

## DRAFT STUDY MATERIAL



## SELF EMPLOYED TAILOR

(Qualification Pack: Ref. Id. AMH/Q1947)  
Sector: Apparel, Made-ups & Home Furnishing

(Grade XII)



**PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION**

(A constituent unit of NCERT, under MOE, Government of India)

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## Preface

Vocational Education is a dynamic and evolving field, and ensuring that every student has access to quality learning materials is of paramount importance. The journey of the PSS Central Institute of Vocational Education (PSSCIVE) toward producing comprehensive and inclusive study material is rigorous and time-consuming, requiring thorough research, expert consultation, and publication by the National Council of Educational Research and Training (NCERT). However, the absence of finalized study material should not impede the educational progress of our students. In response to this necessity, we present the draft study material, a provisional yet comprehensive guide, designed to bridge the gap between teaching and learning, until the official version of the study material is made available by the NCERT. The draft study material provides a structured and accessible set of materials for teachers and students to utilize in the interim period. The content is aligned with the prescribed curriculum to ensure that students remain on track with their learning objectives.

The contents of the modules are curated to provide continuity in education and maintain the momentum of teaching-learning in vocational education. It encompasses essential concepts and skills aligned with the curriculum and educational standards. We extend our gratitude to the academicians, vocational educators, subject matter experts, industry experts, academic consultants, and all other people who contributed their expertise and insights to the creation of the draft study material.

Teachers are encouraged to use the draft modules of the study material as a guide and supplement their teaching with additional resources and activities that cater to their students' unique learning styles and needs. Collaboration and feedback are vital; therefore, we welcome suggestions for improvement, especially by the teachers, in improving upon the content of the study material.

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Deepak Paliwal  
(Joint Director)  
PSSCIVE, Bhopal

20 June 2024

## **STUDY MATERIAL DEVELOPMENT COMMITTEE**

### **MEMBERS**

1. Mrs. Kanchan Nainani, Fashion Designer and Boutique Owner, 'AKS', Rachna Nagar, Bhopal
2. Mrs. Sneha Gyanchandani, Former Fashion Designer, Free Lancer, Bhopal

### **PSSCIVE TEAM MEMBERS**

1. Dr. Nishi Sharma, Consultant, Department of Home Science and Hospitality Management, PSSCIVE, Bhopal
2. Ms. Shivangi Vig, Consultant, Department of Home Science and Hospitality Management, PSSCIVE, Bhopal

### **REVIEWERS**

1. Dr. Veena Gupta, Former Associate Professor, Lady Irwin College, University of Delhi, New Delhi
2. Dr. Amita walia, Assistant Professor, Institute of Home Economics, University of Delhi, New Delhi
3. Dr. Kusum Chopra, Professor and Chairperson Fashion Design (Retd.), NIFT, New Delhi
4. Dr. Harsha Jharia, Vice Principal and Coordinator Fashion Designing, LAD P.G. College, Nagpur

### **MEMBER-COORDINATOR**

1. Dr. Pinki Khanna, Professor & Head, Department of Home Science and Hospitality Management, PSSCIVE, Bhopal

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**Module 1****Drafting, Cutting and Sewing  
Process of Garments****Module Overview**

Development of a garment starts with an idea which is represented as a garment design. This design or idea is made into reality by preparing patterns of the design which are used as templates for the cutting of the garment pieces, this is done by pattern making process. Pattern making is the technique of manipulating and moulding a flat piece of fabric to fit to human body.

Pattern making can be done by following methods:

- 1. Drafting or Flat Paper Pattern making :** is a method of pattern making which involves measurements derived from sizing systems or precise measurements taken on a person, dress or body form. To prepare the pattern, measurements for the chest, waist, hips, and other areas are marked on paper, along with ease allowances and construction lines. Drafting is a technique for creating fundamental, foundational, or design patterns.
- 2. Draping:** is a method of pattern making in which a 2-Dimensional fabric is draped around 3-Dimensional body form, conforming to its shape. This creates a 3-Dimensional fabric pattern. This method is used for garments which include drapes such as cowls. An inexpensive fabric is used for creating patterns through draping.

To create a pattern specially using drafting technique it is important to take measurements. One should have the knowledge to take measurements.

Once the patterns are created for a design, fabric panels are cut using pattern pieces as templates. These cut pieces are then brought together by sewing to form a garment.

This unit explains the use of drafting to create some women's and men's garments. Here, students will understand some drafting and garment construction procedures of both men and women's garments with their detailed steps of construction. The drafting, cutting and construction details will help students to construct garments with ease.

<b>Learning Outcomes</b>
After completing this module, you will be able to: <ul style="list-style-type: none"> <li>• Explain measurement techniques of men</li> <li>• Demonstrate drafting and construction of a Kalidar kurta and chudidar pyjama</li> <li>• Demonstrate drafting and construction of a katori blouse and circular skirt</li> <li>• Demonstrate drafting and construction of a Nehru kurta , pant pyjama and single-breast waistcoat</li> </ul>
<b>Module Structure</b>
Session 1 : Measurement Techniques of Men
Session 2: Kalidar Kurta and Chudidar Pyjama
Session 3: Katori Blouse and Circular Skirt
Session 4: Nehru Kurta, Pant Pyjama and Waist Coat

### **Session 1: Measurement Techniques of Men**

The basic blocks can be drafted for individual figures by substituting the personal measurements of the figure for standard ones. It is vitally important to take personal measurements accurately and in the correct place on the body in order to make accurate personal blocks or customised patterns.

To take accurate and correct measurements one should take care of various factors while taking body measurements. Following are some important points to be kept in mind while taking body measurements for men's garments:-

- For taking body measurements, the body should be relaxed and not stiff.



- The measurements are usually taken when the person is wearing a shirt or t-shirt with trousers. The pockets of trousers should be empty.
- A string or elastic should be tied around the waist to establish the natural waistline.
- When measuring the circumferences keep in mind to hold the tape horizontally and perfectly parallel to the floor.
- Do not measure by keeping the tape too tight; let it lay flat on the body.
- Make sure to hold your tape from the right end.
- Take the exact body measurements in inches without any extra ease and seam allowance.
- Except for the back length, one should avoid using the measurements of garments that fit the person giving measurements.

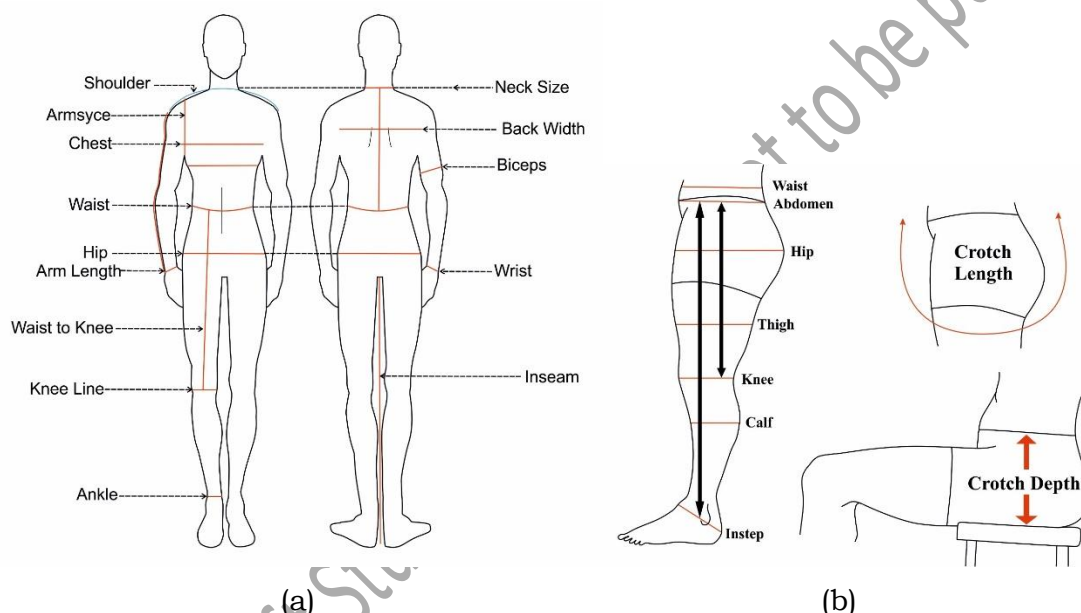


Fig.1.1 (a & b) Men's Measurements

### Guide for Taking Men's Measurements:

- **Shoulder width or across shoulder:** Measure from left shoulder edge/bone to right shoulder edge/bone. Measure between these two points by holding the measuring tape straight.
- **Natural waist length:** Measure from the highest shoulder point (next to neck) to the narrowest part of waistline.
- **Length of garment:** Measure from the highest shoulder point to length required.
- **Back Width:** Measure from centre position at back armsyce (armhole). For a very accurate measurement - measure the full back width then halve the measurement.

- **Chest or round chest:** This is the most important measurement. Place the tape under the arms round the body at chest level by holding the tape measure straight on front and back .
- **Natural waist or round waist:** Measure in the position of the string. Measure at its narrowest point of around the waist, by holding the tape measure straight on front and back, usually just above the navel.
- **Trouser waist position:** Measure 4 cm below the natural waist. This is a low waist measurement and is the common position in which trousers are worn.
- **Seat/Hip or round hip:** Measure around the fullest part of the seat/hip, usually 21cm down from waistline.
- **Neck or round neck:** measure easily around base of neck; take the measurement on the lower edge of tape.
- **Arm/Sleeve length:** Measure from shoulder bone to wrist bone with bent arm.
- **Knee circumference:** Measure around the knee.
- **Knee length:** Measure from waist to Knee level.
- **Ankle:** Measure around the ankle.
- **Side seam length for trouser:** Measure from the waist to heel seam of shoe.
- **Crotch depth:** In sitting position; measure the depth from waist to top of stool.
- **Inside leg:** Measure from high in the crotch to heel seam of shoe. This measurement can be calculated by taking crotch depth measurement from side seam measurement.
- **Bottom width:** The width required for the bottom of the trousers should be noted.
- **Wrist circumference:** Measure wrist in position of wrist bone.
- **Arm/Bicep circumference:** Measure the top thickest part of arm,
- **Scye or Armscye depth:** The standard measurement from the size chart is usually used, but if the arm and shoulder are well developed, check scye depth. Place tape across back under arms, measure down from neck bone to centre of tape.

## STANDARD MEASUREMENTS

Standard measurements are a set of measurements which are standardised with the help of anthropometric studies. Based on these studies human bodies with similar body measurements are categorized under different sizes.

It is important to compare personal measurements against the standard measurements to ensure that the personal ones are correct. The following measurements are usually taken from the standard measurement chart using the chest measurement for reference:

- Scye depth
- Cuff size of two-piece sleeve for jacket or coat
- Cuff size for shirt

### Activities

**Activity 1:** Visit a men's tailoring shop and observe the measurement techniques used list the measurements taken by the expert (Tailor/master).

#### Materials Required:

1. Measuring tape
2. Pencils/pens
3. Book/Note pad

#### Step-by-Step Procedure:

1. Visit to men's tailoring shop.
2. Observe the master while taking measurements.
3. Note the list of measurements taken by him.
4. List down the observations and discuss in class.

**Activity 2:** Take body measurements of a male and fill the Sample Measurement chart given.

#### Materials Required:

1. Measuring tape
2. Pencils/pens
3. Book/Note pad
4. A person(male) who's measurements are to be taken.

#### Step-by-Step Procedure:

1. Keeping in mind the points and measurement techniques learned in the session take the following measurement.

### Measurements (upper and lower)

- Neck \_\_\_\_\_ inches
- Full Chest \_\_\_\_\_ inches
- Shoulder Width \_\_\_\_\_ inches
- Sleeve \_\_\_\_\_ inches
- Bicep \_\_\_\_\_ inches
- Wrist \_\_\_\_\_ inches
- Waist/Stomach \_\_\_\_\_ inches
- Hips/Seat \_\_\_\_\_ inches
- Front Jacket Length \_\_\_\_\_ inches
- Front Chest Width \_\_\_\_\_ inches
- Back Width \_\_\_\_\_ inches
- Full Back Length \_\_\_\_\_ inches
- Half Back Length \_\_\_\_\_ inches
- Trouser Waist \_\_\_\_\_ inches
- Trouser Out seam \_\_\_\_\_ inches
- Trouser Inseam \_\_\_\_\_ inches
- Crotch \_\_\_\_\_ inches
- Thigh \_\_\_\_\_ inches
- Knee \_\_\_\_\_ inches

### Check Your Progress

#### A. Fill in the Blanks

1. The measurement of men's lower garment is usually taken when he is wearing a \_\_\_\_\_.
2. Length of garment: Measure from the bone at the \_\_\_\_\_ of the neck to length required.
3. Sleeve length for one-piece sleeve: Measure from \_\_\_\_\_ bone to \_\_\_\_\_ bone.
4. \_\_\_\_\_ shapes: The line of side seam often has to be adjusted as the shape of the hip can vary.

**B. Questions**

1. Explain the important points to be kept in mind while taking men's measurements.

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## Session 2: Drafting and Construction of Kalidar Kurta and Chudidar Pyjama

### DRAFTING AND CONSTRUCTION OF KALIDAR KURTA

Kurta word is originated in the Indian subcontinents with different regional variations. Kurta is an upper garment worn by men and women. There are many variation of kurta with various names like Hyderabad kurta , Lucknowi kurta, straight cut kurta. Each variation has its own unique style, cut, embroidery, stitch it is famous for.

Kalidar kurta basically is stitched by joining panels. Kalidar kurtas are mostly paired up with chudidars as it gives a slimmer and smarter look. It is a comfortable wear suitable for occasional and daily wear. These days kurtas also have variations in designs, cuts as per fashion and trends.

Kalidar Kurtas are loosely fit garments with two kalis (panels) at each side and bagal (i.e. gusset) at the scye or armscye to provide comfort.

Note: All measurements are given in inches or foot; students may take measurements in centimetres (millimetres or meters) and then use the conversion table to do drafting in centimetres. This will help students to learn drafting, placement and construction of garments both in inches and centimetres. All drafts are done in small scale for this book for understanding purpose, therefore may vary slightly in measurements and size. Students should follow drafting instructions and make drafts of correct measurements.

### Measurements Required

Body Measurements	Women	Men's
Chest	32"	40"
Shoulder Width	7"	8 ½"
Sleeve Length	20"	22"
Full Length	34"	38"
Neck Round	16"	18"

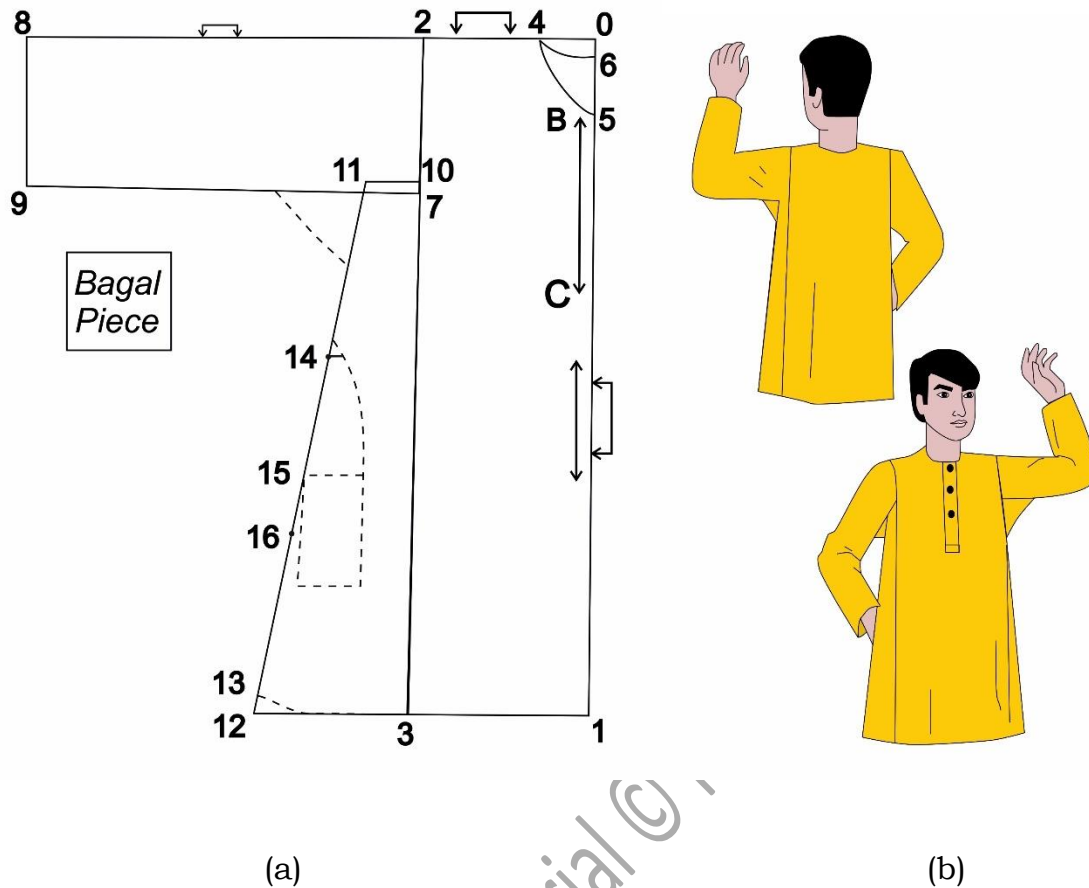


Fig.1.2 (a &amp; b) Draft of Kalidar Kurta

### Instructions for Drafting

#### FRONT BODY

1-0 = full length + 1" for turning.

Square out lines from 0 and 1.

2-0 = shoulder width + ½"

3-1 = 2-0

Join 2 and 3

4-0 = 1/6 neck + ½" for ease.

5-0 = 1/6 neck + 1".

Shape the front neck from 4 to 5 as shown.

B-5 = 0.5".

Cut the opening B to C = 9"

**BACK BODY**

6-0 – 1.5”.

Shape the neck from 4 to 6.

All the other points are the same as shown in the front body.

**SLEEVE**

7-2 =  $\frac{1}{2}$  of shoulder

8-2 = the sleeve length + 1” for a seam on the line 2-7. No seam allowance is kept on the line 8-9 because selvedge side of the cloth is generally kept here otherwise turning in allowance should be added.

9-8 = 2-7 less  $\frac{1}{2}$ ”

**KALI (Side - panels)**

10-7 =  $\frac{1}{2}$ ” for seam

11-10 = one-twelfth ( $\frac{1}{12}$ ) of chest

12-3 = 7-2 = 8”

Join 11 to 12

13-12 =  $\frac{1}{2}$ ”.

Shape from 13 to 3.

14-11 = 8” for women and 9” for men

15-14 = 6”. This pocket position can be lowered if necessary.

16-13 = 8” for women and 9” for men

A slit is kept from 16 downwards.

**BAGAL (gusset)**

A square piece of 5” (one-sixth chest less 1”) is joined to the sleeve and Kali and is folded diagonally as shown by dash line.

Join side seam, attach sleeve to body. Then attach Kali piece to the armhole and stitch. On the left side of the garment, pocket should be stitched.



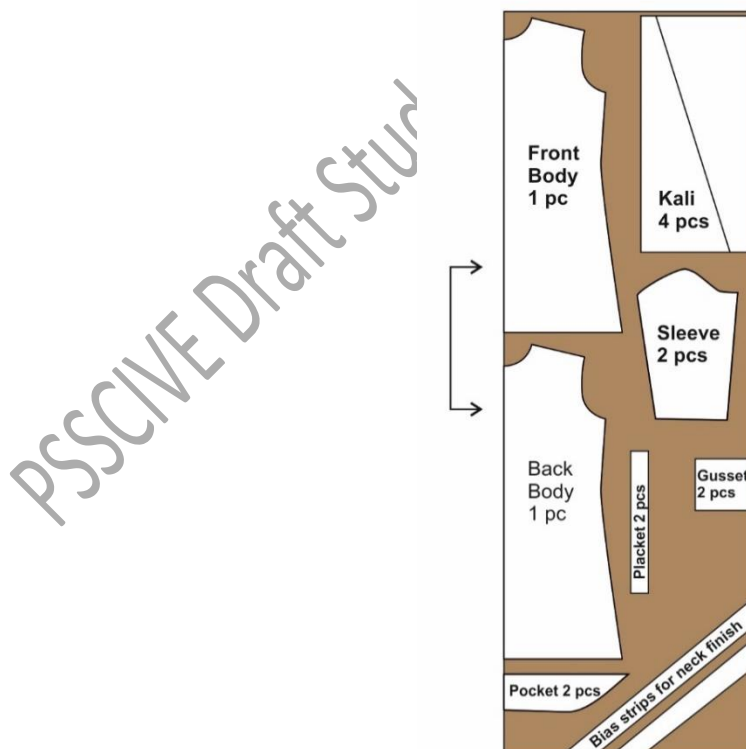
### Layout of Kalidar Kurta

Minimum 2 ½ meters of fabric is required for kalidar kurta.

Following are cut panels required to construct kalidar kurta :

1. Front Body
2. Back Body
3. Sleeves
4. Kali
5. Pocket
6. Gusset
7. Bias Strips for neck finish
8. Placket strips

All the panels are arranged in a manner that the fabric is used judiciously with minimum wastage. This layout planning is done on fabric according to the grain requirements. A kalidar kurta is cut on a straight grain. A suggestive layout for cutting of a kalidar kurta is shown in Figure 1.3.



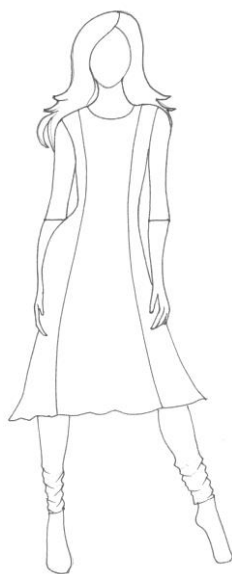
**Fig.1.3 Layout of Kalidar Kurta**

## Construction or Stitching method

1. According to the pattern; layout all the cut panels, mark seam allowances and cut the fabric.
2. Stitch run and fell seam on the shoulder of front and back.
3. Join the bagal pieces with both kali or side panels.
4. Side seam line should be attached to the sleeve as shown in the figure.
5. Attach the sleeve with the body.
6. Fold the kali piece and keep it on the armhole and stitch it.
7. On the front neck portion cut open to attach continuous placket and stitch.
8. Finish the neckline, using a bias strip.
9. Bottom edges of sleeves and kurta should be folded and stitched.
10. When stitching the side seams, pocket should be attached on the left side of the kurta. A 2” slit can be left open at hem of both the side.
11. Once the garment is stitched, it is pressed and ironed.

## DRAFTING AND CONSTRUCTION OF CHUDIDAR PYJAMA

Chudidar is a lower garment worn by both male and female, with fullness at the top, but tightly fitted at the lower leg from knee to bottom. It is cut on bias material to get a nice fit below knee. For this, either a bias bag (i.e. thaili) is prepared or it is cut on plain material keeping it on bias grain. To obtain gathers around the ankles, extra length of fabric is taken than the required length of Pyjama to give the effect of churries.



**Fig.1.4 Chudidar Pyjama design**

**Measurements Required:**

1. Full length .....40" +10" for chudis or gathers
2. Seat ..... 38"
3. Knee round ..... 16"
4. Ankle round .....12"

**Instruction for Drafting**

Square lines from 0, fold at 0-4.

1-0 = one-fourth seat + 3"

3-0 = full length

3-4 = 10"

0-2 = waist to knee length

Square out from 1,2 and 4.

6-1 = one-fourth seat + 2".

Square up to 5.

7-6 = 2"

Join and shape 5-7 as shown.

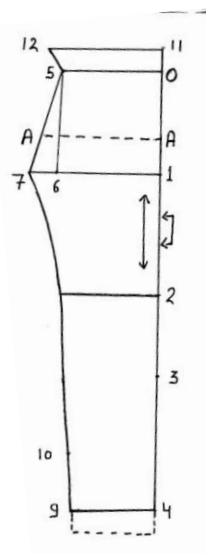
8-2 = half knee round+ 1 ½" for ease

9-4 = half ankle round+ 1 ½" for ease

Join and shape 7-8-9 as shown.

10-9 = 4" for ankle opening.

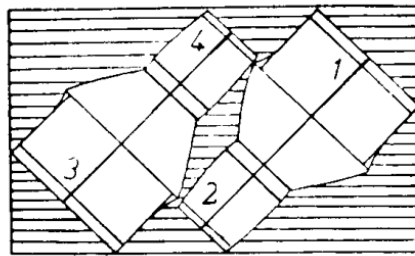
Keep 2" above 0-5 for casing and 2" below 4-9, for in turns.



**Fig.1.5 Draft of Chudidhar**

**Material required:** The length of the material required is twice the full-length measure, when the width is nearly the same at the seat measure. If width is less, the length should be increased accordingly.

**Layout on plain cloth:** As stated earlier, a chudidhar pyjama is cut on bias grain for a perfect fit. Figure 1.6 is a suggestive layout of pattern pieces of chudidhar pyjama for cutting. This layout is followed when no joint is required, but in this case, a lot of material (fabric) is wasted as shown in this figure by horizontal lines.

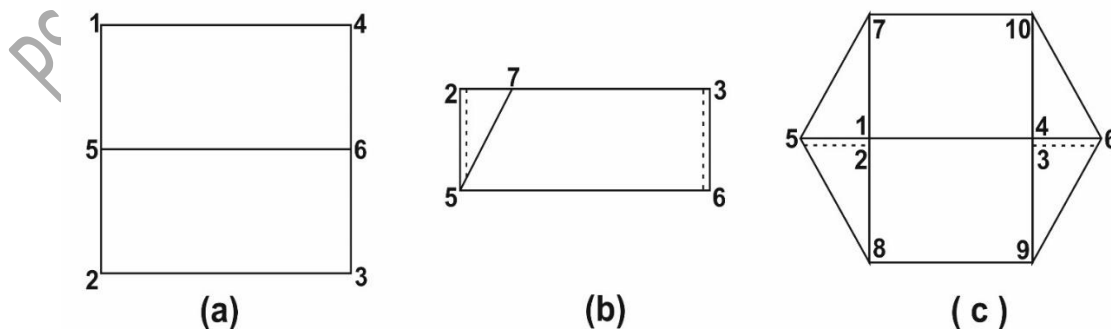


**Fig: 1.6 Layout of Chudidhar Pyjama on full width of fabric**

**MAKING A BIAS BAG:** This bag, with a width of nearly two-third of the seat measure, should be prepared as follows:

- 1-2-3-4 is the material taken for this bag.
- 1-4 or 2-3 is on straight grain and
- 1-2 or 3-4 is on crosswise grain. (Figure: 1.7 a)

By folding the material at 5-6 (Figure:1.7), we get the size 2-3-6-5. Stitch at 2-5 and 3-6 at 1 cm (1/4") seam allowance. Keep 7 from 5 (in a straight line) equal to two third of the seat measure, the required width of bag. (Figure 1.7 b)



**Fig 1.7 Making a bag for cutting Chudidhar (a, b, c)**

Open the folded material, join 7-10-9 with 7-8-9 and we get a bias bag with all sides closed. After cutting on lines 5-7 and 9-6, the bag can be easily placed on a cutting table. (Figure:1.7 c)

Now turn the sides 1-2 and 3-4 (figure: 1.7) in such a way that all the joints come above knee, while cutting the garment. A small seam may appear at the bottom.

