

Instruction Book



IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic safety precautions should always be followed, including the following:

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.

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

1. 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 and/or cutting blade.
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

For Europe only:

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

For outside Europe (except U.S.A and Canada):

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



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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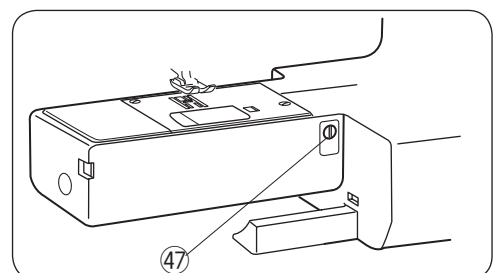
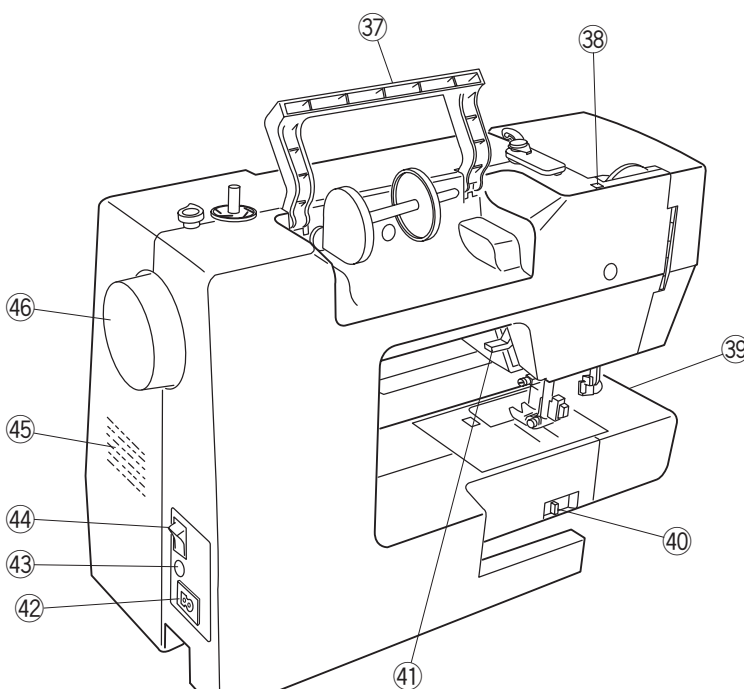
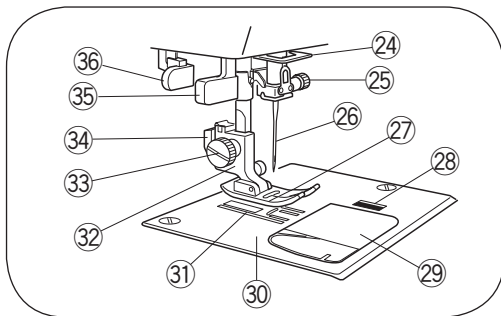
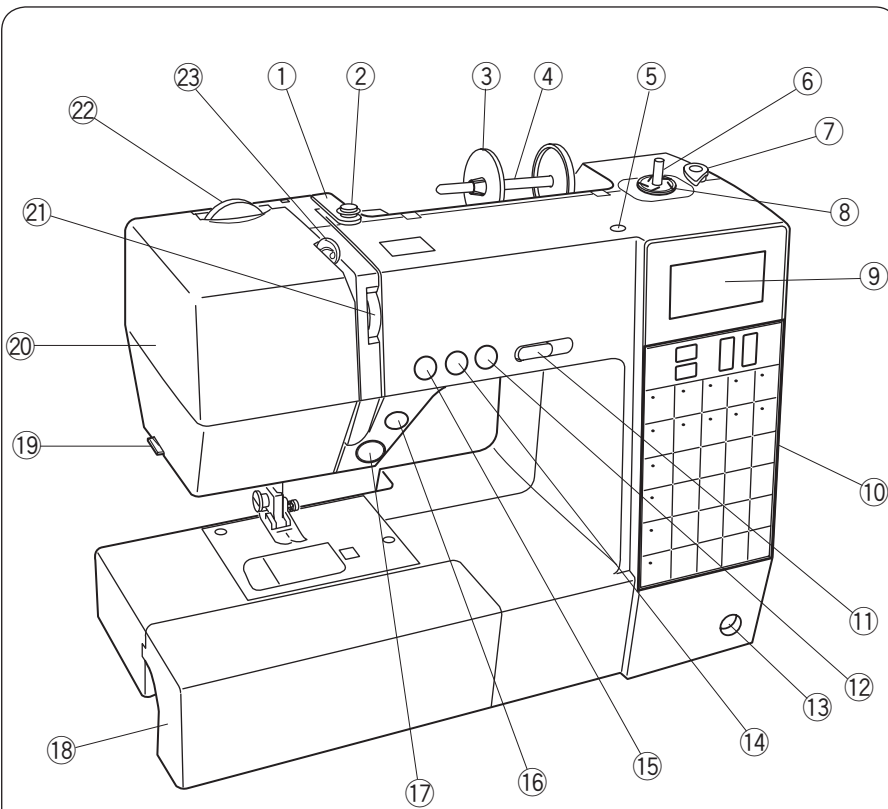
CARE OF YOUR MACHINE

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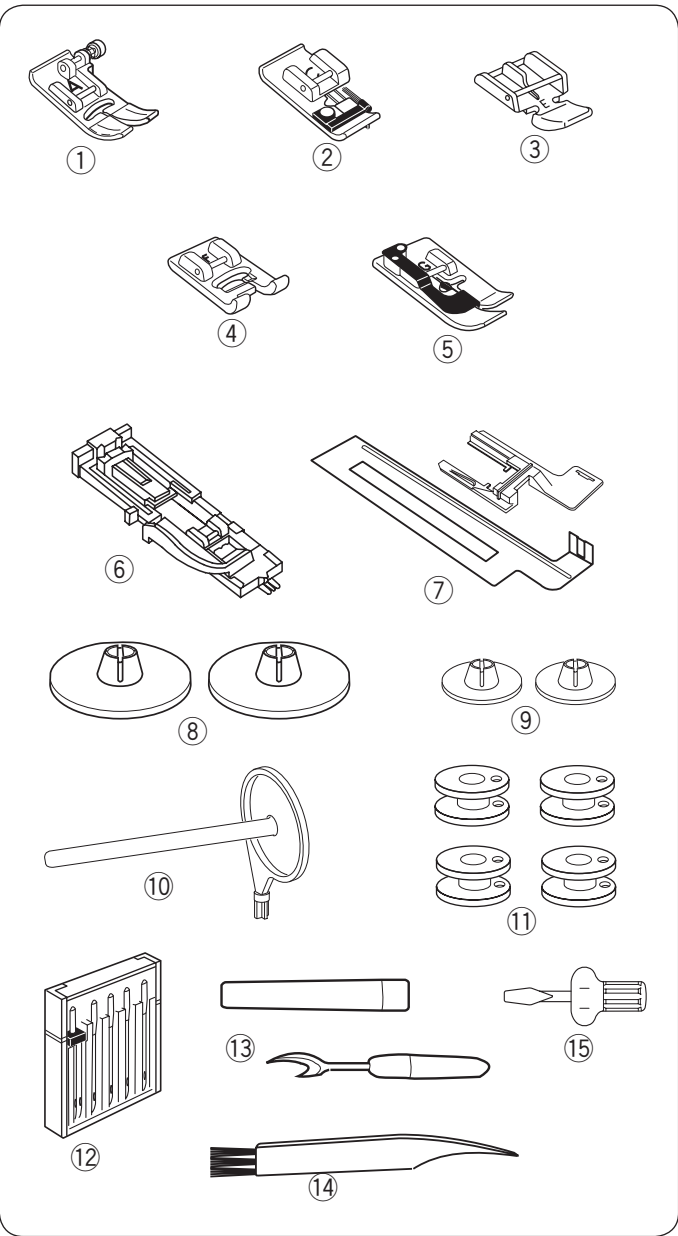
NAMES OF PARTS

Names of Parts

- ① Upper thread guide
- ② Bobbin winding tension disk
- ③ Spool holder (large)
- ④ Spool pin
- ⑤ Hole for additional spool pin
- ⑥ Bobbin winder spindle
- ⑦ Bobbin winder stopper
- ⑧ Bobbin thread holder/cutter
- ⑨ LCD display
- ⑩ Function keys
- ⑪ Speed control slider
- ⑫ Thread cutter button
- ⑬ Knee lifter hole (applicable models only)
- ⑭ Needle up/down button
- ⑮ Auto-lock button
- ⑯ Reverse button
- ⑰ Start/stop button
- ⑱ Extension table (Accessory box)
- ⑲ Thread cutter
- ⑳ Face cover
- ㉑ Thread tension dial
- ㉒ Presser foot pressure dial
- ㉓ Thread take-up lever
- ㉔ Lower thread guide
- ㉕ Needle clamp screw
- ㉖ Needle
- ㉗ Presser foot
- ㉘ Hook cover release button
- ㉙ Hook cover plate
- ㉚ Needle plate
- ㉛ Feed dogs
- ㉜ Foot holder
- ㉝ Thumbscrew
- ㉞ Lever
- ㉟ Needle threader
- ㊱ Buttonhole lever
- ㊲ Carrying handle
- ㊳ Hole for stitch chart
- ㊴ Free-arm
- ㊵ Drop feed lever
- ㊶ Presser foot lifter
- ㊷ Machine socket
- ㊸ Foot control jack
- ㊹ Power switch
- ㊺ Ventilation openings
- ㊻ Handwheel
- ㊼ Feed balancing dial

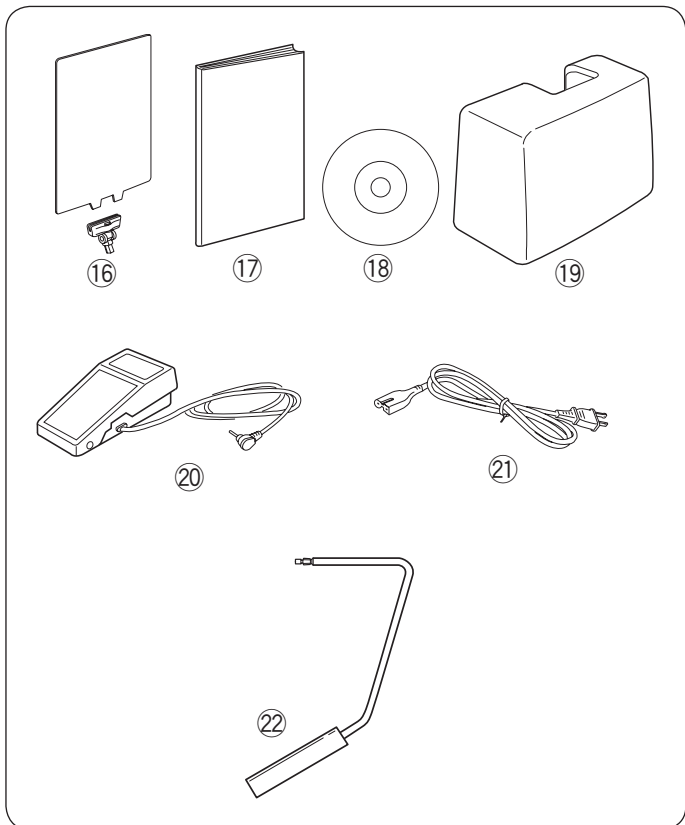


* Design and specifications are subject to change without prior notice.

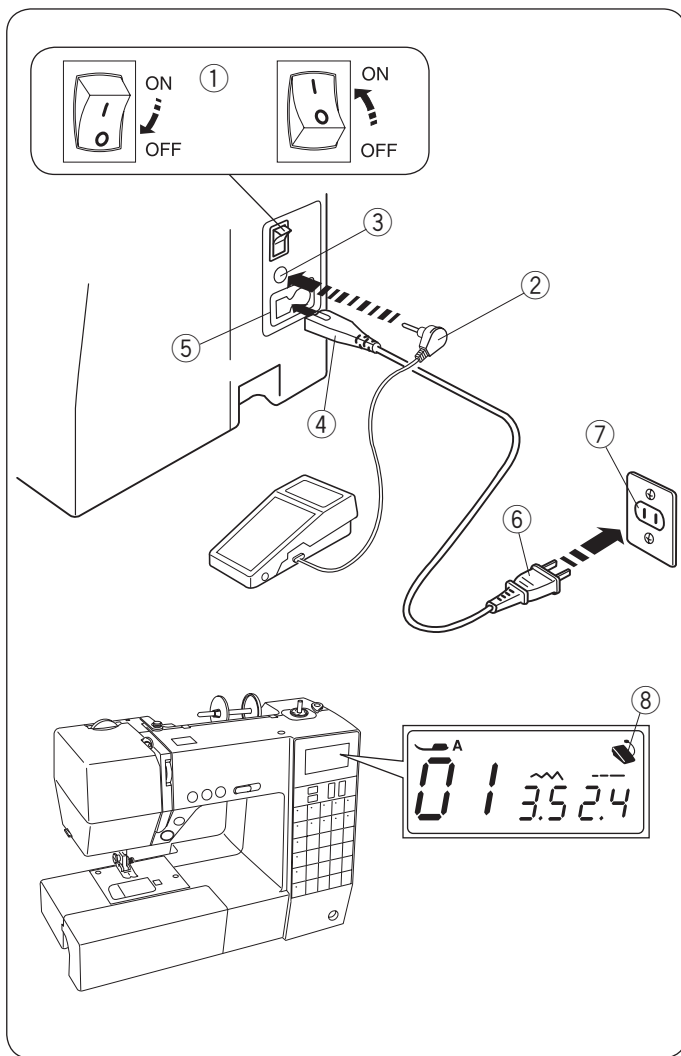


Standard Accessories

- ① Zigzag foot: A (set on the machine)
- ② Overedge foot: C
- ③ Zipper foot: E
- ④ Satin stitch foot: F
- ⑤ Blind hem foot: G
- ⑥ Automatic buttonhole foot: R
- ⑦ Buttonhole stabilizer plate
- ⑧ Spool holder (X 2) (large) (1 set on the machine)
- ⑨ Spool holder (X 2) (small)
- ⑩ Additional spool pin
- ⑪ Bobbins (X 4) (1 set on the machine)
- ⑫ Assorted needle set
- ⑬ Seam ripper (Buttonhole opener)
- ⑭ Lint brush
- ⑮ Screwdriver



- ⑯ Stitch chart
- ⑰ Instruction book
- ⑱ Instructional DVD
- ⑲ Hard cover
- ⑳ Foot control
- ㉑ Power cable
- ㉒ Knee lifter (applicable models only)



GETTING READY TO SEW Connecting the Power Supply

• Using the foot control

Turn off the power switch.

Insert the pin connector into the jack.

Insert the machine plug into the power inlet.

Insert the power supply plug into the wall outlet.

Turn on the power switch.

- ① Power switch
- ② Pin connector
- ③ Jack
- ④ Machine plug
- ⑤ Power inlet
- ⑥ Power supply plug
- ⑦ Wall outlet

The foot control sign will be displayed when the foot control is connected to the machine.

- ⑧ Foot control sign

⚠ WARNING:

While in operation, always keep your eyes on the sewing area and do not touch any moving parts such as the thread take-up lever, handwheel or needle. Always turn off the power switch and unplug from the power supply:

- when leaving the machine unattended.
- when attaching or removing parts.
- when cleaning the machine.

Do not place anything on the foot control.

Before Using Your Sewing Machine

Before using your sewing machine for the first time, place a scrap of fabric under the presser foot and run the machine without thread for a few minutes. Wipe away any oil which may appear.

• Using the start/stop button

Turn off the power switch.

Insert the machine plug into the power inlet.

Insert the power supply plug into the wall outlet.

Turn on the power switch.

- ① Power switch
- ② Machine plug
- ③ Power inlet
- ④ Power supply plug
- ⑤ Wall outlet
- ⑥ Start/Stop button

NOTE:

The start/stop button does not work when the foot control is connected.

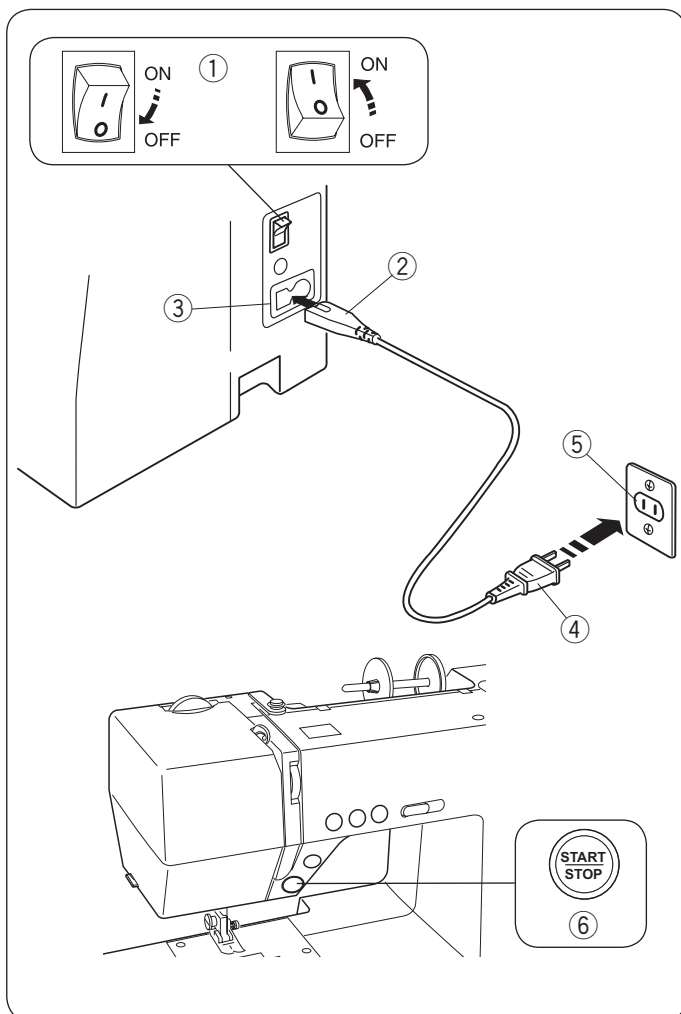
Operating Instructions:

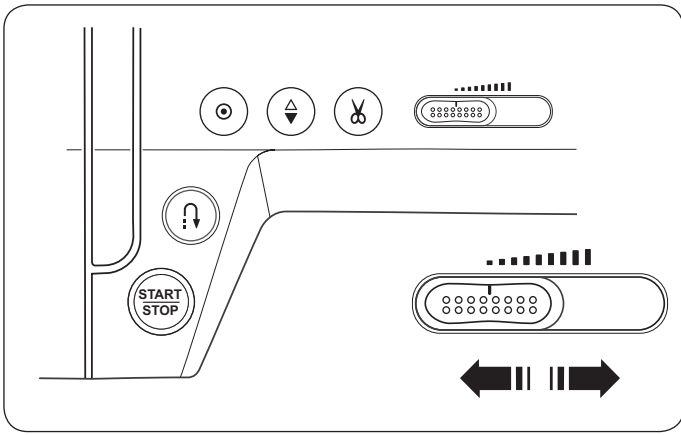
The symbol "O" on the switch indicates the "off" position of the switch.

Foot control model 21371 or YC-485EC-1 is used with this sewing machine.

For the U.S.A and Canada only:

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 still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.





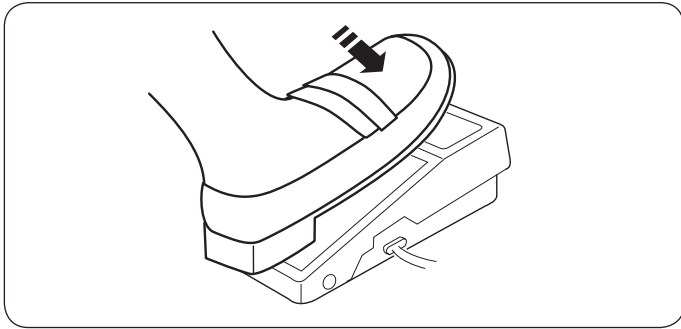
Controlling Sewing Speed

Speed control slider

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

To increase sewing speed, move the slider to the right.

To decrease sewing speed, move the slider to the left.

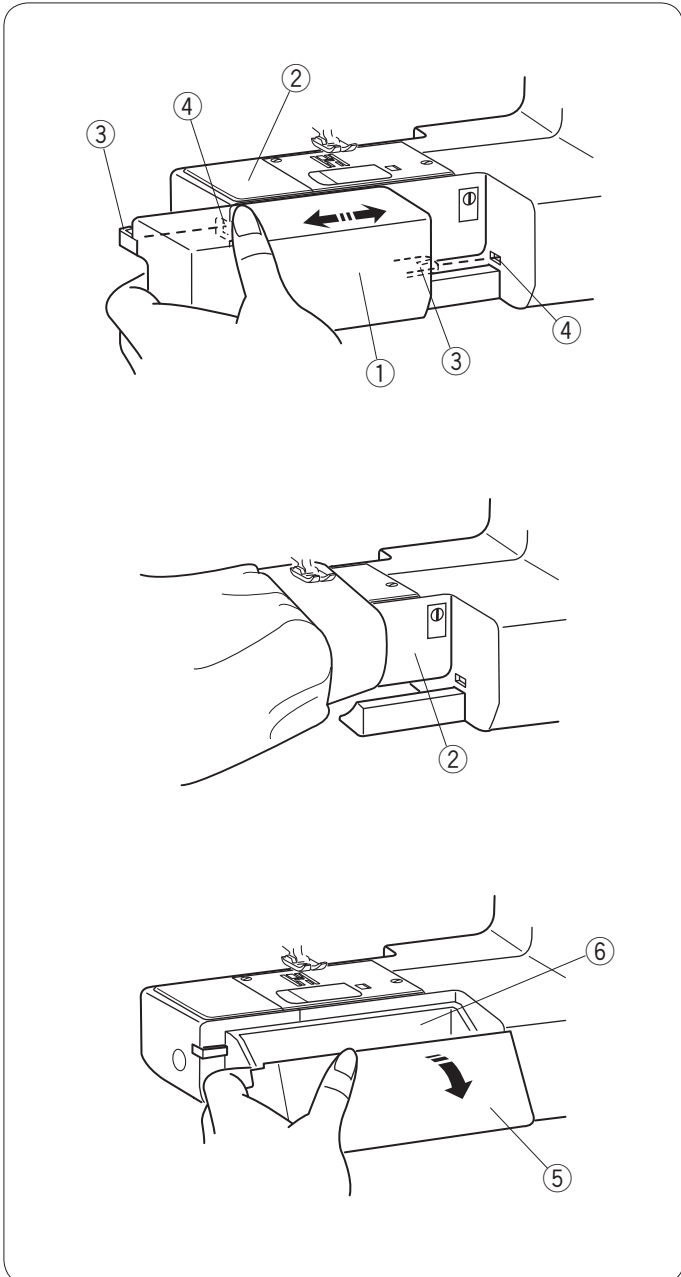


Foot control

Depress the foot control to start the machine.

