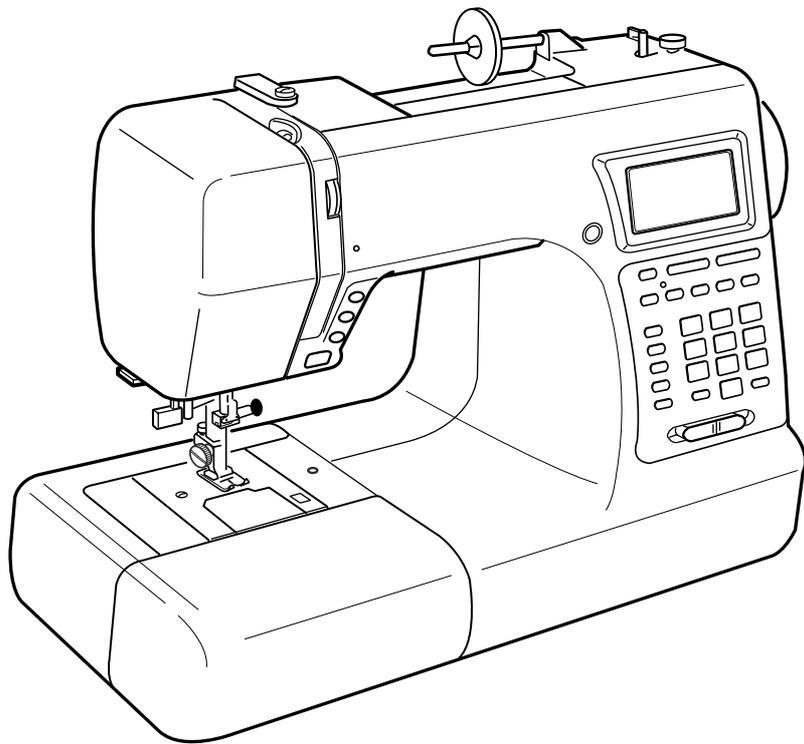


INSTRUCTION BOOK



IMPORTANT SAFETY INSTRUCTIONS

This sewing machine is not a toy. Do not allow children to play with this machine.
The machine is not intended for use by children or mentally infirm persons without proper supervision.

This sewing machine is designed and manufactured for household use only.

Read all instructions before using this sewing machine.

DANGER — To reduce the risk of electric shock:

1. An appliance should never be left unattended when plugged in. Always unplug this sewing machine from the electric outlet immediately after using and before cleaning.
2. Always unplug before replacing a sewing machine bulb. Replace bulb with same type rated 12 Volts 5 Watts.

WARNING — To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Do not allow children to play with the machine. The machine is not intended for use by children or infirmed persons without proper supervision.
Do not allow to be used as a toy. Close attention is necessary when this sewing machine is used by or near children.
2. Use this appliance only for its intended use as described in this owner's manual.
Use only attachments recommended by the manufacturer as contained in this owner's manual.
3. Never operate this sewing machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water.
Return this sewing machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. Never operate the appliance with any air opening blocked. Keep ventilation openings of this sewing machine and foot controller free from accumulation of lint, dust and loose cloth.
5. Never drop or insert any object into any opening.
6. Do not use outdoors.
7. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
8. To disconnect, turn all controls to the off ("O") position, then remove plug from outlet.
9. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
10. Keep fingers away from all moving parts. Special care is required around the sewing machine needle.
11. Always use the proper needle plate. The wrong plate can cause the needle to break.
12. Do not use bent needles.
13. Do not pull or push fabric while stitching. It may deflect the needle causing it to break.
14. Switch this sewing machine off ("O") when making any adjustment in the needle area, such as threading the needle, changing the needle, threading the bobbin or changing the presser foot, and the like.
15. Always unplug this sewing machine from the electrical outlet when removing covers, lubricating, or when making any other adjustments mentioned in this owner's manual.

SAVE THESE INSTRUCTIONS

The design and specifications are subject to change without a prior notice.



Please note that on disposal, this product must be safely recycled in accordance with relevant National legislation relating to electrical/electronic products. If in doubt please contact your retailer for guidance.
(European Union only)

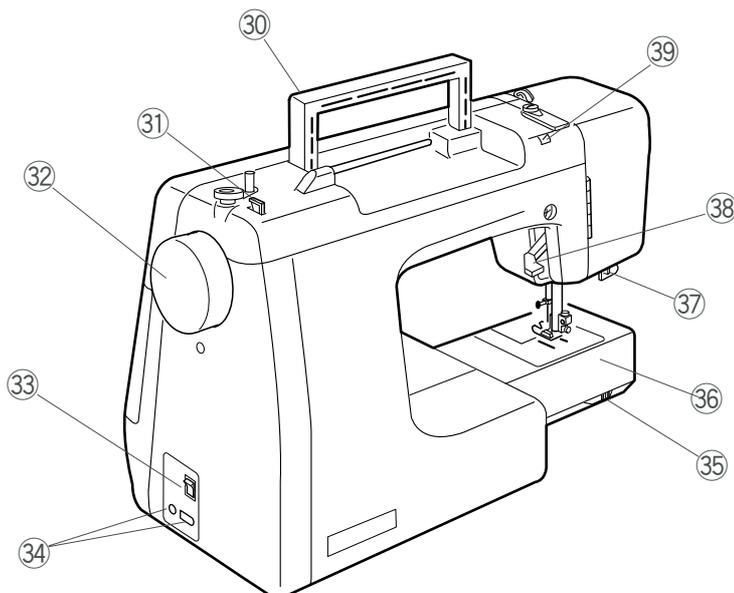
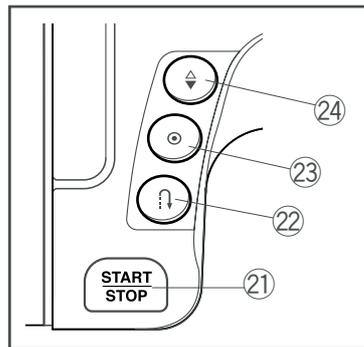
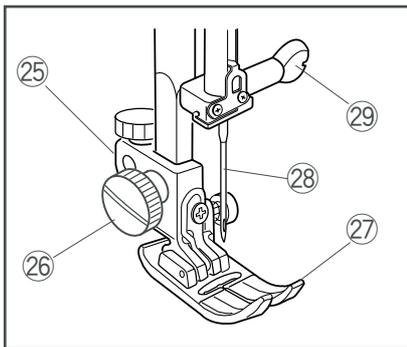
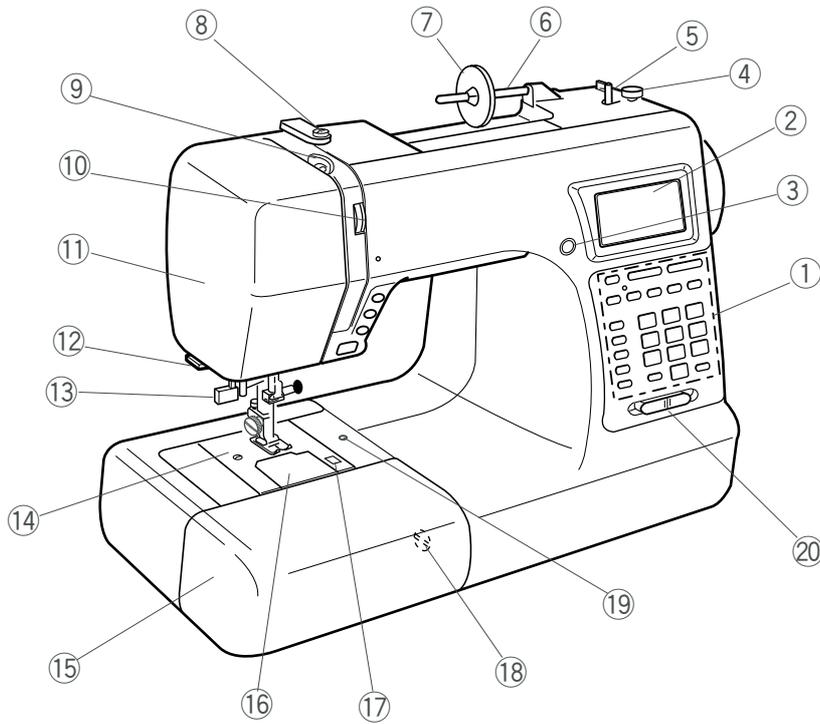
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NAME OF PARTS

Name of Parts

- ① Function buttons
- ② Liquid crystal display
- ③ Screen sharpness adjustment dial
- ④ Bobbin winder stopper
- ⑤ Bobbin winder spindle
- ⑥ Spool pin
- ⑦ Large spool holder
- ⑧ Thread guide
- ⑨ Take-up lever
- ⑩ Thread tension dial
- ⑪ Face cover
- ⑫ Thread cutter
- ⑬ Needle threader
- ⑭ Needle plate
- ⑮ Extension table (Accessory box)
- ⑯ Hook cover plate
- ⑰ Hook cover release button
- ⑱ Feed balancing dial
- ⑲ Attachment hole
- ⑳ Speed control slider
- ㉑ Start/stop button
- ㉒ Reverse stitch button
- ㉓ Auto-lock button
- ㉔ Up/down needle position button
- ㉕ Presser foot holder
- ㉖ Thumb screw
- ㉗ Presser foot
- ㉘ Needle
- ㉙ Needle clamp screw
- ㉚ Carrying handle
- ㉛ Bobbin thread cutter
- ㉜ Handwheel
- ㉝ Power switch
- ㉞ Machine sockets
- ㉟ Drop feed dog lever
- ㊱ Free-arm
- ㊲ Buttonhole lever
- ㊳ Presser foot lifter
- ㊴ Hole for additional spool pin



NOTE:

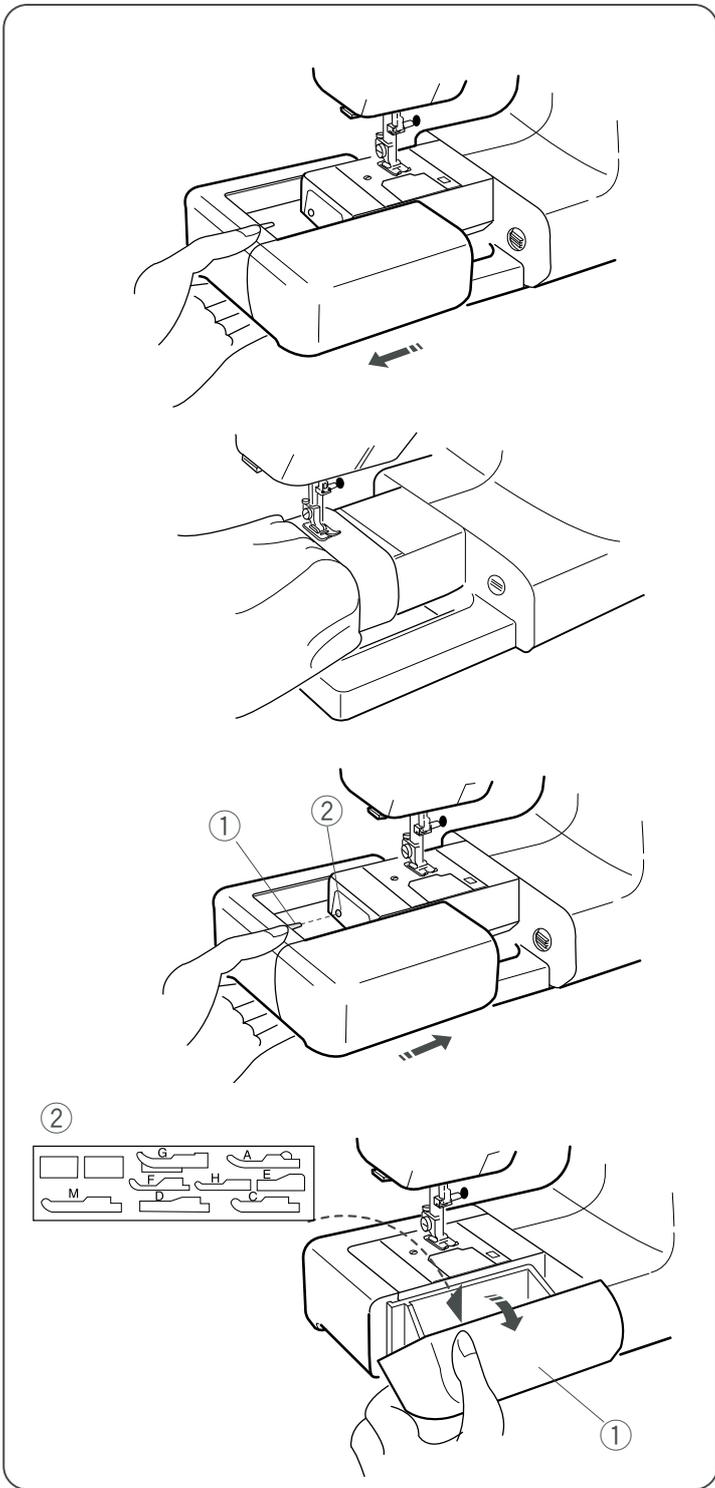
The design and specifications are subject to change without a prior notice.

Standard Accessories

- ① Zigzag foot A (set on the machine)
- ② Overedge foot C
- ③ Rolled hem foot D
- ④ Zipper foot E
- ⑤ Satin stitch foot F
- ⑥ Blind hem foot G
- ⑦ Cording foot H
- ⑧ Overcast foot M
- ⑨ Automatic buttonhole foot R
- ⑩ Darning foot P
- ⑪ Button sewing foot T
- ⑫ Bobbins
- ⑬ Needle set
- ⑭ Quilting bar
- ⑮ Large spool holder (set on the machine)
- ⑯ Small spool holder
- ⑰ Extra spool pin
- ⑱ Spool pin felt
- ⑲ Spool stand
- ⑳ Screwdriver
- ㉑ Screwdriver
- ㉒ Lint brush
- ㉓ Seam ripper/Buttonhole opener
- ㉔ Stitch chart
- ㉕ Stitch chart holder
- ㉖ Instruction book
- ㉗ Power supply cable
- ㉘ Foot control

NOTE:

Accessories can be stored in the extension table (see page 4).



Extension Table

The extension table provides an extra surface for sewing bulky materials, and can be removed for free-arm sewing.

Detaching the table

Pull the table away from the machine as illustrated.

Free-arm sewing can be used for:

Stitching sleeves, waistbands, pant legs or any tubular garment area, darning socks as well as mending knees, elbows or children's wear.

Attaching the table

Push the extension table until it snaps into the machine.

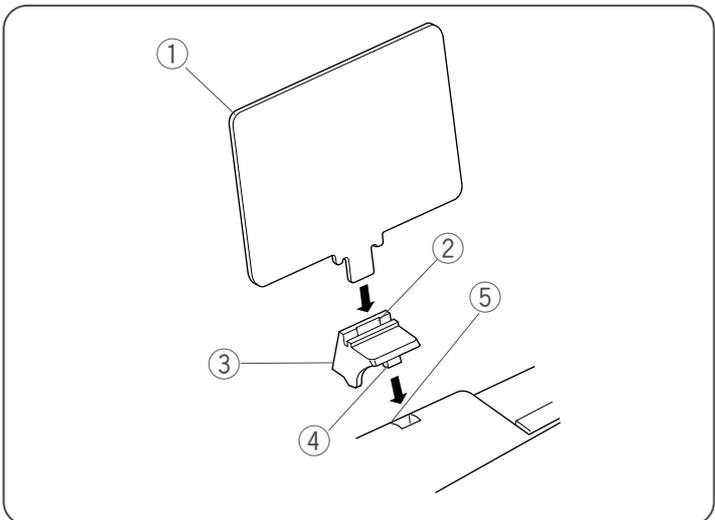
- ① Pin
- ② Hole

Accessory storage

Open the lid toward you.

The accessories can be conveniently stored in the foot compartment and space under it.

- ① Lid
- ② Foot compartment



Stitch Chart

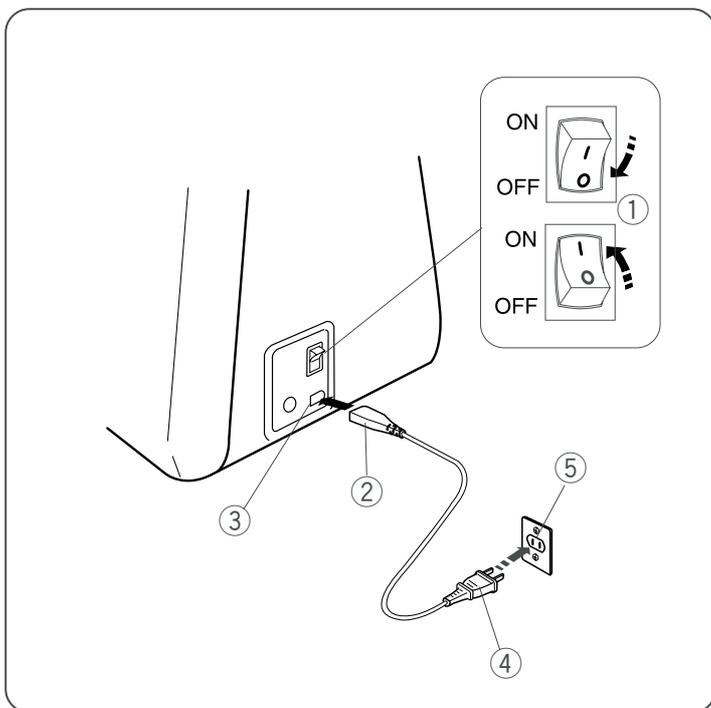
Insert the pin into the hole for additional spool pin.

Insert the stitch chart into the slot of chart holder.

- ① Stitch chart
- ② Slot
- ③ Chart holder
- ④ Pin
- ⑤ Hole for additional spool pin

GETTING READY TO SEW

Connecting the Power Supply



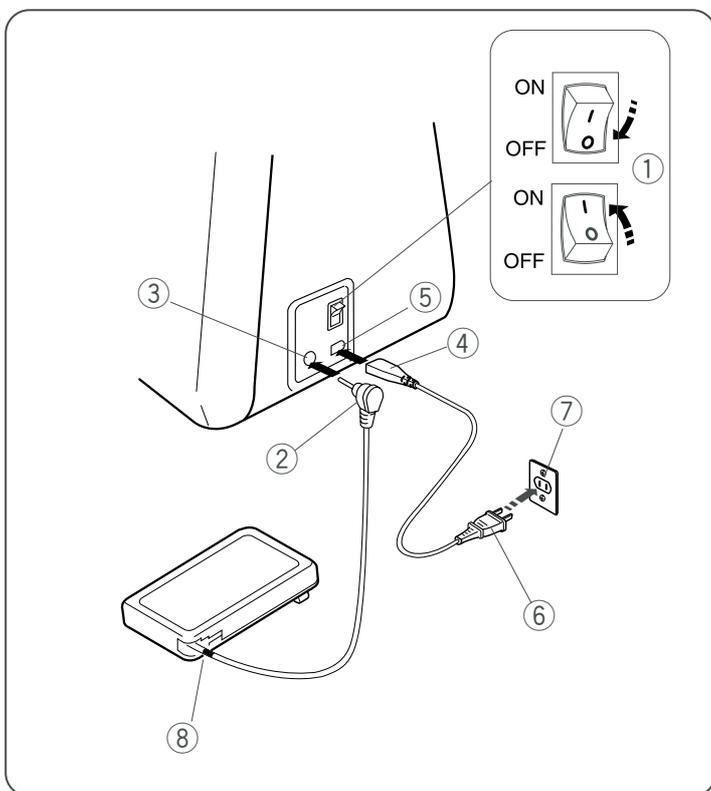
CAUTION

Always turn the power switch off and unplug the sewing machine from the electrical outlet when the machine is not in use.

To use start/stop button

Turn off the power switch.
Insert the machine plug into the machine.
Insert the power supply plug into the wall outlet.
Turn on the power switch.

- ① Power switch
- ② Machine plug
- ③ Machine socket for power supply
- ④ Power supply plug
- ⑤ Wall outlet



To use foot control

Turn off the power switch.
Pull out the foot control cable gently.
Insert the foot control plug into the machine.
Insert the machine plug into the machine.
Insert the power supply plug into the wall outlet.
Turn on the power switch.

- ① Power switch
- ② Foot control plug cord
- ③ Machine socket for foot control
- ④ Machine plug
- ⑤ Machine socket for power supply
- ⑥ Power supply plug
- ⑦ Wall outlet

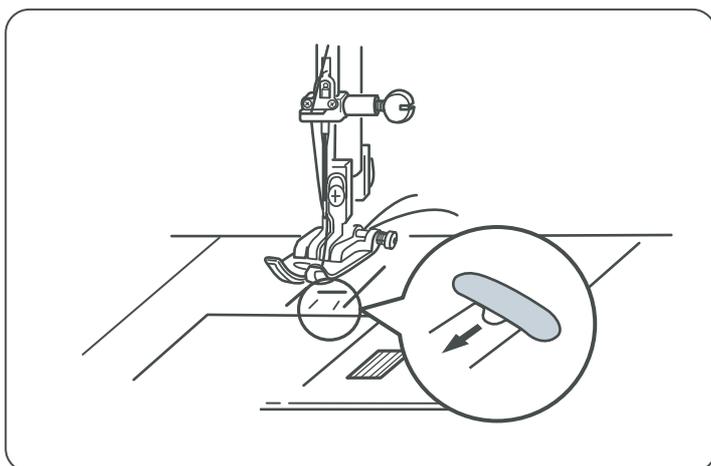
CAUTION

Do not pull the foot control cable beyond the red mark to avoid damage to the foot control.

- ⑧ Red mark

NOTE:

The start/stop button cannot be used when the foot control is connected to the machine.



CAUTION

When turning off the machine after straight stitch sewing, be sure to open the needle plate hole to prevent the needle from hitting the needle plate.

Press  button to open the needle plate before turning the machine off.

NOTE:

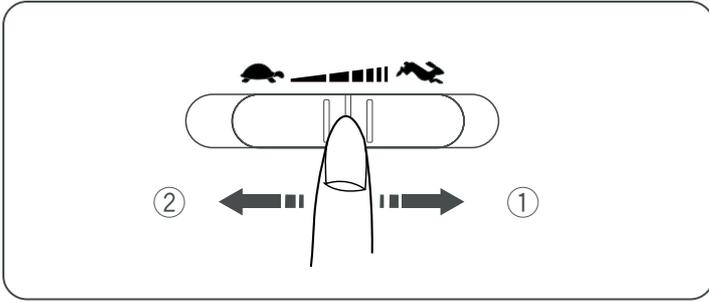
Do not turn the machine off while an hourglass  is indicated on the LCD screen.

Controlling Sewing Speed

Speed control slider

Sewing speed can be varied according to your sewing needs with the speed control slider.

- ① To increase sewing speed, slide it to the right.
- ② To decrease sewing speed, slide it to the left.

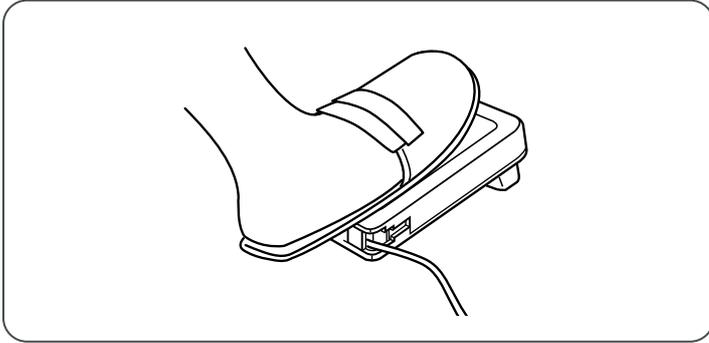


Foot control

Sewing speed is varied by the foot control.

The harder you press down on the foot control, the faster the machine runs.

The machine runs at the maximum speed set by the speed control slider when the foot control is fully depressed.

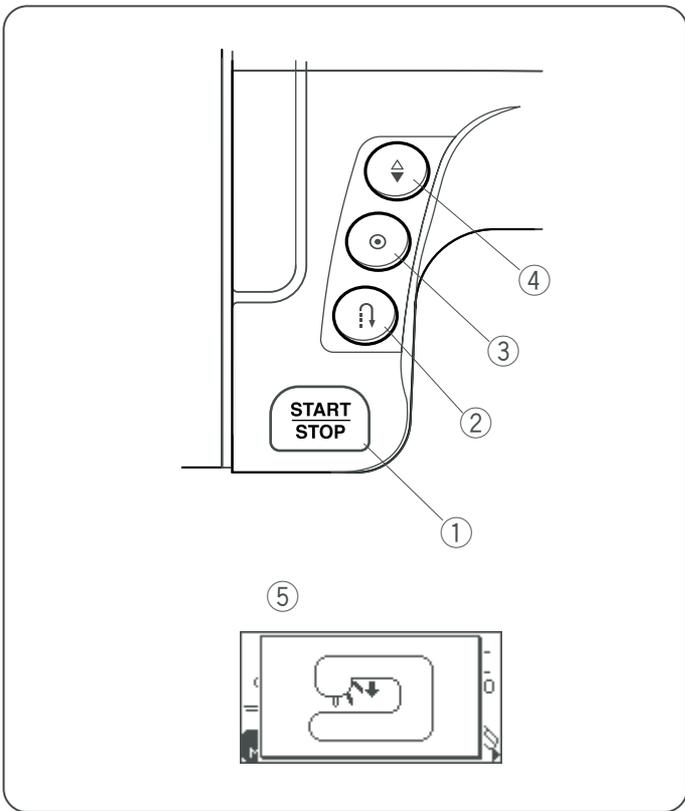


Operating Instructions:

The symbol "O" on a switch indicates the "off" position of a switch.

For appliances with a polarized plug (one blade wider than the other): To reduce the risk of electric shock, this plug is intended to fit in a polarized outlet only one way. If it does not fit fully in 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 (U.S.A. and Canada only).

* Foot control model 21371 is used with this sewing machine.



Function Buttons

① Start/stop button

Press this button to start or stop the machine. The machine starts running slowly for the first few stitches, it then runs at the speed set by the speed control slider.

NOTE:

- Start/stop button cannot be used when the foot control is connected to the machine.
- If you start the machine with the presser foot up, a warning message will appear to advise you to lower the foot. Lower the foot and restart the machine again.
- ⑤ Warning message

② Reverse stitch button

When stitches $\begin{matrix} | & | & | & | \\ \oplus & \oplus & \oplus & \oplus \\ 01 & 04 & 06 & 07 \end{matrix}$ (mode 1) $\begin{matrix} | & | & | & | & | & | & | & | \\ \oplus & \oplus \\ 36 & 37 & 38 & 39 & 40 & 41 & 42 & 43 \end{matrix}$ (mode 2) are selected, the machine will sew in reverse while the reverse stitch button is pressed.

If you press the reverse stitch button when sewing any other stitches, the machine will immediately sew locking stitches and automatically stop.

③ Auto-lock button

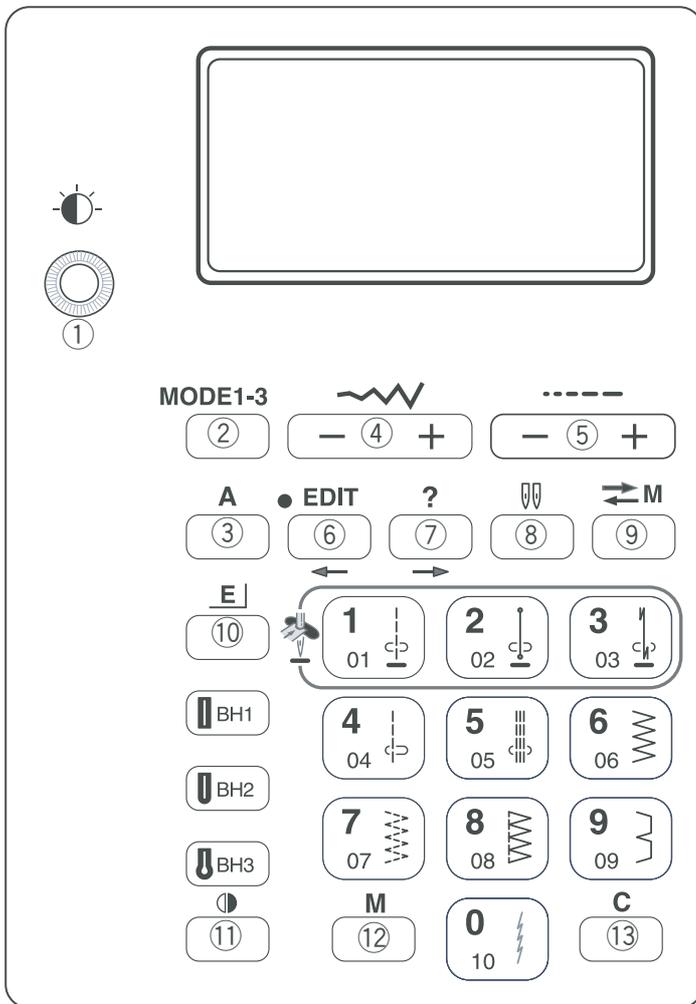
When stitches $\begin{matrix} | & | & | & | \\ \oplus & \oplus & \oplus & \oplus \\ 01 & 04 & 06 & 07 \end{matrix}$ (mode 1) $\begin{matrix} | & | & | & | & | & | & | & | \\ \oplus & \oplus \\ 36 & 37 & 38 & 39 & 40 & 41 & 42 & 43 \end{matrix}$ (mode 2) are selected, the machine will immediately sew locking stitches when the Auto-lock button is pressed, then automatically stop. When sewing any other stitches, the machine will sew locking stitches at the end of the current pattern and automatically stop.

④ Up/down needle position button

Press this button to bring the needle up or down. The machine will stop with the needle up or down depending on the needle position determined by this button.

NOTE:

The needle will always stop in the up position after sewing buttonholes, bartacks, eyelets and darning.



① Screen sharpness adjusting dial

Use this dial to adjust the brightness of the liquid crystal display. If the screen is not clear, adjust the screen brightness with this dial.

② Mode button

Press this button to change the mode.

Mode 1: Direct pattern selection

Mode 2, 3: Utility and decorative stitch pattern selection

③ Letter style button

Press this button to select letter style for sewing letters.

④ Stitch width adjusting button

Press “+” or “-” to change the stitch width.

⑤ Stitch length adjusting button

Press “+” or “-” to change the stitch length.

⑥ Edit button (see pages 12, 13, 67-69)

Press this button to enter the editing mode. In the editing mode, this button is used to shift the cursor to the left.

⑦ Help button (see pages 11-13, 67)

Press this button to view alternative applications of certain stitches. In the editing mode, this button is used to shift the cursor to the right.

⑧ Twin needle button (see page 57)

Press this button for twin needle sewing.

⑨ Memory/call button (see pages 14, 71, 72)

When you press this button after memorizing or editing patterns, the pattern combination will be registered. You can also recall registered patterns by pressing this button.

⑩ Elongation button (see page 56)

Stitches #28 to #34 can be elongated up to five times of their original size.

⑪ Mirror image button (see pages 59, 72)

Press this button to turnover the selected pattern.

⑫ Memory button (see pages 12-14, 58-68)

The memory button will memorize your pattern selection. Press the memory button after you selected the stitch pattern. (You can program up to 40 patterns.)

⑬ Clear button (see pages 68, 72)

When this button is pressed, the pattern before or above the cursor will be deleted.

Press and hold this button to clear the entire pattern combination.

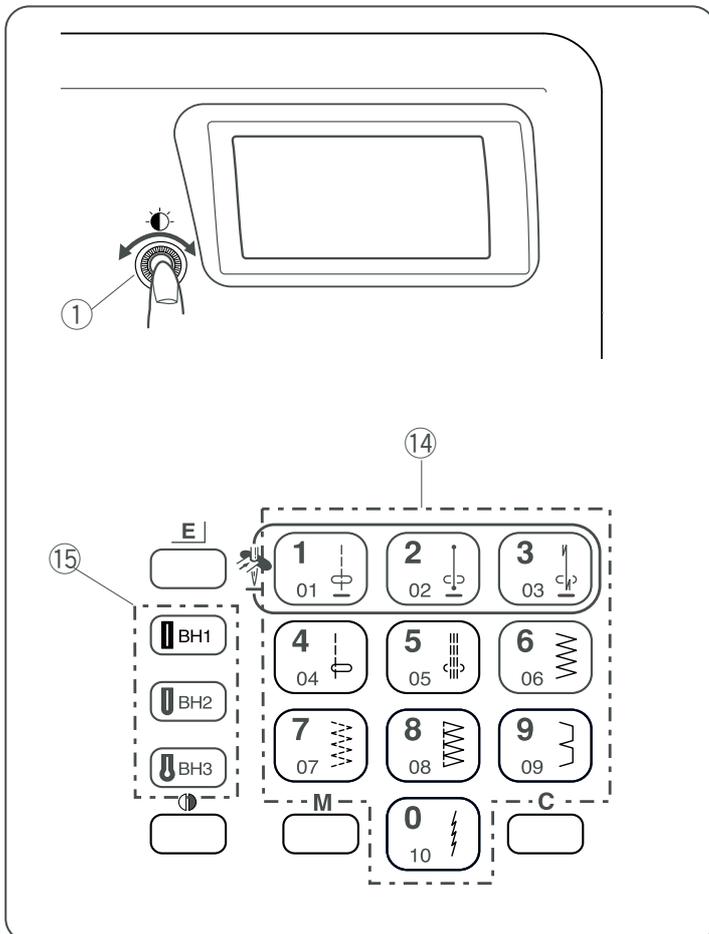
If this button is pressed after sewing a pattern combination, the sequence will be deleted.

⑭ Pattern selection buttons (see page 10)

You can select the stitch patterns directly (mode 1) or by entering the 2-digit pattern number (mode 2).

⑮ Buttonhole selection buttons (see page 10)

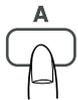
You can select buttonholes directly in any mode.



MODE1-3



MODE1-3



Mode selection

When you switch on the machine, the direct select mode (mode 1) is activated. Press the mode button to change the mode.