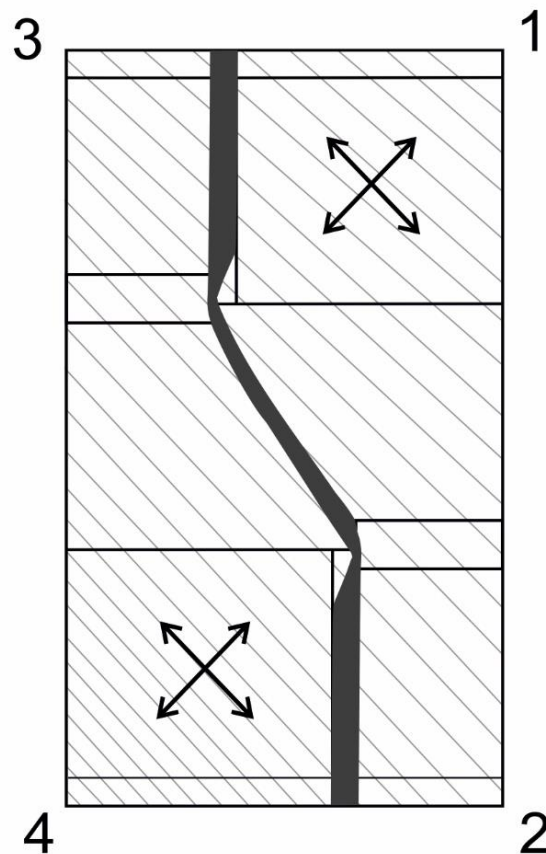


Fig 1.8 Placement of chudidar pyjama pieces on bias bag

### Construction or Stitching Process:

1. Join the crotch of front side by taking both the pieces of leg starting from 2" below 6 to 7. Also join the other side of crotch from 7 to 6 and straight  $\frac{1}{2}$ " inside 12.
2. Finish the opening of casing starting from 12 to 2" below point 6.
3. Now finish the casing by turning it 2" inside.
4. Join the legs by taking  $\frac{1}{2}$ " seam on wrong side.
5. Finish the hemline by turning 2" the wrong side.

## Activities

**Activity 1:** Draft the Kalidar Kurta.

**Materials Required:**

1. Brown paper
2. Adult body measurements
3. Drafting scales
4. Pens/ pencils

**Step by step Procedure:-**

1. Take Adult body measurements/ measurements of the person whose kalidar kurta is being made.
2. Prepare a draft of a kalidar kurta on  $\frac{1}{4}$ cm scale for file and full scale draft for cutting the fabric (follow the instructions as explained in the session).
3. Cut on the marked lines.
4. Paste the draft in the practical file and write the drafting as given above in this session.

**Activity 2:** Construction of Kalidar Kurta (on full scale)

**Materials Required:**

1. Brown paper
2. Measuring tape
3. Adult body measurement
4. Drafting scales
5. Pencils/pens
6. Chalk
7. Fabric
8. Scissors (paper cutting and fabric cutting)
9. Stitching material(thread, machine, needle, etc)
10. Finishing tools (iron, small scissor, etc.)

**Step-by-Step Procedure:**

1. Prepare a full scale draft of kalidar kurta and cut the brown paper as per the markings done.
2. Spread the fabric on table and place the pattern pieces or draft prepared on the fabric as per the layout (layout is explained in the session). Mark on the fabric as per the draft leaving the seam allowances.
3. Cut the fabric as per the marking done.
4. Stitching of kalidar kurta (follow the instructions as given in the session above)
5. Complete the construction by joining the sides.
6. Finish the garment by using iron and by cutting small threads with the scissor.

Note: Draft and construct chudidar pyjama same as activity 1 and 2 (follow the instructions given in the session above)

### Check Your Progress

#### A. Fill in the Blanks

1. This dress is mostly preferred by North Indian\_\_\_\_\_.
2. A chudidar pyjama is cut on bias material to get a nice fit below\_\_\_\_\_.
3. \_\_\_\_\_ is worn with Khamis, Punjabi Kurta, Jodhpur coat, Shervani etc..

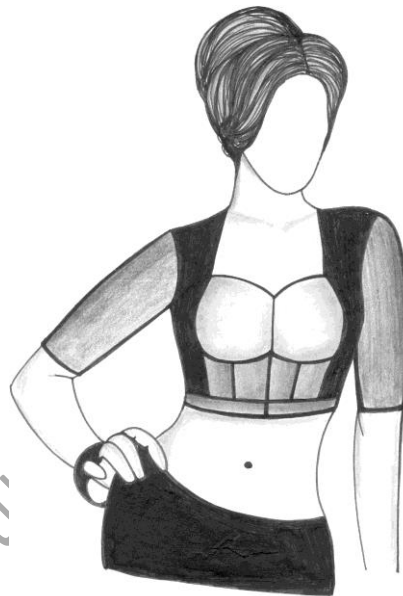
#### B. Questions

1. Explain drafting and steps of construction of kalidar kurta.
2. Explain churidar pyjama with its drafting and steps of construction.

### Session 3: Drafting and Construction of Katori Blouse and Circular Skirt

#### DRAFTING AND CONSTRUCTION OF KATORI BLOUSE

Katori is a word derived from Hindi language which means “cup”. In Katori blouse, the cup part of the bust portion is set correctly in the front portion of bust and gives perfect elegant look to the wearer along with comfort. Katori blouse is an origin of Rajasthan where different kinds of fabric pieces are joined to create a unique look. This blouse mostly has an opening at the front. Embroidered fabrics, mirror work fabrics and various prints are usually used to prepare this style of designer blouse.



**Fig no: 1.9 Design of Katori blouse**

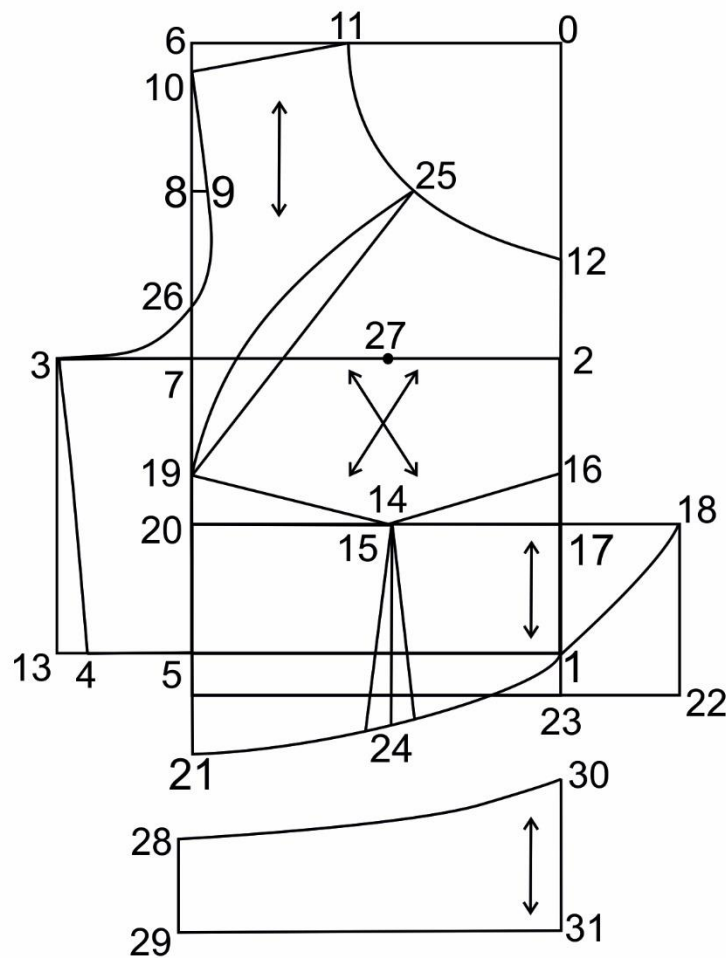
#### Drafting of Katori Blouse- Front

##### Measurements Required:

- |    |               |     |
|----|---------------|-----|
| 1. | Bust          | 34” |
| 2. | Waist         | 28” |
| 3. | Length        | 14” |
| 4. | Shoulder      | 14” |
| 5. | Sleeve length | 10” |
| 6. | Armhole       | 15” |



## 7. Around the arm 10



**Fig.1.10 Draft of Katori blouse Front Part**

**Front:**

0-1 = full length – 2" (for separate belt) + 1/2"

0- 6, 1- 5 = 1/2 of shoulder

0- 2, 6 -7 =1/2 of armhole

2 -3, 1 -13 = 1/4 of bust + 1.5

0-11 = 3"

0 -12 = 6"

Give shape to front neckline by joining 11 to 12

6- 10= 3/4"

Join 10 to 11 for shoulder slope

8 is the centre point of 6 to 7

$8 - 9 = \frac{3}{4}$ "

$7 - 26 = 1$ "

Give a curve to front armhole by joining 10, 9, 26, 3.

$20 - 5, 17 - 1 = 2$ "

$1-23 = 1$ " &  $5-21 = 1 \frac{3}{4}$ "

Join 20 to 21 and 17 to 23

$17 - 18$  and  $23 - 22 = 1$ "

Join 18-23

15 is the centre point of 20 -18

24 is the centre point of 21 -22

Draw a dart of  $\frac{1}{2}$ " on line 24 to 15

$20 - 19$  and  $16 - 17 = \frac{3}{4}$ "

Join 19, 14, 16 with a curve

25 is the centre point of 11-27

Join 19 to 25 with a curve

$1 - 4 = \frac{1}{4}$  of waist +  $1 \frac{1}{2}$ "

Join 4 to 3 for side seam

### **Lower belt**

$29 - 31, 28 - 30 = 1 - 13$

$28 - 29, 30 - 31 = 3$ "

$28 - 32 = 1$ "

Curve from 30-32

### **Back Part:**

$32 - 33, 34 - 35 = \text{full length} + \frac{1}{2}$ "

$32 - 34, 33 - 35 = \frac{1}{4}$  of bust +  $1 \frac{1}{2}$ "

$32 - 38, 36 - 41 = \frac{1}{2}$  of shoulder

$32 - 36, 38 - 41 = \frac{1}{2}$  of armhole

$32 - 47 = 3$ "

$32 - 48 = 4$ "

Give a shape to back neckline by joining 47 -48

$38 - 39 = \frac{3}{4}$ "

Join 47- 39 for shoulder slope



**Sleeve Pattern**

A-B & C- D =  $\frac{1}{2}$  of Armhole (15"/2=7.5")

A-C & B-D = 7" for sleeve length

B – E = 4"

Join A- E with straight line. G is the centre point of A-E.

G-Katori =  $\frac{3}{4}$ "

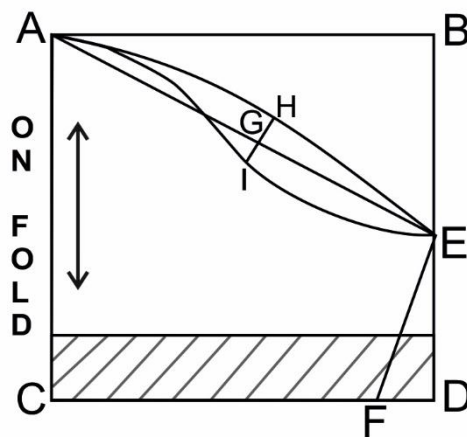
G – I =  $\frac{1}{2}$ "

Give a shape to front armhole by joining AIE

Give a shape to back armhole by joining AHE

C – F =  $\frac{1}{2}$  of around the arm + 1"

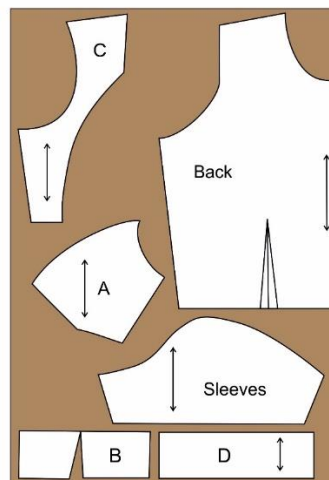
Join E-F with straight line.



**Fig. 1.13 Sleeve block**

**Layout on fabric:**

Figure 1.14 shows suggestive layout of katori blouse.



**Fig. 1.14 Layout of Katori Blouse pieces**

**Steps of construction:**

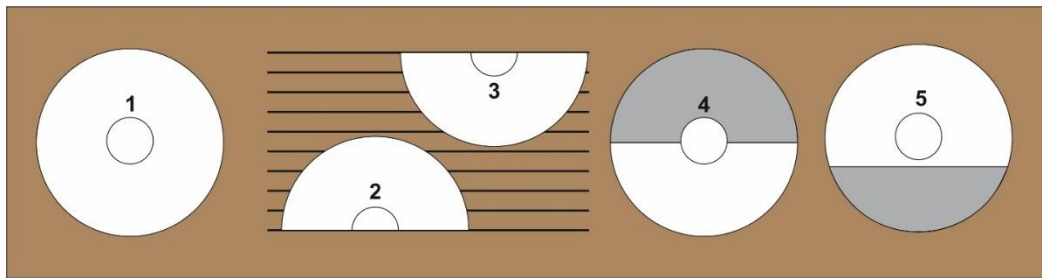
1. Cut and separate A, B, C pieces.
2. Stitch the dart in panel B.
3. Join A piece with B in a curve line.
4. Attach AB pieces with C pieces.
5. After joining AB pieces with C attach it with lower belt piece D.
6. After joining all the pieces attach front and back part from shoulder.
7. Then make finish button strip.
8. Finish the neckline with bias facing or binding.
9. Attach sleeves with armhole of blouse.
10. Stitch the side seam of blouse with sleeves side seam.
11. Finish the lower edge of blouse with a strip.

**DRAFTING AND CONSTRUCTION OF CIRCULAR SKIRT**

An umbrella skirt is a full skirt which gives an effect of umbrella. It is cut in a circular way. Different ways of cutting a circular skirt are explained below.



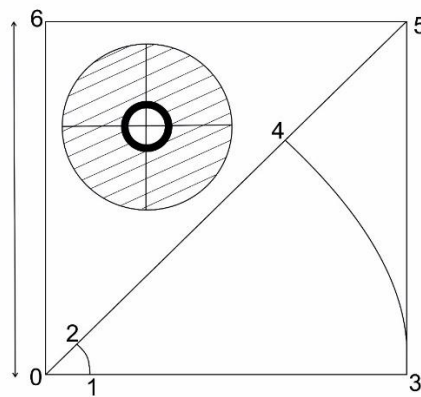
**Fig No:1.15 Design of circular skirt**



**Fig.1.16 Circular skirt Layout and draft**

It is generally cut without a seam at the circumference (Figure:1.16(1)), but in case of insufficient width of cloth, it may be cut in two pieces (Figure:1.16(2 & 3)) and joined together at A-B (Figure:1.16(4)).It can also be cut by joining the same material at one side, to make enough width. This joint (see C-D-E in Figure:1.16(5)) should be taken at the back, before cutting the side opening.

For side opening, slash from the waist on grain line. Bias cloth on the centre front is preferred. Material used: Plain or small designed material with small prints of wider width, preferably 92 to 120 cm (36 to 48”), should be selected for this skirt. Fabric with stripes, lines, or broad printed designs should be avoided to make an umbrella skirt.



**Fig.1.17 Draft of Circular skirt**

**Measurements Required:**

Waist – 28”

Full length - 16”

Belt width - 1½”

**Instructions for Drafting:**

On eight layer fold of pattern paper draw a triangle see 5-0-3 as shown in Figure: 1.17

Mark a point 1 on line 0-3.

1-0 = one-sixth waist -  $\frac{1}{4}$ "

Mark a point 2 on line 0-5.

Join 1-2 in a curve

3-1 = 4-2 full length less belt width +  $\frac{1}{4}$ "

Join 3-4 in a curve

Cut along the line 1-2-4-3.

The unfolded pattern will be a complete circle.

### Steps of construction:

1. Mark outlines of draft by placing it on the fabric. Also, mark seam allowances both at hem and at waist edge.
2. Cut the fabric along the seam allowances.
3. Attach the belt on the waist edge with elastic insertion.
4. Finish the hem line by turning it inwards and hemming.
5. Once the skirt is stitched finish by ironing it.

## Activities

### Activity 1: Drafting of Katori blouse

#### Materials Required:

1. Brown paper
2. Adult body measurements
3. Drafting scales
4. Pens/ pencils

#### Step-by-Step Procedure:

1. Take Adult body measurements
2. Prepare a draft of a Katori blouse (follow the instructions as explained above in the session).
3. Cut on the marked lines.
4. Paste the draft in the practical file and write the drafting as given above in this session.

**Activity 2:** Construction of Katori blouse (on full scale)**Material Required:**

1. Measuring tape
2. Adult body measurement
3. Pencils/pens
4. Chalk
5. Fabric
6. Scissors (paper cutting and fabric cutting)
7. Stitching material (thread, machine, needle, etc)
8. Finishing tools (iron, small scissor, etc.)

**Step-by-Step Procedure:**

1. Spread the fabric on table and place the draft prepared. Marking to be done on fabric as per the draft leaving the seam allowances.
2. Cut the fabric as per the marking.
3. Stitch the Katori blouse.(follow the instructions as given in the session above)
4. Complete the construction by joining the pieces.
5. Finishing of garment to be done by using iron and cutting small thread with a scissor.

**Check Your Progress****A. Fill in the blanks**

1. Katori Blouse is an origin of \_\_\_\_\_.
2. In circular skirt joint should be taken at the back, before cutting the \_\_\_\_\_.
3. Circular skirt is generally cut without a seam at the \_\_\_\_\_, but for the need of sufficient width of cloth, it may be cut in \_\_\_\_\_ pieces and joined together.

**B. Questions**

1. Explain drafting of Katori blouse.
2. Explain drafting of circular skirt with the help of diagrams.



## Session 4: Drafting and Construction Nehru Kurta, Pant Pajama and Single Breast Waist Coat

### DRAFTING AND CONSTRUCTION OF NEHRU KURTA

A Nehru kurta is a straight kurta with one patch pocket at the chest and two side pockets at the side seams. It is generally worn with a dhoti or pyjama. The neckline of this kurta is finished with a bound hem or a stand collar. It can be embellished with embroidery around the neckline, placket and at the shoulder, near the sleeve joint.



Fig.1.18 Nehru kurta Design

#### Measurements Required:

1. Chest .....	38"
2. Full length .....	46"
3. Waist length .....	19"
4. Shoulder .....	9"
5. Neck .....	16"

6. Sleeve length ..... 23”

### Instructions for drafting

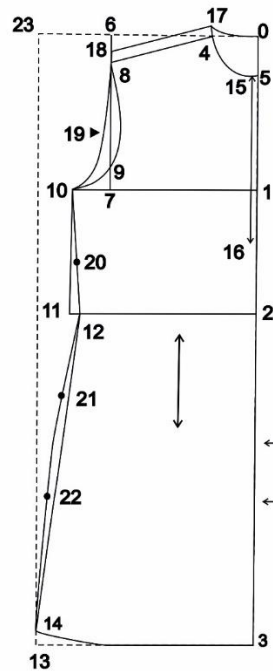


Fig.1.19 Draft of Nehru kurta( Front and Back)

#### Front Body:

Square lines from 0 with fold at 0-1-3.

1-0 =  $\frac{1}{4}$  of chest.

2-0 = Waist length

3-0 = Full length + 1”.

4-0 = 3.5”

5-0 = 4”

Shape front neck 4-5.

6-0 =  $\frac{1}{2}$  Shoulder plus  $\frac{1}{4}$ ”.

Square down from 6 to 7.

8-6 = 1  $\frac{1}{2}$ ”.

Join shoulder 4-8.

9-7 = about 2.5 cm (1”).

10-1 =  $\frac{1}{4}$  of chest + 2”

Shape scye or armscye 8-9-10 for front armhole.

Square down from 10 to 11.

12-11 = 1.5 cm ( $\frac{1}{2}$ ”).

$$13-3 = 10-1 + 2''.$$

$$14-13=3/4''$$

Shape bottom 3-14.

Shape side seam 10-12-14.

Draw line 15-16 at a distance  $1/4''$  from 5-2.

$$16-15= 8''$$

Cut the upper layer at 15-16, thus keeping the right side wider than the left.

### Back Body:

$$17-4 = 1.25 \text{ cm } (1/2'')$$

Shape back neck 0-17.

$$18-8 = 17-4.$$

Join 17-18.

$$19-7= 2''$$

Shape scye or armscye 18-19-10.

### Chest Pocket:

$$\text{Width} = 1/8 \text{ chest} + 1/2''.$$

$$\text{Length} = 4'' + 1/2''$$

### Side pocket marks:

$$20-12= 1 1/2 \text{ to } 2''$$

$$21-20= 1/6 \text{ of chest. Pocket opening.}$$

$$22-21= 1/8 \text{ of chest,}$$

$$22-14= \text{slit (i.e. opening).}$$



**Fig.1.20 Pocket draft**

**Side pocket lining:**

On fold of paper

Square lines from 0

$$1-0 = \frac{1}{6} \text{ chest} + \frac{3}{4}''$$

$$2-1 = \frac{1}{6} \text{ chest} + \frac{1}{2}''$$

$$3-2 = \frac{1}{6} \text{ chest} + 1''$$

Square out from 1, 2 and 3.

$$4-0 = \frac{1}{12} \text{ chest.}$$

Square down from 4 to 7.

$$8-0 = \text{about } 2''$$

$$9-5 = \text{about } 2''$$

Join 8-9 by straight or outer curve line.

**Sleeve :**

On fold of paper

Square lines from 0

$$1-0 = \frac{1}{4} \text{ chest} - 1.5 \text{ cm}$$

$$2-0 = \text{sleeve length from shoulder} + \frac{3}{4}'' \text{ for seams}$$

$$3-2 = 1-0.$$

Join 3-1.

$$4-1 = \frac{1}{8} \text{ chest} - \frac{1}{2}''$$

$$5-0 = 1 \frac{1}{2}''$$

Join 4-5.

Shape back armhole 4-6-5-0 as shown.

Square up from 4 to 7.

$$7-4 = \frac{1}{12} \text{ chest.}$$

Taking  $\frac{1}{4}''$  above point 4, shape front armhole 4-7-0 as shown.

$$8-2 = \frac{1}{8} \text{ chest} + 2 \frac{1}{2}''$$

Join 4-8 by straight line.

Keep  $\frac{1}{4}''$  or  $1 \frac{1}{2}''$  out-side 2-8 for hem fold at cuff end.

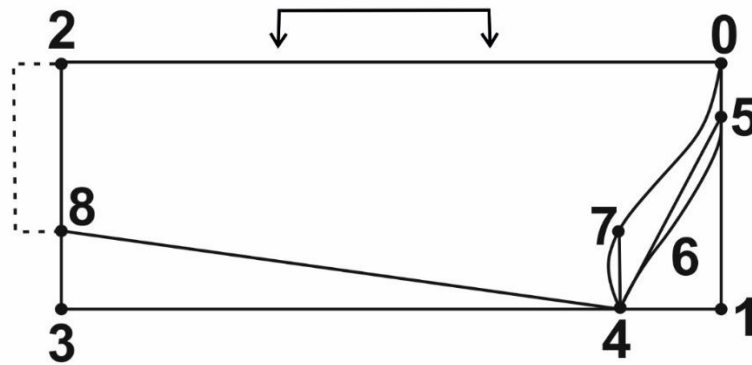


Fig.1.21 Sleeve draft

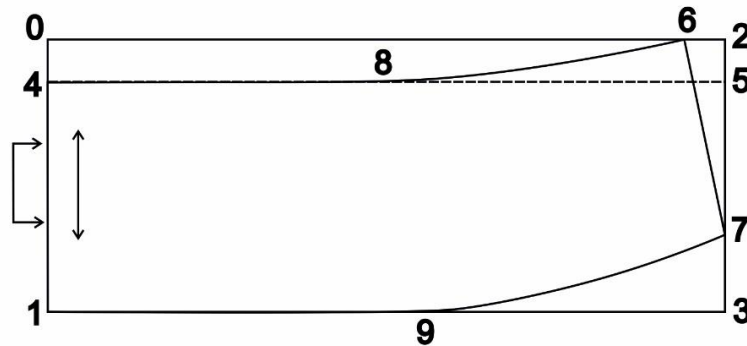


Fig.1.22 Stand Collar Draft

**Stand Collar**

On fold of paper

Square lines from 0.

1-0 = 2"

2-0 = half neck + 2 cm (1/4")

3-1 = 2-0.

4-0 = 5-2 = 1/2" each.

6-2 = 1/2"

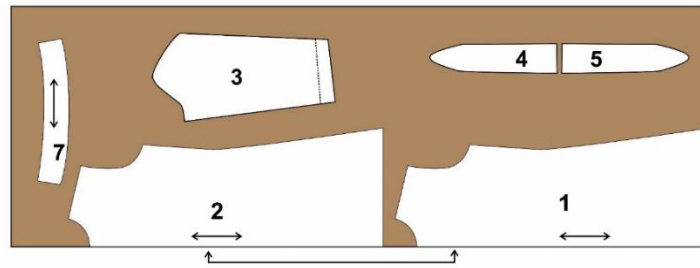
7-3 = 3/4".

Join 6-7

Shape 6-8-4 and 7-9-1 as shown.

**Layout of Nehru Kurta:**

Following is a suggestive layout for this garment with 38” chest and 32” width of cloth. 2.5 meters will be required (i.e. twice the full length plus sleeve length. Both with inlays).



**Fig.1.23 Layout of Nehru kurta**

### **Construction of Nehru Kurta:**

1. Construct front placket of Kurta.
2. Join front and back shoulders with seam.
3. Stitch neck edge and collar edge of stand collar.
4. Attach collar to neckline of kurta.
5. Stitch side seams and seam pockets till slit point.
6. Join side seams of sleeve.
7. Set the sleeve in the armhole.
8. Finish slit, bottom and sleeve ends.
9. Finish the garment by ironing it.

### **DRAFTING AND CONSTRUCTION OF PANT PYAJAMA**

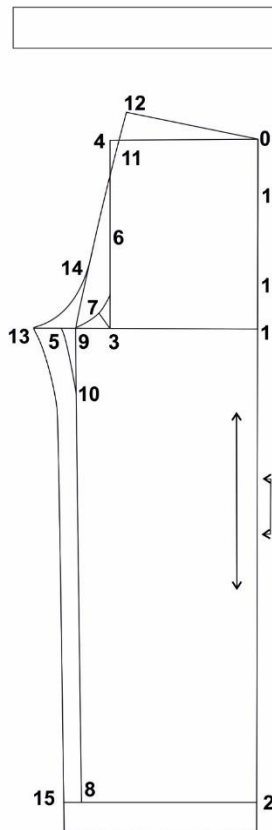
Pant pyjama is a lower garment which is worn both formally and informally. It is a comfortable and versatile garment which can be paired with kurta and shirts. This type of pyjama is prepared with a casing and a zip opening at the waist. If it is to be prepared with a fly-button arrangement, waist-round should be reduced. If required, one pocket is attached on the right side or two pockets on both the sides.



**Fig.1.24 Pant Pyjama Design**

**Measurements Required :**

1. Seat - 36"
2. Full length - 40"
3. Bottom - 14"

**Fig.1.25 Draft of Pant Pyjama****Instructions for Drafting****Front Body:**

On fold of fabric draw a line 0-1-2

1-0 =  $\frac{1}{4}$  seat + 3".

