

JOB ROLE – SEWING MACHINE OPERATOR

Sector – Apparel, Made-Ups and Home Furnishing
(Qualification Pack Code: AMH/Q 0301)



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UNIT 2: SEWING TOOLS AND SEWING MACHINE OPERATIONS

Session 4: Preparation and Operation of Sewing Machine

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Session Objectives

The students will be able to:

- Explain the preparation of single needle sewing machine
- Demonstrate the preparation procedure of SNLS
- Describe the operating steps of sewing machine
- Demonstrate the operating steps of sewing machine

Introduction

There are some key steps that need to be kept in mind for the preparation and operation of the sewing machine.

Single needle sewing machines are mostly used in domestic tailoring and also in industrial or commercial production. As the name suggests, the machine uses a single needle to make a single seam line. The stitch is formed by interlocking two threads- the upper and the lower bobbin thread.

Preparation of a Single Needle Sewing Machine

Before starting the operation process in a single needle sewing machine, an operator should be aware of every aspect relating to the sewing machine. The steps for preparing a sewing machine for stitching are listed below.

Steps for Preparing Sewing Machine for Stitching	
(a) Connect the machine to the power supply	(b) Placement of foot control
(c) Adjust the presser foot	(d) Wind the bobbin

Preparation of a Single Needle Sewing Machine (SNLS)

Steps for Preparing Sewing Machine for Stitching	
(e) Select the correct needle and thread for sewing	(f) Fix the needle into needle bar
(g) Set the bobbin and bobbin case in the machine	(h) Thread the machine
(i) Adjust the thread tension	(j) Adjust the stitch length
(k) Check the stitch formation	(l) Check the reverse stitching lever

(a) Connect the machine to the power supply:

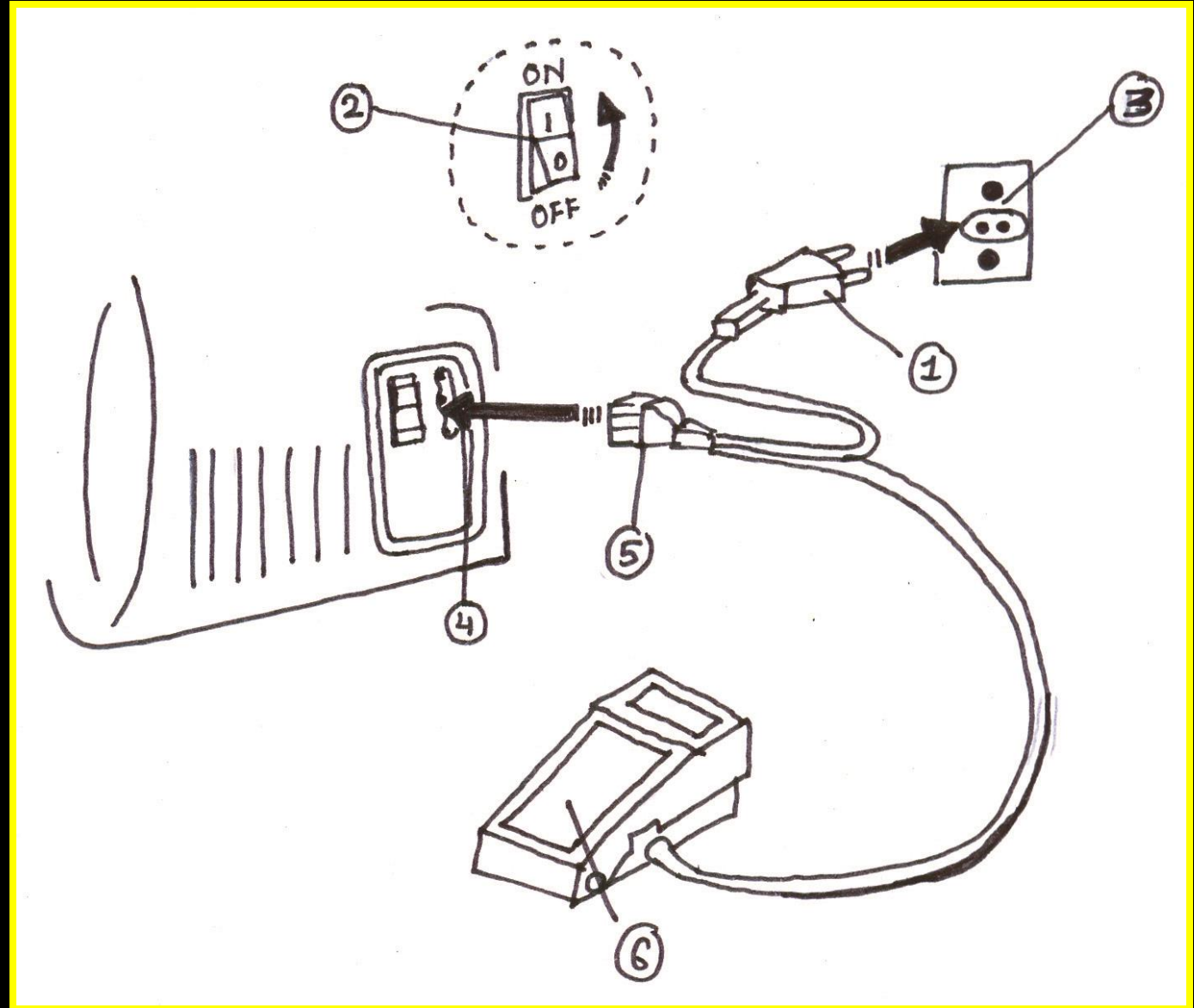
Before connecting the power cord, ensure that the voltage and the frequency shown on the sewing machine conform to the electrical power.

