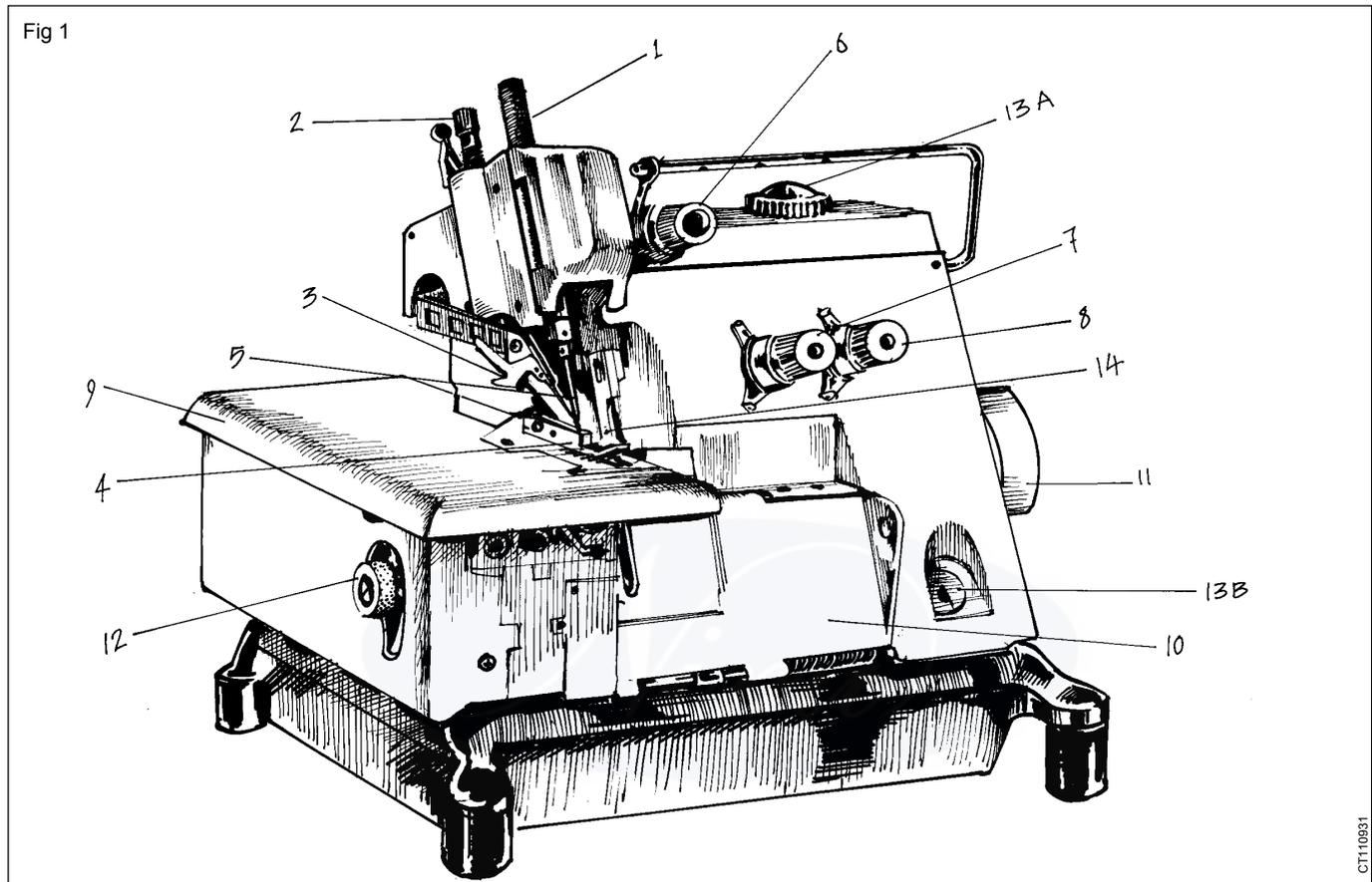


**Overlock machine - 3 thread**

**Objectives:** At the end of this lesson you shall be able to

- state the use of overlock machine
- state the different parts of the overlock machine.



**Over lock Machines**

Over lock machines a special purpose machine used for finishing edges and sometimes for seaming. It falls under the class 500, which means stitches are formed with one or more groups of threads and have a general characteristics that loops from at least one group of threads pass around the edge of the material.

Over lock sewing machines are usually runs at high speeds, from 1000 to 9001 rpm and mostly are used in industry for edging , hemming and seaming a variety of fabrics and products. Overlock stitches are also used for decoration, reinforcement or construction.

**Types of Over lock stitches:**

Over lock machines are generally made in 1,2,3, 4 or 5 thread formations. Each formation has unique uses and benefits -

1. **One Thread Overlock:** End to end seaming or "butt-seaming" of piece goods for textile finishing.
2. **Two Thread Overlock:** Stitch type 503. Machine has one needle & one looper. Used for edging and seaming, especially on knits & woven, finishing seam edges, stitching flat lock seams, stitching elastic and laces to lingerie and hemming. Stitches can be adjusted to sew a rolled hem.
3. **Three thread Overlock:** Stitch type 504. Machine has one needle and two loopers. Used for finishing edges or decorative edging and seaming knit or woven fabric. This is a most common overedging having excellent stretch & recovery. Here stitches looks the same on both the sides.
4. **Four Thread Over lock:** Machine has two needles & two loopers. It will stitch a chain stitch or a safety stitch Decorative edging and finishing, seaming high stress areas, mock safety stitches which create extra

strength while retaining flexibility. Suitable for both knits & woven. Machine can be converted to two thread or three thread overlock.