Mode 1

Screen indication

You can select 10 of the most commonly used patterns directly by pressing the pattern selection buttons.

Mode 2 and 3

You can select stitch patterns from #01 to #99.

Patterns #01 to #10 in mode 2 are programmable patterns equivalent to the patterns in mode 1.

Lettering mode

Press this button to enter the lettering mode and select one of the following fonts or border patterns.

- ① Block style letters
- ② Block style European letters
- ③ Script style letters
- ④ Script style European letters
- ⑤ Broadway style letters
- ⑥ Broadway style European letters
- ⑦ Border patterns

Pattern Selection

Mode 1

You can select the stitch patterns #01 to #10 directly by pressing the pattern selection buttons.

- ① Pattern selection buttons

The buttonholes BH1 to BH3 can be directly selected by pressing the buttonhole selection buttons in any mode.

- ② Buttonhole selection buttons

The LCD screen shows the standard settings for the selected stitch pattern.

- ③ Pattern number and image of the selected stitch
- ④ Stitch width or needle drop position
- ⑤ Stitch length
- ⑥ Recommended setting for needle thread tension
- ⑦ Recommended foot pressure
- ⑧ Recommended presser foot

A triangle mark will appear when a certain utility stitch is selected. This indicates that there are alternative settings for the selected stitch (see page 11).

- ⑨ Recommended presser foot

Mode 2, 3 and Lettering

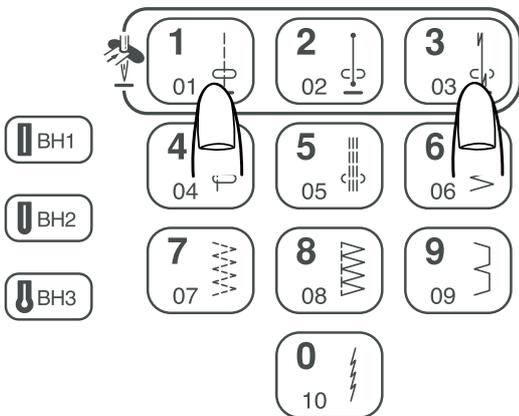
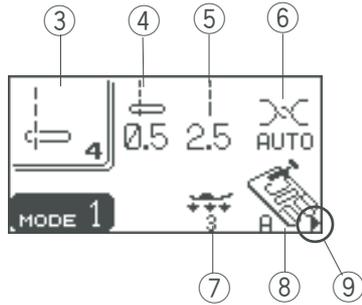
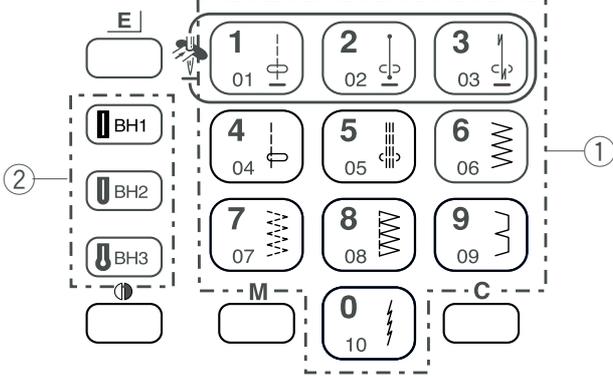
To select a stitch pattern, enter the 2-digit number of the desired stitch pattern by pressing the corresponding number buttons.

Please refer to the stitch chart to find the pattern number of the desired stitch.

Example: stitch pattern #31

Press the button number "3" and button number "1". The pattern number appears for a while.

The LCD screen shows the selected stitch pattern and setting information.



Help button

Pressing this button will show alternative applications of the selected pattern when patterns #01, #04, #06, #08 (mode 1) or #29 (mode 2) have been selected.

Example: When pattern #01, #04, #06, #08, #29 has been selected.

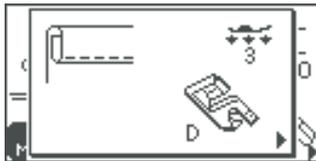
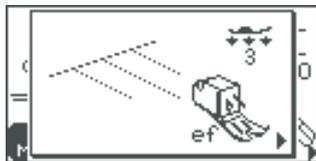
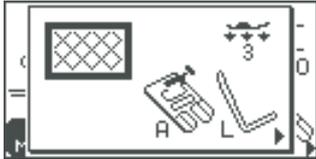
Each time you press the help button, the LCD screen will show as follows:

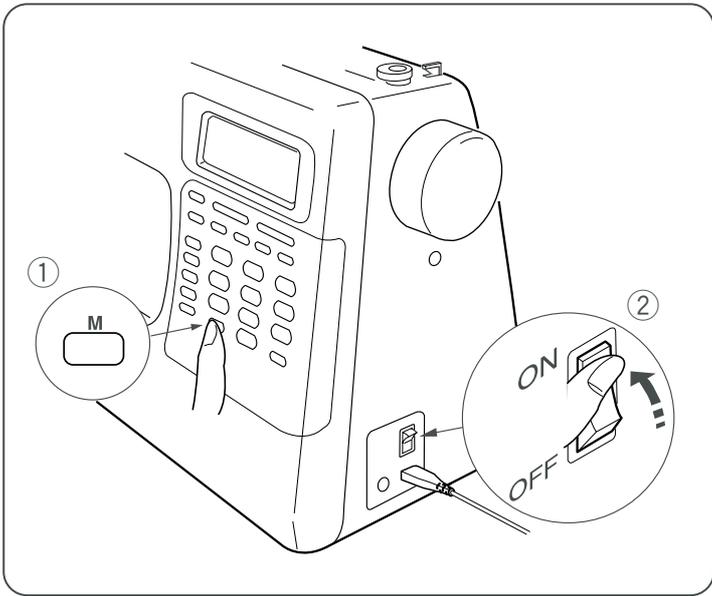
The zigzag foot and quilting bar for quilting will be shown.

The even foot (optional item) will be shown.

The rolled hem foot for a rolled hem will be shown.

The zipper foot for zipper sewing will be shown.



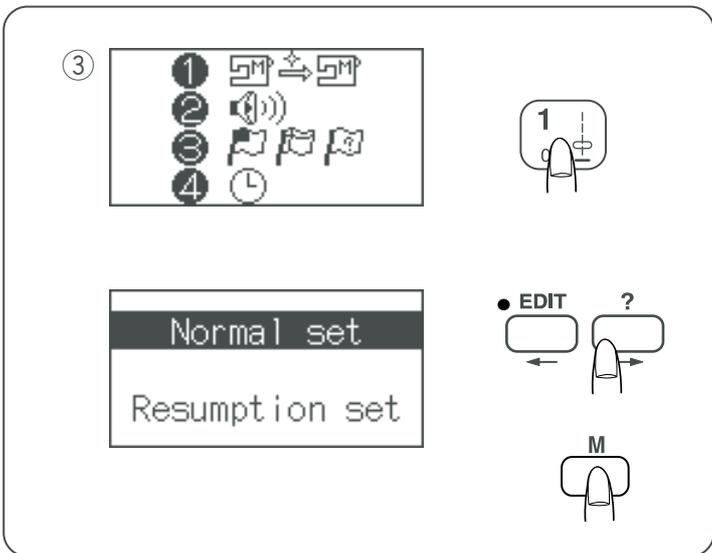


Customizing Machine Settings

You can customize the machine settings to your preference.

Turn on the power switch while pressing the memory button. The machine setting window will appear.

- ① Memory button
- ② Power switch
- ③ Machine setting window



Resumption setting

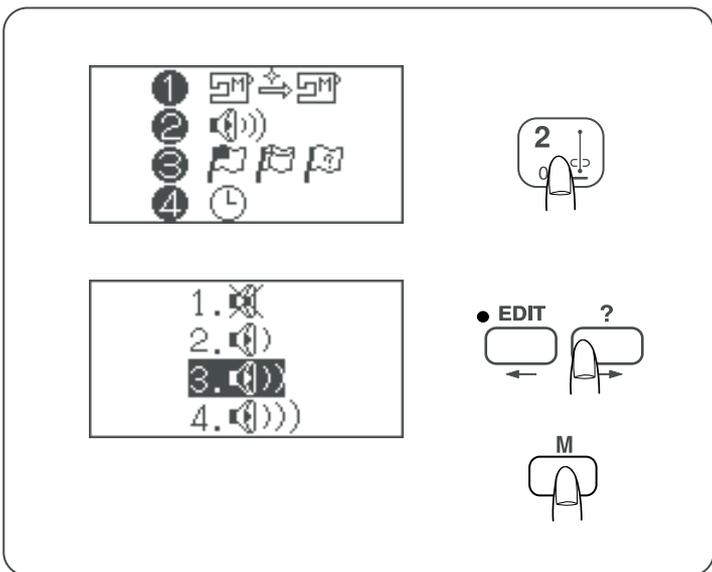
Pattern number 4 will be automatically selected when turning the power on.

However the last pattern sewn before turning the power off can be recalled if the resumption setting is selected.

Press button number 1 to select Normal/Resumption setting.

Press the edit or help button to select either Normal or Resumption setting.

Press the memory button to enable the setting.



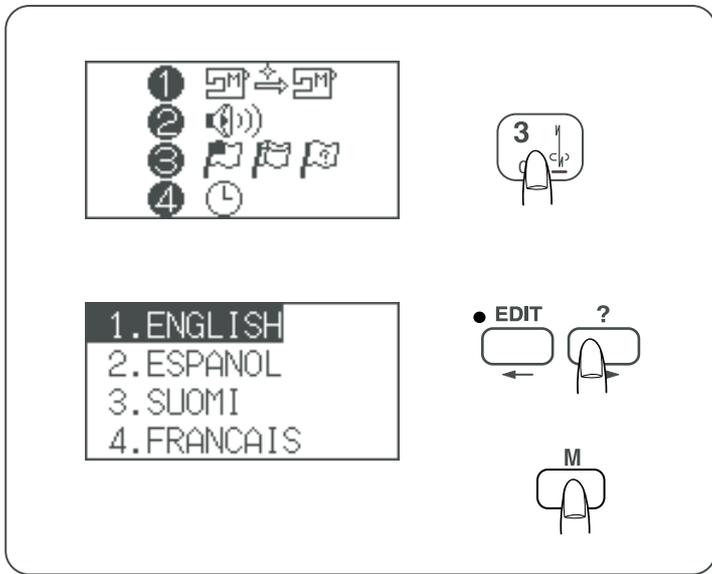
Sound setting

You can change the loudness of buzzer sound.

Press button number "2" to select sound setting. The LCD screen shows the sound setting.

Press the edit or help button to select the sound level.

Press the memory button to enable the setting.



Language selection

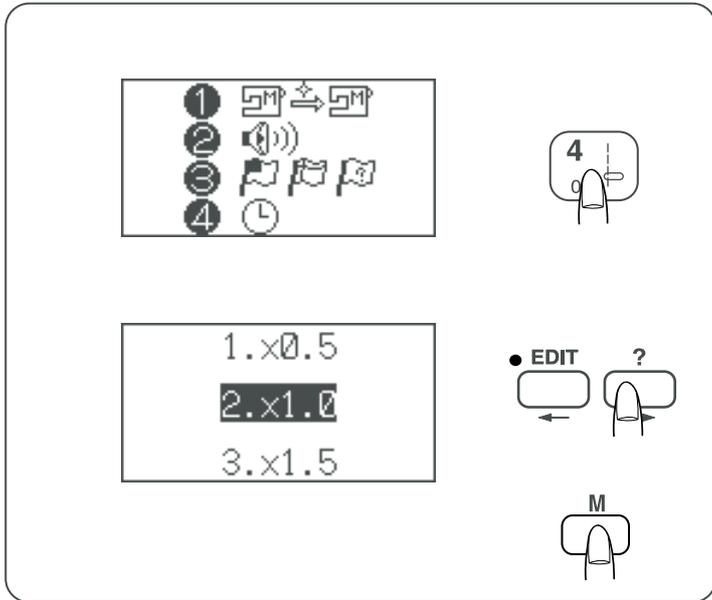
You can choose one of 10 languages for the screen display.

- | | | | |
|------------|-------------|------------|---------------|
| 1. English | 2. Spanish | 3. Finnish | 4. French |
| 5. German | 6. Italian | 7. Dutch | 8. Portuguese |
| 9. Russian | 10. Swedish | | |

Press the button number “3”.

The LCD screen shows language selection.
Press the edit or help button to select a language.

Press the memory button to set the language.



Pop-up window duration time setting

A pop-up window will appear for a while when selecting patterns, altering stitch length or width.

The duration of the window displayed can be changed to suit o your preference.

The default setting is 2 seconds (x1.0).

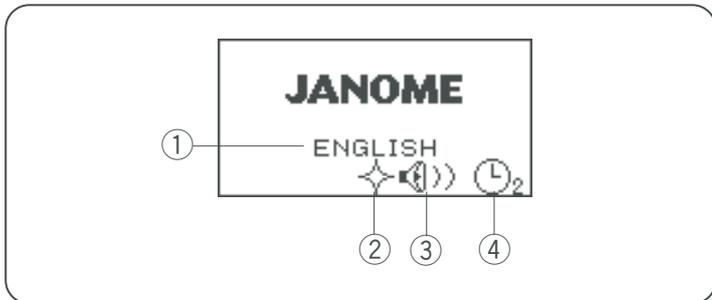
Press the button number “4”.

The LCD screen shows the pop-up window duration time setting display.

Press the edit or help button to select the duration.

- 1.: x 0.5.....1 second
- 2.: x 1.0.....2 seconds
- 3.: x 1.5.....3 seconds

Press the memory button to enable the setting.



When turning the power on, the initial display shows the customized settings that you have made.

Example:

- ① Language: English
- ② Resumption setting: ON
- ③ Buzzer sound: Normal
- ④ Pop-up window duration: 2 seconds

Customizing the preset values for the stitch length and width

The preset value of the stitch length and width are optimized for each pattern.

You can modify the preset value of the patterns in mode 1 and save it so that you do not have to change the setting each time you turn the power switch on.

Example: To change the preset value for the stitch length

Select the stitch pattern you want to change the preset value.

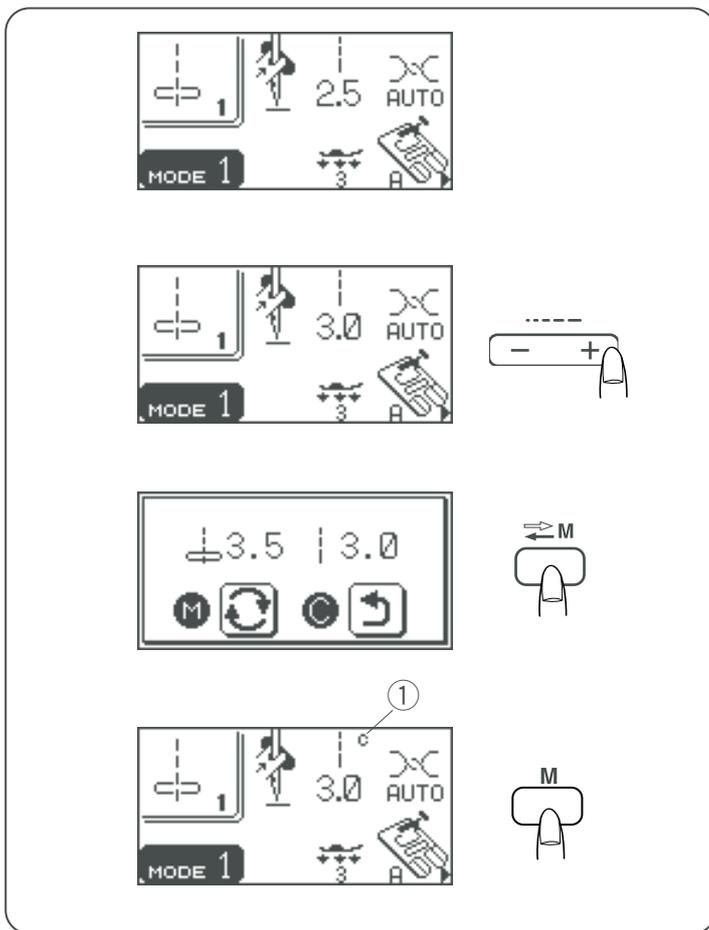
Press “-” or “+” to change the stitch length.

Press the memory/call button.

Press the memory button to save your personal setting.

A symbol “C” appears on LCD screen to indicate the stitch has been altered from the factory default settings.

① Symbol “C”

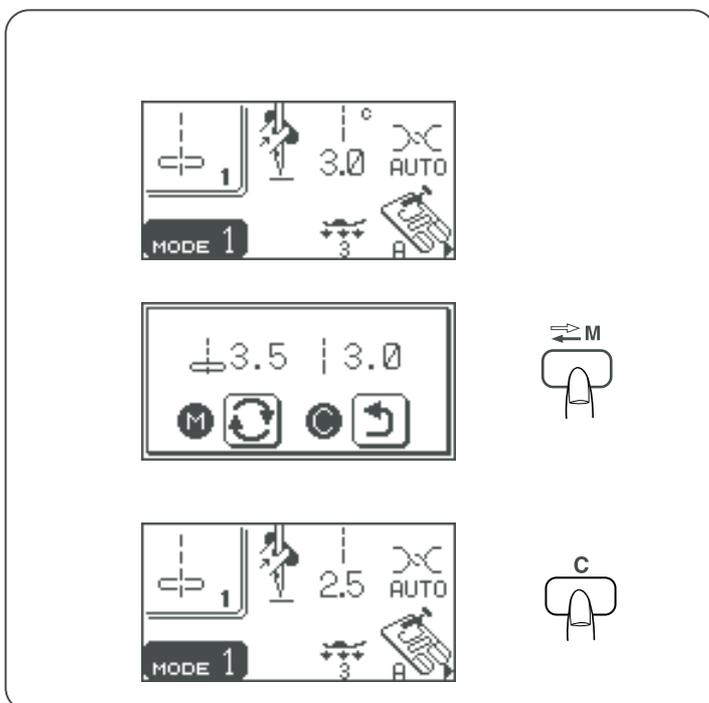


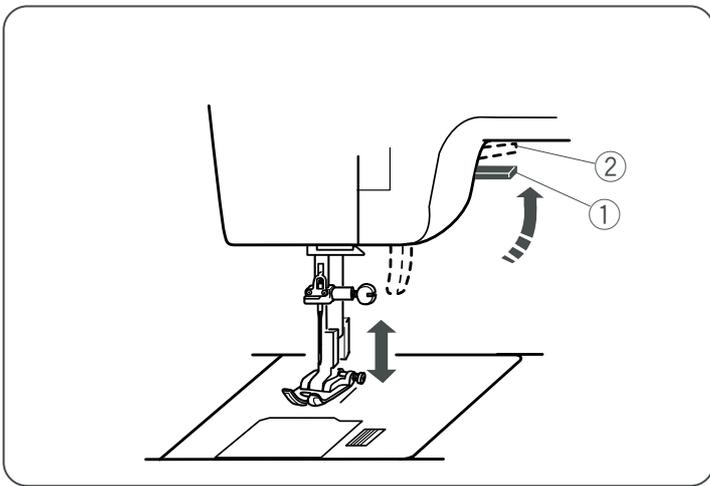
Restoring the original settings

Select the pattern that you have changed its settings.

Press the memory/call button. The LCD screen will show the current settings.

Press the “C” button. The symbol “C” disappears and the preset values will return to the original settings (the same settings when you have purchased the machine).

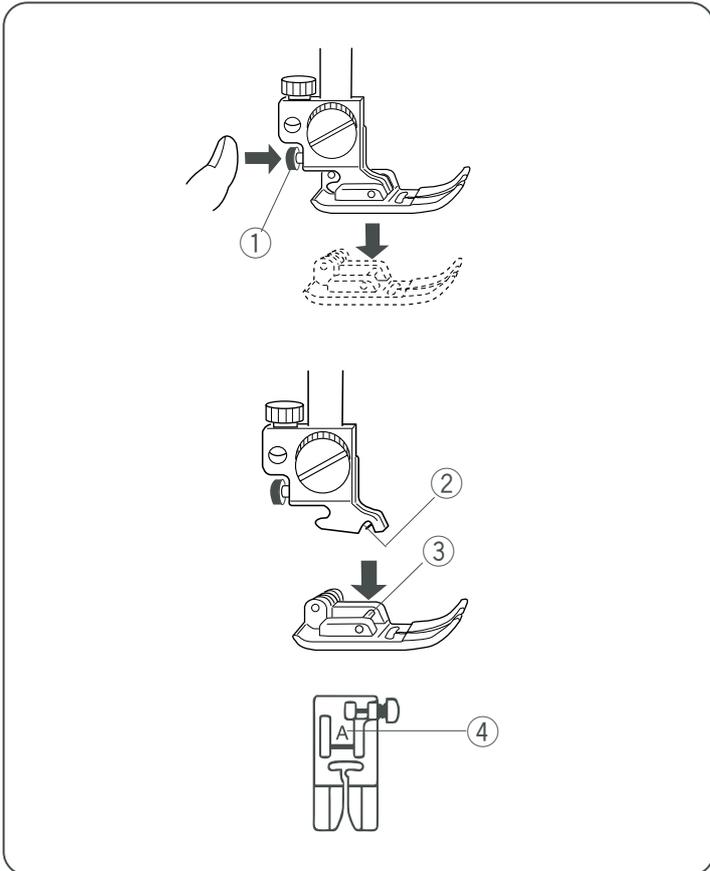




Presser Foot Lifter

The presser foot lifter raises and lowers the presser foot. You can raise it about 1/4" (0.6 cm) higher than the normal up position for easy removal of the presser foot, or to help you place thick material under the foot.

- ① Presser foot lifter
- ② Higher position



Changing the Presser Foot

⚠ CAUTION:

Turn off the power switch before changing the foot. Always use the proper foot for the selected pattern. The wrong foot can cause the needle to break.

• To remove

Raise the needle to its highest position by turning the hand wheel counterclockwise.

Raise the presser foot, and press the red button on the back of the foot holder.

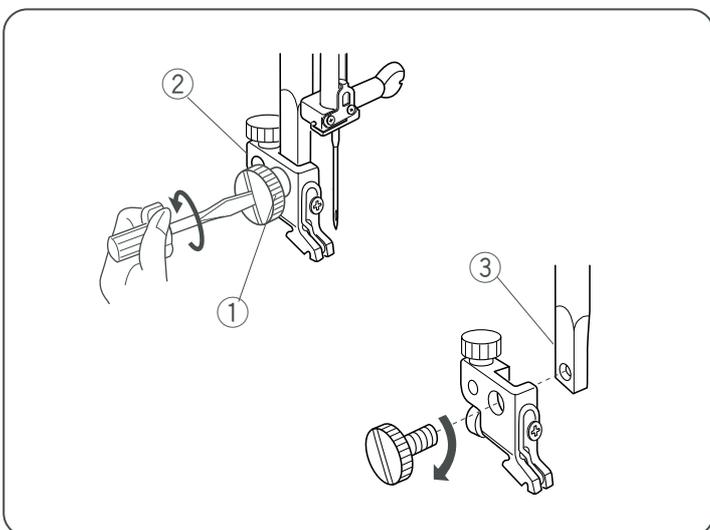
• To attach

Place the selected presser foot so that the pin on the foot lies just under the groove on the foot holder.

Lower the presser bar to lock the foot into place.

Each foot is marked with a letter for identification.

- ① Snap-on button (red button)
- ② Groove
- ③ Pin
- ④ Identification letter



Removing and Attaching the Foot Holder

• To remove

Raise the presser foot lifter and remove the thumb screw by turning it counterclockwise with a screwdriver.

Remove the foot holder.

• To attach

Match the hole in the foot holder with the threaded hole in the presser bar.

Fit the thumb screw into the hole.

Tighten the screw by turning it clockwise with a screwdriver.

- ① Thumb screw
- ② Foot holder
- ③ Presser bar

Variety of Presser Feet and Their Uses

①



① Zigzag foot A:

This is the most versatile foot. It can be used for various stitches including straight stitches and zigzag stitches. It is designed to achieve firm and neat seam results.

②



② Overedge foot C:

This foot is exclusively for overedging. The brush on the foot effectively prevents skipped stitches on the raw edge of fabrics.

③



③ Rolled hem foot D:

This special foot is for sewing a rolled hem. The curl of the foot helps to form a hem at a constant width.

④



④ Zipper foot E:

This foot is for sewing zippers. The zipper teeth are guided through the grooves on the bottom of the foot.

⑤



⑤ Satin stitch foot F:

This clear plastic foot is ideal for satin stitches and decorative stitches. The center groove on the bottom of the foot ensures smooth feeding of dense stitches.

⑥



⑥ Blind hem foot G:

This foot is specially designed for blind hemming. The guide on the foot helps feed the fabric and sew a straight and nearly invisible blind-hem.

⑦



⑦ Cording foot H:

This foot is specially designed to hold one or three strands of cording to create braiding.

⑧



⑧ Overcasting foot M:

This foot is specially designed to simulate professional style overlocking. The wires on the foot effectively prevent the fabric edge from puckering or rolling.

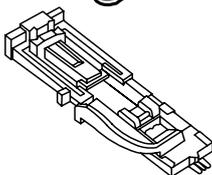
⑨



⑨ Darning foot P:

This is a special foot for basting. It holds the fabric while taking a stitch, synchronizing with the needle bar movement. This foot can also be used for free motion embroidery or quilting.

⑩



⑩ Automatic buttonhole foot R:

This foot is for buttonholes and for darning. Place a button in the button holder on the rear of the foot. This automatically sets the buttonhole size.

⑪



⑪ Button sewing foot T:

This foot is exclusively used for attaching a button. It holds a button securely in place and allows fine adjustment of button position.

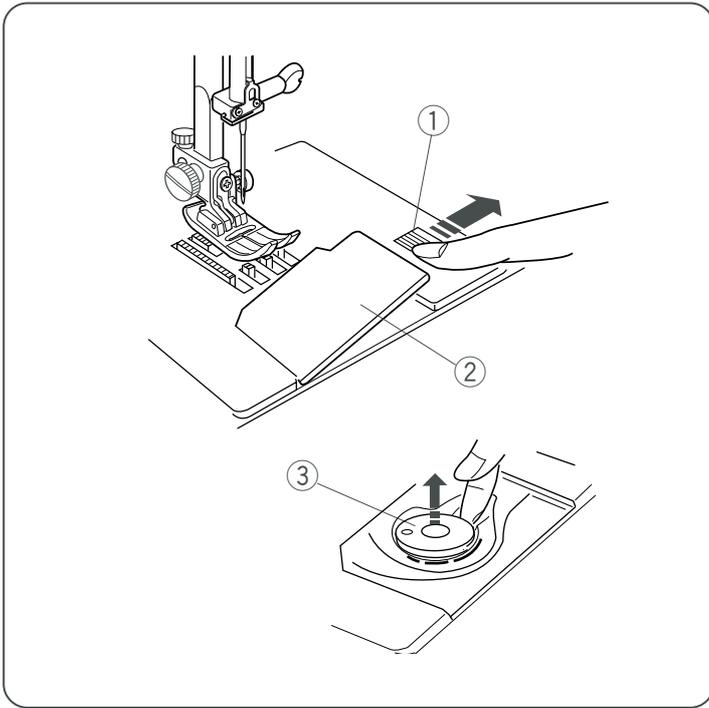
Bobbin Winding

Removing the bobbin

Slide the hook cover plate release button to the right, and remove the cover plate.

Lift out the bobbin from the bobbin holder.

- ① Hook cover plate release button
- ② Hook cover plate
- ③ Bobbin



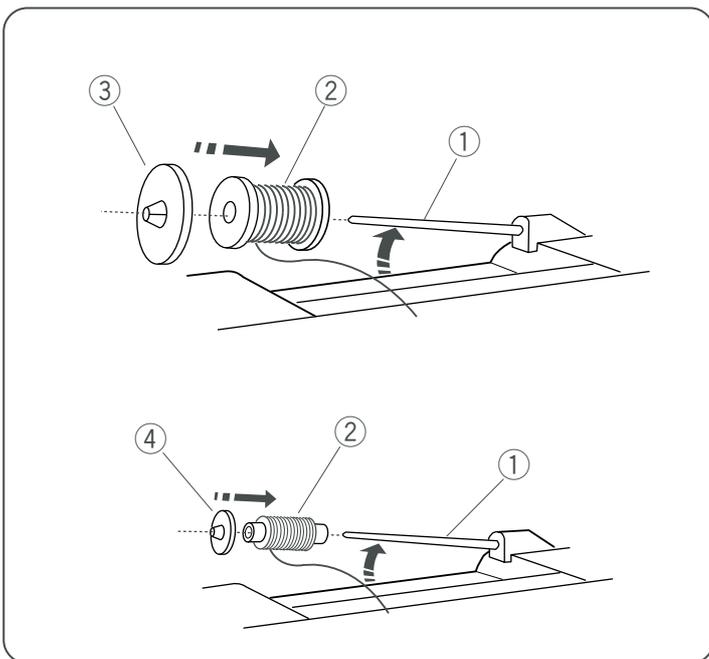
Setting the spool of thread

Lift up the spool pin.

Place a spool of thread on the spool pin with the thread coming off the spool as shown.

Attach the large spool holder, and press it firmly against the spool of thread.

- ① Spool pin
- ② Spool of thread
- ③ Large spool holder



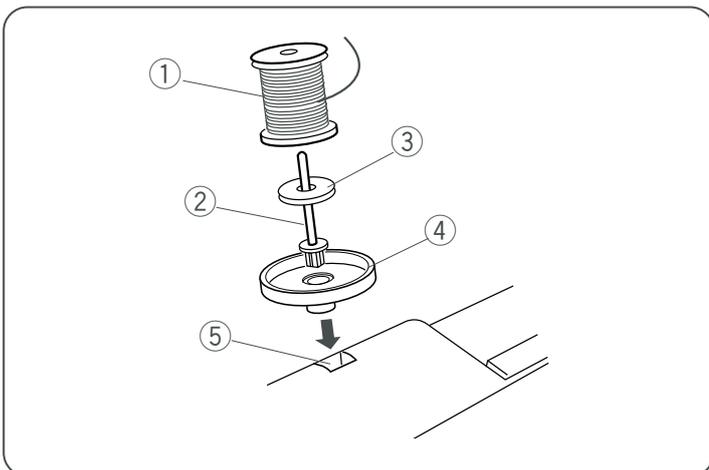
The small spool holder is used with narrow or small spools of thread.

- ④ Small spool holder

Extra spool pin

The extra spool pin is for bobbin winding, without unthreading the machine, and for twin needle sewing. Insert the extra spool pin into spool stand and the hole.

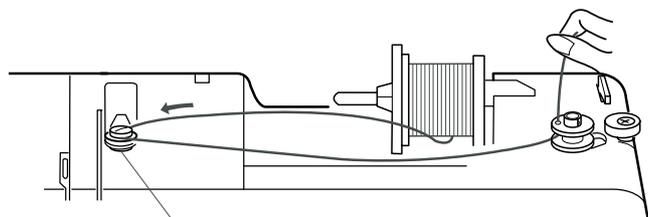
- ① Spool
- ② Extra spool pin
- ③ Spool pin felt
- ④ Spool stand
- ⑤ Spool pin hole



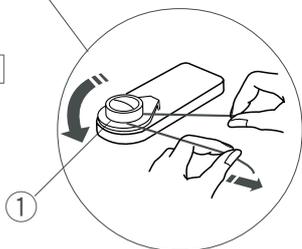
Bobbin Winding

NOTE:

Set the speed control slider at its fastest position for bobbin winding.

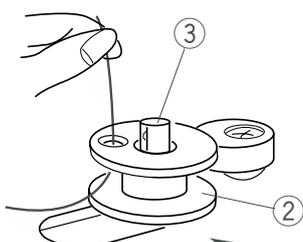


1

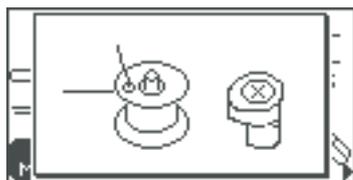


1

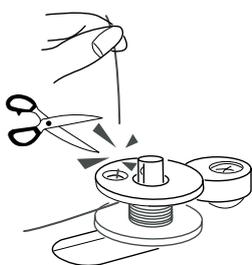
2



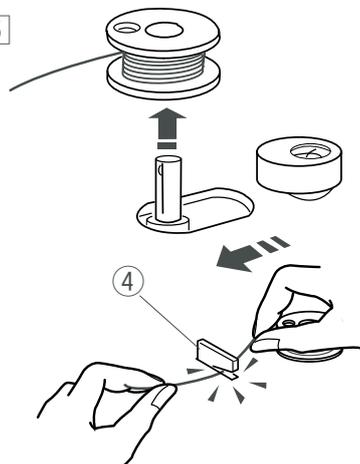
3



4



5



4

- 1 Draw the thread from the spool.
Guide the thread around the bobbin winding tension disk.
Be sure to insert the thread between the tension disks.
① Bobbin winding tension disk

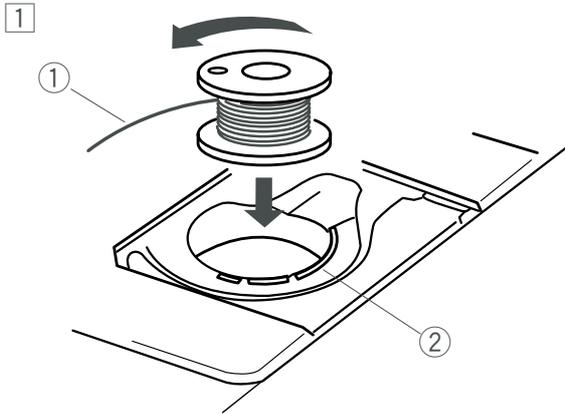
- 2 Insert the thread through the hole in the bobbin, threading from the inside to the outside.
Put the bobbin on the bobbin winder spindle.
② Bobbin
③ Bobbin winder spindle

- 3 Push the bobbin winder spindle to the right.
The LCD screen shows bobbin winding sign.