- (i) Connect the plug to connect the foot control;
- (ii) Now, connect the foot control to the machine socket;
- (iii) Connect the power plug to the power socket;
- (iv) Switch On the power and sewing light.

Note: This step is applicable for motorised sewing machine.

(a) Connect the machine to the power supply

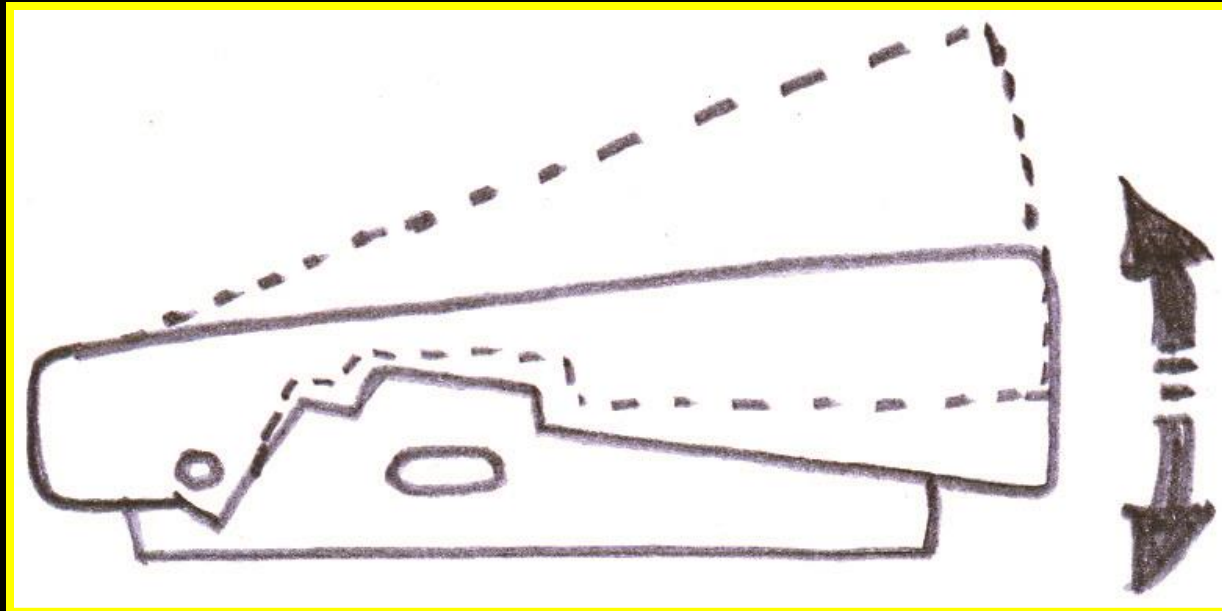
- (1) Power plug
- (2) Power switch
- (3) Power socket
- (4) Machine socket
- (5) Foot control plug
- (6) Foot control



(b) Placement of foot control:

- (i) The speed of the sewing machine can be controlled by the foot control.
- (ii) The foot control should be placed at the correct position for the operator to operate it comfortably.

