UNIT 1

Sewing Equipments and Tools

Structure

1.0 Introduction
1.1 Measuring Tools
1.2 Marking Tools
1.3 Cutting Tools
1.4 Sewing Tools
1.5 General Tools

Learning Objectives
After studying this unit, you will be able to

- Know the type of sewing equipment
- Identify the best tools used in construction of various parts of the garment
- Know the uses of each sewing tool
- Distinguish between various sewing tools

Unit Preview

Sewing equipment and tools will visualize the use of different tools used in clothing construction. A good knowledge of these tools help in using the
appropriate tool for overall quality of the product prepared besides making the

task of sewing easy for the beginner.

1.0 Introduction

Sewing equipment and tools are needed for sewing which aid in construction
of garments of good quality and appearance. The equipment or tools are broadly
categorized into measuring, marking, cutting, general tools, and pressing tools.
A box with compartments is necessary to arrange these tools in one place.

1.1 Measuring Tools

Measuring tools are essential for accurate sewing, they are as follows

1. Measuring Tape
2. Small Ruler
3. Yard Stick or meter scale
4. L-Scale
5. Hem Gauge
6. Hem Marker

1.1.1 Measuring Tape

It has a smooth surface tape that is clearly marked with increments of inches
and centimetres on both sides. A firm good quality tape which will not stretch
after use is to be selected. It is usually about ½ inch to ¼ inch wide and 60
inches long, and has 1/8 divisions (Fig 1.1). It has centimetre markings along
other edge. At one end of the tape is attached a metal strip about 3 inches long
and at the other end, a small metal covering.

Fig. 1.1 Measuring tape
1.1.2 Rulers

There are two types of rulers, one is a small ruler of 1 inch wide and 6 inches long divided into 1/8” or 1/16” divisions on one side and centimetres on the other side, second one is of 2 inches wide and 18 inches long. Generally small rulers are made of clear plastic and larger rulers with metal, wood and plastic. Small rulers are used for measuring small distances for tucks, hem facings, etc. and used at the sewing machine. The larger rulers are used at the work table.

![Fig 1.2. Ruler](image)

1.1.3 Yard stick or Meter scale

These may be wooden, plastic or metal. It is available in 36 inches or 45 inches in length (Fig. 1.3.). They are useful for checking grain lines when fixing pattern pieces on material and for drawing long seam lines on fabric or paper.

![Fig 1.3. Yard Stick or Meter Scale](image)

1.1.4 L - Scale

It has arms or sides made of metal giving it a L-Shape; the long arm measures 24 inches, the short arm 14 inches. This has a perfect right angle corner and is used to draw lines at right angles at the time of drafting. It is helpful during the process of straightening the fabric to check whether the corners of the fabric have got the right angled structure.
1.1.5 Hem Gauge

It is a 6 inch gauge can be made of cardboard or brought from a shop. It is used as a measuring guide for marking width of the hems, pleats, and seam allowances accurately. Notches are provided at regular intervals along the gauge. One edge of the notch is at right angles to the straight edge of the gauge while the other edge is slanted. While measuring or marking, use the straight edge of the notch as the guide (Fig. 1.5).

1.1.6 Hem Marker

It is used for mark out a completely level hem line in chalk. It can be adjusted to any hem length. This is commonly used for professional hem marking.
1.2 Marking Tools

These are generally used for transferring the paper pattern on to the fabric.

1. Tracing Wheel
2. Dress Makers Carbon or Tracing Paper
3. Tailor’s Chalk

1.2.1 Tracing Wheel

This is a sharp toothed wheel used with dress maker’s carbon to transfer pattern markings to cloth. It transfers the pattern markings—including seams, darts, and pocket placements to the wrong side of the fabric. The small serrated edge tracing wheel is appropriate for most fabrics (Fig. 1.7). A smooth edge tracing wheel is used on fine or knit fabrics to avoid pulling of the yarns. Test it to make sure that it does not bend easily and that the points are not blunt.

Fig. 1.7 Tracing wheel

1.2.2 Dress Maker’s Carbon or Tracing Paper

It is a wax-coated paper on one side and is available in different colours. It is used with the tracing wheel to transfer pattern markings such as lines, darts, pleats, etc. from paper patterns to the fabric being cut.

1.2.3 Tailors Chalk

It is made of wax or stone chalk, is used to transfer seam lines and other pattern details to fabric. It is also used for marking fitting adjustments and hems. A wax chalk is acceptable only for woollen fabric. Stone chalk is also available in pencil form. This is available in assorted colours and in rectangular or triangular shapes.

1.3 Cutting Tools

The following types of shears and scissors are made for both right-handed and left- handed cutting. All cutting tools must be kept sharp, clean, and grease-free for accurate cuts.
1. Scissors
2. Dress Maker’s Shears or Bent handle Shears
3. Pinking Shears
4. Buttonhole Scissors
5. Electric Shears
6. Rotary Cutters

### 1.3.1 Scissors

They are 5 to 6 inches long. They are used for light cutting, trimming, clipping corners, and cutting curves. These have round handles for both the blades. They are designed for snipping threads, trimming seams, embroidery threads and for cutting holes sharp pointed scissors with blades ½ inch to one inch long are very useful. The best types have blades of uneven width. They should be held so that the wider blade is above the narrower blade. (Fig. 1.8)

![Fig. 1.8 Scissor](image1.png)

### 1.3.2 Dress Make’s Shears or Bent-Handle Shears:

They are 8 to 10 inches long (Fig. 1.9). They are used for cutting all types of fabrics. These are more satisfactory than scissors. Shears differ from scissors in that they have one small ring handle for the thumb and a large ring handle for the second, third and fourth fingers. It is better to select shears made of high quality steel and having blades joined with a bolt or screw rather than a rivet. The shears should not be dropped down. Protect the shears from rusting.

![Fig. 1.9 Bent Handle Shear](image2.png)
1.3.3 Pinking Shears

They are 9 to 10 inches long (Fig. 1.10). They create a ravel resistant finish to raw edges of firmly woven fabrics when the seam allowance is left unfinished. They produce a notched cutting line (zigzag) which gives a neat appearance to the inside of garments.

![Fig. 1.10 Pinking Shear](image)

1.3.4 Buttonhole Scissors

These can be adjusted so as to cut button holes in any size required (Fig. 1.11.). They are useful if one needs to make many button holes in a garment.

![Fig. 1.11 Buttonhole scissors](image)

1.3.5 Electric Scissors

These are used in most sample rooms. They are ideal for cutting silk, nylon, and soft, hard-to-cut fabric (Fig. 1.12). These are light in weight and easy to operate.

![Fig. 1.12 Electric Scissor](image)
1.3.6 Rotary Cutter

It requires more handling skill than shears. It cuts patterns and samples faster than scissors do. The rotary cutter cuts all fabrics as well as leather and vinyl. (Fig. 1.13). Rotary cutters are used in commercial garment industries.

Fig. 1.13 Rotary Cutters

1.4 Sewing Tools

These are used for hand and machine sewing, they are as follows;

1. Embroidery Frame
2. Hand Sewing Needle
3. Machine Needle
4. Sewing Thread
5. Needle Case
6. Needle Threaded
7. Thimbles
8. Stiletto
9. Bodkin

1.4.1 Embroidery Frame

This is a round frame used for keeping the fabric stretched while the work is being done. It is available in wood and plastic material.

Fig. 1.14 Embroidery Frame
1.4.2 Hand Sewing Needles

They are found in sizes from the very fine 9 to the heavy 18. The best quality needles are made of hand ground steel. For hand sewing medium length needles with a short oval eye is selected. The needles should have sharp Points and smooth and well polished eyes. Sharp and short needles are suitable for permanent stitching, Ball point needles are used to sew fine silk or polyester jersey knits. Crewel needles are designed for embroidery work which have a long oval eye and are therefore easily threaded.

Fig. 1.15 Hand Sewing Needles

1.4.3 Sewing Machine Needles

They are found in sizes from the fine 9 to the heavy 18. The needles are made to fit the specific make and model of each sewing machine. The needle size should conform to the weight, thickness, and kind of fabric.

1.4.4 Sewing Thread

With the wide and ever increasing range of fabrics available in the market, it is important to know the right sewing thread for the various types of fabrics. Both the thread and the garment should share the same characteristics, as they have to be laundered and ironed together, they should shrink and stretch together.

1.4.5 Needle Case

It is a round case with assorted sizes of hand and machine needles.
1.4.6 Needle Threader

It is a device made of thin wire which aids in threading machine needles and hand needles.

Fig. 1.17 Needle Threader

1.4.7 Thimbles

These are necessary for efficient and accurate hand sewing. A metal thimble should fit snugly on the middle finger of the needle holding hand. There are two types of thimbles: an open-ended thimble, preferred by tailors, and the more common closed-ended thimble, called the dressmakers thimble (Fig. 1.18).

Fig. 1.18 Thimble

1.4.8 Stiletto

This is a sharp pointed instrument for punching holes in material. It is used for forming eyelets in belts and for embroidery work.

Fig. 1.19 Stiletto

1.4.9 Bodkin

This is a flat needle with blunt end and a large eye, used for threading ribbon or elastic through a tunnel or eyelet casing.

Fig. 1.20 Bodkin
1.5 General Tools

These are the tools generally aid in cutting, construction and checking the fit of the garments. They include:

1. Pins
2. Pin Cushion
3. Seam Ripper
4. Orange stick
5. Cutting Board or Table
6. Mirror
7. Dress form
8. Awl
9. Loop Turner
10. Paper

1.5.1 Pins

These come in different sizes for use in different fabrics. Use of pins for basting and fixing of pattern pieces on to fabric makes work easier and more accurate. The right choice of pins is most essential for good workmanship. Use steel pins for silk or satin fabrics. The ball point pins are useful for fine knits.

1.5.2 Pin Cushion

A small stuffed cushion made of wool or felt, filled with wool or hair to hold the pins while working near the table is more useful. Pin cushion made with an elastic strap that can fastened to the wrist makes work faster.

Fig.1.21 Pin Cushion
1.5.3 Seam Ripper

This is useful for ripping out machine stitches. It has a handle and a bent point, which can be inserted into the stitches and pulled to break them.

![Fig. 1.22 Seam ripper](image)

1.5.4 Orange Stick

This is a long tool whose point can be inserted into the corners of collars and seams so as to give a neat pointed appearance.

![Fig. 1.23 Orange Stick](image)

1.5.5 Cutting Board or Table

A table of 5 feet by 3 feet and height of 2 feet 6 inches is of convenient height and size for cutting and construction of garments.

![Fig. 1.24 Cutting Board or Table](image)

1.5.6 Mirror

A full length mirror is useful for checking the fit and design of the garment on model.

![Fig. 1.25 Mirror](image)
1.5.7 Dress Form

This is padded form of body and may be made of wood, cardboard, plaster, reinforced plastic. This is useful for designing dresses by draping and also to check correct fitting.

![Fig. 1.26 Dress Form](image)

1.5.8 Awl

It is a small, sharp-pointed tool used to punch small, round holes for marking in paper or leather.

![Fig. 1.27 Awl](image)

1.5.9 Loop Turner

It is a long wire with a latch hook, used for turning bias strips to make spaghetti straps and narrow belts.

1.5.10 Paper

It is used for pattern making. This soft paper comes in rolls of plain paper or paper with blue dots or other markings at set intervals.

1.6 Pressing Equipment

These pressing equipment are used to give the perfect shape to the fabrics and iron difficult garments parts in construction; also helpful to give the neat appearance to the finished garments.
1. Iron
2. Steam iron
3. Ironing board
4. Sleeve Board
5. Press Cloth

1.6.1 Iron

An automatic iron is handy for pressing fabric before cutting, during construction and after the garment is completed.

Fig. 1.28 Iron Box

1.6.2 Steam Iron

It has an adjustable temperature control, and is equipped with a thumb press for automatic steam. Distilled water is heated, and the resulting steam can be released with the thumb press while pressing.