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

The maximum sewing speed can be varied by the speed control slider.



Extension Table

The extension table provides an extended sewing area and can be easily removed for free-arm sewing.

Detaching the table

Pull the table away from the machine, as illustrated.

- ① Extension table

Attaching the table

Slide the extension table along the free-arm and insert the guides into the holes until the table snaps into the machine.

- ② Free-arm
- ③ Guide
- ④ Hole

Free-arm sewing

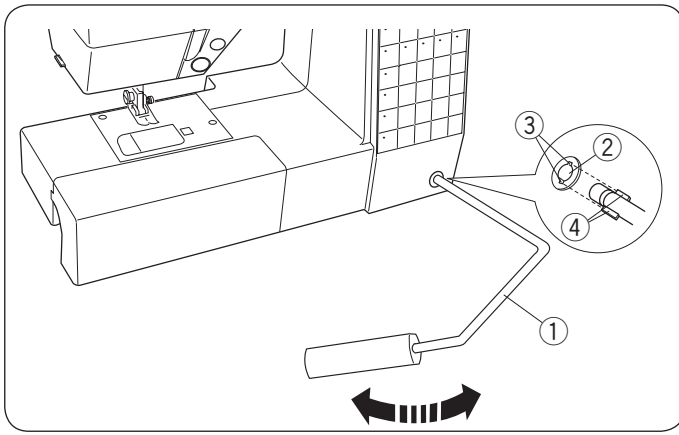
Free-arm is useful for sewing tubular garments and for darning knee or elbow areas.

- ② Free-arm

Accessory storage

Accessories are stored inside the extension table. Pull the lid towards you to open the accessory storage.

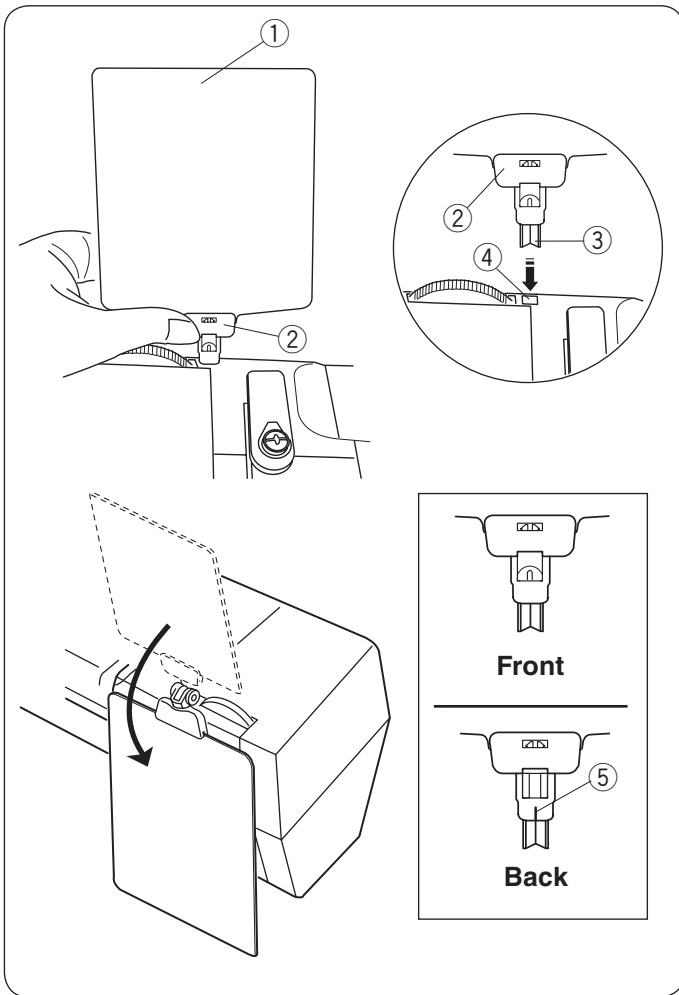
- ⑤ Lid
- ⑥ Accessory storage



Attaching the Knee Lifter (only for applicable model)

The knee lifter is extremely helpful when sewing applique, patchwork and quilting since it allows you to handle the fabric while your knee controls the presser foot. Match the ribs on the knee lifter with the notches in the knee lifter socket and insert the knee lifter.

- ① Knee lifter
- ② Knee lifter socket
- ③ Notch
- ④ Rib



Stitch Chart

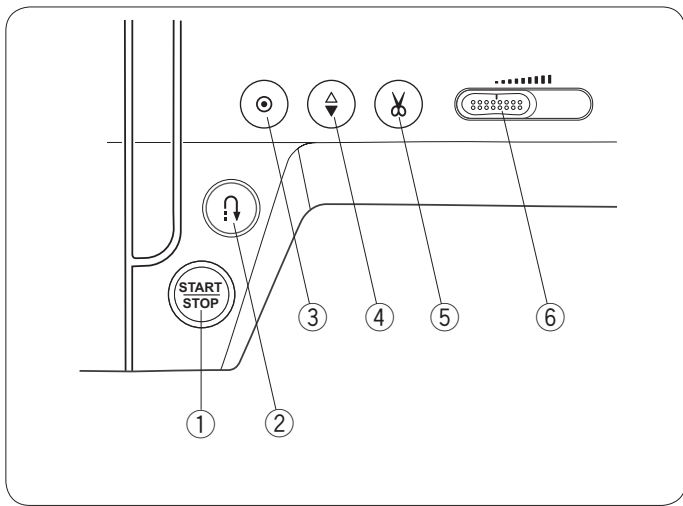
Attach the stitch chart to the chart holder. Insert the pin into the hole for the stitch chart as illustrated. Be sure that the vertical line of the pin is facing the back of the machine when inserting.

- ① Stitch chart
- ② Chart holder
- ③ Pin
- ④ Hole for stitch chart
- ⑤ Vertical line

You can flip the chart to the back of the machine when it is not in use.

NOTE:

When attaching the hard cover, always remove the stitch chart from the machine.



Machine Operating Buttons

① Start/Stop button

Press this button to start or stop the machine.

The machine starts running slowly for the first few stitches, and it then runs at the speed set by the speed control slider.







The machine runs slowly as long as this button is being pressed.

The button turns red when the machine is running, and green when it stops.

NOTE:

- The start/stop button cannot be used when the foot control is connected to the machine.
- The machine will not run and the presser foot mark will blink if you start the machine with the presser foot in the up position. Lower the presser foot and press the start/stop button.

② Reverse button

- **When stitch pattern 01 , 02 , 07 , 08 , 21  or 29  is selected;**





The machine will sew in reverse as long as the reverse button is pressed. Release the button to sew forward.

When the machine is stopped and foot control is disconnected, the machine will sew in reverse slowly as long as the reverse button is pressed. Release the button to stop the machine.







- **When any other stitches are selected;**

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

NOTE:

There will be particular functions of the reverse button when pattern 03 , 04 , 17  or 18  is selected. Refer to page 23, 37 and 38 for instructions.

③ Auto-lock button

- **When stitch pattern 01 , 02 , 07 , 08 , 21  or 29  is selected;**

Press the auto-lock button to sew a locking stitch immediately. The machine will automatically stop.

- **When any other stitches are selected;**

Press the auto-lock button to sew a locking stitch at the end of current pattern. The machine will automatically stop.

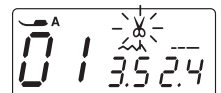
④ Needle up/down button

Press the needle up/down button to bring the needle up or down.

⑤ Thread cutter button

Press the thread cutter button to cut the threads after sewing.

The thread cutter mark will blink while the machine cuts the threads.



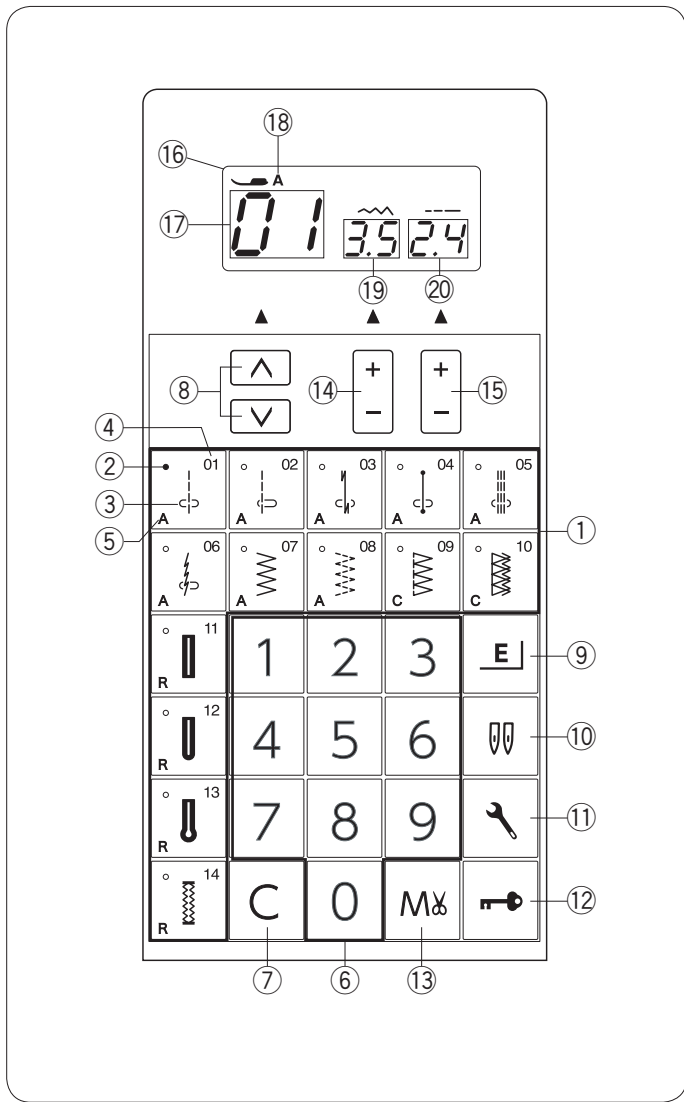
You can continue sewing without pulling the bobbin thread up after trimming the threads.

NOTE:

Use the thread cutter on the face cover if the thread is 30 or thicker.

⑥ Speed control slider

Maximum sewing speed can be adjusted with the speed control slider. Refer to page 4.



14 Stitch width adjusting key

Press “+” or “-” to change the stitch width 19. Refer to pages 22, 25 and 32

15 Stitch length adjusting key

Press “+” or “-” to change the stitch length 20. Refer to pages 22, 25 and 32.

16 LCD Display

The LCD display shows the following information when the machine is turned on:

- 17 Pattern number
- 18 Identification letter of recommended foot
- 19 Stitch width
- 20 Stitch length

Selecting Patterns

Function keys and LCD Display

1 Direct stitch pattern selection keys

You can select stitch patterns from 01 to 14 directly by pressing the corresponding direct stitch pattern selection key.

A pattern number and pattern image along with an identification letter of the recommended foot are indicated on each key.

When the pattern is selected, a green light on the key will turn on.

- 2 Green light
- 3 Stitch image
- 4 Pattern number
- 5 Identification letter of recommended foot

6 Numeric keys

Enter the number of the desired stitch pattern to select the stitch pattern. To refer to the available stitch patterns and pattern numbers, check the stitch chart.

If you want to cancel the input, press the cancel key while the pattern number on the LCD display is blinking.

- 7 Cancel key

8 Arrow keys

To select the desired stitch pattern with the arrow keys, press the \uparrow \downarrow keys until pattern number of the desired stitch is indicated.

9 Elongation key

Satin stitches, patterns from 71 to 79 can be elongated up to five times their normal length by pressing the elongation key. Refer to page 51.

10 Twin needle key

Press this key when using a twin needle.

The twin needle key will appear and the maximum stitch width will be limited to 3.0.

To cancel or finish the twin needle sewing, press the twin needle key twice.

NOTE:

When the twin needle mark is blinking, all the other buttons and keys will not respond. Press the twin needle key again.

For twin needle sewing, refer to pages 52 and 53.

11 Setting mode key

Press this key to enter the machine setting mode.

In the setting mode, the buzzer sound and needle position can be set to your preference. Refer to page 54.

12 Lockout key

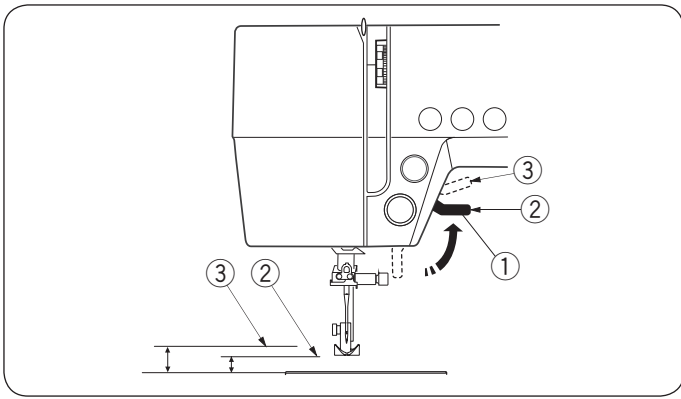
Press this key to lock out the machine when threading the machine, replacing the accessories etc.

The LCD display shows “SAFE”, and all the buttons and keys except for the lockout key are deactivated.

To unlock the machine, press the lockout key again.

13 Thread cut memory key

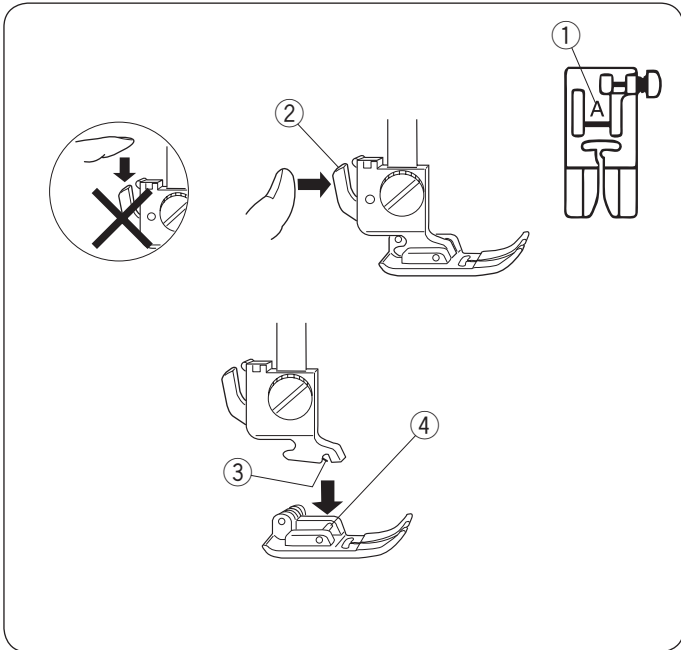
To cut the threads automatically after locking stitches, press the thread cutter memory key (Refer to page 20).



Presser Foot Lifter

The presser foot lifter raises and lowers the presser foot. You can raise the foot 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 Normal up position
- ③ Highest 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. Each foot is marked with an identification letter.

- ① Identification letter

Removing the presser foot

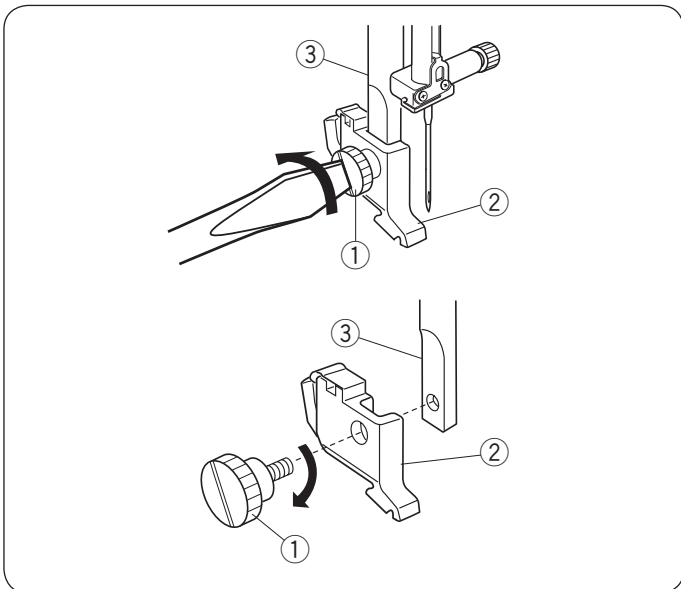
Raise the needle to its highest position by turning the handwheel counterclockwise. Raise the presser foot, and press the lever on the back of the foot holder.

Attaching the presser foot

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

Lower the presser bar to lock the foot into the place.

- ② Lever
- ③ Groove
- ④ Pin



Removing and Attaching the Foot Holder

⚠ CAUTION:

Turn OFF the power switch before detaching or attaching foot holder.

Removing the foot holder

Remove the thumbscrew by turning it counterclockwise with a screwdriver.

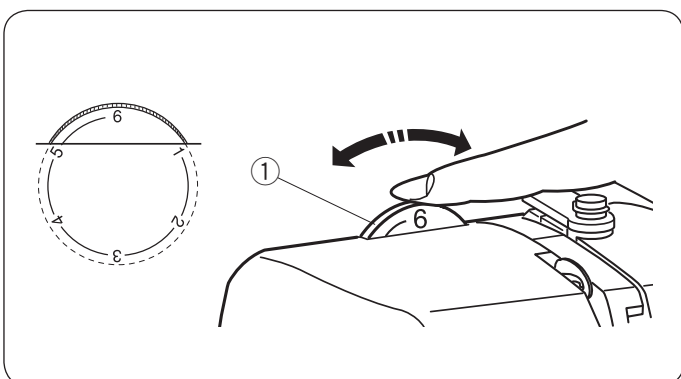
Attaching the foot holder

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

Fit the thumbscrew into the hole.

Tighten the thumbscrew by turning it clockwise with a screwdriver.

- ① Thumbscrew
- ② Foot holder
- ③ Presser bar



Presser Foot Pressure Dial

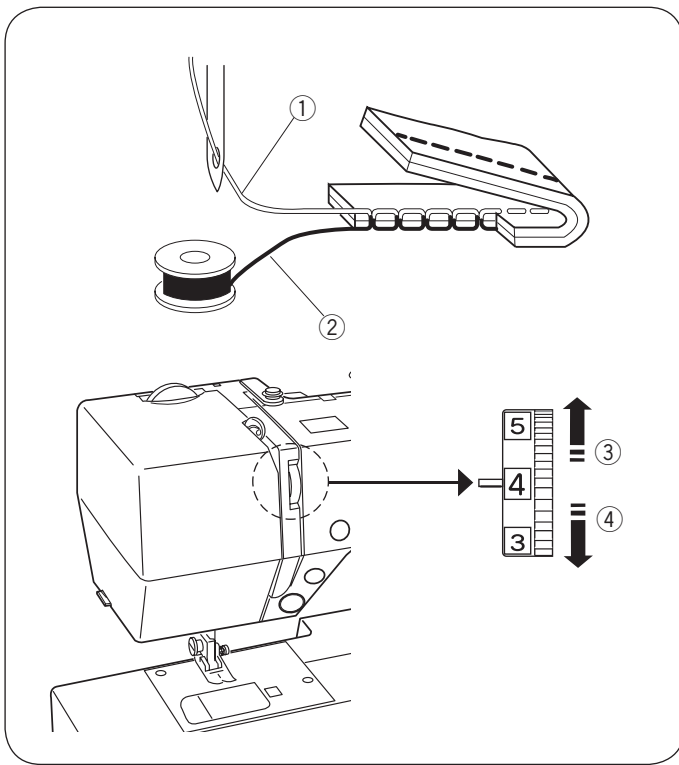
Foot pressure can be adjusted by turning the presser foot pressure dial.

Set the pressure between "3" and "6" for ordinary fabrics.

Set the pressure between "1" and "3" for fine fabrics and applique sewing.

Set the pressure between "5" and "6" for heavyweight fabrics.

- ① Presser foot pressure dial



Adjusting the Needle Thread Tension

Straight stitch

• Balanced tension

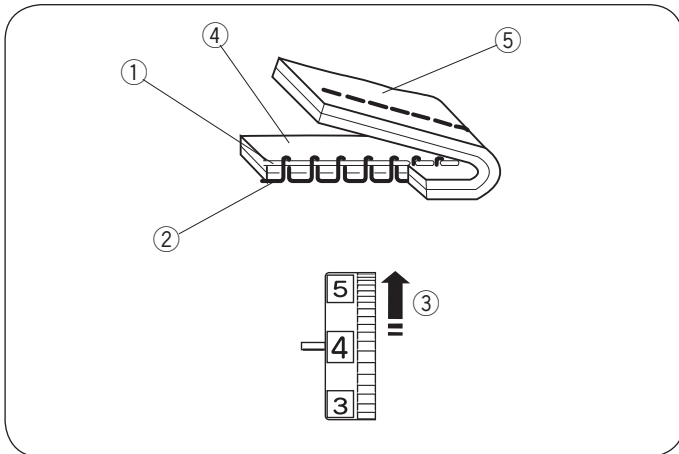
The ideal straight stitch has threads locked between two layers of fabric, as illustrated (magnified to show detail). If you look at the top and bottom of the seam, notice that the stitches are evenly balanced.

- ① Needle thread (top thread)
- ② Bobbin thread (bottom thread)
- ③ To loosen
- ④ To tighten

When adjusting the needle thread tension, the higher the number, the tighter the top thread tension.

Results depend on:

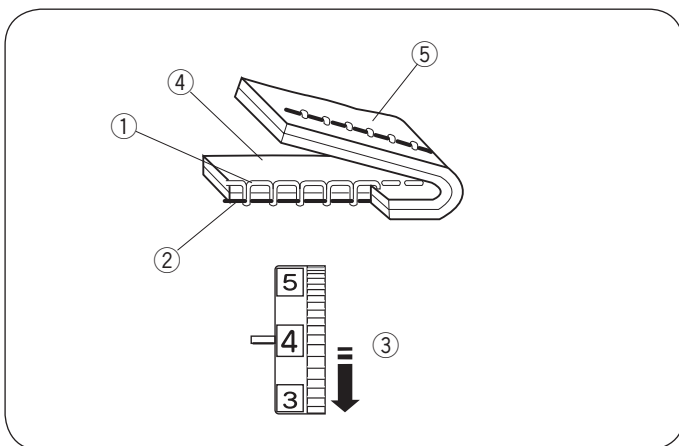
- stiffness and thickness of the fabric
- number of fabric layers
- type of stitch



• Tension is too tight

The bobbin thread shows through on the right side of the fabric, and the stitch feels bumpy. Turn the dial to a lower number to loosen the needle thread tension.