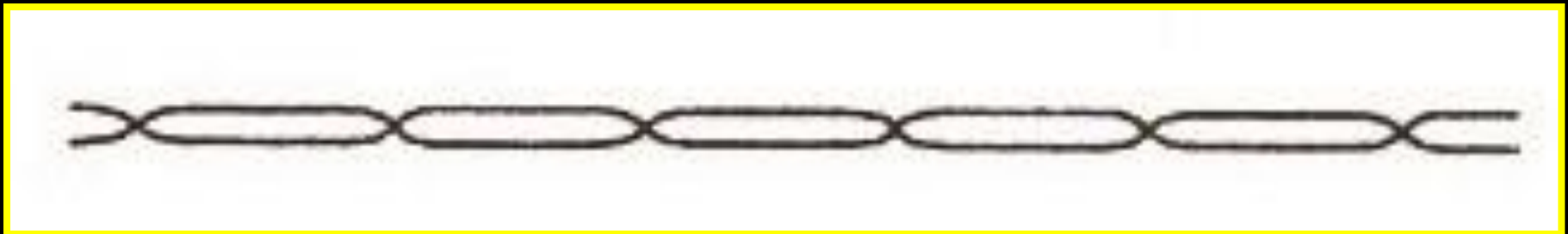
Note: This step is applicable for a motorised sewing machine.



(c) Adjust the pressure of presser foot:

The pressure of the presser foot is required to be adjusted as per the thickness or heaviness of the fabric/material to be sewn. Heavy fabrics require more pressure than the lightweight fabrics. The pressure of the presser foot can be adjusted by using the thumbscrew. To increase the pressure, turn the thumbscrew clockwise or downward. To lighten the pressure, turn the thumbscrew anticlockwise.

When the pressure is appropriately applied correct stitches will be formed.



(d) Wind the bobbin:

A sewing machine has two thread sources for stitching- a top thread and a lower thread stored on a bobbin. The following steps are to be followed to fill the bobbin.

- (i) Place the bobbin spool on the bobbin winder fitted on the top.
- (ii) Wrap the thread from the reel placed in the thread spool around the bobbin.
- (iii) Press the treadle/foot control or turn the hand wheel to start winding.
- (iv) The winding in the bobbin should be uniform.
- (v) Once the bobbin is sufficiently filled with thread, stop winding and remove and remove the bobbin.

(e) Selection of needle and thread for sewing:

For the selection of the appropriate needle and thread, kindly refer to session 3 of this Unit.

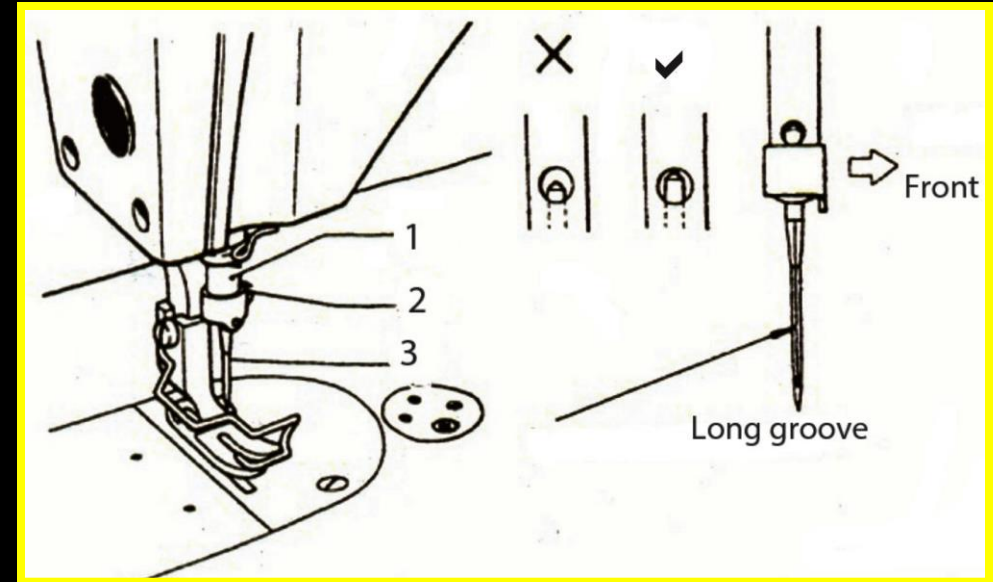
(f) Fix needle into the needle bar:

