



Sewing Machine Guide

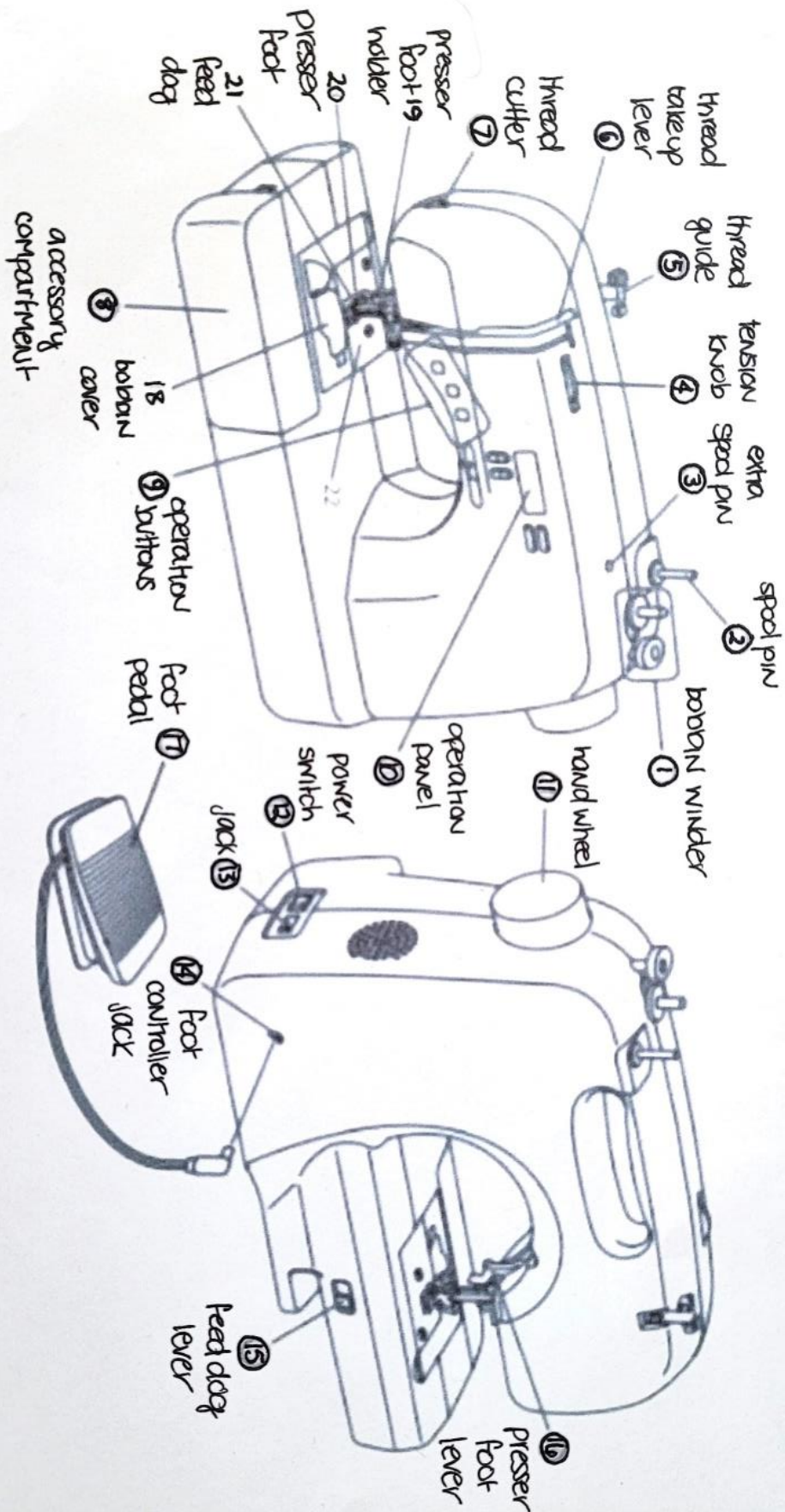
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Basic Sewing Machine Parts

