

IMPORTANT SAFETY INSTRUCTIONS

Your Elna 3000 series sewing machine is designed and constructed for HOUSEHOLD use only. Read all instructions before using this machine.

DANGER – To reduce the risk of electric shock:

1. Your sewing machine should never be left unattended when plugged in. Always unplug the machine from the electrical outlet immediately after using and before cleaning.
2. Always unplug before replacing light bulb. Replace bulb with same type rated 12V, 5W.
3. Do not place or store machine where it can fall or be pulled into a tub or sink. Do not reach for the machine if it has fallen into water. Unplug immediately.

WARNING – To reduce the risk of burns, fire, electrical shock or injury:

1. Do not allow machine to be used as a toy. Supervision is necessary when this machine is used by or near children.
2. Use this sewing machine only for its intended use as described in this manual. Only use attachments recommended by the manufacturer as described in this manual.
3. Never operate this machine if it has a damaged cord or plug, is not working properly, has been dropped or damaged or dropped into water. Return the machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. This machine is equipped with a special connection cord which, if damaged, must be replaced by an identical cord. This can be obtained from your dealer.
5. Never operate the sewing machine with any air opening blocked. Keep ventilation openings of the sewing machine and foot control free from the accumulation of lint, dust and fibers.
6. Never drop or insert any object into any opening.
7. Do not use outdoors.
8. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
9. To disconnect, turn machine off and remove plug from outlet.
10. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
11. Keep fingers away from all moving parts, especially the needle.
12. Always use the proper needle plate. The wrong plate can cause the needle to break.
13. Do not use bent needles.
14. Do not pull or push fabric while stitching. This may deflect the needle causing it to break.
15. Switch the sewing machine off when making any adjustment in the needle area, such as threading needle, changing needle, threading bobbin, changing presser foot, etc.
16. Always unplug the sewing machine from the electrical outlet when removing covers, lubricating or making any other servicing adjustments mentioned in the instruction manual.

SAVE THESE INSTRUCTIONS

USA only

Your machine comes equipped with a polarized plug (one prong wider than the other). A polarized plug reduces the risk of electrical shock. This plug is intended to fit into a polarized outlet. If the plug does not fit fully into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

Use only foot control YC-482J or TJC-150 (UL, CSA) for 3210 and foot control 21361 for 3230.

TABLE OF CONTENTS

SECTION I – Machine Parts and Functions

Part Names	3
Standard Accessories	4
Presser Foot Definitions	5
Extension Table and Free Arm	6
Foot Pressure Dial	6
Presser Foot Lever and Additional Presser Foot Clearance	7
How to Snap Presser Foot Off and On	7
How to Remove and Attach the Shank	7
Thread Tension Dial	8
Seam Allowance Lines	9
Foot Control and Sewing Speed	9
How to Drop the Feed Dog	9
Reverse Stitch Lever	9

SECTION II – Getting Ready to Sew

Connecting the Machine to Power Supply and Foot Control	10
Language Selection (Model 3230 only)	11
Up/Down Needle Key (Model 3230 only)	11
Selecting the Correct Needle and Thread	12
Changing the Needle	12
Needle Definitions	13
Winding a Bobbin	14-15
Additional Spool Pin	15
Inserting the Bobbin	16
Threading the Machine	17
Built-in Needle Threader	18
Drawing Up the Bobbin Thread	19
How to Read the Machine Set-Up Information – Example: Straight Stitch	20
LCD Screen (Model 3230 only)	20
Stitch Selection Knob	21
Stitch Width/Needle Position Dial	21
Variable Needle Position	22
Stitch Length Dial	22

SECTION III – Sewing

Straight Stitch	23
Starting to Sew	23
Changing Sewing Direction	23
Finishing Off a Seam	23
Sewing on Heavy Fabrics	24
Gathering	24
Zipper Insertion – Lapped Application	25-26
Pintucks	27
Quilt Guide	27
Rolled Hem	28
Twin Needle Hem (Optional needle)	29

Zigzag Stitch	30
Overcasting	30
Whip and Roll Hem	31
Satin Stitch Applique	31
How to Sew On a Button	32
Automatic Buttonhole	33-34
Fine Adjustment for Buttonholes	34
Corded Buttonhole	35
Manual Buttonhole	36
3-Step Zigzag	37
Mending a Tear	37
Stretch Blind Hem	38
Shell Tuck	39
Lingerie Stitch (Model 3230 only)	39
Fagoting (Bridging)	40
Patchwork	41
Box Stitch	41
Satin Stitches	42
Scallop Edges	42

Stretch Stitches

Decorative Stretch Stitches	43
Fine Tuning Stretch Stitches	43
Overlock Stitch	44
Super Stretch Stitch	44
Smocking	45
Buttonhole Applique	46
Super Overlock Stitch	47
Triple Seam	47

SECTION IV – Taking Care of Your Machine

Cleaning the Hook Area and Feed Dog	48
Replacing the Bobbin Holder and Needle Plate	49
Changing the Light Bulb	49

TROUBLESHOOTING

INDEX

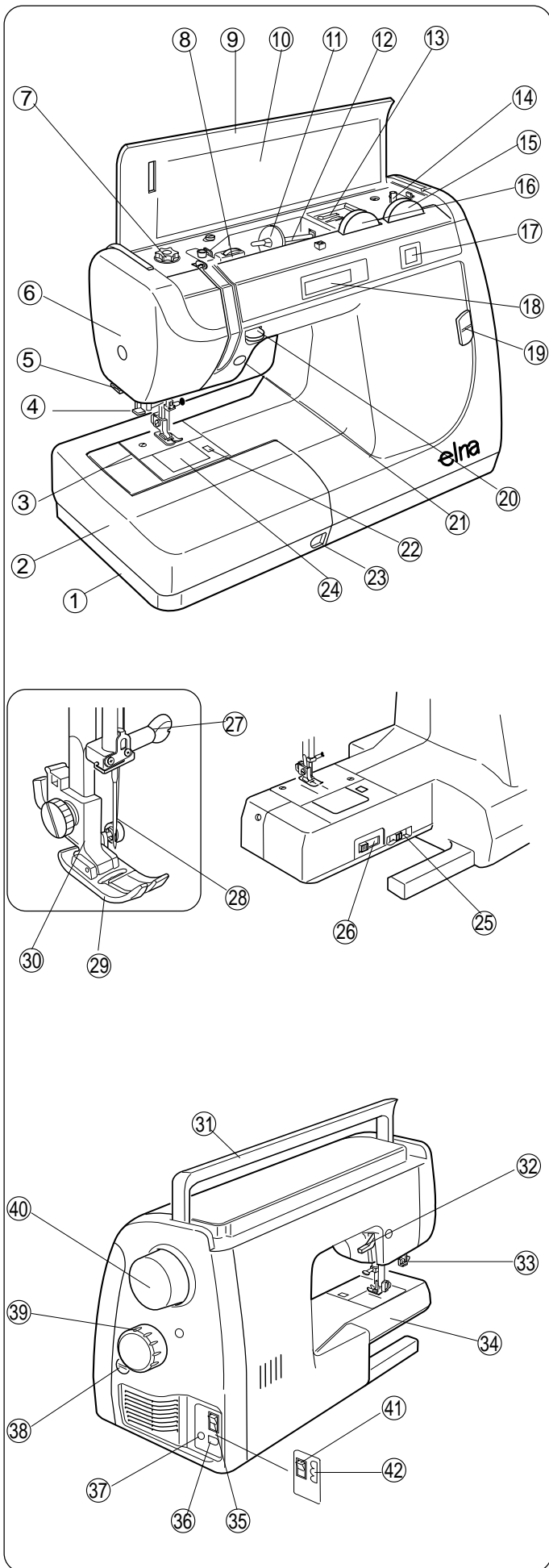
NOTE: *Information found in this instruction manual is current at the time of printing. Elna reserves the right to change and update specifications and information as needed.*

SECTION I

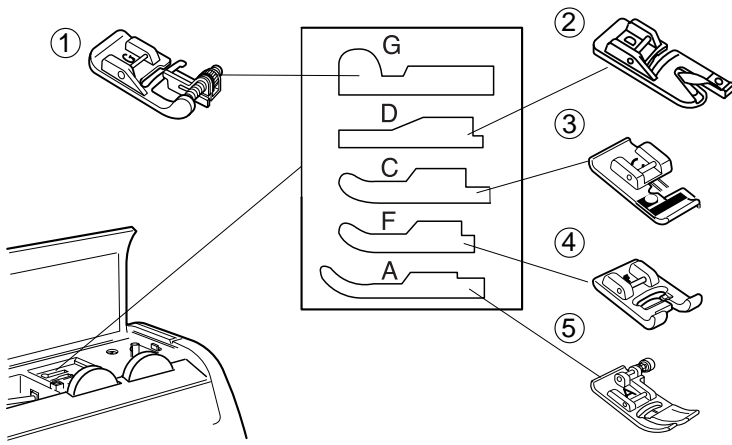
Machine Parts and Functions

Part Names

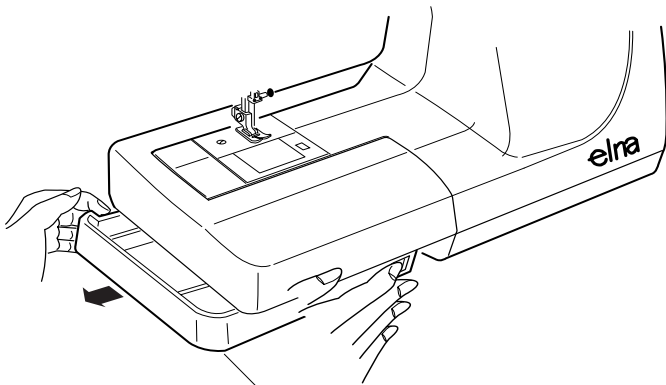
1. Accessory storage box
2. Extension table
3. Needle plate
4. Needle threader
5. Thread cutter
6. Face plate
7. Foot pressure dial
8. Thread tension dial
9. Top cover
10. Stitch chart
11. Large spool holder
12. Spool pin
13. Foot compartment
14. Bobbin winder spindle
15. Stitch length dial
16. Stitch width/needle position dial
17. Stitch selection display (Model 3210 only)
18. LCD screen (Model 3230 only)
19. Speed control lever (Model 3230 only)
20. Reverse stitch lever
21. Up/down needle key (Model 3230 only)
22. Bobbin cover plate release button
23. Notch –remove accessory storage box
24. Bobbin cover plate
25. Fine adjustment lever for buttonhole
26. Feed dog lever
27. Needle clamp screw
28. Needle
29. Presser foot
30. Shank
31. Carrying handle
32. Presser foot lever
33. Buttonhole lever
34. Free arm
35. On/off switch (Model 3230 only)
36. Machine socket for power (Model 3230 only)
37. Machine socket for foot control (Model 3230 only)
38. Fine adjustment screw for stretch stitches
39. Stitch selection knob
40. Flywheel (always turn towards you)
41. On/off switch (Model 3210 only)
42. Machine socket for power (Model 3210 only)



Standard Accessories



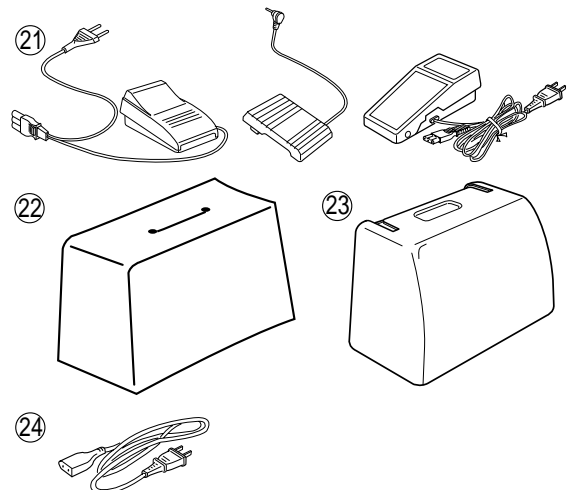
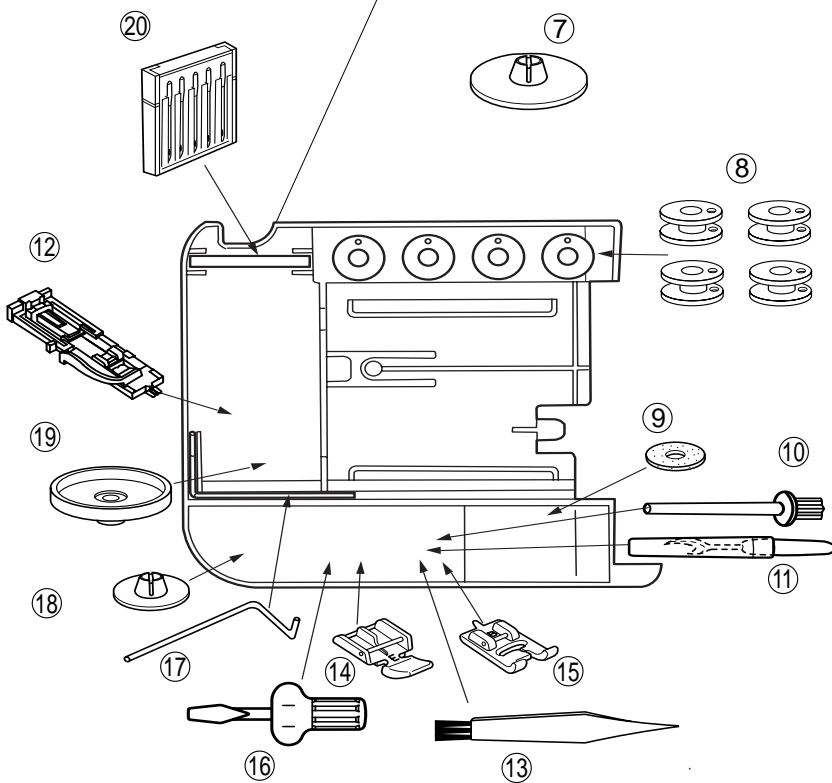
1. G: Blind hem foot
2. D: Hemmer foot
3. C: Overlock foot
4. F: Satin stitch foot
5. A: Standard metal foot



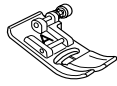
6. Accessory storage box – Accessories are stored underneath the extension table. Pull out the accessory box to the left by inserting your fingertips into front and back notches in molding.

7. Large spool holder
8. Bobbins (4 + 1 in machine = 5 total)
9. Spool pin felt
10. Additional spool pin
11. Seam ripper
12. R: Automatic buttonhole foot
13. Lint brush
14. E: Zipper foot
15. B: Buttonhole foot
16. Screwdriver
17. L: Quilt guide
18. Small spool holder
19. Spool stand
20. Needles

21. Foot control (depends on country and model)
22. Vinyl dust cover (Model 3210 only)
23. Carrying case (Model 3230 only)
24. Power supply cord (Model 3230 only)

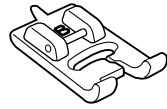


Presser Foot Definitions



A: Standard Metal Foot

This foot comes attached to your machine. It is mainly used for straight stitches and zigzag stitches longer than 1.0. The button locks the foot in a horizontal position helping to sew over multiple layered seams.



B. Buttonhole Foot

Sew oversized buttonholes for novelty buttons or a decorative accent. The two cutout grooves on the underside of the foot ensure that the buttonhole sides lie parallel to each other.



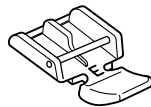
C: Overlock Foot

Prevent fabric edges from raveling by finishing the edge with a zigzag stitch. The prongs on the foot help the stitch lie flatter and reduces puckering. Use with medium weight fabrics.



D. Hemmer Foot

Insert the fabric into the spiral on this foot. The spiral rolls the fabric, creating a rolled hem. An easy, professional way to sew hems.



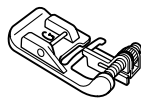
E. Zipper Foot

Use when sewing zippers into place to avoid the foot riding on top of the zipper coil. Attach either to the left or right of the needle to sew each side of the zipper.



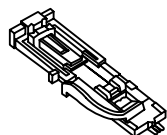
F. Satin Stitch Foot

The cutout on the underside of the foot is designed to accommodate dense stitch formation. Ideal when sewing satin and decorative stitches.



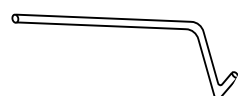
G: Blind Hem Foot, Adjustable

The adjustable guide on the foot helps ensure that the needle catches only one or two fibers of the hem, resulting in an invisible hemline. The guide can also be adjusted to create pintucks.



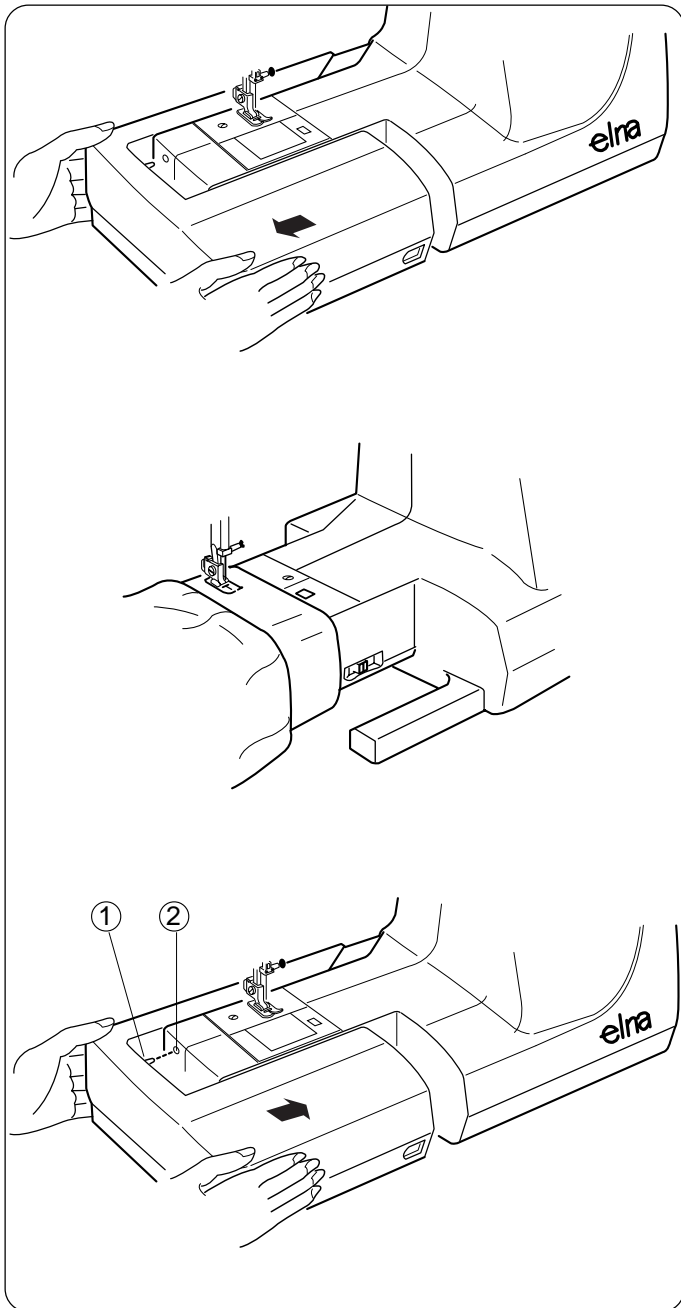
R: Automatic Buttonhole Foot

Place button in foot to determine the buttonhole size. The machine will automatically sew the corresponding buttonhole.



Quilt Guide

The quilt guide is helpful when sewing parallel, evenly spaced rows of stitching.



Extension Table and Free Arm

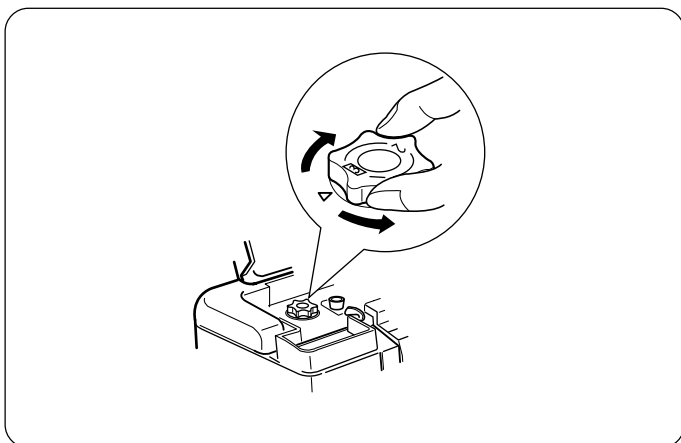
Extension Table

The extension table provides more sewing space to make sewing easier. The extension table can be easily removed for free arm sewing.

Pull the end of the extension table away from the machine, as shown.

Free arm sewing is good for circle areas like sleeves, waistbands and pant legs. If socks, knee or elbow areas need mending, the free arm will be best to use.

Push the table back into place to reattach the extension table, aligning the pin ① with the hole ②.

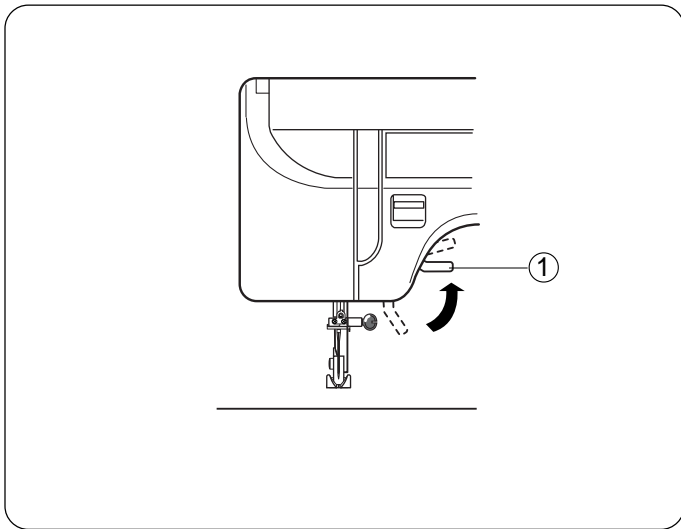


Foot Pressure Dial

Set the pressure dial at "3" for regular sewing.

Depending on the weight of your fabric and sewing technique, you may need to change the pressure of the presser foot on the fabric.

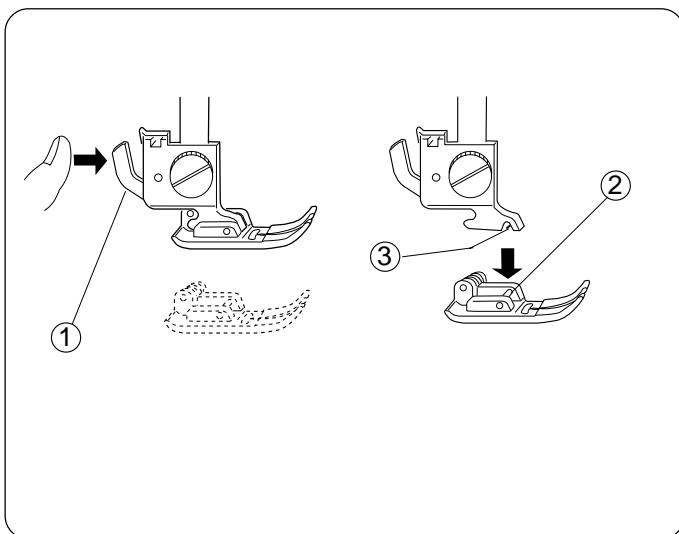
Reduce the pressure for appliqué, cut work, quilting and drawn work.



Presser Foot Lever and Additional Presser Foot Clearance

Use this lever ① to raise and lower the presser foot. When the presser foot is raised, tension discs are open. When the presser foot is lowered, tension discs are closed and sewing can begin.

You can raise the presser foot about 6mm (1/4") higher than the normal up position for easy removal of the presser foot or to place heavy fabrics under the presser foot. Pull the presser foot lever up beyond the normal up position.



How to Snap Presser Foot Off and On

To snap off:

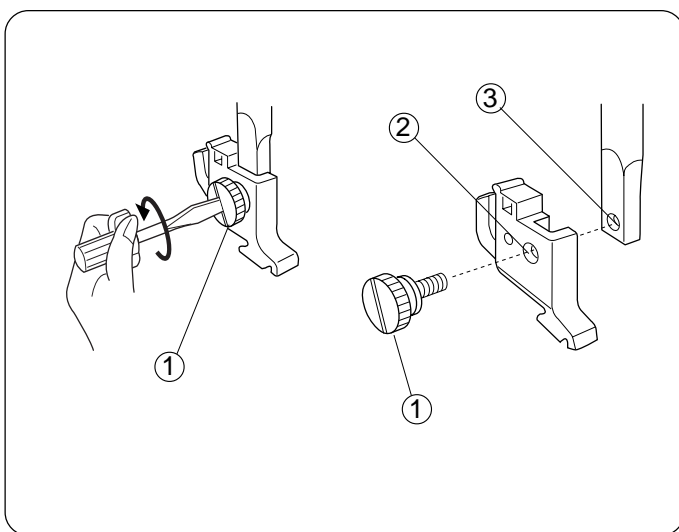
Hand turn the flywheel toward you to raise the needle. OR Press the *Up/Down Needle* key until the needle is in an up position (Model 3230 only).

Raise the presser foot.

Press the presser foot release lever ①. The presser foot will drop off.

To snap on:

Place the presser foot so that the pin ② on the foot lies just under the groove of the shank ③. Lower the shank to attach the foot.

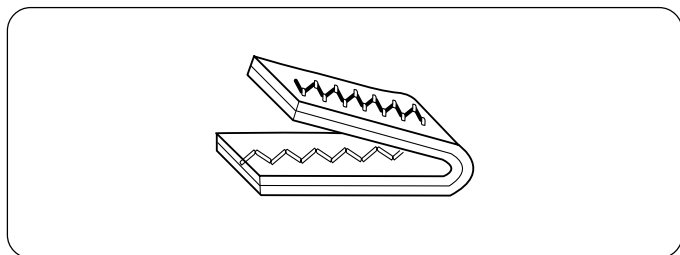
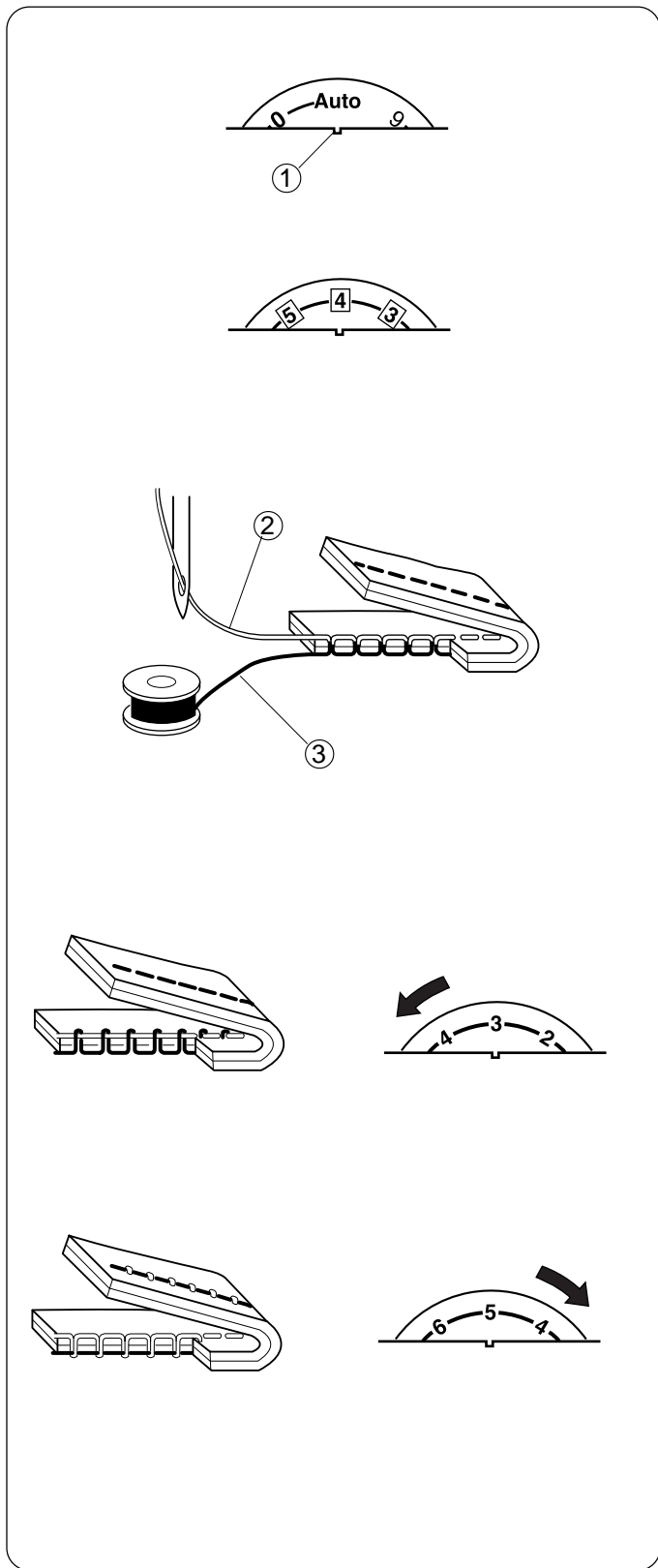


How to Remove and Attach the Shank

Raise the presser foot.