Sewing machine needles have one side flat, so they can only be placed from one side-usually the flat side towards the back. The following steps should be followed to fix the needle into the needle bar.

- (i) Pull the needle bar to the highest level to insert the needle.
- (ii) Loosen the screw or needle clamp to fix the needle.

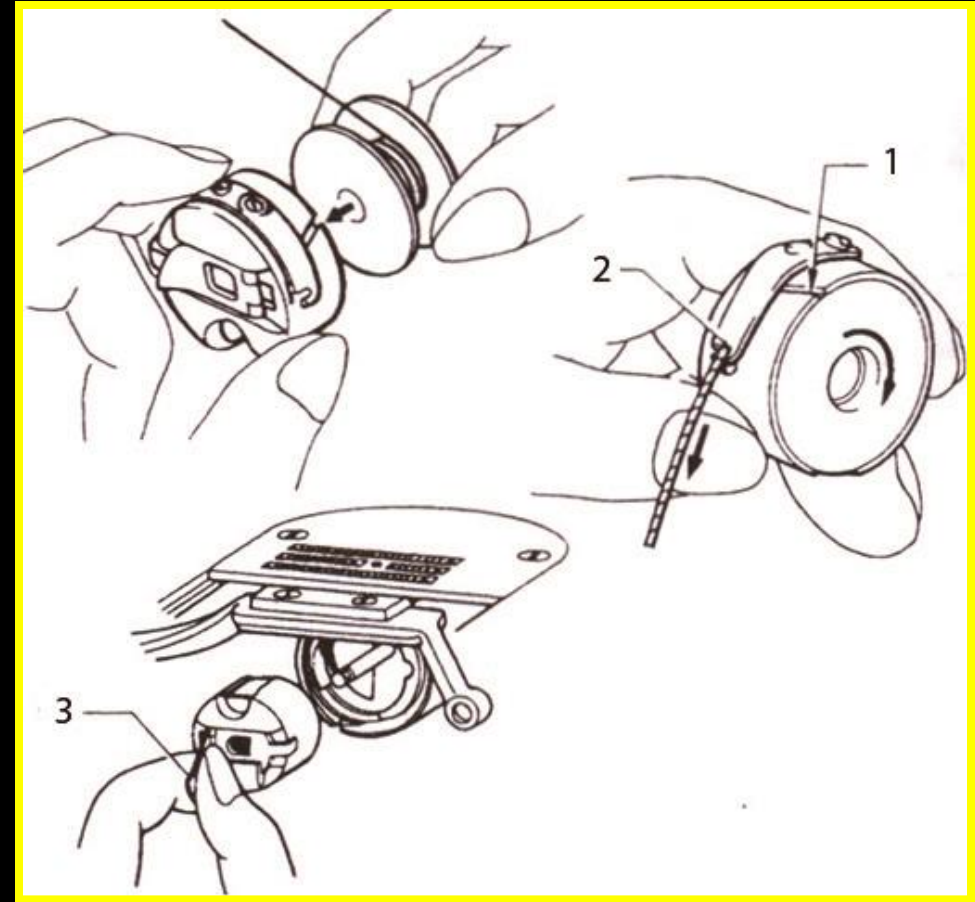
(iii) Keep in mind that there is a groove. Insert the needle in a straight line in the groove and tighten the needle clamp securely and tightly to fix the needle properly.