2-0 = full length +  $\frac{1}{2}$ ".

3-1 =  $\frac{1}{4}$  seat + 2  $\frac{1}{2}$ "

4-0 = 3 - 1.

Join 3-4.

5-3 =  $\frac{1}{12}$  seat.

6-3 =  $\frac{1}{6}$  seat.

7-3 = half of 5 to 3 +  $\frac{1}{4}$ ".

Shape fork 6-7-5.

8-2 = 5-1 -  $\frac{3}{4}$ " , or half bottom.

9-5 =  $\frac{3}{4}$ ".

Join 9-8 and shape 5-10 as shown.

Back: 11-0 =  $\frac{1}{4}$  seat + 1  $\frac{1}{2}$ ".

Mark a point 12 = 1  $\frac{1}{4}$ " above 11.

Join 9-12

Join 12-0

13-5 = 1  $\frac{1}{2}$ "

Shape fork 11-12-13 as shown.

15-8 = 1".

Shape inseam 13-15.

Keep 1  $\frac{1}{2}$ " above 0-4 and 0-12 for casing.

Keep 2" below 2-8 and 2-15 for hem fold.

Pocket marks: 16-0 = 7.5 cm (3").

17-16 =  $\frac{1}{6}$  seat.

### Draft of casing

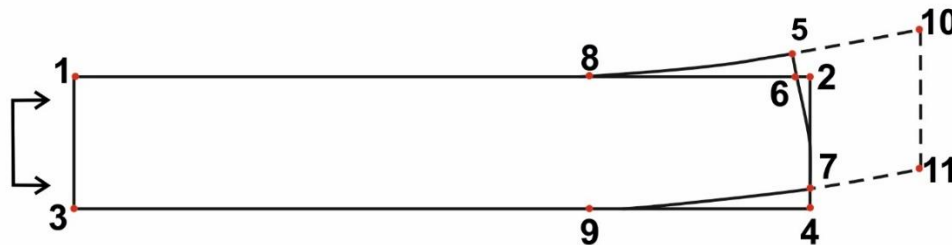


Fig.1.26 Draft of casing for Pant Pyjama

1-2 = half of waist +  $\frac{1}{4}$ "

1-3 = 1  $\frac{1}{4}$ " or 1  $\frac{1}{2}$ " as per the width of casing required

2-4 = 1-3

4-7 =  $\frac{1}{4}$ "

2-8 = 4-9 =  $\frac{1}{6}$ th the waist

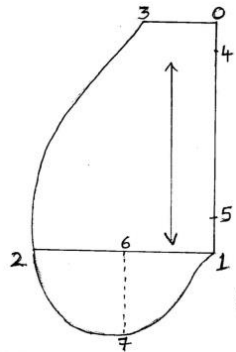
2-6 = 4-7 = 6-5 =  $\frac{1}{4}$ th

Join 5-7 making a curve



Make dotted line  $1 \frac{1}{2}$ " outside 5-7 for overlapping of casing. Mark it as 10-11

### Pocket Drafting



**Fig.1.27 Draft of pocket for Pant Pyjama**

$0-1 = \frac{1}{4}$ th seat + 2"

$0-3 = \frac{1}{12}$ th seat +  $\frac{1}{2}$ "

$1-2 = \frac{1}{6}$ th seat

$0-4 = 3$ "

$4-5 = \frac{1}{6}$ th seat

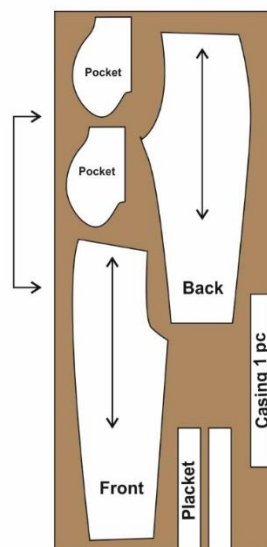
Take the midpoint of 1 & 2 and mark it as 6

$6-7 = 3$ " or as per the depth of pocket needed

Shape the inner side of pocket in a curve 3-2-7-1

### Layout of pant pyjama :

Figure:1.28 shows a suggestive layout for cutting of a Pant Pyjama.



**Fig.1.28 layout of pant pyjama**

**Construction of pant pyjama:**

1. Leaving half inch from the top to attach the casing, join the crotch of front.
2. Join the back crotch by taking 1/2” seam allowance.
3. Join the side seam of both the legs by keeping both right side facing each other and taking ½” seam allowance.
4. Finish the pocket pieces by stitching the curve 4-0-3-2-7-1-5 from the wrong side and then turn it and attach it to the pant in such a way that 4 and 5 of the pocket meets the point 16 & 17 on the side seam of pant.
5. Attach the casing. One can use fusing in the casing for a better finish.
6. Finish the hemline.
7. Sew a button and buttonhole in the casing.
8. Finish the garment by ironing it.

**DRAFTING AND CONSTRUCTION OF SINGLE BREAST WAIST COAT**

A waist coat is a sleeveless upper garment. A single breast waistcoat is a type of waistcoat which doesn't have a collar. It generally consists of 3 or 4 outside welt pockets and 1 or 2 inside cut pockets. The opening and length measurement for a single breast waistcoat are taken from the centre of back neck and not from the shoulder.



**Fig.1.29 Waist Coat Design**

**Measurements Required:**

1. Chest .....38”
2. Waist .....34”

3. Waist opening .....14”
4. Waist length .....19”
5. Shoulder .....17”
6. Full Length..... 25”

### Measures for waistcoats:

**Vest opening:** Measure from the centre of back neck, over the shoulder to the required opening where the fronts overlap.

**Vest length:** Measure from the centre of back neck, over the shoulder, to the required full length of the waistcoat.

### Instructions for Drafting

#### Front Body-

0-1= full length

0-2 = 4-3 =  $\frac{1}{2}$  of shoulder + 1”

0-4 = 3-2 = 1-9 =  $\frac{1}{2}$  of shoulder

2- 13 = 1- 14 =  $\frac{1}{4}$  chest + 2”

0-10 = Waist length

1-28 = 4”

28-29 = 3”

Join 1,29,9,14

0 -6 = 3.5”

0-31 =9” (may vary as per choice)

Join 31 -6 for front neckline.

4- 5 =  $\frac{3}{4}$ ”.

Join 6 - 5 for shoulder slope.

7 is the centre point of 4-3.

7-8 = 1”

3-12=13- 30 =1”

Shape the front armhole by joining 5- 8- 30.

2 -13 = 10 -15 = 1 -14

10 – 17 =  $\frac{1}{4}$ <sup>th</sup> of waist + 2”

10- 15 =  $\frac{1}{4}$  of chest + 2"

15 – 16 = 15- 17=  $\frac{3}{4}$ th on each side

Shape the side seam by joining 30, 17, 14.

11 is Slit pocket cut of 4" length and 1" width

### Back Body-

20-21 = full length

20- 23 =  $\frac{1}{2}$  of shoulder

23 -13 = 21- 14 =  $\frac{1}{4}$  of chest + 2"

20 -26 = 23- 19 =  $\frac{1}{2}$  of shoulder

20 – 22 = waist length

20 -25 = 3.5"

25 – 24 =  $\frac{1}{2}$ "

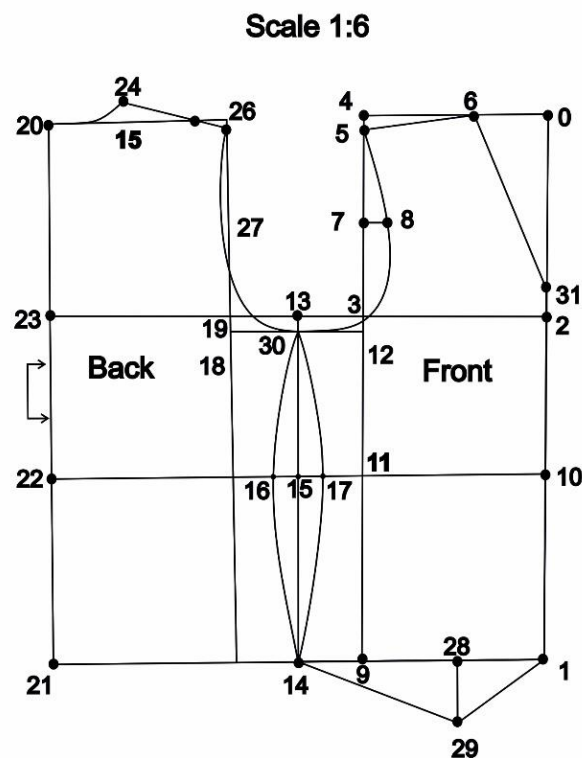
Join 20-24 in a smooth curve for back neck

19 – 18 = 1"

Join 24 -26 for back shoulder slope

27 is centre point of 26 -19

Shape the back armhole by joining 26, 27, 30.



**Fig. 1.30 Draft of Waist Coat ( Front and Back)**

### Layout of Waistcoat

Figure 1.31 depicts a suggestive layout for waistcoat to use the fabric with minimum wastage.

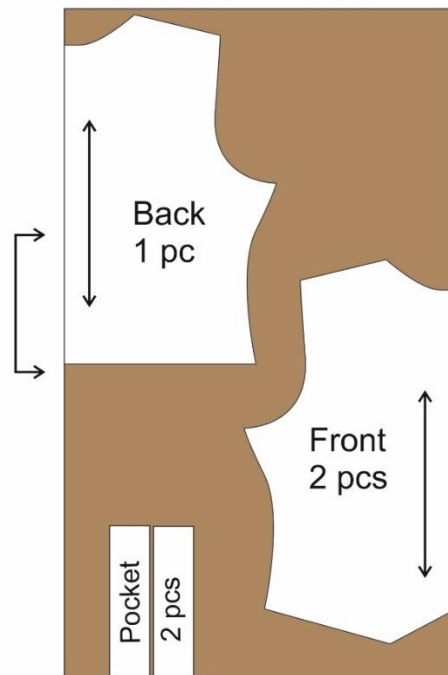


Fig.1.31 Layout of Waistcoat

### Construction of single breast waist coat:

1. Cut the lining for both two front and one back body.
2. Stitch the shoulder of waist coat front and back.
3. Stitch shoulders of the lining and the main body.
4. Finish the edges of slit pocket as the pocket is not seen from the back side too.
5. With wrong side facing each other stitch main body and lining close to the edge of centre front
6. Finish the edges of neckline and armhole.
7. Stitch both front and back lower edge of the waist coat along with lining on wrong side of fabric
8. Then turn both the fabric on right side and iron it to smoothen the curve edges.
9. Complete the stitching by joining the side seams on front and back of the waist coat.

10. Finish the garment by ironing it.

### Activities

**Activity 1:** Prepare a draft of Nehru Kurta.

**Materials Required:**

1. Brown paper
2. Adult body measurements
3. Drafting scales
4. Pens/ pencils

**Step by step Procedure:**

1. Take Adult body measurements.
2. Prepare a draft of a Nehru kurta (follow the instructions as explained above in the session).
3. Cut on the marked lines.
4. Paste the draft in the practical file and write the drafting as given above in this session.

**Activity 2:** Construction of Nehru Kurta

**Material Required:**

1. Measuring tape
2. Adult body measurement
3. Drafting scales
4. Pencils/pens
5. Chalk
6. Fabric
7. Scissors (paper cutting and fabric cutting)
8. Stitching material (thread, machine, needle, etc)
9. Finishing tools (iron, small scissor, etc.)

**Step-by-Step Procedure:**

1. Spread the fabric on table and place the draft prepared (layout is explained in the session). Marking to be done on fabric as per the draft leaving the seam allowances.

2. Cut the fabric as per the marking done.
3. Stitch the Nehru kurta (follow the instructions as given in the session above)
4. Complete the construction by joining the sides
5. Finishing of garment to be done by using iron and cutting small thread with a scissor.

### Check Your Progress

#### A. Fill in the blanks

1. Nehru Kurta is prepared with one or two patch pockets at the chest and two pockets at both the \_\_\_\_\_ .
2. \_\_\_\_\_ is prepared with a casing and a zip opening at the waist.
3. \_\_\_\_\_ is a single type of waistcoat, without a collar and 3-4 welt pockets.

#### B. Questions

1. Explain layout of Nehru kurta with the help of diagrams.
2. Explain drafting of pant pyjama.
3. Explain drafting of single breast waist coat with the help of diagram.

<b>Module 2</b>	<b>Dart Manipulation</b>
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<b>Module Overview</b>
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The art of Pattern making seals the gap between design and production. Dart manipulation is a functional tool for pattern maker for creating attractive, innovative dart placements and style lines.

The alteration in the position of the darts creates attention in the garments at different dart positions.

A fabric is considered to be flat, but a dart has a wedge shape and by drawing the edges of that wedge together a shallow cone is created. Darts give a 3D effect to the fabric. Since fabric is usually more flexible, it shifts around the apex of the cone and form a softer, but still curved shape. In a garment, a dart directs towards the fullest part of the body, but ends 1” away from it.

Darts can be created as per the requirement of a design. Darts can be placed at different positions in a garment like Shoulder, waist, neck, bust, armhole, side seam, centre front, etc.. These darts are generally named after their position on the garment such as shoulder darts, waist darts, side seam darts etc.

The Darts can also be incorporated in a seam going on the bust area. This seam is called princess seam. It can originate from any part of the bodice outline but it always passes through the bust point or the apex.

<b>Learning Outcomes</b>
After completing this module, you will be able to: <ul style="list-style-type: none"> <li>• Demonstrate methods of manipulating the darts</li> <li>• Demonstrate method of converting a dart into princess cut/ style line</li> </ul>
<b>Module Structure</b>
Session 1: Dart Manipulation
Session 2: Converting a Dart into Princess Cut/Style Line



## Session 1: Dart Manipulation and Its Transfer Methods

### INTRODUCTION

Pattern is the design or replica of the garment. Making the design of all the parts of garment according to measurement is called pattern making. A garment is a three dimensional creation whereas the fabric is two dimensional, so to convert the fabric into three dimensional garment there is a need to enclose fullness in a particular area so as to get a proper fit for the body. This procedure is done with the help of pattern making.

Dart manipulation is a useful method for pattern making. It is used to create interesting and new dart placements and style lines. It opens scope for unlimited variety of styles both for fancy and regular designs and patterns.

### Terminology

- **Basic pattern slopers:** It consists of 5 patterns i.e. front bodice, back bodice, front/back basic skirt, and a long sleeve. These patterns are used as basic patterns to create design variations.

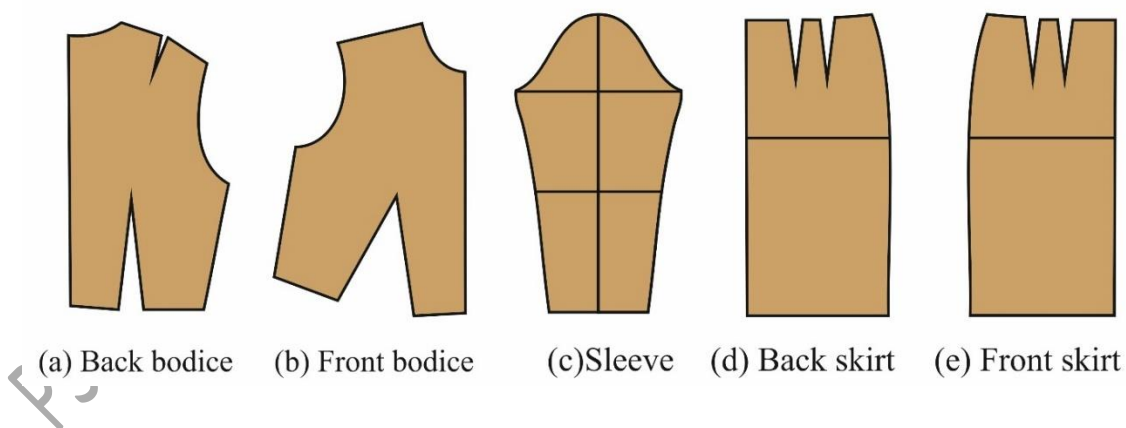


Fig.2.1(a-e): Basic pattern slopers

- **Bust point or Apex:** Apex is the highest position of a rise (also referred to as pivotal point in flat pattern making). This is located at fullest/highest part of women's upper body
- **Dart:** A wedge shape cut-out in a pattern, which is used to manage the fit of a garment. It converts the fabric into 3d from 2D form.

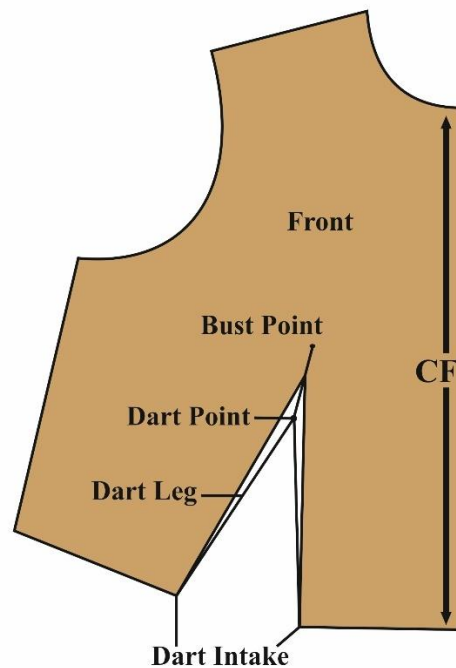


Fig.2.2 Components of Dart

- **Dart point:** The pointed end of a dart. Vanishing point of the dart.
- **Dart legs:** The two lines of the dart that meet at a predestined point on the pattern.
- **Dart intake:** The space confined between dart legs. It is used to shape the fabric according to the body curves and create a perfect fit in the garment.
- **Blending:** A process of smoothening, shaping and encircling angular lines along a seam.

### Principles of the Flat Pattern

Principles of flat pattern are very important for making modifications according to a range of designs. These principles help in developing new designs without affecting the size and fit of the original pattern. There are three basic principles which help to create and alter any pattern.

The three basic principles of pattern making are:

1. Dart manipulation
2. Added fullness
3. Contouring

**Dart manipulation:** Dart is a fold of fabric in a triangular form stitched on the wrong side of the garment. It is used to provide fit to the garment. Dart manipulation is changing the position of a dart within the pattern. There are various rules for creating, combining, dividing and transferring the darts at different locations on a pattern piece. In doing so, it is feasible to shift and relocate the dart into other parts of the bodice without altering the fit of the garment. Dart manipulation helps in creating attractive dress designs. The darts can be stitched as style lines and can be changed into tucks, pleats, gathers, etc.

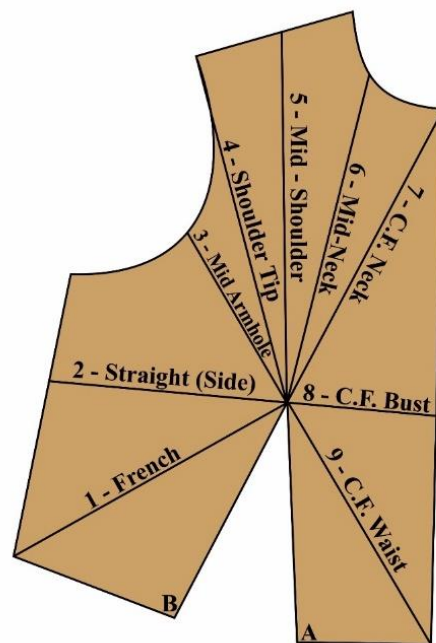
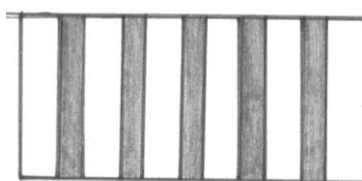


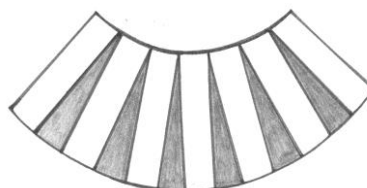
Fig No: 2.3 Various Dart Positions

**Added Fullness:** Fullness can be provided in a garment by using gathers, pleats, tucks etc. Added fullness provides extra fullness than what the dart intake gives in a pattern. Due to this additional fullness the pattern's length and width is increased.

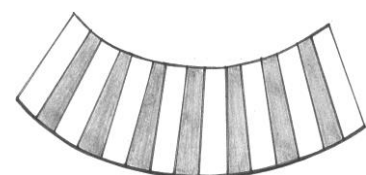
### Spreading fullness



(a) Equally on both the sides



(b) On one side



(c) Unequally on both sides

Fig.2.4(a,b,c) Spreading fullness

There are three ways to create fullness in garments. One is by mounting fullness equally on top and bottom of a pattern (a), the other is adding fullness on one side only while the other side remains without fullness (b) and finally by spreading pattern equally on both the sides (c). This means the pattern spreads more on one side and less on the other side.

**Contouring:** This principle makes a pattern well fitted on the curved parts of the figure. It fits better than a pattern with darts. Fitting is achieved in the pattern by shaping within its structure to fit the body curves above and below the waist, and in between the bust and shoulder blades using seams and darts for a closer fit. Strapless dresses are examples of garments made by this principle.

### Basic Techniques used in dart manipulation

The two basic methods for manipulating the darts are:

- (a) Slash and spread method
- (b) Pivot method

#### (a) Slash and Spread Method

In the slash and spread method, the pattern or basic sloper is slashed or cut on the desired style line and original dart intake is closed. The pattern itself spreads on the new position to create the new position for dart.

For example, to shift waist dart on shoulder, a new line is drawn from the center of the neck in the bodice pattern (Figure: 2.5) so that it touches the bust point. The pattern is slashed at this new line until the bust point but not through it. The old dart is now closed at waist. Now the slashed line opens out to form a new dart. The length of the new dart is then shortened. This creates relocation of the dart without changing the fit of the garment.

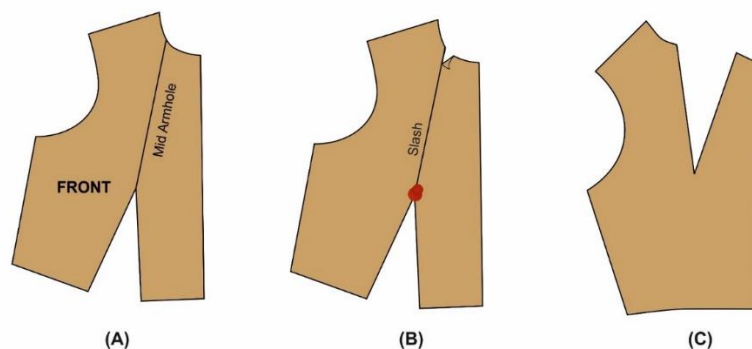


Fig.2.5 Slash and spread method

## Creating Styles in Pattern Making Using Slash and Spread Method

### 1. Waist dart to side seam dart

- Trace the basic pattern front block with waist dart.
- Label dart legs A and B.
- Draw a slash line from side seam to bust point or apex.
- Cut pattern from side seam to (not through) bust point or apex.
- Close dart legs A and B. Tape.
- Place pattern on a paper and retrace it.
- Dart point  $\frac{1}{2}$ " away from bust point or apex.
- Draw side seam dart legs from dart point.

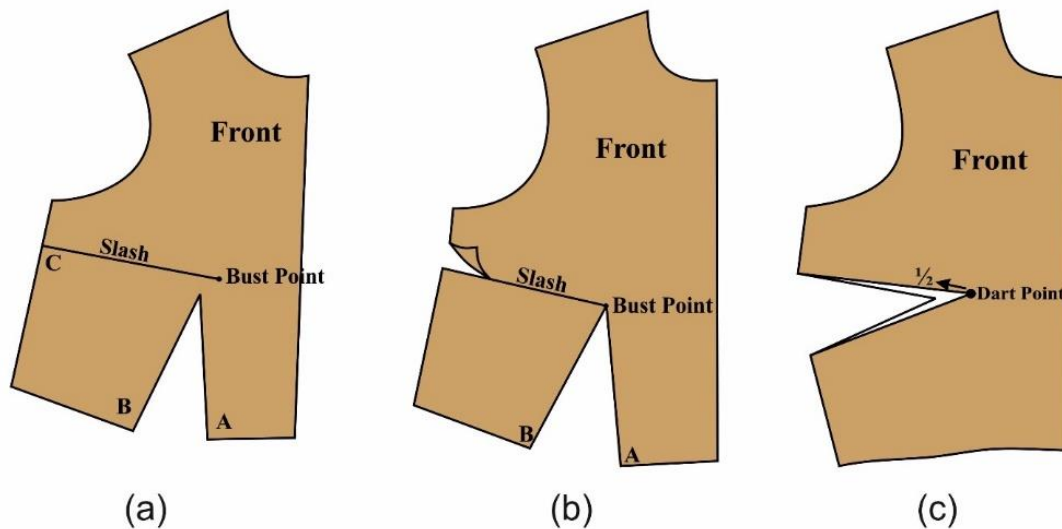


Fig.2.6 Shifting waist dart to side seam dart

### 2. Waist dart to mid armhole

- Trace the basic pattern front block with waist dart.
- Label dart legs A and B.
- Draw a slash line from mid armhole to bust point or apex.
- Cut pattern from mid armhole to (not through) bust point or apex.
- Close dart legs A and B. Tape.
- Place pattern on a paper and retrace it.
- Dart point  $\frac{1}{2}$ " away from bust point or apex.
- Draw mid armhole dart legs from dart point.

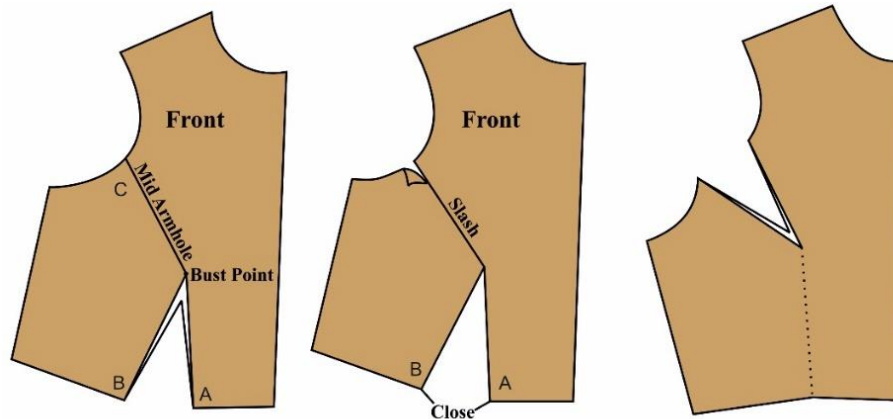


Fig.2.7 shifting waist dart to mid armhole

### 3. Converting waist dart to mid shoulder

- Trace the basic pattern front block with waist dart.
- Label dart legs A and B.
- Draw a slash line from mid shoulder to bust point or apex.
- Cut pattern from mid shoulder to (not through) bust point or apex.
- Close dart legs A and B. Tape.
- Place pattern on a paper and retrace it.
- Dart point  $\frac{1}{2}$ " away from bust point or apex.
- Draw mid shoulder dart legs from dart point.