Here is a list of the basic sewing machine parts that all machines have. Depending on the vintage of the machine the part may look different and be in a different location but will still have the same function. ***Review the sewing machine manual to learn the specific machine parts.***

1. Bobbin winder - wind thread onto a bobbin
2. Spool pin - holds spool of thread in place
3. Extra spool pin - for sewing with twin needle
4. Tension knob - adjusts tension
5. Thread guide - guides the thread to the thread take up lever to get needle threaded
6. Thread take up lever - follow this to thread needle
7. Thread cutter - cuts extra thread
8. Accessory compartment - keeps extras like needles and feet
9. Operation buttons - differs from machine to machine
10. Operation panel - where stitch type and length are selected. Depending on the vintage of the sewing machine there may be Stitch Length and Stitch Type knobs/selectors instead of the electronic operation panel.
11. Hand wheel - raises and lowers the needle
12. Power switch - turns the machine on
13. Jack - plug in
14. Foot controller jack - plug in foot pedal
15. Feed dog lever - raise and lower the feed dogs
16. Presser foot lever - raise and lower the presser foot
17. Foot pedal - raises and lowers the needle
18. Bobbin cover - covers the bobbin
19. Presser foot holder - holds presser foot in place (but not feet like quilting foot or walking foot)
20. Presser foot - applies consistent pressure on the fabric while sewing; different presser feet work with different stitches
21. Feed dogs - feed the fabric in the sewing direction
22. Needle plate – small, notched lines to the right of the presser foot serve as guides for seam allowances and for sewing straight lines





Threading a Sewing Machine

Most modern machines have arrows on the machine to guide how to thread from the top to the needle. Follow the arrows or read the sewing machine manual.

General Threading Steps

1. Make sure the:
 - a. Presser Foot is in the UP position.
 - b. Needle is in the UP position.
2. Place a spool of thread on the spool spin.
3. Guide the thread through the Thread Guide.
4. Then down the Tension Control.
5. And back up the Take Up Level, making sure that the thread catches hold of the lever.
6. Place the thread through the small metal holder above the Needle Clamp.
7. Thread the Needle.
 - a. The Presser Foot can be lowered, once the upper thread is threaded, to have better access to threading the needle.
 - b. To see the eye of the needle more easily, hold a white piece of paper behind the needle or use a standard needle threader.

Thread with your presser foot up!



Winding a Bobbin

The thread in the bobbin makes the bottom stitch. It is important to wind the bobbin correctly to have good bobbin tension.

How to Wind a Bobbin

1. Place a spool of thread on the spool spin.
2. Guide the thread through the Thread Guide.
3. Thread through Tension Discs - make sure the thread is tight.
 - a. Some machines require the thread to be wrapped around the Tension Discs once.
4. Thread through hole in bobbin - top hole only, thread up, leave a couple inches of thread tail.

5. Put the bobbin on the spindle and push to the right, then push the foot pedal to start winding.
6. Hold thread tail until there are several wounds of thread on bobbin, then stop winding and cut the thread tail close to the bobbin - do not pull tight and stretch the thread.
 - a. Wind at a slow/moderate speed - a fast speed stretches the thread and affects the tension.
 - b. Hold your finger in front of the tension discs - if there are problems with the thread jumping out of the tension discs.
 - c. Watch what is happening with the winding.
 - d. Sometimes thread can jump out of the bobbin and start to wind on the spindle.
 - e. Make sure the thread winds evenly from top to bottom, up and down.
 - f. The thread should be smooth and firm when the bobbin is completely wound.
7. The machine will automatically stop winding the bobbin when it is full.



Threading a Bobbin

There are two different ways to thread a bobbin in a sewing machine: front loading and top loading.

Front Loading Bobbin Threading

1. Put the needle in the UP position.
2. Open the Bobbin Cover. The accessories box may also need to be moved.
3. Take out the metal Bobbin Case.
4. Wind the Bobbin Case.
 - a. Put the bobbin in the Bobbin Case with the thread winding clockwise.
 - b. Put the thread through the 2 notches.
 - c. Hold the case by the hinged latch, with the metal piece facing up, and place the bobbin into the shuttle in the machine.