- ① Needle thread (top thread)
- ② Bobbin thread (bottom thread)
- ③ To loosen tension
- ④ Right side (top side) of fabric
- ⑤ Wrong side (bottom side) of fabric



• Tension is too loose

The needle thread shows through on the wrong side of the fabric, and the stitch feels bumpy. Turn the dial to a higher number to tighten the needle thread tension.

- ① Needle thread (top thread)
- ② Bobbin thread (bottom thread)
- ③ To tighten tension
- ④ Right side (top side) of fabric
- ⑤ Wrong side (bottom side) of fabric

Zigzag stitch

For an ideal zigzag stitch, the bobbin thread does not show on the right side (top side) of the fabric, and the needle thread shows slightly on the wrong side (bottom side) of the fabric.

See the illustrations for the correct appearance.

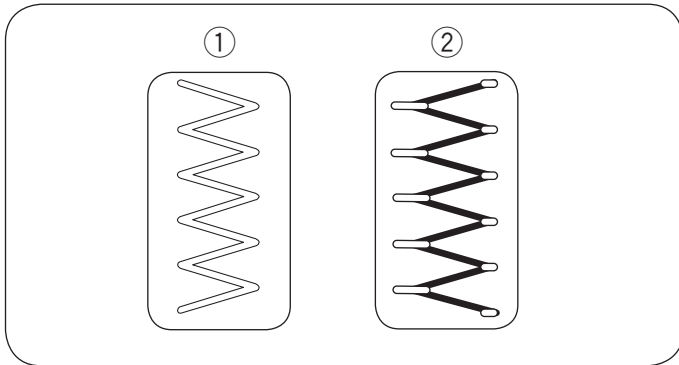
To match this appearance, adjust the needle tension as necessary.

• Balanced tension

Minimize the amount of needle thread visible on the wrong side (bottom side) of the fabric without causing excessive puckering, or causing the bobbin thread to show on the right side (top side) of the fabric.

Results vary with fabric, thread and sewing conditions.

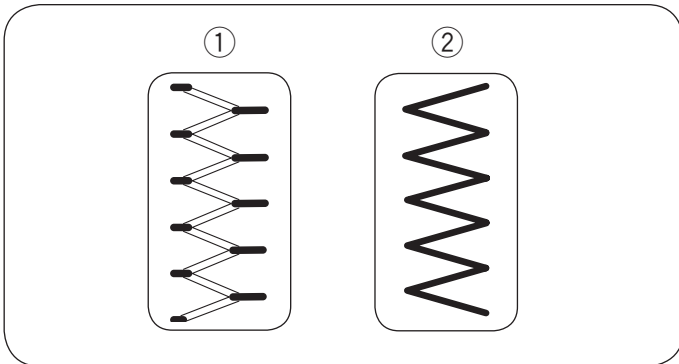
- ① Right side (top side) of fabric
- ② Wrong side (bottom side) of fabric



• Tension is too tight

The corner of each zigzag pulls together on the right side of the fabric

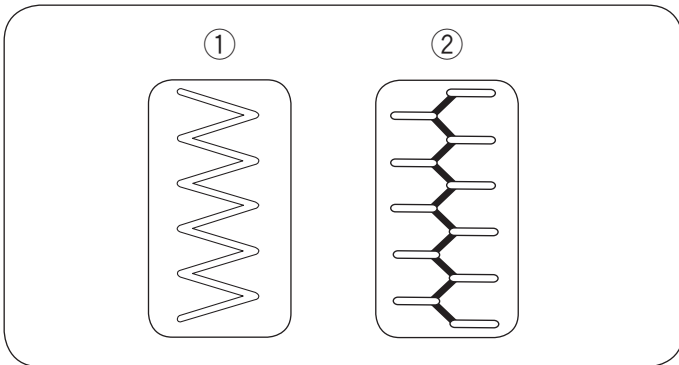
- ① Right side (top side) of fabric
- ② Wrong side (bottom side) of fabric

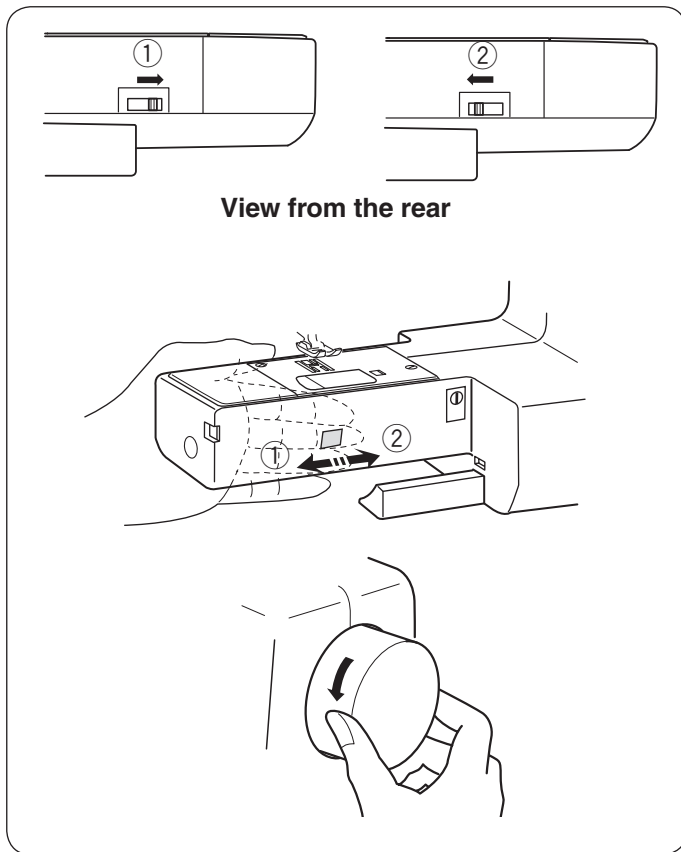


• Tension is too loose

The corner of each zigzag point pulls together on the wrong side of the fabric.

- ① Right side (top side) of fabric
- ② Wrong side (bottom side) of fabric





Dropping or Raising the Feed Dog

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

To drop the feed dog, push the lever in the direction of the arrow ①.

To raise the feed dog, push the lever in the direction of the arrow ②, as illustrated, and turn the handwheel toward you.

The feed dog must be up for normal sewing.

NOTE:

Set the stitch length value at the minimum when lowering the feed dog.

Changing the Needle

⚠ CAUTION:

Turn OFF the power switch before changing the needle.

Raise the needle to its highest position by turning the handwheel counterclockwise, and lower the presser foot.

Loosen the needle clamp screw by turning it counterclockwise. Remove the needle from the needle clamp.

Insert a new needle into the needle clamp with the flat side to the rear. When inserting the needle into the needle clamp, push it up as far as it will go.

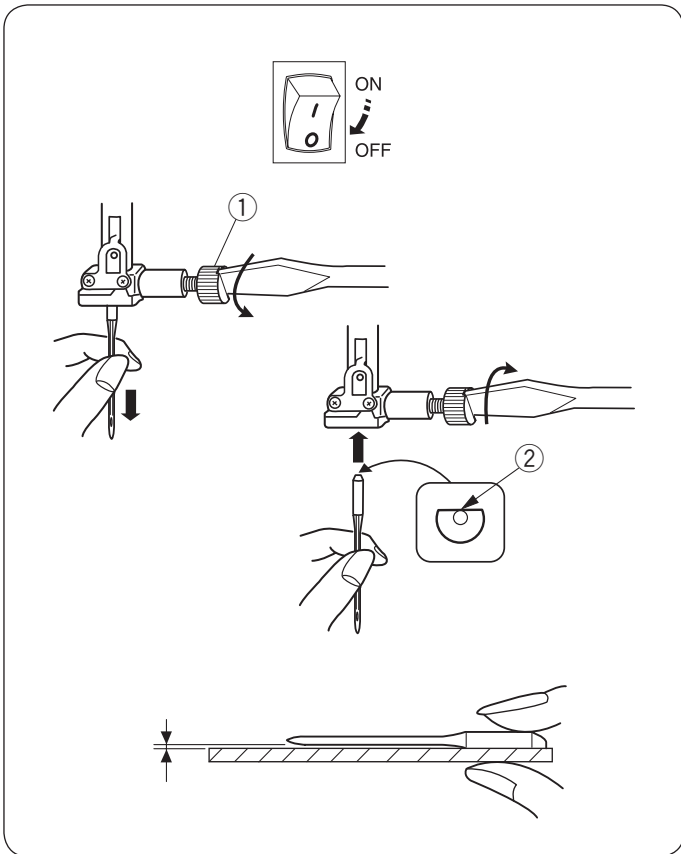
Tighten the needle clamp screw firmly by turning it clockwise.

① Needle clamp screw

② Flat side

To see if the needle is in good condition, 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.

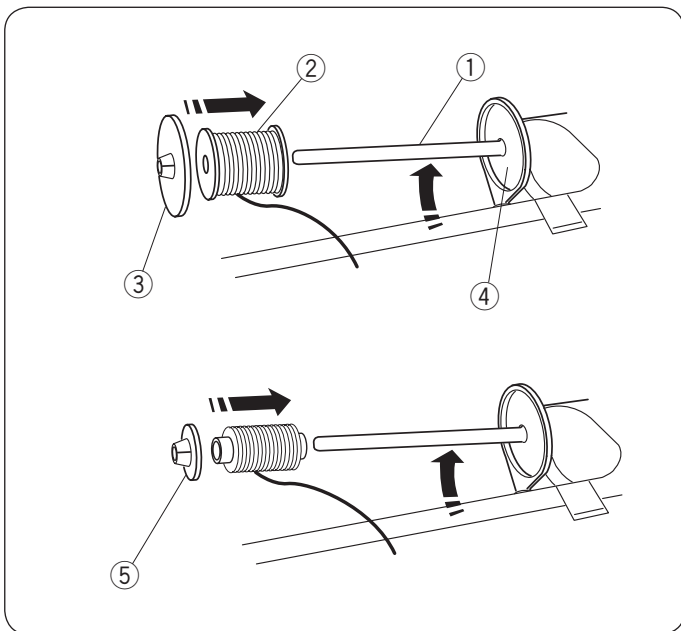
A damaged needle can cause permanent snags or runs in knits, fine silks and silk-like fabrics.



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

Selecting Thread and Needles

- For general sewing, use needle size 11/75 or 14/90.
- A fine thread and needle should be used for sewing lightweight fabrics, so the fabric will not be marred.
- Heavy fabrics require a needle large enough to pierce the fabric without fraying the needle thread.
- Always test the needle size on a small scrap of the fabric that will be used for actual sewing.
- In general, use the same thread for the needle and bobbin.
- When sewing stretch fabrics, very fine fabrics and synthetics, use a blue tip needle. The blue tip needle effectively prevents skipped stitches.



Setting the Spool of Thread

Horizontal spool pin

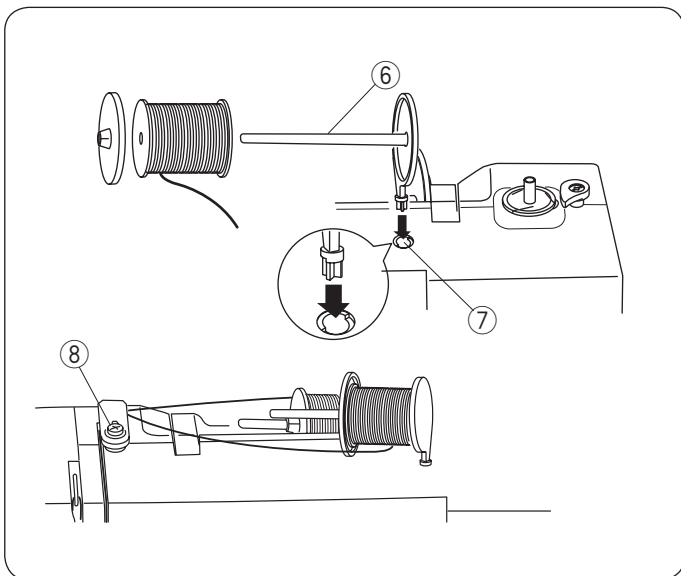
Lift up the spool pin. Place a spool of thread on the spool pin.

Attach the large spool holder, and press it firmly against the spool of thread so that the spool rests on the supporter.

- ① Spool pin
- ② Spool of thread
- ③ Large spool holder
- ④ Supporter

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

- ⑤ Small spool holder



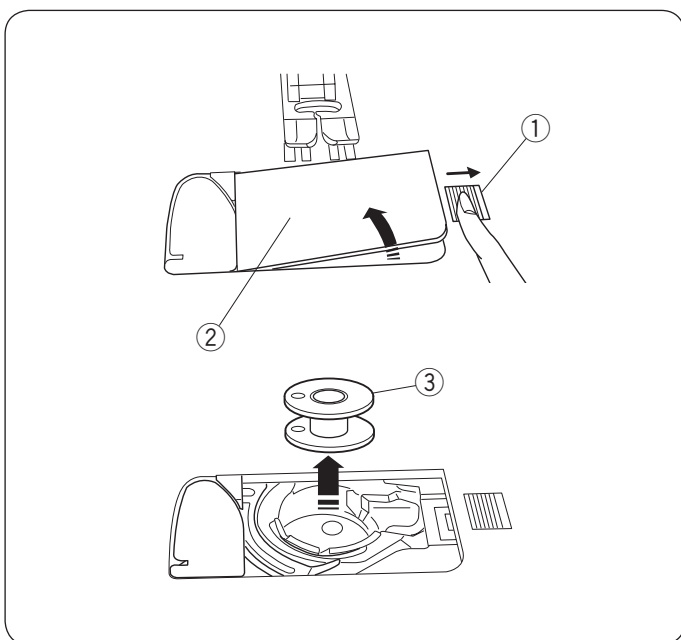
Extra spool pin

The extra spool pin is for twin needle sewing, or winding bobbins without unthreading the machine.

Insert the extra spool pin into the hole.

The extra spool pin should point to the bobbin winder tension disk.

- ⑥ Extra spool pin
- ⑦ Hole for additional spool pin
- ⑧ Bobbin winder tension disk



Bobbin Winding

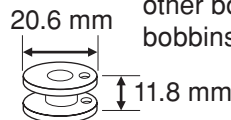
Removing the bobbin

Gently slide the hook cover release button to the right and remove the hook cover plate.

Lift out the bobbin.

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

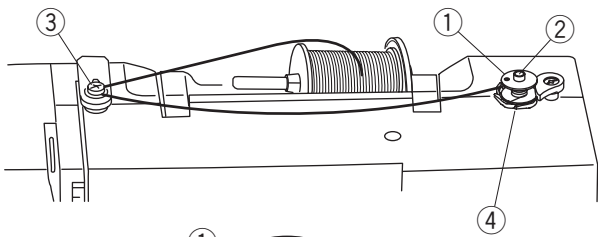
NOTE: Use the Janome plastic bobbins. Using other bobbins such as prewound paper bobbins, may cause stitching problems or damage to the bobbin case.



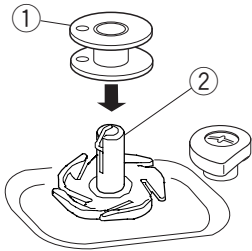
Winding the bobbin

NOTE:

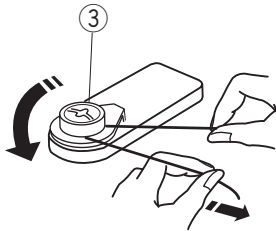
Set the speed control slider at its fastest position for bobbin winding.



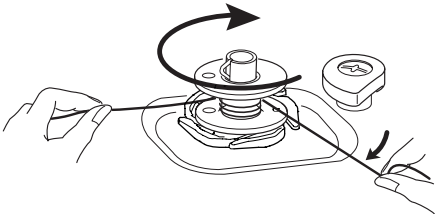
1



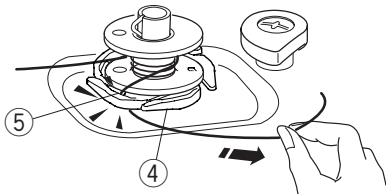
2



3



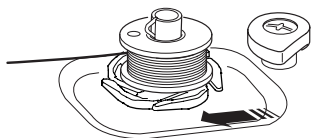
4



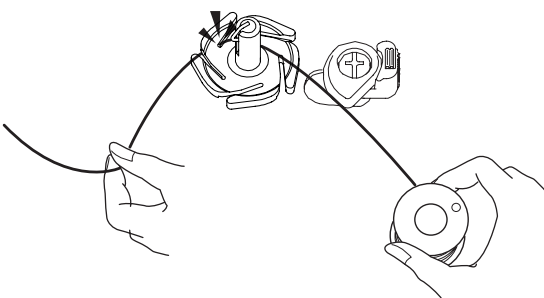
5



6



7



1 Put the bobbin on the bobbin winder spindle.

① Bobbin

② Bobbin winder spindle

2 Draw the thread from the spool and pass the thread around the bobbin winding tension disk.

③ Bobbin winding tension disk

3 Pass the thread to the bobbin.

Hold the thread with both hands and wind it around the bobbin clockwise several times.

4 Insert the thread into one of the slits of the flange plate and pull the thread to cut.

④ Flange plate

⑤ Slit

5 Push the bobbin to the right.

The bobbin icon appears on the LCD display.

⑥ Bobbin icon

6 Start the machine. When the bobbin is fully wound, it will stop spinning automatically.

Stop the machine and return the bobbin winder to its original position by moving the spindle to the left.

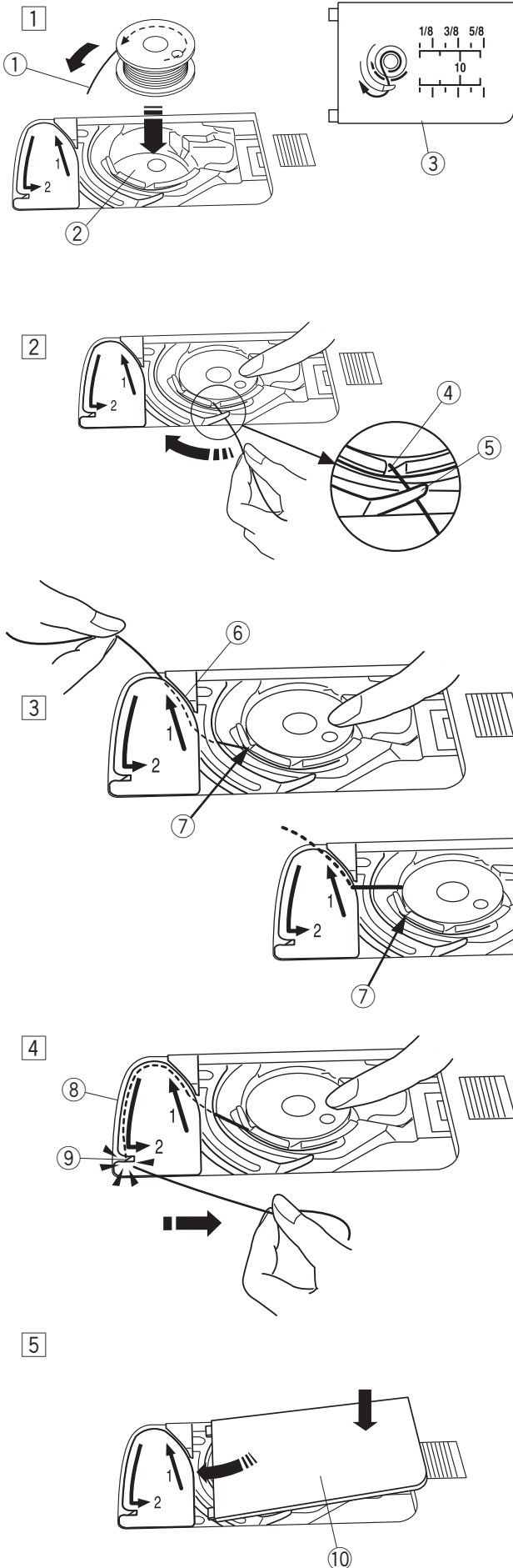
7 Remove the bobbin. Insert the thread into the slit and pull it to cut as shown.

Inserting the bobbin



CAUTION:

Turn OFF the power switch or press the lockout key before inserting the bobbin and threading the bobbin holder.



- 1 Place a bobbin in the bobbin holder with the thread running off counterclockwise as shown on the hook cover plate.

- 1 End of thread
- 2 Bobbin holder
- 3 Hook cover plate

- 2 Hold the bobbin with your fingertip so it does not rotate. Guide the thread into the front notch of the bobbin holder.

Pull the thread to the left to pass it under the guide.

- 4 Front notch
- 5 Guide

- 3 Draw the thread to the left to pass it into the guide path marked "1".

Make sure that the thread comes out from the side notch of the bobbin holder.

- 6 Guide path 1
- 7 Side notch

NOTE:

If the thread does not come out from the side notch, rethread from step 1.

- 4 Continue to draw the thread along the guide path marked "2" and pull the thread to the right through the slit. The thread will be cut to a proper length and held in place.

- 8 Guide path 2
- 9 Slit (Thread cutter)

- 5 Set the left edge of the hook cover plate into opening. Push down the hook cover plate to fit in place.

- 10 Hook cover plate

NOTE:

Unless otherwise noted, you can start sewing without drawing up the bobbin thread.

Refer to page 18 for how to draw up the bobbin thread.

