

Basic Pattern Development

Students Handbook + Practical Manual

Class XII



**CENTRAL BOARD OF
SECONDARY EDUCATION**

Shiksha Kendra, 2, Community Centre,
Preet Vihar, Delhi-110301



Basic Pattern Development

Students Handbook + Practical Manual

CLASS-XII



CENTRAL BOARD OF SECONDARY EDUCATION

in collaboration with



NATIONAL INSTITUTE OF FASHION TECHNOLOGY



Basic Pattern Development

Students Handbook + Practical Manual for Class - XII

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भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण¹ प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,
विचार, अभिव्यक्ति, विश्वास, धर्म

और उपासना की स्वतंत्रता,

प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए

तथा उन सब में व्यक्ति की गरिमा

²और राष्ट्र की एकता और अखंडता

सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० को एतद्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

1. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से “प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य” के स्थान पर प्रतिस्थापित।
2. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से “राष्ट्र की एकता” के स्थान पर प्रतिस्थापित।

भाग 4 क

मूल कर्तव्य

51 क. मूल कर्तव्य - भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
- (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
- (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
- (घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;
- (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
- (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परिरक्षण करे;
- (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणी मात्र के प्रति दयाभाव रखे;
- (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
- (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
- (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;
- ¹(ट) यदि माता-पिता या संरक्षक है, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।

1. संविधान (छयासीवां संशोधन) अधिनियम, 2002 की धारा 4 द्वारा प्रतिस्थापित।

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a ¹**SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the²unity and integrity of the Nation;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

-
1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
 2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)
-

THE CONSTITUTION OF INDIA

Chapter IV A

FUNDAMENTAL DUTIES

ARTICLE 51A

Fundamental Duties - It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- ¹(k) to provide opportunities for education to his/her child or, as the case may be, ward between age of 6 and 14 years.

-
1. Subs. by the Constitution (Eighty - Sixth Amendment) Act, 2002

Foreword

The Indian textile and fashion industry contributes substantially to its exports earnings. It is also the second largest domestic employer after agriculture. The garment industry is classified into organized and unorganized sectors catering to a diverse consumer segment. The unorganized segment comprises small-scale readymade apparel stores, independent fabric and tailoring shops etc. The organized sector comprises single-brand or multi-brand retail outlets, designer boutiques etc. to cater to different strata of consumers. The domestic apparel market is expected to grow @ 11% CAGR primarily driven by high value growth due to organized and branded segment. The Indian textile and apparel trade is estimated at USD 662 billion in 2011 and is expected to grow at 5% CAGR by 2021. Employment in the Indian textile and apparel sector stands at 45 million with an additional employment of 60 million in allied sectors.

The Central Board of Secondary Education (CBSE) has taken the initiative of developing a range of vocational courses in areas of emerging interest for those students who may not pursue higher education due to financial constraints or for any other reason. In keeping with this objective, the vocational course on Fashion Design Garment Technology (FDGT) for students of Std XI and XII offers an option to those who would like to enter the fashion industry right after completion of secondary level of education. While academic courses have more theory-based curricular content and do not develop extensive hands-on skill competency, it is envisaged that vocational courses will inculcate not only knowledge but also the related skills which are required by specific industry segments. The FDGT course combines a gamut of theoretical with practical inputs in order to enable students to gain professional competency education in the area of fashion design and garment technology.

The content of the subject is the outcome of consultative discussions among CBSE officials and teachers, senior NIFT faculty members and alumni, industry members representing the export and domestic garment sector including fashion designers.

The Board would like to place on record the support received from Shri P K Gera, IAS, Director General NIFT and Sr. Prof. Banhi Jha, Dean - Academic. We also acknowledge the contribution of Sr. Prof. Banhi Jha, Prof. Vandana Narang - Project Anchor, Prof. Malini Reddy, Dr. Rajitha & Mr. K.D. Sharma faculty of NIFT for their time and effort in developing the FDGT textbooks for Std XII. The contribution of Dr. Biswajit Saha, Addl. Director & Ms. Swati Gupta, Deputy Director, Vocational Education Cell, CBSE is also deeply appreciated.

Any suggestions and feedback from the readers for improvement in the future editions of the subject is welcome.

Shri Vineet Joshi
Chairman, CBSE



Preamble

Fashion is dynamic and ever changing. It is one of the most powerful forces in our lives. It influences every facet of our lifestyle at a particular period in time e.g. the clothes we wear, the music we listen, the food we eat, where we go for holiday or the car we drive in etc.

The purpose of the stream of Fashion Design and Garment technology under the broad head of Professional Competency Education is to acquaint the students with the fundamentals of fashion design and production of garments. Fashion Design as profession includes the entire process of designing and producing fashion apparels from the fibre and yarn stage to the finished product. The subjects of this course will give an overview of fashion design and elaborate on different aspects like elements of design, history of fashion, fabrics, and understanding of the body, pattern development and garment construction.

The apparel industry is a heterogeneous entity where the design, technology and management of fashion activities are geared towards mass production, limited edition, high fashion clothing, crafts, exports and other niche segments. This subject also gives directional options for students wishing to pursue higher studies in fashion and seeking careers as fashion professionals.

CBSE

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Chapter - 1: Introduction to Pattern Making

1.1 Introduction

Human form is a compound of complex geometric shapes and presents problems in pattern construction. The accuracy of any pattern making method depends largely on relevant and correct measurements. Learning pattern making by trial and error is like learning to play music by ear. Pattern making can be further divided in two sub headings namely measuring the body or dress-form correctly & accurately and knowledge of techniques with which these measurements are applied to achieve a good pattern.

Pattern making is a complex task as no two human beings are identical. Pattern makers have generally tried to find an ideal system and not realizing that a system set by one method may not fully satisfy the needs of other human figures. The proportionate systems work on the principles that the whole body length is divided in to eight heads and the girth measurements are in proportion in to each other. Proportionate systems on the other hand seem to offer a ready solution to the problem of unreliable or incorrect measurements.

Pattern making systems are largely dependent and are influenced by accepted style of their period. Seam placement and suppression are an integral part of a draft that did not allow for change in the design without disturbing the garment balance.

1.2 Understanding of Body & Its Measurements

Before proceeding to take measurements it's important to understand the body and different parts of body. It is important to identify various hallmarks in the body.

Let us start with Head - the measurement of head is taken only if you were making a headgear like caps or hats. You measure the head lengthwise from the forehead to back of the neck and for width you measure from above the ear from one side to the other from back of the head.

Neck: the measurement of neck is taken for making collars and necklines. You measure the round neck from the center front to center front around the neck by keeping the measuring tape perpendicular to the neckline without pulls or folds.

Shoulder: the shoulder is measured in two different ways one the length of shoulder is measured by measuring from high shoulder point or neck point to shoulder point at the start of the arm. For traditional pattern making methods cross back is required and it is measured from one shoulder point to the other at the back.

Armhole: the measurement of armhole is taken for making sleeves. You measure the round armhole by passing the measuring tape under the arm pit starting at the shoulder point and ending there itself by ensuring that the measuring tape is without pulls or folds.

Bust: the measurement of bust is taken for making all upper torso garments like shirts, blouses, jackets, kurta, kameez and others. You measure the round bust by passing the

measuring tape over the fullest part of the breast starting at center front and ending there itself, also by ensuring that the measuring tape is without pulls or folds and your two fingers are inside the tape.

Apex or bust point is the highest point or the tip of the bust, the measurement of apex is taken for making darts in the bodice. The length wise measurement is taken from high shoulder point at the neck to apex and width of the apex is measured by measuring the distance between two apex points.

Center Front: is a line that divides the front body into two equal halves. The measurement of center front is taken for establishing neck depth. The measurement is taken from the pit of the neck at the center front to the waistline ensuring that the measuring tape is without pulls or folds.

Center Back: is a line that divides the back body into two equal halves. The measurement of center back is taken for establishing neck depth. The measurement is taken from the pit of the neck at the center back to the waistline ensuring that the measuring tape is without pulls or folds.

Side Seam: is an imaginary line that divides the body into two parts on the side i.e. front and back. The measurement of side seam is taken for establishing armhole depth. The measurement is taken from under the armpit to the waistline ensuring that the measuring tape is without pulls or folds.

Waist: the measurement of waist is taken for making all garments that cover the waist like shirts, blouses, jackets, kurta, kameez, skirts, trousers and others. Waist is the narrowest part of the body natural waist can be established by taking a piece of string making a loop and letting it fall the smallest part of the torso. You measure the round waist by passing the measuring tape over the curve of the waist starting at center front and ending there itself, also by ensuring that the measuring tape is without pulls or folds and your two fingers are inside the tape for breathing ease. It is also imperative that the person is standing in natural posture without pulling the stomach and breath inside.

Hip: the measurement of hip is taken for making all garments that cover the hip like shirts, jackets, kurta, kameez, skirts, trousers and others. You measure the round hip by passing the measuring tape over the fullest part of the hip starting at center front and ending there itself, also by ensuring that the measuring tape is without pulls or folds and your two fingers are inside the tape.

Princess Line: is an imaginary line that passes through the apex from shoulder to the entire length of the dress from. It takes the suppression in to give a well fitted look.

Sleeve Length: the measurement of sleeve is taken for making sleeves. You measure from top the arm at shoulder point by measuring the length till the wrist or desired sleeve length, ensuring that the measuring tape is without pulls or folds.

Bicep: the measurement of bicep is taken for making sleeves. You measure the round the round arm at the fullest point of upper arm by passing the measuring tape under the arm hole ensuring that the measuring tape is without pulls or folds.

Elbow: the measurement of elbow is taken for making sleeves. You measure the round bent elbow by passing the measuring tape around the elbow ensuring that the measuring tape is without pulls or folds.

Wrist: the measurement of wrist is taken for making sleeves. You measure the round wrist by passing the measuring tape around the wrist ensuring that the measuring tape is without pulls or folds.

Thigh: the measurement of thigh is taken for making trousers, churidar payjama etc. You measure the round thigh by passing the measuring tape around the fullest part of the thigh ensuring that the measuring tape is without pulls or folds.

Knee: the measurement of knee is taken for making trousers, churidar payjama etc. You measure the round knee by passing the measuring tape around the fullest part of the bent knee ensuring that the measuring tape is without pulls or folds.

Ankle: the measurement of ankle is taken for making trousers, churidar payjama etc. You measure the round ankle by passing the measuring tape around the fullest part of the ankle covering the heel of the foot and ensuring that the measuring tape is without pulls or folds.

1.3 Methods of Measuring Body and Dress Form

Measuring the human body or the dress form is the first step in development of garments to fit the body well. To take measurements precisely and accurately is the first step in learning to make patterns. 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. It is equally important for the pattern maker to understand various body functions and how and where each limb moves while performing various body movements or daily tasks.

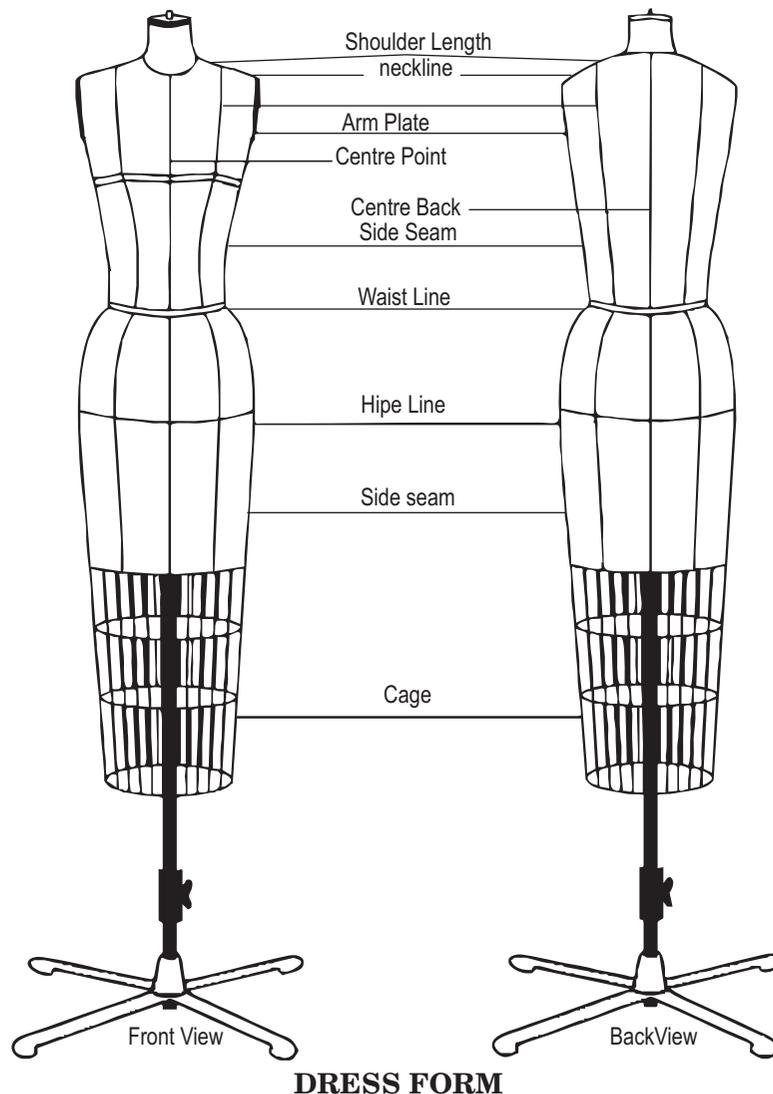
1.3.1 Method of Measuring a Dress Form

Identify Various Body Parts: Dress forms come in various sizes, shapes, figures, colours, lengths etc. from a number of companies in standard body measurements in different materials. They are available ready made according to standard measurements of a country and can be customized according to the customer profile or target market of the company. A dress form with Size 8 marked on it and made by a US based company is made as per size 8 of US standard size. However, a company dealing with maternity wear will require a customized dress form.

The first step in order to learn to measure a dress form is to know the form. The figure given below identifies the various body parts on the front and back of a standard dress form.