**5. Five Thread Overlock:** Machine has two needles & three loopers. It is two thread chain stitch combined with a three thread overlock. The left needle and lower looper form a two thread chain stitch. For every unit length of stitch it requires 20 times of thread length.

Securing the raw edges of a seam allowance with overlock machine is a very fast way of finishing. Overlock machine can also be used to sew two pieces of fabric together (e.g. knit garments). It cuts the edges and secures them in one operation.

**Overlock machines** come in different models but all are basically similar. The machine shown here is a three-thread overlock machine working with two knives - a moving upper knife and a fixed lower knife. They cut off frayed fabric edges to give a neat finish.

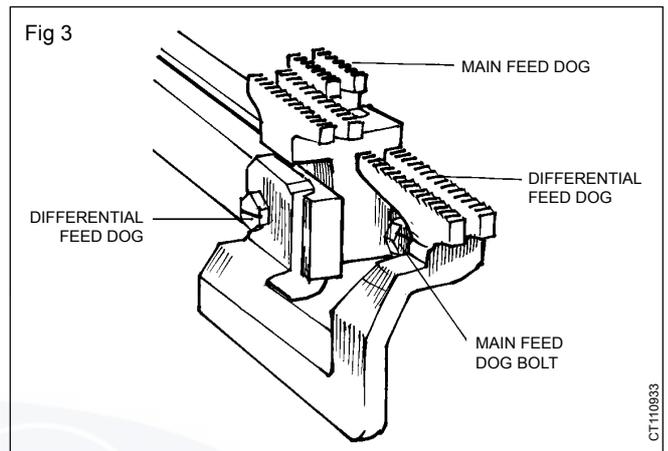
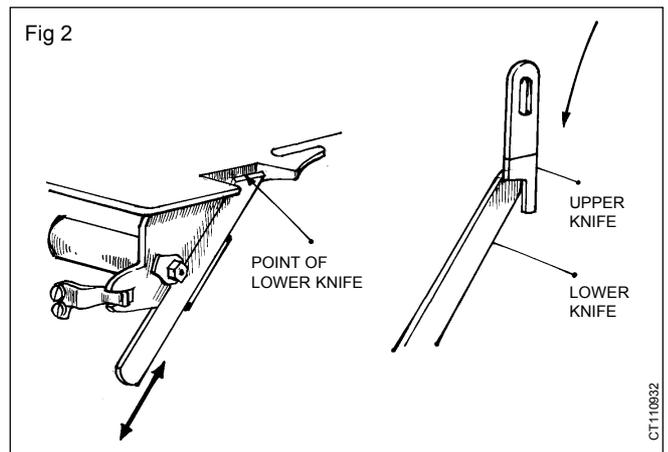
**Parts of the machine (Fig 1)**

- Needle bar (1)
- Thumb screw (to regulate pressure of the presser foot) (2)
- Thread cutter (3)
- Presser foot (4)
- Needle (5)
- Tension set (for needle) (6)
- Tension set (for overlooper) (7)
- Tension set (for underlooper) (8)
- Cloth plate (9)
- Slide cover (10)
- Hand wheel (rotates in clockwise direction) (11)
- Feed ratio (12)
- Sight glass (oil window) (13)
  - i indicates lubrication of the mechanism
  - ii indicates the level of the oil in oil tank
- Lower and upper knife (14)

**Lower and upper knife** are fixed in the opposite direction with the sharper edges meeting each other so that the fabric will get cut with each movement. Sharp edges of the knives overlap around 0.5 - 1 mm depth. (Fig 2)

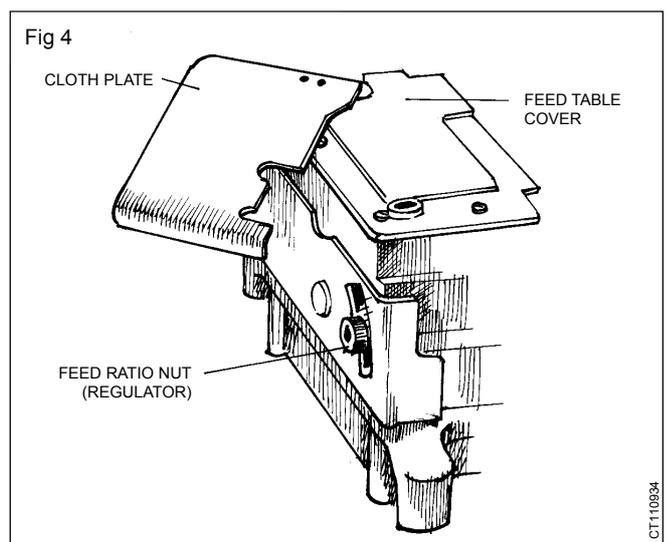
The overlock machine has two feed dogs, the main feed dog and the differential feed dog. (Fig 3) The levels of these two should be equal with one another and the height can be adjusted independently by the respective bolts. The height of the feed dog must be adjusted according to the thickness of the material.