Fig. 1.29 Steam Iron

1.6.3 Ironing Board

It is used for hand pressing. A well-padded, shaped table of convenient height is very good. One may use an ordinary table covered with sheet and blanket for this purpose.
1.6.4 Sleeve Board

This is a well-padded miniature of a full-sized ironing board; is used to press sleeves and hard-to-reach small details (Fig. 1.31). It has a tapered end on one side and a round end on the other side.

1.6.5 Press Cloth

Fabric used to cover the ironing table is a press cloth. It should be colour-fast and should be washed or boiled to remove all sizing.

Test Your Understanding

Check the following statements for better understanding of the lesson:

- Into how many broad classes the sewing equipment is categorised.
- How many of the above sewing tools and equipments are commonly seen in tailor shop?
- Make a list of the tools that you need for the clothing practical classes
- Do you know any brand names for these tools?
- Name and visit the nearest reliable shops that sell the above tools.
- Make a chart indicating the cost of each item and their brands.
• Prepare a hem gauge with ½ inch notches apart.

• Make a wrist pin cushion for yourself.

• Visit nearest tailor’s shop and identify the tools used by him for garment construction.

Summary

The sewing equipments and tools are broadly classified as Measuring Equipment, Marking Equipment, Cutting Equipment, General Tools, and Pressing Tools. Each category of tools has their own purpose in garment construction and finishing. Proper selection and use of tools require more care as they improve the appearance of the finished garments and reduce the time taken in their construction.

Model Type Questions

Short Answer Type Questions

1. Give the broad classification of sewing equipment used.

2. How to select the best measuring tape for garment construction?

3. List out the common cutting tool used to cut the fabric?

4. Differentiate between the ordinary hand needle and bodkin.

5. How small parts of the garments are pressed in garment construction?

6. What is a seam ripper? How it is used?

7. What is the common marking tool used in garment making?

8. What is L-scale?

9. Give the common sizes of hand sewing needles.

10. What is meter scale? How do you use it?

Long Answer Type Questions

1. List the various sewing equipments and tools used in garment construction.

2. Write about the different types of cutting tools used in the sewing process.

3. Explain the use of hem gauge and hem marker.

4. Write about the five types of general tools used in garment construction.

5. Describe the various marking tools used.
UNIT 2

Sewing Machines

Structure

2.0 Introduction
2.1 Types of sewing machine
2.2 Parts of sewing machine and their functions
2.3 Threading the machine
2.4 Needle change
2.5 Common machine troubles and repairs
2.6 Care of the machine

Learning Objectives

After studying this unit, you will be able to practice the following

• Identifying the types of sewing machines
• Selection of correct sewing machine for different end uses
• Understanding the mechanism of different parts of sewing machine
• Selection of right size sewing needle
• Use of correct sewing thread
• Threading a machine
• How to peddle the sewing machine
• Working on the machine for ordinary lock stitches
• Appropriate number of stitches for different fabrics
• Cleaning and oiling the machine

Unit Preview

Sewing is a creative and interesting skill. The knowledge of sewing gives a confident feeling when it is applied to the construction of dresses. This chapter gives the knowledge about the various parts of sewing machine used in garment construction and their role in formation of stitch. It also helps to identify the small troubles that arise while working on the sewing machine and learning to rectify them.

2.0 Introduction

Sewing by hand as done in olden days is not applicable for all stages of garment making. Therefore, considerable emphasis is given to machine sewing. There are several machines in the market today, each with its own desirable features and advantages. Machines range from most basic having only simple lock stitch to the electronic machines that use advanced computer technology having various functions for example piping, binding, ruffling, pleating, darning, hemming and even making button holes and attaching fasteners.

2.1 Types of Sewing Machines

Sewing machines are now available in various models such as domestic model, tailor model, industrial model, portable and cabinet models. They may be operated by hand, treadle or electric motor.

2.1.1 Hand – Operated Sewing Machine

This is the simplest form of sewing machine which is operated by hand. A detachable handle provided to the flywheel is used to operate the machine. This machine is generally suitable for domestic purpose because it does not help in speeding up the work.

2.1.2 Treadle Sewing Machine

This machine is exactly like the hand sewing machine but it is operated by foot, using an additional stand. In this type the balance wheel is operated by a belt with the help of lower stand, which is driven by feet. This machine operates faster than that of the hand-operated machine. This machine is suitable when there is no power supply. While handling this machine both the hands are free to
handle the fabric, hence speeding up the work. Even some of the heavy duty machines are operated by this method.

2.1.3 Electric Sewing Machine

This is the fastest sewing machine. One needs practice to handle it. The three types of electric sewing machines available are straight stitching, straight stitching with semi-automatic and automatic stitching machines. In an electric machine the balance wheel comes to motion by a belt, which is attached to an electric motor.

2.2 Parts of a Sewing Machine and their Functions

![Fig. 2.1 Parts of sewing machine](image)

The basic structure of sewing machine is the same whether it is hand-operated sewing, treadle sewing machine or electric sewing machine. The basic parts of a sewing are listed below and seen in fig. 2.1

**2.2.1 Bed:** Bed of machine is the base of the machine on which all the attachments are fixed.

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

**2.2.3 Balance wheel:** It controls the operation of the machine. It is located on the right side of the machine. It is driven by hand or belt in the industrial machine. It controls the movement of the needle bar and drives the machine.
2.2.4 **Spool pin**: It is fitted on the top of the arm to hold the reel.

2.2.5 **Thread guide**: It is a small hole made of spring wire through which thread runs directly to needle.

2.2.6 **Tension disc**: The two concave discs put together with the convex sides facing each other, compose the tension disc. The thread passes between the two. The tension of the thread is adjusted by a spring and nut which increases or decreases pressure.

2.2.7 **Take up lever**: It is lever fitted to the body of the arm with a small hole through which the thread passes. Its up and down motion feeds the thread to the needle and tightens the loop formed by the shuttle and loosening the top thread to complete the stitch.

2.2.8 **Needle bar**: This is a steel rod to hold the needle at one end with the help of a clamp. Its main function is to give motion to the needle.

2.2.9 **Bobbin case**: This moves into position to catch the top thread and form the stitch as the needle is lowered into the bobbin chamber.

2.2.10 **Presser foot**: It is fixed to the presser bar to hold the cloth firmly in position when lowered.

2.2.11 **Presser foot lifter**: A lever attached to the presser bar for raising and lowering the presser foot.

2.2.12 **Stitch regulator**: This controls the length of the stitch. Some regulators can stitch in reverse.

2.2.13 **Bobbin winder**: A simple mechanism used for winding thread on the bobbin.

2.2.14 **Clutch or Thumb screw**: This is in the center of the fly wheel and it engages and disengages the stitching mechanism.

2.2.15 **Slide Plate**: A rectangular plate, which facilitates the removal of the bobbin case without lifting the machine.

2.2.16 **Needle plate or Throat plate**: A semi-circular disc with a hole to allow the needle to pass through it.

2.2.17 **Feed dog**: This consists of a set of teeth fitted below the needle plate. It helps to move the cloth forward while sewing.

2.2.18 **Face plate**: A cover which when removed gives access to the oiling points on the needle bar, presser bar and take-up lever.
2.5.19 **Spool pin for bobbin winding**: Spool of thread is placed on this at the time of bobbin winding.

### 2.3 Threading the Machine

Manufacturers supply an instruction manual with each sewing machine. One should follow the directions given in instruction book. When learning to treadle, run the machine with the presser foot up and the clutch on fly wheel loosened so that the needle does not go up and down. Sit at a comfortable height in front of the machine and place one foot forward and the other foot slightly back on the treadle. Start the machine by turning the fly wheel towards you. Start pedaling the machine slowly in such a way as to continue this motion. Gradually increase the speed. To stop the machine, place your hand on the fly wheel and stop the motion of the feet.

Before starting actual machining, it should be checked that the needle of the machine is of correct size, is sharp and correctly set. The bobbin should be evenly set. Briefly, the various steps of pre-preparation are:

- Winding the bobbin
- Upper threading
- Drawing the bobbin thread
- Tension adjustments
- Pressure and feed adjustments
- Selection of thread and needle

#### 2.3.1 Winding the bobbin

Bobbins wind differently on various machines, but generally the thread is first placed on a spool pin located below the flywheel and then drawn through the thread guide near the spool pin. Now with your hand wind the end of the thread on the bobbin in clock wise direction and place it on the winder. Turn the bobbin on the winder until the pin like projection on the winder fits into the slot on the bobbin, thus holding bobbin in place. Then press the winder lever down until the rubber ring touches the hub of the fly wheel and is held there. Loosen the thumb screw and run the machine, holding the thread end loosely. Make sure that the thread winds on the bobbin evenly and that you do not fill the bobbin too full.
2.3.2 Upper threading

Raise the take up lever to its highest point by turning the balance wheel towards you for upper thread. Place the spool of the thread on spool pin. Lead the thread into thread guide, then pass through tension discs and into small wire spring and finally through the eye of the needle from left to right. Draw about 2 inches of thread through the needle. For the lower thread hold the bobbin between thumb and fore finger of the left hand with the thread leading on top, into the slot or shuttle race.

2.3.3 Drawing the bobbin thread

Raise the take up lever to its highest point. Holding the end of the top thread with your left hand, slowly turn the fly wheel around once so that the needle goes down and then comes up to its highest position. Pull the end of the needle thread. Then a bobbin thread will appear through the needle hole. Pull the loop to bring the end of the bobbin thread out.

2.3.4 Tension adjustments

Tension controls increases or decreases the pressure on the threads as they are fed through the machine. When pressure is correct in both thread, the tension is balanced, the threads interlock in the middle of the material to make a perfect or balanced stitch. The seam is flat and elastic without being loose and there is no seam grin when the seam is stressed. If there is too much pressure on the tension discs, not enough thread is fed into the stitching and the tension is tight. The material puckers, the seam is strained and the stitches break. If there is too little pressure, too much thread is fed, the tension is too loosed and the seam is loose and weak. The link position is a good indicator of which thread tension is incorrect. When the tension on the top or needle, thread is too tight or the tension on the bottom or bobbin thread is too loose, the top thread lies along the surface of the material and the thread forms loops on the top. When the tension of the top or needle, thread is too loose or the bottom or bobbin thread is too tight, the bottom thread lies along the underside of the material and the top thread forms loops on the underside.

To adjust the top thread tension, regulator situated on the front of the machine adjusts the tension discs. To decrease tension, turn dial to lower number if present. To increase tension, turn dial to high number. The bobbin thread tension is controlled by a screw on the bobbin. Clockwise turning increases the tension whereas anti-clockwise turning decreases tension.
2.3.5 Pressure and feed adjustments

Pressure means the downward force exerted on the fabric by the presser foot, to hold the layers so that they move together evenly during stitching. The feed exerts upward force that moves the fabric to the back of the machine. The two forces pressure and feed, work together to produce properly stitched seam. Pressure has several functions. It holds the fabric layers in such a way that they move evenly with one another. It holds the material taut and it helps to assure that the stitches are properly set in the material and that an even stitch tension, and stitch length are maintained. Pressure also prevents the fabric from being pulled down into the bobbin area and can cause skipped stitches.

The primary function of feed is to move the fabric into position for each stitch. Feed also helps in holding the fabric layers taut during stitch formation. Feed is controlled by the stitch length regulator. The smaller the stitch length setting, the shorter the distance the feed moves the fabric for each successive stitch.

The amount of pressure needed depends on the weight and thickness of the material. Lighter and thinner the fabric weight, the lighter the pressure needed and vice-versa.