Dress form with all the horizontal levels

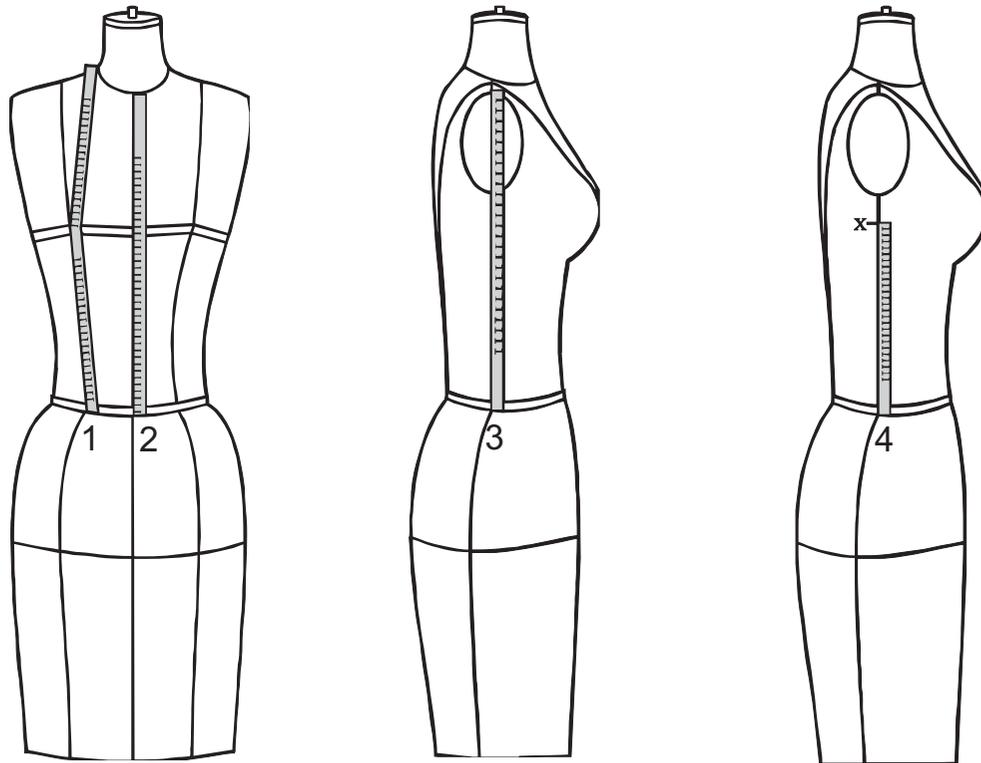


All the measurements are according to the number given for e.g. 1. - Front length corresponds to the 1 identified on the figure of dress form.

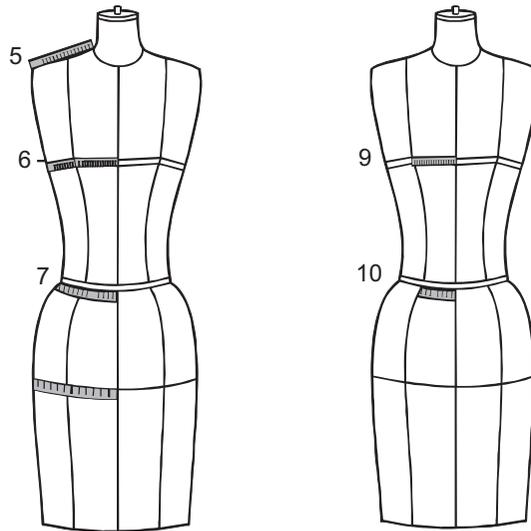
1.3.2 Measurements

1. **Front Length:** measure from high shoulder neck intersection to waistline over the bust, take care to measure with a hand under the bust in order to measure the underside of the bust.
2. **Centre Front Length:** measure from neck intersection at centre front to waist at centre front intersection without any pulls.
3. **Shoulder to Waistline:** measure from the shoulder tip to side seam waistline intersection (over the sides add 3/4th of an Inch as ease for the armhole).

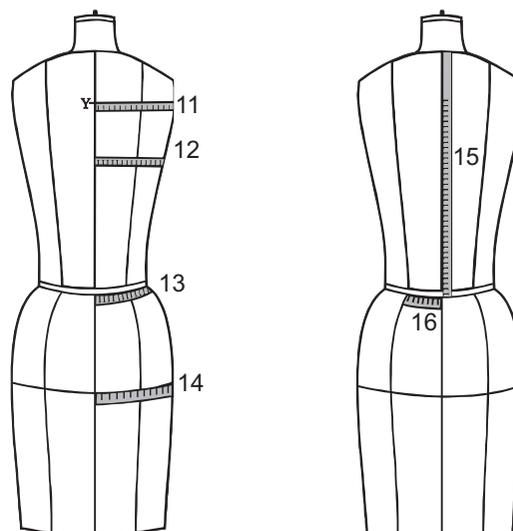
4. **Underarm Seam:** mark a point X 1" below armhole plate. From the point X measure down to waistline intersection at the side seam.

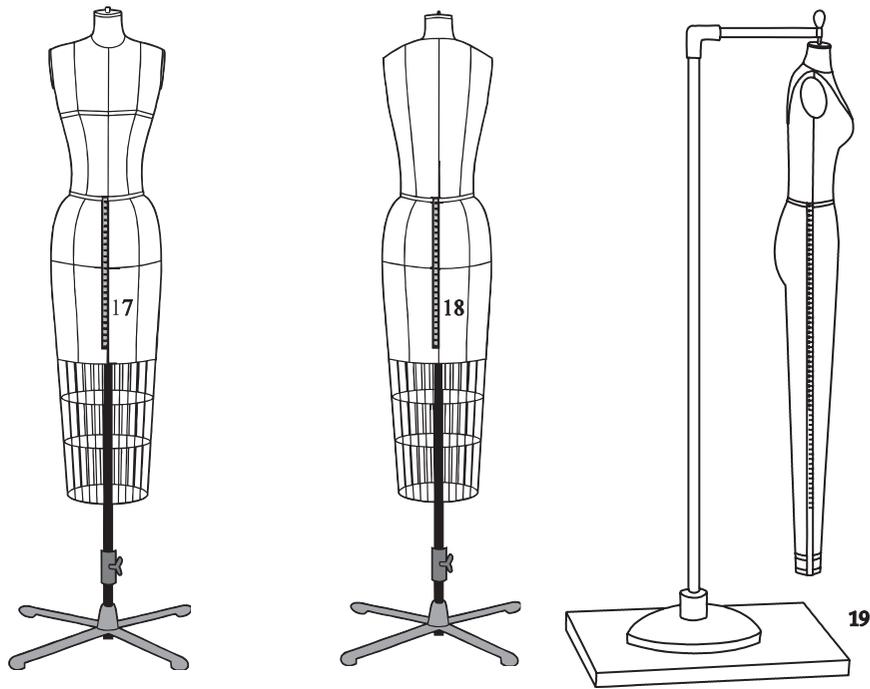


5. **Shoulder Length:** measure from shoulder neck intersection to princess line and then from princess line to the tip of the shoulder.
6. **Width of Bust:** measure from centre front over the bust to point X on side seam (to just over the seam).
7. **Front Waistline:** measure from centre front waistline intersection to side seam waist line intersection.
8. **Front Hipline:** Mark a point with the help of a pin at on centre front which is 7" below the waistline. Using this point measure from floor up, mark this measurement horizontally on the dress form starting from Center front and continue to centre back (keeping it uniform throughout). Put a style tape for reference and label it as hip line. On this line, measure starting from the centre front intersection to side seam intersection (to just over the seam).
9. **Apex Measurement:** measure from the centre front to the high bust point keeping the tape parallel to the floor.
10. **Centre Front to Princess Line:** At waistline measure from centre front intersection to princess line intersection.

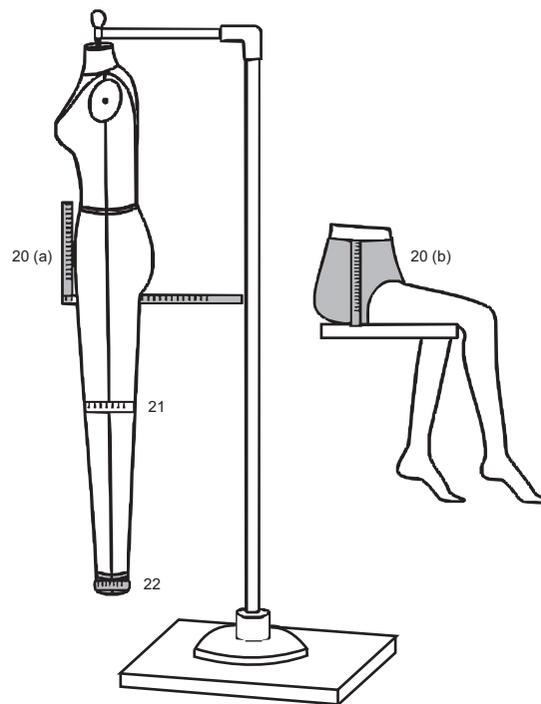


11. **Shoulder Blade:** Mark a point Y on centre back so that, from centre back neck intersection to point Y is 1/4th of centre back length. Shoulder blade is measured from point Y to armhole ridge keeping the tape parallel to the floor.
12. **Width of Back:** measure from point X on side seam to centre back keeping the tape parallel to the floor.
13. **Back Waistline:** measure from centre back waistline intersection to side seam waistline intersection.
14. **Back Hip line:** measure from centre back intersection to side seam intersection on hip line marked earlier.
15. **Centre Back Length:** measure from neck intersection at centre back to waist at centre front intersection without any pulls as for center front.
16. **Centre Back to Princess Line:** At waistline measure from centre back intersection to princess line intersection.

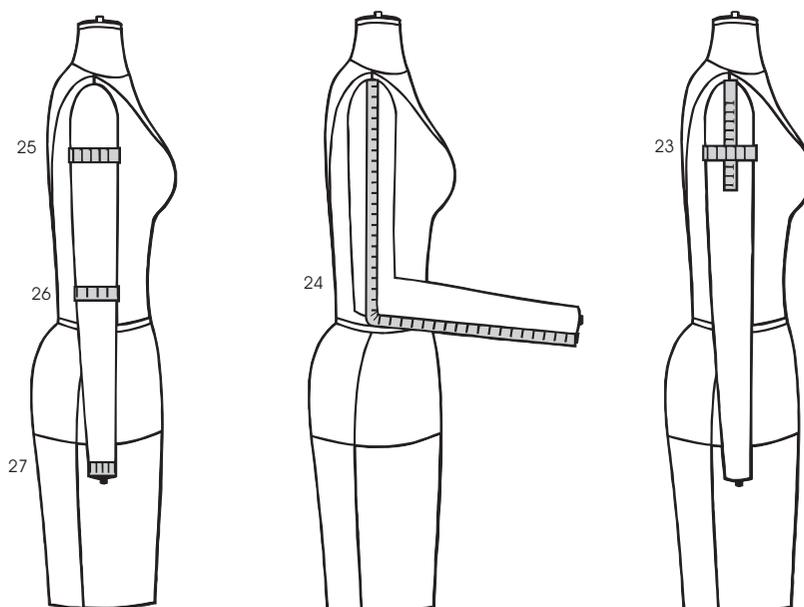




17. **Centre Front Length for Lower Garment:** measure from centre front waistline intersection at centre front down to the desired length ensuring that the tape measure has no pulls or folds.
18. **Centre Back Length for Lower Garment:** measure from centre back waistline intersection at centre back down to the desired length ensuring that the tape measure has no pulls or folds as for centre front.
19. **Side Seam Length:** measure from waistline intersection at side seam over the hip to ankle ensuring that the tape measure has no pulls or folds.
20. **Crotch Depth**
 - (a) **On Dress Form:** Place an L-square between legs of form and note the measurement at waistline. This measurement includes 1¼" ease as the L-square is generally 1¼" wide.
 - (b) **On Body:** make the customer sit on a flat surface ensuring that back of the client is absolutely straight. In this seated position, measure from the waistline intersection at side seam over the figure to the seat of the chair. (Ease needs to be added here.)
21. **Knee Circumference:** take the round measurement over the fullest part of the knee over the bone. On the body, it should be measured over a bent knee for a complete measurement.
22. **Ankle Circumference:** take the round measurement over the ankle bone. On the body, it should be measured over ankle and heel for a complete measurement.



- 23. **Cap Height:** Tie a tape around the biceps of arm close to the armpit. Cap height is to be measured from shoulder intersection to the top of the tape.
- 24. **Sleeve Length:** measure from shoulder intersection over the bent elbow to the wrist.
- 25. **Bicep Circumference:** take the round measurement over the fullest part of the arm.
- 26. **Elbow Circumference:** take the round measurement over the elbow. On the body, it should be measured over a bent elbow for a complete measurement.
- 27. **Wrist Circumference:** take the round measurement over the wrist bone.



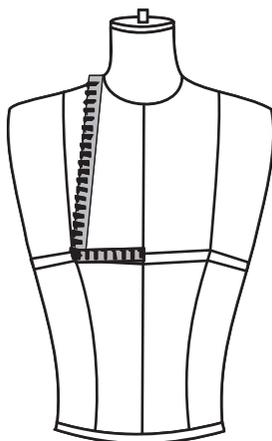
1.3.3 Things to Keep in Mind While Taking Measurement on the Body.

- ◆ Round measurement /girth measurement are to be taken by measuring over the widest point of the body with two fingers between the body and measuring tape, this will ensure that the body is neither pressed nor squeezed.

Note: Remember the measuring tape should not press into the body otherwise measurement may not be accurate.

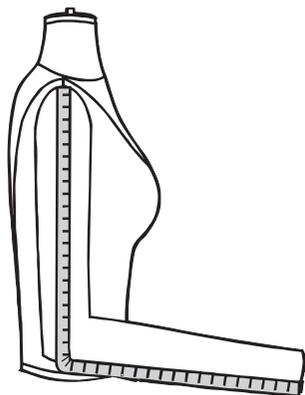
For lengthwise measurement, ensure that the customer is standing in a natural pose.

- ◆ Length wise measurement: While taking length wise measurement a hand should be kept under the bust for ensuring that bust is taken while measuring the length. Otherwise the length of the garment will fall short.
- ◆ Shoulder/cross back measurements are taken from one shoulder bone to the other.
- ◆ Apex is to be measured as shown in the diagram



Apex measurement

- ◆ Sleeve length is taken from the shoulder bone to the length required



Sleeve length

- ◆ For full length of the salwar measure from waist to the floor ensuring that the person is standing straight.



Summary

The chapter covers the following topics:

1. The definition of pattern making, it is a blue print of the garment, Pattern making is an activity by which design is transformed from a drawing stage to an actual physical piece. A pattern maker interprets the designers sketch by drafting it through pattern pieces.
2. The identification of body parts and the method of measuring each of them in context of why and how to measure.
3. The different methods of measuring a human body and dress form.
4. Visual identification of each body part on a dress form and the method of measuring it.
5. Things to be kept in mind while measuring crucial body areas like bust, full length.

