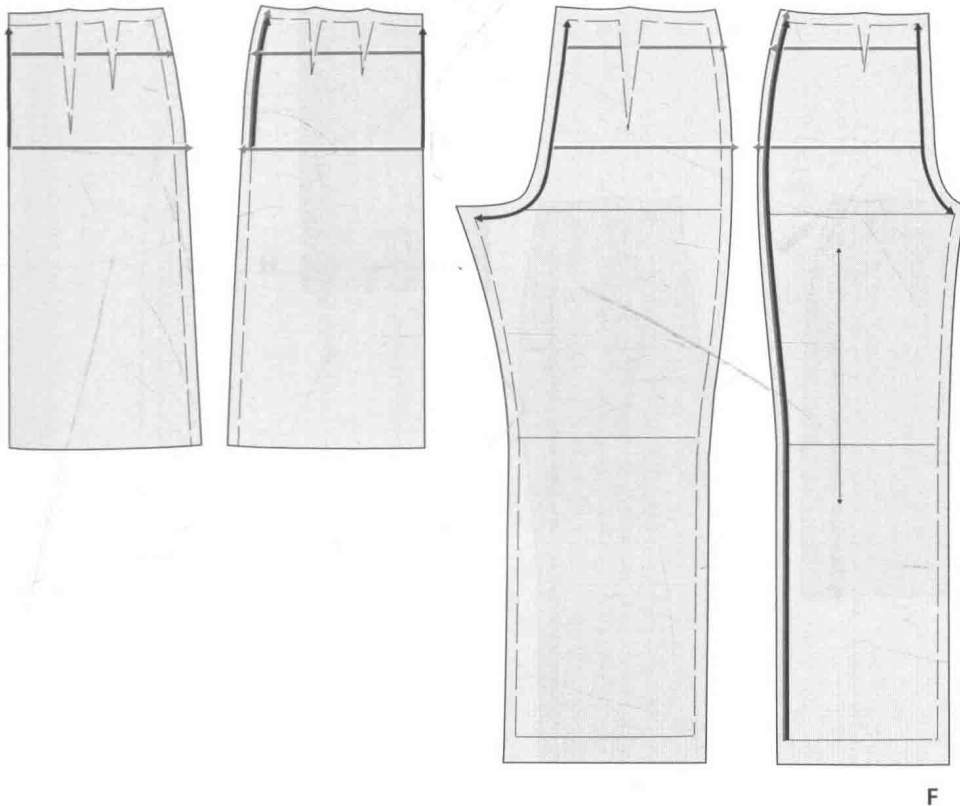
D

70. Larger/Wider Hips



BODY MEASUREMENT POSITIONS (E)

- Side, floor to waist or hip to waist
- Crotch length, front and back, inseam to hip, hip to waist
- High hip, front and back, 1 to 3 inches below waist
- Hip, front and back, at hip joint level



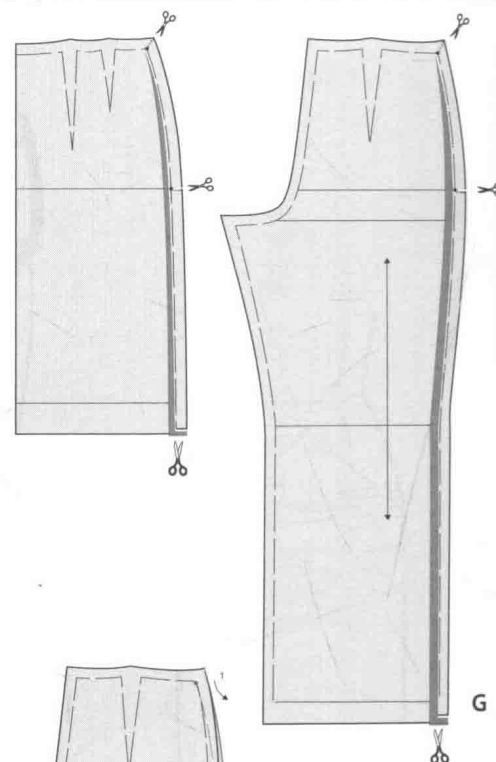
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side correct or too short
- Pattern crotch curve correct
- Pattern centers, front and back, correct
- Pattern high hip, front and back, too narrow
- Pattern hip, front and back, too narrow

70. Larger/Wider Hips

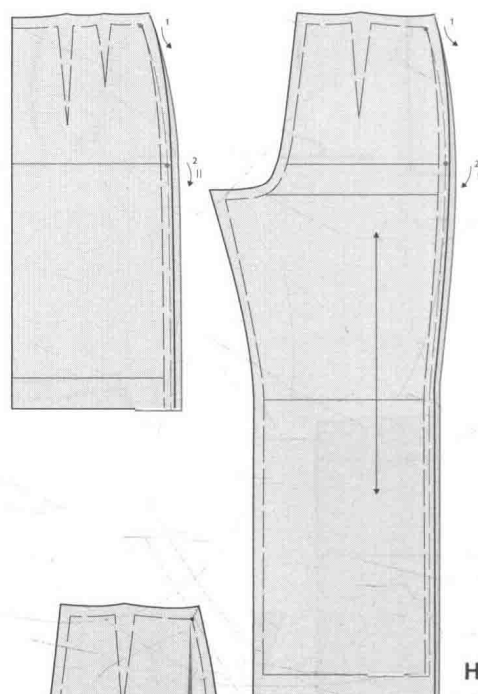
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



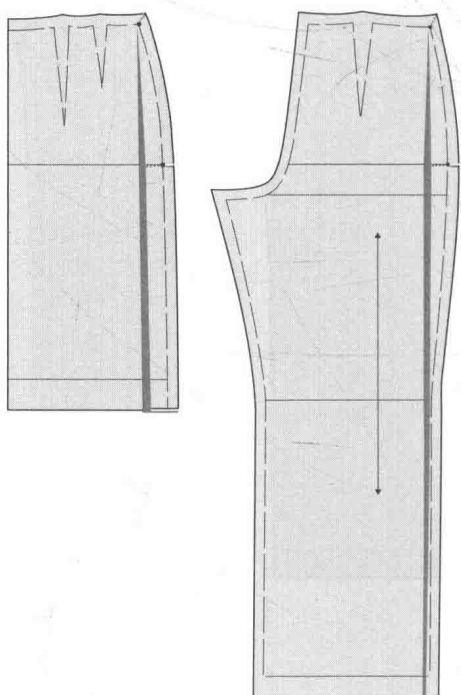
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



71. Smaller/Narrower Hips

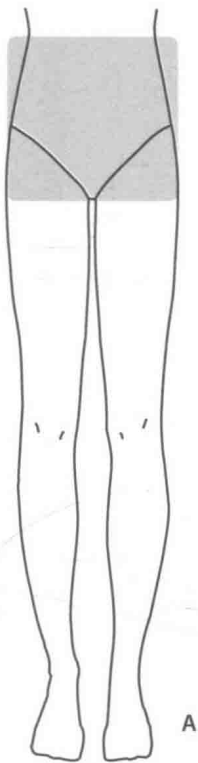
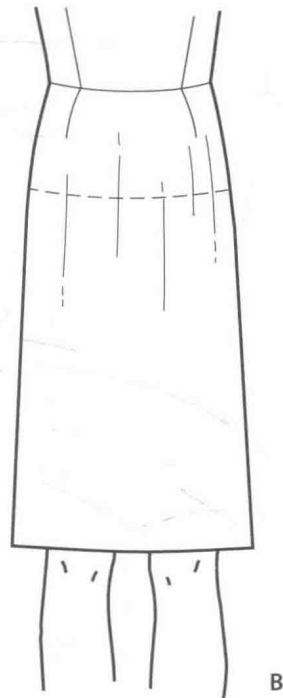


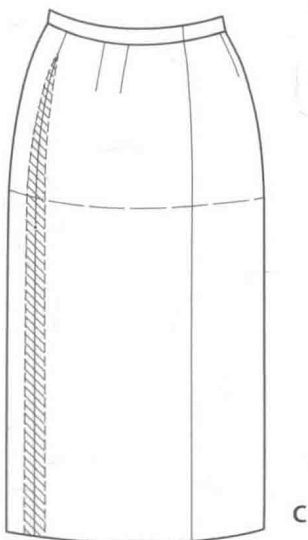
FIGURE EVALUATION (A)

- The bones of the pelvis and hip joints may be smaller than average/ideal.
- There may be less weight deposit and/or muscle development than average/ideal.



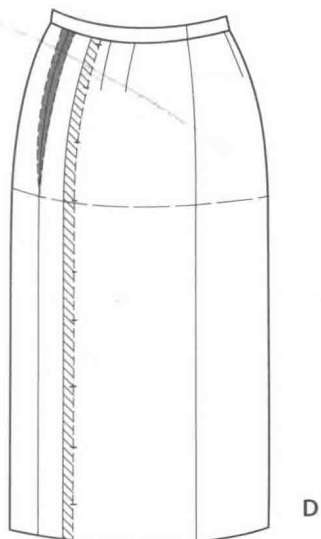
FITTING PROBLEMS (B)

- The fabric is loose around the hips, and soft vertical folds may form.
- Ready-made garments that fit at the hip are too small at the waist.
- The hips need less fabric width.



READY-TO-WEAR ALTERATION (C)

- Release the side seams.
- Take in the side seams, tapering to the waist as illustrated.



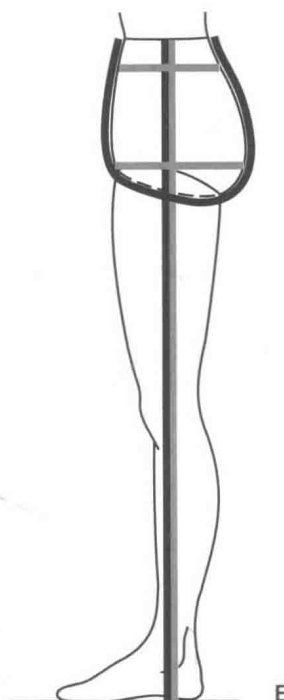
TRIAL GARMENT ALTERATION (D)

- Release the waistband over the side seams.
- Make a parallel tuck from waistline to hem.
- Let out the side seam, tapering from waist to hip.

71. Smaller/Narrower Hips

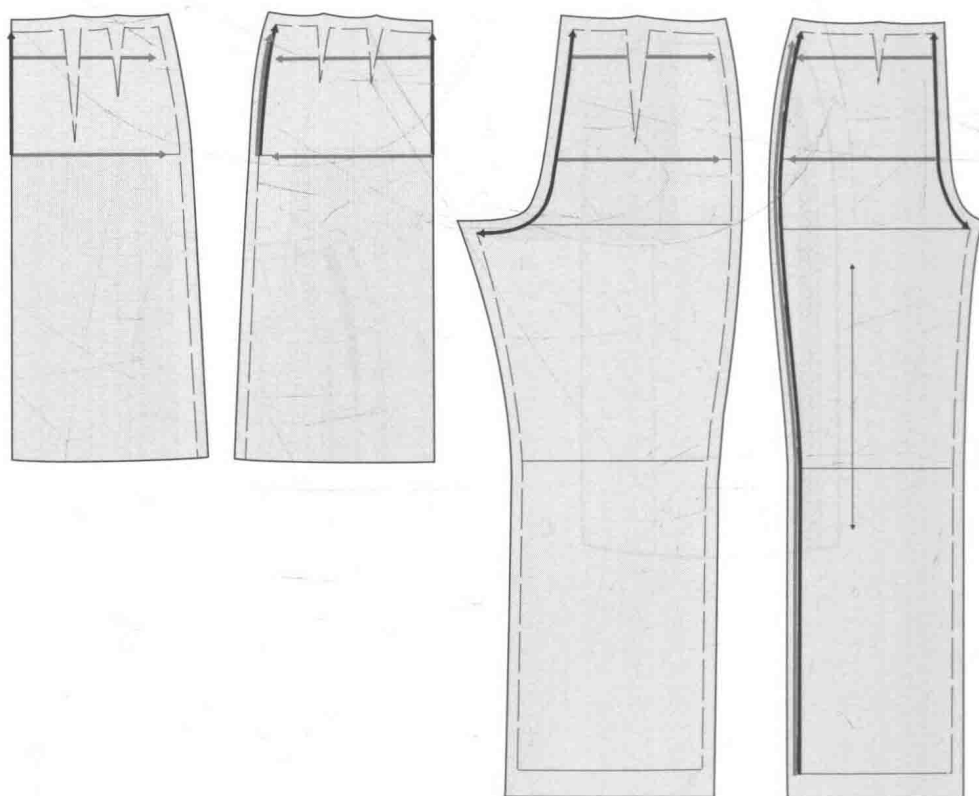
BODY MEASUREMENT POSITIONS (E)

- Side, floor to waist or hip to waist
- Crotch length, front and back, inseam to hip, hip to waist
- High hip, front and back, 1 to 3 inches below waist
- Hip, front and back, at hip joint level

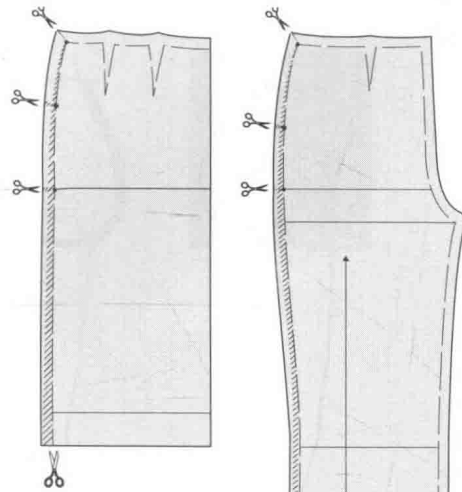


PATTERN MEASUREMENT COMPARISON (F)

- Pattern side length correct or too long
- Pattern waist correct
- Pattern high hip, front and back, too wide
- Pattern hip, front and back, too wide

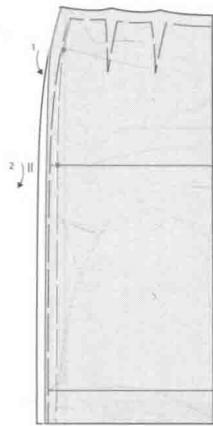


71. Smaller/Narrower Hips



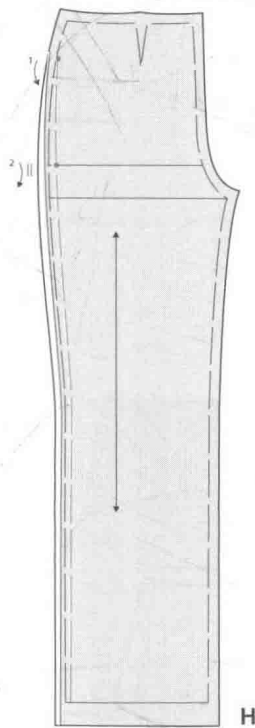
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

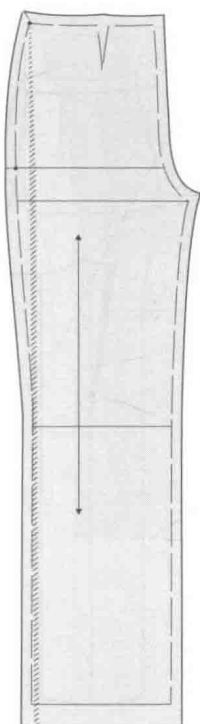
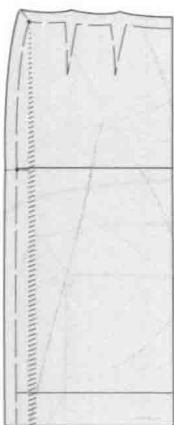


PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H



I

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

72. Cylindrical Lower Torso

FIGURE EVALUATION (A)

- The bones of the pelvis are more rounded than average/ideal.
- The torso is deeper front to back and narrower side to side.
- The torso circumference is not changed.

FITTING PROBLEMS (B)

- Only the fit of pants is affected.
- Tight diagonal wrinkles pull through the crotch. They are more apparent in back.
- The fabric may pull into the body.
- The waistline is pulled down at center back.
- Pants need more fabric width in the crotch extensions.

READY-TO-WEAR ALTERATION (C)

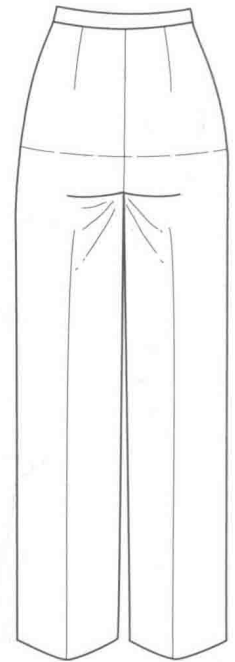
- Release the crotch seam and inseam to the knee.
- Let out the inseam at the crotch, tapering down the leg as far as needed.

TRIAL GARMENT ALTERATION (D)

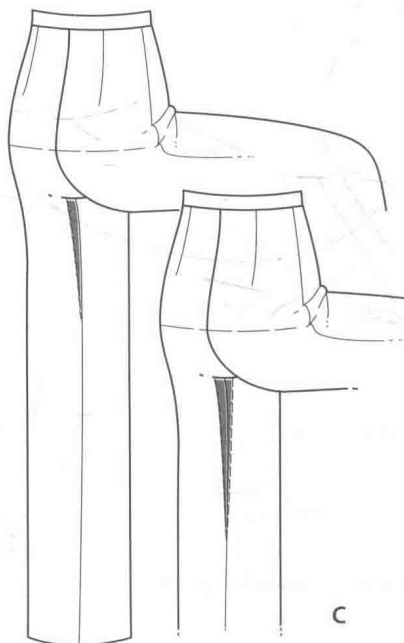
- Release the lower crotch seam.
- Slash from crotch seam to inseam.
- Insert fabric strips and spread as illustrated.



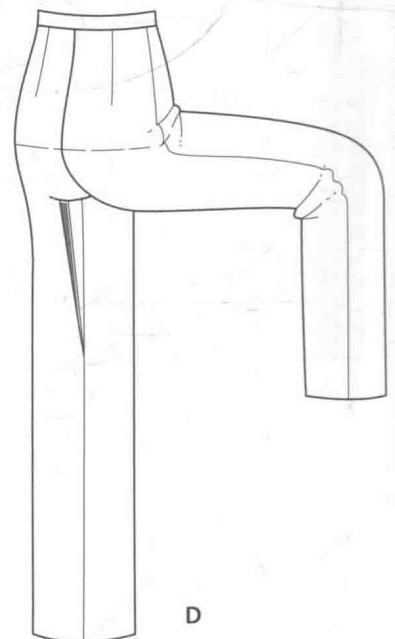
A



B

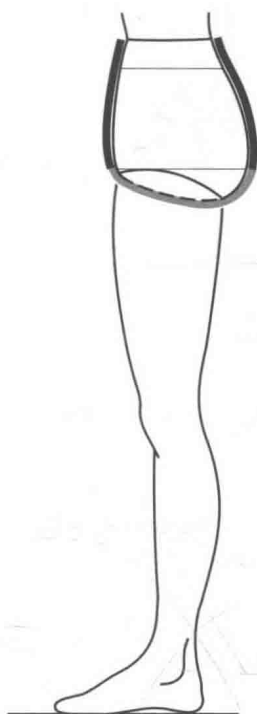


C



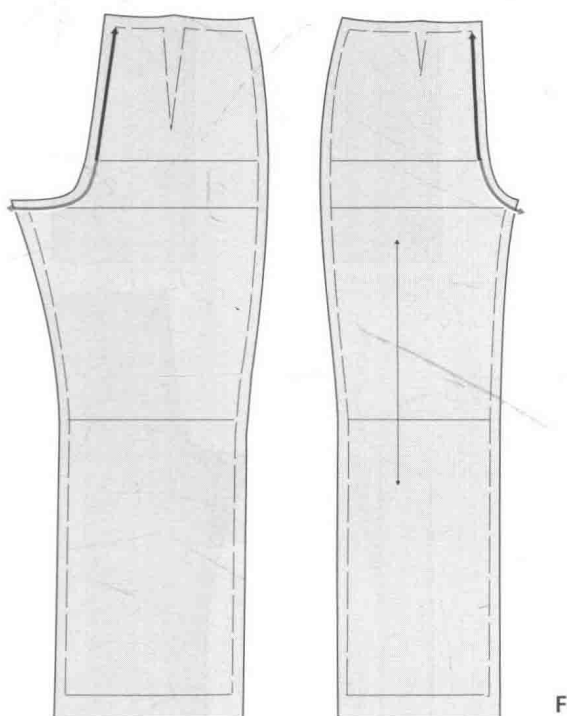
D

72. Cylindrical Lower Torso



BODY MEASUREMENT POSITIONS (E)

- Crotch, front and back, inseam to hip



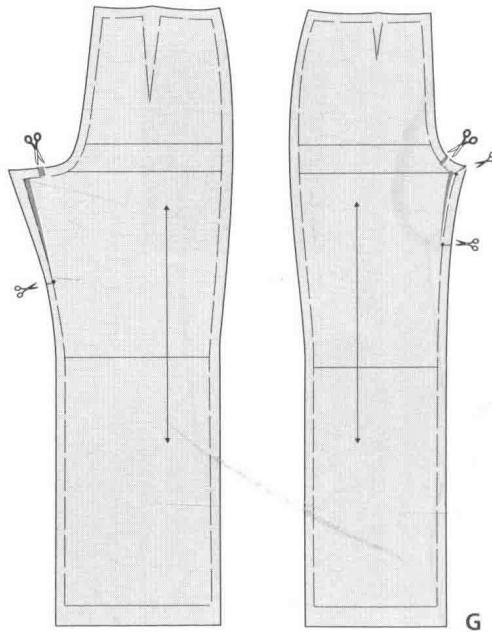
PATTERN MEASUREMENT COMPARISON (F)

- Pattern crotch width, front and back, too narrow

72. Cylindrical Lower Torso

SEAM METHOD (G)