(iv) If you are still having trouble, refer to your machine's manual.



(g) Set the bobbin and bobbin case in the machine:

- (i) Hold the wound bobbin and bobbin case with both hands.
- (ii) Place the bobbin in the bobbin case correctly.
- (iii) Pass the thread through a small notch at the front of the bobbin case and then pull the thread out.
- (iv) It should be checked that the bobbin should move clockwise when the thread is pulled out.



(v) Leave the end of the thread outside the bobbin case. It should be brought up through the hole in the needle plate after the top thread is threaded.

(vi) Hold the latch of the bobbin case and fix it into the rotary hook.

(vii) Lock the bobbin case in the machine.

(h) Thread the machine:

- (i) Take-up lever should be raised to keep the needle at its highest point which will help in threading the upper thread.
- (ii) This will make threading easier and it will prevent the thread from coming out while sewing.
- (iii) Take the thread end with the hand and pull it through the thread guide at the top, and then down.
- (iv) Then thread it around the take-up lever.
- (v) Follow the instruction to thread as per the guidelines printed in your machine's manual.
- (vi) Usually, the thread follows this general pattern: left, down, into a hook, through the needle.

(i) Adjust thread tension:

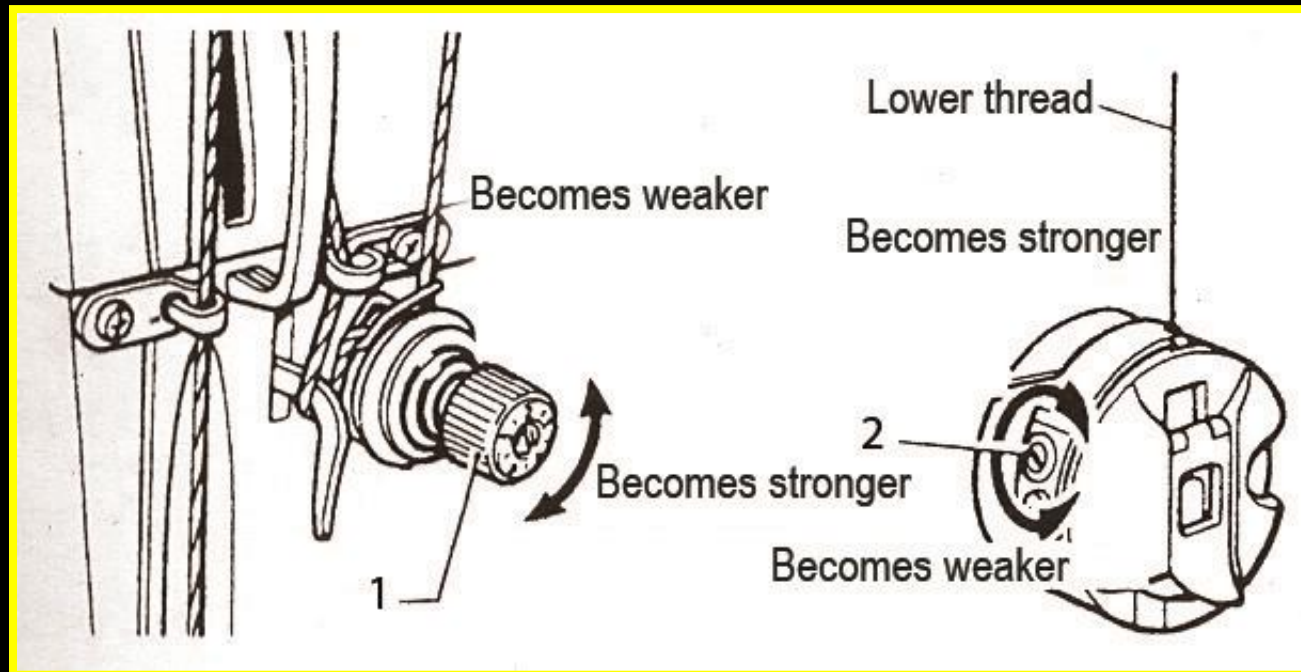
For good quality stitching, a balanced tension or balanced stitches are desirable. Appropriate thread tension is needed for perfect stitching. Adjust the tensions only as needed until the stitch is balanced. The tension of the stitch is regulated by two controls.

