

Western Casual Wear Course Book

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Rishika Jalali is a fashion design graduate from NIFT, New Delhi.
rishikajalali@gmail.com, 9971832449

Rashmi Sharan is a fashion design graduate from NIFT, New Delhi.
rashmisharan87@gmail.com, 9868341625

Ashish Kashyap is a fashion design graduate from NIFT, New Delhi.
ashish.kashyap.jha@gmail.com, 9873297576

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Chapter 1

Syllabus

SERIAL NO.	TOPIC	CHAPTER NO	NO OF DAYS
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NOTE-

Duration of class: 2 Hours per day

According to the students coming to the sewing school, the instructors can teach pattern making of garments in any order that they deem fit.

All garments will include special features of the Usha sewing machine like zip fixing, hemming, button holing, button fixing, decorative stitches etc., teaching of this will depend on the availability of these machines in the school.

All students are required to maintain a record consisting of detailed notes on pattern making. All practical work, including paper patterns and garment samples constructed, should be properly filed.



Chapter 2

History of Fashion Designing

The history of Indian fashion dates back to the Harappan culture in the Vedic times. The evidence about textiles and dresses is scant but not unimportant even in the Harappan sculptures.

In Vedic literature, the lower garment worn by the women was much like the sari or dhoti of later times. Garments made by the skin of animals were worn by gods, sages and tribal alike. It was a perception among some scholars that initially, sewing was not a very popular concept amongst Indian people and it was something that was brought in by the Mughals.

There is a definite indication that the Indians were familiar with the knowledge of sewing i.e. the needle was known to the Indians from the very beginning of historic periods. So, a distinction needs to be made between the knowledge of sewing and the use of sewing.

So, we need to draw a distinction between what can be designated as “timeless” costumes and those that are “time-bound”. The timeless Indian dress of men thus consists of garments that use no stitching. As Forbes Watson says, “leave the loom, ready to wear”. The dhoti, the scarf, the uttariya, and the turban, which have never really disappeared from any part of India, belong to this category. Similarly for women, the dhoti or sari as the lower garment combined with a

stanapatta or breast-band forms a basic ensemble, and once again consists of garments that do not have to be stitched. The upper garment is simply fastened in a knot at the back and the dhoti or sari is worn covering both legs at the same time, or alternatively, with one end of it passed between the legs and tucked at the back in the kakshya fashion that is still prevalent in large areas of India.

The preference for people to wear these kinds of timeless garments was also due to the hot Indian climate, where comfort of fabric was important.

The “time-bound” category of garments reflects the eras of the various invasions that happened in India. With each invasion came a new concept of clothing. The Indians adapted these to a certain extent in their own dress code, and a new range of costumes evolved.

Trousers of a close-fitting kind evolved with the British influence. Angrakha and chogas evolved with the Muslim influence. So, we became familiar with time-bound attire and sewing became a visible feature and the evolution of fashion occurred.

When we evolve, we pick from all these basic elements and create ensembles of our own.

For example, the Ghaghra has been an inspiration for all. It can be called a day skirt, a lehnga or even a petticoat.

The concept is the same. The Angrakha of the man has been converted into the Angrakha with churidar for women. The backless choli of Rajasthan inspired all of us to create backless blouses with strings and knots. The choga of men inspires us to use embroideries and also create a toned down version of kurtas for women.

However, while creating new designs, the basic concepts remain “timeless” and “time-bound”. We at times pick from the timeless fashion drapes of ancient India and create draped garments on our dummies. We also pick from the various costumes, colours and embroideries of our heritage and translate them into contemporary fashion.

Chapter 3

Theory of Colour

Designers are experts in combining colours in original ways, and each collection requires a new and creative mix of colours. Some designers are known for their signature colour palettes, which reflect their individual perspectives and preferences. The palettes are modified from collection to collection, but the stamp of the designer's style is always present and sometimes results in the beginning of new design trends. Other designers change palettes at will to fit the needs of the individual collection and the trends prevailing

BASICS OF COLOUR

Colour is the perceptual characteristic of light described by a colour name. Specifically, colour is light, and light is composed of many colours—those we see are the colours of the visual spectrum: red, orange, yellow, green, blue and violet. Objects absorb certain wavelengths and reflect others back to the viewer. We perceive these wavelengths as colour.

A colour is described in three ways: by its name, how pure or de-saturated it is, and its value or lightness. Although pink, crimson and brick are all variations of the colour red, each hue is distinct and differentiated by its chroma, intensity and value.

Chroma, intensity, and value are inter-related terms and have to do with the description of a colour.

Chroma: How pure a hue is in relation to gray. **Intensity:** The brightness or dullness of a hue. One may lower the intensity by adding white or black. **Value:** A measure of the amount of light reflected from a hue. Those hues with a high content of white have a higher luminance or value.

Shade and tint are terms that refer to a variation of a hue. **Shade:** A hue produced by the addition of black. **Tint:** A hue produced by the addition of white.



Learning about colours is like wanting to enjoy a musical instrument, or a game of football. The real enjoyment comes after one has begun to learn some basic rules and skills. If one doesn't know how to co-ordinate colours, one generally lands up mixing colours which may not give a desired effect. However, once the basic principles are learnt, colour co-ordination becomes simple and automatic

COLOUR WHEEL

The colour wheel is an invention credited to Sir Isaac Newton (1706). Artists use a traditional colour wheel based on the Red/Yellow/Blue model with secondary colours of orange, green and purple. A colour wheel (also referred to as a colour circle) is a visual representation of colours arranged according to their chromatic relationship. Begin a colour wheel by positioning primary hues equidistant from one another, then create a bridge between primaries using secondary and tertiary colours.



In the 19th century, a French artist, Michel Chevreul, developed a wheel bringing in the secondary and tertiary colours, which had a profound influence on many artists of the time. Chevreul's wheel, the basis of most contemporary colour theory, is the foundation of all colour teaching. Colours could now be mixed optically, in the eye, rather than being premixed on the palette. The colour wheel can be divided into ranges that are visually active or passive. Active colours will appear to advance when placed against passive hues. Passive colours appear to recede when positioned against active hues.

TYPES OF COLOURS

PRIMARY COLOURS: RED, BLUE, YELLOW

PRIMARY COLOURS: Colours at their basic essence; those colours that cannot be created by mixing others. The primary colours are the three basic hues red, blue and yellow. They are the foundation of the colour wheel, and theoretically all other colours are mixed from them.

It is important to be familiar with the positions of the primaries on the colour wheel and the relationships formed by these positions.

Red: Red is the most dramatic, emotional and active of the three primaries. It is an especially versatile colour in its effects, brightening up dresses by creating excitement, warmth and elegance. The use of red suggests a bold and confident attitude. When tinted, it becomes distinct; when deepened, it is more rich and masculine; when used with yellow, the cheerful family is created, and when combined with blue, the more dreamy and mysterious violets are created. The complement of red is green.

Diverse cultures view red in very different ways. The Chinese have always favored red, traditionally using it for the bridal gown, a sign of longevity. In India, it is the colour of fortune and is favored as the wedding colour.

The Romans used it to symbolize power, an association that has been continued in the rituals of the Catholic Church. Many nations have chosen red for their flags. In nature, red is associated with the powerful life-sustaining fluid, blood and with the earth where certain types of soil and rocks are characterized by the distinctive colour.

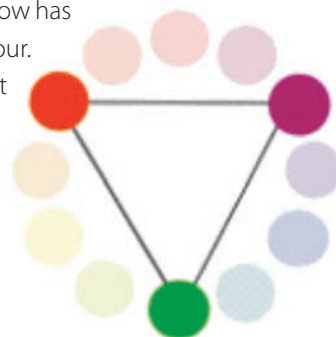
Blue: Of all the colours, blue is perhaps most universally equated with beauty. It has remained popular from ancient times until the present throughout the world. Blue is timeless, linking the present with tradition and lasting values. One of the three primary hues, it is perhaps the most versatile in its expressive qualities. Its analogous families include greens when mixed with yellow, and violets when mixed with red. The complement of blue is orange.

Blue is most commonly associated with the sky and the sea. Blue has the capacity to express the airiness of clouds and the solidity of slate, the calmness of a clear sky as well as electric energy. It can evoke clarity or mystery, joyfulness of sadness, broad daylight or deep night. Psychologically, blue is associated with tranquility and contentment.

Yellow: Yellow is powerful colour, both in light value and extremely intense in its purest form. Its brilliance is most often associated with the sun and evokes a sense of energy and excitement. The emotional effects of yellow are optimistic and bright. Yellow combines with red to form the warm family of oranges and with blue to blend the cooler greens. Its complement is violet.

Gold as part of the yellow family is responsible for the association of richness and opulence with this brilliant colour. In Eastern cultures, yellow has always been a revered colour.

The Brahmins considered it sacred, and in India, brides wore yellow as they had in ancient Rome. The Chinese associated this colour with royalty and deity.



These terms refer to colour groups or types:

SECONDARY COLOURS: ORANGE, VIOLET, GREEN

Secondary Colours: Those colours achieved by a mixture of two primaries. The Secondary group of colours are orange, violet and green. They are made by combining equal parts of two primaries; red and yellow make orange, blue and yellow form green and red and blue result in violet.

The secondary group of colours is orange, violet and green. They are made by combining equal parts of two primaries; red and yellow make orange, blue and yellow from green and red and blue result in violet.

Green: Green is unique in its duality; pushed towards yellow its acts as a warm colour, and when more blue

is present, it becomes a cool tone. In some form green goes with every other colour, making it a natural. Our eyes appreciate the beauty of this versatile colour, associating it with soothing shade, quietness and youth. Bright yellow greens evoke the memories of miracle of nature 'spring'. Deep green suggest elegance and security.

Violet: Violet seems to be a colour of emotional contrasts. Its paler tints are delicate, fragile and exquisitely feminine. Deeper purple denotes the colour of power and royalty.

Orange: Orange is amazingly versatile; capable of emitting great energy in its purest form and, as an earth tone, it reminds of warmth and comfort. As a pale tint, it becomes the most flattering colour of all for human skin tones.



TERTIARY COLOURS

Tertiary Colours: Those colours achieved by a mixture of primary and secondary hues. The three primary colours give a third set of colours known as tertiary colours. A tertiary colour is simply a mixture of a primary colour with a secondary colour. Red can be mixed with orange to make red orange.

Red can be mixed with violet to make red-violet, yellow can be mixed with green to make yellow-green, yellow can be mixed with orange to make yellowish orange, blue can be mixed with violet to make bluish violet and blue can be mixed with green to make blue-green.

COMPLEMENTARY COLOURS

Complementary Colours: Those colours located opposite each other on a colour wheel.

Opposite colours have a curious effect on the human eye. If you stare hard at any shape of bright colour for a few minutes, then transfer your gaze to a white wall, you will see an after-image. This fades after a few seconds. During that time the eye sees the same shape, but perceives it

in its opposite colour. This is because the receptors in the eye, which have been looking at the first colour, are tired, while the receptors that perceive the opposite colour are rested and react immediately.

WARM AND COOL COLOURS

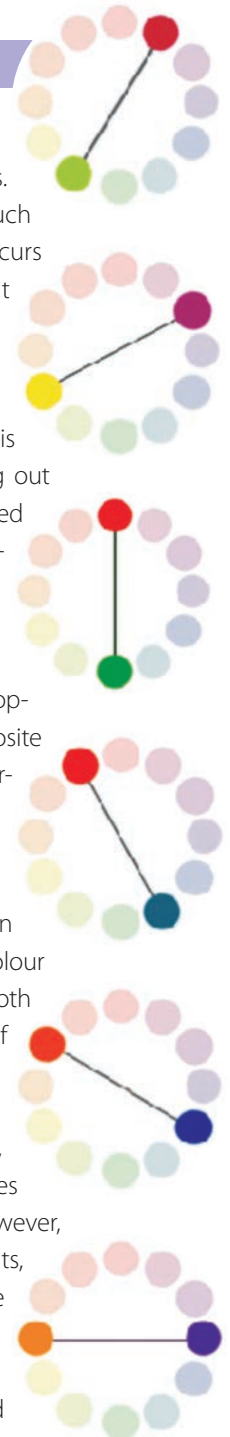
We look at a colour wheel to understand the relationships between colours. Analogous colours are positioned in such a way as to mimic the process that occurs when blending hues. The colours that are positioned opposite one another are complementary colours.

To call those hues in direct opposition to each other "complements of each other" is appropriate. Complementary colours bring out the best in each other. When fully saturated complements are brought together, interesting effects are noticeable. This may be a desirable illusion, or a problem if creating visuals that are to be read.

Every colour on the colour wheel has an opposite, or complementary, colour. The opposite colour pairs are red and green, blue and orange, and yellow and violet, but every other colour on the wheel also has an opposite.

Take any tertiary colour, and its complementary can be found facing it on the other side of the wheel. By laying a colour next to its opposite, the effect is to make both appear more vibrant than they would be if perceived separately. They create a tension through strong contrast as well as an attraction. Combined in less intense hues, complements form subtle colour balances that are enormously pleasing to the eye. However, when both colours are used in equal amounts, the effect can be counter-productive. The two colours compete and may even be uncomfortable to look at.

We learn from the relationships displayed by a colour wheel that every colour has an



opposite. Every colour has both a colour wheel opposite as well as a perceptual opposite. Without a colour wheel, it is still possible to find the opposite of a colour and this is due to a phenomenon of our eyes. Due to the physiological differences between individuals, everyone's perceptions do vary.

ANALOGOUS COLOURS

It is always important to use colours that go well together, or are in 'harmony'. To achieve Colour harmony, it is important to know which colours go together and how to mix them. It is also important to know when an exception is required.

Analogous Colours: Those colours located close together on a colour wheel. colours, which are adjacent on the colour wheel and have a primary colour in common, produce what is referred to as 'analogous harmony'. Sometimes a contrasting colour can be used in a group of Analogous colours to brighten up the effect. Examples of analogous groups are blues and greens, reds and violets, yellows and oranges.



PASTELS

Pastels are simply lighter tints of any hue, white added to red yields pink and light pink is a pastel. When colours become so light that they almost seem to be white, or seem to suggest a mere hint of colour, they are pastel.

Colour relationships may be displayed as a colour wheel or a color triangle.

The Colour Triangle consists of colours we would often use in art class— those colours we learn about as children. The primary hues are red, blue and yellow.

Colours which remind us of the sun, fire and desert stands, are warm colours – the oranges, reds and yellows



on one side of the colour wheel. Warm colours are being, flamboyant and aggressive. More than any other colours, they catch the eye and excite our emotions. Warm colours can make a colour scheme look cheerful and energizing.

On the other side of the wheel are the cool colours – the blues and greens that are associated with cool subjects such as ice, water, snow and wintry skies. cool colours have exactly the opposite effect as warm colours. Cool colours make a nice change; they give a clean and inviting look.

The world around us is made up of both warm and cool colours, and even those subjects which are very cool or very warm contain contrasting colour temperatures within the main colours. Colour temperatures vary within the same named colour group. For example, although red is generally thought as warm, some reds are much warmer than others.

Cool blues, violets and greens are brought to life whenever they are used alongside their complementary – warm oranges, yellows and reds. Similarly, the warm colours appear brighter and more effective when seen against their cool counterparts.

Just as choice of colour is largely subjective and varies from person to person, so the response to a particular color varies according to the individual. For example, most blues and greens are 'quiet' colours and evoke a feeling of tranquility, white oranges and reds are more imposing, seeming to demand attention.

COLOURS FOR VARIOUS SEASONS

We generally take our inspiration of colours from nature. We delight in the colours of the world around us: the evening sunset, a rainbow, a spring meadow in bloom. Colour acts as a seventh sense. It communicates loudness, softness, moods, fashion trends, energy etc. Colour gives vitality. It has always been a vehicle of expression in our culture. By becoming more sensitive to the colours around us, we can have the courage to bring the vitality of colour back into our lives.

Generally, in fashion, we follow trends according to forecasts, but colours are also chosen according to the changes in season and moods.

An assortment of colours is associated with various seasons. For example, before winters, in autumn, we prefer warmer tones of brown, yellow, red, orange, maroon, violet, amber etc.

In winters, surroundings become cold and dull, and that is the time we experiment with dark bright colours. So colours like indigo, grey, burgundy, Indian red, purple, violet, turquoise green, cobalt, emerald green etc. are preferred.

With the arrival of spring, bright colours are displayed by nature. Brighter shades of yellow, orange, green, lemon, crimson red, rose, blue, magenta etc. are generally found in clothes.

With summer and the heat arriving, colours tend to get lighter, with people preferring whites, pastels and tones of the spring season.

However, these colours are not applicable as a rule in all conditions. Preferences change according to geographical locations, trends, moods and cultural backgrounds.

SELECTING COLOURS

In order to be able to choose right colour for the design it is very important to understand colours.

1. COLOURS

Before selecting which colours to use, one should be familiar with the various colours as discussed previously.

2. PURPOSE

A colour scheme should always reflect the purpose of design. The following points should be kept in mind before choosing colours for the design:

- Effect
- Most suitable colour
- Alternative colours
- Appropriate colours and eye-catching

3. USE COMPATIBLE COLOURS

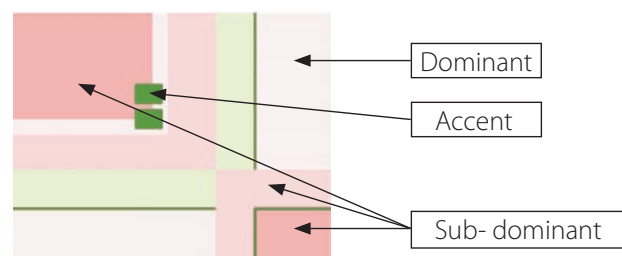
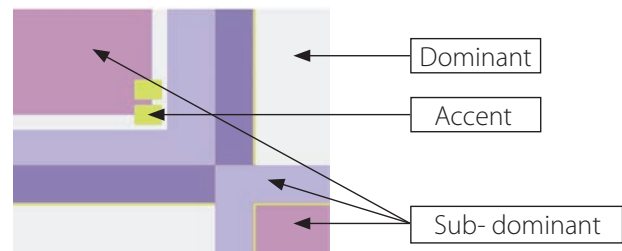
The colours, which are used, should be compatible with each other. One can even use contrasting or complementary colours as long as there isn't too much contrast.

4. LIMIT THE NUMBER OF COLOURS

Another way to increase colour harmony is to limit the number of colours. Two or three colours generally enough, but if more colours are being used, they must be selected with great care.

5. COORDINATING COLOURS

- Accent colours are those with a small relative area, but offer a contrast because of a variation in hue, intensity, or saturation (the figure).
- Placing small areas of light colour on a dark background, or a small area of dark on a light background will create an accent.
- If large areas of a light hue are used, the whole area will appear light; conversely, if large areas of dark values are used, the whole area appears dark.
- Alternating colour by intensity rather than proportion will also change the perceived visual mix of colour.



6. USE ACHROMATIC COLOURS FOR HARMONY

When in doubt, use achromatic colours: black, grey or white. Black, grey or white have a simplicity and elegance that attract our attention just as much as the bold colours. In addition, you won't have to worry about a clashing Colour scheme, since everything goes with these colours.

7. USE FAMILIAR COLOURS

Colour schemes that use uncommon colours can sometimes look jarring and ugly. This rule does not apply for the latest and trendy clothes, but for conventional dresses, use conventional colours.

8. BE ORIGINAL

Last, but not the least, be original. Originality might mean using a colour combination that no one has ever used before. Or it might be a combination that is just subtly different from what we might expect.

Colour has a profound effect on our mood. A colour can change a mood from sad to happy, from confusion to intelligence, from fear to confidence. It can actually be used to “level out” emotions or to create different moods.

Particular colours have different effects on each individual. The hope is that we will learn to “tune in” to our individual colour response and begin to create colour palettes, which will indeed nurture and inspire us.

COLOUR COMBINATIONS

Colour combinations may pass unnoticed when pleasing, yet offend dramatically when compositions seem to clash. To determine whether or not we are successful, we need to critically assess the visual balance and harmony of the final composition—balance and harmony are achieved by the visual contrast that exists between color combinations. Planning a successful colour combination begins with the investigation and understanding of colour relationships. The only way to discover what effects can be achieved by combining two or more colours is to work through all the available colours. With experience, this becomes instinctive and it becomes simpler to choose specific colours for specific results.

As all good chefs know, unlimited quantities of the very best ingredients do not amount to good cookery. A tasty dish is a delicate balance of a few select ingredients combine in the correct quantities, and the most successful recipes are often the combined in the correct quantities, and the most successful recipes are often the simplest. Exactly the same is true in combining colours while

designing. To combine good colours is the ambition of many designers, but combining a vast number of colours in a dress does not ensure an eye-pleasing dress. Ironically, too many bright colours can be counter-productive, because they tend to cancel each other out when used indiscriminately. Like the chef, a designer chooses the appropriate ingredients, a few colours, carefully selected to combine successfully in the finished garment.

Using a colour wheel and a template, the relationships between colours are easy to identify.

- Monochromatic Relationship Colours that are shade or tint variations of the same hue.
- Complementary Relationship Those colours across from each other on a colour wheel.
- Split-Complementary Relationship One hue plus two others equally spaced from its complement.
- Double-Complementary Relationship Two complementary colour sets; the distance between selected complementary pairs will affect the overall contrast of the final composition.
- Analogous Relationship Those colors located adjacent to each other on a colour wheel.
- Triad Relationship Three hues equally positioned on a color wheel.

COLOUR & CONTRAST

Every visual presentation involves figure-ground relationships. This relationship between a subject (or figure) and its surrounding field (background) will show a level of contrast; the more an object contrasts with its surrounds, the more visible it becomes.

PROPORTION & INTENSITY

When colours are juxtaposed, our eyes perceive a visual mix. This mix will differ depending on the proportions of allocated areas.

- The colour with the largest proportional area is the dominant colour (the ground).
- Smaller areas are subdominant colours.

TONE

Every colour has a tone, and the simplest way to understand this is to imagine a black and white photograph. In the black register black, the whites as white. All other colours show up in varying degrees of grey, ranging from very dark to very pale.

An awareness of tone is crucial to a designer. The overall tones in a dress should relate accurately to each other.

The lightness or darkness of each colour should be correct in relation to the neighboring colours used. If these are not correct, the dress will lack a sense of space and three-dimensional form.



Chapter 4

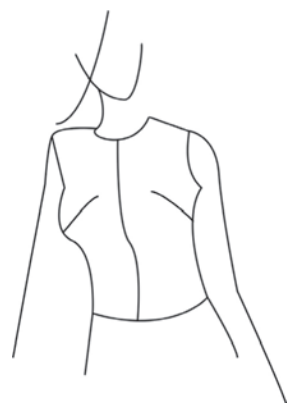
Garment Details

1. Darts

The dart is one of the most flexible and creative parts of the pattern. The space between the dart legs can be used in a variety of creative ways and is limited only by the imagination of the designer.

Types of darts:

- Shoulder dart
- Bust dart
- Armhole dart
- Centre front dart
- Waist dart in skirt

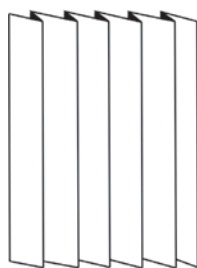


2. Pleats

A pleat is an unstitched, folded dart held securely along joining seamline. It is a fold in the fabric that releases fullness.

Pleats are used to increase stride room, or can also be used as a design. Pleats are found on skirts, bodices, sleeves, dresses, jackets etc. they are formed in a variety of ways.

They may be folded and left un-pressed or pressed, stitched or left unstitched. They may be grouped together with even or uneven spacing. Pleat depth may be single, doubled or tripled.



Side pleats



Box pleats



Inverted pleats

Types of pleats:

- Knife pleats -Pleats are grouped and face in one direction.
- Box pleats -Pleats are folded away from each other on right side of the garment.
- Inverted pleats -Pleats are folded to meet each other on the right side of the garment.
- Accordion pleats-Pleats have folds resembling the bellows of an accordion. The pleats are close together and depth is equal from waist to hem.
- Sunburst pleats -Pleats fan out and graduate from the waist. They are generally used on circular skirts.

3. Gathers

Gathers change the look of the basic garment, but do not affect the fit.

Types of gathers:

- Gathers at shoulder
- Gathers at centre front bust
- Gathers at waist
- Gathers at neckline



At shoulders



At neckline



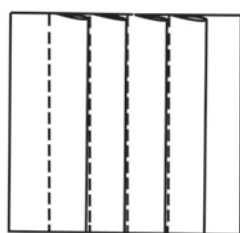
At C.F. line

4. Tucks

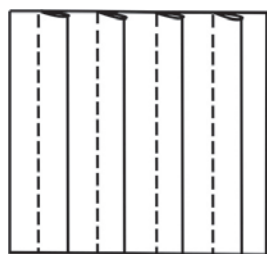
A tuck is a stitched fold on the right side of the fabric resembling a pleat. Tucks are used as design details and can be placed on any garment (top, skirt, dress, sleeve, pants etc.). Tucks can be placed in any direction (vertical, horizontal and diagonal) and may be of any width. They can be spaced close or far apart for varying effects.

Types of tucks:

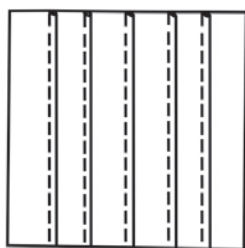
- Pin tucks
- Shell tucks
- Release tucks
- Cross tucks
- Space tucks



Blind tucks



Spaced tucks



Pin tucks



INVERTED PLEATS



ACCORDION PLEATS



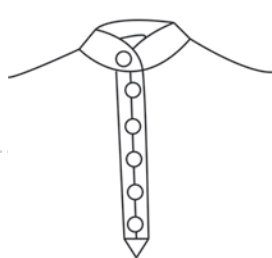
SUNBURST PLEATS

5. Plackets

Plackets are finished slits or faced openings designed on all types of garments-bodice, sleeve, skirt, dress, jacket, pant etc. plackets can be of any length and width, with rounded, pointed, stylized or blunt ends. Some plackets have buttons and buttonholes, others may not. The measurement can vary to create different effects.

Types of plackets:

- Regular shirt placket
- Half pointed placket
- Slit opening with placket
- Wing collar placket



Pointed plackets

6. Facings

A facing is a duplicate-shaped piece of fabric stitched to the outside edge of a garment and is folded over to conceal the raw edges. Facings control the fit of the garment when the cut edge is bias or crosses the hollow areas above the bust. Facings are planned as part of the pattern plotting. They are placed from the pattern before or after the design pattern has been developed. They vary in width and shape but generally are from 1 ½ to 2 inches around the neck and armhole.

Types of facings:

- Separate facings: Individual facings for armhole and/or neck.
- V neck facing
- Square neckline facing
- Scoop neckline facing
- Combination facing: All-in-one armhole and neck facing.

7. Collars

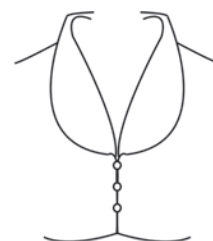
A collar is the part of a garment that encircles the neck and frames the face, offering great opportunities for design variations. Collars can be developed close to or away from the neckline. They can be wide, narrow, flat, or high, and with or without an attached stand. The collar edge may be stylized or may follow a basic shape (round, curved, scalloped, square, pointed etc.). Collars can be convertible (can be worn closed and open, so that it lies flat across the chest when opened) or nonconvertible (stay in the same location whether garment is buttoned or unbuttoned).



Stand collar



Peter pan collar



Shawl collar

Types of collars:

- Peter pan collar
- Sailor collar
- Chinese collar
- Shirt collar
- Collar for square neck

Basic shirt collar

Fabric needed

- ½m fabric
- 1.2m microdot fusing

Measurement

- A. Center back neck
- B. Center front neck

Pattern

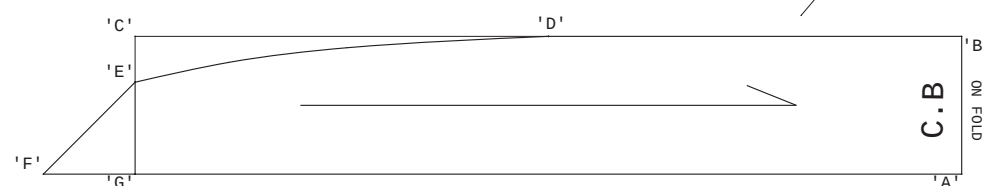
1. AB is collar width we can be taken as per the requirement of the design
2. BC ½ of total neck measurement
3. BD is center back to shoulder for marking the notch point.
4. From C draw a perpendicular line to G and join it with A.
5. EC = ½". Draw a curved line from E blending with D.
6. G to F is 1".
7. For band trace the Chinese collar pattern.

Construction

- A. Cut collar in two pieces.
- B. Fuse the under collar with microdot.
- C. Stitch all the sides except for the neckline. Then trim the seam allowance to 2/8".
- D. Join the neckline side of shirt collar with Chinese collar (stand)E. Sandwich the neckline of the top in between the two layers of collar and finish with a top stitch.

*all collars will be attached similarly.

Draft



Peter pan collar

Fabric needed

- ½m fabric
- 1.2m microdot fusing

Measurement

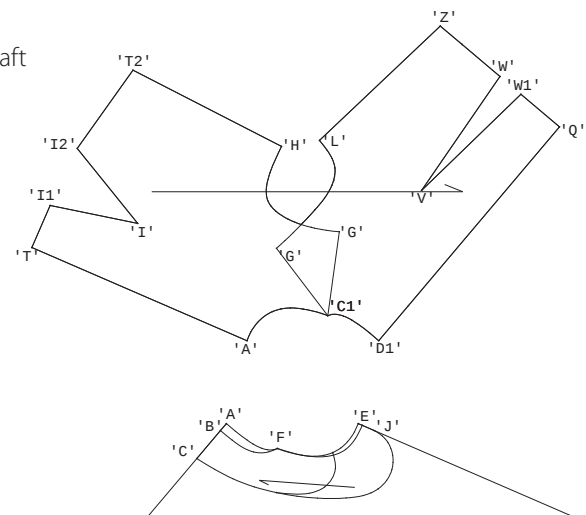
- Center back neck
- Center front neck

Pattern

1. Trace the pattern as shown in the figure 1. Till the shaded part only.
 2. AB is 1/8".
 3. CB is 2 ½".
 4. EJ is ¼"
 5. Join CJ with desired shape of the collar, then cut on fold.
- Construction

1. Cut collar in two pieces.
2. Fuse the under collar with microdot.
3. Stitch all the sides except for the neckline. Then trim the seam allowance to 2/8".
4. Sandwich the neckline of the top in between the two layers of collar and finish with a top stitch.

Draft



Chinese collar

- Fabric needed
- ½m fabric
 - 1.2m microdot fusing

- Measurement
- Center back neck
 - Center front neck

Method -

1. From point O mark A i.e. 1.5".
2. From O draw a horizontal line till point B which is ½ of neck + ½ "and also OB= AC.
3. From point B go up 3/8th" and from point C go up 2/8th inch.
4. Blend it from the midpoint of the lines OB and AC.
5. Curve the points as shown in the figure.

Construction

1. Cut collar in two pieces.
2. Fuse the under collar with microdot.
3. Stitch all the sides except for the neckline. Then trim the seam allowance to 2/8".
4. Sandwich the neckline of the top in between the two layers of collar and finish with a top stitch.

Draft



Sailors Collar

- Material
- Any cotton fabric.

Measurement

- Round neck.