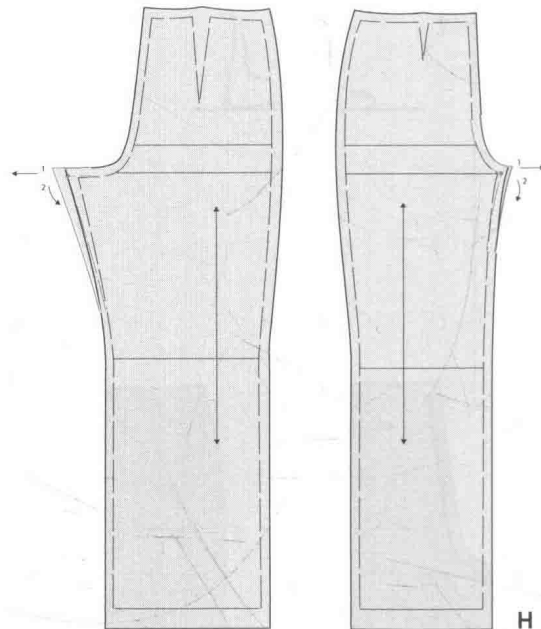
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



G

PIVOT/SLIDE METHOD (H)

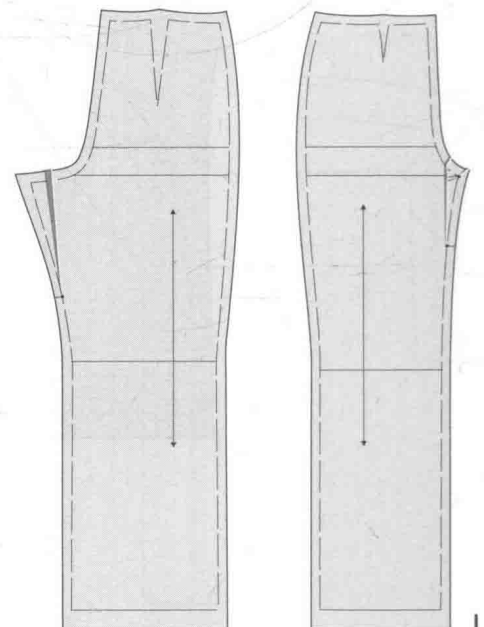
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

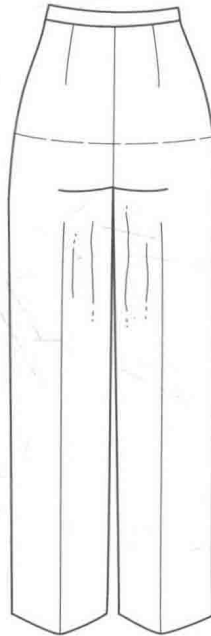


I

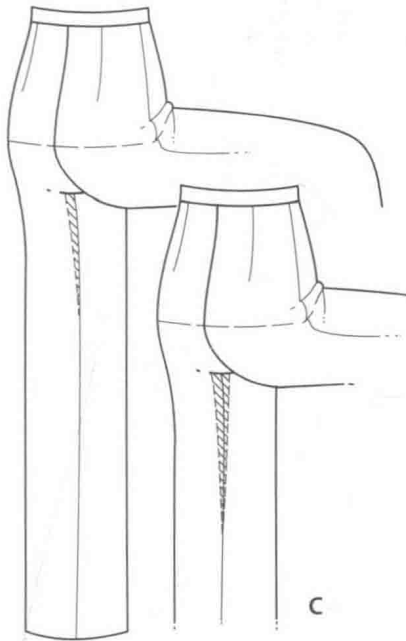
73. Flattened Oval-Shaped Lower Torso



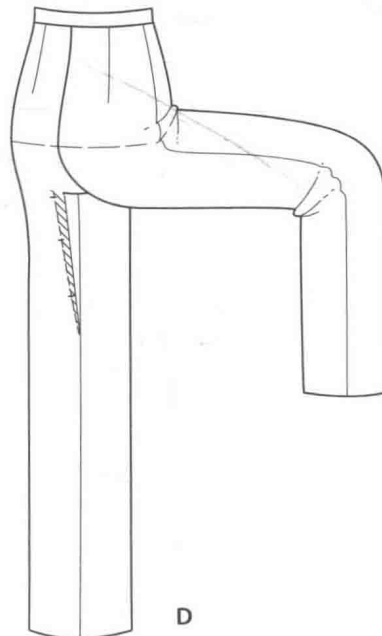
A



B



C



D

FIGURE EVALUATION (A)

- The bones of the pelvis are more oval than average/ideal.
- The torso is narrower front to back and wider side to side.
- The torso circumference is not changed.

FITTING PROBLEMS (B)

- Only the fit of pants is affected.
- The fabric hangs loose between the legs.
- Pants need less fabric width in the crotch extensions.

READY-TO-WEAR ALTERATION (C)

- Release the lower crotch seam and the inseam to the knee.
- Take in the inseam at the crotch, tapering down the leg as far as needed.

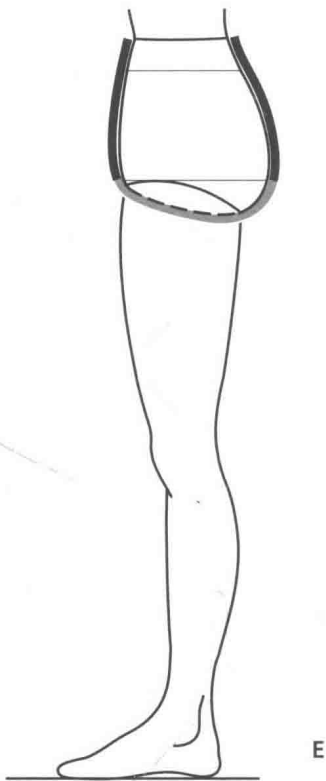
TRIAL GARMENT ALTERATION (D)

- Release the lower crotch seam.
- Make a tuck to decrease crotch width, taper to above the knee, as illustrated.

73. Flattened Oval-Shaped Lower Torso

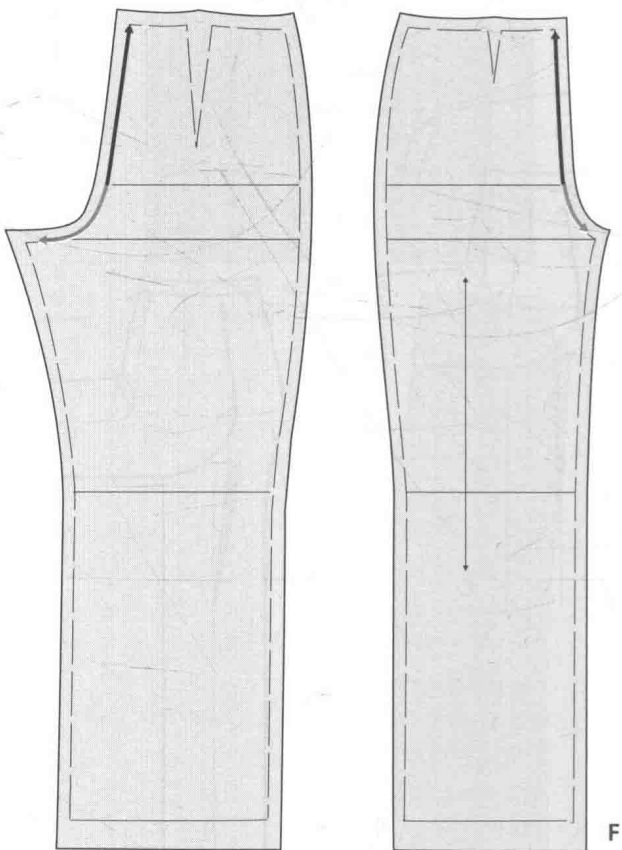
BODY MEASUREMENT POSITIONS (E)

- Crotch, front and back, inseam to hip level

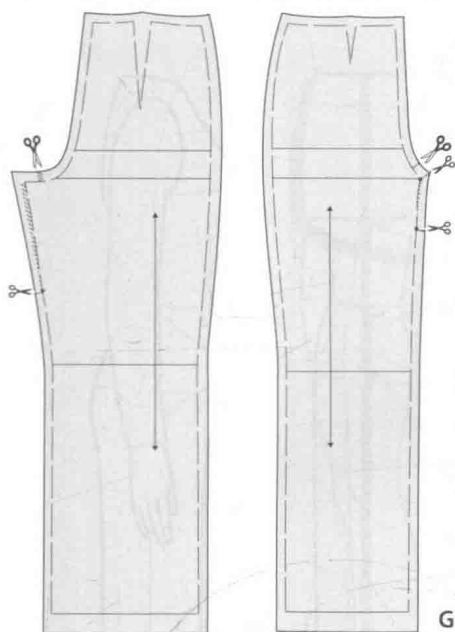


PATTERN MEASUREMENT COMPARISON (F)

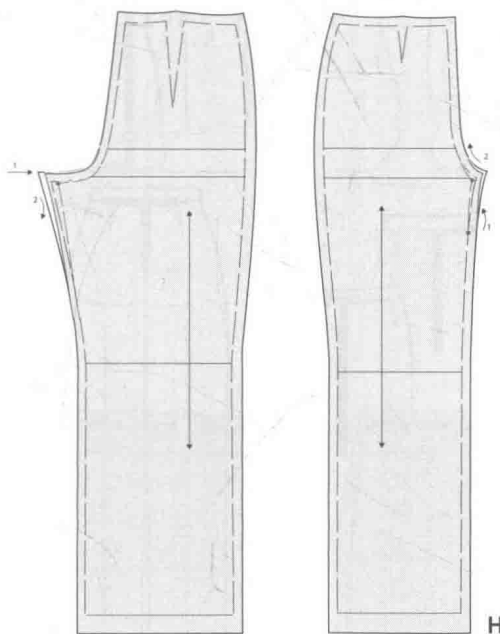
- Pattern crotch, front and back, too wide



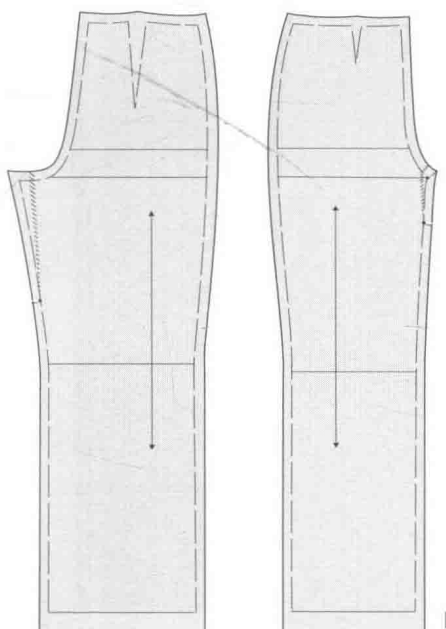
73. Flattened Oval-Shaped Lower Torso



G



H



SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

74. Large/Prominent Abdomen

FIGURE EVALUATION (A)

- The abdomen protrudes more than average/ideal.
- There may be more weight deposit and/or less muscle tone than average/ideal.
- A slumped posture may increase the roundness.

FITTING PROBLEMS (B)

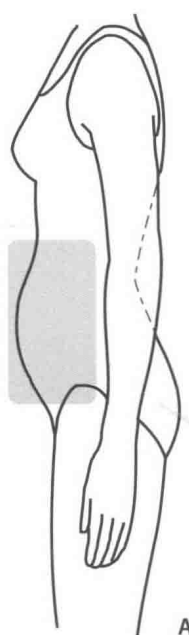
- Fabric is tight over the abdomen.
- The side seams above the hip bow forward.
- Diagonal stress wrinkles may radiate from the abdomen.
- Fitted skirts and pants “cup” under the abdomen.
- The skirt hemline may rise and angle outward at front.
- Pants may bind uncomfortably tight against the crotch.
- The abdomen needs more fabric length and width, and shaping.

READY-TO-WEAR ALTERATION (C)

- Release the waistband in the front and center front seam.
- Let down the waistline evenly between center darts, then taper to the sides.
- Skirt option: If there is not enough fabric to let down at center front, also take up the length in back.
- Let out the center front as illustrated.
- On a skirt with no center front seam, let out side seams parallel down to the hem.
- Adjust darts or convert to pleats/gathers.

TRIAL GARMENT ALTERATION (D)

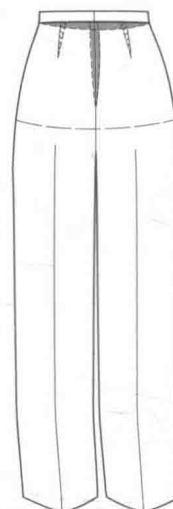
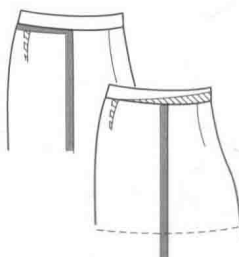
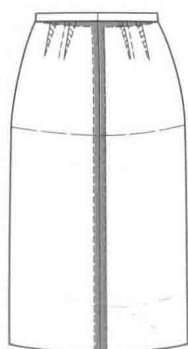
- Slash across the abdomen from center to sides.
- Insert fabric strips and spread as illustrated.
- Increase width at center front, evenly on skirts, tapering to hip level on pants.



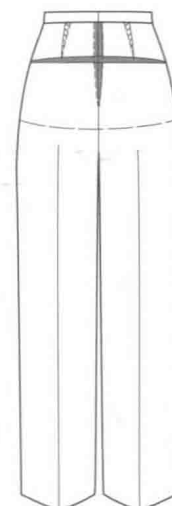
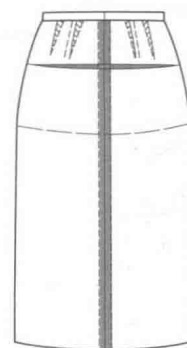
A



B

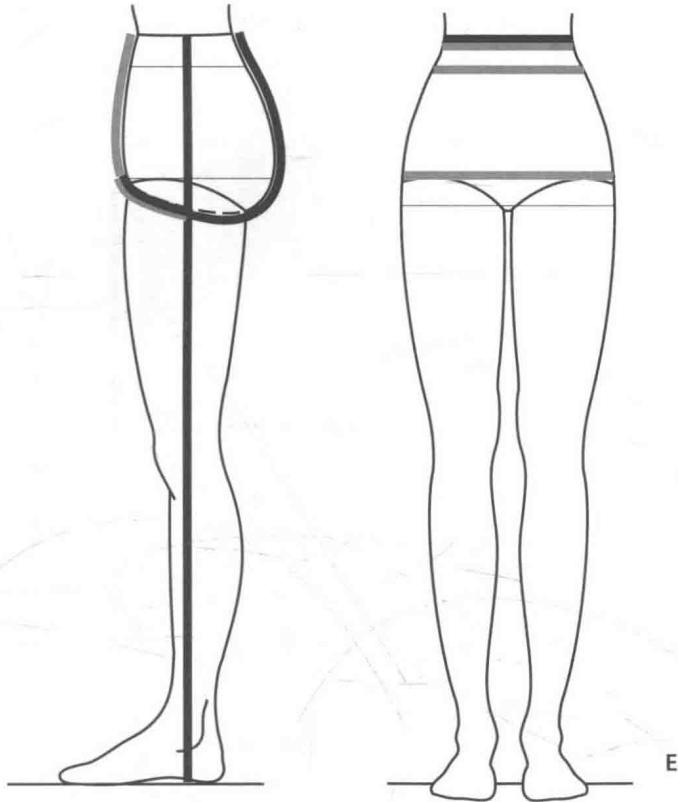


C



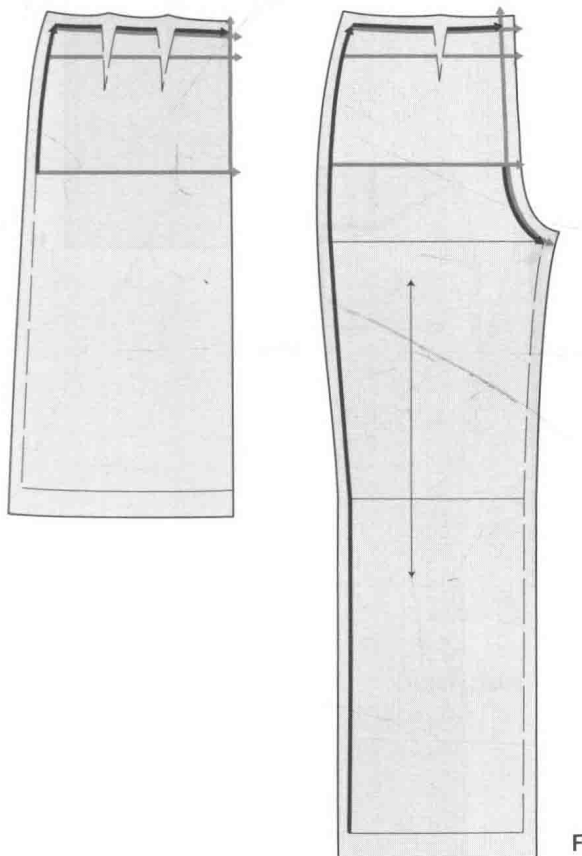
D

74. Large/Prominent Abdomen



BODY MEASUREMENT POSITIONS (E)

- Side, floor to waist
- Crotch length, front, inseam to hip and hip to waist
- Waist, front
- High hip, front, at widest position
- Hip, front, at hip joint level



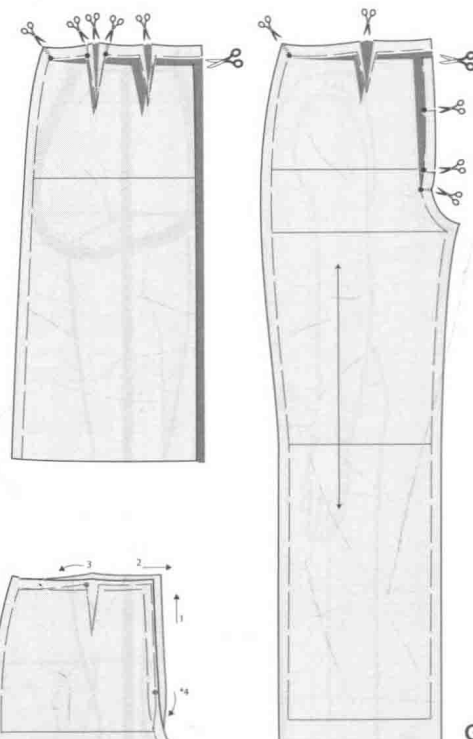
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side length correct
- Pattern crotch length, inseam to hip, correct or too short
- Pattern crotch length, hip to waist, too short
- Pattern waist correct or too narrow
- Pattern high hip too narrow
- Pattern hip too narrow

74. Large/Prominent Abdomen

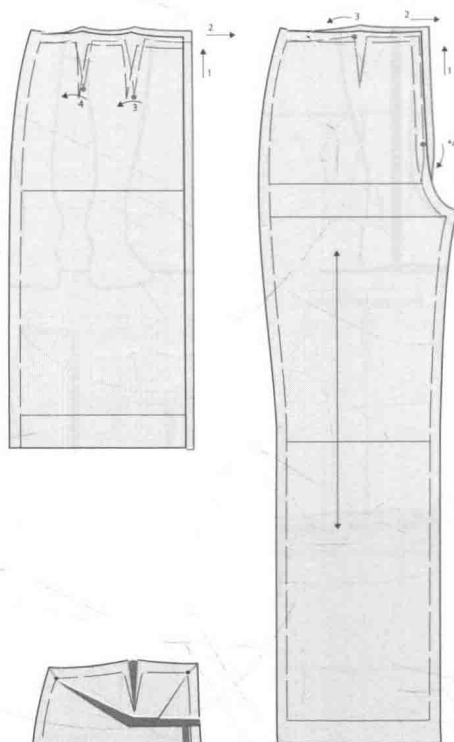
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



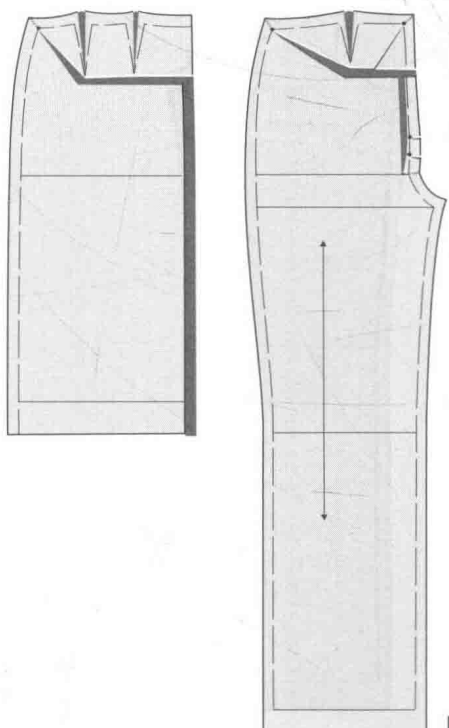
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



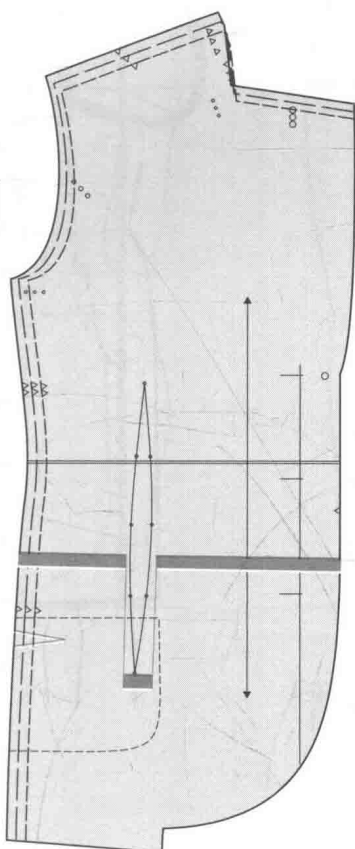
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

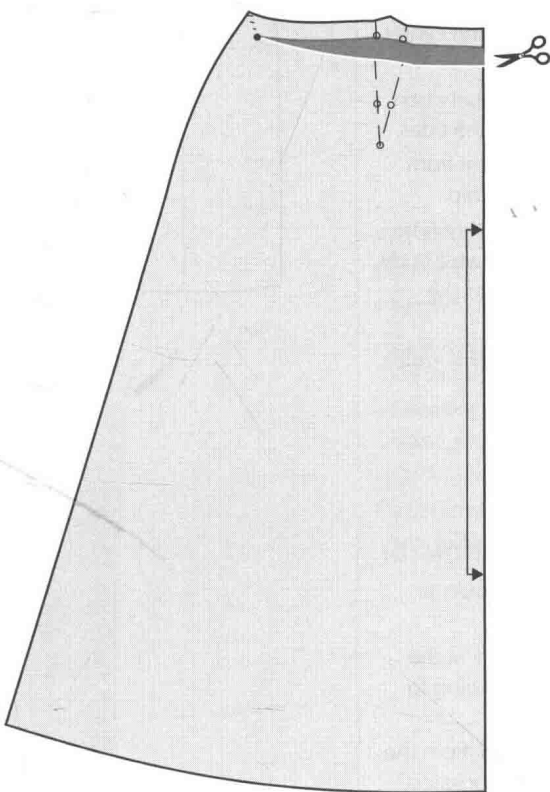


74. Large/Prominent Abdomen

FASHION PATTERNS



Fashion Jacket



A-line Skirt

75. Smaller/Flat Abdomen

FIGURE EVALUATION (A)

- The abdomen is flatter than average/ideal.
- There may be less weight deposit and/or more muscle tone than average/ideal.
- The length between the waist and the crotch is shorter.