Exercise

1. Collect pictures of womens wear garments. Create a folder or style file and identify the kind of darts used in the garment. This will become a guide for you on various styles
2. Measure a dress form and body note the difference in the two measuring methods you need to use.
3. Fill in the blanks
 - a. The pattern can be cut by _____ methods and they are _____ and _____.
 - b. Pattern is a _____ of a garment.
 - c. The book written by Philip _____ is called _____.
 - d. The dart is a _____ wedge that gives _____ to the flat piece of _____.
 - e. _____ method is the oldest pattern making method and is regarded as a _____.
 - f. Center front is the line that divides the front _____ in two _____.
 - g. Ankle should be measured around the _____.
 - h. Correct sleeve length is taken by measuring over a _____.
 - i. Bodice length is measured by measuring from neck _____ to apex and waist by placing a _____.
 - j. Crotch depth on a body is measured by making the _____ sit on a _____ surface and it is measured from _____ to _____.
 - k. Apex is measured by taking the measurement from shoulder _____ to the apex point.
 - l. Distance between the apex and center _____ is measured by _____ the distance between _____ points in _____.
 - m. Shoulder blade level is measured at _____ of _____.

Chapter - 2: Methods of Measuring

2.1 Relationship of Sizes and Measurement



After learning how to measure a body and dress form the next question which comes to the mind is what is the size of an individual or dress form based on the measurements and secondly what size of the garment should be made that would fit the person properly.

A general sizing system for clothing production for a region or country is based ideally on the body measurements taken on a cross section of the population.

In earlier times everyone went to a tailor to get clothes made to one's own measurements. It is in modern time due to changing economy, society and the constantly

growing global demand for 'ready to wear apparel or RTW has made sizes and sizing systems very important.

Sizing systems are generally developed by the Government or standardization organization that needs to work out the standard sizes for the country. A large cross section of the population is measured to establish the standardized sizing system for the country. For example it is British standards with BS3666, which has established the sizing system for the British clothing Industry. All the shops selling garments or manufacturers for clothes for the UK market adhere to the BS3666. The size is suffixed with S or T denotes whether for a short or tall person. The buyer in UK can easily buy clothes of their size if one is sure of which size would fit, as generally all the garments in that particular size would fit the person.

Women have different sizes and shapes and the sizing are so varied that the extent of two women with equal hip girth can have a difference of as much as 12" in their bust measurement. On the other hand, two women of equal bust girth can be completely shaped differently. Most of the sizing systems are based on bust measurements for women.

A good sizing system incorporates the variation in figure shapes to be able to meet the requirement of the population of the country.

Apart from the bust and hip girth variation another factor that influences sizes is height. Most small manufacturers tend to ignore the difference in height and produce garments for above average height women so that most of the shorter women can reduce the length as desired.

The country that has maximum size variation available in the market is United States. The number of the sizes in a sizing system depends on the body structure of the population. In country like India and US the body types of people in various parts (in India) and different ethnic groups (in US) is so varied that the number of sized in sizing system need to be much more than three usual ones - small (S), Medium (M) and Large (L). Some countries work with extra small (XS) and extra-large (XL) and sometimes even XXL but in a country like



United States the women wear sizes start at 2,4,6,8,10,12,14,16,18,20,22,24,26 etc. Apart from these sizes being available in the market there is 'Misses' and 'Petit' which cater to the medium and shorter women and 'tall and big' taking care of taller and bigger sizes.

In India as of now there is no single standard measurement chart available. Several agencies have been trying to work out the sizing and measurements. Individual companies or businesses work out their own set of measurement charts based on their customers or on the demand of the stores in which they sell their wares. This sometimes leads to confusion in the minds of the customers as to what size do they buy.

2.1.1 Ease

Ease or tolerance in a pattern means acceptable margin but there is a difference of 'ease or pattern' and 'ease of comfort' each garment is made for a purpose, an outerwear needs more allowance as it is to be worn over other garments where as a foundation or inner garment like a bra needs to be fitted like a second skin over the body ease added in a pattern for both these garments would vary substantially.

Size one that belongs to depends on the bust and hip measurement someone with abnormally large hip or bust in comparison to the other would need to pick up a size that accommodates larger measurement and would have to alter the garment in the other part for example a women with 36" bust and 48" hip would need to by either a size which fits 48" hip or may be go in for a silhouette which accommodates the girth of the hip like A-line, flared or tend.

2.2 Standard Measurement Chart for Womens wear

(in inches)

SIZES	32	34	36	38	40	42	44
Front Length	17 ^{1/4}	17 ^{1/2}	17 ^{3/4}	18	18 ^{1/4}	18 ^{1/2}	18 ^{3/4}
Width of Bust (1" below arm plate includes an ease of 1/2")	9 ^{1/2}	10	10 ^{1/2}	11	11 ^{1/2}	12	12 ^{1/2}
Centre Front Length	14 ^{3/8}	14 ^{1/2}	14 ^{5/8}	14 ^{3/4}	14 ^{7/8}	15	15 ^{1/8}
Apex	3 ^{5/8}	3 ^{3/4}	3 ^{7/8}	4	4 ^{1/8}	4 ^{1/4}	4 ^{3/8}
Under Arm Seam	7 ^{7/8}	8	8 ^{1/8}	8 ^{1/4}	8 ^{3/8}	8 ^{1/2}	8 ^{5/8}
Front Waistline (includes an ease of 1/4")	6 ^{3/8}	6 ^{3/4}	7 ^{1/8}	7 ^{1/2}	7 ^{7/8}	8 ^{1/4}	8 ^{5/8}
Waistline To Shoulder (includes an ease of 3/4")	14 ^{3/4}	14 ^{7/8}	15	15 ^{1/8}	15 ^{1/4}	15 ^{3/8}	15 ^{1/2}
Shoulder Length	4 ^{7/8}	5	5 ^{1/8}	5 ^{1/4}	5 ^{3/8}	5 ^{1/2}	5 ^{5/8}
Centre Front To Princess Line	2 ^{5/8}	2 ^{3/4}	2 ^{7/8}	3	3 ^{1/8}	3 ^{1/4}	3 ^{3/8}

Width Of Back (1" below arm plate includes an ease of 1/2")	8 ^{1/2}	9	9 ^{1/2}	10	10 ^{1/2}	11	11 ^{1/2}
Centre Back Length	16 ^{1/2}	16 ^{3/4}	17	17 ^{1/4}	17 ^{1/2}	17 ^{3/4}	18
Back Waist Line (includes an ease of 1/4")	5 ^{5/8}	6	6 ^{3/8}	6 ^{3/4}	7 ^{1/8}	7 ^{1/2}	7 ^{7/8}
Shoulder Blade	6 ^{7/8}	7	7 ^{1/8}	7 ^{1/4}	7 ^{3/8}	7 ^{1/2}	7 ^{5/8}
Centre Back To Princess Line	2 ^{1/2}	2 ^{5/8}	2 ^{3/4}	2 ^{7/8}	3	3 ^{1/8}	3 ^{1/4}
Front Hipline (7" below waistline) (includes an ease of 1/4")	9 ^{1/8}	9 ^{3/8}	9 ^{5/8}	9 ^{7/8}	10 ^{1/8}	10 ^{3/8}	10 ^{5/8}
Back Hipline (7" below waistline) (includes an ease of 1/4")	9 ^{1/8}	9 ^{3/8}	9 ^{5/8}	9 ^{7/8}	10 ^{1/8}	10 ^{3/8}	10 ^{5/8}
Cap Height	6	6	6	6	6 ^{1/8}	6 ^{1/8}	6 ^{1/8}
Short Sleeve Length	9	9 ^{1/4}	9 ^{1/2}	9 ^{3/4}	10	10 ^{1/2}	10 ^{3/4}
Sleeve Length	23	23 ^{1/2}	24	24 ^{1/2}	24 ^{1/2}	25	25

Summary

This part of the chapter covers the following topics:

1. The relationship between size and measurement
2. Concept of ease
3. Measurement chart for standard body shape.

Exercise

1. Go to the market and check various womens wear brands what are the different sizes you can identify. Try out garments in different styles and brands do fit into same size of different brand or is there a difference
2. Fill in the blanks
 - a. Standard measurements are _____ in a _____ chart.
 - b. Country that has the most elaborate _____ is _____.
 - c. Sizing systems are _____ by the _____ or standardization organization for a country.



BASIC PATTERN DEVELOPMENT

- d. The standard sizes for the country are established by _____ a _____ cross section of the _____.
- e. In UK British standards was established by _____ for the _____ Industry.
- f. All garments manufacturers in UK market adhere to the _____.
- g. The size is suffixed with S denotes _____ and T for a _____ person.
- h. Countries have different sizes and _____.
- i. Two women with _____ hip girth can have a difference of _____ in their bust measurement.
- j. Generally _____ systems are based on _____ measurements for women.



Chapter - 3: Tools & Terminology of Pattern Making

3.1 Tools of Pattern Making

Name of the Tool	Picture	Uses
Tool Box		A box to keep your tools properly
Hip Curve		A curved ruler to draw curved lines for womens wear.
Grading Ruler		2" X 18" transparent straight plastic with grid in inches and fraction of inches (or millimeters) ruler. Used to mark straight lines to measure.
French Curve		A curved ruler to draw curved lines of armholes and necklines in womens wear.
Leg Curve		A curved ruler to draw curved lines for menswear.
Scissors		A cutting instrument, ranging in size from 8" to 12", with two sharply pointed straight blades. Used to cut paper patterns and fabric

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”
Flexible Ruler		A flexible ruler to measure armholes and necklines.
Knotcher		Cuts a narrow U shape on pattern used to indicate seam allowance, center lines, ease and dart intake.
Measuring Tape		Metal tipped narrow, firmly woven double tape of cloth or plastic usually 60" long (150cm) marked with both inches and centimeters.
Cutter		A sharp cutting tool for cutting straight lines
Board Pins		Drum shaped 1/2" long p" Used for pivoting and transferring points. Used to hold pattern pieces and fabric on table.
Cello Tape		Transparent tape for holding patterns and extending paper length and width



3.2 Other Pattern Aids

All pins: fine, long, rust proof pins. They are used for attaching muslin pieces together for draping and test fit muslin.

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. It is used to experiment and develop design concepts.

12" / 24" scale: Long ruler 12" / 24" metal or plastic.

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

L-square: Plastic or metal ruler with two rulers at right angles of different lengths usually 12" and 24". It is used to draw perpendicular and parallel lines and mark reference points.

Dress form: A standardized duplication of a human form, cotton padded and canvas covered, set on a movable, light adjustable stand and compressible shoulders and sloper. It is used to take measurements, develop patterns, 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.

Magnet: Used to pick up pins and needles.

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

3.3 Terminology

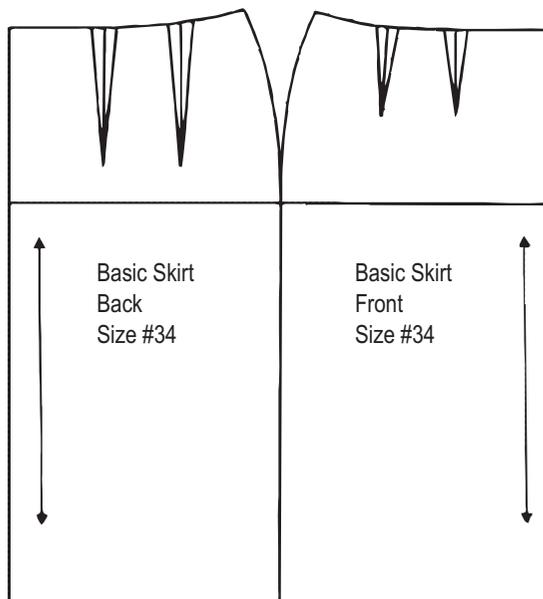
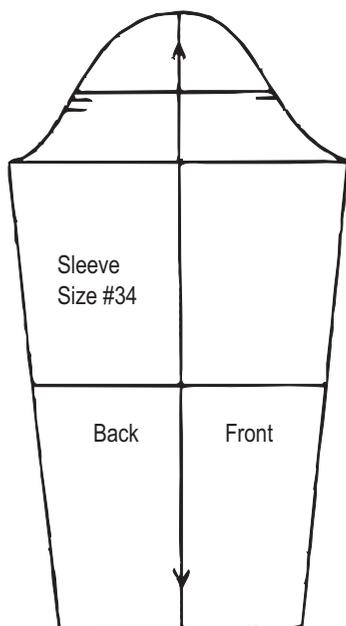
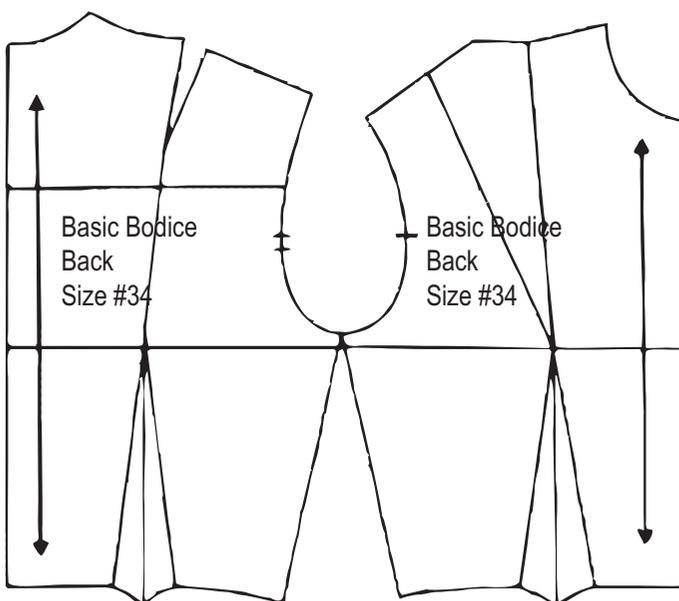
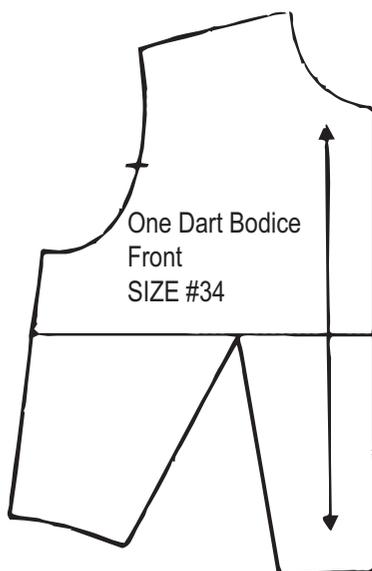
Block/sloper: Sloper is a term given to a very basic set of pattern piece used to make patterns of any style. This is a term for a paper cutting of basic bodice, skirt, sleeve or any such basic pattern from which all the other designs are developed. Block normally represents the dimensions of a specific form or figure. It has darts to fit to the contours of the body but no other design features. It is a foundation that is used to make the pattern for a design and has no seam allowances.

It is important that the correct block is chosen for the design; this not only saves time during adaptation but can affect the final shape. The basic blocks can be drafted to fit individual figures by using personal measurements instead of the standard measurements listed in the size chart.