1 mm for thin materials



1.3 mm for medium thick materials and  
1.5 mm for thick material, also raised above the top of the needle plate. (Fig 3)

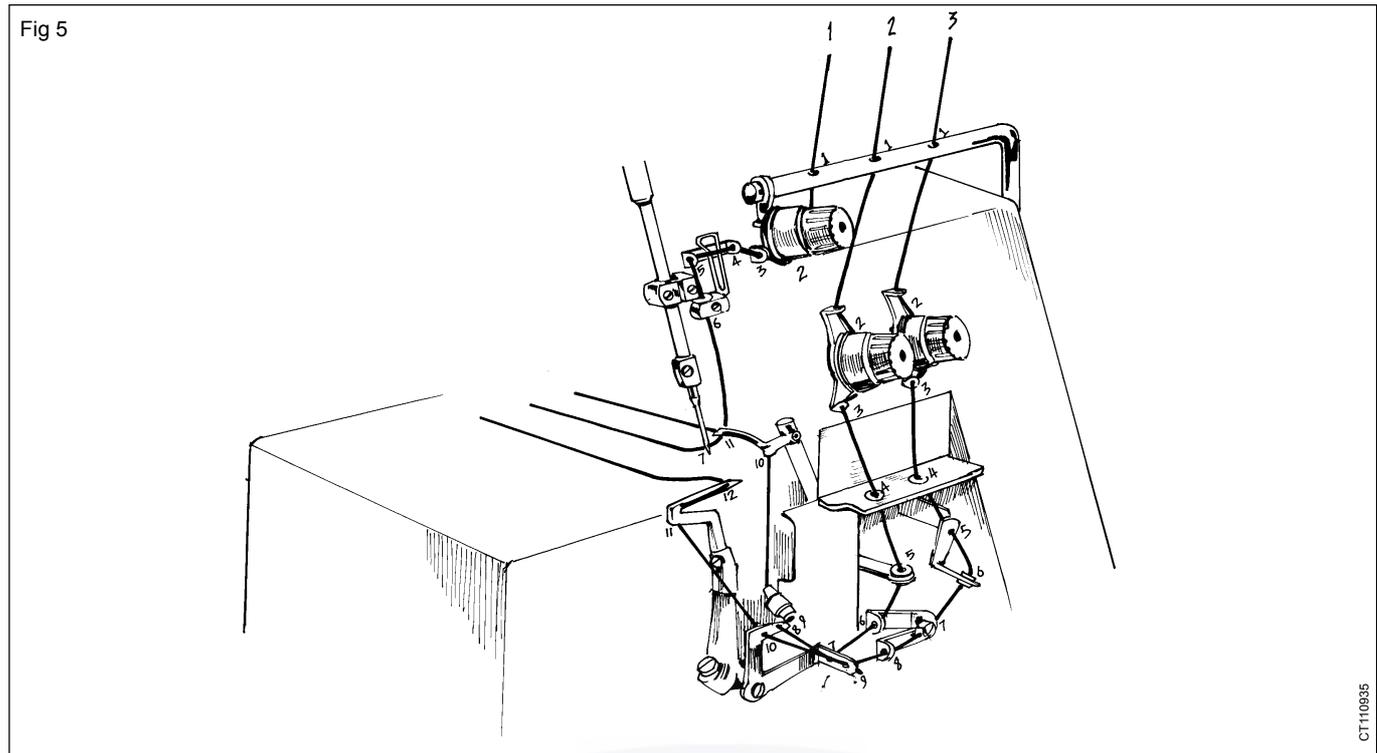
**Feed ratio nut regulator** increases and decreases the teeth of the feed dog to get shirring and stretching stitches. (Fig 4)



**Threading of overlock machine:** Threading of the overlock machine is strictly complicated compared with other sewing machines. The one shown in the graphic has three different threads: the needle thread (I), the overlooper thread (II), the underlooper thread (III). The

sequences of guiding these three threads can be followed as in the diagram. (Fig 5)

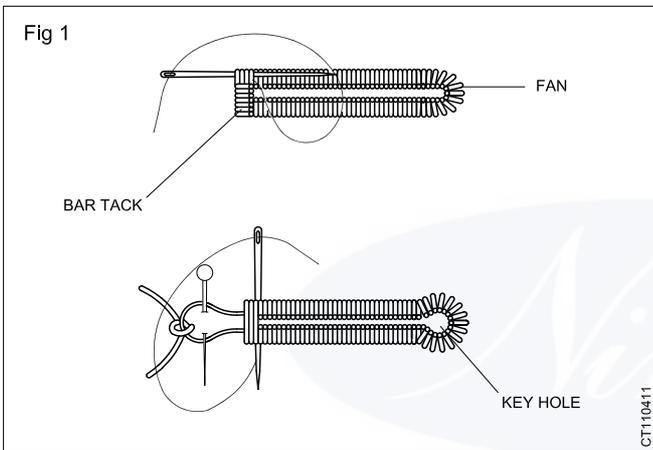
After each use the lint and dust has to be removed. Cover the machine when not in use. Periodic oiling and greasing should be done.



**Types of buttonholes**

**Objectives:** At the end of this lesson you shall be able to  
 • list the types of buttonholes and name their features.