FITTING PROBLEMS (B)

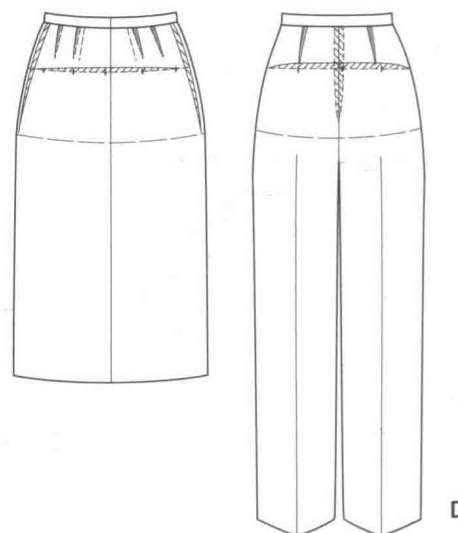
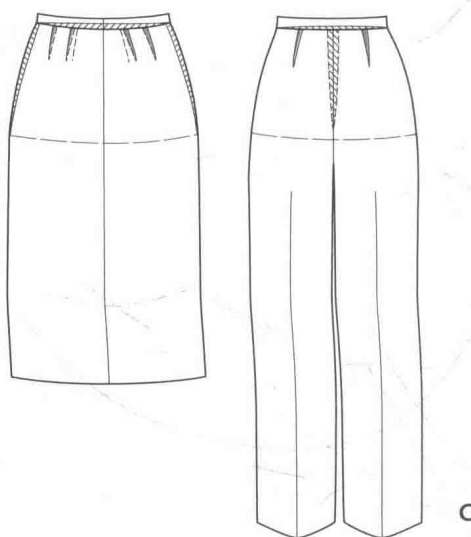
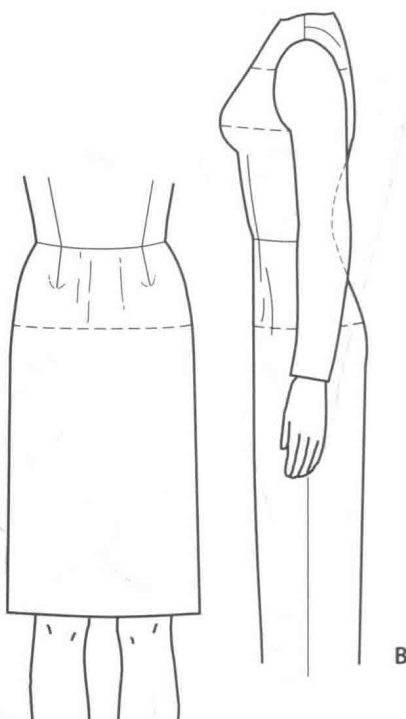
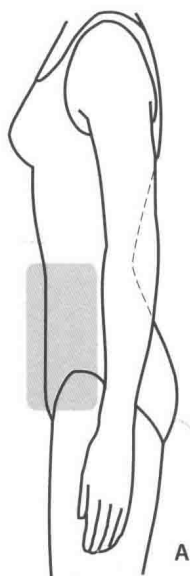
- The fabric over the abdomen is loose and vertical folds may form.
- The skirt hemline may sag in center front.
- On pants, the crotch seam may droop slightly.
- The abdomen needs less fabric length and width, and shaping.

READY-TO-WEAR ALTERATION (C)

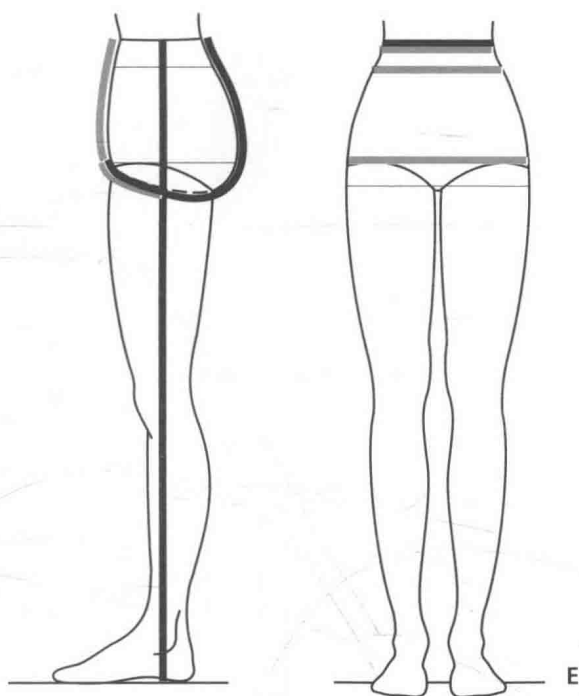
- Release the front waistband and center front seam.
- Take up the waistline, evenly between the center darts, tapering to the sides.
- On a skirt, take in the side seam from the waistline, tapering to the hip.
- On pants, take in the center front from the waist, evenly to the narrowest body position, then tapering back to the original near the hip.
- Narrow the darts to restore waist width.

TRIAL GARMENT ALTERATION (D)

- Make a tuck across the abdomen as illustrated.
- On a skirt, make a vertical tuck at the waist near the side seam, tapering to the hip.
- On pants, make a parallel tuck from the waist to the narrowest body position, then tapering to hip level.
- Narrow the darts to restore waist width.

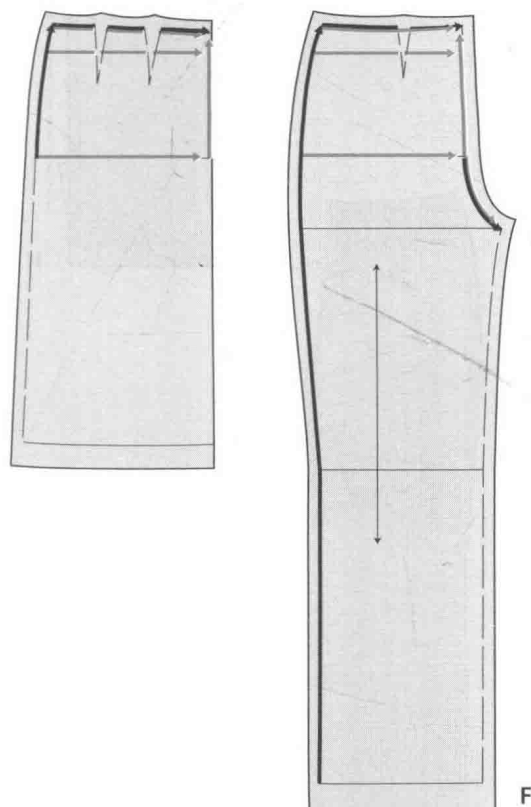


75. Smaller/Flat Abdomen



BODY MEASUREMENT POSITIONS (E)

- Side, floor to waist or hip to waist
- Crotch length, front, inseam to hip and hip to waist
- Waist, front
- High hip, front, at narrowest position
- Hip, front, at hip joint level



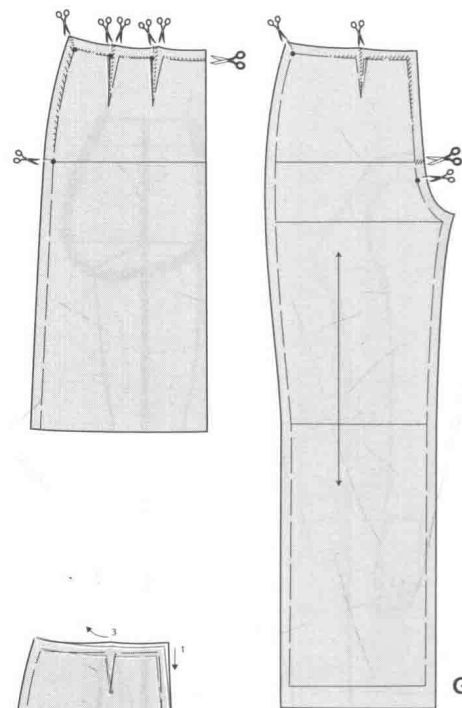
PATTERN MEASUREMENT COMPARISON (F)

- Pattern side length correct
- Pattern crotch length, inseam to hip correct or too long
- Pattern crotch or center front, hip to waist, too long
- Pattern high hip at front too wide
- Pattern hip front correct or too wide

75. Smaller/Flat Abdomen

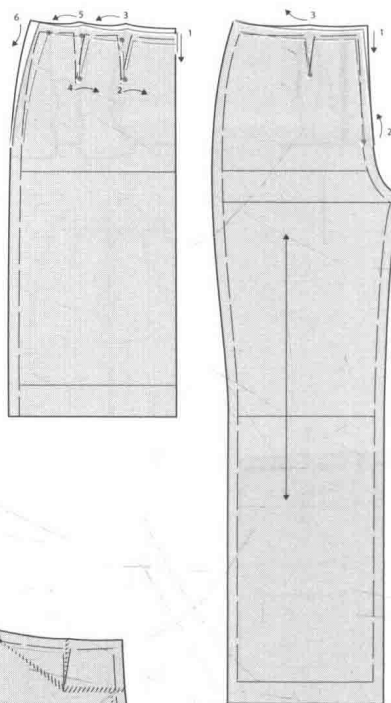
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



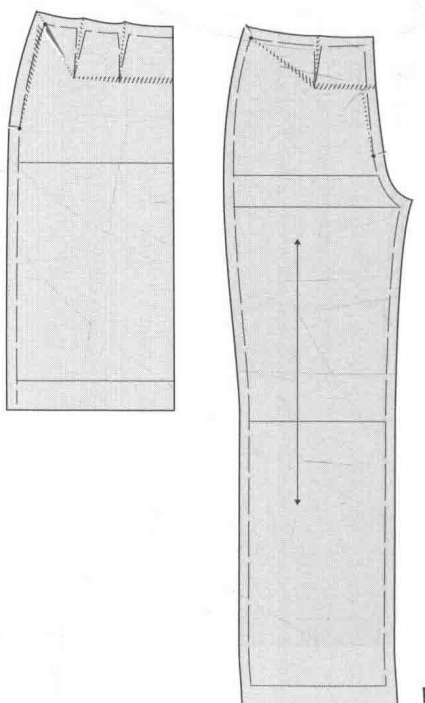
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

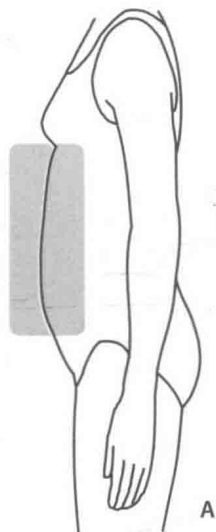


SLASH METHOD (I)

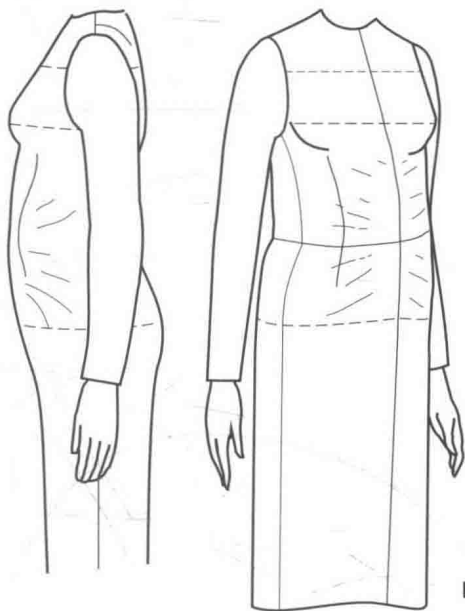
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



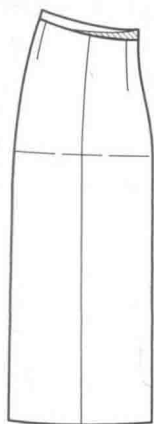
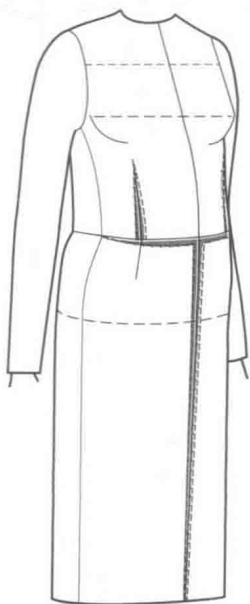
76. High Abdominal Contour



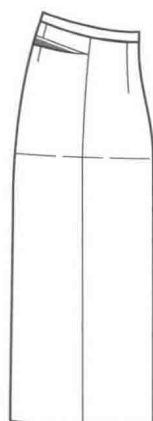
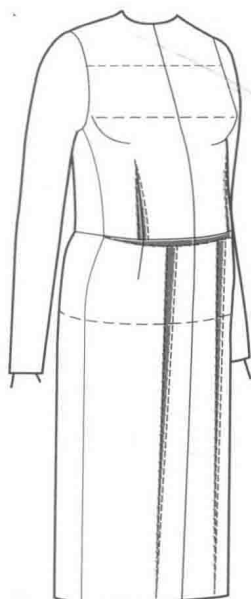
A



B



C



D

FIGURE EVALUATION (A)

- The abdominal contour begins above the waist.
- There is more weight deposit and/or less muscle tone than average/ideal.
- Length and width increase from midriff to the crotch.

FITTING PROBLEMS (B)

- Fabric is too tight over the abdomen.
- Side seams and darts bow forward.
- Tight diagonal wrinkles radiate from the abdomen.
- The circumference of the waistline may be larger than the hip line.
- A skirt hemline rises and angles outward in front.
- On pants, the waistline pulls down and the crotch binds against the body.
- The abdomen needs more fabric length and width and less shaping.

READY-TO-WEAR ALTERATION (C)

- Level the hemline on a skirt by taking up the waistline in back and letting it down in front.
- Let out the center front seam, tapering below the hip line to maintain the hem circumference.
- On pants, release waist darts/pleats and let down the front waistline. Take up the back waistline.
- Deepen the crotch curve.
- The bodice waistline can be raised to a higher position.
- If a bodice has a waist dart, it can be converted to a $\frac{1}{8}$ tuck to increase width.

TRIAL GARMENT ALTERATION (D)

- Slash vertically at center front and horizontally at the widest area.
- Insert fabric strips and spread as illustrated.

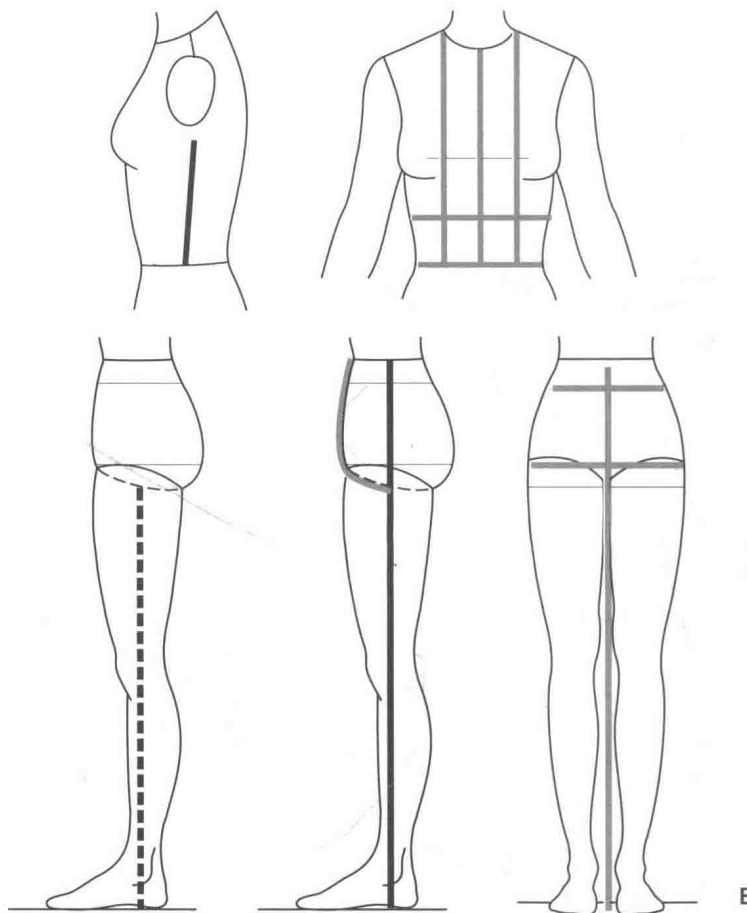
76. High Abdominal Contour

BODY MEASUREMENT POSITIONS UPPER TORSO (E)

- Side, from 1 inch below arm hinge
- Full bodice, front, waist to shoulder at neck
- Center front, waist at center to neckline
- Midriff, front
- Waist, front

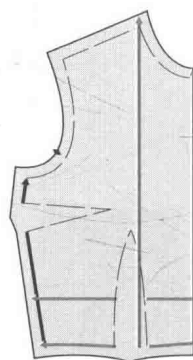
BODY MEASUREMENT POSITIONS LOWER TORSO (E)

- Inseam, crotch to floor
- Side, floor to waist
- Center front, floor to waist
- High hip, front, 1 to 3 inches below waist
- Hip, front, at hip joint level



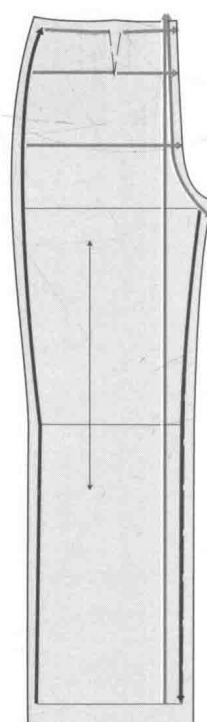
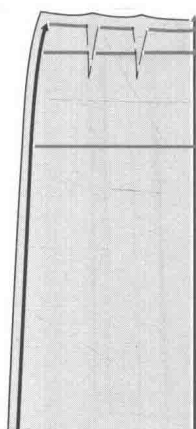
PATTERN MEASUREMENT COMPARISON UPPER TORSO (F)

- Pattern side correct
- Pattern full bodice front too short
- Pattern center front too short
- Pattern midriff too narrow
- Pattern waistline too narrow



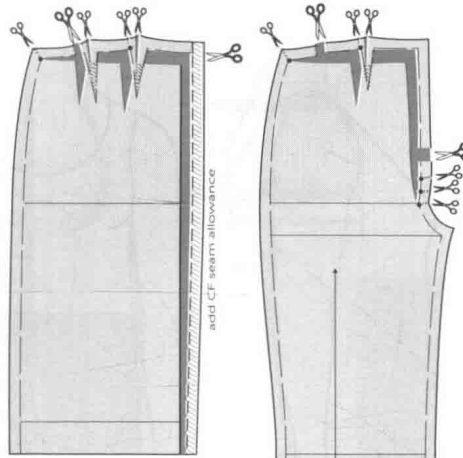
PATTERN MEASUREMENT COMPARISON LOWER TORSO (F)

- Pattern inseam correct
- Pattern side correct
- Pattern center front too short
- Pattern high hip front too narrow
- Pattern hip front too narrow



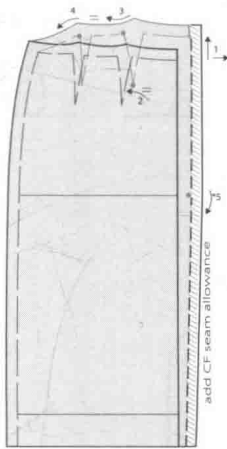
F

76. High Abdominal Contour



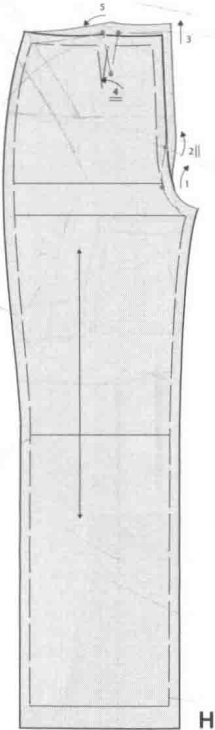
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



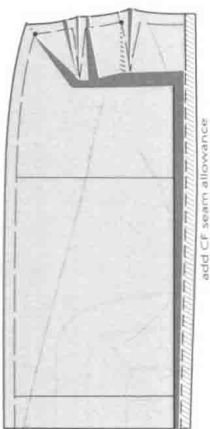
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

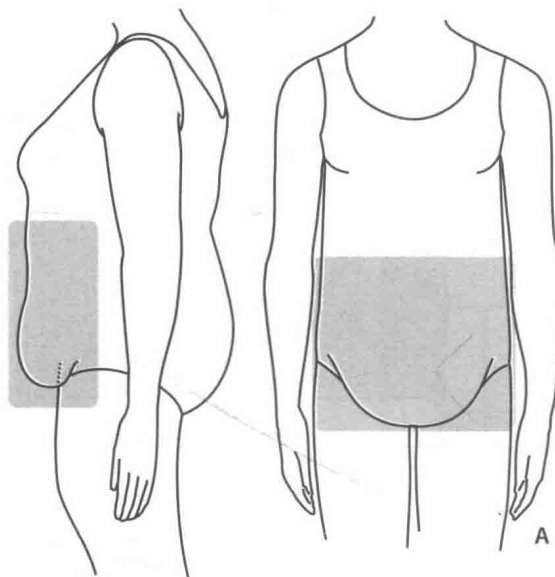
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



77. Low Abdominal Curve

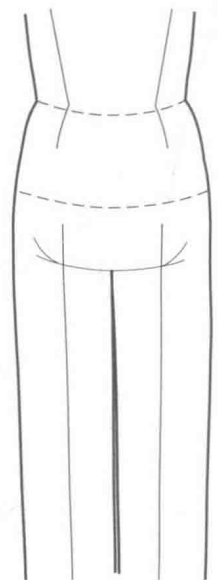
FIGURE EVALUATION (A)

- The lower abdomen protrudes more than average/ideal and drops below the crotch.
- There may be more weight deposit and less muscle tone than average/ideal.
- The length and depth of the body is increased over the dropped curve.