- d. Check that the bobbin case was inserted correctly by turning the hand wheel toward you. The needle should move up and down without hitting the bobbin case.
5. Pull the bobbin thread up through the metal plate. The Needle needs to be threaded and the Bobbin Case threaded.
 - a. Use the hand wheel to put the needle down and back up.
 - b. The top thread will catch a hold of the bottom bobbin thread.
 - c. Pull the thread up and lay both threads towards the back of the machine.

Top Loading Bobbin Threading

Most modern machines have arrows on the machine to guide how to thread the bobbin from the top. ***Follow the arrows or read the sewing machine manual.***

1. Put the needle in the UP position.
2. Open the bobbin cover.
3. With most top loading bobbins, drop the bobbin in the shuttle with the thread winding counterclockwise.
4. Put the thread through the 2 notches.
5. Then lay the thread toward the back of the machine or to the right of the metal plate and then toward the back of the machine.
6. Pull the bobbin thread up through the metal plate. The Needle needs to be threaded and the Bobbin Case threaded.
 - a. Use the hand wheel to put the needle down and back up.
 - b. The top thread will catch a hold of the bottom bobbin thread.
 - c. Pull the thread up and lay both threads towards the back of the machine.



Essential Sewing Accessories

These eight items are the must have essential accessories to have for any sewing project.

1. **Bobbins:** All sewing machines use bobbins for the bottom thread. There are many different sizes. Make sure the correct size is used for any specific sewing machine.
2. **Measuring tool:** tape measure and straight edge

3. Hand sewing needles

4. **Scissors:** fabric and snips. Snips or small scissors are essential to keep handy to make quick thread cuts. Fabric scissors are used to cut fabric, and only fabric. Do not use on paper or other materials.
5. **Straight pins:** Ball point pins are preferred as they are easier to handle and see with the varying colors of the ball point.
6. **Thread:** black and white are the essential colors to start with.
7. **Seam ripper:** Oops! Used to take out a seam when a mistake is made.
8. **Marking tool:** There are all kinds including disappearing markers, water soluble pencils, tailors chalk, or a regular pen works too.



Presser Feet



All Purpose or Zigzag

This foot can be used with most fabrics and stitches.



Overcast/Overlock

This foot is used to mimic a serger seam and lock the seam.



Zipper

This foot is used to insert a zipper.



Blind Hem

This foot is used to put in hems.



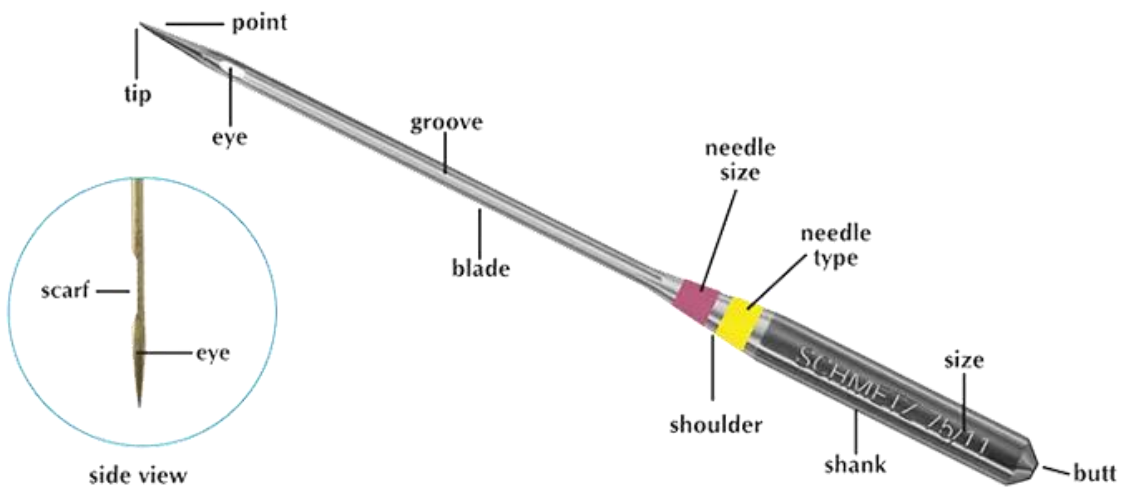
Walking Foot

This foot is used when sewing layers, such as quilting.