Buttonholes are created as one of the last steps in stitching garments. In ladies' garments the buttonholes are worked on the **right-hand side**. But in gents garments, they are worked on the **left-hand side**. In side plackets, the buttonholes are always worked in the front part. A buttonhole is constructed with 2 long sides and two ends. These ends are either finished by **bar tacks** or one end is finished with a bar while the other end can have the shape of **keyhole** or a **fan**. The keyhole with its strong rounded end is suitable for coat buttons which pass through easily. (Fig 1)



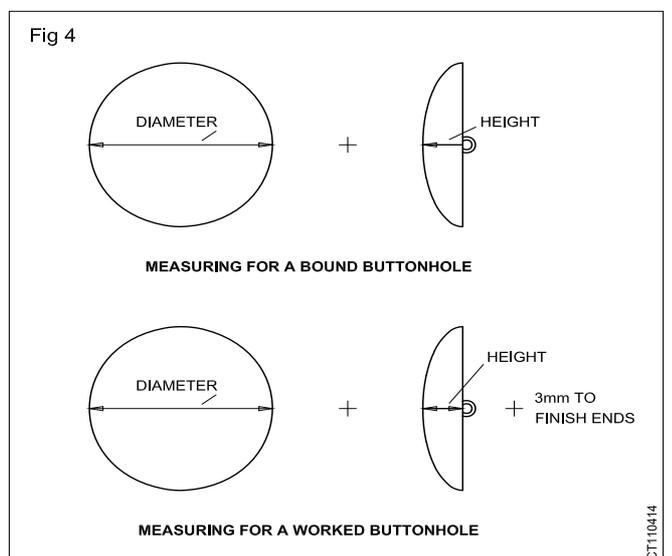
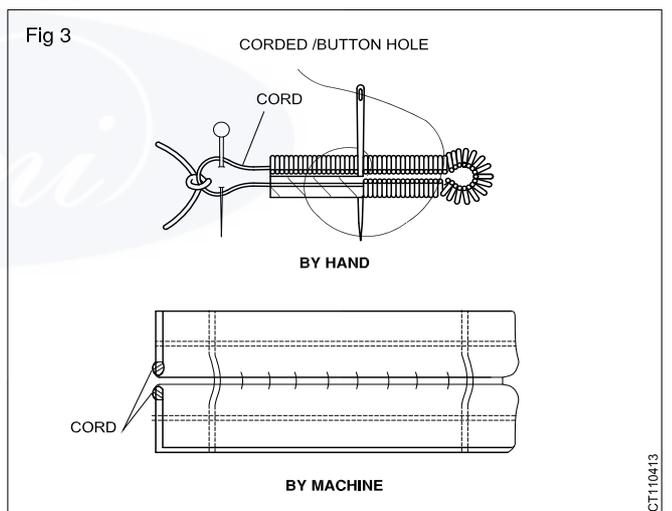
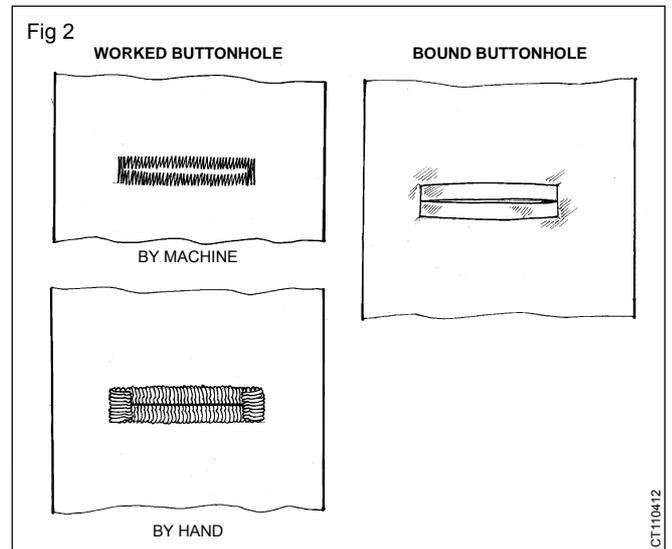
**Bound buttonholes** are worked with machine by stitching strips or patches on the location of the buttonhole. The strips or patches are fixed on the right side and finished on the wrong side, thus the binding edge is seen on the right side. They are not suited for delicate fabrics. Worked buttonholes can be worked either by hand or by machine. Hand worked buttonholes are slashed first and then stitched. But machine worked buttonholes are stitched first and then slashed. Hand worked buttonholes are stronger than the machine worked buttonholes but take more time. (Fig 2)

**Corded buttonholes** are prepared by machine with a corded bias strip used for buttonhole lips or by hand using a cord as a filler below the single stitch. The cord produces soft, rounded edges suitable for spongy fabrics such as knits etc. (Fig 3)

**Dimension of the buttonhole** can either be calculated (diameter of the button + it's height) or tried out by cutting a slit in a scrap of fabric and by adjusting the length until the button slips through easily. (Fig 4)