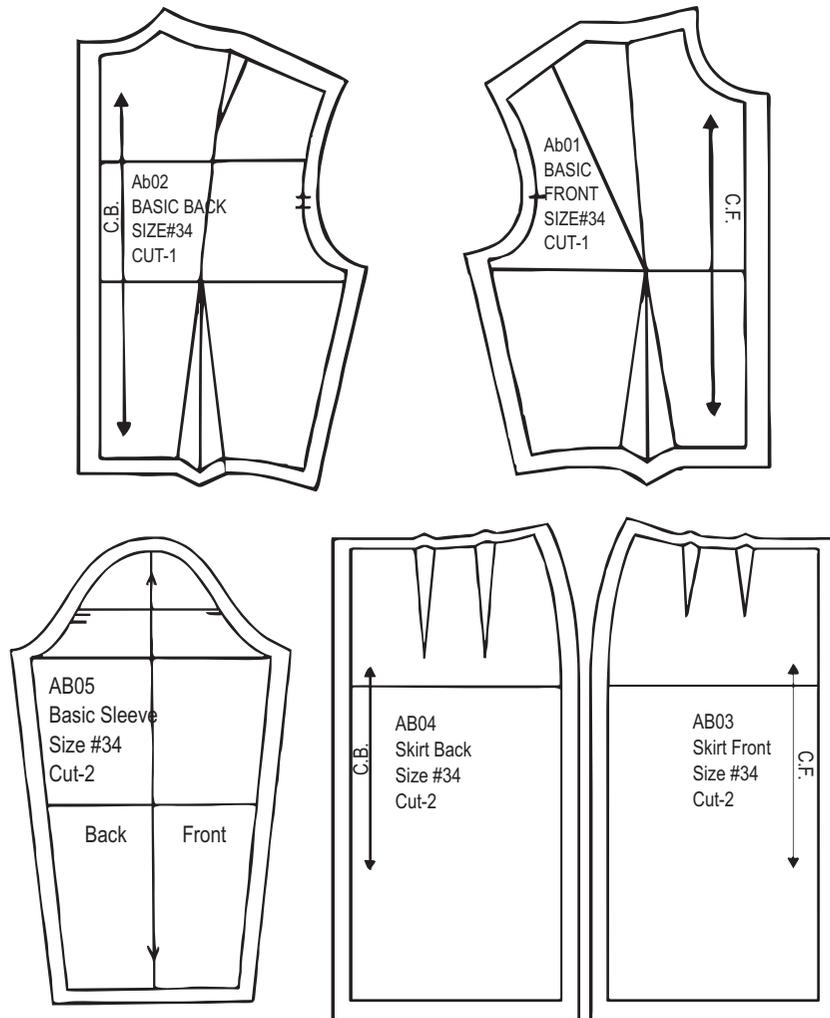


The block should carry the following information:-

- ◆ 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.



Things to be included on a pattern are:-

- ◆ Grain line
- ◆ Centre Front or Centre Back
- ◆ Style number or code number of the pattern set may be evolved e.g. **AB 01** here AB identify type of the garment and 01 identify the piece number of complete set. If there are 5 pattern pieces in a garment, the pieces will be numbered as AB 01, AB 02, AB 03, AB 04 and AB 05.
- ◆ Pattern piece e.g. skirt front, skirt back, side front etc.
- ◆ Size as 32, 34, 36, or S, M, L etc.
- ◆ Cutting information - It should be clearly mentioned as to how many pieces are to be cut e.g. Cut 1, Cut 2, Cut on fold.

- ◆ Notches - Marks that are needed to help assemble garment sections correctly.
- ◆ Directional Fabrics - For fabrics which have designs in one direction such as floral print, stripes, plaid, velvet, fur etc. A symbol "cut one way" or (?) is indicated on the pattern.
- ◆ Date - Indicated as a reference point.
- ◆ Seam Allowances.

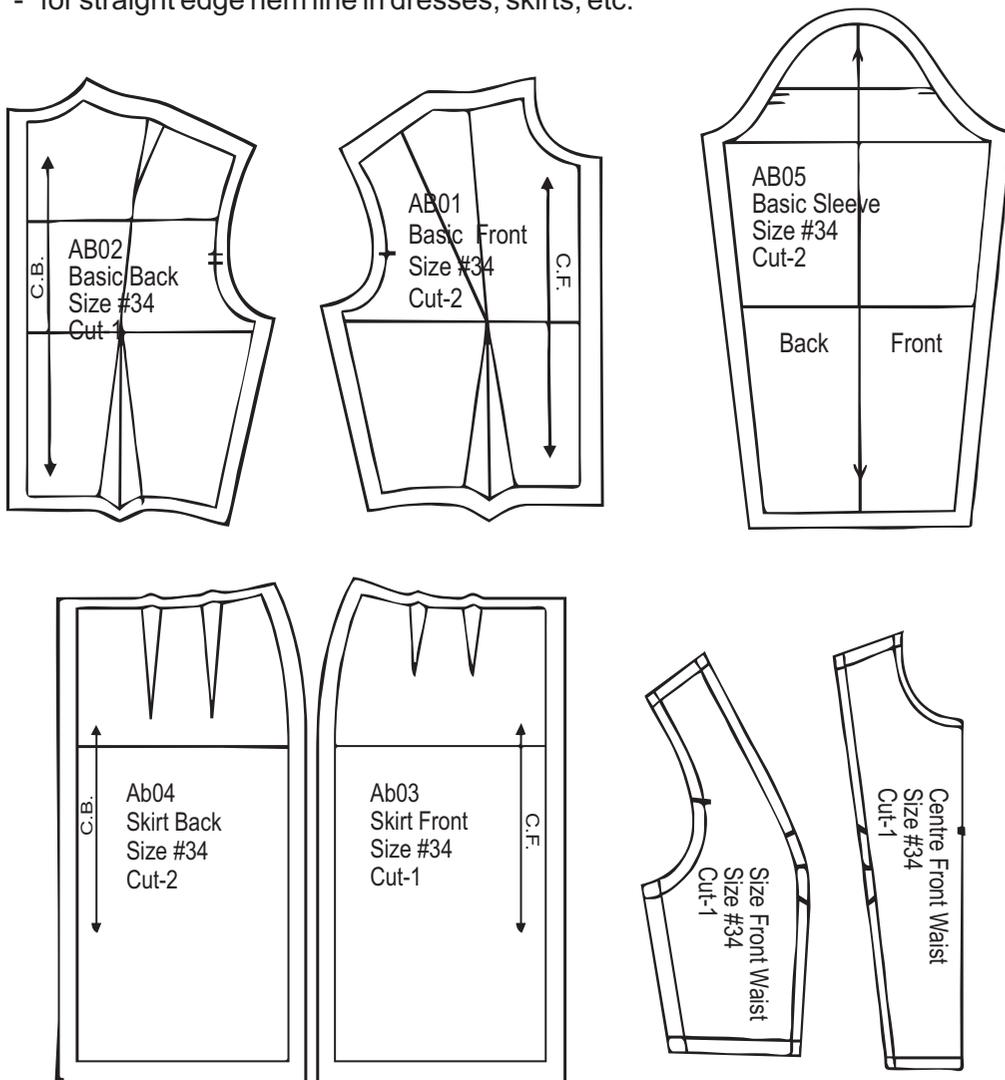
Seam Allowances: The amount of seam allowance required for each seam line may vary depending on the location and end purpose. Generally the seam allowances as followed in the industry are -

¼" - for sharp curves

½" - for smoother curves like neckline, armhole, waistline, style line, etc.

1" - for straight seam line like side seam, centre line, shoulder, plackets, etc.

2" - for straight edge hem line in dresses, skirts, etc.



Muslin: 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. The pattern pieces will always be placed parallel to the selvedge on the fabric in the direction in which the grain line is drawn on the pattern.

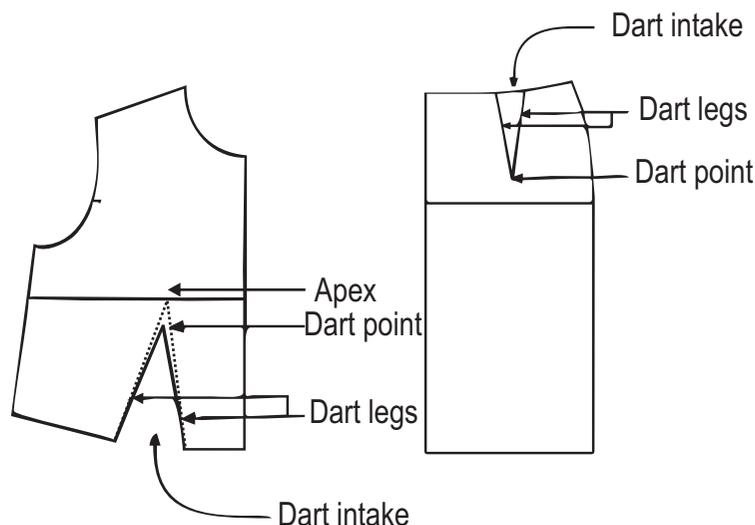
Balance Refers to hang and proportion of the garment. Fashion does determine balance to a certain extent, for example is it appropriate to wear long tops over short skirts. Where the flat pattern cutting is concerned it is often difficult to judge correct balance until the garment is test-fitted in fabric.

Balance Marks: Marks made on edges of complimentary pattern pieces that indicate corresponding seam line and area. They are a useful construction guide on all seams. However, balance marks are vital in a pattern if two pieces have different edge or shape that are required to be joined or where one seam line is longer or fuller than another. While doing pattern cutting make short pencil marks at the edge of the paper, copying them through all stages till the final pattern. On readymade paper patterns balance marks are indicated by triangles and are referred to as notches

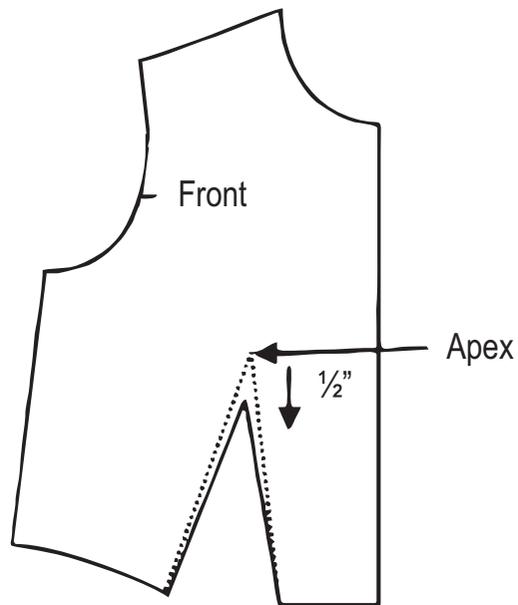
Dart: Wedge shape or triangular shape marked on the pattern that controls the fit of the garment.

- 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 - The amount of suppression taken between the dart legs.
- Apex - The highest point on the bust.

Darts radiate from the highest point of a mount/ rise 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.



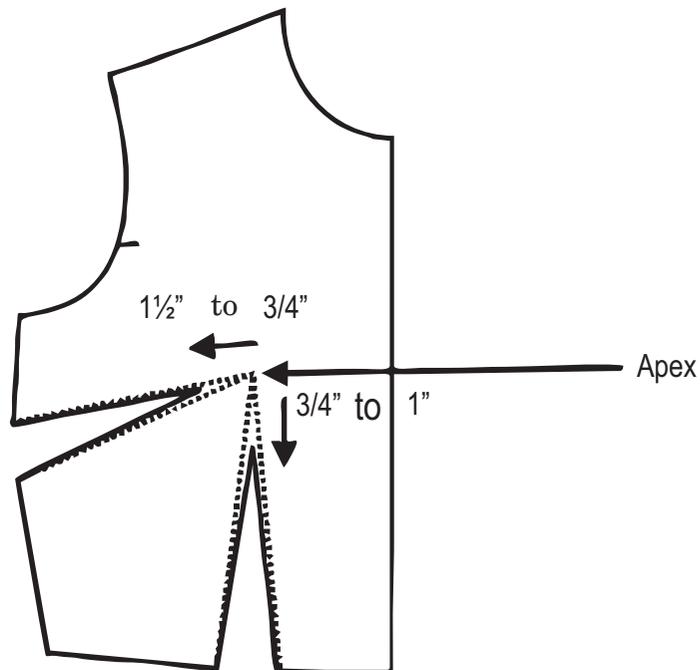
Single Dart Pattern: A single dart is used for entire suppression/control required. Dart ends $\frac{1}{2}$ " away from the bust point.



Two Dart Pattern: a pattern with two darts either in a skirt or bodice.

Waist dart is $\frac{3}{4}$ " to 1" away from the bust point.

Other dart is $\frac{3}{4}$ " to 1 $\frac{1}{2}$ " away from the bust point.



3.4 Symbols and abbreviations

Centre Front	-	CF
Centre Back	-	CB
Grain line	-	↑↔
Notches	-	τΠ<Ц
Buttons	-	⊙
Button hole	-	┌┐
Front	-	F
Back	-	B
Waist line	-	WI
Arm hole	-	Ah
Side Seam	-	SS
Neck line	-	NI
Shoulder	-	Sh
Grain line on fold	-	↔
Pleat (arrows indicates direction of fold)	-	↔
Two way grainline	-	↑
One way grainline	-	↓↑

Summary

The chapter covers the following topics:

1. The tools and equipment used for pattern making
2. The terminology used in pattern making

Exercise

1. Go to the library and check books on pattern making and see the different kinds of pattern making tools you can identify. Try to find the tools on internet also. In your scrap book please give uses of various tools.
2. Fill in the blanks
 - a. Grading ruler is used for drawing _____ & _____ in making a pattern.



- b. _____ curve is used for drawing the _____ seam in a pattern.
- c. _____ is used for marking a seam line on a pattern.
- d. The pattern is made on _____ paper and test fitted on _____.
- e. _____ is used for marking notches on _____.
- f. The dart is a _____ wedge that gives _____ to the flat piece of _____.
- g. Waist dart is _____ inch away from the bust and side seam dart is _____ away.
- h. Balance refers to _____ and _____ in a garment.
- i. Muslin is used for _____ a pattern and it is also called a _____.
- j. Pattern is placed _____ on the _____ of the fabric.
- k. _____ is a term given to _____ set of pattern piece used to make patterns of _____ style.