Needle Guide

Replacing the needle is the easiest way to improve your stitch quality.



Change Needle When:

1. Broken or shredded threads
2. Skipped or uneven stitches
3. Puckered or damaged fabrics
4. Popping sounds made by the sewing machine

Fabric and Needle Examples:

Fabric Type	Fabric Name	Needle Size
Lightweight	Gauze, chiffon, tulle, organza, silk, net, lace	65/9 – 75/11
Medium weight	Taffeta, quilting cotton, jersey, satin, rayon, linen, knit, elastic, velvet	75/11 – 90/14
Heavy weight	Upholstery, heavier denim, vinyl, corduroy, tweed, canvas, wool, leather	100/16
Very heavy weight	Extra heavy denim, leather, or upholstery	110/18

Bigger Needle Number = Bigger Needle



Stitch Length

Usually controlled by a dial on the machine, the stitch length determines how much fabric is fed under the presser foot between the punches of the needle. When the length is shortened, less fabric is fed under the foot between each needle punch, and when the stitch length is lengthened, more fabric is fed.

Fabric Type	Stitch Length
Lightweight & sheer	Shorter, 1.5-2
Medium weight	Standard, 2-2.5
Heavy weight & quilts	Longer, 3-4
Leather & Vinyl	Longer to reduce the number of needle holes
Knits & stretchy fabric	Longer

Stitch Purpose	Stitch Length
Basting	Longest length
Topstitching, quilting and decorative	Longer, 2.5-3.5
Stay stitching & paper piercing	Shorter
Gathering	Longer, 4.5-5
Curves with a smaller radius	Shorter

Thread Thickness	Stitch Length
Thicker, 30wt cotton	Longer length
Thinner, 100wt silk	Shorter length
Metallic & rayon	Longer
Invisible	Shorter

Common stitch length problem: the stitch length is uneven.

- The thickness of the fabric may change as you sew. For example, sewing over folds or making hems. The feed dogs grip thicker fabric differently than thinner fabric- so the thicker parts of the project might not advance the same distance as the thinner parts.
 - To solve this problem, slow down when approaching thicker areas and try using the wheel to advance stitches until you're back to a thinner area.
- Pulling or pushing the fabric behind the needle or forcing the fabric to go through. To solve this problem, let the feed dogs move the fabric, not you! For thicker fabrics, use a walking foot.
- Stitch length that is not correct for the fabric type- stitches bunch together, or the fabric didn't move, or the needle broke, or the fabric puckered, etc. Refer to the list of stitch length considerations, and always first test stitches on a scrap of fabric.



Stitch Width

Controlled by a dial on the machine, the stitch width is how wide each stitch can be made. The stitch width adjustment gives the machine the ability to go from a straight line to a zigzag stitch.

The stitch length works together with the stitch width and determines how open or closed the zigzag/decorative stitch will be. When using zigzag stitches, it's advisable to make it look proportional.

When increasing the width, increase the length also. Imagine an accordion when you're setting the stitch length for a zigzag--the more open the accordion, the more open the zigzag stitch, which means a larger setting number is used for the stitch length. To make a zigzag that is very close (a satin stitch), set the stitch length to 0.5 or slightly smaller. When set to 0 mm the zigzag sews in place, it doesn't move.



Tension

The tension is how fast the thread is fed through the machine- so how much thread can pass through the machines to create the stitch. The tension is what allows the upper thread and the lower thread to lock together properly to form a stitch.

- Higher tension number = tighter tension (less thread in the stitch)
- Lower tension number = loose (more thread in the stitch).