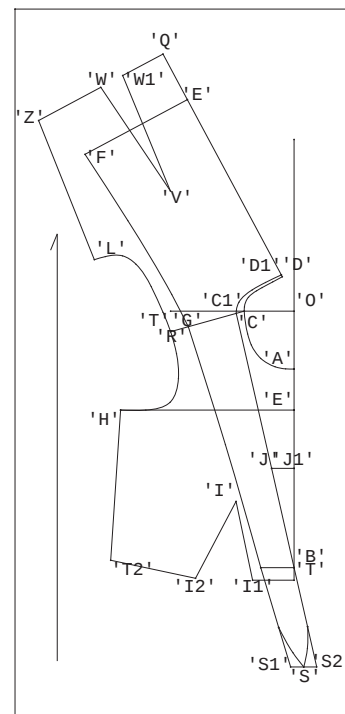
Method-

1. Mark A, B, C, to D.
2. Extend the line C , 6" past B
3. Square a line in from E and up to shoulder. Continue the line to length of the tie 2 inches from B.
4. Shape the tie ends.
5. Cut from paper and trace it on to the fabric.
6. Cut the shaded area

Construction -

1. Cut the pattern twice on the fabric.
2. Fuse one side with micro dot fusing.
3. Stitch the collar with right side facing each other. (make sure the fusing part should be on top while stitching because when you turn it around, that part will go inside)
4. Leave the lower part open for attachment to the neckline.
5. Sandwich the neckline with the collar with a simple lock stitch.

Draft



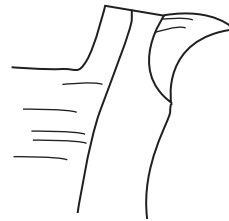
8. Sleeves

Sleeves have always been used for changing the silhouette of a garment. Important sleeve silhouettes keep appearing, disappearing and reappearing over a period of time. There are two major classifications of sleeves: Set in sleeve cut separately and stitched into the armhole of the bodice. Sleeve combined with part or the entire bodice.

Types of sleeves:

- Cap sleeve -These jut away from the arm and can be shaped in a variety of ways. It is usually designed for a bodice, dress or blouse.
- Puff sleeve -Puff sleeves are developed by adding fullness to the sleeve's width. Puff sleeves can be of any length desired.
- Bell sleeve -Bell sleeves have a smooth cap and an unconfined hemline flaring out in the shape of a bell.
- The bell may be developed into any length and flare desired.
- Leg-of-Mutton Sleeve -This sleeve is developed by enlarging the biceps and cap area, tapering the fullness towards the elbow level.
- Raglan sleeve -The raglan sleeve pattern is developed by including part of the neckline and armhole to complete the sleeve draft. The raglan sleeve can be designed for bodice, dress, blouse, jacket, coat etc.

Cap sleeve



Bell sleeve



Puff sleeve



Leg of mutton sleeve



Raglan sleeve



Chapter 5

Body Type

An awareness of differences in anatomy amongst people helps to explain why ready-to-wear garments cannot fit all types of figures perfectly. The main purpose of analysing the figure is to determine if the figure deviates from the standard figure.

1. Shoulder Types

- Ideal: Shoulders slope slightly from the base of the neck.
- Sloped: Shoulders slope radically downward from the base of the neck.
- Square: Shoulders level from base of the neck.
- Muscular: Fleshy shoulders around neck area.
- Bony: Protruding shoulder bones and clavicle.

Style tips for various shoulder types:

- Ideal: A woman with ideal shoulders can wear garments with shoulder pads. Halter blouses would also look good on an ideal shoulder.

- Sloped: Sloped shoulders should not wear halters. They should highlight the neckline rather than the shoulder. They should wear sweetheart necklines. They should ideally wear a shoulder pad. Puff sleeves look very nice on a sloping shoulder.
- Square: Square shoulders should wear spaghetti straps and strapless blouses.
- Muscular: Muscular shoulders should wear short sleeves always top hide the muscular part or they should dress in well fitted sportswear-both active and inactive.
- Bony: Bony shoulders should not wear cut away sleeves. They should also try and wear jackets and layered outfits to help fill up the bony look.

2. Hip Types

- Ideal: Curves outward gradually from waist and rounds over hip bone.
- Diamond: Curves diagonally downward from waist to hips.



- Square: Curves outward abruptly from waist and falls straight to hip.
- Heart-shape: Curves outward abruptly from waist and rounds sharply inward to hips.

Style tips for various hip types:

- Ideal hips can wear any kind of trousers and skirts.
- Heavy hips such as heart and square should avoid tight fitting jeans, low waist trousers and should wear dark coloured bottoms such as trousers or skirts.
- Saris look very nice on women with heavy hips.
- Women with heavy hips should wear long tops and kurtas to hide their hips.
- Women with diamond shaped hips can wear snug fitted trousers, pencil skirts and short tops.

3. Back Types

- Ideal: Back curves, slightly outwards.
- Round: Dominant outward-curved back.
- Flat: Straight back, no curve.
- Dowager's hump: A rounded and protruding hump.

Style tips for various back types:

- Ideal: Ideal back can wear a backless choli or a cowl at the back. They should highlight their back.
- Dowager's Hump: They should keep long hair and wear boat-necks. They should not wear choli or highlight their back. They should wear loose and not structured garments.
- Round: They should accentuate the neckline. They should highlight the front and sleeves rather than the back.
- Flat: Flat back should also highlight the back. They should wear sporty garments.

4. Arm Types

- Ideal: Flesh almost straight from ball of arm to elbow, tapering to wrist.
- Thin arm: Flesh closer to skeletal structure than average (thin and bony).
- Fleshy arm 1: Bulges outward just below the ball of the arm.
- Fleshy arm 2: Bulges between shoulder tip and elbow.

Style tips for various arm types:

- Ideal: Ideal arm types should show off their arms by wearing sleeveless, cut away blouses and strapless dresses.
- Thin: They should reveal their arms, but with diaphanous fabrics such as chiffons or georgette sleeves. They should not wear either very tight or very loose sleeves.
- Fleshy 1: Fleshy arms should wear loose sleeves, and should try and wear longer sleeves, at least three quarter sleeves.
- Fleshy 2: They should full wear full sleeves or long three quarter sleeves, and preferably in darker shades.

5. Leg Types

- Thin legs: Little musculature and flesh, full hips, space between thighs.
- Bottom-heavy: Bulging thighs; from a front view, the thighs exceed hip width.
- Bow legs: Legs with outward curvature.
- Knock-knees: Legs bend inward and knees touch each other in walking.

Style tips for various leg types:

- Thin: Women with thin legs can wear fitted bottoms like Capris and skirts. They should avoid very tight fitted lowers.
- Bow Legs: Full length trousers and long skirts look good on women with bow legs.
- Bottom Heavy: Women with bottom heavy legs should wear long tops and avoid wearing much fitted lowers. Saris and Indian outfits help to hide their bottom heavy legs.
- Knock Knees: They should avoid highlighting their knees by wearing short lowers, and should wear longer bottoms such as Capri's, trousers and skirts.

The posture affects the hang and balance of garments that one wears. If the garment is not in harmony with the posture, because of tilting waistline or high/low hips, hemlines may ride upward or fall downward and sleeves may show stress, affecting comfort and fit.

Chapter 6

Sewing Machine & Practice

SEWING MACHINE

Sewing Machine is an important piece of sewing equipment. There are several machines in the market, each with its own desirable features and advantages. Machine ranges from most basic which having only simple lock stitch to the electronic machines that uses advanced computer technology, have various functions for example piping, binding, ruffles, pleating, darning, hemming and even makes button holes and attaches fasteners. A basic requirement of any machine is a precisely timed movement of the needle and shuttle to manipulate thread from top and bottom to form a stitch. The presser foot in the machine holds the fabric in place and pushes in front for formation of seam.

Lockstitch Machine

The single needle lock stitch is the most used machine in the industry globally. The chain stitch machines and over edge machines are generally used for knits.

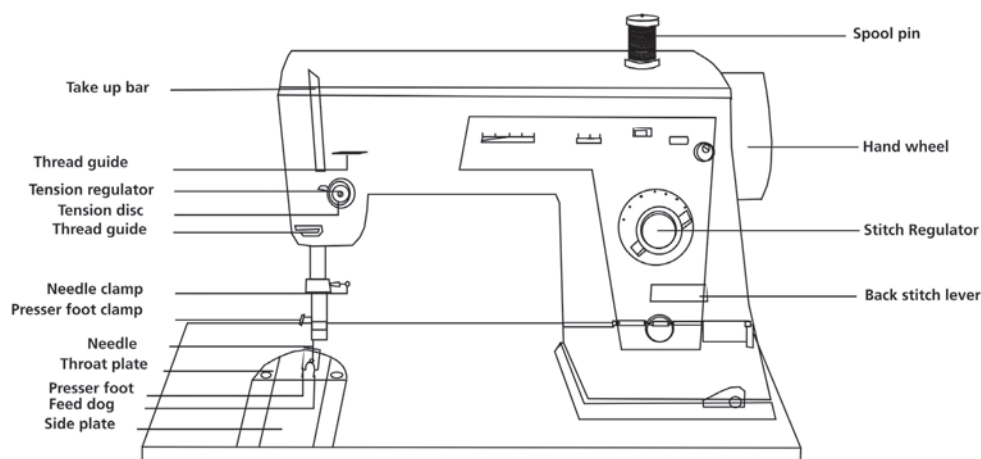
A basic understanding of how the machine operates will enable you to use any machine efficiently and correct stitching defects. The simple lockstitch machine is also called a flat bed machine and it makes only straight stitches. The stitch looks same from both the sides it is absolutely flat, most supple, and completely secure and is the least conspicuous stitch. If it breaks during use it does not open up because the two threads are locked together. This is the reason why it is also called a lockstitch.

The lockstitch is formed with the needle thread that feeds from a spool at the top and a bobbin thread that feeds from a bobbin at the bottom. When formed correctly, the amount of thread used from the top and bottom is equal and the threads lock in the centre of the fabric.

Types of Lockstitch Machines

If we broadly classify there are two types of lockstitch machines. The lockstitch power machine is similar to lockstitch home sewing machine. However, there are some important differences:

- 1 The power machine is much faster. It stitches an average of 5000 stitches per minute. Whereas an average home machine stitches no more than 800 stitches and a hand sewing machine would stitch a maximum of 300 stitches per minute.
- 2 The presser foot in a power machine is controlled with a knee lift but in a home sewing machine it is operated manually using a lever at the back of needle bar.
- 3 The throat plate in a home sewing machine is often marked with seam guides which are not there on industry machines.
- 4 In the industrial sewing machine or power machine the presser foot has a narrow opening between the two toes and it holds fabric more securely and firmly.
- 5 The industrial sewing machine or power machine has a small and round needle hole on the throat plate than the home sewing machine, which is large and oval. This reduces stitching problems.



Parts of Sewing Machine

It is important for the beginner to know and recognize the different parts of the sewing machine.

Arm: The horizontal upper part of the head which has the mechanism for handling upper thread and driving the needle.

Back Stitch Lever: A lever located at the lower right hand side of the machine and its basic function is to form the stitches in reverse direction.

Bed: The lower portion of the machine i.e. stands under which the mechanism for handling lower thread including the shuttle and feed are mounted.

Bobbin: A small metal / Plastic spool that holds the lower thread supply.

Bobbin Case: The metal case that holds the bobbin. It has the tension spring that controls the pressure on the bobbin thread.

Bobbin Winder: It is a simple mechanism for winding the thread on the bobbin and is located at the right hand side near the wheel.

Feed Dog: A small metal device under the presser foot which has teeth which carries the material along as it is stitched. It moves the material forward, by one stitch length, after each stitch has been drawn.

Hand Wheel: Hand is located on the right side of the machine. It is driven by hand or belt in the domestic machine and with the help of belt in the industrial machine. It controls the movement of the needle bar and drives the machine.

Hand Lifter: To lift the presser foot by hand.

Head: The upper part of the machine above the stand. It is a complete sewing machine without the bed.

Knee Lifter: To lift the presser foot by knee.

Needle Bar: A bar at the end of which the needle is attached.

Pan: It is the metal pan under the head that catches oil, lint, broken threads.

Presser Foot: A foot which is used to hold the fabric while stitching. It is detachable and different types of foot are available for different functions e.g. zipper foot, plastic foot.

Presser Foot Lifter: A lever attached to the presser bar to lift up & down the presser foot.

Shuttle: A device that carries the needle thread around the bobbin and forms the lock on the lock stitch.

Stitch Regulator: The length of the stitches is determined by graduation marks on the stitch regulating screw. As you increase the numbers on regulator the number of stitches per inch increases i.e. the size of the stitches decreases and vice-versa.

Tension Regulator: It is a mechanism which controls the tension of upper thread and the quality of stitches. The tension of the thread is adjusted with the help of spring and nut which controls the pressure on the disc.

Thread Stand or Spool Pin: It is a metal rod fitted either on top or on side of the stand to hold the thread spool.

Thread Take Up Lever: A bar/lever which is located above the tension regulator. It moves up and down.

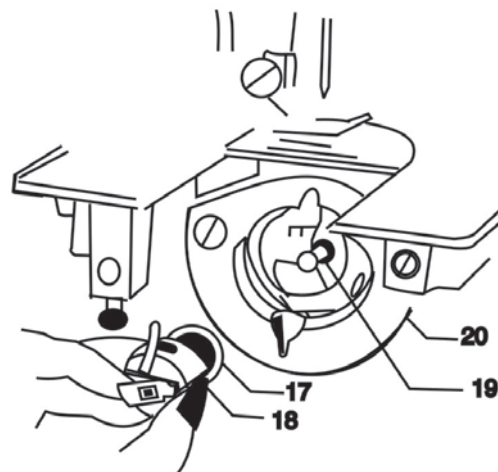
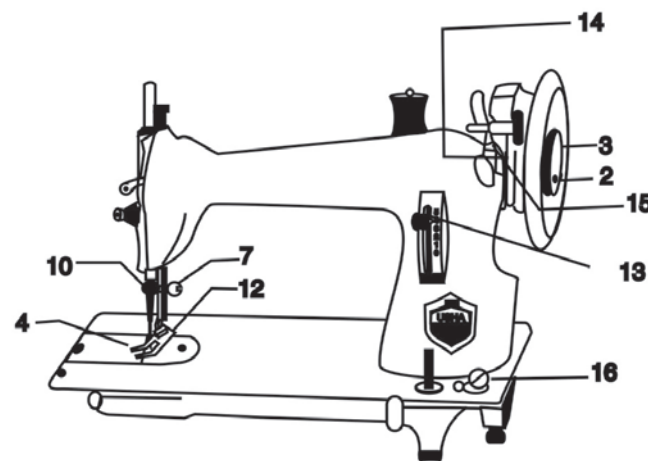
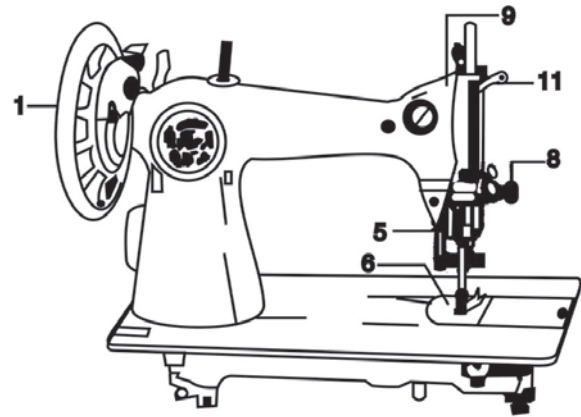
It has a hole through which the thread passes. It feeds thread to the needle and it also tightens loop formed and locks it.

Throat Plate: A semicircular disc with a hole to allow needle to pass through it and also has marking in some cases which are used as guidelines while stitching.

IDENTIFICATION OF PARTS

NAME OF PARTS

1. Balance Wheel
2. Disconnecting screw
3. Stop motion screw
4. Presser foot
5. Presser foot lifter
6. Needle Plate
7. Needle clamp screw
8. Thread tension unit
9. Presser bar screw
10. Threads Guide
11. Take up Lever
12. Feed dog
13. Stich regulator knob
14. Bobbin spindle
15. Rubber ring
16. Tension angle
17. Bobbin
18. Bobbin case
19. Shuttle
20. Shuttle race

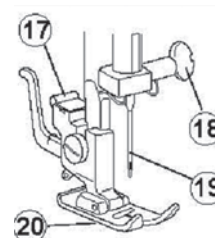
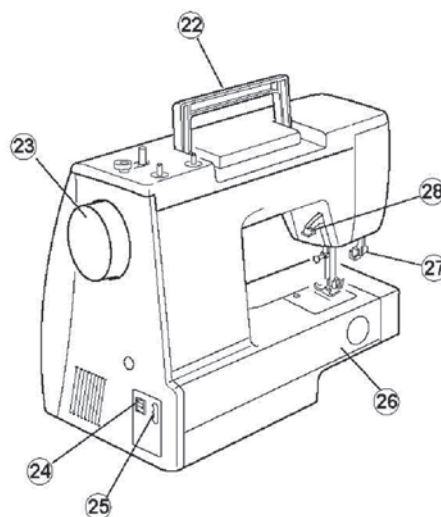
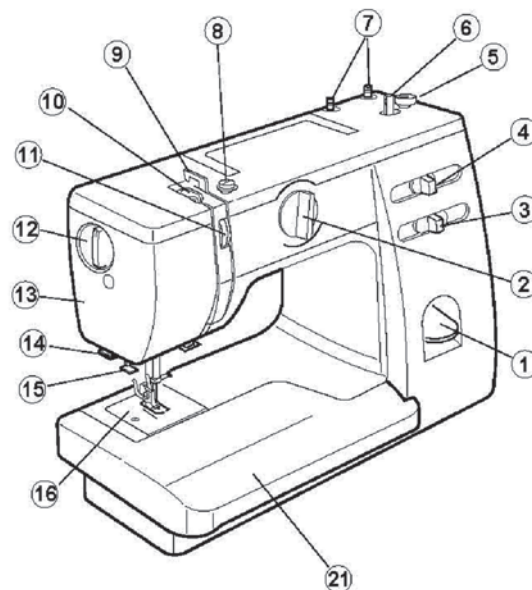


IDENTIFICATION OF PARTS USHA JANOME MACHINE

NAME OF PARTS

- 1 Reverse stitch button
- 2 Pattern selector dial
- 3 Stitch width control
- 4 Stitch length control
- 5 Bobbin winder stopper
- 6 Bobbin winder spindle
- 7 Spool pins
- 8 Bobbin winder thread guide
- 9 Thread guide
- 10 Thread take-up lever
- 11 Thread tension dial
- 12 Pressure adjusting dial
- 13 Face plate
- 14 Thread cutter
- 15 Needle threader
- 16 Needle plate
- 17 Presser foot holder
- 18 Needle clamp
- 19 Needle
- 20 Pressure foot
- 21 Extension Table
- 22 Carrying Handle
- 23 Hand Wheel
- 24 Power Switch
- 25 Machine Socket
- 26 Free Arm
- 27 Button Hole Lever
- 28 Pressure foot Lifter
- 29 Plastic Bobbin (not shown in figure)
- 30 Lower shaft gear (not shown in figure)
- 31 Thread type bulb (not shown in figures)

Sewing Accessories for USHA Janome machines



SEWING ACCESSORIES FOR USHA JANOME MACHINES



PIPING FOOT

If ready made piping cord is not available or if you just want to make your own, the piping foot is ideal for the job. The piping foot (sometimes mistakenly referred to as the cording foot) is designed with two grooves on the underside and will hold and cover the cord when making piping tape. It can also be used for attaching piping. Maximum cord size is 5 mm.



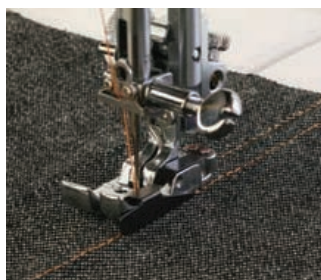
RUFFLER

Rufflers have been around for a very long time and have changed very little over the year; they have however remained very popular. Although at first sight a ruffler may appear bulky and complicated, its innovative design actually makes it very easy to use. This design allows fabric to be ruffled or pleated to the desired fullness quickly and easily and also has the capability to vary the sizes of ruffles.



GATHERING FOOT

This foot is for creating soft gathers in lightweight fabrics. The underside of the foot is raised behind the needle and has a thick bar in front of the needle to gather and attach a ruffle onto a flat piece of fabric simultaneously. Use a ruffler to obtain a more dramatic gather.



1/4 INCH SEAM FOOT

A popular foot with patchworkers for that essential 1/4 inch seam. The guide on the foot enables you to sew a perfect 1/4 inch seam every time. The guide can also be used wherever a 1/4 inch seam is called for but the markings on the needle plate cannot be used, such as when completing a flat-felled seam.



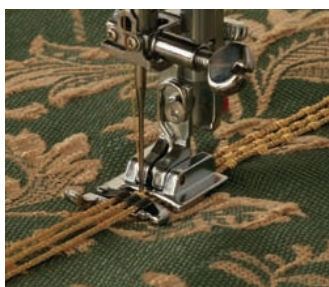
DARNING FOOT

Sometimes referred to as the embroidery foot, the darning foot is used for 'free hand' embroidery and darning to ensure proper stitch formation, minimize skipped stitches and puckering and also protect your under fingers while you move your fabric freely under the needle. Especially beneficial to those just learning how to do free hand embroidery.



BINDER FOOT

The binder foot is used to apply pre-folded bias binding tape or bias tape you have cut yourself to the edge of fabric in one easy step. It is equipped with a small funnel to fold and guide the binding over the fabric edge before it reaches the needle and can be used with either zigzag or decorative stitches as well as straight stitch. 10 mm to 14 mm bias tape can be used.



3 WAY CORDING FOOT

The 3-way cording foot will hold one, two or three fine cords or threads. Because they are attached to the foot, the required design can be easily followed and the cords are perfectly placed. A variety of utility or decorative stitches can be sewn over the cords to couch them onto base fabrics. The choice of cord, thread and stitch are all contributory factors to the final effect.



PINTUCKING FEET

The pintucking foot is used with a 2 mm twin needle to create multiple rows of the foot make it easy to stitch several rows parallel and evenly spaced from each other.



BEADING FOOT

Sewing on strung beads and pearls has always been a tedious task but the beading foot now goes some small way to alleviating this and to add pleasure to embellishing. Popular for bridal wear, evening wear, smart/casual or crafts, the beading foot set is a blessing. There are two feet in the set: narrow groove for beads up to 2 mm in diameter and wide groove for beads 2.5 - 4 mm in diameter.



RIBBON/SEQUIN FOOT

As with beads and pearls it is now so much easier to attach ribbons and even sequins with the help of our special ribbon/sequin foot. This foot is designed with guides through which ribbon or strung sequins can be inserted and it will allow them to feed through evenly as you sew. Besides affixing the ribbon, a wide ladder stitch can be used with narrow ribbon to make an easy and functional drawstring.

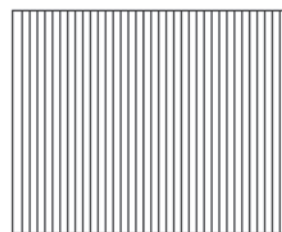
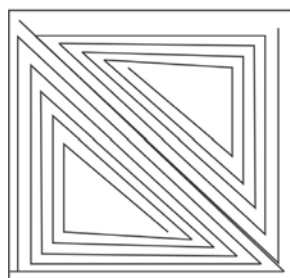
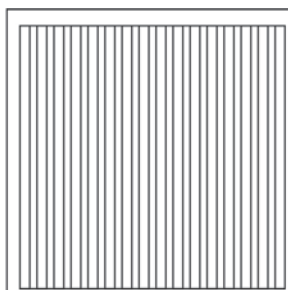
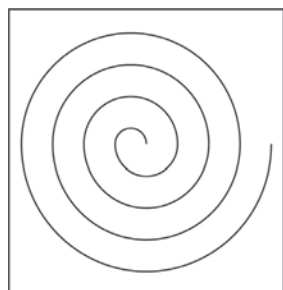
SAFETY RULES

Safety is important to everyone and it is ones responsibility to maintain a safe working place. Safety Rules to be observed while working on the machine:

- 1 When operating the machine, do not be careless.
- 2 Always inspect the machine before starting the work. Be sure it is clean and threaded correctly, with no loose threads on the pulley belt and all guards in place.
- 3 When in doubt, ask the teacher.
- 4 Report any injuries or accidents immediately to the teacher.
- 5 Wipe up any oil spilled on the floor immediately to prevent anyone from slipping.
- 6 Operate machines only with permission.
- 7 When sewing on a power machine, wear low shoes and close-fitting clothing. Avoid loose-fitting sleeves, sweaters, Jewellery, ties and ribbons when operating the machine. If your hair is long, tie it at the back.
- 8 Do not tilt your chair forward or backward while operating the machine.
- 9 Use both hands to raise and lower the machine head.
- 10 Always keep your head above the table.
- 11 Keep your feet off the treadle when you are not operating the machine.
- 12 Keep your feet off the treadle when you are setting or threading the needle.
- 13 Turn the motor off when you are not stitching.
- 14 Turn the motor off before cleaning, oiling or adjusting the machine.
- 15 Turn the motor off before removing or replacing the pulley belt and run the machine out. Wait until all motion has stopped.
- 16 Turn the motor off in case of an emergency or when in doubt.
- 17 Turn the motor off before unplugging the machine.
- 18 Do not use your hand to stop and start the hand wheel.
- 19 Use your hand only to set the hand wheel.
- 20 Before operating the machine, close the slide bed cover.
- 21 When operating the machine, keep your hands, scissors and other sharp objects away from the belt.
- 22 Keep the machine and work station clean with all tools in the side drawer.
- 23 Unplug the machine at the end of the day.
- 24 Know the location of the main power switch, outlets and fuses in case of an emergency.
- 25 Do not remove any safety devices from the machines.
- 26 Turn off the iron at the end of the class.
- 27 Always place the iron on the iron pad to avoid burning the ironing board cover.
- 28 When trimming or cutting, put all trimmings in the wastebasket.
- 29 Scissors should be handed to another person with the handles toward the person.
- 30 Never toss or throw scissors or equipment.
- 31 Do not eat or drink in the work area.

MACHINE PRACTICE

Learn to stitch on machine without thread on paper to gain expertise.





Chapter 7

Common Machine Problems

The student needs to understand the common problems that may be there while sewing and should be able to rectify these as they are common and irritating and slow down the sewing process. A person operating the machine should be able to rectify these and solve the problems.

Bobbin

1 Does not wind:

- » Make sure the thread is wrapped around the bobbin in proper direction.
- » Check to see if bobbin has been placed properly in the winder.
- » The rubber ring might be worn out and needs to be replaced.

2 Winds unevenly:

- » The thread may not be inserted in the thread guide.
- » You may be running the machine too fast.
- » The tension spring may need adjustment.

3 The Needle moves up and down during winding:

- » Needle has not been disengaged

Fabric

1 Layers feed unevenly:

- » Presser foot pressure incorrect
- » May need to stitch slowly
- » The fabric may be very light weight use tissue paper while stitching

2 Does not feed in straight line:

- » Presser foot may be loose or bent
- » Pressure of the presser foot may be incorrect
- » Needle may be bent
- » There may be a defect in the machine feed
- » You may be pushing or pulling the fabric

3 Puckers when stitched:

- » Many fabrics pucker when stitch in a single layer
- » The stitch length may be not in correct relation to the fabric type
- » If the fabric is sheer or light weight, the presser foot tension may need to be regulated
- » Thread may be too thick
- » Needle may be coarse
- » Bobbin thread may be uneven

» Stitch tension may be unbalanced

» Feed dog may be worn out

4 Shows feed mark on the underside:

- » Presser foot pressure may be too heavy. You may need to put tissue paper between the fabric and the feed
- » The feed may be damaged or set too high

5 Fabric is damaged or holes around the stitches:

- » Needle may be blunt or too coarse or wrong type for the fabric
- » Check for the nick in the throat plate, foot or feed

Machine

Motor does not run:

- 1 Cord is not plugged.
- 2 Power switch off.
- 3 Knee or foot accelerator may be jammed or improperly attached to power source.

Motor runs but hand wheel does not turn:

- 1 Thread or lint may be caught or tangled in the bobbin case area.

Motor runs, hand wheel turns, but needle does not move:

- 1 The needle may have been disengaged for bobbin winding and not tightened back to sewing position
- 2 If needle has been tightened but still does not move, the motor belt is slipping because it is loose or worn.

Motor, hand wheel and needle moves but fabric does not feed:

- 1 Make sure the presser foot is down
- 2 Check the stitch length regulator
- 3 The pressure regulator may at the least/ light pressure. If fabric is heavy, more pressure may be necessary for fabric to feed.

4 The feed dog may be in the lowered or "down" position

Motor, hand wheel, needle and fabric moves but no stitch is formed :

- 1 Thread may have come out of the needle.
- 2 Needle may be threaded in the wrong direction.
- 3 Needle may be inserted backward or may not be pushed all the way up into the clamp.
- 4 Needle may be the wrong length for the machine.
- 5 Machine may be threaded incorrectly

- 6 Bobbin may be empty
- 7 Bobbin and / or case may be inserted incorrectly
- 8 The timing of the machine might be off

Runs sluggishly:

- 1 Bobbin winder may still be engaged
- 2 Knee or foot control might be improperly positioned
- 3 Machine may be in need of oiling and / or cleaning

Runs noisily:

- 1 Machine probably needs oiling and / or cleaning
- 2 The needle could be bent and hitting against foot or throat plate
- 3 Bobbin and / or case may not be tight enough
- 4 Bobbin may be almost out of thread.

Will not stitch in reverse:

- 1 If machine is very old, it may not have this capability
- 2 If it is a recent model, check the stitch control. It may be set for "stretch stitch" or "buttonhole", sometimes these stitches cannot be reversed manually.

Needle

Unthreads:

- 1 Insufficient thread may have been pulled through the needle before the seam was started
- 2 Machine may be out of top thread

Breaks:

- 1 You may be using the incorrect presser foot
- 2 Presser foot and / or throat plate may be loose or improperly fastened.
- 3 Needle might have become bent and hit the presser foot and /or throat plate
- 4 Needle may be incorrectly inserted
- 5 Needle might be too fine for the fabric being sewed and for the job being done
- 6 You may have pulled too hard on fabric while stitching
- 7 Check machine settings.
- 8 Needle may be defective

Stitches

Are uneven lengths:

- 1 You might be pushing or pulling the fabric too much
- 2 Pressure on the presser foot could be either too light or too heavy for the fabric

- 3 There could be lint or other clog between the teeth of the feed dog

Have loops between them:

- 1 If the loops are large, the machine is improperly threaded
- 2 If loops are small tensions are unbalanced
- 3 Bobbin may be wound unevenly
- 4 There may not be enough pressure to hold the fabric taut during stitch formation

Skip here and there:

- 1 Needle may be blunt or bent
- 2 Needle may be inserted backward or it might not be all the way up into the clamp
- 3 There may be insufficient pressure on the presser foot
- 4 Throat plate may be wrong for the purpose
- 5 You may be stitching at an uneven speed
- 6 While stitching, you may be pulling too hard on the fabric
- 6 Thread

Needle thread breaks:

- 1 Usually this is caused by the needle being inserted backward or threaded backward
- 2 Thread may be caught in the spool notch or it could be wrapped around the spindle
- 3 There may be a rough or burred place on a thread guide
- 4 The needle may be blunt
- 5 Needle may not be all the way up into the clamp
- 6 Needle may be too fine for the thread, causing it to fray-often the case with silk buttonhole twist

Bobbin thread breaks:

- 1 Bobbin case may not be threaded properly and / or the case not inserted properly
- 2 Bobbin may be too full
- 3 Check for dirt or clog in the bobbin case
- 4 Bobbin tension may be too tight

Bobbin thread cannot be raised through hole in throat plate:

- 1 Bobbin case may be improperly threaded.
- 2 It may not have been properly inserted

Chapter 8

Pattern Terminology

Block/sloper: A term for a paper cutting of basic bodice, skirt, sleeve or any such basic pattern from which all the other designs are developed. Block normally represents the dimensions of a specific form or figure. It is a foundation that is used to make the pattern for a design and has no seam allowances.