2.3.6 Selection of Thread and Needle

<table>
<thead>
<tr>
<th>Fabric</th>
<th>Fibre</th>
<th>Thread</th>
<th>Needle</th>
<th>Stitch length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine woven fabrics: lawn, voile, organdie, silk chiffon, organza, crepe de chine, georgette, fine lace</td>
<td>Synthetics, cotton &amp; blends</td>
<td>Synthetic 60 Mercerized 50</td>
<td>9-11</td>
<td>10-15</td>
</tr>
<tr>
<td>Light weight woven fabrics: poplin, gingham, silk, crepe cotton, corduroy, and velveten</td>
<td>Synthetics, cotton &amp; blends</td>
<td>Synthetic 60 Mercerized 50</td>
<td>11-14</td>
<td>12-15</td>
</tr>
<tr>
<td>Medium weight woven fabrics: Silk, brocade, taffeta, linens, some denims, tweed, gabardine, water proof fabrics</td>
<td>Synthetics, cotton &amp; blends</td>
<td>Synthetic 60 Mercerized 50</td>
<td>11-14</td>
<td>12-15</td>
</tr>
<tr>
<td>Heavy weight woven fabrics: suiting, thick corduroy, denim, canvas, double faced wool, heavy furnishing fabrics</td>
<td>Synthetics, cotton &amp; blends</td>
<td>Synthetic 60 Mercerized 50</td>
<td>16-18</td>
<td>10-12</td>
</tr>
</tbody>
</table>
2.3.6.1 Types of threads

The natural fibre threads available in the market are cotton and silk. Cotton thread comes in two varieties mercerised and un-mercerised. Mercerised cotton is stronger and has lustre. Silk thread is an all-purpose thread and combines strength with elasticity, but is not easily available in India in small spools.

The synthetic threads are usually made from polyester and terylene. Cottons or linens should not be stitched with synthetic thread, as the thread will not be able to withstand the heat while being ironed. Cotton sewing thread comes in a great range of sizes, from number 8 (very heavy for work on canvas, etc.) to number 100 (very fine). Wool and silk should preferably be stitched either with mercerized cotton or silk threads only. Blended fabrics may be stitched with synthetic thread suitable to the dominant fibre in its content. Threads whether natural or synthetic are produced in various thickness: higher the number, finer is the thread and smaller the number, coarser is the thread. It is important to remember that the same thread should be used for the bobbin and top spool.

The thread used for stitching a garment must of course blend in with the fabric and be inconspicuous. If the thread is just a shade darker than the fabric, it will blend in well; a good test is to lay a single strand of the thread over the fabric. If a fabric is plaid or printed, the colour of the thread should match the dominant colour of the plaid or print. If a print, stripe, or check is composed of equal amounts of two colours, the thread should match the darker colour.

2.3.6.2 Selection of Needles

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

Needles also come in three different tips or points:

- **Regular sharp needle** – ideal for almost all woven fabrics

- **Ball point needle** - the slightly rounded tip is recommended for all knit fabrics and elastic fabrics. Available in sizes 9-16

- **Wedge point needle** – this needle has been specially designed for leather and vinyl. Available in sizes 11-18.
2.4 Needle Change

As soon as your needle becomes blunt you must change it. Machine needles have a flat side and a round side. On the flat side there is a short groove at the eye and on the round side three is a long groove. When fixing a new needle in the machine, remember that the long groove must always face the side from which the machine is to be threaded, i.e. the side facing the last thread guide. Rise the take-up lever to its highest point and loosen the needle lamp screw to remove the old needle. Keeping the take-up lever in the same position, insert the new needle upward into the needle clamp as far as it will go in, then tighten the needle clamp screw.

2.5 Common Machine Troubles and Repairs

The sewing machine like any other machine, gives troubles of stitching like thread breaking, uneven stitching, puckering, bending and breaking of needle, looping of threads, skipping of stitches, etc. Little problems with the sewing machine can be very irritating and time consuming. They can happen to even the most experienced seamstress.

A person operating the machine should be able to rectify these and solve the problems

2.5.1 Needle

To avoid breaking needle

- Use proper size of needles for thread and fabric to be sewn.
- See that the presser foot or attachment is securely fastened to the bar and that the needle goes through the center of the hole.
- Avoid pulling fabric when sewing. The needle may become bent and strike the back of the needle hole.
- Use a needle of correct length. If it is too long it will come in contact with the bobbin case and break. If it is too short, stitches cannot interlock.
- Be sure needle is tightly fastened in the needle bar. Also be sure presser foot is tightly fastened.
- Sew over pins carefully. Be sure they are perpendicular to the seam and keep the heads of pins away from the stitching line.
2.5.2 Stitches / Seams

Cause of looped stitches

- Looped stitches are usually caused by improper tension. If the loop is on the upper side, it may be corrected by loosening the top tension or by tightening the lower tension. If the loop is on the underside, it is usually best corrected by adjusting the upper tension.
- Be sure that the upper and lower threading is correct and that the needle is of good quality and the correct size for the thread.
- Looping of stitches is sometimes caused by placing the bobbin in the bobbin case the wrong way. Check your machine manual for directions.
- There may be lint, dirt, or thread between tension discs.

Cause of skipping stitches

- Needle not correctly inserted in the needle bar
- Needle too small for the thread used
- Needle too short for the machine
- Blunt or bent needle
- If zipper foot is used, the edge of the foot is too far away from the needle.
- Needle threaded incorrectly
- Needle hole in throat plate too large
- Pressure too light
- Upper tension too tight
- Upper thread and bobbin thread of different size and/or type

Cause of stitch length variation

- Stitch regulator incorrectly adjusted
- Feed dog clogged with lint
- Pressure incorrect for fabric
- Tension incorrect for fabric
- Throat plate adjusted incorrectly
Causes of puckered seams

- Presser foot loose or not suited for fabric being sewn
- Tension is too tight
- Stitch too long for fabric being sewn, especially on fine fabric
- Wrong presser foot used
- Puckered threads across seams are due to a blunt needle or too large a needle.
- Stitch too short for synthetic and easy care fabrics
- With automatic machines, the use of the plate with wide needle hole may cause straight seams to pucker. Upper thread and bobbin threads are of a different size and/or type. Pressure too heavy for fabric
- Fabric pushed or pulled while stitching

2.5.3 Thread

Causes of upper thread breaking

- Needle is in backwards.
- Machine improperly threaded
- Tension too tight
- Needle bent or having blunt point
- Thread too coarse for needle size
- Burr on needle hole of presser foot (Caused by breaking needle when pulling fabric from machine)
- Needle too long for machine, or not inserted all the way in the needle bar
- Tension discs worn so that thread works in groove
- Needle too fine for size of thread and fabric to be sewn
- Threads not properly pulled back under presser foot when starting to sew
- Lint or dirt around bobbin case holder
- Irregular sewing speed
Causes of lower thread breaking

- Improper threading of bobbin in bobbin case
- Tension too tight
- Thread wound unevenly on bobbin in bobbin wound too full
- Spring on bobbin case worn to sharp groove
- Burr on underside of throat plate
- Knot in bobbin thread
- Lint, dirt, or thread under tension spring of bobbin case

2.5.4 Machine

Cause of machine not feeding properly

- Pressure incorrect for the fabric being sewn
- The feed dog worn smooth. This can be determined by running the finger over the teeth. If they are not sharp, the feed dog should be replaced
- Feed dog clogged with lint
- The stitch regulator may have been turned back so far that the feed is entirely out of action.
- Needle may be bent.
- Spool of thread may jerk and catch if machine is operated too rapidly or at uneven speed.
- Stitch regulator incorrectly adjusted
- Throat plate incorrectly positioned

Cause of machine working heavily

- If the machine works hard after standing, it may be gummed with oil and in need of general cleaning.
- The belt may be too tight and hence puts excessive pressure on the bearing.
- When the belt is too loose, it slips on the balance wheel.
- Thread jammed in bobbin case
2.5.5 Fabric

Layers feed unevenly
  • Presser foot pressure incorrect
  • May need to stitch slowly
  • The fabric may be very light weight, use tissue paper while stitching

Problem in straight line stitching
  • Presser foot may be loose or bent
  • Pressure of the presser foot may be incorrect
  • Needle may be bent
  • There may be a defect in the machine feed
  • You may be pushing or pulling the fabric

Damage of Fabric
  • Bent needle, Needle too large, Replace with a new needle of the correct size
  • Needle hole in throat plate too large
  • Damaged feed dog so fit new feed dog

Puckering on both layers of fabric
  • Too large a needle, so fit a fine needle
  • Thread too thick, replace with fine thread

Puckering on under layer only
  • Operator slow
  • Action of the feed dog
  • Careful handling during sewing in order to counteract the action of the feed dog

Feed marks on the underside
  • Presser foot pressure may be too heavy. You may need to put tissue paper between the fabric and the feed
  • The feed may be damaged or set too high
Fabric is damaged or holes around the stitches

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

### 2.6 Care of the Machine

A sewing machine needs care for its smooth running. It should be cleaned and oiled regularly to ensure satisfactory sewing and long life. When not in use, cover machine to prevent dust accumulation on it.

#### 2.6.1 Cleaning

Use a small dry brush or old toothbrush and soft cloth to remove dust and lint. You should always remove lint deposits, dust and thread bits before oiling any part of the machine. Use a pointed instrument like a needle to pick out the bits of thread and lint that cannot be brushed out.

#### 2.6.2 Oiling

It is necessary to oil and lubricate the machine periodically. If the machine is used everyday, oil it once a week. After oiling, wipe off the surplus oil and place a piece of folded fabric under the presser foot to absorb any excess oil. To oil thoroughly, remove the upper thread, needle plate, slide plate, faceplate, bobbin case, needle and presser foot. Oil the holes on the underside first, after cleaning and then proceed to the upper side. Use only few drops of oil in each hole. Never use coconut oil. Machine oil of different brands may be used for different models of sewing machine, but should be used as recommended in the instruction book.

If the machine becomes gummed with oil, put a drop of kerosene or petrol in each oil hole and joints and run it rapidly for several minutes. Wipe off and reoil it with machine oil. The motor of electric sewing machine should be greased periodically.

### Summary

The knowledge of sewing gives a confident feeling when it is applied to the construction of garments. The various parts of a sewing machine and their functions help one to understand the working of a sewing machine. A brief up on the common machine problems help us to understand and rectify the problems. Above all the care sewing machine is rather important for a long service of the machine.
I. Test your Understanding

Check the following points on sewing machine

- Identify the parts of the domestic sewing machine in the lab
- Collect picture of different sewing machines used in our country
- Do a market survey for various sewing machines available locally
- List the manufacturer names of the domestic sewing machines
- Visit a tailoring unit to understand the uses of various sewing machines

II. Test your Understanding

- Purchase the proper needle and thread suitable for the machine
- Try to peddle the sewing machine by pressing the treadle
- Operate the fly wheel with right hand and coordinate the peddle movements
- Fix the needle to the machine
- Stitch on lines drawn on a paper
- Fill the bobbin
- Thread the machine
- Stitch on the fabric
- Adjust the stitch length and tension

III. Test Your Understanding

- On which side of the fabric do loops appear when the upper tension is too tight?
- To which side do you turn the tension regulator to tighten the upper tension?
- If tension needs adjustments what do you adjust first – upper tension or under tension?
- To which side do you set the long groove of the machine needle while fixing?
- How many drops of oil are needed in each point?
Look for gathers or frills in your or classmate dress and check the length of the stitches used in it

**Short Answer Type Questions**

1. List the types of sewing machines.
2. What is the function of tension disc?
3. Write about the presser foot?
4. How does the take up lever work?
5. What are the common sizes of the needles used for domestic sewing machine?
6. What are the steps of preparation before operating a sewing machine?
7. List the stitch lengths used for different weighted fabrics.
8. List the common machine problems that occur.
9. How machine oiling is done?
10. How are the machine needles changed?