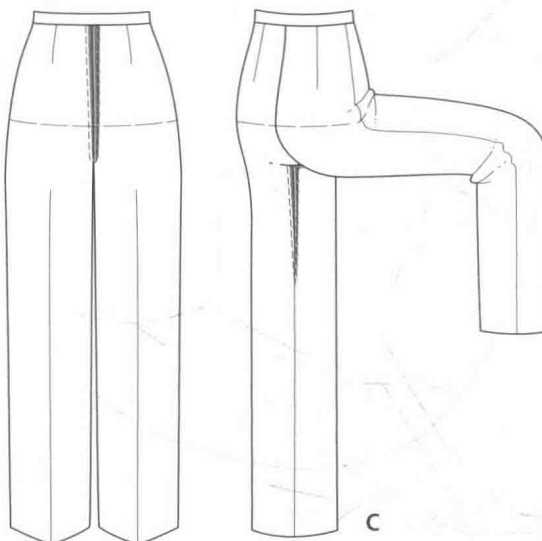
FITTING PROBLEMS (B)

- Skirts ride up seeking a smaller circumference.
- The pant front waistline pulls down and diagonal wrinkles form at the groin.
- The low abdomen needs more fabric length and width below the hipline.



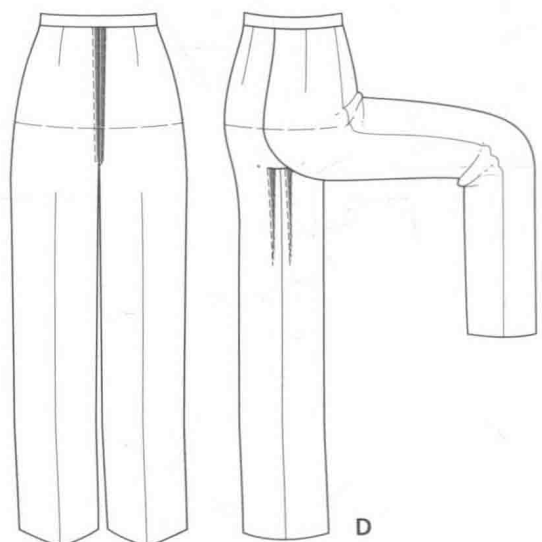
READY-TO-WEAR ALTERATION (C)

- Release the crotch seam and inseam.
- Let out the pant inseam and deepen the crotch curve.
- Let out the center front seam.
- If this variation is accompanied by flat buttocks, the pant may be worn front to back.
- On a skirt, increase width as for #82 Larger Thighs at Side.

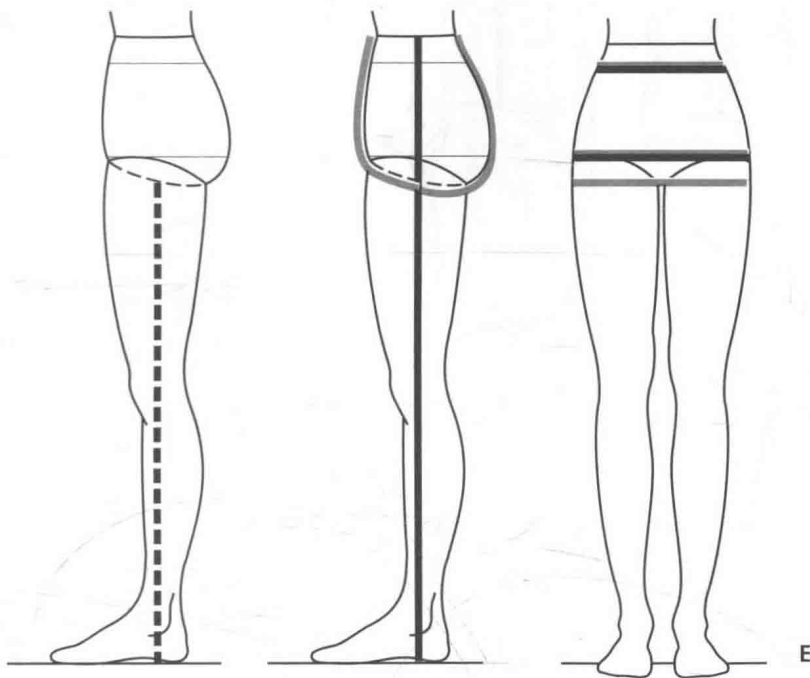


TRIAL GARMENT ALTERATION (D)

- On pants, slash across the crotch extensions front and back.
- Insert fabric strips and spread as illustrated.
- Let out the pant center front seam.
- On a skirt, slash from hem to hip near the side seam.
- Insert fabric strips and spread as for #82 Larger Thighs at Side.

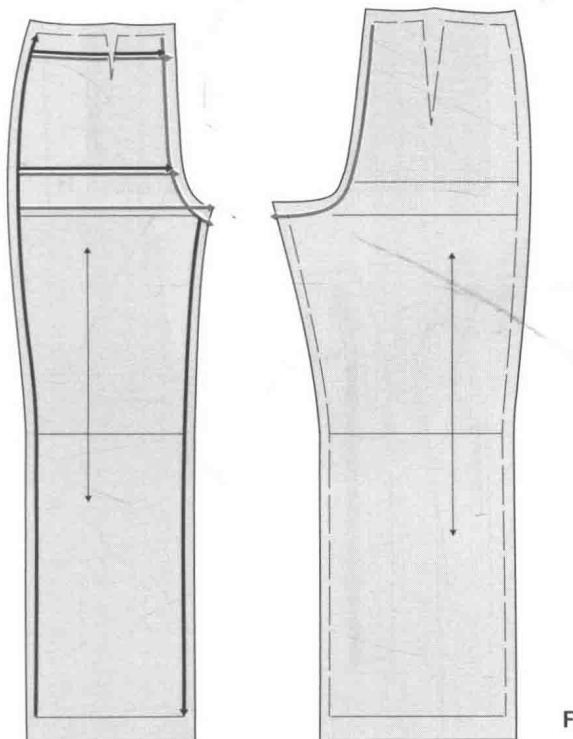


77. Low Abdominal Curve



BODY MEASUREMENT POSITIONS (E)

- Inseam length, crotch to floor
- Side, floor to waist
- Crotch length, front and back
- Waist, front
- High hip, front, 1 to 3 inches below waist
- Hip, front, at hip joint level
- Low hip width front, at crotch or thigh level



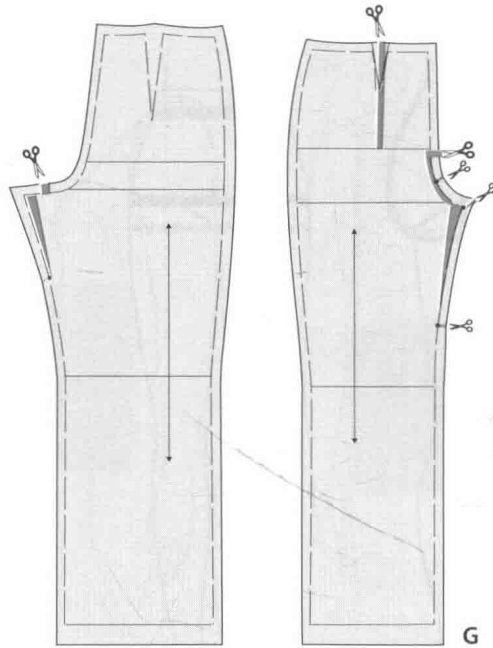
PATTERN MEASUREMENT COMPARISON (F)

- Pattern inseam and side seam correct
- Pattern crotch front too short
- Pattern crotch back too short
- Pattern waist front correct or too narrow
- Pattern high hip front correct or too narrow
- Pattern hip width front correct or too narrow
- Pattern low hip front too narrow

77. Low Abdominal Curve

SEAM METHOD (G)

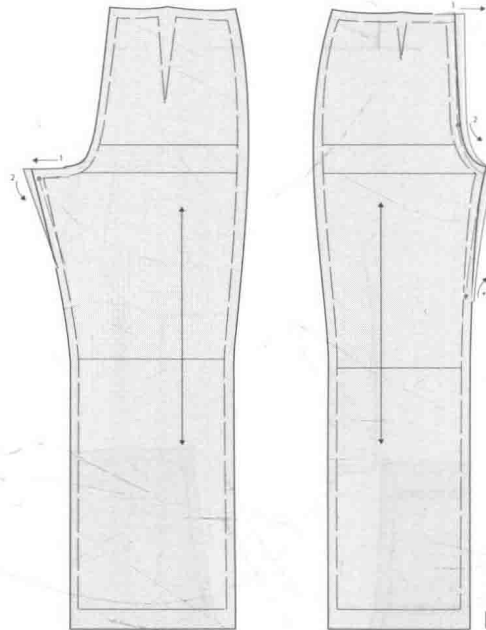
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



G

PIVOT/SLIDE METHOD (H)

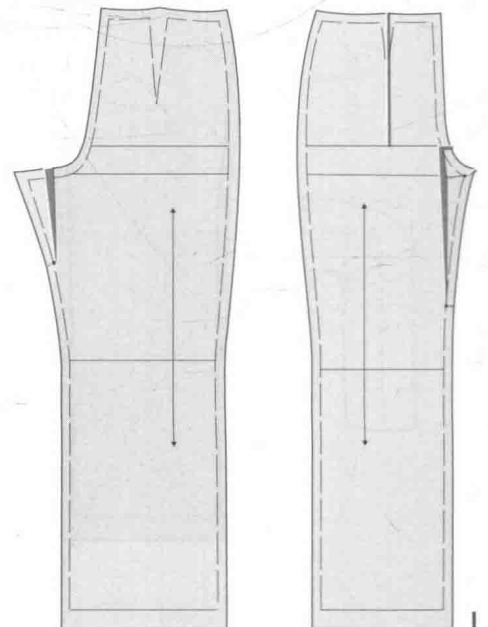
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



H

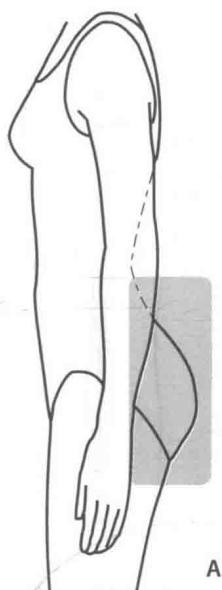
SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

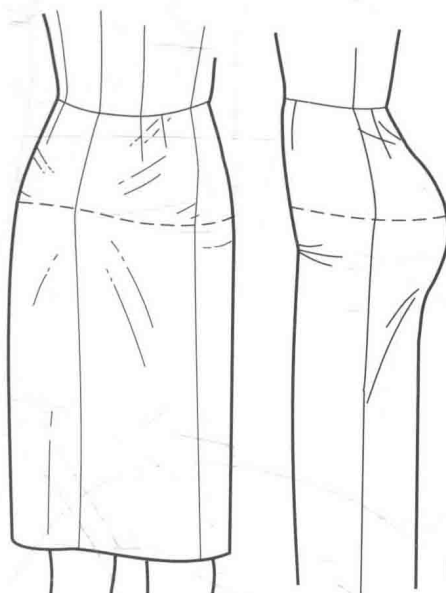


I

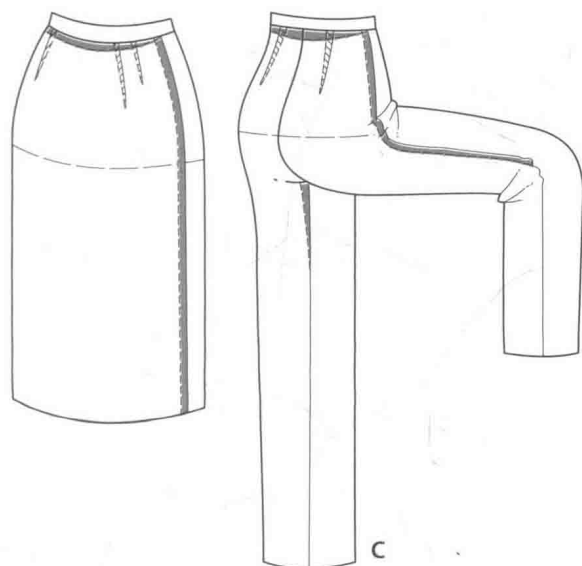
78. Large Prominent Buttocks



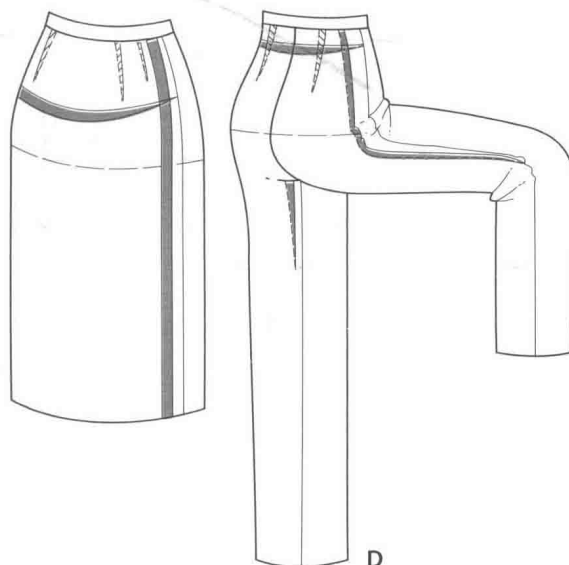
A



B



C



D

FIGURE EVALUATION (A)

- There may be more weight deposit and/or muscle development than average/ideal.
- There is greater depth from the body's center to the buttocks.
- The hip circumference is larger than average/ideal.

FITTING PROBLEMS (B)

- The fabric is tight over the buttocks.
- The side seams bow toward the back at hip level.
- The skirt rides up at the back causing the hem to rise and angle outward.
- Diagonal wrinkles radiate from the buttocks.
- On pants, the back waistline is pulled down.
- The back pant leg may have diagonal wrinkles angled toward the crotch.
- The buttocks need more length and width and a wider crotch extension on the pants.

READY-TO-WEAR ALTERATION (C)

- Release the back waistband and side seams.
- Let down the waistline evenly between darts, then taper to the sides.
- Let out the back side seams as illustrated.
- Let out the back inseam of the pants to increase crotch width.
- Increase the dart size to restore waist width.

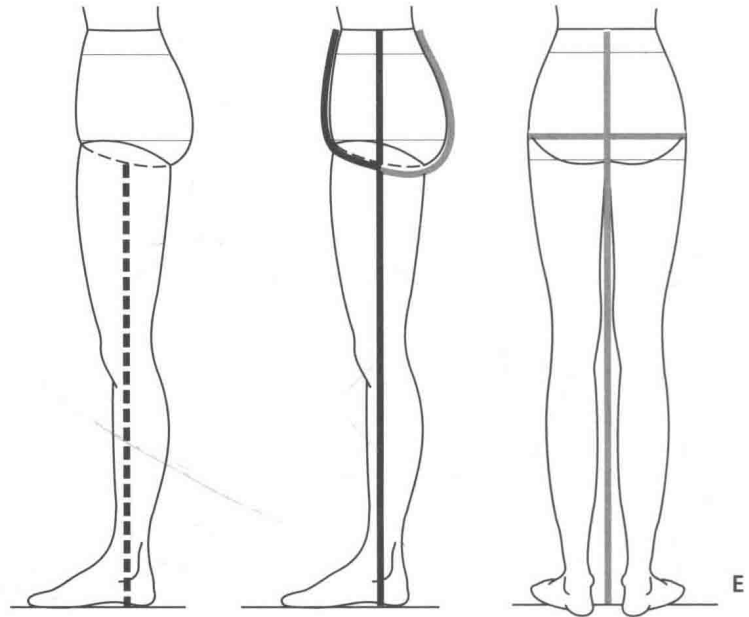
TRIAL GARMENT ALTERATION (D)

- Slash across the back above the hipline.
- Insert fabric strips and spread as illustrated.
- Release the back waistband.
- Slash lengthwise from the waistline as illustrated.
- Insert fabric strips and spread as illustrated.
- On pants, slash the back crotch extension.
- Insert fabric strips and spread as illustrated.
- Increase the dart size to restore waist width.

78. Large Prominent Buttocks

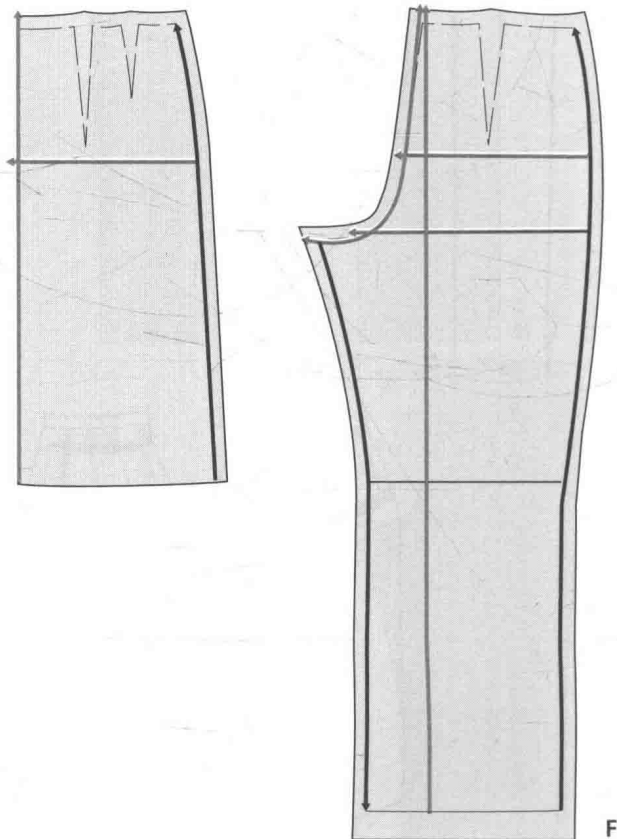
BODY MEASUREMENT POSITIONS (E)

- Inseam, crotch to floor
- Side, floor to waist
- Center back, floor to waist
- Crotch length, back, inseam to hip and hip to waist
- Waist, back
- Hip, back, at hip joint level

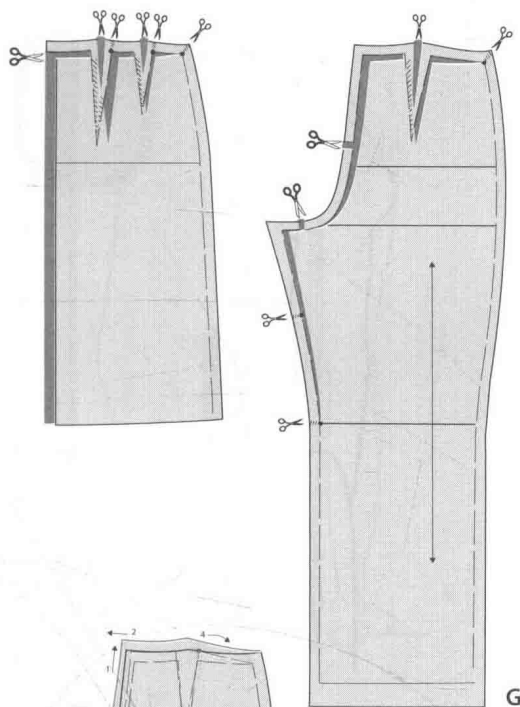


PATTERN MEASUREMENT COMPARISON (F)

- Pattern inseam is correct
- Pattern side correct
- Pattern center back too short
- Pattern crotch length, back, inseam to hip and hip to waist are too short
- Waist back correct
- Hip back too narrow

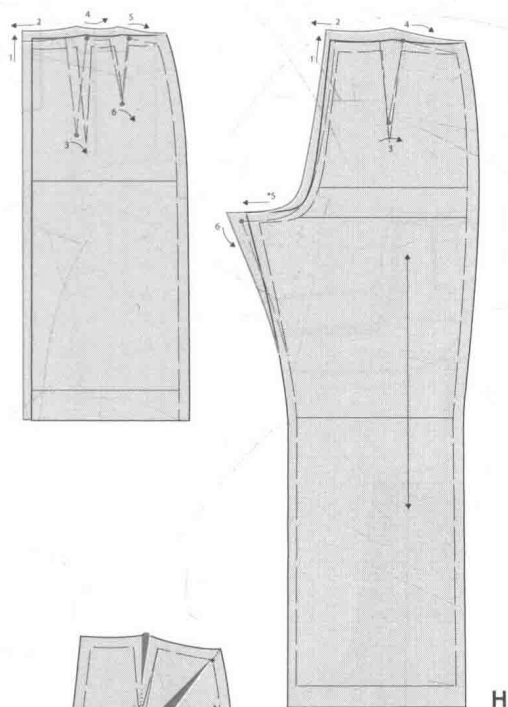


78. Large Prominent Buttocks



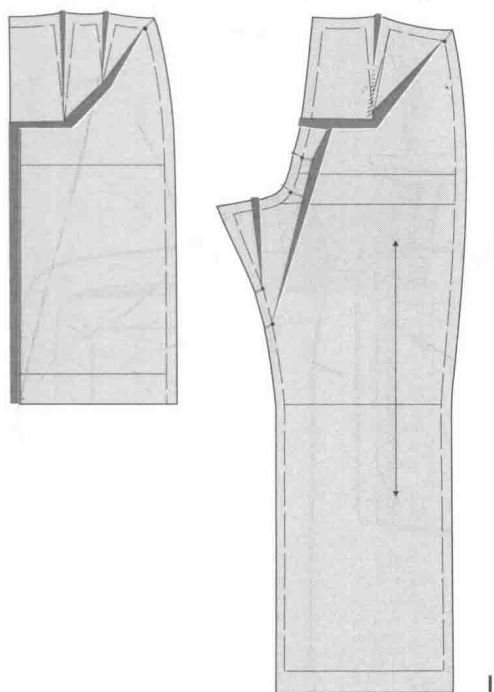
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

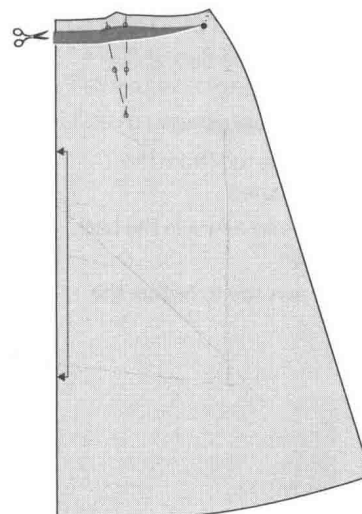
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

FASHION PATTERN



A-line Skirt

79. Flat Buttocks

FIGURE EVALUATION (A)

- There may be less weight deposit and/or muscle development than average/ideal.
- There is less depth from the body's center to the buttocks.
- The hip circumference is less than average/ideal.