Turn the setscrew ① counterclockwise with the screwdriver to remove the shank.

When attaching, align hole in shank ② with hole in presser bar ③ and insert setscrew. Turn setscrew clockwise to tighten.



Thread Tension Dial

Auto Tension (Model 3230 only)

The “Auto” setting on the tension dial is suitable for most sewing techniques. The setting mark ① should be aligned with “Auto” unless otherwise indicated.

Tension Adjustment for Straight Stitch

In straight seams, the needle thread ② and the bobbin thread ③ should lock together in the center of the two layers of fabric. (Model 3210 only – Needle thread tension can range from 3-5 with setting mark ① usually on 4.) If you look at the top and bottom of the stitch, you will notice that there are no gaps; each stitch is smooth and even.

When adjusting needle thread tension, the higher the number, the tighter the needle thread. Here are some reasons you may need to change the thread tension dial:

1. The fabric is stiff or heavy.
2. You are sewing more than two layers of fabric.
3. The stitch you are using needs the threads to not lock together in the center of the fabric.

- **Tension is too tight**

The bobbin thread shows through on the topside of the fabric and it will feel bumpy.

Turn the dial to align the setting mark with a lower number to loosen the needle thread tension.

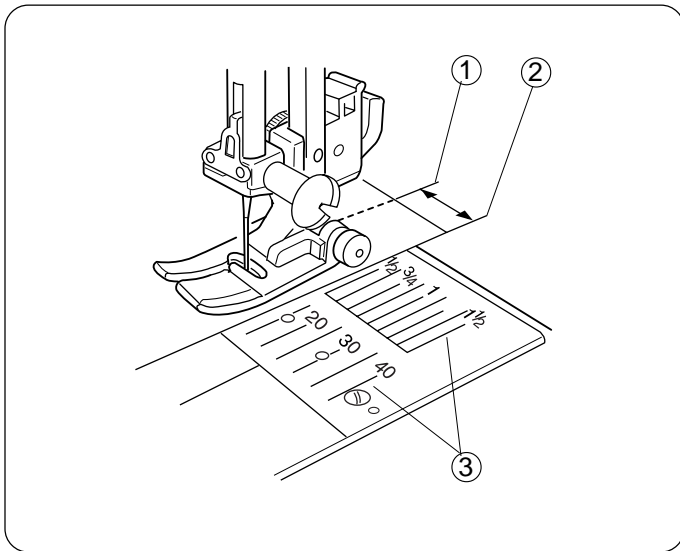
- **Tension is too loose**

The needle thread shows through on the underside of the fabric and it will feel bumpy.

Turn the dial to align the setting mark with a higher number to tighten the needle thread tension.

- **Adjusting Tension for Zigzag and Embroidery**

The upper thread tension should be slightly looser when sewing a zigzag or a satin stitch. The upper thread should appear slightly on the underside of the fabric.



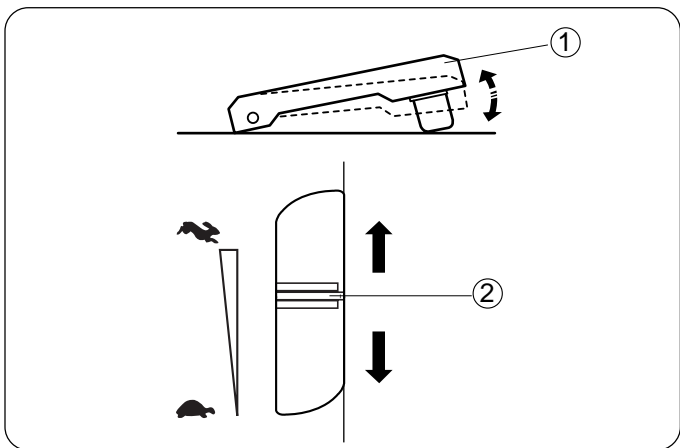
Seam Allowance Lines

The lines on the needle plate and bobbin cover plate help measure seam width.

The number shows the space between the center needle position (set stitch width/needle position dial at 0) and the line on the needle plate.

The numbers at the front are in millimeters. The numbers at the back are in inches.

- ① Center needle position
- ② Edge of fabric
- ③ Needle plate guidelines

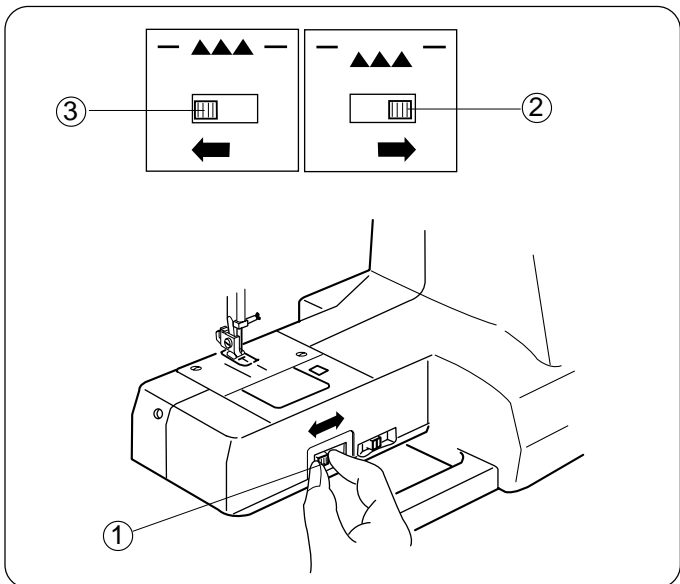


Foot Control and Sewing Speed

Sewing speed is determined by how hard you press on the foot control ①. The harder you press on the foot control, the faster the machine runs.

Model 3230 only

Slide the speed control lever ② to vary the sewing speed. For a faster speed, slide it up; for a slower speed, slide it down.

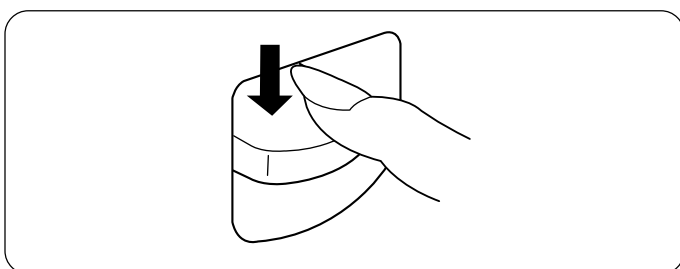


How to Drop the Feed Dog

The feed dog must always be up for regular sewing and down for special sewing, such as free motion embroidery/ quilting, button sewing, etc.

Remove extension table. Push the feed dog lever to the right to lower the feed dog.

When special sewing is complete, push the feed dog lever to the left. Hand turn the flywheel to raise the feed dog. Or, Press the *Up/Down Needle* key until feed dog is up (Model 3230 only).



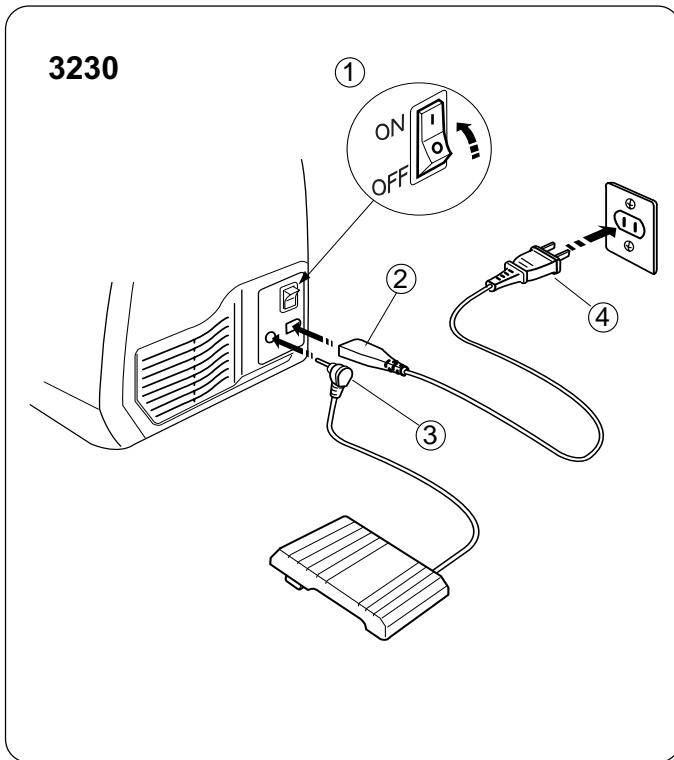
Reverse Stitch Lever

The machine will sew backwards while you press down the reverse stitch lever.

SECTION II

Getting Ready to Sew

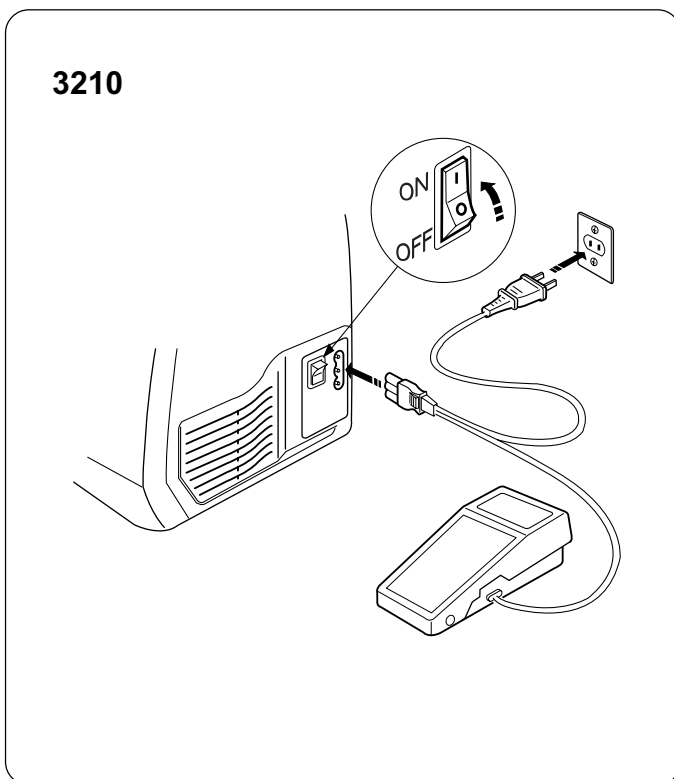
Connecting the Machine to Power Supply and Foot Control



Your machine is equipped with a detachable power cord. Before connecting the power cord, make sure the voltage and frequency shown on the machine are identical to your electrical power.

Check that the power/light switch ① is in the off position. Insert the machine plug ② and foot control plug ③ into the machine and the power supply plug ④ into the wall socket.

Your machine may come equipped with a polarized plug (one prong wider than the other). A polarized plug reduces the risk of electrical shock. This plug is intended to fit into a polarized outlet. If the plug does not fit fully into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.



Switch ON the machine.

IMPORTANT: Before using your sewing machine the first time, place waste fabric under the presser foot and run the machine without thread for a few minutes. Wipe away any excess oil.

For Your Safety

1. Always turn off the power/light switch first and then unplug from the electrical outlet. Examples:
 - when leaving the machine unattended
 - when cleaning the machine
2. Always turn off the power/light switch:
 - when attaching or removing parts such as needle, presser foot, needle plate
 - when threading needle or bobbin
3. Do not use extension cords or plug adapters.
4. Do not touch plug with wet hands.
5. Do not place anything on the foot control.
6. Do not place heavy items on cords. Do not subject cords to heat. Do not use damaged cords. Have the cord repaired immediately.
7. While the machine is in operation, always keep your eye on the sewing area and do not touch any moving parts such as the thread take-up lever, flywheel or needle.

Language Selection (Model 3230 only)

There are six languages built into the programming. Press and hold the language key ① until the desired language appears in the display.

Choose from:

English

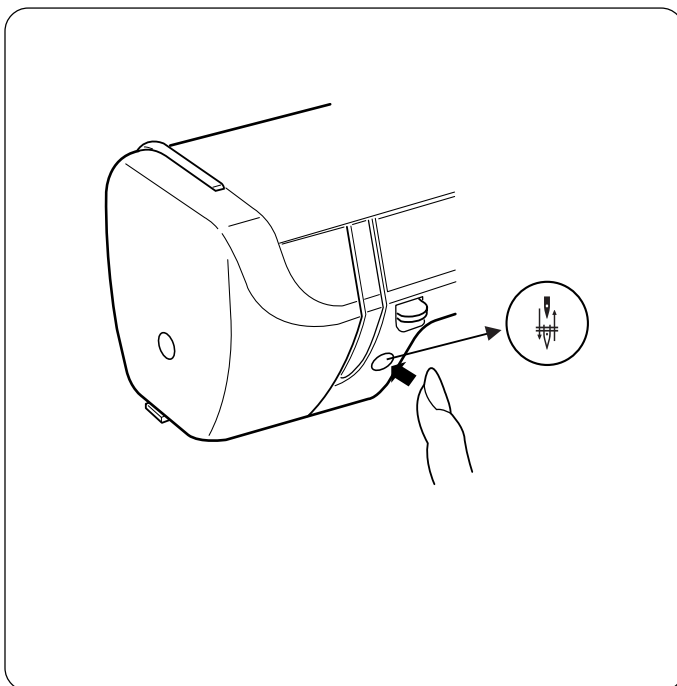
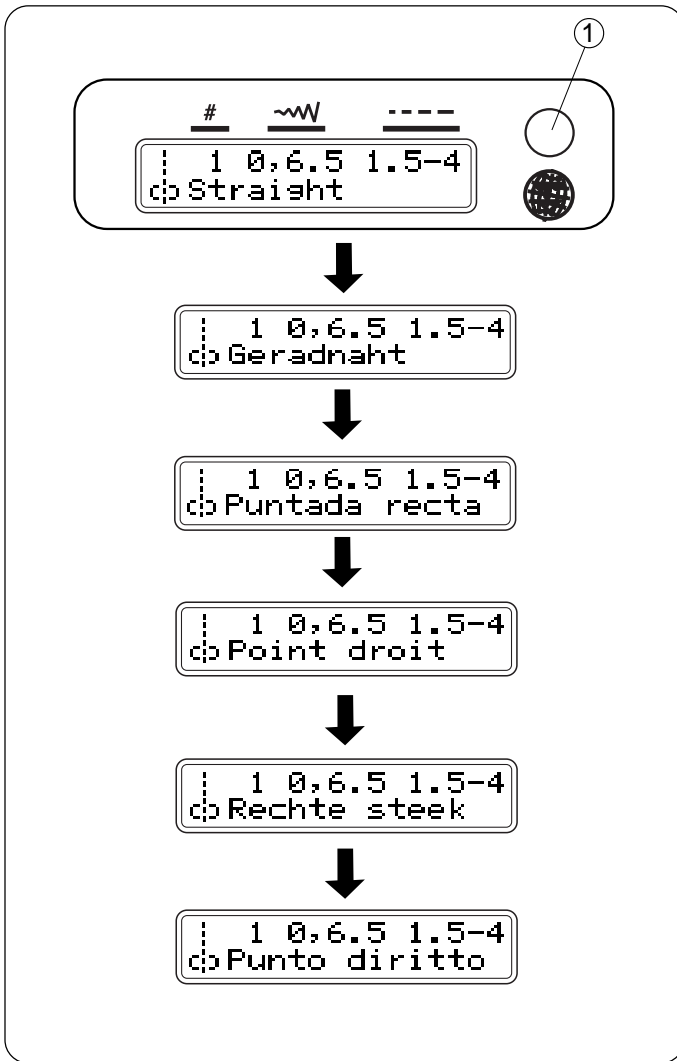
German

Spanish

French

Dutch

Italian



Up/Down Needle Key (Model 3230 only)

If the needle is up, it will go down to its lowest position when you press this key. The needle will continue to stop in the down position.

If the needle is down, it will go up to its highest position when you press this key. The needle will continue to stop in the up position.

NOTE: When machine is switched on, the machine will stop with the needle in its highest position.

Weight	Fabric	Needle Type	Needle Size
Very Light	Chiffon, Fine Lace, Organdy	Universal Ball Point	9 (65)
Light	Batiste, Lawn, Crepe de Chine, Challis	Stretch	11 (75)
	Handkerchief Linen, Crepe, Taffeta, Satin	Universal	11 (75) 12 (80)
	Single Knits, Jersey, Swimwear, Tricot	Stretch Ball Point	11 (75) 11 (75)
	Leather, Suede	Leather	11 (75)
Medium	Flannel, Velour, Velvet, Velveteen, Corduroy, Linen, Gabardine, Wool, Terry, Burlap	Universal	14 (90)
	Double Knits, Stretch Velour, Stretch Terry, Sweater Knits	Ball Point	14 (90)
	Leather, Vinyl, Suede	Leather	14 (90)
Heavy	Denim, Sailcloth, Ticking	Denim	16 (100)
	Coating, Polar Fleece, Drapery and Upholstery Fabrics	Universal	16 (100)
	Leather, Suede	Leather	16 (100)
Very Heavy	Canvas, Duck, Upholstery Fabrics	Universal	16 (100)
	Topstitching for Special Finish	Topstitching	11 (75) 14 (90)

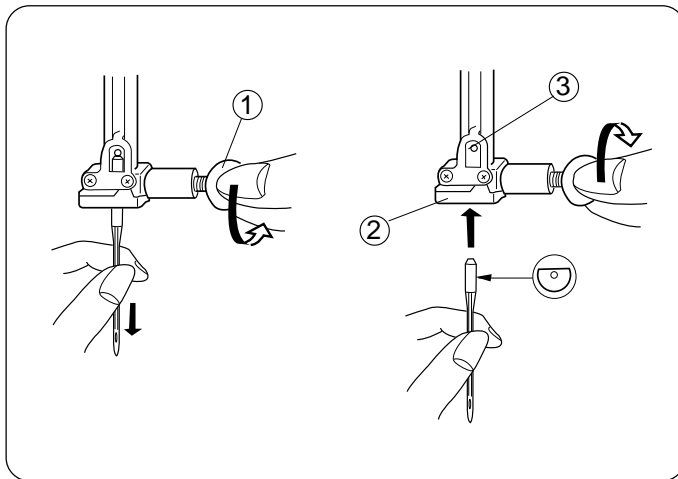
Selecting the Correct Needle and Thread

There are many kinds of fabrics, threads and needles. It is important to use the correct ones together.

Always purchase good quality thread. It should be strong, smooth and even in thickness. Use the same thread for needle and bobbin. Always test thread and needle size on a scrap piece of fabric.

In general, fine threads (the larger the number, the finer the thread) and needles (the smaller the number, the finer the needle) are used for sewing lightweight fabrics and heavier threads and larger needles are used for sewing heavyweight fabrics. There are many specialty needles available from your sewing machine dealer.

Check your needles frequently for rough or blunt tips. Snags and runs in knits, fine silks and silk-like fabrics are permanent and are often caused by damaged needles.

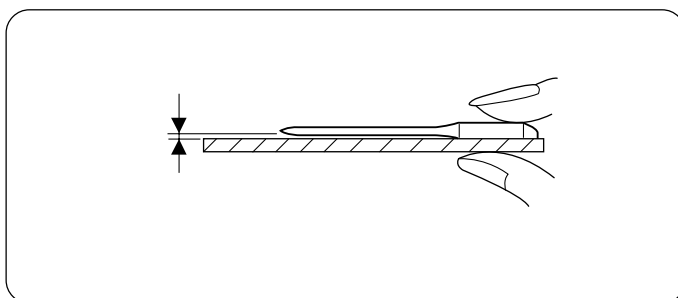


Changing the Needle

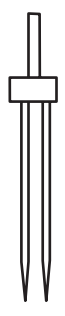
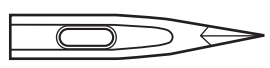
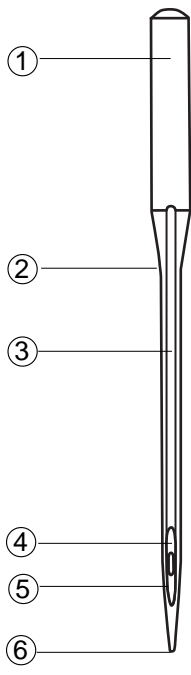
Hand turn the flywheel toward you to raise the needle. OR Press the *Up/Down Needle* key until the needle is in an up position (Model 3230 only). Lower the presser foot. **Switch OFF the machine.**

Turn the needle clamp screw ① counterclockwise to loosen. Remove the needle from the clamp.

Insert the new needle into the clamp ② with the flat side to the back, pushing it up as far as it will go against the stopper pin ③. Tighten the clamp screw firmly.



Always purchase good quality needles. Change needle often. Never use a bent or broken needle as it may cause skipped stitches or thread breakage. Defective needles can ruin the fabric. To determine if the needle is defective, place the flat side of the needle on something flat (a needle plate, piece of glass, etc.). The gap between the needle and the flat surface should be even.



Needle Definitions

The illustration identifies the main parts of a sewing machine needle.

- ① Body
- ② Shaft
- ③ Long groove (round side of needle)
- ④ Short groove (flat side of needle)
- ⑤ Eye
- ⑥ Point

Universal – an all-purpose needle that handles most woven and knit fabrics. A universal needle size 14/90 comes inserted in your machine.

Ball point – the point spreads the fibers, preventing tears and is especially suited for knit fabrics. Not recommended for embroidery.

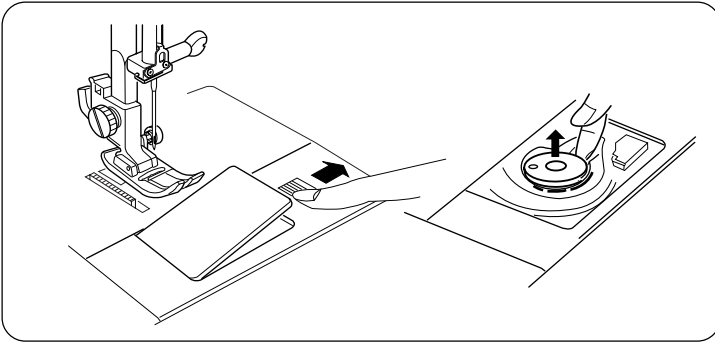
Denim – the sharp tip effectively pierces densely woven fabrics such as denim and canvas.

Stretch – specially designed to prevent skipped stitches in synthetic suedes and elasticized knits (swimwear).

Leather – the cutting point creates small holes in leather and suede.

Topstitching – the extra sharp tip penetrates layers of fabrics; extra large eye and large groove accommodate heavyweight topstitching thread.

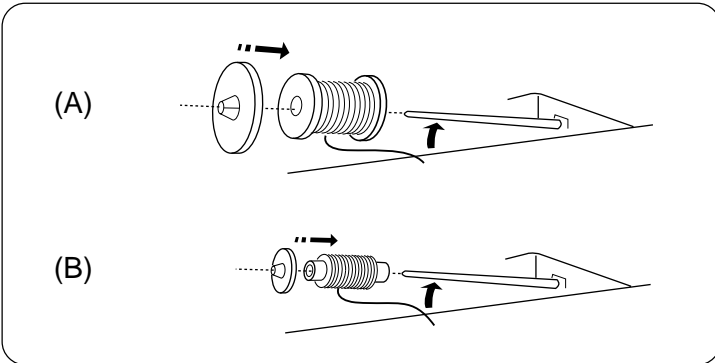
Twin/Double – two needles are joined on a crossbar and share a single shaft. Sews two parallel rows of stitching. Available in universal and ballpoint.



Winding a Bobbin

To remove bobbin, slide bobbin cover plate release button to the right and lift away the bobbin cover plate.

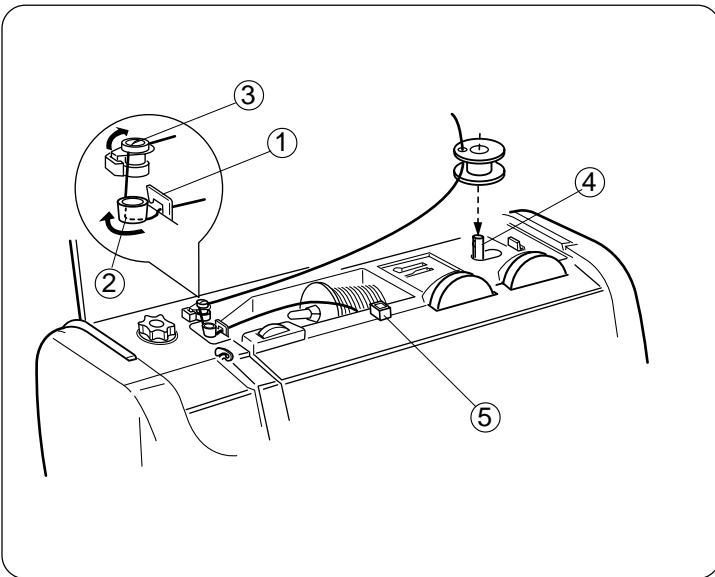
Lift out the bobbin.



1. Lift up the spool pin. Place the spool of thread on the spool pin with the thread coming off the spool as shown. Attach the spool holder and press it firmly against the spool of thread.

NOTE: Spool holder needs to be changed according to the type of thread spool.

- A. Large spool
- B. Small spool



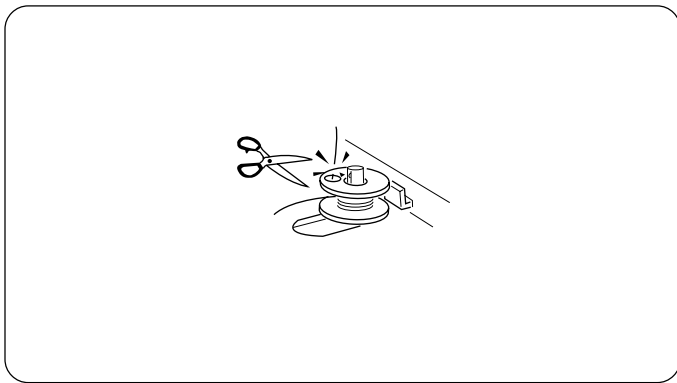
2. Pull the thread towards the thread guides, under the hook (1) and wrap it around guides (2) and (3) as shown.