Chapter - 4: Garment Details

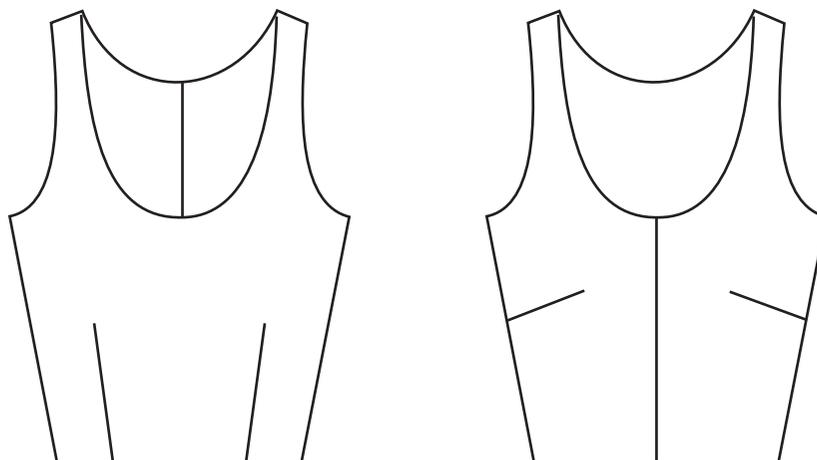
4.1 Types of Darts, Pleats, Gathers and Tucks

4.1.1 Darts

Dart is flexible and creative part of the pattern. The space between the dart legs can be used in a variety of creative ways and its use is limited only by the imagination of the designer. Darts are named after the line on which they originate.

Types of darts in the garment:

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



Types of Darts

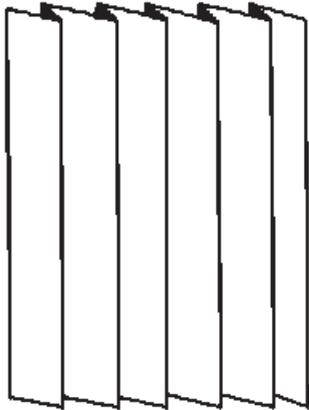
4.1.2. Pleats

A pleat is an unstitched, folded dart held securely along the 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.

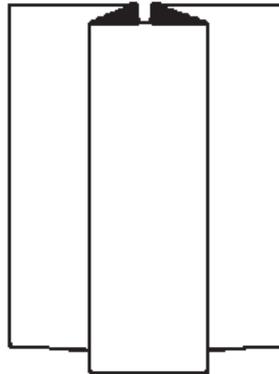
Types of pleats:

- ◆ 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.

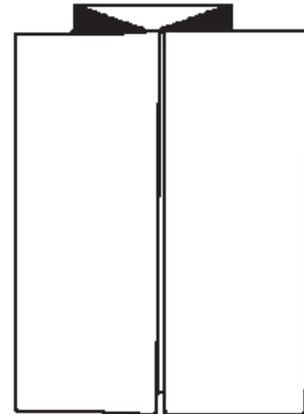
- ◆ Inverted pleats: Pleats are folded to meet each other on the right side of the garment.
- ◆ Accordion pleats: Pleats have folds resembling the bellows of an accordion. The pleats are close together and depth is equal from waist to hemline.
- ◆ Sunburst pleats: Pleats fan out and graduate from the waist. They are generally used on circular skirts.



Side pleats



Box pleats



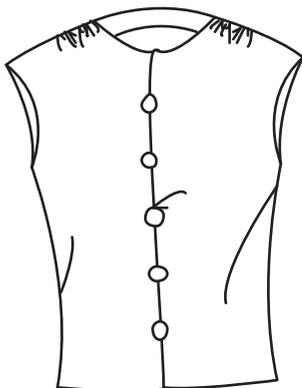
Inverted pleats

4.1.3 Gathers

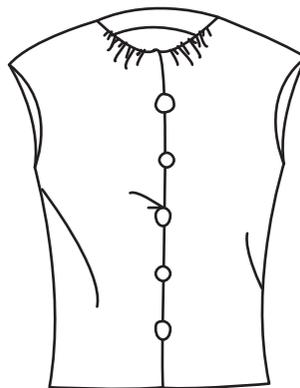
Gathers change the look of the basic garment, but do not affect the fit.

Types of gathers:

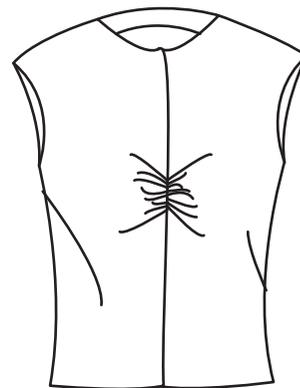
- ◆ Gathers at shoulder
- ◆ Gathers at centre front
- ◆ Gathers at waist
- ◆ Gathers at neckline



Gathers at Shoulder



Gathers at Necklace



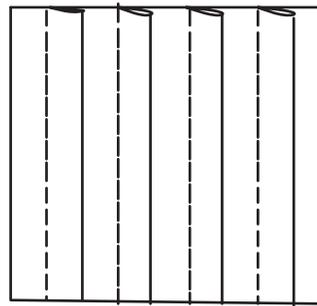
Gathers at centre front

4.1.4 Tucks

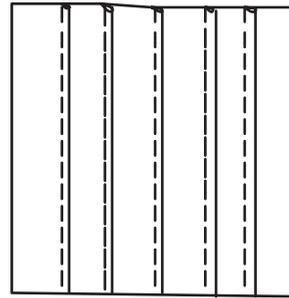
A tuck is a stitched fold on the right side of the fabric resembling a pleat. Tucks are used as design details and can be placed on any garment (top, skirt, dress, sleeve, pants etc.). Tucks can be placed in any direction (vertical, horizontal and diagonal) and may be of any width. They can be spaced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

Types of tucks:

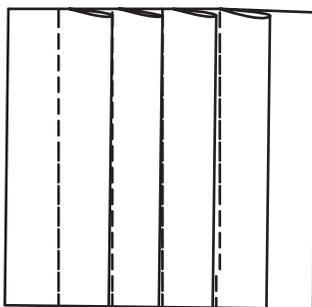
- ◆ Pin tucks
- ◆ Shell tucks
- ◆ Release tucks
- ◆ Cross tucks
- ◆ Space tucks



Spaced tucks



Pin tucks



Blind tucks



INVERTED PLEATS



ACCORDION PLEATS

SUNBURST PLEATS



4.2 Types of Collars, Necklines & Edge Finishes

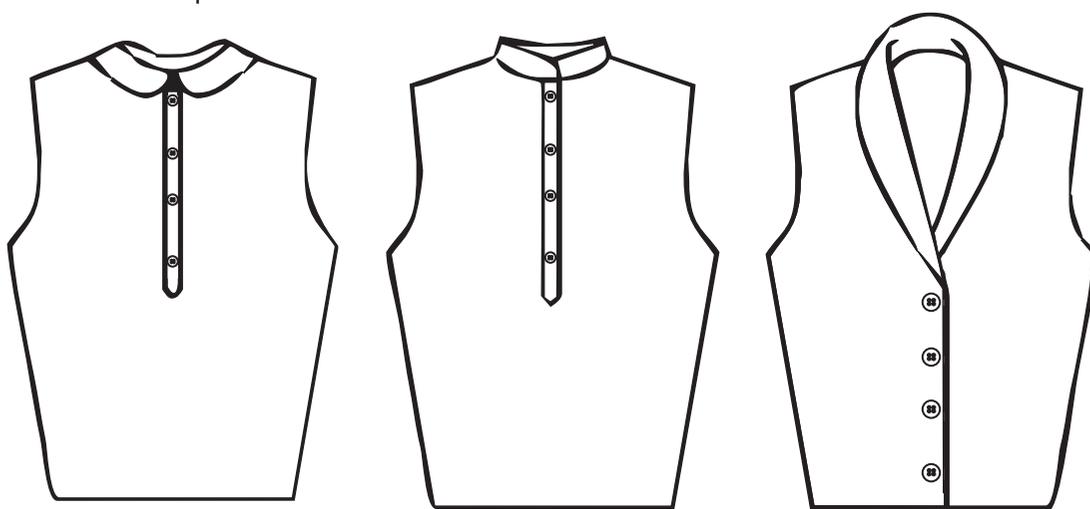
4.2.1 Collars

A collar is part of 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).

Types of collars:

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



Peter-pan Collar

Chinese Collar

Shawl Collar

4.2.2 Facings

A facing is a finishing to an edge in a garment with a separate piece of fabric stitched to the edge and is folded over to conceal the raw edge. 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:

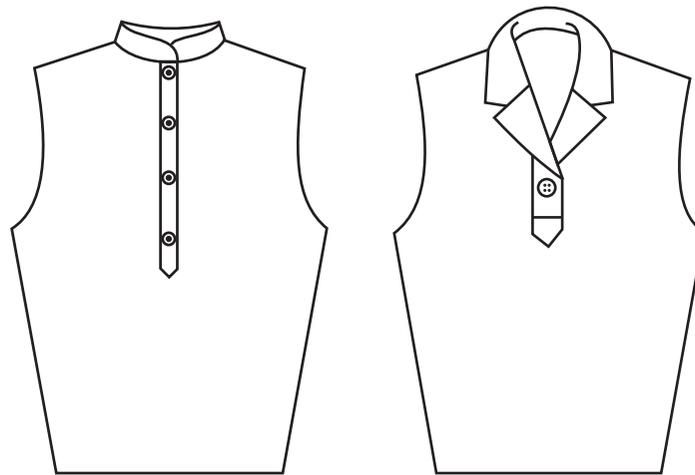
- ◆ Separate facings: Individual facings for armhole and/or neck.
 - ◆ V neck facing
 - ◆ Square neckline facing
 - ◆ Scoop neckline facing
- ◆ Combination facing: All-in-one armhole and neck facing.

4.3 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

4.4 Sleeves

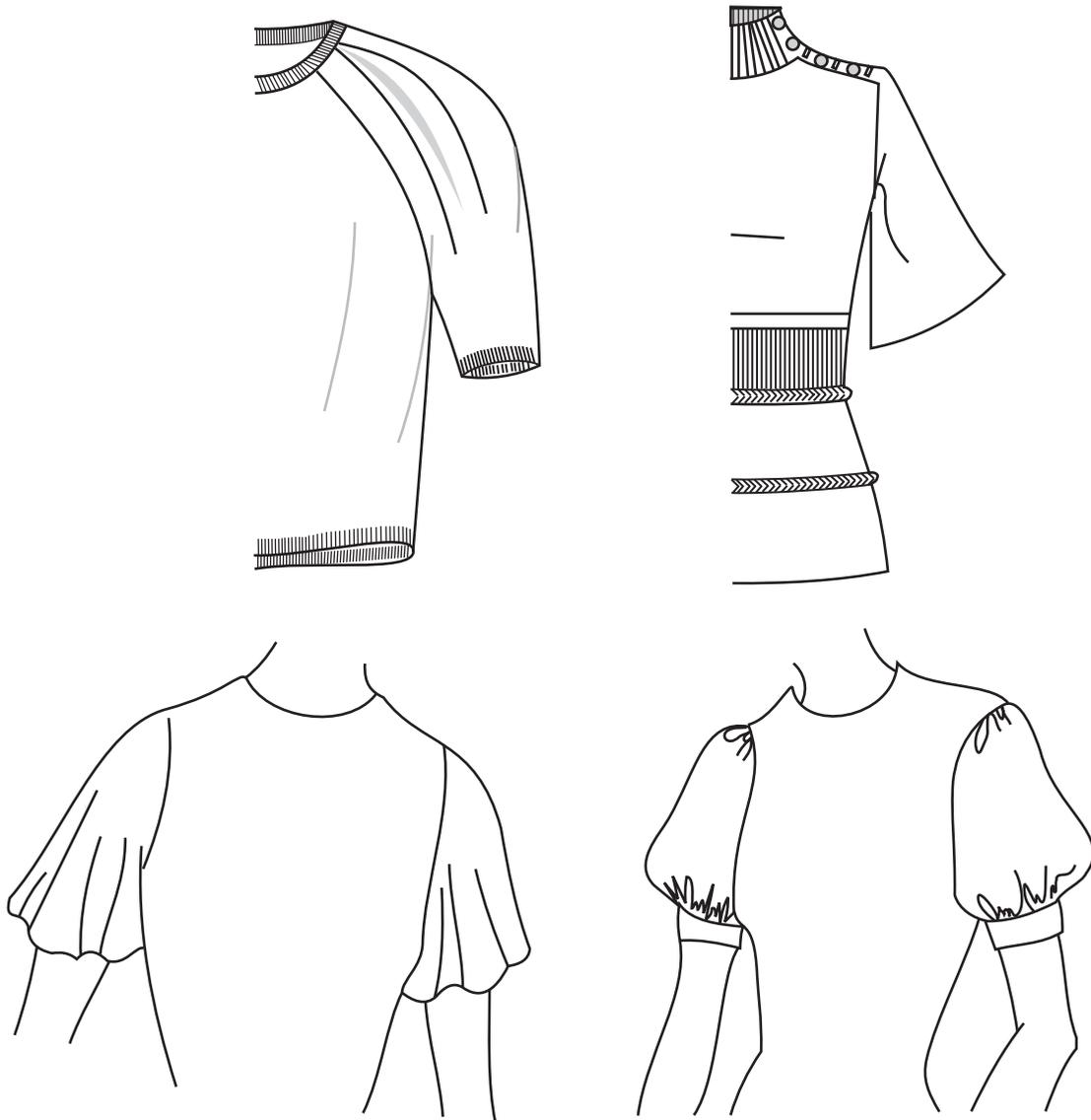
Sleeves can be used for changing the silhouette of a garment. Sleeve silhouettes keep changing and evolving over a period of time. There are two major classifications of sleeves:

- ◆ Set-in sleeve where sleeve is cut separately and stitched into the armhole of the bodice
- ◆ Raglan Sleeve where sleeve is part of 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 expanding the bicep 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.



Summary

The chapter covers the following topics:

1. Identification of pattern details, seam lines and marking of seam allowances
2. Garment details like gathers, darts, pleats, tucks, pockets, plackets, collars, necklines and neckline finishes.

Exercise

1. Collect pictures of as many garment details as you can and label them. Distinguish between the ones that add fullness in the garment and those which add third dimension.
2. Fill in the blanks
 - a. _____ sleeve juts away from the _____ and can be shaped in a variety of ways.
 - b. The _____ sleeve includes part of the _____ and armhole.
 - c. There are _____ kinds of sleeves _____ sleeve and _____ sleeve.
 - d. A _____ is part of garment _____ the neck and frames the _____.
 - e. Three basic collars are _____, _____ & _____ collars.
 - f. Facing is of _____ types and generally width of facing is _____ inches.
 - g. Plackets are finished _____ or _____ openings on garments.
 - h. Plackets can be of any _____ & _____, the measurement can _____ to create different effects.
 - i. A tuck is a _____ fold resembles a _____ can be used as _____ detail and can be _____ on any garment.
 - j. Gathers change the _____ of the basic garment, but _____ affect the _____.
 - k. _____ pleats fan out and _____ from the waist.
 - l. _____ pleats _____ in one direction only.
 - m. A pleat is an _____, _____ dart held securely along the joining seam line. It is a _____ in the fabric that releases _____.