- 4 With the free end of the thread held in your hand, depress the foot control. Stop the machine when the bobbin has wound a few layers, and cut the thread close to the hole on the bobbin.

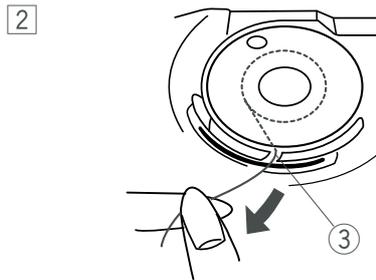
- 5 Depress the foot control again. When the bobbin is fully wound, it will stop automatically.
Return the bobbin to its original position by moving the spindle to the left, and cut the thread as shown.
④ Bobbin thread cutter

Inserting the bobbin



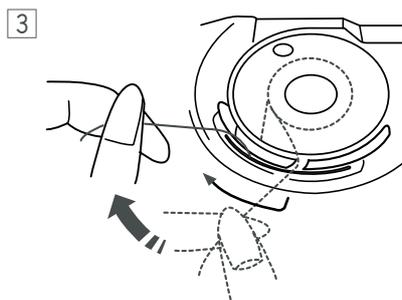
1 Place the bobbin in the bobbin holder with the thread running off counterclockwise.

- ① Thread
- ② Bobbin holder

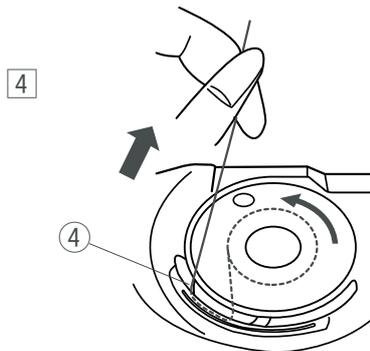


2 Guide the thread into the notch on the front of the bobbin holder.

- ③ Front notch

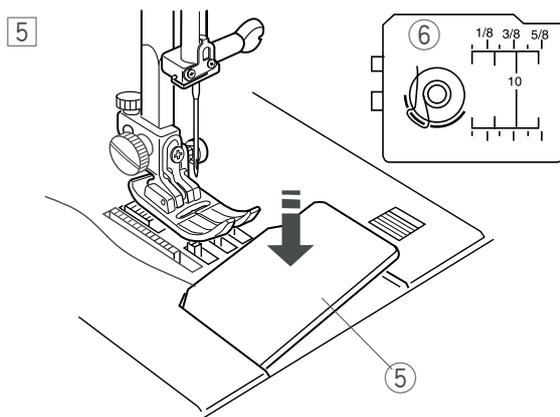


3 Draw the thread to the left, sliding it between the tension spring blades.



4 Continue to draw the thread lightly until the thread slips into side notch (B).

- ④ Side notch



5 Pull out about 10 cm (4") of thread to the rear. Refer to the threading chart shown on the hook cover plate. Attach the hook cover plate.

- ⑤ Hook cover plate
- ⑥ Threading chart

Threading the Machine

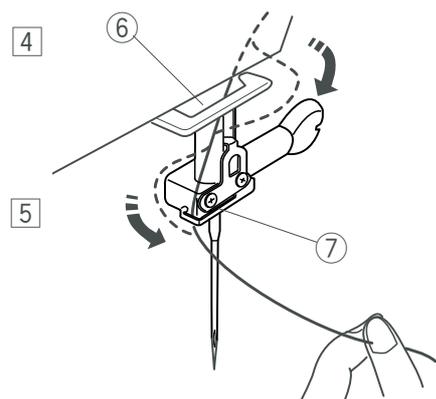
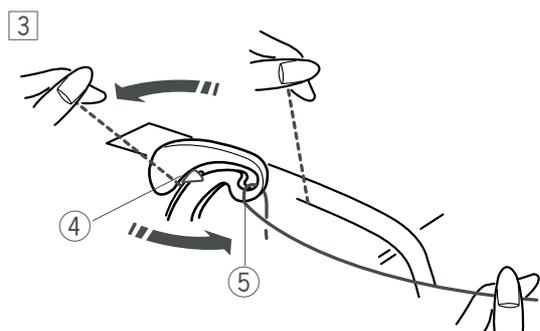
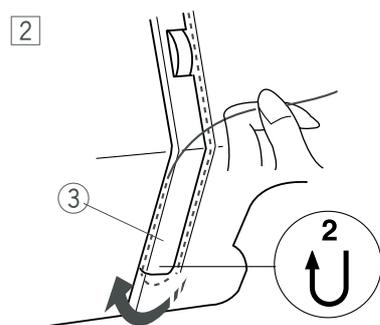
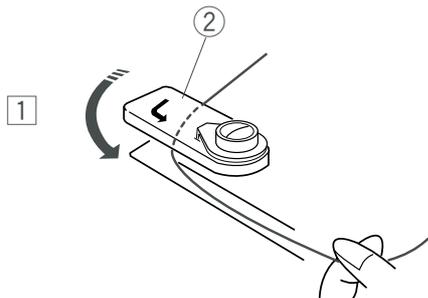
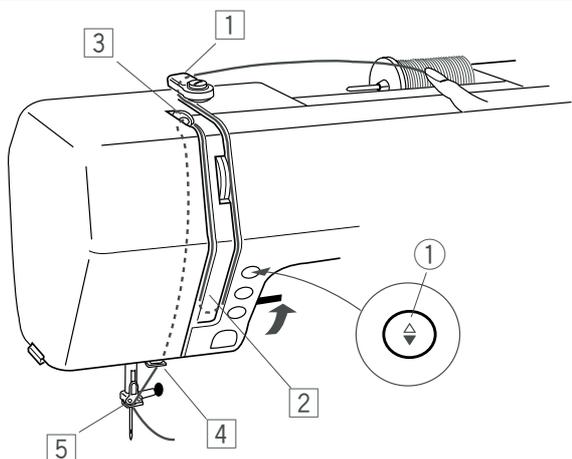
Raise the presser foot lifter.

Turn the power switch on.

Press the up/down needle position button twice to raise the needle.

- ① Up/down needle position button

Turn the power switch off.



- ① Draw the thread around and under the upper thread guide while holding the thread at the spool.

- ② Upper thread guide

- ② Draw the thread down along the right channel. Then turn around the bottom of the guide plate.

- ③ Guide plate

- ③ Firmly draw the thread up to the take-up lever. Slip the thread through the slit and into the eye of the take-up lever.

- ④ Slit

- ⑤ Eye of take-up lever

- ④ Then down through the lower thread guide.

- ⑥ Lower thread guide

- ⑤ Slide the thread behind the needle bar thread guide on the left. Thread the needle from front to back or use the needle threader.

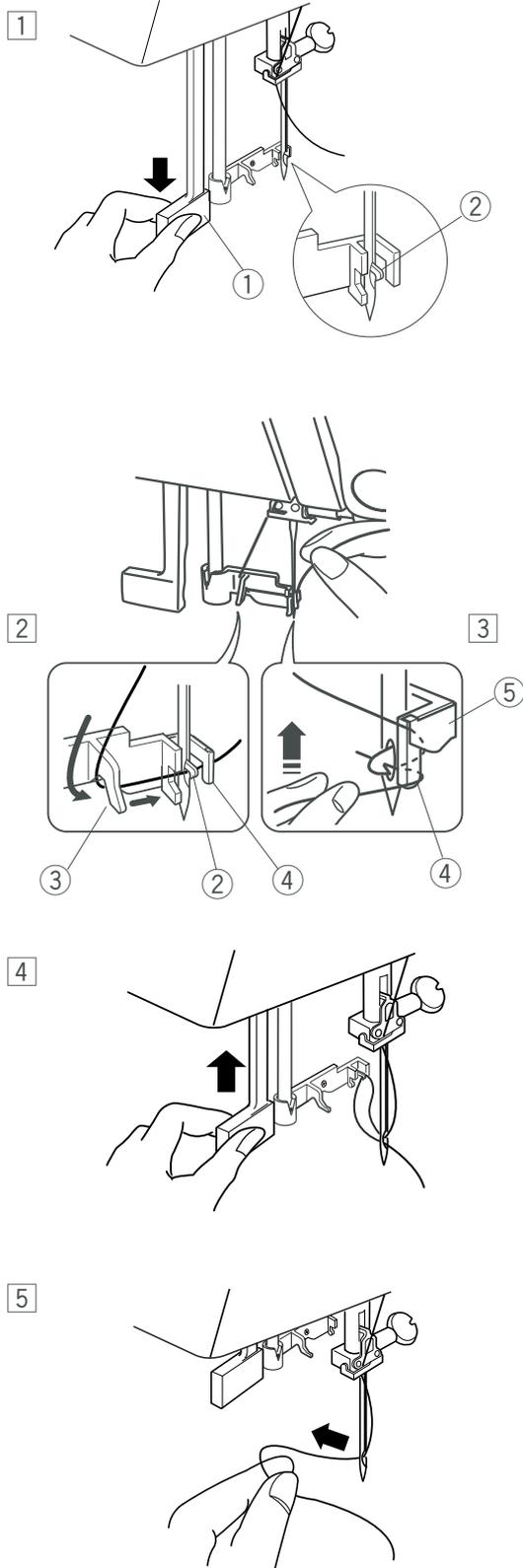
- ⑦ Needle bar thread guide.

Thread the needle using the needle threader (see the next page).

Built-in needle threader

NOTE:

The needle threader can be used with a #11 to #16 needle, or a #11 Blue needle.
Thread size 50 to 90 is recommended.



- 1 Lower the presser foot. Raise the needle to its highest position.
Push down the needle threader knob as far as it will go.
The hook comes out through the needle eye from behind.
 - 1 Knob
 - 2 Hook

- 2 Draw the thread from the right to the left, under the guide (A), threader hook and the guide (B).
 - 3 Guide (A)
 - 2 Hook

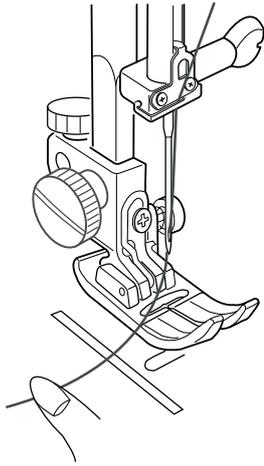
- 3 Draw the thread up along the right side of the guide (B) and slip the thread in between the guide (B) and holder plate.
 - 4 Guide (B)
 - 5 Holder plate

- 4 Release the knob slowly so a loop of the thread is pulled up through the needle eye.

- 5 Pull the thread end through the needle eye.

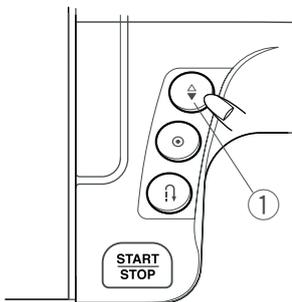
Drawing Up Bobbin Thread

1



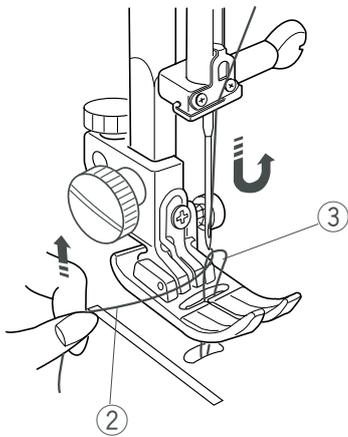
- 1 Raise the presser foot. Hold the needle thread lightly with your left hand.

2



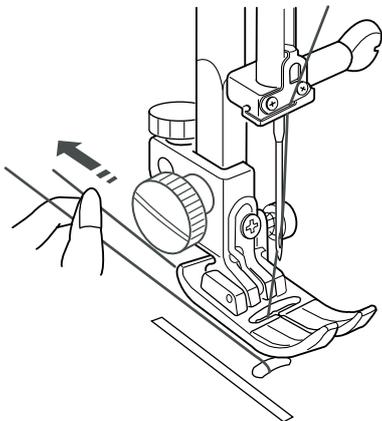
- 2 Press the up/down needle position button twice to lower and raise the needle.
① Up/down needle position button

3



- 3 Pull the needle thread to pick up the bobbin thread.
② Needle thread
③ Bobbin thread

4



- 4 Pull both threads 4" to 6" (10 to 15 cm) under and behind the presser foot.

Changing the Needle

CAUTION

Always make sure to turn the power switch off and disconnect the machine from power supply before changing the needle.

• Removing the needle

Turn the power switch off.

Raise the needle to its highest position by turning the hand wheel. Lowering the presser foot.

Loosen the needle clamp screw by turning it counterclockwise.

Remove the needle from the needle clamp.

- ① Needle clamp screw
- ② Needle clamp

• Attaching the needle

Insert a new needle into the needle clamp with the flat side to the rear.

Push the needle up as far as it goes.

Tighten the needle clamp screw firmly by turning it clockwise.

- ③ Flat side

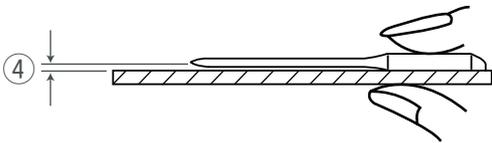
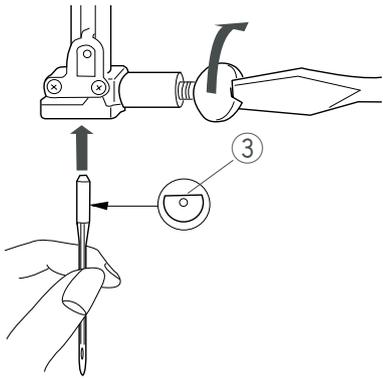
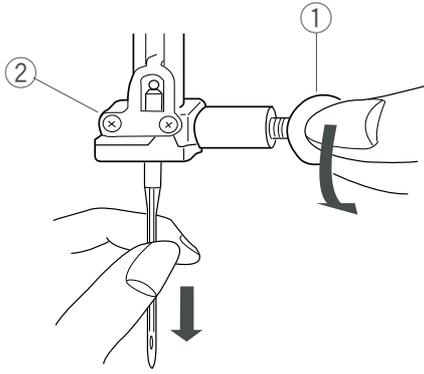
• Checking the needle

To see if the needle is good, place the flat side of the needle onto something flat (needle plate, glass, etc.).

The gap between the needle and the flat surface should be consistent. Never use a bent or blunt needle.

A damaged needle can cause permanent snags or runs in knits, fine silks and silk-like fabrics.

- ④ Gap



Needle and thread chart

	Fabric	Thread	Needle
Light	Lawn	Silk #80-100	#9/65–11/75
	Georgette	Cotton #80-100	
	Tricot	Synthetic #80-100	
	Wool, Polyester		
Medium	Cotton, Polyester	Silk #50	#11/75–14/90
	Fine jersey	Cotton #60-80	
	Wool	Synthetic #50-80	#14/90
		Cotton #50	
Heavy	Denim	Silk #50	#14/90–16/100
	Jersey	Cotton #40-50	
	Coating	Synthetic #40-50	#16/100
	Quilting	Silk #30	
		Cotton #50	

Balancing Thread Tension

• Auto-thread tension

When the thread tension dial is set at AUTO for automatic thread tension, the green light will be on.

For general sewing, set the tension dial at AUTO, which covers a wide range of sewing conditions.

Align the AUTO mark of the thread tension dial with the indication line.

The green light turns on.

- ① Green light

• Balanced thread tension

For straight stitch sewing, both needle and bobbin threads will join at the middle of the fabric.

For zigzag stitch sewing, the needle thread will appear slightly on the wrong side of the fabric.

- ① Wrong side of fabric
- ② Right side of fabric
- ③ Bobbin thread
- ④ Needle thread (Top thread)

• Manual thread tension adjustment

You should adjust the tension manually if the green light blinks when a specific stitch is selected.

The LCD screen shows a recommended tension setting for the selected stitch.

The tension setting also blinks until you set the tension manually.

- ① Green light
- ② Recommended tension setting

You may also need to adjust tension manually depending on the sewing condition such as type of the fabric and number of layers.

If the needle thread is too tight, the bobbin thread appears on the right of the fabric.

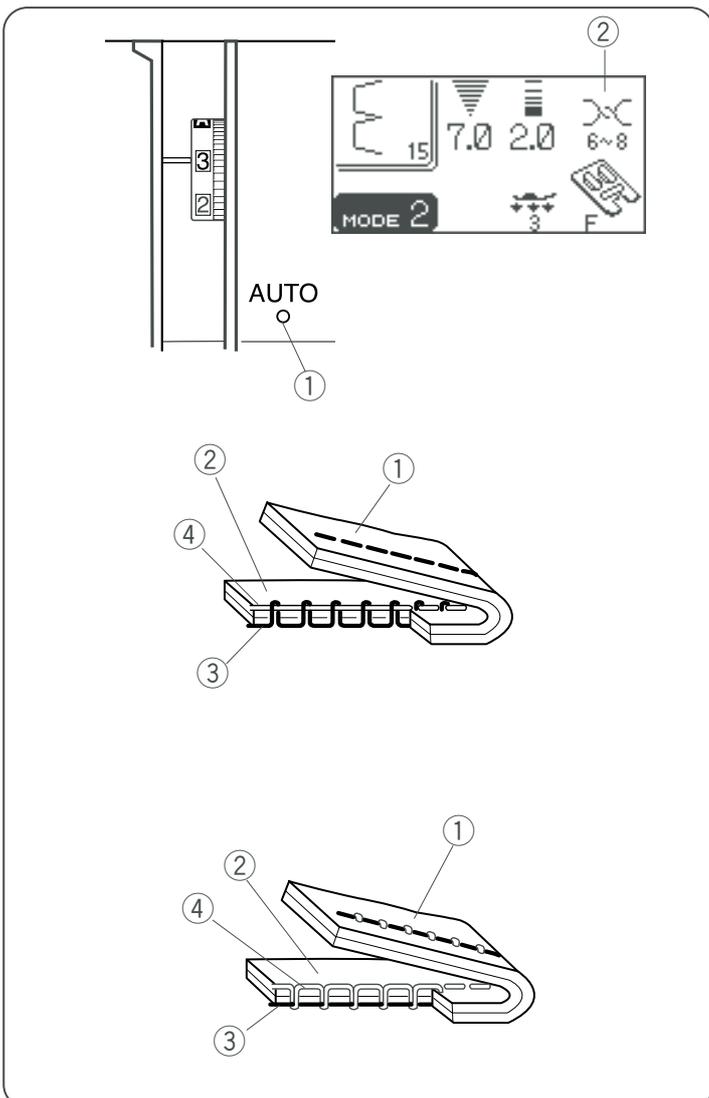
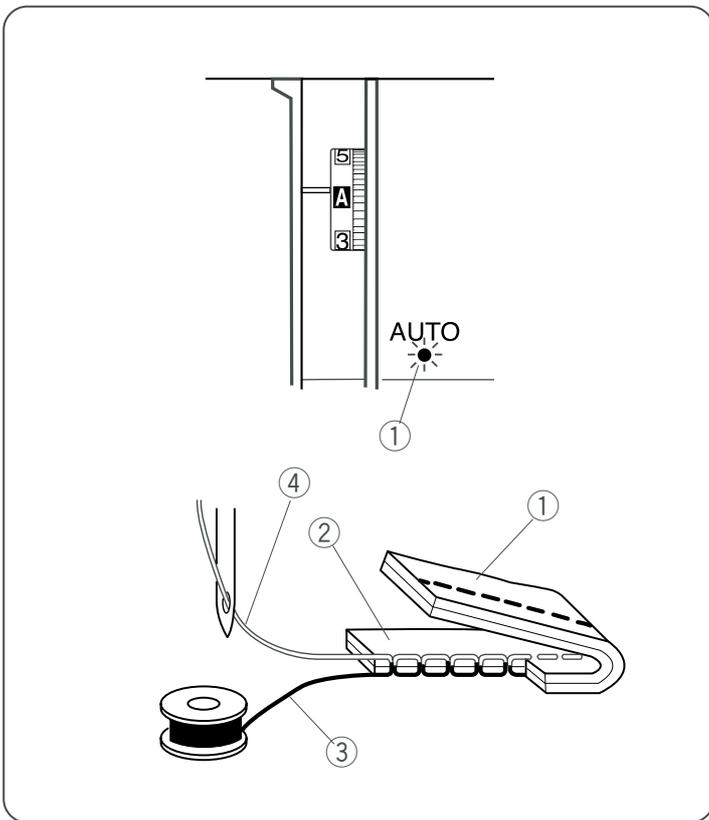
- ① Wrong side of fabric
- ② Right side of fabric
- ③ Bobbin thread
- ④ Needle thread (Top thread)

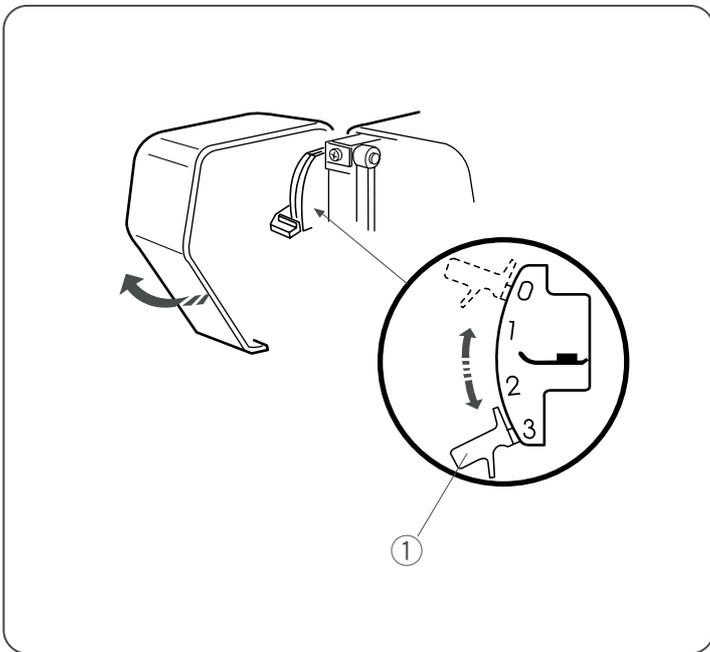
Turn the thread tension dial to the lower number to decrease the thread tension.

If the needle thread is too loose, the needle thread loops on the underside of the fabric.

- ① Wrong side of fabric
- ② Right side of fabric
- ③ Bobbin thread
- ④ Needle thread (Top thread)

Turn the thread tension dial to the higher number to increase the thread tension.





Pressure Adjusting Lever

Foot pressure can be adjusted with the pressure adjusting lever located inside the face cover.

The pressure adjusting lever should be set at “3” for regular sewing.

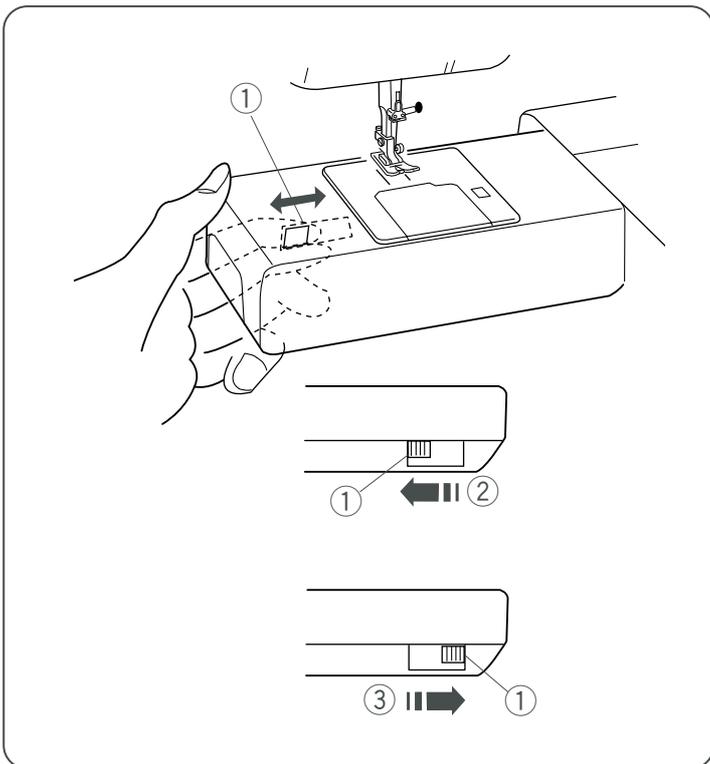
Reduce the pressure to “2” for applique, cut work, drawn work, basting and embroidery.

Set the pressure to “1” when sewing chiffon, lace, organdy and other fine fabrics.

Velour and knits with a lot of stretch may also require a “1” setting.

Open the face cover and set the lever at the desired number.

① Pressure adjusting lever



Dropping and Raising the Feed Dog

The drop feed lever is located underneath the free arm bed on the back side of the machine.

① Drop feed lever

- To drop the feed dog, push the lever in the direction of the arrow ②, as illustrated.

② To drop the feed dog

- To raise the feed dog, push the lever in the direction of the arrow ③, as illustrated, and turn the hand wheel toward you. The feed dog must be up for normal sewing.

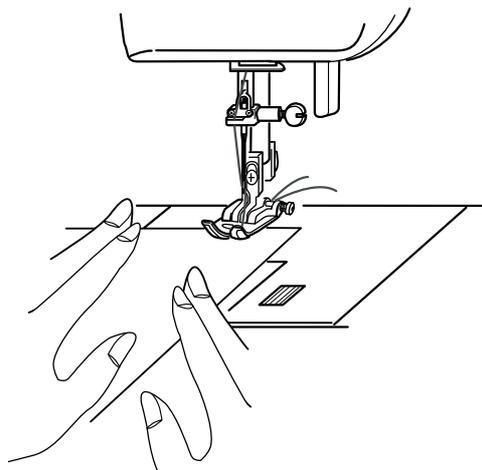
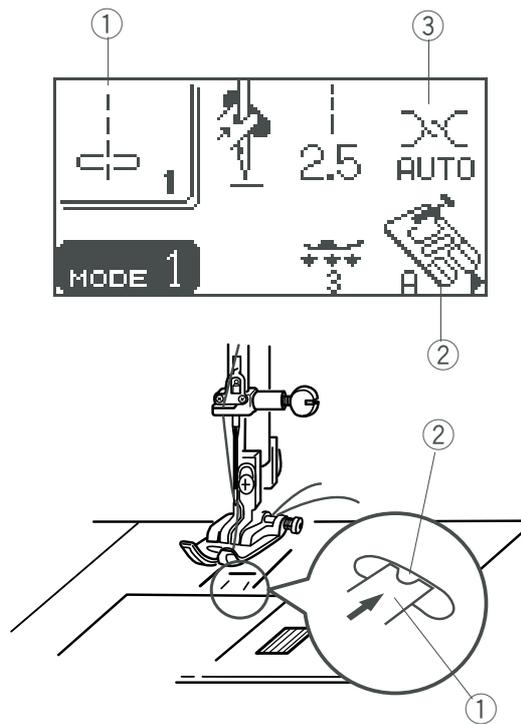
③ To raise the feed dog

BASIC AND UTILITY STITCHES

Straight Stitches

Straight stitch in center needle position

- ① Pattern: #1 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO



NOTE:

When stitch pattern #01, #02 or #03 is selected, the sub needle plate will close to set up the needle hole for straight stitch.

- ① Sub needle plate
- ② Needle hole

The needle drop position of patterns #01, #02 and #03 cannot be changed.

To sew

Raise the presser foot and position the fabric next to a seam guide line on the needle plate. Lower the needle to the point where you wish to start.

Pull the needle and bobbin threads toward the rear.
Lower the presser foot.

Depress the foot control or press the start/stop button to start sewing. Gently guide the fabric along the seam guide line letting the fabric feed naturally.

NOTE:

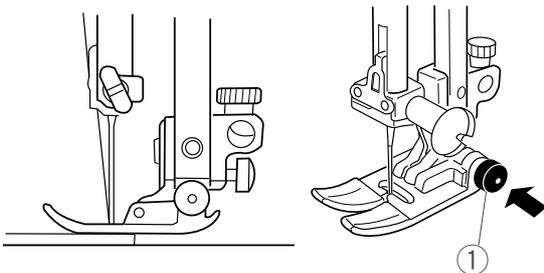
When you press the start/stop button once, the machine starts running slowly for the first few stitches, then runs at the speed set by the speed control slider.
The machine runs slowly as long as you press and hold the start/stop button.

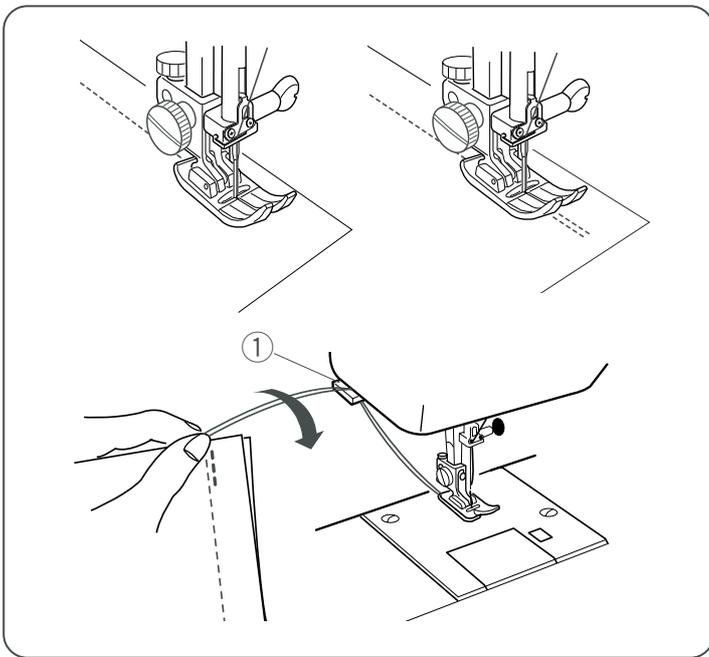
Sewing on heavy fabric

The black button on foot A will lock the foot in a horizontal position if you push it 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 sewing over welt seams when hemming jeans.

When you reach a point of increased thickness, lower the needle and raise the presser foot. Press the toe of the foot and push in the black button, then lower the foot and continue sewing. The button will be released after a few stitches.

- ① Black button





Securing a seam

For fastening the end of seam, press the reverse button and sew several reverse stitches.

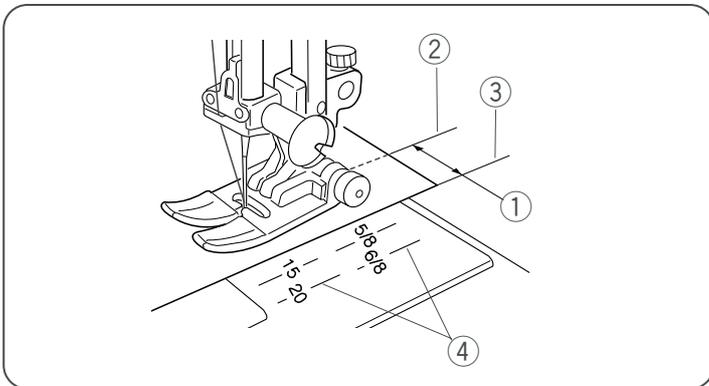
The machine sews in reverse as long as you press and hold the reverse button.

Press the reverse button once when sewing the Lock-a-Matic stitch (pattern #02) or locking stitch (pattern #03) so the machine will lock the stitch off and stop automatically.

Cut the thread by using the thread cutter.

The threads are cut the proper length for starting the next seam.

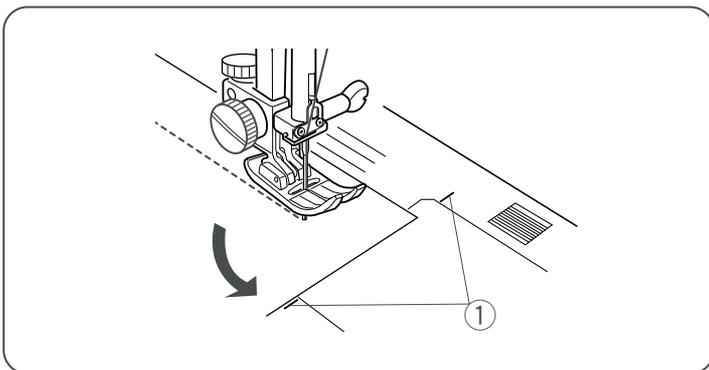
- ① Thread cutter



Using the seam guides on the needle plate

The seam guides on the needle plate are engraved to help you measure seam width. The number on the needle plate indicates the distance between the center needle position and the edge of the fabric. The lines are 1/8" (0.3 cm) apart, and engraved at 3/8", 4/8", 5/8" and 6/8". The lines in millimeters are 5 mm apart, and are engraved at 10 mm, 15 mm and 20 mm.

- ① Seam width
- ② Needle drop position
- ③ Edge of fabric
- ④ Needle plate guide lines

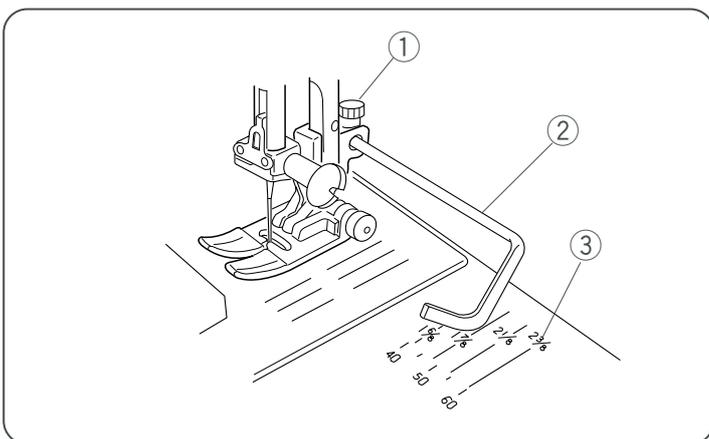


Turning a square corner

To maintain a 5/8" seam allowance after turning a square corner, use the cornering guide on the needle plate.

1. Stop sewing when the front edge of fabric reaches the cornering guide lines.
2. Lower the needle by pressing the up/down needle position button.
3. Raise the presser foot and turn the fabric counterclockwise 90°.
4. Lower the presser foot, and begin stitching in the new direction.