If the tension is too high, the thread is stressed to the point where it may be weaker, and the seam may not be strong enough to hold the garment together- the seam/hem may also look wavy.

If the tension is too low, you may be able to see the stitches in the seam when wearing the garment, and they may be more prone to breaking.

Testing Tension

Sew a straight line a few inches long on a scrap fabric (Tip: Try with different color top and bottom threads).

- Is the fabric wavy? If so, tension is too high.

- Can you see the loops of the bobbin thread showing through the topside of your fabric? If so, the tension is too high.
- Can you see the loops of the top thread on the underside of your fabric? Then the tension is too low.

Note: If there is a mess of thread on the top or bottom of the fabric, the machine is probably threaded incorrectly.

- A mess on the top = top thread is threaded incorrectly.
- A mess on the bottom = bottom thread is threaded incorrectly. Take a look at the bobbin.

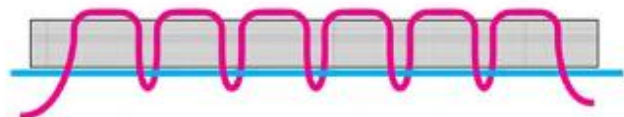
Tension Guide



upper thread and bobbin are balanced
no adjustment needed



Don't touch!



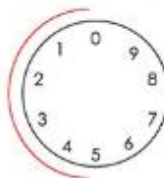
upper thread too loose or bobbin thread too tight
increase tension (higher number)



CLOCKWISE
higher number



upper thread too tight or bobbin too loose
decrease tension (lower number)



ANTI-CLOCKWISE
lower number



Sewing Machine Maintenance

Care

Store in a dry, clean environment that is not exposed to extreme highs, lows, or variables in temperature. Wipe down the machine routinely with a dry cloth to keep it free of dust and lint.

De-fluffing

The most important maintenance to do for any machine. Performance may suffer if lint and dust fill up the area. If you use your machine daily, do this once a week. If using it routinely but not daily, once every few weeks to once a month is ideal.

Steps to De-fluff a Sewing Machine

1. Make sure the machine is off and unplugged.
2. Remove foot and needle, or make sure they are up and out of the way.
3. Remove the plastic plate under the needle area.
4. Take out the bobbin.
5. Remove the metal thread plate with a screwdriver.
6. Take out the bobbin holder- some machines have clips that hold this in place, but others may just slide out (Tip: Take a picture of what this area of the machine looks like, so it is easier to put back together later).
7. Clean out all debris.
 - a. Using a small brush, get in every nook and cranny that you can access. TAKE YOUR TIME!! You can use the hand wheel to move around; this can help get into harder to reach areas.
 - b. A vacuum can be used to suck debris out.
 - c. Or canned air can be used to blow debris out, although many believe canned air is not good for the machine.
8. Pop the bobbin holder back in, then the metal plate and screw everything back in. Place the bobbin in the slot and finally, replace the plastic plate.

Oiling

This is required for older machines (older than 15 yrs. or so). Most contemporary machines are self-lubricating. If oiling is needed, it should be done once a month to once every 6 months. ***Read the sewing machine manual to see if oiling is needed.***



Tips

- **Thread with your feet up!** The common cause of stitch problems is wrong tension, but increasing or decreasing the tension with the tension knob will not solve the problem. **Threading the machine correctly is what sets the tension correctly.** When a stitch comes out wrong and/or if there is a mess of thread on the bottom stitch, rethread the sewing machine making sure to follow these tips:
 1. **Make sure the presser foot is in the UP position.**
 2. **Make sure the needle is in the UP position and the take-up lever is in the farthest UP position.**
- Always turn the **hand wheel towards you**. Turning the wheel away from you is considered turning it backwards which turns the bobbin hook backwards which can tangle up the bobbin thread.
- Read the sewing machine manual front to back. You can get them online.
- **Top loading bobbin = counterclockwise**
- **Front loading bobbin = clockwise**
- For every 8 hours of sewing machine use, de-fluff and oil.
- Sew on test fabric first to make sure the stitch is correct.