The block should carry the following information:-

- Name of the block e.g. skirts front, bodice back etc.
- Grain line is a line drawn from end to end on each pattern piece to indicate how the pattern should align with the lengthwise grain of the fabric.
- Size e.g. 32, 34, 36 or S, M, L

Pattern: Pattern is developed from the block that includes all the information needed for cutting and production of the garment including seam allowance.

Seam Allowances: The amount of seam allowance required for each seam line may vary depending on the location and end purpose. Generally these are the measurements followed -

- ¼" for sharp curves.
- ½" for neckline, armhole, waistline, style line.
- 1" for side seam, centre line, shoulder, plackets.
- 2" for straight hem line.

Muslin: is used for making test fits. This is basically an unbleached plain woven cotton fabric. It is available in light, medium and heavy weight. Medium quality is used for test fitting and draping.

Grain line: Grain line is a line drawn from end to end on each pattern piece to indicate how the pattern should align with the lengthwise grain of the fabric. Whichever direction, the grain line is drawn on the pattern; it will always be placed parallel to the selvedge on the fabric.

Balance: Refers to hang and also proportions in garments. Fashion dictates balance to a certain extent, for example long tops over short skirts.

Balance marks: Marks made on edges of pattern pieces that show where they are to be matched. They are a useful construction guide on all seams but where edges of different shapes are to be joined or where one edge is fuller than another, balance marks are vital. In pattern cutting make short pencil marks at the edge of the paper, copying them through all stages to the final pattern. On bought paper patterns balance marks are indicated by indicated by triangles and are referred to as notches.

Dart: Wedge shape or triangular shape marked on the pattern that controls the fit of the garment. Darts radiate from the highest point of a mount on a body, these mounts are generally rounded. If the darts on front bodice are stitched till the apex they would create a point on the apex and strain the garment. The body is rounded and not pointed hence to avoid these strains or pulls on the garment the darts need to be finished away from apex.

- Dart legs - The two sides of the triangular shape & should be of the same length.
- Dart point - The point at which the dart ends.
- Dart intake - Is the amount of suppression taken between the dart legs.
- Apex - The highest point on the bust.

Single Dart Pattern

In this a single dart is there for entire suppression required. Dart ends ½" away from the bust point.

Two Dart Pattern

- Waist dart is ¾" to 1" away from the bust point.
- Other dart is ¾" to 1 ½" away from the bust point.

Chapter 9

Sewing Aids

All pins: All pins are fine, long, rust proof pins. Used for attaching muslin pieces together and for draping. Used to fasten parts and pieces of pattern paper.

Magnetic pin holder / pin cushion: Used to hold pins.

Muslin: A plain weave fabric made from bleached or unbleached yarns which vary in weight and in texture. Used to experiment and develop design concepts.

Push pins: Drum shaped $\frac{1}{2}$ " long p" used for pivoting and transferring points. Used to hold pattern pieces and fabric on table.

Tracing wheel: An instrument with small serrated or needle point wheel mounted on one end of a handle. Used for transferring markings from paper patterns on the muslin"

Tailor chalk: $1\frac{1}{2}$ " X $1\frac{1}{2}$ " square of white or coloured chalk of wax. Used for marking on fabric.

Notcher: Cuts a narrow U shape on pattern used to indicate seam allowance, centerlines, ease and dart intake.

12" / 24" scale: Long ruler 12" / 24" metal or plastic. Used to mark straight lines to measure.

Measuring tape: Metal tipped narrow, firmly woven double tape of cloth or plastic usually 60" long (150cm) marked with both inches and centimeters.

Grading scale: 2" X 18" transparent straight plastic with grid in inches and fraction of inches (or millimeters) ruler.

Pencil: Used to mark lines in developing the muslin, pattern or sloper.

L-square: Plastic or metal ruler with two arms at right angles of varying lengths usually 12" and 24". Used to square off corners. Establish perpendicular lines, reference points and lines.

Dress form: A standardized duplication of a human torso, cotton padded and canvas covered, set on a movable, light adjustable stand and compressible shoulders and sloper. Used to take measurements, develop pattern, fit garment samples to alter garments, to establish style lines for the garment.

Pattern paper: Strong white paper available in variety of weights and widths.

Newsprint paper: Used for rough drafts.

Thick brown paper: Strong brown papers for finished pattern. Used for preliminary patterns drafting and development of the final pattern.

Sloper/master/block/basic pattern making: A pattern of a garment, without style lines, or seam allowance developed from specific measurements of a given size, dress forms. Used as tool from which other patterns may be developed, to facilitate the development of original styles and to develop various bodices, skirt, dress, pants, sleeve designs.

Carbon paper: Coated paper on one side with white or coloured wax, used to transfer marking on fabric or paper.

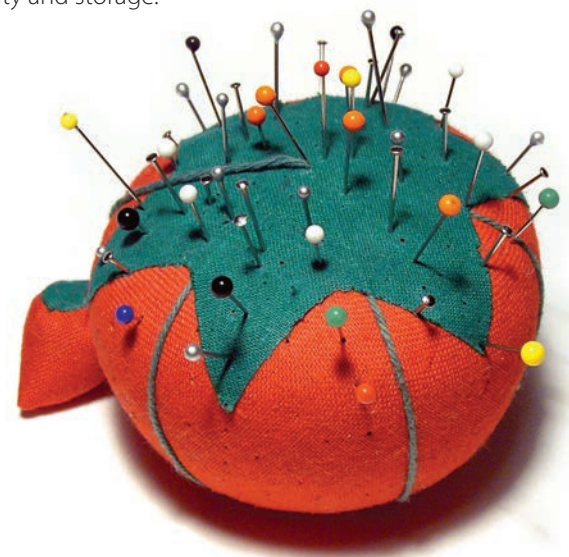
Transparent tape: A clear plastic narrow continuous stripes with an adhesive surface on one side, available in roll. Used to hold paper pieces and mend tears.

Paper shears/scissors: A cutting instrument, ranging in size from 8" to 12", with two sharply pointed straight blades. Used to cut paper patterns.

Tailor's shears: A cutting instrument ranging in size from 12" to 16" with two wide blades. Used to cut fabric and muslin.

Magnet: A high carbon alloy steel that has a property of attracting iron and steel can be of any shape. Used to pick up pins and needles.

Pin cushion: A small firmly stuffed pillow made in a variety of shapes and sizes. Used to hold pins, needles for easy accessibility and storage.



Chapter 10

Needle and Thread

Machine needles are selected according to the weight and other characteristics of the fabric, as well as the thread type being used for construction. Generally, a needle should be fine enough to penetrate the fabric without damaging it and yet have an eye, which is big enough so that the thread does not fray or break. Needles come in various sizes, from very fine (size 9) for lightweight fabrics to thick (size 18) for very heavy weight and dense fabrics.

Needles also come in three different tips/ points:

- Regular sharp needle: this is ideal for mostly all woven fabrics because it helps produce even stitching with minimum puckering.
- Ball-point needle: the slightly rounded tip is recommended for all knit fabrics and elastic fabrics as the needle pushes between the fabric yarns instead of piercing them. Available in sizes 9-16 where the point is rounded to, in proportion to the needle size, points of larger sizes being more rounded than finer ones.
- Wedge point needle: this needle has been specially designed for leather and vinyl, as it easily pierces these fabrics to make hole that closes back upon itself. This avoids unattractive holes in the garment and also reduces the risk of stitches tearing the fabric. Available in sizes 11-18, size 11 is used for soft and supple leather and size 18 being used for heavy or multiple layers of leather.

Needles should be chosen carefully for different fabrics. If a needle is of the wrong size, the machine stitch formation is affected. If it is too fine the thread might fray. If it is too coarse it may damage the fabric and the stitches will look imbalanced.

Care should also be taken to ensure that the needle is neither damaged nor dirty. A needle that has a burr on the point, eye, or the groove may cause the thread to break or fray or even the fabric might get damaged. A blunt or bent needle can cause a thumping noise in the sewing machine as it penetrates the fabric and may also result in pulling the fabric or in skipped stitches in the seam lines.

With the wide and ever increasing range of fabrics

available in the market, it is important to know the right sewing thread for the various types of fabrics. The right kind of thread is important in sewing as the both the thread and the garment should share the same characteristic, as they have to be laundered and ironed together, they should shrink and stretch together. In the Chapter Fibres & fabrics (Chapter 10) you will learn the characteristics of various fabrics and fibres.

Types of threads: The natural fibre threads available in the market are cotton and silk. Cotton thread comes in two varieties mercerised and unmercerised. Mercerised cotton is stronger and has lustre. Silk thread is an all-purpose thread and combines strength with elasticity, but is not easily available in India in small spools. It is generally used for over- lock machines in the industry. The synthetics threads are usually made from polyester and Terylene thread. This thread is stronger than the natural thread and has an important feature of being elastic, which is particularly important while stitching knits or Lycra based fabrics. There is tremendous amount of strain on seams in active sportswear, swimwear or during movement, use of this thread minimizes the chance of broken stitching. Synthetic thread is also useful in stitching of leather as it has a good deal of stretch in it. But cottons or linens should not be stitched with synthetic thread, as the thread will not be able to with stand the heat while being ironed. Wool and silk should preferably be stitched either with mercerised cotton or silk threads only.

Blended fabrics may be stitched with synthetic thread suitable to the dominant fibre in its content.

Threads whether natural or synthetic are produced in various thickness: higher the number finer is the thread and smaller the number coarser is the thread. The threads are available in sizes 30-60. It is important to remember that the same thread should be used for the bobbin and top spool.

Threads for decorative stitching: For decorative stitching such as saddle stitching, topstitching a special thread called buttonhole twist (it is also sold in the market as no. 20/30 thread) is used, to emphasis stitching. It may only

be used in spool or bobbin; this is an exception to the rule. Use a 40 size mercerised cotton thread as a companion to it. The yellow coloured top stitching thread used on denim jeans is a commonly used buttonhole twist thread. Always choose a thread a shade or two darker than the fabric as in the long run; it will look the same as the fabric colour. Buy good quality and branded thread even if it is expensive, as it will last longer and be cost effective. Before one starts sewing, a test of the seam strength should be

done on a double scrap of the same fabric, to check if it has right appearance, correct tension and if it is a pucker-less seam. Puckering will mean that either the needle is not correct or there are too many stitches per inch. Adjust the tension of the machine and test till one is satisfied. It will be worth an effort.

Given below is a Table for easy reference of needle sizes, threads and stitches per inch for various fabrics:

TOP STITCHING

S NO.	PROCEDURE & FABRICS	NEEDLE	THREAD	STITCH LENGTH
1.	Top stitching straight Woven Knit Vinyl	16-18 14/16 ballpoint 16 wedge-point for leather	Heavy duty cotton wrapped polyester thread (normal bobbin thread)	6-12
2.	Top stitching zigzag Woven Knit	14-16 14/16 ballpoint	Heavy duty cotton wrapped polyester thread (normal bobbin thread)	8-12 (length) 2-4 (width)



S. No.	FABRIC	FIBRE	THREAD	NEEDLE	STITCH LENGTH
1.	Fine Woven: lawn, voile, organdie, silk chiffon, organza, crepe de chine, georgette, fine lace, tulle Knits: lingerie tricot, cut velvet Metallic fabrics	Synthetics & blends Cotton & Linen Wool Silk	Synthetic 60 Mercerised 50 Mercerised 50/60 Silk	9-11 9-11 9-11 9-11 10/11 ballpoint for knits and metallic fabrics	10-15 10-14 10-15 10-14
2.	Light weight Woven: poplin gingham, silk, chambray, crepe, cotton, corduroy, Knits: jersey, stretch terry, soft double knits, soft sweater knits Metallic fabrics	Synthetics & blends Cotton & Linen Wool Silk	Synthetic 60 Mercerised 50 Mercerised 50/60 Silk	11-14 11-14 11-14 11-14 11-14 ballpoints for knits and metallic fabrics and velveteen.	12-15 10-15 10-14 10-15 10-14
3.	Medium weight Woven: silk, brocade, taffeta, linens, some denims, tweed, gaberdine, water proof fabrics Knits: double knits, bonded knits Metallic fabrics	Synthetics & blends Cotton Linen Wool Silk	Synthetic 60 Mercerised 50 Mercerised 40 Mercerised 50/60 Silk	11-14 11-14 11-14 11-14 11-14 11-14 ballpoint for knits and metallic fabrics	10-12 12-15 12-14 12-14 10-12
4.	Heavy weight Woven: suiting, thick corduroy, double-faced wool, denim, canvas, heavy furnishing fabrics. Knits: velour, fleece, jacquards double knits Metallic fabrics	Synthetics & blends Cotton Linen Wool Silk	Synthetic 40 Mercerised 40 Mercerised 40 Mercerised 40/50 Silk	16-18 14-14 14-18 14-16 14-16 14/16 ballpoint for knits and metallic fabrics	10-12 10-12 10-12 10-12 10-12 8-12
5.	Fine Leather and PVC		Synthetic 40	11 wedge-point for leather	8-12
6.	Medium Leather		Synthetic 40	14 wedge-point for leather	8-10
7.	Heavy Leather		Synthetic 30	16 wedge-point for leather	6-10

Chapter 11

Essential Terminology of Fashion Industry

Acetate	A synthetic fibre that is used for luxurious fabrics such as taffeta and sat. It is often blended with rayon.		
Acrylic	A generic name for a synthetic fibre. Acrylic is typically used as a substitute for wool.	Chiffon	A sheer, lightweight, drapable, woven fabric originally made of silk but usually made from man-made fibers today.
Angora	A hair fiber from the Angora rabbit. It may be blended with rayon or wool fibers for a novelty effect.	Chintz	Any closely woven, plain weave fabric with a shiny lustrous finish often printed in bright floral designs.
Aramid	A generic name for a synthetic fiber that is very strong and highly flame resistant.	Colorfast	A term which implies that the color in a fabric will not be removed in the recommended procedure and will not wash out or fade upon exposure to sunlight or other atmospheric elements.
Bias	The diagonal of a woven fabric between the warp (lengthwise) and the filling (crosswire) threads. This part of the fabric has the greatest amount of stretch and can easily be distorted in the cleaning and pressing process.	Corduroy	A pile corded fabric in which the rib has been sheared or woven to produce a smooth, velvet-like nap.
Bleeding	The running of dyes that aren't colourfast in solvent or water. When the colour runs it can stain other materials.	Crepe	A fabric with an overall crinkled surface that is made from yarns with such a high twist that the yarn actually kinks.
Blend	A fabric made from two or more fibers that will have the performance characteristics of both fibers (i.e., a cotton and polyester blend).	Denim	A twill weave fabric with a colored warp and white filling thread.
Bouclé	A rough, fairly thick, stubborn yarn that gives a fabric a tufted or knotted texture.	Faille	A woven fabric that has a very narrow, crosswire rib.
Brocade	A heavy jacquard weave fabric with a design, such as leaves and flowers, woven into it. Metallic threads are often used in brocades.	Fake fur	A common term for synthetic fabrics used to imitate animal pelts.
Bugle Beads	Tube-shaped beads originally made of glass although often man-made. They are sewn on dresses and blouses as decoration. These beads may contain a coating on the inside that can be removed in dry-cleaning, giving the bead a translucent appearance, or can discolour during long-term storage.	Felt	A fabric made from wool, fur, or hair fibers that mesh together when heat, moisture, and mechanical action are applied.
Cashmere	Fine, soft wool obtained from goats native to Kashmir and Tibet.	Flocked Fabric	Small pieces of fiber glued or bonded to the surface of a fabric.
Cellulose	Fibers that come from a plant source, such as cotton, linen, ramie and rayon.	Fusible Fabric	A fabric with an adhesive coating that can be joined to another fabric by applying heat, moisture and pressure.
Chenille	From the French word for caterpillar. A fuzzy pile yarn that resembles a caterpillar or pipe cleaner.	Interfacing	A fabric used to give additional body and strength to certain parts of garments. Some areas that usually contain interfacing include front opening edges, collars, and pocket flaps. Some interfacing material may not be compatible with the shell fabric and may cause a bubbling or puckering of the shell fabric.

Jersey A single-knit fabric with plain stitches on the right side and purl stitches on the back. The word jersey is often used to describe any knit.

Knit A method of making fabrics through the interlacing of yarns. These fabrics tend to mold and fit body shapes and are characterized by their ability to stretch and recover to the original size.

Lace Knotted, twisted, or looped yarns that produce a fragile, sheer fabric, usually with intricate design patterns.

Metallic Fibers Man-made mineral fibers composed of metal, plastic-coated metal, metal-coated plastic, or a core completely covered with metal. Metallic fibers are primarily used to create shiny, decorative yarns.

Nap A fuzzy or soft down-like surface produced by brushing the fabric, usually with wire brushes.

Non-woven Fabrics Fabrics made from fibers that are held together in a web by mechanical or chemical means or through heat. Some examples include felt and Ultra-suede.

Oxford A fabric woven in a basket weave and made of cotton or a cotton blend. It often has a thin, colored warp and a thick, white filling.

Pile A woven fabric containing an extra set of yarns woven into the base of the fabric to produce the "hair like" surface texture. Velvet, velveteen, corduroy, and fake fur are the most common pile fabrics.

Pilling The tendency of fibers to pill or roll up. Pilling occurs when the loose end of a fiber is rubbed and collected on the surface of the fabric. The length of the fiber and twist of the yarn will affect pilling.

Rayon The generic name for a cellulose-based man-made fiber. Rayon has characteristics similar to those of cotton, linen, and ramie.

Satin Satin weave fabrics are characterized by yarns that usually float over four to seven yarns before being interlaced with yarns laid in the opposite direction. The floating yarns along the surface reflect light, which gives the fabric its luster. Satin fabrics can be made from silk or man-made fibers like acetate or polyester.

Shell Fabric The outer fabric of a garment or household item.

Silk A natural filament fiber produced by silk worms when spinning their cocoons.

Sizing A term used for materials used to give a fabric stiffness, luster, or firmness. Different types of material are used on different fabrics.

Velvet A fabric with a short, closely woven pile. It is usually made of rayon, acetate, silk, nylon, or a blend of these fibers.

Weave Yarns interlacing at right angles. There are three basic weave types: plain, twill, and sat. All other weaves are variations of these. Some of the more common variations include basket, rib, and jacquard.

Woolen A wool fabric made from loosely twisted yarns that have a somewhat fuzzy surface.

Worsted A wool fabric with a clean, smooth surface made from tightly twisted yarns.

Yarn A continuous strand spun from short (staple) fibers or long (filament) fibers. Yarns can be of low twist (lofty) or high twist (tight).

Chapter 12

Basic Hand Stitches

To stitch a beautiful garment various steps have to be undertaken. After taking measurements and cutting the cloth accordingly, we need to stitch the various pieces together with the help of different types of stitches. Attaching two or more pieces of cloth together with the help of a needle and thread, by taking the threaded needle up and down through two pieces of cloth is what forms a stitch. Care should be taken to thread only a requisite amount of thread through the needle so that it does not tangle at the time of forming stitches. Like any other profession, tailoring also has some basic rules and tenets following which is an absolute must, and following are some of these rules:

It is necessary to have knowledge about basic stitches before proceeding to construct a garment because:

- To make cut pieces of fabric into a garment one has to attach them with the help of stitches like basting.
- There are various types of fabric available in the market today. To be able to stitch all of them successfully, we need to hold them together temporarily. For e.g. Nylon cloth, silks etc.
- At times the basic stitches are used to give a neat finish to the garment like hemming.

TYPES OF STITCHES

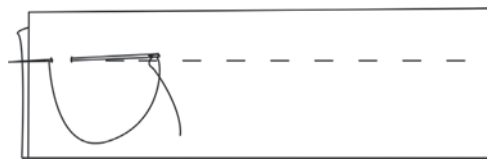
TEMPORARY STITCHES

Temporary stitches are those that are used to loosely attach two pieces of cloth to ensure that pieces fit together, darts are appearing at the right points. These stitches are opened out after stitching the garment. These also help to keep pieces in place while being stitched. These are of various types, like:

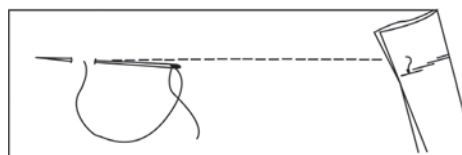
1 Basting Stitch

This is used to join two pieces of cloth together. This helps to keep slippery material in a straight line together while stitching.

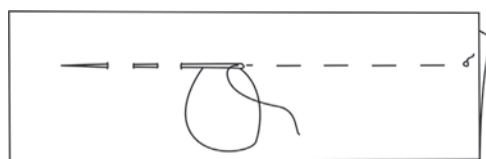
Method: Basting is done using a single thread. After threading the needle with an appropriate length of thread, the needle is taken in and out of the two pieces of cloth at some distance, throughout the required length.



1a. **Even basting:** All stitches are of equal length. This is achieved by taking an equal quantity of thread for the upward as well as downward stitch, at equal distances.



1b. **Uneven basting:** All the stitches are at varying distance but of the same length, i.e. the length of thread taken for upward and downward stitch is the same but at different distance from each other.



1c. **Zigzag basting:** When the cloth is slippery or a lining cloth is to be attached, then this zigzag stitch is used to keep the two pieces together.

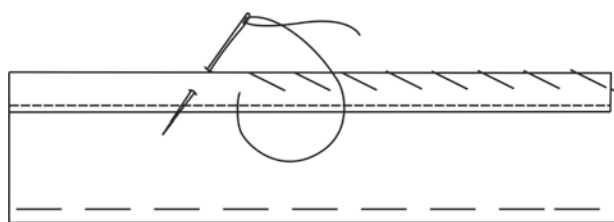
2 Thread Marks

This is a type of temporary stitch, which is removed after the garment is stitched. This is used in situations where you cannot use a pencil or chalk, to mark the cloth. Sewed in a very loose manner, one stitch is small, and the next one larger. Used mainly on garments where many trials etc are required before final fitting. It is usually made with a double thread, but is always made on a double layered cloth. The stitches are adjoining to each other. Made in a loose manner, the needle is taken out from a determined distance and then again inserted in the same position and then the second stitch taken with certain looseness in the thread.

PERMANENT STITCHES

1. Hemming: Used on almost every garment. Can be replaced by a simple running stitch also, but to enhance the beauty of a garment, hemming is used as a most important stitch. This is almost invisible on the right side of the garment and as very small stitches on the wrong side.

Method: As single thread is put in the needle and a very small margin of the cloth is taken or a single strand taken from the turned in surface. The needle is passed through the single strand and through the surface of the cloth to give a neat edge and finishing touch. Used on sleeves, neck, skirts etc.



2. Slip Hem: Similar to simple hemming but the stitches are taken at a little distant from each other. It's usually used on slippery materials like silk, nylon etc.

Method: As the name signifies, this stitch is similar to hemming but in a more lateral (slipping) position. Used to finish cuffs, necklines etc.

3. Narrow Hem: Stitches taken very close together. Usually to finish men's garments like shirts, coats etc. It is considered to be very strong.

Method: Stitches are put very close together using a single thread. The turned in part is firmly stitched in place using this method of taking the needle in and out of the turned in and rest of the garment.

4. Blind Hem: As the name suggests this stitch is almost invisible to the naked eye. It has to be done with great care to give a neat finish. It is used mainly in men's wear.

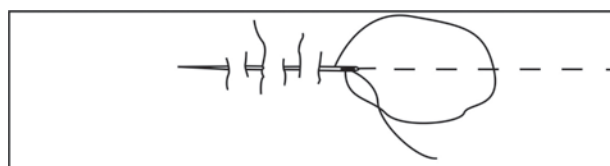
Method: The turned in part is so closely stitched to the main body of the garment so as to take only one strand of thread at a time giving it almost an invisible feel.

5. Rolled Hem: Used on fine materials. Edging of saris, edges of rills, puff sleeves etc are finished using rolled hem.

Method: Similar to simple hemming but instead of taking a straight band of cloth as the trend in portion a small edge is rolled between the thumb and forefinger and the stitch is put on the inside surface.

6. Circular Hem: A type of hem only, but used on bias cut cloth. When one needs to turn a straight edge on a bias cloth, it is difficult to do so, that is when this stitch comes in handy. Used on umbrella cut frocks etc. when the edge of the garment is always cut on bias.

Method: Bias cut cloth is once turned inside used. The amount of cloth to be turned is turned and a temporary stitch is put in loosely. The thread is then pulled a little to give small gathers. The gathers are then spread out and then hemmed into place.



7. Fine Running Stitch: One can see only fine dots of this stitch from the right side of the garment. Used mainly for finishing fine garments like sari edges.

Method: The needle is taken out from a predetermined distance. The place from where the needle comes out, then determines the point from where a single strand of thread is picked up for the next stitch. The shape of the garment has to be kept in mind while unraveling this stitch.

8. Padding Stitch: Used to set layers of cloth. It is used mainly in coats.

Method: Put at an angle this stitch resembles a temporary stitch. The first line is taken at a certain angle and in the next line the angle is in the opposite direction. The stitch seems like it is standing up.

9. Saarjoo: Used in materials where the strands of cloth come out. The garment is not stitched in these cases. Used in tricot trousers etc. This stitch is usually not opened. It is used to keep allowance in garments.

Method: Used with a single thread in the needle. The needle is taken out at an angle. Stitches are taken at some distance from each other and kept loose. You should keep in mind that the thread does not come out at the time of pulling the thread.

10. Back Stitch: Used to attach two pieces of cloth together, by using a handmade stitch. It has been used since the time when the machine was not yet invented. This is believed to have greater flexibility and is very strong. This stitch can also be used easily on a bias cloth. Most important use is on churidar pajamas, the stitch is different from its right and wrong side.

Method: A crease is created on the edge of the two pieces of cloth that need to be joined together. A small margin is taken on top and bottom and small stitches taken close together.

11. Button Hole: Of utmost importance in the tailoring trade, as it is used on almost all types of garments – ladies, men's and children. There is a need to keep an opening somewhere on the garment for ease of wearing and taking off. Most of such openings are closed with the help of buttonhole stitches. The button hole is always made on the top portion. The buttonhole stitch is used to finish the button hole. It is made on two or more layers of cloth. The button hole has a slight curve on one side known as the fan and an edge on the other known as the bar.

Method: First choose the distance between each button hole, then keeping the diameter of the button in mind, use the tip of a scissor to cut holes in the cloth. To ensure that no, loose strands come out finish the edge with a temporary stitch. Always cut the button hole in the direction of the grain line. Then using a single thread finish the edge with a buttonhole stitch keeping a little extra tension on the 'fan' side to make a kind of chain stitch is then pressed down once the buttonhole is finished.

12. Hook Eye: An opening can be closed with other methods apart from a button and buttonhole. One of these is the hook and eye. There are hooks of different sizes available to suit different purposes and garments like trousers or blouses. The hook is usually fixed half a point behind the edge of the belt. This is fixed using the buttonhole stitch. It is fixed from two edges below and one point above like a bow. The simple hooks are best used with an eye made from thread by hand, using a button hole stitch. The big hooks used for trousers usually come with a ready-made eye of metal which is also affixed using a buttonhole stitch.

13. Press Buttons: These are metal buttons with one part having a hole and the other a nail to fit into the hole. The nail part is always put on the top and the one with the depression on the bottom. This is also affixed using the button hole stitch.

14. Buttons: The various types of buttons available in the market differ in that they have different number of holes – 2 or 4. The method for fixing them remains the same. The spot where the button needs to be fixed is determined and then the needle is taken out first from one and then the other to properly fix the button. There should be a little looseness in the stitch so that the button can be easily passed through the button hole.



Chapter 13

Basic Seams

Seams are result of joining together two or more pieces of fabric by means of stitching or fusing, but the basic function of a seam is to hold pieces of fabric together. To perform its function correctly the seam should have properties or characteristics closely allied to those of the fabric being sewn. The careful selection of the most appropriate seam, a suitable stitch type together with the correct thread and machine settings for the fabric and end product is therefore of paramount importance.

In addition to holding a garment together, seams can be used as a design element. Seams placed in unusual locations or top stitched with contrasting thread add interest to a garment. Whereas puckered, crooked or uneven seams spoil the fit as well as the look of the garment.

Most seams are constructed on inside or wrong side of the garment, but there are some seams which are constructed from right side of the garment.

A “seam line” is designated line along which the seam is to be joined.

A “seam allowance” is the distance from the fabric edge to the stitching line farthest from the edge. Seam allowance is planned according to the width needed for the type of seam, seam finish or garment design.

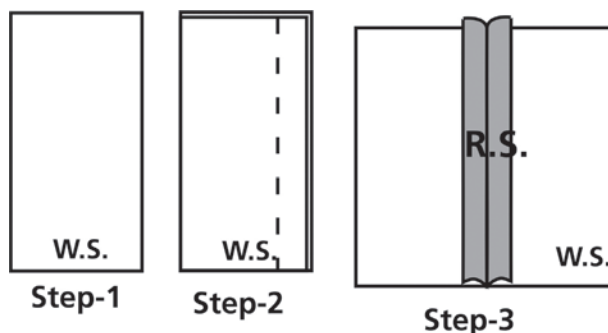
There are only a few fundamental seams but by using a wide variety of finishes it is possible to adapt seams to materials of different weight and texture, to the different location and design of the garments so that the type of seam selected depends on

- The type of fabric i.e. the firmness, weight & texture of the fabric
- The use of garment
- Placement or position of seam on garment
- Care of garment

Most plain seams require a seam finish to prevent raveling. A seam finish is a way of treating or enclosing the raw edges of seam allowance so they are more durable and do not ravel.

Variations of the plain seam include bound encased, top stitched and eased seams. Some, such as the flat fell seam, add strength or shape. Others such as French or bound seams, improve the appearance of the garment or make it longer wearing.

PLAIN SEAM



Of all the seams, a plain seam is the most basic and easiest to use. Its seam allowances are usually pressed open, although on lightweight fabric they can be trimmed and neaten together. In a well made plain seam, the stitching is exactly the same distance from seam edge till the entire length of the seam. To ensure absolutely straight seam, it is advisable to practice stitching while keeping the fabric edge aligned with seam guideline on the throat plate of needle, it is basically used on:

- Fabrics that will not ravel like fine to medium weight cottons, linens or fine wools.
- On seams of garments that will be covered by a lining.

A STRAIGHT SEAM

A straight seam is the one that occurs most often in most cases, a plain straight stitch is used for stretchy fabrics, and however a tiny zigzag or special machine stretch stitch may be used. It is rarely used for transparent fabrics such as voile, georgette, organdy etc. It is frequently chosen for side seams in blouses, kameez and frocks etc.

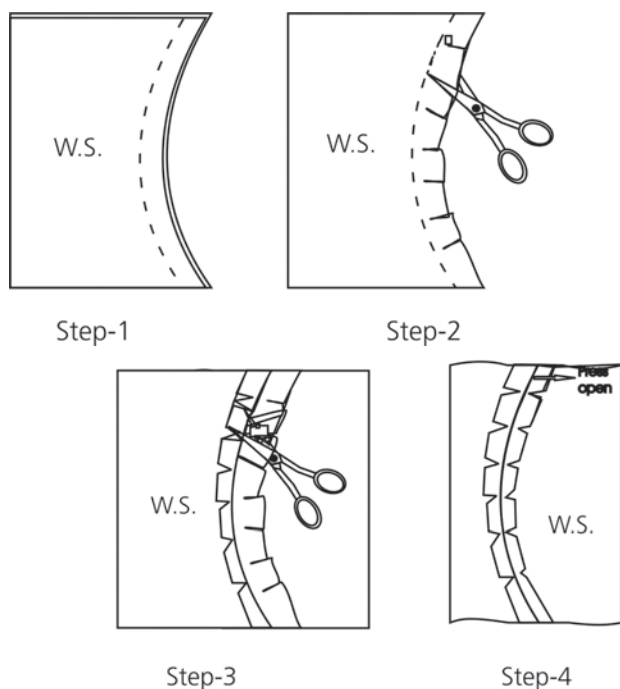
Steps of Construction

- 1 Lay two layers of material together, right side facing right side.
- 2 Machine stitch at edge leaving an allowance of 1". Start with back stitch and end with back stitch.
- 3 Press opens the seam, to avoid bulkiness and to make it smooth and flat.