•Upper thread tension:

- After lowering the presser foot, turn the nut to adjust the upper thread tension.
- To do this, turn the nut to the left to loosen it and turn it to the right to tighten it.

- **Lower thread tension:**

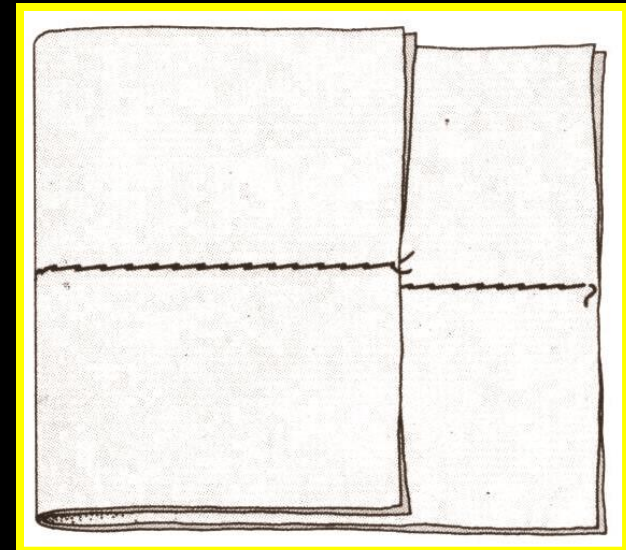
➤ The bobbin case tension screw, which is located on the bobbin case, controls the tightness of the bobbin case spring. These controls increase or decrease the amount of pressure on the threads as they feed through the machine.



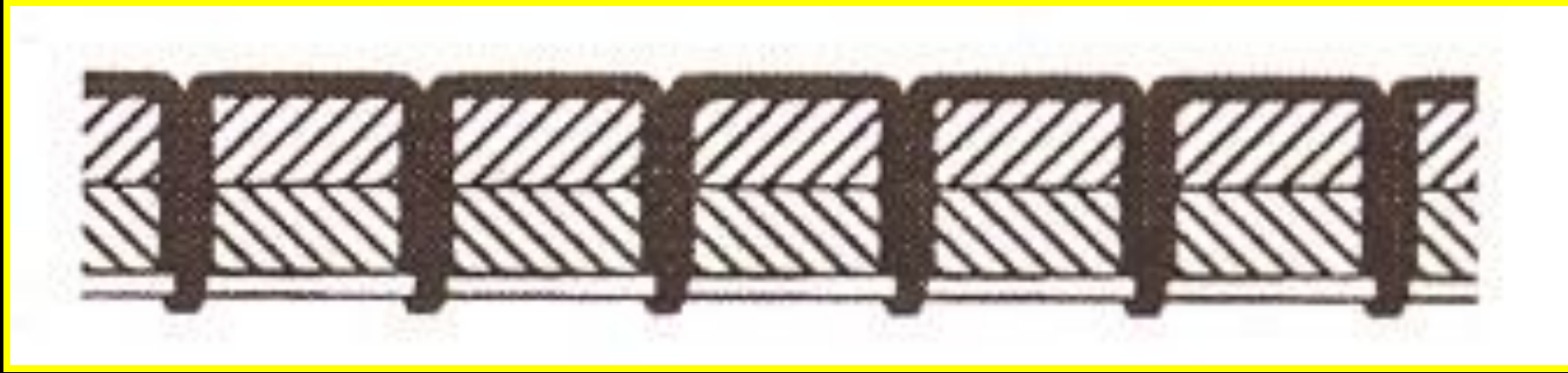
Correct seam with balanced thread tension