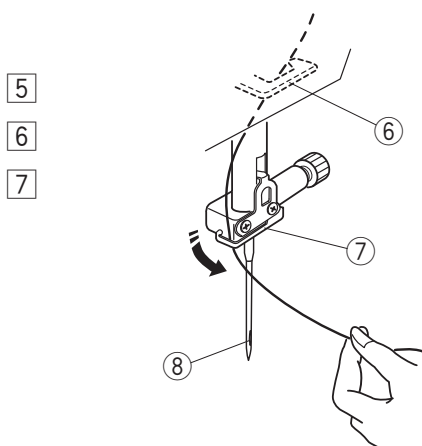
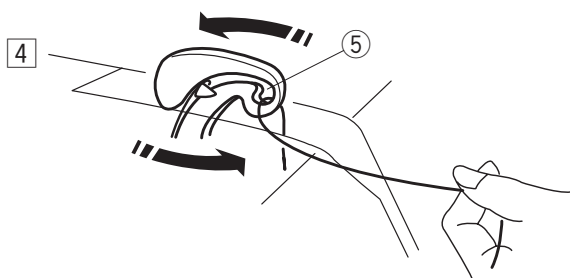
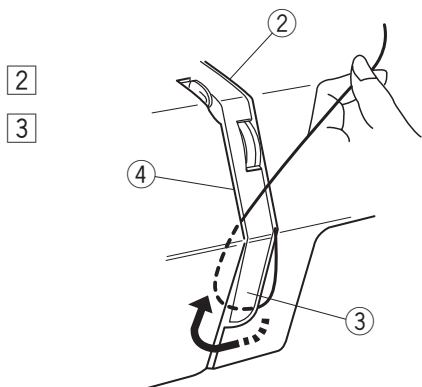
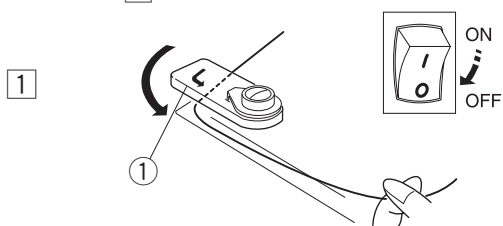
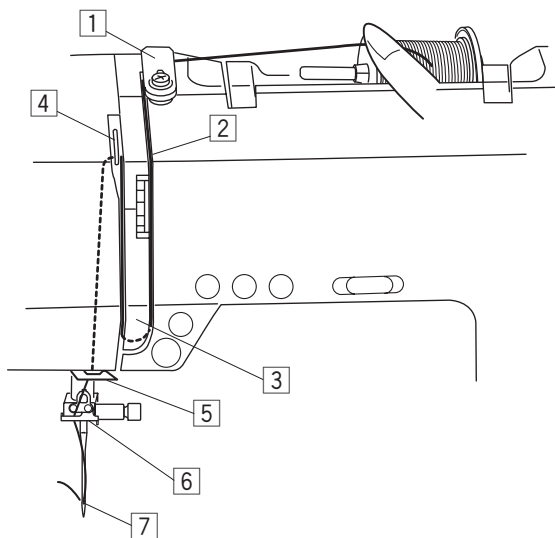
Threading the Machine

Raise the presser foot. Press the needle up/down button to raise the thread take-up lever to its highest position.



CAUTION:

Turn off the power switch or press the lockout key before threading the machine.



- 1 Turn the power switch off. Draw the thread around the upper thread guide.

① Upper thread guide

- 2 While holding the thread near the spool, draw the thread down along the right channel.

② Right channel

- 3 Pull the thread up around the bottom of the thread guide plate.

Pull the thread up along the left channel.

③ Thread guide plate

④ Left channel

- 4 Firmly draw the thread up and to the back of the take-up lever. Draw the thread forward to pass it into the take-up lever eye.

⑤ Take-up lever eye

- 5 Pull the thread down along the left channel and pass the thread through the lower thread guide.

⑥ Lower thread guide

- 6 Slide the thread behind the needle bar thread guide on the left.

⑦ Needle bar thread guide

- 7 Thread the needle from front to back, or use the needle threader.

⑧ Needle

Needle Threader



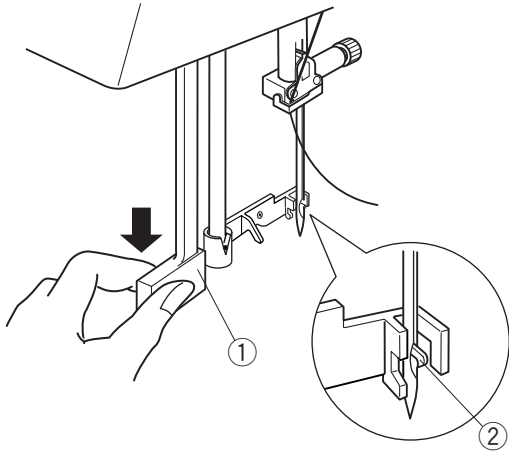
CAUTION:

Turn off the power switch or press the lockout key when using the needle threader.

Lower the presser foot. Raise the needle to its highest position.

Pull down the needle threader knob as far as it will go. The hook comes out through the needle eye from behind.

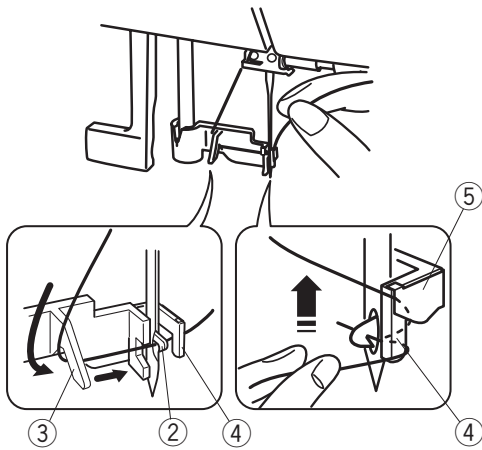
- ① Knob
- ② Hook



Draw the thread from the left guide to the right guide and under the hook.

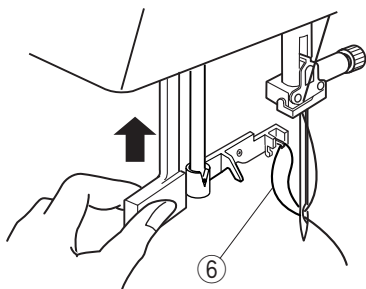
Draw the thread up along the right side of the right guide and slip the thread in between guide and the holder plate.

- ③ Left guide
- ④ Right guide
- ⑤ Holder plate



Raise the knob in the direction of the arrow, drawing the thread loop through the needle.

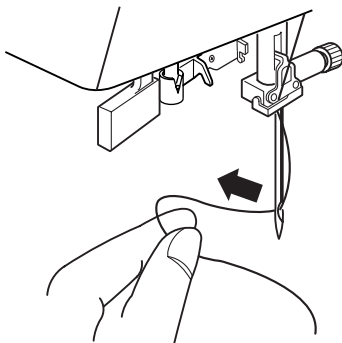
- ⑥ Thread loop

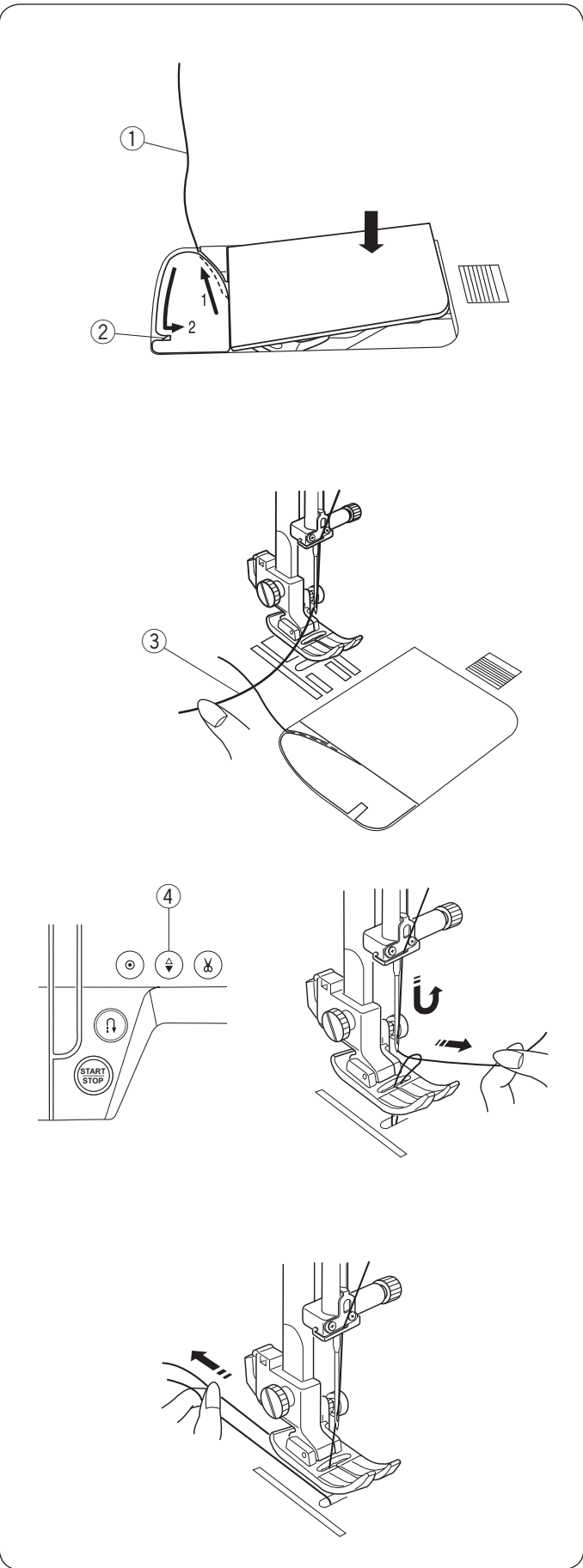


Pull the thread through the needle eye.

NOTE:

- The needle threader can be used with a #11 to #16 needle or a blue tip needle. Thread sizes 50 to 90 are recommended.
- The needle threader cannot be used for a twin needle.





Drawing up the Bobbin Thread

After using auto thread cutting or threading the bobbin holder, you can start sewing without drawing up the bobbin thread.

However, you need to draw up the bobbin thread when sewing gathering stitches etc.

Remove the bobbin. Insert the bobbin into the bobbin holder again and rethread the bobbin holder according to the instructions on page 15, but leave a 10 cm (4") tail of the bobbin thread as shown.

① Bobbin thread

NOTE:

Do not cut the bobbin thread with the thread cutter.

② Thread cutter

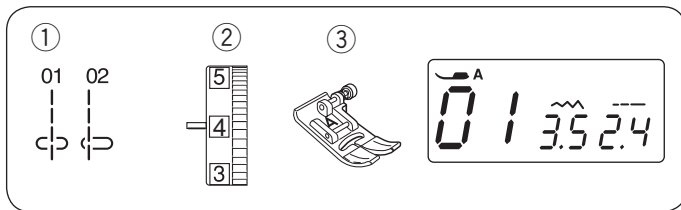
Raise the presser foot. Hold the needle thread lightly with your left hand.

③ Needle thread

Press the needle up/down button twice to lower and raise the needle to pick up the bobbin thread.

④ Needle up/down button

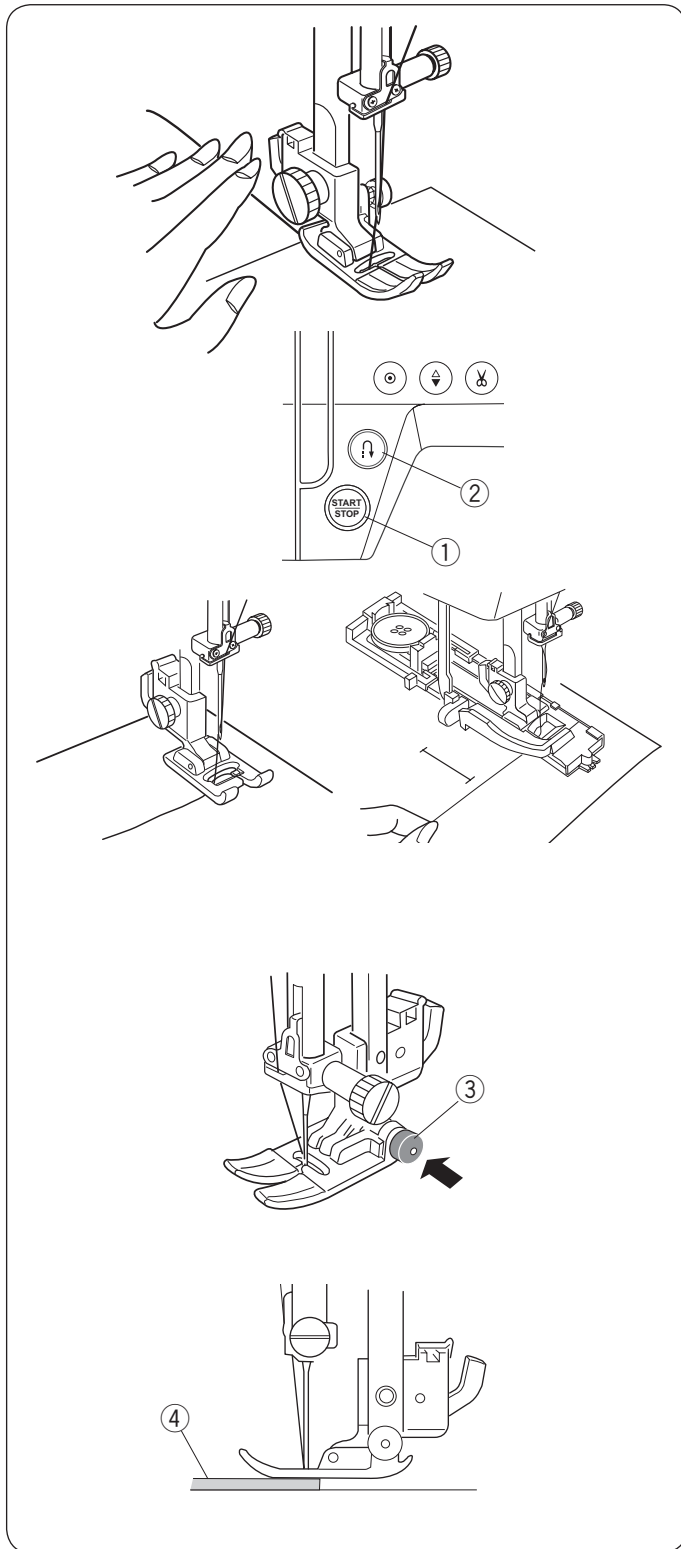
Pull both threads 10 cm (4") under and behind the presser foot.



BASIC SEWING

Straight Stitch Sewing

- ① Stitch pattern: 01 or 02
- ② Needle thread tension: 2 to 6
- ③ Presser foot: Zigzag foot A



Starting to sew

Raise presser foot and position the fabric next to a seam guide line on the needle plate. Lower the needle to the point where you want to start. Pull the thread(s) toward the rear and lower the presser foot.

Press the start/stop button or depress the foot control to start sewing.

Gently guide the fabric along a seam guide line letting the fabric feed naturally.

- ① Start/stop button

To secure the beginning of seam, sew several reverse stitches by pressing the reverse button.

- ② Reverse button

NOTE:

When sewing with the satin stitch foot or buttonhole foot, pull the thread(s) to the left to hold them.

Sewing from the edge of thick fabric

The black button on the zigzag foot locks the foot in the horizontal position.

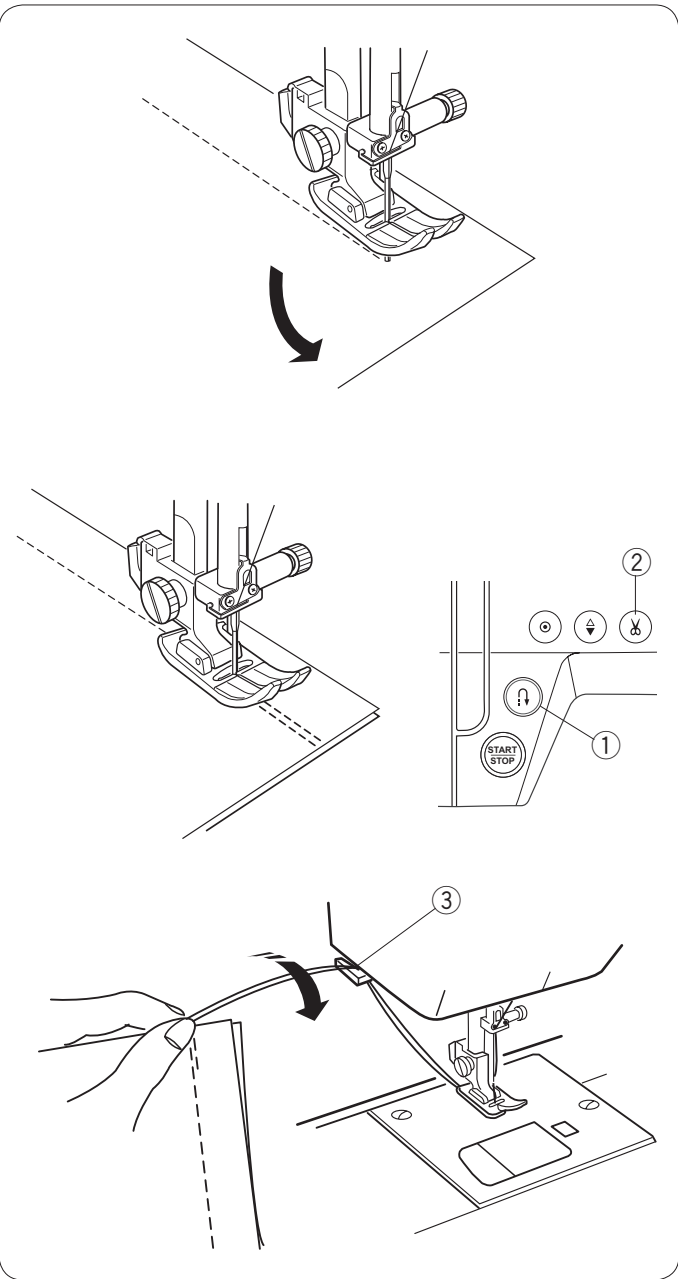
This is helpful when starting sewing from the far edge of thick fabrics or sewing across a hem.

Lower the needle into the fabric at the point where you wish to start sewing.

Lower the foot while pushing the black button in. The foot is locked in the horizontal position to avoid slipping.

The button is released automatically after sewing a few stitches.

- ③ Black button
- ④ Thick fabrics



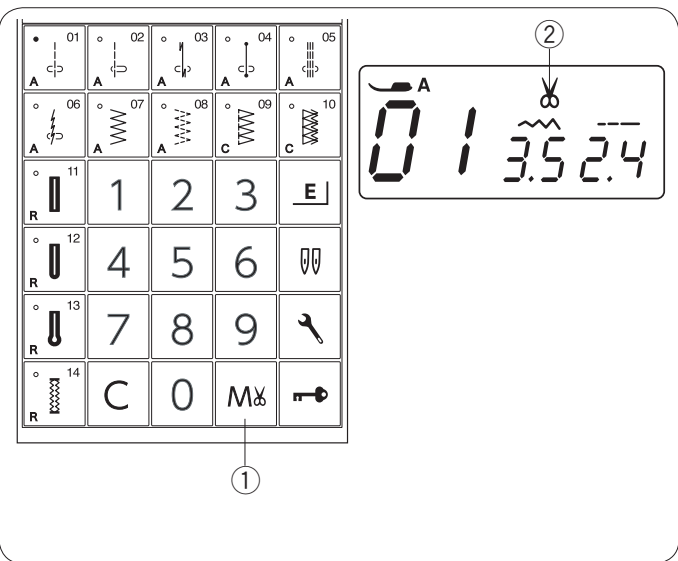
Changing sewing direction

Stop the machine and raise the presser foot.
Pivot the fabric around the needle to change the sewing direction as desired.
Lower the foot and start sewing in a new direction.

Securing seam

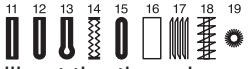
To secure the end of seam, press the reverse button and sew several reverse stitches.
Press the thread cutter button to cut the threads.
① Reverse button
② Thread cutter button
Raise the presser foot.

Use the thread cutter on the face cover to cut thicker threads.
③ Thread cutter



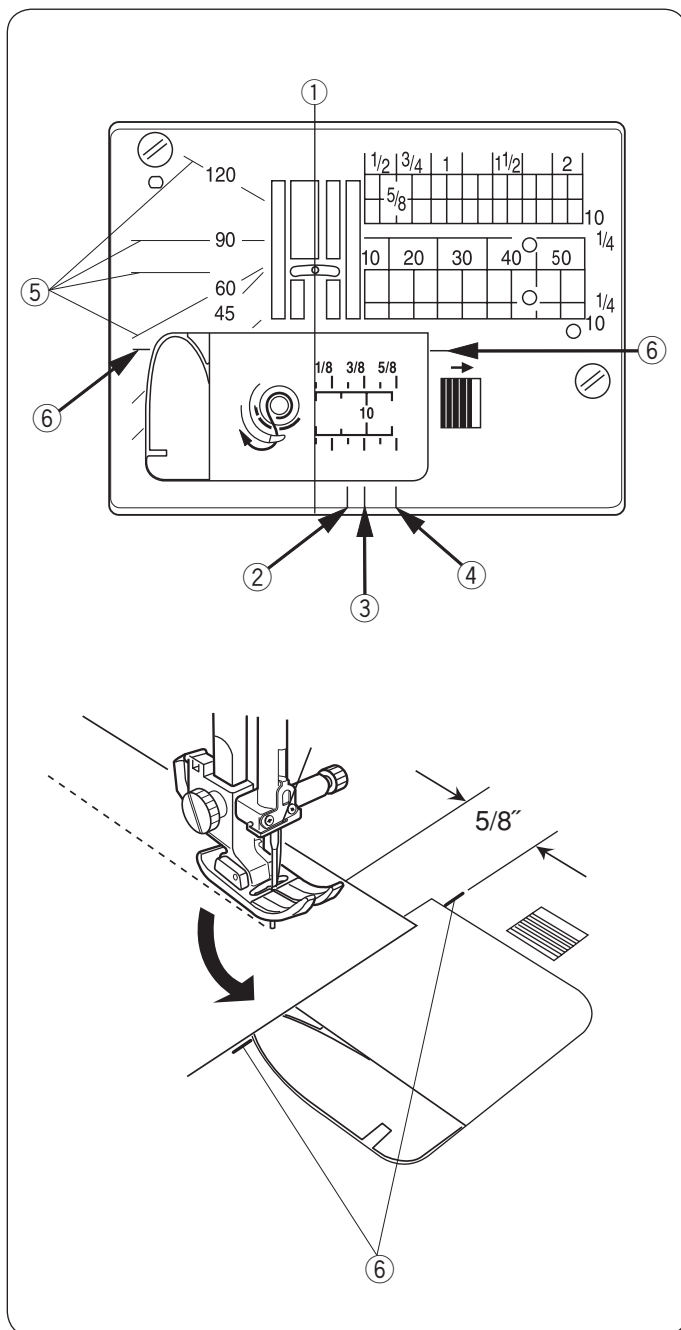
Auto Thread Cutting

To cut the threads automatically after locking stitches, press the thread cutter memory key.
The thread cutter icon appears on the LCD display.
① Thread cutter memory key
② Thread cutter icon

When buttonhole, tacking, darning  or eyelet is selected, the machine will cut the threads automatically after sewing is finished.
Press the auto-lock button or reverse button to cut the threads automatically after locking stitches when other stitch is selected.

NOTE:

Use the thread cutter on the face cover if the thread is 30 or thicker.



Using Seam Guides

The seam guides on the needle plate and the hook cover plate help you to measure seam allowance.

The numbers on the needle plate indicate the distance from the center needle position in inches and millimeters.

- ① Center needle position

The front seam guides are marked at 1/4", 3/8" and 5/8" from the center needle position.