A CURVED SEAM

A curved seam requires careful guiding as it passes under the needles so that the entire seam line will be the same

even distance from the edge. The separate seam guide will help greatly. To get better control, use a shorter stitch length (15 per stitch) and slower machine speed.

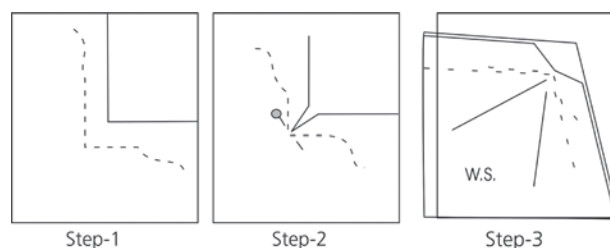


Steps of Construction

- 1 Stitch a line of reinforcement stitching just on seam line of the curve.
- 2 Clip into seam allowance all the way to the stitching line at intervals along the curve.
- 3 Cut out wedge-shaped notches in the SEAM ALLOWANCE of outer curve by making small folds in SEAM ALLOWANCE and cutting at slight angle. Be careful not to cut into stitching line.
- 4 Press seam open over the curve, using tip of iron only. Do not press into body of the garment. If not press to contour, seam lines become distorted and look pulled out of the shape.

A CORNERED SEAM

A cornered seam needs reinforcement at the angle to strengthen it. This is done by using small stitches (15 to 20 per inch) for 1" on either side of the corner. It is important to pivot with accuracy when cornered seams are enclosed, as in a collar; the corners should be blunted so that better point results when collar is turned.



Steps of Construction

- 1 To join an inward corner with an outward corner or straight edge, first reinforce the inward angle stitching just inside the seam line 1" on either side of corner.
- 2 Insert a pin diagonally across the point where stitching forms the angle clip exactly to this point, being careful not to cut past the stitches.
- 3 Spread the clipped section to fit the other edge; pin in position then with clipped side up, stitch on the seam line pivoting at the corner.

SEAM FINISHES

A seam finish is any technique used to make a seam edge look neater and or prevent it from raveling out.

Though not essential to completion of the garment, it can add measurably to its life. Less tangibly, finished seams add a trim professional touch, in which you can take pardonable pride.

Three considerations determine the seam finish decision.

- 1 The type & weight of fabric. Does it ravel excessively, a little, or not at all?
- 2 The amount & kind of wear & care the garment will receive. If a garment is worn often then tossed into washer, the seams need a durable finish. On the other hand, if the style is a passing fad, or will be worn infrequently, you may select not to finish the seam edges.
- 3 Whether or not seams will be seen. An unlined jacket warrants the more elaborate bias binding finish. A lined garment requires no finishing at all, unless the fabric has a tendency to ravel a great deal.

Plain straight seams are finished after they have been pressed open. Plain, curved or cornered seams are seams finished right after stitching, next clipped or notched, then pressed open.

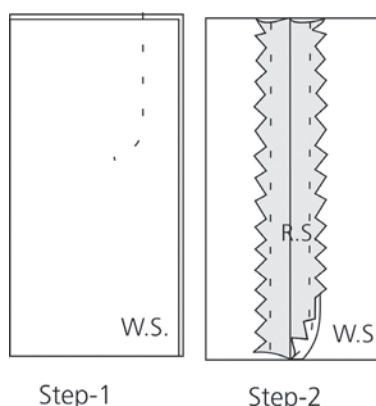
In this category we have the following seams:

- (i) Stitched & pinked seam
- (ii) Turned & stitched seam
- (iii) Hong-Kong seam

STITCHED & PINKED SEAM

A seam finish in which a line of machine stitching is made $\frac{1}{4}$ " from the raw cut edge before pinking. It is done to prevent the pinked edge from raveling, to prevent the seam from curling & on fabrics which ravel slightly.

It is a quick and easy finish suitable for firmly woven fabrics.



Steps of Construction

- 1 Take two layers of fabric, right side facing right side; stitch on wrong side, leaving a distance of 1" from edge. Press open the seam allowance. (straight plain seam)
- 2 Using a short stitch place a line of a stitching $\frac{1}{4}$ " away from the edge of the seam allowance. On the one side of seam allowance. Repeat the same on the other end of seam allowance.
- 3 Then pink the outer edge of the seam allowance away from the seam you have just applied.
- 4 Press opens the seam.

TURNED AND STITCHED SEAM

A seam finish in which the raw edge of the SEAM ALLOWANCE is turned under stitched and concealed. Tailored edge, turned and stitched or clear finish all are the names of one seam. It may be helpful on difficult fabrics. This is a neat tailored finish for light to medium weight fabrics of cotton, linen and viscose. It is done to:

- Prevent the seam edge from fraying.
- On straight edge seams.
- On garments where SEAM ALLOWANCE will not show on the face of the garment.
- On plain weave fabrics.
- On unlined coat, jacket or vests.

Steps of Construction

1. Take two layers of fabric, right side facing right side, stitch from wrong side at a distance of 1" from the edge. Press open the allowance. (Straight plain seam)
2. Turn under the edge of the seam allowance $\frac{1}{4}$ " stitch along the edge of the fold. Repeat the same step on the other edge of seam allowance.

HONG-KONG SEAM

A seam finish in which the raw edge of the SEAM ALLOWANCE is covered with a folded ribbon tape or bias binding.

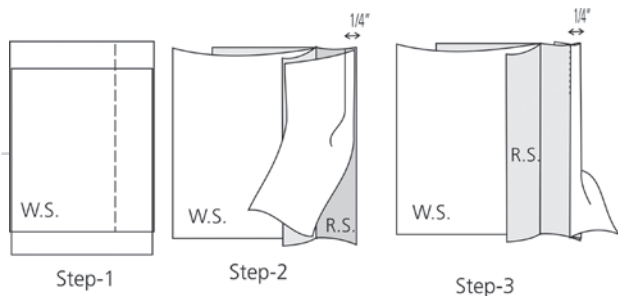
Hong-Kong seam is basically a couture finish on the hem edge, the Hong-Kong finish takes a little extra time and requires superior workmanship.

This is done on heavy fabrics that ravel easily.

- On the seams of unlined coats, jackets and vests.
- When the inside or WRONG SIDE of clothing may show.
- To reduce the abrasion of seam edge.
- To cover the raw edge of fabric that may chafe the skin.
- To protect the raw edge of easily frayed fabrics.
- On fabrics that are too thick to be turned under and edge stitched.

It is also taken as an alternative to bias bound finish.

- 1 Right side facing right side. Stitch at a distance of 1" from the edge on wrong side. Press open the allowance.
- 2 Cut 1 or $1\frac{1}{2}$ " wide bias strip from a light weight material. With right sides together stitch bias strip to seam allowance $\frac{1}{4}$ " from edge.
- 3 Turn bias over edge to the underside and press. From the right side. Stitch in the crevice of the first stitching (Stitch in ditch) trim unfinished edge of bias.



SELF ENCLOSED SEAMS

Self-enclosed seams are those in which all seam allowances are contained within the finished seam, thus avoiding the necessity of a separate seam finish. They are especially appropriate for visible seams, such as occur with sheer fabrics & in unlined jackets. Also they are ideally suited to garments that will receive rugged wear or much laundering. Proper trimming and pressing are important steps if the resulting seams are to be sharp and flat rather than lumpy and uneven. Precise stitching is essential, too. This selection includes following seams:

- (i) The French seam
- (ii) Fat felled seam
- (iii) Mock French seam

FRENCH SEAM

A seam constructed so that a narrow seam is contained within a cage on producing a clear finish. This is a very secure and neat seam as the raw edges are not exposed. Since the finished seam consists of four layers of cloth, it is likely to be bulky. Hence it is suitable for thin/sheer fabric such as voile, organdy, and georgette. It is also used for dainty garments and lingerie.

This is done to prevent fabrics from fraying.

- Where the seam finish will show through garments made of sheer fabrics e.g. chiffon, organza, georgette, and organdy.
- On children's & infants wear, underwear and outerwear.
- On straight seams when a seam is to appear as a plain seam on the face of the garment and a clear finish is desired on the inside.

It is not used in couture, industry but is suitable for garments that require frequent washing e.g. night wear.

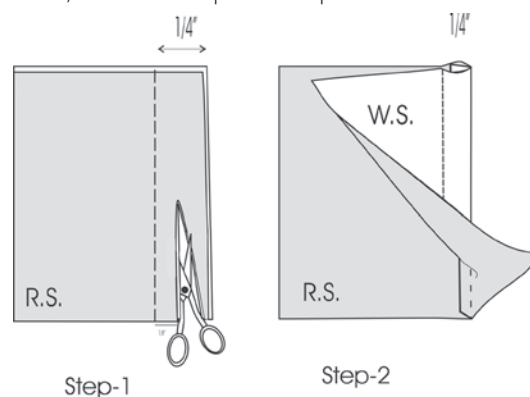
This seam is also known as "lote pote silaye" and "gum silaye" in Hindi.

Steps of Construction

1. Lay two layers of material together, wrong side facing wrong side. The first stitch is $\frac{1}{8}$ " or $\frac{1}{4}$ " outside the fitting line, depending on the desired finished width of the seam.

Trim the edge so that it is less than desired finished width of the seam. It looks best when finished width is $\frac{1}{4}$ " or less.

2. Press the seam in one direction. Turn the fabric so that right side is facing right side. Fold on the line of stitching. Machine stitch on the seam line. Since the raw edges are enclosed, this seam requires no special finish.



FLAT FELL SEAM

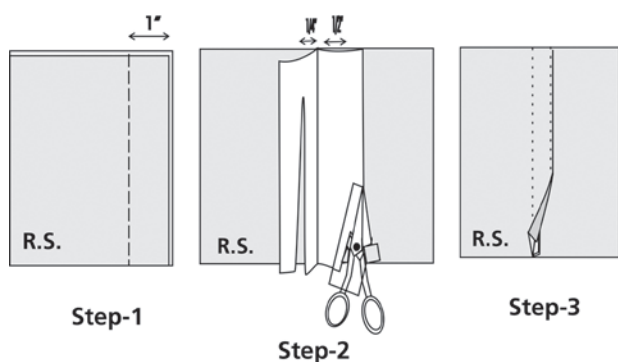
Place two layers of fabric with wrong side facing wrong side stitch from right side leaving an allowance of 1" press open the seam.

Trim inner seam allowance to $\frac{1}{4}$ ". Press under the edge of the outer seam allowance which is trimmed to $\frac{1}{2}$ ".

After pressing or folding outer seam allowance on inner one stitch this folded edge to the garment.

FLAT FELLED SEAM

A flat felled seam is the results of enclosing both seam allowance by machining opposing folded edges beneath a row of machine stitches through all piles. The flat-felled seam is very sturdy and so often used for garment that are made to take hard wear e.g. sports clothing and children's wear. Since it is formed on the right side, it is also decorative and care must be taken to keep the widths uniform within a seam and from one seam to another. Be careful to press like seams in the same direction (e.g. both shoulder seams to the front). Other examples are men's shirts, boy's trousers & women's tailored garment & unlined garments. Flat felled seams may be produced in all in on operation with a felling foot attachment on an industrial machine. In non industrial production, seam may be made in two or more steps.



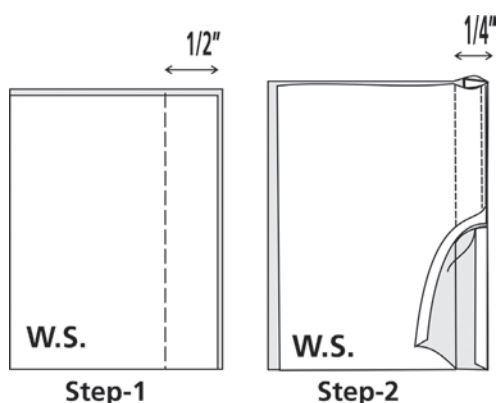
Steps of Construction

- 1 Place two layers of fabric with the wrong side facing wrong side. Stitch from right side leaving an allowance of 1". Press open the seam. (Straight plain seam)
- 2 Trim the inner seam allowance to 1/4". Press under the edge of the outer seam allowance which is trimmed to 1/2".
- 3 After pressing or folding outer seam allowance on inner one, stitch this folded edge to the garment.

MOCK FRENCH SEAM

A plain seam made to resemble a French seam by the face-to-face enclosing of the folded seam edges.

The mock French seam which is also known as False French or Imitation French seam can be used in place of the French seam, especially on curves of armholes and princess line garments, where a French seam is difficult to execute on transparent fabrics that ravel easily and where a strong finish is required. Basically used for fabrics where two turnings are difficult to make, as in matching plaids.



Steps of Construction

- 1 Take two layers of fabric, right side facing right side, stitch at a distance of 1/2" from the edge on wrong side.
- 2 Turn in the seam edges 1/4" and press, matching folds along the edge. Stitch these folded edges together. Press seam to one side.

TOP STITCHING SEAMS

Seams are topstitched from the right side with usually one or more seam allowances caught into the stitching. Topstitching is an excellent way to emphasize a construction detail, to hold seam allowances flat or to add interest to plain fabric.

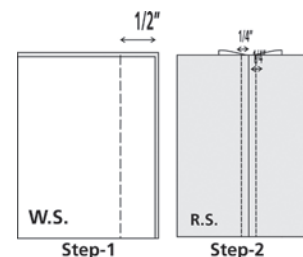
There are two main considerations when top stitching. The first is that normal stitching guides will not, as a rule, be visible, so new ones had to be established. A row of hand basting or tape applied just next to the topstitching line can help. The presser foot is also a handy gauge. The other consideration with topstitching is how to keep the under layers flat and secure even basting will hold pressed open seam allowances. Diagonal basting will hold those that are enclosed or pressed to one side. Grading and reducing seam bulk will contribute to smooth topside.

A long stitch is best when topstitching used buttonhole twist or single or double strands of regular thread. Adjust needle and tension accordingly.

- 1 Double top stitched seam
- 2 Mock flat seam

DOUBLE TOP STITCHED SEAM

A seam which has been pressed open and stitched parallel to and on both sides of the seam line, through garment and seam plies. This is an excellent seam to emphasize a construction detail as decorative stitching to hold seam allowance flat and to add interest to plain fabric and also to strengthen seams.

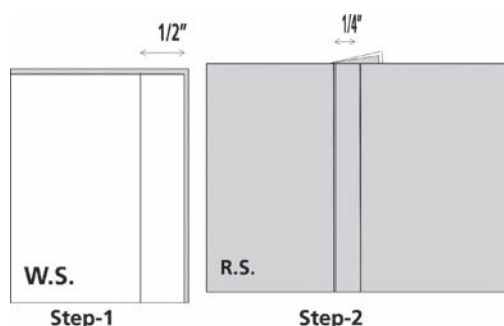


Steps of Construction

- 1 Take two layers of fabric, right side facing right side, stitch at a distance of 1" from the edge on wrong side. (Straight plain seam)
- 2 Press plain seam open. Top stitch at equal distance from each side of seamline, (1/4" away from seam line on both sides) catching seam allowances into stitching.

MOCK FLAT SEAM

This is a seam where seam allowance is about $\frac{1}{2}$ " and the finished seam is $\frac{1}{4}$ ". Stitch right side to right side flatten both allowances to one side and stitch on right side on the edge and one at a distance of $\frac{1}{4}$ " (on the side where your allowance is i.e. at wrong side)



Steps of Construction

- 1 Take two layers of fabric size 9" X 5 $\frac{1}{2}$ " (for sample) with right side facing right side. Stitch at an allowance of $\frac{1}{2}$ ".
- 2 Turn the seam and stitch from right side one near edge and one at a distance of $\frac{1}{4}$ ". There should be backstitch in the beginning and at end. The allowance of both the sides will be turned on one side on which you will apply seam.

SEAM WITH FULLNESS

When two seams to be joined are uneven in length, the longer edge must be drawn in to fit the shorter. This is done, depending on the degree of adjustment, by easing or gathering: easing for slight to moderate fullness; gathering for a larger amount it is important to recognize the difference between the two seams when finished. An eased seam has subtle shaping but is smooth and unpuckered. It may or may not call for control stitching. This section includes the following seams.

- 1 Eased seam
- 2 Gathering seam

EASED SEAM

An eased seam entails the drawing in or easing of a longer section of a seam line on one ply to fit a corresponding but shorter section of a seam line in the second ply.

This seam is used to replace small darts in necklines elbows, buntlines and waistlines, on the back sleeve seam at the elbow, on outward curved seam of the side front panel in princess line garment, on waistlines of skirts and bodice to distribute fullness and control fit and to match back shoulder to front.

Steps of Construction

- 1 Machine is run on the bigger side of the fabric piece without any thread in the needle. At the same time finger is kept behind (intact to) presser foot so that bigger material gets (kind of) gathers.
 - 2 This piece is place on shorter piece, stretched to the required length and stitch in place.
- [Note: - This method or seam is possible only when bigger piece is $\frac{1}{2}$ " to 1" bigger otherwise other method has to be used to control ease].

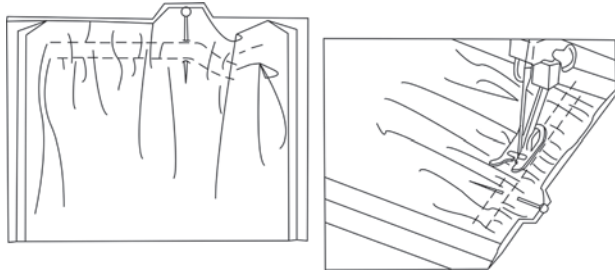
GATHERED SEAM

A gathered seam requires control stitching and retains more fullness. Gathering is the process of drawing fullness into a much smaller area by means of two rows of machine basting. This seam is possible when one fabric piece is much more bigger than the other one gather start with two stitching lines on a long piece of fabric the stitching lines are then pulled at each end to draw up the fabric. Finally, the gathered piece is sewn to a shorter length of fabric.

The stitch length for gathering is longer than for ordinary sewing. Use a stitch length of 6 to 8 stitches per inch for medium weight fabrics. For soft or sheer fabrics, use 8 to 10 stitches per inch. A long stitch makes it easier to draw up the fabric but a shorter stitch gives more control when adjusting gathers.

Before you stitch loosen the upper thread tension. The bobbin stitching is pulled to draw up the gathers and a looser tension makes this easier.

If the fabric is heavy or stiff, use heavy-duty thread in the bobbin. A contrasting color in the bobbin also helps distinguish it from upper thread.



Steps of Construction

- 1 Take the bigger fabric piece and from the right side stitch (8 to 10 per inch) one basting line just next the seam.
- 2 Stitch another line (on the same single piece of fabric) $\frac{1}{4}$ " away in the seam allowance.
- 3 Pin seam edges together at matching points, such as notches. Draw up bobbin threads, distributing fullness evenly and wind drawn threads around a pin to secure gathers. Pin baste and stitch seam with gathered side up.

PLEATS

Pleats are made by folding the fabric in various ways. Pleating may occur as a single pleat, as a cluster or around an entire garment section. Side pleats are all turned in the same direction. Box pleats have the two folds turned away from each other. Inverted pleats which have an underlay, have the two folds meeting at the curve.

TUCKS

Tucks are parallel folds of fabric used for a decorative effect in the right side of the fabric. The spacing can vary from the very narrow pin tucks to deeper, spaced tucks.

For perfection in stitching tucks, the markings must be exact. The pin tuck is an edge stitch evenly spaced $\frac{1}{16}$ " from the fold, for wider or more widely spaced tucks, increase the amount of fabric in each fold or the space between the tucks.

Chapter 14

Fibres and Fabrics

Fibres are the basic components of textile fabrics. Each has a unique characteristic that it lends to the fabrics made from it. Although fabric's character can be altered by yarn structure, by the type of weave and also by the finish that is given to the fabric, the original personality is still evident in the final fabric and is important to its uses and its care.

Before this century all the fabrics were made from natural sources. In recent years a plethora of new fabrics has come into the markets, which are product of chemical laboratory or in other words are man-made.

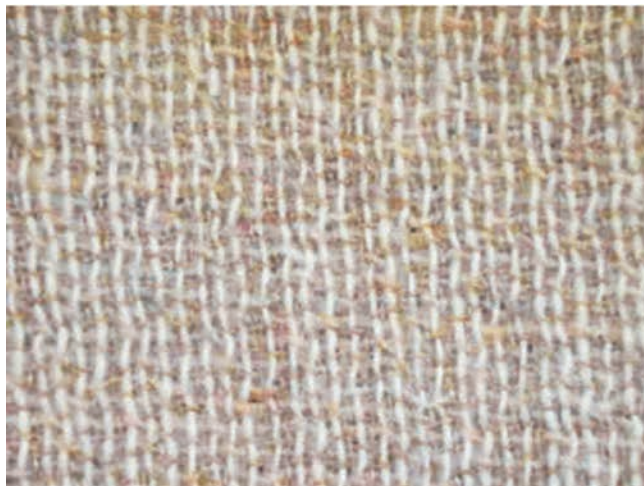
There is a variety of fabrics available in the market; these can be broadly divided into three major categories:

- Natural
- Man made
- Blends of natural and man made

Natural fabrics are further categorized into those fabrics, which are procured from animals and those, which originate from plants.

The commonly available and used Animal Fabrics are silk, wool, fur, leather etc. Some experts do not include fur and leather in textile fabrics technically, as they are skins of animals. On the other hand some include them, as they are widely used as an alternative to textile fabrics both for garments and household products. The most commonly available and used Plant Fabrics are cotton and linen.

Characteristics: Natural fibres have the irregularities and sensitivity inherent in natural things. These contribute to the beauty of natural fabrics. Advantages: These fibres due to their natural character have common qualities of being absorbent and are breathable due to the porous



structure. Thus, they are more responsive to climatic changes in temperature and humidity and are hence more comfortable to wear in a variety of climatic conditions.

The disadvantage of natural fabrics especially for cotton and linen, which is also an inherent quality, is that due to less elasticity they tend to wrinkle. This is also being overcome with a variety of wrinkle-resistant finishes, though at the cost of some comfort. Mercerised cotton is a common example of wrinkle-resistant finish without the application of chemicals, where cotton fibre is spun at very high tension to produce sheen in the yarn and make it more supple thus making it wrinkle-resistant.

Characteristics: All synthetic fabrics have their beginnings in chemical solutions that are forced through tiny holes into chemical bath or air chamber; these harden into long ropes of fibres that are later woven into fabrics.

Advantages: All synthetic fibres are elastic hence they are wrinkle-resistant. **Disadvantage:** On the other hand almost all manmade fibres are less porous hence they are uncomfortable in hot and humid weather. Certain synthetics like Nylon are thermoplastic and hence can be moulded at controlled temperature and pressure to create interesting textures and design variations; they are called heat-set designs. An all time favorite of this design is heat set pleats. Japanese designers have explored a lot in this technique and have mastered the art of heat set pleating. This pleating can be done at any stage in fabric

production at fibre stage, yarn stage or on the final fabric. Blended Fabrics are combinations of two or more different fabrics. Usually the fibre present in higher percentage dominates the characteristics of the final fabric, but a successful blend will have desirable qualities of all fabrics. One such successful and popular fabric is Terry cot® which is a blend of 65% Cotton and 35% Terylene.

A common problem with the synthetics is the large number of terms used to identify them. For example, Acrylic may be called Orlon® & Acrilan® as they are the registered trademarks of some companies which generally confuse the consumers. In India, the consumer generally recognizes the fabrics by the trade names or the common group terms by which a shopkeeper might be referring to them. Second problem that we face in India is of the common consumer being misled by the shopkeepers selling polyester blended silk as Khadi silk and claiming it to be pure silk. Hence the consumer needs to learn to identify the commonly used fabrics as most of the fabrics cannot be identified only by their appearance. You can read the information on the fabric bolt, as it is compulsory for the manufacturer to print it on the fabric. In some of the developed countries, where consumer rights are a major consideration, the retailer also has to put a tag containing information on care and fibre content and a customer can ask for the same at the time of purchase.

A comprehensive chart of the natural and man-made fabrics has been prepared for a ready reference.

Chapter 15

Different Types of Fabrics

DIFFERENT TYPES OF FABRICS

S. No.	FIBRE	SOURCE	CHARACTERISTICS	TYPICAL FABRICS	USED FOR	CARE
1.	Cotton	From cotton plant as pods	Strong, even when wet, absorbent, draws heat from body, tends to wrinkle, dyes easily, prone to shrinking, weakens with sunlight	Versatile fabrics in variety of weights and textures e.g. Corduroy, denim, poplin, terry, organdie, seersucker, cambric, drill, calico, chintz, flannelette, velveteen (a cotton fabric with short pile)	All season wear, work clothes, kids wear, upholstery	Can be laundered by hand or machine wash, colour fast fabrics in hot water, others in warm or cold water, Tumble dry at hot setting, bleach can be used for white and light coloured cottons, iron while damp
2.	Linen	From Flax plant	Strong, absorbent, draws heat from body, wrinkles, dyes with great difficulty, tends to shrink	Fabrics usually have coarse textures and natural lustre, in heavy and medium weight	Spring & summer wear, upholstery	Usually dry cleaned to retain crisp look, can be washed but will shrink and become limp
3.	Silk	From cocoons of silk worms	Strong, absorbent, holds in body heat, wrinkle resistant, dyes easily, weakens with sunlight and perspiration, excellent draping quality	Luxurious, lustrous fabrics in variety of weights e.g. brocade, chiffon, crepe, satin, tweed, crepe de chine, damask, organza, taffeta, shantung	Winter wear for formal and party wear mostly used for women's wear and lining for coats, men's shirts	Usually dry-cleaned if washable, usually washed by hand in mild soap / Ritha in cool water. Iron at low temperature setting, do not bleach
4.	Wool	From hair / fleece of sheep and other animals	Relatively weak, exceptionally absorbent, holds in the body heat, wrinkle resistant, dyes well, needs mothproofing, shrinks, shows wear and muss easily, irons well	Variety of fabrics of different weights and textures and construction e.g. crepe, flannel, fleece, gaberdine, Melton, tweed, jersey, felt, serge, tartan	Winter wear for sweaters, dresses, coats, trousers etc. for every one	Usually dry-cleaned, sweaters may be hand washed in tepid water and mild soap but should not be wrung. Do not use bleach. Some woolen fabrics can be machine-washed but follow care instructions
5.	Acetate	From the laboratory	Relatively weak, moderately absorbent, holds in the body heat, tends to wrinkle, dyes well but fades with exposure to sunlight, resists shrinking, accumulates static electricity	Luxurious silk like fabrics with deep lustre and excellent draping quality, often blended with other fibres. e.g. brocade, , crepe satin, taffeta, lace, jersey, tricot	For lingerie, women's wear, in colder climates	Usually dry-cleaned, may be hand or machine-washed on gentle cycle. Iron at low temperatures of synthetic setting as they melt at high temperatures

6.	Acrylic	From the laboratory	Strong, low absorbency, holds in body heat, resists wrinkles, dyes well, moth-resistant, accumulates static electricity, tends to pill, heat sensitive	Soft and fluffy fabrics, sometimes with pile construction often blended with other fibres e.g. fake fur, fleece, double knit, crepe, jersey	Light winter wear fabrics for sweaters, dresses and outer wear	Usually laundered, can be machine washed at warm setting and tumble dried often needs no ironing
7.	Nylon	From the laboratory	Strong, low absorbency, holds in body heat, resists wrinkles, moth resistant, accumulates static electricity, tends to pill	Variety of fabrics of different weights and textures often blended with other fibres.	For lingerie, women's wear, swimsuits, saris, men's shirts	Usually laundered, can be machine washed at warm setting and tumble dried/ drip dried, often needs no ironing
8.	Polyester	From the laboratory	Strong, low absorbency, holds in body heat, resists wrinkles, moth resistant, accumulates static electricity, retains heat set pleats	Variety of fabrics of different weights and types of construction often blended with other fibres.	For lingerie, women's wear, saris, upholstery, sportswear, thread, pillow filling, blended polyester is widely used as men's wear fabric for shirts, trousers and jackets	Usually laundered, can be machine washed at warm setting and tumble dried/ drip dried, often needs no ironing
9.	Rayon	From the laboratory	Relatively weak, moderately absorbent, holds in the body heat, tends to wrinkle and shrink, dyes well	Fabrics usually have coarse textures and natural silky lustre, in heavy, light and medium weight often blended with other fibres	For women's wear and men's wear in colder climates, linings, curtains	Usually dry-cleaned, may be hand or machine-washed on gentle cycle. Iron at moderate setting, chlorine bleach can be used
10.	Spandex/ Lycra	From the laboratory	Strong, non-absorbent, great elasticity, light weight	Flexible light weight fabrics often blended with other fibres	Used for ski-wear, socks, swimwear, & T-shirts, active sports wear	Wash by hand or machine at gentle cycle and drip/ tumble-dried iron at low temperatures.

The above chart is the ready reference for fabric care. As it is evident that some fabrics have inherent character of being prone to shrinking like cotton. It is advisable that when sewing these fabrics, care should be taken to check the fabric shrinkage. There is no fixed percentage that can be attributed, as to how much a given fabric would shrink. As already explained, the fabric characteristics are also determined by the yarn and fabric construction.

Hence no one formula can be given for determining the exact percentage of shrinkage.

It is recommended to soak cotton fabric in cold water overnight before cutting. Also iron fabric well before cutting as any folds will create a fitting problem later. This

will take care of shrinkage and also of colour bleeding if required. In case, the colour of the fabric runs, put colour fixer, (a number of brands are available in the market or can be fixed with a home mix of a table spoon of salt and half a cup of vinegar in half a bucket of water) in the same water in which fabric is soaked. Please remember that this is only required for unblended cotton fabric. Woolens should be dry cleaned if one is not sure that they can be hand washed. Silks too should be dry cleaned until one is absolutely sure about the washability of the fabric. All synthetic fabrics should be pre-soaked in cold water before cutting.

Chapter 16

Trims

Trims enhance the garment appearance. Trims are generally decided by the fashion trend. As they help in creating an effective look with very less effort. Trims such as ribbons, braids, laces, and other narrow fabric trims are widely used to adorn kids wear, night wear, lingerie etc. These help in creating a soft look in the garment and without too much effort makes it look dressy.

A garment is not only made from the apparel fabric but also various accessory items form part of it. These have to be chosen in such a manner, that they compliment the garment both aesthetically, in terms of decoration, and practically, in terms of ensuring that the garment performs as expected in its intended end use. There are a large variety of trims available in the market. They can be broadly divided into two categories Functional trims and Decorative trims. Functional trims are those which have a definitive purpose like closures, edge finishes but they might work as decorative trims, like buttons on the side of the jacket sleeve. The decorative trims are for embellishment only, like laces, ribbons, braids etc. There are trims that one can buy in the market and there are trims that can be made at home by an individual.

The type of trim and the amount of trim used would depend on current trends in fashion, cost of the garment and individual taste. Although a trim generally enhances the garment appearance but a trim that ravels, falls off, shrinks, fades, bleeds or discolours ruins the entire outfit. Hence one has to be very careful in selecting and in purchasing the trim. One must always go in for the trims that match with the basic characteristic of the fabric, which is being used for the garment. Like one must never use a cotton lace on a polyester garment as they do not have matching ironing temperatures.

There are trims that can be glued on and there are trims that can be stitched on the garments. The first variety is not readily available in the market. There are trims that are attached by hand to achieve a softer look, especially the old laces which need to be attached with invisible seams.

The various types of trims available in the market have been described in detail.