- ① Cornering guide

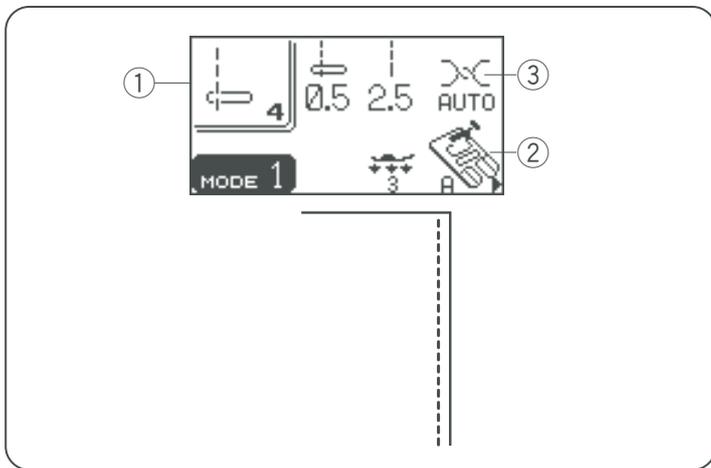


Using the quilting guide

The quilting bar will help keep the seam lines evenly spaced. Use the seam guide lines on the needle plate, and the free-arm, to help determine the distance between quilting stitches.

Loosen the quilting bar screw on the back of the foot holder. Insert the quilting bar into the hole under the screw. Set the quilting bar at the desired position and tighten the screw. Sew tracing the previous seam with the quilting bar.

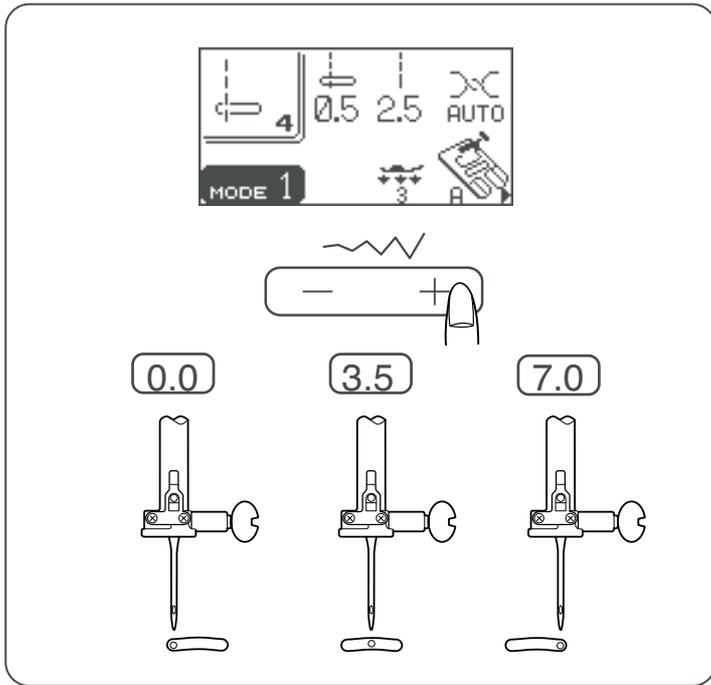
- ① Quilting bar screw
- ② Quilting bar
- ③ Seam guide lines



Straight stitch in left needle position

- ① Pattern: #4 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

Use this stitch to seam the fabrics along the edge.

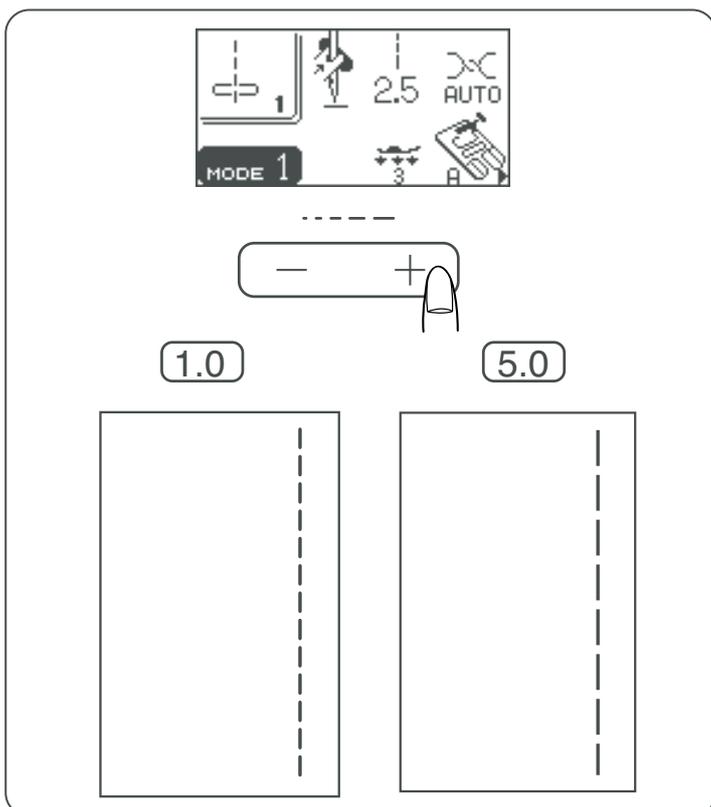


Adjusting the needle drop position

The needle drop position of the straight stitch patterns, #04, #05, #27, #36-#43, #46, #48-51 can be changed by pressing the stitch width adjustment button.

Press the right side of the button (+ sign) to move the needle bar to the right.

Press the left side of the button (- sign) to move the needle bar to the left.



Adjusting the stitch length

The stitch length can be altered by pressing the stitch length adjustment button.

The stitch length indication will change as the button is pressed.

Press the right side of the button (+ sign) to increase the stitch length.

Press the left side of the button (- sign) to decrease the stitch length.

Variety of Straight Stitches

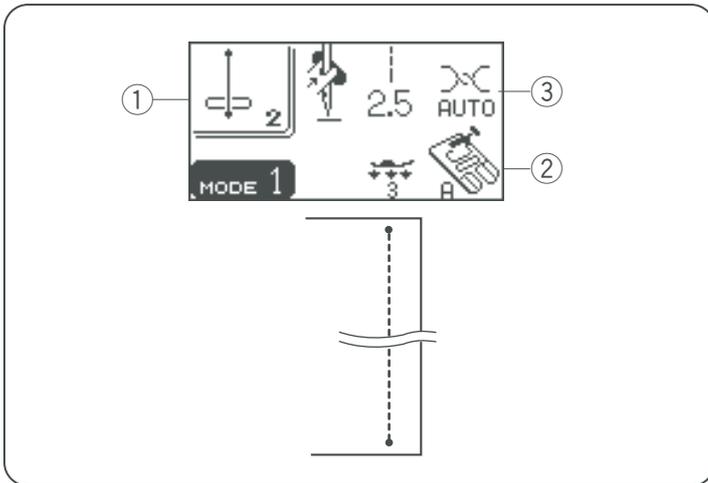
Locking stitch

- ① Pattern: #2 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

This unique stitch is used where an invisible locking stitch is needed.

Lower the needle close to the front edge of the fabric. The machine will sew several locking stitches in place and continue sewing forward.

When you press the reverse stitch button at the end of the seam, the machine will sew several locking stitches in place, then stop sewing automatically.



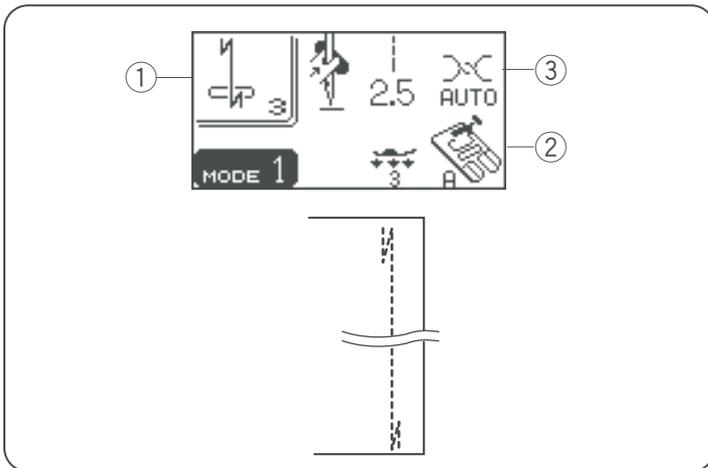
Lock-a-Matic stitch

- ① Pattern: #3 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

Use it to reinforce areas such as crotch and armhole seams, as well as when constructing items such as backpacks for extra strength.

Press the reverse stitch button once, when you reach the end of the seam.

The machine will sew four reverse stitches, four forward stitches, and then stop sewing automatically.



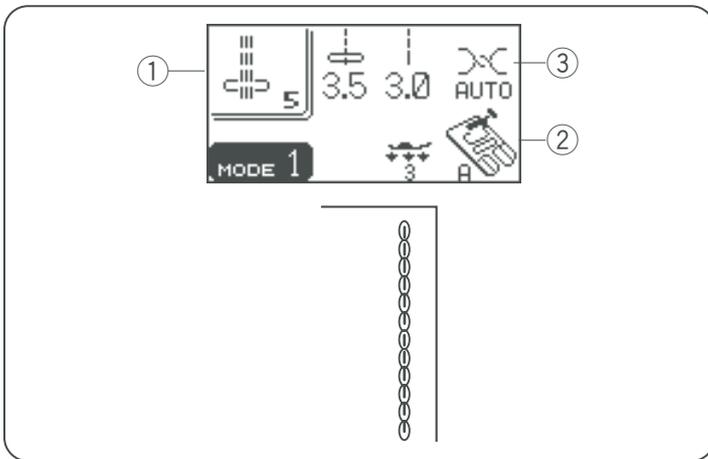
Triple stretch stitch

- ① Pattern: #5 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

This strong, durable stitch is recommended for areas where both elasticity and strength are needed to ensure comfort and durability.

Use it to reinforce areas such as crotch and armhole seams.

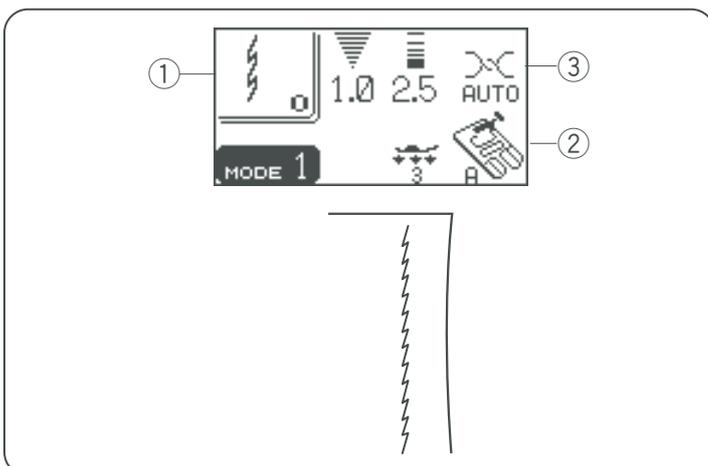
Also use it when constructing items such as backpacks for extra strength.



Stretch stitch

- ① Pattern: #0 (mode 1) or #10 (mode 2)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

This is a narrow stretch stitch designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely open and flat.

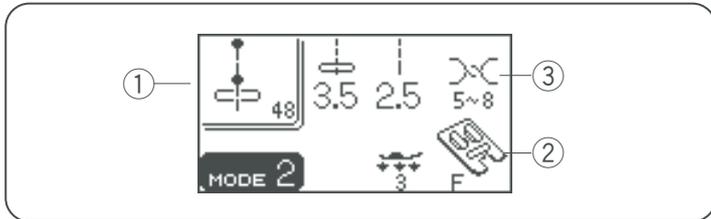




Patchwork piecing stitch

- ① Pattern: #39 (mode 2)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

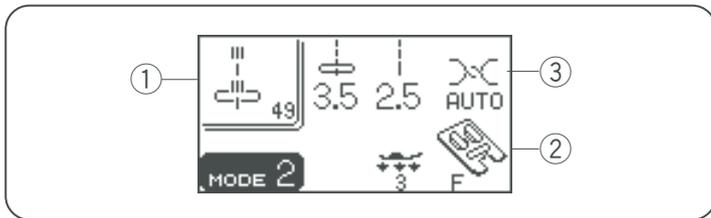
This is straight stitch with 1.8 mm stitch length, ideal for patchwork piecing. Pattern #43 (mode 2) is the patchwork piecing stitch with left needle drop position.



French knot

- ① Pattern: #48 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: 5-8

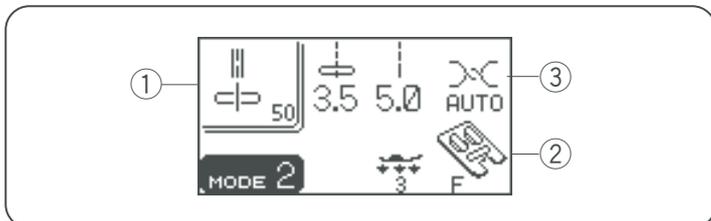
Combine this stitch with patterns#36-38 to program French knots.



New sculpture stitch

- ① Pattern: #49 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

This decorative stitch adds a three dimensional effect when outlining designs.



Decorative stitch

- ① Pattern: #50 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

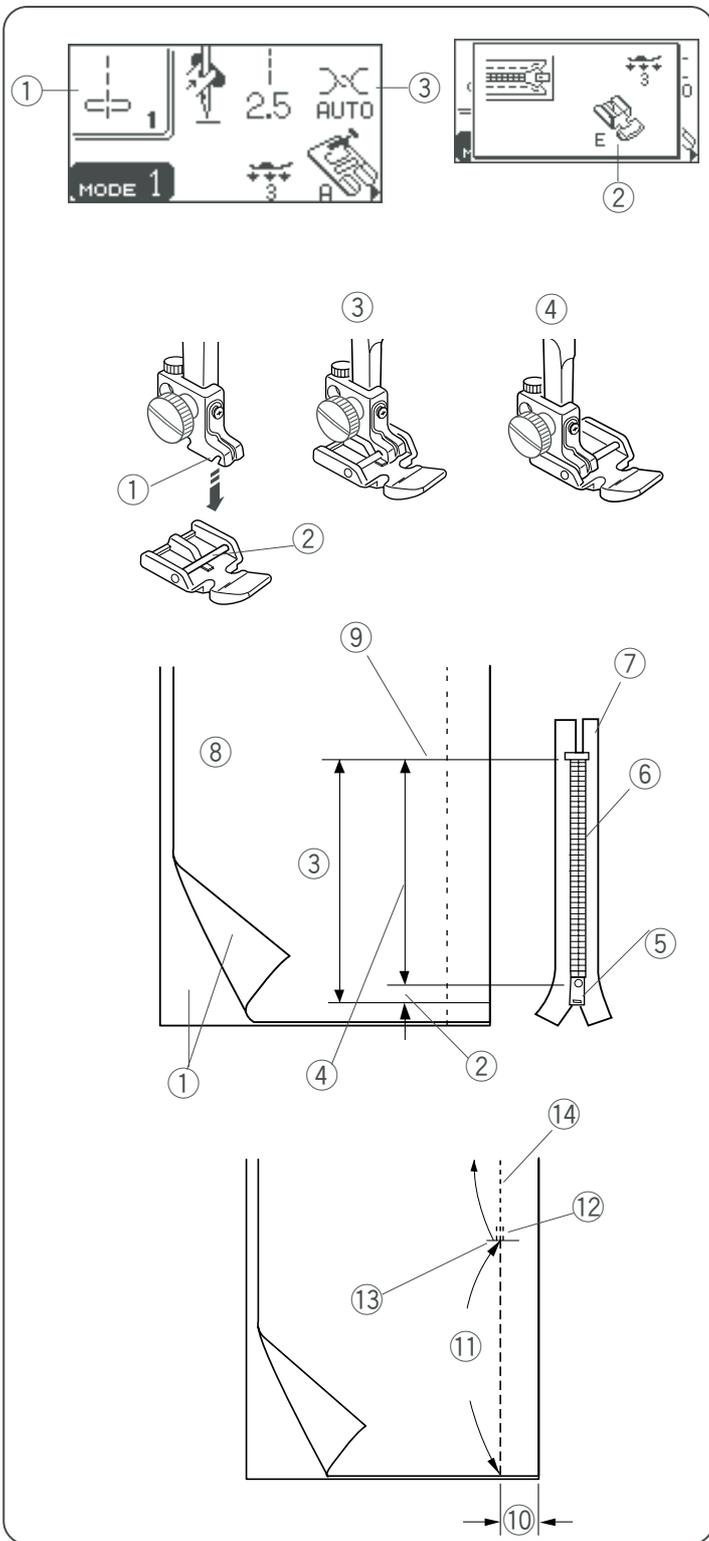
Use this stitch for quilting or decorative stitching.



Saddle stitch

- ① Pattern: #51 (mode 2)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

You can achieve a lovely hand-worked look when topstitching suits, blazers, jumpers and denim outfits with the saddle stitch.



Zipper Sewing

- ① Pattern: #1 (mode 1)
- ② Presser foot: Zipper foot E
- ③ Thread tension: AUTO

Attaching the zipper foot

Fit the pin on the zipper foot into the groove on the foot holder.

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

- ① Groove
- ② Pin
- ③ To sew left side
- ④ To sew right side

Fabric preparation

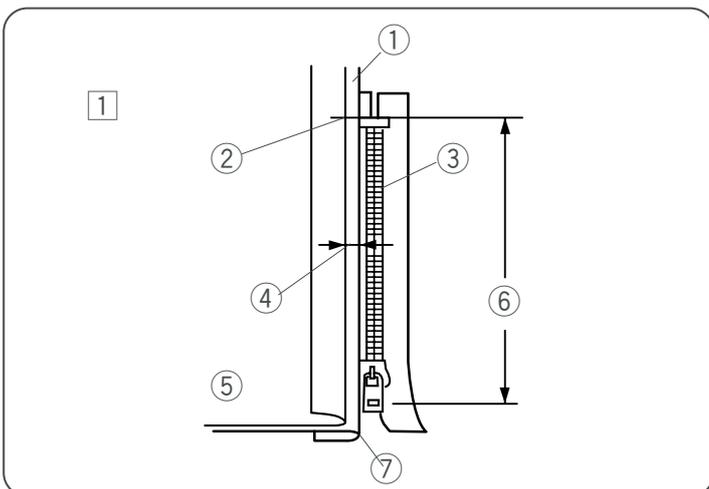
Add 1 cm (3/8") to the zipper length. This is the overall opening size.

Place the right sides of the fabric together and sew up to the end of the zipper opening, with a 2 cm (13/16") seam allowance. Reverse the stitch to fasten the seam. Baste along the zipper opening with the stitch length 4.5

- ① Right side of the fabric
- ② 1 cm (3/8")
- ③ Opening size
- ④ Zipper length
- ⑤ Slider
- ⑥ Zipper teeth
- ⑦ Zipper tape
- ⑧ Wrong side of the fabric
- ⑨ End of the opening
- ⑩ 2 cm (13/16")
- ⑪ Zipper opening (Basting)
- ⑫ Reverse stitches
- ⑬ End of the opening
- ⑭ Seam

NOTE:

Loosen the thread tension to one (1) for the basting stitch.



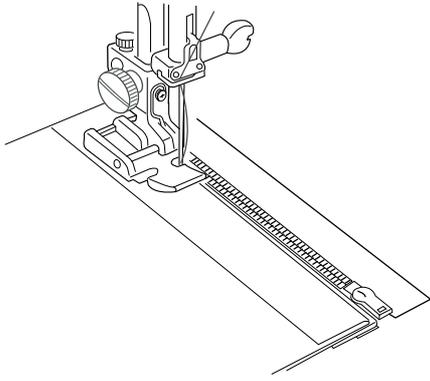
To sew

- ① Fold up the upper seam allowance. Fold back the bottom seam allowance to form a 0.3 cm (1/8") fold. Place the zipper teeth next to the fold and pin it in place.

- ① Bottom fabric
- ② End of the zipper opening
- ③ Zipper teeth
- ④ 0.3 cm (1/8")
- ⑤ Wrong side of the upper fabric
- ⑥ Opening size
- ⑦ Fold

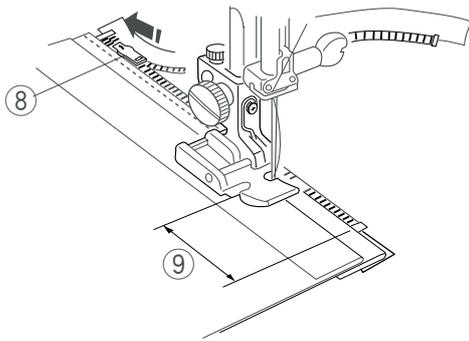
Zipper Sewing (continued)

2



- 2 Attach the foot with the pin on the right. Sew through all the layers from the end of the zipper opening, guiding the zipper teeth along the edge of the foot.

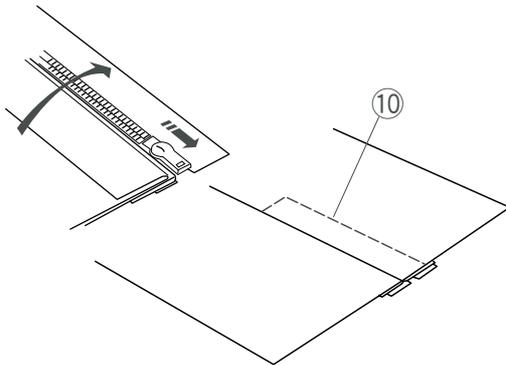
3



- 3 Stop the machine 5 cm (2") before the foot reaches the slider on the zipper tape. Lower the needle into the fabric, and raise the foot. Open the zipper, then lower the foot and stitch the remainder of the seam.

- 8 Slider
- 9 5 cm (2")

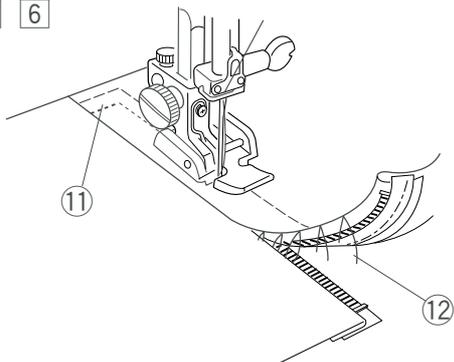
4



- 4 Close the zipper and open the upper fabric flat over the zipper. Baste the upper fabric and zipper tape together.

- 10 Basting stitch

5 6



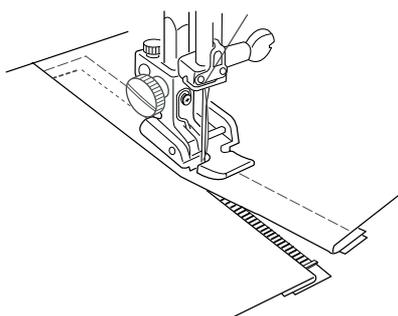
- 5 Detach the foot and attach it with the pin on the left. Backstitch across the end of opening to 1 cm (3/8"). Turn the fabric 90 degrees and stitch through the garment and zipper tape.

- 11 Backstitch

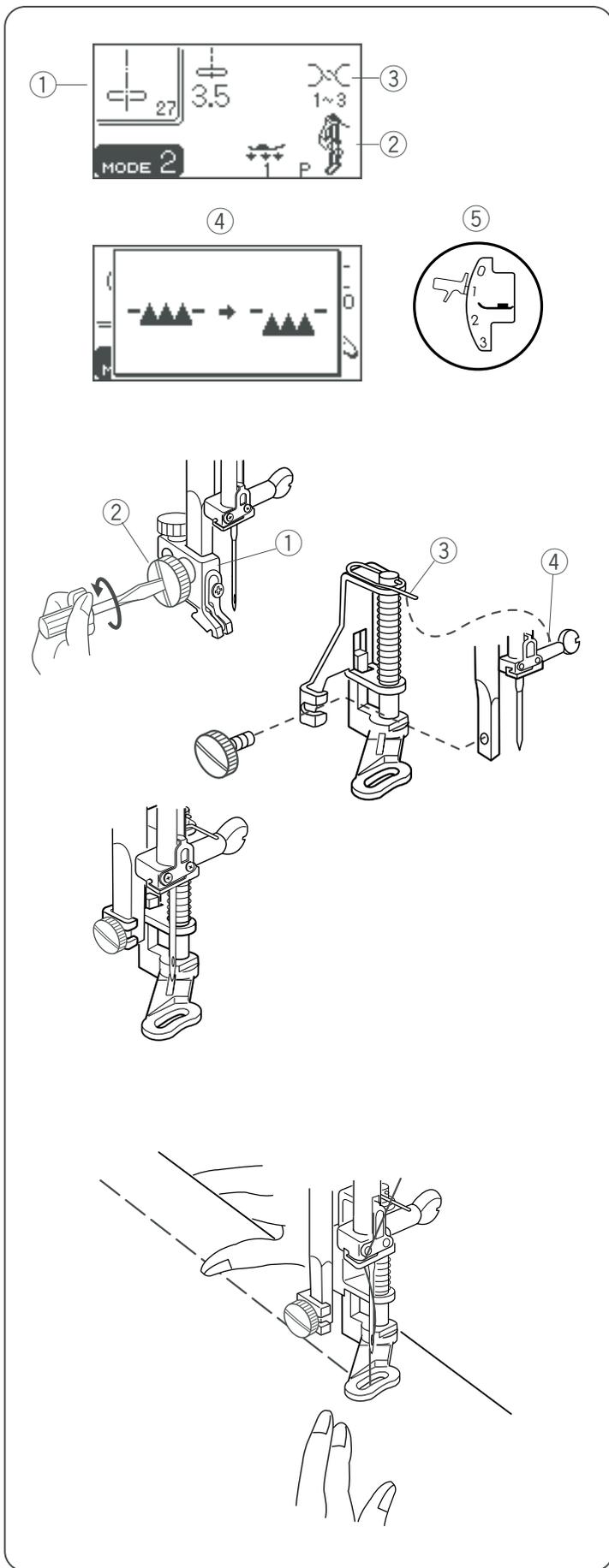
- 6 Stop the machine 5 cm (2") before the foot reaches the slider on the zipper tape. Lower the needle into the fabric, and raise the foot. Remove the basting stitches.

- 12 Basting stitches

7



- 7 Open the zipper, then lower the foot and stitch the remainder of the seam. After finish sewing, remove the basting stitches on the upper fabric.



Basting

- | | |
|-------------------|----------------|
| ① Pattern: | #27 (mode 2) |
| ② Presser foot: | Darning foot P |
| ③ Thread tension: | 1-3 |
| ④ Feed dog: | Lowered |
| ⑤ Foot pressure: | 1 |

Attaching the darning foot

Raise the needle.

Remove the foot holder by loosening the thumb screw. Attach the darning foot on the presser bar putting the pin on the needle clamp. Tighten the thumbscrew firmly with a large screwdriver.

- ① Foot holder
- ② Thumb screw
- ③ Pin
- ④ Needle clamp

To sew

Lower the feed dog.

Set the thread tension dial between 1 and 3.

Put some fabric under the foot and press up/down needle position button twice to bring the needle thread down through the hole in the foot.

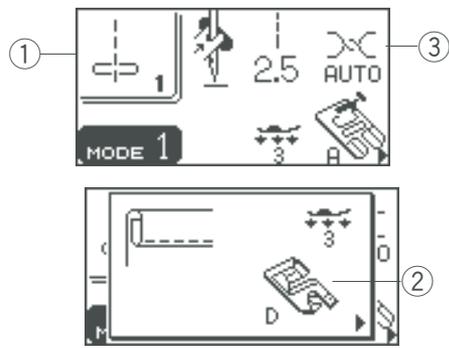
Pull the fabric and thread to the rear. Lower the presser foot.

Press down the foot control. The machine stops after each stitch.

Move the fabric to where you want the next stitch.

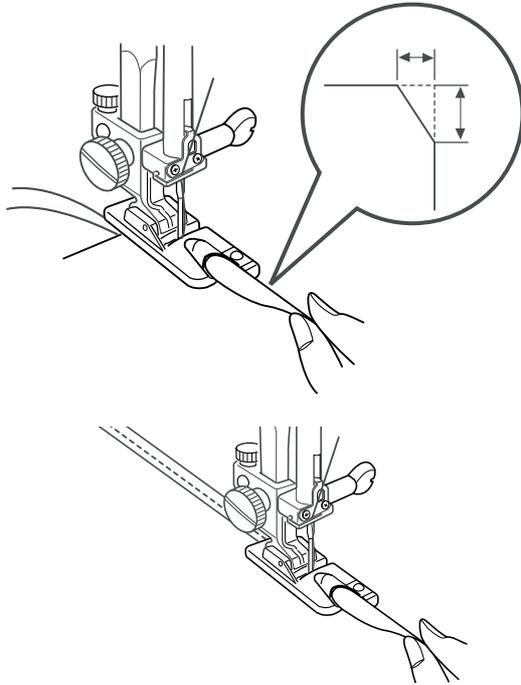
Repeat steps to sew. After finishing sewing, pull the threads and fabric to the rear side.

* After sewing, reset tension to "AUTO". Return feed dog lever to raised position. Feed dog will rise when sewing resumes.



Rolled Hem

- ① Pattern: #1 (mode 1)
- ② Presser foot: Rolled hem foot D
- ③ Thread tension: AUTO



To sew:

Fold the edge of the fabric twice, 6 cm (2 3/8") in length and 0.3 cm (1/8") in width.

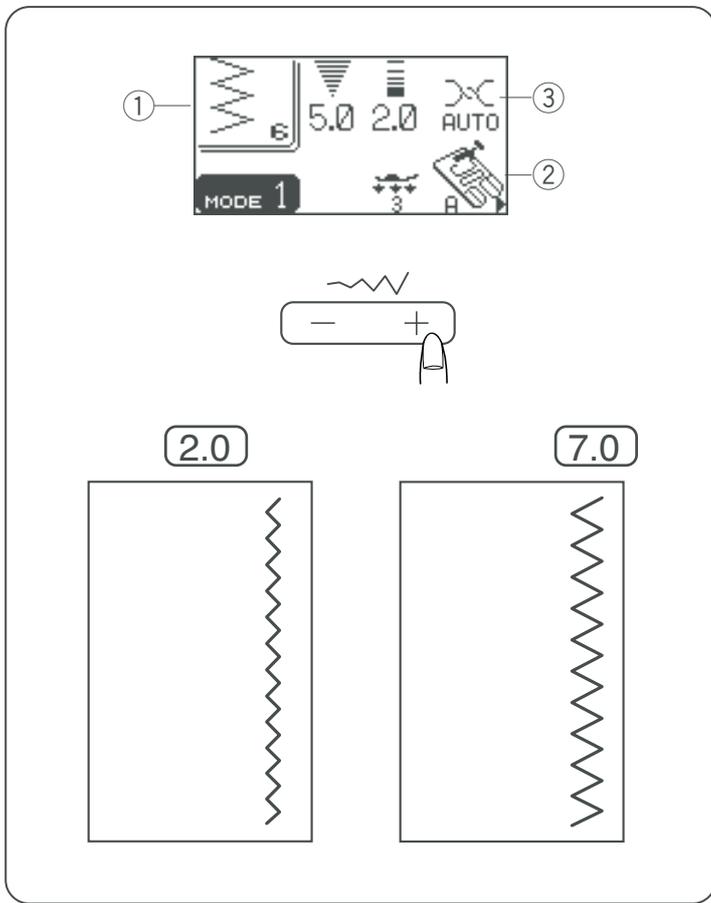
Trim the corner 0.5 cm (3/16") by 0.8 cm (1/4") for easier insertion of the hem into the foot.

Position the fabric aligning the edge of hem with the guide on the foot.

Lower the foot and sew 1–2 cm (1/2" – 1") while pulling both threads to the back.

Stop the machine with the needle down in the fabric. Raise the foot and insert the folded portion of the fabric into the curl of the foot.

Lower the foot, and then sew by lifting up the edge of the fabric to keep it feeding smoothly and evenly.



Zigzag Stitch

- ① Pattern: #6 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

Zigzag stitch is useful for overcasting, applique, mending etc.

Changing the stitch width

Press the stitch width button to change the stitch width.

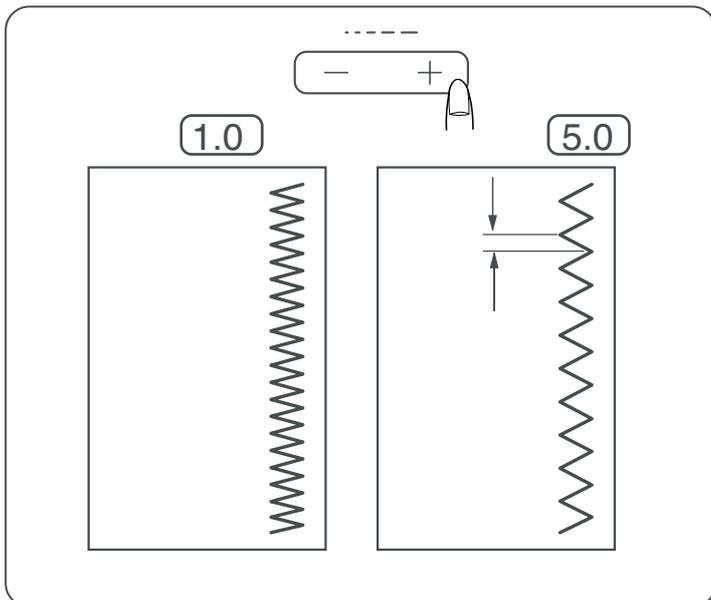
Press the right side of the button (+ sign) to increase the stitch width.

Press the left side of the button (– sign) to decrease the stitch width.



Pattern #35 (mode 2) has a fixed right needle drop position.

When you change the stitch width the right needle drop position will change.