3. Pass the thread through the hole in the bobbin from inside to the outside. Place the bobbin on the bobbin winder spindle (4).

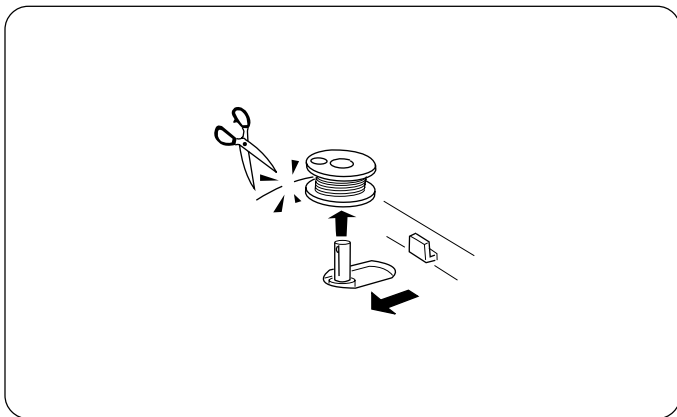
(5) Additional spool pin hole. See page 15.



4. Push bobbin winder spindle to the right. (Model 3230 only - the LCD readout will display "Bobbin winding".)

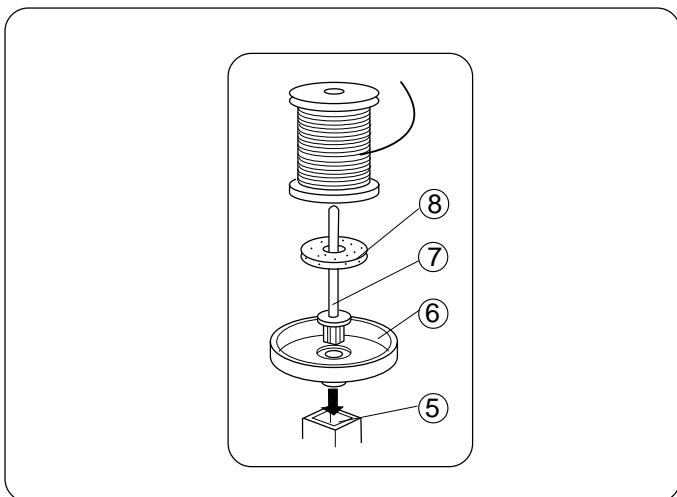


5. Holding the free end of the thread, press the foot control. Stop the machine when it has made a few turns and cut the thread tail close to the hole in the bobbin. Press the foot control again. When the bobbin is fully wound, it will stop automatically.



6. Return the bobbin winder spindle to the left and cut the thread.

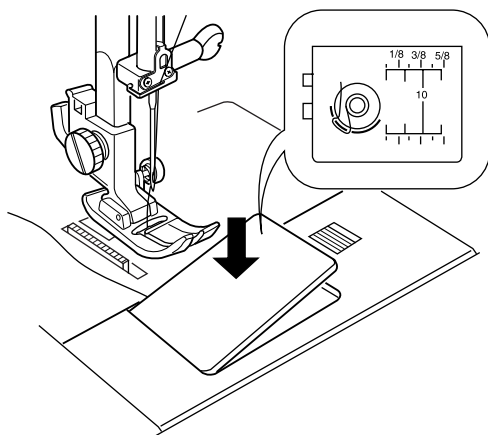
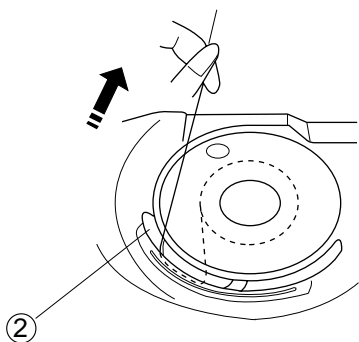
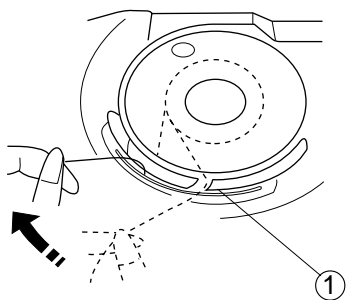
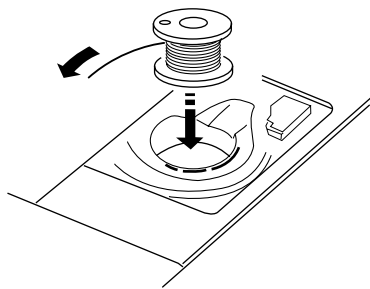
NOTE: Do not move the bobbin winder spindle when the machine is running.



Additional Spool Pin

The additional spool pin can be used to wind an extra bobbin without unthreading the machine.

PROCEDURE: Insert the spool stand (6) and the additional spool pin (7) in the hole (5) (located in front of spool pin). Place the felt (8) and spool on the pin with the thread coming off the spool as shown.



Inserting the Bobbin

Place the bobbin in the bobbin case with the thread running counterclockwise.

Guide the thread into first notch ① on the front side of the bobbin case.

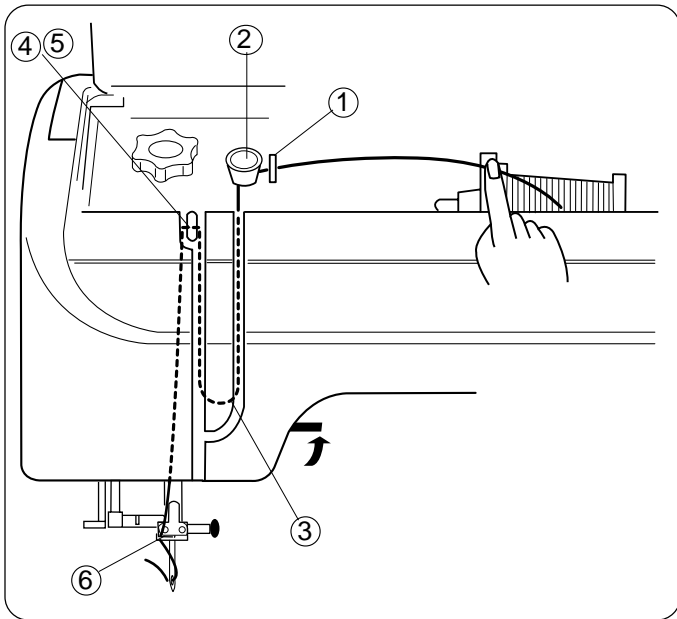
Hold the bobbin with your right hand and pull the thread to the left, through the tension spring blades.

Continue pulling the thread lightly until the thread slips into second notch ②.

Pull out about 15 cm (6") of thread.

Replace the bobbin cover plate.

Refer to the chart shown on the bobbin cover plate to check the threading.

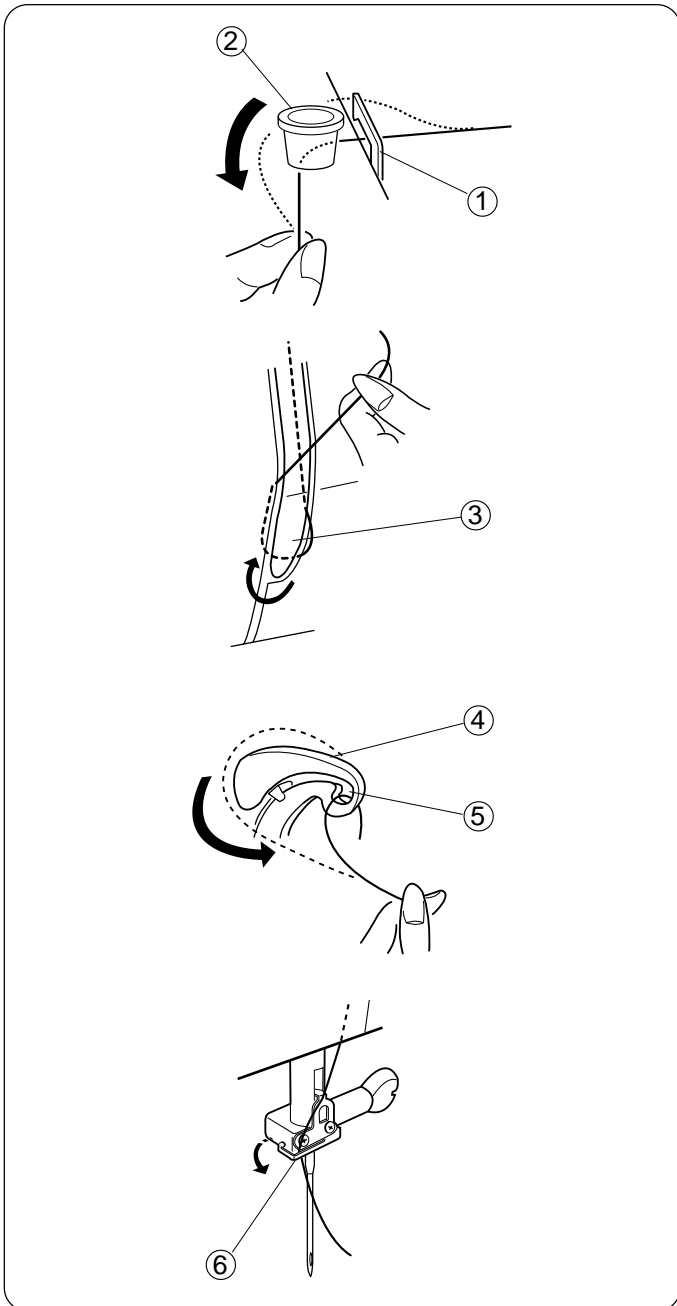


Threading the Machine

Hand turn the flywheel toward you to raise the needle.
OR Press the *Up/Down Needle* key until the needle is in an up position (Model 3230 only).

Raise the presser foot.

Switch OFF the machine.



Pull the thread under the hook (1) and around the upper thread guide (2).

Guide the thread down the right side slot into the tension area, continuing down around the check spring holder (3).

Firmly pull the thread from right to left, over the take-up lever (4) and down into the take-up lever eye (5).

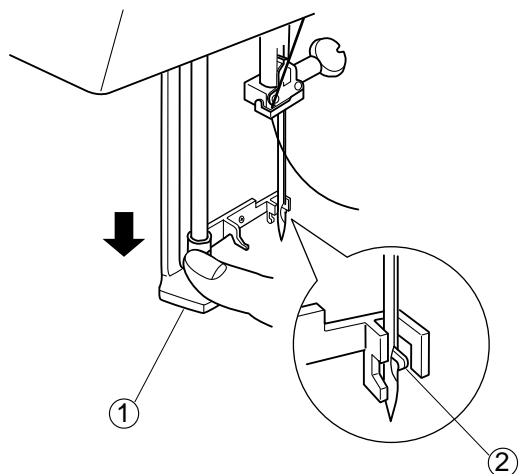
Pull thread down behind needle bar thread guide (6).

Thread the needle from front to back manually or use the built-in needle threader.

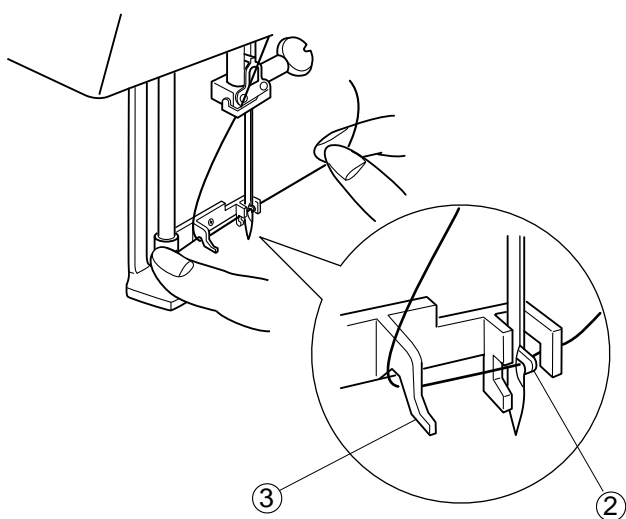
Built-in Needle Threader

Machine should remain switched OFF with needle in highest position.

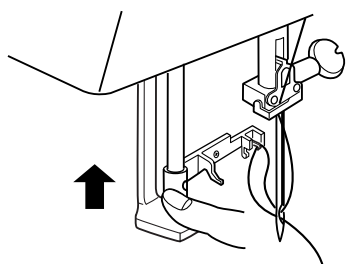
Lower the presser foot. Lower the needle threader lever ① as far as it will go. The hook ② is automatically inserted into the needle eye.



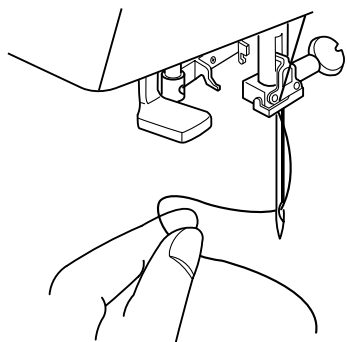
Bring the thread around threader guide ③ and under the hook ②.



Release the lever and let the needle threader return to its original position.



Pull the thread loop to the back to manually bring the thread through the needle eye.



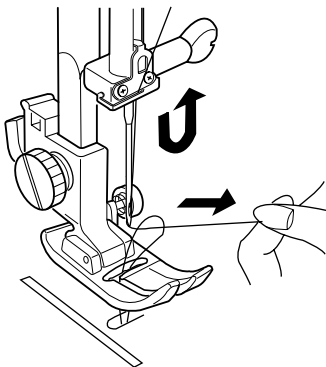
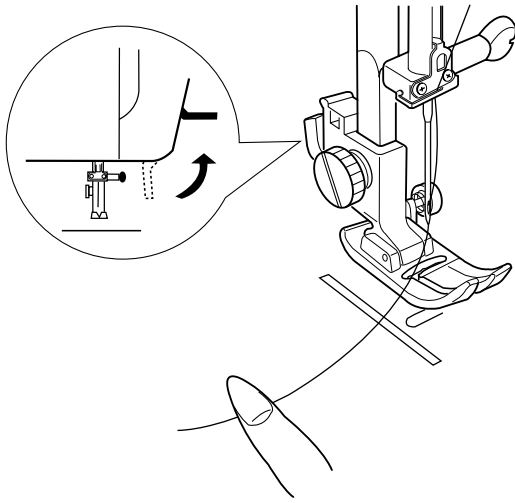
- The needle threader can be used with #11 to #16 size needles. Thread weight may vary from 30 to 100.

NOTE: Needle threader cannot be used with a twin needle.

Drawing Up the Bobbin Thread

Raise the presser foot and hold the needle thread lightly with your left hand.

Switch ON the machine.

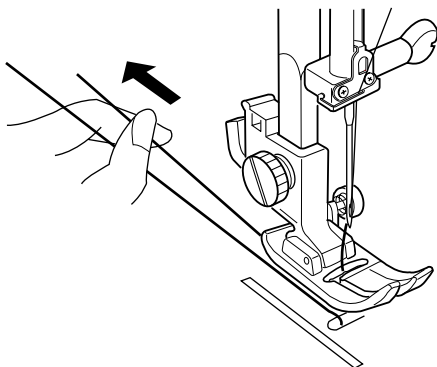


Hand turn the flywheel toward you to lower the needle and continue turning until the needle has risen (take-up lever is at its highest position).

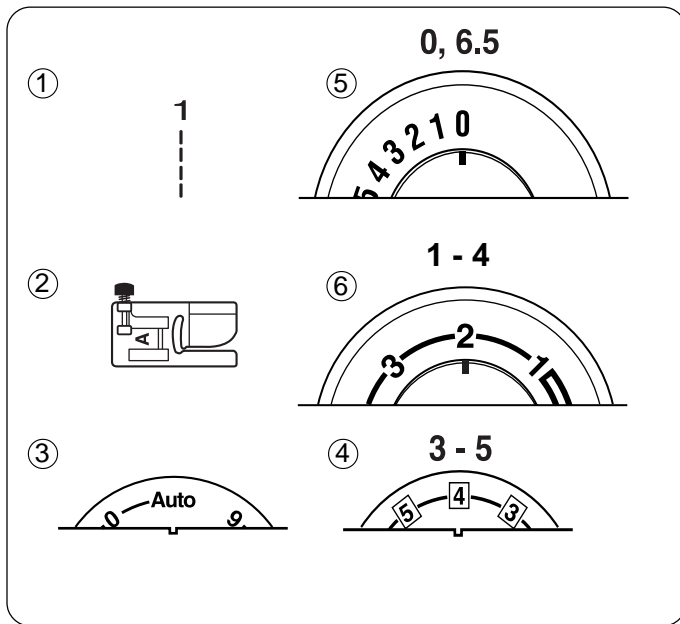
OR

Press the *Up/Down Needle* key twice to pick up the bobbin thread (Model 3230 only).

Pull up the needle thread together with a loop of bobbin thread.



Slide 10 cm (4") of both threads to the back under the presser foot.



How To Read the Machine Set-Up Information – Example: Straight Stitch

Before sewing begins, the machine must be set up for the stitch/technique. Each technique in Section III will show the setup information using illustrations.

① **Select Stitch**
Set stitch selection knob to illustrated stitch. See page 21.

② **Which Presser Foot to Use**
Use presser foot shown for the best sewing result. See page 5.

③ **Set Thread Tension Dial (Model 3230 only)**
Set thread tension to “Auto”. See page 8.

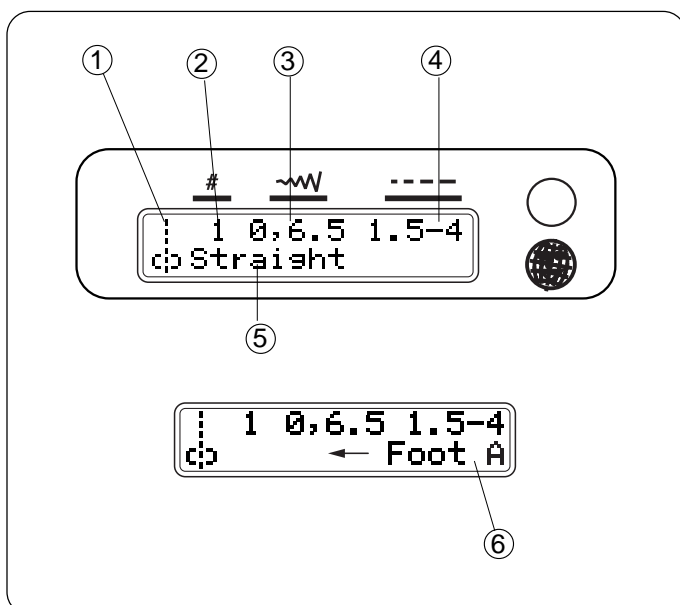
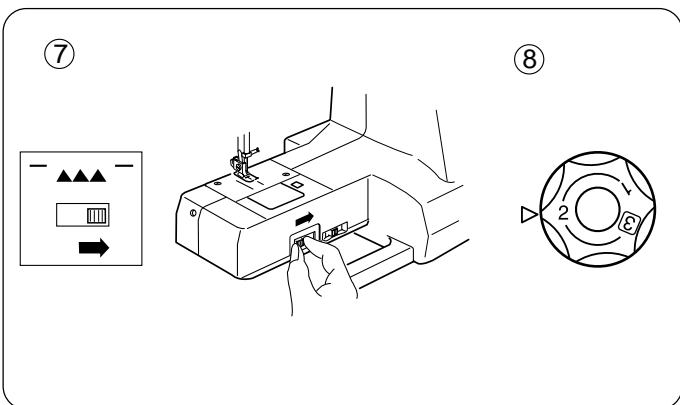
④ **Set Thread Tension Dial (Model 3210 only)**
Set thread tension to 4. The fabric, thread and number of layers of fabric might change where tension should be set. Variation range is 3 to 5. See page 8.

⑤ **Set Stitch Width/Needle Position Dial**
Set this dial to 0. Setting can be changed to 6.5 for left position. See page 21-22.

⑥ **Set Stitch Length Dial**
Set this dial to 2.5. Setting should be changed according to fabric weight. Variation range is 1 to 4. See page 22.

⑦ **Drop Feed Dog**
If a technique requires the feed dog to be lowered, this symbol will be shown. See page 9.

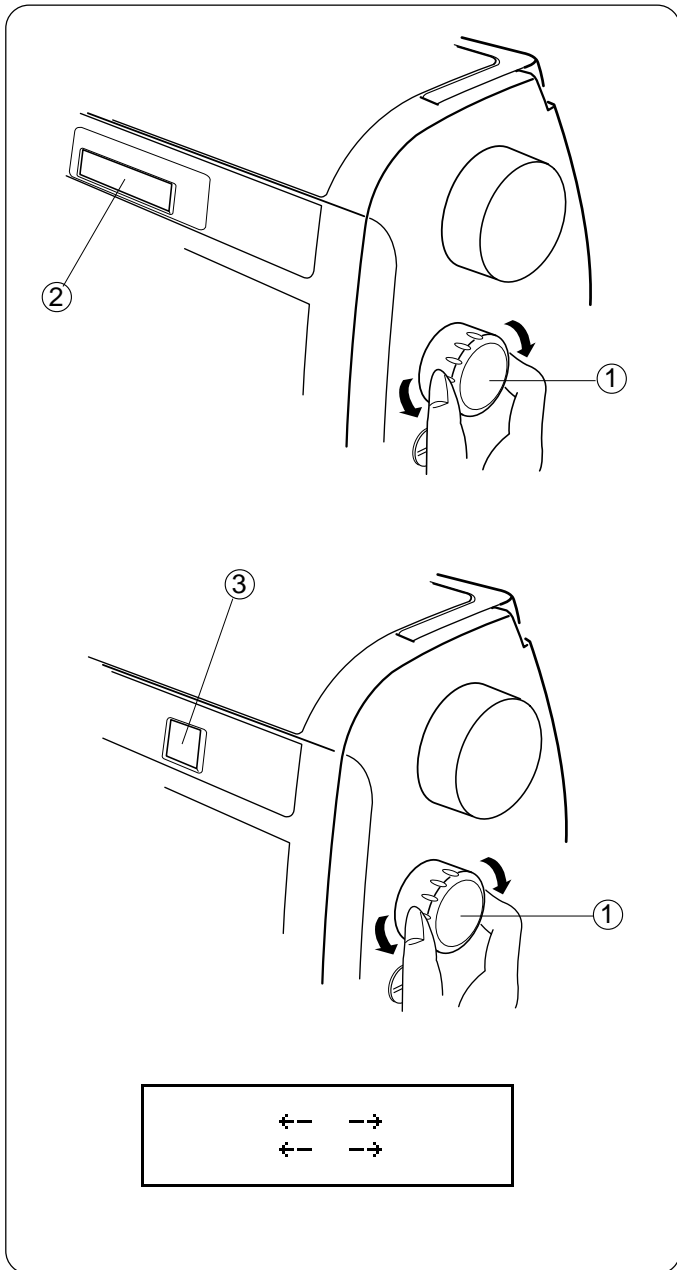
⑧ **Change Foot Pressure Dial**
If a technique requires a setting other than “3”, this symbol will be shown. See page 6.



LCD Screen (Model 3230 Only)

Standard machine settings for stitches are displayed on the LCD screen. Turn the stitch selection knob and for a few seconds the stitch name will scroll to the left to display the recommended foot.

- ① Stitch Illustration
- ② Stitch number
- ③ Stitch width/needle position – 0 or 6.5
- ④ Stitch length – 1.5 to 4
- ⑤ Stitch name
- ⑥ Presser foot



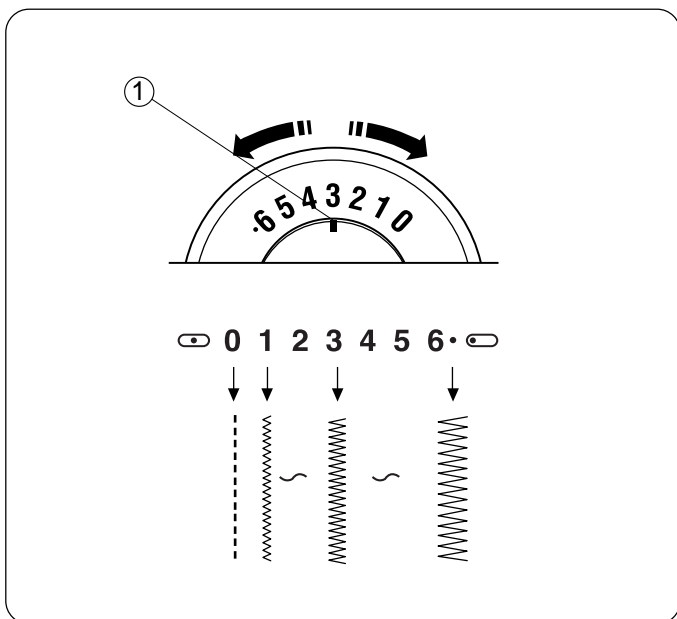
Stitch Selection Knob

The needle must be at a high position before selecting a stitch. Hand turn the flywheel toward you to raise the needle. OR Press the *Up/Down Needle* key until the needle is in an up position (Model 3230 only).

Turn the stitch selection knob (1) until the desired stitch is shown in LCD Screen (2) (Model 3230 only) or Stitch Selection Display (3) (Model 3210 only).

Model 3230 Only

If the LCD Screen only shows arrows and no stitch information, the stitch selection knob is not positioned correctly. Move the stitch selection knob until a stitch is displayed.

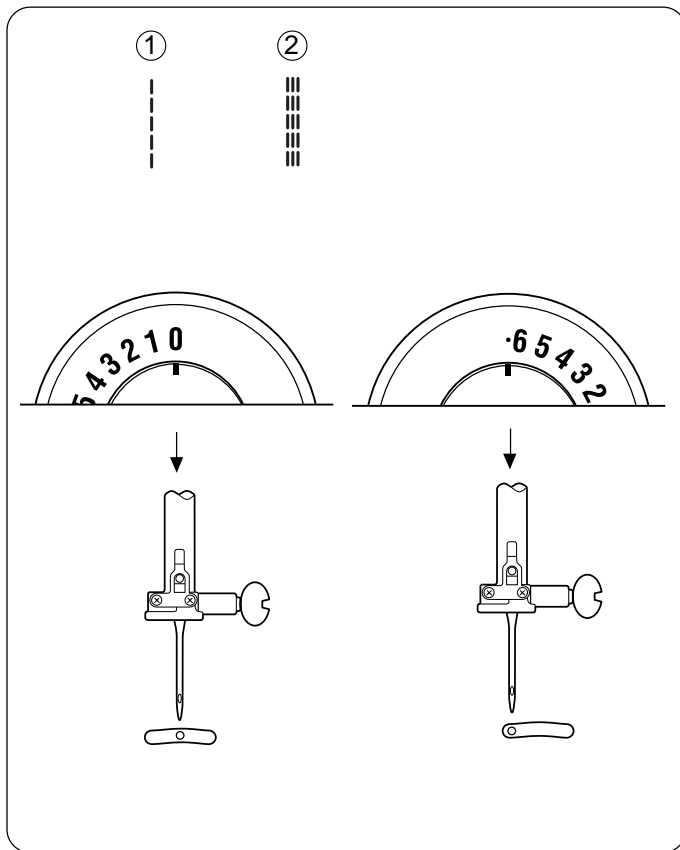


Stitch Width/Needle Position Dial

The needle must be at a high position before changing stitch width or needle position. Hand turn the flywheel toward you to raise the needle. OR Press the *Up/Down Needle* key until the needle is in an up position (Model 3230 only).

Turn the stitch width/needle position dial to align the desired stitch width with the setting mark (1). The lower the number, the narrower the stitch. The higher the number, the wider the stitch. The widest width this machine can sew is 6.5 mm.