The Trims and their uses:

Laces: Lace is a narrow lace fabric (in contrast to the all over lace fabric from which whole garments are constructed). Lace can be very expensive, depending on its fibre content, intricacy and complexity, width and if it is gathered, fullness.

Some of the popular laces are:

- **Insertion lace:** a flat lace trim that has two finished sides. It is inserted between two edges.
- **Gallon lace:** a flat lace that has two scalloped edges
- **Edge lace:** Any lace with one scalloped edge and one straight edge.
- **Ribbon pass lace:** any lace trim through which a ribbon is threaded.
- **Medallion:** any individual lace motif, for example an appliqué, collar or a cuff.
- **Embroidered Lace:** a lace that has embroidered edge on it.



Braids:

Intertwining a set of yarns according to definite pattern forms braids. Braids are used on women's wear and children wear and sometimes are also used on uniforms as decorations. They are top stitched on the garment and are also used on accessories like Pea Caps. Broader braids are occasionally used as belts. Some of the popular braids are:

- **Loop Braid:** a braid that consists of many loops
- **Scrolling:** a wavy braid
- **Gimp Braid:** a complex highly decorative braid made from a cord used to decorate a high price jacket.
- **Rickrack:** a zigzag shaped trim used chiefly on kids wear, it can be edge stitched and also inserted. Broad rickrack is called Jumbo rickrack and narrow one is baby rickrack.
- **Ribbons:** Ribbon is a narrow, woven fabric used as a trim and to make ties and bows. It is available in a variety of widths ranging from 1/8th of an inch to 6" wide. Ribbons that feel papery and crease when folded is cheaper, inexpensive and of low quality. They do not last long, so should be carefully chosen. Ribbons can be top stitched, passed through a ribbon pass lace, or used as edge finish inside knits, or even at hems. Types of Ribbons available are:
 - **Grosgrain ribbon** (pronounced as growgrain): has a dull ribbed appearance. It can be used as a decoration or as facing inside a button placket in a cardigan.
 - **Satin Ribbon:** is shiny and smooth and is made using satin weave.
 - **Velvet Ribbon** has a soft smooth, three-dimensional pile surface.
 - **Novelty ribbon** is made with unusual design and weaves.

Fringes: Fringe is a trim that has dangling yarns. It is usually attached as an edge finish and is commonly used on duppattas, scarves and on upholstery.

- **Shimmy fringe:** A shiny fringe that moves when the wearer moves.
- **Kiran:** A fringe made with metallic yarn widely used in Indian bridal and trousseau wear.
- **Tassel fringe:** Groups of fringes tied together into tassels at intervals. Used in upholstery.

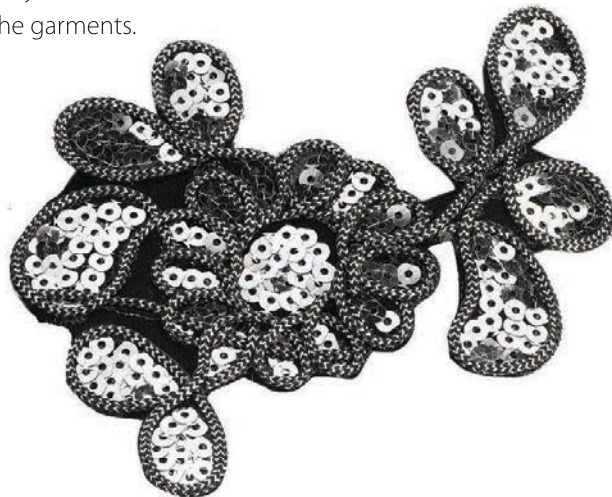
Twill Tapes: A twill weave tape used to trim casual garments and also to reinforce seams in knits. Other common tapes are seam tape or hem tape, which has a smooth ribbon like finish, used to finish inner seam and hems. Bias tape are bias cut fabric might be in contrasting colours used as decorative binding both inside and outside the garment.

Appliqués: are decorative patches applied to the garment. They are generally die cut from fusible fabrics may be embroidered. They can be ironed on and then permanently stitched. These can be in the form of emblems for school /college uniforms. As decorations on armed forces uniforms or even be ornamental motifs for kids wear. These can be Zari motifs for formal wear.

The following are non-fabric trims that are available in the market:

Beads: can be cylindrical called bugle (Nalki) or round called seed (Moti Dana). These are embroidered on to the formal wear as motifs or spread over as individual pieces on the garment. Nowadays, rhinestones are also very popular on garments. In past royal families used to wear clothes with real pearls and stones including diamonds embroidered on their clothes but today only very high fashion and very expensive garments have real pearls, most of the ornamentations used today are in plastic or glass. Swarovski crystals are also becoming increasingly popular in India they are not real diamonds but are quite expensive; these can be stitched or ironed on to the garments.

Sequins: can be shiny or in matt finish, can be flat or slightly three-dimensional. These are also embroidered on to the garments.





Studs and rivets: are metallic may or may not be studded with stones, popularly used on jeans, bags, belts, leather jackets, shoes etc. they are simply attached by fitting the two pieces together with a stud gun, or can be nailed into the garment. A wide variety of designs are available in the market.

Feathers: not very popular in India, but are quiet in demand in European countries both the real ones as well as fake ones. They are attached on garments as embellishments.

Closures: are the fasteners that secure garment openings. Closures unfasten to enlarge the garment and fasten to make the garment fit the body. There is a wide variety of closures readily available in the market. Closures include Buttons, Zippers, and Snaps, Hooks and Eyes and other fasteners. To a certain extent, tradition governs the use of particular fastener in a garment. For example formal shirts for men will always have buttons, whereas technically there is nothing wrong in using zippers for the same.

Buttons: have widely been used as garment closure from the middle Ages. Most buttons have dual functions in the garment of being functional closure and a decorative detail. However, some buttons inside a concealed placket, or inside a double-breasted garment are completely functional. But, buttons on the side of jacket sleeve are completely decorative. There are several other examples of decorative button usage in kids wear, and women's wear.

Buttons are made in several materials like plastic, wood, shell, nylon, animal horn, leather, nuts, beads, glass, fabric and metal etc. The plastic buttons are more popular than in natural materials as they are more uniform than in natural material and are cheaper too. Plastic buttons often imitate the one in natural material.

- **Polyester Buttons** are resistant to heat and dry-cleaning. They are produced in large quantities for all kinds of clothing.

- **Nylon Buttons** are made in large number of shapes and in a wide variety of colours.
- **Metal buttons** are made in brass, nickel and aluminum with an engraved or stamped face. Used for blazers, jeans and jackets etc.
- **Leather** or leather like **buttons** are sensitive to moisture and abrasion. Used mostly in apparel made of leather and sports jackets.
- **Wood buttons** are made from variety of wood, are lightweight and sensitive to heat. Traditionally used in Gujarat and Rajasthan for Indian wear are also used in knitted jackets.
- **Mother of pearl** or shells **buttons** are made from mussel shell, with their uneven and beautiful surface are very expensive decorative buttons. Traditionally used for western Bridal wear and lingerie.

Before selecting the appropriate buttons for the garment care should be taken to insure that if the garment requires ironing, it should have heatproof buttons. The appropriate number of buttons on a garment depends upon the size of the button and fit of the garment. Garments designed to fit the body loosely requires fewer buttons than a garment closely conforming to the body, since the latter requires closely spaced buttons to prevent the garment from gaping. An example of this is that 6" fly opening of jeans requires the same number of buttons as an 18" front of a loose shirt.

Buttons either have holes on the top called eyes or have a loop at the back called shank; these are meant for attaching the button to a garment. The eyed buttons have either two or four holes. Shank buttons have a stem of plastic, metal or cloth built into it. Shank buttons are more bulky than eyed buttons.

Button loops: are used in some garments instead of buttonhole to fasten the garment. In these garments two sides of the placket do not overlap. These loops can be made of tubes of bias fabric; strips of cording; braid, elastic or thread chains. Sometimes buttons too are made of fabric or cord that has been elaborately knotted.

Zippers are fast easy means of getting in and out of garments. They have been widely used in garments in



the west since 1930's but have come to India at a much later date. They are continuing to grow much lighter, more supple and less obvious with the advent of new technology. Zippers are usually more smooth and comfortable to lean on than buttons, so they are preferred to buttons for back open garments. Zippers close the garment completely, so they are preferred to buttons in closer fitting garments. However, for decorative purpose the buttons are still preferred over zippers being more decorative and that has a wider variety to provide larger choice.

Zippers are available as:

- **Plastic zipper** the teeth of the zipper are made of plastic.
- **Metallic zipper** the teeth of the zipper are made of metal.
- **Invisible zipper** cannot be seen after it is attached on the garment.
- **Separate zipper** is the one where two sides of the zipper get separated and can be easily put together by the wearer. These are used in front open jackets or any garment where two sides of the garment have to be separated for the garment to be easily worn.
- **Double slider Zipper** is the one with two sliders that can be opened from both top and bottom.
- **Zipper slider** is the piece that glides up and down. The slider or pull is usually plain but occasionally these come as decorative details. Mostly all the zippers have lock mechanism, either it is automatic or the wearer may need to pull the tab flat down to engage it.

Snap Fasteners: are of two types one is called the sewn on variety that is stitched on the garment popularly known as Tich buttons, they have holes in them with which they are attached on lightweight fabrics. The other type is called mechanically attached variety that is used on medium to heavy weight fabrics. Mechanically attached ones have two parts for each side of the button, where one piece goes inside the fabric and second goes on top and these are attached with help of a press machine.

Hooks and Eyes: consist of two parts, a hook and an eye (which can be made of thread/ can also be of metal). Hooks and eye offer the advantage of being small and easy

to conceal but can carry a heavy stress load. A hook and eye closure is stronger than snap closure of similar type. Hooks and eyes should be used in area of heavy strain. The majority of hooks and eye closure are concealed closures but visible hooks are used in bras and some sportswear. Hooks and eyes come in various sizes and are chosen depending on the areas of strain and the weight of the garment. Buckles used in waistbands of skirts and trousers are also on the same principle of hook and eye and are part of the same family.

Other miscellaneous closures are belt buckles that come in various materials, shapes and sizes; cord and ties commonly used in infant clothing and upholstery.

The Trims one can make on the machine are:

- **Piping-** in same colour or contrasting colour fabric cut on bias.
- **Tucks-** commonly used ones are like pin, space, broad and scalloped tucks.
- **Frills-** gathered strip of same fabric or different fabric or lace attached as a decorative or functional piece.
- **Pleats-** several kinds of pleats are added to garments providing fullness as well as for design detail, like knife pleats, box pleats, inverted box pleat to name a few.
- **Decorative top stitching-** done on top of a seam to highlight, it is both decorative and functional as apart from visual appeal it provides strength to the seam. It can be done with same colour or in a contrasting color in straight stitches or in variety of stitches that may be offered as attachments by the manufacturer of sewing machine.
- **Edge stitching-** same as decorative stitching.
- **Embroidery-** can be done with hand or machine in variety of placements, colours, threads and motifs that is primarily done for visual appeal.
- **Monograms-** same as embroidery.
- **Cut work-** same as embroidery but has cut out pieces in the motifs:

The above list is only indicative and is basically there to make the sewing enthusiast start taking the initiative and exploring.

Chapter 17

Fabric Care

The proper care of clothes ensures that the garments last longer and gives one value for money and look great after a number of washings. The garments that can be washed have been explained in the chapter "Fibre and Fabrics". In this chapter the topics covered are maximum ironing temperatures and spots and stain removal from various fabrics. These are important for proper care of garments and fabrics.

Pressing or ironing

To get wrinkles out of the handkerchief one pushes the iron along, this is ironing - a gliding motion. Pressing is an up and down motion. Lower the iron, press, and lift and move on to another section of the fabric. Then again lower the iron, press and lift the iron; this is the pressing motion. As ironing has long strokes it is done on flat surfaces. Pressing is done on small surfaces using various pads to suit the shape of different pieces and parts of the garment. For the shaped three-dimensional garments it is advisable to use small shaped pads for pressing. For better finishing, it is advisable to press each and every dart and press-open every seam while stitching. Press open every enclosed seam before turning the facing back to the underside. It is so much easier to topstitch an edge when it has been pressed flat.

It is far easier to insert a zipper after seam allowance has been pressed back first. Do not press over pins or basting as they leave marks.

Pressing special fabrics

a) **Crepe weave fabric**- Crepe weave fabrics tend to shrivel when damp and stretch with pressure. Place a press pad under the fabric and a press cloth over the fabric to retain the crinkle. Press lightly at required temperature depending on the type of fibre.

b) **Furs**- They require very little or no pressing. Press from the wrong side, if you choose to press, use a self fabric or a thick pile fabric like toweling as a press cloth.

c) **Napped fabrics**- same as for furs using either a self fabric or a thick pile fabric like toweling as press cloth.

d) **Slubbed, looped, ribbed fabrics**- Place the right side of the material against the right side of self-fabric or terry cloth. Using a light touch steam the fabric.

e) **Wool**- press lightly using a press cloth with moderately hot iron and steam lightly, if required.

f) **Metallic fabrics**- ironing should be avoided as they may get permanently creased while being ironed. If necessary, press lightly with a warm iron over a dry press cloth.

g) **Leather** or leather-like and coated fabrics- should not be ironed.

h) **Lace fabrics**- in order to preserve the raised structure of lace, place it over a thick towel and cover with press cloth and steam iron lightly.

Safe pressing temperatures limits for fabrics

FABRICS	TEMPERATURES
Natural Fibres	
Cotton	400° - 425° F
Linen	450° F
Silk	300° F
Wool	300° F
Manmade Fibres	
Acetate	250° -350° F (Press on wrong side)
Acrylic	300° F
Metallic	cover with pressing cloth
Nylon	300° -350° F
Polyester	325° F
Rayon	350° -375° (Press on wrong side)
Rubber	Do not press
Spandex	300° F
Vinyl	Do not press
Blends/mixed Fibres	lowest for the fibre type

Chapter 18

Spots and Stain Removal

Many common stains can be removed by just washing the garment, especially if the stains are fresh. Some laundry products contain special ingredients such as enzyme or oxygen bleach to aid in removing stains.

If the stains have aged, it would be best to pre-soak the garments in warm water. This should be followed by regular laundering. Often old, unknown stains can be removed and many yellowed fabrics restored by this method.

Oxygen bleach is mild bleach, which can be easily used on fabrics that cannot withstand chlorine bleach; it will be most effective in removing stains when used in hot water. Use the water at maximum temperature, which the fabric can stand. There are stains, which even the best products cannot remove.

The information you need to have before you start stain removal

- 1 Know the fibre content.
- 2 Do not use chlorine bleach on silk, wool or spandex.
- 3 Do not treat leather; take it to a professional dry cleaner.
- 4 If stain remains repeat the treatment.

Although no guarantees can be given about the following methods but experience has shown them to be effective in most of the cases.

- 1 Alcoholic beverage: sponge with cold water, then with glycerin and water. Rinse with vinegar water before laundering.
- 2 Blood: soak in cold water for about thirty minutes. If stain remains soak in lukewarm
- 3 Ammonia water: (3 Tbs. of ammonia to half a bucket of water)/ club soda. Launder.
- 4 Chewing gum: Put the article in plastic bag and place it in freezer. Gum may be removed with a blunt knife.
- 5 Coffee: Sponge with cold water immediately or soak in cold water for at least 30 minutes. Rub with soap and rinse thoroughly.
- 6 Crayons: Loosen stain with kitchen shortening. Apply detergent and baking soda, working until the outline of the stain is removed. Launder and use bleach if safe.

- 7 Deodorant: on silk they can't be removed except maybe by dry cleaning, on cottons rub lemon juice on to the stain and launder normally.
- 8 Eggs: Sponge with cold water. Work in soap or detergent if stain remains. Scrape if egg has dried before working with soap.
- 9 Fruit stains: Stretch the fabric over a bowl and pour hot water through it. Sponge with lemon solution if stain persists.
- 10 Gravy stains: Sponge in lukewarm water. Launder in warm soapy water. In some fabrics it may be necessary to work soap / detergent well into the stain and allow it to stand for few hours. If the gravy has turmeric work detergent/ soap well into the stain, the stain will turn red in colour and keep the garment in the sun till the stain disappears, rinse in water to remove soap.
- 11 Grass: work detergent into the stain and rinse.
- 12 Grease: Place a towel under the stain, pour cleaning fluid through stained area, and launder in hot water.
- 13 Ice cream: Sponge in cold water, apply vinegar water.
- 14 Ink: Soak the stained area in cold milk and wash after half an hour. If it persists rub with lemon and wash normally.
- 15 Ketchup: On washable articles, sponge with cold water let it sit for 30 minutes. Work in detergent and rinse.
- 16 Lipstick: Lessen stain with cold cream or glycerin. Wash as usual in undiluted detergent or pour liquid detergent through spray on it.
- 17 Milk/ cream/ Ice cream: Launder washable fabrics with plenty of soap.
- 18 Mud: Allow it to dry, then brush lightly and launder.
- 19 Nail polish: Clean with nail polish remover on all fabrics except acetate. Acetate needs to be sponged with amyl acetate.
- 20 Oil/ ghee: Sprinkle liberally with talcum powder let it stay for at least ½ an hour, then brush the powder lightly. Rub with soap or detergent into the stain and wash with warm water if stain persists.
- 21 Perfume or cologne: Wash immediately in solution of detergent and hot water. Do not allow the stain to age.

- 22 Soft drinks: Sponge immediately with cold water. Rub in glycerine and rinse after 30 minutes.
- 23 Soup: Sponge immediately with cold water. If stain remains rub in soap or detergent and allow it to dry. Rinse after few hours.
- 24 Vegetable stains: on washable fabrics sponge with cold-water let it stay for 30 minutes, work in the detergent and rinse.
- 25 Urine: Soak in enzyme detergent and launder using safe bleach as per fabric requirement.
- 26 Water: Launder the fabric.
- 27 Wax: Scrape off as much as possible. Then place the fabric between two paper towels and press with warm iron. Sponge final traces of the stain with a solution of water (2 parts) and alcohol (1 part).
- 28 Wax Polish: Rub with soap or detergent and rinse with warm water. Sometimes you may need to use grease solvent.
- 29 Wine: Soak in enzyme detergent in hot water (as hot as possible according to the fabric) and launder using bleach if it is safe for the fabric.

Prompt treatment helps in more effective stain removal. Hence it is wise to store some of the supplies on hand.

Bleaches: Chlorine bleach; fabric colour remover; oxygen type bleach (non-chlorine for all fabrics).

Detergents: Enzyme pre soak product; Liquid detergent; powder detergent; spray type pre treatment products

Soap: Laundry soap; white bar soap

Miscellaneous stain removers: Ammonia, rust stain remover; white vinegar

Solvents: Nail polish remover; turpentine oil

Other supplies: Clean white cloth and white paper towels.

Chapter 19

Garment Fitting

Fit refers to how well a garment conforms to the three-dimensional human body. Good fit is crucial to one's satisfaction. However, it is often easier to find clothes in right colours, prices and style that one likes than a well fitted garment. The effect of a stunning design, gorgeous fabric and exquisite workmanship are destroyed if the finished garment doesn't fit well to the intended wearer. Fit problems may be caused due to careless design, construction or may be the result of individual characteristics of an individual's body. No two bodies are alike, and sometimes even the left and right halves of the same body are not mirror images of each other.



New technology promises to overcome these problems; a new computer system can optically measure an individual's body in three dimensions. This data is then converted to a computerized, individual pattern, a man's suit designed by this method is ready to be cut out and ready to sew within 7 minutes of receipt of the measurement data. The resultant garments fit accurately as the computerized scanner detects subtle nuances in the shape of the body that normal measurement systems are unable to read. These systems are on the stage of trial; but they would be costly and would take a long time to be readily available.

There are varying opinions on what comprises a good fit. Personal preferences regarding fit are governed by current fashion trends, cultural influences, age, sex, figure type, and lifestyle. The intended end use of the garment also affects the desired fit. For example, a person needs more ease for active sportswear than for spectator sportswear like in a tracksuit.

Elements of Fit: an evaluation of Fit is based on five classical elements:

Grain: for a good fit the garment should be cut on the right grain or in other words on grain. (This has already been explained on How to calculate fabric). An on grain garment hangs evenly and appears symmetrical. If the garment is off-grain, it will not hang straight. The garment and seam lines may twist or hang crooked because the fabric on each half of the garment behaves differently. Deviation in the grain line is a result of wrong cutting or stitching or even due to a poor posture of the wearer or figure irregularities that may interfere with the grain of the garment as it hangs on the body.

Set: refers to a smooth fit without any undesirable wrinkles. Wrinkles caused by poor set cannot be ironed out, but result from the way the garment fits the wearer. Set wrinkles usually occur because the garment is too large or too small for the wearer and the garment hangs or sags when worn.

Line: refers to the alignment of the structural lines of the garment with the natural lines of the body. Side seams of the garment should hang like a plumb line down the centre of the side of the body. It should be perpendicular to the floor. Centre front and centre back likewise should fall centre of the front and back of the body and be perpendicular to the floor. Darts and seams such as shoulder seams should visually appear to be straight lines that follow the body part they are intended to fit. Other seam lines should be gradually curving lines like necklines, waistlines, hiplines and armholes. Poor design or construction can result in an out of line garment. Even figure irregularities can distort the lines of the garment.

Balance: occurs when the garment is in equilibrium. The right and left side of the garment appear evenly balanced or symmetrical, when viewed from front, back or side of the garment. A skirt is balanced if the legs of the wearer are in the centre and are not touching the front or back of the skirt. Balance relates to grain and line in the garment. A garment is out of balance when it is cut off grain, causing it to hang unevenly. Also if the line of the garment does not follow the line of the body, it will hang out of balance. Poor posture or lack of symmetry in the wearer's body is another likely cause of it.

Ease: refers to the amount of roominess in a garment. Ease is the difference between the measurements of the body of the intended wearer and the measurements of the garment. There are two kinds of ease: fitting ease and design ease. A garment must contain adequate ease beyond the actual measurements of the wearer to allow room for ordinary movements like walking, sitting, reaching out and even breathing. Ease in this context is called Fitting ease. Design ease is the extra style fullness added to the fitting ease. All the garments have fitting ease but design ease is optional as it is added purely for the sake of appearance and giving the garment its style.

Evaluating fit

In evaluating the fit of the garment, all the sides of the garment must be examined. The fitting should start from

the top and move downwards. The following body parts should appear as:

Shoulders: should appear smooth and feel comfortable. Seam should lie on top of the shoulder. In regular styles the arm syce seam should fall on edge of the wearers shoulder. The shoulders of the garment should be wide enough so that the sleeves hang smoothly. If the shoulders are too narrow, the sleeves will pull across the upper arm and cause wrinkles. If fashion trends require the shoulders to be narrow or wider the pattern still should allow sufficient movement. The shoulder slope of the garment should match the shoulder slope of the wearer.

Bust/Chest: if the garment is too small, the seams or closures are at the centre front or back are going to pull and gape open. A larger bust or highly developed chest often causes the button closure to gape open at centre front or back, also the garment may ride up because the larger bust curves takes up more length. A well-fitted dart always points towards the fullest part of the of the body curve it is intended to fit. The tip of the dart should end about an inch before the fullest part of the curve. Darts that are too short or darts that extend beyond the fullest part of the curve result in a bubble at the dart tip. Darts occurring anywhere in the garment follow the same principle. The practice of eliminating darts to speed construction creates diagonal wrinkles on the bodice front.

Neckline: necklines should be large enough to fit without pulling or chafing but not so large that it doesn't lie flat against the body in front and back. The front of the basic neckline should always be lower than that of the back.

Collar: the most important factor in the fit of the collar is the neck circumference. The circumference of the collar should be at least ¼th of an inch bigger than that of the neckline or just large enough for one to insert two fingers between the neck and collar. A properly fitted collar should be smooth and stays in place when the wearer moves.

It should not be so tight that it pulls. A tight collar is uncomfortable and makes the neck look large. But neither should it be so loose that it gapes.

Armsyces: must fit well for the garment to be comfortable and attractive. The circumference of the arm syce should be large enough so they do not pull at the front and back of the garment, but not so large that it gapes. In well-fit armsyces, the base of the arm syce is cut close to the armpit, but not so close to the armpit that it bites into the armpit. It should be cut about an inch below the armpit. This provides adequate comfort, room for movement, and close fit without wrinkles in the armsyce area. If the armsyces are too tight they are snug and uncomfortable. Armsyces in the front should be more deeply cut than at the back as most of the movements are in the front.

Sleeves: that fit well are attractive and comfortable. The circumference of the basic sleeve should be loose enough so that it does not bind nor has wrinkles horizontally around the arm. A tight sleeve apart from being uncomfortable makes normal arm movements impossible. Sleeves can be as loose as one wants but only problem would be to wear the garment under a fitted jacket. A well-set jacket sleeve hangs with a slight angle towards the front. The crosswise grain at the bicep should lie parallel to the floor.

Waistline: fit is essential for comfort. The waistline of the garment should not be so tight that it binds and rolls. It should have plenty of room for breathing and eating and it should return to its position after the arms are raised or lowered. It should not be so loose that it stands away from the body, droops, or adds bulk when a top or shirt is tucked in or worn under another garment. The narrowest part of the garment should fall at the wearer's waist. If there are buttons at the waist the garment should not pull or strain at the closure. A jacket should be big enough at the waist so that a person can sit even when it is buttoned.

Hips: the fit of the hip area is critical when fitting skirts or trousers. If there is adequate room in the hip area other parts of the garment can easily be altered to fit. Garments with enough room in the hip, thigh and abdomen area fit smoothly without pulling, wrinkling or riding up. Pocket, pleats or vents that open up indicate that garment is tight in the hip or abdomen area. If the garment has excess ease in hip or thigh area it will result in vertical folds.

Crotch/seat: trousers and other bifurcated garments require a well-fitted crotch for comfort or durability. A properly fitted crotch doesn't cut or bind the wearer between the legs and conforms to the shape of the buttocks. There should be slight but not excessive ease in the crotch area. Crotch length generally has one inch of ease in the crotch area. The back of the crotch seam should be longer and more deeply curved than the front as the backside of the buttocks are more curved than the front. Bigger sizes require longer and deeper curved crotch lengths at the back. Diagonal wrinkles radiating from the crotch area are the result of, crotch curve not long enough to accommodate the size of the buttocks. Diagonal wrinkles in the front may also be due to the wearer's big abdomen. Wrinkles emanating upward from the crotch area indicate a too tight and high crotch, resulting in chafing and discomfort.

Wrinkles emanating downwards from the crotch area indicate a low and loose crotch; it bags and sags, restricts walking and has increased probability of ripping from strain of movement. If the rise may be lengthened or shortened, the waistband should also be raised or lowered. Rise should not be lengthened or shortened in the crotch length as the same may lead to problems where none existed.

Another important rule of the fitting apart from knowing how to fit is when not to fit. Clothes must not only fit but need to flatter as well. There is absolutely no need to fit a garment so close to the body that it looks bad, also there is no need to stick to the design if it does not flatter the body. The real expertise lies in the fact that one is able to strike a balance between the lines of the design and the lines of the figure. The ability to do this is a skill that one learns by training the eye to see and judge as to what flatters the body.

Fitting is like sculpturing it creates a three dimensional form. Another question that is frequently asked is how many times one should fit; the answer to this is as many times as it takes to fit well.

Why and how to fit?

Mathematical calculations and pattern corrections alone cannot guarantee the fine fit of the garment. They can only provide an approximation of ones figure needs.

The other points to be considered are:

- The style of the garment whether it suits oneself or not.
- The necessary and sufficient ease in the garment.
- The posture and the individual shape of the wearer.

These can truly be evaluated only on a fabric test fit. Since only minor changes can be made once the garment has been cut on the fabric. Hence a test fit can save lot of wastage. There are times when test fit is not necessary, those are when one is sure of the style, know from experience how to adjust the pattern, have sufficient material to recut if necessary and have sufficient seam allowances to borrow in emergencies. But if one has any doubts whatsoever, then test fitting is a must.

Commonly used test material is muslin, bleached or unbleached, should be used in a similar weight to that of the final fabric. Any other solid coloured plain weave fabric like poplin in a similar weight to final fabric would do. A plain surface is recommended as this clearly shows all seams, darts and other style details. Layout the pattern cut and mark your test fit fabric with equal amount of care as you would your final garment fabric.

Put the trial muslin together. The quickest way to get the effect of the finished garment without actual stitching is to overlap and pin all the seams lines. Pinning gives the same result and information, that one wants without going to the machine. It is so much faster and easier to unpin and then re-pin than to rip stitching and re-stitching.

Pins should be placed at right angle to the seam line, as in this method there is least amount of strain or pull on the seam, and it does not gape. When test-fitting trousers remember to baste stitch the crotch seam.

Check the test fit muslin and make correction till fully satisfied. Mark all the corrections and the same should be transferred on the pattern for it is the paper pattern that one should use to cut the final fabric and not the test fit muslin. Mark new notches as the old ones may not hold good after the alterations. Check the lengths of two matching seams to ensure that the alterations have not created more problems, e.g. if you have corrected the dart intake of side seam dart in the front, check to ensure that both the side seams are still equal or not and if required make the necessary changes.

Methods of fit

There are two kinds of fitting:

One is the first test fit that is done on muslin at the time when the pattern is made. A basic test fit is done to check the pattern fitting; the pattern is cut with relevant seam allowances and pinned in place for test fitting. Make sure that seams and darts are in place. This fitting is always done from the right side of the garment, as it is easier to make changes and corrections. These corrections become the new seam lines for the garment. Check the garment for ease and fullness. It is important to mark buttons and buttonholes at right places in this fit.

The second is after the garment has been stitched before final finishing. Stitch the garment with relevant interfacing/ or underlining in place press it well and test fit to check the position of darts, seams, puckers if any and locate the position of outer seams. This type of fitting refines and perfects the fit of the garment.

Other times when refitting becomes necessary are if the garment has been purchased readymade from the market some alterations may be required for it to be fitted to an individual's size and also if there are changes in the body size, like if someone has grown thin or has put on weight or if a child has gained height, refitting may become necessary. The methods by which each pattern seam or area is to be corrected and altered depends on the type of problems and nature of the fitting defect. The major problem areas have been earlier identified and detailed explanation has been given subsequently. There are areas that require minor alterations those have been explained and those that require some pattern manipulation have been shown with figures and explained briefly.

Given below are some of the fitting problems that would necessitate pattern alterations.

1. Waist alterations

- a) Thick waists reduce the size of the darts and or add at the side seam.
- b) Slim waists increase the size of the darts and take some at the side seam. If difference is a small amount then the adjustments may be made in either in the darts or on the side seam. But in case the amount is sufficiently

large then half of it should be altered in the dart and half in the side seam.

2. Shoulder alterations

Since the clothes hang from the shoulder their correct fit establishes the lines and shaping of the rest of the garment.

a) Sloping shoulders- on front and back pattern draw slash lines from neck to armhole edges. Slash and overlap the pattern at armhole edges to the needed amount. Pin the pattern piece or scotch- tape it to the required position. Redraw the armhole curves, lowering them at underarm by the same amount that you have taken in for corrections.

b) Square armholes- on front and back pattern; draw slash lines from neck to armhole edges. Slash and spread the pattern at armhole edges to the needed amount. Raise the armhole curve by the correction amount. Redraw the pattern on a new sheet or add paper to fill the gap

c) Round armholes- on front and back pattern, draw slash lines from neck to armhole edges. Slash and overlap the pattern at armhole edges to the needed amount. Redraw the armhole curves, lowering them at underarm by the same amount that you have taken in for corrections.

d) Broad shoulders- on front and back pattern draw L-shaped slash lines from mid shoulder to notches on the armhole. Slash and spread the pattern at shoulder to the needed amount. Redraw the pattern or insert paper in the gap. Correct the shoulder lines.

e) Narrow shoulders- on front and back pattern; draw L-shaped slash lines from mid shoulder to notches on the armhole. Slash and overlap the pattern at shoulder to the needed amount. Redraw the shoulder line.