FITTING PROBLEMS (B)

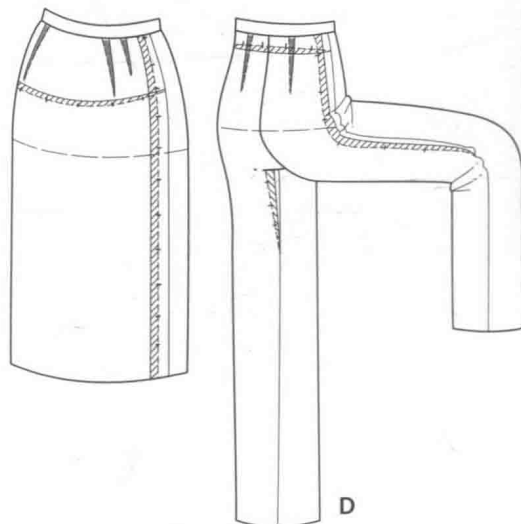
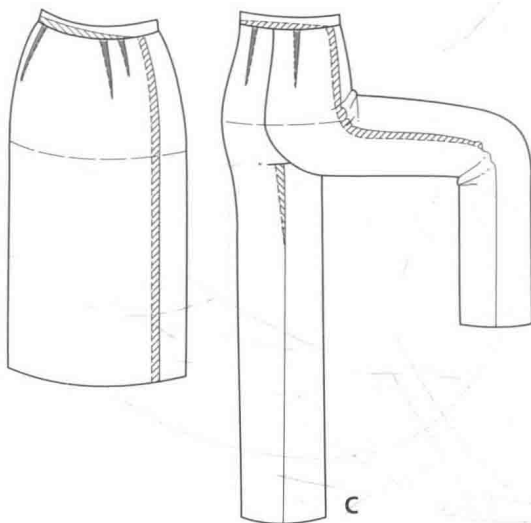
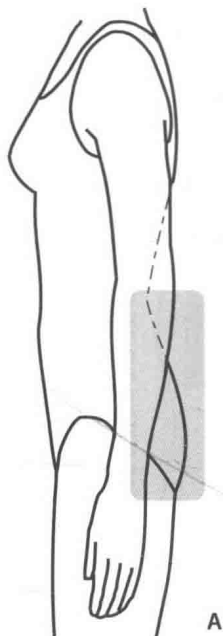
- The fabric is loose over the buttocks.
- The hem may droop at the back.
- Soft folds form below the buttocks.
- The buttocks need less fabric length and width and a narrower crotch extension on the pants.

READY-TO-WEAR ALTERATION (C)

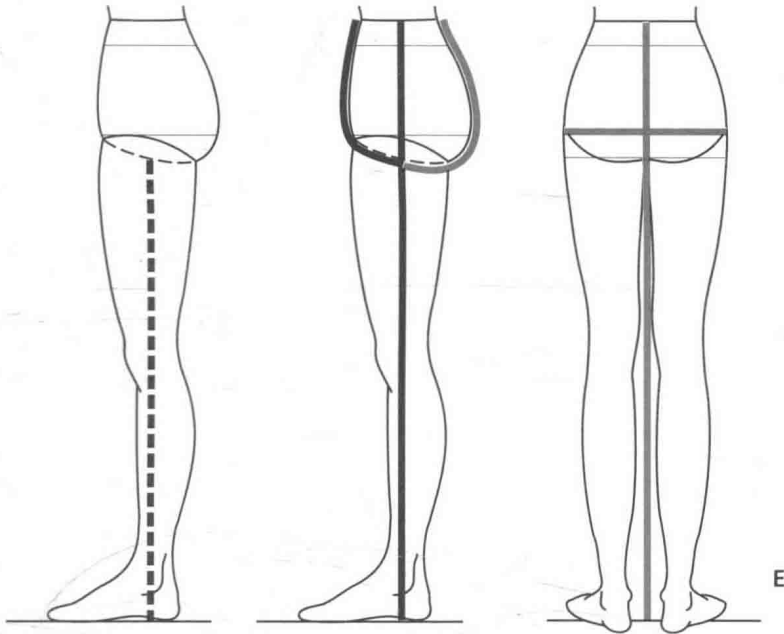
- Release the back waistband and side seams.
- Take up the waistline evenly between darts, then taper to the sides.
- Take in the back side seams as illustrated.
- Take in the back inseam of the pants to decrease the crotch width.
- Decrease the dart size to restore the waist width.

TRIAL GARMENT ALTERATION (D)

- Make a tuck across the back above the hipline.
- Release the back waistband.
- Make a lengthwise tuck from the waistline as illustrated.
- On the pants, make a tuck in the back crotch extension.
- Decrease the dart size to restore the waist width.

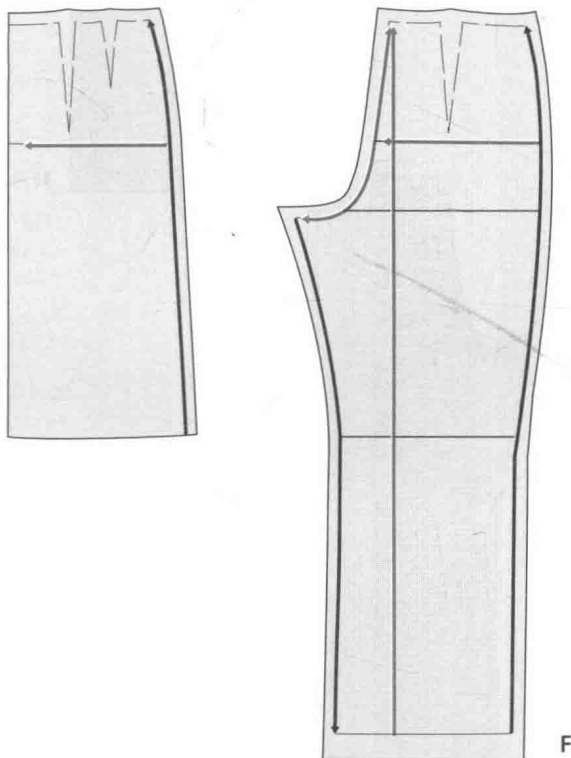


79. Flat Buttocks



BODY MEASUREMENT POSITIONS (E)

- Inseam, crotch to floor
- Side, floor to waist
- Center back, floor to waist
- Crotch length, back, inseam to hip and hip to waist
- Waist, back
- High hip, back 1 to 3 inches below waist
- Hip, back, at hip joint level



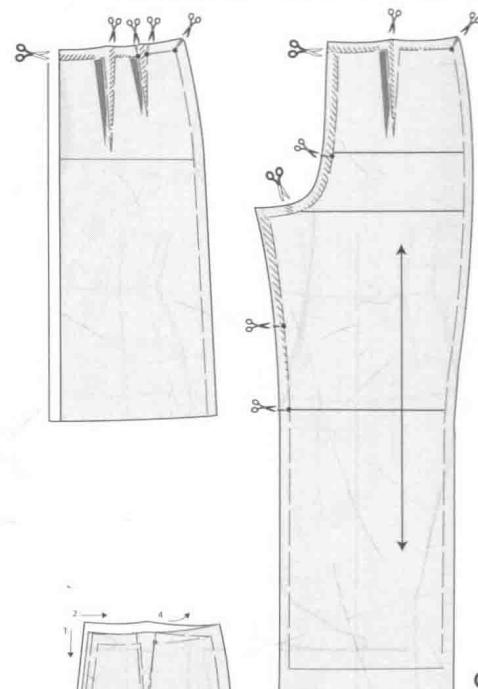
PATTERN MEASUREMENT COMPARISON (F)

- Pattern inseam, correct
- Pattern side correct
- Pattern center back too long
- Pattern crotch length, back, inseam to hip too wide
- Pattern crotch length, back, hip to waist too long
- Pattern back waist correct
- Pattern back high hip too wide
- Pattern back hip too wide

79. Flat Buttocks

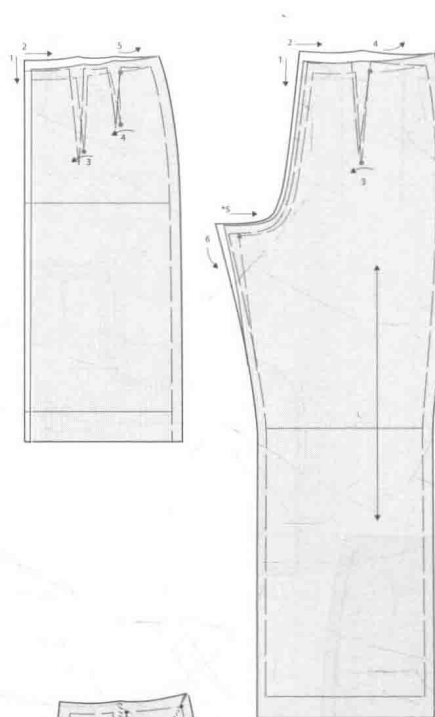
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



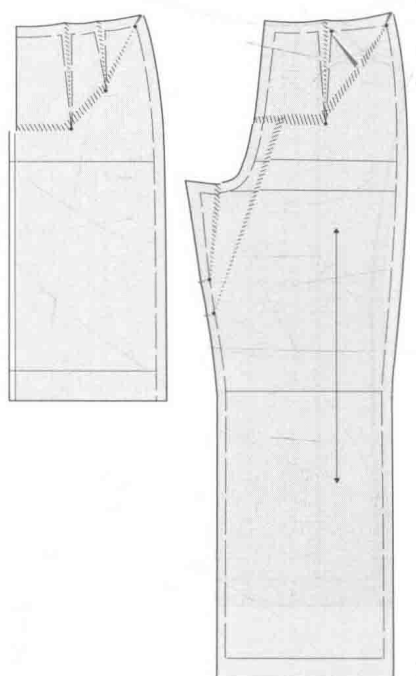
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

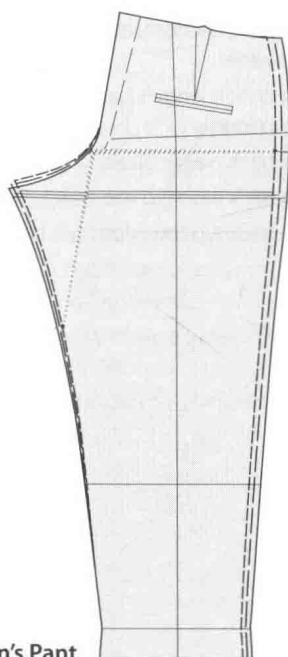


SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



FASHION PATTERN



Men's Pant

80. Prominent Pubic Area

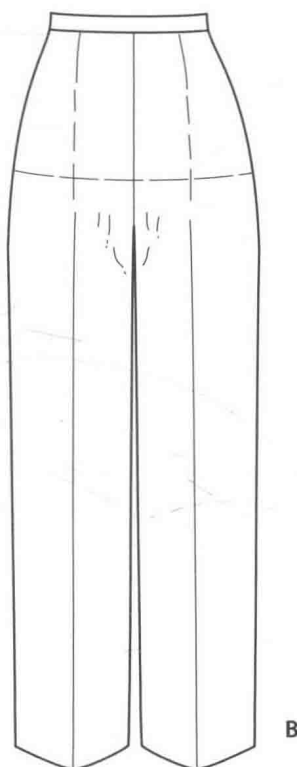
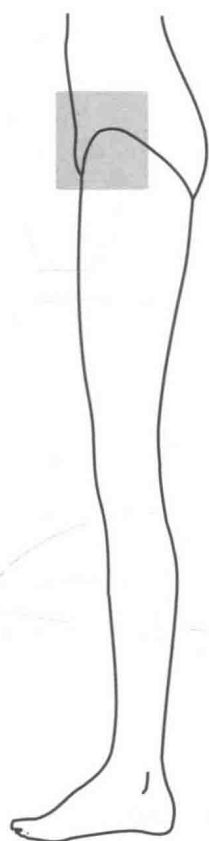
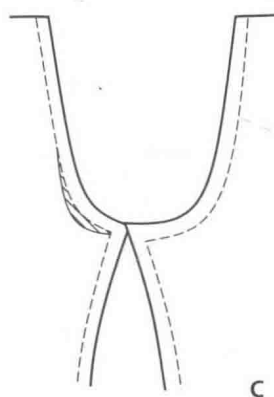


FIGURE EVALUATION (A)

- The pubic bone is more forward, lower, or larger than average/ideal.
- There may be more weight deposit than average/ideal.
- The front torso/crotch curve is more vertical than sloped.
- The front crotch is more abruptly curved.

FITTING PROBLEMS (B)

- Only the fitting of pants is affected.
- Wrinkles follow the crotch curve.
- The fabric is pulled into the crotch crevice because the fabric curve is too shallow.
- The front crotch curve needs to be deeper and more abrupt, or L-shaped, decreasing fabric width.



READY-TO-WEAR ALTERATION (C)

- Deepen the front crotch curve between hipline and inseam as illustrated.
- If more width is needed, let out the front inseam.

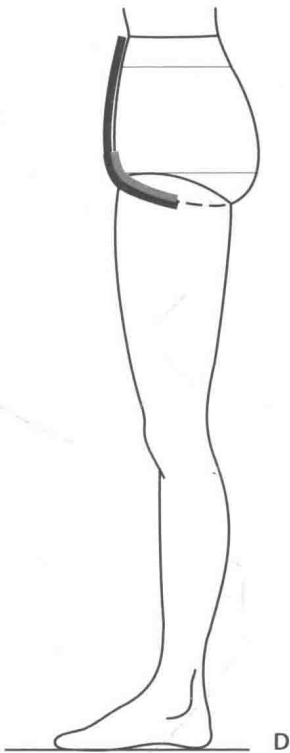
TRIAL GARMENT ALTERATION

- Proceed as for Ready-to-Wear.

80. Prominent Pubic Area

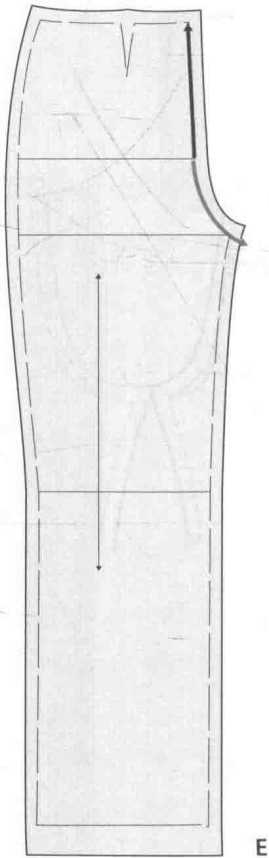
**BODY MEASUREMENT
POSITIONS (D)**

- Crotch length, front, inseam to hip and hip to waist

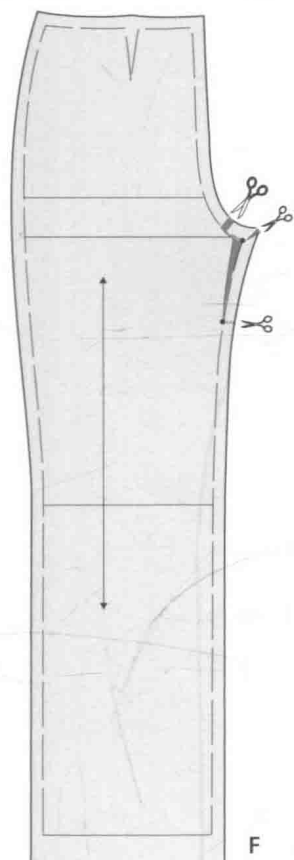


**PATTERN MEASUREMENT
COMPARISON (E)**

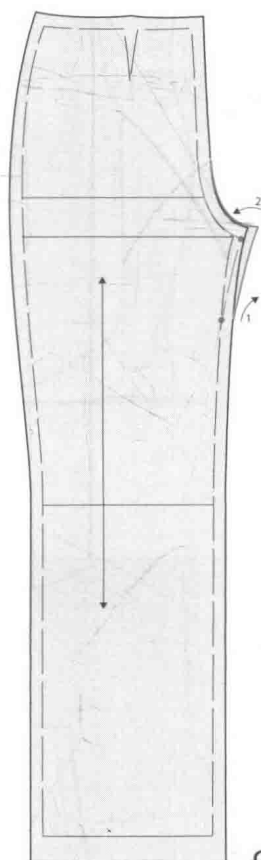
- Pattern front crotch length, inseam to hip too short
- Pattern front crotch length, hip to waist correct



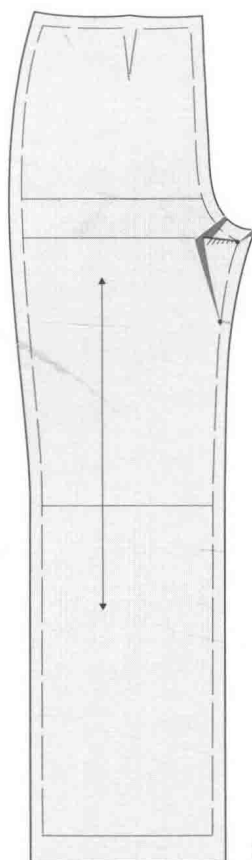
80. Prominent Pubic Area



F



G



H

SEAM METHOD (F)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (G)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (H)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

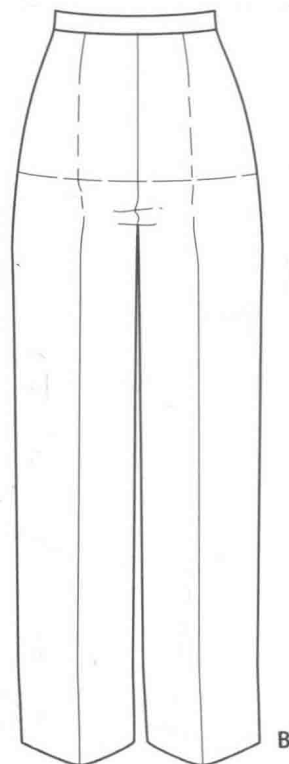
81. Receded Pubic Area

FIGURE EVALUATION (A)

- The pubic bone is smaller or set back more deeply than average/ideal.
- The front torso/crotch curve slopes more than average/ideal.

FITTING PROBLEMS (B)

- Only the fit of pants is affected.
- Horizontal stress wrinkles form across the front crotch area.
- The vertical grain lines pull toward each other at the groin.
- The front crotch curve needs to be shallower, increasing fabric width.

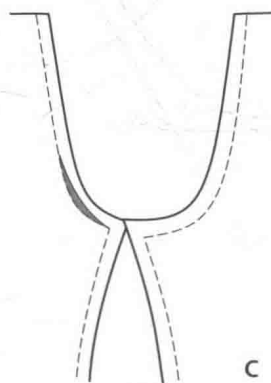


READY-TO-WEAR ALTERATION (C)

- Stitch a new seam line creating a shallower crotch curve.
- Release the original seam.

TRIAL GARMENT ALTERATION

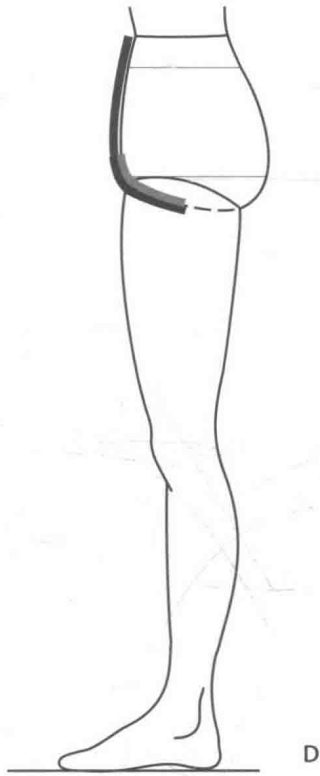
- Proceed as for Ready-to-Wear.