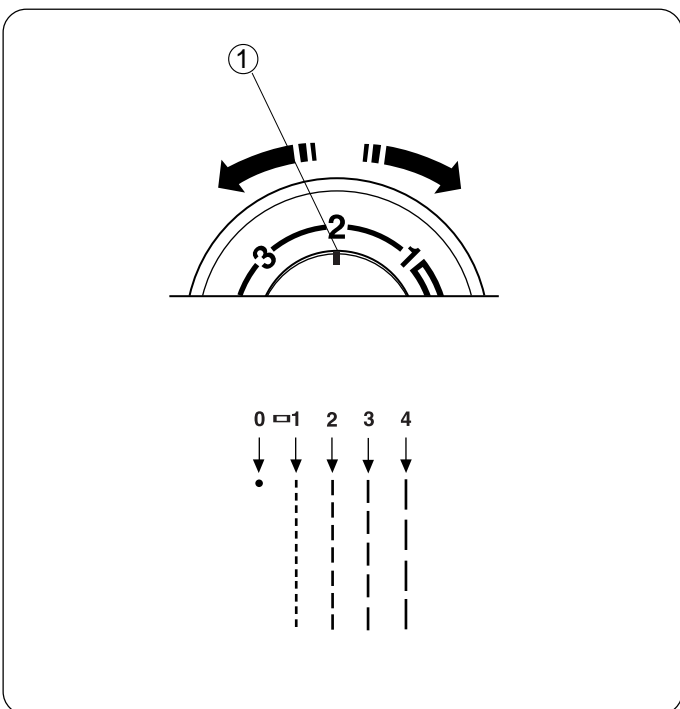
NOTE: If the setting is "0" the machine will sew a straight stitch (or triple seam) in center needle position.



Variable Needle Position

Straight Stitch and Triple Seam can sew from different needle positions:

- center needle position – set dial at 0.
- left needle position(s) – set dial between 0 and 6.5, with 6.5 being the farthest left.

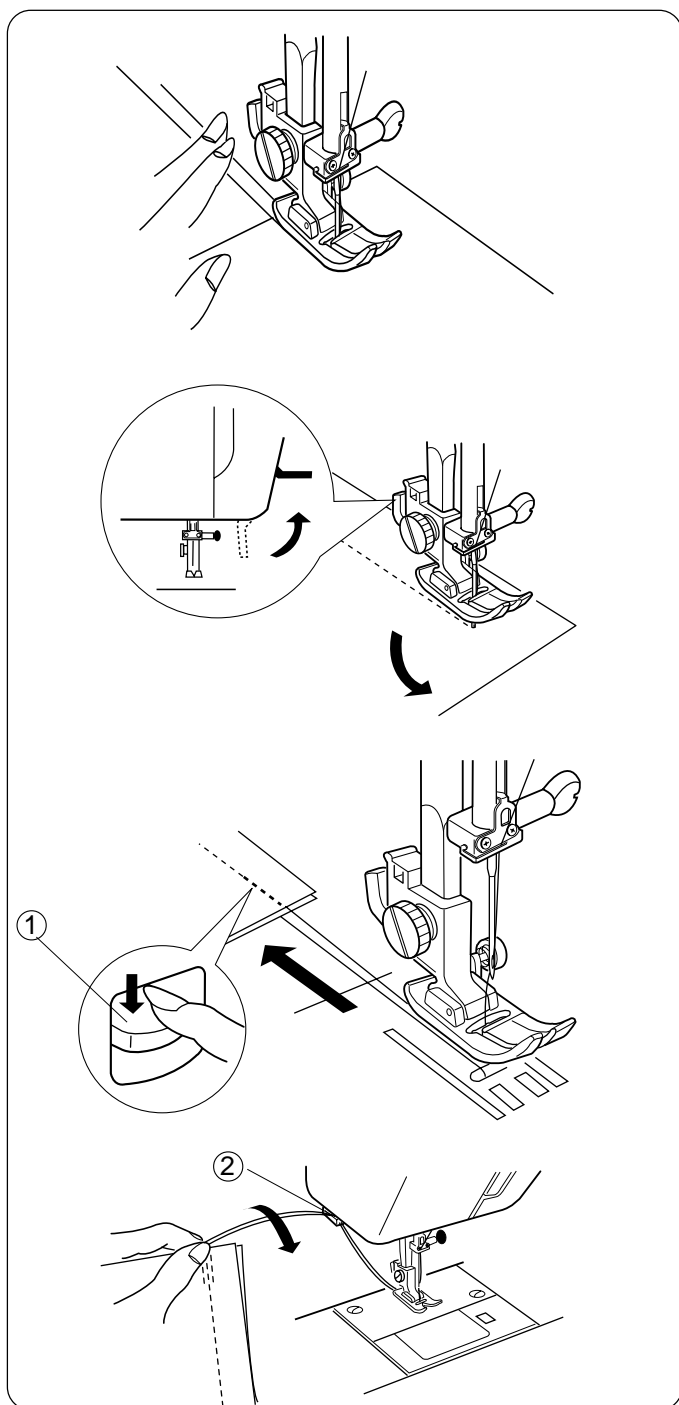
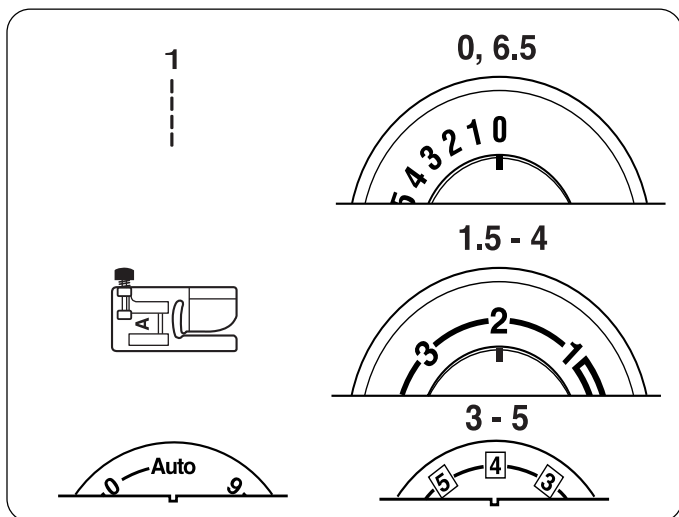


Stitch Length Dial

The needle must be at a high position before changing stitch length. Hand turn the flywheel toward you to raise the needle. **OR** Press the *Up/Down Needle* key until the needle is in an up position (Model 3230 only).

Turn the stitch length dial to align the desired stitch length with the setting mark ①. The lower the number, the shorter the stitch length. The higher the number, the longer the stitch length.

The buttonhole illustration indicates where to align the setting mark when sewing buttonholes. Stitch density for buttonholes should be adjusted to the fabric weight. See page 33.



SECTION III

Sewing

Straight Stitch

The straight stitch is used to sew a seam in woven fabrics and may also be used for gathering, basting, sewing in a zipper, pintucks, rolled hems and twin needle hems.

NOTE: Fine fabrics should have a stitch length between 1.5 and 2.5, medium fabrics between 2.0 and 3.0 and heavier fabrics between 3.0 and 4.0.

Starting To Sew

Raise the presser foot and position the fabric next to a seam allowance line on the needle plate. Lower the needle to the point where sewing is to begin.

Pull the threads under the foot towards the back and lower the presser foot. Press the foot control. Gently guide the fabric along the seam allowance line letting the fabric feed naturally.

NOTE: To fasten the threads at the beginning of a seam, press and hold the reverse stitch lever ① to form a few reverse stitches.

Changing Sewing Direction

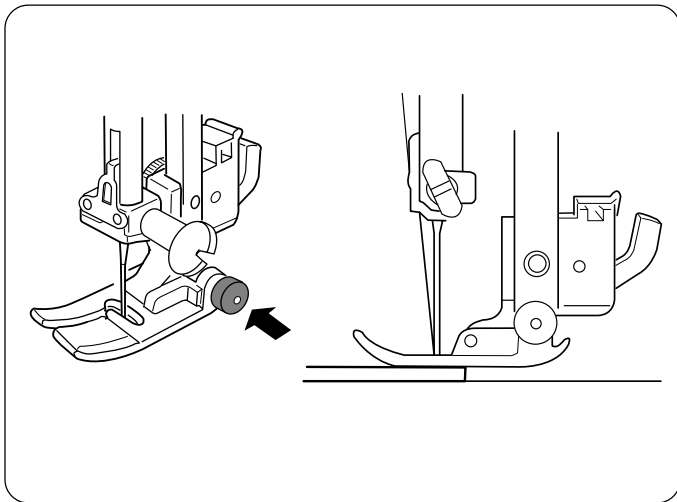
Stop sewing when you reach the point where you want to turn the fabric. Using the flywheel or *Up/Down Needle* key (Model 3230 only), bring the needle down into the fabric.

Raise the presser foot. Pivot the fabric around the needle to change the sewing direction. Lower the presser foot and continue sewing.

Finishing Off a Seam

To fasten the threads at the end of a seam, press and hold the reverse stitch lever ① while sewing.

Using the flywheel or *Up/Down Needle* key (Model 3230 only), bring the needle to highest position. Raise the presser foot. Remove the fabric; pull the threads up and into thread cutter ② to cut them the proper length to start the next seam.

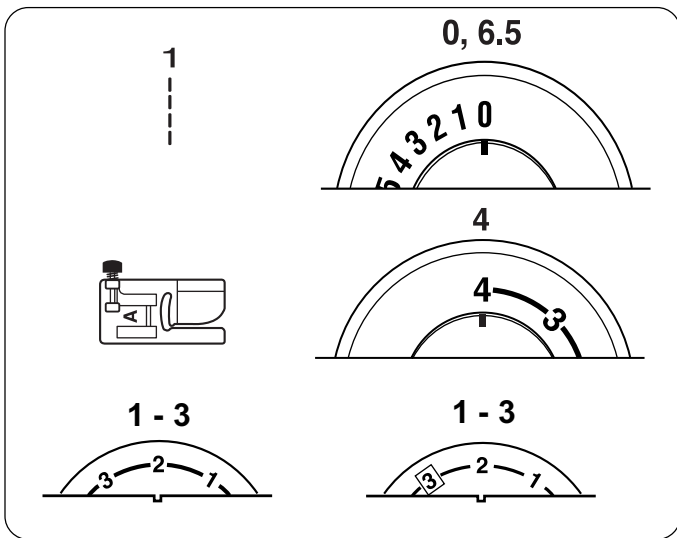


Sewing on Heavy Fabrics

The black button on presser foot A locks the foot in a horizontal position when pushed in before lowering the presser foot. This ensures even feeding at the beginning of seams and helps when sewing many layers of fabric such as welt seams used to hem jeans.

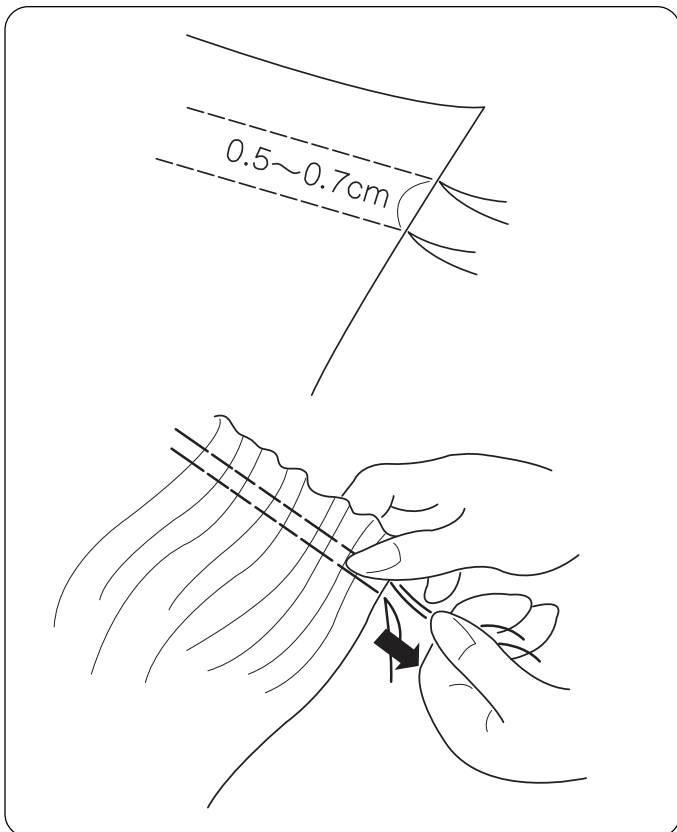
When the point of an increased thickness is reached, lower the needle and raise the presser foot. Press in the black button. Lower the foot and continue sewing.

This button releases automatically after a few stitches have been sewn.



Gathering

Gathering/shirring evenly distributes fullness in an area with very tiny pleats. Gathering is one row or two parallel rows. Shirring is three or more parallel rows. Light to medium weight fabrics provide the best results.



Sew two rows of parallel stitches. Sew first row next to raw edge using foot edge as guide. Sew second row next to first row using foot edge as guide. Leave long thread tails at beginning and end of each row.

Pull the bobbin threads simultaneously from each end of the fabric until the desired amount is gathered.

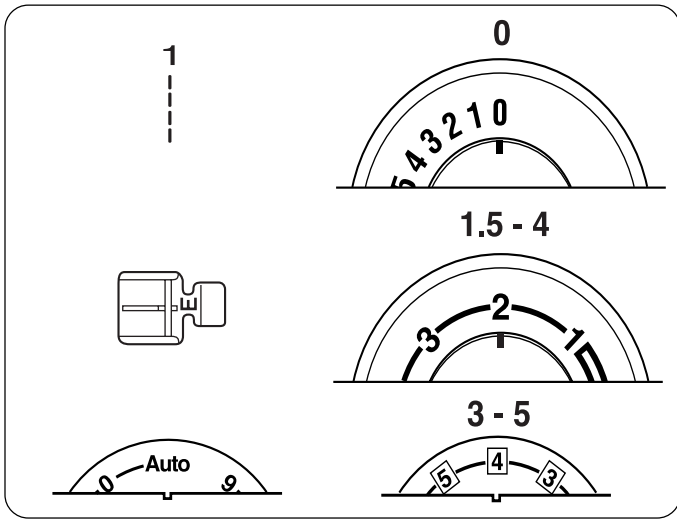
Knot the threads at each end and distribute the gathers evenly.

Reset machine settings to straight stitch. See page 23.

Sew between two rows of stitching to secure gathering.

OR

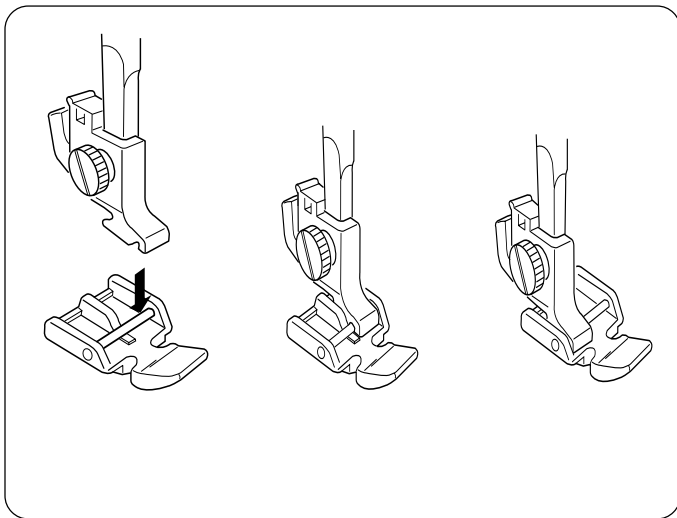
Lay gather fabric over flat fabric and sew the two fabrics together directly on the second row of gathering stitches.



Zipper Insertion

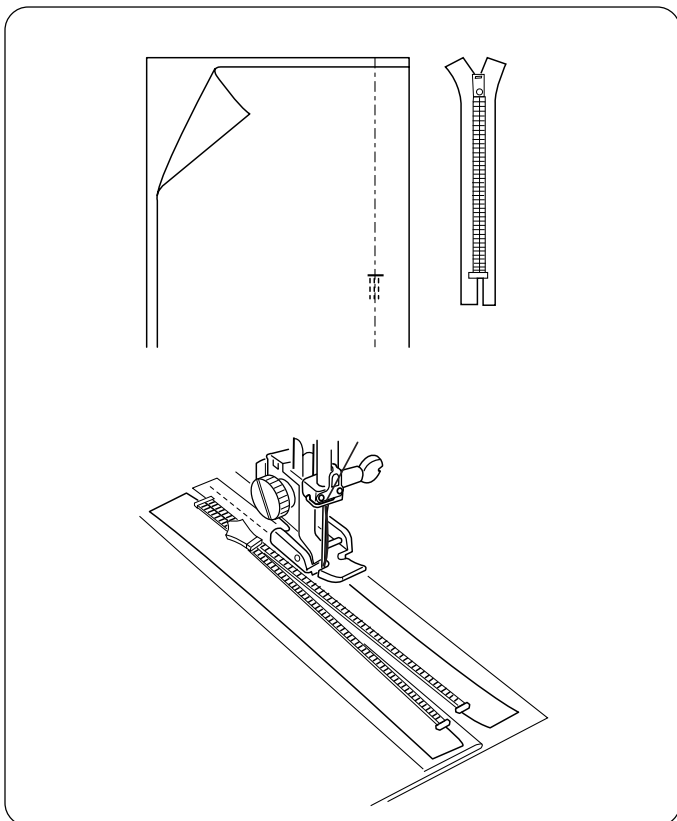
Lapped Application

Lapped zippers are usually inserted into a side seam of skirts or pants, for example.



Attach the pin on zipper foot E to the groove on the shank.

- To sew the left side of the zipper, attach the zipper foot on the right-hand side.
- To sew the right side of the zipper, attach the zipper foot on the left-hand side.



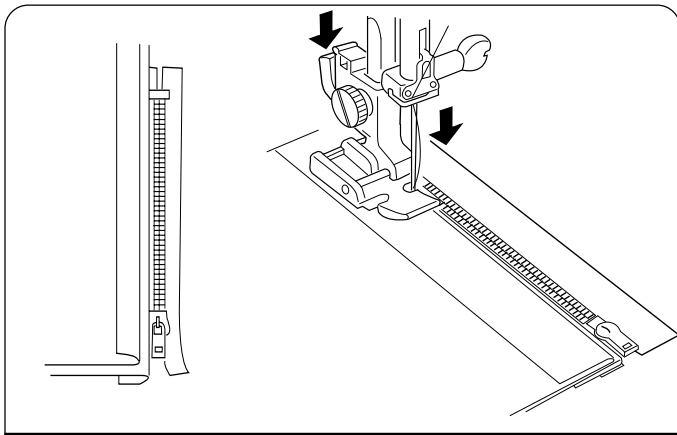
Fabric Preparation

Add 1 cm (3/8") to the zipper size. Use this measurement and mark the opening for the zipper.

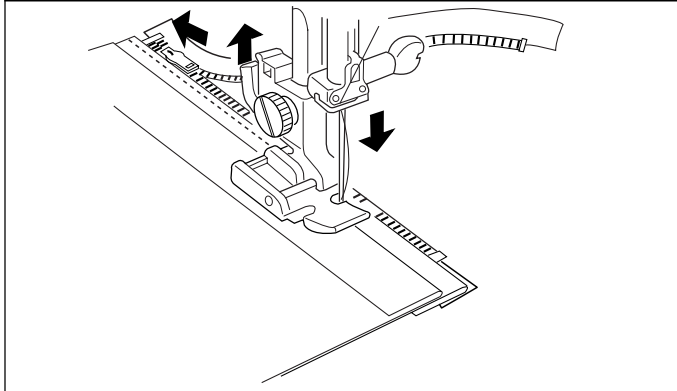
Place right sides of fabric together and sew the seam located below zipper placement. (Make sure to reverse sew the stitches directly below the zipper placement.)

Increase stitch length to 4, decrease thread tension to 2 and baste the zipper opening closed. Press the seam and basting seam open.

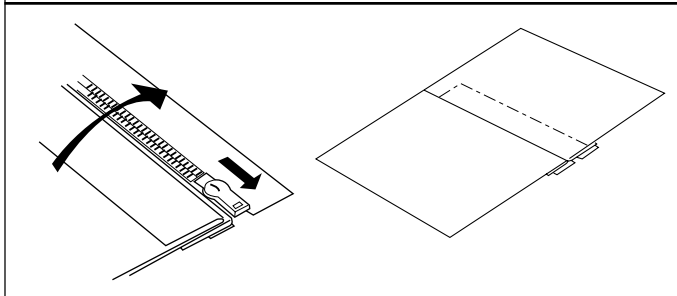
Open zipper and place it face down on the seam allowance. Teeth are on the seam line and zipper top is 1 cm (3/8") from fabric top edge. Attach foot with left side pin. Baste zipper in place, sewing from bottom to top.



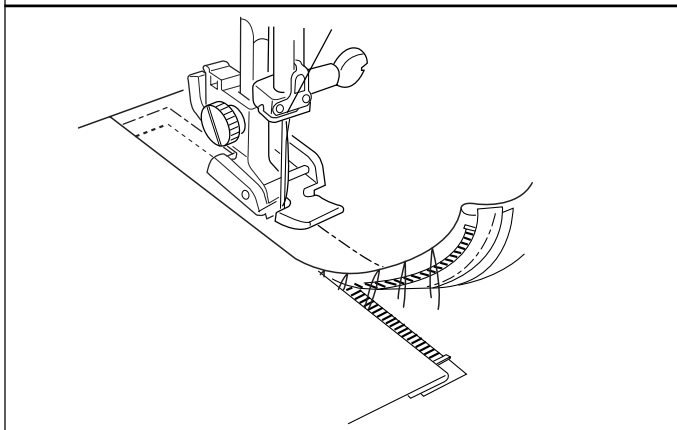
Close zipper. Turn zipper face up (right seam allowance forms a small fold at basting line) and smooth zipper teeth away from seam. Attach foot with right side pin. Reset machine to normal straight stitch settings. Starting at the bottom, sew through the folded seam allowance and zipper tape.



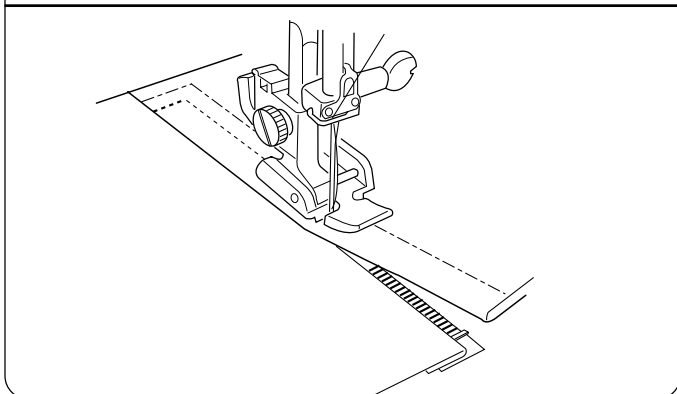
Stop just before the zipper foot reaches the slider on the zipper tape. Lower the needle slightly into the fabric. Raise the zipper foot and open the zipper. Lower the foot and stitch the remainder of the seam.



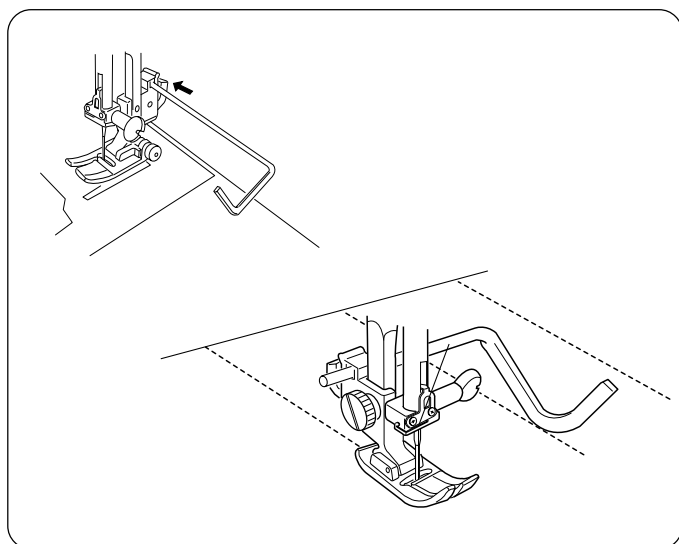
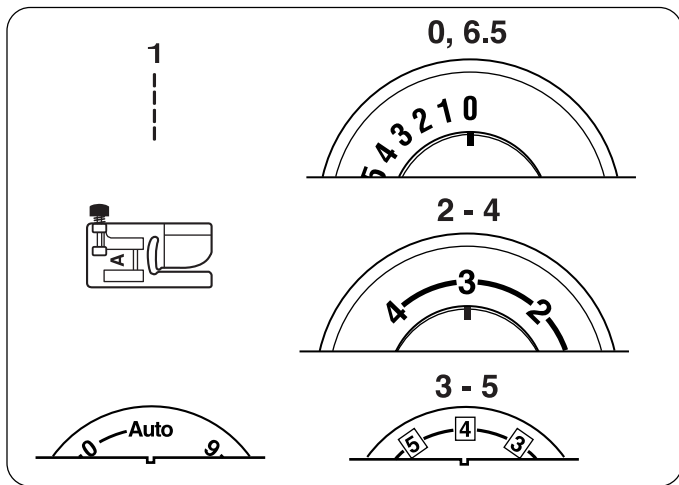
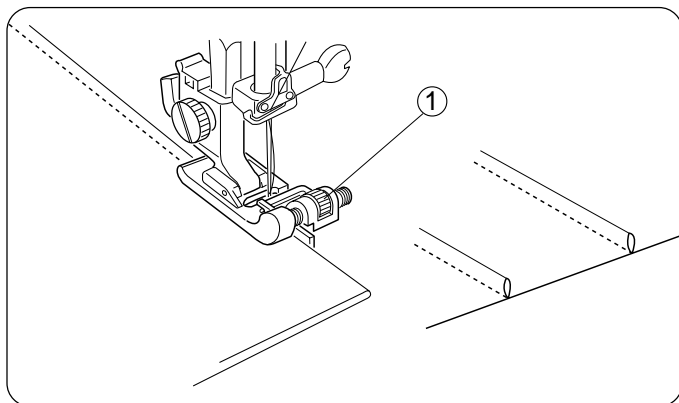
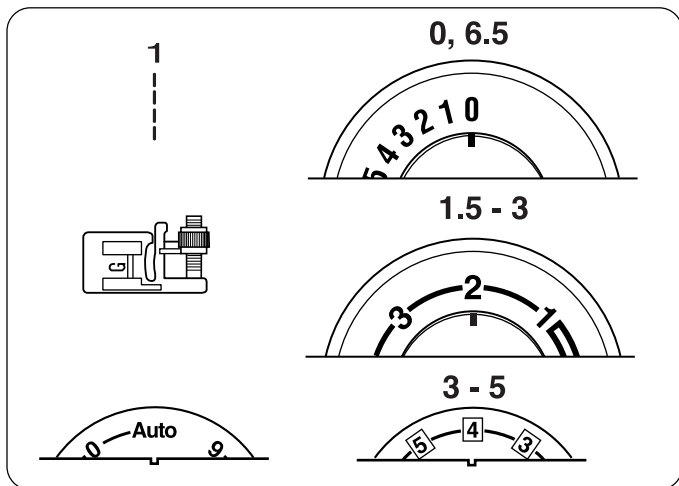
Close the zipper and spread the fabric flat with the right side facing up. Baste through the opened seam allowance and zipper tape.



Move the zipper foot to the left side pin. Guide the edge of foot along the zipper teeth and stitch through the garment and zipper tape. Stop about 5 cm (2") from the top of the zipper.