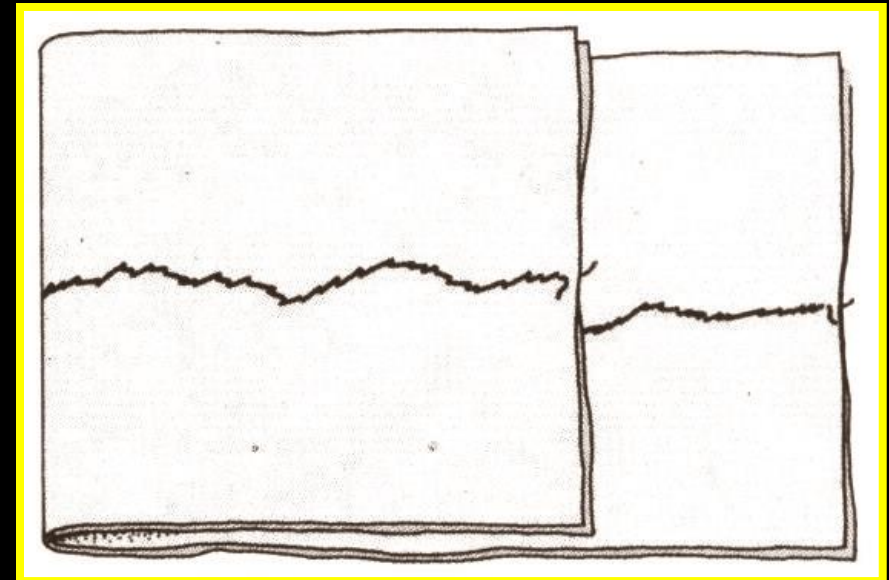
Correct stitch



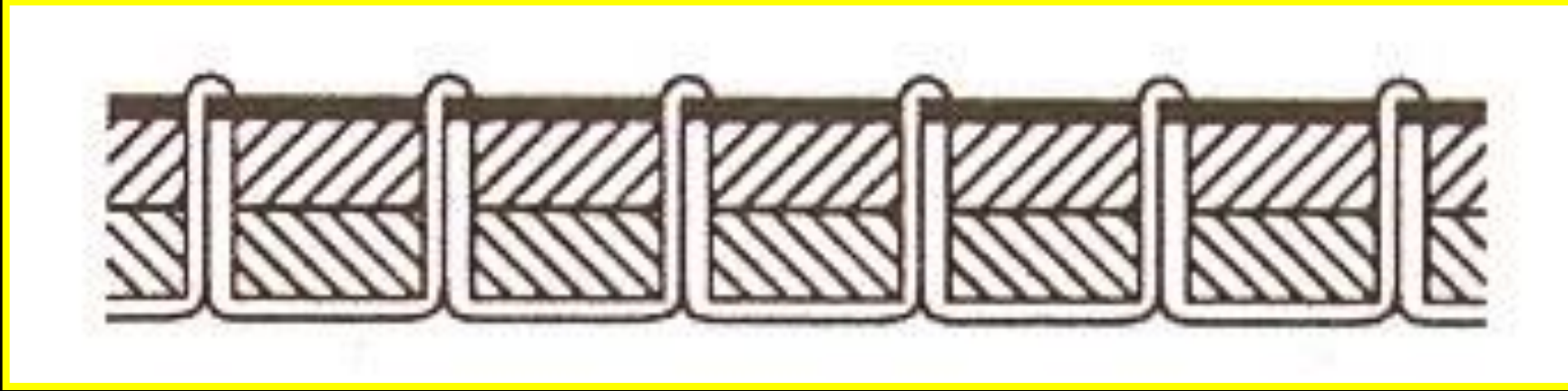
The appearance of seams when the upper tension is too loose