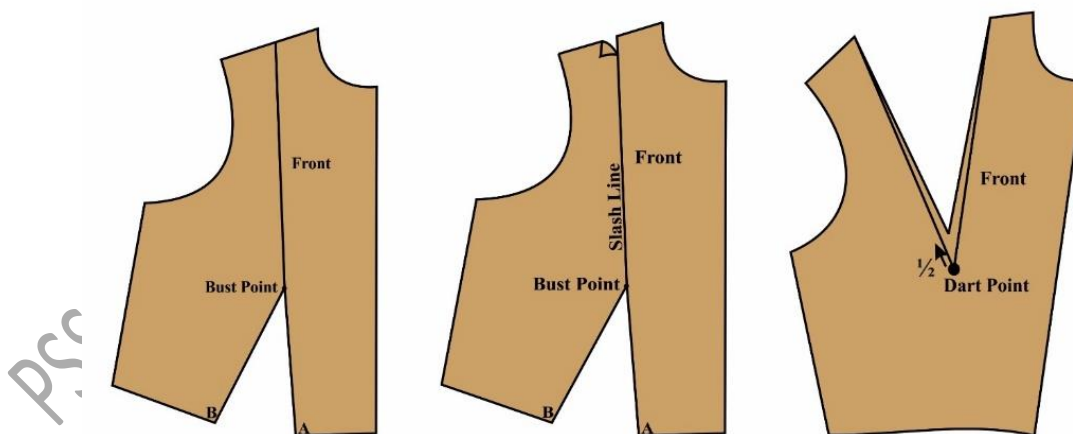


Fig.2.8 Shifting waist dart to mid shoulder

#### (b) Pivot Method:

In pivot method darts are moved by anchoring the basic pattern with a pin and moving the pattern. This method does not need slashing of the pattern. It is a quicker method of dart manipulation, but requires skill for the designer.

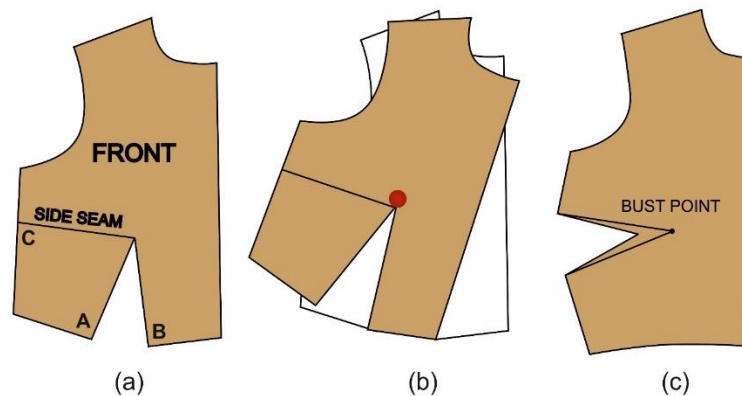


Fig.2.9 (a, b &amp; c) Pivot method

Pivotal method is mainly used in the manufacturing industry as it is quick and easy to shift dart positions. It does not require a slash (cut) and join technique. Following are the steps to relocate darts using pivotal methods (see Figure 2.9) :

- First step is to place the pattern or basic sloper on pattern paper.
- The basic pattern is then pinned on the paper with a fixed pin at the bust point.
- Once the pattern is pinned, mark a point on the pattern where the dart has to be relocated on the pattern ( In Figure 2.9 the relocation is done from the waist to the side dart).
- Now, on the pattern paper trace the pattern from dart leg (A) to the new position point on the pattern (C).
- Keeping the dart point or apex (pinned earlier) as the radial point, move the pattern in such a way that the dart legs A and B meet each other.
- At this point it can be seen that the dart is closed.
- At the same time it can be observed that point C also moves. This results in a new dart at point C. Name the dart legs as C and D.
- Now, trace the pattern from the new location of C to combined dart legs AB.

### Creating Styles in Pattern Making Using Pivotal Method

#### 1. Waist dart to neck dart

- Place the basic pattern front block with waist dart on pattern paper with a push pin through bust point or apex.
- Mark mid neck location as point C and dart leg A on pattern paper.

- Trace section of pattern from dart leg A to C.
- Pivot pattern until dart leg B touches A on paper (this closes waist dart and opens space for mid-neck dart).
- Trace the remaining section of the pattern from dart leg B to point C on pattern.
- Remove the basic front block and check.
- Draw new dart legs to dart point.
- Center dart point  $\frac{1}{2}$ " away from bust point.

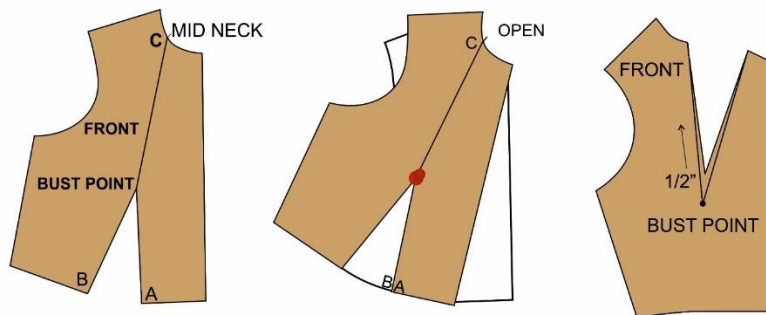


Fig No 2.10 Waist dart pivot to Neck dart

## 2. Waist Dart to Mid Shoulder

- Place the basic pattern front block with waist dart on pattern paper with a push pin through bust point or apex.
- Mark mid shoulder location as point C and dart leg A on paper.
- Trace section of pattern from dart leg A to C.
- Pivot pattern until dart leg B touches A on paper (this closes waist dart and opens space for mid-shoulder dart).
- Trace the remaining section of the pattern from dart leg B to point C on pattern.
- Remove the basic front block and check.
- Draw new dart legs to dart point.
- Center dart point  $\frac{1}{2}$ " away from bust point.

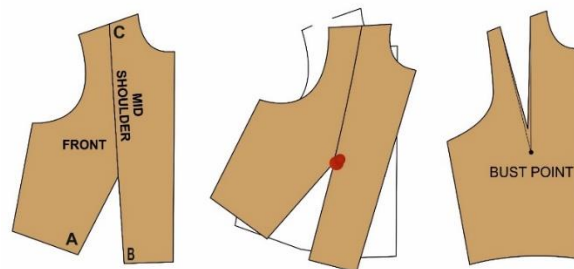


Fig No 2.11 Waist dart pivot to mid Shoulder dart



## Activities

**ACTIVITY 1:** Using slash and spread method, make a bodice pattern with a side seam dart.

**Materials Required:**

1. Brown paper or pattern paper
2. Drafting scales
3. Push pins
4. Scissors
5. Pens/ pencils
6. Basic bodice block with a single waist dart

**Step by step Procedure:**

1. Mark the new dart position with a line from the side seam to the bust point or apex.
2. Follow the instructions given in the session to relocate dart from waist to side seam.
3. Trace the new pattern on a pattern paper and cut new pattern.

**ACTIVITY 2:** Using pivotal method, make a bodice pattern with a centre front dart.

**Materials Required:**

1. Brown paper or pattern paper
2. Drafting scales
3. Push pins
4. Scissors
5. Pens/ pencils
6. Basic bodice block with a single waist dart

**Step by step Procedure:**

1. Place the basic pattern front block with waist dart on pattern paper with a push pin through bust point or apex.
2. Mark centre front location as point C and dart leg A on paper.

3. Trace section of pattern from dart leg A to C.
4. Pivot pattern until dart leg B touches A on paper (this closes waist dart and opens space for centre front dart).
5. Trace the remaining section of the pattern from dart leg B to point C on pattern.
6. Remove the basic front block and check.
7. Draw new dart legs to dart point.
8. Center dart point  $\frac{1}{2}$ " away from bust point.
9. Cut the new pattern from the pattern paper.

### Check Your Progress

#### A. Multiple Choice Questions

Tick the most appropriate answer from the choices given below:

1. Flat pattern techniques involves \_\_\_\_\_
  - (a) Slash and spread
  - (b) Pivot
  - (c) Both (a) & (b)
  - (d) None
2. \_\_\_\_\_ flat pattern principle makes a pattern well fitted to the curved human figure.
  - (a) Dart manipulation
  - (b) Added fullness
  - (c) Contouring
  - (d) None

#### B. Questions

1. What is dart manipulation. How it can be done?
2. Explain the slash and spread method. Show its application by converting waist dart to mid armhole with diagram.
3. Explain pivotal method. Show its application by converting waist dart to mid neck with diagram.
4. Explain dart terms.

## Session 2: Converting a Dart into Princess Cut/Style Line

### PRINCESS LINE

Princess line is the generally refers to the name given to panel seams that go through bust point or apex, incorporating the dart width into the seams. The princess cut line generally curves from the center of the shoulder down through bust point or apex to the waistline, or from the armhole, down to the waistline through bust point or apex.



Fig.2.12 Princess line from shoulder

The shapes of these seam lines are often replicated in the seam lines of the back pattern pieces, so that the panels curve into the armhole, or both panels meet at the shoulder on both front and back pattern pieces.

### DRAFTING OF BODICE BLOCK WITH PRINCESS LINE FROM ARMHOLE

Follow the instructions below to make princess panel line from armhole to waistline using slash and spread method.

1. Trace the bodice block (with a single dart at waist) on a new piece of pattern paper to preserve the original basic paper pattern.

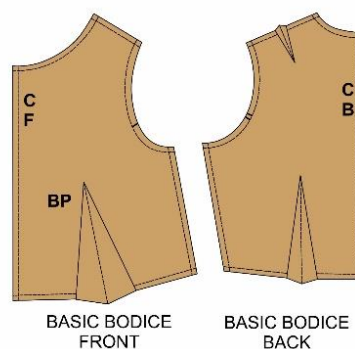
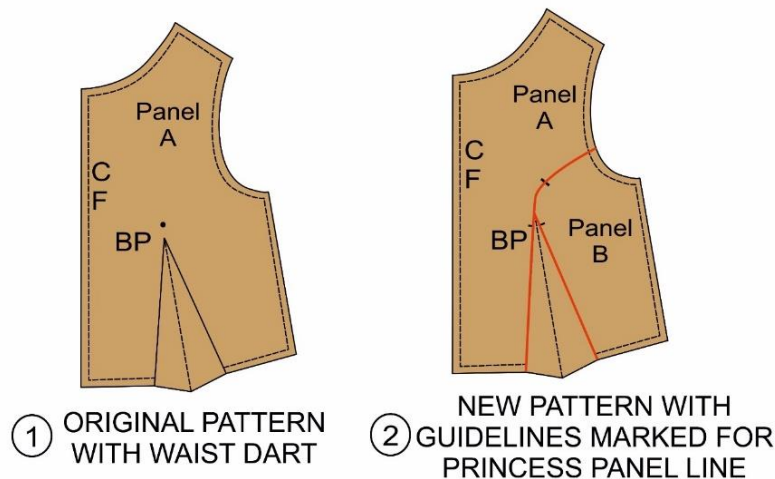


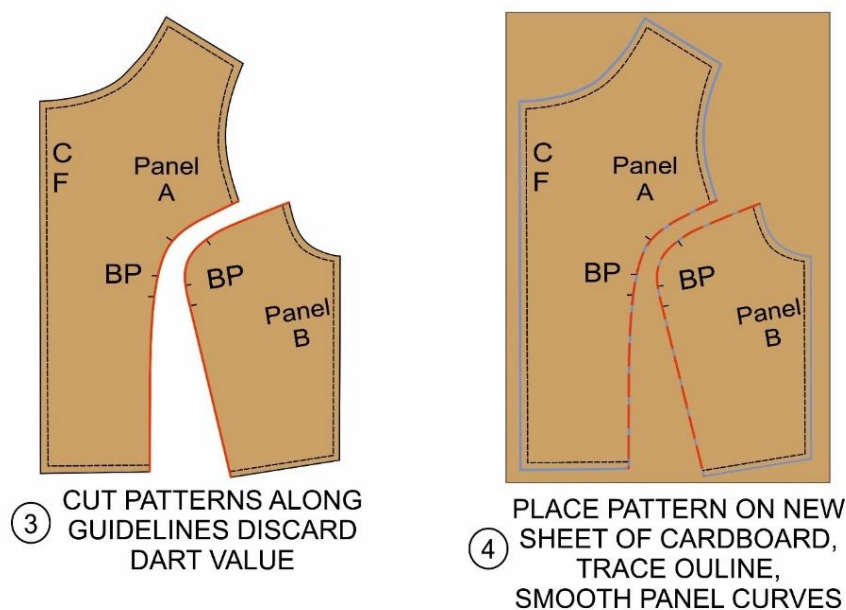
Fig.2.13 Basic bodice Block (Front and Back)

2. Mark the seam line by passing it through bust point or apex and along the dart arms. Extend the seam line from bust point or apex to the armhole. Correctly mark the notches for bust point or apex for ease of sewing.
3. Mark the panels as A and B. (See Figure 2.14)
4. Cut the pattern along the seam line from armhole or shoulder disposing the dart value and going through center of the bust and waist .



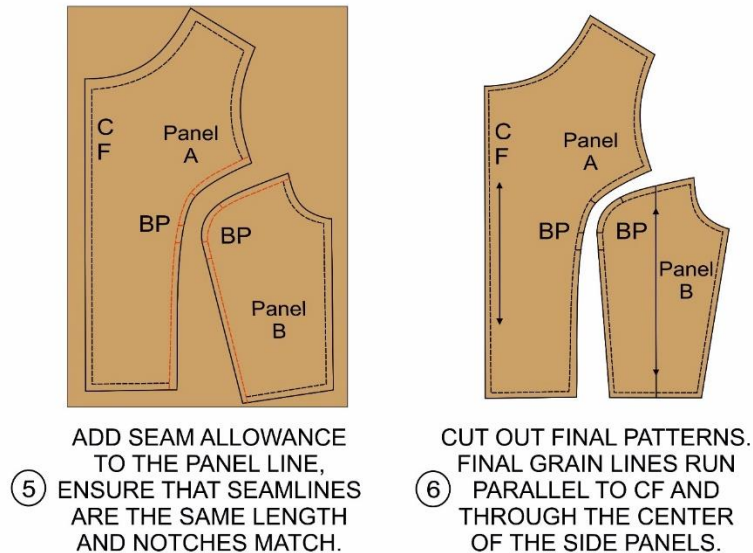
**Fig.2.14 Shifting of waist dart into Princess Seam from Armhole- Step 1**

5. Place the patterns on a pattern paper. Trace the outlines of the patterns on the pattern paper, and smoothen the curve of the panel lines by pencil, using a French curve ruler, or by using a similar pattern-making guide.

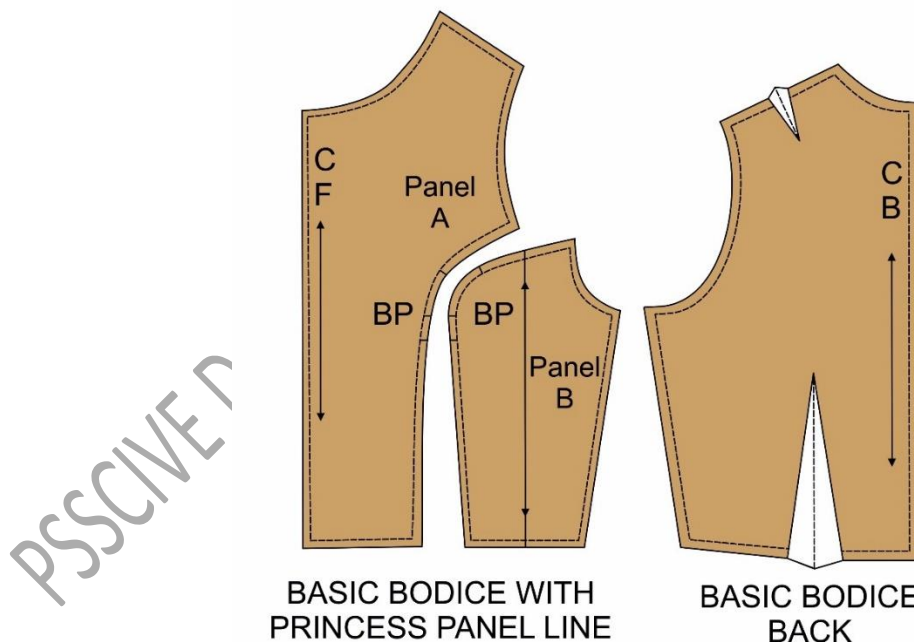


**Fig.:2.15 Shifting of waist dart into Princess seam from Armhole- Step 2**

6. Make sure that the seam lines of the princess panel lines are identical to each other in length. Draw the seam allowance on the new panel lines and transfer the notch marks.
7. Cut the panel pieces properly. Mark grain lines.



**Fig.2.16 Shifting of waist dart into Princess seam from Armhole- Step 3**



**Fig.2.17 Shifting of waist dart into Princess seam from Armhole- Final Pattern**

Note: - Princess line may require more shaping on waist. Most of the designers prepare a sample dress before preparing using the main fabric for fit trials. Adjustments if any are done on the main fabric as per the sample piece.

## DRAFTING OF BODICE BLOCK WITH PRINCESS LINE FROM SHOULDER

A princess line from shoulder can be achieved by following two different methods-

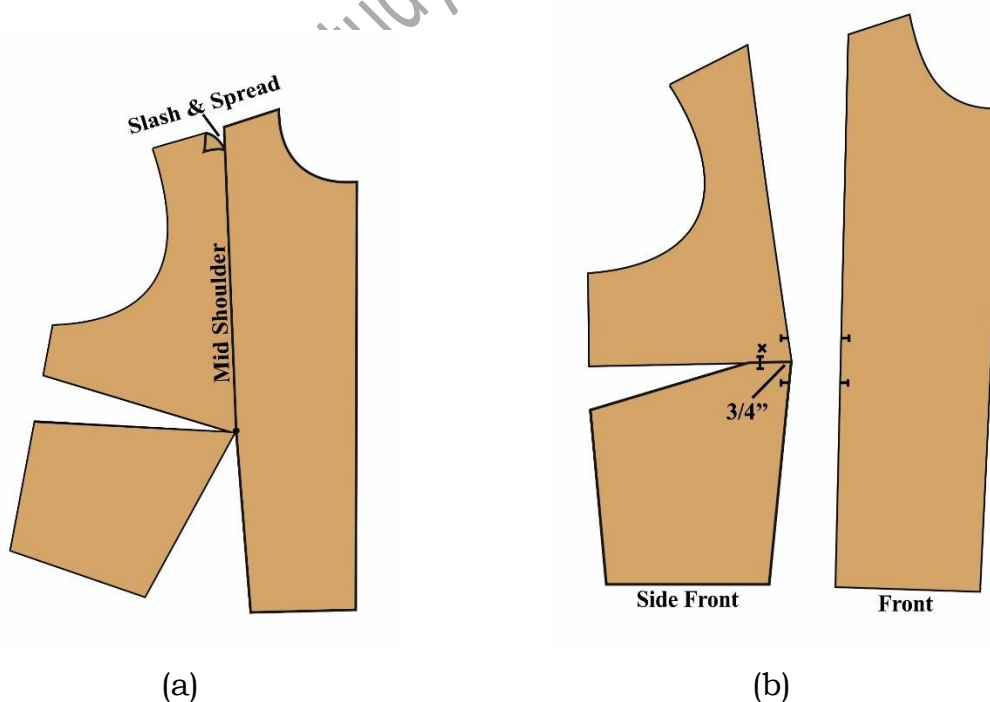
1. Using single shoulder dart-curved till waist.
2. Using two dart bodice to make a shoulder princess seam line.

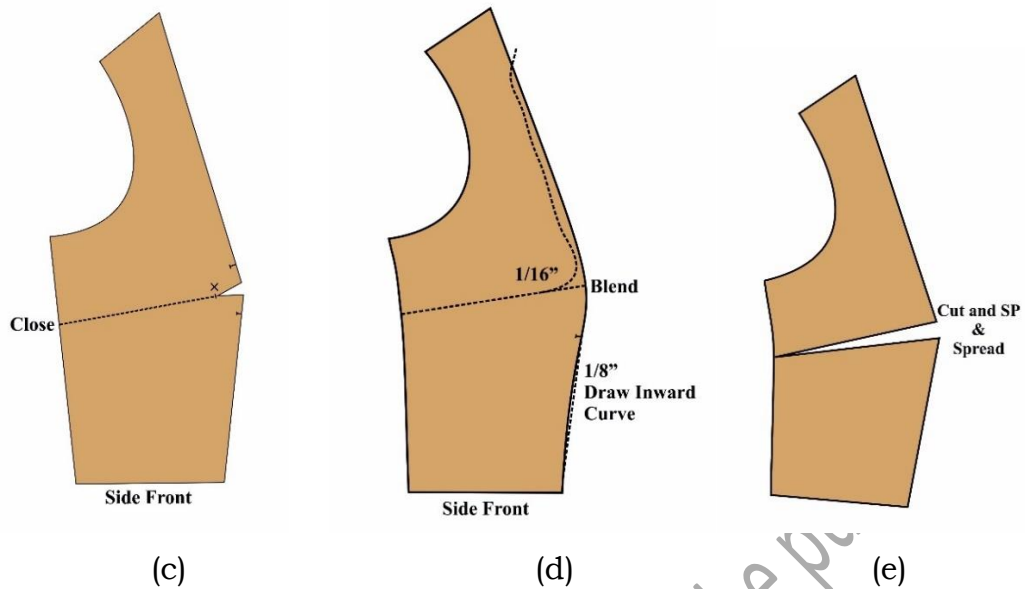
For the drafting of classic princess seam, which originates from the front and back waist darts and continues through to the shoulder darts, a two-dart bodice is used.

### Creating princess line from mid shoulder

Trace the front of two dart bodice pattern.

- Mark a line from mid shoulder to bust point or apex (style line)
- Mark notch points 2 inches above and below the bust point or apex.
- Mark the lines from dart points to bust point or apex from both the darts.
- Mark  $\frac{3}{4}$ " from bust point, (new pivot point) Mark it as X.
- Cut the style line drawn from mid shoulder.





**Fig.2.18 Shifting of waist dart into Princess seam from Shoulder**

- Retrace side front panel on a paper pattern by shaping the bust curve.
- Broken lines represent the original shape of panel.
- Cut the slash line from bust point to dart point to (not through) X point.
- Close side dart legs and tape it.
- This will shift the fulness at the princess seam.
- Retrace and blend by shaping the bust point or apex.

## Activities

**Activity 1:** Draft a bodice with princess line from mid shoulder.

### Materials Required:

1. Brown Paper
2. Scale
3. Pencil
4. Basic two dart bodice block
5. Scissors

### Step-by-step Procedure:

1. Trace the basic block on a piece of brown paper. Mark the waist dart and armhole dart on it

- Convert these darts into princess seam from armhole as explained above in the session.

### Check Your Progress

#### Fill in the blanks:

- \_\_\_\_\_ is the name commonly given to panel lines that go through bust point, absorbing the dart value into the panel line.
- Fullness of \_\_\_\_\_ can be shifted to the neckline and converted to gathers.

#### Questions

- Explain how a dart can be converted into a seam with the help of diagrams
- Explain how some style line and creative designs can be created using shifting of darts. Give examples.



<b>Module 3</b>	<b>Fitting Defects, Remedies and Finishing</b>
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<b>Module Overview</b>
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Clothing construction is incomplete without a study of the inherent problems of fitting. It is necessary to have proper knowledge regarding the alterations and adaptations in the patterns so as to suit individual measurements.

There are basically five standards of a good fit namely ease, grain, line, balance and set. These standards help to find out the fitting problems in the garment. As discussed in the unit, fitting defects can be observed in a garment such as defects at shoulder line, side seam, neck line, waist line etc. There are various remedies to solve these defects.

Fit is subjective to each individual. However, a garment is said to be well fitted if it follows the curves of the body being covered. A well fitted garment has correct amount of ease (neither too tight nor too loose) and its seam lines follow the normal silhouette of the body.

An ill fitted garment can make the wearer feel uncomfortable. Deviations of measurements from standard set of measurements for a body type might result in fit problems at certain areas. Problems related to these areas or body landmarks are explained in this unit.

This unit is also gives a detailed explanation about the finishing process in a manufacturing unit and how a product is finished in a manufacturing unit to give a complete finished product for customer satisfaction. This finishing process includes thread cutting, Quality check of measurements, attachment of accessories, tagging, ironing, packing, assortment and final inspection by the buyer before dispatch of goods.

<b>Learning Outcomes</b>
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After completing this module, you will be able to:

- Explain fitting defects and remedies
- Understand figure abnormalities
- Explain finishing of garments

<b>Module Structure</b>
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Session 1: Fittings, Defects and Remedies
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Session 2: Figure Abnormalities
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Session 3: Finishing of Garment
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## Session 1: Fittings, Defects and Remedies

### FITTING

Fit refers to the relationship of the garment form to the human form. To fit well, the three-dimensional contours of the garment must correspond with those of the body and any undergarments worn beneath the garment.

A well-fitted garment is a cause of approval and appears pleasing to the eye. It hangs neatly or sets without creases, drooping or poking out and is well balanced. In a well fitted garment, person feels easy and comfortable and adjusts naturally to his/her activities. A good fitted garment must hang freely and easily as the body moves.

In contrast, when a garment fits poorly, there is a lack of harmony with the body structure. Signs of misfit include. Wrinkles, strain, lines or bagging.

One can spend hours and hours doing meticulously careful construction, but unless it is properly fitted, the garment will not look aesthetically pleasing. Any finished garment is judged by its look on the wearer.

A human body comprises of many subtle curves, but there are some basic ones. These curves include:

1. Bust
2. End of shoulder
3. Shoulder blade
4. The elbow
5. The abdomen
6. The side
7. The hip

A garment therefore has to be so cut and stitched to fit into curves and bulges. A straight flat piece of cloth should be folded into darts or cut in seams to allow enough ease over each bulge.

### Five Standards for a Good Fit

Five basic factors of fitting decide whether a garment fits well or not. These factors include ease, line, grain set and balance. These elements are correlated but not all are equally obvious in every situation. For example: Grain is difficult to be seen in fine weaves or firm thick textures. In such a case, one must look for wrinkles or look for balance at the lower edges as in a skirt, jacket or short sleeves.

In a simple dress, such as the basic pattern, which does not have some unusual style, there will be the following evidences of a good fit:

**Ease:** This refers to the amount of extra allowance added in a garment to make it comfortable to the wearer. A good fitted garment should have perfect fit neither too tight nor too loose. It must contain sufficient ease to allow room for movements like walking, sitting, reaching out and even breathing. The ease allowance varies with fashion, body size/shape, personality, age, fabric, and for the occasion.

**Line:** This refers to the placement of the structural lines of the garment with the natural lines of the body. Lines to be observed in fitting are the basic silhouette seams, the girth seams and not style or design lines. For a good fitted garment, side seams should hang in the centre of the side of the body and should be perpendicular to the floor. Also, centre front (CF) and centre back (CB) seams should fall at the centre of the front and back of the body and should be perpendicular to the floor. Darts and seams such as shoulder seams should follow the shoulder line. Other seam lines such as necklines, armholes etc. should gradually curve. The hemline should be parallel to the floor. The circumference(girth) lines including the bustline, waistlines, hiplines and hem line should be smooth curves following the natural body curves. The neckline should fit well both in front and back neither too tight nor too loose, yet it should be comfortable. Some design lines within the silhouette such as pleats, tucks, gathers should appear to hang perpendicular to the floor.