Slightly lower the needle into the fabric. Raise the foot, remove the seam basting stitches and open the zipper. Lower the foot and stitch the remainder of the seam, making sure the fold is even. Remove remaining basting stitches.



Pintucks

Pintucks are a lovely accent for modern and heirloom fashions. They should be added to your fabric before cutting out the pattern piece.

1. Use a washable fabric marker and draw lines for pintucks on the fabric right side.
2. Fold the fabric together on the first line with wrong sides together.
3. Place folded fabric under presser foot against the blind hem foot guide. Decide how wide you want the pintucks and move the adjustment nut ①.
4. Sew using the foot as a guide for the folded edge.
5. Sew all pintucks. Remove fabric marker lines before pressing pintucks to one side.

Quilt Guide

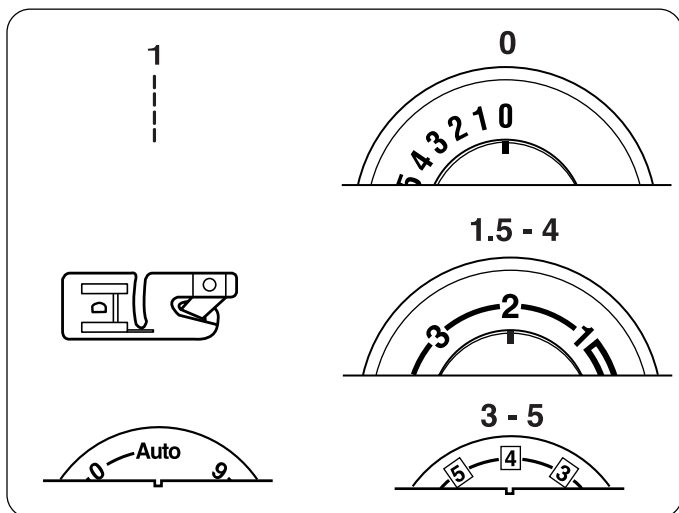
Quilting is produced by stitching two layers of fabric together with batting in-between to add dimension and warmth. Traditionally used for bedspreads, quilting is now used for crafts, garments and home decorating.

The quilt guide is helpful when sewing parallel, evenly spaced rows of stitching.

Insert the quilt guide into the back opening on the shank. Slide the quilt guide to set the width at the distance you desire between the stitching rows.

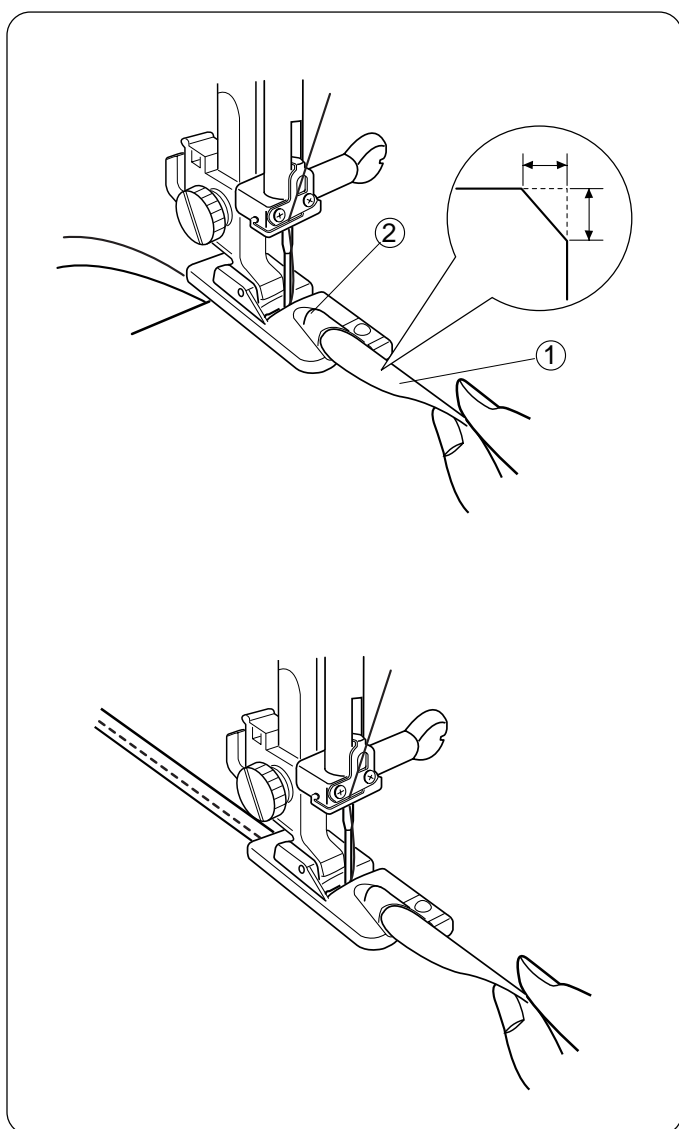
Use a washable marker to draw the first line for stitching. Sew over line. When sewing subsequent rows of stitching, the quilt guide will rest on the previous row of stitching.

The quilt guide can also be used with the walking (even feed) foot, an optional accessory.



Rolled Hem

An easy professional way to sew hems. The spiral on the hemmer foot guides the fabric edge to create a rolled hem. Recommended for fine, sheer fabrics used in bridal wear.



Trim 6.5 mm (1/4") by 8 mm (3/8") from corners to reduce bulk.

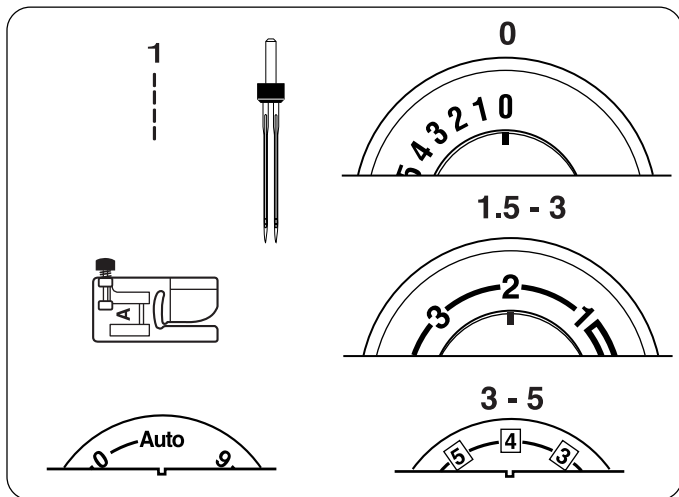
Make a double 3 mm (1/8") fold approximately 8 cm (3") in length.

Align fabric hem edge with the inside of right extension of foot ①. Use this placement on foot as guide. Lower presser foot. Sew 3 or 4 stitches while holding needle and bobbin threads. Stop machine.

Lower needle into fabric and raise presser foot. Insert folded portion of fabric into spiral of foot ②.

Lower presser foot and sew; lift up edge of fabric to keep it feeding smoothly.

NOTE: Use zigzag with stitch width 1.0 – 2.0 for a variation.



Twin Needle Hem (optional needle)

A twin needle hem is quick and easy. This is an excellent hemming method for knit fabrics because the bobbin thread zigzags, allowing the hem to stretch with the fabric. Be sure to use a stretch twin needle for knit fabrics.

CAUTION: Twin needles are available in many different sizes and widths. Before sewing, always turn the flywheel to make sure the needles do not hit the foot. If you use any stitch other than the straight stitch, the stitch width must be 3 mm or less.

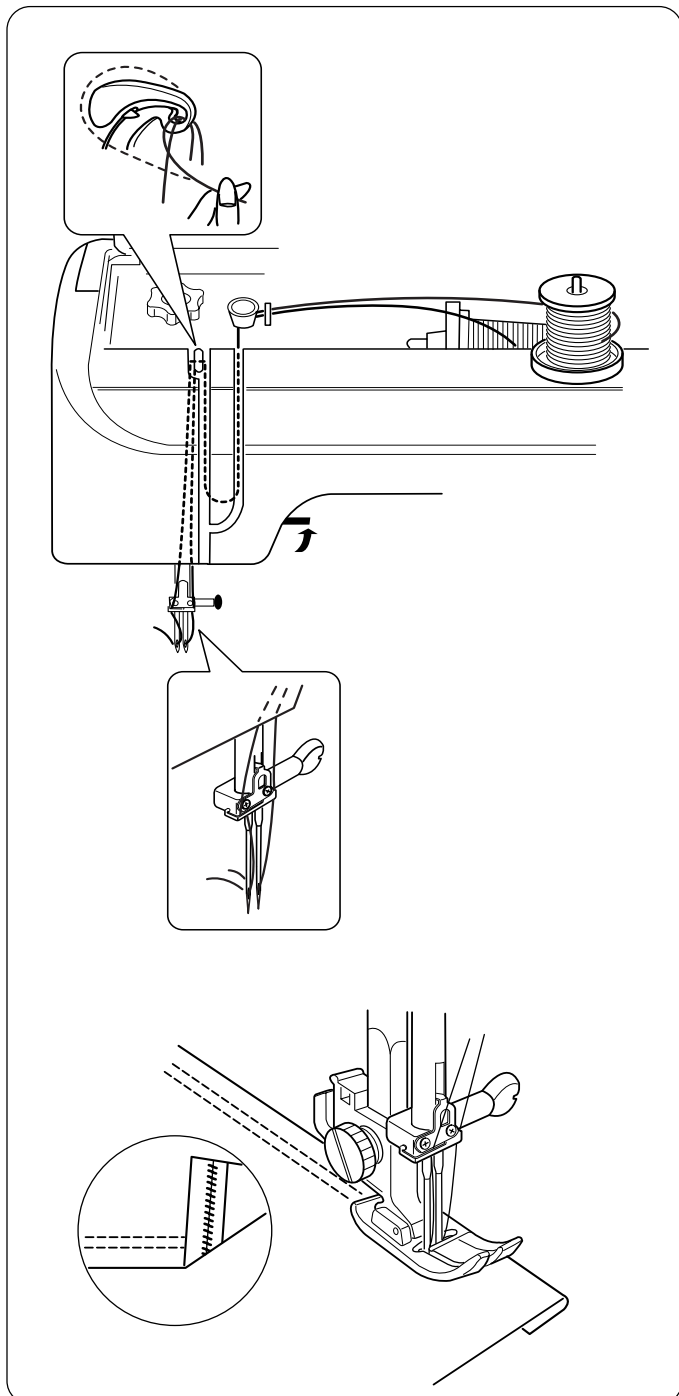
Switch OFF the machine. Insert a twin needle and additional spool pin (see page 15).

Thread the machine in the same manner as for single thread (see page 17), using both spool pins.

Thread each needle from front to back.

NOTE: Needle threader cannot be used with twin needle.

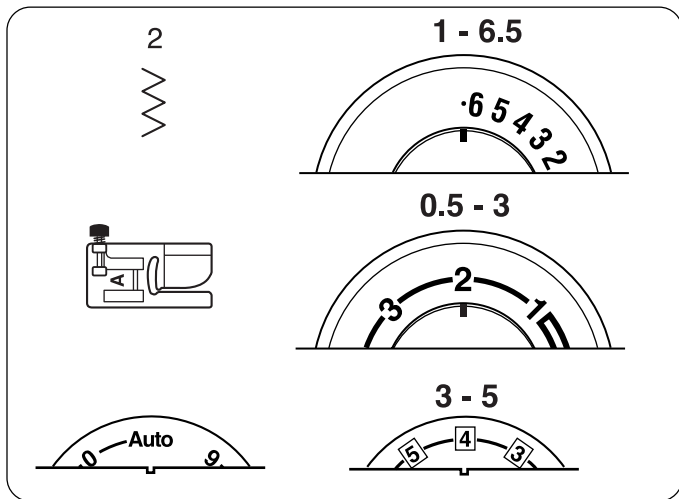
Switch ON the machine.



Fold the hem up desired amount and topstitch with the twin needle. Carefully trim away excess fabric using sharp scissors.

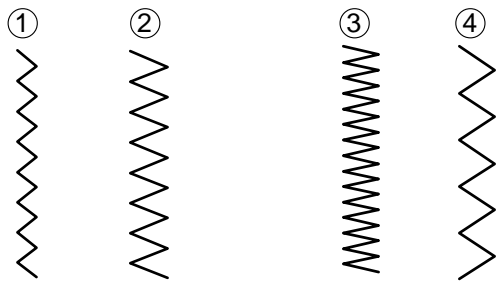
Switch OFF the machine.

Remove twin needle. Set up machine for single needle sewing.

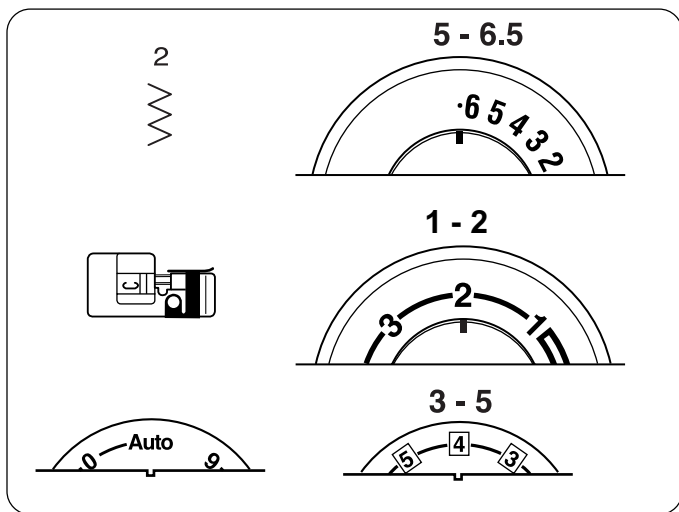


Zigzag Stitch

The zigzag stitch is a very versatile stitch. Simply change its width and length. Use the zigzag to finish raw seam edges, sew narrow hems, sew satin stitch appliques, sew on buttons, etc.

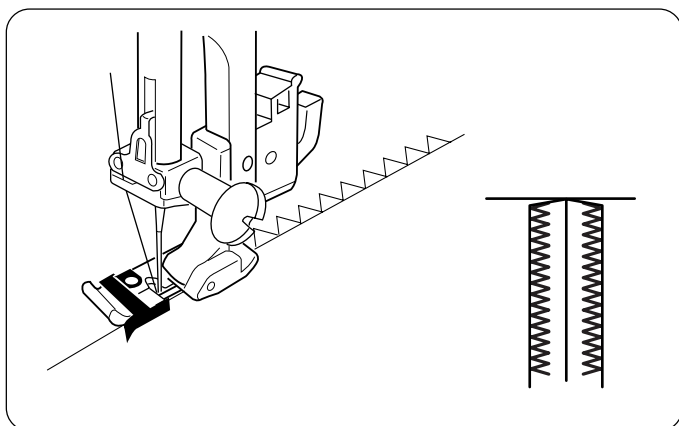


- ① Narrower width (lower number)
- ② Wider width (higher number)
- ③ Shorter stitch (lower number)
- ④ Longer stitch (higher number)



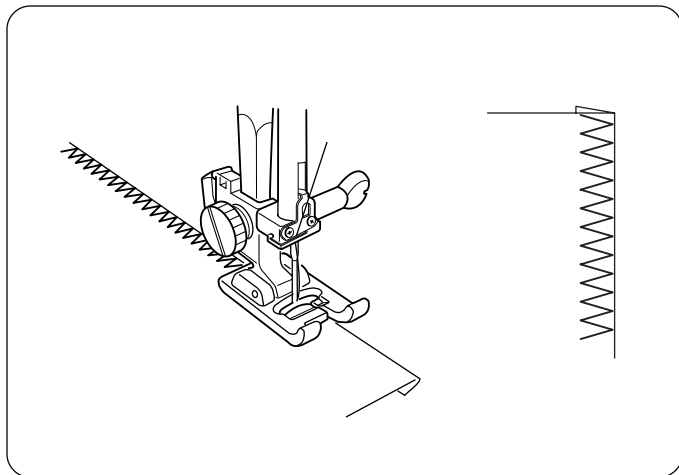
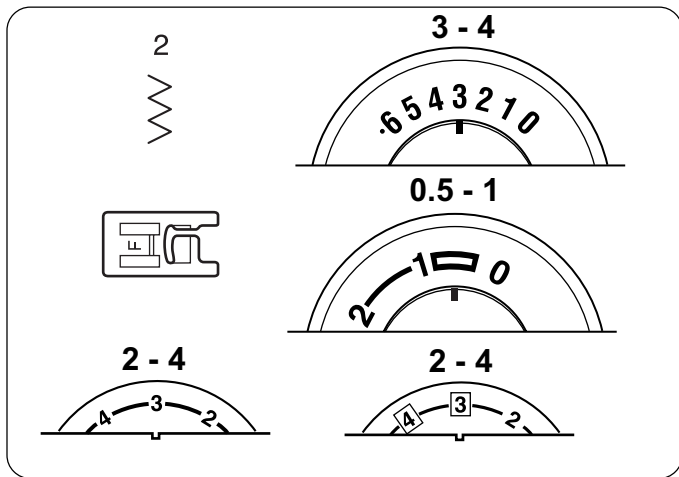
Overcasting

Simple zigzag stitching is used for finishing raw seam edges to prevent fabric from raveling. Finishing seam edges is called overcasting.



CAUTION: Do not set the stitch width lower than 5 when the overlock foot is attached.

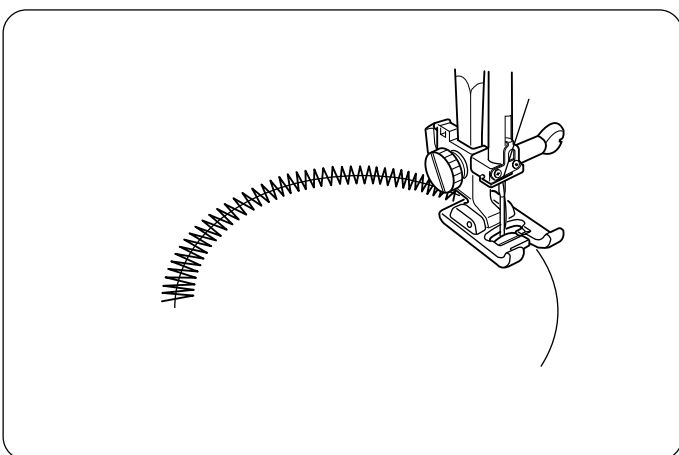
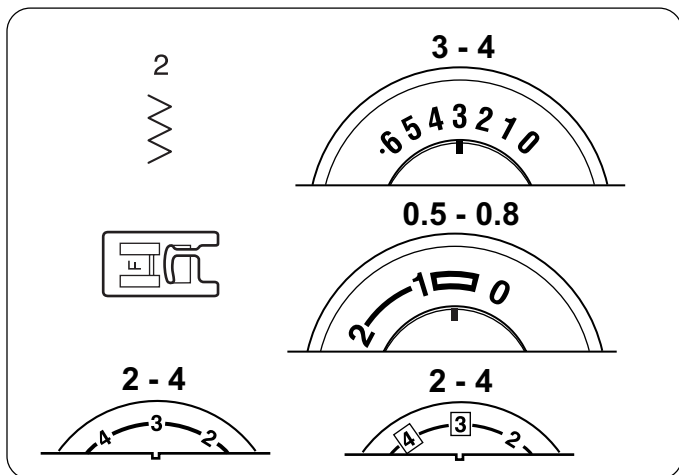
Place the fabric edge next to the black guide on the foot so the needle swings off the fabric to the right. Sew.



Whip and Roll Hem

This technique produces a beautiful edge on ruffles and hems. It should only be used for lightweight fabrics and is commonly used in heirloom sewing.

1. The fabric edge must be clean cut with no raveling threads.
2. Align the fabric edge with right side edge of foot. Begin sewing slowly with the zigzag catching the fabric edge on the left and going off the raw edge on the right. The fabric will automatically roll itself under the stitch.



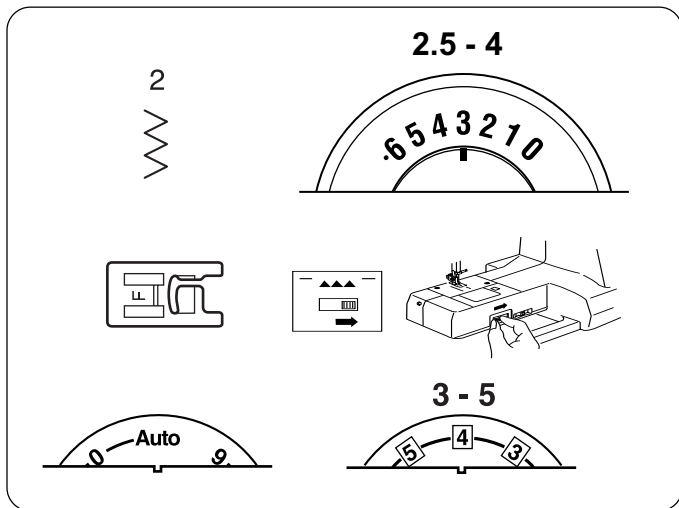
Satin Stitch Applique

The zigzag stitch is commonly used for applique, monogramming, stems of flowers and petals. (A short zigzag stitch length creates the satin stitch.) Threads of 100% cotton, rayon or silk provide the best results.

- Apply stabilizer to the fabric for the stitch to form correctly.

• Applique Preparation

1. Press fusible webbing to the wrong side of a lightweight fabric.
2. Cut out design shape. Fuse design to main fabric.
3. Sew design to fabric with the needle swinging off the applique.
4. When you reach a place where you need to turn, lower the needle into the fabric at the outer edge of the turn. Raise the presser foot, turn fabric, lower the presser foot and continue sewing. You may need to set the foot pressure dial to 2.

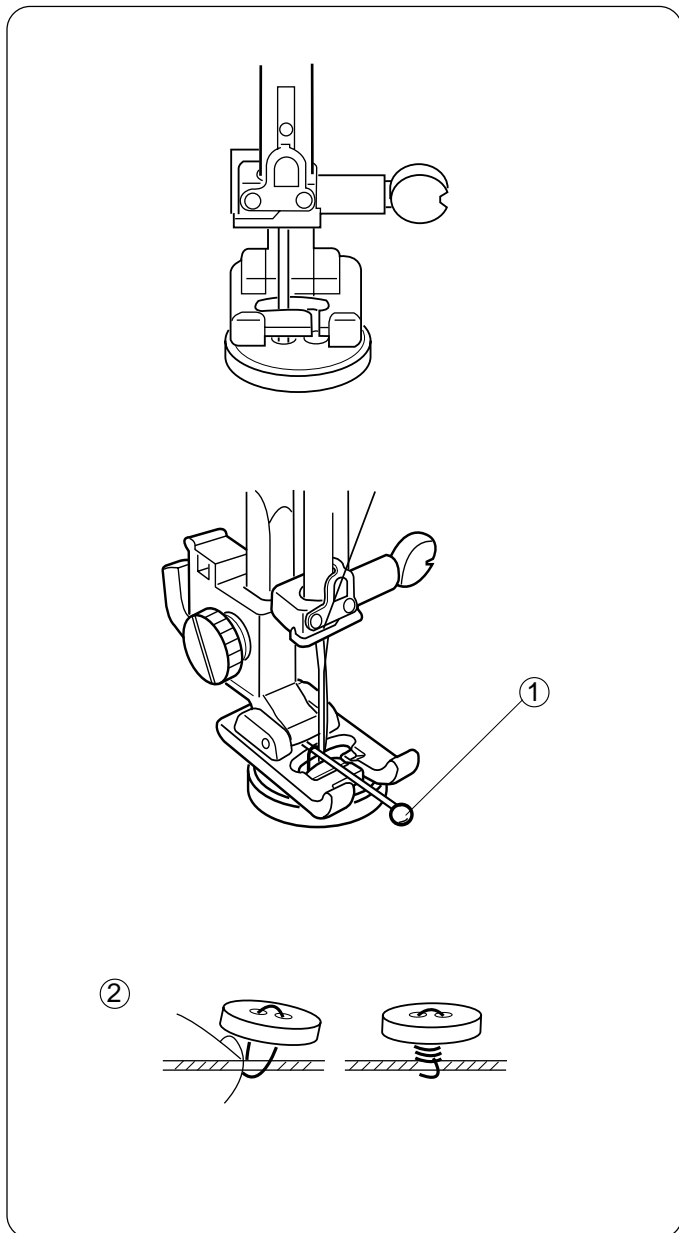


How To Sew On a Button

Hand sewing buttons to a garment is very time-consuming.

Sew them on in one quick, easy step.

- Set the stitch width according to the position of the holes in the button.
- Drop the feed dog. See page 9.
- Set the stitch length on any number.



1. Mark button placement on fabric. Use washable glue or transparent tape to temporarily secure the button. Place the button and fabric under the presser foot. Match the holes in the button to the horizontal slot on the presser foot. Turn the flywheel to lower the needle into a hole of the button. Lower the presser foot.

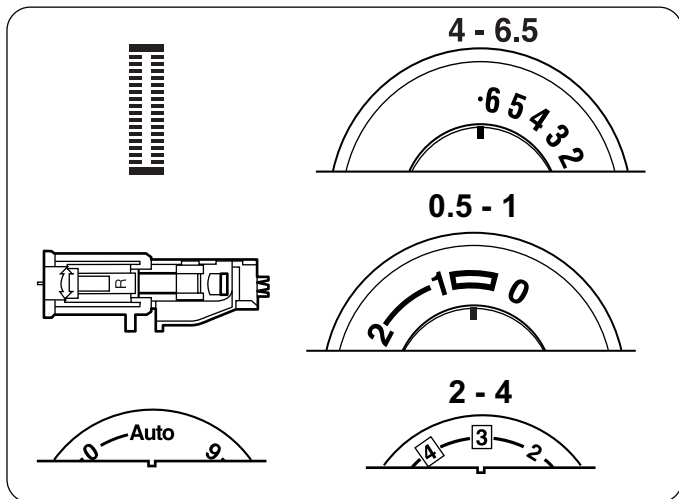
2. Turn the flywheel to have the needle enter the opposite hole of the button. Readjust the stitch width if necessary. To form a thread shank, place a pin ① on top of the foot.

Stitch several times.

After you finish sewing, cut the thread but leave 10-15 cm (4-6") of thread at the button.

3. Pull the thread to the reverse side of the fabric and tie the threads. (To complete creation of thread shank ② – pull threads to underside of button, wrap threads around each other and tie them.)

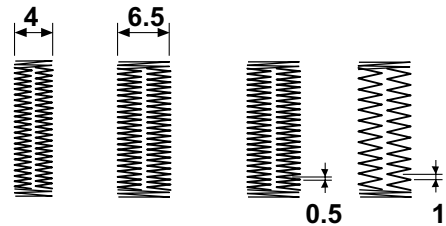
Raise the feed dog after sewing on buttons.