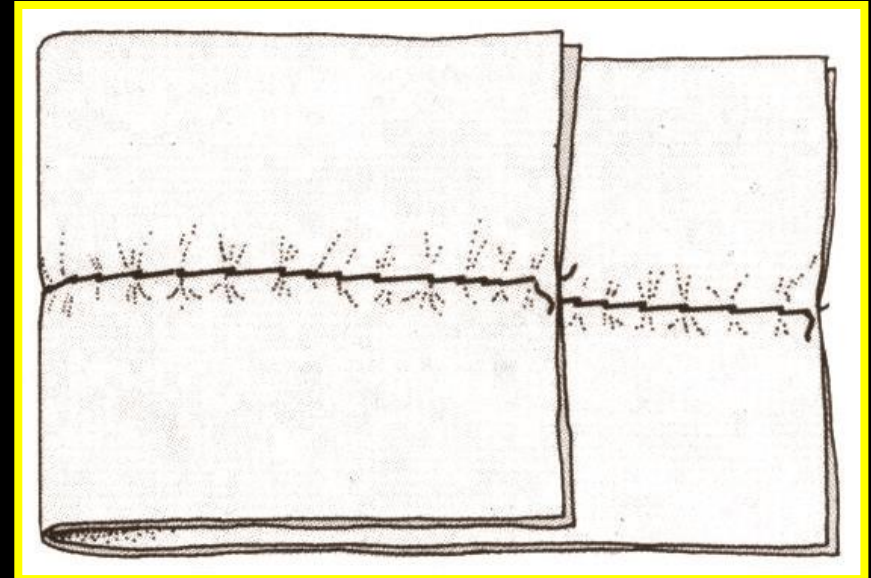
Too loose



The appearance of seams when the upper tension is too tight



Too tight



Note: The structure, texture, thickness, density, and resilience of the fabric, and the size and type of the thread, affect the tension. The tension setting will vary with the material and the thread size and type. Test the tension before you begin stitching or sewing with a different fabric, thread, or machine.

(j) Adjust the stitch length:

- A stitch length regulator/dial is used to adjust the stitch length and get the desired length.
- The bigger number on the stitch length dial produces a long stitch, and the smaller number produces a smaller stitch.

(k) Checking the stitch formation:

Before starting sewing on the final material, it is a good practice to check the formation of stitch on a rough fabric. The method of stitch formation in a sewing machine is as follows.

- (i) The needle descends (that is, the downward action of the needle) passes through the fabric.
- (ii) Then it reaches its lowest point and begins to rise slowly.
- (iii) It creates a loop.

(k) Checking the stitch formation:

(iv) The shuttle enters the slack-loop, enlarging it and taking with it the under thread, and when the needle reaches back to its highest level, a complete interlock stitch is formed.



(1) Checking of reverse stitching lever:

- (i) When the reverse stitching lever is pushed, the cloth feed direction for sewing will be reserved.
- (ii) When it is returned to its original position, the feed direction for sewing will change back to normal.

Operating the Sewing Machine

The following are the steps for operating a single needle swing machine.

(a) Sew on the fabric:

1. Raise the presser foot and then turn the flywheel so that the take-up lever is at its highest level

2. Pull the both (lower & upper) threads straight back side under the presser foot to avoid them from knotting at the beginning of the stitching line.

3. Place fabric under the presser foot, allowing the seam allowance to the right side of the needle and the rest of the fabric to the left.

4. Turn the flywheel until the needle point enters the fabric at the exact beginning point.

5. Lower the presser foot and then start the machine slowly, simultaneously guiding the fabric gently with the hand.

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6. Gradually, increase the speed of the sewing machine for stitching.
7. Take up the presser foot, then pull the material straight back with threads under the presser foot to avoid bending of the needle.
8. Cut the threads using the thread cutter or scissors.

Precautions:

1. To check stitch length and proper tension, first stitch on a scrap, that is rough cloth. Finalize it and then stitch on the final material.

Cont.....

2. Do not pull the material/fabric forward or backward, but hold the two layers slightly tight and firm at the back and front of the presser foot.

3. Keep the take-up lever at its highest point to avoid unthreading the needle when beginning to stitch again.

4. Leave about two to four inches of thread, extending from the machine to prevent unthreading.

(b) Fastening the thread ends:

It is essential to fasten the thread ends. This can be done in three ways

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(i) Reverse stitching:

Stitch till the termination point with the needle in the fabric. Now carry out reverse stitching, and then cut the threads.

(ii) Pivoting:

Stitch till the termination point with the needle in the fabric, lift the presser foot and stitch back a small distance along the seam. Cut the threads.

(iii) Tying:

When reached at end of the stitching line, pull the fabric back and cut the threads, leaving a length of about two to four inches extending from the fabric. Pick the last stitch with a pin or needle point so that both the thread ends come to the wrong side of the fabric, and then tie a double knot.

Summary

In this session, you have learnt about the preparation steps of sewing machine for stitching and operating of a single needle sewing machine.

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