3. Sleeve alterations

The sleeve hangs from the shoulder and setting of the sleeve starts at the shoulder. Check that the armhole is neither too tight nor too loose otherwise a sleeve will not set in properly.

a) Wrinkling, pulling, straining, binding- this may be due to insufficient width across the sleeve cap, across the chest or back. Unpin the sleeve. Use some of the sleeve seam allowances at the armhole and sleeve cap for more width.

b) Tight armhole- drop the armhole by requisite amount. Add width at both the armhole and sleeve edge. Use some of the under arm seam allowances at sleeve and side seam.

c) Short sleeve stands out at the hem- this is due to insufficient length of the sleeve cap. Draw a slash line across the cap. Slash and spread to the needed amount. Correct the armhole curve.

d) Sleeve cap wrinkles across the top of the sleeve- this indicates too much length at sleeve cap. Draw a slash line across the cap. Slash and overlap to the needed amount. Correct the armhole curve.

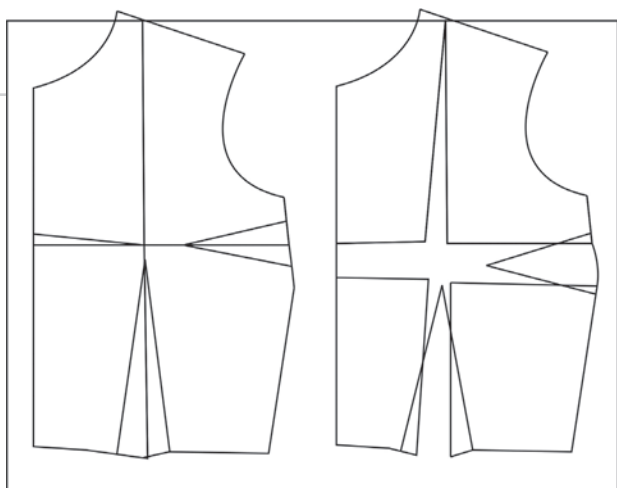
e) Heavy arm- draw an inverted slash line on each side of the sleeve starting at under arm to the lower edge of the sleeve. Slash and spread the pattern to half the needed amount to each side at the underarm and tapering to nothing at the lower edge. Make corresponding changes in the armhole seam of the front and back bodice. Draw a slash line from the underarm to waistlines in front and back bodice. Slash and spread the pattern to the same amount as that added on each side of the sleeve, starting at the underarm and tapering to nothing at the lower edge.

f) Tight upper arm- slash the sleeve at the centre from shoulder point to the lower edge. Spread at the cap the necessary amount tapering at the lower edge.

4. Bust alterations

Since the bust area is the most difficult to fit being the curviest part of the body. Check the garment; it is neither too tight nor too loose as big alterations are not very effective in this area especially for closer fitting garments.

a) Bust with a large cup-as you are aware women with the same bust size have different cup sizes. This causes the garment to be tight over the bust area. Draw a vertical slash line from the shoulder passing through the bust point to the other edge of the pattern, passing



through the waistline dart. Draw a perpendicular to this line at the bust point from centre front to the side seam. Slash on all lines and spread the pattern adding at the bust area without increasing at the shoulder. The added width at the side seam and waistline should be taken in a dart. If the dart intake is very big it is advisable to convert it into two darts.

b) Bust with a small cup- Draw a vertical slash line from the shoulder passing through the bust point to the other edge of the pattern, passing through the waistline dart. Draw a perpendicular to this line at the bust point from centre front to the side seam. Slash on all lines and overlap the pattern without reducing on the shoulder.

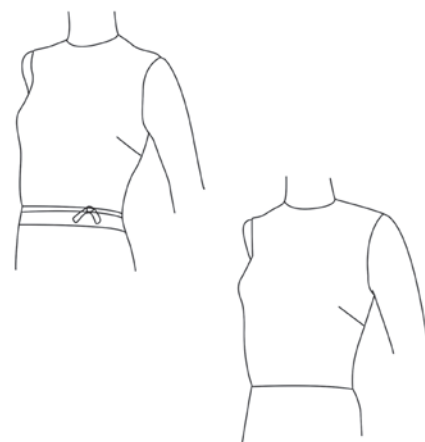
5. Hip pattern alterations

Fitting problems in this are manifest themselves in wrinkling, pulling, sagging and uneven hemlines.

a) Small hips- Draw a vertical slash line from the waist to the hem of the skirt pattern. Draw a horizontal line from centre back to the side seam passing through the fullest part of the hip. Slash the pattern on both the lines and overlap width wise to remove excess without losing at the waist, unless the dart intake can be taken out for ease. Overlap length wise to remove excess without losing at the side seam. True the seam lines.

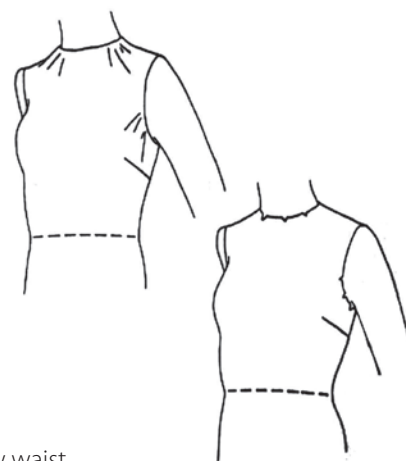
b) Large hips- Draw a vertical slash line from the waist to the hem of the skirt pattern. Draw a horizontal line from centre back to the side seam passing through the fullest part of the hip. Slash the pattern on both the lines and spread width wise to fullness; the added ease may be taken in the dart intake. Spread length wise to add fullness without adding at the side seam. True the seam lines.

Given below are some of the common fitting problems that would necessitate pattern alterations with illustrated solutions by draping method.



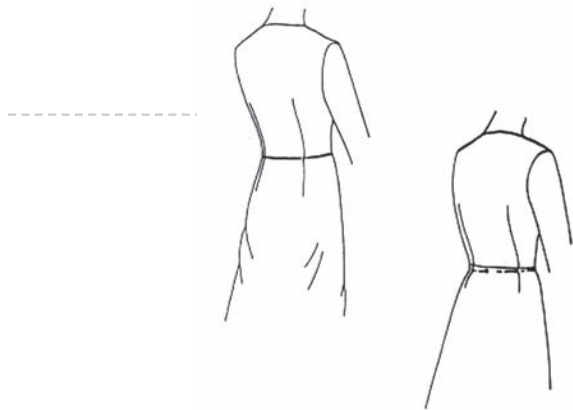
1. Problem- Folds below the bust dart.

Solution- Undo the dart and part of the side seam. Lift shoulder a little, re-pin a bigger dart and pin the side seam to take out the excess fabric.



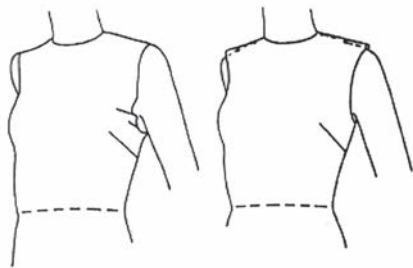
2. Problem- Low waist.

Solution- Tie a band around the waist and remark the waistline. Remove and re-pin the skirt to new waistline. —



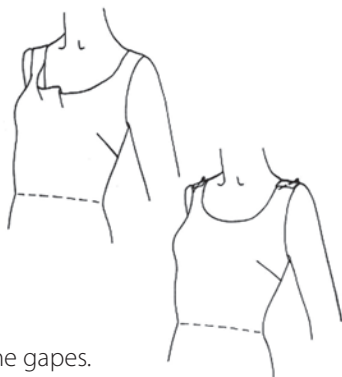
3. Problem- Baggy below the hip.

Solution- Raise the skirt at back only and re-pin



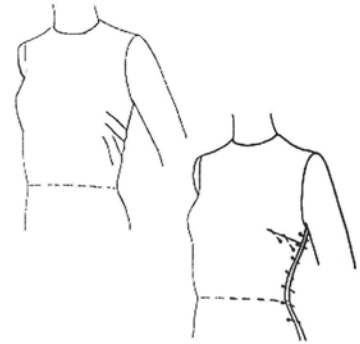
4. Problem- Gaping armhole

Solution- undo dart and pin a bigger dart. Making sure that it points towards the bust point. One may need to lift shoulder seam at the armhole.



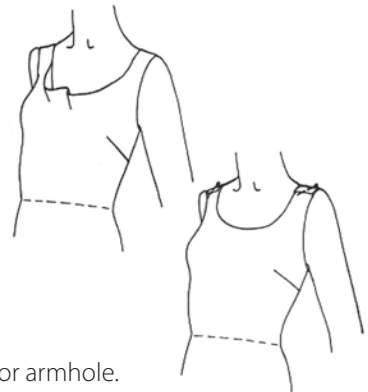
5. Problem- Low neckline gapes.

Solution- Lift at the front shoulder seam. Lower the dart point if necessary.



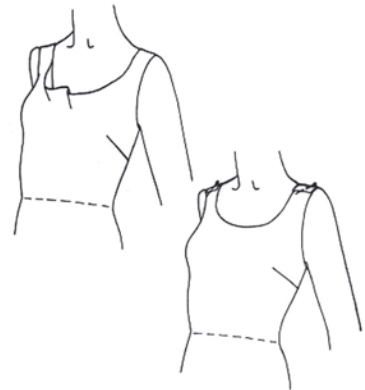
6. Problem- Folds in the dress below the waist.

Solution- Undo the side seam from below the armhole and ease out until the garment hangs smoothly.



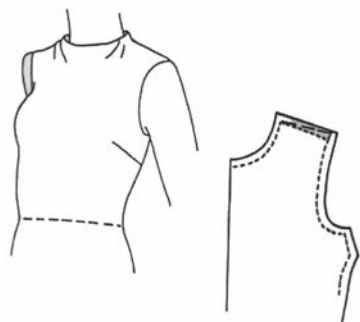
7. Problem- Tight neck or armhole.

Solution- slash and snip seam allowance to release tension. If it is not enough, mark a new seam line that is lower than before.



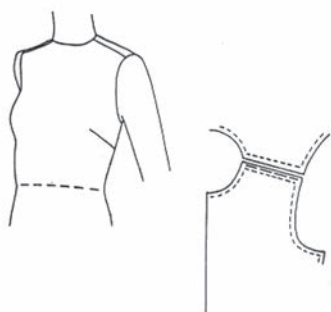
8. Problem- Neckline stands away and folds below.

Solution- release shoulder seam and let it out at the armhole edge.



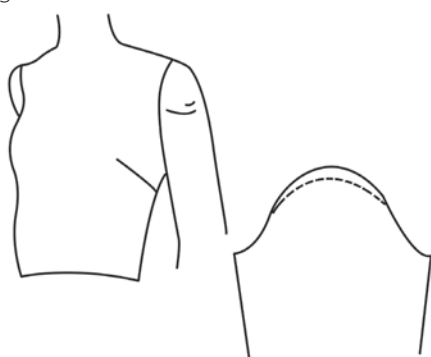
9. Problem- Shoulder seam lies towards the front of the shoulder.

Solution- Undo shoulder seam and release front seam allowances only.



10. Problem- Folds across sleeve at the top.

Solution- Mark a new fitting line below the existing one to reduce cap height.

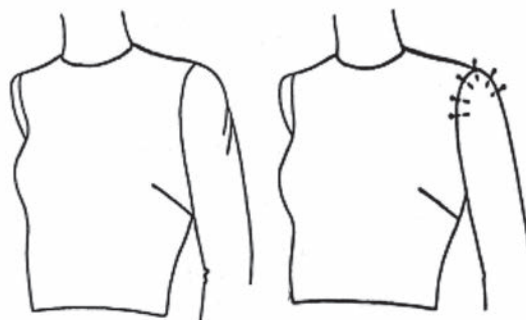


11. Problem-Sleeve hangs towards the back.

Solution- Remove the sleeve and re-pin by moving the notch at the centre of the sleeve toward the back so that the sleeve may hang towards the front.

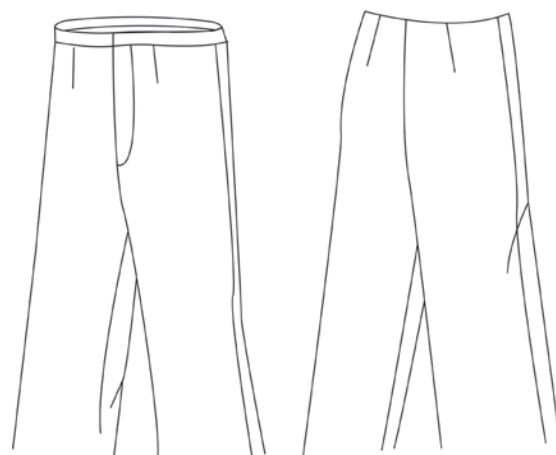
12. Problem- Wrinkles and creases around the upper arm.

Solution- Release the underarm seam allowance and add the ease.



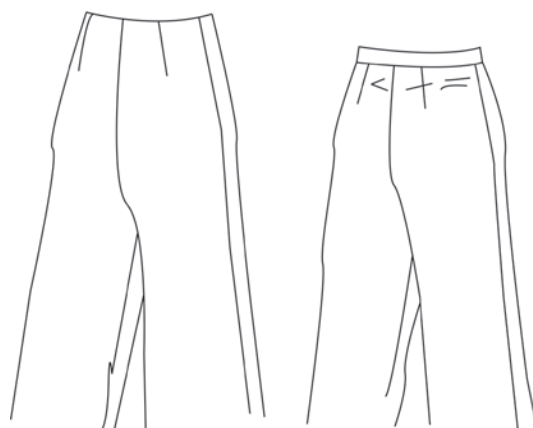
13. Problem- Sleeve pulls at the back armhole.

Solution- Unpin the sleeve and release the seam allowance on both the armholes of sleeve and bodice.



14. Problem- Trousers are loose at waist, hip or leg. Creases on leg and trousers stand away at waist.

Solution- Take excess fabric at side and pin at original seam lower down. For larger hip increase the dart intake. Pin the excess towards the outer seam.

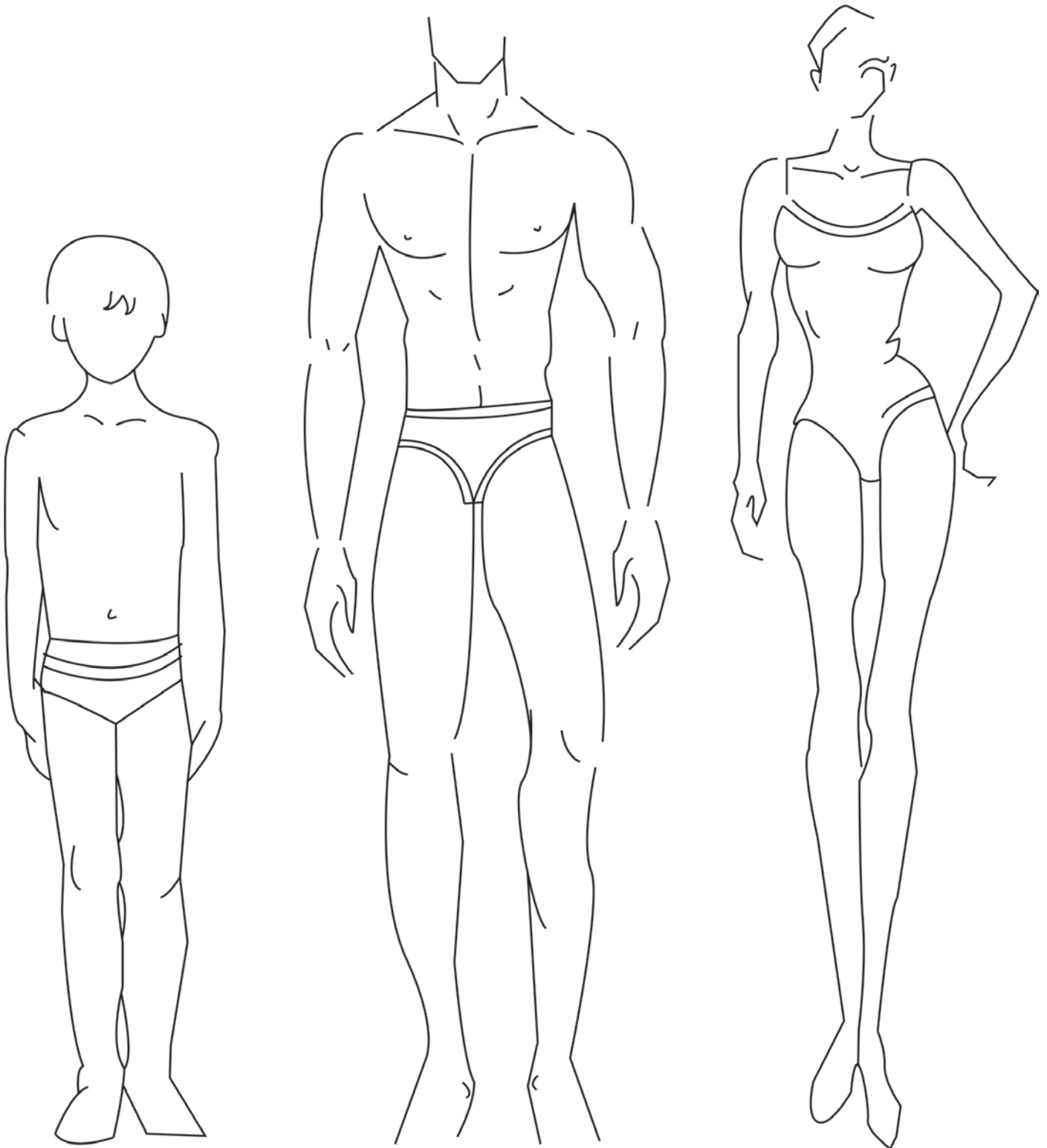


15. Problem- Trousers tight below the waist, crease around abdomen.

Solution- Release darts and reduces their width and length, also release some ease on the outer seams and re-p".

Chapter 20

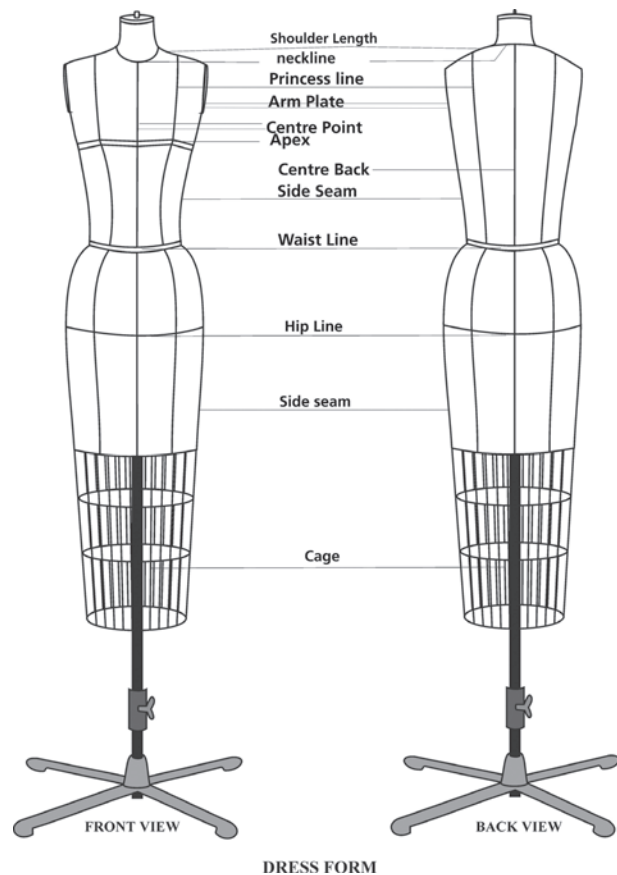
Elementary Sketching



Chapter 21

How to Take Measurements

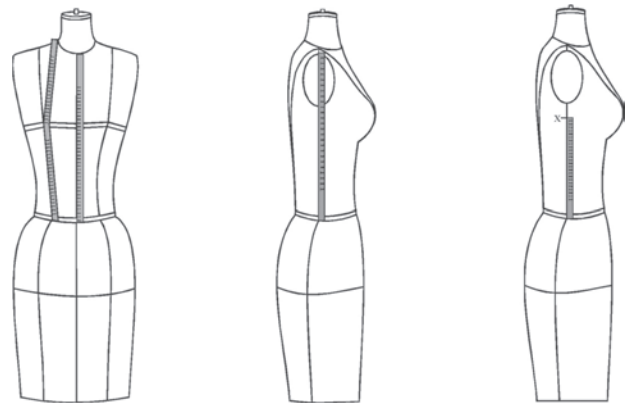
Care should be taken to take accurate measurements in order to achieve a good fit. It is extremely important to understand the dress form before starting to take dress form measurements. One should carefully observe the shape of the body, where it is hollow, how shoulder slopes etc.



Measurements

- 1 Front length - Shoulder neck intersection to waistline over the bust, take care to measure with a hand under the bust.
- 2 Centre front length - Centre front neck intersection to centre front waist intersection.
- 3 Shoulder to waistline - Shoulder tip to side seam waistline intersection (over the sides)

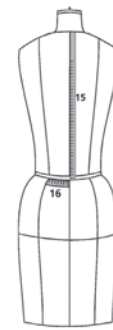
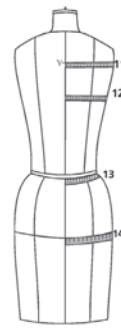
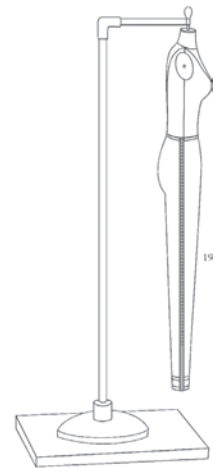
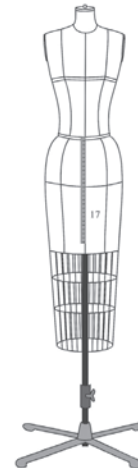
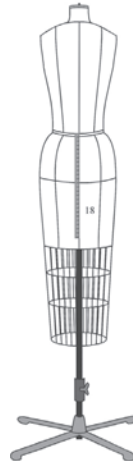
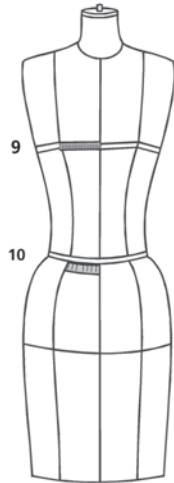
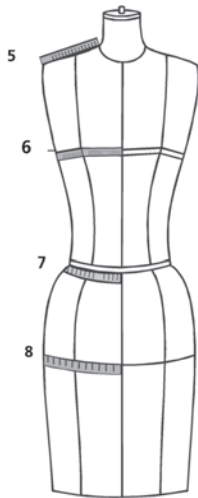
- 4 Underarm seam - From a point X, 1" below the armhole to waistline intersection at the side seam.
- 5 Shoulder length - From shoulder neck intersection to princess line and from princess line to shoulder tip.
- 6 Width of bust - Width of bust measurement is from centre front over the bust to point X on side seam.
- 7 Front waistline - From centre front waistline intersection to side seam waistline Intersection



- 8 Front hipline - Place a pin at 7" below the waistline on centre front line. Using this measurement from floor up mark it horizontally on the dress form continuing to centre back (keeping it uniform throughout). Put a style tape for reference and call it hip line. On this line measure centre front intersection to side seam intersection.
- 9 Apex measurement - From the centre front to the high bust point keeping the tape parallel to the floor.



10 Centre Front to the Princess line - From centre front intersection to princess line intersection at waistline.



11 Shoulder blade - Mark a point Y on centre back such that, centre back neck intersection to point Y is equal to $\frac{1}{4}$ th of centre back length. Shoulder blade measurement is taken from point Y to armhole ridge keeping the tape parallel to the floor.

12 Width of back - From point X to centre back keeping the tape parallel to the floor.

13 Back waistline - From centre back waistline intersection to side seam waistline intersection.

14 Back hip line - From centre back intersection to side seam intersection on hip line.

15 Centre Back length - From centre back neck intersection to centre back waistline intersection.

16 Centre back to - From centre back intersection to princess line intersection at the Princess Line waistline.

17 Centre Front length for - From centre front waistline intersection at centre front down to the desired lower garment length.

18 Centre Back length for - From centre back waistline intersection at centre back down to the desired lower garment length.

19. Side Seam Length - From waistline intersection at side seam over the hip to ankle.

20 Crotch depth

(a) On dress form - Place an L-square between legs of form and note the measurement at waistline. This measurement includes $1\frac{1}{4}$ " ease as the L-square is generally $1\frac{1}{4}$ " wide.

(b) On body - In seated position, measure from waistline intersection at side seam over the figure to the seat of the chair. (One needs to add ease here.)

21 Knee Circumference - Round measurement over the knee bone.

22 Ankle Circumference - Round measurement over the ankle bone.

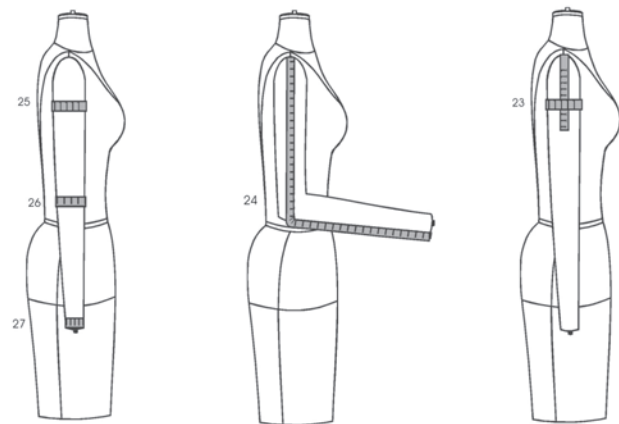
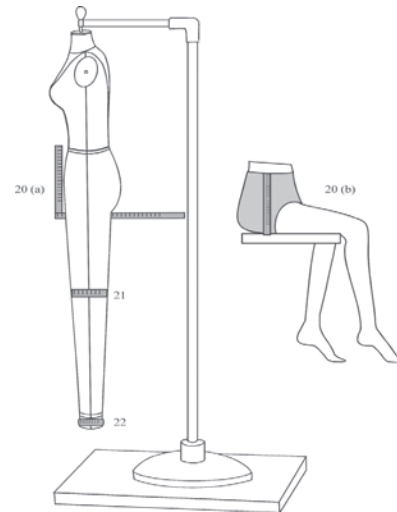
23 Cap height - Tie a tape around the biceps of arm close to the armpit. Cap height is from shoulder intersection to the top of the tape.

24 Sleeve length - From shoulder intersection over the bent elbow to the wrist.

25 Bicep Circumference - Round measurement over the fullest part of the arm.

26 Elbow Circumference - Round measurement over the elbow.

27 Wrist Circumference - Round measurement over the wrist bone.



Chapter 22

Women's Size Chart

SIZE: MEDIUM

S.NO.	SPECIFICATIONS	MEASUREMENTS (in Inches)
1	Chest	36
2	Waist	28
3	Shoulder	15
4	Half Sleeve Length	7
5	Half Sleeve Girth	12 ½
6	Full Sleeve Length	21
7	Full Sleeve Girth	10
8	Salwar Length	41
9	Salwar Bottom Opening	13 ½
10	Hip	37
11	Trouser Length	42
12	Round Neck	15
13	Waist Level from Shoulder	15
14	Crotch	10
15	Knee	21

Chapter 23

Men's Size Chart

SIZE: MEDIUM

S.NO.	SPECIFICATIONS	MEASUREMENTS (in Inches)
1	Chest	38
2	Waist	32
3	Shoulder	19
4	Half Sleeve Length	9
5	Full Sleeve Length	24
6	Waist Level from Shoulder	18
7	Round Neck	16
8	Half Sleeve Opening	7 ½
9	Full Sleeve Opening	6
10	Hips	36
11	Total Trouser Length	42
12	Trouser Bottom Opening	18
13	Churidar Bottom Opening	12
14	Pajama Bottom Opening	16
15	Crotch	11 ¼
16	Knee	22

Chapter 24

Kid's Size Chart

(IN INCHES)

AGE	3-9 MNTS	1 YR	2 YR	3 YRS	4 YRS	5 YRS	6 YRS	7 YRS	8 YRS	10 YRS
CHEST	19	20	21	22	23	24	24 ½	25	26	28
WAIST	19	19 ½ -20	20-21	21 ½	22	23	24	24 ½	25	26
CROSS BACK	8	8 ½	8 ¾	9	9 ½	10	10 ½	11	11 ½	12 ½
WAIST LENGTH	6	7	8	9	9 ½	10	10 ½	11	11 ½	12 ½
SHORT SLEEVE LENGTH	2 ¾	3	3 ¼	3 ½	4	4 ½	4 ¾	5	5 ½	6 ½
LONG SLEEVE LENGTH	6 ½	7	8	8 ¾	9 ½	11	11 ½	12	12 ½	13 ½
FINISHED DRESS LENGTH	14	15	17	19	21	22	23	24	25	27

Chapter 25

Seam Allowance

Collar: 2 piece collar- $\frac{1}{4}$ " all side

Chinese collar- $\frac{1}{4}$ " all side

Arm hole: $\frac{1}{2}$ " on the curve

Placket: $\frac{1}{4}$ "- $\frac{1}{2}$ "

Hemming: $\frac{1}{2}$ " – 2"

Sleeve: $\frac{1}{2}$ " on the curve and 1" on the under arm seam

Sleeve Hem: without cuff: $\frac{3}{4}$ "-1"

With cuff: $\frac{1}{4}$ "

Cuff: $\frac{1}{4}$ "

Pocket Body: $\frac{1}{2}$ "

Upper: $\frac{3}{4}$ "

Flap: $\frac{1}{2}$ "

Side seam: $\frac{1}{2}$ " – 1"

Yoke: $\frac{1}{4}$ "

Patch: $\frac{1}{4}$ "

FOR THE BOTTOM

Waist band: $\frac{1}{4}$ "

Fly: $\frac{1}{4}$ "

Side seam: $\frac{1}{2}$ "-1"

In seam: $\frac{1}{2}$ "

Hemming: $\frac{1}{2}$ "-1"

Pocket: $\frac{1}{4}$ "- $\frac{1}{2}$ "

Patch: $\frac{1}{2}$ "

Divider flap: 1"

NOTE:

- To join two pieces, always keep $\frac{1}{2}$ " seam allowance
- Keep $\frac{1}{4}$ " extra allowance for over-lock.
- For finishing the side seam keep $\frac{3}{4}$ " seam allowance.

Chapter 26

Measure from a Garment

Measurements that are needed for a pattern and how to take measurements properly have been covered in another topic. In this, one is going to learn to measure and draft a pattern from an existing garment. This requires a person to have the ability to measure correctly and accurately on a body and dress form. This is an advance skill and requires thorough knowledge of pattern development, as it is essential to understand the importance of the crucial areas. The higher skill is needed to be able to measure the flat fabric that has been converted into a three dimensional body.

Why do we need to measure an old / existing garment?

One may have a favorite shirt or a well-fitted sari blouse or any other garment, and that one has not been able to replicate or find the same fit again. The same fit has never been achieved; this may be due to a well-adjusted pattern or fitting or a different method of pattern drafting of the original garment. Another case may be that the person is unable to personally to give measurements and sends a garment as a sample. In any case the garment has to be measured for the purpose of getting the measurements.

There are two methods that can be followed to accomplish this:

1. Tracing the garment: If it is an old garment, and one has not achieved sufficient level of proficiency in pattern making then it is advisable to open the garment very carefully, with the help of seam ripper and separate each individual piece of the garment, at seams, darts, pleats



and other types of fullness taking care so as not to tear of any seam allowance. All the seams like princess seam, yoke seam, darts or panels should also be opened. The pockets or decorations if any should be removed.