**Grain:** This refers to the direction of the threads/yarns. In a standard basic pattern at the centre front and back at both bust and hip, the lengthwise grain is perpendicular to the floor and the crosswise grain is horizontal or parallel to the floor. For a good fit, the garment should be cut on the correct grain. An on-grain garment hangs smoothly and appears symmetrical. If the garment is off grain it will not hang in a straight line. But in some garments, bias cutting is necessary for the drape and to fit body's natural curve so garments like chudidhar, bias blouse are cut on bias (45 degree) grain.

**Set:** This refers to a smooth fit without any unwanted wrinkles. Wrinkles caused by poor set results from the way the garment fits the wearer. Set wrinkles generally take place because the garment is too large or too small for the wearer and the garment hangs or sags when worn. Wrinkles across the shoulders at the back of a jacket or blouse occur because the shoulders are broad, or some times because the shoulders are square.

**Balance:** This takes place when the garment is in symmetry. The right and left side of the garment appear evenly balanced, when viewed from front, back or side of the garment. 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.

### Reasons for poor fitting

1. Garment is not cut properly. Poor stitching and pressing.
2. Poor foundation of garments. Badly fitted under garments such as brassiere, knicker, or a saree petticoat often gives the impression of a poor fit.
3. Pattern not of right size or not altered.
4. Unsuitable style to the wearer and his/her figure.

### Steps in Solving a Fitting Problem

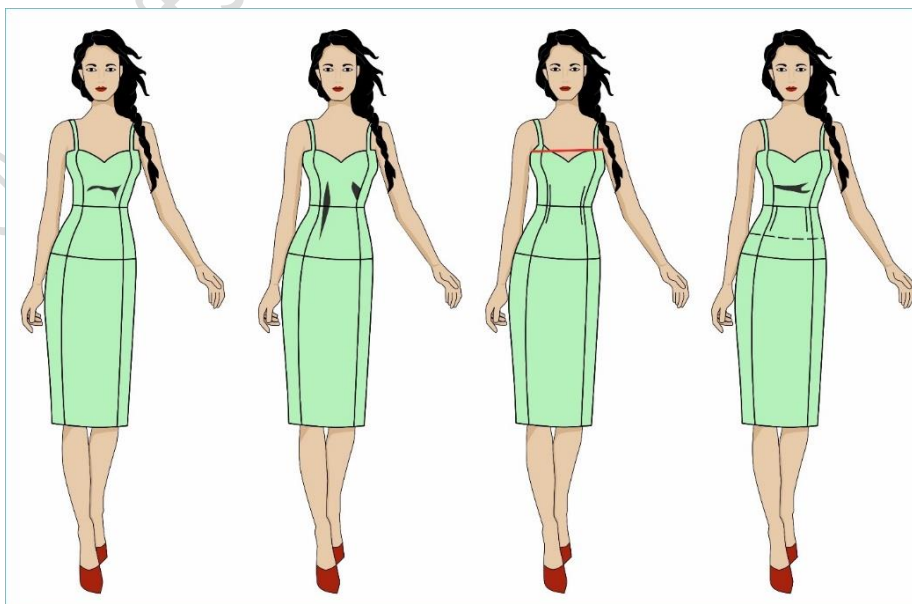
1. Study garment and check each of the five factors of fit (Ease, Comfort, Line, Grain, Set and balance).
2. Check on diagonal wrinkles straining for release at a bulge.
3. Find out the cause.
4. Decide on remedy.
5. Cut with care:
  - i. Lay pattern parallel to the lengthwise grain/ selvedge.
  - ii. Keep ½-1” seam allowance.
  - iii. Take care of neck and armhole curves.
6. Stitch carefully- for a good fit, the garment panels and pieces must be properly pinned, marked, tacked and stitched. Make sure that:
  - i. Seams are straight and even
  - ii. Darts do not have ugly pouches or creases at ends.
  - iii. Fulness, if used should be evenly distributed without puckers or pleats.
  - iv. Facing and hems should fit smoothly.
7. Iron as you stitch. It neatens seams and edges.
8. Fit over correct under garments.
9. The posture of the body should be as natural as possible when fitting.
10. Blouses or dresses should not be too tight.

11. Use a hanger, when you are not working on a garment. This prevents wrinkles and creases.

### **Evaluation of well-stitched, well fitted and well finished garments**

In order to make a well fitted garment it is important to evaluate and inspect the garment for fit. This can be done by checking the following points:

1. Sufficient fullness at all points for movement; standing, bending and sitting.
2. Grain lines at bust, waist, hip and upper arm are parallel to the floor
3. Grain lines at side seams, centre front and back are perpendicular to the floor.
4. Centre front and back seams are in the middle of the figure.
5. Side seams are straight and placed halfway between the front and back.
6. Shoulder seams lie straight across top of shoulder.
7. Bodice length is correct above and below the waist and waistline seam fits snugly at natural waist.
8. Sleeve length is correct above and below the elbow, with centre elbow dart pointing to the tip of the elbow when the arm is bent.
9. Bodice dart points directly to the fullest part of the bust.
10. Hip darts point to the fullest part of the hip and end just above this point.
11. Sleeve seam line lies across the outer edge of shoulder.
12. Neckline fits smoothly without pulling or gaping.



**Fig.3.1 Evaluation of well-stitched, well fitted and well finished garments**

To evaluate the fit of a garment, a test fit sample is prepared before the finally garment construction. This test fit garment or sample is evaluated for stitching, fit and finishing. If any of these fitting point is not correct, the correction should be pinned in, removing the basting wherever necessary and alterations are made in the fit sample and the pattern.

To prepare a garment for fitting or to prepare a test fit garment, following points should be considered:

1. Be sure that all curved and bias edges are stay-stitched.
2. Machine-baste the garment together before doing permanent stitching. Never hand-baste a garment for fitting as the basting pulls and stretches and does not give an accurate fit.
3. Use a non-matching colour thread so that the basting can be seen when it is to be removed.
4. Stitch all darts, tucks and construction details and press them lightly.

### **FITTING PROBLMES AND THEIR REMEDIES**

A good fitted garment should conform to following points:

- A garment should fit properly, neither too large nor too small and should conform to the shape of the body without binding, pulling, sagging, straining, or wrinkling.
- It should be comfortable and attractive to the wearer

### **Garment fitting procedure**

In order to fit a garment to body various procedures are followed which help in acquiring desired fit. These procedures involve:

- 1. Figure Analysis-** The body structure of each individual varies from others. Standard measurements and hence standard patterns may not adjust every type of figure. Hence, while checking fit of a garment one must analyse the body structure to determine the cause of fitting problem.
- 2. Fitting Analysis-** While checking fit of a garment, it is important to locate the wrinkles and to identify the direction and character of the wrinkles. For a large garment area, either loose horizontal or vertical folds forms making the garment stand away from the body. Whereas, for a small(in terms of required size) garment, tension wrinkles appear

horizontally, vertically or diagonally over the tight area. Learning to evaluate, observe and analyse wrinkles is the first step while learning fit.

**3. Figure Requirements-** Some parts of the body might deviate from the standard measurements which creates a need for special attention while fitting a garment. For this one must analyse the need for change in garment measurements.

**4. Garment Alterations-** In order to acquire a good fit, pattern adjustments and alterations are required. Making adjustments or alterations before the garment is cut from fabric can eliminate many problems later.

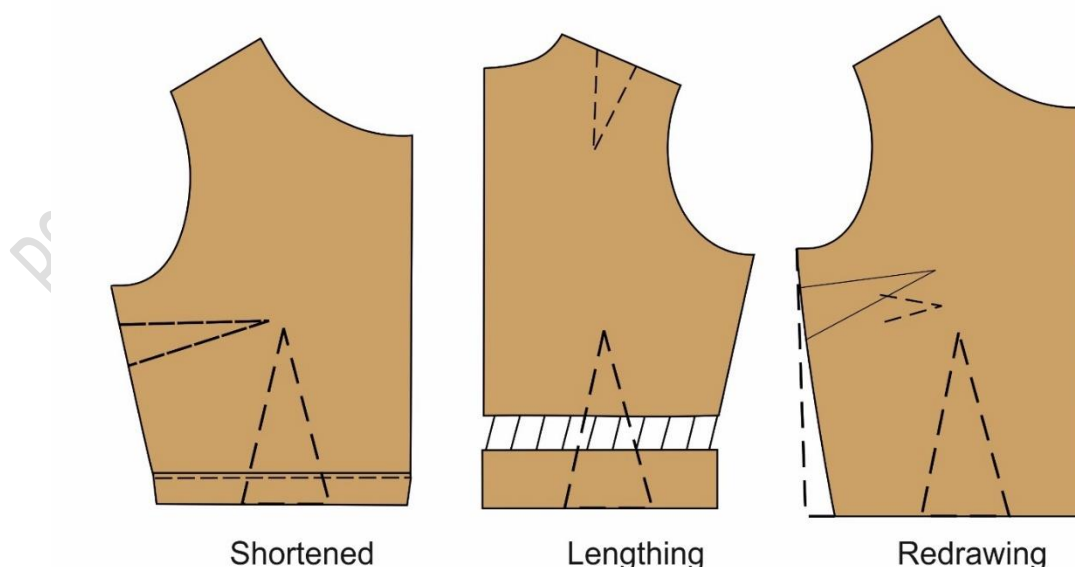
A pattern can be altered and adjusted three ways:

- i. By folding out surplus fullness to make an area smaller.
- ii. By slashing and spreading or overlapping along pattern lines to increase or decrease measurements.
- iii. By redrawing darts or seam lines.

Fitting problems usually involve one or more of these basic body areas: neckline, bust line, hipline, arms, shoulder line, back waistline, or abdomen.

### 1. Length Alteration

Length can be increased by slashing the pattern and spreading the required amount to increase the length. To decrease the length, it can be pleated the required amount.



**Fig.3.2 Length Alterations**

## 2. Bodice fitting problems

### i. Full Bust (large cup size)

**Problem** – Garment is too tight at bust level, wrinkles pulling across bust

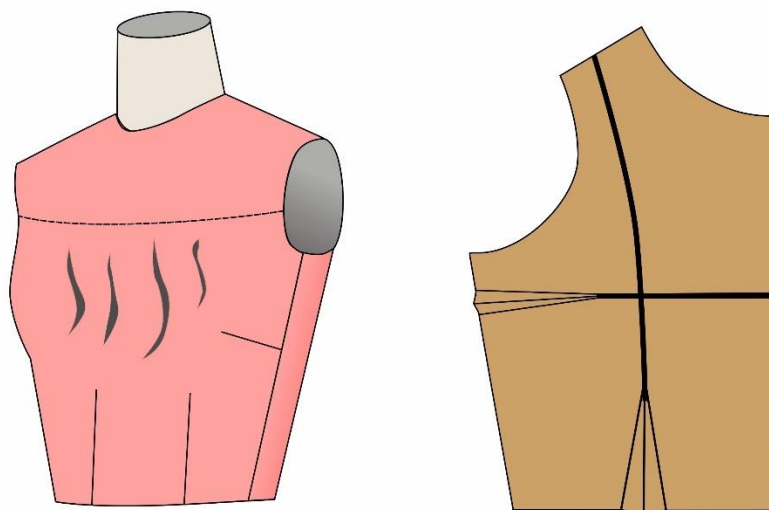


**Fig.3.3 Too Tight at bust alteration**

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

### ii. Small Bust (small cup size)

**Problem** – Garment is too loose at bust level wrinkles falling below the bust



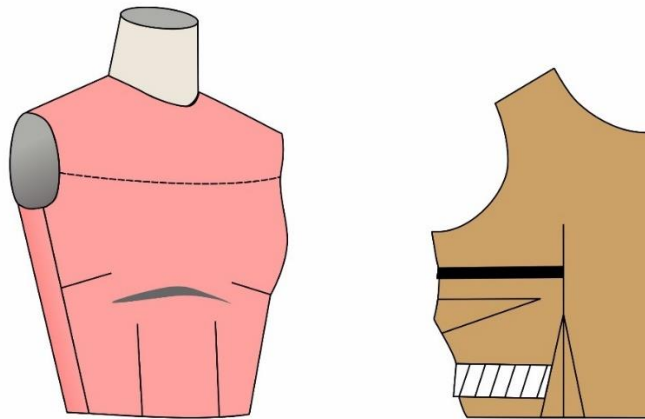
**Fig.3.4 Too Loose at Bust alteration**



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

### iii. High Bust

**Problem-** Folds falling above bust, dart length are short for high bust

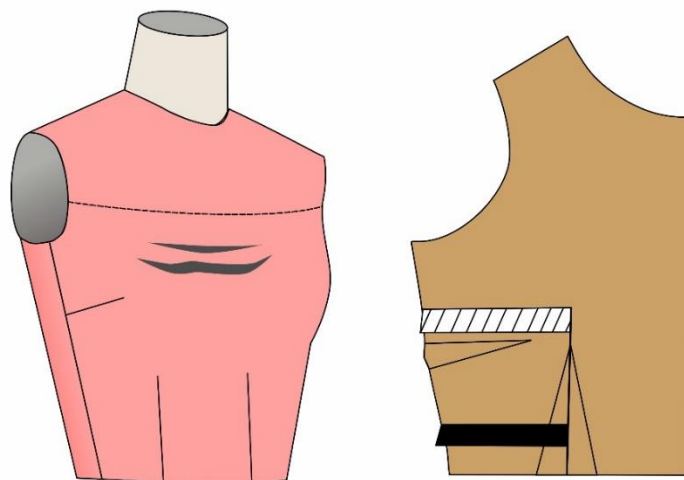


**Fig.3.5 High Bust Alteration**

**Remedy -** Slash below dart and up to armhole (or armhole) level. Fold out desired amount above the dart. Lengthen the waistline dart as needed. Redraw seam line below dart.

### iv. Low Bust

**Problem-** Folds falling below bust ,dart length are high for low bust

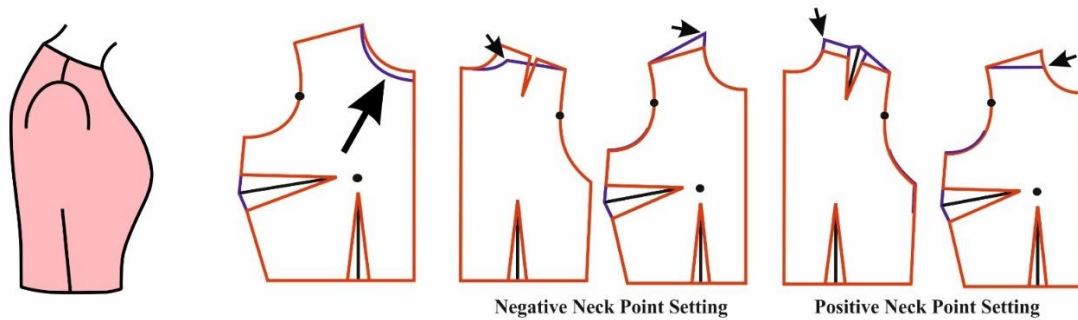


**Fig.3.6 Low Bust Alteration**

**Remedy** - Slash above dart and down to waist. Fold out desired amount below dart. Shorten the waistline dart as needed. Redraw seam line above dart.

### 3. Neckline Fitting Problem

**Problem-** A horizontal fold forms just below the base of the neckline and the front neckline is too tight. The shoulder seam pulls forward at the neck point. The back neckline may rise at the center back.



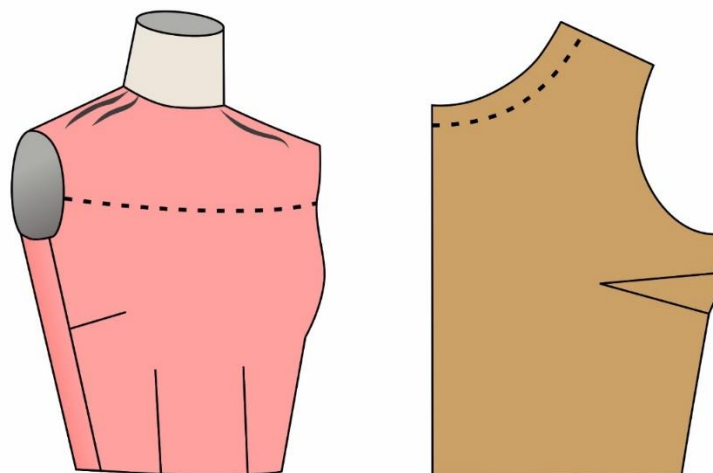
**Fig.3.7 Neckline Alterations**

#### Remedy:

- Increase the Front Neckline Depth setting first. This increase may be sufficient to push the shoulder seam back to the correct location.
- If necessary, use the Neck Point setting to change the position of the shoulder seam at the neck point.

#### i. Small Neck

**Problem-** Neckline is too loose at the neck and falls in folds

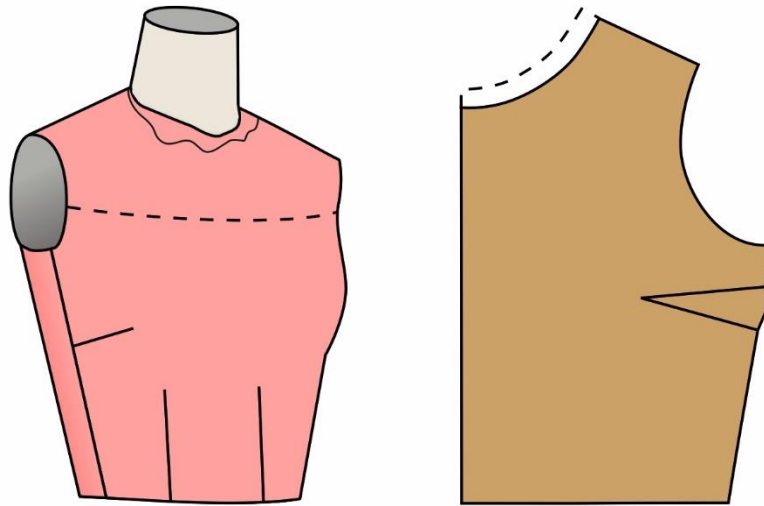


**Fig.3.8 Loose Neckline Alteration**

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

## ii. Large Neck

**Problem-** Neckline is too tight at the neck and wrinkles pulling across the neck



**Fig.3.9 Tight Neckline Alteration**

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

## iii. Gaping Neckline

**Problem-** Neckline is too big for the neck and fold falling across the neck



**Fig.3.10 Neckline Gaping Alteration**

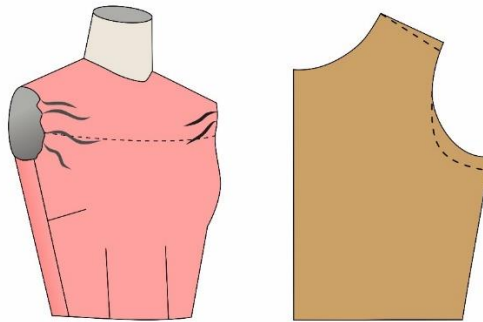
**Remedy-** Slash from neckline down through bust area to waist. Overlap the

desired amount on neck edge; the waistline dart will become larger. Remember to alter the neckline facing and collar patterns to fit the altered neckline. If by mistake neckline is cut bigger than the required shape, make gathering running stitches along the neckline and gather the running stitches to the correct size of neckline you want and finish it with bias binding

#### 4. Shoulder Fitting Problems:

##### i. Sloping Shoulders

**Problem-** Wrinkles falling in folds from neck towards armhole

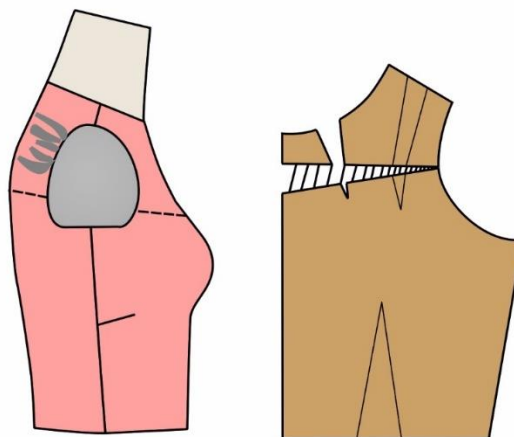


**Fig.3.11 Shoulder and Armhole Front Alterations**

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

##### ii. Round Shoulders

**Problem-** Wrinkles pulling from center back towards back armhole

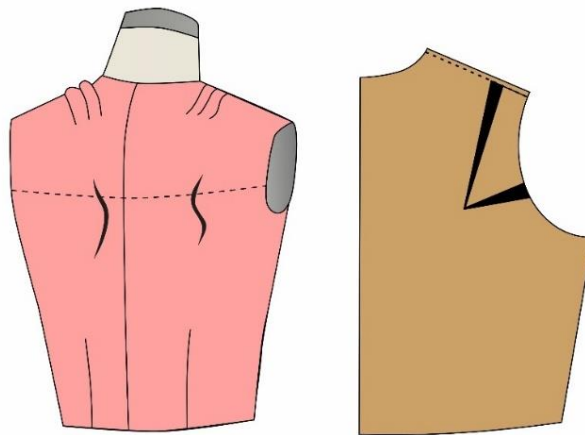


**Fig. 3.12 Shoulder and Armhole Back Alterations**

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

### iii. Narrow Shoulders

**Problem-** Shoulder seam falls beyond the shoulder bone. Wrinkles pulling from shoulder to shoulder blades

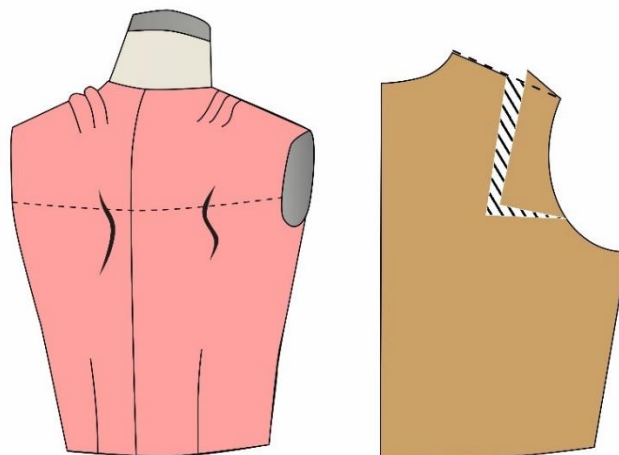


**Fig. 3.13 Alteration for Narrow Shoulders**

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

### iv. Broad Shoulders

**Problem-** Shoulder seam doesn't reach the shoulder bone. Wrinkles pulling from armhole towards shoulder blades

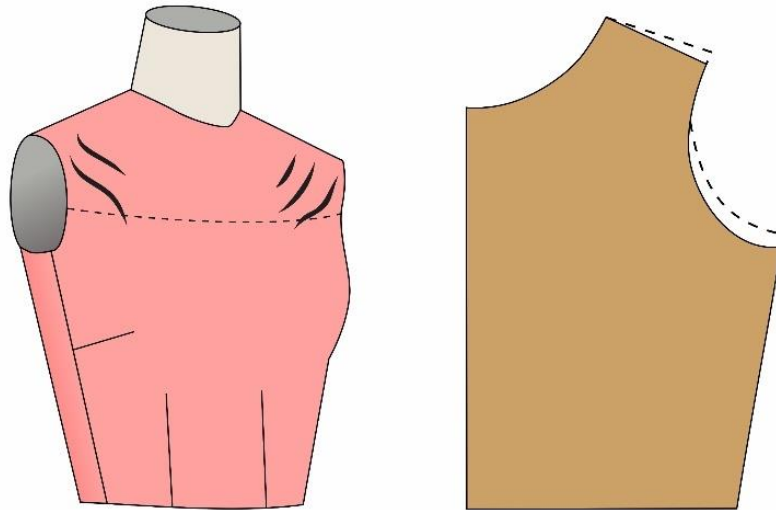


**Fig. 3.14 Alteration for broad Shoulders**

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

#### v. Square Shoulders

**Problem-** Wrinkles falling in folds from shoulder toward shoulder blades



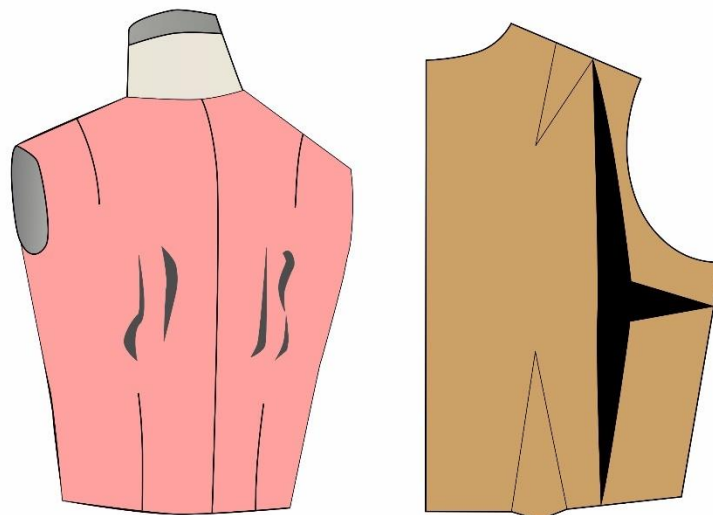
**Fig. 3.15 Alteration for Square shoulders**

**Remedy-** Redraw shoulder seam and armscye seams, raising them the desired amount. Be sure to redraw seams on both front and back pattern

### 5. Back fitting problem

#### i. Narrow Back

**Problem-** Folds falling across the centre back and garment is loose on the back

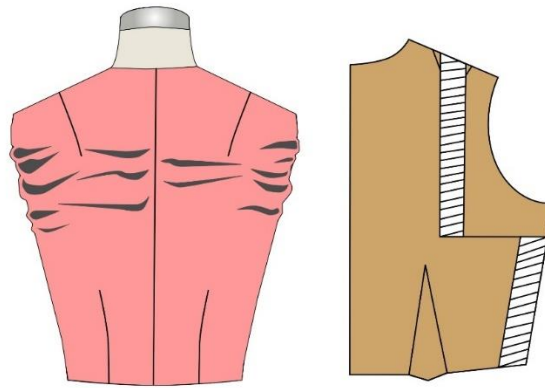


**Fig. 3.16 Alteration for Narrow Back**

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

## ii. Broad Back

**Problem-** Wrinkles pulling across the back and garment is tight on the back

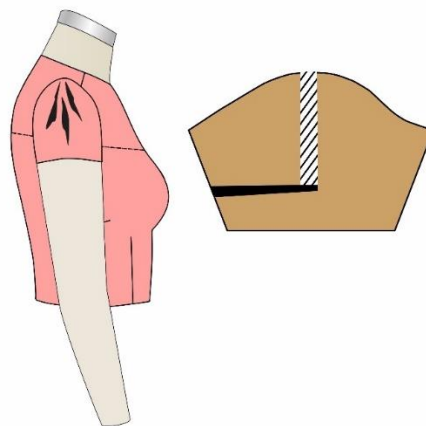
**Fig. 3.17 Alterations for broad Back**

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

## 6. Sleeve fitting problems

### i. Sleeve Cap Too Narrow

**Problem-** Sleeve is too tight at the sleeve cap, wrinkles pulling from top of the sleeve.

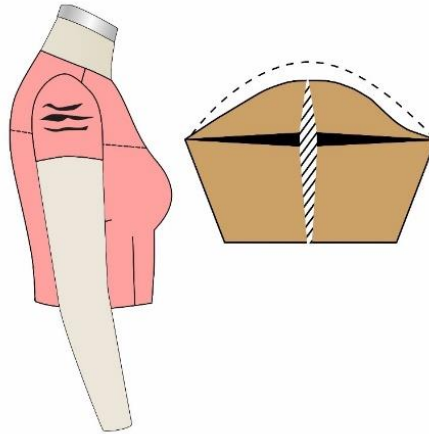
**Fig. 3.18 Alteration for tight cap sleeves**

**Remedy-** Slash from top of sleeve to elbow, then across to side seam. Spread

the desired amount at the top. Redraw cap. Add  $\frac{1}{2}$  the amount added to the shoulder cap to the shoulder seam on both the bodice front and back.