**Marking position of Buttonholes -**

Button holes are always marked in relation to the button

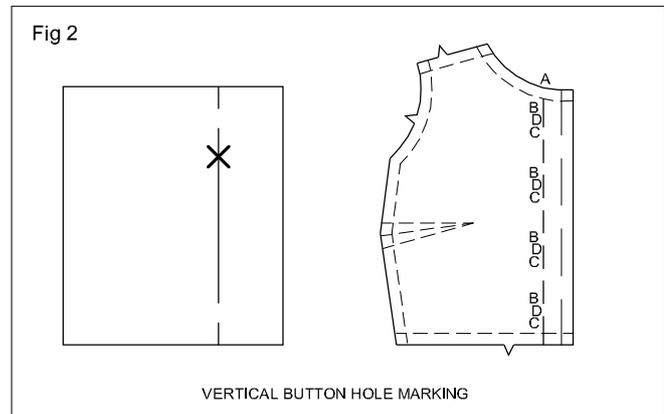
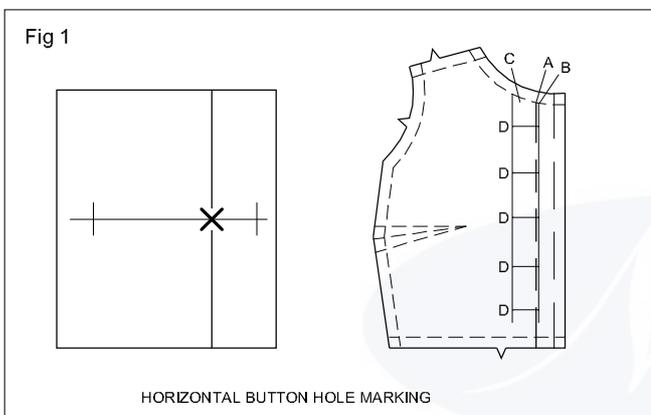


placement line, which is always in according to the centre line of the garment.

The three key placement points for the button holes are Neck, the fullest part of the bust and the waist. Additional button holes are evenly placed in between these points. The lowest button hole must always be above bulk of hem.

Horizontal Button Holes are placed to extend 3 mm beyond the button placement line. Line A is the button placement line of the garment. B is 3 mm from button placement line. Line C is at a distance of buttonhole length. D marks the centre of the button hole.

Vertical buttonholes are marked 3mm above the mark for centre of button. The markings for vertical buttonholes are placed directly on the button position line A. The marking B and C is the length of buttonhole. Point B is 3mm above the mark for the centre of the button. D is the button hole marking.



There are three types of Button holes in consideration with Bar & Fan

- 1 One Bar & one Fan (Standard)
- 2 Two Bar ( Mostly machine made)
- 3 Two Fan (Fitted Ladies Garment)

**The button placement line must be marked on each half of the garment to make it convenient to mark button hole position and for checking that both the centre lines will match when the garment is closed.**

**Button holes in women garments - placed on the right hand side of the front open garments and on the left hand side of the back open garments.**

**In fitted garments Buttonholes are horizontal and in loose garments Buttonholes are vertical**

**The space between finished edge of garment and button position line must be three-quarters to the diameter of the button.**

## Zig-zag machine/ attachment

**Objectives:** At the end of this lesson you shall be able to

- explain the formation of zig-zag stitch
- name important parts of the zig-zag equipment and explain its function
- set width and length of zig-zag stitch.

The zig-zag sewing machine is a motorised sewing machine which requires some experience in handling to control the speed of sewing. Some power sewing machines have an in-built zig-zag facility. Apart from ordinary sewing machines, these machines have some additional parts and functions.