**Long Answer Type Questions**

1. Give a brief account of the parts of a sewing machine and their functions.
2. Explain the types of sewing machines.
3. Explain the steps involved in threading the machine.
4. Write a note on cleaning and oiling of the machine.
5. What are the common machine troubles and their causes?
Hand Sewing Techniques

Structure

3.0 Introduction
3.1 Temporary Stitches
3.2 Permanent Stitches

Learning Objectives

After studying this unit, you will be able to understand and practice the following

- To know the various temporary stitches – even or uneven
- Understanding the types of permanent hand stitches suitable for stitching different fabrics
- To know how the raw edges of the fabrics are finished by means of hemming

Unit Preview

This unit aims at understanding the basic idea of garment construction i.e attaching two pieces of fabrics or giving shape to a piece of the fabric by means of stitches.
3.0 Introduction

Understanding garment making and regular knowledge of basic sewing techniques such as simple stitches, seams, darts, gathers and pleats etc. would enable appropriate application in garment construction. Before learning to stitch seam on the machine one must learn the basic hand stitches which are used in garment making.

Basic stitches are divided into constructive and decorative stitches. Constructive stitches are further divided into temporary and permanent.

3.1 Temporary Stitches

Garment pieces are held together by use of temporary stitches, before actual permanent stitches are made. These temporary stitches are termed as tacking or basting stitches. They help in holding two or more layers of material together before the permanent stitches are made. Usually these stitches are worked in horizontal and from right to left. This is the only stitch which is started with a knot. For tacking it is better to use a contrast colour thread. The length of stitches will vary depending on the weight of the fabric and how securely the pieces have to be held together. There are several types of tacking or basting stitches as given below,

3.1.1 Even basting

This is used for tacking seams and other details. It is a short temporary stitch used on smooth fabric and in areas that require close control such as curved seams. The stitches are of equal length about ¼ inch on both sides of the material. (Fig. 3.1).

3.1.2 Uneven basting

The stitch on the upper side of the fabric is at least twice than that on the under side. The size of the stitch is usually ½ inch. Use this type of basting as guideline where there is little or no strain (Fig. 3.2.)
3.1.3 Diagonal basting

This stitch is used when several layers of fabrics are to be held securely. Work stitches through the material at right angles to the fabric edges so that a diagonal or slanting stitch is made on the upper side and a small vertical stitch on the underside. The stitches are made about ¼ inch apart (Fig. 3.3).

3.1.4 Slip basting

This is the most often used while matching seams in checked and striped fabrics. This is also used to bast seam lines that have been fitted from the right side of the garment. Fold one seams edge under and pin it over the other seam edge along the stitching line. Now bring the needle up very close to the folded edge through the three layers of fabric. As close to that point as possible go down through the single layer, and come up again ¼ to ½ inch away through the three layers as before. Continue till the end. Stitches on wrong side will be slightly diagonal. Only very small stitches will appear on the right side (Fig. 3.4).
3.1.5 Pin basting

Pin basting is an easy and quick method of basting or tacking with the help of pins. Hold the edges of the fabric together and secure them in place with pins. Place the pins perpendicular to the seam line keeping pin heads towards the seam edge and pin them 2.5 - 10 centimetres apart (Fig. 3.5). Keep pin heads away from the presser foot and machine stitch along the basting line.

3.2 Permanent Stitches

The stitches that are left in the garment and form a part of the stitched garment are permanent stitches. Knots are not generally used for starting the permanent stitches. Two or three stitches at the beginning of a row will be helpful in securing the stitches.

3.2.1 Running stitch

This is the simplest form of hand stitch which is used for permanent sewing. Hand seams such as tucks, gathering, shirring, quilting and mending can be done with these stitches. It is similar to even basting, but the stitches are much smaller. The stitches should be straight, fine and evenly spaced and about 1/16 to 1/8 inch in length. Pass the needle through the fabric several times before pulling it through (Fig. 3.6).
3.2.2 Hemming

This is used to secure down a folded edge of material like hems. Hemming appears as small slanting stitches on the wrong side and right side. The stitches should be fine and spaced close enough to hold the hem securely in place, but far enough apart to be inconspicuous from the right side of the garment. Before starting the hem, fasten the thread with several tiny stitches on top of each other. Finish off the hemming also with several stitches to fasten it securely. There are two types of hems – slip hemming and knot hemming.

3.2.2.1 Slip stitching / Hemming

This is used for hems, facings or folds where invisibility is more important than strength. Fasten the thread beneath the hem, bringing the needle out through the edge of the fold. Take a tiny stitch in the garment directly beneath the point where the thread leaves the fold. Now insert the needle in the hem, slip it along inside the fold and bring it out again about ½ inch away. Repeat the stitch (Fig. 3.8).
3.2.2.2 Knot hemming

This is worked from right to left. A small vertical hem stitch is made such that the thread passes around the tip of the needle that on pulling the needle out forms a knot around the stitch made. Thus each stitch is fixed securely by means of a knot and therefore is very strong (Fig. 3.9).

3.2.3 Backstitch

The backstitch is strong and is sometimes substituted for machine stitching. Stitches should be about 1/16 to 1/8 inch long on the topside. To make the backstitch, push needle up through the material at a point on the stitching line about 1/8 inch from its right end. Take a stitch inserting the needle 1/8 inch back of the thread at the beginning of the stitching line and bringing it out an equal distance in front of the thread. Repeat this way, keeping stitches uniform in size and fairly firm (Fig. 3.10).

3.2.4 Run and back or combination stitch

In this a backstitch and three or four running stitches are combined and can be used for working plain seams done by hand. This stitch is faster than the backstitch and stronger than the running stitch (Fig. 3.11)
3.2.5 Over sewing

This stitch is used to secure two finished or folded edges together, or for applying lace or patch or insertion. Fold and press back the two seam allowances to wrong side and place the fabric right sides facing with the seam lines matching. Insert the needle through the back fold and then through the front fold, picking up only one or two threads each time. Bring the needle out diagonally to the left. This produces a straight stitch. The stitches should be kept close together (Fig. 3.12)

3.2.6 Whipping

This stitch is similar to overhand stitch and serves the same purpose. Sometimes it is used to finish edges of handkerchiefs.
The only difference between over handing and whipping is that the later produces slanting stitches, taking stitches over the edge with the needle in a straight position (Fig. 3.13).

Summary

Hand sewing techniques will help in garment construction with or without use of sewing machine. Both temporary and permanent stitches are useful. Especially temporary stitches are more useful to the beginner’s in garment construction as they work as guiding lines to permanent hand or machine stitches.

I. Test your Understanding

- Have you ever done the tacking stitches?
- Do you start tacking with a knot?
- Why coloured thread is used for tacking?
- Do you think that pin basting is the fastest method?
- Is tacking useful as permanent stitch?

II. Test your Understanding

- Have you ever seen a permanent hand stitch?
- Do you know the procedure of any permanent hand stitch?
- Number and identify the permanent hand stitches in your dress.
- What is the common permanent hand stitch used around necklines in your dress?

Short Answer Type Questions

1. Name five types of tacking.
2. How many ways hand stitches are broadly classified?
3. How do you start tacking?
4. Why a coloured thread used in basting stitches?
5. What is the fastest method of tacking?
6. List the permanent hand stitches.
7. How hem stitches appear on the wrong side of the garment?
8. What is whipping?
9. Name the strongest of all hand stitches.

10. Combination stitch is more technically called as what and why?

**Long Answer Type Questions**

1. Write a short note on temporary hand stitches.

2. What are different permanent stitches? Explain any three of them.

3. What are the types of hemming? Explain them.

4. Why temporary stitches are preferred than permanent stitches while learning garment construction?

5. Differentiate between overcasting and oversewing stitches.
UNIT 4

Seams and Seam Finishes

Structure

4.0 Introduction
4.1 Classification of Seams
4.2 Selection of Seams
4.3 Types of Seam
4.4 Seam Finishes

Learning Objectives

After studying this unit, you will be able to understand and practice the following.

- Importance of seams and seam finishes
- Factors to be considered in the choice of seams for different fabrics and garments
- Creating design and line in the garments by application of various seams
- Improving the life of a garment by use of right seam and seam finishes
Unit Preview

This unit gives the idea of attaching pieces of fabrics by using seams. The primary purpose is to know the different seam methods and using them for stitching different fabrics.

4.0 Introduction

A seam is a method of joining two or more pieces of materials together by a row of stitches. They give definite shape and appearance to the garment. The permanent stitches are used in making seams. Machine stitches enable making seams faster, stronger and neat. The seams should be as flat as possible and unseen.

4.1 Classification of Seams

Seams are broadly classified into two major categories depending upon the flatness created by the seam and other by its appearance on the outer side of finished garment.

4.1.1 Classification by flatness of seam

Seams can be classified into Flat seams and Ridge seams depending upon the flatness created on fabric. Plain seam and Flat Fell seam and Top seam are examples of flat seams. Ridge seams include the French seam.
4.1.2 Classification by appearance of seam

Seams may also be divided into conspicuous and inconspicuous seams. Inconspicuous seams when finished will not have stitches seen on the right side of the garment, example are plain, corded and french. The purpose of most of these seams is purely functional and can be called as constructional seams. Conspicuous seams are those that have stitches seen on the right side of the garment like flat fell seam, lapped seam etc. These are also used for decorative purposes. These are made visible to the outside in order to give design and line effect to the garment.

4.2 Selection of Seams

The type of seam to be used on a garment will depend on various factors. They are:

4.2.1 Texture and durability of the fabric: When working with a heavy fabric, one should avoid bulky seams like french seam.

4.2.2 Design and use of the garment: When making a boys’ sports shirt, a strong seam like flat fell should be used.

4.2.3 Shape of the seam: Seams by be straight or curved. Straight seams may be in vertical, horizontal or slanting direction on the dress. When joining curved edges, plain seam will give a better finish than french seam.
4.2.4 Seam allowance: It is the extra amount of material provided over and above the exact drafting to enable working of seams. The amount of seam allowance ranges from 1-1.5 centimetres depending again on the texture of the fabric. The materials like drill require more seam allowance when compared to fine fabrics.

4.2.5 Position and shape of seam in the garment: Stitching is always done on the fitting lines exactly. Therefore, stitching line of a seam forms the fitting line of the garment, which determines the shape and fit of a garment. Therefore, garments with more stretch should give durable seam.

4.2.6 Finishing of seam: Curved seams should be clipped along the seam allowances after stitching to give a flat smooth finish.

4.2.7 Tension and length of stitches: The tension and length of the stitches should be suitably adjusted to the thickness of the garment.

4.2.8 Current fashion: The trend that is present at that time of the season has to be considered while selecting the seams.

4.3 Types of Seams

4.3.1. Plain Seam

This is the most widely used seam which is flat, pliable, less bulky and inconspicuous. It can be used on all types of fabrics except on very transparent kinds. It is mostly suitable for firm fabrics that do not ravel and will not be subjected to hard and frequent laundring. This is used for side seams, under arm seams and armhole seams (Fig. 4.1). Place the right sides together and cut edge even. Tack and stitch along the seam line. Press seam open.

![Fig. 4.1 Plain seam](image_url)

4.3.1.1 Uses of Plain Seam

- Most commonly used seam because of its simplicity and quickness in making.
· It costs less in the production due to its simplicity
· It can be used on firm fabrics as it is a moderately strong seam

4.3.2 Flat fell seam

This type of seam is mostly used on men’s sports shirts, work clothes and children’s clothes and pyjamas. Place the pieces to be joined wrong sides facing and stitch on the seam line. Press both seam allowance together in the same direction and trim the under seam to 1/8\text{th} inch and the upper one to 3/4\text{th} inch. Turn under the raw edge of the wide seam allowance so as to make a smooth fold 1/4\text{th} inch wide. Machine stitch close to the folded edge on the right side of the garment. The right side of the seam will show two rows of stitching and wrong side will show only one row of stitching (Fig. 4.2.)