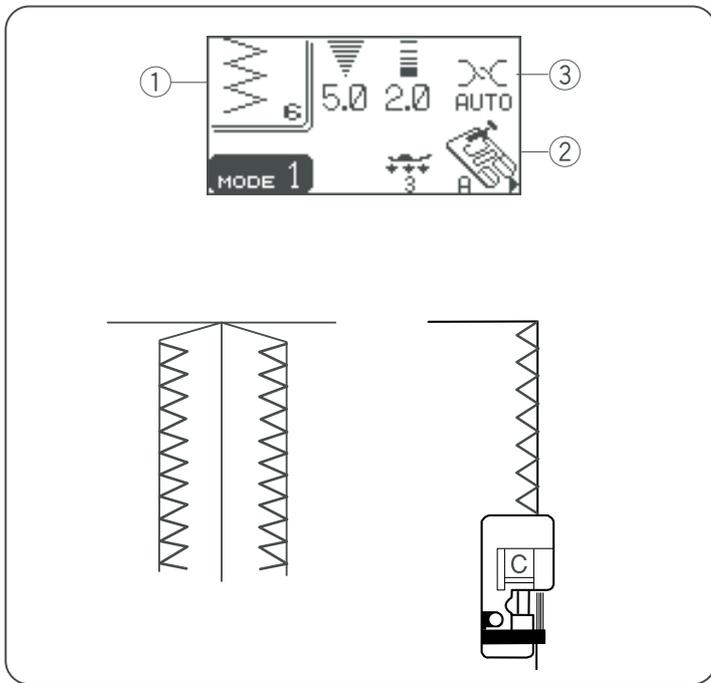


Changing the stitch length

Press the stitch length button to change the stitch length.

Press the right side of the button (+ sign) to increase the stitch length.

Press the left side of the button (– sign) to decrease the stitch length.



Overcasting

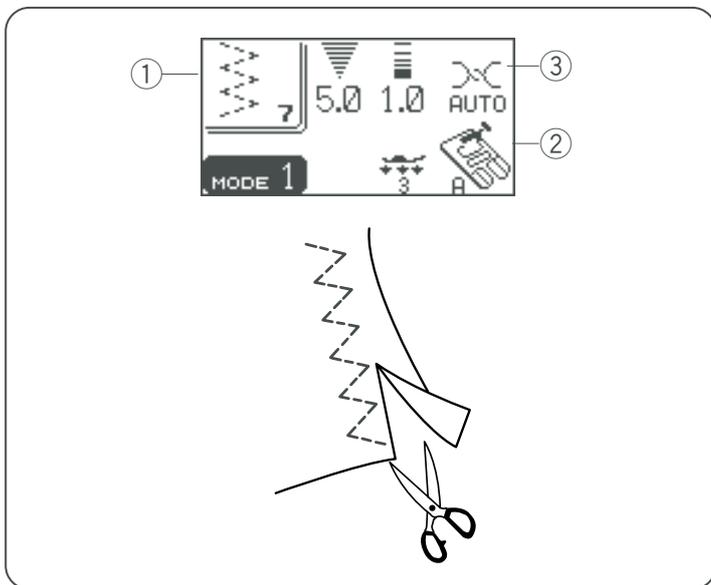
- ① Pattern: #6 (mode 1)
- ② Presser foot: Overedge foot C
- ③ Thread tension: AUTO

This zigzag variation is very useful in garment construction and in finishing raw edges of any sewing project.

- ① The black ridge and the guide wires on the overedge foot keep the edge neat and the fabric straight.
- ② Place your fabric so that the double guide wires come to the edge. The machine will stitch over these wires. The black ridge will keep the loose threads in so that the needle can stitch over them.
- ③ As you sew, be sure your fabric edge pushes up against the black ridge.

⚠ CAUTION:

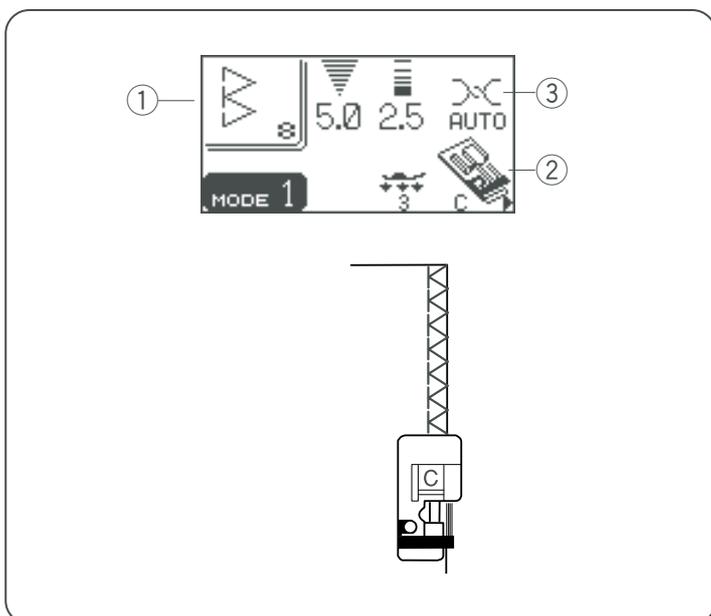
When using an Overedge foot, make sure to set the stitch width between 5 and 7, otherwise the needle may hit the overedge foot.



Tricot Stitch

- ① Pattern: #7 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

This stitch is used to finish the seam allowance on synthetics and other fabrics that tend to pucker. The stitch is also excellent for darning and mending tears. Place your fabric to allow a 5/8" (1.5 cm) seam. Trim excess close to stitching. Be careful not to cut the stitches.



Overedge Stitch

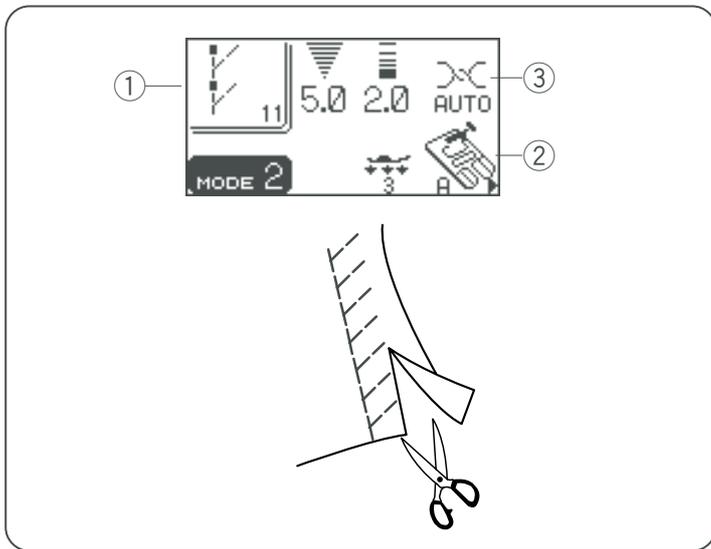
- ① Pattern: #8 (mode 1)
- ② Presser foot: Overedge foot C
- ③ Thread tension: AUTO

This stitch pattern combines the straight and the zigzag stitches, using the overedge foot, to stitch and overcast seams in one step.

It is ideal for 0.6 cm (1/4") seams on knits (when attaching ribbing) or on medium to heavyweight woven fabrics where you want a narrow seam. Place your fabric so that the raw edges fit under the wire guides and touch the black ridge.

NOTE:

Stitch width cannot be set narrower than 4.5.



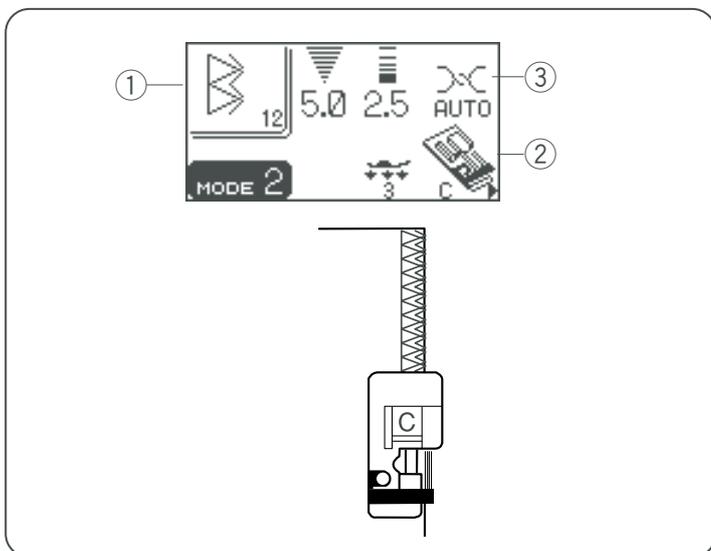
Knit Stitch

- ① Pattern: #11 (mode 2)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

This stitch is recommended for sewing such fabrics as synthetic knits and stretch velour, as it provides the greatest amount of elasticity and strength.

Sew along the fabric edge leaving an adequate seam allowance.

After sewing, trim the seam allowance close to the stitches.



Double Overedge Stitch

- ① Pattern: #12 (mode 2)
- ② Presser foot: Overedge foot C
- ③ Thread tension: AUTO

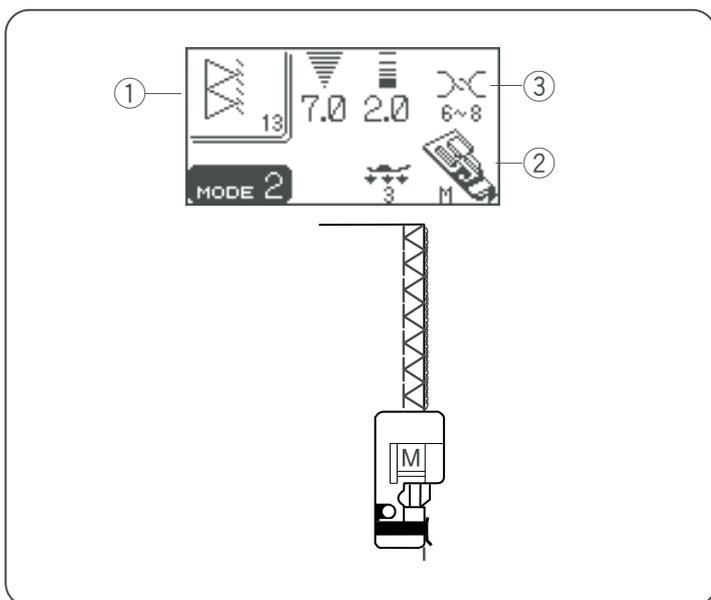
This is an excellent stitch for fabrics that tend to ravel extensively such as linens and gabardines.

Two rows of zigzag stitches are simultaneously sewn over the edge to insure that fabric will not ravel.

Place the fabric edge next to the guide of the foot and then sew.

NOTE:

Stitch width cannot be set narrower than 4.5.



Overlock Stitch

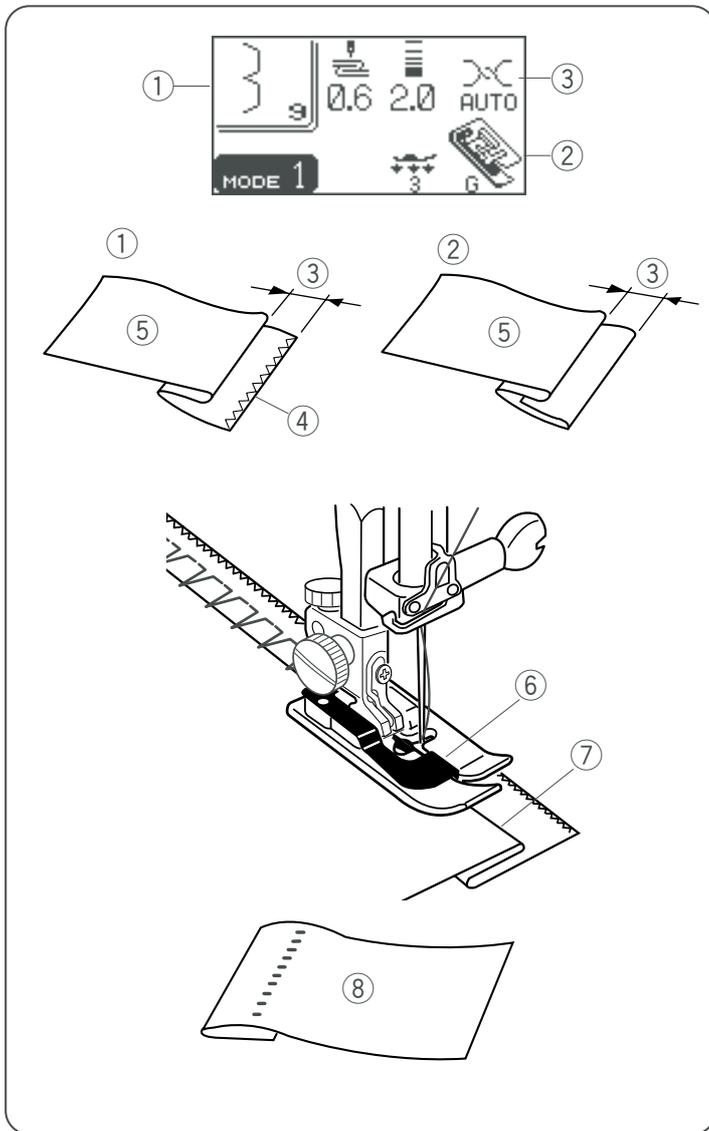
- ① Pattern: #13 (mode 2)
- ② Presser foot: Overcast foot M
- ③ Thread tension: 6-8

This stitch finishes the edges of fabric similar to a commercial overlocking machine for a professional look.

Place the fabric edge next to the guide of the foot and then sew.

NOTE:

Stitch width cannot be changed.



Blind Hem

- ① Pattern: #9 (mode1) or #14 (mode 2)
- ② Presser foot: Blind hem foot G
- ③ Thread tension: AUTO

Select pattern #9 for woven fabrics or pattern #14 for elastic fabrics.

How to fold the fabric

Fold the fabric to make a hem as shown.

- ① Heavy fabric
- ② Fine to medium fabric
- ③ 0.4–0.7 cm (3/16"–1/4")
- ④ Overcasted edge of fabric
- ⑤ Wrong side of fabric

To sew

Position the fabric so that the fold comes to the left side of the guide on the foot.

Lower the presser foot.

Adjust the position of the needle swing with the stitch width adjustment button so that the needle just pierces the folded edge of the fabric when the needle comes over to the left side.

Sew guiding the fold along the guide.

- ⑥ Guide on the foot
- ⑦ Fold

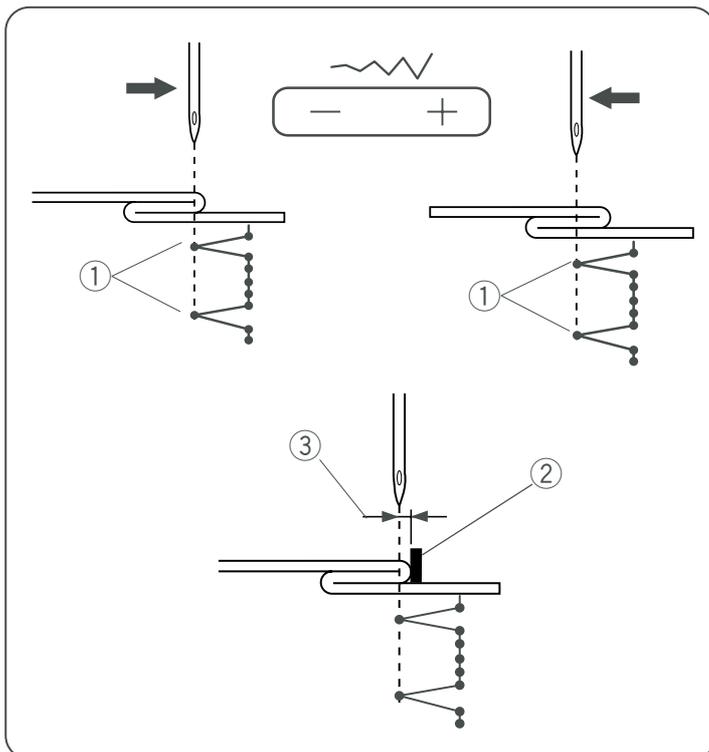
NOTE:

The stitch width of the patterns cannot be changed, but the needle drop position will move.

Open the fabric with the right side up.

The stitches on the right side of the fabric are almost invisible.

- ⑧ Right side of the fabric



Changing needle drop position

Press the stitch width adjustment button.

The LCD screen shows the left needle position from the guide in millimeters.

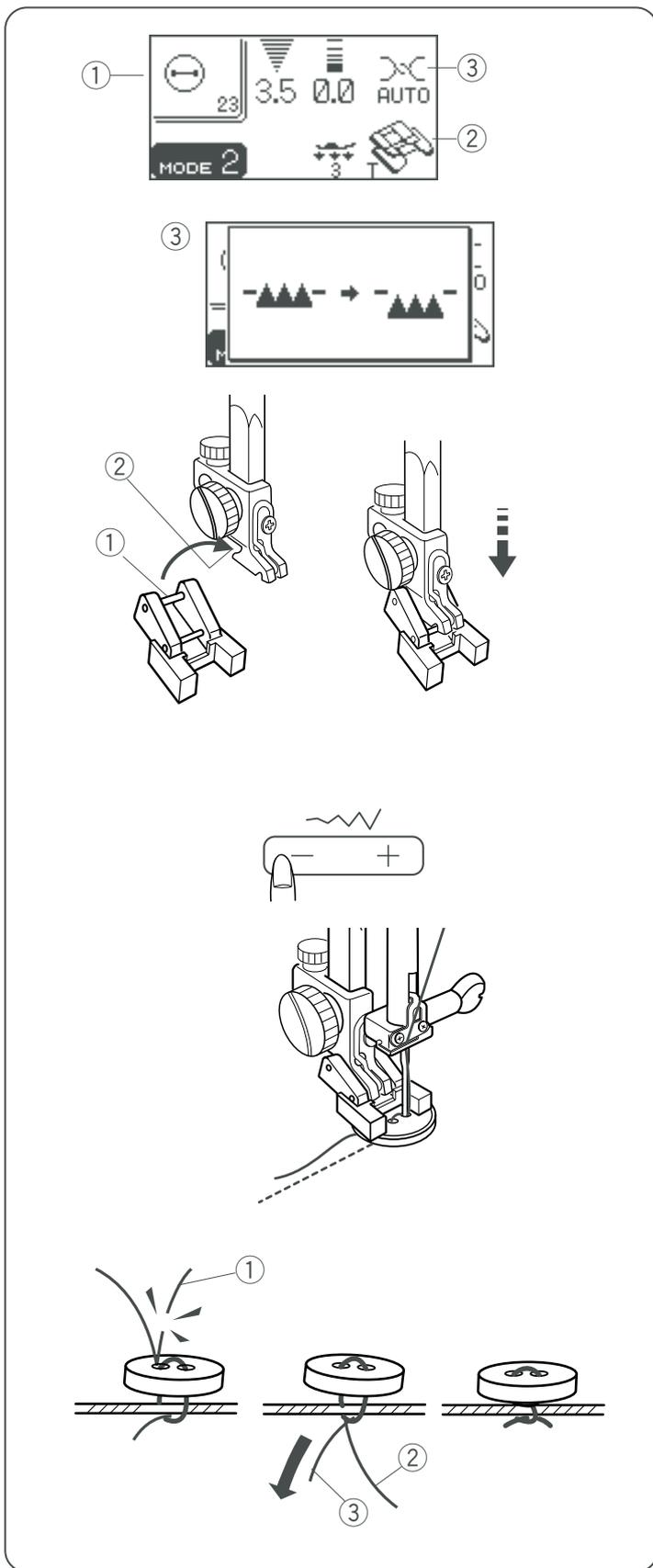
Press “-” to move the needle to the right.

Press “+” to move the needle to the left.

- ① Left needle drop position
- ② Guide on foot
- ③ Distance between the left needle position and the guide

NOTE:

You can lengthen a straight portion of the blind stitch by inserting an extender stitches (see page 63).



Button Sewing

- ① Pattern: #23 (mode 2)
- ② Presser foot: Button sewing foot T
- ③ Thread tension: AUTO
- ④ Feed dog: Lowered

Attaching the button sewing foot T

Insert the rear pin on the foot into the groove of the foot holder.

Gently lower the presser foot lifter while holding the foot with your fingers.

- ① Rear pin
- ② Groove of the foot holder.

To sew

Place a button on the fabric and lower the needle by turning the hand wheel with your hand, so that the needle enters through the left hole in the button.

Align the direction of button and lower the button sewing foot T to hold the button in place.

Press the up/down needle button to bring the needle up to the highest position. Adjust the stitch width, so that the zigzag width matches the span of holes in the button.

Press the start/stop button to sew and the machine will stop automatically.

Cut the needle thread at the beginning.

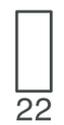
- ① Needle thread at the beginning

Pull the bobbin thread to pull the needle thread to the wrong side off the fabric.

- ② Needle thread
- ③ Bobbin thread

Tie both threads together.

* Raise the feed dog after sewing.



Buttonholes

Variety of buttonholes

Square Buttonhole

This square buttonhole is widely used on medium to heavy weight fabrics. The buttonhole size is automatically determined by placing a button in the foot.

Round-end Buttonhole

This buttonhole is used on fine to medium weight fabrics especially for blouses and children's wears.

Keyhole Buttonhole

The Keyhole Buttonhole is widely used on medium to heavy weight fabrics. It is also suitable for large and thick buttons.

Fine Fabric Buttonhole

This buttonhole is rounded at both ends and is used on fine, delicate fabrics such as fine silk.

Round Keyhole Buttonhole

A variation of the keyhole buttonhole.

Tailor-made Buttonhole

This buttonhole is ideal for heavyweight fabrics and large and thick buttons.

Stretch Buttonhole

This buttonhole can be used on stretch fabrics. It can also be used as a decorative buttonhole.

Knit Buttonhole

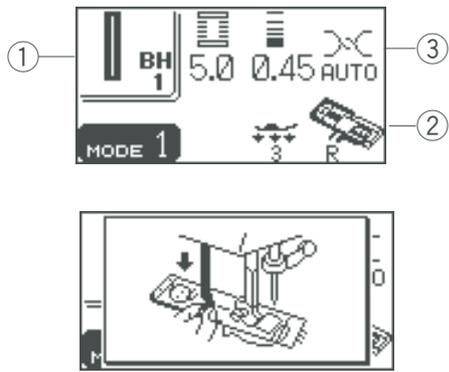
This buttonhole is suitable for knit fabrics. It can be used as a decorative buttonhole.

Faux Chain Buttonhole

Resembles a "Hand Worked" buttonhole. Ideal on fine fabrics featured in Heirloom sewing or for couture fashions.

Welted Buttonhole

This is a template pattern for the hand sewn welted (bound) buttonhole.



Square buttonhole

- ① Pattern: BH1
- ② Presser foot: Automatic buttonhole R
- ③ Thread tension: AUTO

NOTE:

The size of the buttonhole is automatically set by placing a button in the rear of automatic buttonhole foot R.

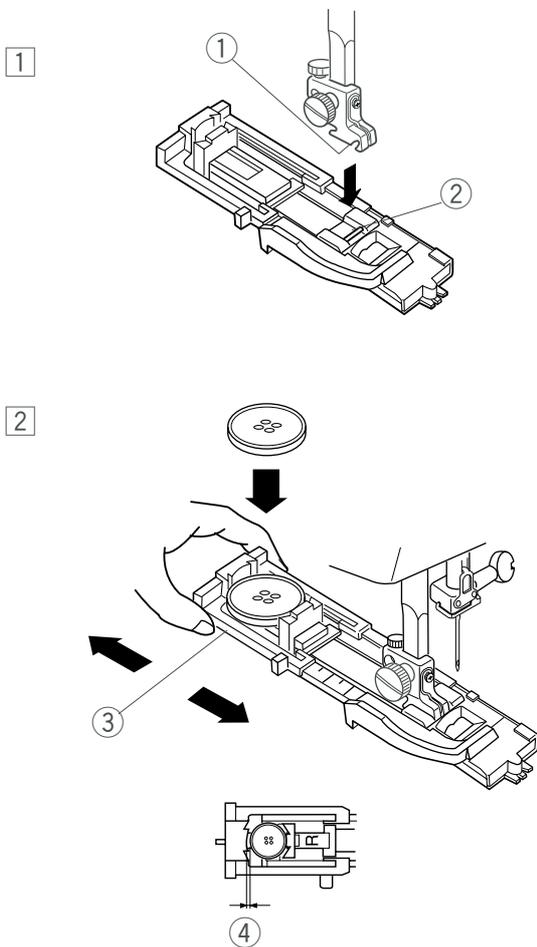
The button holder of the foot takes a button size of 1 cm (3/8") to 2.5 cm (1") in diameter.

It is sometimes necessary to change buttonhole size to match certain heavy or specific fabrics and threads.

Make a test buttonhole on an extra piece of the fabric to check your settings.

The preset width of the buttonhole is suitable for ordinary buttons.

Apply an interfacing to stretch or fine fabrics.



To sew

- ① Press the up/down needle position button to raise the needle.

Attach the automatic buttonhole foot R snapping the pin into the groove of the foot holder.

- ① Groove
- ② Pin

- ② Pull the button holder to the back, and place the button in it. Push it together tightly to the button.

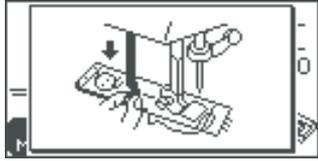
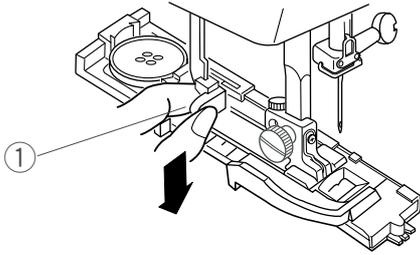
NOTE:

If the button is extremely thick, make a test buttonhole on an extra piece of the fabric.

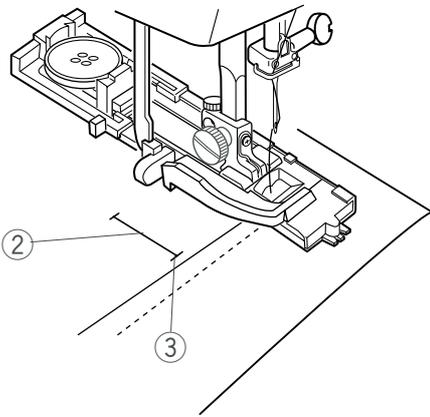
If it is difficult to fit the button through the test buttonhole, you can lengthen the buttonhole by pulling the button holder back a little. The length of the buttonhole will be increased.

- ③ Button holder
- ④ Pull back a little

3



4



- 3 Pull the buttonhole lever down as far as it will go.
 ① Buttonhole lever

NOTE:

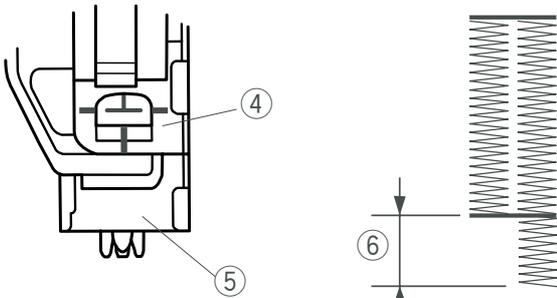
If you start sewing without pulling down the buttonhole lever, the LCD screen will show a warning and the machine will stop after a few stitches. Pull the buttonhole lever down and restart the machine.

- 4 Insert the corner of the fabric under the foot. Press the up/down needle button twice. Remove the fabric to the left to draw the needle thread through the hole of the foot. Place the garment under the foot, and lower the needle at the starting point of the buttonhole mark. Then lower the automatic buttonhole foot R.
 ② Buttonhole mark
 ③ Starting point

NOTE:

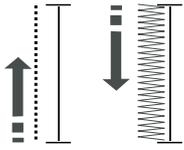
Make sure there is no gap between the slider and front stopper, otherwise the left and right lengths will be different.

- ④ Slider
 ⑤ Front stopper
 ⑥ Difference

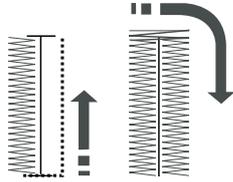


5

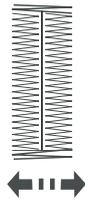
Step 1



Step 2



Step 3



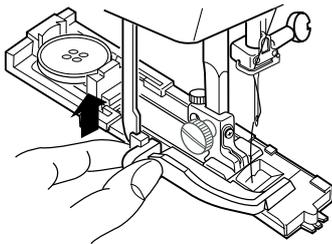
5 Start the machine to sew the buttonhole.
The buttonhole will be automatically sewn.

Step 1: The machine will sew the front bartack and the left row first.
Then it goes back to the starting point with straight stitch.

Step 2: The machine will sew the right row.

Step 3: The machine will sew the back bartack, and the machine will stop automatically.

6

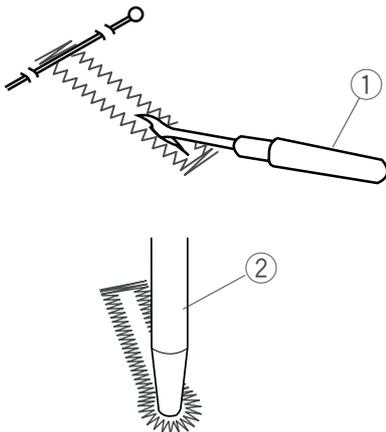


6 When buttonhole sewing is finished, push the buttonhole lever upward as far as it will go.

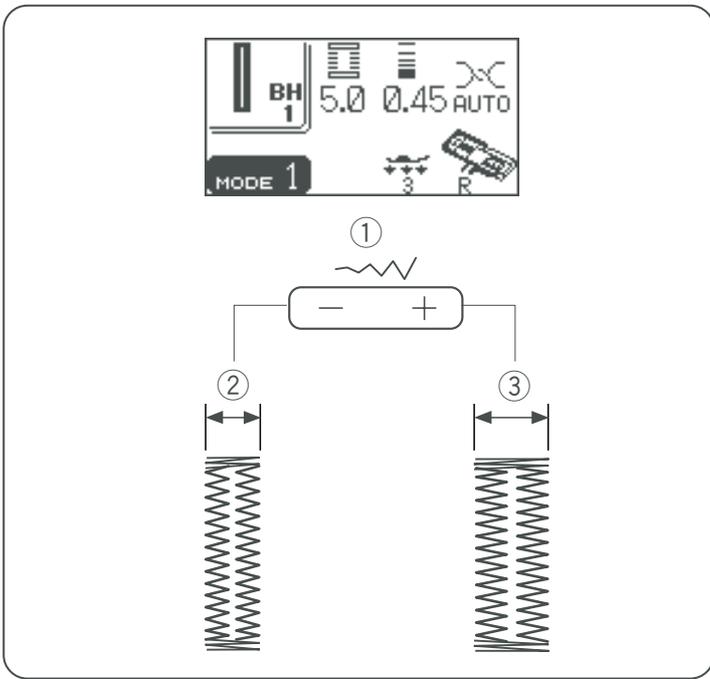
NOTE:

To make a solid and sturdy buttonhole, sew another layer of buttonhole over the previous stitches.
After the buttonhole is finished, simply start the machine again.
Do not raise the foot or buttonhole lever.
The machine will sew another layer of buttonhole and stop automatically when it is completed.

7



7 Remove the fabric and place a pin just below the bartack at each end to prevent accidentally cutting stitches.
Cut the opening with the seam ripper.
Use an Eyelet puncher to open a keyhole buttonhole
① Seam ripper
② Eyelet puncher



Adjusting buttonhole width

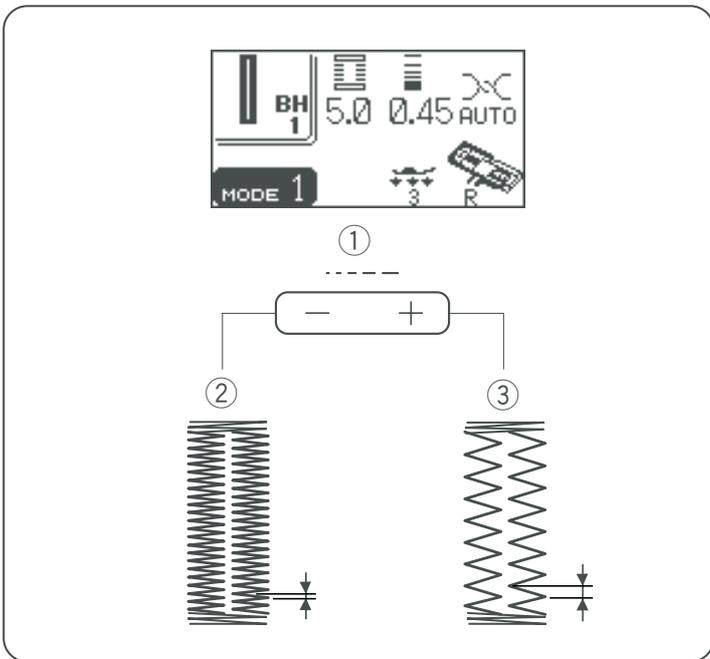
Press the stitch width adjustment button to change the buttonhole width

Press on “+” to increase the buttonhole width.

Press on “-” to decrease the buttonhole width.

The range of adjustment is 2.5 to 7.0.

- ① Stitch width adjustment button
- ② Narrower buttonhole
- ③ Wider buttonhole



Adjusting stitch density

Press the stitch length adjustment button to change the stitch density.

Press on “+” to make the buttonhole stitch coarser.

Press on “-” to make the buttonhole stitch denser.

The range of adjustment is 0.2 to 0.8.

- ① Stitch length adjustment button
- ② Denser buttonhole
- ③ Coarser buttonhole

NOTE:

To alter the buttonhole width and density while sewing a test buttonhole, stop the machine at the left or right row of the buttonhole then adjust the stitch width and density to find the appropriate settings.

Press the memory button so that you can sew a buttonhole with the new settings.

The setting will return to the preset value when the power switch is turned off or selecting another stitch.



Corded buttonhole

- ① Pattern: BH1
- ② Presser foot: Automatic buttonhole R
- ③ Thread tension: AUTO

To sew a corded buttonhole, follow the same procedure as for a square buttonhole.