- ② Front seam guide at 1/4"
- ③ Front seam guide at 3/8"
- ④ Front seam guide at 5/8"

The angle scales are marked at 45, 60, 90 and 120 degrees.

Use the angle scales when seaming patchwork pieces (refer to page 45).

- ⑤ Angle scales

Turning a square corner

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

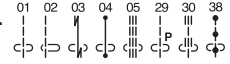
- ⑥ Cornering guides

Stop sewing when the front edge of fabric reaches the cornering guides.

Raise the presser foot and turn the fabric 90 degrees. Start sewing in a new direction.

Altering the Needle Drop Position

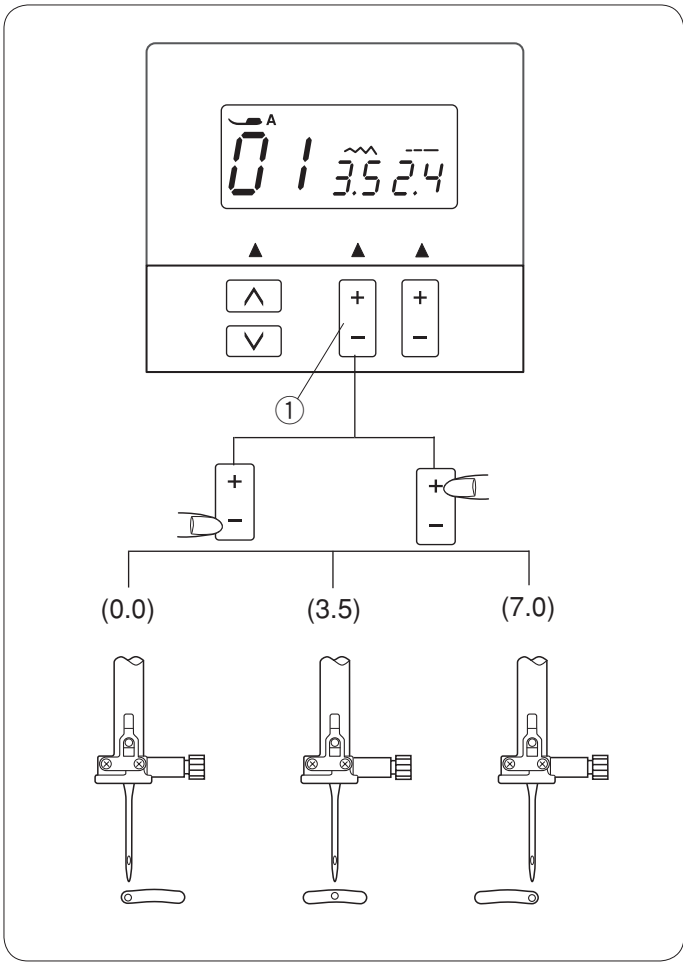
The needle drop position can be altered for straight stitch patterns 01 to 05, 29, 30 and 38.



Press the “-” sign on the stitch width adjusting key to move the needle to the left.

Press the “+” sign on the stitch width adjusting key to move the needle to the right.

① Stitch width adjusting key



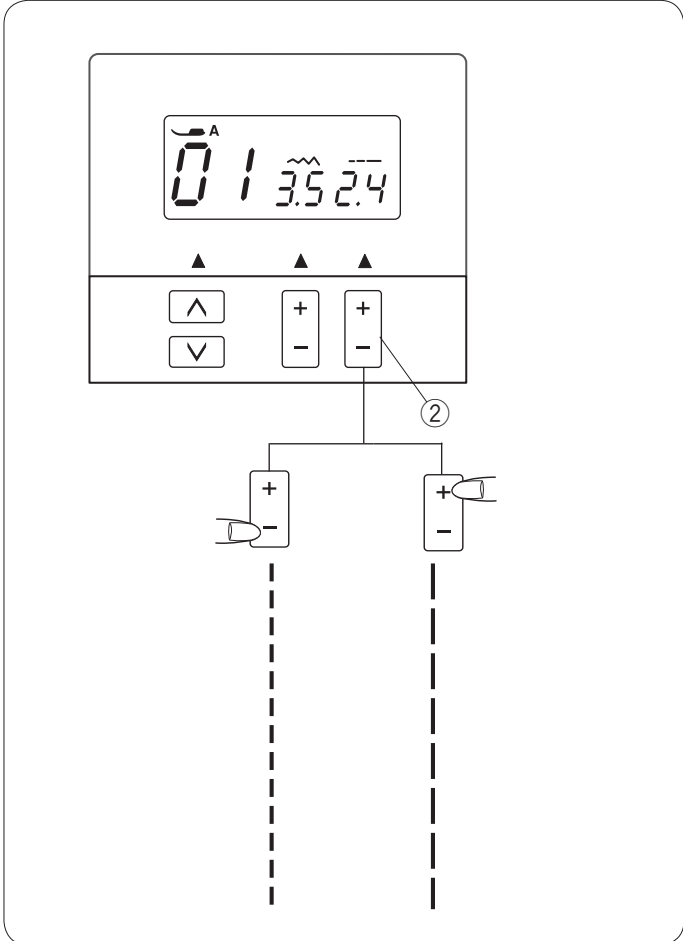
Altering the Stitch Length

The stitch length can be altered.

Press the “+” sign on the stitch length adjusting key to increase the stitch length.

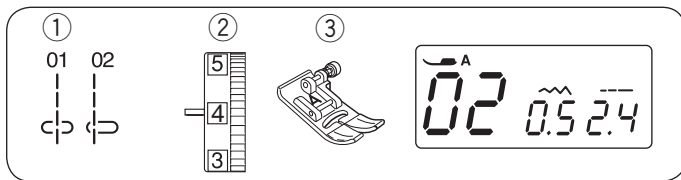
Press the “-” sign on the stitch length adjusting key to decrease the stitch length.

② Stitch length adjusting key



NOTE:

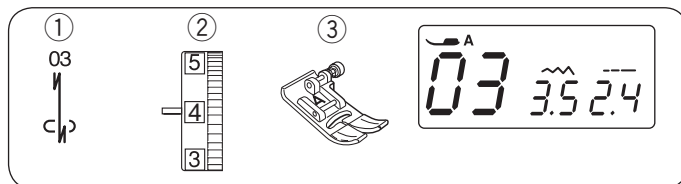
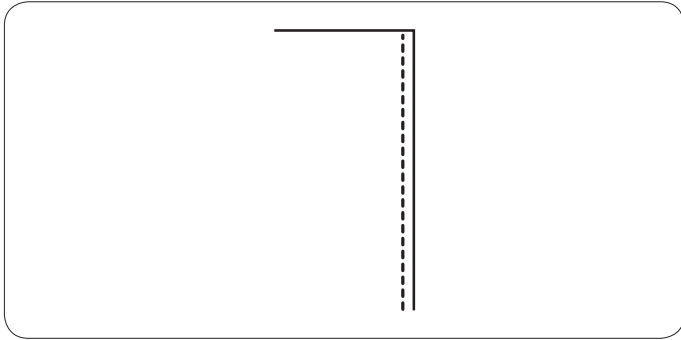
Reverse stitch length cannot be set longer than 4.0.



Straight Stitch

- ① Stitch pattern: 01 or 02
- ② Thread tension dial: 2 to 6
- ③ Presser foot: Zigzag foot A

For seaming garments, zipper application and more. Pattern 02 is used for seaming fine fabrics.

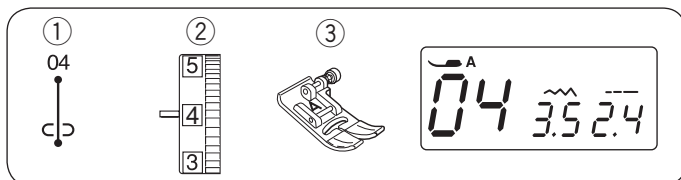
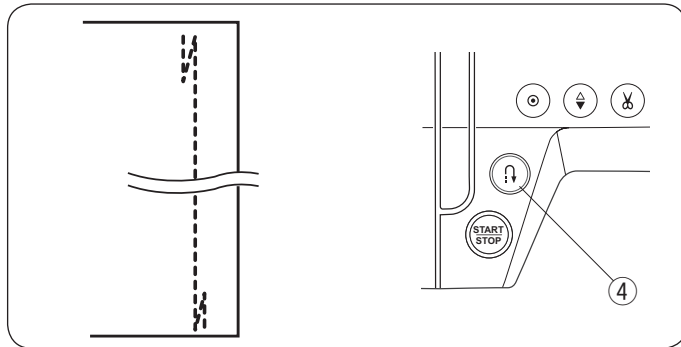


Lock-a-matic Stitch

- ① Stitch pattern: 03
- ② Thread tension dial: 2 to 6
- ③ Presser foot: Zigzag foot A

Use this stitch to secure the beginning and the end of a seam with backstitching. When you reach the end of the seam, press the reverse button once. The machine will sew four reverse stitches, four forward stitches, and then stop sewing automatically.

- ④ Reverse button



Locking Stitch

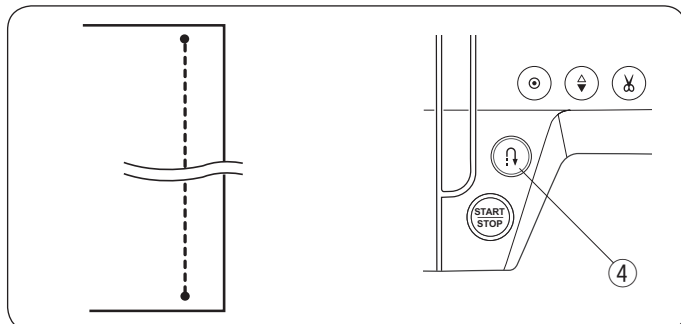
- ① Stitch pattern: 04
- ② Thread tension dial: 2 to 6
- ③ Presser foot: Zigzag foot A

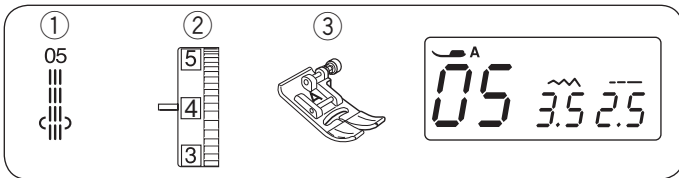
This unique stitch is used where an invisible locking stitch is needed.

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

- ④ Reverse button

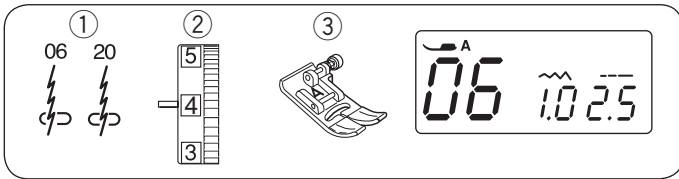
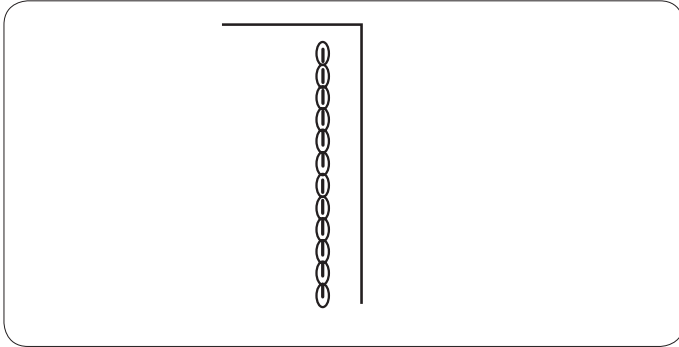




Triple Stretch Stitch

- ① Stitch pattern: 05
- ② Thread tension dial: 2 to 6
- ③ Presser foot: Zigzag foot A

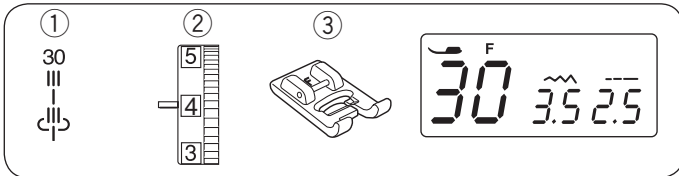
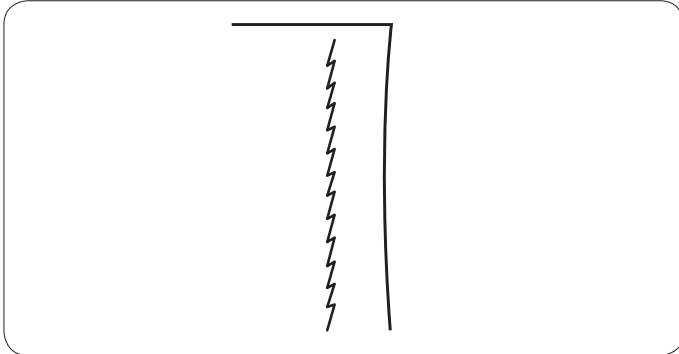
This strong, durable stitch is recommended when both elasticity and strength are necessary in order to insure comfort and durability. Use it to reinforce areas such as crotch and armhole seams. Also use for extra reinforcement when constructing items such as backpacks.



Stretch Stitch

- ① Stitch pattern: 06, 20
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Zigzag foot A

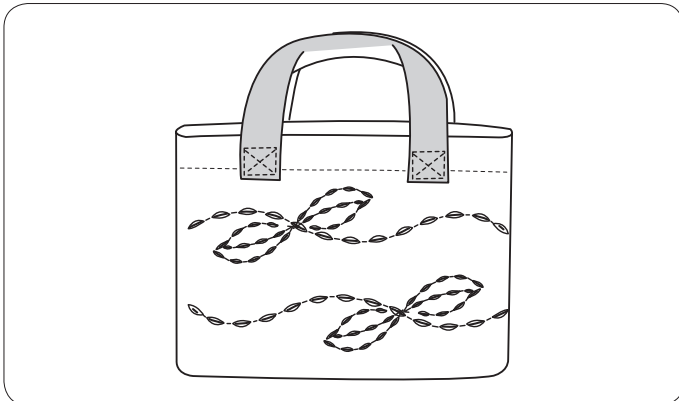
This stitch is a narrow stretch stitch designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely open flat. Use this stitch for seaming fine fabrics.

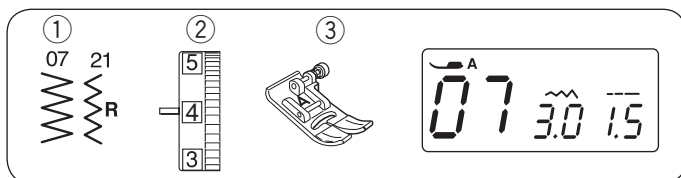


Saddle Stitch

- ① Stitch pattern: 30
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

The saddle stitch is formed with one stitch forward, two stitches backward, and a fourth stitch forward. You can achieve a lovely hand-worked look when topstitching suits, blazers, jumpers, and denim outfits with the saddle stitch.





Zigzag Stitches

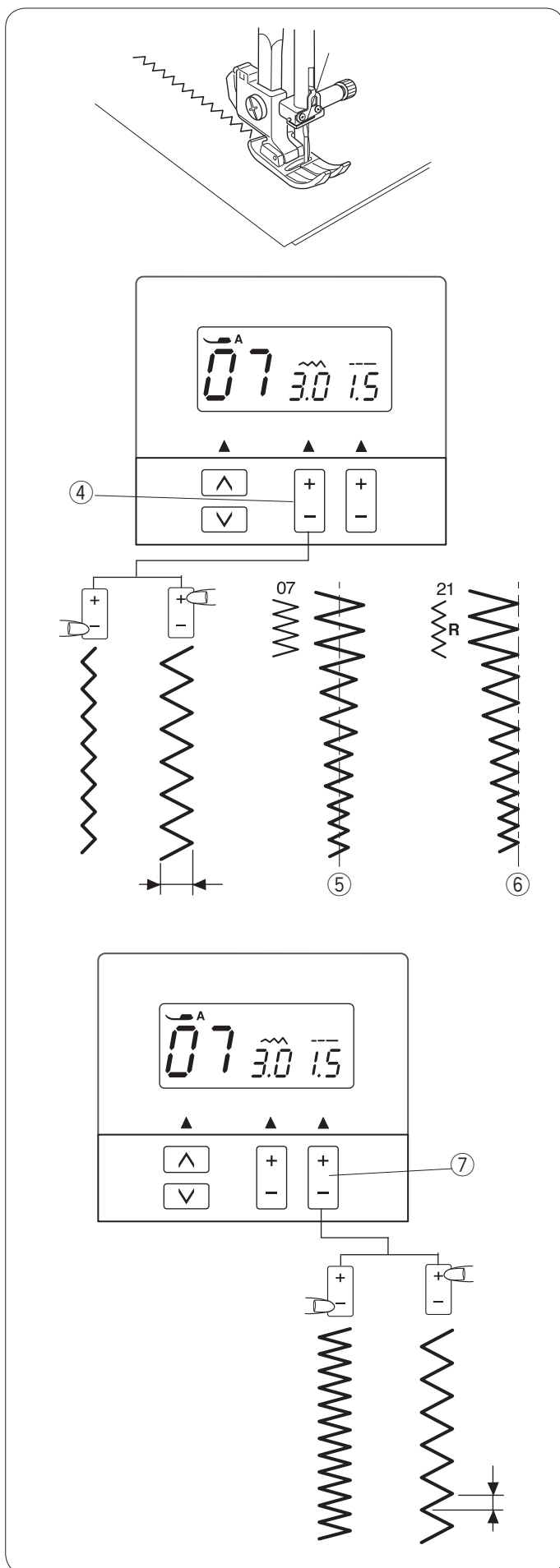
- ① Stitch pattern: 07, 21
- ② Thread tension dial: 2 to 6
- ③ Presser foot: Zigzag foot A

The zigzag stitch is one of the most useful and versatile stitches.

It is used for overcasting, mending, appliqué, and also used as a decorative stitch.

NOTE:

Use interfacing when sewing on stretch fabrics such as knit, jersey or tricot.



Altering the Stitch Width

Press the “+” sign on the stitch width adjusting key to increase the stitch width.

Press the “-” sign on the stitch width adjusting key to decrease the stitch width.

④ Stitch width adjusting key

The stitch width of pattern 07 can be changed without changing its center needle position ⑤.

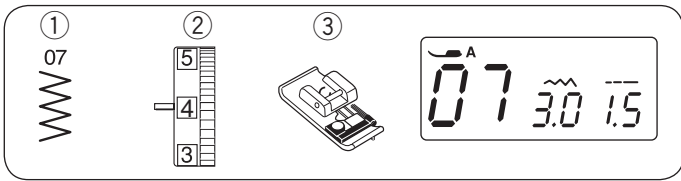
The stitch width of pattern 21 can be changed without changing its right needle position ⑥.

Altering the Stitch Length

Press the “+” sign on the stitch length adjusting key to increase the stitch length.

Press the “-” sign on the stitch length adjusting key to decrease the stitch length.

⑦ Stitch length adjusting key



Overcasting with Zigzag Stitch

- ① Stitch pattern: 07
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Overedge foot C

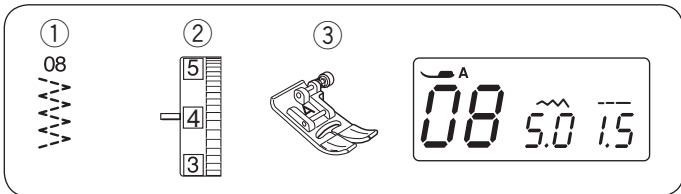
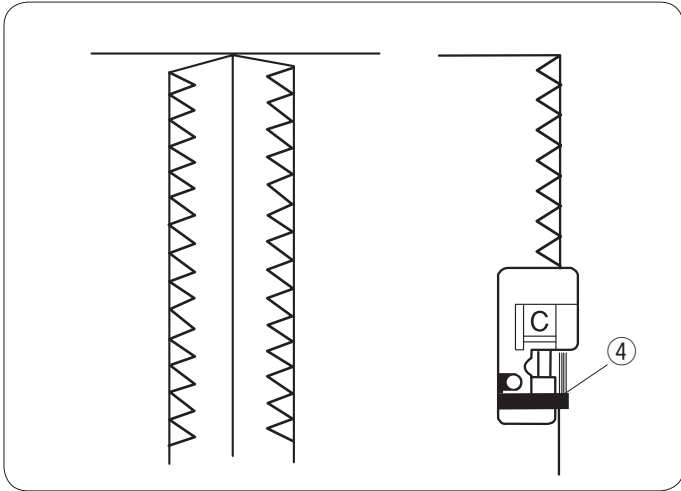
Place the fabric edge next to the guide on the foot and sew while guiding the fabric along the guide.

- ④ Guide



CAUTION:

When using an overedge foot, make sure to set the stitch width at 4.5 or wider, otherwise the needle may hit the wires on the foot.



Multiple Zigzag Stitch

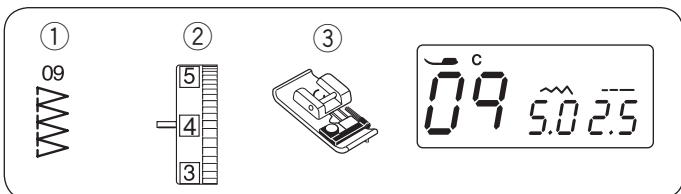
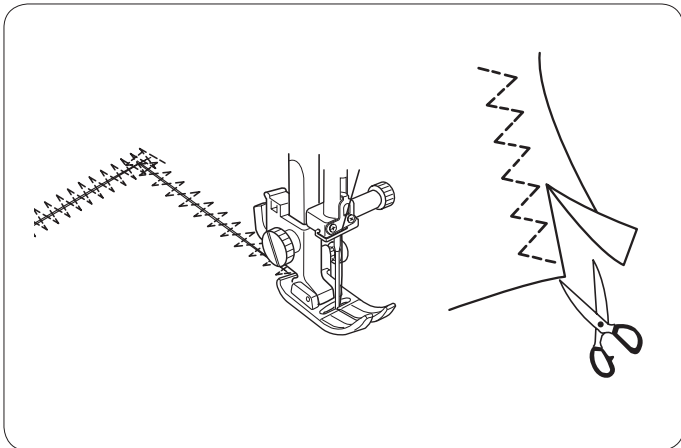
- ① Stitch pattern: 08
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Zigzag foot A

This stitch is used to finish a raw edge of synthetics and other stretch fabrics that tend to pucker.

Sew along the fabric edge leaving an adequate seam allowance.

After sewing, trim off the seam allowance closer to the stitches.

This stitch is also excellent for darning and mending tears.