![Fig. 4.2 Flat Fell seam](image)

4.3.2.1 Uses of flat fell seam

· It is most durable seam
· It is acceptable on sheer fabrics also as no raw edges are seen
· No further seam finishes are required

4.3.3 Lapped seam

This seam is commonly used for joining a gathered section to a straight edge as in a yoke (Fig. 4.3.) Take the part of the seam which is to be laid on top and turn its seam allowance to the wrong side. Place this piece on the top of the second piece, right sides facing and matching the fold to the seam line. Tack in position and machine close to the folded edge.

![Fig. 4.3 Lapped seam](image)
4.3.3.1 Uses of lapped seam

- It is the only seam possible where other seams are not possible in areas like attaching yoke of a blouse or frock.
- It can give a decorative effect especially when a contrast coloured thread is used as it is conspicuous seam.

4.3.4 Bound seam

This is formed by folding a separate binding strip over one or more plies of material and seaming the strip with one or more rows of stitches. They are frequently used as an edge finish at necklines, hems and sleeve plackets (Fig. 4.4.)

![Fig. 4.4 Bound Seam](image)

4.3.4.1 Uses of bound seam

- It adds decorative effect to the garment by adding an other piece to the garment
- It is decorative and functional seam

4.3.5 Counter seam

This also a durable flat seam used for very thick materials, men’s wear and reversible garments. Turn down a little on wrong side of one piece of fabric and on right side of the other piece and iron them firmly. Keep wrong side of the first piece of fabric on the right side of the second piece along the edges, maintaining the seam allowances, and tack it in position. Machine stitch along the folded edges (Fig. 4.5.). This also called as three layered counter seam.

![Fig. 4.5 Counter Seam](image)
4.3.5.1 Uses of counter seam

- It is a strong seam used on delicate fabrics
- No extra seam finishes are required

4.4 Seam Finishes

Seam finishes are made to prevent fraying of the raw edges and thus make the seams more durable. They also provide a neat appearance to the inside of the garment. Though not essential to completion of the garment, it can add measurably to its life. Whatever may be the seam selected it should be completed quickly and should not add bulk to the garment. Three considerations determine the seam finish decision –

- the type and weight of fabric
- the amount and kind of wear and care the garment will receive
- whether or not seams will be seen

There are several types of seam finishes in use.

4.4.1 Pinked finish

This is a quick method done with pinking shears, which are not bulky, but not a suitable finish for fabrics that ravel badly. After stitching plain seam trim off about 1/8 inch of the seam allowance using the pinking shears, and then press the seam open. (Fig. 4.6)

![Fig. 4.6 Pinked seam finish](image)

4.4.2 Double stitch finish

After making a plain seam, work an extra line of stitching about ¼ inch from the raw edge (Fig. 4.7). This is done for a plain unfinished seam or pinking seam and is not suitable of bulky fabrics.
4.4.3 Edge stitched finish

The seam is stitched and pressed open (Fig. 4.8). Then turn under ¼ inch on each seam edge and top stitch close to the fold without catching the garment. This is a bulky finish and is not suitable for deeply curved seams. This is mostly used on unlined coats and jackets where the seam allowance is wide.

Summary

Seam and seam finishes play an important role in garment construction. As selection of these details will depend on various factors like kind of garment, texture of the fabric, durability of the garment, end use of the garment, shape of the seam and the fashion trend of that period. Whatever may be the factors a seam and seam finish should provide strength and neat appearance to the garment.

I. Test Your Understanding

• Identify the types of seams in your dress

• What is the seam used for denim pants?

• Make a survey of tailor units to check the seams commonly used by the tailors
Fashion Garment Making

• What is the easiest and quickest seam?
• What is the common seam used for children’s pyjamas?

II. Test Your Understanding
• Do seam finishes improve the quality of the garment
• Seam finished garments are better opted than garments without seam finishes. Yes or no?
• Turn any garment inside out check for the seam finish given.
• Is machine over-lock a seam finish?
• What is the fastest and cheapest seam finish?
• Which seam finish will not require use of hand or machine stitches?

Short Answer Type Questions
1. What is a seam?
2. How seams are broadly classified?
3. Which seam is widely used in construction of children’s pyjamas?
4. Classify seams by the flatness they give after construction. Give flow chart.
5. What is the seam used for attaching yoke to the bodice of a frock?
6. What are the uses of bound and counter seams?
7. What is a seam finish?
8. Which seam finish is quickly done and how?
9. Write about the suitability and application of various seams in garment making process?

Long Answer Type Questions
1. Classify the seams. Explain about flat fell and lapped seam.
2. Distinguish between plain seam and flat fell seam. Explain in detail about their uses.
3. What are the factors that effect in selection of seams and seam finishes?
4. Do seam finishes help in improving the quality of the garments? Explain.
UNIT 5

Creating Fullness in Garments

Structure

5.0 Introduction
5.1 Tucks
5.2 Pleats
5.3 Gathers
5.4 Shirring or Gauging
5.5 Frills or Ruffles
5.6 Godets
5.7 Smocking

Learning Objectives

After studying this unit, you will be able to understand and practice the following.

- Understanding the various methods used for introducing the fullness in the garment.
- The best methods of introducing fullness.
- Suitability of various fullness methods for different age groups, fashion trends etc.
Unit Preview

In garment construction not only sections are joined but also sections are shaped to fit the curves of the body to give fit and comfort. There are various ways in which garments are shaped depending on the amount of curve needed in the garment and the design of the garment. Shaping is done by one of the methods of fullness.

5.0 Introduction

Fullness of material is an important feature of the style as well as a necessity for ease of movement in a well fitted garment. Fashion changes the basic methods of controlling fullness that frequently recur, though adapted to enhance the current style. Darts, tucks, pleats, gathers etc., are some of the methods of introducing fullness. Fullness is introduced into garments for various reasons such as,

- To give good shape and proper fit to the garment
- To allow freedom of movement and comfort to the wearer, and
- To make the garment look attractive.

5.1 Tucks

A tuck is a fold of fabric stitched in place by running stitch or machine stitch on the right side of the garment as a means of shaping the garment to the body, for holding in fullness or adds decorative effect at shoulders, waistlines, yokes, pockets or cuff sleeves etc. The tucks that are partly stitched help in shaping the garments. These are also used in children’s garments to hold the allowance for growth. Tucks add body to thin fabrics and textural interest to plain fabrics.

Tucks can be used in groups or clusters and in graduated width. While calculating the amount of material that is needed, each tuck requires an allowance equal to twice its finished width. So for making a group of 4 tucks of 1/8 inch finished width, allow $4 \times (1/8 \times 2) = 1$ inch extra material.

To stitch each tuck fold along middle of a tuck so that stitching lines coincide. Then stitch along the markings. Cut the garment section only after completing the stitching of the tucks.

5.1.1 Points to be followed in stitching tucks

- Decide the placement of tucks
- Width of each tuck
- Spacing between the tucks
· Regularity of the tucks
· Proper stitching lines in construction

5.1.2 Methods of tucking

There are several methods of tucking, which can be selected according to the requirement in designing and shaping of the garment.

5.1.2.1 Pin tucks

These are very tiny tucks that may be done by hand with tiny running stitches or by machine. They are commonly used on baby clothes and fine blouses. They are usually less than 1/8 inch wide (Fig. 5.1).

![Fig. 5.1 Pin tucks](image)

5.1.2.2 Piped or corded tucks

These are made by placing cording on the wrong side of the fabric at center of tuck before stitching the tuck (Fig. 5.2) Stitching should be done close to cording.

![Fig. 5.2 Piped or corded tucks](image)
5.1.2.3 Shell or scalloped tucks

This is a very decorative tuck made by hand. Mark and crease the fabric as for a straight tuck of about ¼ inch wide. On the line of stitching, mark uniformly spaced dots about ½ inches apart. Stitch the tuck using small running stitches. As you come to each dot, take two overcast stitches through the dot and pull tightly before proceeding further with the running stitches. (Fig. 5.3)

![Fig. 5.3 Shell or Scalloped tucks](image)

5.1.2.4 Cross tucks

When rows of tucks are stitched along the fabric in both horizontal and vertical directions, the decoration is called cross tucking. First stitch the vertical tucks, and press them to one side. Then stitch the horizontal tucks (Fig. 5.4).

![Fig. 5.4 Crossed tucks](image)

5.2 Pleats

Pleats are formed by folding the fabric that provides fullness in some parts of a garment. They can be placed single or in a series and can be pressed flat or left un-pressed, according to the style of the garment. Pressed pleats give a smooth, slimming line to a garment, whereas un-pressed pleats provide a softer and fuller shape.
Pleats are introduced usually at the waist line of skirts and dresses, to provide fullness evenly all around. The preparation of pleats is similar to that of tucks, the main difference being that pleats are seldom stitched all the way down. Sometimes they are stitched part way down the garment for flatness. Each pleat requires extra material of twice the width of the finished pleat. If pleats are to touch each other all round the garment, the amount of material needed is three times the finished width.

### 5.2.1 Types of pleats

Pleats are classified in the following way

#### 5.2.1.1 Knife pleats

They are usually about 1/2 inch to 1 inch wide and are turned towards the same direction (Fig. 5.5). The direction may be reversed at center back or centre front of the garment. Pleats are formed by folding the fabric as per the width of the pleat required (1/2 to 1 inch). Make all the folds orpleats in the same direction. Press them. Hand or pin baste along the folded edges. Pleats can be top stitched in place, or sometimes stitched from top along the folded line to produce the slender effect. The main function of a knife pleat in a tailored garment is to provide fullness at the bottom of the garment.

![Fig. 5.5 Knife Pleats](image)

#### 5.2.1.2 Box Pleats

Two knife pleats turned away from each other (one to the left and one to the right) form a box pleat (Fig. 5.6). These are used quite often for uniforms.

![Fig. 5.6 Box Pleats](image)
5.2.1.3 Inverted pleat

It is the opposite of a box. It is made up of two knife pleats turned towards each other so that the folds meet in the middle on the right side of the garment. It is usually designed at centre front or centre back and looks like two knife pleats facing away from each other on the underside (Fig. 5.7).

Fig. 5.7 Inverted box pleat

5.3 Gathers

Gathering is an effective and decorative way of distributing fullness over a given area. Gathers are graceful folds of fabric that provide fullness, suggesting a soft look, which can be made using machine or hand stitches. These are formed by drawing the fabric together on a line of stitching and may be used to control the fullness at round waist, yoke lines, waist lines, neck lines and upper and lower edge of sleeves.

5.3.1 Methods of Gathering

Gathering is done in different methods

5.3.1.1 Gathering by Hand

Make two rows of running stitches of ¼ inch apart (Fig. 5.8 Draw the ends of threads until the section measures the desired length, and secure the thread.

Fig. 5.8 Hand gathering
5.3.1.2 Gathering by machine

Make seam line on the right side of the fabric by adjusting the machine for long stitch and loosening the upper tension slightly. Make two to three rows of small stitches on either side of the seam line on the area to be gathered (Fig. 5.9).

![Fig. 5.9 Machine gathering](image)

5.3.1.3 Gathering by using elastic

Gathers can be made by stretching a narrow strip of elastic and stitching on the part of the garment which is to be gathered (Fig. 5.10)

![Fig. 5.10 Gathering using elastic](image)

5.4 Shirring or Gauging

Several rows of gathering (3 or more) used for a decorative finish are termed shirring (Fig. 5.11).

![Fig. 5.11 Shirring](image)
The rows should be evenly spaced. Shirring appears as a decorative feature at
the shoulder, waistline, at the lower edge of a sleeve and usually at the narrower
parts of garment also allowing a certain degree of stretching. Shirring can be
done as Thread shirrs or Elasticized shirrs.

5.5 Frills or Ruffles

These are used for the purpose of adding decoration to a garment. Sometimes they are used at the hems of skirts and dresses to add length. To make frills allow at least one and a half times the length of the piece to which the frill will be attached. The width of the frill is usually anything from one inch to 3 inches. The longer side should be cut along the lengthwise grain of the material. The gathered edge of the frill can be concealed in a seam, facing, binding or wide band (Fig. 5.12).