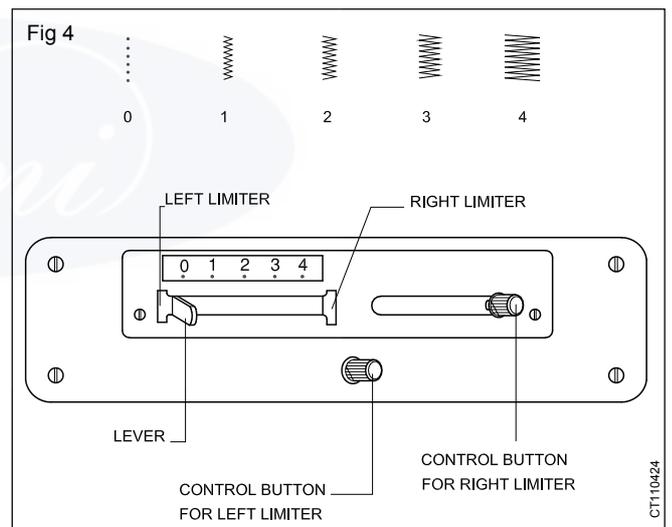
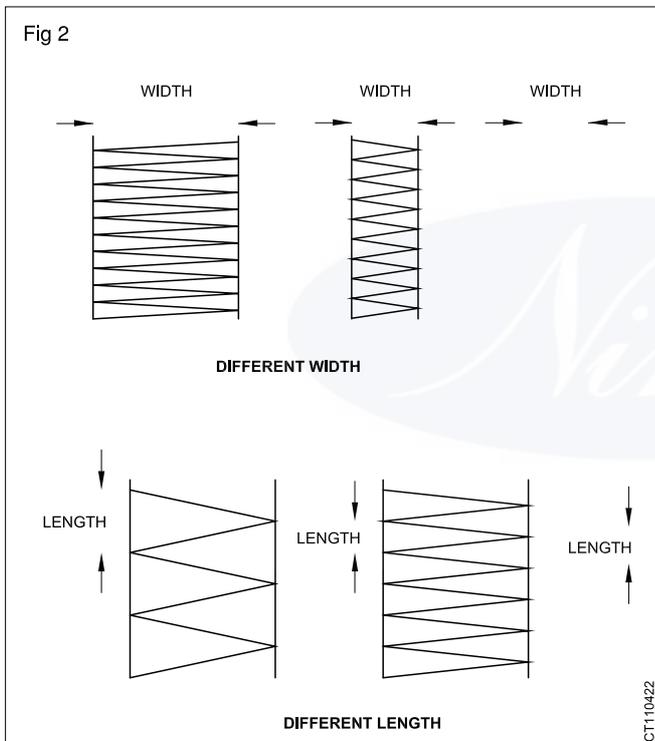
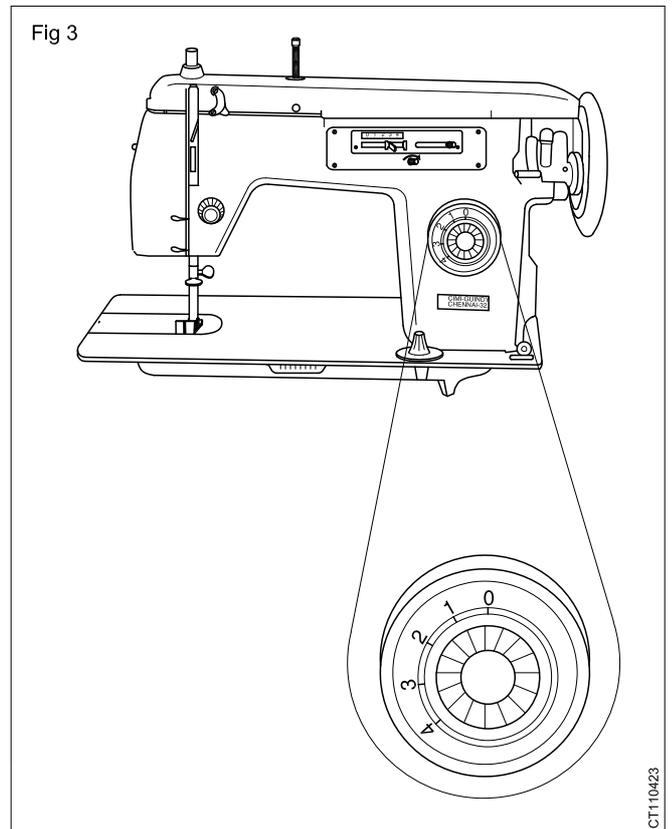
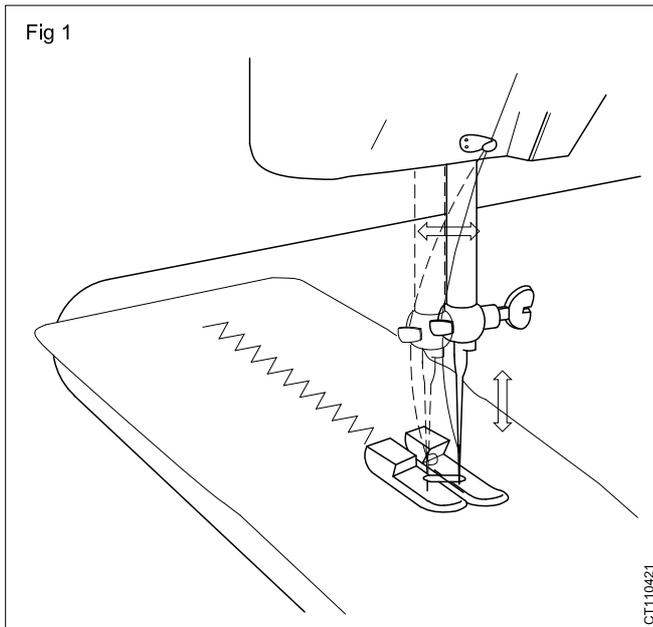
The machine has extra features like reverse stitch which helps to overcome the problem of turning the fabric every now and then. It has a powerful sewing light which gives more visibility while stitching. It also has a facility to perform zig-zag stitches in various patterns for functional (e.g.buttonhole stitching) and decorative purpose. The appearance of the zig-zag stitch as a decorative stitch is very close to the satin stitch.

A buttonhole foot (all-purpose presser foot) and an all purpose needle plate have to be fixed for zig-zag stitching.

Both attachments have a wider needle opening. While performing the stitch, the needle not only moves up and down but sews also from left to right. The shuttle race moves correspondingly to help forming the stitches while the fabric moves forward at the same time. (Fig 1)

Width and length (distance between the single stitches) of zig-zag stitch can be manipulated in order to create different designs. (Fig 2)

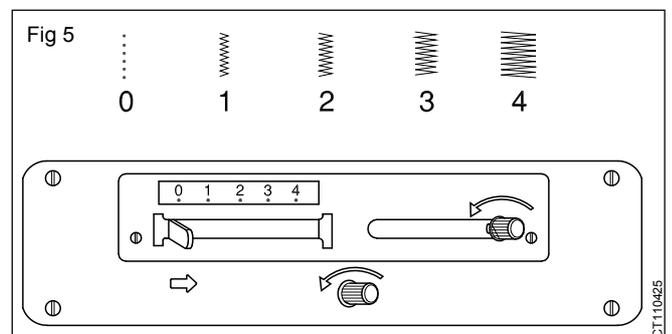
The stitch length is controlled with the help of the stitch regulator knob. If the knob is set on or close to '0' the stitch will look like a satin stitch. (Fig 3)