With the automatic buttonhole foot R raised, hook the filler cord on the spur at the back of the buttonhole foot.

Bring the ends of cord toward you under the buttonhole foot clearing the front end.

Hook the ends of the filler cord into the forks on the front of buttonhole foot to hold them tight.

- ① Spur
- ② Forks

Lower the needle into the garment where the buttonhole will start and lower the foot.

Lower the buttonhole lever and buttonhole foot. Start the machine and sew the buttonhole over the filler cord. The machine stops automatically when finished.

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

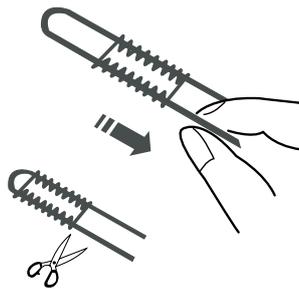
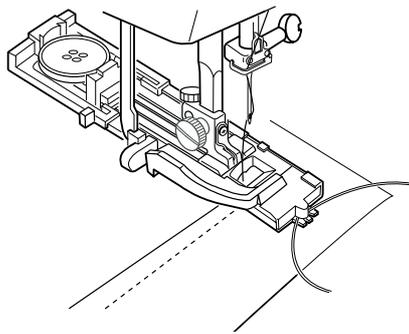
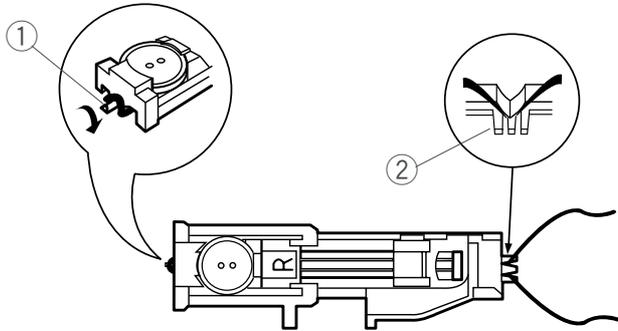
Pull the end of the filler cord to tighten it. Thread the end of the cord through a darning needle and draw it to the wrong side of the fabric and cut.

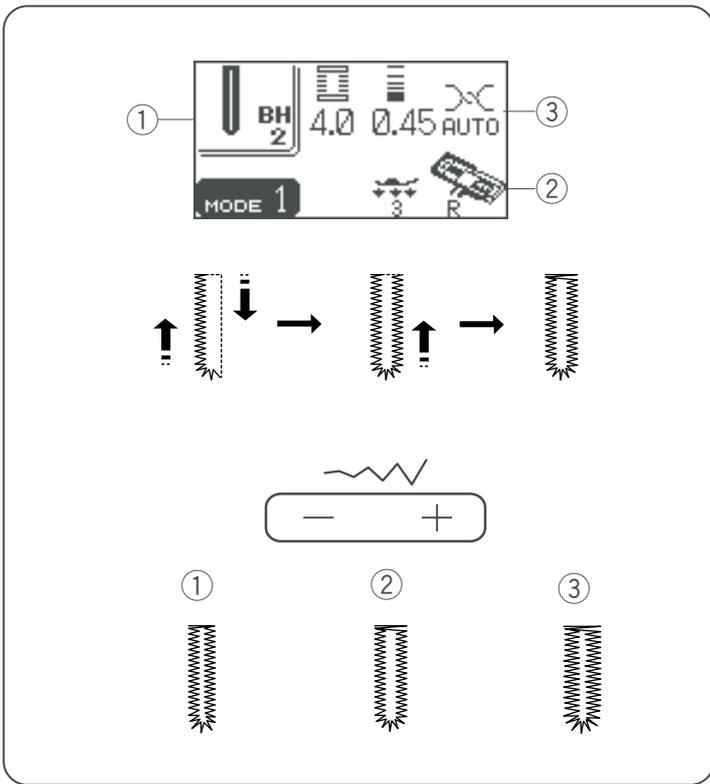
NOTES:

Set the stitch width in accordance with the thickness of the filler cord used.

To cut the buttonhole opening, refer to page 44.

If the filler cord is stitched to the fabric and cannot be pulled, cut it at both ends.





Round-end buttonhole

- ① Pattern: BH2
- ② Presser foot: Automatic buttonhole R
- ③ Thread tension: AUTO

The sewing sequence is as shown.

Adjusting buttonhole width

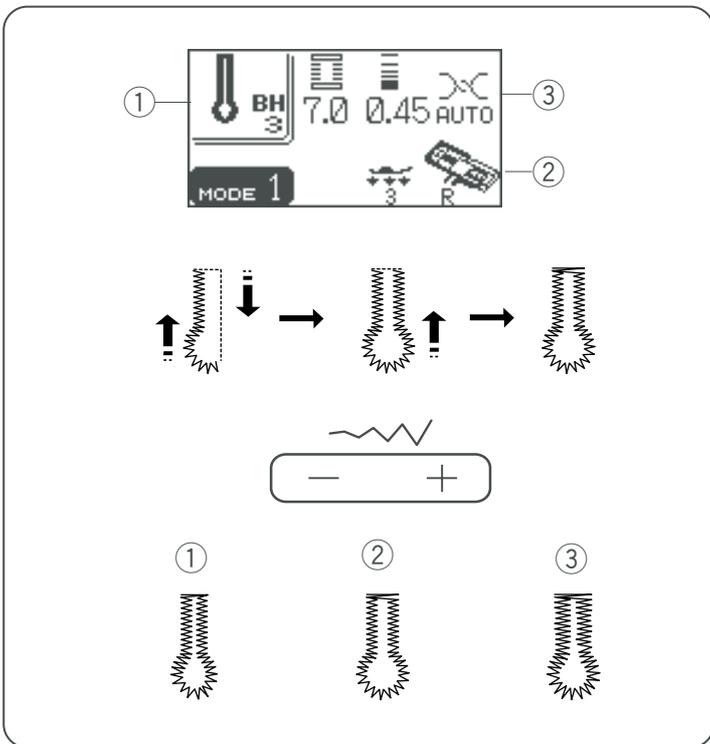
Press the stitch width adjustment button to change the buttonhole width.

Press “+” to make the buttonhole wider.

Press “-” to make the buttonhole narrower.

The range of adjustment is 2.5 to 5.5.

- ① Stitch width 2.5
- ② Stitch width 4.0
- ③ Stitch width 5.5



Keyhole buttonhole

- ① Pattern: BH3
- ② Presser foot: Automatic buttonhole R
- ③ Thread tension: AUTO

The sewing sequence is as shown.

Adjusting buttonhole width

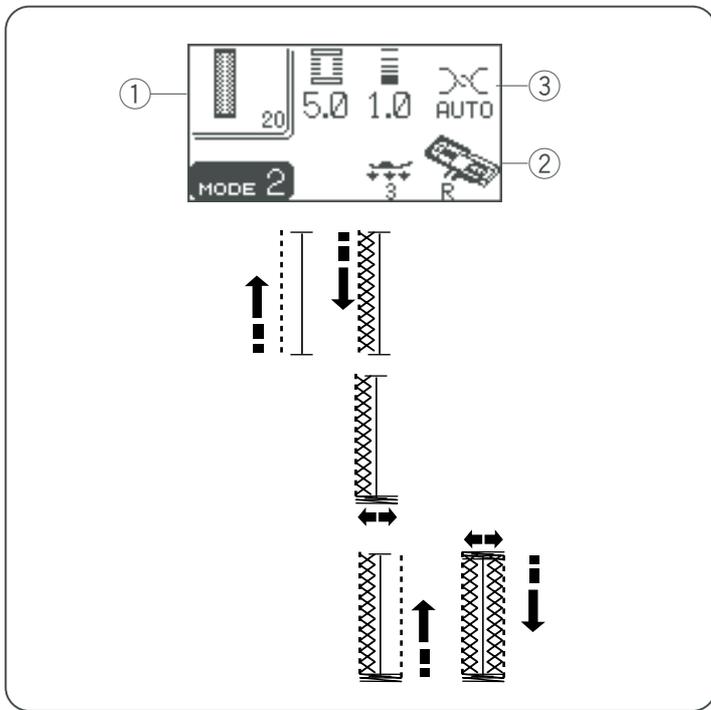
Press the stitch width adjustment button to change the buttonhole width.

Press “+” to make the buttonhole wider.

Press “-” to make the buttonhole narrower.

The range of adjustment is 5.5 to 7.0.

- ① Stitch width 5.5
- ② Stitch width 6.5
- ③ Stitch width 7.0

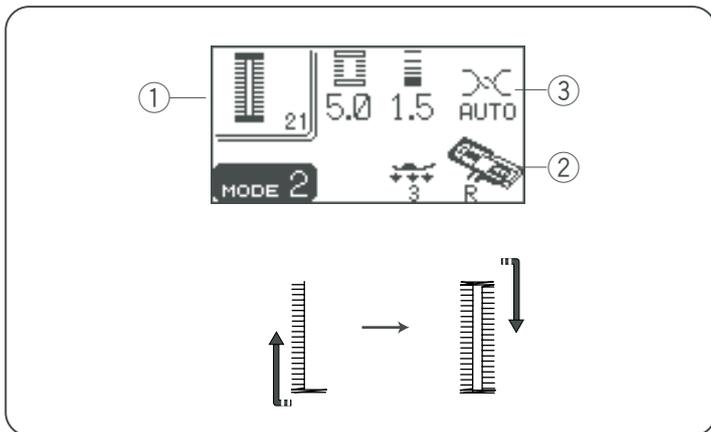


Knit buttonhole

- ① Pattern: #20 (mode 2)
- ② Presser foot: Automatic buttonhole R
- ③ Thread tension: AUTO

The sewing sequence is same as that of square buttonhole (see page 43).

The range of buttonhole width adjustment is 2.5 to 7.0.
The range of stitch density adjustment is 0.7 to 1.2.

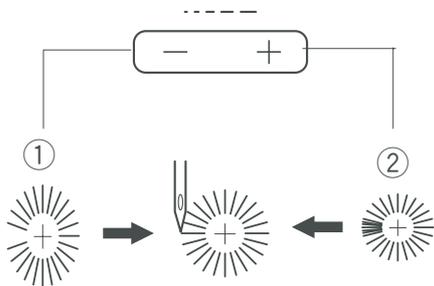
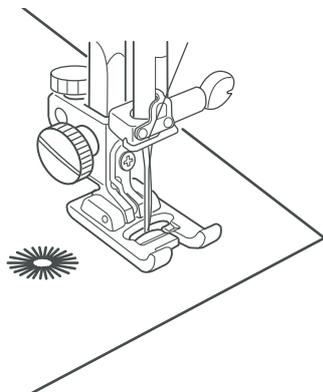


Faux chain buttonhole

- ① Pattern: #21 (mode 2)
- ② Presser foot: Automatic buttonhole R
- ③ Thread tension: AUTO

The sewing sequence is as shown.

The range of buttonhole width adjustment is 2.5 to 7.0.
The range of stitch density adjustment is 0.5 to 2.5.



Eyelet

- ① Pattern: #26 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

The eyelet is used for belt holes etc.

To sew

Depress the foot control to sew.

The machine will sew an eyelet and stop automatically when completed.

Open the eyelet with an awl, punch or pointed scissors.

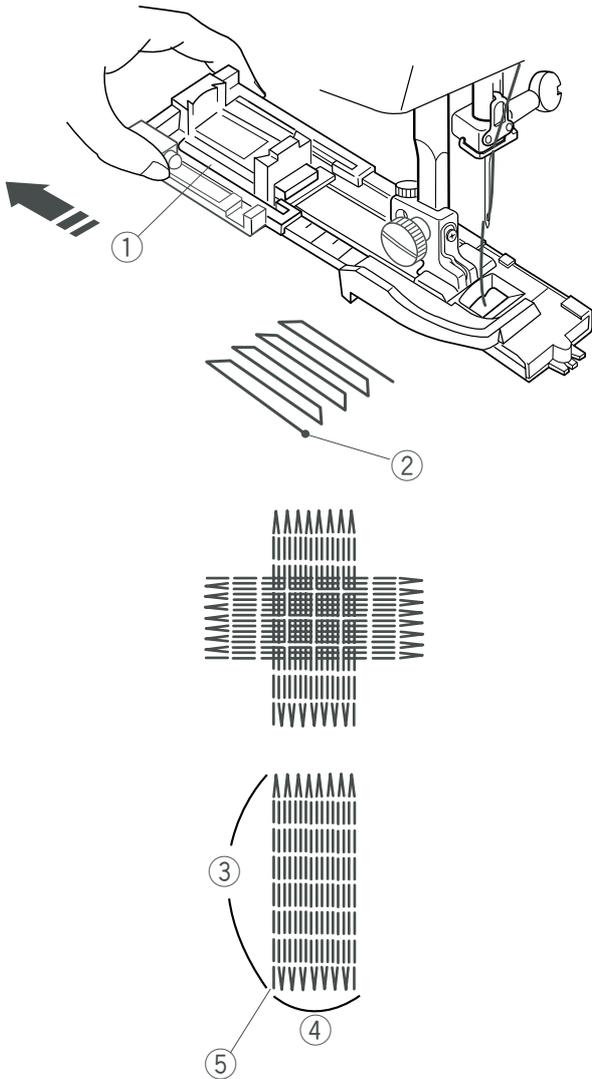
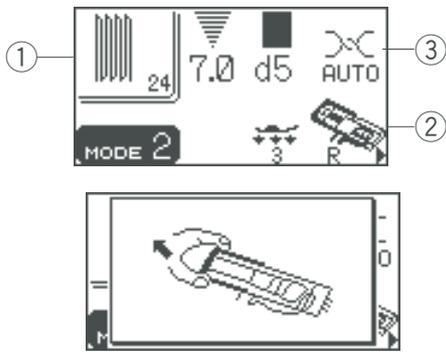
Adjusting the shape of an eyelet

Correct the shape of the eyelet as follows:

- ① If the eyelet gap opens, press “-“ on the stitch length adjustment button.
- ② If the eyelet overlaps, press “+“ on the stitch length adjustment button.

NOTE:

The shape can be adjusted within L1 to L3 (default setting is L2).



Darning

- ① Pattern: #24 (mode 2)
- ② Presser foot: Automatic buttonhole foot R
- ③ Thread tension: AUTO

Pull the button holder to the rear as far as it will go.

- ① Button holder

Place the garment under the foot.

Press the up/down needle position button twice.

Remove the fabric to the left to draw both threads under the foot and place the fabric back under the foot.

Lower the needle at the starting point, then lower the foot.

- ② Starting point

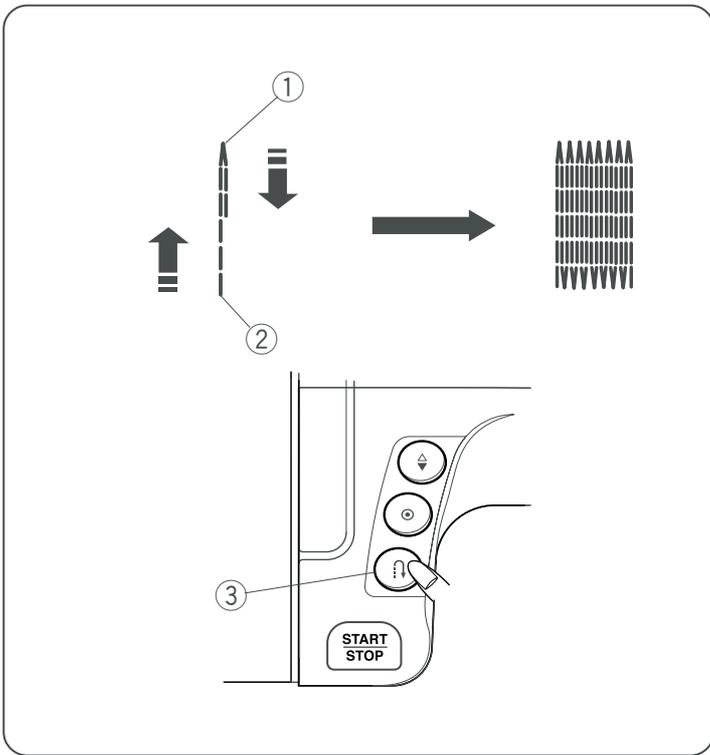
Depress the foot control and the machine will sew a darning 2 cm (3/4") long and stop automatically.

Repeat sewing in a different direction until the darning covers the rip or hole.

NOTE:

The maximum size of darning is 2 cm (3/4") long and 0.7 cm (1/4") wide.

- ③ Maximum length 2 cm (3/4")
- ④ Maximum width 0.7 cm (1/4")
- ⑤ Starting point



To sew a shorter darning

To sew a darning shorter than 2 cm (3/4"), first stop the machine after sewing the required length, then press the reverse button. The required length has been determined.

Start the machine again and continue sewing until the machine stops automatically.

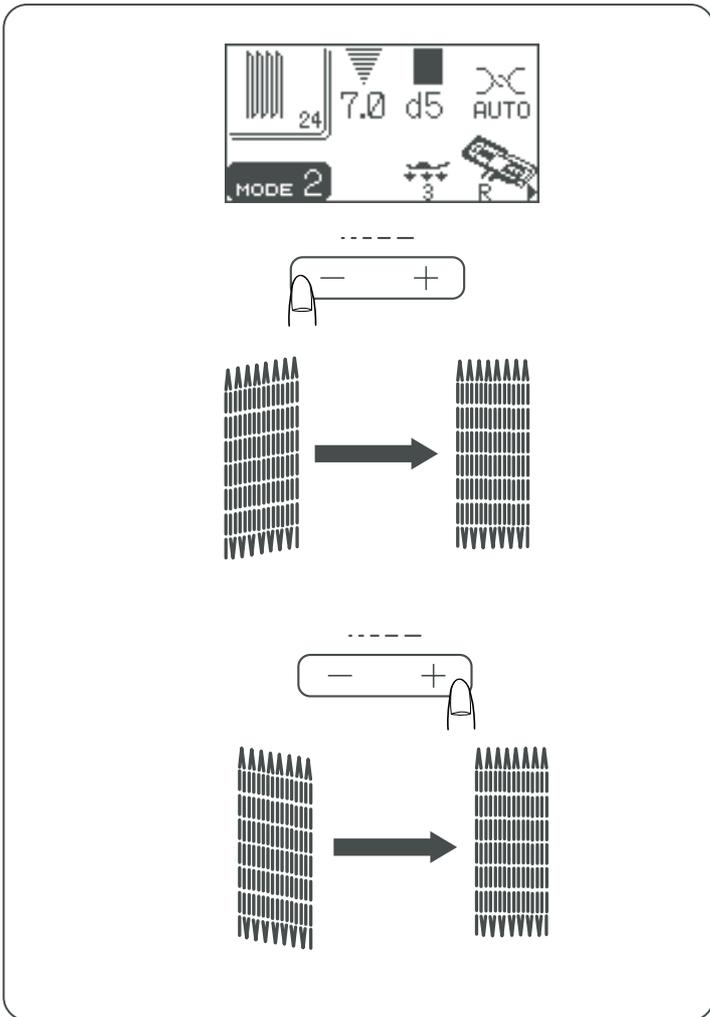
- ① Required length
- ② Starting point
- ③ Reverse stitch button

To sew the same size darning

Simply start the machine to sew another darning at the same size.

To sew the darning at a different size

Press the memory button and start sewing from the beginning.



To adjust the evenness of darning

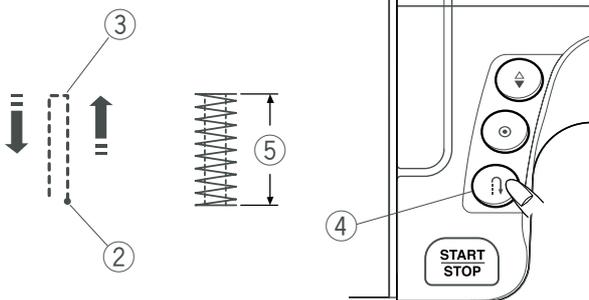
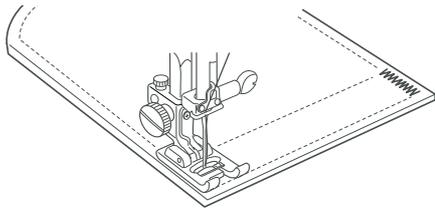
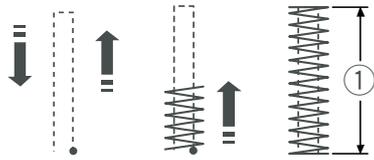
The evenness of darning may vary depending on the sewing conditions, such as type of fabrics, number of layers etc. You can correct the unevenness of darning with the stitch length adjustment button.

If the left corner is lower than the right side, press “−” to correct it.

If the right corner is lower than the left side, press “+” to correct it.

NOTE:

The evenness can be adjusted within d1 to d9 (default setting is d5).



Tacking

- ① Pattern: #25 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

Tacking is used to reinforce pockets, crotches and belt carriers where extra strength is needed.

To sew

Depress the foot control until the machine stops automatically.

The machine will sew a tacking 1.5 cm (9/16") long automatically.

- ① 1.5 cm (9/16 ")

To sew a shorter tack

To sew a tack shorter than 1.5 cm (9/16"), first stop the machine after sewing the required length, and then press the reverse stitch button.

The required length has been determined.

Start the machine and continue sewing until the machine stops automatically.

- ② Starting point
- ③ Required length
- ④ Reverse stitch button
- ⑤ Tack length

To sew the same size tack

To sew another tack at the same size, simply start the machine and it will stop automatically when finished sewing.

To sew a tack at a different size

To sew the next tack in a different size, press the memory button and start sewing. Press the reverse stitch button after sewing the required length.

The required length has been determined.

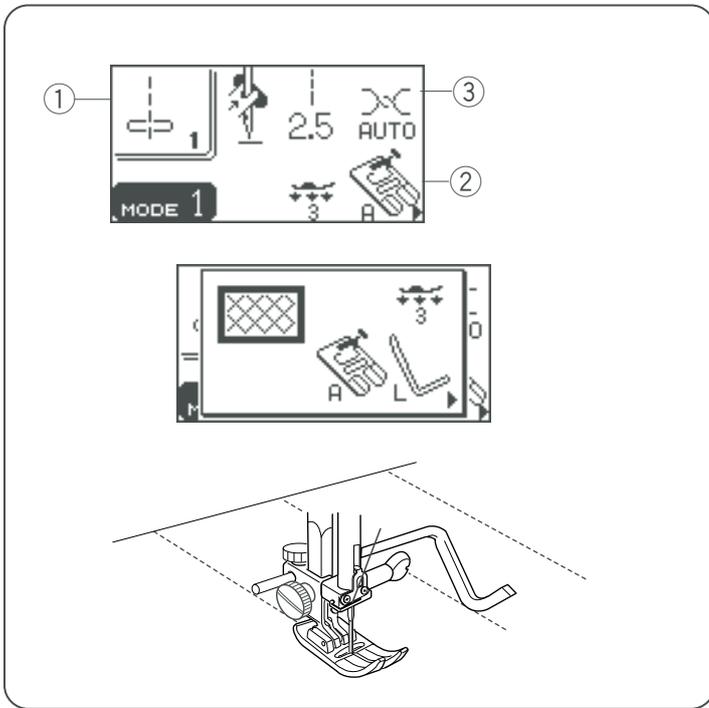
QUILTING AND DECORATIVE STITCHES

Quilting

- ① Pattern: #1 (mode 1)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

Attach the quilting bar (see page 27).

Sew while tracing the previous seam with the quilting bar.



Free motion quilting

- ① Pattern: #4 (mode 1)
- ② Presser foot: Darning foot P
- ③ Thread tension: AUTO
- ④ Feed dog: Lowered
- ⑤ Foot pressure: 1

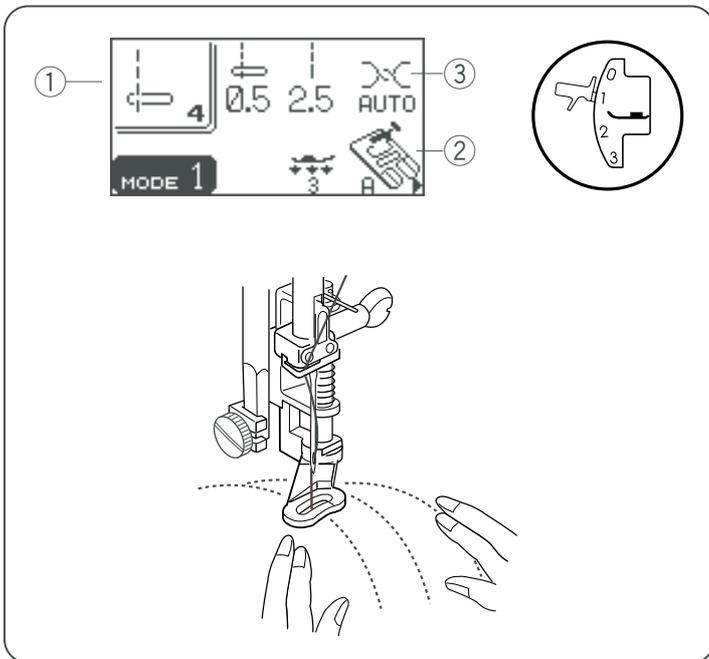
Lower the feed dog (see page 25).

Attach the darning foot (see page 33) and reduce the foot pressure (see page 25).

Baste or pin the quilt layers together.

Draw a design on the top fabric with a washable marker.

Move the quilt layers slowly and evenly while stitching along the design marked on the fabric.

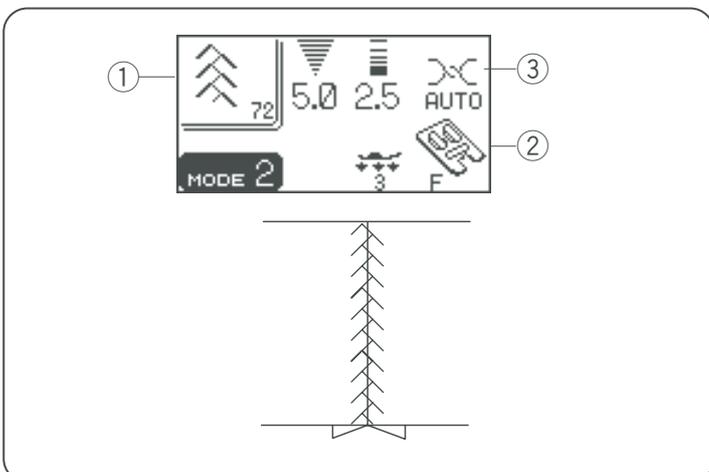


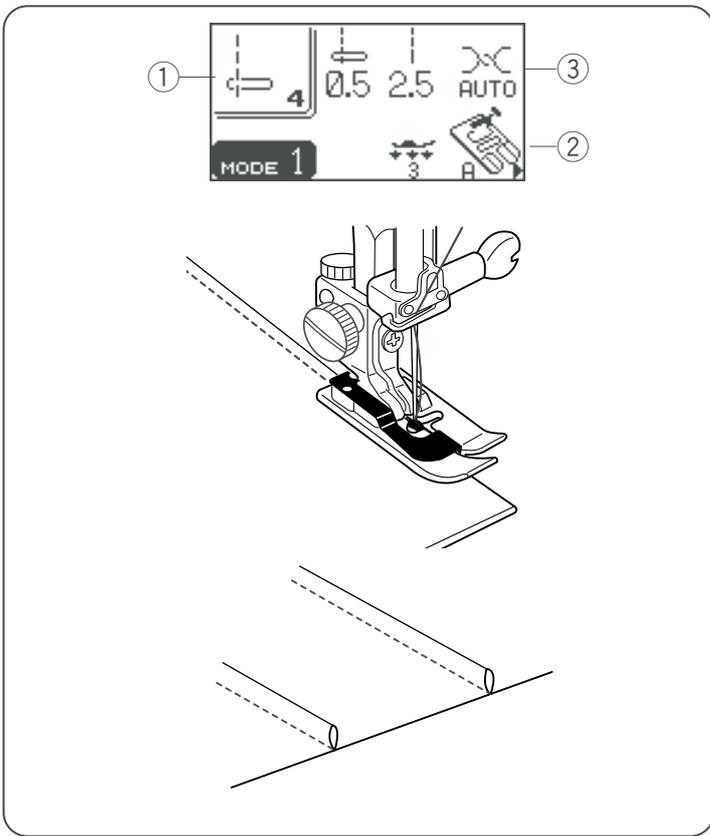
Patchwork

- ① Pattern: #71-#74 (mode 2)
#15, #65-#68, #71, #72 (mode 3)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

Seam the fabrics right sides together with straight stitch. Press seam allowance open.

Select the desired stitch and sew on the right side of garment centering over the seam line.



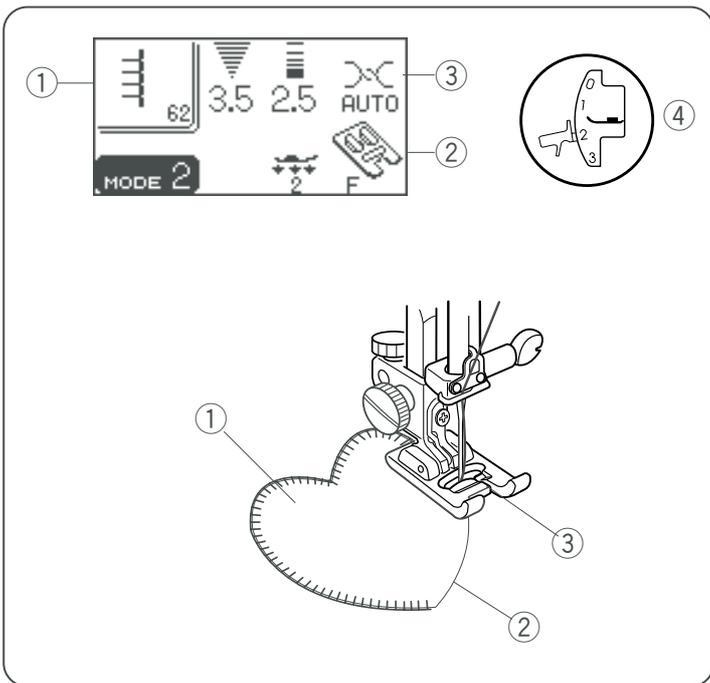


Pintucking

- ① Pattern: #4 (mode 1)
- ② Presser foot: Blind hem foot G
- ③ Thread tension: AUTO

Fold a fabric with the right side together.
Place the folded fabric under the blind hem foot.
Align the edge of the fold with the guide on the foot, and lower the foot.
Sew while guiding the edge of the fold along the guide.

Open the fabric and press the tuck to one side.



Applique

- ① Pattern: #35, #62-#68 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO
- ④ Foot pressure: 2

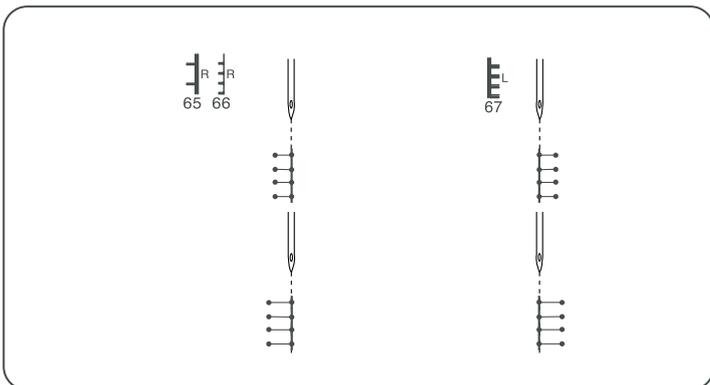
Place an applique on the fabric and baste or pin it in place.

Reduce the foot pressure.
Sew while guiding the fabric so the outer edge of the applique aligns with the slit of the foot.

- ① Applique
- ② Slit
- ③ Outer edge

When turning around a corner, stop the machine and press the up/down needle position button to lower the needle at the outer edge of the applique.

Raise the presser foot and pivot the fabric around the needle to change the sewing direction.



NOTE;

The stitch width of patterns #65-67 is fixed, but the needle drop position will move to the left or right by pressing the stitch width adjusting button.

Shell Tuck

- ① Pattern: #15 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: 6-8

Use a lightweight fabric (tricot, for example).
Fold the fabric in bias as shown and stitch on the fold.

Increase the thread tension.
Allow the needle to just clear the folded edge to create a shelled edge.

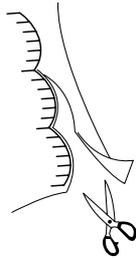
If you sew rows of shell stitches, space the rows at least 1.5 cm (5/8") apart. You can also sew shell stitches on knits or soft silky woven fabrics, in any direction.

Scallop

- ① Pattern: #69 (mode 2)
- ② Presser foot: Zigzag foot A
- ③ Thread tension: AUTO

Sew scallops 1 cm (3/8") from folded edge.

Trim the allowance close to the stitches.
Make sure not to cut the stitches.



Smocking

- ① Pattern: #52, #79, #80, #85, #86 (mode 2)
#15 (mode 3)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

Smocking is a delicate decorative treatment used on children's wears or women's blouses.

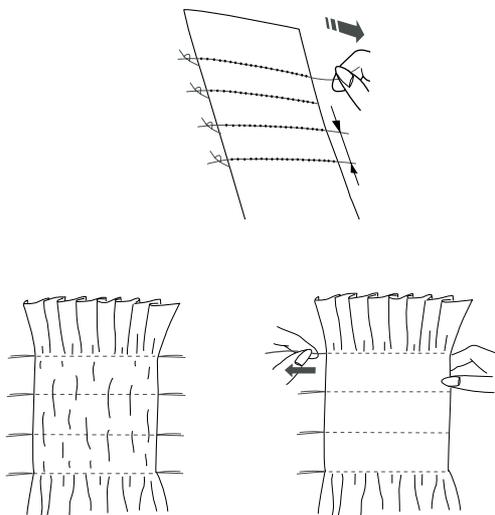
Choose a soft and lightweight fabric such as batiste, gingham or challis. Cut the fabric three times wider than the projected width.