![Fig. 5.12 Frills or Ruffles](image)

5.6 Godets

These are wedge shaped pieces which are usually set into a skirt so that the wide side of the wedge becomes a part of the hem of the skirt. The godet may be set into a seam of the skirt, or the skirt may be slashed so that the slashed edges form the seams joining into the godet (Fig.5.13).

![Fig. 5.13 Godet](image)

5.7 Smocking

It is a type of fabric enrichment, consisting of tiny embroidery stitches sewn over the folds of gathers at regularly spaced intervals on the right side of the fabric. It is used to hold fullness or to add texture and surface interest to a bodice, neckline or sleeves of children’s or women’s dress. Best suited fabrics
for smocking are soft and flat-faced fabrics such as voiles, cambric and crepes. Use a medium-weight and firmly twisted thread of cotton or silk.

5.7.1 Preparation of fabric

Smocking on plain material requires marking with a series of dots on the wrong side (Fig. 5.14). These dots should be evenly spaced, around 0.3 cm apart, and the distance between the rows may be 0.5 - 1 cm. For heavy fabrics the distance can be more. Fabrics with checks, plaids or dots do not require the transfer of the pattern. Using strong thread, pick up the dots along one row and make several running stitches along. Complete all the rows. The number of rows depends on the area to be covered. The width of fabric should be three times as long as the gathered fabric for smocking. Draw up the fabric on the threads and fasten the thread ends by winding them together round the pins placed at one end to hold them securely.

![Fig. 5.14 Preparation of material for smocking](image)

5.7.2 Stitches used for smocking

All the stitches are worked from left to right. Good-quality embroidery threads of suitable colour are used for smocking.

5.7.2.1 Outline stitch

This is like a stem stitch used to make outlines. Work each row over the tubular fabric folds. Take out needle on the first fold on the extreme left by making small back stitch over the fold. While making the stitch, always keep the thread under the needle. Draw up each fold firmly, after each stitch (Fig. 5.15).

![Fig. 5.15 Outline stitch](image)
5.7.2.2 Cable stitch

It is a variation of outline stitch done in two close rows. Start in the same way as for the outline stitch. While taking stitch, keep the thread above the needle for the first stitch and below the needle for the second, and repeat throughout the length of the row (Fig. 5.16).

![Fig. 5.16 Cable stitch](image)

5.7.2.3 Wave Stitch

To make wavy effect, make odd number (5, 7, or 9) of outline stitches diagonally upward and then downward. For the upward row keep the thread below the needle and for the downward row keep the thread above the needle. Repeat the process to make rows of diamond shapes or rows of wavy design (Fig. 5.17)

![Fig. 5.17 Wave stitch](image)

5.7.2.4 Chevron

This type forms zigzag stitches over the folds. Take a stitch on the first pleat at the left of a row of gathering stitches, pass the needle down to the next row of gatherings and take another stitch in the same first fold. Then, over the same
fold, take a stitch on the second fold, inserting the needle to the right. Bring it
down between the first and second pleat. Keeping the thread below the needle,
draw this stitch up so that the two pleats are held closer. Then pass the needle
up to the first row, take a stitch over the second pleat, with the thread above the
needle, take a stitch over the third pleat, bringing the needle out between the
second and third pleat and draw the stitch tight. Make the second row of zigzag
stitches in such a way that its points meet the points of the second row followed
by the fold on the third row to form diamond design (Fig. 5.18).

Fig. 5.18 Chevron stitch

5.7.2.5 Honeycomb Smocking

To start with, bring the needle out in first pleat; take two tiny backstitches
over fold to secure the thread. Pull the needle through the first fold about 0.5 cm
below the first stitch, keeping the thread above the needle. With thread below
the needle, put the needle through the second fold at the same level. Draw the
thread tightly together. Put the needle through the same fold at the same level as
the first stitch. With thread above the needle, put the needle through the third
fold at the same level. Draw tightly together. Repeat till the end of the row
(Fig. 5.19).

Fig. 5.19 Honey Comb Smocking
Summary

Fullness is introduced into garments for various reasons such as to give good shape and proper fit to the garment; to allow freedom of movement and give comfort to the wearer and to make the garment look attractive. Darts, tucks, pleats, gathers etc. are some of the methods for introducing fullness.

Test Your Understanding

• Will smocking will give soft stretch to the garment?
• Mention some parts of the garment suitable for smocking.
• Zigzag smocking stitches are also called as ______________.
• Draw few children’s frocks designs by introducing smocking.
• Is tucking done by hand or machine stitches or both?
• Will tucking helps in shaping the garment to fit the body?
• Draw sketches of few garments using different tucks as a designing element.
• Are pleats stitched in full length like tucks?
• What are the pleats generally used at the back side of the mens shirt?
• How much extra material is required for forming each pleat?
• Create some designs using gathers, shirring, ruffles and godets.
• Can gathers be done by hand? Try that with a soft paper.
• Which type of fullness is used to increase the length of the finished garment?
• Width of the garment can be increased by introducing the wedge shaped fullness called as?

Short Answer Type Questions

1. What is a tuck?
2. In how many ways pleats can be done? Name them.
3. Name the methods of introducing fullness.
4. What are the different methods of gathering the fabric?
5. Differentiate between box pleat and inverted pleat.
6. How are pin tucks different from cross tucks?

7. What is a godet?

8. What is shirring? How it is different from gathering?

9. What is smocking?

10. Explain the method of forming a knife pleat.

Long Answer Type Questions

1. Differentiate between gathering and shirring.

2. Explain about the types of tucks

3. Name and explain the stitches used in smocking.

4. What is a pleat? Describe the different methods of making pleats.

5. What are ways of introducing the fullness in garments? Explain about tucks and pleats.
UNIT 6

Placket Openings

Structure

6.0 Introduction
6.1 Standards of a good placket
6.2 Types of Placket

Learning Objectives
After studying this unit, you will be able to understand and practice the following

- Standards used to finish a good placket.
- Types of finishing placket openings.
- Finishing placket openings for mens and womens garments.

Unit Preview
Plackets are the finished openings made in the garment to put on or take off garment easily. This chapter helps us to understand methods employed for finishing placket openings, so as to improve the quality of the finished garment.
6.0 Introduction

The finished placket openings in the garment are kept closed with the aid of fasteners such as zips, buttons and buttonholes, press buttons, hooks and eyes etc., when the garment is put on. They are used at waist lines, necklines, wrists and other snug fitting parts of garments. A placket may be made in an opening left in a seam, or in a slash cut in a garment. The former is stronger and gives a better finish when completed.

6.1 Standards of a good placket

A good placket should meet the following standards

6.1.1 Neatness and invisibility

A placket should be as inconspicuous and flat as possible, unless used as a decorative detail. It should not be bulky, puckered or stretched. Fastenings should hold securely and there should be no gaping edges.

6.1.2 Suitable length and convenience

Placket opening should admit the body parts easily. So plackets for neck should be 9 inches to 12 inches long. Skirt openings should be long enough (about 7 inches) to ensure that the garment can pass over the shoulders and hips without strain. Wrist opening can be about 4 inches long to enable the sleeve to pass over the hand. The position of the placket should be such that it is easily accessible and convenient to operate.

6.1.3 Strength

Openings are subjected to strain during wear and should be strengthened at the closed ends, e.g lower end of placket openings. For plackets in seams to be durable, the garment seam should be at least 5/8 inch wide. Seams should not be trimmed or clipped too close.

6.1.4 Correct lapping

All openings for women’s garments fasten right over left irrespective of where they are located. For men’s garments, openings should lap left over right when worn.

6.1.5 Suitability

The type of placket used should be suitable to the kind of garment on which it is used, its position in the garment, texture of the fabric, age and sex of the wearer and current fashions.
6.2 Types of Plackets

All the plackets are made conspicuous or inconspicuous depending on their placement in the garment or as per the fashion. Mostly, all women garments use inconspicuous plackets and gents tailored made garments use conspicuous plackets.

6.2.1 Inconspicuous Plackets

Inconspicuous plackets are not seen when the garment is put on. The continuous bound plackets, bound and faced plackets and zipper plackets are examples of inconspicuous plackets.

6.2.1.1 Continuous bound placket

This is also called One-Piece placket and may be made in a seam or slash (Fig. 6.1). It is suitable for children’s dresses, saree petticoats, sleeve openings where a cuff or band is used. Do not use this placket on curved seams and on bulky fabrics.

Fig. 6.1 Continuous bound placket
This placket can be made in an opening made by slash or in a seam opening. To make a placket in a slash, cut a strip of fabric on the lengthwise grain, 1 ¼ inch to 1 ½ inch wide and one inch longer than twice the length of the opening. Tack the piece to garment opening and machine stitch keeping the opening flat till the center. Stop the machine keeping the needle inside the fabric and push all the material backward so as to avoid a pleat in the centre of the fold. Continue stitching till the end.

Press the seam edges towards the placket strip and fold under the free edge of the strip ¼ inch and crease. Then fold the strip over the opening edge and hem it along the stitching line.

Fold the strip under on the overlap section and tack it at the seam. Tacking can be removed after the fasteners are fixed.

Placket in a seam is done in almost similar way as placket in a slash. Prior to making a placket reinforce the seam edges (where the placket ends) with back stitches, clip the seam allowances leaving only ¼ inch allowances. Now the seam opening is ready to be finished as continuous bound placket.

6.2.1.2. Bound-and-faced placket or two-piece placket:

This is used in the left seam of skirts or petticoats and back seam of dresses. The underlap side of this placket is finished with a binding and the overlap with a facing. For this, two separate strips of fabric are used. Wider strip of 2 inches used for underlap and narrow strip of 1 ½ inches is used for overlay. Both the strips should be 1 inch longer than the placket opening so as to extend below the placket opening. The seam allowances of the placket should be same as the seam allowance on which it is made. To finish underlap, crease the strip back over the seam, bringing its free edge to the wrong side of garment, turn under 1/4 inch at the free edge and hem the fold to the stitching line. This forms the bound side of the placket and should have ½ inch to ¾ inch finished width.
Make a ¼ inch or wider stitch to the wrong side of overlap’s free edge, turn the strip over to the wrong side of the garment (as for a facing) and slip hem the fold to the garment. Work a line of stitches at the base of the placket catching the underlap and overlap together (Fig. 6.2.). This can be done by hand from the wrong side in such a way that no stitches are visible on the wrong side.

6.2.1.3 Zipper plackets

There are several methods of applying zippers. The choice depends on the position of the zipper in the garment and the type of garment. Zippers are usually concealed either with two overlapping fabric edges or with one. The former shows two lines of stitching and is referred as slot seam zipper placket (Fig. 6.3). The latter is called lapped seam zipper placket and only one line of stitching is visible on this.

Fig. 6.3 Slot Seam Zipper Placket

6.2.2 Conspicuous plackets

Tailored plackets are conspicuous plackets commonly seen on men’s shirt sleeve, on neck openings of kurtas, children’s dresses.

6.2.2.1 Tailored or Kurta plackets

Tailored placket is commonly used on kurtas or men’s shirt sleeve openings and on children’s garments. (Fig. 6.4). To finish this placket two separate strips are cut for under-lap and over-lap. For under-lap cut one strip of 1 ½ inch wide and exact length of the slit. Keeping one end of the strip exactly in line with the end of the slit and with the right sides facing, stitch a ¼ inch seam joining the edge of the strip to the correct edge of the sleeve opening. Now fold ¼ inch
under on the free edge of the strip and hem or machine this folded underlap strip tacked to the wrong side of the garment.

For over-lap take a shaped strip, cut a strip of 2 ½ inch wide and 1 ½ inch longer than the slit. Shape the bottom side of the strip into a pointed 'V'. Keep the right side of the strip facing the wrong side of garment and tack the short side of the strip to the free side of the placket opening on the seam line. Machine stitch and bring this overlap strip over to the right side of the garment. Turn under the seam allowances and adjust the position of the strip so that it will overlap the underlap binding. Tack in position. Top stitch the strip to the garment.