Chapter - 5: Pattern Making of Indian Garments

5.1 Indian Garments

Traditionally Indian women wear saree, salwar kameez, kalidar kurta suits or lehnga choli. Even in large metropolitan cities, majority of women prefer traditional Indian garments for special occasions like festivals or weddings. However, a substantial number wear it on daily basis both as working attire as well as for daily use in all the cities. Women from smaller towns and rural India wear for all purposes. Indian designers who are designing womens wear always have a range of traditional line even if they are primarily doing western garments, lingerie or resort wear.

Due to abundance of labor in India coupled with tradition of draped garments from saree to dhotis, the skill of pattern making in India did not develop in the same manner and

speed as per global benchmarks. Indian pattern makers have mastered the art of direct drafting. Traditionally Indian garments are cut by direct drafting method, be it saree blouse, choli blouse, kameez, kalidar kurta, salwar or churidar payjama.

In direct drafting method pattern is cut for individual persons measurements. In block method patterns are made as per standard measurements for example for bust size 34 or 36 following a standard measurement chart and are then adapted to make various designs. While in direct drafting method an individual is measured and a pattern for a particular design is drafted for the individual's measurement. Most of the time, it is drafted by expert tailors directly on the final fabric itself, this can be often seen in tailor shops across India.



There are advantages and disadvantages of both methods the block method is a boon for ready to wear (RTW) markets big brands range of RTW apparel is only possible through block method. Globally fashion industry follows block method to create patterns as it is easy to cut patterns for standard sizes through block method , it saves time as one does not need to test-fit again, it saves money and is easy to store patterns in standard blocks. Grading to several sizes in the range is possible even for most complicated patterns. However, fit of the garment is a big issue as standard measurement charts divides the entire population of a country in five to seven sizes it is a known fact that no two human beings are alike in structure. Direct drafting ensures that the garment would conform to an individual measurement and give proper fit it ensures, that most complicated designs also do not require a test-fit. Garment can be designed keeping the shape of the person in mind lot of detailing in garment and individual styling is possible in this method. Both the methods are opposite to each other, advantages of one are the drawback of the other method.

Interesting fact about salwar, churidar pajama and kalidar kurta is that the method of cutting the pattern is identical for both genders only change being that the required measurement of an individual. These three garments are worn by both men and women even today, though today salwar is worn by men only in certain communities.

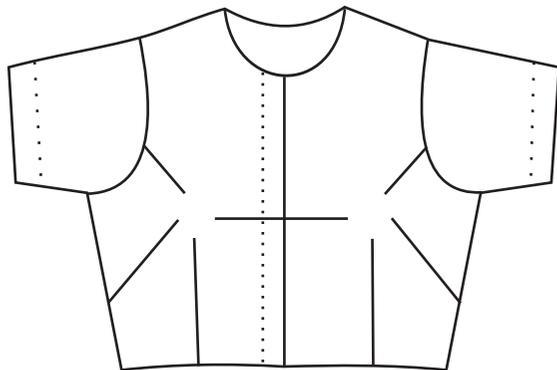


5.2 Various Kinds of Saree Blouse

The upper garment worn with a saree is called a saree blouse it has unique feature like it fits the body like a second skin. It is widely used by women from all walks of life it can be a basic one as being of the same color as the saree. It can be of different color, contrast color and is even used to make a statement.

5.2.1 Detailing of Blouse

The fabric generally used for saree blouse is 2X2 rubia, it has some inherent stretch in the fabric, If the blouse is being cut on silk with lining or in thick cotton fabrics, sufficient ease needs to be added on bust and waist level. There are various necklines that are possible in the saree blouse. The saree blouse has a placket opening that is in either front or back of the blouse. For the ladies garments the right overlap the left for the opening. The placket in the left front of the wearer is extended by $\frac{3}{4}$ " and right front is completely folded inside.



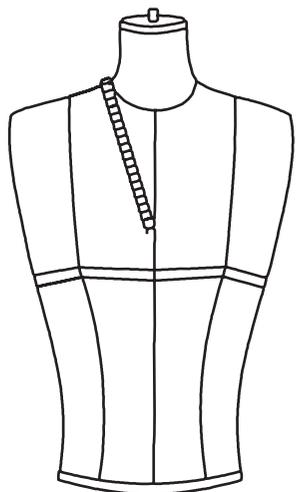
Outfit by Ritu Beri

5.3 Necklines & Its Variations

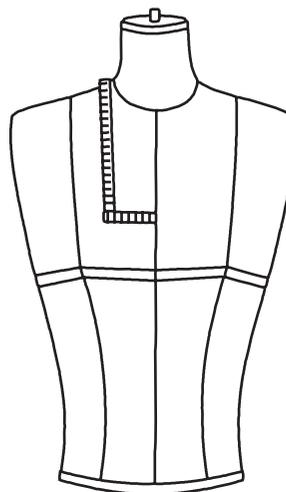
There are number of variation in necklines that are possible to make once the basic block has been drafted.

The **measurement** required for any neckline is the depth of the neck measured from the nape of the neck point to the center front diagonally. (Neckline measurement A)

In case of necklines like square, glass neck, sweet heart measure in a straight line on the body for the length and for the width of the neckline at that point to the center front is also measured. (Neckline measurement B)



Neckline measurement A



Neckline measurement B

5.3.1 Points to be kept in mind for developing Necklines

1. If a neckline is made wider in the front, the same needs to be done for the back.
2. Try avoiding deeper neckline for both front and back at the same time. In case one decide to keep the neckline deeper in both front and back then an ease of about $\frac{1}{2}$ " needs to be taken out on the centre front neck.
3. The measurement which is taken diagonally should be marked diagonally on the pattern and a measurement taken straight should be marked straight.
4. For curved neckline, always square out $\frac{1}{4}$ " either side at center back and center front and on shoulder level.

5.4 Various Possibilities in Necklines



V-Neck



Broad V



Round



U



Square



Glass



Sweet Heart



Sweet Heart Variation



5.5 Finishing of Necklines

The necklines in a garment can be finished with a collar or a separate finishing like facing or piping, since the neckline is cut as a shape it has a substantial amount of stretch so it needs to be secured properly. The neckline also frames the face of the wearer hence it draws maximum attention. Both kinds of facings that are cut on bias or a shaped facing are prevalent in all kinds of clothing around the world, however, piping is generally only used in Indian garments specially the sari blouses.

Piping is a bias strip of fabric 1¼" wide and is attached to the neckline on the seam line after stretching. The piping is finished either by hemming or machine stitch. It is finished to about 1/8" - 1/4" wide ready on the right side of the garment. It is a popular finish for blouses and other Indian garments.

Facings are of two kinds - bias facing and shaped facing.

Bias facing is a similar strip of fabric like piping but is attached to the neckline without stretching. The same is finished completely on the wrong side.

Shaped facing: A shaped facing is cut following the shape of the neckline and is attached on the right side and then is completely turned in. The width of this facing varies for each design but is generally 1½" wide.

Summary

This part of the chapter covers the following topics:

1. The overview of Indian Garments.
2. Saree blouse and the stitching procedures to finish it.
3. Pattern of a sleeve of a saree blouse.
4. Sleeveless saree blouse pattern
5. Various kinds of neckline designs and patterns for them
6. Neckline finishing with facing and piping.

Exercise

1. Collect pictures of various traditional Indian garments and maintain this information in your scrap book. Can you identify the state or region they may originally belong to?
2. Collect pictures of various Indian Garments designed by today's designers and label these various outfits and designers. Is information in your scrap book. Can you make pattern for these designs.
3. Collect pictures of various necklines and maintain this information in your scrap book. Try making patterns of these necklines.

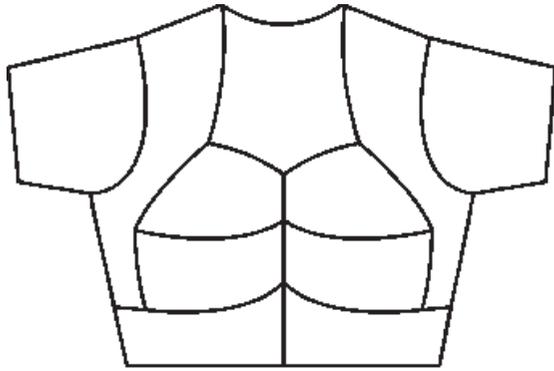
4. Fill in the blanks

- a. Traditionally Indian women wear _____, _____, _____ suits.
- b. Indian pattern makers have _____ the art of _____ drafting.
- c. In direct drafting method pattern is cut for _____ measurements while in block method patterns are made for _____ measurements.
- d. In India pattern is _____ by tailors _____ on the final _____.
- e. In direct drafting garment can be designed keeping the _____ of the person in _____ a lot of _____ in a garment and individual _____ is possible.
- f. The method of _____ pattern of _____, churidar pajama and _____ is _____ for _____ genders.
- g. _____ Blouse fits the body like a _____.
- h. The armhole dart is at least _____ from apex.
- i. The _____ height of saree blouse sleeve is kept _____ so as to provide maximum _____ in the sleeve to allow for _____ movement.
- j. In a sleeveless blouse go _____ on the _____ level.
- k. To ensure that the neckline doesn't end in a point go out _____ on _____ of the bodice.
- l. While making a neckline deeper in front it is _____ not to make the neckline _____ and _____ at back.
- m. A _____ neckline is drawn using a French curve.
- n. The _____ facing is cut keeping the pattern of the _____ of the desired piece.
- o. The measurement required for any neckline is the depth of the neck measured from the _____ of the _____ point to the center front of the _____.

5.6 Choli Blouse

Choli blouse is an outerwear garment which fits the body like second skin and provides the support of foundation garment. Traditionally women did not wear any lingerie with a choli blouse yet felt comfortable wearing the same. In the traditional pattern the choli or cup cut on bias that would stretch to fit on various bust sizes) and gathered on the center front to give ease over bust. It has an under bust band cut on lengthwise grain to give support (which doesn't stretch).

Modern version of a choli blouse has a choli piece and a waistband, but it does not provide the requisite support so use of lingerie is not eliminated. The choli blouse fits closer than the traditional saree blouse. Women with a smaller bust highlight the across bust seam with contrast piping and sometimes the two parts of the cup piece is made up of different fabrics.



5.7 Salwar Kameez

The salwar kameez suit traditionally used in north India predominantly in Punjab is the result of Mughal influence. The suit initially was referred to as Punjabi by people in some southern states of India and is now an accepted dress pan India cutting across religious, state and income boundaries so much so, that it is readily available in ready to wear avatar in several price ranges in a number of brands with innumerable design variations. Each state and region has its own variation and a take on this outfit.

5.7.1 Salwar

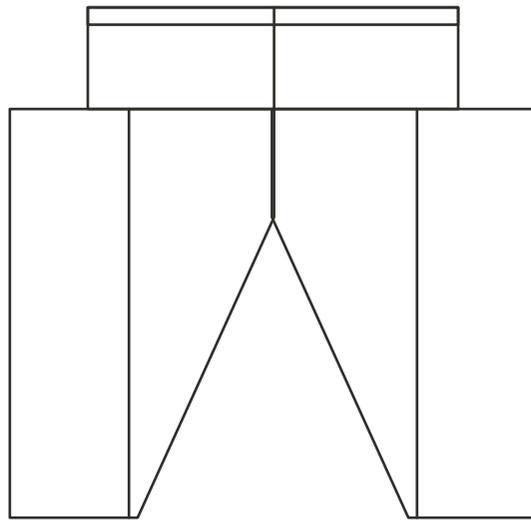
Salwar lower part of the set is worn by both men and women in North India, however, its use by men in modern India is limited to certain communities. Women use it on daily basis as it is one of the most comfortable of lower body garments which has sufficient ease for manual work, sit or squat on floor and even to sleep in it.

The hem of the salwar is stiffened to enable the garment to fall and drape well. The traditional salwar had full waist which was generally cut one and half times of hip measurement or even could be cut of free size, ensured that one size fitted majority of women and covered for body changes due to weight gain or loss. It was tied with a draw string, it required an expertise of handling a large amount of fabric and modern day version is a salwar with a belt, which is cut in proportion to an individual's hip measurement.

Salwais made up of basic geometric shapes to create a garment that has no wastage using the width of fabrics. Also by placing the patterns intelligently and using various widths of the fabric variations in designs of the salwar are possible, e.g. a design variation of Patiala salwar uses the larger width fabric, the side panel or kali is cut on fabric i.e.45" in width, a Peshawari salwar is cut with double the width of Patiala salwar.

By traditional method the fabric required for a salwar is 2.5 meters.



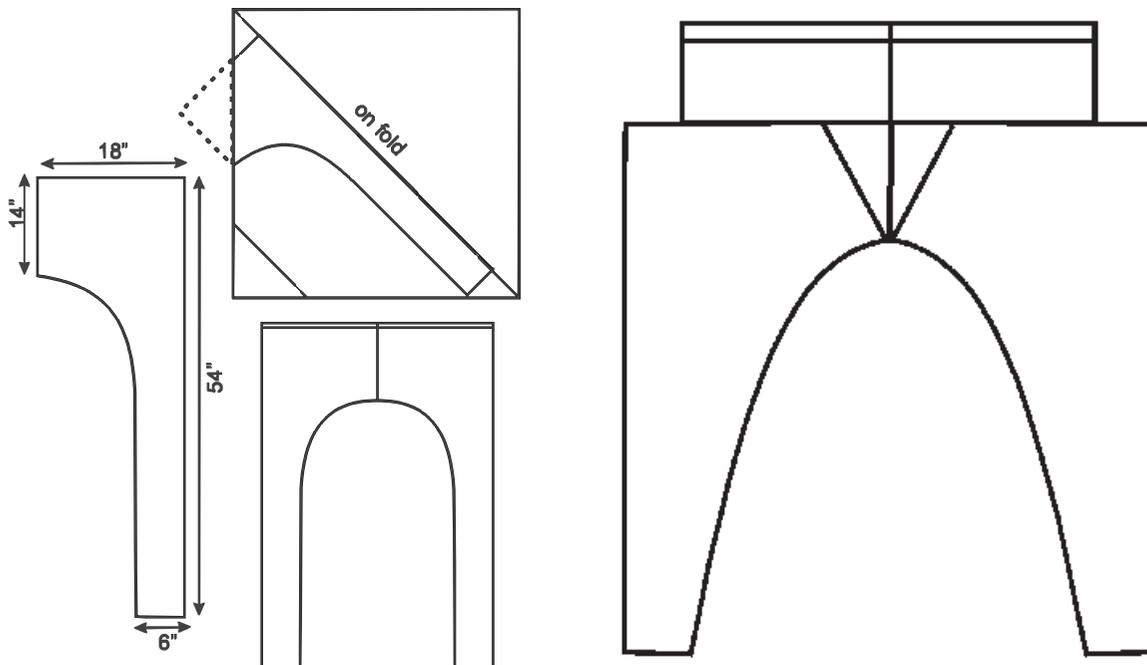


Salwar

5.7.2 Churidar Payjama

Churidar payjama traditionally was cut in a very interesting manner, the fabric was folded and stitched to create a bag where the entire fabric was on a bias grain thus making the churidar to be very close fitted and yet give ease of movement to the wearer. This method required a much smaller length of fabric for an adult woman of average height of 5 and half feet, fabric required of usual width of 36" was only 1.75 meters.