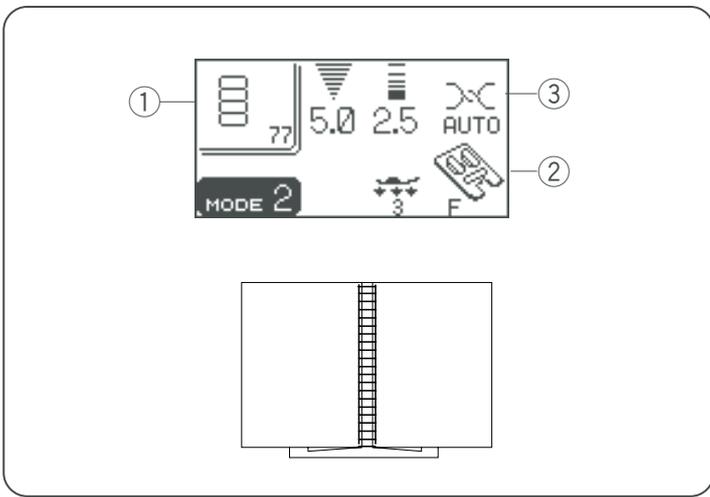
Reduce the thread tension to "0" and set stitch length at "5.0".

Sew rows of straight stitches 1 cm (3/8") apart across the area to be smocked.

Knot the threads along one edge. From the other edge, pull the bobbin threads (bottom threads) to distribute the gathers evenly.

Sew the smocking stitches between the gathered rows.
Remove the straight stitches between the gathered rows.





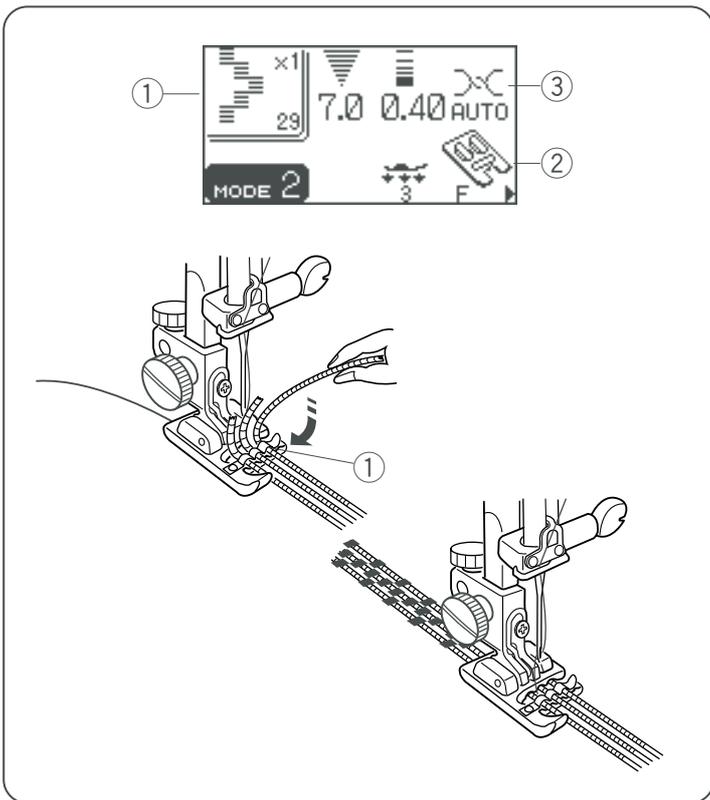
Fagoting

- ① Pattern: #56, #77, #78, #85, #86 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

Use this stitch to join two pieces of fabric to create an open work appearance and add design interest.

Fold under each fabric edge 5/8" (1.5 cm) and press. Pin the two edges to paper or tear away backing 1/8" (0.3 cm) apart. Sew slowly, guiding the fabric so the needle catches the folded edge on each side.

After finishing sewing, tear away the paper.



Cording

- ① Pattern: #29 (mode 2)
- ② Presser foot: Cording foot H
- ③ Thread tension: AUTO

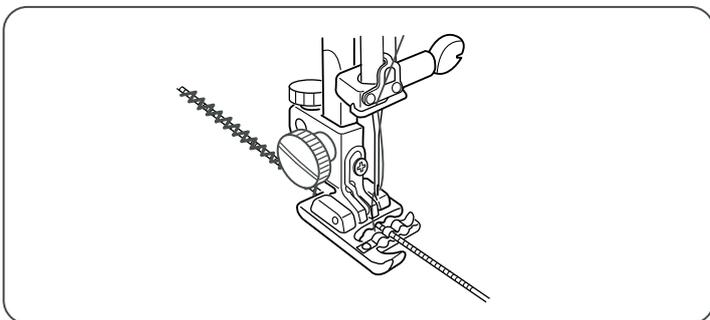
3-strand cording

Insert 3 strands of cording under the spring of the foot and draw them under the foot to the rear.

Hold the three strands parallel for even sewing and be sure to sew over the strands.

Stitch slowly and smoothly, guiding the fabric as you sew.

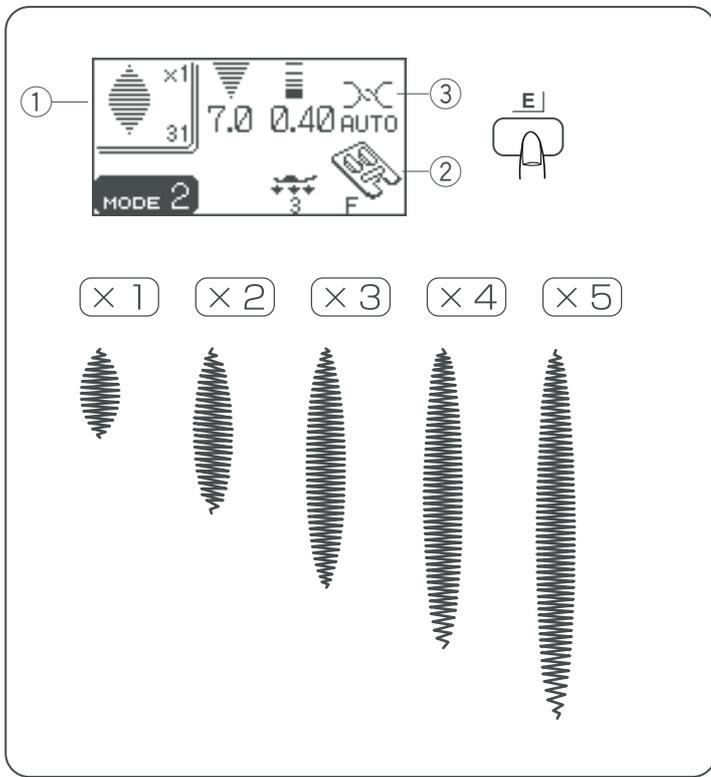
- ① Spring



1-strand cording

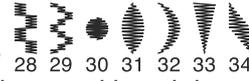
Insert 1 strand of cording under the spring of the foot and draw it under the foot to the rear (use the center slot of the spring).

Select pattern #6 (mode 1), then decrease the stitch width and sew.



Satin Stitches

- ① Stitch pattern #28-#34 (mode 2)
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

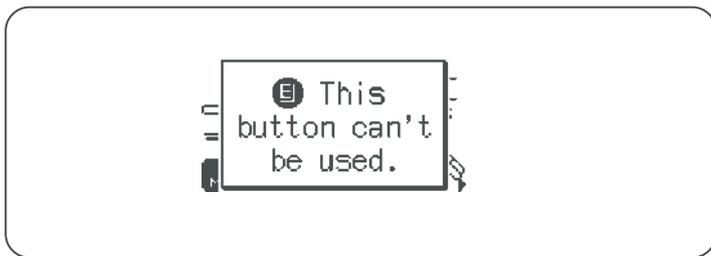


Satin stitches 28 29 30 31 32 33 34 can be elongated up to five times their normal length by pressing the elongation button.

The stitch width and length can also be changed.

Select the desired satin stitch.

Press the elongation button to change the elongation ratio. Elongation ratio is indicated in multiples of the original pattern length.



NOTE:

If you press the elongation button when any stitch other than satin stitches, buzzer sounds and a warning message will appear.

Twin Needle Sewing

Machine settings

- ① Pattern: See the list below.
- ② Presser foot: Satin stitch foot F
- ③ Thread tension: AUTO

NOTES:

- * When you sew patterns with the twin needle, press the twin needle button and test the stitches first before you begin to sew.
- * Use the zigzag foot A or satin stitch foot F for twin needle sewing.
- * Turn off the machine before changing the needle.

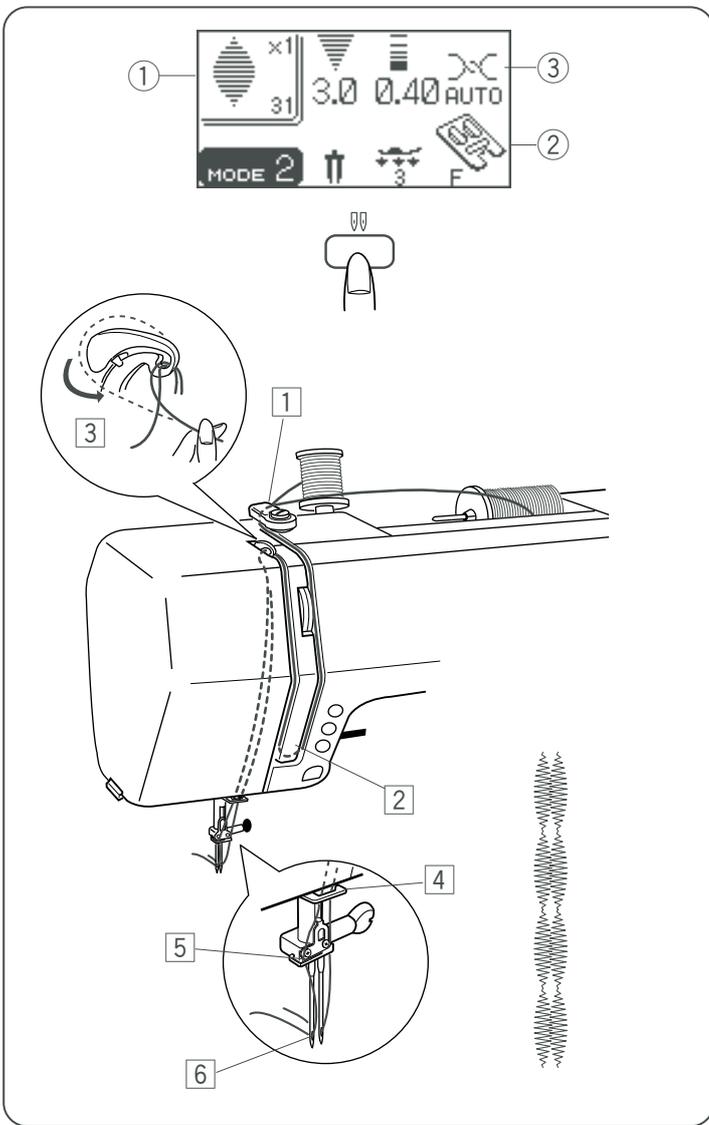
Use the extra spool pin and spool stand.

Threading the machine for twin needle sewing

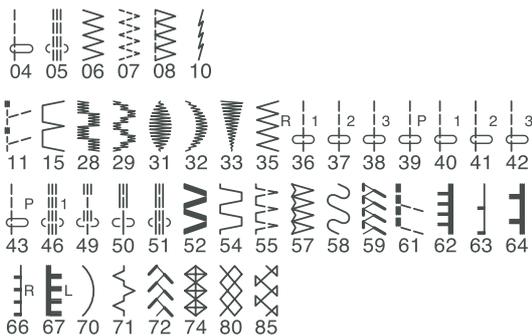
Place two spools of thread, one on the horizontal spool pin and the other on the extra spool pin as shown. Draw both threads from the spools and thread them through the points from ① to ⑥. Make sure that the two strands of thread do not get tangled.

Turn the power switch on and press the twin needle button  .

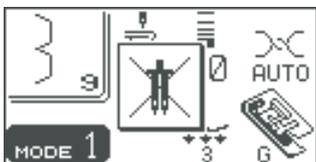
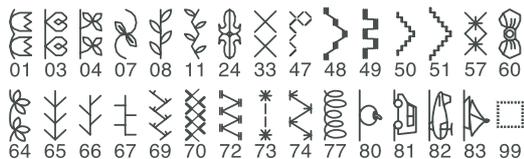
Select a pattern and sew.



Mode 2



Mode 3



NOTES:

- * The stitch width is limited to 3 mm or less.
- * The stitch patterns shown to the left can be sewn with the twin needle.
- * If a selected pattern is not for twin needle, a buzzer will sound and a message will appear on the LCD screen.

PROGRAMMING PATTERNS AND LETTERS

Programming the Pattern Combination

Example: Patterns #31 and #32 (mode 2)

Select pattern 31 (mode 2).



Press the memory button.



Select the pattern 32 (mode 2).

Press the memory button.



A series of pattern combination will be sewn.



NOTE:

If you press the memory button when the pattern cannot be programmed, a buzzer sounds and a warning message will appear.

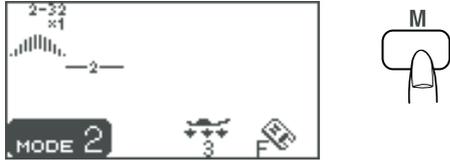
Programming the mirror image patterns

Example: Pattern #32 and its mirror image

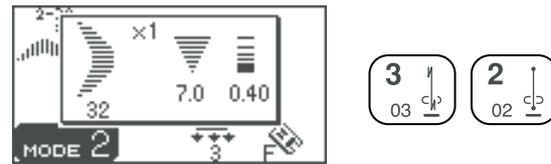
Select pattern #32 (mode2).



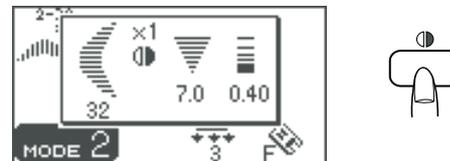
Press the memory button.
Pattern #32 is memorized.



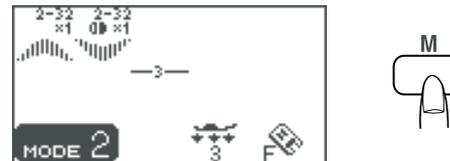
Select pattern #32 (mode 2) again.



Press the mirror image button.
Pattern #32 is turned over.



Press the memory button.
A mirror image of pattern #32 is memorized.



Programming the locking stitch

Example: Pattern #31 (mode 2) with locking stitch.

Select pattern #31 (mode 2).

Press the memory button.

Pattern #31 is memorized.

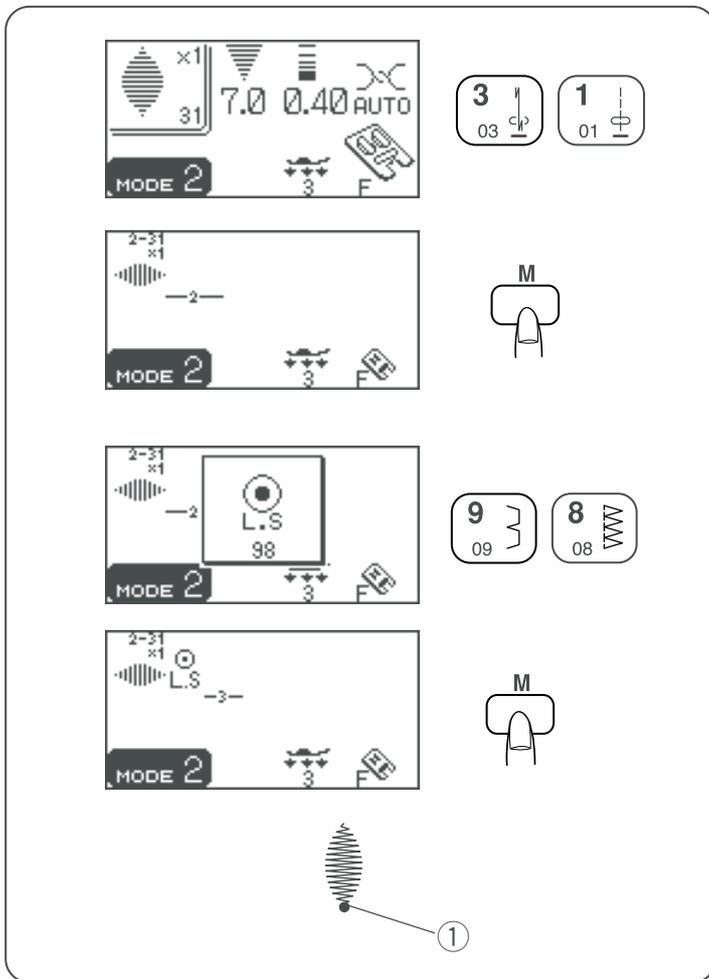
Select pattern #98 (mode 2)

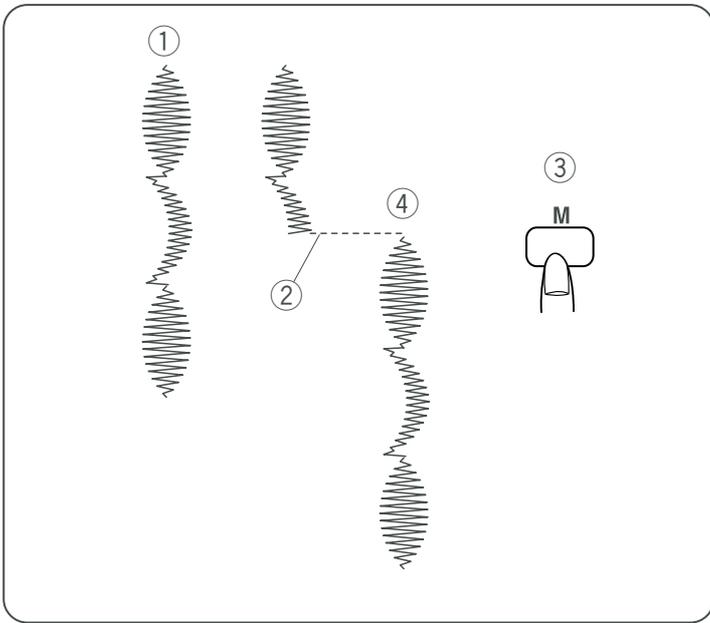
Press memory button.

Pattern #98 (locking stitch) is memorized.

Press the start/stop button so the machine will sew pattern #31 and lock the stitch off then stop automatically.

① Locking stitch

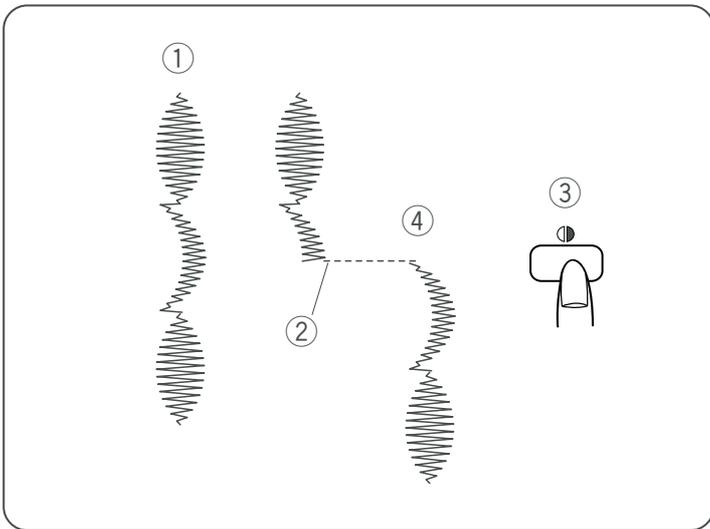




Sewing a pattern combination from the beginning

If you have to stop sewing a pattern combination and wish to sew it over again, press the memory button to sew the pattern combination from the beginning.

- ① Pattern combination
- ② Stop sewing.
- ③ Press the memory button.
- ④ Sews the pattern combination from the beginning.



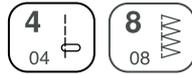
Sewing the current pattern from the beginning

If you have to stop sewing a pattern combination and wish to sew from the incomplete pattern, press the mirror image button to sew from the beginning of the pattern last sewn.

- ① Pattern combination
- ② Stop sewing.
- ③ Press the mirror image button.
- ④ Sews the pattern combination from the pattern last sewn.

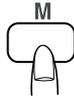
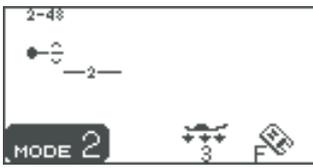
Programming French knots

Select pattern #48 (mode 2).

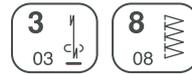
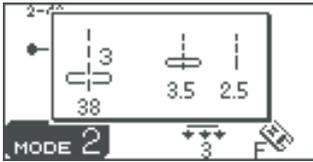


Press the memory button.

A knot and 2 counts of straight stitch is memorized.

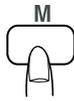
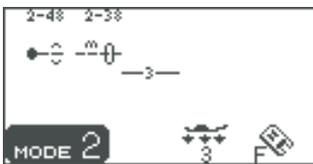


Select pattern #38 (mode 2).



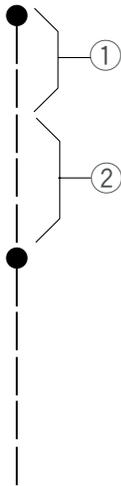
Press the memory button.

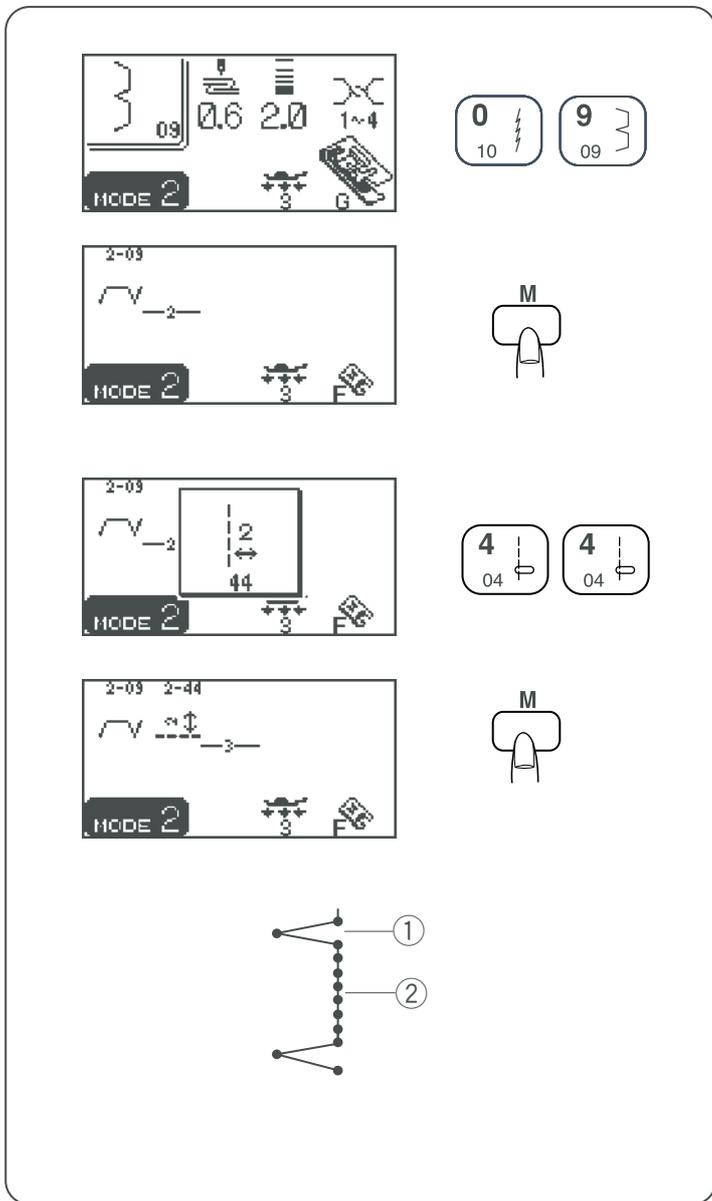
Three counts of straight stitch is memorized.



French knots will be sewn after every 5 counts of straight stitch.

- ① Pattern #48 (French knot and 2 counts of straight stitch)
- ② Pattern #38 (3 counts of straight stitch)





Extender Stitches

Patterns #44, #45 and #50 (mode 2) are extender stitches which are used to insert straight stitches between stitch patterns.

The extender stitches inherit the stitch length and needle drop position of a previous pattern in the programmed pattern combination.

Example: Inserting 2 counts of the straight stitch between the blind stitches (pattern #09, mode 2)

Select pattern #09 (mode 2).

Press the memory button.
Pattern #09 is memorized.

Select pattern #44 (mode 2).

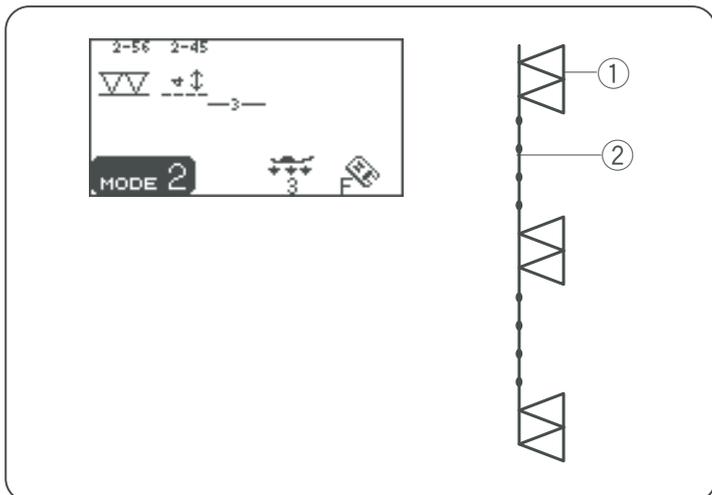
Press the memory button.
Pattern #44 (2 counts of straight stitch) is memorized.

Two counts of straight stitch are inserted between blind stitches.

- ① Pattern #09 (blind stitch)
- ② Pattern #44 (2 counts of straight stitch)

NOTE:

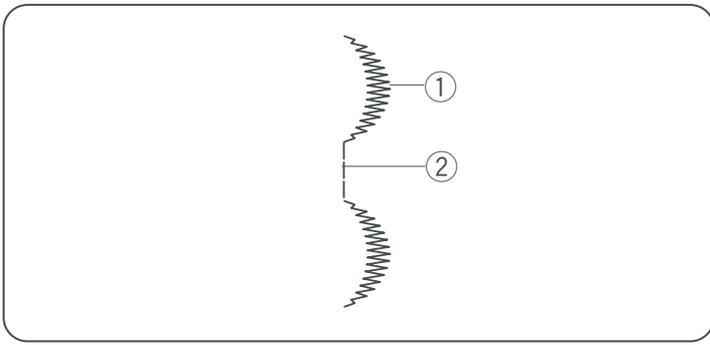
Pattern #46 is an extender stitch for the triple stretch stitch (#05).



Example: Inserting 4 counts of the straight stitch after pattern 56 (mode 2)

Program pattern #56 and #45 (4 counts of straight stitch).

- ① Pattern #56
- ② Pattern #45 (4 counts of straight stitch)



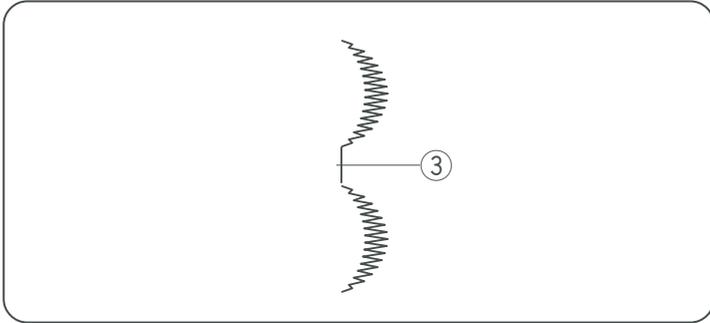
Other extender stitches

The stitch length and needle drop position of patterns #36, #37, #38, #40, #41 and #42 are independent from those of the combined pattern.

Example: Inserting 3 counts of the straight stitch after pattern 32 (mode 2)

Program pattern #32 and #42 (3 counts of straight stitch).

- ① Pattern #32
- ② Pattern #42 (3 counts of straight stitch)



To insert blank space, use pattern #99. Trim the connecting thread after sewing.

- ③ Connecting thread

Programming Letters

Selecting a letter style

Press the letter style button to choose one of the following letter styles:

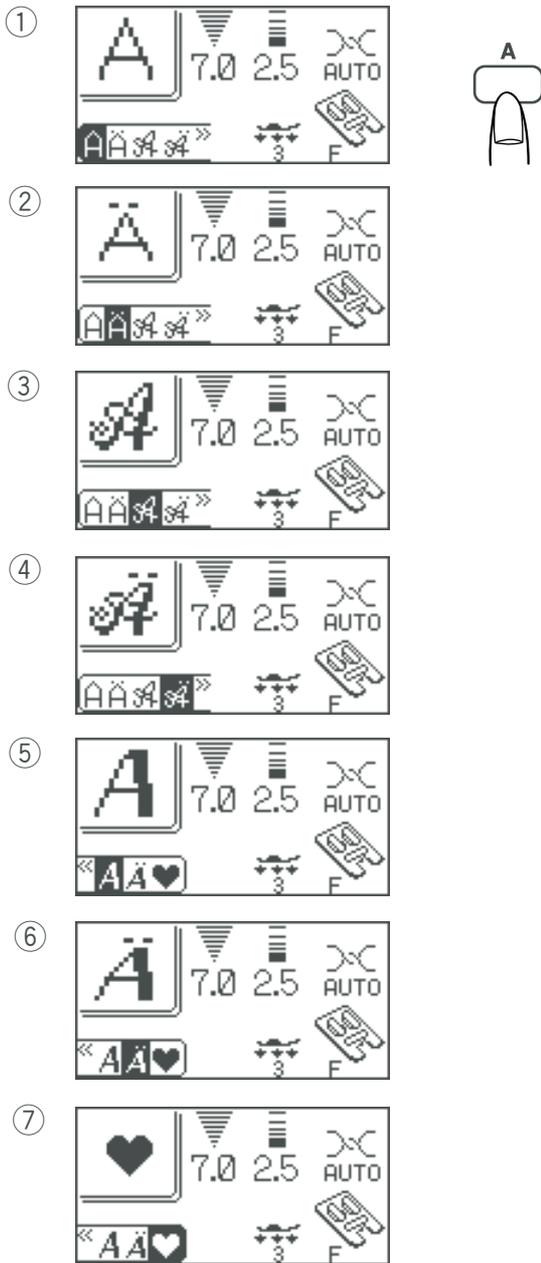
- ① Block
- ② Block (European letters)
- ③ Script
- ④ Script (European letters)
- ⑤ Broadway
- ⑥ Broadway (European letters)
- ⑦ Decorative patterns

Each time you press the letter style button, the letter style will change in the order above.

NOTE:

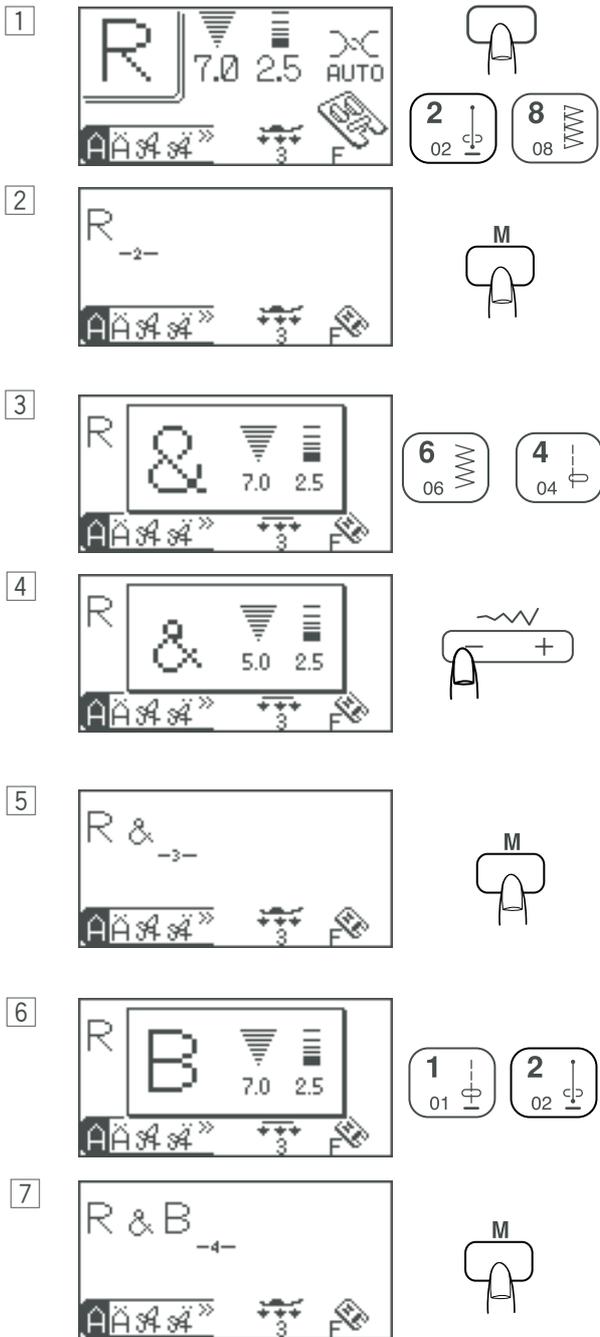
The stitch patterns in mode 2 and 3 cannot be programmed with letters.

Use the decorative patterns in the lettering mode to program a combination of letters and decorative patterns.



Programming letters

Example: To program “R&B” in Block style



1 Press the letter style button to select Block style.
Select the uppercase letter “R” (pattern 28).

2 Press the memory button.
Uppercase letter “R” will be memorized.

3 Select letter “&” (pattern 64).

4 Press the stitch width “-” button to reduce the letter size.

5 Press the memory button.
Small “&” will be memorized.

6 Select uppercase letter “B” (pattern 12).

7 Press the memory button.
Uppercase letter “B” will be memorized.

Programming letters and decorative patterns

Example: To program “I ♥ You”.