The separate pieces should be then carefully labelled and grain lines marked specially in case, pieces that need to be cut on Bias grain as in the case of Choli blouse, where the two front piece are always cut on bias for a better fit. Use these cut-apart-sections as guide for your new pattern. The garment should be copied on muslin as an intermediate step and then transferred on thick pattern making paper. The garment should be well ironed before starting the procedure.

All the pieces should be cut on the same grain as the original piece; hence the grain of the pieces should be marked on the sketch as this will ensure that the garment has the same fall as the original. It is worth the effort to carefully mark out the seam allowances, hemline folds and turn-backs like self-facings with tailors chalk. In case of a style, that one may want to make repeats of or that is to be cut on an expensive or a slippery fabric, then these allowances should be thread traced. Thread tracing is with basting stitches a seam allowance is marked, this is the permanent method of marking seam lines. This is generally done for silk fabrics or fabrics on which tailors chalk does not show.

Place marks at top of the sleeve and underarm seams, at the front and back armholes of sleeve and bodice and the corresponding notches of both sleeve and bodice this point would be where the curve changes from over arm to underarm.

Mark placement of buttonholes, buttons, pockets, points at which collars and cuff joins the garment. Mark any other garment detail that might be there.

The pieces then should be laid out on the fabric in the same manner as one would layout a paper pattern.

Remember to do it with least wastage, pieces should be laid out together in such a manner that they fit within the confines of the fabric width as closely and efficiently as possible. For a more efficient and professional approach the same should be first traced on the thick pattern making paper and a muslin test fit done before one proceeds on the final fabric.

Remember this pattern has all the seam allowance and sufficient ease has been added to it. Hence, there is no need of adding any ease or allowance for stitching.

2. Drape the garment method: A similar method is followed as the one for tracing the garment. This requires an additional skill of draping the garments. In this method each section of the garment is copied. Cut a piece of muslin larger than the part to be copied. Straighten the lengthwise and crosswise grains of the muslin. Place the lengthwise grain on the right side of the length of the garment like centre front or back and pin in any darts, tucks, pleats or other fullness by the same amount that may be there in the garment and also in the same position. Locate and place a row of pins on all seam lines and edges. Mark the position of the buttonholes, buttons, plackets, collars and any other design detail that may be there. Mark the grain.

Transfer all the seam lines, darts and others that are pinned with marking chalk or tailors chalk. When all the lines are in place, unpin the muslin from the garment. True the straight lines and curved lines with appropriate tools like ruler, French curve or hip curve. Add seam and hem allowances. Transfer the corrected muslin to paper. Place an identifying mark on each pattern piece.

Measurement Method: If the garment is a sample and cannot be opened out in separate pieces then one has to measure it carefully and measurements are to be recorded in the same manner, as one would measure the body or



dress form. It is of paramount importance to do it in a systematic and careful manner.

All the length-wise measurements should be recorded first and width-wise measurements are recorded next in order.

The length wise measurements that are needed to be measured are the maximum length of the garment, neck to

waist, shoulder to neck depth, dart points if any, centre front length, centre back length, waist length if it is required, waist to hip measurement if required, hip to hem, for trousers inner leg seam and seat length are also required. For the sleeve measure the sleeve length, sleeve cap, cuff length or hem fold if required.

The width wise measurements that are needed to be measured are the maximum width of the garment (whichever part of the garment it may be), Shoulder length, cross back, neck width, armhole to armhole measurement, front width, back width, front waist, back waist, front hip, back hip, front hem, back hem, dart lengths, dart widths, for trousers measure width at crotch level, knee level and hem. For sleeves measure the sleeve width at bicep, elbow and wrist.

One may choose to make the pattern from any method the important points that one would need to keep in mind while taking measurements are as follows:

1. The measurements required should be carefully noted. A list should be prepared before one begins to measure the garment so that, none of the required measurements is left out.
2. Lay the garment on a flat surface; check whether the garment is flat or three-dimensional.
 - a) If the garment is flat, proceed, as you would have done on a body, as these garments do not have additional focal points.
 - b) If the garment is three-dimensional then check where the garment has the third dimension; e.g. the bust point in a close fitted blouse. If one is to measure the width of the front, start on the side seam, measure till the bust point and then measure across

to the centre front, remember to hold the garment in such a manner that one does not lose out the third dimension of the blouse. A simple method to ensure this is to hold the garment in hand and then measure the garment.

The lengthwise measurement over a focal point is also taken in the same manner. If one is careless the measurement would be shorter and the garment would never fit the intended wearer.

3. Note the number of individual pieces in the garment. A beginner should always make a little sketch and mark the pieces and number them, so as to remember all the pieces and the sketch would ensure at the time of cross checking if all the pieces have been cut.
4. Check if the garment is symmetrical or asymmetrical, i.e. is the garment identical on two sides of centre front and centre back. If it is symmetrical it is possible to cut it on the fold with only one piece each for front, back and sleeve. If it is asymmetrical then check the number of front, back or sleeves that may be required and make a note of them.
5. Note the number of lengthwise panels that may be there. Compare it with design that you are working on if it is identical or are there changes in the new design. In case of any variation note the changes that may require any alteration in the measurements, e.g. a sample piece might have princess panels running through the bodice, but the new garment may not have them, then one needs to add the measurements of the two or three panels to get the final measurement for the new design. Make a note of these changes and ensure that one makes least amount of mistakes as possible.
6. A princess bodice may have a dart that has been converted into a seam; this requires a trained eye to decipher the pattern manipulation that may have been done to achieve the fit of the sample garment. In case a princess seam is there measure the width of the garment at several points like starting of the



panel, at the bust point level where the body is fullest, at the waist level, at the hip level and also at about 3½" below the bust. This is the point at which the dart is maximum for the under bust shaping especially in very close fitted garments, like contoured garments.

7. Note the number of width wise panels that may be there. Compare it with design that you are working on if it is identical or are there changes in the new design. In case of any variation note the changes that may require any alteration in the measurements follow as for the above, e.g. if the sample garment has no waist seam and the new garment has a waistline, study the sample and mark the waistline. Generally a garment is narrowest at the waist. The same method would be used for garments with yokes and hipline seams.
8. Note it is important to measure only till the line where the garment will close i.e. till the centre front or centre back for placket opening as the additional is just the overlap for the closures. In case the garment has a zipper as a closure then it is necessary to zip up the garment and then measure it.
9. Measure from seam line to seam line only; do not measure dart widths in the total bust or waist measurement. If there is a panel in between, measure

from the seam line to the panel and from the panel to the next seam line. Do not try to measure in shortcuts.

10. It is easy to measure the lengths of the garments that have basic neckline, the problem starts when the style departs from the standard shape. All the garments that are worn over other garment are automatically dropped slightly from the neckline for ease.
11. Note placement of buttonholes, buttons, pockets, points at which collars and cuff joins the garment. Note any other garment detail that might be there.

The following points have to be kept in mind before you begin making a pattern from these measurements:

1. All the pattern pieces include ease, as these are the final/ ready measurements of the garment. While making the pattern, remember not to add any additional allowance for ease.
2. If the new design has different pieces than the original then the same should be carefully marked and noted.
3. Make a small sketch of the garment before starting the pattern.

4. All the pieces should be cut on the same grain as the original piece hence the grain of the pieces should be marked on the sketch as this will ensure that the garment has the same fall as the original.

After recording all the measurements required, draft the pattern and check if the ready measurements are exactly the same or not. Make the necessary corrections and proceed with the final garment. If the new garment is different than the original, then it is recommended that a basic pattern may be drafted and test fitted before developing the style variations. This may take little more time but in the long run is more economical in terms of time and money saving.

Any method that one may choose to make a garment from a sample, there is an important suggestion that should be taken note of; i.e. it is important to make trial muslin from the completed paper pattern as a test for accuracy of reproduction and for fit. Make all the necessary changes before cutting the final fabric. Use the corrected paper pattern for cutting, as it is more dependable than muslin.

Chapter 27

Fabric Requirement

A major question that arises in one's mind at the time of purchasing fabric for any garment is how much to buy? It is a very important question and to be able to give an objective reply, it requires a person to be an expert in pattern development and an expert in making an economical layout. For the garment industry, this is of crucial importance, as even minimal saving of 5cms of fabric in a shirt would result in 50 meters being saved in a lot of 1000 shirts. At Rs. 80 per meter it would save Rs. 4000/-, which is a substantial amount of saving for a producer. Generally an expert is able to save as much as 25 - 30cms in a garment easily even for a single shirt that is a big saving in the made to measurement sector of the apparel industry.

Imagine a stage where one buys minimum of 50cms extra than the required amount, so that one does not run short of fabric while cutting. The amount of money that is being spent on extra fabric, which goes waste and is thrown out or that collects dust is tremendous.

How to calculate fabric required?

For any garment, that one is going to make one needs to know its two major dimensions i.e. maximum length and the maximum round width. For any garment one needs a minimum of two lengths plus seam allowances. The fabric has two grains lengthwise grain and width wise grain. One should cut the garment lengths along the length wise grain as this is the stronger grain (which you have learnt in earlier chapters) and the fall of the garment would be far better on this grain. One is able to cut the garment in less fabric only if the width of the fabric is wide enough to fit two length of the garment in one length of the fabric.

The patterns representing all the individual pieces of the garment should be laid out together in such a manner that they fit within the confines of the fabric width as closely and efficiently as possible. This minimizes the wastage in fabric. This is a pattern lay.

How to make a layout?

In the industry, this is the specialized task for which most of the companies that work on developing, pattern making softwares for the clothing industry have been working

for a long time and have successfully created a number of dedicated softwares. On the computer all the pattern pieces of the garment are either digitized or drafted and a lay of the garment is made. A rectangle of the dimensions of the fabric is made and the pattern pieces are placed on it in exactly the same manner as one would on a fabric keeping in mind whether a piece is to be cut on fold, on bias or on a cross grain. One can do this exercise manually by cutting or drawing a similar rectangle on a small scale and placing or drawing the pattern pieces also on small scale in it. This exercise would be more scientific, precise and accurate for fabric calculation. An example of the same is given below:

It takes time and effort to fit together all the pieces of pattern. It is like playing a giant puzzle. The game is to place all the pattern pieces on grain in such a manner so as to be able to use the entire width and the length most economically. For such purposes it is advisable to keep on hand several lengths of wrapping paper cut to standard widths of fabric on scale.

Place the fabric on a flat surface. Line up its straightened edges with the straight edges of the cutting surface.

Place the pattern in position. Start with one end of the fabric. Support the weight of the cloth at the other end of the cutting area. When the pattern pieces have been temporarily pinned on the material check if you could adjust the pattern pieces and save more fabric.

Remember to place the pieces on the right grain and close to each other. Spaces between them may result in wastage of as much as five to six inches of fabric. Always place the largest piece first, then the ones that may need to be cut on fold. Fit in the smaller pieces. Fit in the shapes against each other, locking them whenever possible. This saves a lot of fabric. Arrange the pattern pieces in such a manner that if any fabric is left, it is in one usable piece, either at an end or middle.

The pattern pieces have to be laid out in such a way that it takes into account directional properties of fabric, such as fabric design and fabric grain. The quality of a product is affected significantly by the accuracy of fabric matching also called mitering that is very important for fabrics with checks or stripes. Mitering is the perfect matching of check

or stripes even other directional prints on the side seam, centre back and centre front seam or any seam that might be running across in the garment like a yoke or waistline seam. This might require more fabric consumption and great deal of time and effort, for a perfectly mitered garment is a joy and pride of a designer and master tailor.

Given below are methods of fabric calculations for some of the popular categories of garments. These have been given on an assumption that one would be using readily available 36" width fabric. These are just indicative and have been done for basic or classical styles in the category and are in no way conclusive as it is expected that this should be combined with practical exercises at every step. This is a practical subject and more learning happens with hands on experience.

Shirt - For buying fabric for a man's shirt, one needs to know the shirt length, the round chest, and sleeve length whether full or half. One needs to buy fabric piece for two lengths of the shirt plus the seam allowances and one length of the sleeve with seam allowance. Care should be taken to place the centre front on selvedge, as not only this saves fabric but also will save one operation, as the placket would have a ready finished edge. In case one is making a shirt in a fabric that has one way print one may need at least two lengths of the shirt and sleeve length.

Trouser – A trouser is generally made in the thicker fabric, which most of the times is available in a larger width of 60". Hence, one requires fabric piece for one length of the trouser plus 25cms, since two legs of the trousers have 4 pieces which can be cut two at one time by placing them in opposite directions on a fabric that is, folded half width wise. In case one is making a trouser in a fabric that has one way print one would need at least two lengths of the trouser.

Salwar – A Salwar has 6 pieces for the legs and a belt. 4 side leg pieces of the Salwar are cut in the most economical manner by placing them in opposite directions with no wastage of fabric whatsoever. The other two pieces of the leg and belt are simple rectangles but basically Salwar is

much wider than the trouser. For the Salwar one requires fabric piece for two lengths of the Salwar and one seat length. . In case one is making a Salwar in a fabric that has one-way print one would need minimum four lengths of Salwar fabric.

Kameez –A woman's kameez is worn over a Salwar. One needs fabric piece for two lengths of the kameez and one sleeve length. If trends in fashion were for a big flare at the hem then, more than two lengths would be required. This depends on number of panels of the required width, which would be needed, to cut the pattern according to the design. In case one is making a kameez in a fabric that has one-way print one may not need extra fabric in basic styles but for larger flare in the hem or a kameez with princess panel an extra length would be required.

Kalidar Kurta – A Kalidar Kurta has two simple rectangles for back and front, which have the dimension of cross back plus seam allowance by the length of the Kurta plus the seam allowance. It has two sleeves, the length of which depend on design and generally has four kali. The kalis are cut in the same manner as the Salwar side panels. Generally the kali is added after the sleeve in the Kurta but in some designs it may start from shoulder. In case the fabric width is sufficient (depending on the width of the kali required) you need fabric piece for one length of the Kurta, one length of the kali and one length of the sleeve. Otherwise, you would need two lengths of the Kurta and one length of the kali. In case the number of kali's is more than the fabric required would increase proportionately.

Pajama- is a trouser like in its pattern but is generally much wider for comfort and easy fit. Generally it requires fabric piece for two lengths of pajama plus seam allowance.

Churidar Pajama – is a variation of a simple pajama that has extra length, which gathers around the ankle of the wearer. This pajama is cut on bias for a better fit. The fabric required for this is 2½ times the required length of the wearer (This is the measurement of the person and not the pajama).

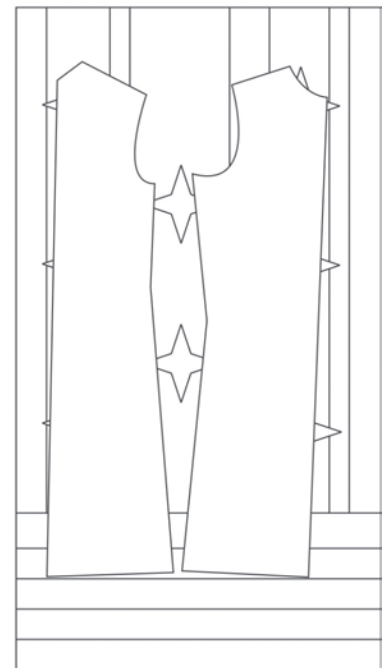
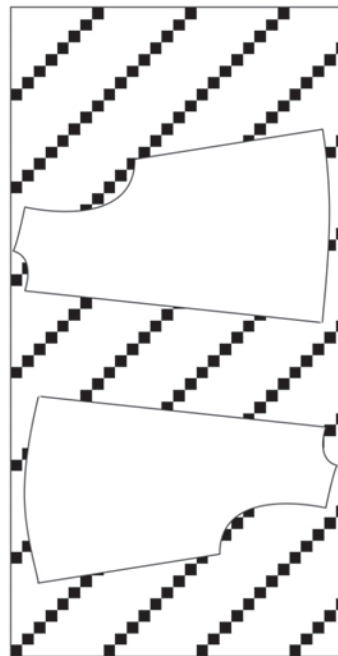
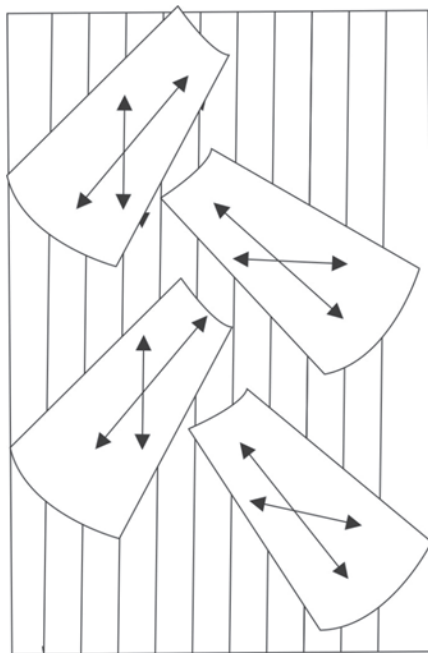
Sari Blouse – For sari blouse, you need fabric piece for one length of the blouse and one sleeve length plus the seam allowance. In case of a bigger size, one may need to buy two lengths of the blouse. Since the sari blouses are generally made in 2 x 2 rubia that comes only in 36" width.

Skirt – Skirt generally has one back piece, one front piece and a waistband. You need fabric piece for two lengths of the skirt. There are tremendous possibilities of design variation in skirt. So the generalization may not work for skirts with bigger flares, more panels, different fits and skirts with yokes holding pleats or gathers. The amount of gathers or pleats in the skirt generally determine the fabric required.

Nightie – Like a shirt you need two lengths of the Nightie and one sleeve length. All the above are indicative measurements and requirements. It is recommended that one learns to make a pattern layout. As explained in the

beginning layout is a process similar to the actual cutting of fabric one needs to layout on an imaginary fabric with the required pieces as one would on an actual fabric for the sake of fabric calculation.

For the beginner it is important to do a simple exercise as a learning point and should progress into more complicated ones later. Conversion chart of fabrics with various widths has been prepared and that is to be used after one has calculated the fabric required for a garment in 36" width (which is a most common width available in the Indian market). A beginner needs to buy at least 25cms extra, as it is only with experience that one is able to make a layout economical and accurate. Another reason is that as a beginner one may make some mistakes in marking or cutting the right grain or dimensions and run short of fabric. After gaining experience, one must do some complicated layouts to gain confidence.



CONVERSATION CHART

Yardage required \ Fabric width	32"	35"-36"	39"	41"	44"-45"	50"	52"-54"	60"
	17/8	13/4	1½	1½	13/8	1½1¼	11/8	1
	2¼	2	13/4	13/4	15/8	1½	13/8	1¼
	2½	2¼	2	2	13/4	15/8	1½	13/8
	23/4	2½	2¼	2¼	21/8	13/4	13/4	15/8
	31/8	27/8	2½	2½	2¼	2	17/8	13/4
	33/8	31/8	23/4	23/4	2½	2¼	2	17/8
	33/4	33/8	3	27/8	23/4	23/8	2¼	2
	4	33/4	3¼	31/8	27/8	25/8	23/8	2¼
	5	43/4	4	37/8	35/8	3¼	27/8	23/4

PATTERN MAKING & SEWING

Chapter 28

Panel Top with Chinese Collar

MATERIAL REQUIRED

- Any cotton or cotton variant fabric, approximately 1.5m

MEASUREMENT

- | | |
|--------------------|-----------|
| a. Round neck | d. Waist |
| b. Across shoulder | e. Length |
| c. Chest | |

METHOD FRONT

1. Draw line OA which is the total length measured.
2. From point O mark Z which is the waist level (15")
3. Then from O mark B which is 1/4th of chest measurement – 1.5".
4. From O also mark C which is 1/12th of chest.
5. From O mark the shoulder drop at point D which is 1"
6. Mark point E from O which is 1/12th of chest.
7. Join E and F which should be parallel to OC.
8. From point D mark G which is 1/2 of shoulder + 1/2" and join E – G.
9. BH is equal to 1/4th of chest + 1"
10. ZY is 3.5" of chest measurement.
11. YX is 1".
12. ZZ1 is 1/4 th of waist + 1/2" + 1" for darts.
13. Join GH using a French curve.
14. Mark AI as 1/4th of hip + 1/2".
15. AS is chest/12 + 1"
16. R is the midpoint of GE. Join R with the apex point i.e. R1 and extend the line to point S perpendicular to AI.
17. Cut on the line S, X, R1, R and S, Y, R1, R which will divide the pattern into 2 panels. (similar for the back)

BACK

18. From point E mark L which is 1" and draw a line parallel to OE.
19. From point M mark L which is 1" above and is parallel and equal to GE. Also MG and LM would be perpendicular to GE.
20. Join LP and MH using a French curve.

SLEEVE

1. Mark line OA which the length of the sleeve.
2. OB would be 5".



Fabric Dual Colour Mix Options

Pantone 7635c 7467c and 1585c 362c



3. From point B mark B1 which is 1/4th of chest – 2" and is = B - B2.
4. A1 and A2 = 12" or Sleeve bottom
5. Join B1 to O, A1 and B1, B2 and O, A2 and B2.
6. C1 and C2 are mid points of OB1 and OB2.
7. Similarly D1 and D2 are mid points of C1B1 and C2B2.
8. Join these points with a slight curve as shown in the figure.
9. The armhole of the front block will always be deeper in the curve than the back.

CHINESE COLLAR

1. From point O mark A i.e. 1".
2. From O draw a horizontal line till point B which is 1/2 of neck + 1/2" and also OB = AC.
3. From point B go up 1/2" and from point C go up 2/8th inch.
4. Blend it from the midpoint of the lines OB and AC.
5. Curve the points as shown in the figure.

CONSTRUCTION

1. Trace the front on the fabric twice (one for left and one for right)
2. On both sides of the front pattern extend about 1 1/2" from the centre front for the plackets.

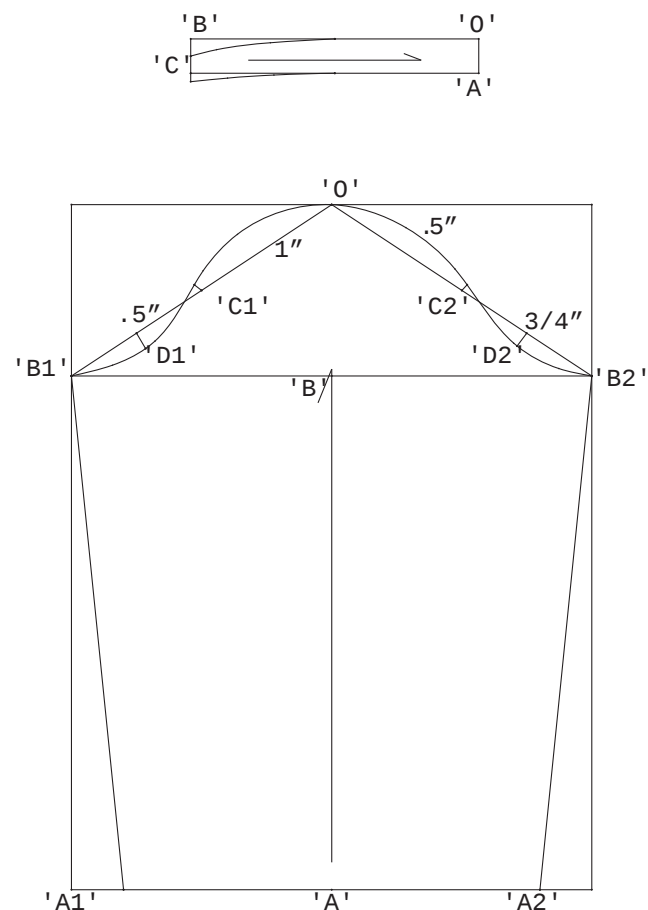
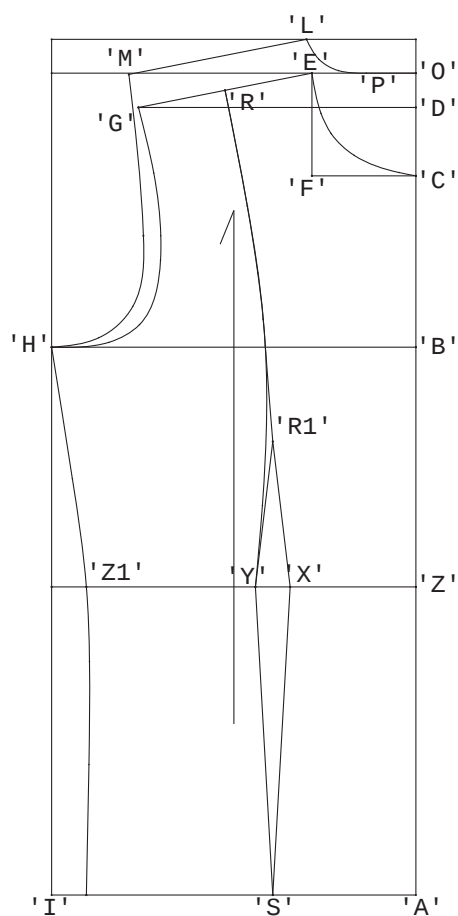
3. The seam allowance is included.
4. Trace the back on fold.
5. Join the side seams with flat fell seam.
6. Finish the hem with Blind hem stitch.
7. For the collar, trace the full pattern twice as shown in the figure.
8. Use micro dot fusing for a little stiffness.
9. Stitch the collar with right side facing each other. (make sure the fusing part should be on top while stitching because when you turn it around, that part will go inside)
10. Leave the lower part open for attachment to the neckline.

11. Now turn around the collar and give a top stitch on the stitched part at about 2/8th of a distance.
12. Sandwich the neckline with the collar and give it a neat top stitch.

TRIMS

1. Different kinds of printed fabrics can be used to play around
2. Piping can be used in the color for decorative purpose

PANEL TOP WITH CHINESE COLLAR



Chapter 29

Top with Sailors Collar



MATERIAL REQUIRED

- Any cotton or cotton variant fabric, approximately 2m

MEASUREMENT

- a. Round neck
- b. Across shoulder
- c. Chest
- d. Waist
- e. Length

METHOD FRONT

1. Draw line OB which is 15" (waist level).
2. Mark point OA which is 1/12th of chest.
3. Mark point OC1 i.e. 1/12th of chest.
4. Mark point OT which is 1/2 across shoulder.
5. From point G to point T i.e. 1.25".
6. Join GC1.
7. Mark point C1 to C which is 0.5".
8. From point O to E on centre front which is 1/4th of chest – 1.5".
9. From point E mark H which is 1/4th of chest + 1".
10. From point C on line GC1 mark point R which is 3".
11. Extend collar length about 6" from point B to point S2.
12. $S2-S1 = 1.5"$.
13. S is midpoint of S2 and S1.
14. Join S1 with point R.
15. Join S2, B, C1 with straight line.
16. From point B to T2 which is 1/4th of waist + 1.5" (Dart width is 1.5", dart length is from apex point to waist level).
17. Join HG with French curve.

BACK

1. Mark point DQ which is waist level (15")
2. Mark point Z from Q which is 1/4th of waist + 1" (Dart width is 1" and dart length is 5.5")

Fabric Dual Colour Mix Options

Pantone 306c 232c and 340c 7579c



3. Mark point D to E which is 12" and mark point EF which is 7".
4. Join FR.
5. Join LG with French curve.

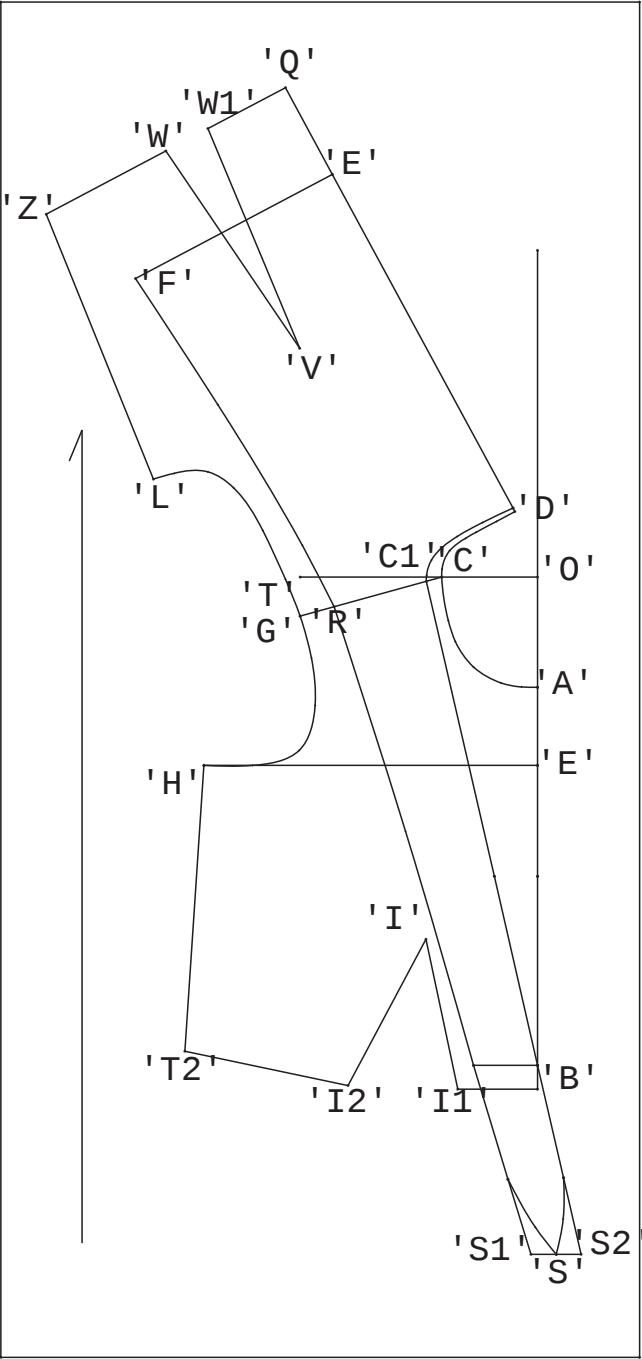
CONSTRUCTION

1. Cut the pattern twice on the fabric.
2. Fuse one side with micro dot fusing.
3. Stitch the collar with right side facing each other. (make sure the fusing part should be on top while stitching because when you turn it around, that part will go inside)
4. Leave the lower part open for attachment to the neckline.
5. Sandwich the neckline with the collar with a simple lock stitch.

TRIM

1. The collar can be tied in different ways and experimented with.
2. Color blocking can be done
3. Piping can be used in the collar.

TOP WITH SAILORS COLLAR



Chapter 30

Overlap Top

MATERIAL REQUIRED

- Any cotton or cotton variant fabric, approximately 2m

MEASUREMENT

- a. Round neck
- b. Across shoulder
- c. Chest
- d. Waist
- e. Length

METHOD FRONT

1. Draw line OA which is the total length measured.
2. From point O mark Z which is the waist level (15")
3. Then from O mark B which is 1/4th of chest measurement – 1.5".
4. From O also mark C which is 1/12th of chest + 1 1/2".
5. From O mark the shoulder drop at point D which is 1"
6. Mark point E from O which is 1/12th of chest + 3/4th "
7. Join E and F which should be parallel to OC.
8. From point D mark G which is 1/2 of shoulder + 1/2 "and join E – G.
9. BH is equal to 1/4th of chest + 1"
10. ZY is 1/12th of chest measurement.
11. From point Z mark Z1 which is 1/4th of waist+ 1/2" and also + 1" for the dart (1/2" on either sides XY)
12. Keep in mind that the distance between point Y to the centre front should be 3 to 3 2/8"
13. Join GH using a French curve.
14. Mark AI as 1/4th of hip + 1/2".
15. R is the midpoint of GE. Join R with the apex point i.e. R1 and extend the line to point S perpendicular to AI.
16. From the Centre front line i.e. CA extend C to point C1 on the straight line i.e. 3 1/2"
17. Go down about 1/2" from point C1 and join it with C with a slight curve.
18. From point A on the Centre front line Go out 3 1/2" and join with C1.
19. Cut on the line S, R1 and R which will divide the pattern into 2 panels. (similar for the back)

BACK

20. From point O mark D which is 1" and draw a line parallel to OE.



Fabric Colour Options

Pantone 191c 3262c 354c 239c



21. From point M mark N which is 1/2" above and is parallel and equal to GE. Also MG and NE would be perpendicular to GE.
22. Join NP and MH using a French curve.