## ii. Large Upper Arm

**Problem-** Wrinkles pulling across upper arm and sleeve is too tight at upper arm.

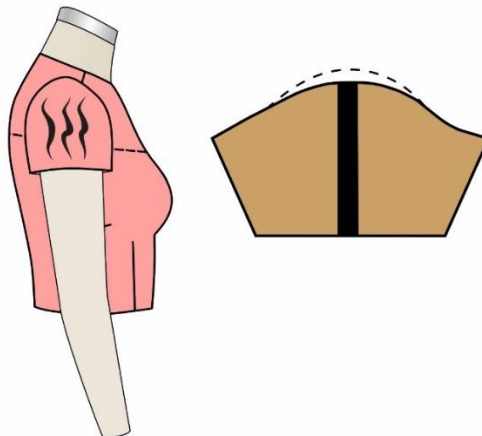


**Fig. 3.19 Alteration for large upper arm fitting**

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

## iii. Thin Arm

**Problem-** The sleeve is too wide and loose



**Fig. 3.20 Alteration for thin upper arm fitting**

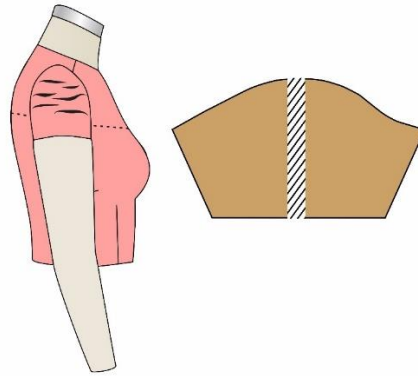
**Remedy-** Measure the length of the original seam at the top of the sleeve and



record the measurement. Draw a line from the centre of top of sleeve to bottom edge of the sleeve and slash the pattern on this line, overlap the sleeve at bottom edge tapering to nothing at sleeve cap. Redraw the sleeve cap and bottom edge of the sleeve.

#### iv. Thick Arm

**Problem-** The sleeve is too tight at bottom edge and wrinkle pulling across the sleeve.



**Fig. 3.21 Alteration for thick arm fitting**

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

#### v. Adjust of sleeve length:

Some sleeves have a seam line at the lower edge, while others have a hemline. Consult your instruction sheet for direction for the sleeve you are using. Baste under the seam of hem allowance at the lower edge of the sleeve. The desired length is dependent on personal preference in most sleeves. You can change the length by trimming off the desired amount or by using a smaller hem if you want the sleeve longer. The full-length fitted sleeve must reach about  $1/4$  inch below the bend of the wrist, so that the sleeve reaches the bend of the wrist when the arm is bent.

### 7. Skirt fitting Problems

#### i. Protruding Back Hips

**Problem-** Horizontal wrinkles near waist and hip area.

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

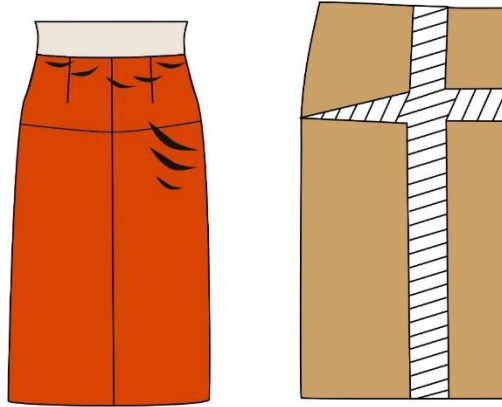


Fig. 3.22 Alteration for Protruding back

## ii. Flat Hips

**Problem-** Vertical wrinkles at hip area.

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

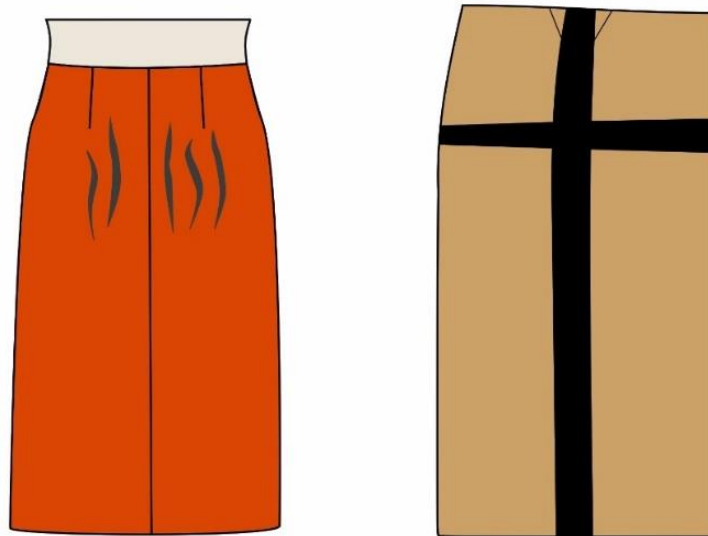
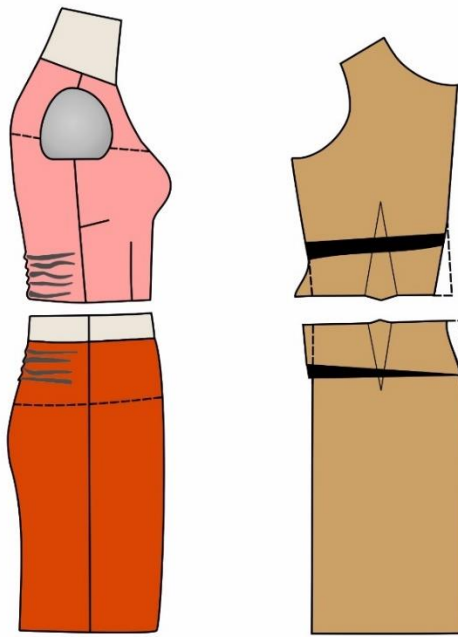


Fig. 3.23 Alteration for Flat Hips

## iii. Sway Back

**Problem-** Horizontal wrinkles near waist.

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

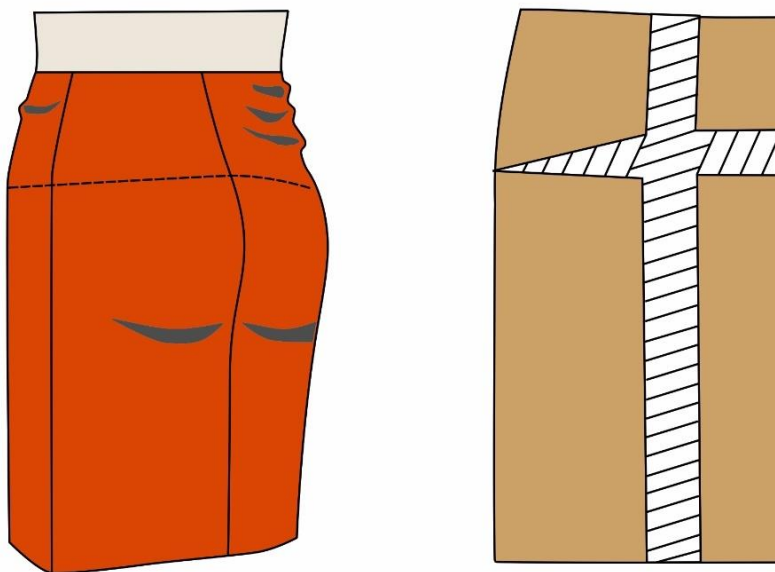


**Fig. 3.24 Alteration for sway Back**

#### iv. Protruding Abdomen

**Problem-** The skirt is too tight at the abdomen area.

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



**Fig. 3.25 Alteration for Protruding Abdomen**

### v. Bulging Thigh or Wide Hips

**Problem-** Horizontal wrinkles at thigh and waist area.

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

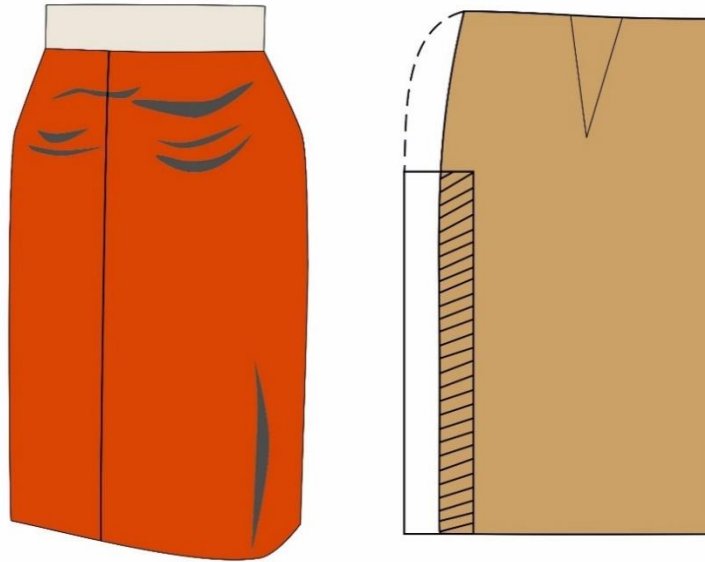


Fig. 3.26 Alteration for Bulging thigh or wide hips

### vi. Flat Side Hip

**Problem-** Vertical wrinkles near hip area.

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

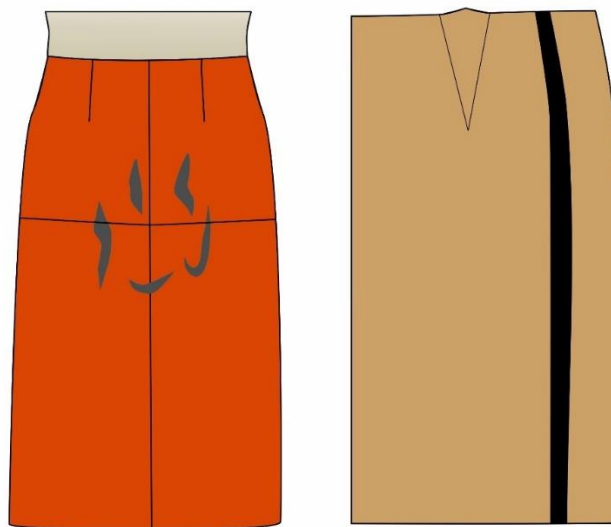


Fig. 3.27 Alteration for Flat Hip

## 8. Trouser fitting problems

### i. Protruding Back Hips

**Problem-** Horizontal wrinkles near waist and hip area.

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

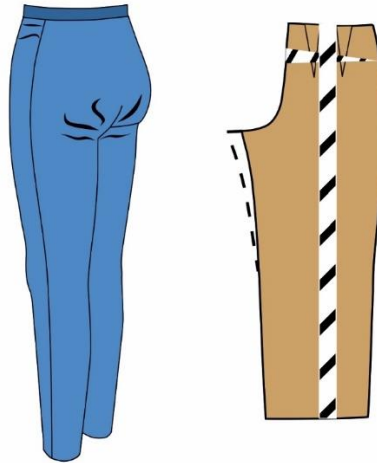


Fig. 3.28 Alteration for protruding Back Hips

### ii. Flat Hips

**Problem-** Vertical wrinkles at hip area.

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

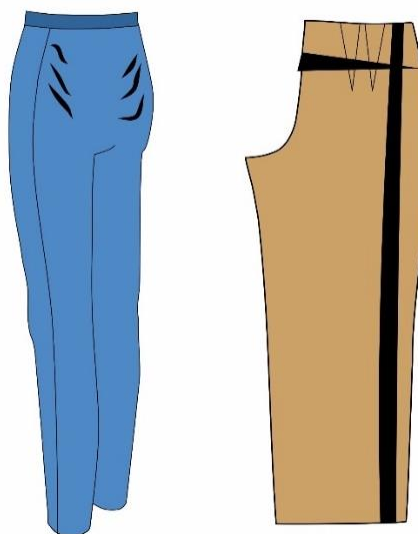


Fig. 3.29 Alteration for Flat Hips

### iii. Bulging Thighs

**Problem-** Horizontal wrinkles at thigh and waist area.

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

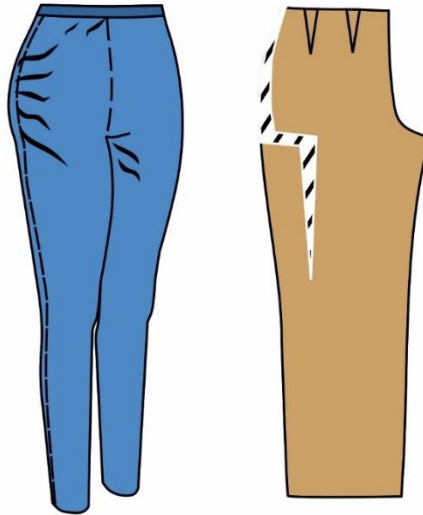


Fig. 3.30 Alteration for Bulging Thighs

### iv. Protruding Abdomen

**Problem-** The garment is too tight at the abdomen area.

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

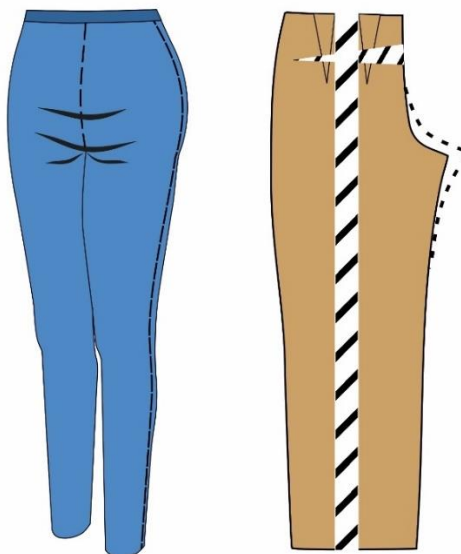
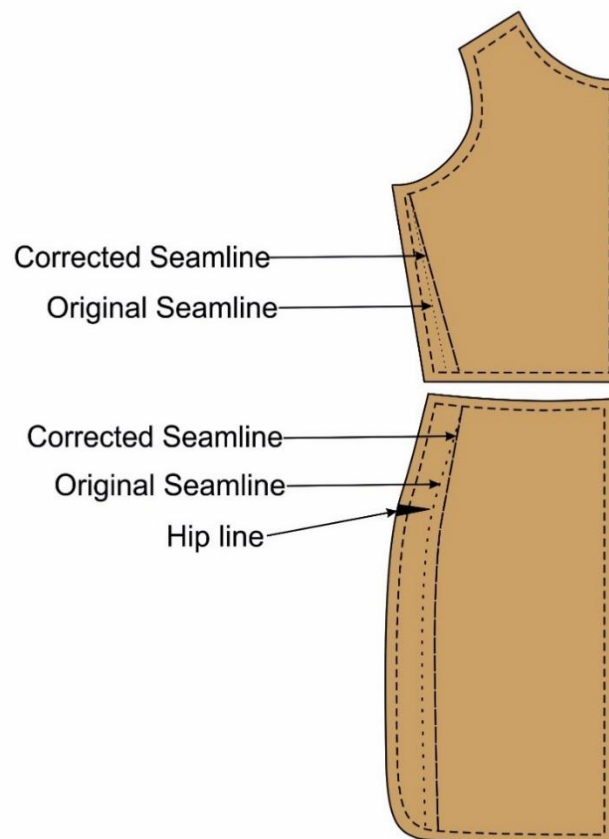


Fig. 3.31 Alteration for Protruding Abdomen

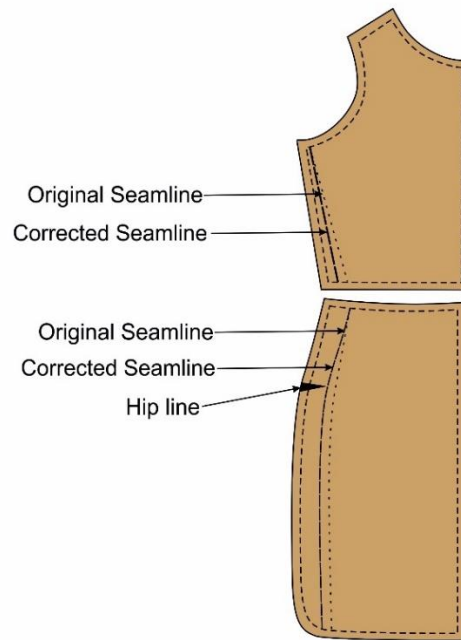
### 9. Alteration in waist measurement

Increasing or decreasing the waist measurement is one of the most common and simple alteration. Seams and darts can be either let out or nipped in as needed, as long as one understand certain principles. The width of a dart determines the amount of shaping the dart will create, a wide dart creates a larger bulge to fit larger curves on the body, and vice versa. So if you let out a dart line, there will be less shaping and if you nip in the dart line, a larger bulge will be created. This may or may not be all right for every individual, persons with rounded, curving figures can decrease the waist by taking in a dart, but the same figure would be poorly fit if darts were let out to increase waist measurement; the person with a slim, flat figure can let out the dart lines to increase waist measurement but would be poorly fitted with darts taken in to decrease waist measurement. Most average figures are best fitted by making the alteration at the side seam lines. If one's figure is such that dart lines cannot be altered, all alteration should be done at the sides. Be sure to make corresponding changes at the waistlines of both bodice and skirt.



**Fig. 3.32 Decreasing the waistline**

**Decreasing the waistline:** Beginning at the original seam line at the armhole, re-baste the bodice edges, taking in the desired amount at the waistline. Baste in a corrected line between the waistline and the hipline of the skirt making a smooth even curve.

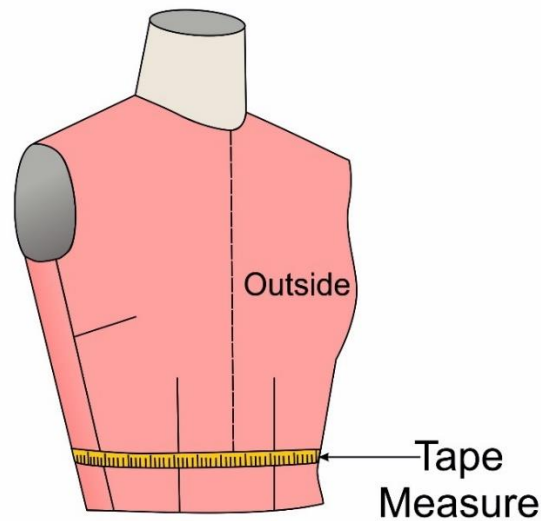


**Fig. 3.33 increasing the waistline**

**Increase the waistline:** Beginning at the original seam line at the armhole, re-baste the bodice edges, letting out the desired amount at the waistline. Baste in a corrected line between the waistline and the hipline in the skirt making a smooth even curve.

**Marking the position of the waistline seam:** If the seam line at the waist does not fall at the waistline, one must mark a corrected line to be used when the waistline seam is sewn. For doing this, place a tape measure or a string around wearer's body and adjust it to the natural waistline. The bodice edge may extend in varying amounts beyond the tape measure. Place pins at the lower edge of the tape on the right half of the garment. Then remove the garment and run a marking basting along the pins; mark the left side, using the right side as a guide. This marking-basting line should be used as the seam line when the skirt is attached. If you find that the bodice is too short, there is very little that can be done to correct it. In such case, an increase of possibly  $\frac{3}{8}$  inch can only be achieved, this can be achieved by following these steps: After the seams and darts of the bodice have been stitched and pressed, lap seam binding, on the outside, inch over the cut edge and stitch very close to the upper edge of the binding (fig 3.34). Then use this upper edge of the seam binding as the seam line when the skirt is attached.





**Fig. 3.34 Tape measure**

## FINAL FITTING

Once all the pattern alterations are made, the garment is tested for final fit. At this the garment is tested for minor details. Some of the examples of the final fit are zipper, the position of belt carriers, etc. The hemline must be measured after all other details are finished. Remove the basting wherever the construction seam meet or cross each other, or where it is necessary in order to stitch construction details. These steps are repeated until a satisfactory fit is achieved.

## Activities

**Activity 1:** Take a stitched garment (skirt/ bottom) and alter its waistline to get a proper fit.

### Materials Required:

1. A stitched garment (skirt, pant, trouser, etc.)
2. Measuring tape
3. Chalk
4. Needle
5. Thread
6. Scissors
7. Sewing Machine

**Step-by-step Procedure:**

1. Take a stitched garment, misfit at waist.
2. Take your waist measurement using measuring tape.
3. Make the markings using chalk according to alterations to be done (to increase or decrease the waistline)
4. Alter the garment with sewing machine.
5. Try the garment after alteration to check the fitting.

**Check Your Progress****A. Fill in the blanks:-**

1. The five basic factors present in every fitting problem are \_\_\_\_\_, line, grain, set and\_\_\_\_\_.
2. To evaluate the fit of a garment, a \_\_\_\_\_ sample is prepared before the finally garment construction.
3. For a good fit, grain lines at bust, waist, hip and upper arm should be \_\_\_\_\_ to the floor.
4. For a large garment area, either loose \_\_\_\_\_or \_\_\_\_\_folds forms making the garment stand away from the body.
5. For\_\_\_\_\_, the hemline must be measured after all other details are finished.

**B. Answer the following questions:**

1. What is fitting and what are the five standards for a good fit?
2. What are the characteristic features of well-finished garment?
3. Write short note on the "Evaluation of well fitted garment".
4. What are the fitting defect and their remedies?
5. Explain how to increase and decrease waist measurement.
6. Explain how to adjust the length of the sleeve.

## Session 2: Figure Abnormalities

### WOMEN'S BODY SHAPES

One body is different from another. Hence, each individual has a different body shape. As a general practice body shapes are categorized into different categories based on the features and shape of the body. Bodies with similar shapes are group and categorized in same categories of body shape. Based on this, there are different types of body shapes. For women these are categorized as: pear /triangle shaped, inverted triangle, hourglass ,rectangle and rounded.

Body shapes in general determine the shape of the garment. One must wear garment shapes that compliment one's shape of the body. A garment must gather one's attention to the most flaunting areas in body. However, it also depends on an individual's choice and comfort.

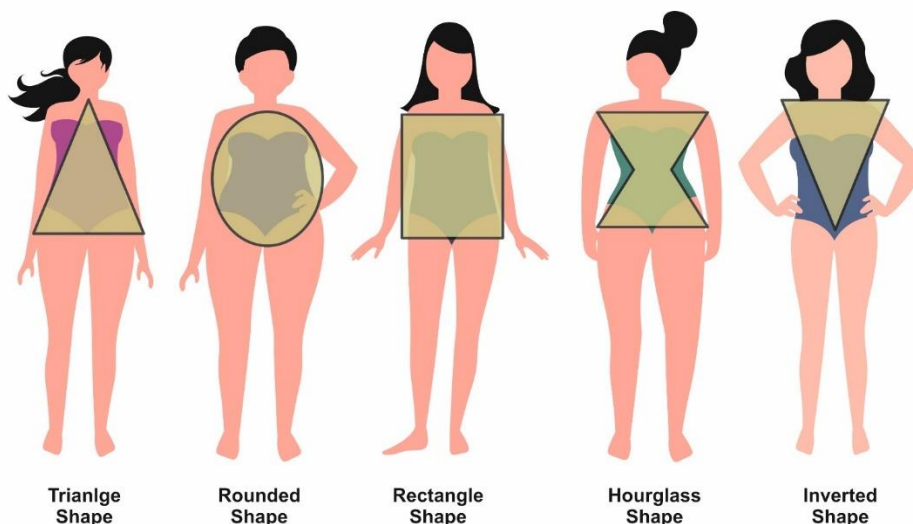


Fig.3.35 Basic Body Shapes

### BASIC BODY SHAPES

- i. **Triangle /Pear body shape:** A female with this figure has a round, heavy bottom with a defined waist, but hip size is always wider than the bust and shoulders. Short legs with full thigh are common features.

To accentuate body curves of a triangular shaped woman, the main aim is to balance her top half to bottom half by creating the style look of a wider upper body.

Short-sleeved tops, Shoulder pads, medium to high necklines, garments that emphasize waist, skirts and dresses that are straight or slightly flared, Low rise pants, boot leg and straight pants look most flattering on a triangular body shape .

- ii. Inverted triangle body shape:** A woman with this shape has a broader shoulders, large bust, narrow hips, slim legs, flat bottom. Body fat is mainly distributed in the abdomen, chest and face.

Baggy pants, Pegged pants , bell silhouette look most flattering on an inverted triangular shape of body. Deep necklines, off shoulder dresses and tops, skinny pants and tubular silhouette must be avoided.

- iii. Rectangle body shape:** Rectangular body type is also known as straight figure. The bust and hip are approximately of the same width. The waist measures 1” to 8” smaller than the bust. The Rectangular body figure shape usually depends on the ribcage structure.

Garments that add bulk at the hip like lots of layered clothes, various prints, textures and details like ruffles, ties, studs around the neck looks most flattering on a rectangular shape of body. Tubular silhouettes must be avoided.

- iv. Hourglass body shape:** a curvy female with the hips and bust of the same size, which highlights a narrow waist, is the best example of hourglass body shape. The main style aims is to emphasize on curves, especially the waist, without adding bulk.

Fitted and semi-fitted clothes, dresses with defined waistlines, soft, clingy, flowing fabrics, low to medium-low necklines, straight and gently flared pants, straight and gently flared shirts, waist belt look most flattering on this body shape. Bulky, fabrics, baggy styles must be avoided.

- v. Rounded/Oval figure:** has an overall appearance of being round especially around the waist region, stomach are big, the hips are wide and upper thighs are full. The bottom could be full or flat.

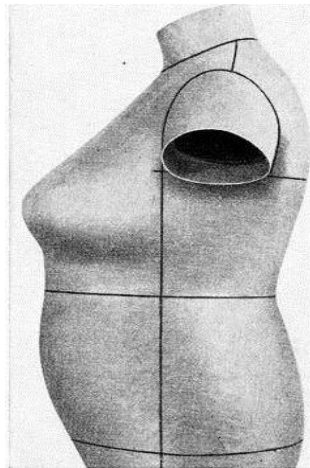
Semi-fitted and loose fitting clothing, low necklines look most flattering on a rounded body shape. Clingy fabrics, tight fitted clothes, fabric with large patterns, high necklines, Tucked-in tops, pleated skirts because that add more volume to the figure must be avoided.