![Fig. 6.4 Kurta Placket](image)

**Summary**

Plackets provide ease while putting the garment on and off. Therefore, the plackets should be made with proper care, neatness, suitable length, correct placement, strength, correct lapping and fashion. As plackets are generally closed with aid of fasteners, selection of proper fasteners is also important. Sometimes, plackets are made conspicuous for functional and decorative effect.

**I. Test your Understanding**

- Where are the plackets used?
- What is the difference between the lapping seen in mens and women’s garments?
- What is the use of the placket?
- Do wider necklines require placket openings?
- Are there any placket openings on Women’s T Shirt
- Illustrate with sketches the various types of plackets on different garments.
Short Answer Type Questions

1. What is a placket?
2. Classify the plackets.
3. How do plackets lap in women’s garment?
4. What are the main differences between continuous, bound and faced placket?
5. On what fabrics continuous plackets are used?
6. In how many ways continuous plackets can be made?
7. What is a bound and faced placket?
8. In how many ways zipper plackets can be made?
9. What are the measurements followed for underlap and overlap of the two piece placket?
10. A tailored placket has other name because of its usage. Explain

Long Answer Type Questions

1. Write about the good standards of plackets?
2. Write in detail about the finishing of continuous placket?
3. Write the procedure of making a bound and faced placket?
4. Explain the difference between a kurta placket and one piece placket.
5. What is the fastest method of finishing a placket? Explain.
UNIT 7

Methods of Finishing Necklines

Structure

7.0 Introduction

7.1 Preparation of uses of true bias strip

7.2 Different methods of finishing necklines

Learning Objectives

After studying this unit, you will be able to understand and practice the following

- Preparation of bias strip
- Knowing the uses of bias strip
- Application of bias facing
- Application of bias binding
- Application of fitted facing

Unit Preview

This unit explains the various methods of finishing neckline edges
7.0 Introduction

Neckline is an outline of bodice around the neck. These necklines can be finished either by using facing or binding or by attaching a collar. The necklines can be shaped in different ways and styles to get a decorative effect, particularly for ladies garments. Round, square, V-neckline, U-neckline etc. are the most commonly used shapes of neckline. A straight piece of material attached to finish these curved necklines will look bulky and untidy. The elasticity of bias permits it to stretch making a smooth finish. The various necklines finishes include fitted facing, bias facing and bias binding.

7.1 Preparation and uses of true bias strip

Necklines, armholes and other curved parts of the garments require special treatment. It is better to use a bias strip than the strip cut on true grain to finish these openings.

7.1.1 Cutting bias strips

Fold the fabric diagonally so that the lengthwise threads of the folded part fall parallel to the crosswise threads on the rest of the material. Using a gauge or ruler, measure from the fold to desired width of bias strip and draw parallel lines. Cut strips along the marked lines and trim off ends along warp threads. Bias strip will have maximum elasticity if cut on diagonal line at 45° to the lengthwise and crosswise grains which is called as true bias. It shows more stretch than any other direction on cloth (Fig. 7.1).

7.1.2 Joining bias strips

Place the two strips to be joined right sides facing and the edges of the right angles to each other. Shift the top strip ¼ inch beyond the other so that the sharp points at the ends of the strips project on either side. Stitch a ¼ inch seam joining the points where the sides of the two strips intersect. Press the seam open and trim the seam projections showing on right side (Fig. 7.2).
7.1.3 Uses of bias strip

- True bias is used to finish raw edges. It is useful especially in finishing curved edges such as necklines, sleeveless armholes and scallops. The elasticity of bias permits it to stretch or contract and thus takes the shape of any curved edge giving it a flat smooth finish.

- Bias strips can be applied as facing and bindings. In striped, checked or contrasting coloured material it gives a decorative finish when used as a binding or facing applied on the right side of the garment.

- Bias is also used to finish raw edges of plain seams as well as seams which join collar to neckline, cuffs to sleeves etc.

- Fabric or bound buttonholes, piped seams and bias tubing are made using bias strips. Bias tubing is useful for making small motifs for trimming dresses and for preparing fabric loops which can be used decoratively in the place of buttonholes.

7.2 Different methods of finishing necklines

Neckline may be finished with a facing, binding or a collar. The type of finish chosen will depend on the design of a garment, the fabric and in some cases even personal preference. Necklines are generally curved and hence tend to stretch during handling. It is therefore important to note that before garment construction, a row of stay stitching is done at a distance of 0.5 cm from the edge of the neckline, so that it will not stretch.

7.2.1 Facings

These are used to provide a neat finish to the raw edges in a garment and to support the shape of necklines, armholes, collars, etc. When the edge to be faced is a straight line, the facing may be cut in one piece with the garment section. Usually facings are applied separately. There are two main types of applied facings - shaped facing and bias facing.
Shaped facing can be of any width, but bias facing should not be more than ½ inch wide. Facings are usually turned to the inside of the garment and will not show when the garment is worn. Sometimes facings are turned to the outside of the garment for decorative effect.

### 7.2.1.1 Method of applying bias facing:

Stay stitch edge of garment to be faced. Cut a bias strip of true bias the width of which is equal to the finished width and 2 turnings. Tack bias strip to edge of garment, right sides facing beginning at a seam. For inward corners to be faced the bias must be eased and for outward curves it must be stretched. (Easing means holding bias strip slightly loose at the seam line). Stitch bias to the edge of the garment in line with the bias on top. Trim the seam to ¼ inch, clip at curves, grade bulky seams and ends coinciding. Turn the strip to wrong side under stitch the facing to the seam. Making sure that the facing is not visible from the right side of the garment. Now hem or slip stitch the facing to the garment. When finished, the bias facing should be about 3/8 inch wide (Fig. 7.3).

![Fig. 7.3 Applying bias facing](image)

### 7.2.1.2 Applying shaped or fitted facing:

Shaped facing is cut to the exact shape of the garment edge to which it is to be applied. Usually it is cut on the same grain as the section of the garment. Shaped facing is often used to finish square or ‘V’ necklines or scalloped edges. It is easier to apply than bias facing and is less conspicuous (Fig. 7.4). It is usually cut separately for front and back with allowances extra. After cutting, join the front and back facings with a plain seam, trim the seam and press it open. Finish the outer edge of the facing by turning up the edge and stitching it. Carefully tack the facing to the garment section, right sides facing, and seam lines, center lines and notches matching. Trim, clip and grade seam edges turn the facing to the wrong side under stitch it at the seam and hem or slip stitch the folded edge of the facing to the garment. When fitted facing is applied to right side of the garment then it is called as decorative facing (Fig. 7.5)
7.2.2 Bias binding

Bias binding is used to finish and strengthen raw edges and to add a decorative trim to a garment. It shows both on the right and wrong sides. It is used to finish necklines, armholes, sleeve edges, front closings, collars, cuffs and seams. It can be adapted equally well to straight, curved, gathered and irregular edges. When finished, bias binding should have uniform width (less than ¼ inch) and should lie flat and smooth without any stitches showing on the right side of the garment.

7.2.2.1 Types of bias binding

There are two kinds of bias bindings: Single binding and double binding (or French binding).

7.2.2.1.1 Single bias binding

Cut a bias strip that is twice the finished width plus two seam allowances. Tack the strip to the garment right sides facing. Stitch the binding to the garment with a plain seam. Trim the seam as wide as the finished binding. Turn under 1/8 to ¼ inch on the outer edge of the bias and fold it over the seam on the wrong side. Now hem the fold to the line of stitching using hemming stitches (Fig. 7.6).
7.2.2.1.2 Double or French binding

French binding or double bias binding is used on sheer fabrics. Cut bias strip that is six times the desired finished width. Fold the strip in half, wrong sides together, and press. Stitch raw edges of binding to the garment on the right side and hem the folded edge to stitching line on the wrong side.

Test your understanding

• What is the maximum stretch angle for bias strip?
• Identify the neckline finish in your dress.
• Draw few neckline shapes that can be finished with bias binding, bias facing and fitted facing.
• Draw a graph to cut the bias on paper.
• Show a true bias cutting on paper.
Summary

As neckline is the outline of bodice around the neck, it can be shaped and finished in different ways for strengthening as well as for decorative purpose. Any of the methods described can be chosen to finish the necklines as per the need of the garment and fashion of the period. Bias binding and decorative facings are seen on the right side of the garment, bias facings are generally finished on the wrong side of the garment. Care is to be taken while finishing the necklines, especially curved ones. Always stay stitch around the neckline before finishing it, as this will avoid shaping out of the neckline.

Short Answer Type Questions

1. What are different ways of finishing a neckline?
2. What is true bias?
3. On which types of fabric double bias is used.
4. What is the distance from outer edge of the neckline for stay stitching?
5. How are the bias strips attached?
6. What is single bias binding?
7. What are the uses of bias strips other than the finishing necklines?
8. What is decorative facing?
9. Why do you need to finish a neckline?
10. What is facing?

Long Answer Type Questions

1. Give the method of cutting and joining the bias strips.
2. Explain the difference between fitted and bias facing.
3. What is bias binding? Explain the methods followed.
4. Explain the uses of bias strips in various garment finishing methods.
5. Which neckline finishes are seen on the right side of the garment? Explain.
UNIT 8

Types of Fasteners

Structure

8.0 Introduction
8.1 Selection of Fasteners
8.2 Buttons
8.3 Button Holes
8.4 Hooks and Eyes
8.5 Button Loops
8.6 Snaps
8.7 Fancy Buttons

Learning Objectives

After studying this unit, you will be able to understand and practice the following:

- Types of fasteners suitable for men’s, ladies and children’s garments.
- Placement of fasteners depending on various factors like strain of the garment part.
- Stitching of different fasteners.
- Selection of right fasteners over the other for a particular garment.
Unit Preview

All garments need openings at some point or the other so that they can be put on and taken off easily. These openings can be closed in a variety of ways by using fasteners. The common fasteners are buttons, hook and eyes, eyelets and cord, press buttons, fancy buttons etc.

8.0 Introduction

There are various types of fasteners, some are decorative and conspicuous while some are meant to be inconspicuous. The type of fasteners selected will depend on the position, the amount of strain it will receive and whether it is to remain concealed or form a decorative feature on the garment. It is important to remember with all types of closures that the two sides of the opening match perfectly without any puckering, pulling or gaping of the fabric and give a neat appearance to the garment.

In general, fasteners should be fixed on to double material for strength. Fasteners should be selected to suit the colour, design and texture of the fabric, the style and use of the garment and the position of the placket. One should also consider the age and sex of the wearer. For example buttons and buttonholes are generally used for men’s shirts, trousers etc., just as press buttons and hooks and eye are commonly used for ladies’ cholics and children’s dresses.

8.1 Selection of Fasteners

As fasteners are used for both functional and decorative purpose, selection of these should be taken care.

8.1.1 Strength

Strength of the fasteners is very essential as press buttons are less secure than buttons and button holes.

8.1.2 Care

Press buttons, hooks eyes, on a garment which are frequently washed and ironed are easily damaged.

8.1.3 Strain

Hooks and eyes give an invisible closing which is particularly suitable when there is cross wise strain.

8.1.4 Combination of fasteners

Combination of fasteners will always give best closing, for example use of zippers and button and button holes in pants.
8.1.5 Correct lapping

Fasteners should be fixed in such a way that the right side of the garment laps over the left side for women and the left laps over the right for men.

8.2 Buttons

Buttons should be selected carefully to suit both the weight and colour of the fabric. The advantages of using buttons as closures are numerous. They are both functional and decorative. They should be sewn securely by a strong matching thread in such a way that it allows the buttonholes to close under the button without puckering the fabric. The fabric on which the button is attached should be reinforced to prevent tearing or pulling under strain.