Overedge Stitch

- ① Stitch pattern: 09
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Overedge foot C

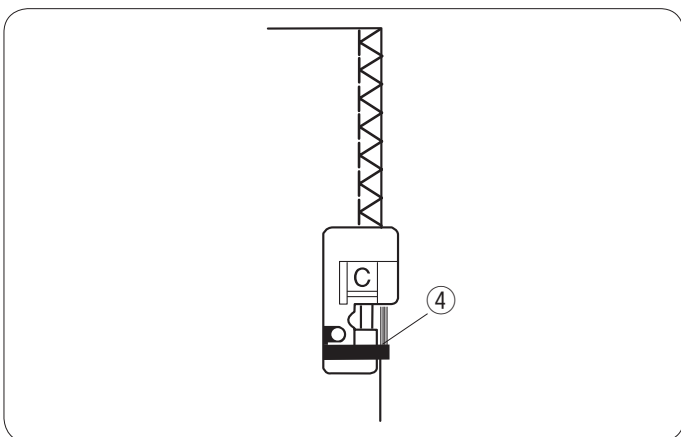
This stitch is used to seam and overcast fabric edges at one time.

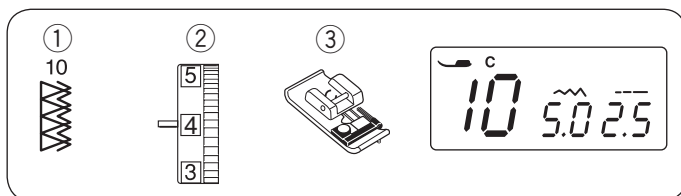
Use this stitch when you do not need to open seams flat. Sew while guiding the fabric edges along the guide on the foot.

- ④ Guide

NOTE:

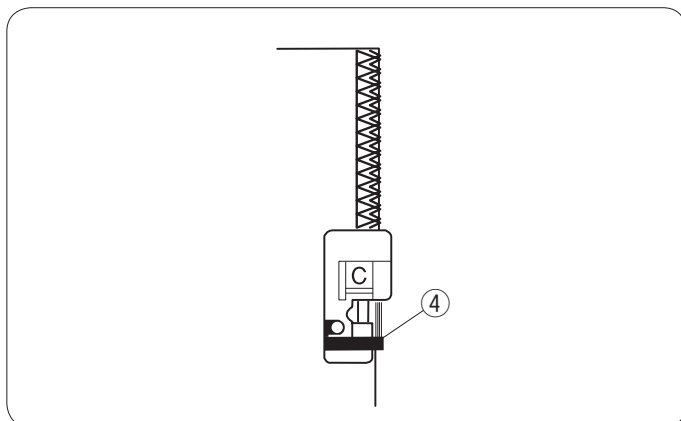
The stitch width cannot be adjusted to less than 4.5 to prevent the needle from hitting the wires on the foot.





Double Overedge Stitch

- ① Stitch pattern: 10
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Overedge foot C

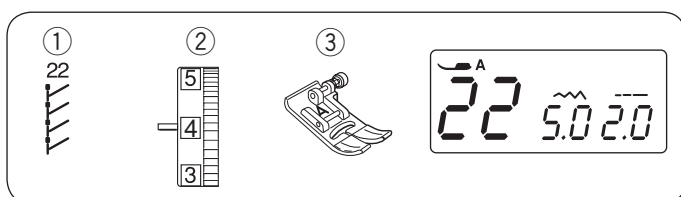


This stitch is excellent for sewing fabrics that tend to fray extensively such as linens and gabardines. Two rows of zigzag stitches are simultaneously sewn over the edge to insure that your seams will not ravel. Sew while guiding the fabric edges along the guide on the foot.

- ④ Guide

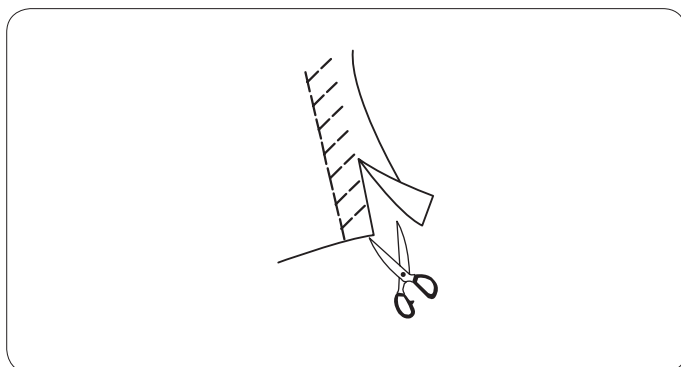
NOTE:

The stitch width cannot be adjusted to less than 4.5 to prevent the needle from hitting the wires on the foot.

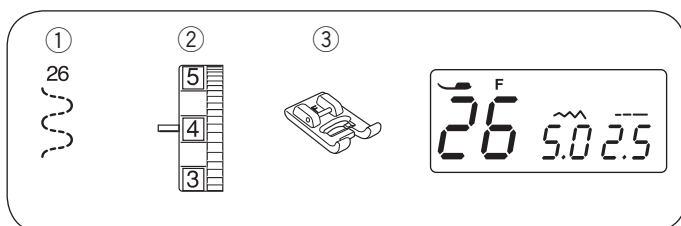


Knit Stitch

- ① Stitch pattern: 22
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Zigzag foot A

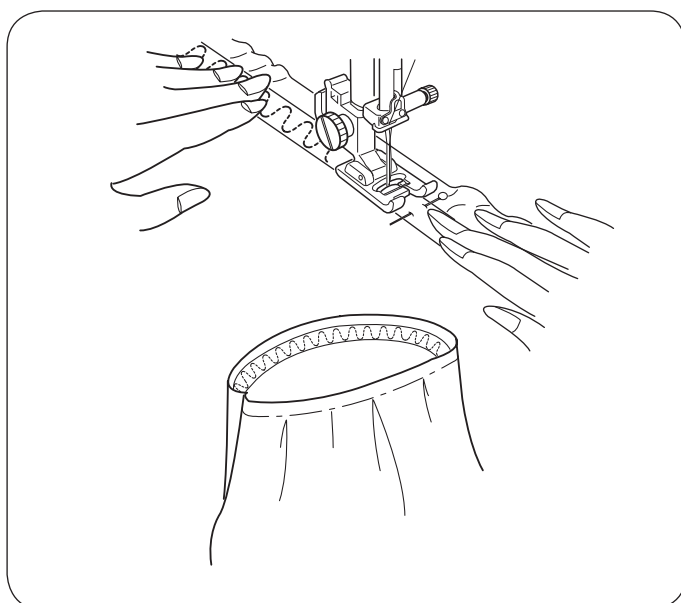


Place your fabric to allow a 5/8" (1.5 cm) seam. Trim excess close to the stitching. Be careful not to cut the stitches.

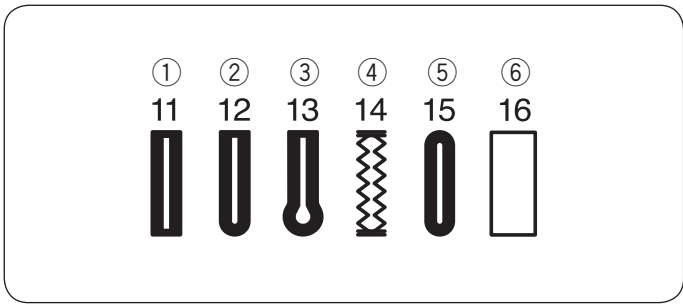


Attaching Elastic

- ① Stitch pattern: 26
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Satin stitch foot F



Mark the elastic into quarters. Match those to the center front, center back and side seams, and pin the elastic to the fabric. Place the elastic under the foot and stitch into place while stretch the elastic evenly.



Buttonholes

The following 6 types of buttonholes are available.

① Square buttonhole

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

② Round-end buttonhole

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

③ Keyhole buttonhole

The keyhole buttonhole is widely used on medium to heavy fabrics. It is also suitable for larger and thicker buttons.

④ Stretch buttonhole

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

⑤ Fine fabric buttonhole

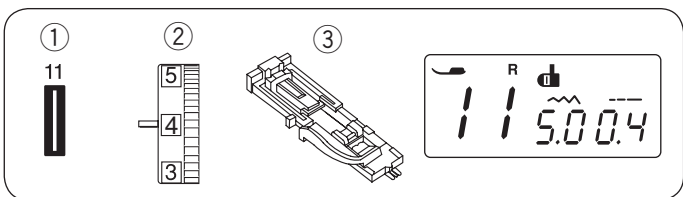
This buttonhole is used for thicker buttons on medium weight fabrics.

⑥ Welled buttonhole

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

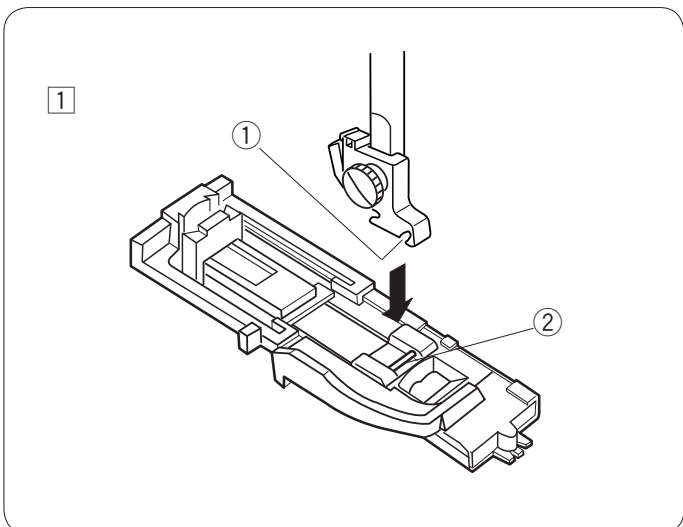
NOTE:

- To sew the buttonholes 12 to 15, follow the same procedure as buttonhole 11.
- The buttonhole size 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 up to 1" (2.5 cm) in diameter.
- It is sometimes necessary to change buttonhole size to match certain heavy or specific materials and threads.
- Make a test buttonhole on an extra piece of the fabric to check your setting.
- Place the button on the fabric and mark the top and bottom to determine the position of the buttonhole on the fabric.
- Use interfacing on stretch fabrics.



Square Buttonhole

- ① Stitch pattern: 11
- ② Thread tension dial: 1 to 5
- ③ Presser foot: Automatic buttonhole foot R

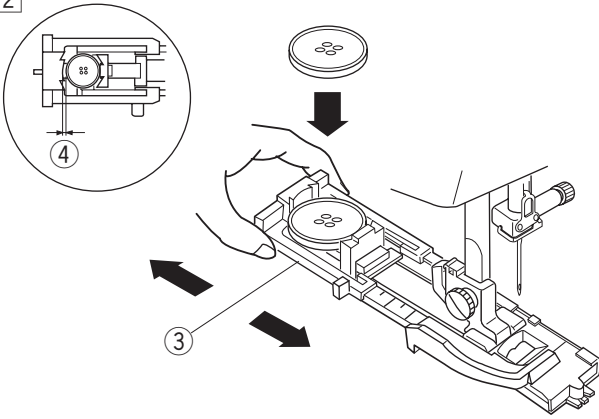


To sew

- ① Attach the automatic buttonhole foot R by snapping the pin into the groove of the foot holder.

- ① Groove
- ② Pin

2



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

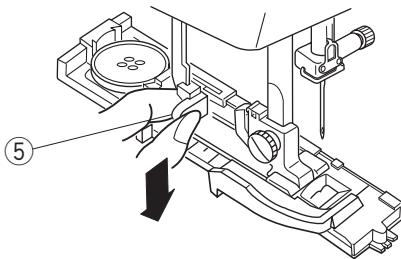
NOTE:

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.

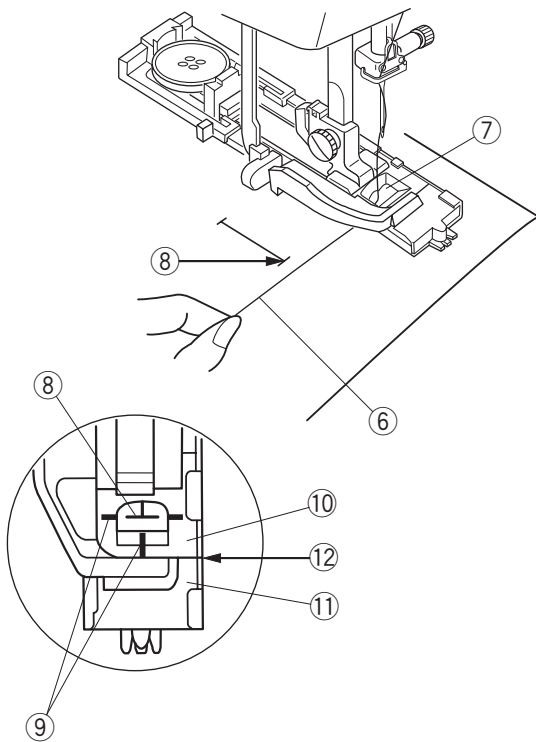
- 4 Extra gap

3



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

4



- 4 Draw the needle thread to the left through the hole of the foot. Mark the buttonhole position on the fabric. Position the fabric and lower the needle into the starting point. Lower the buttonhole foot. Start sewing while pulling the needle thread lightly to the left. After several stitches, free the needle thread and continue sewing.

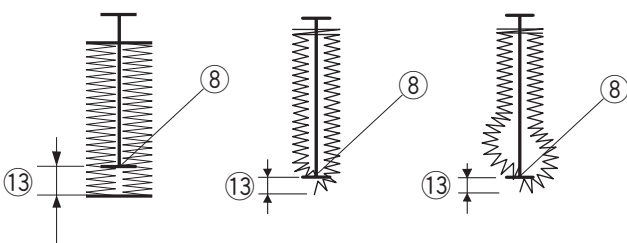
- 6 Needle thread
- 7 Hole
- 8 Starting point

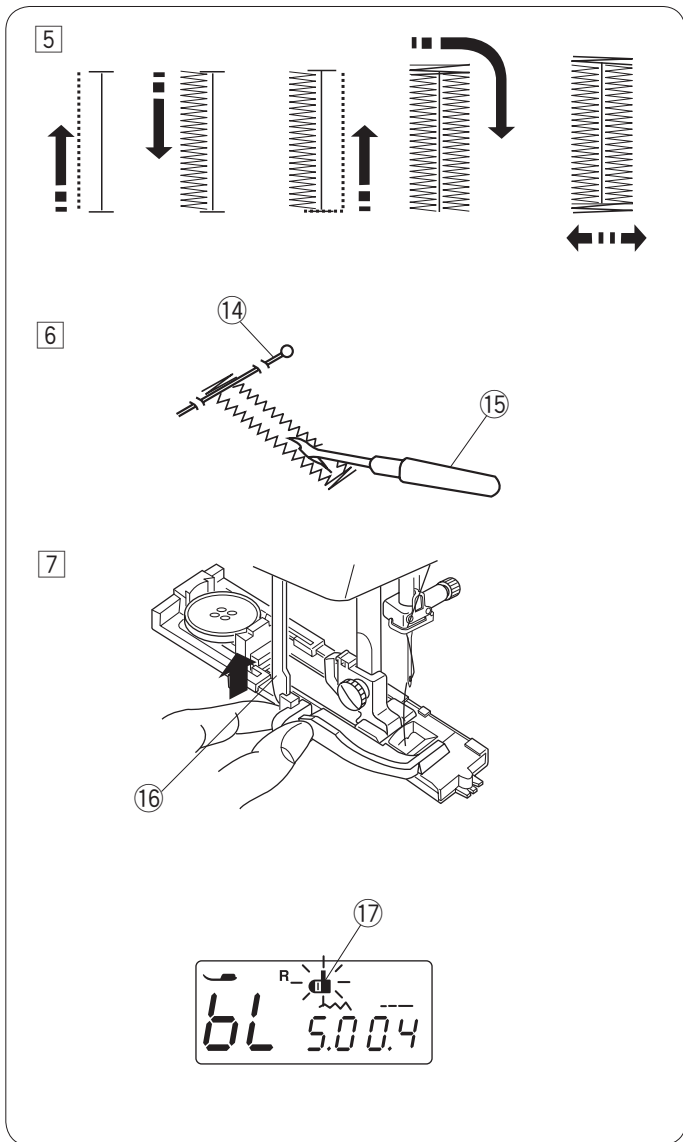
NOTE:

The reference marks on the buttonhole foot can be used as a positioning guide.

Make sure there is no gap between the slider and stopper, otherwise the buttonhole will not be sewn in the required position.

- 9 Reference lines
- 10 Slider
- 11 Stopper
- 12 No gap
- 13 Sewing gap





5 Start the machine to sew the buttonhole.
The buttonhole is sewn in the sequence as shown.
When the buttonhole is finished, the machine will stop automatically with the needle in the up position.

6 Remove the fabric and place a pin just below the bartack to prevent accidentally cutting the stitches.
Cut the opening with the seam ripper.
14 Pin
15 Seam ripper

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

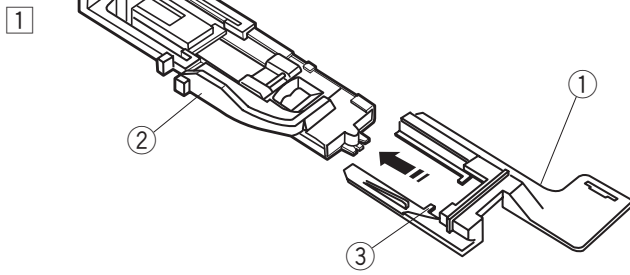
NOTE:
If you start sewing buttonhole without lowering the buttonhole lever, the LCD display will show “bL” message and the buttonhole lever icon will blink.
Lower the buttonhole lever, then restart the machine.
17 Buttonhole lever icon

Double layer buttonhole

To make a sturdy buttonhole, sew another layer of buttonhole stitches over the previous stitches.
After the buttonhole is finished, do not raise the foot or buttonhole lever, simply start the machine again.

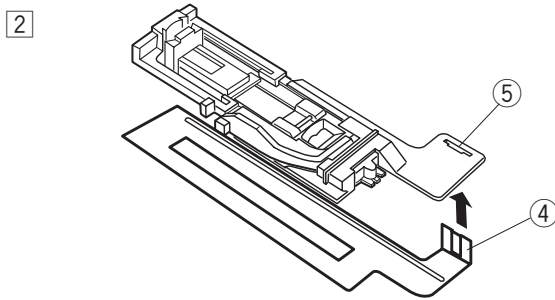
Using the stabilizer plate

The stabilizer plate holds and supports fabrics so it is helpful when sewing buttonholes over the hem of thick fabrics.



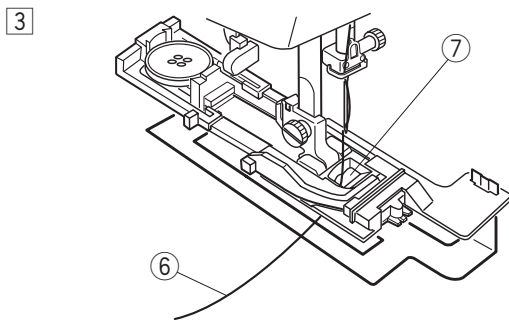
- 1 Attach the stabilizer holder to the buttonhole foot by inserting the foot into the channels of the holder.

- ① Stabilizer plate holder
- ② Buttonhole foot
- ③ Channel



- 2 Insert the tab of the stabilizer plate into the slot of the plate holder.

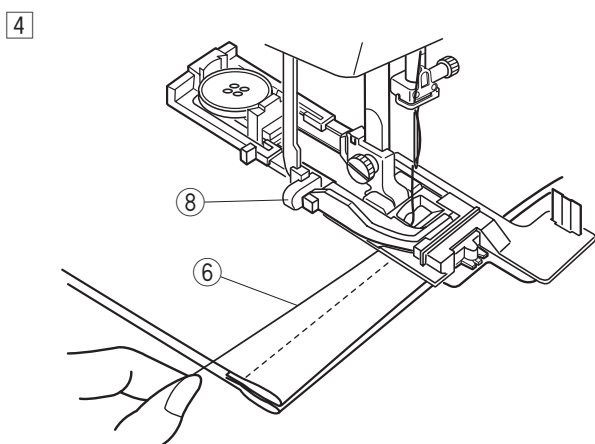
- ④ Tab
- ⑤ Slot



- 3 Attach the buttonhole foot with the stabilizer plate to the machine.

Pass the needle thread through the hole of the foot and draw it to the left between the foot and stabilizer plate.

- ⑥ Needle thread
- ⑦ Hole of the foot



- 4 Insert the fabric between the foot and stabilizer plate. Position the fabric and lower the needle into the starting point.

Lower the foot and pull down the buttonhole lever as far as it will go.

Start sewing while pulling the needle thread lightly to the left. After several stitches, free the needle thread and continue sewing.

- ⑧ Buttonhole lever

Adjusting the width and density for buttonholes

• Adjusting the buttonhole width

Press the “+” sign on the stitch width adjusting key to increase the buttonhole width.

Press the “-” sign on the stitch width adjusting key to decrease the buttonhole width.

① Stitch width adjusting key

NOTE:

The buttonhole width can be adjusted from 2.5 to 7.0.

• Adjusting the stitch density

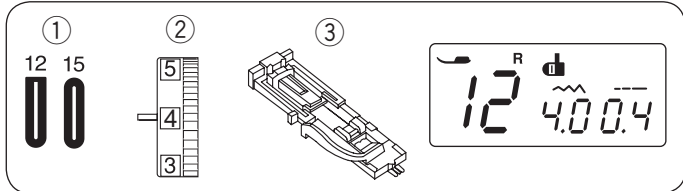
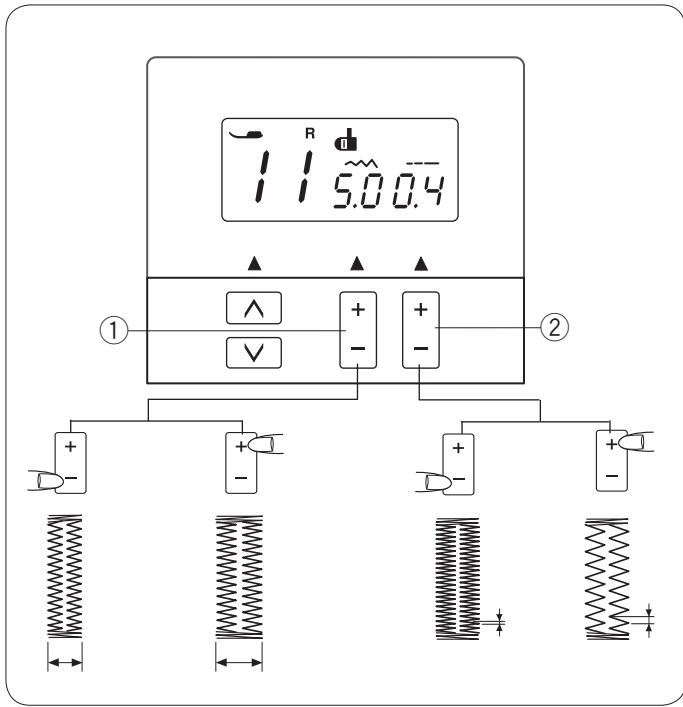
Press the “+” sign on the stitch length adjusting key to increase the stitch density.