The modern version of pajama is cut by folding the two lengths of fabric into half lengthwise and then folding it diagonally.

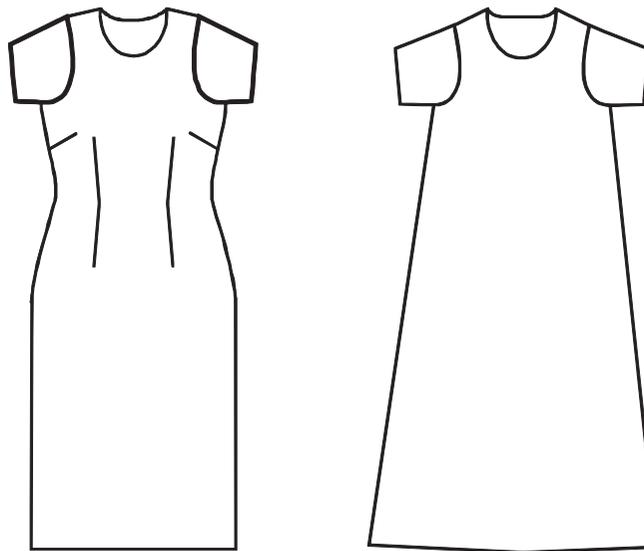


5.8 Upper Body Garments

5.8.1 Kameez

The top half of the suit is called a kameez, it is a long top worn over the salwar. The traditional kameez is a longer version of the saree blouse. However, with influence of global fashion trends and needs of modern women the kameez has changed several silhouettes from being closely fitted short length in 60's to long loose tent silhouette of 90's to an individualistic length of the 21st century. It changes its looks keeping with the global trends it has also appeared on the international ramps regularly for last couple of years since the beginning of this century in various avatars.

The trends have changed its silhouette to suit the needs of modern Indian women from traditionally being worn with salwar or churidar its modern versions are teamed with slacks, trousers, leggings and jeans.



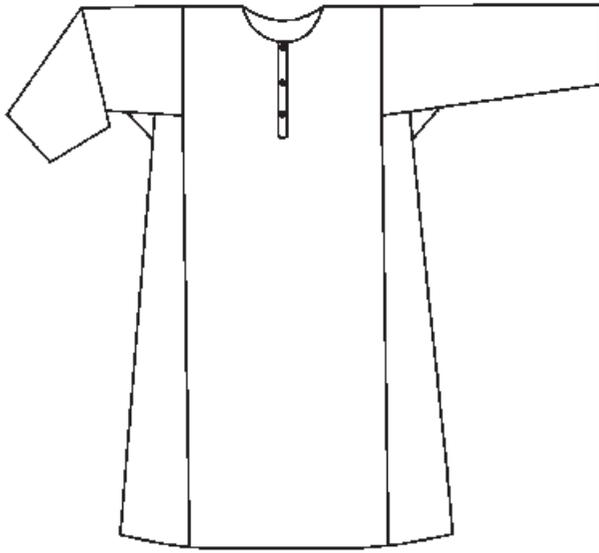
Traditional kameez

A-line Kameez

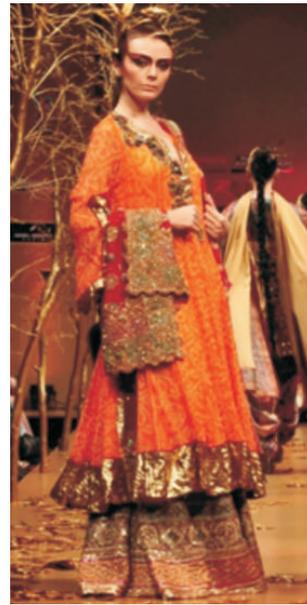
5.8.2 Kalidar Kurta

Kalidar Kurta a comfortable garment and has an interesting pattern. The pattern is made up of geometric shapes. The only measurements required are chest/ bust, length of kurta and sleeve length. Traditional kurta was cut with the center panel on fold. The kalis or side panels of kurta are cut in a similar manner as side panels of salwar. The sleeve has a straight armhole and traditionally a square gusset is attached between sleeve and kali for ease of movement.

Variations in designs of Kalidar kurta are Bhopali kurta, Jama, Angarkha which are gaining international popularity these days and all of them are cut on basic principles of kalidar kurta, if the pattern cutter understands the nuances of kalidar pattern then variations are easy to cut.



Kalidar Kurta



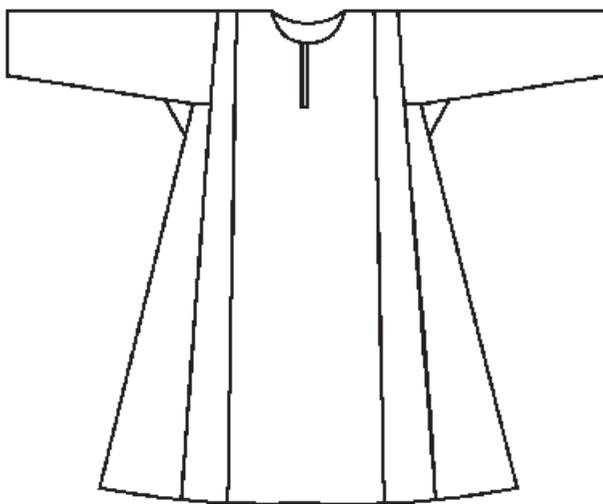
Variation of Kalidar Kurta by Ritu Beri

Two Kali Kurta

Another popular variation of the kalidar kurta is a two kali kurta where one of the kali or panel starts from the shoulder itself

Variation of Kalidar Kurta by RituBeri

The kurta has several kalis starting from the waist level.



Various kinds of Kurta



Summary

The chapter covers the following topics:

1. The traditional Indian garments for women's wear.
2. The different kinds of sari blouses.
3. Different kind of bifurcated Indian garments salwar and churidar payjama.
4. Different kinds of upper body garments kameez and kurtas.

Exercise

1. Collect pictures of various traditional Indian garments and maintain this information in your scrap book. Can you identify the period they originally belong to.

2. Collect pictures of various Indian Garments designed by today's designers and label these various outfits and designers. Is information in your scrap book. Can you make pattern for these designs.
3. Fill in the blanks
 - a. _____ blouse provides the support of a _____ garment and fits _____ than a regular sari blouse.
 - b. In the traditional pattern the choli or _____ cut on _____ would _____ on _____ bust sizes.
 - c. Salwar a lower _____ is worn by both _____ and _____, however, its use by _____ in modern India is limited to certain communities.
 - d. The salwar kameez suit traditionally used in _____ India predominantly in Punjab is the result of _____ influence.
 - e. The _____ of the salwar is stiffened to enable the garment to _____ and _____ well.
 - f. _____ is made up of basic _____ shapes to create a garment that has no _____ using the _____ of fabric.
 - g. The traditional kameez is a longer version of the _____.
 - h. The Kurta pattern is made up of _____ shapes, only measurements required are _____, required _____ of kurta and _____ length.
 - i. Traditional kurta was cut with the _____ panel on fold, _____ of kurta are cut in a similar manner as side panels of _____.
 - j. Variations in designs of Kalidar kurta are _____ kurta, _____, _____ which are gaining _____ popularity these days.
 - k. The _____ of the Kurta is cut as a square measuring _____ of _____ plus one inch.
 - l. _____ was traditionally cut in a very interesting manner; the fabric was _____ and stitched to create a _____ where the entire fabric was on a _____ grain.
 - m. The modern version of pajama is cut by folding the _____ lengths of fabric into half _____ and then folding it _____.
 - n. Fabric required for a churidar in traditional cutting method was only _____ meters and by modern method is _____ meters.
 - o. The belt in a salwar or churidar measures _____ hip plus _____ ease.



Chapter - 6: Pattern Development from Drape and Measurements

6.1 Pattern Development from Drape and Measurements

Pattern is a wrapping of the body in fabric in different interesting and innovative designs. It is the blue print or map of the garment. Pattern making is a subject that opens several doors/ vistas for creating infinite number styles by designers. Mastering the art of pattern making gives a designer an opportunity to be a leader in his field. Knowledge of pattern making distinguishes an amateur from master of the field. The understanding of pattern making is fundamental to the work of designer in fashion industry. Pattern making is an activity by which design is transformed from a drawing stage to an actual physical piece. A pattern maker interprets the designers sketch by drafting it through pattern pieces.

Several systems of pattern constructions were devised in the early days of tailoring long before readymade garment industry came in to existence. The patterns served the needs of a busy tailor who generally required a guide for drafting garments directly on to the cloth. As each garment was cut individually to varying measurements, pattern drafting had to be simple and fast operation; since speed was an important element systems were devised to include necessary seam allowances. Now days the system which is used for pattern development is called block method where seam allowances are applied at the time of cutting the final pattern.

Due to unreliability of cutting systems, many pattern designers started draping their patterns on a dress form. A skillful designer can achieve good results but this method is inefficient and time consuming for the ready to wear market. The modern methods base their foundations on principles of draping in the two-dimension form balance. Balance is the underlying objective while manipulating pattern balance is a vertical relationship between the front and back. If the balance of a pattern is faulty it means that accuracy of all vertical measurements is lost.

6.2 Pattern Development

Pattern development is the process of transforming a design into its required flat pattern pieces and then drafting them out, the job of a pattern maker is to interpret the designer's into sample pattern pieces and then drafting them. Pattern making covers principles of constructions and techniques in a wider sense rather than style details in a narrow sense. It opens scope for infinite variety of styles both for regular designs and impulsive patterns. Pattern making can be divided in two parts namely measuring correctly & knowledge of technique devised to include necessary seam allowances. Measuring the human body is the precursor to developing garments to fit the body. Measuring scales range from simple measuring tape to complex body scanners and low to high tech.

Pattern for a garment is the blue print on the basis of which the fabric is cut and the same is



achieved by three methods:

- ◆ Flat Pattern Method
- ◆ Direct drafting method
- ◆ Draping Method

6.2.1 Flat Pattern Method

Flat Pattern Method is a method where in body or dress form measurements are taken for developing a pattern. Following a logical stepwise procedure, the measurements are then converted into a pattern. In other words this system depends on accurate measurements to complete the paper pattern. There are limitless designs, which can be achieved for workable garments. Flat pattern making should be done in conjunction with a dress form so that as the design evolves, proportion and balance in the garment can be checked side by side. It is important to transfer the pattern on to a muslin (toile pronounced as 'twall') to test the fit, on a dress form or a human figure. Flat pattern cutting is now widely used because of its accuracy of sizing and the speed with which complicated designs are made. It is a system of creating patterns by manipulating a basic block. The basic block contains a movement ease allowance which allows the body to perform a variety of normal body functions that require movement of various body parts. Creating a fashion pattern by using the flat pattern making method is reasonably logical and easy to understand, the flat pattern making method brings consistency of both size and fit of mass-produced garment and is also the fastest and most efficient pattern design method.

6.2.2 Direct Drafting Method

Direct drafting method or Pattern drafting is a system of pattern cutting that uses a combination of ease allowance and body measurement taken from body measurement of the customer or dress form measurement to create patterns for the chosen design. It is a method of pattern construction based on the systematic draft of measurements taken directly from the human form. Traditionally level of education prevalent amongst pattern makers and tailors have been low in India. Traditionally the skills are passed on by the master craftsmen through a system of apprenticeship or a 'guru shishya parmpara' in the course of working with master as an understudy. In India, this practice is prevalent till today.

6.2.3 Draping

Draping method is the oldest pattern making method and is generally regarded as a creative approach. In this method a piece of two-dimensional fabric is draped directly on a dress form or figure and made to fit on the dress form to achieve the desired look or shape. The fabric may conform to the basic shape of the form or arranged artistically in folds for a specific design. This muslin pattern is then transferred on the paper, corrections are made, if any, and then the same are converted into a final pattern.

Summary

The chapter covers the following topics:

1. The definition of pattern making, it is a blue print of the garment, Pattern making is an activity by which design is transformed from a drawing stage to an actual physical piece. A pattern maker interprets the designers sketch by drafting it through pattern pieces.

Exercise

1. Collect pictures of womens wear garments. Create a folder or style file and identify the kind of darts used in the garment. This will become a guide for you on various styles
2. Fill in the blanks
 - a. The pattern can be cut by _____ methods and they are _____ and _____.
 - b. Pattern is a _____ of a garment.
 - c. The book written by Philip _____ is called _____.
 - d. The dart is a _____ wedge that gives _____ to the flat piece of _____.
 - e. _____ method is the oldest pattern making method and is regarded as a _____.



Chapter - 7: Garment Fit

7.1 Pattern Development

At the very beginning of this industry, pattern making was done by skilled workers who were primarily illiterate. W. H. Hulme wrote in his book "The Practice of Garment Pattern making" wrote that the Clothing Industry has been productive in developing systematic methods of applying descriptive data, many of these pattern systems have not been clearly stated. Several years of research on techniques various pattern systems suggest that method adopted may be unrelated to, or divorced from, principles of pattern making. The systems do not state the principles applied have wide variations and are based on the assumptions.

Philip Kunick in his book Modern sizing and pattern Making for Women's and children's Garments has written that it is still a common practice to teach pattern construction for the wholesale trade by means of a drafting scale based on a girth measurement, not only for fixing points or locating parts, but also for drafting a garment of any size. This is rarely done in the wholesale trade, where it is the general practice to cut a pattern in a standard size indication that the exact dimensions are not known and proportionate measurements must be used as substitutes; with the result that extreme sizes, drafted to a hypothetical scale, rarely give a satisfactory fit.

There were just 18 pattern cutting books including Alcega's published from the 16th century to the 19th century in Europe. This fact can be attributed largely to high levels of illiteracy and innumeracy prevalent amongst pattern makers, tailors and dress makers at that time. Traditionally the skills were passed to the apprentices through demonstration and verbal instructions.