Select the uppercase Block style.

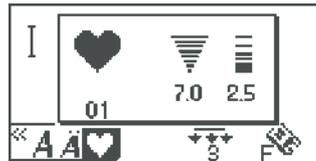
Select “I” (pattern #19) and memorize it.

Select the decorative patterns.

Select “♥” (pattern #01) and memorize it.

Select the Block style.

Memorize “Y”, “o” and “u”.



Viewing a long text

The LCD screen shows up to 8 characters at a time. If the entire text is not displayed, press the edit button or help button to scroll the text.

Pressing the edit button shifts the cursor and scrolls the text to the left.

Pressing the help button shifts the cursor and scrolls the text to the right.



NOTE:

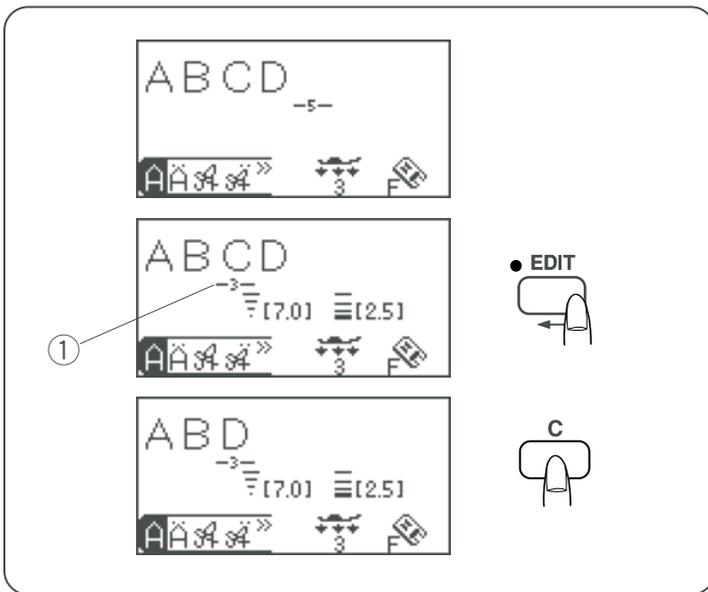
Arrows  under a character indicate that there are remaining characters in that direction.

① Arrow

Editing the Programmed Patterns

Deleting a letter (pattern)

Example: To delete “C” from “ABCD”



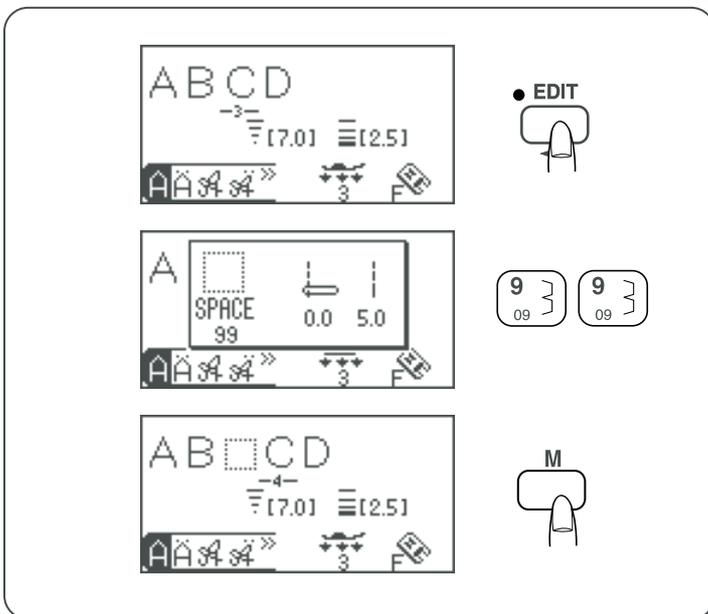
Press the edit button to shift the cursor under letter “C”.

① Cursor

Press the clear button. Letter “C” is deleted.

NOTE:

Pressing and holding the clear button will delete all the programmed patterns and the LCD screen will return to the initial display of the selected mode.



Inserting a letter (pattern)

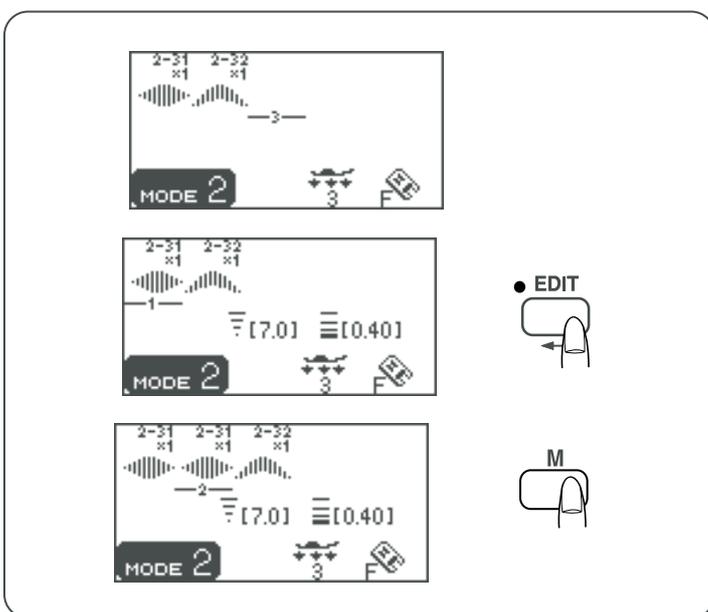
Example: To insert a blank space between “B” and “C” in “ABCD”

Press the edit button to shift the cursor under letter “C”.

Select pattern 99 (blank space).

Press the memory button.

A space is inserted before letter “C”.



Duplicating a pattern (letter).

Example: To duplicate pattern #31 of the pattern combination

Press the edit button to shift the cursor under the pattern to duplicate (#31).

Press the memory button.
Pattern #31 is duplicated.

Stitch adjustment of programmed patterns

The stitch width and length of the programmed stitch patterns can be altered uniformly or individually.

Example: To alter the stitch width uniformly

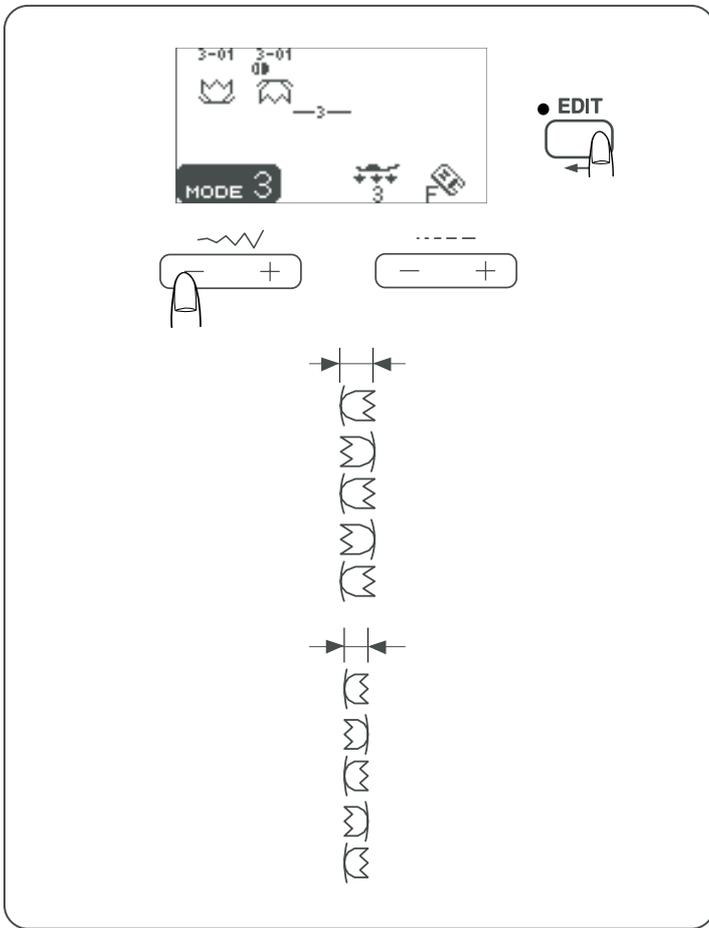
Press the edit button to shift the cursor to the right of the last programmed pattern.

Press the stitch width adjustment button to alter the stitch width.

The stitch width of programmed patterns will be uniformly altered.

NOTE:

Stitch length can also be uniformly altered when patterns of the same category (satin stitches or stretch stitches) have been programmed.



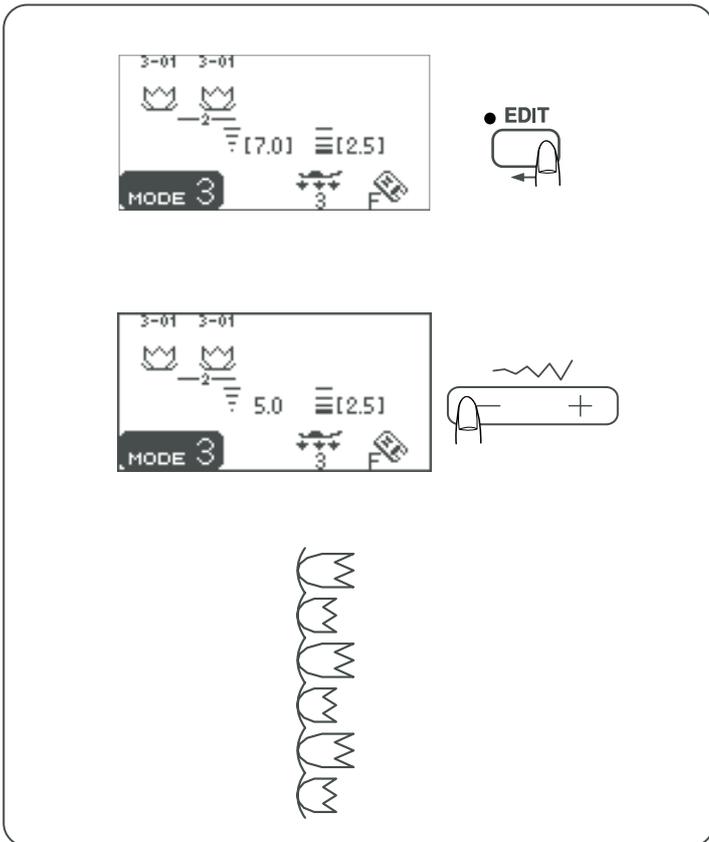
Example: To alter the stitch width individually

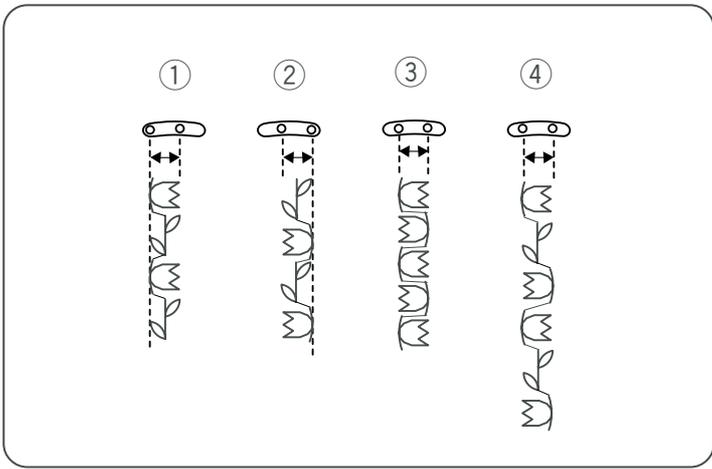
Press the edit button to shift the cursor under the pattern you wish to alter.

Press the stitch width adjustment to alter the stitch width. The stitch width of the desired pattern will be altered individually.

NOTE:

To view the stitch setting of each pattern, shift the cursor under the desired pattern then press the stitch width or length adjustment button. The settings will be displayed on the LCD screen.





Unified needle drop position

The needle drop position of the programmed patterns will vary depending on the combination:

- ① Unified to the left when combining the patterns with the left needle position and the center needle position.
- ② Unified to the right when combining the patterns with the right needle position and the center needle position.
- ③ Unified to the center when combining the patterns with the left needle position and the right needle position.
- ④ Unified to the center when combining the patterns with the left, right and center needle positions.

Storing and Recalling the Pattern Combinations

A pattern combination can be stored in the memory for future use even after turning the machine off. The stored pattern combination can be recalled by pressing the memory/call button.

You can store total 5 combinations in mode 2, mode 3 and lettering mode.

NOTE:

Memory/call function is not available in mode 1.

Storing the pattern combinations

Program the desired pattern combination.

Press the memory/call button.

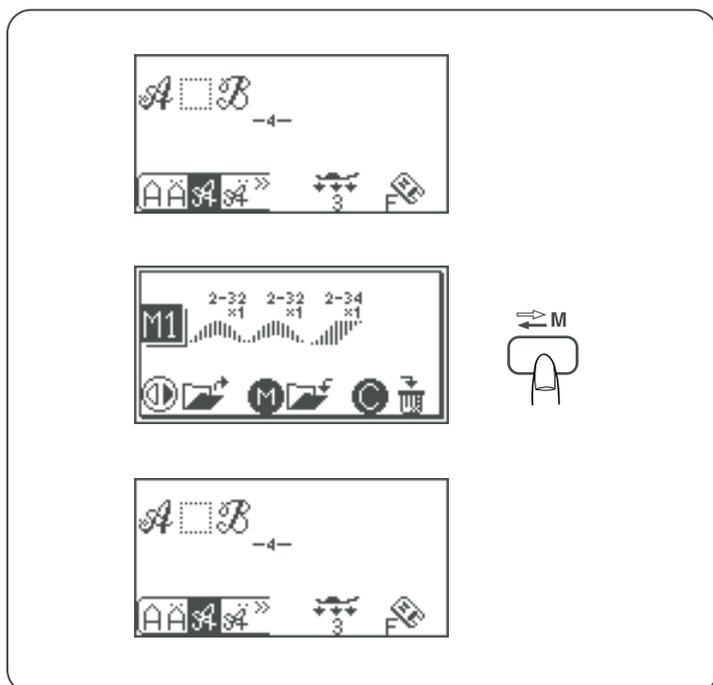
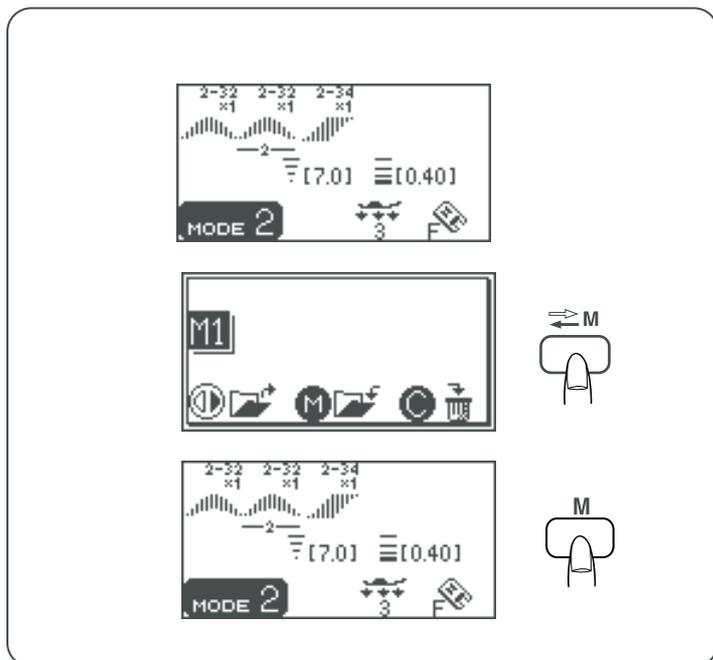
Press the memory button to store the stitch pattern combination.

* The machine beeps and an hourglass appears on the LCD screen while the machine is saving the stitch pattern combination.

Do not turn the power switch off while the machine is beeping or an hourglass is indicated on the LCD screen.

* You can access other memory address (M2 to M5) by pressing the memory/call button.

* To exit from the memory/call mode, press any key except the memory, clear, turnover memory, edit or help button.



Overwriting a stored combination

Program the desired combination.

Press the memory/call button to select the desired memory address.

The LCD screen will show the pattern combination already stored.

Press the memory button and the stored combination will be replaced with the new combination.

Recalling a stored combination

Select mode 2, 3 or lettering.

Press the memory/call button to select the desired memory address.

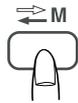
Press the mirror image button to recall the stored combination.

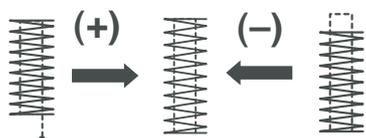
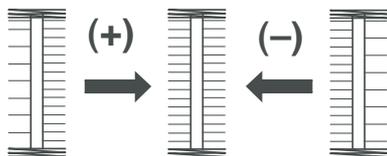
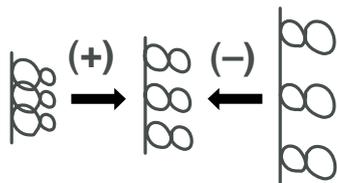
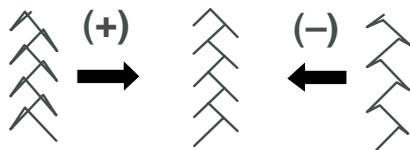
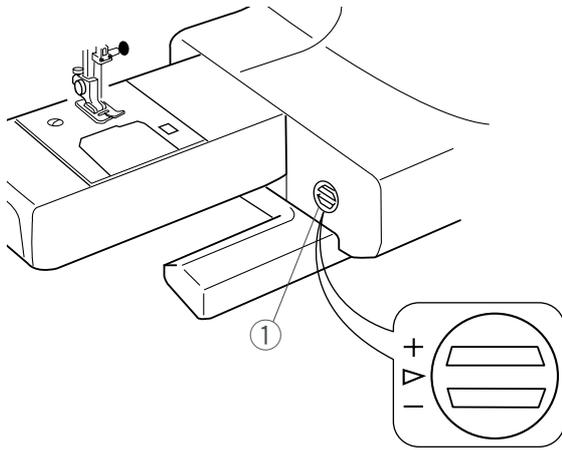


Deleting a stored combination

Press the memory/call button to select the desired memory address.

Press and hold the clear button to delete the stored combination.





Correcting Distorted Stitch Patterns

The sewing results of the stretch patterns may vary depending upon the sewing conditions, such as sewing speed, type of the fabric, number of layers etc.

Always test sew on a scrap piece of the fabric that you wish to use.

If stretch patterns, letters or numbers are distorted, correct it with the feed balancing dial.

① Feed balancing dial

Stretch stitch pattern

If the pattern is compressed, turn the feed balancing dial in the direction of “+”.

If the pattern is drawn out, turn the feed balancing dial in the direction of “-”.

Letters and numbers

If the pattern is compressed, turn the feed balancing dial in the direction of “+”.

If the pattern is drawn out, turn the feed balancing dial in the direction of “-”.

Stitch balance of buttonholes #19 and #21 (mode 2)

If the right row is denser, turn the feed balancing dial in the direction of “+”.

If the left row is denser, turn the feed balancing dial in the direction of “-”.

Evenness of bartacking

If the stitch does not meet start position, turn the feed balancing dial in the direction of “+”.

If the stitch does not meet return position, turn the feed balancing dial in the direction of “-”.

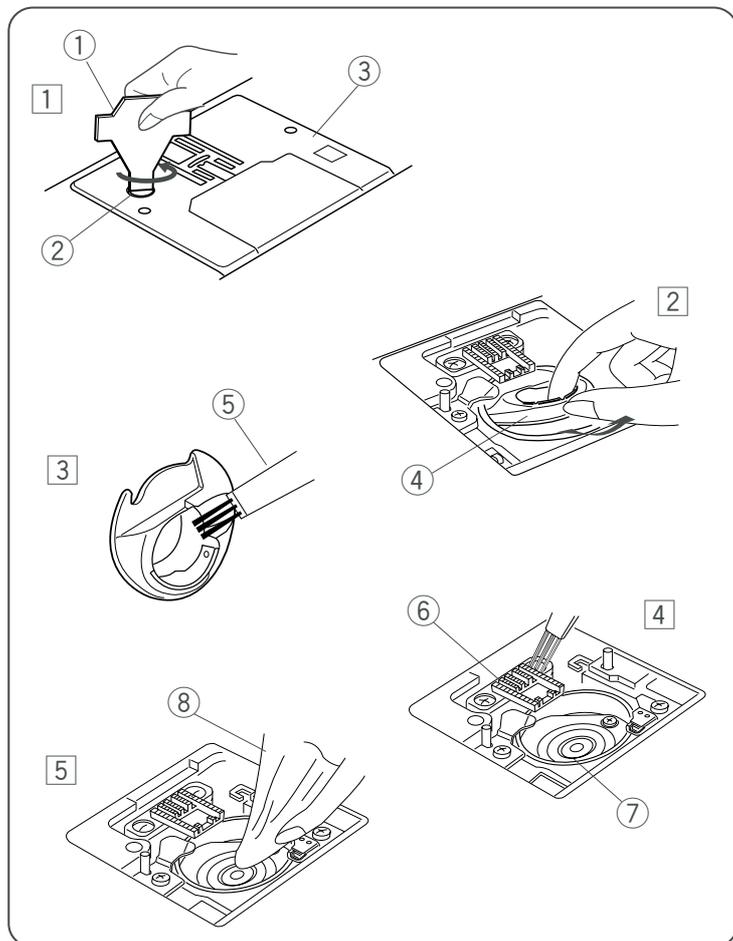
CARE AND MAINTENANCE

CAUTION:

Press  button to open the sub needle plate and turn the power switch off and unplug the machine before cleaning.

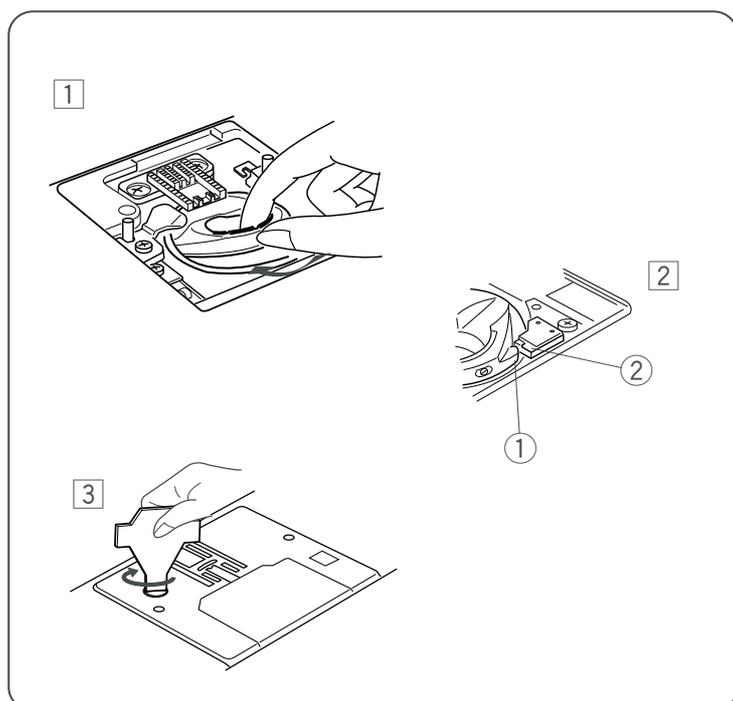
NOTE:

Do not dismantle the machine in any way other than what is explained in this section.



Cleaning the Hook Race and Feed Dog

- 1 Remove the needle and presser foot. Remove the setscrew and remove the needle plate.
 - 1 Screwdriver
 - 2 Setscrew
 - 3 Needle plate
- 2 Take out the bobbin. Lift up the bobbin holder and remove it.
 - 4 Bobbin holder
- 3 Clean the bobbin holder with a lint brush and soft dry cloth.
 - 5 Lint brush
- 4 Clean the feed dog and hook race with the lint brush.
 - 6 Feed dog
 - 7 Hook race
- 5 Clean the hook race with a dry cloth. (You may also use a vacuum cleaner.)
 - 8 Soft dry cloth



Inserting the bobbin holder

- 1 Insert the bobbin holder.
- 2 The knob of the bobbin holder should fit next to the stopper on the hook race.
 - 1 Knob
 - 2 Stopper
- 3 Reattach the needle plate and tighten the screws.

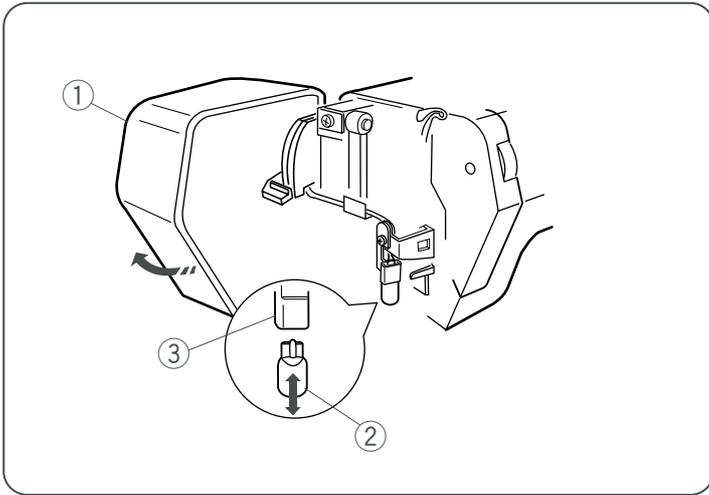
NOTE:

After cleaning the machine, attach the needle and presser foot.

Replacing the Light Bulb

WARNING:

Turn the power off before replacing the light bulb.
The bulb could be HOT, wait until it has cooled down before touching it.



To remove:

Open the face cover.

Pull out the bulb from the lamp socket.

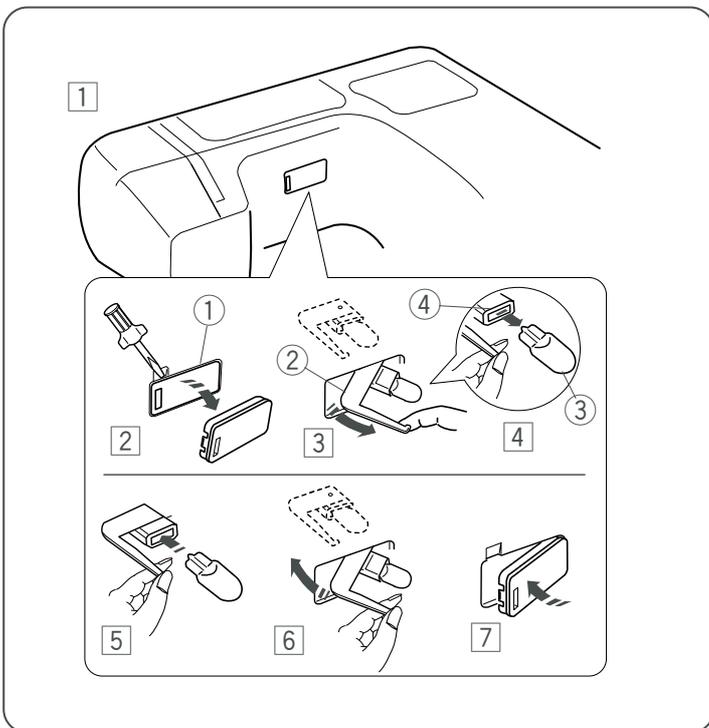
To replace:

Insert a new bulb into the opening of the socket.

Close the face cover.

- ① Face cover
- ② Bulb
- ③ Lamp socket

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



Replacing the light bulb on the underside of the sewing arm

① Lay the machine on its back.

② Remove the clear window with the screwdriver as shown.

① Clear window

③ Pull out the lamp holder from the opening by hooking the holder plate with your fingertip.

② Holder plate

④ Pull out the light bulb from the lamp socket.

③ Light bulb

④ Lamp socket

⑤ Insert a new bulb into the socket.

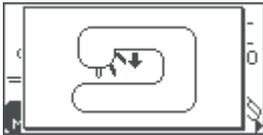
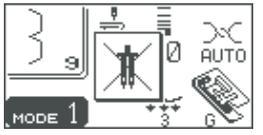
⑥ Push the lamp holder back into the opening.

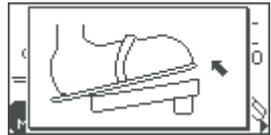
⑦ Attach the window into the opening on the machine.

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

Warning Messages

If a buzzer sounds and the LCD screen shows one of these messages, follow the guidance below.

Message	Problem/Cause	Remedy
	<ul style="list-style-type: none"> The machine is started with the presser foot up. The machine will stop if the presser foot is raised while sewing. 	Lower the presser foot and start the machine again.
	<ul style="list-style-type: none"> The machine will stop after several stitches if the buttonhole is sewn without lowering the buttonhole lever. 	Lower the buttonhole lever and start the machine again.
	<ul style="list-style-type: none"> The twin needle button is pressed when a pattern unsuitable for twin needle sewing has been selected. An unsuitable pattern is selected when the twin needle mode has been activated. 	Cancel the twin needle mode, and sew with a single needle.
	<ul style="list-style-type: none"> The machine is stopped while sewing a locking stitch. 	Sew until it automatically stops.
	<ul style="list-style-type: none"> The machine is started soon after it has halted due to overloading. Bobbin winder spindle locks during bobbin winding. 	Wait for at least 15 seconds to restart. If thread jamming causes overload, remove the tangled threads. Turn off the power and remove tangled thread.
	<ul style="list-style-type: none"> The machine is turned on when the needle is in the down position. 	Press the up/down needle position button to raise the needle.
	<ul style="list-style-type: none"> The machine is turned on when the needle is in the down position and the bobbin winder spindle is shifted to the left. 	Turn the hand wheel to raise the needle.
	<ul style="list-style-type: none"> The elongation button is pressed when a pattern that cannot be elongated has been selected. 	Select satin stitches to be elongated.
	<ul style="list-style-type: none"> The memory button is pressed when a pattern that cannot be programmed has been selected. 	Select the equivalent patterns from mode 2.

Message	Problem/Cause	Remedy
	The foot control is disconnected while sewing.	Turn OFF the power and connect the foot control.
	<ul style="list-style-type: none"> The start/stop button is pressed after the foot control has been connected. 	Disconnect the foot control and restart the machine.
	<ul style="list-style-type: none"> Power switch is turned on while depressing the foot control. 	Release the foot control.
<div style="border: 1px solid black; padding: 5px; text-align: center;">E1 Error</div> <p style="text-align: center;">to</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">E5 Error</div>	<ul style="list-style-type: none"> The machine is malfunctioning due to a problem in its electronic components. 	Contact the service center or the store from where the machine was purchased.
F1 ERROR	<ul style="list-style-type: none"> The sub needle plate mechanism fails to operate properly. 	Raise the presser foot and turn the power switch off. Clean the hook area, then turn the power on again.
	<ul style="list-style-type: none"> The LCD screen shows an abnormal display. 	Turn the power switch off and turn it on again.

It is normal that a faint humming sound is coming out from the internal motors.

Audible Signals

BEEP	Beep sounds during:
pip	Normal operation
pip-pip-pip	Invalid operation

Troubleshooting

Condition	Cause	Reference
The needle thread breaks.	<ol style="list-style-type: none"> 1. The needle thread is not threaded properly. 2. The needle thread tension is too tight. 3. The needle is bent or blunt. 4. The needle is incorrectly inserted. 5. The needle thread and the bobbin thread are not set under the presser foot when starting sewing. 6. The thread is either too heavy or too fine for the needle. 	<p>See page 20 See page 24 See page 23 See page 23 See page 26 See page 23</p>
The bobbin thread breaks.	<ol style="list-style-type: none"> 1. The bobbin thread is not threaded properly in the bobbin holder. 2. Lint has collected in the bobbin holder. 3. The bobbin is damaged and doesn't turn smoothly. 	<p>See page 19 See page 74 Replace bobbin.</p>
The needle breaks.	<ol style="list-style-type: none"> 1. The needle is incorrectly inserted. 2. The needle clamp screw is loose. 3. The threads are not drawn to the rear after sewing. 4. The needle is too fine for the fabric being used. 	<p>See page 23 See page 23 See page 26 See page 23</p>
Skipped stitches	<ol style="list-style-type: none"> 1. The needle is bent, blunt or incorrectly inserted. 2. The needle and/or fabrics are not suitable for the work being sewn. 4. The needle thread is not threaded properly. 5. A poor quality needle is being used. 	<p>See page 23 See page 23 See page 20 Change the needle.</p>
Seam puckering	<ol style="list-style-type: none"> 1. The needle thread tension is too tight. 2. The needle thread is not threaded properly. 3. The needle is too heavy for the fabric being sewn. 4. The stitch length is too long for the fabric. 	<p>See page 24 See page 20 See page 23 Make the stitch coarser</p>
The cloth is not feeding smoothly.	<ol style="list-style-type: none"> 1. The feed dog is packed with lint. 2. The stitches are too fine. 3. The feed dog is not raised after "drop feed" sewing. 	<p>See page 74 Make the stitch coarser. See page 25</p>
Stitches form loops below the fabric.	<ol style="list-style-type: none"> 1. The needle thread tension is too loose. 2. The needle is either too heavy or too fine for the thread. 	<p>See page 24 See page 36</p>
The machine does not work.	<ol style="list-style-type: none"> 1. The machine is not plugged in. 2. Thread has been caught in the hook race. 3. The bobbin winder spindle is not returned to the left after bobbin winding. 	<p>See page 5 See page 74 See page 18</p>
Buttonhole is not sewn properly.	<ol style="list-style-type: none"> 1. The stitch density is not suitable for the fabric being sewn. 2. A suitable interface material has not been used for stretch or synthetic fabric. 	<p>See page 44 See page 41</p>
The machine does not run smoothly and is noisy.	<ol style="list-style-type: none"> 1. Thread has been caught in the hook race. 2. Lint has built up in the hook race or bobbin holder. 	<p>See page 74 See page 74</p>