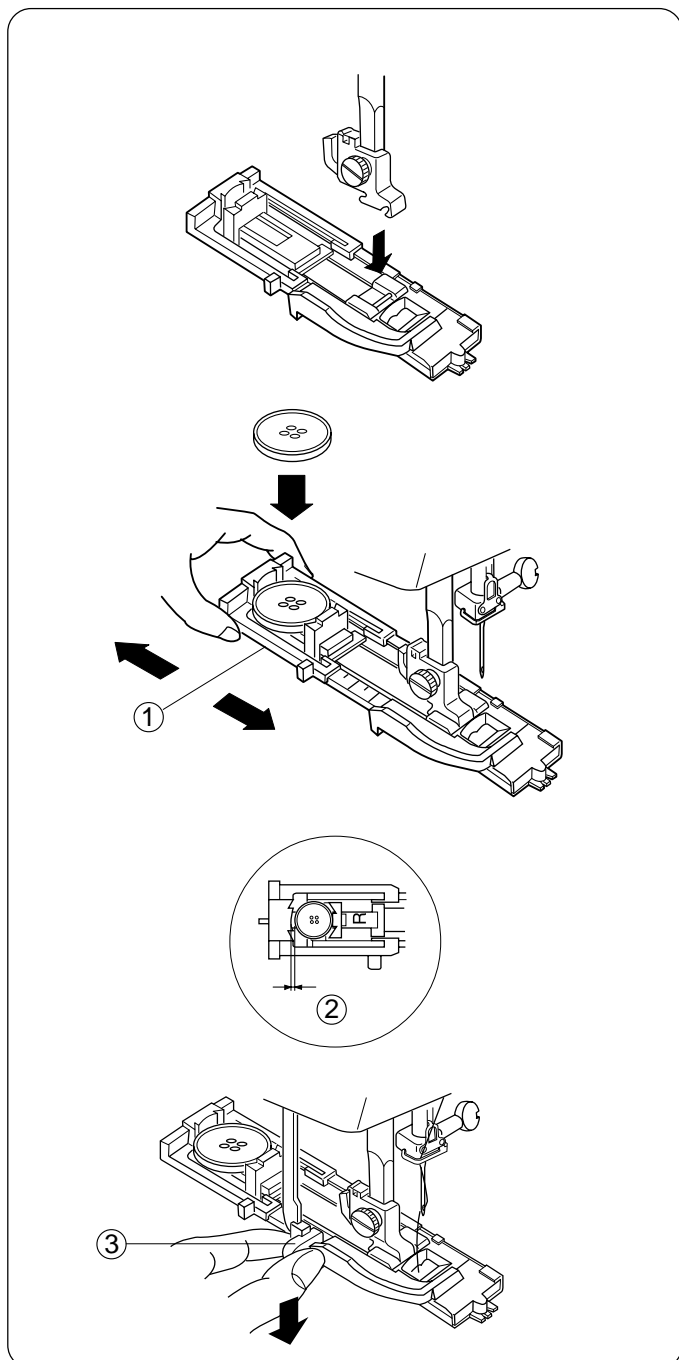
Automatic Buttonhole

All buttonholes should use interfacing that is the same weight as the fabric. Interfacing is especially important when sewing on stretch fabrics. **Always** make a test buttonhole on extra fabric before sewing on your fabric.

- Use a narrow stitch width (4) for a finer buttonhole, a wider stitch width (6.5) for a more substantial buttonhole.
- Use a shorter stitch length (0.5) for finer fabrics, a longer stitch length (1) for heavier fabrics. Remain within the range of the buttonhole illustration.

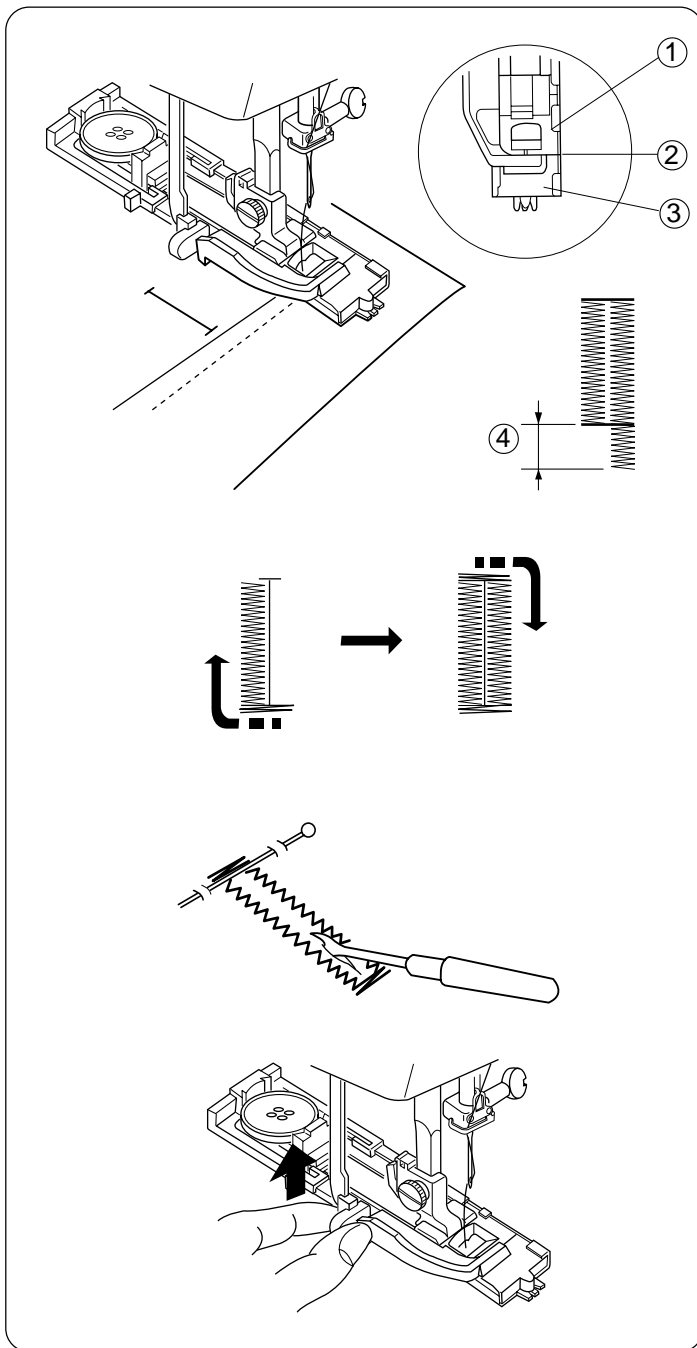


1. Attach the automatic buttonhole foot. Make sure the button opening is at the back of the foot when it is attached.
2. Pull open the buttonholder ① to the back and place the button in it. Push the buttonholder together tightly around the button.



NOTE: Placing the button in the automatic buttonhole foot automatically sets the size of the buttonhole. The button holder on the foot adjusts for a button up to 2.5 cm (1") in diameter. If you are using a novelty button or extremely thick button that does not fit through the test buttonhole, pull the buttonholder open to lengthen the buttonhole ②.

3. Pull the buttonhole lever ③ down as far as it will go.



4. Mark the buttonhole area on the fabric. Place both threads to the left under the foot. Insert the fabric under the foot and turn the flywheel until the needle comes down into the fabric. The needle should go in exactly at the marked line for the buttonhole. Lower the presser foot.

NOTE: Make sure there is not a gap between the slider ① and the spring holder ③. If there is a gap ②, the sides of the buttonhole will be different lengths ④.

5. The buttonhole will automatically sew:
1. the front bartack and zigzag on left side
 2. back bartack
 3. zigzag on right side

The machine will automatically stop when the buttonhole is complete (Model 3230 only).

6. Raise the presser foot and remove fabric. Cut threads at least 10 cm (4") long. Pull the needle thread to the wrong side of the fabric. Knot the threads.

To cut the buttonhole open, place a pin just inside the bartack (to prevent accidentally cutting bartack) and use a seam ripper.

To sew another buttonhole, turn the stitch selection knob in either direction to an adjacent stitch and then re-set it to the buttonhole.

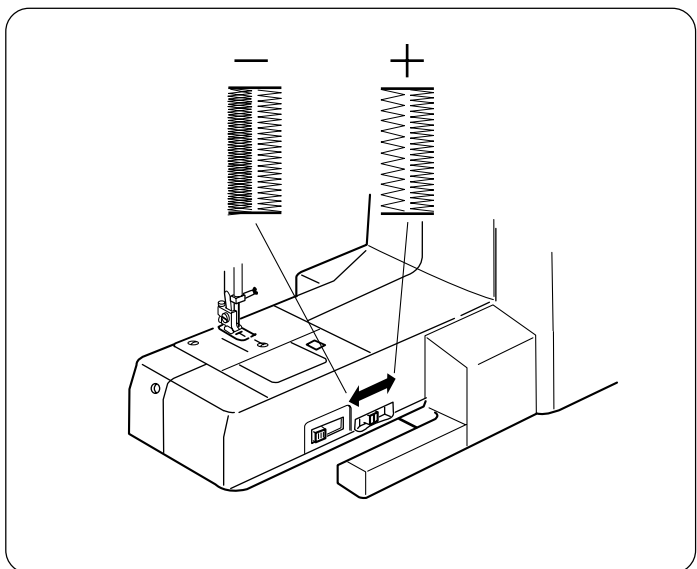
When buttonhole sewing is finished, push the buttonhole lever upward as far as it will go.

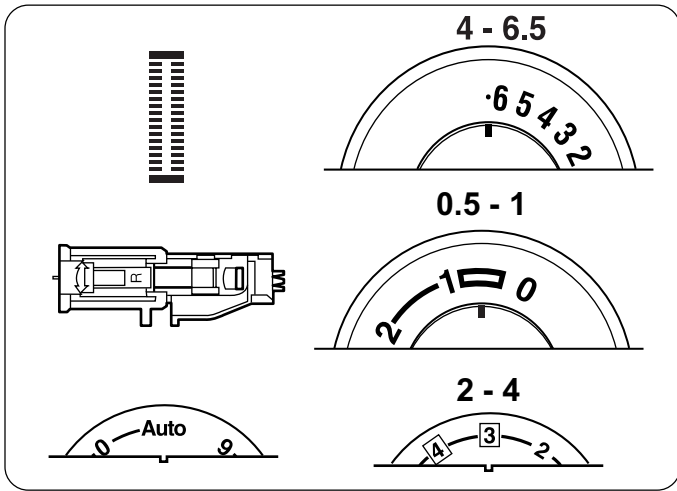
Fine Adjustment For Buttonholes

If the stitches on each side of the buttonhole are not balanced, adjust them with the fine adjustment lever for buttonholes.

Slide the lever to the right (+), if the left side is more dense than the right side.

Slide the lever to the left (-), if the left side is less dense than the right side.

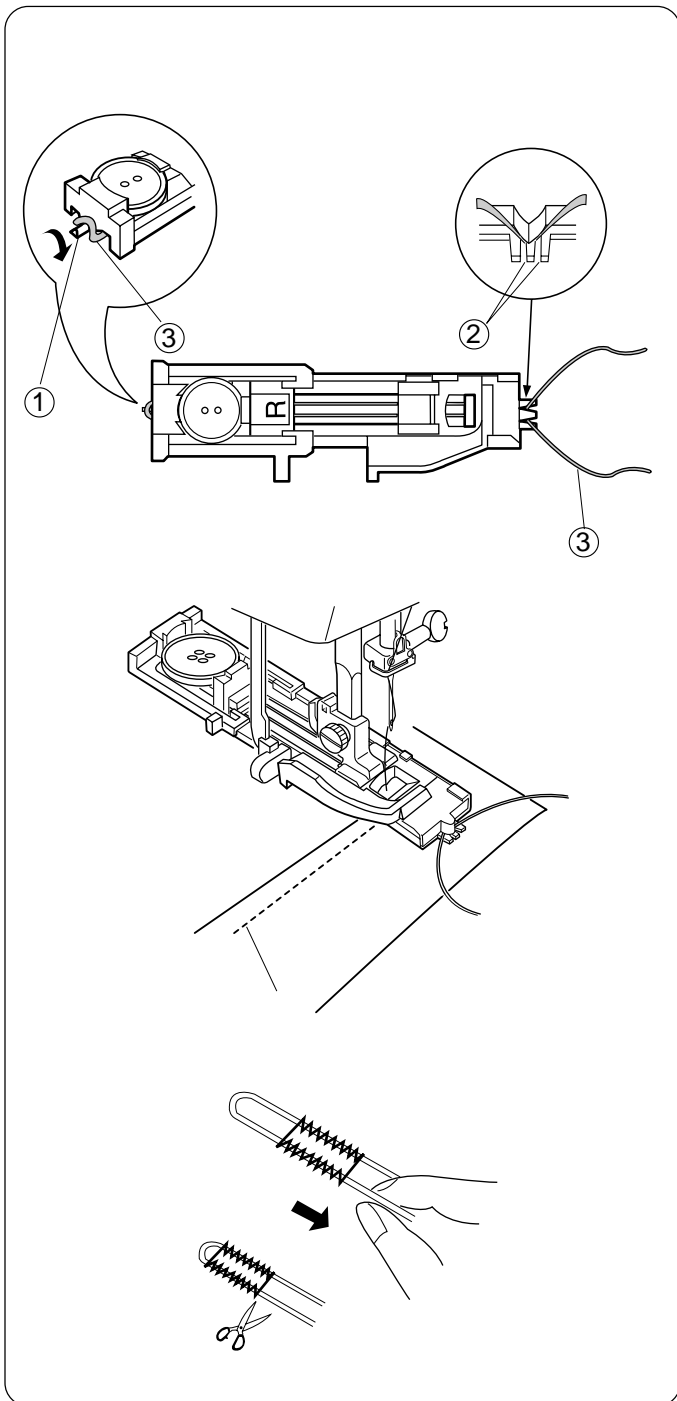




Corded Buttonhole

Corded buttonholes are found on coats and other garments that require extra strong buttonholes. The cording reinforces and accentuates the buttonhole. **Always** make a test buttonhole on extra fabric before sewing on your garment.

- Set the stitch width dial wider than the thickness of the cording.



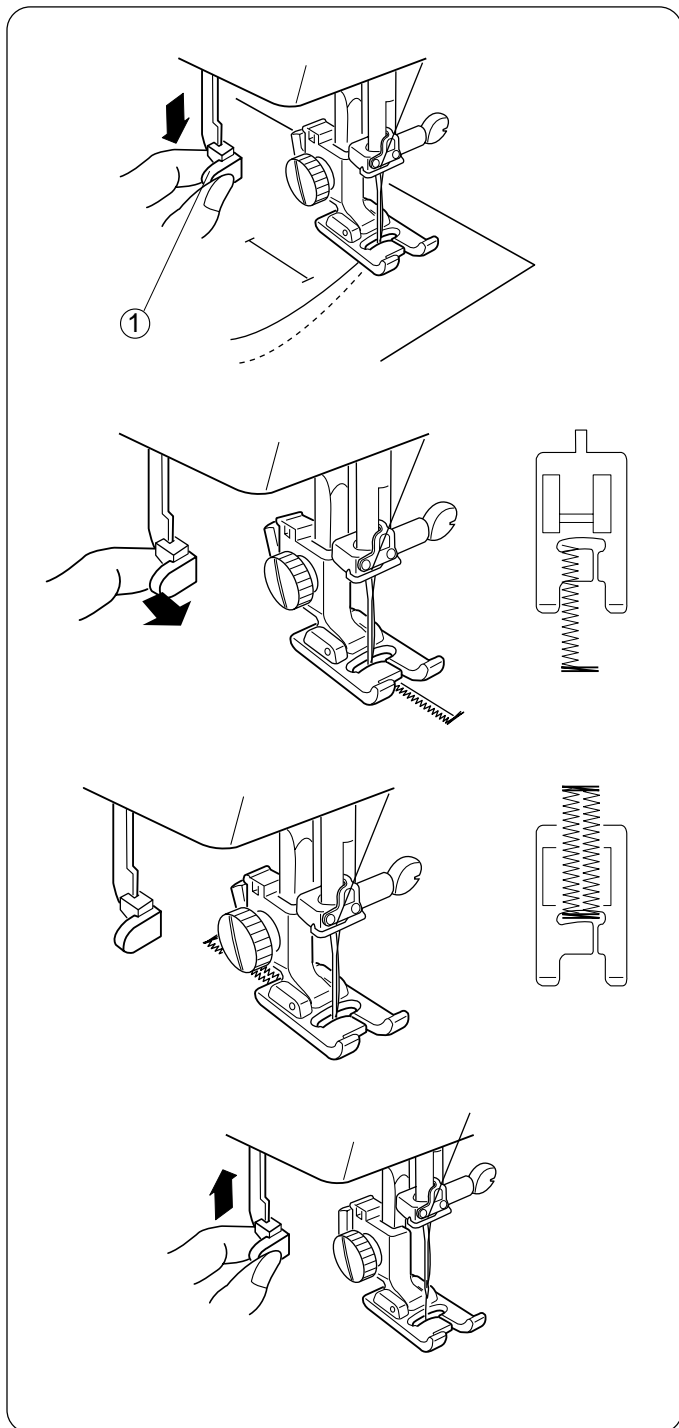
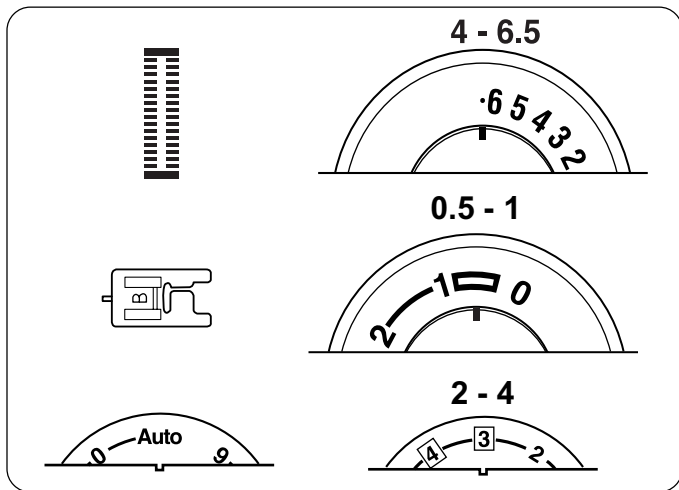
With the buttonhole foot raised, hook the filler cord (3) on the spur (1) at the back of the buttonhole foot. Bring the ends forward under the buttonhole foot. Position the cord into the forks (2) on the front of the foot to hold the ends tight.

Sew a corded buttonhole using the same directions as for an automatic buttonhole. Each side of the buttonhole should be sewn over the cord. If cord is sewn through, adjust the stitch width dial wider.

Remove the fabric from the machine and cut only the sewing threads.

Pull the left end of the cord to tighten it. Thread the end through a darning needle; draw to the wrong side of the fabric and cut.

Cut open buttonhole.



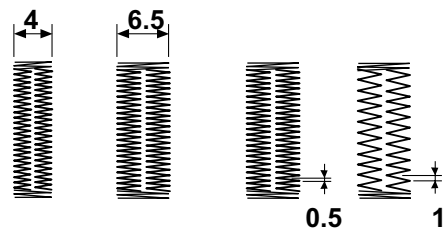
Manual Buttonhole

Make a manual buttonhole to sew oversized buttonholes for novelty buttons or a decorative accent.

Always make a test buttonhole on extra fabric before sewing on your fabric.

HINT: Sew slowly to make accurate manual buttonholes.

- Use a narrow stitch width (4) for a finer buttonhole, a wider stitch width (6.5) for a more substantial buttonhole.
- Use a shorter stitch length (0.5) for finer fabrics, a longer stitch length (1) for heavier fabrics.

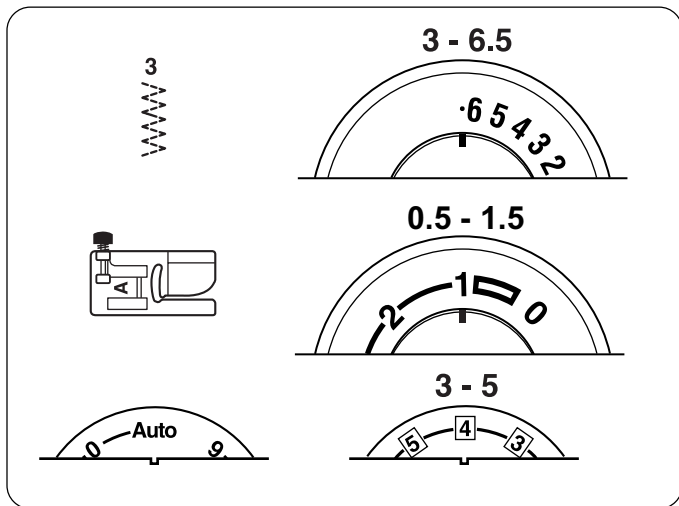


1. Pull the buttonhole lever ① down as far as it will go. Mark the buttonhole area on the fabric. Insert the fabric under the foot and turn the flywheel until the needle comes down into the fabric through the buttonhole mark line. Lower the presser foot.
2. The machine will sew the front bartack and zigzag backwards on left side. When the left side is the desired length, STOP, pull the buttonhole lever forward.
3. Sew the back bartack and zigzag forward on right side. When the right side reaches the front bartack, STOP. Raise the presser foot and remove fabric. Cut threads at least 10 cm (4") long. Pull the needle thread to the wrong side of the fabric. Knot the threads.

To sew another buttonhole, turn the stitch selection knob in either direction to an adjacent stitch and then re-set it to the buttonhole.

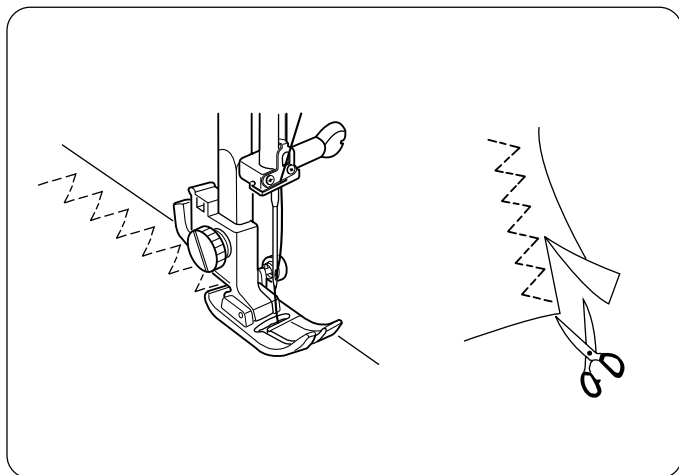
4. When buttonhole sewing is finished, push the buttonhole lever upward as far as it will go.

To cut the buttonhole open or to fine adjust buttonhole see page 34.

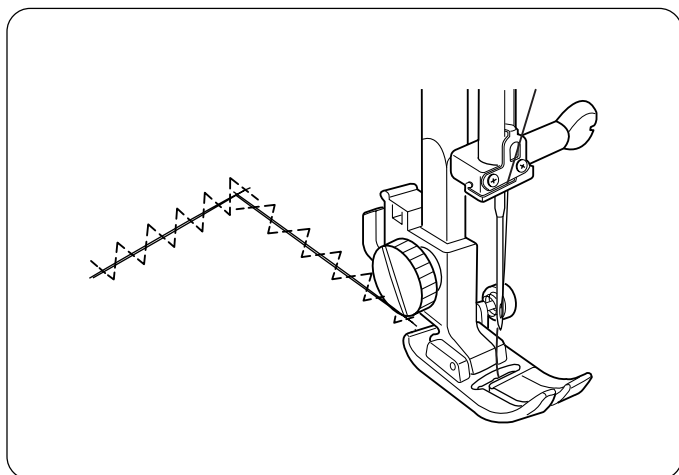


3-Step Zigzag

The 3-step zigzag (sometimes called a multiple zigzag) is used to finish raw seam edges. This stitch gives a flatter edge finish than the regular zigzag. It is also used for mending tears in fabric.



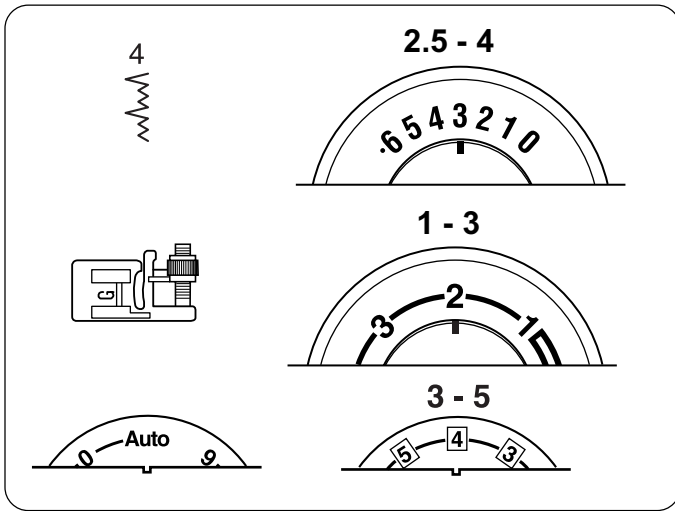
Place the fabric under the presser foot so the needle swings off the fabric to the right or trim away any excess fabric.



- **Mending a Tear**

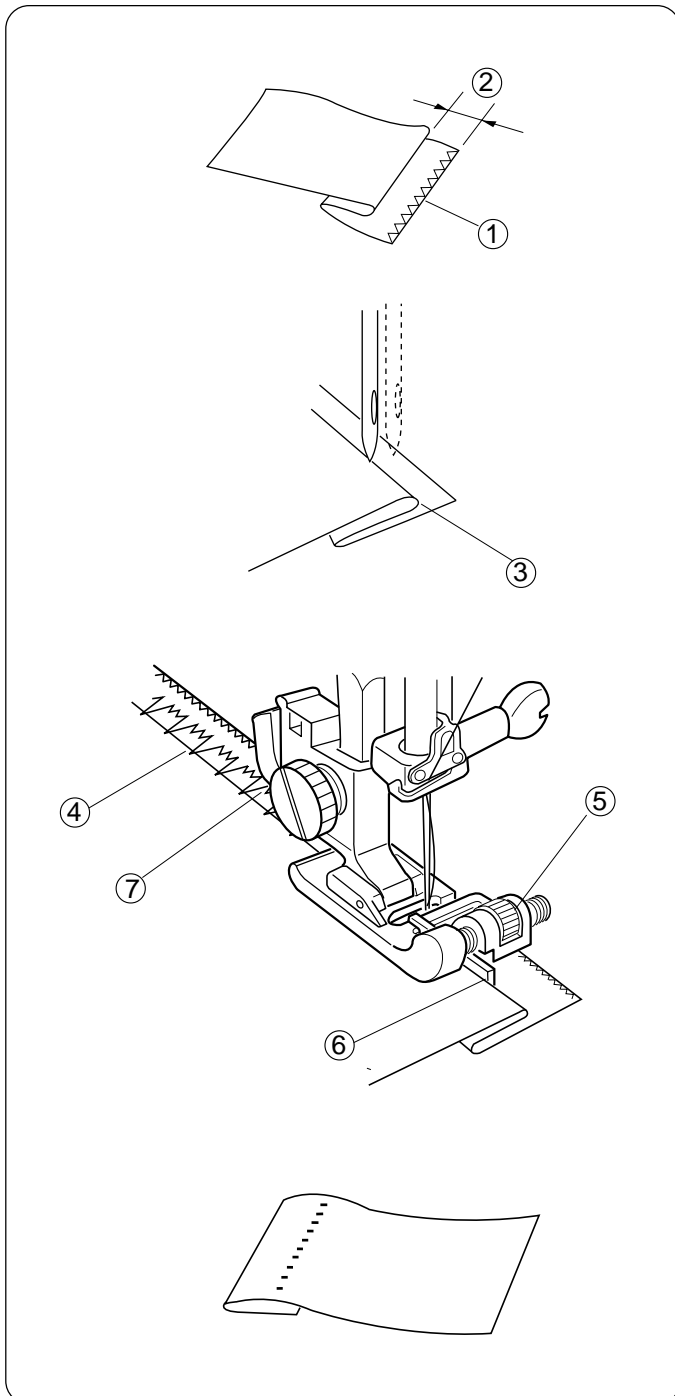
Pull torn edges together and fuse a piece of interfacing slightly larger than the tear to the wrong side of the garment.

Begin sewing above the tear. Stitch down the middle, pulling edges together. Stop sewing just beyond end of tear. Depending on the tear, you might need to stitch area 2 or 3 times.



Stretch Blind Hem

Use this stitch to sew a blind hem on either knit or woven fabrics. Elna invented the stretch blind hem in 1952.