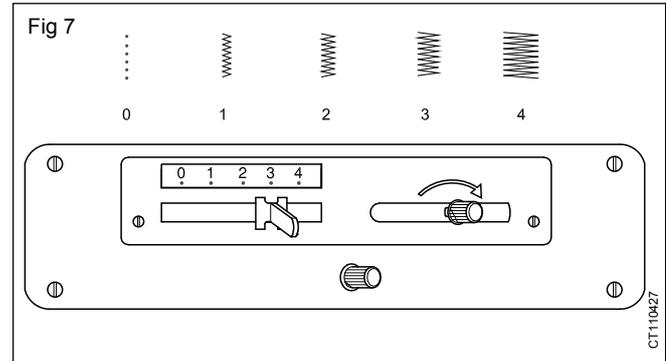
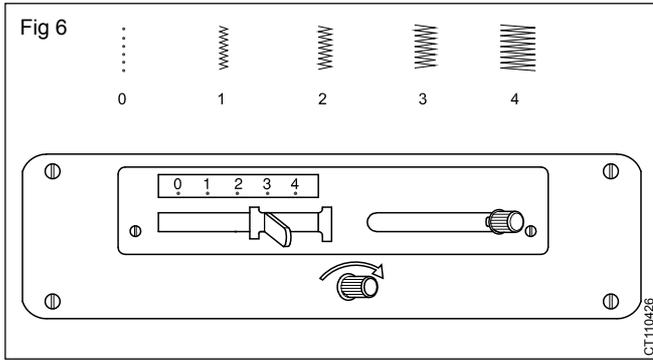


To set the width of the zig-zag stitch, you have to operate the zig-zag width lever. (Fig 4)

If you want to set the lever on a width marked as '3' on the scale first you have to unscrew the two control buttons. (Fig 5)

Then slide the lever on '3'. To keep the lever in a fixed position, the two side limiters have to be adjusted also. Position the left limiter by hand close to the lever and clamp the left control button. (In some machines the left side limiter is attached to the lever). (Fig 6)





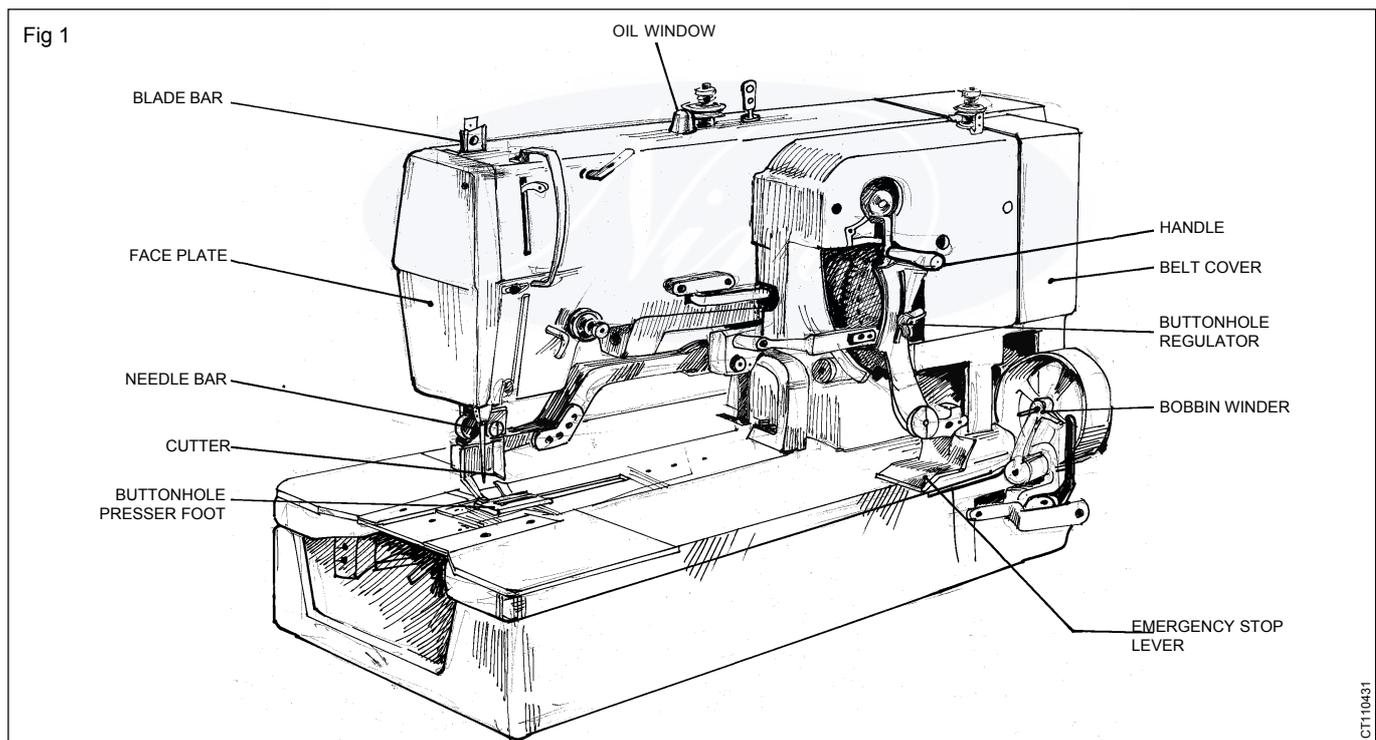
Set the right limiter close to the lever while shifting the right control button to the left until the final position of the right limiter is reached. Clamp the control button. (Fig 7)

## Buttonhole machine

**Objectives:** At the end of this lesson you shall be able to

- name the main parts of the buttonhole machine
- explain their functions
- explain the use of buttonhole scissors.