## VARIOUS TYPES OF FIGURE ABNORMALITIES

If a figure has the measurements that are not related to its height and also measurements are not related with each other in a proportional order, then it is said to be a disproportionate figure. Such figure is imbalanced in appearance. Even when the body measurements coincide with the standard

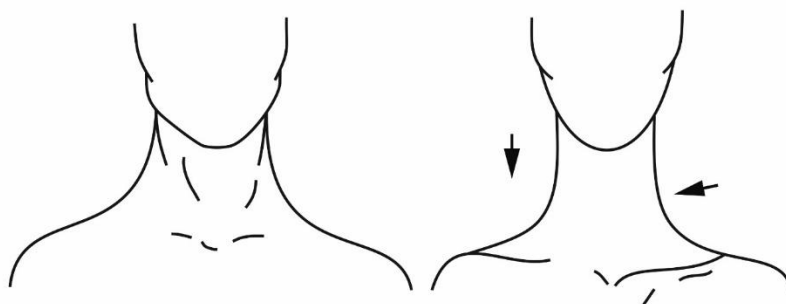
measurements, garment fit can be affected due to various reasons such as the body posture, the built, and body shape deviations. These deviations can be seen in individuals which include:

1. **Erect figure:** Those who always walk in an erect pose. For such figures, front length measurements for upper garments are taken more depending on the erectness and even shoulder slant should be carefully studied.
2. **Stooping figure:** Those who walk in a bent posture. For these figures, the length of back part of an upper garment is taken more and the shoulder bent and shape should also be considered properly.
3. **Corpulent figure:** A figure with excess fat around the waist is called corpulent. For such figures, waist measurement is more than chest. The hip and waist measurements are almost the same.



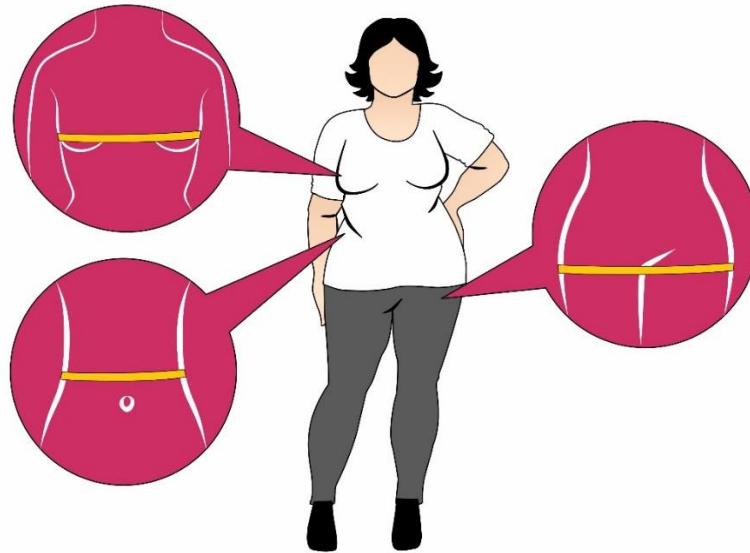
**Fig. 3.36 Corpulent figure**

4. **Square Shoulders:** Straight shoulder shapes with minimum slope. In such case, minimum shoulder slant is given while drafting and cutting the garment.
5. **Sloping/Down shoulders:** Excess shoulder slant is visible in such figures. Care must be taken while giving the shoulder slope in the drafts of upper garments like tops, blouse, etc.



**Fig 3.37 Square and Sloping Shoulders**

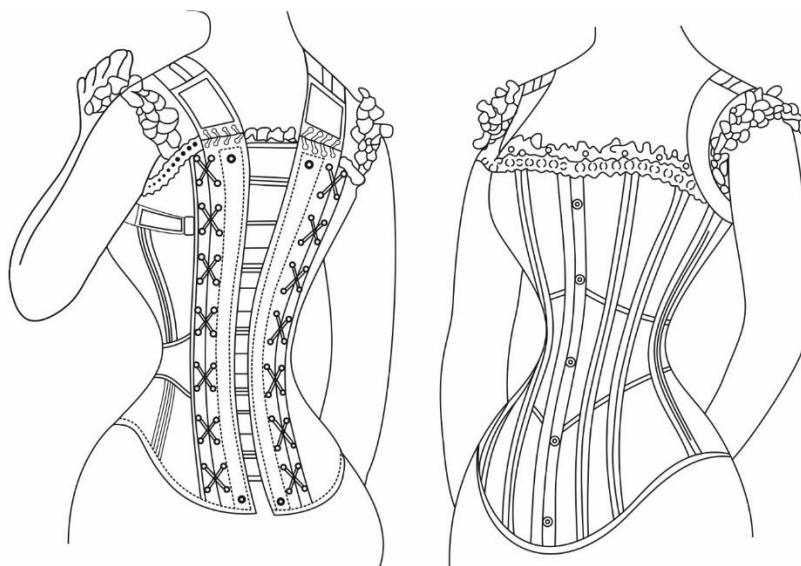
- 6. Short and stout figure:** Height is less than normal figure, and weight is more. Vertical lines, linear pattern, and dark colours help to create an illusion of length in such figure types. Care must be taken while taking measurement as well as while fabric print selection.



**Fig.3.38 Short and stout figure**

- 7. Tall and Thin figure:** More height but skinny and thin body gives such figures a very sleek and slim look. Use of Bulky textures with a lot of volume, big bold prints, horizontal lines and light colours all help in making the garment look flattering.

- 8. Prominent Bust:** Chest measurement is more in such postures. The center front chest measures are more than the center back chest area. Shoulder line is made after taking proper and accurate measurement.



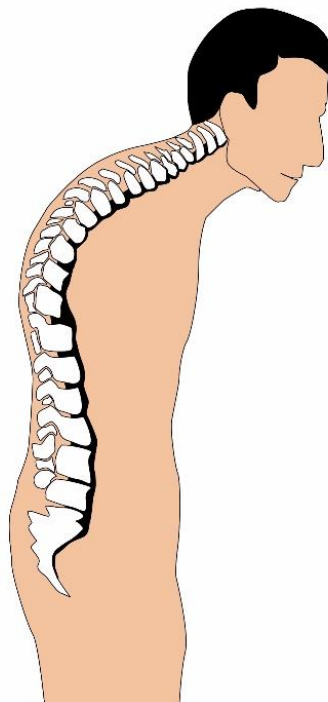
**Fig. 3.39 Prominent Bust and Hip**

- 10. Flat Bust:** In this body type, the chest area is flat and not very prominent, so chest measurements should be taken properly before construction of the upper garment.



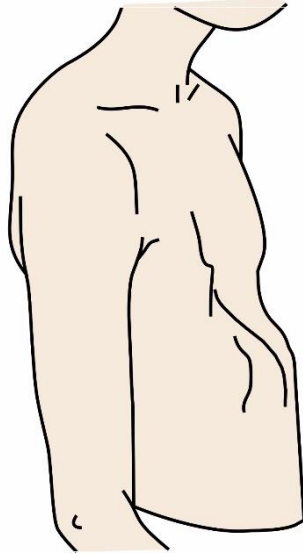
**Fig.3.40 Flat bust And Flat hip**

- 11. Hump back:** In this type of figure, back is bulged out a lot, so back chest measurement is more than front.



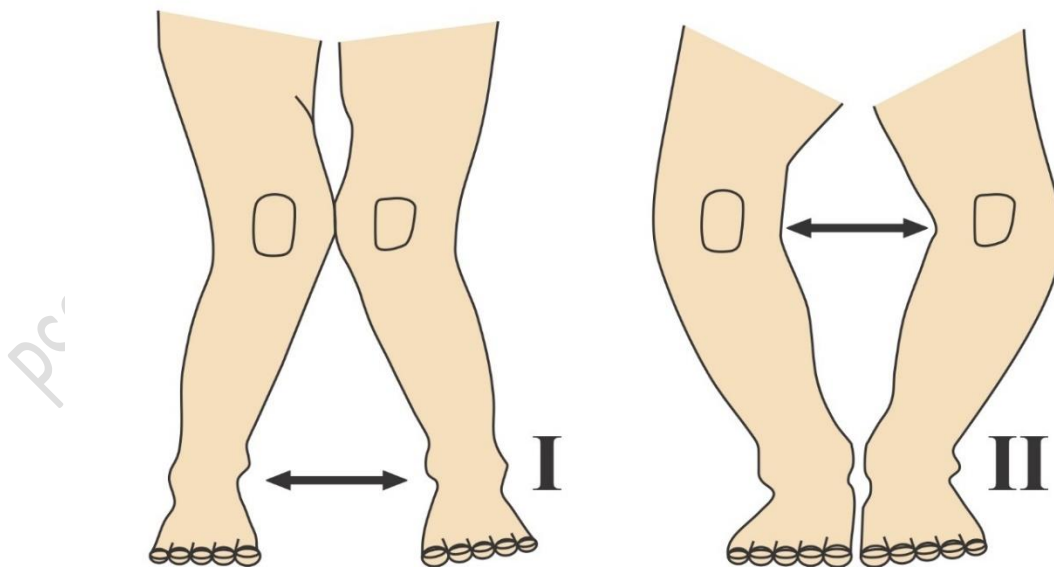
**Fig.3.41 Hump Back**

- 12. Pigeon Chest:** In these figures, chest measurements are less at front than at back. Therefore, care must be taken while cutting the upper garment.



**Fig.3.42 Pigeon Chest**

- 13. Knocking Knees and Bowlegs :** Some people have knees bend on the outer side than the normal, such figure is called Bowleg. The figures having knees moving inner side than the normal is known as Knocking Knees. In such cases, care should be taken while taking measurements and constructing lower garments, like pants, trousers. Also for females, the legs can be covered by usage of long flared skirts or full gowns.



**Fig.3.43 Knocked Knees and Bow Legs**



For such cases it is important for a tailor or designer to analyse the figure types before designing, drafting and cutting the garment and apply modifications in dimensions and curves in drafting for achieving good quality garment without any fitting problem. Tailors and designers should have this skill to hide the deviations in body structure and highlight or emphasize the good aspects in a body with the usage of constructional and decorative techniques in the garments.

### Activities

**Activity 1:** Draw any 5 figures of figure deviations on a Sheet explained above in the session.

#### Materials Required:

1. Paper
2. Pencils
3. Ruler
4. Sheet
5. Drawing Pens/ Colours
6. Adhesive

#### Step by step Procedure:

1. Draw any 5 figure deviations (corpulent figure, prominent hip and bust, bow & knocked legs, hump back) a on a paper using pencil.
2. Cut the figures leaving borders. Paste on a background sheet and name them.
3. Decorate the sheet.
4. Place the sheet in a file.

### Check Your Progress

#### A. True or False:

1. Short legs with full thigh are common characteristic of a triangular shape woman.
2. Rectangular figure is a curvy female with the hips and bust of the same width, which emphasizes a defined waist.
3. Straight shoulder shapes are with maximum slope.
4. A figure with excess fat around the waist is called corpulent.

5. The figures having knees moving inner side than the normal is known as Knocking Knees.

**B. Questions:**

1. Explain different basic body shapes of women.
2. Explain different types of figure abnormalities.
3. Explain sloping and square shoulders with diagrams.
4. Explain bow legs and knocked knees.

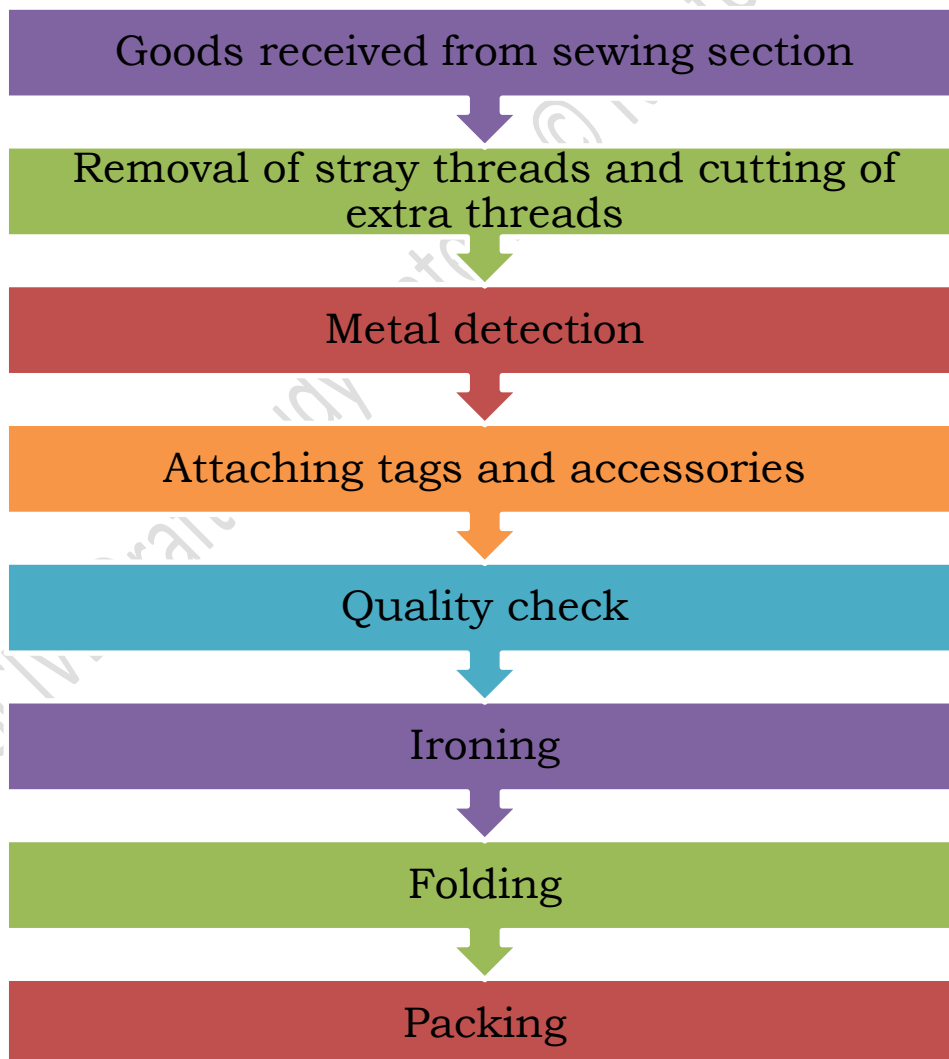
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## Session 3: Finishing of Garment

### GARMENTS FINISHING

Finishing is one of the most important sections in the garment industry. In this sector, stitched goods from sewing section are taken and records are kept, then after suckering; they are send to iron section. Then the ironing is done as per buyer instructions. The thread sucker, fusing machine, metal detector, vacuum table, steam iron, table grinding machine, stand drill machine etc. are used in the finishing process. The steps of garments finishing with brief descriptions are as follows:

#### Flow Chart of Garments Finishing



**Fig.3.44 Flow Chart of Garments Finishing**

## Steps of Garments Finishing:

The steps of garments finishing are as follows:

### 1. Goods Received from Sewing Section:

At first, finished garments are received from sewing section as per order quantity. Goods received from sewing section is the first step to finishing section.

### 2. Removal of stray threads and cutting of extra threads:

In this step extra loose sewing thread are sucked from the garments by sucking machine and the extra threads are clipped. Threads are removed by two systems. One is done by hand, which is manual system and the other is done by sucking machine.

**3. Metal Detection:** Garments are passed through the metal detection machine for metal check.

**4. Attaching tags and accessories:** All the garment tags and accessories are attached to the garment which includes hand tags, price tags, etc.

**5. Quality Check:** Once the tags are attached the garment is checked and inspected for quality.

**6. Ironing:** Ironing is a finishing process done by with or without steam to remove creases and to impart a flat appearance to garments. After ironing, garments are folded.

**7. Folding:** After ironing garments are folded according to the buyers directions before they are packed.

### 8. Packing

After folding, garments are packed according to the size of polythene. These are then packed in cartons.

**NOTE:** The finishing process explained in the session is the basic structure of finishing process as followed in the garment manufacturing unit. For a self-employed tailor the finishing of garment includes more or less similar steps but on a smaller scale. Once the garment is stitched by the tailor it is finished which includes removal and clipping of extra threads, stain removal (if any), ironing, folding and finally packing.

## Activities

**Activity 1:** Finishing of any 1 garment prepared by the students (Kalidar kurta, Chudidar pyjama, Nehru kurta, Pant pyjama, Single Breast Waist Coat)

### Materials Required:

1. A stitched garment
2. Scissors
3. Measuring tape
4. Iron
5. Needles
6. Buttons (if required)

### Step by step Procedure:

1. Take a stitched garment.
2. Follow the steps explained in the session and finish the garment.

## Check Your Progress

### Fill in the Blanks

1. \_\_\_\_\_ is a finishing process done by a cloth to heat and pressure with or without steam to remove creases.
2. Garments are passed through into the \_\_\_\_\_ machine for metal check.
3. Once the tags are attached the garment is checked and inspected for \_\_\_\_\_.
4. After ironing garments are \_\_\_\_\_ according to the buyers directions before they are packed.

### Questions

1. Explain the finishing process of a garment in a garment manufacturing industry.
2. Write the steps of finishing a garment for a self-employed tailor.

<b>Module 4</b>	<b>Basics of Home Textiles</b>
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<b>Module Overview</b>
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Home textile is a sub-category of technical textile that deals with the application of textiles in household purposes. Home textiles are an internal environment, which deals with internal spaces and their furnishing. Home furnishing can really enhance a room and provide an attractive decorative atmosphere. Home furnishing fabrics or home textiles refer to the textiles used for manufacturing home furnishing. It includes carpets, rugs, bedding products, kitchen linen, bathroom furnishing, window textiles, table linens, curtains and upholstery fabrics. It has an extensive range of functional as well as decorative products. Home furnishing, have a wide range of fibre combinations, fabrics, designs, textures, and colour.

A large number of significant developments have taken place in home textiles over recent years. The entire range of home furnishing is increasingly becoming popular these days to the growing middle class due to their rising incomes. Increased awareness and consumer interest in home interior decoration has stimulated greater buying amongst consumers. More the people look for decorating their surroundings with soothing colours and designs, more the textile manufacturers are increasing the production of interior textiles.

Fabric is the main component which plays an important role for home textiles. Fabric prevents fading of interior colours and degradation of furnishings due to sunshine. Home furnishing fabrics protect people from draughts or heat and reduce heat loss in winter. Fabric can make a room cool in summer and reduce an air conditioning load and it also reduces environmental noise.

<b>Learning Outcomes</b>
After completing this module, you will be able to: <ul style="list-style-type: none"> <li>• Understand home textiles</li> <li>• Explain kitchen textiles</li> </ul>
<b>Module Structure</b>
Session 1: Introduction to Home Textiles
Session 2: Kitchen Textiles

## Session 1: Introduction of Home Textiles

Home textiles can be defined as the fabrics used for preparing home furnishing items. It consists of a various range of functional as well as decorative products. Various types of fabrics are used in home furnishing items including manmade and natural fibers. Fabrics are also made by blending different types of fibers as per the requirement. Home textiles are typically made by weaving, knitting, crocheting, knotting, or non-woven methods. Made-ups are non-garment articles that are created or sewn from any type of fabric. Silk, cotton, jute, rayon, wool, nylon, polyester, satin, and other materials are often used for home furnishings. Home furnishings play an important role in transforming monotonous spaces into unique and distinctive environments. It adds texture, colour, character, size, and anything else missing from architecture, as well as adding style, reflecting one's taste, and controlling one's mood. It improves a location's liveability and workability while also reducing noise.

Different types of home textile products are given below:

1. Bed textiles
2. Window textiles
3. Table linen
4. Kitchen linen
5. Floor covering
6. Upholstery fabrics
7. Bathroom textiles

### 1. Bed Textiles

Bed linens comprise bed sheets and pillowcases, bedspreads, quilt covers, duvet covers, cushions, blankets, mattresses, bed throws, sofa and bed throws, and a variety of other products. Acrylic, viscose, silk, and mixes are commonly used fabrics for bed sheets, bedspreads, and other comparable goods. Wool, acrylic fibre, and acrylic polyester fibre blends are commonly used in blankets.

### 2. Window Textiles

Curtains, drapes, and blinds are examples of window textiles. This is most likely the most diverse area of fabric development in the home textiles industry. Cotton, flax, wool, silk, acrylic, and other natural fibres are commonly utilised. Blinds are window coverings that are opaque. Some blinds allow a small amount of light into the room, while others are constructed of cotton fabric, which is known as black out material, and provide complete opacity. (fig: 4.1).



Fig.4.1: Window textiles

### 3. Table Linen

The cloth and napkins that are placed on a table for a meal are referred to as table linen. Tablemats, napkins, placemats, chair coverings, chair mats and cushions, table runners, coasters, and other items are included as table linens. Cotton, linen, polyester, and other materials are commonly used for tablecloths. Other materials such as jute, leather, plastic, silk, and satin are commonly used for products such as placemats, chair mats, and table runners.

### 4. Kitchen Linen

Kitchen linen includes aprons, mittens, dishcloths, kitchen towels etc. Cotton fabric, striped linen fabric, and terrycloth, are mostly used for making kitchen wear aprons. Flame retardant kitchen wears are also in great demand these days.

### 5. Floor Coverings

Textiles have long been used as floor coverings, and they serve not only as a means of covering the floor but also as a decorative element. Carpet and rugs are two popular types of floor covering textiles. Rugs and carpets provide a vibrant base for the decorative layout and colour scheme of all rooms in the modern home, including the kitchen, baths as well as schools, offices, and hospitals. Carpets also act as sound and heat insulation. Although the terms "rug" and "carpet" are commonly interchanged, the form or size in which these coverings are made differs. Rugs come in a variety of shapes, sizes, and lengths.

All the factors that contribute to pricing variations are the type, quality, and quantity of fibre used, as well as the degree of twist in the yarn, the number of plies in the yarn, and the basic method of production.



## 6. Upholstery

Upholstery refers to the textile covering of furniture, particularly seats, that includes padding, springs, webbing, and fabric or leather covers. Upholstery is derived from the Middle English words "up" and "holden," which signify "to held up." Fabrics for upholstery are used to cushion and cover furniture. There are two types of upholstery: fixed upholstery and loose covers. Upholstery that is glued or fastened to the furniture is known as fixed upholstery.

## 7. Bathroom Textiles

Shower curtains and towels are two commonly used bathroom textiles. Shower curtains are made with water proof material and are usually coated with plastic. Bath textiles can be made from both woven and non-woven fibres. Towels come in a variety of forms and sizes depending on their intended usage, such as bath towels, hand towels, and face towels. Towels are typically composed of a soft fabric to ensure that they are gentle on the skin. Bath towels, bath robes, shower curtains, bath mats, and bath rugs are examples of bathroom textiles. Terry materials have gained much importance in the bathroom textiles market.

### Activities

**Activity 1:** Enlist various product range for home furnishing textiles.

#### Materials Required:

1. Pen
2. File
3. Pencil
4. Scale
5. Eraser

#### Step-by-Step Procedure:

1. Draw a table of two columns with the help of pencil and scale.
2. Write names of different home furnishing textiles in first column.
3. Write the product range of these textiles in the second column.

**Activity 2:** Make a scrap book of different type of home furnishing textiles.

#### Materials Required:

1. Pictures of different type of home furnishing textiles

2. Scissors
3. Adhesive
4. Scrap Book
5. Pen
6. Pencil
7. Eraser

**Step-by-Step Procedure:**

1. Collect the pictures of different type of home furnishing textiles
2. Cut them very neatly with scissor
3. Paste them in scrap book
4. Label them.

**Check Your Progress****A. Fill in the blanks with the most appropriate answer from the choices given below:**

1. \_\_\_\_\_ play an important role in transforming monotonous spaces into unique and distinctive environments.
  - a) Clothing's
  - b) Upholstery
  - c) Home Furnishing
  
2. Curtains, drapes, and blinds are examples of \_\_\_\_\_
  - a) Window textiles.
  - b) Clothing
  - c) Meal
  
2. \_\_\_\_\_ are two popular types of floor covering textiles
  - a) Curtains and blinds
  - b) Carpet and rugs
  - c) Fixed upholstery and loose covers

**B. Questions:**

1. Explain the meaning of home furnishing.
2. Explain the types of home furnishing textiles.

## Session 2: Kitchen Textiles

A wide range of innovative products are available in the category of kitchen textiles, which cater to the varying requirements of consumers. Kitchen textiles comprise of the products and the fabrics used to produce kitchen products. Products which are primarily used in the kitchen, both for functional as well as decorative purposes are known as kitchen textile products.

Various types of kitchen textile products are given below:

1. Apron
2. Kitchen towel
3. Kitchen dish cloth
4. Kitchen gloves
5. Pot holder and oven gloves

### 1. Apron

An apron is an outer protective garment mostly used in kitchen that covers primarily the front of the body. It can be worn for hygiene reasons as well as to keep clothes stain-free. The apron has traditionally been recognized a necessary piece of clothing for anyone who does housework. It's a type of traditional apparel that's worn during cooking and dishwashing. Straps are attached at the shoulder and side seams. Loose ends of straps are tied around neck and back waist.

A pocket can be attached at the front of the apron. Embroidery or patchwork design at the centre front or on the pocket will beautify the garment. Use contrast coloured piping around the border and straps to make it attractive. It is prepared from thick materials, of fast and dark colours with or without any design.



Fig 4.2: Apron

## 2. Kitchen Towel

These towels are intended to be used all over the kitchen, and during any number of scenarios, making them one of the most versatile and useful kitchen items. Kitchen towels, for example, are typically more durable than bath towels. They can absorb liquids, but they can also be used to wipe up spills, clean cutting boards, dry hands, and handle hot plates and dishes. These towels are usually made of cotton, which makes them soft and absorbent while also being sturdy enough to withstand multiple uses and washings. They're normally quite thick and have hemmed ends for further reinforcement. Kitchen towels are typically very elegant, despite the fact that they are intended for some fairly hard uses. Kitchen towels are available in a variety of colours and textures, making it simple to mix and match to suit any home's design.

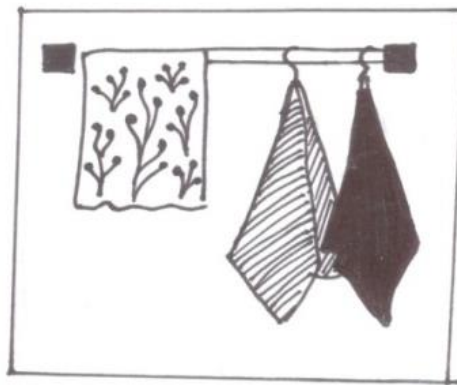


Fig.4.3: Towel

## 3. Kitchen Dish Cloth

Kitchen dishcloths are used for drying dishes, pots and pans, and kitchen implements after hand washing or dishwasher cleaning. Absorbency and softness are usually two of the biggest factors that influence a dishcloth purchase. Both help ensure that moisture is lifted off from dishes and that the dishes remain as close to their original form as possible (Fig.4.4).

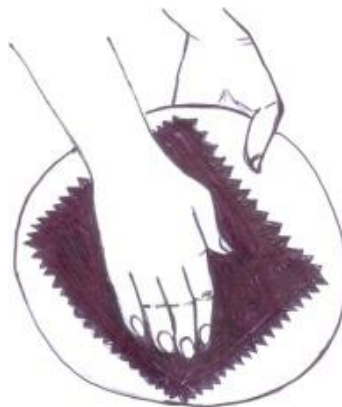


Fig.4.4: Kitchen dish cloth

#### 4. Kitchen Gloves

In kitchen, various types of gloves are used. They are made up of various textile materials like silicon, rubber, linen, cotton, etc. Kitchen gloves are used for food service, food processing, food handling, and dishwashing (Fig.4.5). Single-use gloves are used in the kitchen for two main reasons: as a barrier between ready-to-eat food and bare skin contact. It is also used to decrease cross-contamination risks, such as when raw meat juices on hands aren't fully rinsed off before switching activities to prepare a sandwich.