Press the “-” sign on the stitch length adjusting key to decrease the stitch density.

② Stitch length adjusting key

NOTE:

The buttonhole width can be adjusted from 0.3 to 0.8.



Round-end and Fine Fabric Buttonholes

① Stitch pattern: 12, 15

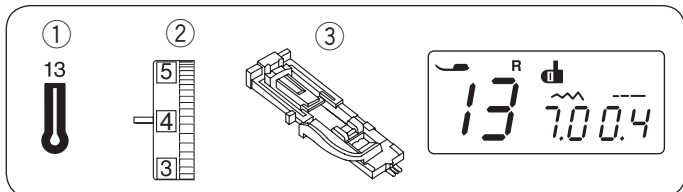
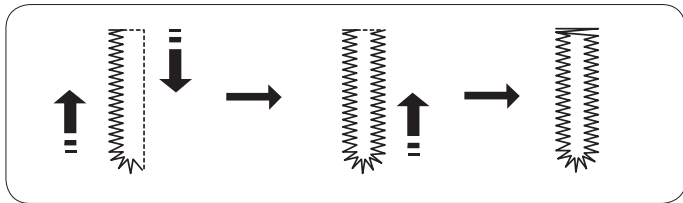
② Thread tension dial: 1 to 5

③ Presser foot: Automatic buttonhole foot R

Sewing procedure is the same as square buttonhole.

The buttonhole width can be varied from 2.5 to 5.5.

The stitch density can be varied from 0.3 to 0.8.



Keyhole Buttonhole

① Stitch pattern: 13

② Thread tension dial: 1 to 5

③ Presser foot: Automatic buttonhole foot R

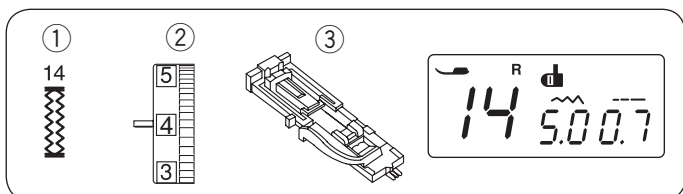
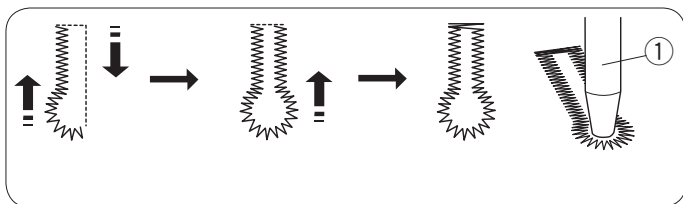
Sewing procedure is the same as square buttonhole.

The buttonhole width can be varied from 5.5 to 7.0.

The stitch density can be varied from 0.3 to 0.8.

Use the seam ripper and an eyelet punch to open the buttonhole.

① Eyelet punch (not provided with the machine)



Stretch Buttonhole

① Stitch pattern: 14

② Thread tension dial: 1 to 5

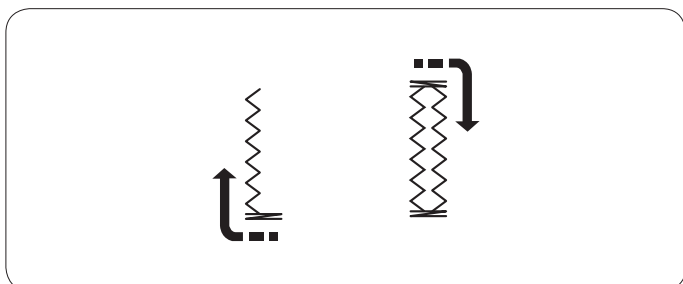
③ Presser foot: Automatic buttonhole foot R

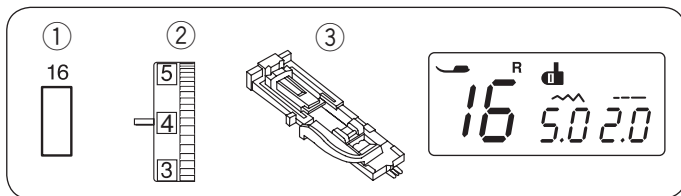
Sewing procedure is the same as square buttonhole.

The buttonhole width can be varied from 2.5 to 7.0.

The stitch density can be varied from 0.5 to 1.0.

The sewing steps are as shown.





Welted Buttonhole (Bound buttonhole)

- ① Stitch pattern: 16
- ② Thread tension dial: 1 to 5
- ③ Presser foot: Automatic buttonhole foot R

A welted buttonhole is made by stitching a strip or patch of fabric to the buttonhole. Welted buttonholes are particularly suitable for tailored garments, but are not recommended for sheer or delicate fabrics where the patch might show through or add bulk.

- ① Baste a patch to the garment fabric with the right sides together.

- ① Wrong side of patch
- ② Right side of garment fabric

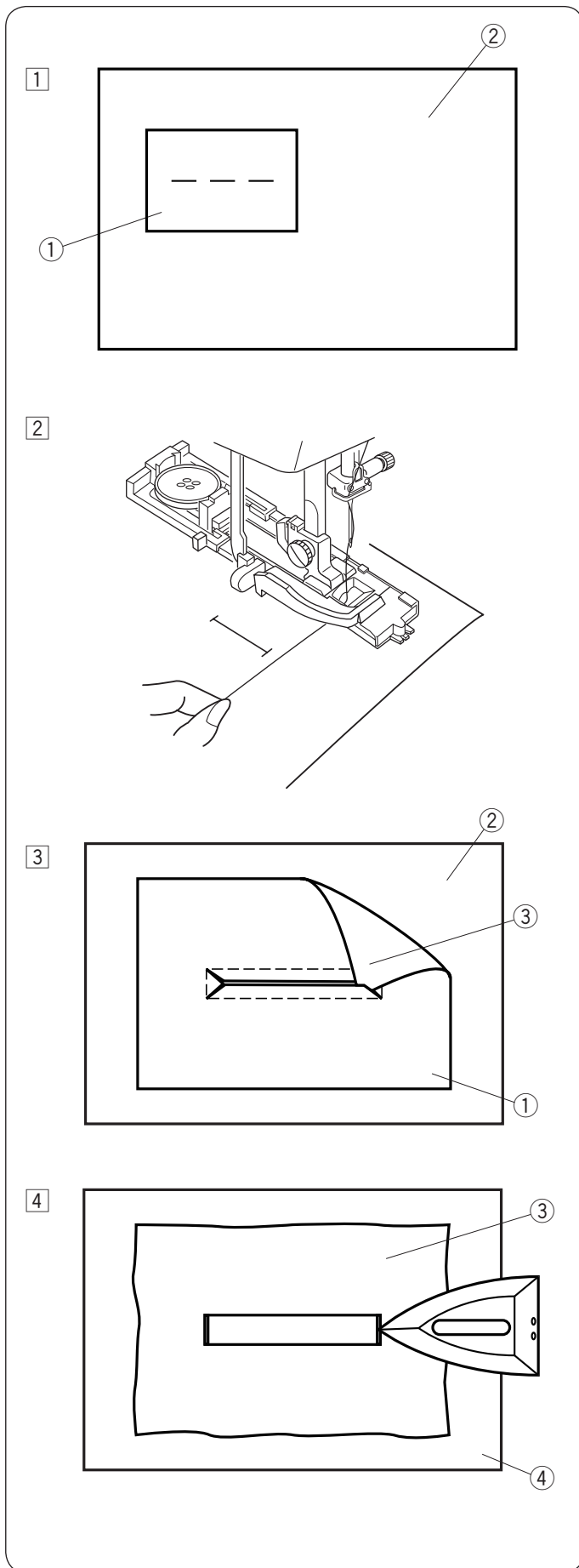
- ② Select pattern 16.
Sew the welted buttonhole on both fabrics together.

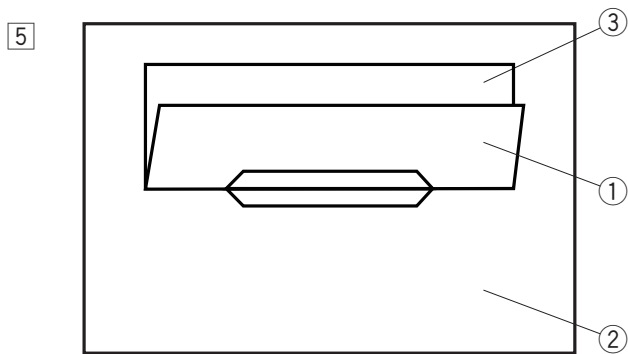
- ③ Cut the buttonhole opening as illustrated then pull the patch out through the slit to the other side.

- ① Wrong side of patch
- ② Right side of garment fabric
- ③ Right side of patch

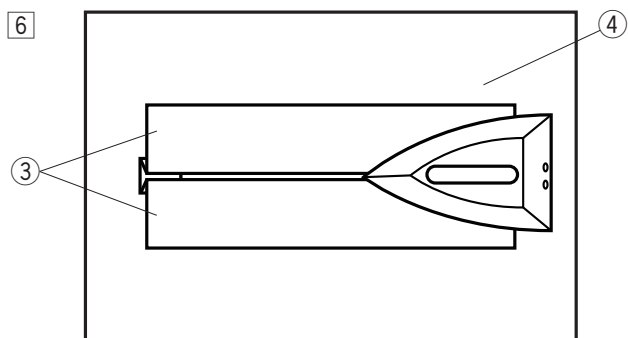
- ④ Pull out the patch until the right side of the patch is showing. Use an iron to press both corner ends until they are squared off.

- ③ Right side of patch
- ④ Wrong side of garment fabric

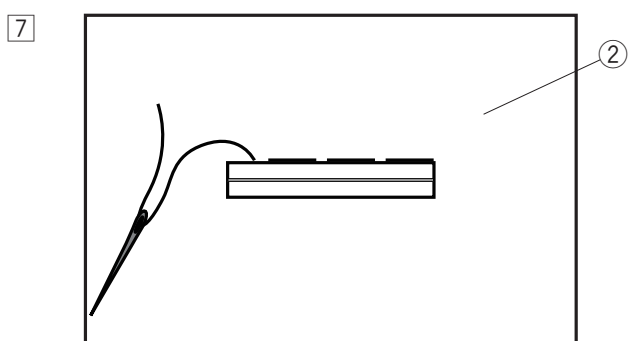




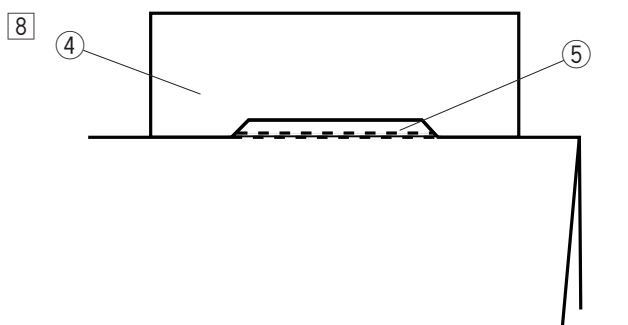
- 5 Fold back each side of the patch to form buttonhole lips.
- ① Wrong side of patch
 - ② Right side of garment fabric
 - ③ Right side of patch



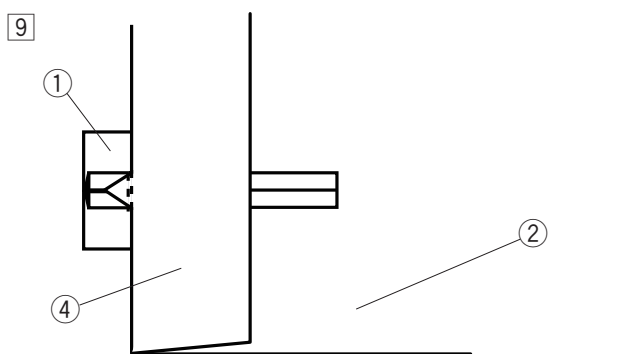
- 6 Press both folds with an iron.
- ③ Right side of patch
 - ④ Wrong side of garment fabric



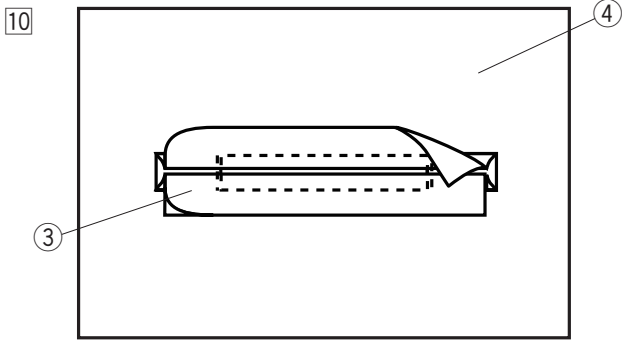
- 7 Baste both edges of the seam with a needle and thread by hand.
- ② Right side of garment fabric



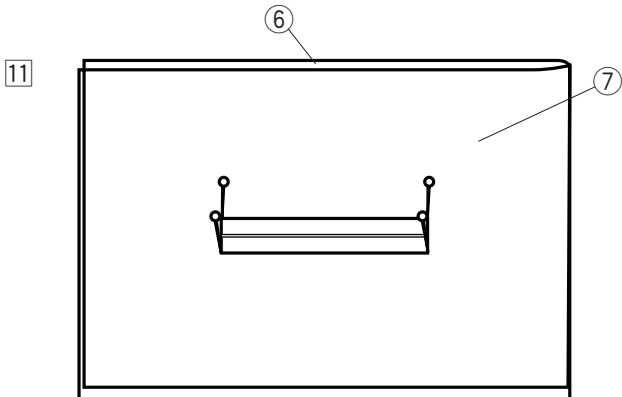
- 8 Fold over the length of the garment fabric, sew back and forth beside the original seam to secure flaps of the patch.
- ④ Wrong side of garment fabric
 - ⑤ Sew back and forth



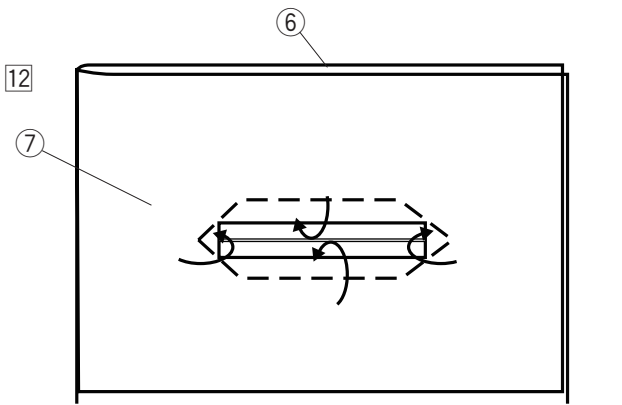
- 9 Fold over the end of fabric and sew back and forth three times over the triangular end.
- ① Wrong side of patch
 - ② Right side of garment fabric
 - ④ Wrong side of garment fabric



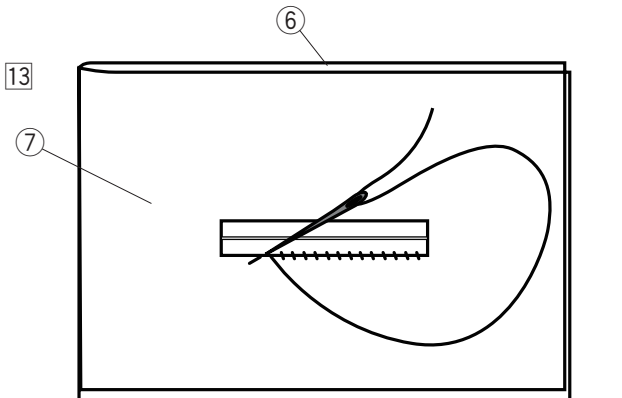
- 10 The patch should be cut 1 to 1.5 cm (7/16" – 5/8") away from the hole. The corners should be cut rounded off as shown.
- 3 Right side of patch
 - 4 Wrong side of garment fabric



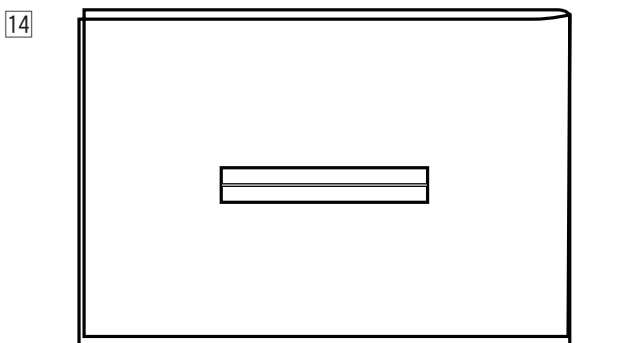
- 11 Place the facing on the wrong side of the garment fabric. Mark the 4 corners with pins as shown.
- 6 Facing
 - 7 Garment fabric



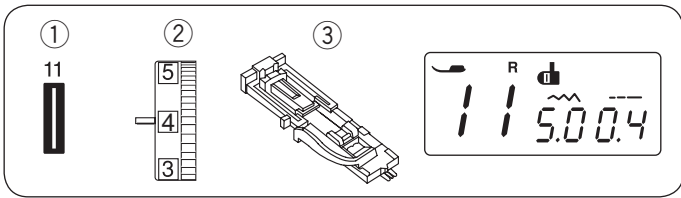
- 12 Turn all the layers over and cut the buttonhole opening on the facing in the same way as step 3. Four marker pins show you the corner points on the facing. Fold back each flap between the facing and patch.
- 6 Facing
 - 7 Garment fabric



- 13 Stitch around the opening with a needle and thread as shown.
- 6 Facing
 - 7 Garment fabric

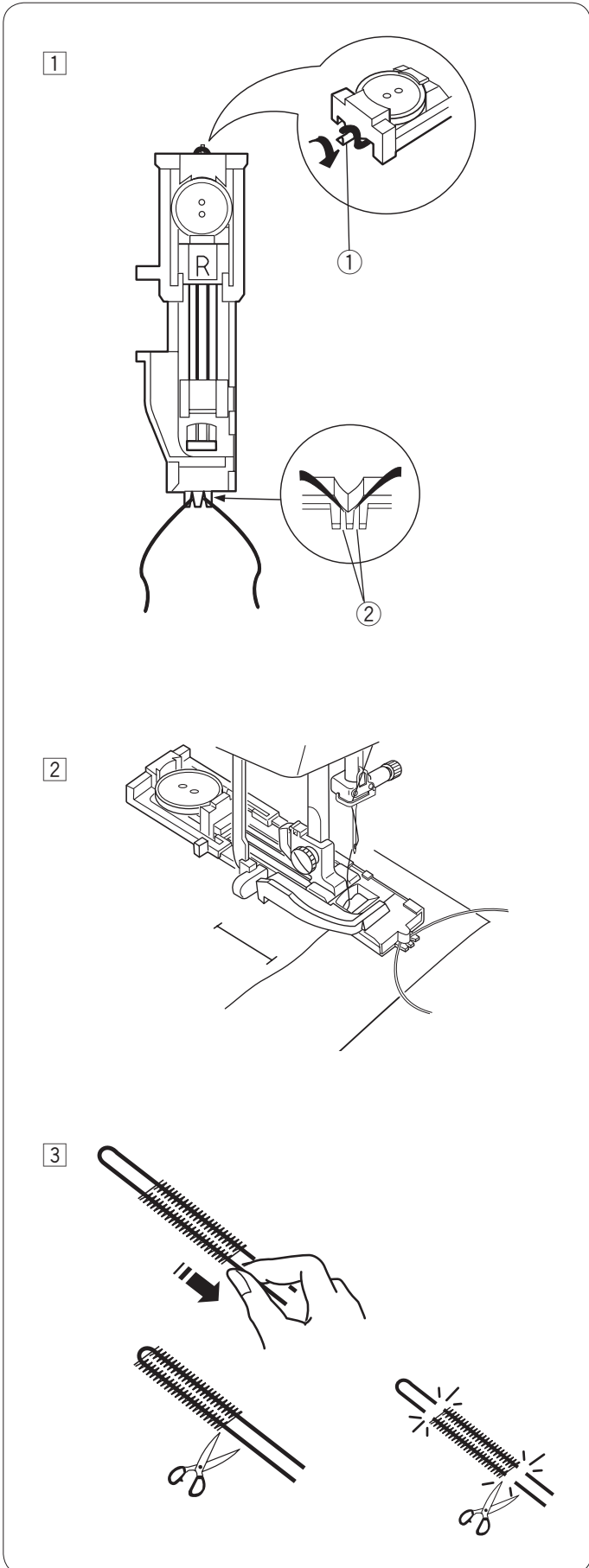


- 14 The welted buttonhole is complete.



Corded Buttonhole

- ① Stitch pattern: 11
- ② Thread tension dial: 1 to 5
- ③ Presser foot: Automatic buttonhole foot R



① Use the same procedure as the square buttonhole sewing. Set the stitch width to match the thickness of the cord used.

With the buttonhole foot raised, hook the filler cord on the spur at the back of the buttonhole foot. Bring the ends toward you under the buttonhole foot, clearing the front end.