Buttons are placed centrally on the centre front and centre back lines of the garment except in unusual cases. Sufficient buttons should be spaced equally to ensure that the opening is neat without gaping between buttons. The width of spacing varies according to the position of opening, fabric weight and size of button. Too few or too many can spoil the appearance of the finished garment. On a shirt or blouse the buttons must be placed to avoid gaping across the bust or waist. On a waist area of the garment a button must always be used because this is the stress point of the garment.

8.2.1 Types of buttons

There are three types of buttons, the details are given below.

8.2.1.1 Buttons with holes

These are commonly used buttons which are sewn flat through the holes from upper side of the fabric. These are available with two or four holes. They may be made of bone, glass, metal, plastic etc.

![Two holes and Four holes](image)

Fig. 8.1 Buttons with holes

8.2.1.1.1 Sewing of buttons with holes

Sew these types of buttons using double thread. Bring the needle up and down through the holes in the buttons with a pin kept over the button. After working enough stitches, remove the pin, lift the button and form a shank by
winding the thread tightly around the strands about six times. Now fasten the thread on the wrong side. Buttons with four holes may be sewn in the shape of a cross, two parallel lines, a square or an arrow head (Fig. 8.2).

Fig. 8.2 Sewing of buttons with Holes

8.2.1.2. Shank buttons

These are attached to the garment from the underside with a small loop on the lower side of the button. There are two types of shank buttons i.e., link buttons and covered buttons. Covered buttons may be made of fabric. On dresses buttons covered with self-fabric may be used. Scraps of fabric are used to get the fabric buttons covered by a special machine. Covering may be done by hand also. For decoration, buttons can be: (a) grouped in pairs; (b) placed to give a double-breasted effect, and (c) be purely decorative and not as a fastening.

Fig. 8.3 Shank Buttons, Covered Buttons

8.2.1.2.1 Sewing shank buttons

Bring needle through fabric and shank loop at the bottom of the button and then back through fabric. Stitch through fabric and shank until button is secured. Fasten thread on underside (Fig. 8.4).

Fig. 8.4 Shank Button
8.2.1.3 Link buttons

These are used as links for cuffs or for the front of a coat or a jacket. There should be two buttonholes, one on each side of the placket opening. To make the link, hold two buttons at the desired distance apart and connect the buttons together with strands of thread. Work buttonhole stitches across the strands and fasten the thread (Fig. 8.5).

![Fig. 8.5 Link buttons](image)

8.3 Buttonholes

Buttonholes are slits cut in garments to hold buttons in place. They are made on the overlap section of the garment opening in line with the buttons on the underlap. The length of the buttonhole should be the diameter of the button plus about 1/8 inch (or the thickness of the button). They are so placed that when closed, the button rests on the centre of the button hole. The slits are made vertically or horizontally on the garment. The raw edges of these slits can either be hand or machine worked or fabric bound button holes.

8.3.1 Marking of buttonholes

Buttonholes can be marked in vertical or horizontal way depending on the position of the placket opening, width of the placket or the strain it holds.

8.3.1.1 Marking vertical buttonholes

Vertical buttonholes are often used with a narrow placket where less strain involved such as a shirt band, or where there are many small buttons involved in closing the garment. They are placed parallel to the length wise grain of the garment. They are placed directly on the button placement line and the top of the buttonhole is 3mm above the mark for center of button.

8.3.1.2 Marking horizontal buttonholes

Horizontal buttonholes are the most secure and therefore used on most garments where strain is involved. When buttoned, the pull of the closure is absorbed by the end of the buttonhole with very little distortion. These buttonholes are placed to extend 3 mm beyond the button placement line.
8.3.2 Working of buttonholes

Whatever may be the marking of the slit used to make the buttonhole, they should be worked to finish its raw edges. The raw edges of these slits can either be hand worked with buttonhole stitches, machine worked using zig-zag stitches or fabric bound buttonholes using self or contrast fabric. The method you choose for a garment will depend on the design of that garment, the fabric and your ability to sew.

8.3.2.1 Hand-worked buttonholes

These are used in children’s and men’s garments and are worked after the garment is completed. Avoid these on fabrics that stretch and fray. Hand worked buttonholes are used where details of construction are to be finely finished. They should be made with matching thread and should have stitches of uniform length worked close together. Worked buttonholes are made through double fabric, therefore facings, collars and cuffs must be completed first. Mark the centre of the buttonhole with a row of tacking. Do not slash. Stitch around the entire buttonhole using very fine hand-running stitches to indicate the width of stitching. Fold the buttonhole end to end and make a small cut in the middle with a sharp pointed scissors. (Fig. 8.6)

Open cut and slash to each end. Leaving thread unknotted; take a back stitch on the wrong side near the end of the buttonhole. Bring the needle out through the buttonhole to the right side. With the right side of the garment up, hold the cut buttonhole over the index finger of your left hand and work the buttonhole using buttonhole stitches.

For the vertical buttonholes, both the ends are finished in the same shape, either fanned or bar tacked. But for the horizontal buttonholes, the outer end is fanned to accommodate the button shank and the inner end is bar-tacked to give strength.

Fig. 8.6 Steps in making button holes
8.3.2.2 Machine worked buttonholes

Readymade shirts usually have machine worked buttonholes. They can be done with an automatic machine or with an ordinary machine which has a buttonhole attachment.

8.3.2.3 Fabric or bound buttonholes

These are more decorative than worked buttonholes and are suitable for women’s or children’s garments. A binding strip is used to bind the raw edges of the hole. The binding may also be in contrast or design for decorative effects. Pin an interface on the wrong side and mark the buttonhole. Cut a strip of material 1 ½ inch wide and 1 inch longer than the length of finished buttonhole. Place the strip with right sides facing and work a row of tacking stitches and then machine baste. Then cut along the tacking line to within ¼ inch of the ends and then cut diagonally to all four corners as in fig. 8.7. Pull the binding strip through the slit to wrong side of the garment. Next fold back the strip to form an even binding of about 1/8 inch wide along each side meeting the center of opening. Baste the binding along each side of the buttonhole. Remove the excess interfacing fabric leaving about ¼ inch beyond the buttonholes at each end.

Fig. 8.7 Making of Bound Buttonhole

8.4 Hook and Eyes

Hooks and eyes are small but comparatively strong fasteners. Hence, these are used on plackets where there is crosswise strain. They form an inconspicuous closing. Though they are mostly applied at single point of a garment opening, such as waistband or neckline, they can also be used to fasten an entire opening. There are several types of hooks and eyes, each designed to serve a particular purpose. General purpose hooks and eyes are the smallest of all the types and are used primarily as supplementary fasteners, for example a hook and an eye at the top of zipper placket.
8.4.1. Stitching of hooks and eyes

The hook is always sewn on to the back of the overlap and positioned so that the end of the hook does not extend further than the edge of underlap of the garment. Over sew each loop and across the bar of the hook. Position the metal bar or eye on the opposite right side of the underlap and over sew around the loops. The hook and eye should appear invisible when fastened.

In some cases, a thread eye can be used as a substitute for a metal eye. A thread eye is not as strong as a metal eye; hence should not be used at places where there is much strain. To form a thread eye, use a single strand of heavy-duty thread or double strand of common sewing thread of colour matching with the fabric. A thread eye should be as long as the space between its two placements marks. Insert needle into fabric at one mark and bring it up at the other mark. Apply 2 - 3 more stitches in the same way. Cover all the strands with closely spaced blanket stitches, taking care not to catch the fabric beneath. When finished, bring the needle and thread to the wrong side and fasten securely (Fig. 8.8).

Fig. 8.8 Hooks and eyes

8.5 Button Loops

Instead of buttonholes, loops may be used to fasten buttons. These may be made of thread or cloth.

8.5.1 Thread Loops

The thread loop is an inconspicuous fastening which is most often found at the neck edge of collars. To make a thread loop, sew four or five strands of matching thread on the underlap in the correct position, work buttonhole stitches over these strands (Fig. 8.9)
8.5.2 Fabric loops

These are made of strips of bias fabric stitched and turned inside out to form a narrow tube. The fabric used may be of self material or harmonizing material. This type of fastening adds a decorative trim to children’s and women’s garments. Buttons matching to the fabric loops are fixed on the underlap.

8.5.3 Corded loops

These are made the same way as ordinary cloth loops except that a cording is placed inside the bias strip.

8.5.4 Corded frogs

These are very decorative and can be made in varied designs. Button loops of the frog should be long enough to slip over button smoothly (Fig. 8.11).
8.6 Snaps

Snaps or press buttons are a kind of small fasteners having less holding power than hooks and eyes. It is best to use them where there is not much strain on the opening. Each snap has two parts - a ball or knob and a socket. General-purpose snaps range in size from fine to heavy.

Other snap types are covered snaps, no-sew snaps and snap tape. Covered snaps are intended for use on garments, such as jackets, where it is desirable that the snap not be apparent when the garment is worn open. No-sew snaps are strong fasteners that are not sewed to the garment, but cleaved into the fabric. Snap tape has the ball half of the snap on one tape and the socket half on the other. The tapes can be machine or hand stitched on back side of the overlap and right side of the underlap.

Fig. 8.12 Snaps and Snap Tapes

8.6.1 Stitching of snaps

The knobs are stitched on the wrong side of the overlap close to the edge and must take care to see that the stitches that fasten the button to the overlap do not show on the right side of the garment. Press the knob against the underlap to form the slight impression to place the socket. Place the socket side of the snap center over impression and stitch. (Fig. 8.13)

Fig. 8.13 Stitching Snap fasteners
8.7 Fancy buttons

These are buttons generally used for decorative purpose. They are mainly false buttons which are used for not closing the placket. They are worked on the right side of the garment. These buttons are commonly used on children’s or ladies garments to give the decorative details in the garment. They are readily available in the market in wide range of colours, shapes, textures and made of different materials like fabric, plastic, metal, wood etc.,

Fig. 8.14 Fancy Buttons

Summary

All the garment openings need to be closed with the aid of fasteners. The type of fasteners selected will depend on the position, the amount of strain it will receive and whether it is to remain concealed or form a decorative feature on the garment. They should be fixed in such as way that the right side of the garment laps over the leftside for women and left over right for men. Fasteners should be selected to suit the colour, design and texture of the fabric, the style and use of the garment and the position of the placket. One should also consider the age and sex of the wearer. Hooks and eyes, buttons, buttonholes, snaps, fabric loops are some of the types of the fasteners that may be used as fasteners.

Test Your Understanding

• Indicate the suitable place for hooks and eyes in a kurti.
• Is thread eye stronger than metal eye?
• Are corded frogs button or buttonholes?
• Can snaps be used near the waist line placket?
• How many parts a snap contains.
• Are fancy buttons real closures?
• What type of buttons are suitable for dressy garments?
• Do shank button have hole on the front side?
• What type of buttons are suitable for coats or kurtas?
• What type of buttonholes are marked on strained openings?
• What is the general calculation followed to mark the buttonhole?
• Which type of buttonhole working is more decorative?
• What stitches are used to make hand worked buttonhole?

**Short Answer Type Questions**

1. What is a fastener?
2. Why fasteners are required to finish a placket opening?
3. What are the points considered in selection of fasteners?
4. What are the different types of buttonholes?
5. What are the different ways of working buttonholes?
6. Where are the vertical buttonholes used? Explain the procedure used in making these buttonholes?
7. Where are the hooks and eyes used? Explain the types of eyes?
8. What fasteners are replaced by fabric loops in plackets?
9. What are the possible ways of placing decorative buttons?
10. What are the possible fasteners used on children’s garments?

**Long Answer Type Questions**

1. Write in detail about the marking and making of different buttonholes?
2. Explain the difference between the hooks and eyes and buttonholes.
3. What are the different fabric loops used to replace the buttonholes?
4. Explain about the decorative fasteners and their respective uses in various garments.
5. Why fasteners are required to close the placket opening? Explain the steps involved in selection of fasteners.