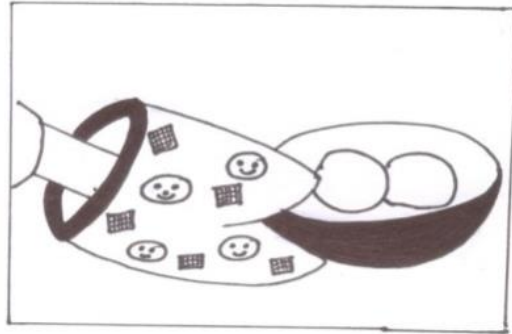


Fig.4.5: Kitchen gloves

#### 5. Pot holder and Oven gloves

It is a thick piece of material, as a quilted or woven pad, used in handling hot pots and dishes. Gloves are usually worn in kitchen to easily protect the wearers hand from hot objects such as oven, stoves, cookware, etc.

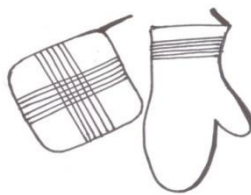


Fig.4.6: Pot Holder

### DRAFTING AND CONSTRUCTION OF APRON

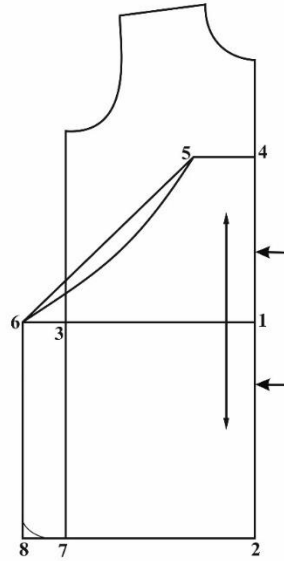
#### Measurements:

Round Chest = 32"

Across Shoulder = 14"

Waist = 28"

**Note:** As the length and girth of this apron can be adjusted by straps, it can be drafted even with approximate measures.



**Fig.4.7 Apron Draft**

### Instructions for Drafting

1. Trace the front section of the adult bodice block.
2. Extend from the waistline to the required full length or apron i.e. 1-2 = 12" – 14" or as per requirement.
3. Mark point 4 down the basic neckline approximately 4" down.
4. Point 4-5 = 4" = the width of the apron. (The shape of the bib can be changed according to choice).
5. 3-6 = 2" Square down from 3 and mark as point 7.
6. Join 5 and 6 in a straight line and give slight inverted curve shape from this line.
7. 7-8 = 2.5". Square down from 6-8
8. Give ½" curved from point 8.

### Belt:-

1. Cut 2 Belt approximately 24" long and 4" width.
2. Cut 2 Straps 12" and 1.5" width for neck tie up
3. Cut 2 patch pocket for the apron, the size of it will be length 5"X7" width. Stitch the pocket equal distance from center of lower portion of the apron.

### Steps of Construction:

1. Finish the neckline, side seam, hemline and armhole with bias binding/ facing/frill/lace etc. of the apron.

2. Attach straps at both the side edges of the bib at the point 5 (to be tied at back of the neck with a knot or Velcro)
3. Attach straps on both the sides of the waist at point 6 to be tied down at back of waist.
4. Your apron is complete.

### Activities

**Activity 1:** Visit nearby market to collect different kitchen textiles and identify kitchen textiles.

**Materials Required:**

1. Pictures of different Kitchen textiles
2. Scissors
3. Adhesive
4. File

**Step-by-Step Procedure:**

1. Visit your nearest market and try to identify different kitchen textiles with the help of your parents and shopkeeper.
2. Collect pictures of different kitchen textile from newspapers, magazines etc.
3. Cut them into shape.
4. Paste them in your practical file.

**Activity 2:** Draft and Construct an Apron

**Materials Required:**

1. Tailor's chalk
2. measuring tape
3. cotton fabric
4. needle
5. thread
6. sewing machine
7. scissors

**Step-by-Step Procedure:**

1. Prepare the draft of Apron as per the measurements
2. Lay the draft on fabric and cut the fabric
3. Construct the apron in a step by step manner as explained in the session above
4. Finish the Apron after completion

### Check Your Progress

#### A. Fill in the blanks with the most appropriate answer from the choices given below:

1. An ..... is an outer protective garment mostly used in kitchen that covers primarily the front of the body in the kitchen.
  - a) Gloves
  - b) Apron
  - c) Napkin
2. ....are typically more durable than bath towels.
  - a) Kitchen towel
  - b) Kitchen gloves
  - c) Dish cloth
3. .... are usually two of the biggest factors that influence a dishcloth purchase.
  - a) Elasticity
  - b) Strength
  - c) Absorbency and softness

#### Questions:

1. Explain the meaning of kitchen textile.
2. Explain the types of kitchen textile.
3. Explain the drafting and steps of construction of an Apron.



**Module 5****Hazards in Industry and Safety Measures****Module Overview**

There are different types of machinery that a Self-employed tailor uses in the tailoring unit. While operating them, it is critical to have a thorough awareness of the safety and health precautions.

Although it is critical that management take steps to protect and safeguard tailors from potentially dangerous situations, the best way for any self-employed tailor to stay safe and healthy is to be aware of the various occupational hazards associated with sewing machine operation, as well as work-related illnesses and injuries. Many of the injuries are caused mainly by the Operator's error, carelessness and inattentiveness.

Tailors must be thoroughly instructed for the right use of all tools and equipment, machineries, and safety precautions to be taken while working. Operators should be required to follow basic instructions when using machinery, tools, and equipment. For the tailors' safety and health, appropriate furniture, suitable ventilation and lighting, and effective emergency safety measures are required. The most significant safety precautions in production units include first-aid kits, safety symbols/signs, fire extinguishers, and alarms.

**Learning Outcomes**

After completing this module, you will be able to:

- Define risks and hazards in a tailoring unit
- Explain health and safety measures for a self- employed tailor

**Module Structure**

Session 1: Risks and Hazards in Industry

Session 2: Health And Safety Measures For Self Employed Tailor.

## **Session 1: Risk and Hazards in the Tailoring Unit**

Risk is a chance occurrence that may or may not occur, but if it does, it will have a negative influence on the organization's aims.

A danger is a substance that has the potential to damage or injure the target. The potential source of risk is referred to as hazard. The phrases "risk" and "hazard" are frequently interchanged. They are, however, two quite distinct phrases in terms of risk assessment. Any agent that can cause harm/damage/injury to humans and their surroundings is considered a danger. Risk is defined as the likelihood of being exposed to a danger that has a negative outcome.

In industry, different types of tools, equipment, and machinery are used in various sectors. When operating these equipments, there is always the possibility of a hazard. They might be physical, biological, chemical, mechanical, or any combination of these. Hence, it is critical for all tailors to be aware of the potential for risks in the tailoring unit where they operate. Tailors should observe all safety precautions when working with equipment and machinery. To avoid injury from these dangers, tailors must get specialised instruction. Tailors should also take steps to avoid workplace injuries and dangers.

The hazards in most manufacturing processes and work environments are identical. As a result, in order to prevent these hazards, the unit must have proper equipment and facilities. To train the tailors, adequate planning, training, and awareness workshops are required, in which they must be made aware of the numerous hazards associated with their units, as well as the safeguards that must be taken.

All production units, whether in a business or residential setting, must conform and have the essential equipment, such as fire extinguishers, hydrants, emergency exits, emergency lights, hooters, and first aid, among other things.

Tailors are subject to a variety of occupational injuries as a result of the methods, equipment, and machines used in a tailoring shop. A tailor's first job is to ensure his or her own occupational health and safety in the workplace.

## TYPE OF HAZARDS

Although not all of the dangers discussed in this session are likely to arise in a garment manufacturing facility, being aware of them is necessary to be ready to deal with them if they do. Different work settings might expose tailors to a variety of dangers and risks to their health. As a result, it is critical to recognise and handle all types of dangers with suitable safety precautions, and for each individual to be accountable for their own safety and welfare, as well as the safety and welfare of others in the tailoring unit and the environment.

There is always a threat to the health and safety of people at the workplace. These may be chemical hazards, physical hazards, biological hazards, etc. Here we have discussed some hazards keeping in mind the exposure of students of this course towards machines and industry. Following are the types of hazards:

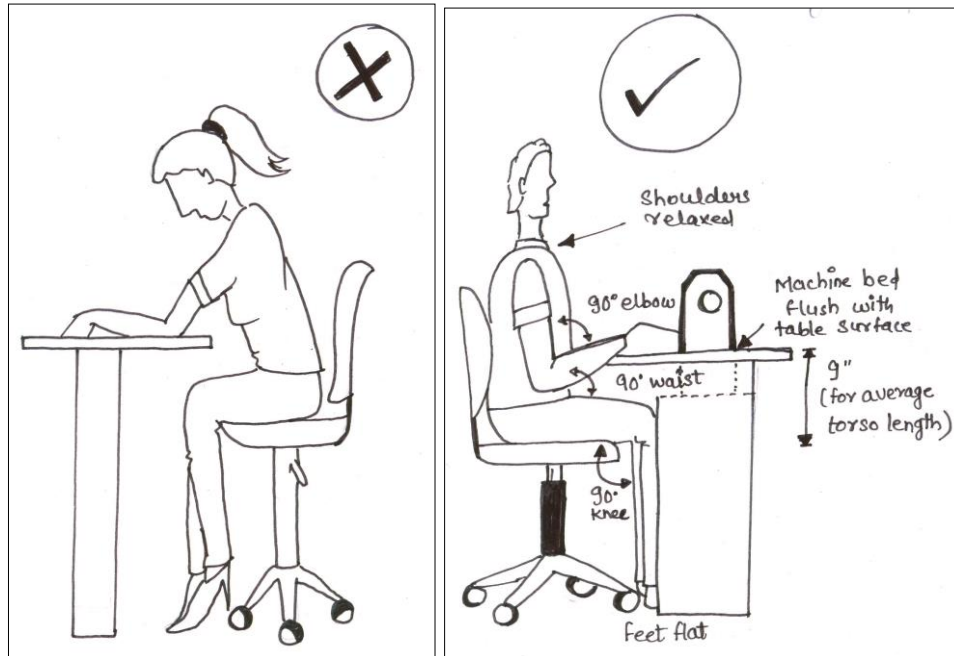
### 1. Physical hazards

Occupational hearing loss, postural abnormalities, falls, accidents, and other issues affect many tailors in the job. Hearing loss is one of the most common problems in a manufacturing unit with loud machines, such as industrial sewing machines or cutters; postural defects, such as cervical and bone shape change, can occur if a person is required to sit or stand in an incorrect position for an extended period of time. Accidents and falls are also significant causes of workplace injuries and deaths in areas such as transportation, construction, extraction, healthcare, and construction.

Some of the problems associated with the physical environment at the workplace include:

1. Excessive dust can cause respiratory problems, allergies, skin problem, etc.. Adequate ventilation, exhaust fans, etc., are helpful to make the environment clean and dust-free.
2. A low light environment for working, and shortage of eye protective glasses, can cause eye problems.
3. Prolonged sitting, and continuous work involving the eye, creates eye problems (strained eyes) and backbone problems for the tailors. Problems like backache, stiffening of neck, cervical and wrist joint problems can also occur during stitching work. These problems can be solved with the following tips:
  - (i) One must work with the right body posture.
  - (ii) Keep the stand/machines at a height till bust level and straight wrist position to avoid bending your neck and back for a long time.

- (iii) Use wrist rests to avoid strain in the hand and wrist joint.
- (iv) Take short breaks from long sittings, maybe after an hour or two, to relax the strain in the back.



**Fig. 5.1 Sitting position while working on a sewing machine**

### Fire hazards

They are common in industries that use a lot of flammable material, like cotton, chemicals, etc. Fire hazards occur mainly due to the following reasons:

1. Improper working of fire and smoke alarm bells.
  2. Absence of fire and smoke alarm systems in many industries .
  3. Improper maintenance of fire exits or emergency staircase.
  4. Lack of proper exit route or emergency staircase to reach the place of safety.
- Every industry should keep fire extinguishers as a safety measure.



**Fig.5.2 Fire extinguishers**

## **2. Biological hazards**

These involve hazards due to bacteria, viruses and toxins. It can be due to non-airy and dark rooms, suffocation (bad ventilation), and unhygienic conditions of washrooms. These also include animal bites and stings, problems from toxic plants, and transmitted diseases through animals.

## **3. Chemical hazards**

Some substances can be dangerous in the workplace. Hazardous materials fall into a variety of categories. When some chemicals are combined with others, they might cause damage. Chemical risks are widespread in the garment and textile industries during the dyeing and printing processes. When handling chemicals in an industry one must be cautious. The worker must be informed of the exact guidelines that must be followed while handling a certain chemical.

## **4. Psychosocial hazards**

Psychosocial hazards adversely affect an employee's mental health or wellbeing. For example, sexual harassment, victimization, stress and workplace violence. Presence of such hazards means that the status of mental health and emotional well-being of the tailors in a tailoring unit may not be normal. These might be caused by job insecurity, excessive working hours, a lack of enthusiasm for work, disappointment at not being able to provide a quality product owing to the pressures of quantitative production, workplace harassment, and a poor work-life balance. Because these are sensitive matters, they should be handled with caution. Behavioural treatment, such as continuous counselling, meditation, yoga, leisure centre participation, music therapy, or occupational care, is useful in reducing sick days and low working productivity.

## **5. Electrical hazards**

Fabrics, machinery, and other fire-prone equipment are all handled in the textile sector, therefore electrical hazards are prevalent in the industry. Electrical mishaps are most common when people are operating with live electrical equipment that they believe is dead. Accidents are also caused by improper equipment use and the use of malfunctioning electrical equipment. One of the reasons might be working on or near electric equipment without proper training or equipment. Shocks from malfunctioning equipment can cause severe and long-lasting damage. The risk of falling from ladders or other work platforms is high due to significant injuries. Such errors or avoidance result in damage to the plant, machineries, equipment, and property, in addition to injuries or accidents. In a tailoring workshop, there is a lot of machinery. However, before any work on a machine begins, the Operator should be taught on how to operate it properly and all safety precautions should be performed. Proper training and demonstration of work technique or process is valuable for each Operator.

**Table 5.1: Some Common Hazards and Potential Accidents and their Preventive Measures**

<b>Common hazards</b>	<b>Preventive measures</b>
Finger and hand injury during cleaning and repair work	The machine must be switched off, with the plug removed, and must be stationary before any cleaning or repair work is started.
Eye injury from broken parts	Proper adjustment of the eye guard should be checked before work starts. Safety glasses should be used.
Finger injury from the needle	Setting of the finger guard should be checked before work starts
Injury from tools and equipment of drafting, cutting and measuring	Shears and needles should be put at the right place after use.
Electrical injury	Never use a machine with damaged covers, cables, switches, etc. Report the damage at once. Never try to repair it yourself.
Internal injury from accidentally swallowed items	Never store items temporarily in the mouth. Place needles, etc., in suitable containers.
Tripping and falling in the surrounding work area	The work area must be clean and tidy.
Fire hazards: loss of life and damage to machinery due to electric short circuit or welding operation	Place MCB (Motor Circuit Breaker), ACB (Air Circuit Breaker), restrict unauthorised person for welding

### Activities

**Activity 1 :** Prepare a chart of the hazards in a tailoring unit.

**Materials Required:**

1. Pens
2. Adhesive
3. Chart sheet
4. Scissors
5. Pictures of hazards related to the clothing industry

**Step-by-step Procedure :**

1. Search pictures of various types of hazards in a tailoring unit through Internet and books.
2. Collect pictures of various type of hazards in the a tailoring unit.
3. Cut the pictures very neatly with scissors.
4. Paste them on a chart sheet.
5. Label them.
6. Place the chart in classroom/practical lab.

### Check Your Progress

#### A. Fill in the blanks

1. \_\_\_\_\_ might be physical, biological, chemical, mechanical, or any combination of these.
2. A low light environment for working, and shortage of eye protective glasses, can cause \_\_\_\_\_ problems.
3. Biohazards involve contagious bacteria, \_\_\_\_\_ and \_\_\_\_\_.

#### B. Find the following words from the maze below

HAZARD, MACHINE, INJURY, ELECTRICAL, ACCIDENT, ALLERGY, DAMAGE, RISK, HURT

X	i	n	j	u	r	X	a	m	e
a	h	s	t	r	a	i	n	a	l
c	a	z	k	h	u	r	t	c	e
c	z	d	a	m	a	g	e	h	c
i	a	r	l	r	i	s	k	i	t
d	r	e	l	g	d	s	c	n	r
e	d	X	e	a	r	s	r	e	i
n	p	o	r	j	p	k	m	s	c
t	q	p	g	i	s	s	m	s	a
s	r	n	y	n	u	v	n	s	l

#### C. Questions

1. Define the risks and hazards in a tailoring unit.
2. List out the type of hazards in a tailoring unit.
3. How can the management reduce the risks and hazards in a tailoring unit?
4. Write at least two physical hazards that might be faced by the Operator and give causes and precautions to avoid them.

## **Session 2: Health and Safety Measures for Self-Employed Tailor**

It is always important for a tailor to be aware of the hazards associated with sewing machine operations as many of the injuries are caused by error, carelessness or inattentiveness on the part of the tailor / operator. The Self-employed tailor should take precautions to guard against work-related illnesses and injuries. The tailor/operator must be trained to handle and operate the sewing machine properly and safely. One should follow all safety precautions.

### **Safety precautions to be followed by Self-employed tailor while working**

1. While sewing one must always concentrate on the machine and the task at hand.
2. Shields and guards should always be used while working with the open moving parts of machine.
3. One must use safety glasses and earplugs while working on high-speed sewing machinery.
4. Always wear proper footwear to avoid leg and feet injury. The footwear worn should not slip off from the feet while operating the machine.
5. Turn off the sewing machine before oiling it or while changing parts.
6. In the event of a cut, wound, or any other injury, immediately report to the supervisor. Wounds should be cleaned and covered with a bandage.
7. All tools and machinery required for production should incorporate ergonomic design principles and should not require an excessive force to operate.
8. The tools should be easy and comfortable in holding and using.
9. Work area should be properly designed like enough space for performing tasks, appropriate working height and proper sitting arrangement.
10. Improper furniture and poor ergonomic conditions lead to serious health problems such as musculoskeletal disorders for example carpal tunnel syndrome, lower back pain, forearm tendinitis, neck pain, etc.





**Fig. 5.3 Tailors working on a sewing machine**

11. Unpadded stools that may also lack a backrest lead to the tailors having to sit in an uncomfortable position without adequate support for the entire working shift.
12. Short breaks should be provided to prevent muscular pains.
13. Take proper physical rest and mental relaxation in order to prevent injuries.
14. Adopt an appropriate sitting posture while working. Avoid working in uncomfortable and awkward postures.
15. Do not work with hands above the shoulder height on a regular basis. Arms must be placed at a lower level and near to the body. Frequent bending and twisting of wrists, back and neck should also be avoided.
16. Tailors should take proper rest. Give your muscles rest during the tea/snacks break, lunches and weekends by doing something different from what is routine.

### **GOOD LIGHTING**

Proper lighting at the workplace is very essential for productivity. Conversely, poor lighting can cause eye strain, fatigue and headache, which results in poor productivity.

#### **Practices for good lighting**

1. There should be an arrangement for proper natural lighting in the sewing department/unit. This may help decrease the electricity bill.
2. Work stations that need more light should be moved closer to the windows.
3. Use a combination of natural and artificial lighting arrangement, and try to adjust the lighting at the work area such as, drafting and cutting.
4. The interior colour of the walls affects the illumination needed. Make sure that the ceilings should be as close to white as possible. Use pale colours on walls.

**Benefits of good lighting**

1. Good quality of work with less faults and high production
2. Decreased tiredness and work-related illnesses, like itching and strain in the eyes
3. Better health of tailors will decrease the number of sick leaves, and increase productivity

Many a times, different chemicals are used for different processing in textile and garment industries. Chemicals such as dyes, solvents and other chemicals are used to create different fabric finishes and durability. Hence, proper ventilation, respiratory protection, and other personal protective equipment should be readily available to protect tailors during chemical processing. As a lot of work involves close viewing of the fabric, material or garment, eye protection is critical. Tailors in a tailoring unit can avoid eye injuries by using proper shields on high-speed sewing machinery or appropriate safety glasses. Before using any tool or machine, the tailor/operator should be trained in safe working practices. Some of the measures are given below.

**Safety measures to prevent accidents with scissors**

When not correctly handled, hand scissors can cause accidents. Scissor injuries most commonly occur when a scissor slips during cutting or trimming. The blade usually slashes the Operator's hand and/or fingers. Injuries can also occur to other parts of the body. The following safety measures should be taken:

1. Suitable storage system, such as racks, boxes, etc. should be used near the working area at a comfortable height to place scissors, blades, etc., after use.
2. Ensure placing lighting fixtures in a way that the light should fall on the working surface from the left side or from the front. This promotes better visibility.
3. Prohibit carrying scissors in pockets, or in the hand when going from one place of work to another.
4. Do not hold scissors with sharp sides up. Do not use it when the middle screw is loose.
5. Fix disposal points for used blades.
6. Protect your feet with footwear that can withstand sliding and injury from a fallen scissor or other sharp item.
7. Avoid leaving scissors around the work area. This has the potential to hurt both the Operator and people nearby.

8. Floor surfaces should be slip resistant so the tailors do not slip.
9. Work surface and floor should be free of debris and other waste to avoid tripping and falling.

### **Safety measures to prevent accidents with needles**

1. Keep needles and pins at a fixed place, such as in a special box, and all small tools in separate bags or boxes. Do not leave them at the workplace.
2. Do not hold the needle, pins, etc., in your mouth nor tuck them in the clothes. Do not leave it in the fabric too. An Operator can sew through one's finger.

### **Safety measures while using spray guns**

Spray guns are used to get rid of any stains on the fabric that may have been transferred while manufacturing. These guns either employ a cleaning fluid (often ethylene) that can induce headaches, dizziness, and drowsiness if inhaled, or spirit, which can cause skin redness and severe drying if exposed. Train the tailors in the use of the gun. Rather of spraying directly on the clothing, spray the cleaning solution onto a rag and then clean with the rag.

### **Safety measures while ironing**

1. When using a hot iron, be cautious since it might cause serious harm.
2. Before utilising the cord, inspect it for any flaws.
3. With dry hands, turn on the plug and hold it in place.
4. Use only a heat-resistant stand to hold the iron.
5. When ironing, make sure the cable does not come into contact with the iron soleplate.
6. Select an ironing mode (heating temperature) suitable for the fabric to be ironed.

### **Safety and navigation symbols**

A signage or symbol is a picture, written word or mark that represents a message. It is important to know the different type of symbols used in a workplace so that they can be followed. There are two type of symbols—safety symbols and navigation symbols. Safety symbols are those used for warning and the protection to be taken. Navigation symbols are used to show the direction or placement of a certain object or department. Some of the commonly used symbols are shown in Fig. 5.4.





















 Symbol for explosives or an explosion hazard	 Sign to prohibit flames and smoking	 Sign indicates flammable gas	 Hazard symbol for non-flammable gas	 Sign for protective eyewear
 Symbol for first-aid	 Symbol for gloves required	 Sign for protective footwear	 Sign for protective clothing	 Sign for fire extinguisher
 Sign for ear protection required	 Sign for escaper route	 Hazard symbol for toxic	 Hazard symbol for flammable	 Hazard symbol for oxidizing
 Hazard symbol for a corrosive substance	 Warning sign	 Symbol for fire exit	 Hazard symbol for a harmful or irritant substance	 Sign for fire alarm

Fig.5.4 Safety and navigation symbols

## Activities

**Activity 1 :** Prepare a chart of safety and navigation symbols.

### Materials Required

1. Chart sheet
2. Pictures of safety and navigation symbols
3. Adhesive
4. Scissors

### Step-by-step Procedure

1. Search and collect pictures of safety and navigation symbols from the Internet and books.
2. Cut the pictures very neatly with scissors.
3. Paste them on a chart sheet.
4. Label them.
5. Display the chart in the classroom/practical lab.

**Check Your Progress****A. Fill in the blanks**

1. The tailor/operator must be trained to handle and operate the \_\_\_\_\_ properly and safely.
2. \_\_\_\_\_ and \_\_\_\_\_ should always be used while working with the open moving parts of machine.
3. Work stations that need more light should be moved closer to the \_\_\_\_\_.
4. Floor surfaces should be \_\_\_\_\_ so the tailors do not slip.
5. \_\_\_\_\_ and \_\_\_\_\_ are the two types of symbols.

**B. Short questions**

1. Write a short note on good lighting while working in a tailoring unit.
2. Write short notes on any five safety practices while working on sewing machines.

**C. Long questions**

1. Why is it important to take health and safety measures for a Self-employed tailor in the tailoring unit?
2. Write about the importance/benefits of good lighting for the Self-employed tailor.

**ANSWER KEY****MODULE – 1****SESSION 1:****Fill in the Blanks**

1. Males
2. Knee
3. Chudidar pyjama

**SESSION 2:****Fill in the Blanks**

1. Bottom
2. Side opening
3. Circumference , two

**SESSION 3:****Fill in the Blanks**

1. Trousers
2. Nape
3. Shoulder, wrist
4. Hip

**SESSION 4 :****Fill in the Blanks**

1. side seams
2. Pant pyjama

### 3. Single Breast Waist Coat

## **MODULE – 2**

### **SESSION 1:**

#### **Multiple choice questions**

1. Both (a) & (b)
2. (c) Contouring

### **SESSION 2:**

#### **Fill in the Blanks**

1. Princess line
2. Darts

## **MODULE – 3**

### **SESSION 1:**

#### **Fill in the Blanks**

1. Ease, balance
2. test fit
3. parallel
4. horizontal, vertical
5. final fit

### **SESSION 2:**

#### **True/False:**

1. True
2. False

3. False
4. True
5. True

### **SESSION 3:**

#### **Fill in the Blanks**

1. Ironing
2. metal detection
3. quality
4. folded

### **MODULE – 4**

#### **SESSION 1:**

#### **Fill in the Blanks**

1. C
2. A
3. B

#### **SESSION-2**

#### **Fill in the Blanks**

1. B
2. A
3. C

### **MODULE – 5**

#### **SESSION 1:**



**Fill in the Blanks**

1. Hazards
2. eye
3. viruses, toxins

**Find the following words from the maze below**

HAZARD, MACHINE, INJURY, ELECTRICAL, ACCIDENT,  
ALLERGY, DAMAGE, RISK, HURT

X	i	n	j	u	r	X	a	m	e
a	h	s	t	r	a	i	n	a	l
c	a	z	k	h	u	r	t	c	e
c	z	d	a	m	a	g	e	h	c
i	a	r	l	r	i	s	k	i	t
d	r	e	l	g	d	s	c	n	r
e	d	X	e	a	r	s	r	e	i
n	p	o	r	j	p	k	m	s	c
t	q	p	g	i	s	s	m	s	a
s	r	n	y	n	u	v	n	s	l

**SESSION 2:****Fill in the Blanks**

1. sewing machine
2. Shields, guards
3. Windows
4. slip resistant
5. Safety symbols, navigation symbols

## List of Credits

### Graphics

Verma Prachi Fig.- 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.29, 1.30, 1.31, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3.22, 3.23, 3.24, 3.25, 3.26, 3.27, 3.28, 3.29, 3.30, 3.31, 3.32, 3.33, 3.34, 3.35, 3.36, 3.37, 3.38, 3.39, 3.40, 3.41, 3.42, 3.43, 3.44, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 5.1, 5.2, 5.3, 5.4