81. Receded Pubic Area

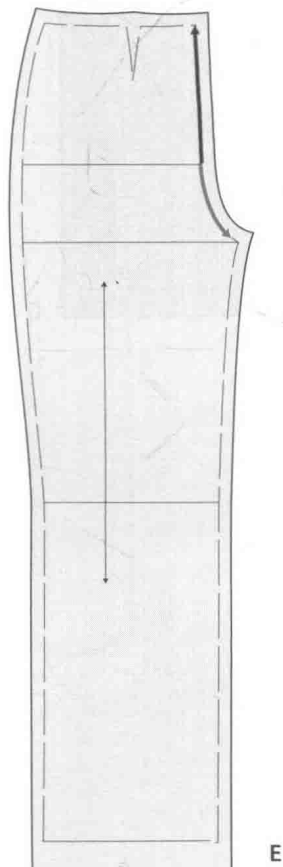
BODY MEASUREMENT POSITIONS (D)

- Crotch length, front, inseam to hip and hip to waist



PATTERN MEASUREMENT COMPARISON (E)

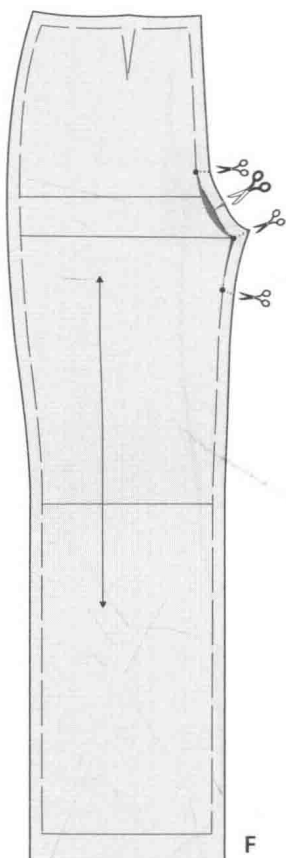
- Pattern front crotch length inseam to hip too long
- Pattern front crotch length, hip to waist correct



81. Receded Pubic Area

SEAM METHOD (F)

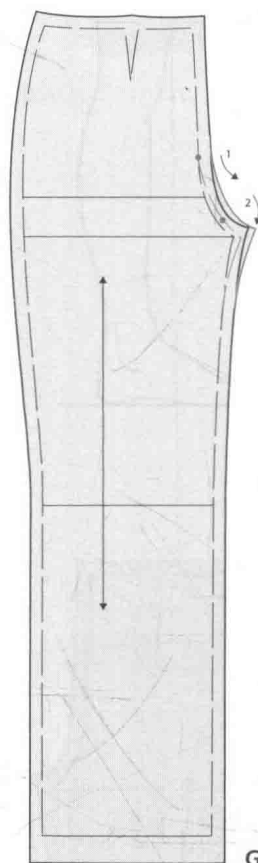
- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



F

PIVOT/SLIDE METHOD (G)

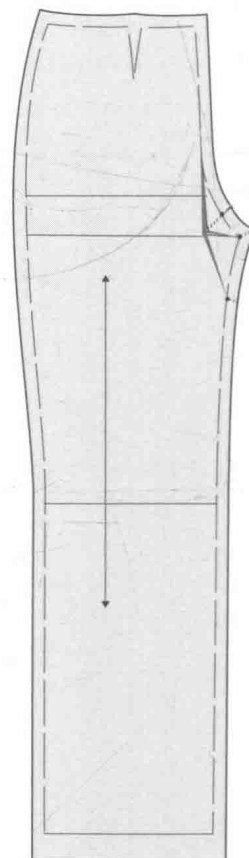
- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



G

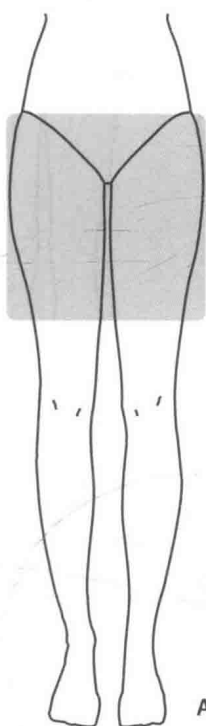
SLASH METHOD (H)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

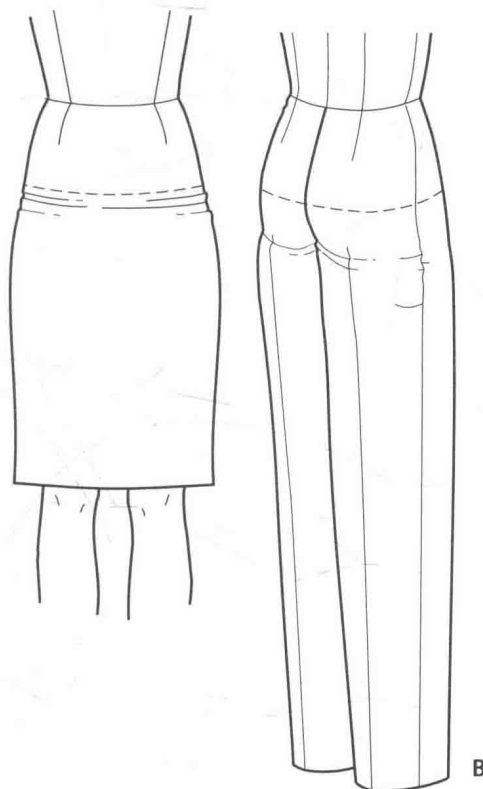


H

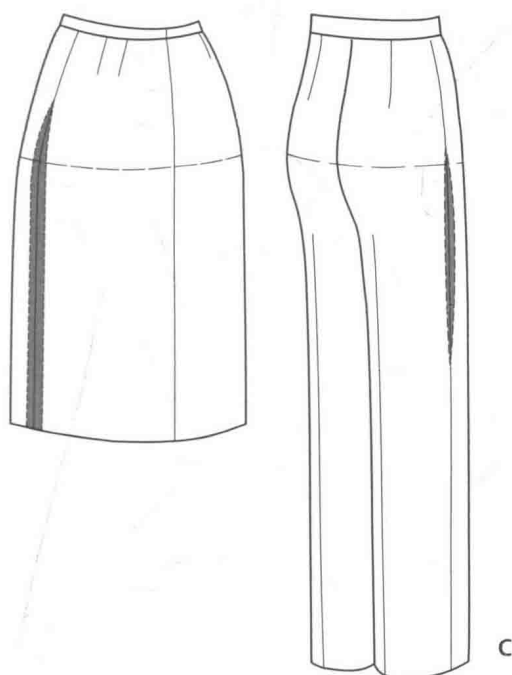
82. Larger Thighs at Side



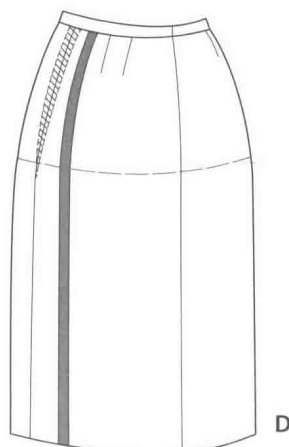
A



B



C



D

FIGURE EVALUATION (A)

- Added weight is deposited on upper thighs below the hips.
- The thighs at sides are larger than average/ideal.

FITTING PROBLEMS (B)

- Tight horizontal wrinkles form around the upper thighs below the hipline.
- On pants, horizontal wrinkles may radiate from the crotch toward the side at thigh level.
- The crease lines of pants are pulled to the side.
- Fabric "cups" under the buttocks and thighs.
- More fabric width is needed over the upper thigh.

READY-TO-WEAR ALTERATION (C)

- Release the side seams.
- On a skirt, let out the side seams beginning above the hip, taper out to the thigh, then parallel to the hem.
- On pants, let out the side seams over the thighs, taper above and below the thighs.

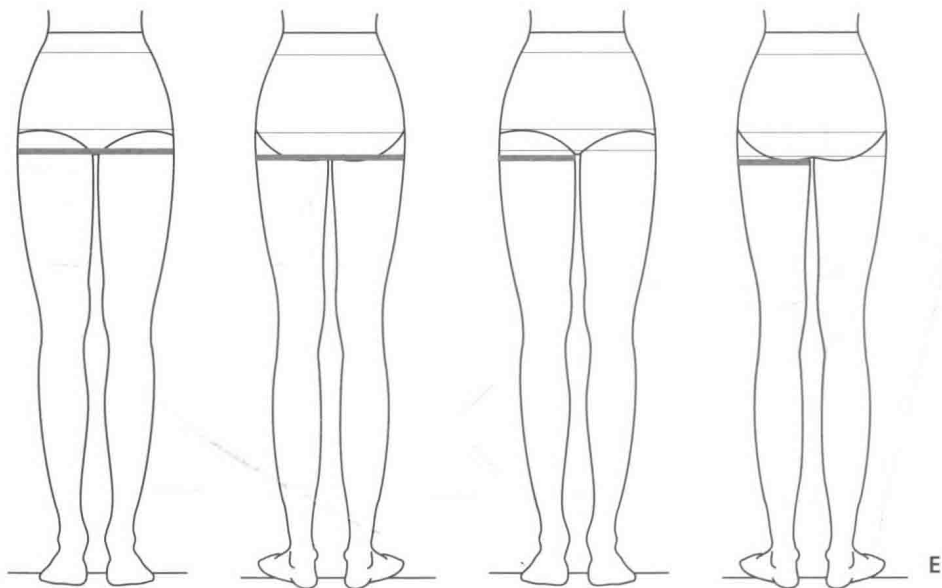
TRIAL GARMENT ALTERATION (D)

- Release the waistband over the sides and slash from waistline to hem.
- Insert and attach parallel fabric strips to increase width.
- Release side seams and take in the waistline to restore waist width.

82. Larger Thighs at Side

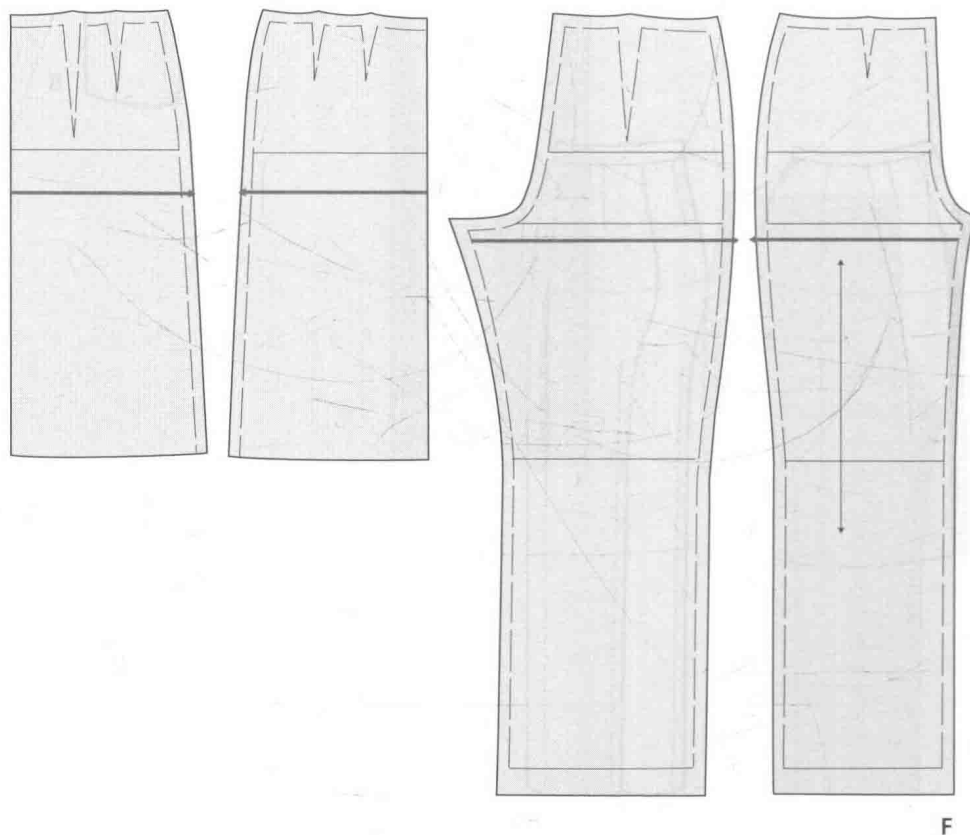
BODY MEASUREMENT POSITIONS (E)

- Waist width front and back, at waist level
- High hip width front and back, below waist
- Hip width front and back, at hip joint
- Thigh width front and back, at thigh level

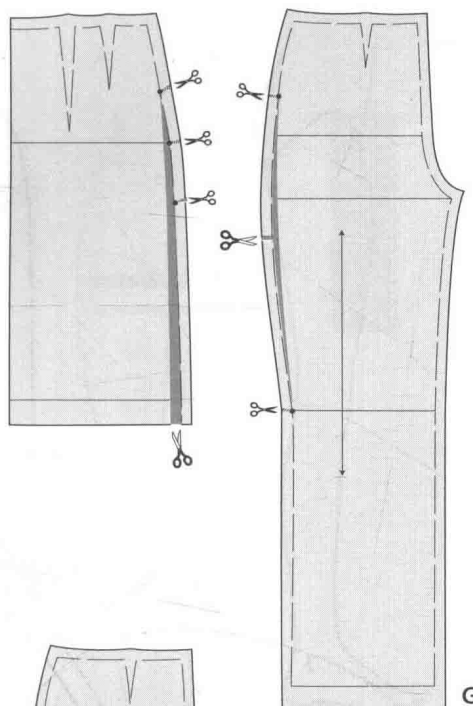


PATTERN MEASUREMENT COMPARISON (F)

- Pattern waist width front and back correct or adjusted
- Pattern high hip width front and back correct or adjusted
- Hip width front and back may be correct or too narrow
- Thigh width front and back too narrow

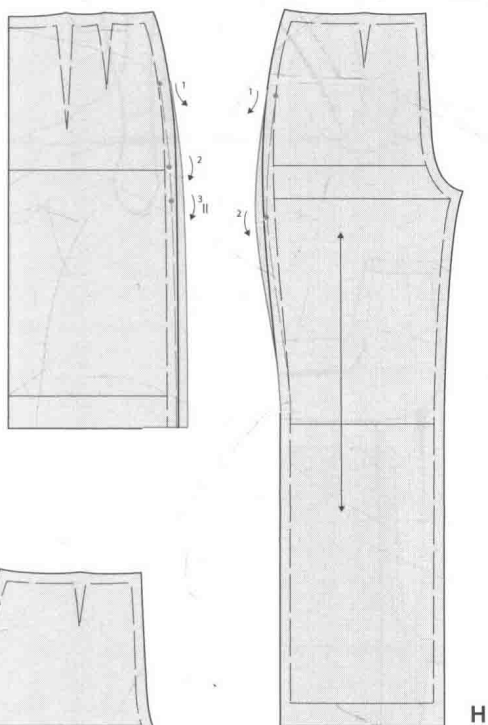


82. Larger Thighs at Side



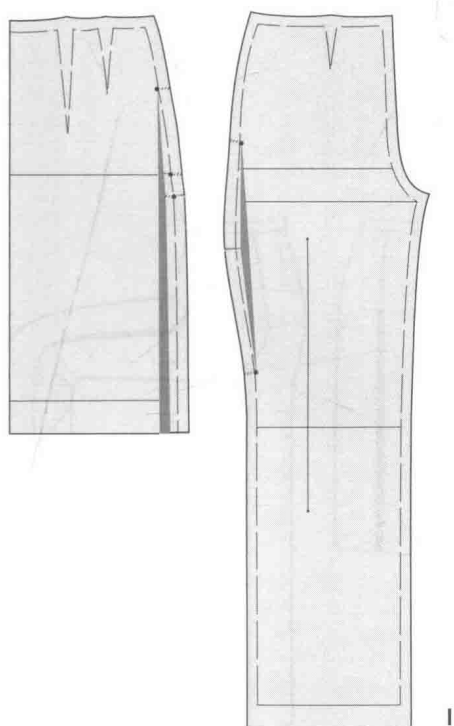
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

83. Larger Thighs at Front

FIGURE EVALUATION (A)

- Front thigh muscles are more fully developed and rounded out below the groin than average/ideal.
- The groin area appears to be more indented than average/ideal.

FITTING PROBLEMS (B)

- The fabric is pulled tight over front upper thigh area.
- When walking, the fabric rises at the front, forming a horizontal fold.
- On pants, horizontal wrinkles form across the inseam near the crotch.
- The front thigh needs more fabric width over the thigh and through the crotch.

READY-TO-WEAR ALTERATION SKIRT (C)

- Release the side seam and the side waistline to and including the dart.
- Introduce a flare over the thigh by narrowing the dart and raising the waistline at the side.
- Insert fabric strips and spread as illustrated, keeping width parallel from hip to hem.

READY-TO-WEAR ALTERATION PANTS (C)

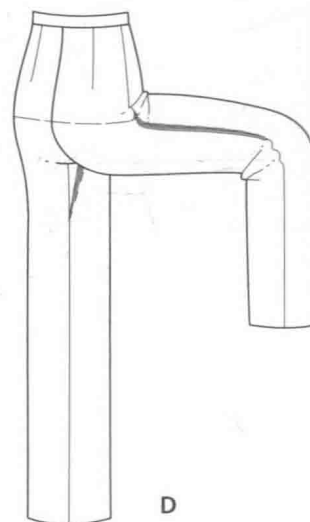
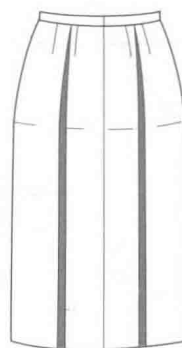
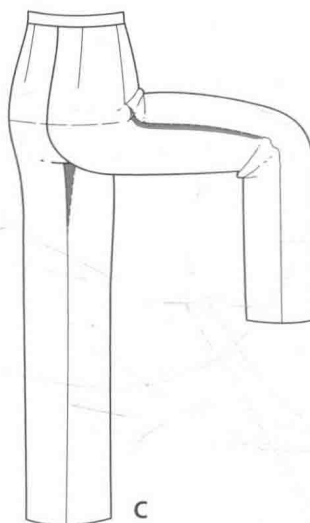
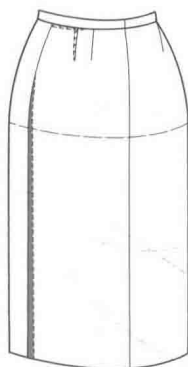
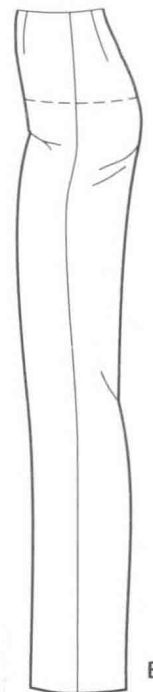
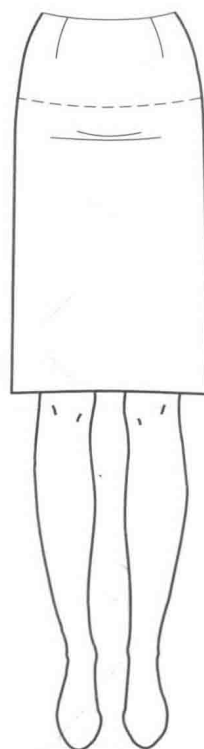
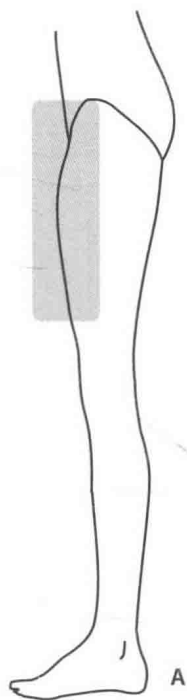
- Release the front waistline and inseam to the knee.
- Let out the front crotch extension, tapering to above the knee.
- Take up the front waistline evenly to the dart, then taper to the side to restore crotch length.
- If needed, release the side seam over the thigh and let out the front side seam.

TRIAL GARMENT ALTERATION SKIRT (D)

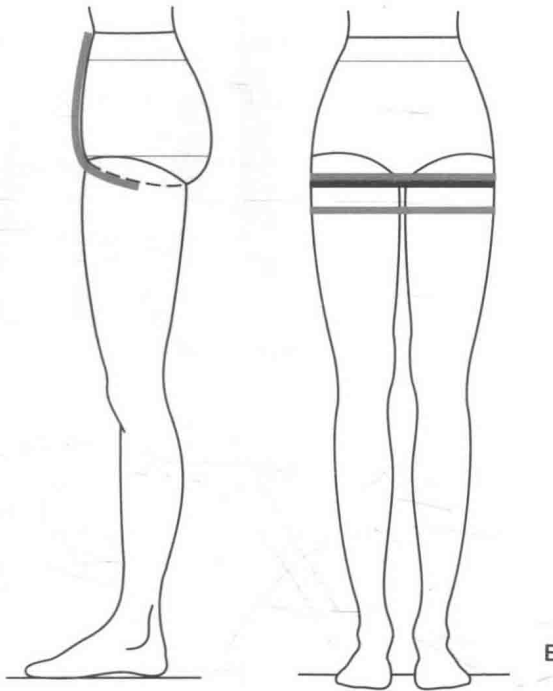
- Slash the front over the thighs.
- Insert fabric strips and spread as illustrated.

TRIAL GARMENT ALTERATION PANTS (D)

- Slash the crotch extension to the inseam above the knee.
- Insert fabric strips and spread as illustrated.
- If needed, let out the front side seam as illustrated.