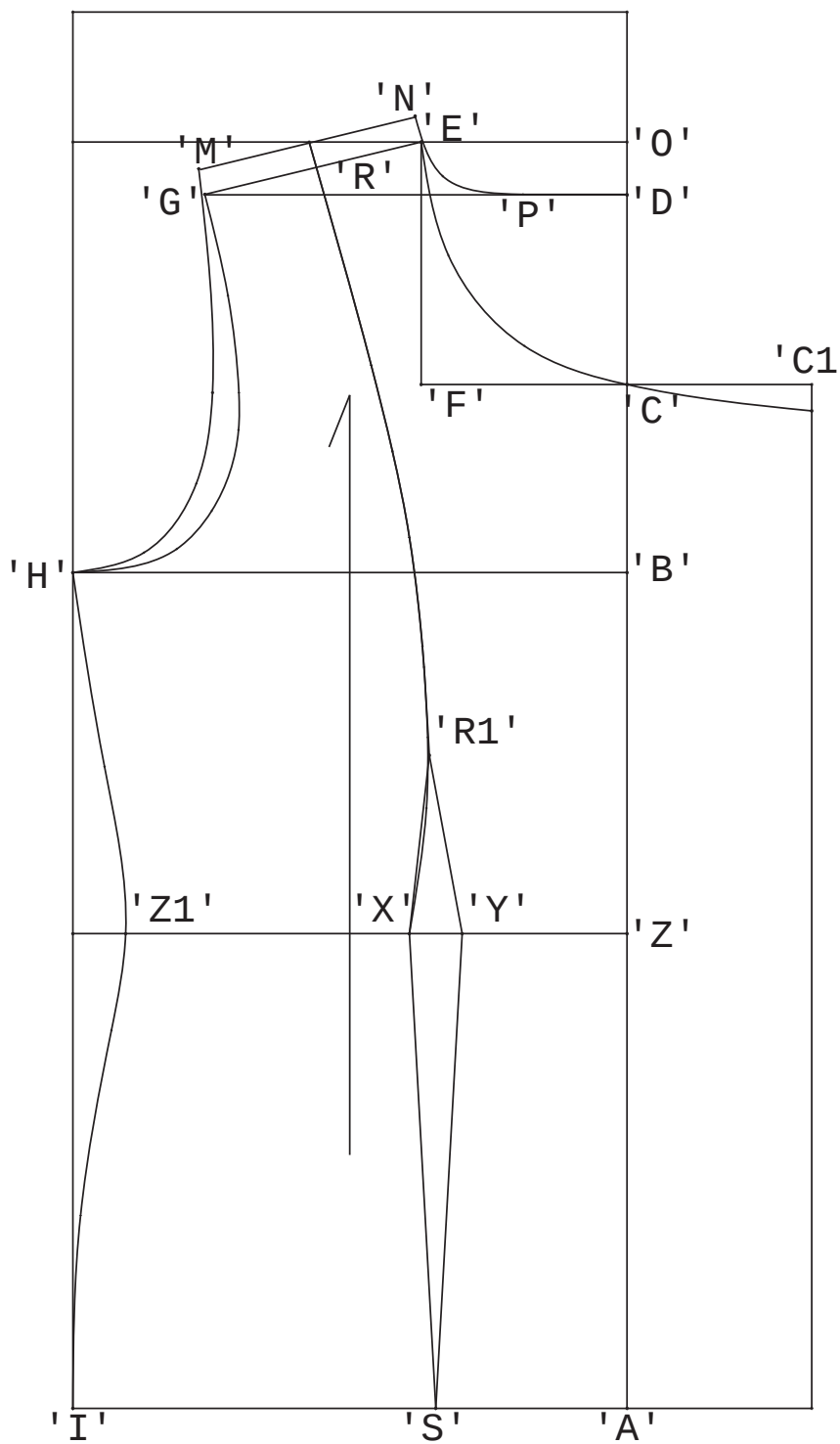
CONSTRUCTION

1. Trace the front on the fabric twice (one for left and one for right)
2. The right side of the front panel will fall as an overlap on the left.
3. The seam allowance is included.
4. Trace the back on fold.
5. Join the side seams with flat fell seam.
6. Finish the hem with Blind hem stitch.

TRIMS

1. You can finish the top with fancy Chinese buttons available in the market.
2. Piping and lace can be added on the overlapping panel.
3. Decorative stitches can be used.

OVERLAP TOP



Chapter 31

Yoke Cut Top



MATERIAL REQUIRED

- Any cotton or cotton variant fabric, approximately 1.5m

MEASUREMENT

- a. Round neck
- b. Across shoulder
- c. Chest
- d. Waist
- e. Length

METHOD FRONT

1. Draw line OA which is the total length measured.
2. From point O mark Z which is the waist level (15")
3. Then from O mark B which is 1/4th of chest measurement – 1.5".
4. From O also mark C which is 1/12th of chest + 1 1/2".
5. From O mark the shoulder drop at point D which is 1"
6. Mark point E from O which is 1/12th of chest
7. Join E and F which should be parallel to OC.
8. From point D mark G which is 1/2 of shoulder + 1/2 "and join E – G.
9. BH is equal to 1/4th of chest + 1"
10. ZY is 1/12th of chest measurement.
11. From point Z mark Z1 which is 1/4th of waist+ 1/2" and also + 1" for the dart (1/2" on either sides XY)
12. Join GH using a French curve.
13. Mark AI as 1/4th of hip + 1/2".
14. Go down 10" from the shoulder level and mark a horizontal line for the yoke.
15. Cut on the line to separate it from the yoke.

BACK

16. From point O mark D which is 1" and draw a line parallel to OE.

Fabric Dual Colour Mix Options

Pantone 1785c 102c and 234c 1767c



17. From point M mark N which is 1/2" above and is parallel and equal to GE. Also MG and NE would be perpendicular to GE.
18. Join NP and MH using a French curve.

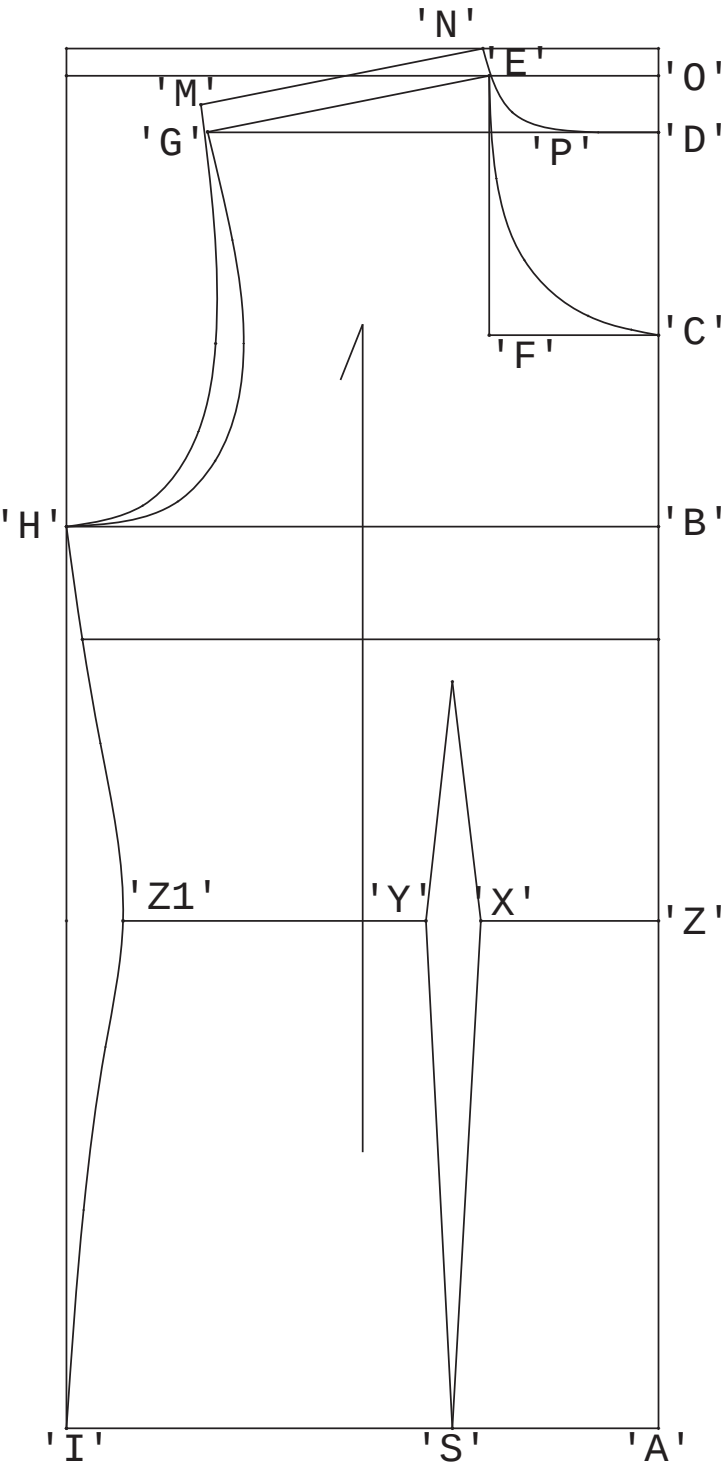
CONSTRUCTION

1. Trace the front on the fabric on fold.
2. The seam allowance is included.
3. Trace the back twice, for right and left side respectively.
4. Join the yoke with French seam for the front and back.
5. Join the side seams with flat fell seam.
6. Stitch the dart keeping the lines equal.
7. Finish the hem with Blind hem stitch.
8. Use a concealed zipper at the back.

TRIMS

1. Two different fabrics can be used. Like one plain and one printed.
2. Lace stitch can be used for joining the 2 panels.
3. Piping can be done on the sleeve and neck

YOKE CUT TOP



Chapter 32

Raglan Top



MATERIALS REQUIRED

- Any cotton fabric with 2 different colors for the sleeve and the body), approx. 2m

MEASUREMENT

- | | |
|--------------------|-----------|
| a. Round neck | d. Waist |
| b. Across shoulder | e. Length |
| c. Chest | |

METHOD FRONT

1. Draw point OA total length of Top.
2. OT is 1/2 of across shoulder
3. OD = OE ie 5"
4. Now from E go down 2.5"
5. F is the mid point of ED curve
6. AI is 1/4th of Hip + 1"
7. Join FC with a straight line.
8. H is the midpoint of CF, from H go down 1/2" to G.
9. Join FGC with a slight curve shape.

BACK

10. Back will be same as front.

SLEEVE

11. CQ is length of sleeve.
12. EC = BQ is 1/4th of chest + 1"(width)
13. OE is neckline which is 5".
14. ED is 2.5".
15. BR is half of sleeve bottom.

Fabric Dual Colour Mix Options

Pantone	341c	7406c and	021c	314c
				

16. CF is chest/6 – 3/4"
17. Join FR with French curve.

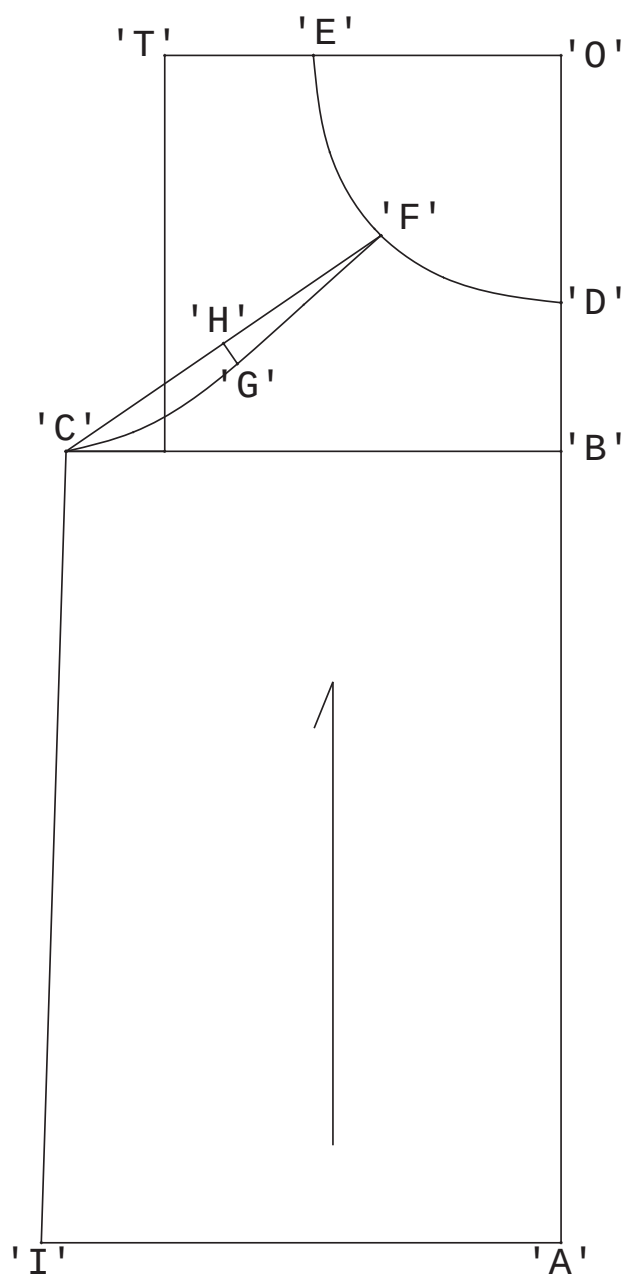
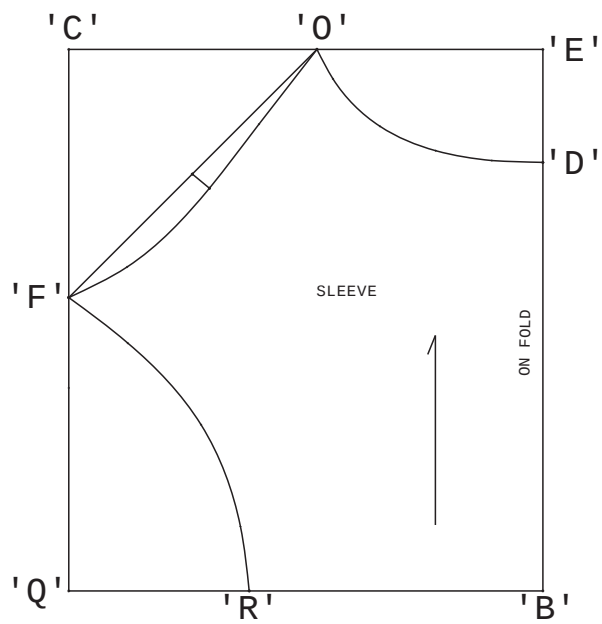
CONSTRUCTION

1. The top will be cut on fold.
2. Attach the sleeves with body and then finish the top with French seam.
3. Finish the neck line with shaped facing or blind hemming.
4. Now finish the hem line of top with straight stitch or hemming.

TRIMS

1. Fabrics with two colors can be used
2. Stitch detailing on the sleeve can be used
3. Piping can also be used as an option on the sleeve.

RAGLAN TOP



Chapter 33

Princess Dress

The dress can be achieved from the basic top / torso foundation.

MATERIAL REQUIRED

- Plain or printed cotton which fit comfortably , approx. 3m

MEASUREMENT

- | | |
|--------------------|-----------|
| a. Round neck | d. Waist |
| b. Across shoulder | e. Length |
| c. Chest | |

METHOD

1. Draw line OA which is the total length measured.
2. From point O mark Z which is the waist level (15")
3. Then from O mark B which is 1/4th of chest measurement – 1.5".
4. From O also mark C which is 1/12th of chest + 1 1/2".
5. From O mark the shoulder drop at point D which is 1"
6. Mark point E from O which is 1/12th of chest
7. Join E and F which should be parallel to OC.
8. From point D mark G which is 1/2 of shoulder + 1/2" and join E – G.
9. BH is equal to 1/4th of chest + 1"
10. ZY is 1/12th of chest measurement.
11. From point Z mark Z1 which is 1/4th of waist+ 1/2" and also + 1" for the dart (1/2" on either sides XY)
12. The length of the dart will be 3 1/2" upward from the waist line and joining straight to the hip line which is 9" below the waist level.
13. Join GH using a French curve.
14. Mark AI as 1/4th of hip + 1/2".
15. R is the midpoint of GE. Join R with the apex point i.e. R1 and extend the line to point S perpendicular to AI.
16. Draw a straight line from point H to I as shown in the figure.
17. Mark the hip level. (9" below the waist level)
18. Extend the line till the length you desire for the dress.
19. Blend as shown in the figure.
20. Also keep a 1 inch extension at the back for zipper opening.

CONSTRUCTION

1. Trace the front part twice



Fabric Dual Colour Mix Options

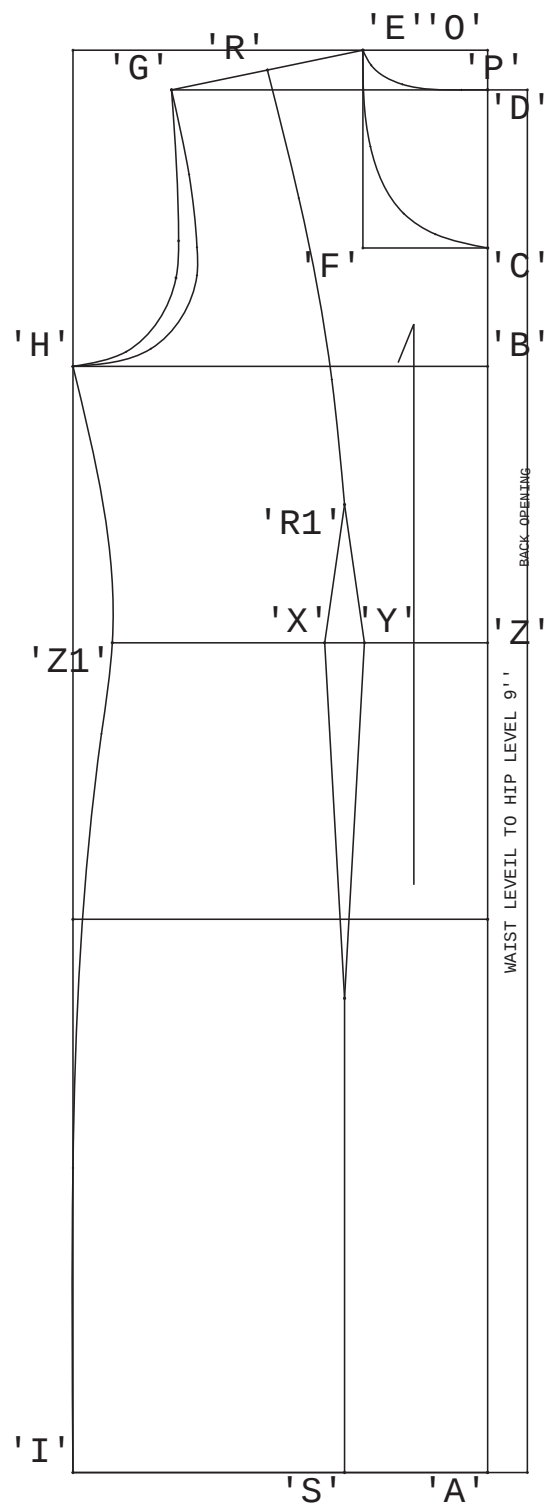
Pantone	7726	7723	and	178c	116c
					

2. Trace the back part twice.
3. Finish the side seam and the princess seam with French seam.
4. You can use a different colored piping to add a creative edge.
5. Finish the neck line with shaped facing
6. Finish the hem with blind hem.

TRIMS

1. Any solid or printed fabric can be used
2. Stitch detailing on the sleeve can be used
3. Piping can also be used as an option on the sleeve and in between the princess line.
4. A metal zipper can be used for the back closure or similar colored buttons can be used for closure.

PRINCESS DRESS



Chapter 34

Umbrella Skirt

MATERIAL REQUIRED

- Any cotton or cotton variant/ printed fabric, approximately 3.5m

MEASUREMENT

- Waist
- Length required.

METHOD

- Take square piece of fabric.
- Fold it four times as shown in the figure.
- From Point O mark A and B ie (1/4th of waist measurement)
- AB is 1/4th of waist measurement.
- From O mark the desired length of the skirt + 1/4 th of waist to point C and D and make a curve.

BELT

- $AB = CD = 1.5''$
- $AC = DB = \text{waist}/2$

CONSTRUCTION

- Finish the waist line AB with wide width elastic.
- Finish the hem with blind hem.

TRIMS

- Printed fabrics can be used
- Lace can be used on the hem.

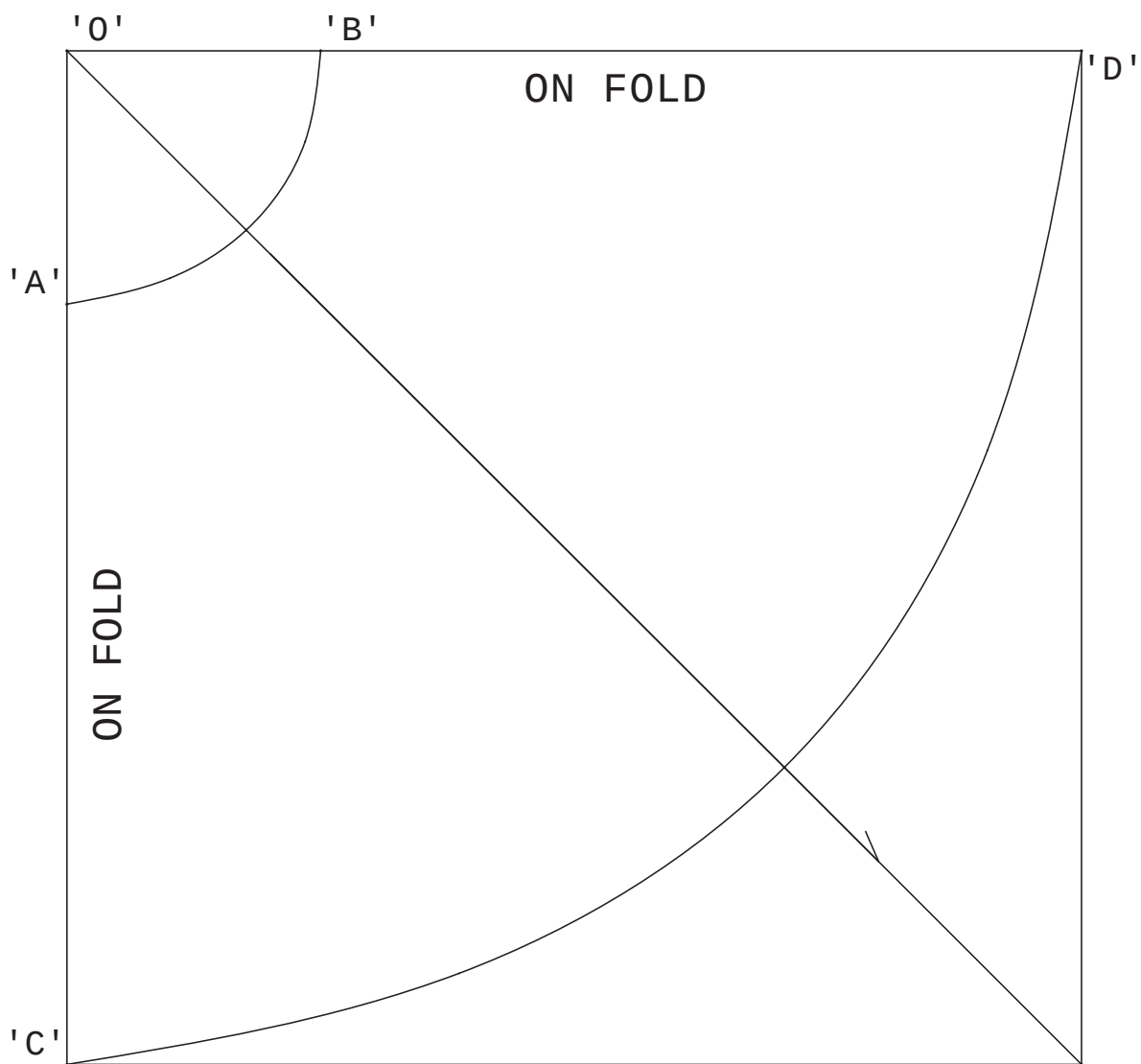


Fabric Dual Colour Mix Options

Pantone 7709 7634c and 802c 811c



UMBRELLA SKIRT



Chapter 35

Carrot Pants

MATERIALS REQUIRED

- Heavy weight cotton or linen fabric, approx. 2m

MEASUREMENTS

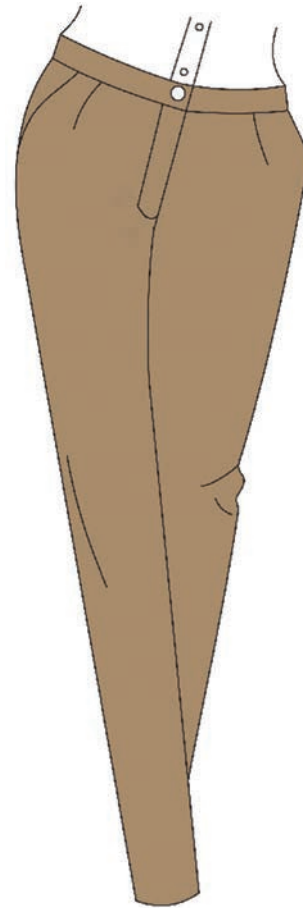
- | | |
|----------------------------|---------------------------------|
| a. Waist | e. Inner Length: crotch length |
| b. Hip | f. Knee Length |
| c. Outer length | g. Bottom opening |
| d. Total length of trouser | h. Crotch = outer-inner length. |

METHOD FRONT

1. AB is full length (i.e. waist to ankle)
 2. AD is crotch depth (subtract 1/4" for higher crotch)
 3. DC is hip depth i.e. 1/3rd of DA
 4. BE is knee depth, one half of BD plus 1" (towards D) square out from both sides of A, B, C, D and E.
 5. CJ is front hip, + 1/8" (ease)
 6. DK is same as CJ and AL is also same as CJ, connect K with L
 7. KX is 1/2 of KL plus 1/2" (towards L)
 8. KM is 2"
 9. LQ is 1/2"
 10. QR is front waist arc, plus 3/4" (dart and ease included)
 11. QS is 3 1/4"
 12. Square down 2 1/2" from S. Measure out 2/4th inch from each side of S and mark
 13. QU is 1/4 "squared up from Q. draw a line from U through X to crotch level.
 14. K1K2 is 1 1/4" diagonal line.
 15. Draw a curve touching X,K2,M
 16. DY is 3/8"
 17. YZ is one half of YM
 18. Square up and down from S.
- Convert the darts into pleats.

BACK

1. CF is back hip, + 1/8" (ease)
2. DG is same as CF
3. AH is same as CF, connect G with H
4. GX is one half of GH
5. GI is 3" for contour fit
6. HN is 1 3/4"
7. NO is back waist arc, plus 1" (dart and ease included)
8. NP is one half of NO



Fabric Colour Options

Pantone	424c	348c	7634c	3272c
				

9. Square down 3 1/2" from P
10. Measure out 3/8" from each side of P and mark
11. NT is 1" squared up from N
12. Draw a line from T through X to crotch level
13. G G1 is 1 3/4" diagonal line
14. Draw curve with ruler touching X and G1 at or near I. Blend at G1 if necessary.
15. DV is 3/8"
16. W is one half of VI, square up and down from W (grainline)

Draw slightly curved line from T to O and U to R

Draw dart legs from dart points to curve of waistline.

True dart legs by adding to shorter leg. Blend with side waist.

Draw hip curves just above C to O and C to R

- Measure out from both sides of the grain line at hem and knee level using measurements given. Mark

- Out seams – draw hip curve from C, passing Y and V.
- Draw straight line from ankle marks and knee marks to crotch level.
- Use flattest inward part of the skirt curve to draw leg line from just above knee blending with B line.
- Draw inward curve lines to I and M.

For the hem line of pants the total measurement should not be more than 12. Front 6 and back 6.

Mark the 6 inches on the back and front hemline and merge them till the knee level.

WAIST BAND

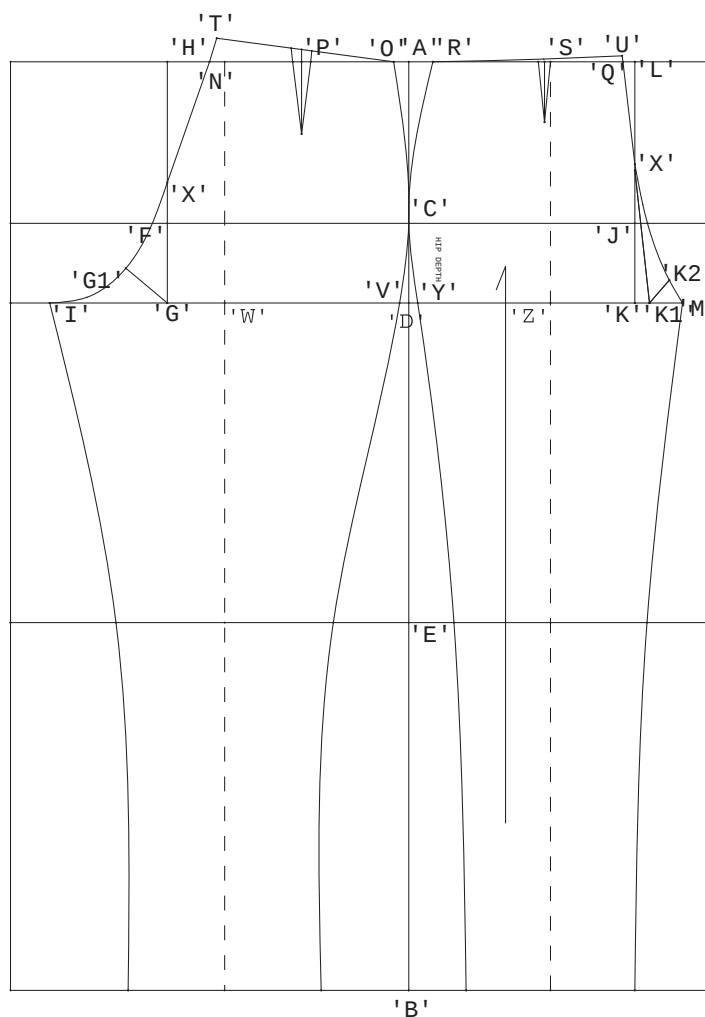
1. Cut a fabric, keeping the waist measurement as desired and keep the width as 1 1/2". (cut X 2)
2. Also keep an extension of 2 inches on both sides of the button and button hole

3. For a better fit, give shaping to the waist band according to the curves on the waist.

CONSTRUCTION

1. Cut the front panel twice
2. Cut the back panel twice
3. Attach the zipper first.
4. Stitch the outer legs with a French seam
5. Join the crotch and then stitch the inner seam.
6. Keep the right sides of the waist band together and stitch it
7. Invert the band and give a top stitch to hold it on place.
8. Sandwich the waist of the trouser between the waist bands.
9. Finish it with a top stitch.

CARROT PANTS



Notes

Notes

Notes