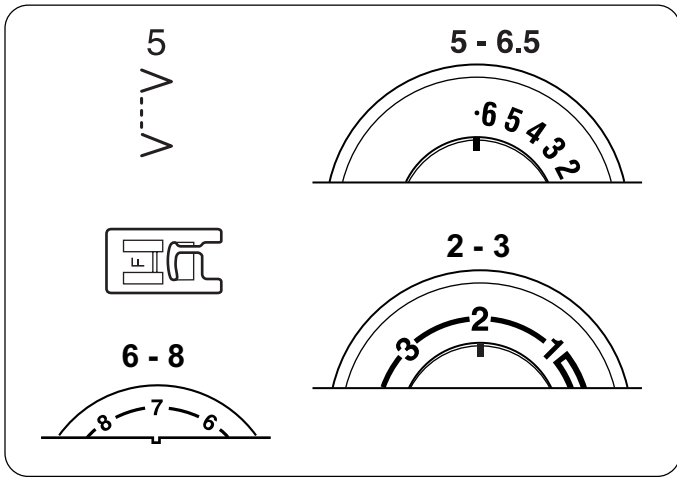


Finish the raw hem edge ① with a zigzag or 3-step zigzag before sewing the blind hem. Fold up the hem allowance and press. Fold the hem under toward right side of garment. Leave a 6.5-10 mm (1/4" to 3/8") extension ② at the right.

Position the fabric (wrong side up) so the folded edge ③ is to the left side of the guide ⑥. Lower the presser foot. Handturn the flywheel and sew a few narrow zigzag stitches ⑦ on the extension (single layer). When the needle begins swinging far left to catch the folded edge, make sure it only catches one or two fibers with the widest zigzag ④.

If the guide needs adjustment; raise needle out of fabric, lift presser foot up, turn the adjustment nut ⑤ and move the guide to the right or left. Reposition fabric against guide, check needle swing by turning flywheel, lower presser foot and sew hemline.

NOTE: If the needle catches too much of the fold, the stitches will show on the right side.

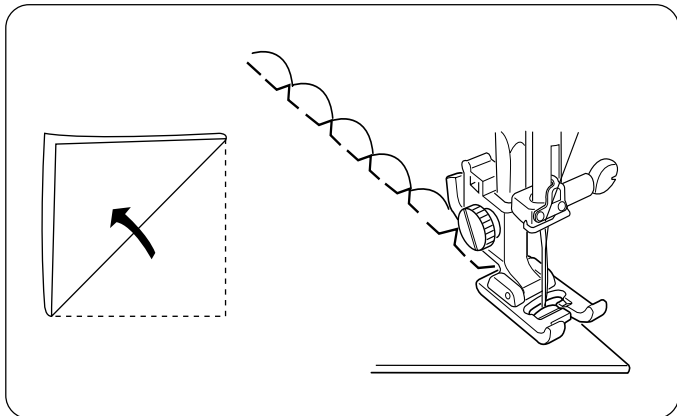


Shell Tuck

This is a pretty hem finish for lingerie and tricot fabrics.

May also be used for decorative rows of stitching.

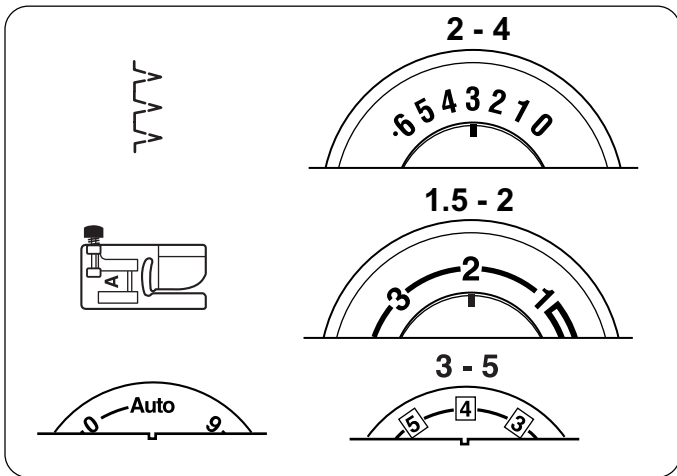
- Set the stitch width and length as you desire.
- Tighten the top thread for best results.



Use a lightweight fabric such as tricot. Fold and stitch on the bias. Allow the needle to just clear the folded edge of the fabric when it swings off the fabric to the right.

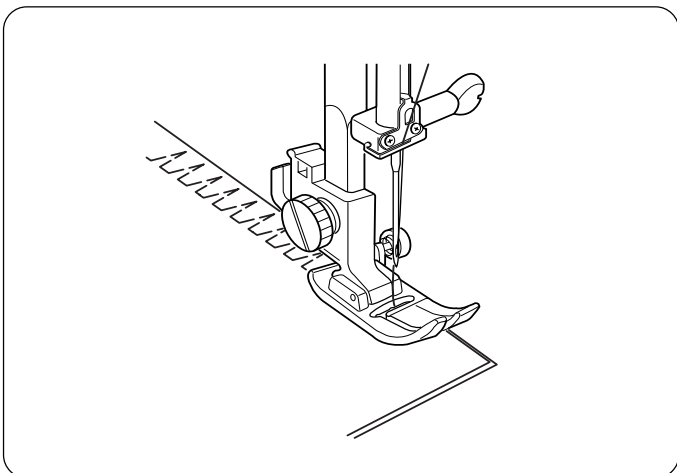
If you sew rows of shell stitches, space the rows at least 1.5 cm (5/8") apart.

You can sew shell stitches in any direction on knits or soft silky wovens.

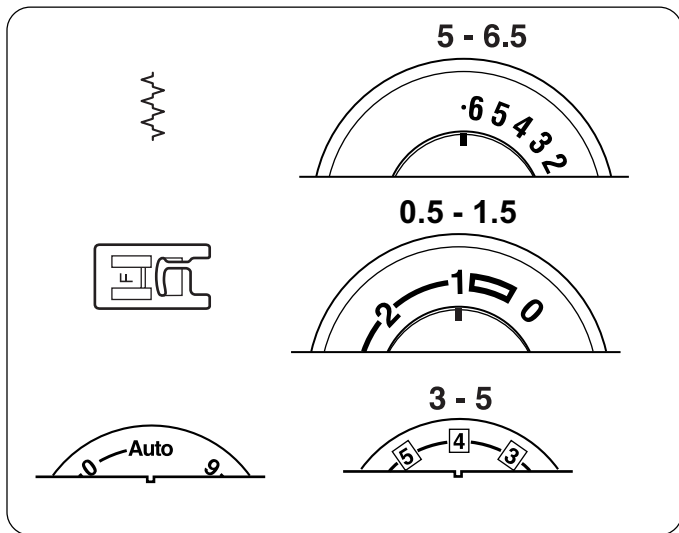


Lingerie Stitch (Model 3230 only)

Sew a fine seam in lingerie and lightweight knits. The small seam size stretches and is comfortable to wear.

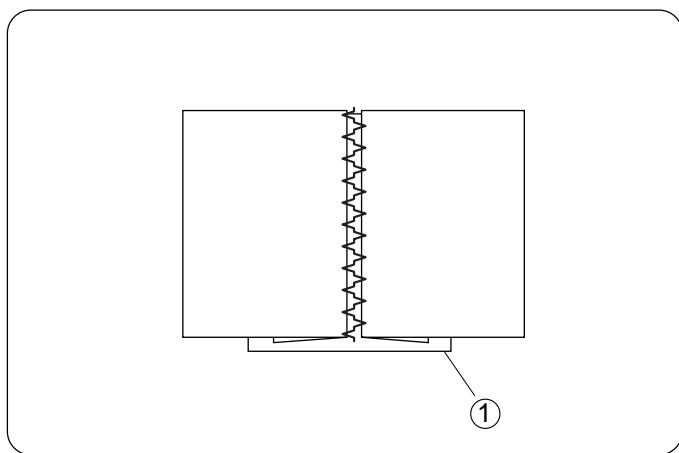


Place fabric edges so needle just clears edge when it swings off the fabric to the right.

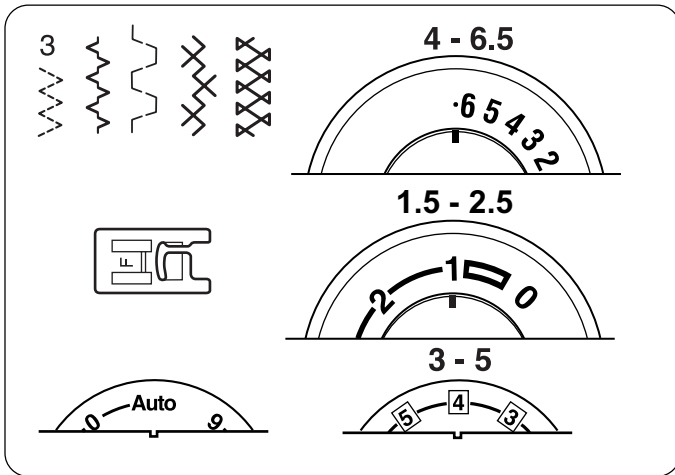


Fagoting (Bridging)

Fagoting is a technique seen in heirloom sewing. Two folded edges are joined together by threads over an open area. Use linen, cotton or blend of linen/cotton.

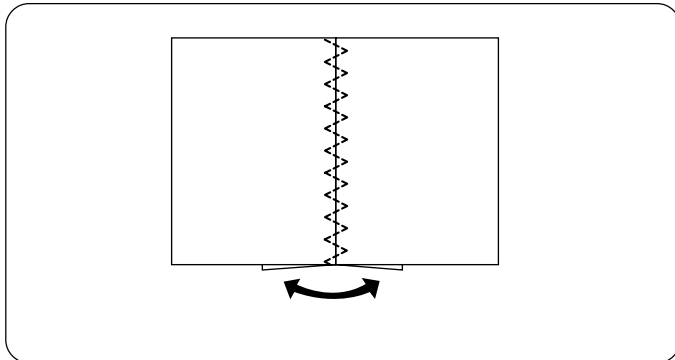


1. Thread machine, needle and bobbin with fine embroidery thread (50 weight or finer). Use spray starch to stabilize fabric.
2. Fold and press under seam allowance to wrong side of fabric.
3. Baste folded edges of fabric on top of thin paper or water-soluble stabilizer ①.
4. Center fagoting stitching over the paper/fabric. Lower the presser foot. Sew, catching the folded edges of fabric.
5. Remove paper or wash away stabilizer.

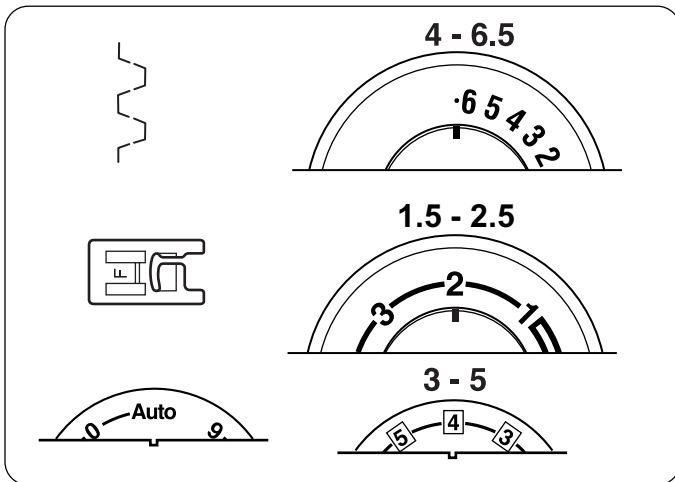


Patchwork

Add a little something special to decorate your pieced fabrics.

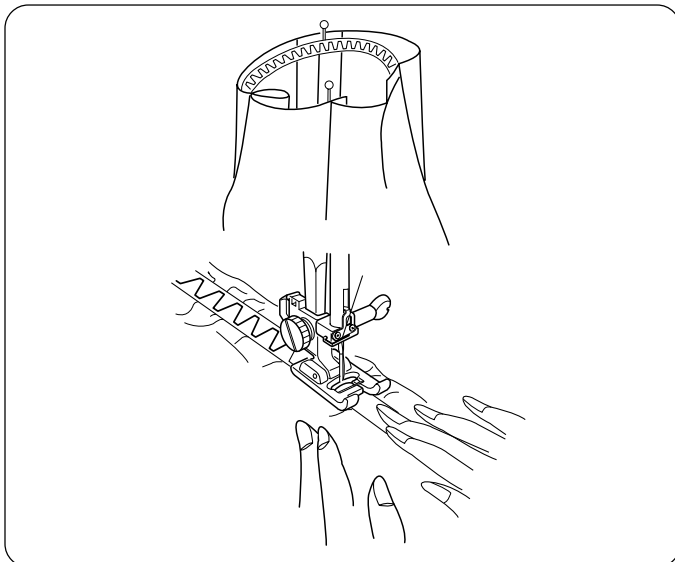


Sew a straight stitch seam and press seam allowance open. Sew patchwork stitch on right side of fabric, centering it over the seam.

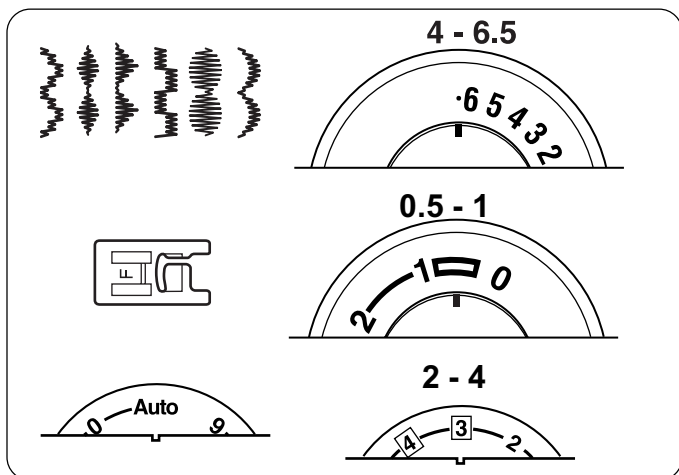


Box Stitch

Choose the box stitch to attach elastic directly onto fabric without making an elastic casing.



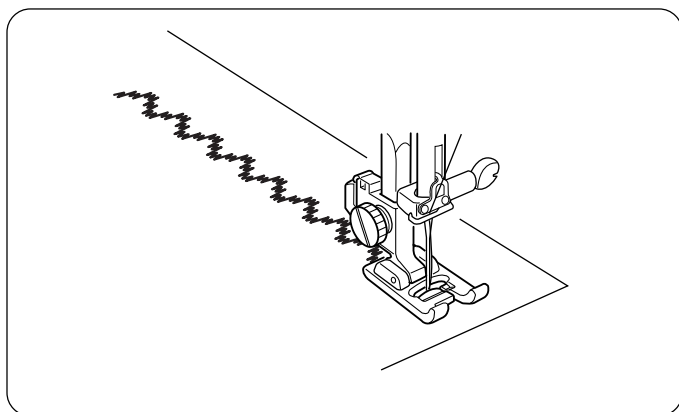
1. Mark the elastic into quarters and match these to the center front, center back and side seams.
2. Place the middle of the elastic under the center of the presser foot and stitch into place, making sure the elastic is evenly stretched.



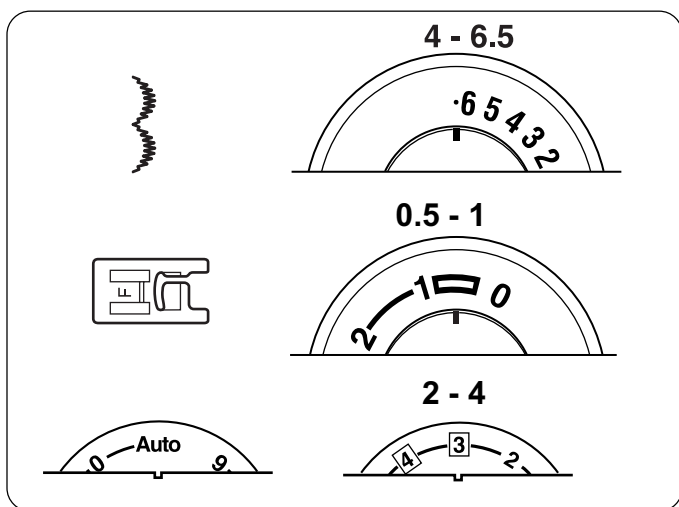
Satin Stitches

Express your creative talents by using one of the pretty satin stitches to add a decorative accent.

It is very important to use a stabilizer with your fabric or the stitch will not form correctly. The weight of the stabilizer should be the same as the fabric.

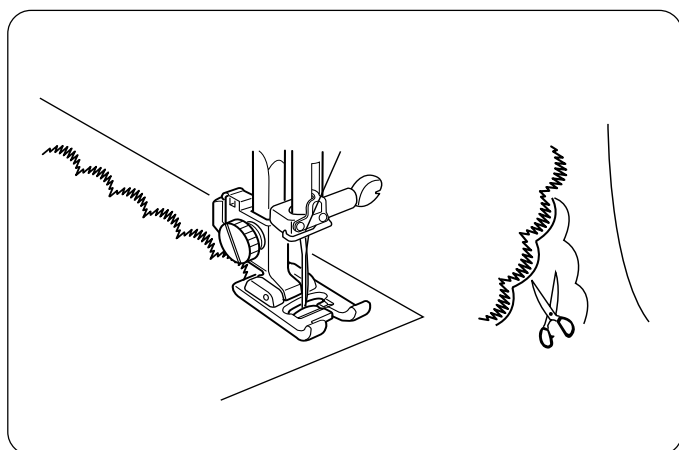


1. Use a washable fabric marker to draw lines for the satin stitches.
2. Place the fabric underneath the presser foot. Lower the presser foot and sew over the line.

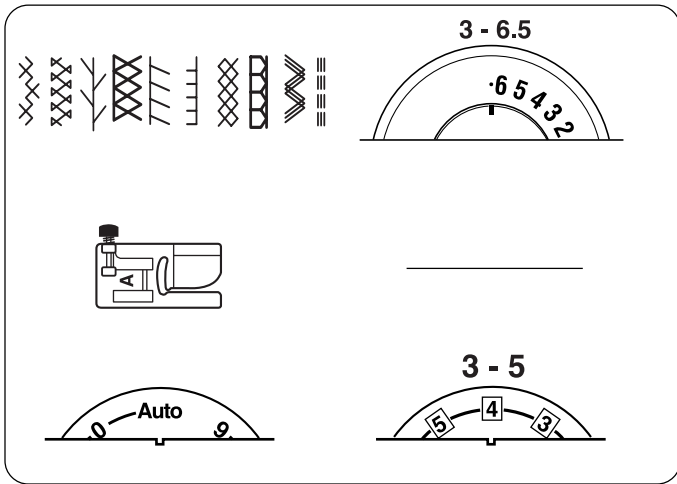


Scallop Edges

A scallop satin stitch can be used to attractively finish the edges of collars, pockets and placemats.



1. To edge a collar, place interfacing between upper and under collar and sew the scallop on the seam line.
2. After sewing, trim fabric close to stitching, taking care not to cut the scallops.

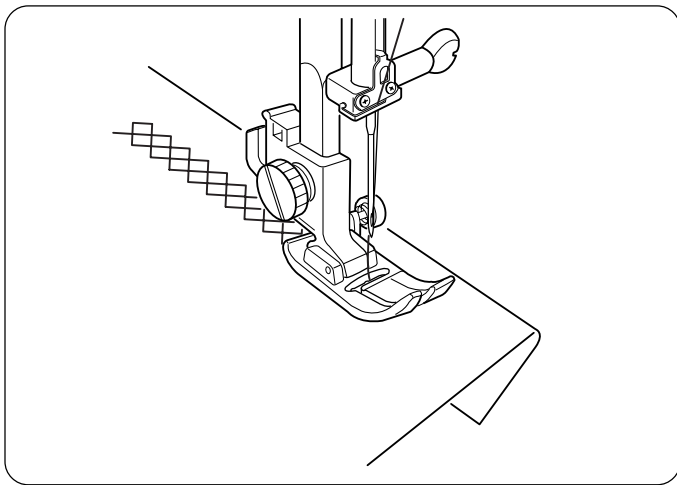


Stretch Stitches

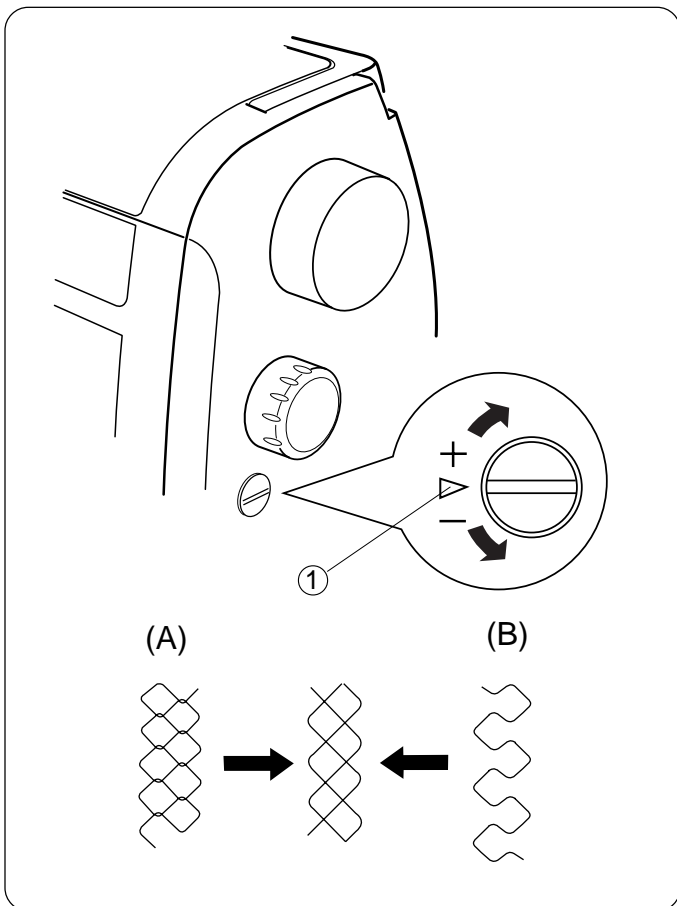
Decorative Stretch Stitches

Choose a decorative stretch stitch to apply a hem to knit fabrics.

- Set stitch width on 0 or 6.5 for Triple Seam.
- Use any setting for stitch length.



1. Fold and press under hem allowance.
2. Place the fabric underneath the presser foot. Lower the presser foot. Sew hem.
3. Trim away any excess hem fabric.

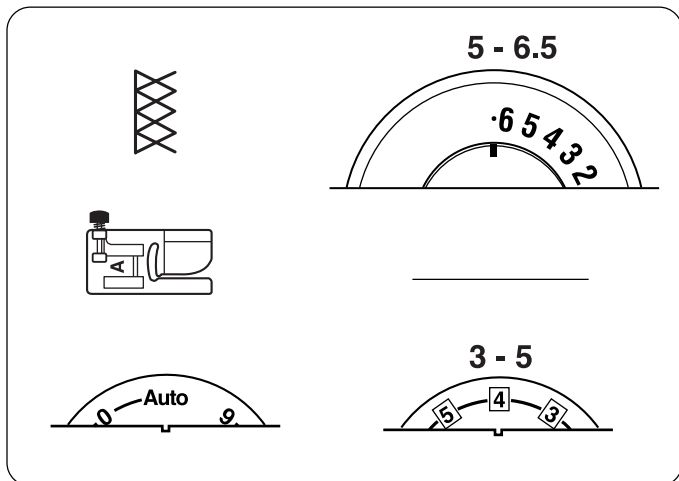


Fine Tuning Stretch Stitches

The setting mark ① should be aligned with the horizontal line as the standard. If the stretch stitch doesn't look right, you can adjust it using the screwdriver.

If stitches are too short (A), correct by turning the dial toward the "+".

If stitches are too long (B), correct by turning the dial toward the "-".

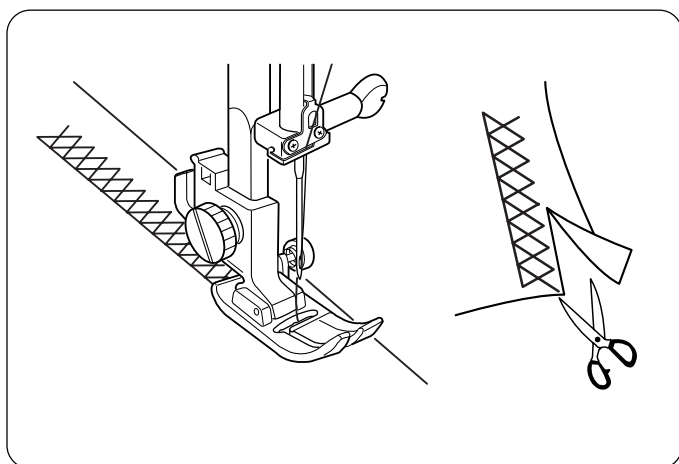


Overlock Stitch

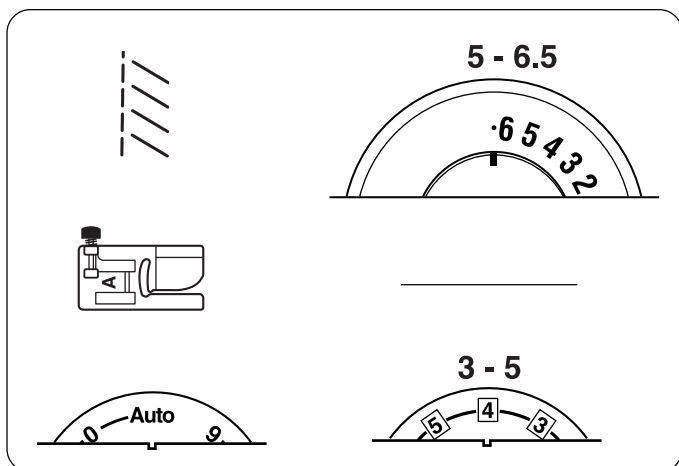
Create a straight seam and overcast at the same time.

Elna invented this stitch in 1963.

- Use any setting for stitch length.



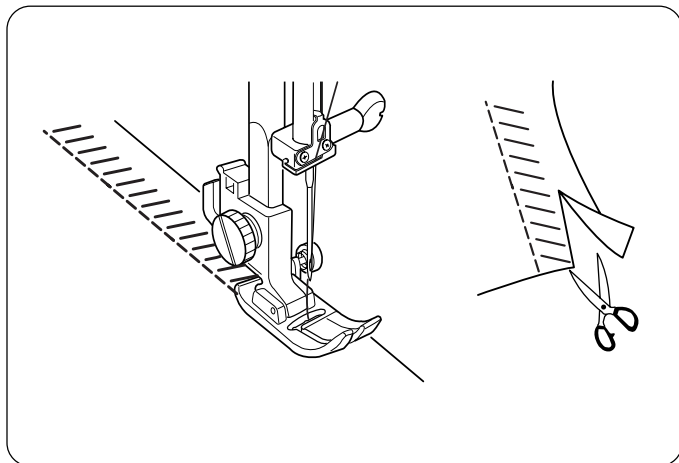
Place the fabric edges together under the presser foot.
Trim away any excess seam allowance.