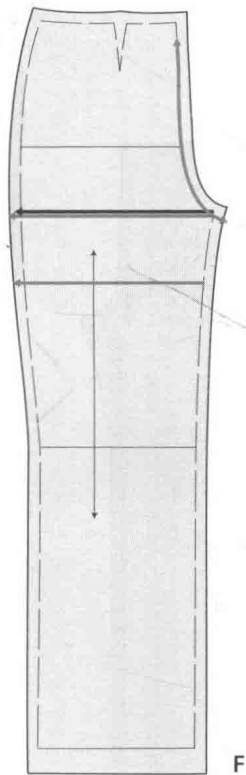


83. Larger Thighs at Front



BODY MEASUREMENT POSITIONS (E)

- Crotch length front, inseam to hip and hip to waist
- Low hip, front, at crotch level
- Thigh, front, at fullest position
- Observation of thighs is important to this variation



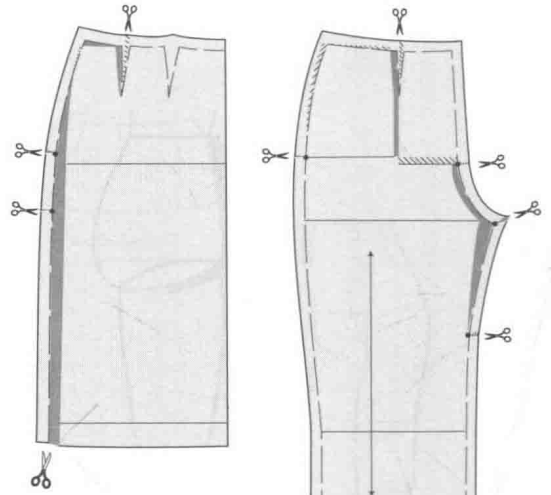
PATTERN MEASUREMENT COMPARISON (F)

- Pattern crotch length, front, inseam to hip too short
- Pattern crotch length, front, hip to waist correct or too long
- Pattern thigh, front, too narrow

83. Larger Thighs at Front

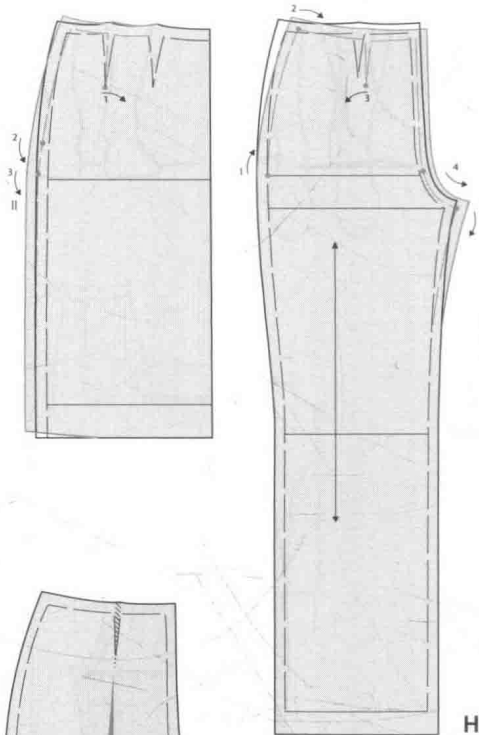
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



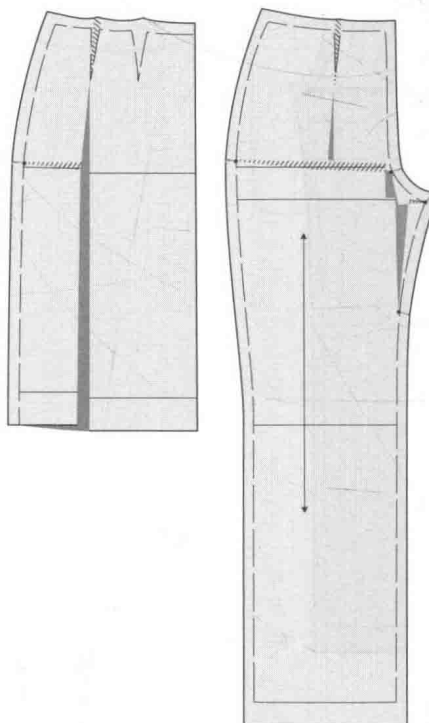
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

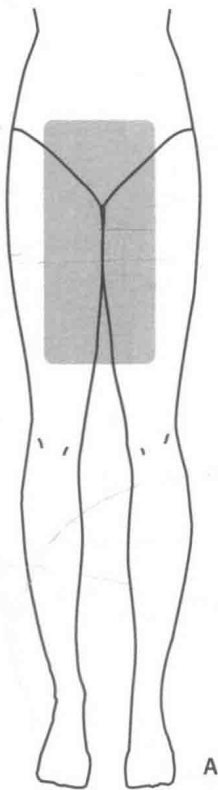


SLASH METHOD (I)

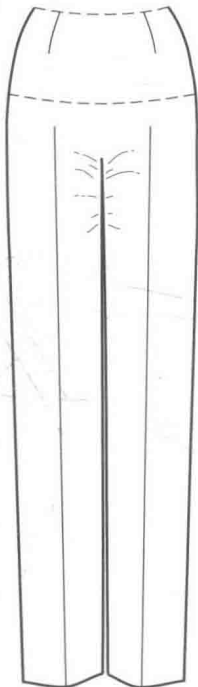
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



84. Larger Thighs at Inside



A



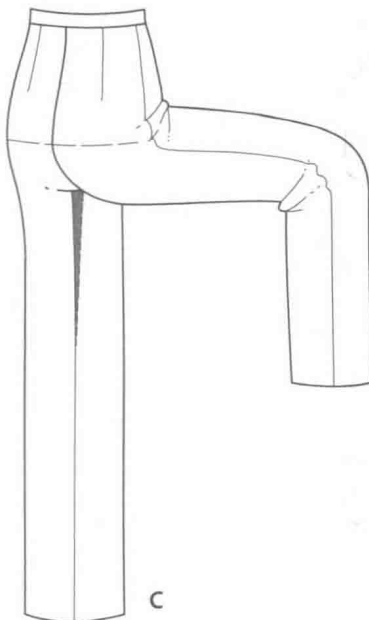
B

FIGURE EVALUATION (A)

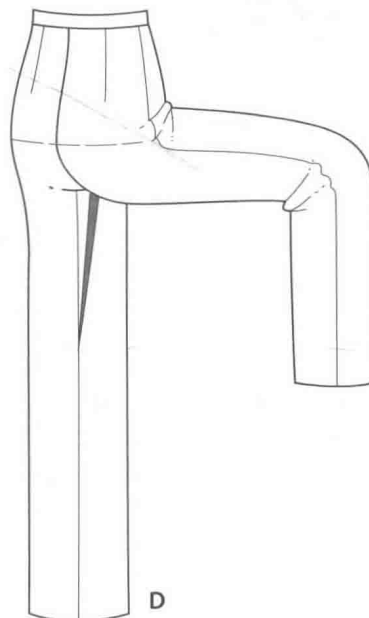
- There may be more weight deposit and/or muscle development than average/ideal.
- The inner thighs may rub together when walking.

FITTING PROBLEMS (B)

- On pants, horizontal stress wrinkles form below the crotch at the inseam.
- When walking, the inseam is pulled up into the body.
- The inner thighs need more width on the front crotch extension.
- Larger thighs may increase leg spread affecting straight skirt fit (see # 82 Larger Thighs at Side).



C



D

READY-TO-WEAR ALTERATION (C)

- Release the inseam.
- Let out the front inseam.

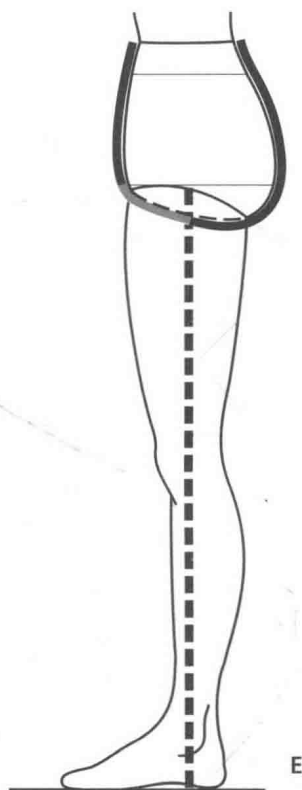
TRIAL GARMENT ALTERATION (D)

- Slash across the front crotch extension to the inseam.
- Insert fabric strips and spread as illustrated.

84. Larger Thighs at Inside

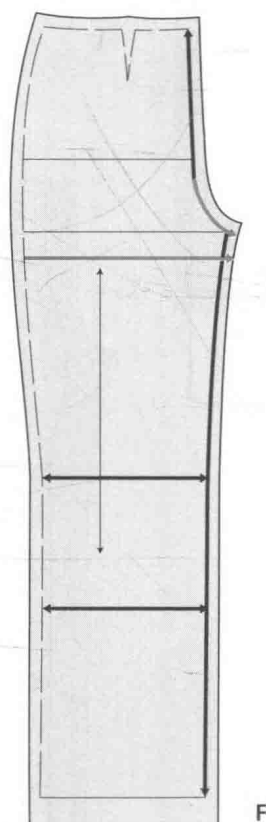
BODY MEASUREMENT POSITIONS (E)

- Crotch length, front, inseam to hip and hip to waist
- Thigh, front, at fullest position
- Knee, front
- Calf, front, at fullest position

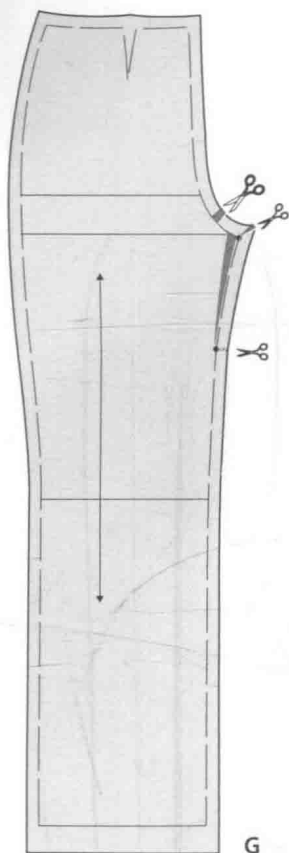


PATTERN MEASUREMENT COMPARISON (F)

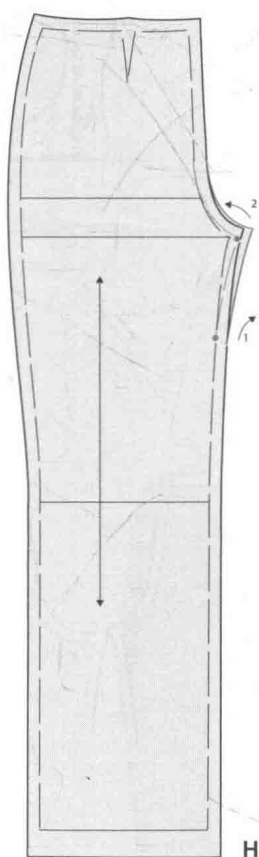
- Pattern crotch length from inseam to hip too short
- Pattern crotch length from hip to waist correct
- Pattern thigh front too narrow
- Knee front correct
- Calf front correct



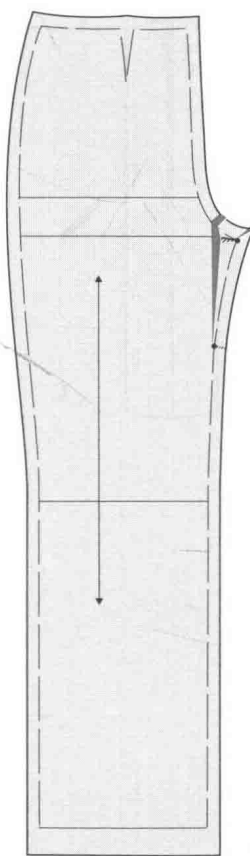
84. Larger Thighs at Inside



G



H



I

SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

85. Shallow Thighs on Inside

FIGURE EVALUATION (A)

- There may be less weight deposit and/or muscle development than average/ideal.
- There is more space between the legs from crotch to knee than average/ideal.

FITTING PROBLEMS (B)

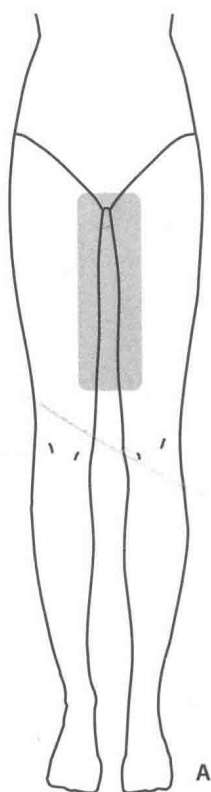
- Skirts are not affected except for miniskirts, which expose the upper leg.
- On pants, vertical folds form near the inseam.
- The front crotch hangs loose.

READY-TO-WEAR ALTERATION (C)

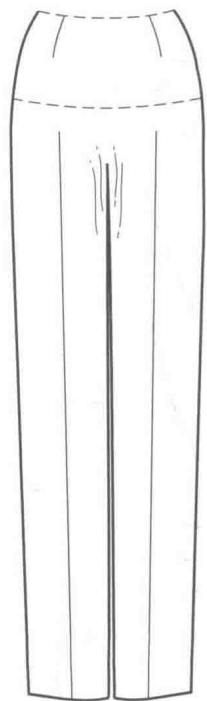
- Release the crotch seam and the inseam.
- Take in the front crotch seam and inseam as illustrated.

TRIAL GARMENT ALTERATION (D)

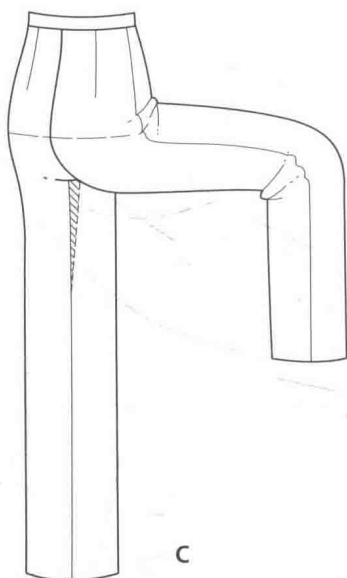
- Release the crotch seam.
- Make tucks from crotch seam to inseam as illustrated.



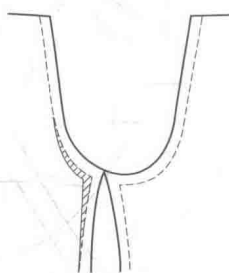
A



B

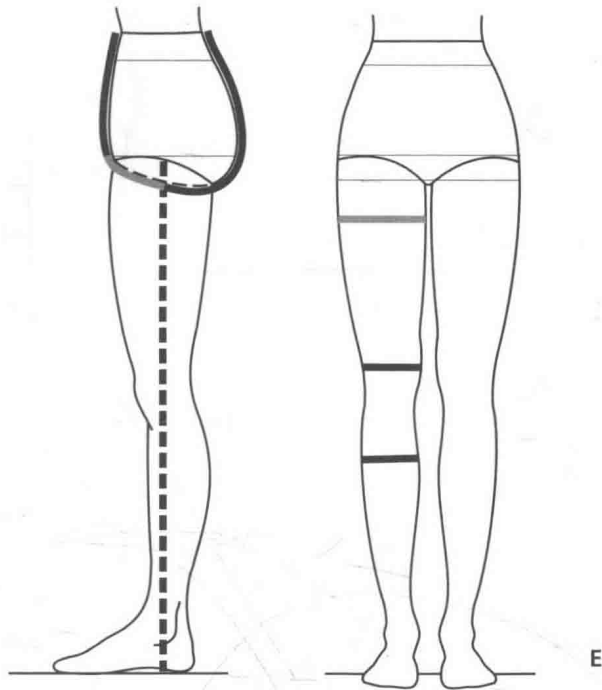


C



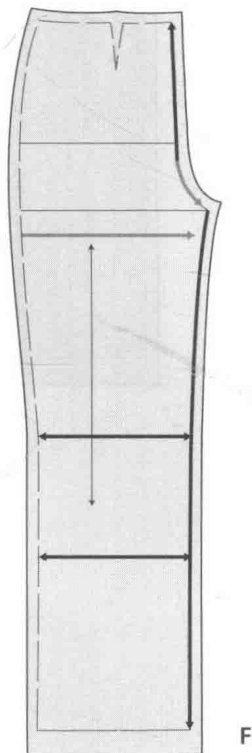
D

85. Shallow Thighs on Inside



BODY MEASUREMENT POSITIONS (E)

- Crotch length, front, inseam to hip and hip to waist
- Thigh, front, at fullest position
- Knee, front
- Calf, front, at fullest position



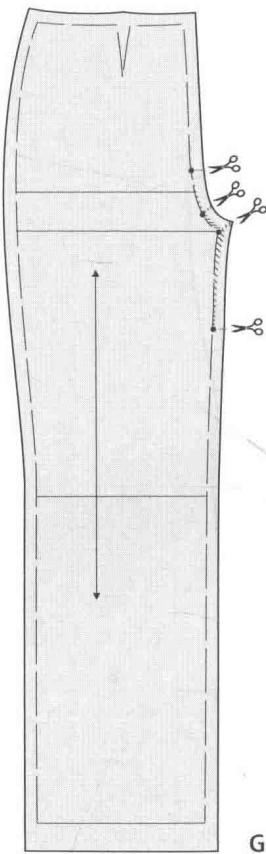
PATTERN MEASUREMENT COMPARISON (F)

- Pattern front crotch length, inseam to hip too wide
- Pattern front crotch length, hip to waist correct
- Pattern thigh front too wide
- Pattern knee front correct
- Pattern calf front correct

85. Shallow Thighs on Inside

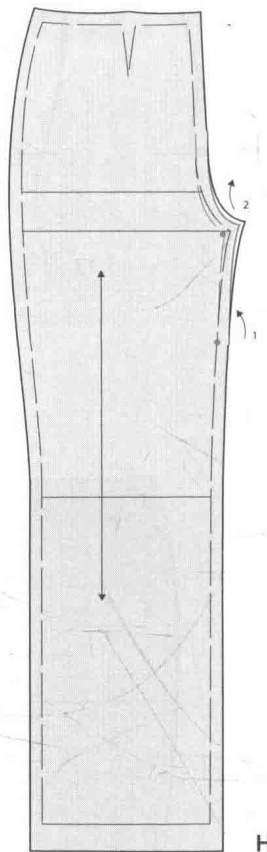
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



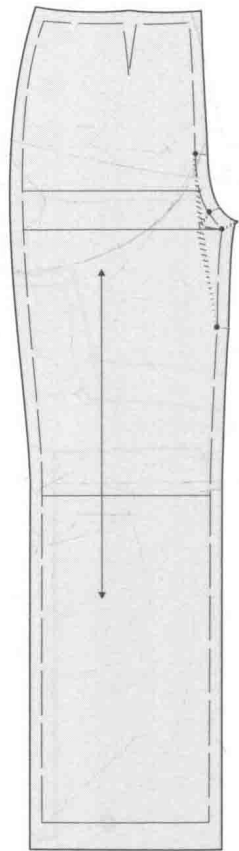
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

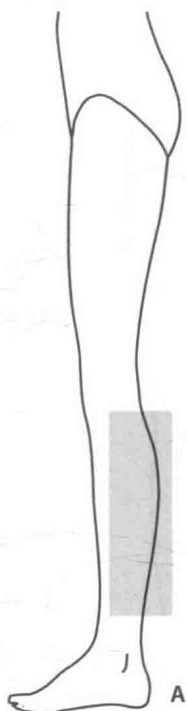


SLASH METHOD (I)

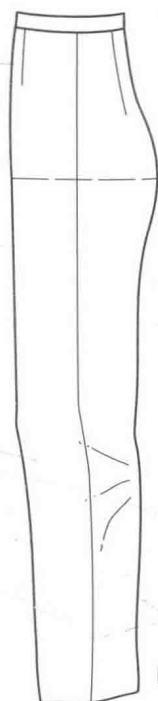
- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



86. Larger Calves



A



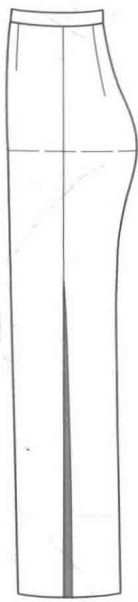
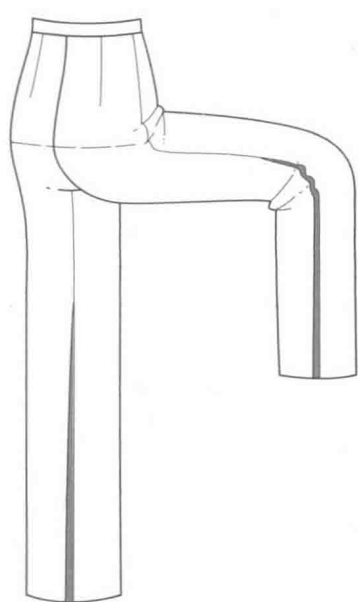
B

FIGURE EVALUATION (A)

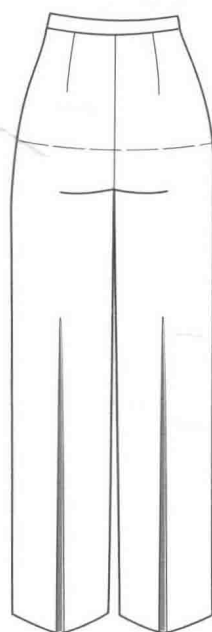
- There is more weight deposit and/or muscle development than average/ideal.

FITTING PROBLEMS (B)

- Long diagonal wrinkles radiate from the fullest part of the calf.
- Pant lower legs are tight, not allowing the pant leg to rise when seated.
- The pant rubs against the calf.



C



D

READY-TO-WEAR ALTERATION (C)

- Release the inseam and side seam from above the knee to the hem.
- Let out the back inseam and side seam, tapering from above the knee to calf, then parallel to the hem.

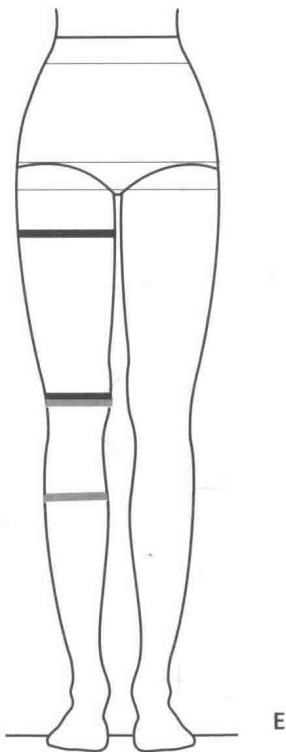
TRIAL GARMENT ALTERATION (D)

- Slash back pant leg from hem center to above the knee.
- Insert fabric strips and spread as illustrated.