### Buttonhole machine and its parts (Fig 1)



The **cutter blade** helps to cut the buttonhole after it is worked. The blade width varies from 8 mm to 32 mm. The blade length can be adjusted according to the button size. The presser foot is of rectangular in shape. Center space is provided to form a zig-zag stitch. (Fig 2)

The emergency stop lever is used to stop the machine at any time during stitching.

The **buttonhole regulator** selects the desired stitch length on which the stitches of buttonholes are set. The machine will stitch automatically according to the selected

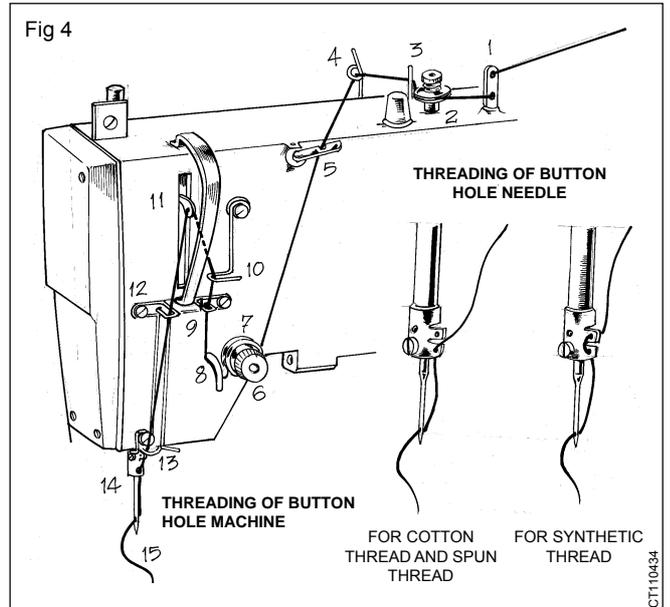
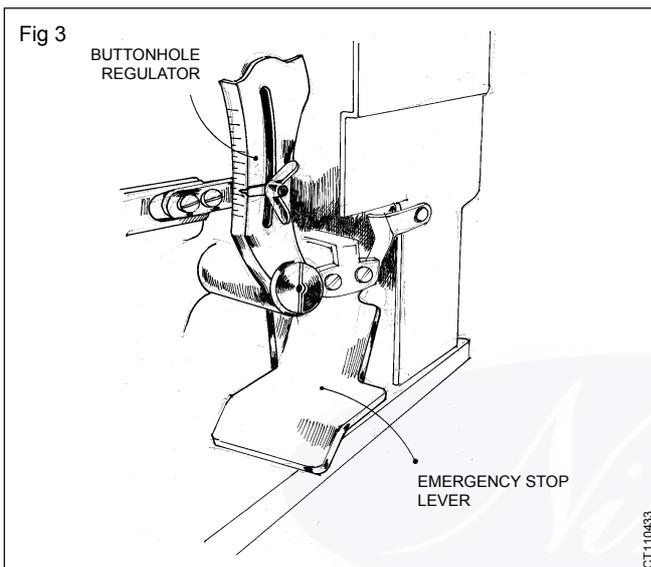
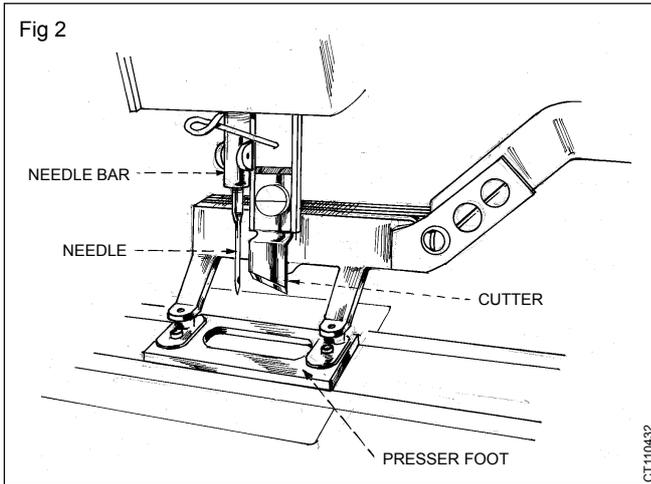
length of stitch. (Fig 3)

The **blade bar** will be selected according to the desired buttonhole length. After completing the buttonhole stitch, the length of the buttonhole is cut automatically.

Threading the machine with the upper thread is shown in Fig 4.

### Safety precautions while using buttonhole machine

- Keep hands a little away from the sewing area to avoid hand injury.



- Ensure that there is no electrical leakage before starting to work on the machine.

**Buttonholes scissors** have a special gap in the blades which allows shortcuts to be made inside the edge of the fabric. The length of the cut can be adjusted by a screw. (Fig 5) It is used for horizontal buttonholes.