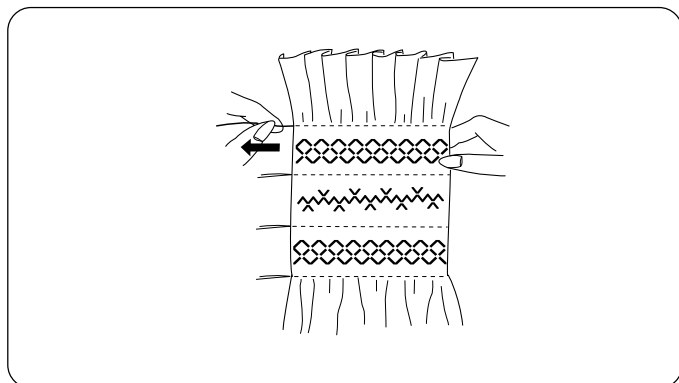
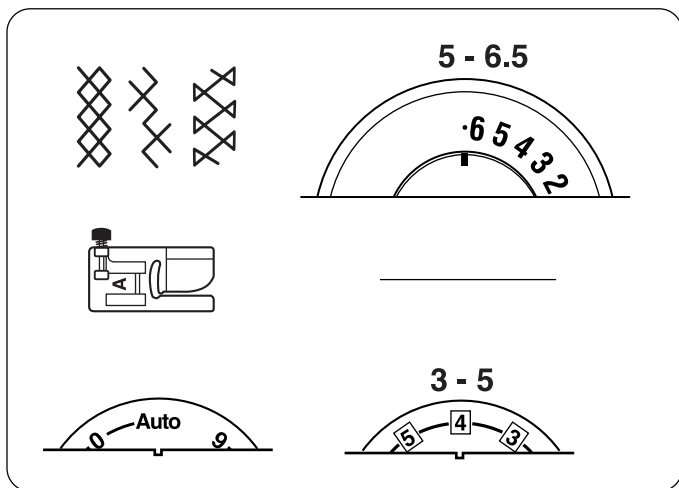
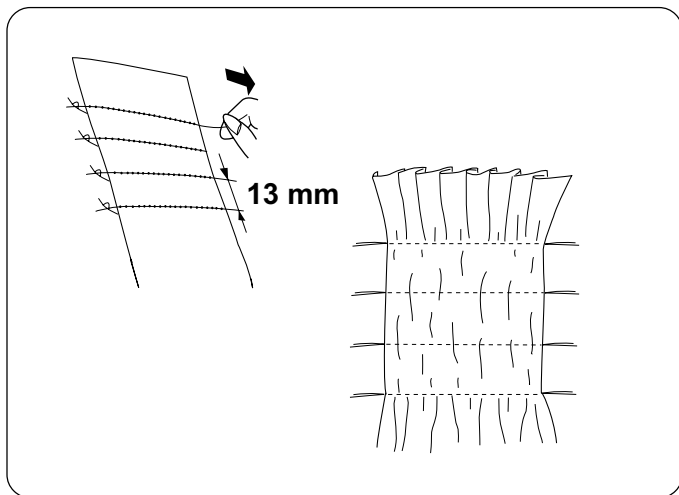
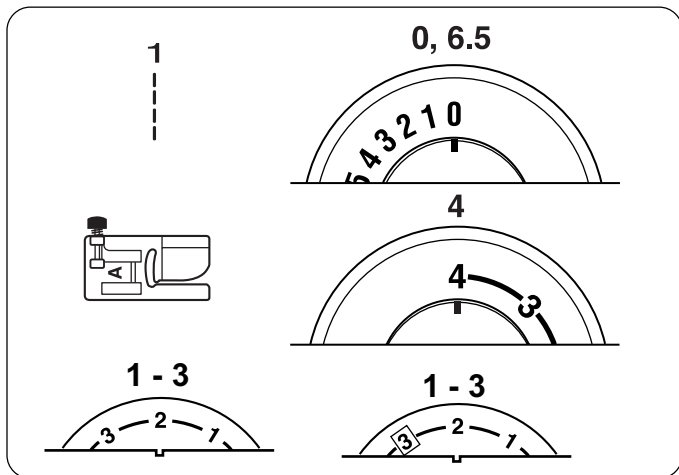
Super Stretch Stitch

This stitch is recommended for sewing fabrics such as swimwear and stretch velour as it provides the greatest amount of stretchability and strength. Seams lie flat and do not lose their shape. Foot pressure may need to be lowered for fabric to maintain its shape.

- Use any setting for stitch length.



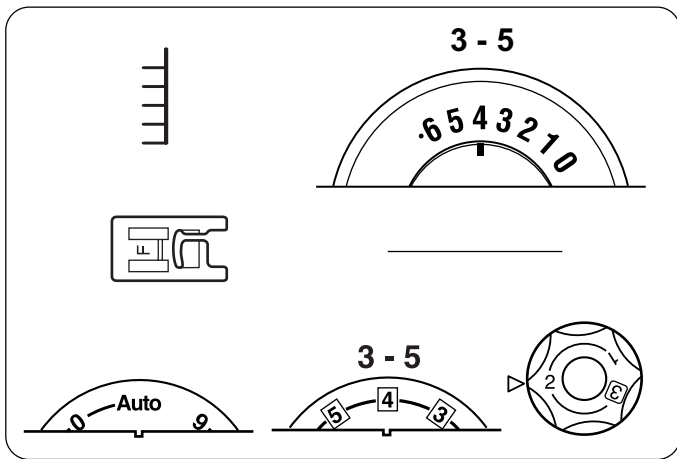
Place the fabric edges together under the presser foot.
Trim away any excess seam allowance.



Smocking

Smocking is a delicate, decorative treatment on children's clothing or women's blouses. Choose a soft, lightweight fabric such as batiste, gingham or challis. Cut the fabric three times the finished width.

1. Sew rows of straight stitches about 13 mm (1/2") apart across the area to be smocked. Tie the threads along one edge. Pull the bobbin threads to gather the fabric.
2. Distribute the gathers evenly. Tie the threads at the other end.
3. Turn the stitch selection knob to a decorative stitch.
 - Use any setting for stitch length.
4. Sew the decorative stitch between the straight stitching lines.
5. Pull out straight stitching lines.

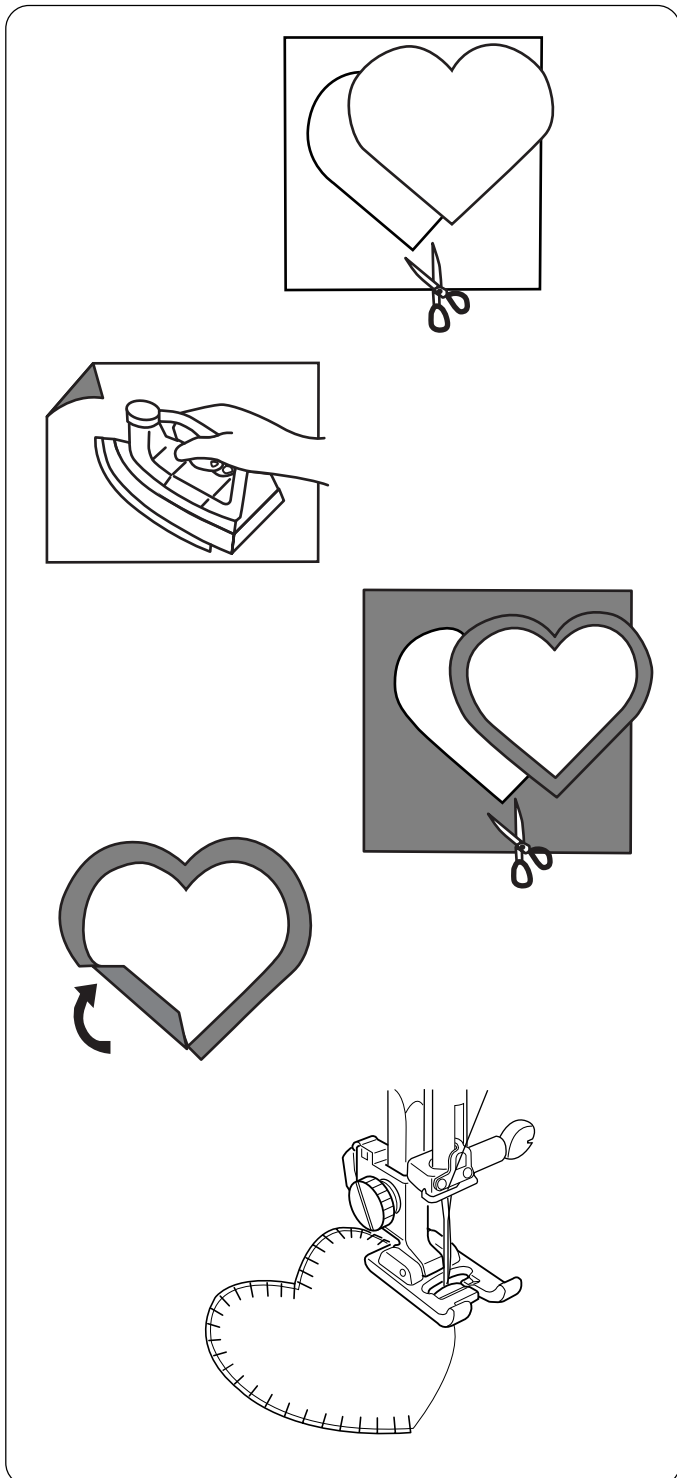


Buttonhole Applique

A favorite method of applying small pieces of fabric to quilts for decoration.

Use fine embroidery thread and needle appropriate for fabric.

- You may need to set the foot pressure dial on 2.
- Use any setting for stitch length.



1. In this type of applique, raw edges are folded under.

To prepare raw edge, first cut applique design out of paper.

2. Press fusible webbing to wrong side of applique fabric.

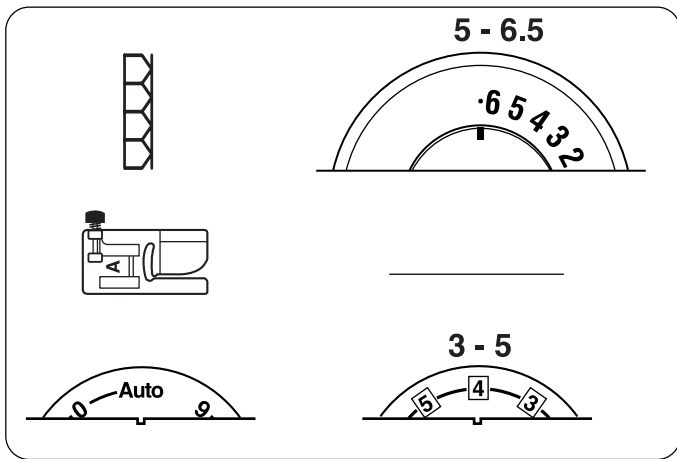
3. Cut applique fabric slightly larger than paper pattern.

4. Fold fabric under to match paper pattern size. Remove pattern. Press only edge to form a perfectly shaped design.

NOTE: *Clip curves where necessary.*

5. Press applique in place and sew. Straight edge of the stitch is sewn next to folded edge of applique.

HINT: How to pivot around curves and corners – lower needle into the outer edge of appliqué, raise presser foot, pivot and lower presser foot.

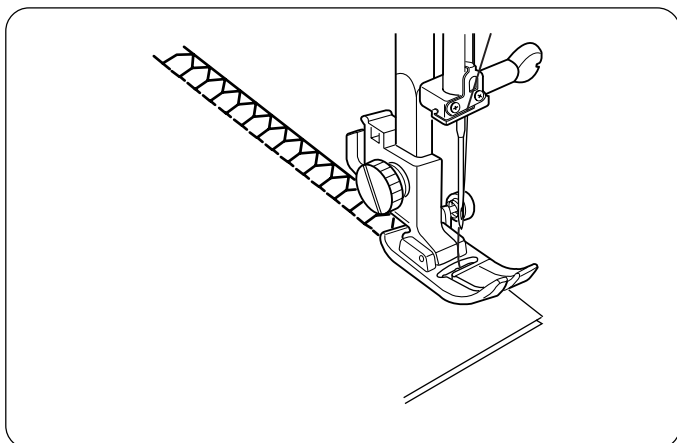


Super Overlock Stitch

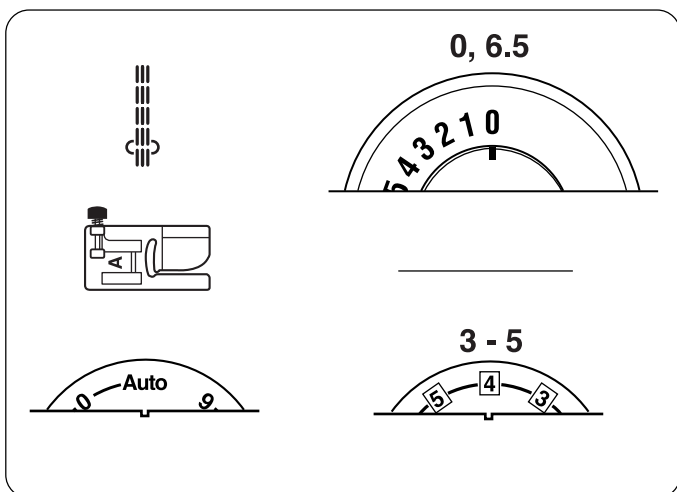
This industrial-inspired overlock stitch is excellent for assembling and finishing fabrics together in one step. Apply ribbing to knits and garment retains its shape.

Elna invented this stitch in 1982.

- Use any setting for stitch length.



Place the fabric edges together under the presser foot and sew.

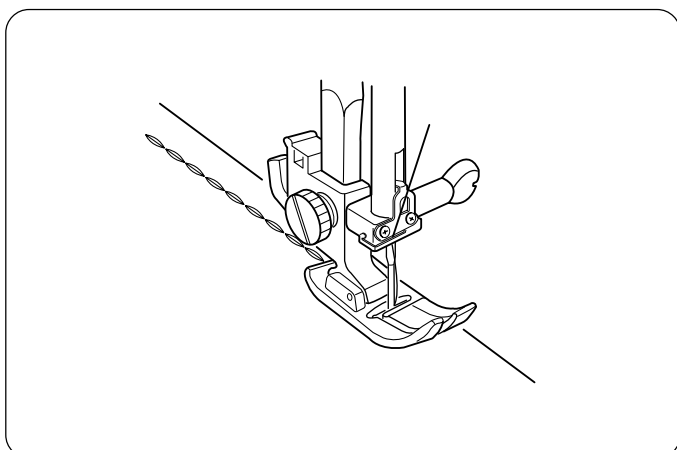


Triple Seam

This strong durable stitch is recommended where both elasticity and strength are needed. Because of its durability, once in place this stitch is not easily removed. Use it to reinforce areas such as crotch and armhole seams or to construct items such as backpacks. This stitch can also be used for topstitching.

Elna invented this stitch in 1952.

- Use any setting for stitch length.



Using a straight stitch (stitch length 4), baste a seam together. Verify the fit. Reset the machine for triple seam and sew.

SECTION IV

Taking Care of Your Machine

Your Elna machine has been meticulously designed and manufactured to give you a lifetime of sewing pleasure. Do not store the machine in a high humidity area, near a heat radiator or in direct sunlight. The machine is self-lubricating, however, the area around the bobbin and hook must be cleaned each time the machine has had extensive use. Do not dismantle the machine further than explained on these pages. Clean the outside of the machine with a soft cloth and pure soap.

Cleaning the Hook Area and Feed Dog

Loose threads and dust may cause puckered stitches and thread breakage during stitching. Check for lint buildup after each project is completed.

Turn the flywheel or press the *Up/Down Needle* key (Model 3230 only) until the needle is raised.

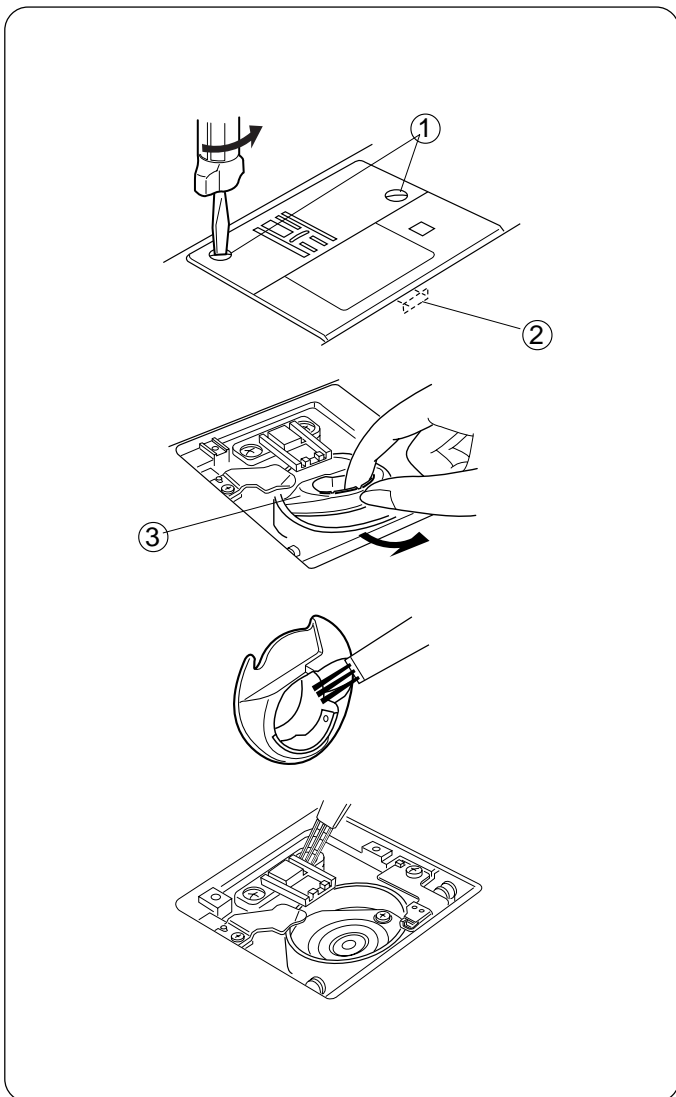
UNPLUG THE MACHINE BEFORE CLEANING.

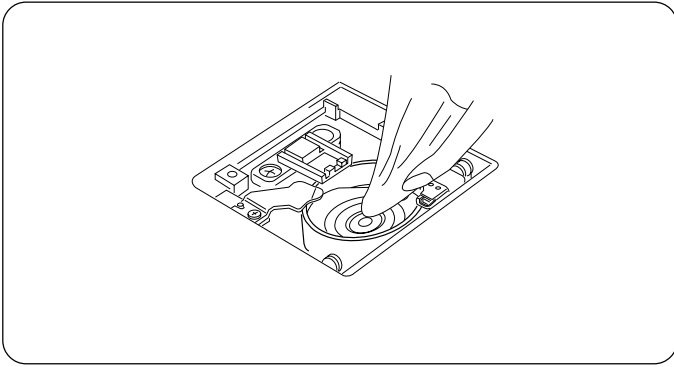
Remove the presser foot and needle. Use the screwdriver supplied with the machine to remove the two screws ①. Lift up and pull away the back of needle plate to release the hook ② and remove the needle plate.

Remove the bobbin and bobbin holder ③.

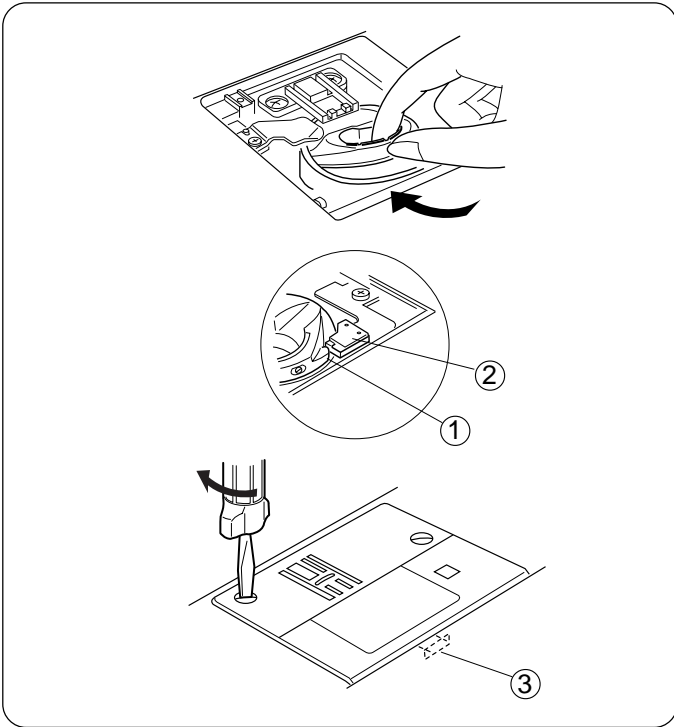
Clean the bobbin holder with the lint brush and soft dry cloth.

Clean the feed dog and hook area with the lint brush.





Wipe gently inside the hook area with soft, dry cloth. (You can also use a small vacuum cleaner.)

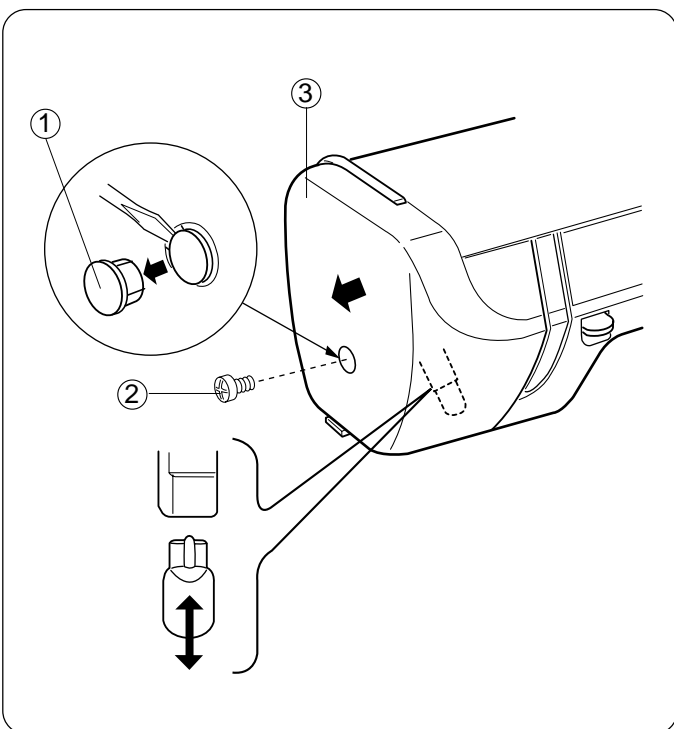


Replacing the Bobbin Holder and Needle Plate

Insert the bobbin holder so the knob ① fits next to the stopper ② in the hook area.

Replace the needle plate and align the hook ③. Replace the screws.

After cleaning, be sure to replace the needle, presser foot and bobbin.



Changing the Light Bulb

The sewing light is located behind the face plate.

UNPLUG THE MACHINE.

Wait until the bulb is COOL before you touch it!

Remove screw cap ①, screw ② and face plate ③.

To remove: pull out bulb from socket.

To replace: insert bulb into socket.

Attach face plate and insert screw and screw cap.

NOTE: Replace bulb with same type rated 12V, 5W.

TROUBLESHOOTING

Condition	Cause	See page(s)
The machine is noisy and does not run smoothly.	1. Threads have been caught in the hook area.	48-49
	2. The feed dog is packed with lint.	48-49
The needle thread breaks.	1. The needle is not threaded properly.	17
	2. The needle thread tension is too tight.	8
	3. The needle is bent or blunt.	12
	4. The needle is not inserted correctly.	12
	5. The thread is either too heavy or too fine for the needle.	12
	6. The threads are not under the presser foot when sewing begins.	23
The bobbin thread breaks.	1. The bobbin thread is not threaded correctly in the bobbin holder.	16
	2. Lint has collected in the bobbin holder.	48-49
	3. The bobbin is damaged and does not turn smoothly.	replace bobbin.
The needle breaks.	1. The needle is not inserted correctly.	12
	2. The needle is bent or blunt.	12
	3. The needle clamp screw is loose.	12
	4. The needle thread tension is too tight.	8
	5. The needle is too fine for the fabric being sewn.	12
	6. The stitch selection knob has been turned while the needle was in the fabric.	21
Skipped stitches.	1. The needle is not inserted correctly.	12
	2. The needle is bent or blunt.	12
	3. The needle and/or the thread are not suitable for the fabric being sewn.	12
	4. A stretch needle is not being used for sewing stretch, very fine and synthetic fabrics.	12-13
	5. The needle thread is not threaded properly.	17
The seam puckers.	1. The needle thread tension is too tight.	8
	2. The machine is not threaded correctly.	17
	3. The needle is too large for the fabric being sewn.	12
	4. The stitch length is too long for the fabric.	22, 23
	5. The foot pressure dial is not set correctly.	6
	6. Threads have been caught in the hook area. <i>Place lightweight tearaway stabilizer under lightweight fabrics.</i>	48-49
The stitches form loops underneath the fabric.	1. The needle thread tension is too loose.	8
	2. The needle is either too large or too small for the thread.	12
The fabric does not feed smoothly.	1. The feed dog is packed with lint.	48-49
	2. The pressure foot dial is not set correctly.	6
	3. The stitches are too short.	22, 23
	4. The correct presser foot is not being used.	20
	5. The feed dog is lowered.	9
The machine does not work.	1. The machine is not plugged in.	10
	2. A thread is caught in the hook area.	48-49
	3. The bobbin winder spindle is in the winding position.	14-15
The buttonhole is not correct.	1. The stitch length is not suitable for the fabric being sewn.	12
	2. Interfacing is not being used with fabrics.	33-36
	3. Fine adjustment lever for buttonhole is not set properly.	34

INDEX

A	
Accessories	4
Accessory Storage Box	3, 4
Applique	31, 46
Automatic Buttonhole	33-34
B	
Bobbin	
Drawing Up Bobbin Thread	19
Inserting	16
Removing Bobbin Holder	48-49
Winding	14-15
Box Stitch	41
Bridging	40
Button Sewing	32
Buttonholes	33-36
C	
Changing Needles	12
Cleaning	
Bobbin Holder and Hook	48-49
Feed Dog	48-49
Machine	48-49
Connecting Machine to Power Supply	10
Corded Buttonhole	35
E	
Elastic	41
Extension Table	3, 6
F	
Fabric	12
Face Plate	3, 49
Fagoting	40
Feed Dog	3, 9, 32
Fine Tuning	34, 43
Flywheel	3, 12
Foot Control	4, 9, 10
Foot Pressure Dial	3, 6
Free Arm	3, 6
G	
Gathering	24
H	
Heavy Fabrics	24
Hems	28, 29, 31, 38, 39, 43
I	
Interfacing	33, 35, 36, 42
L	
Lapped Zippers	25-26
LCD Screen	20
Light Bulbs	1, 49
Lingerie Stitch	39
M	
Manual Buttonhole	36
Mending Tears	37
N	
Needle Position	21, 22
Needles	12-13
O	
Overcasting	30, 44
P	
Part Names	3
Patchwork	41
Pintucks	27
Pivoting	23, 46
Power/Light Switch	3, 10
Presser Foot	
Attaching and Removing	7
Clearance	7
Definitions	5
Q	
Quilt Guide	27
R	
Reverse Stitch Lever	3, 9
S	
Satin Stitch Applique	31
Satin Stitches	42
Scallops	42
Seam Allowance Lines	9
Shank	7
Shell Tuck	39
Shirring	24
Smocking	45
Speed	9
Spool Pins	3, 15
Stabilizer	33, 35, 36, 42
Stitch Length Dial	3, 20, 22
Stitch Selection Knob	3, 20, 21, 34
Stitch Width/Needle Position Dial	3, 20, 21-22
Straight Stitch	23
Stretch Blind Hem	38
Stretch Stitches	43
Super Stretch Stitch	44
T	
Tension	8
Thread	12
Thread Cutter	3, 23
Thread Tension Dial	3, 8, 20
Threading	17, 29
Three Step Zigzag	37
Triple Seam	47
Twin Needle Hem	29
W	
Whip and Roll Hem	31
Z	
Zigzag Stitches	30
Zippers	25-26