86. Larger Calves

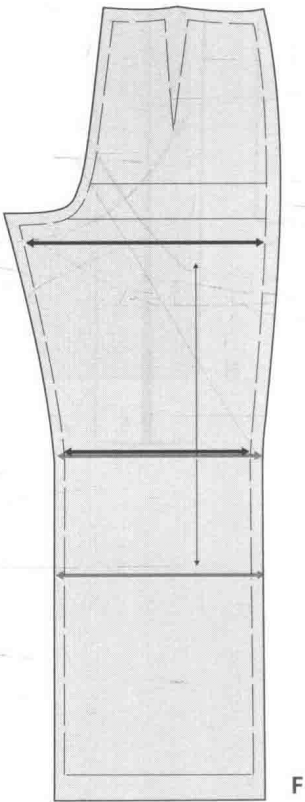
BODY MEASUREMENT POSITIONS (E)

- Thigh, back
- Knee, back
- Calf, back, at fullest position

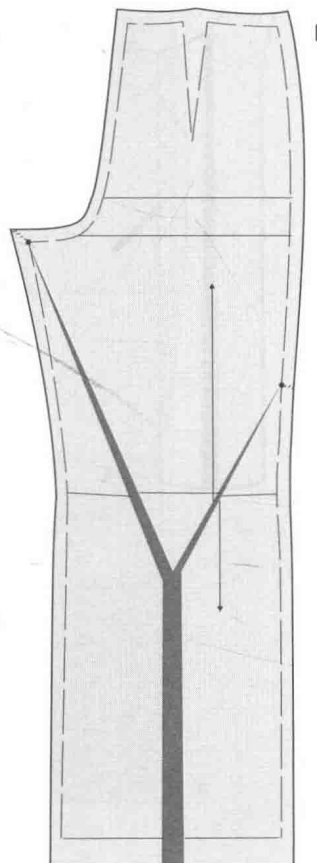
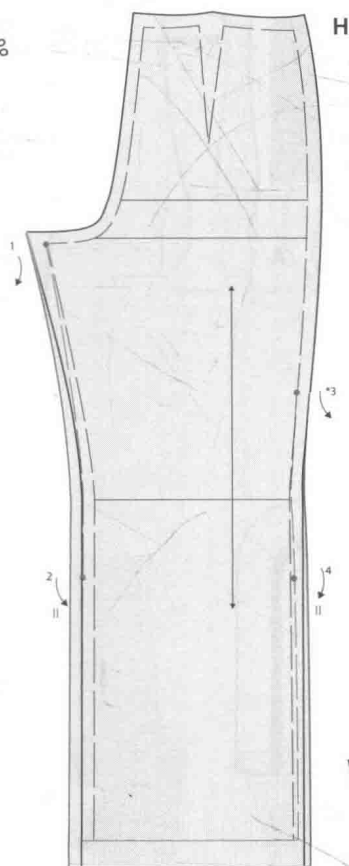
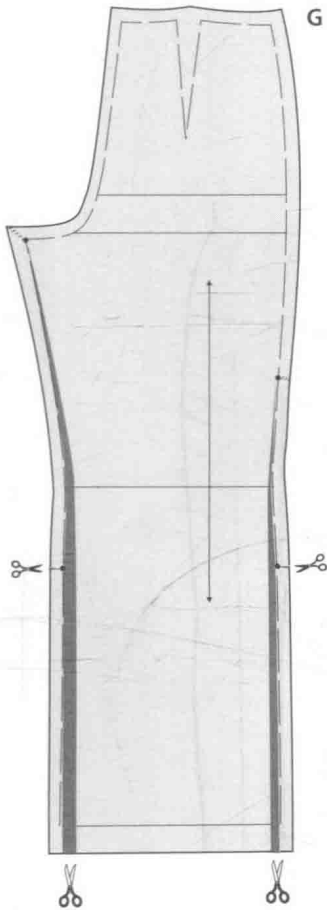


PATTERN MEASUREMENT COMPARISON (F)

- Pattern thigh back correct
- Pattern knee back correct
- Pattern calf back too narrow



86. Larger Calves



SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.

PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.

SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

87. Larger Legs

FIGURE EVALUATION (A)

- The leg bones may be larger than average/ideal.
- There may be more weight deposit and/or muscle development than average/ideal.
- The variation may occur on the upper and/or lower leg.
- The angularity of the ankle bone is concealed.

FITTING PROBLEMS (B)

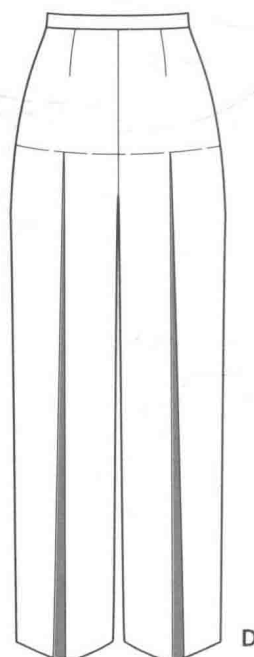
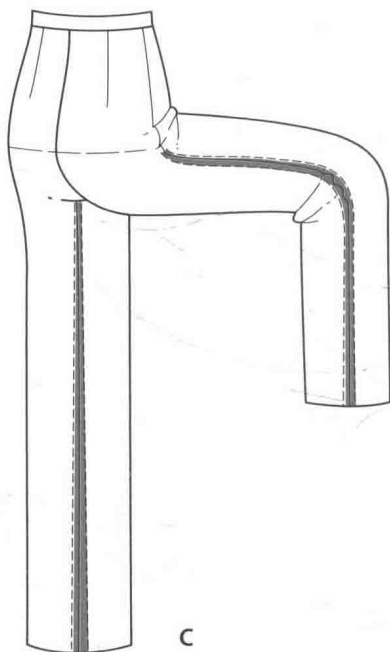
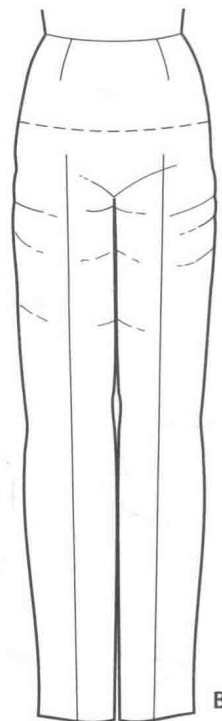
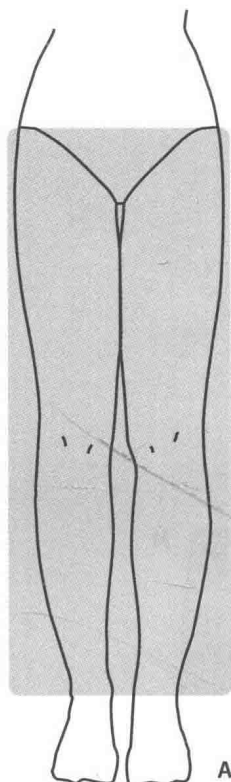
- The fit of pants is primarily affected (see #82 Large Thighs at Side for skirts).
- Horizontal stress wrinkles form around each leg.
- The legs need more fabric below the hipline.

READY-TO-WEAR ALTERATION (C)

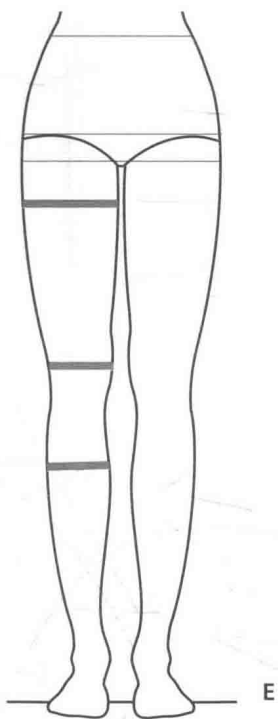
- Release the inseam and side seam from the hem to the crotch/hipline.
- Let out the inseam and side seam.
- Maintain the line of the original pant leg shape.

TRIAL GARMENT ALTERATION (D)

- Slash the pant leg center front and back from hem to crotch level.
- Insert fabric strips and spread as illustrated.

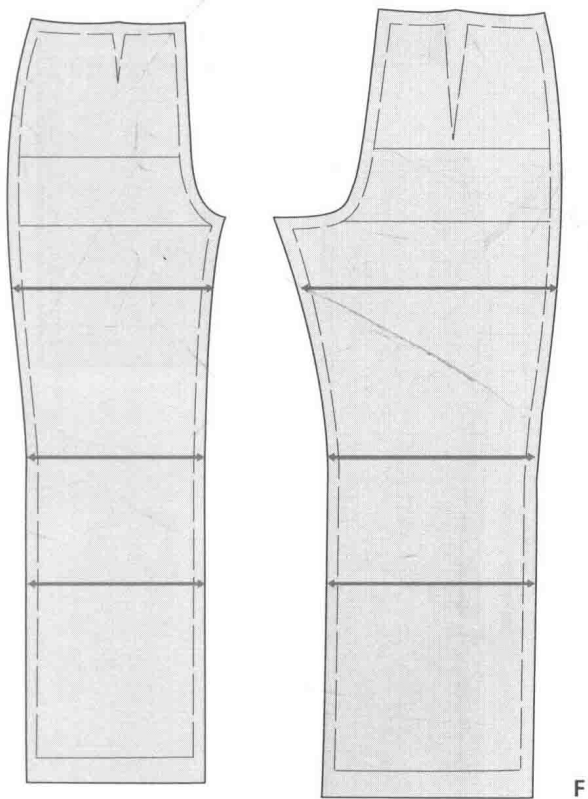


87. Larger Legs



BODY MEASUREMENT POSITIONS (E)

- Thigh, front and back, at fullest position
- Knee, front and back
- Calf, front and back, at fullest position



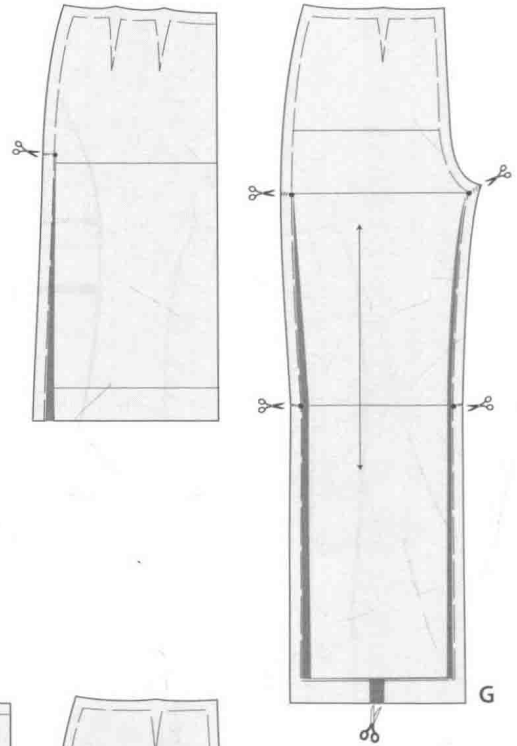
PATTERN MEASUREMENT COMPARISON (F)

- Pattern thigh front and back too narrow
- Pattern knee front and back too narrow
- Pattern calf front and back too narrow

87. Larger Legs

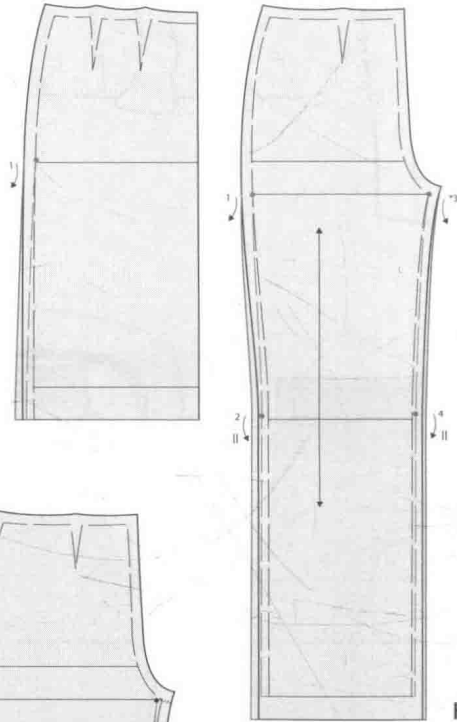
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



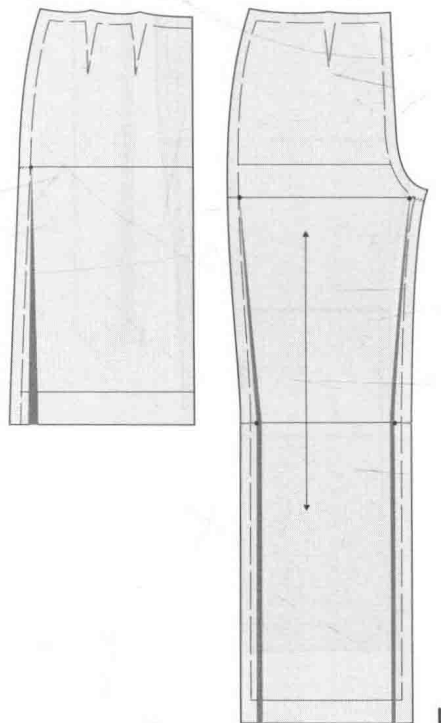
PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.



88. Thin Legs

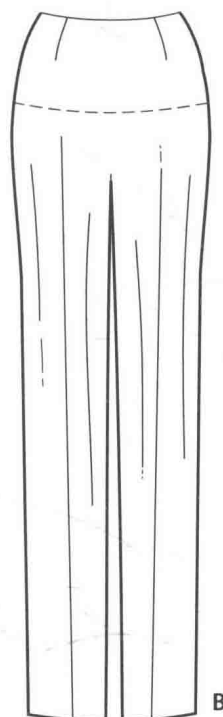
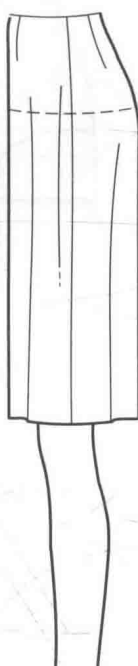
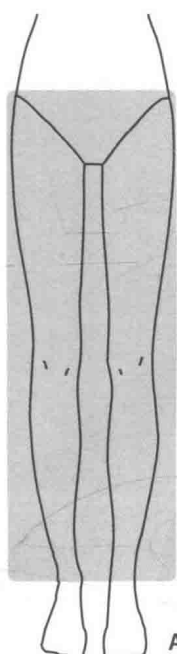
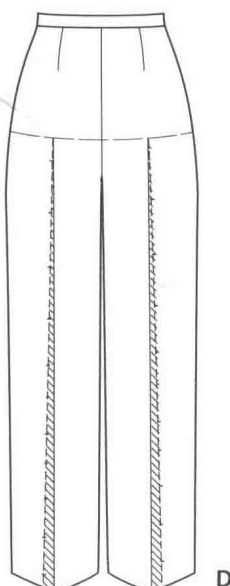
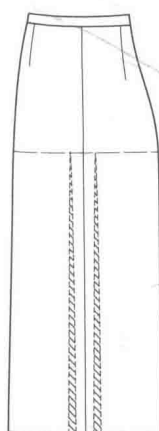
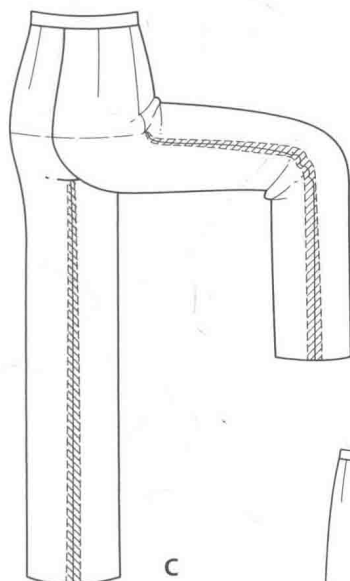
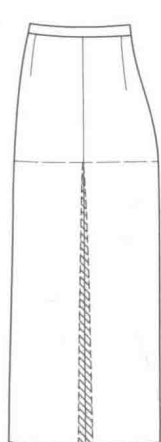


FIGURE EVALUATION (A)

- The leg bones may be smaller than average/ideal.
- There may be less weight deposit and/or muscle development than average/ideal.
- This variation may occur on the upper and/or lower leg.
- The angularity of the ankle bone is quite apparent.

FITTING PROBLEMS (B)

- The fit of pants is primarily affected.
- Skirts appear large as fabric is far from the legs.
- Soft vertical folds form around the legs.
- The looseness begins to form near the hipline.
- The legs need less fabric width below the hipline.



READY-TO-WEAR ALTERATION (C)

- On a skirt, release the side seams from hip to hem.
- Take in the side seams at the hem and taper to the hip.
- On pants, release the inseams and side seams from crotch/hipline to hem.
- Take in the inseams and side seams parallel to the knee, then taper to the hip.

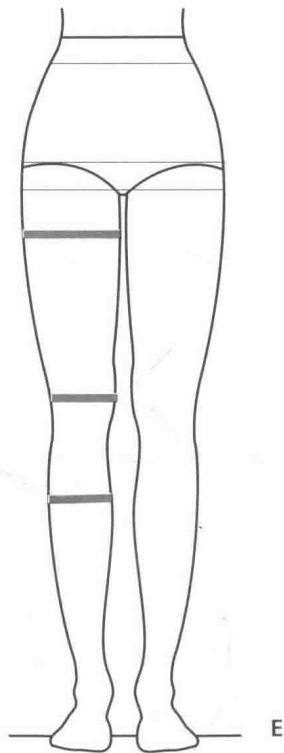
TRIAL GARMENT ALTERATION (D)

- On a skirt, make a tuck at the hem near the side seam, taper to the hip.
- On pants, make a tuck at the center of the leg, front and back parallel to the knee, then taper to hip level.

88. Thin Legs

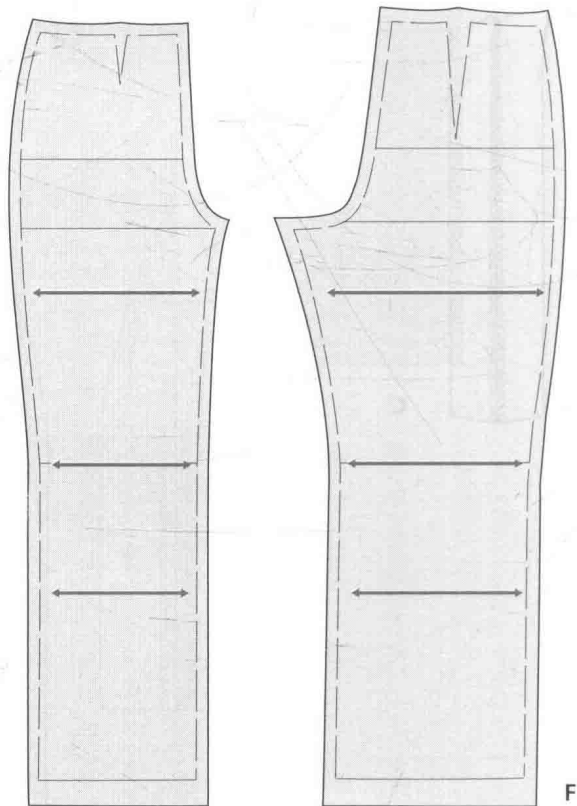
BODY MEASUREMENT POSITIONS (E)

- Thigh, front and back, at fullest position
- Knee, front and back
- Calf, front and back, at fullest position

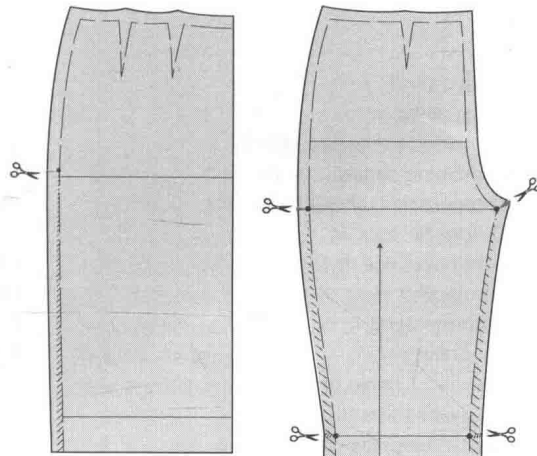


PATTERN MEASUREMENT COMPARISON (F)

- Pattern thigh front and back too wide
- Pattern knee front and back too wide
- Calf front and back too wide

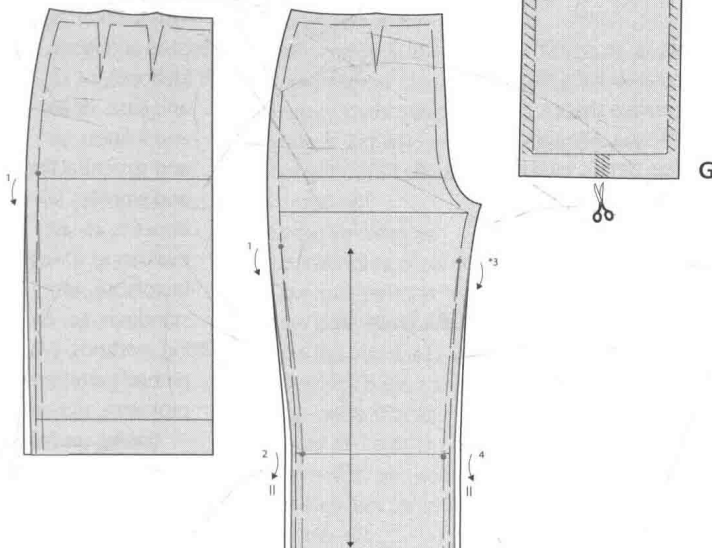


88. Thin Legs



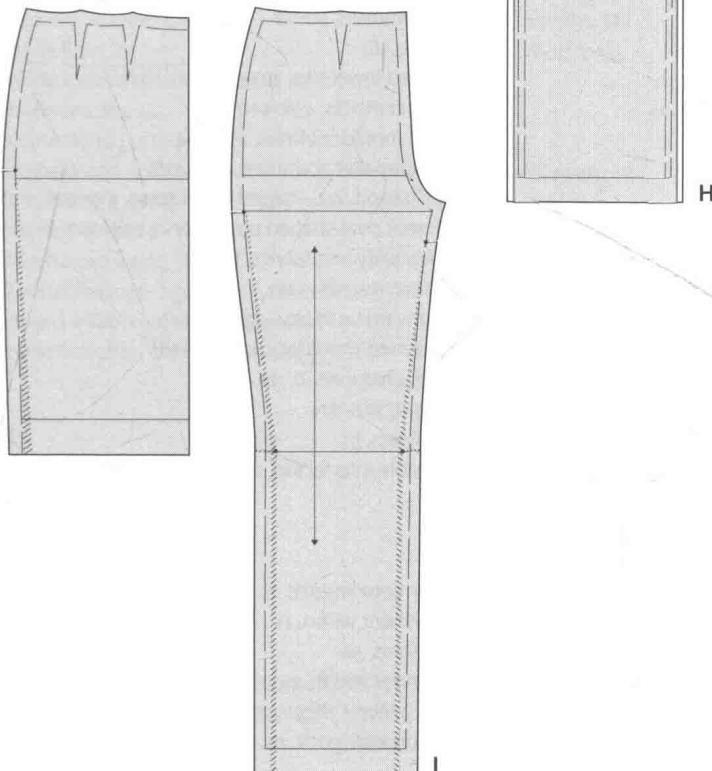
SEAM METHOD (G)

- Release seam allowances in affected area.
- Clip hinges.
- Manipulate seam allowances as illustrated.
- Tape seam allowances in place.



PIVOT/SLIDE METHOD (H)

- Trace cutting lines in affected area.
- Mark, pivot, and trace patterns as illustrated, in sequence and direction shown.
- Return pattern to original position.
- Tape tracing in place.



SLASH METHOD (I)

- Slash as illustrated in affected areas.
- Clip hinges.
- Manipulate pattern as illustrated.
- Tape pattern pieces in place.

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