7.2 Garment Fitting

Apparel fit is the relationship between the size and contour of garment and those of the human body. A well fitted garment is a garment that hangs smoothly and evenly on the body, with no pulls or distortion of the fabric, straight seams, pleasing proportions, no gaping, no constriction of the body, and adequate ease for movement. Hems are parallel to the floor unless otherwise intended, and the garment armholes and crotch do not constrict the body. It can be defined as a simple matter of length and width in each part of the pattern being correct for the human figure.

7.2.1 Introduction to Fit

Fit refers to how well a garment conforms to the three-dimensional human body. Good fit is crucial to customer 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.

The relation between the size charts and body dimensions is not constant because of the changes that occur in the human population. Recent body surveys in UK, US, China, Germany and other countries proved that a garment sizing system for a certain body type does not cover more than the 25 per cent of the population for which it is addressed. Correct sizing is a prerequisite to good fit and customer satisfaction. Fit is a function of sizing and it affects comfort, durability of a garment. Sizing is often overlooked as an important issue.

7.3 Elements of Fit

The elements of fit are the parameters on which the evaluation of Fit is generally based on, these are also referred to as five classical elements of fit:-

Grain: for a good fit the garment should be cut on the right grain or in other words on grain. 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**. Fitting ease is in direct contact with the body and is responsible for the comfort factor and design ease of the garment is for aesthetic appearance. 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.

7.4 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 analysis of fit is a complex process and remains a challenge, for both industry and customers. Apparel fit is a complex issue but of great importance for judging perfect clothing appearance, and that various technologies used, such as a 3D simulated form, may lead to more efficient decision making in the process of product development and quality control. The following body parts should appear as:

7.4.1 Shoulders

Shoulders should appear smooth and feel comfortable. Seam should lie on top of the shoulder. In regular styles the arm scye 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.

7.4.2 Bust

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.

7.4.3 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.

7.4.4 Collar

Collar the most important factor in the fit of the collar is the neck circumference. The circumference of the collar should be at least 1/4th 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.

7.4.5 Armscye

Armscye must fit well for the garment to be comfortable and attractive. The circumference of the arm scye 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 a well-fitted armscye, the base of the arm scye is cut close to the armpit, but not so close 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 armscye area. If the armscye are too tight they are snug and uncomfortable. Armscye in the front should be more deeply cut than at the back as most of the movements are in the front.

7.4.6 Sleeves

Sleeves that fit well are attractive and comfortable. The circumference of the basic sleeve should be loose enough so that it does not bind or 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.

7.4.7 Waistline

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.



7.4.8 Hips

The fit of the hip area is critical for 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.

7.4.9 Crotch/Seat

Trousers and other bifurcated garments require a well-fitted crotch for comfort and 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 for trousers. 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.

7.5 Other Factors in Fit

Mathematical calculations and pattern corrections alone cannot guarantee the fine fit of the garment. They can only provide an approximation of one's 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 re-cut 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. While test-fitting trousers remember to baste stitch the crotch seam instead of pinning.

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.

7.6 Methods of Fitting

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 essential are, if readymade garment has been



purchased 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.

Summary

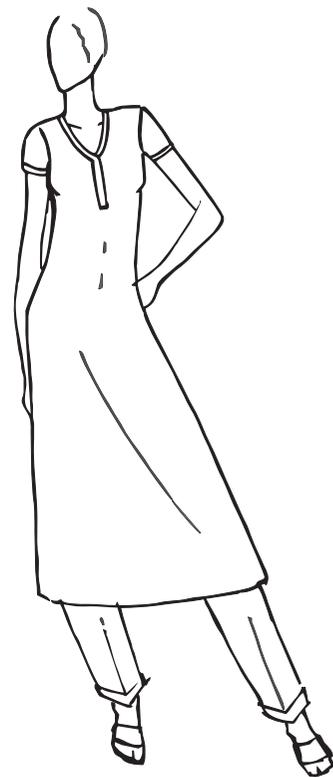
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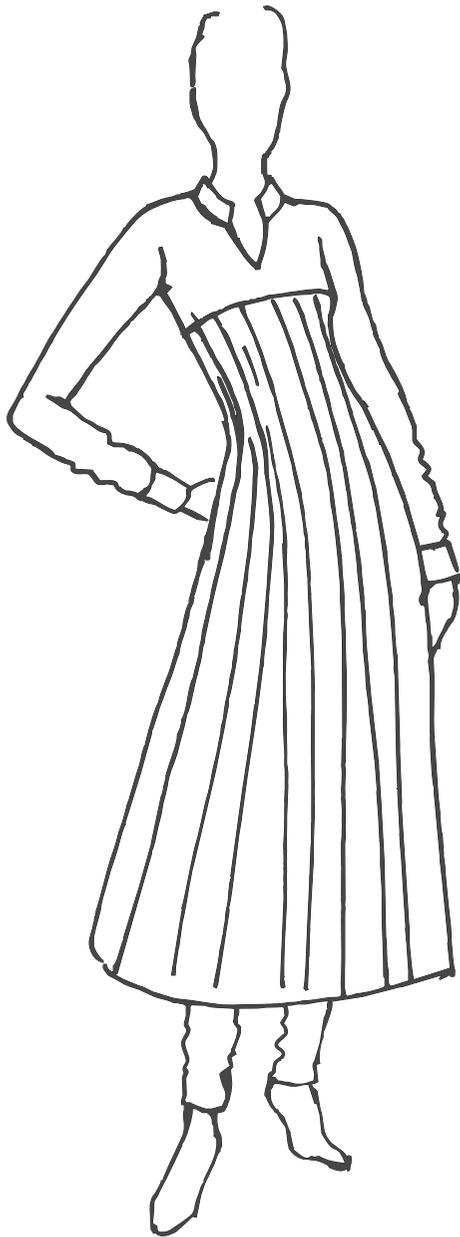
1. The definition of garment fit, various elements of fit like ease, grain, set balance and line.
2. The crucial areas of fit and general problems associated with it
3. Methods of fitting and mathematical method of fitting.
4. Issues in fit and methods of solving problems of fit.

Exercise

1. Check your own wardrobe what are the various fit issues you can identify. Try out garments and see if you can identify methods of correcting it.
2. Collect pictures of various figure types from newspaper and magazines
3. Fill in the blanks
 - a. Fitting is like _____ it creates a _____ form.
 - b. Five elements of fit are _____, _____, _____, _____ & _____.
 - c. Ease is of _____ kinds, i.e. _____ & _____ ease.
 - d. _____ occurs when _____ is in equilibrium.
 - e. The garment is called _____ grain if it is not cut on the _____ grain of the fabric and it would not _____ well.
 - f. The side seam of the garment should _____ straight on the _____ of the _____.
 - g. There are _____ methods of evaluating the _____ of the garment.
 - h. Pins should be placed _____ to the _____ line, as there is _____ of strain or pull on the _____.
 - i. Check the _____ muslin and make corrections till _____ satisfied, _____ all the _____ corrections and _____ on the pattern.
 - j. _____ pulls in a garment indicate that the garment is _____ and _____ folds indicate that it is _____.

STYLE VARIATIONS





Glossary

1. **A-Line:** Fitted dress or skirt, in which the side seams go out at an angle. An A-Line skirt is wider at the hem than at the hips but not full enough to fall into folds.
2. **Armhole:** The seam where bodice joins the sleeve, a hole for the arm, it is important to have the depth and width of the armhole to be perfect for an individual especially when clothes are closely fitting.
3. **Armhole Scye:** Term used to describe the scooped out curve of the armhole on a block or pattern.
4. **Balance:** Refers to hang and proportion in a garment, in flat pattern cutting method it is often difficult to judge correct balance until it is test fitted.
5. **Balance Marks:** Marks made on edges of pattern pieces to ensure that pattern pieces match. They are useful as a construction guide on all seams, however, balance marks are vital when different shapes are to be joined together. While, cutting the pattern make small pencil marks at the edge of the paper they are also referred as notches.
6. **Baste:** To stitch pieces of a fabric together temporarily by hand or by machine so that the garment may be fitted or the seams stitched permanently.
7. **Bell Sleeve:** A style of sleeve that is full and flared at elbow or wrist level
8. **Bias:** Fabric that is cut at 45° to warp and weft grain
9. **Bias Cut:** Refers to a garment such as shorts, skirt, dress or underwear, the pieces of that are wholly or partly cut on the bias.
10. **Clip:** A small snip or cut made in the edge of fabric. All curved edges must be clipped so that the fabric lies flat when final pressing is done.
11. **Crotch Point:** This is where trouser inside leg seams meet the crotch seam. The exact position depends on the figure but the crutch point should be towards the front of the body.
12. **Cutting Board:** A specially constructed folded corrugated board, which opens out to cover a table or bed to provide a surface on which to cut out or make patterns.
13. **Cutting Line:** The point beyond the stitching line or seam lines where the fabric is cut. With patterns that have no seam allowance the cutting line is marked on the fabric using chalk or fabric pen. On a commercial pattern the printed outline is the cutting line for both pattern and fabric.
14. **Dart:** A triangular fold stitched to taper gradually to a point. It makes the fabric shape easily over 3D human body.
15. **Dart Tuck:** Stitching of the dart shaping but stopping short of the dart point, it appears as a tuck from the right side of the garment.



16. **Double Breasted:** A style of front fastening that wrap over to fastens on the left of the body instead of at the center front.
17. **Double Pointed Darts:** These are also called fish darts and are used to shape waist in a one piece dress.
18. **Drafting:** The term applied to drawing and cutting a paper pattern.
19. **Drawstring:** A piece of cord used to tie and hold the waistline of a dress, skirt or trousers, or neckline or hems in place.
20. **Ease:** The amount added to measurements in order to ensure that there is room to move while wearing the garment. The amount varies according to current fashion
21. **Easing:** This is needed when joining two edges that are of different lengths and shape. The longer edge makes a slight bubble of fabric as it is seamed which provides a slight ease for movement. Often the edge to be eased would have had a small dart in that position on the original block. Examples of easing include sleeve heads in to armhole, back shoulder on to front shoulder, back edge of sleeve seam on to front edge at elbow level.
22. **Empire:** A high waist seam it can be on a dress, tunic or nightdress, the upper garment is usually fitted over the bust and often the lower section of the garment is pleated or gathered into the waist.
23. **Extended Shoulder:** The shoulder seam is lengthened and extended so that the armhole seam slopes outwards and runs across the top of the arm instead of passing over the shoulder bone. The underarm must be lowered to allow room for raising the arm.
24. **Flare:** Shaped fullness added to a sleeve skirt edge. While cutting a pattern flare is added by cutting from top to bottom of the basic shape and spreading the pieces at one edge only.
25. **Flounce:** A full circular edging for neckline sleeves and hems.
26. **Fold-back Facing:** A way of finishing straight edge such as button edge of a blouse, by eliminating the seam at the edge .Add a sufficiently wide extension to the edge of the pattern and attach interfacing to extend over the fold line to provide a firm edge when the facing is folded onto the wrong side. Useful in facing on light or transparent fabrics where a seam would be bulky and visible.
27. **Forearm Seam:** The seam nearest to the front of a two piece sleeve.
28. **Frill:** A strip of fabric of any width gathered and attached to a garment as an edging.
29. **Godet:** A flared or triangular insert in the hemline of skirts, sleeves and trousers.
30. **Gorge Line:** A short seam that joins the end of a classic collar to its lapel.
31. **Grading Sizing:** Refers to the way that a pattern is adjusted to the other size while keeping the style. Used in the production of commercial patterns.
32. **Grain:** The direction of yarns in a woven fabric along the length to across the width.

33. **Gusset:** A small piece of fabric inserted in the seam to allow room for movement. Gussets are most commonly required in kalidar kurta sleeves to allow arm movement.
34. **Halter:** A style of neckline that has a strap or an extension of fabric running from the front armhole to around the back of the neck edge.
35. **Piecing:** Joining fabric before cutting to shape. This is required in case a pattern piece is too wide for the fabric width.
36. **Princess:** Length wise seams passing through the apex and giving shape to the garment. The seam may originate from armhole, shoulder and neckline. The seams are named accordingly e.g. a princess seam originating from shoulder is called shoulder princess. Dresses with these style lines are also called panel dresses. Both princess and panel seams are shaped because they include the bodice darts and are useful when a closer fit is required in the garment.
37. **Rise:** A term normally used in relation to men's trousers it refers to the length of the front crotch seam from crotch point up to waist.
38. **Shaped Facing:** Shaped piece of fabric used to finish the edge of a garment, usually a shaped edge such as neckline or sleeve edge and the facing is shaped to correspond the edge to be finished. The facing shape is obtained by tracing the garment edge; seams in the facing usually match those on the garment.
39. **Shift:** A simple straight dress of any length, usually sleeveless
40. **Shrinkage:** Cotton fabric should be washed before cutting
41. **Square Neck:** A neckline may be squared at front or back. Care should be taken to keep the neckline fairly shallow so that it doesn't gape.
42. **Stay:** An extra piece of fabric such as tape, seam binding or interfacing stitched into a seam that might be liable to stretch or lose its shape.
43. **Taper:** To gradually reduce without changing the shape drastically e.g. patterns of a trousers.
44. **Tent:** The silhouette of a dress or coat that is fitted at the shoulders but slope straight out on the side seams.
45. **Toile:** A pattern made in muslin test fit on a dress-form to check the balance and position of style features etc. The toile can be taken apart and used as the pattern or the adjustments can be transferred to the original paper pattern.
46. **Tunic:** A simple short sleeveless dress.
47. **Undercollar:** The under section of a collar that folds or rolls.
48. **Un-pressed Pleats:** Even folds of fabric that are stitched across one end but which are not pressed below that point.



49. **Vent:** A slit in the back hem of a jacket, which allows person wearing it, to move, bend, sit or use the pocket without pulling the jacket. Vents at skirt hems are usually called slits.
50. **Wrap:** Yarns that run through the entire length of the roll or piece, it is also called straight grain. Most of the pattern pieces are cut on this grain.
51. **Weft:** Yarns that runs across the width of the woven fabric are also called filling yarns it is also called straight grain. The weft yarns are often weaker than the wrap yarn.
52. **Welt:** Finishing of a pocket or a particular type of ridged seam.
53. **Wrap Over:** A style of blouse, dress, skirt and jacket where one side of the front overlaps the other and is often fastened with a belt.
54. **Yoke:** A small piece of the garment which is at the waist of a skirt or trousers or at the shoulders in a blouse or dress. The functional purpose of a yoke is that it generally provides a horizontal seam which can hold fullness. The seam line with which a yoke is attached to the main piece of the garment is called a yoke line. This seam line can be emphasized with piping, lace, ribbon etc.





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