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

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

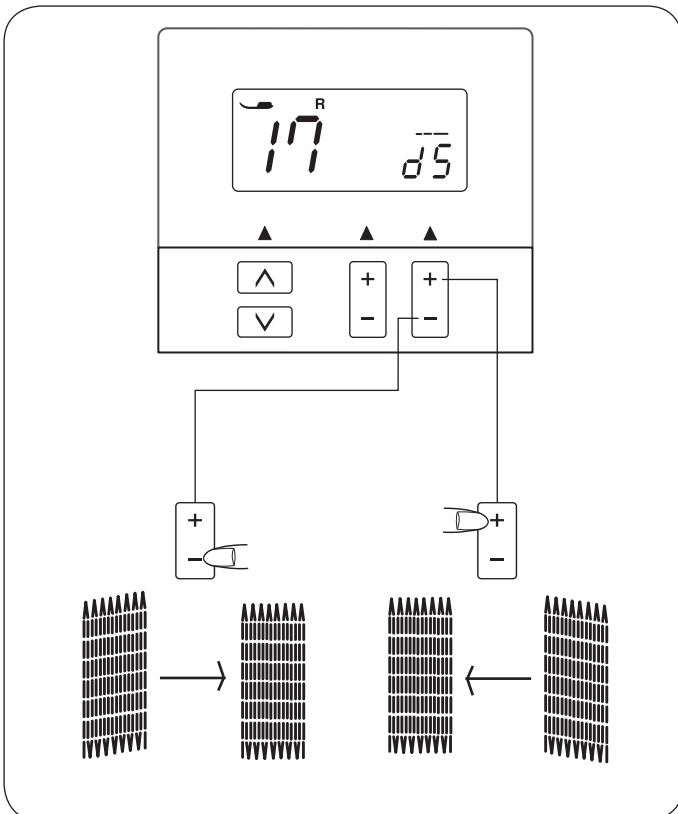
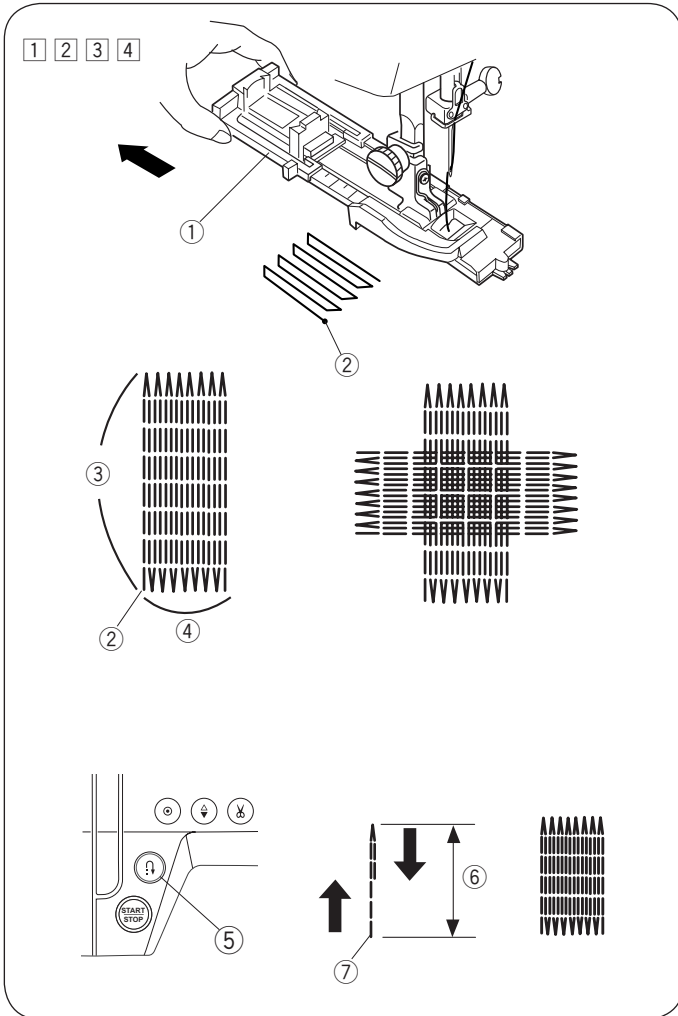
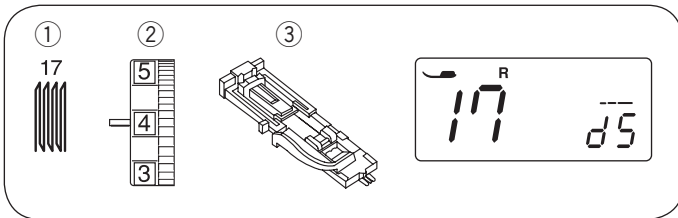
- ① Spur
- ② Forks

② Start the machine and sew the buttonhole. Each side of the buttonhole and the bartacks will be sewn over the cord. Remove the fabric from the machine, and cut the sewing threads only.

③ Pull the loose ends of the filler cord to tighten it. Cut the both ends of the filler cord.

NOTE:

Cut the filler cord at both ends, if the filler cord is stitched on the fabric and cannot be pulled.



Darning Stitch

- ① Stitch pattern: 17
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Automatic buttonhole foot R

• Starting to sew

- ① Pull the button holder ① to the back.
- ② Place the garment under the foot. Press the needle up/down button twice. Move the fabric to the left to draw both threads under the foot.
- ③ Lower the foot. Start the machine. The machine will sew locking stitch, 16 rows of darning, locking stitch again and stop automatically.
- ④ Turn the fabric and repeat sewing in different direction.
The machine will trim the threads at the end of sewing automatically if the thread cutter sign is indicated on the LCD display (see page 7).

- ① Button holder
- ② Starting point
- ③ 3/4" (2 cm)
- ④ 9/32" (0.7 cm)

NOTE:

The machine will cut the threads at the end of sewing automatically if the thread cutter icon is indicated on the LCD display (refer to page 20).

• Sewing a shorter darning

To sew a darning shorter than 3/4" (2 cm), first stop the machine after sewing the required length ⑥, then press the reverse button ⑤.

The required length ⑥ has been determined.

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

- ⑤ Reverse button
- ⑥ Required length
- ⑦ Starting point

• Sewing a same-sized darning

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

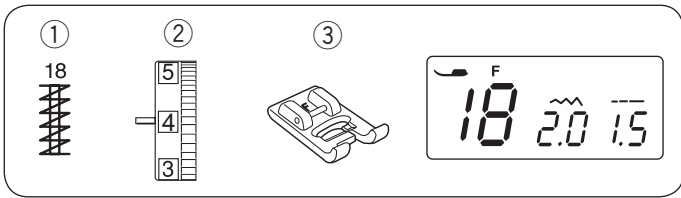
• Adjusting the evenness of the darning

Correct the evenness of the darning as follows:

Press the stitch length adjusting key to adjust the evenness ("d5" is the default setting value).

When the right side of the darn is lower than the left side, press "+" to set the value to "d6" to "d9", and make the darn even.

When the left side of the darn is lower than the right side, press "-" to set the value to "d1" to "d4", and make the darn even.



Tacking

- ① Stitch pattern: 18
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

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

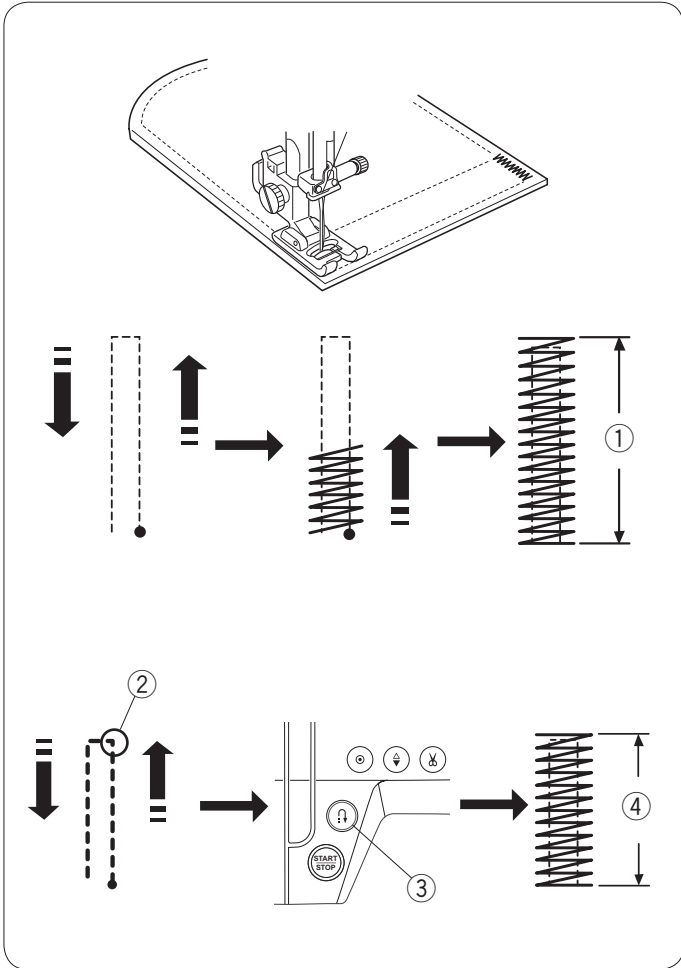
• Start sewing

Start the machine and sew until the machine stops automatically. The machine will sew a tacking 1.5 cm (5/8") long.

- ① 1.5 cm (5/8")

NOTE:

The machine will cut the threads at the end of sewing automatically if the thread cutter icon is indicated on the LCD display (refer to page 20).



• Sewing a shorter tack

To sew a tack shorter than 1.5 cm (5/8"), first stop the machine after sewing the required length, then press the reverse button.

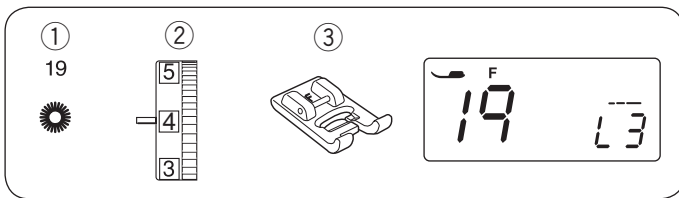
The tack length has been determined.

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

- ② Required length
- ③ Reverse button
- ④ Tack length

• Sewing a same-size tacking

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



Eyelet

- ① Stitch pattern: 19
- ② Thread tension dial: 1 to 4
- ③ Presser foot: Satin stitch foot F

The eyelet is used for belt holes etc.

• Starting to sew

Lower the needle at the starting point and lower the presser foot. Start the machine.

The machine will stop automatically when completed.

- ① Starting point

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

NOTE:

The machine will cut the threads at the end of sewing automatically if the thread cutter sign is indicated on the LCD display (refer to page 20).

• Adjusting the shape of an eyelet

Correct the shape of the eyelet as follows:

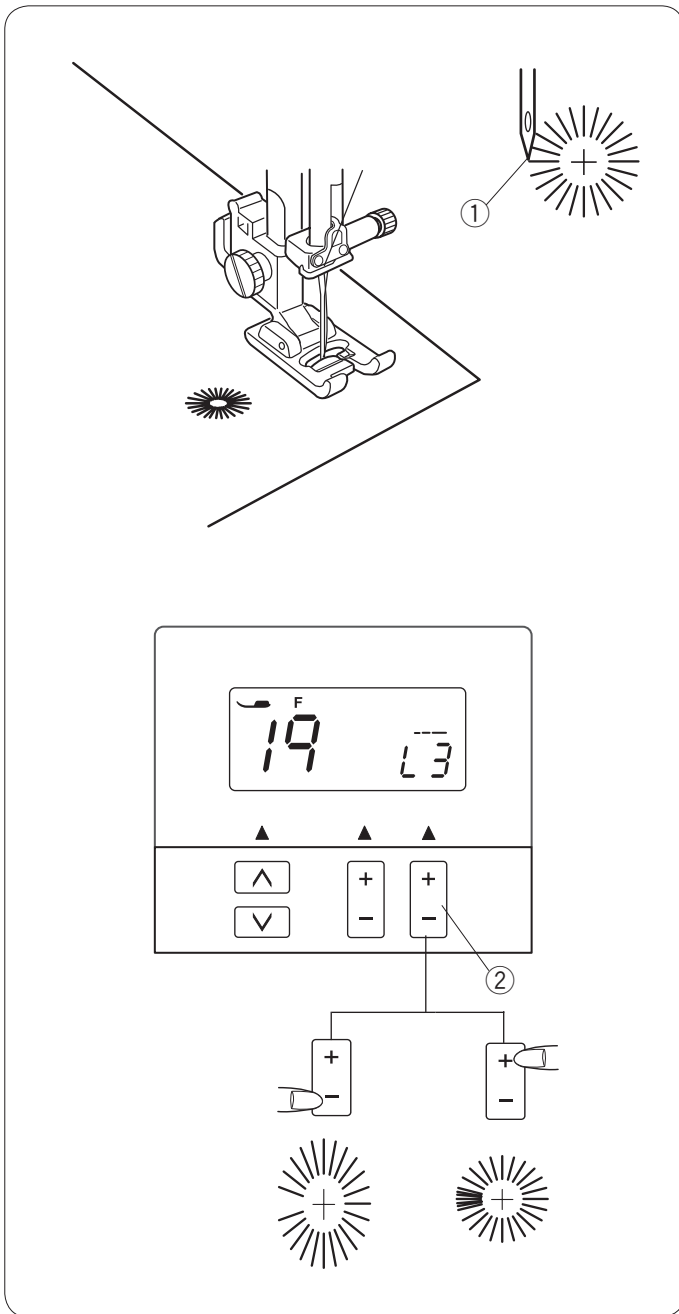
If the eyelet gap opens, press the “-” on the stitch length adjusting key to make the darn even. (L1~L2)

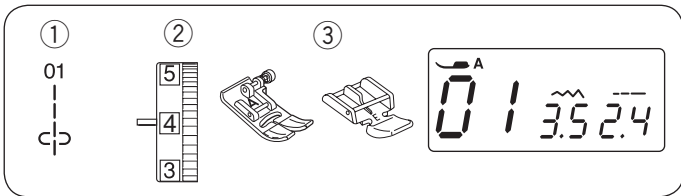
If the eyelet overlaps, press the “+” on the stitch length adjusting key to make the darn even. (L4~L5)

- ② Stitch length adjusting key

NOTE:

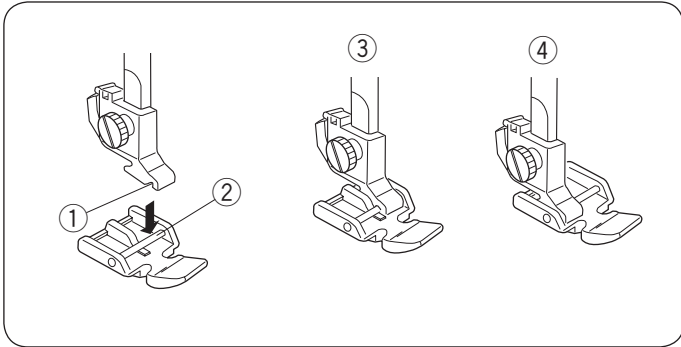
The shape can be adjusted within L1 to L5 (default setting is L3).





Zipper Sewing

- ① Stitch pattern: 01
- ② Thread tension dial: 1 to 4
- ③ Presser foot: Zigzag foot A
Zipper foot E



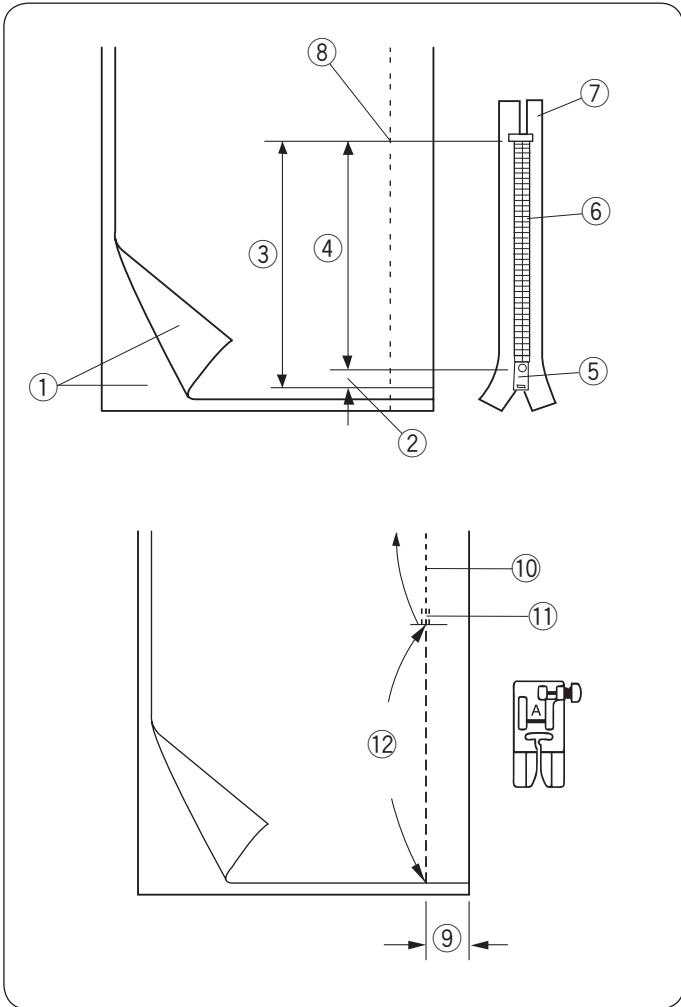
Attaching the zipper foot

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

- 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 End of the opening

Place the right sides of the fabric together.

Attach the zigzag foot and seam 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 5.0.

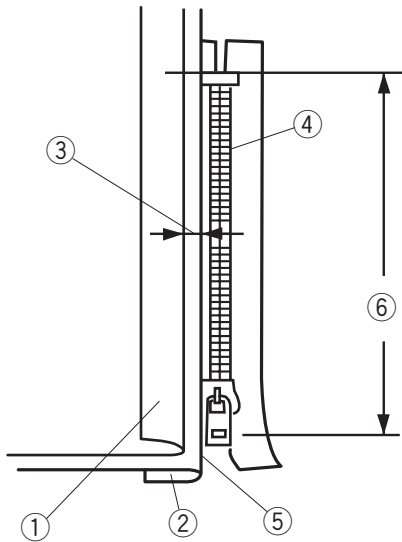
- ⑨ 2 cm (13/16")
- ⑩ Seam
- ⑪ Reverse stitches
- ⑫ Zipper opening (Basting)

NOTE:

Loosen the thread tension to "1" for basting.

Start sewing

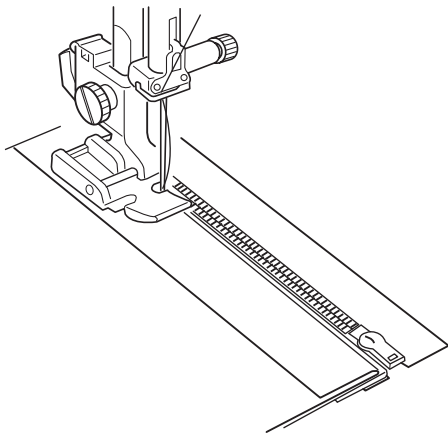
1



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 the zipper tape to the zipper opening.

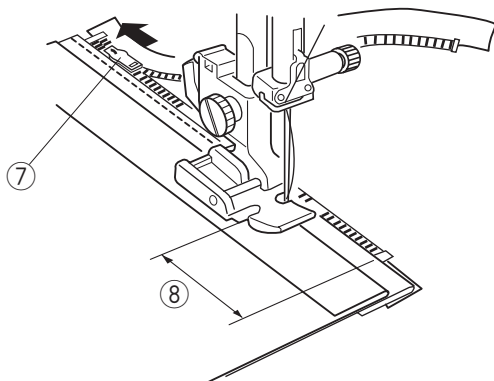
- ① Upper seam allowance
- ② Bottom seam allowance
- ③ 0.3 cm (1/8")
- ④ Zipper teeth
- ⑤ Fold
- ⑥ Zipper opening

2



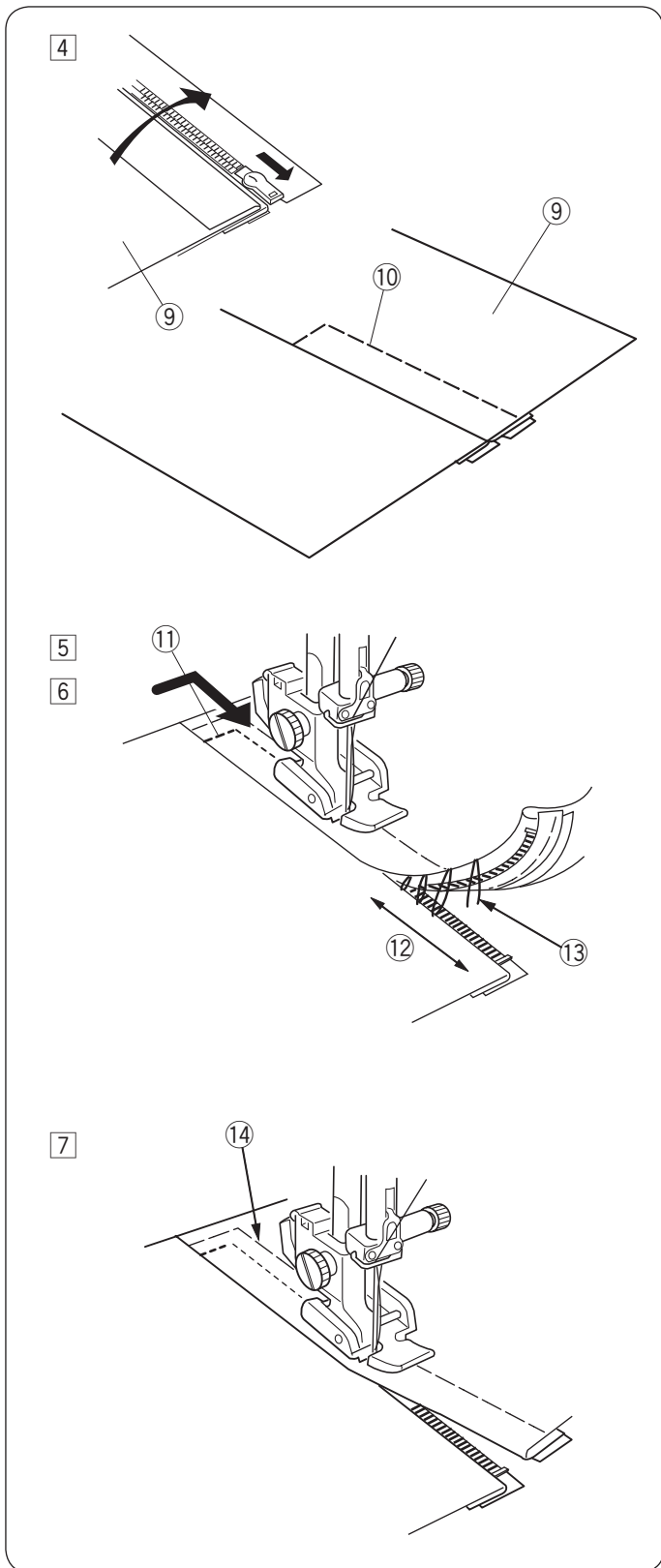
2 Attach the zipper foot with the pin on the right. Sew through all the layers from the end of the zipper opening, guiding the zipper teeth along the edge of the foot.

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.

- ⑦ Slider
- ⑧ 5 cm (2")



4 Close the zipper and open the upper fabric flat over the zipper.

Baste the upper fabric and zipper tape together.

- 9 Upper fabric
- 10 Basting stitch

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

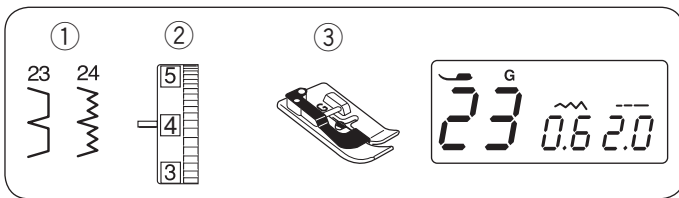
- 11 Backstitch

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 5 cm (2")
- 13 Basting stitches

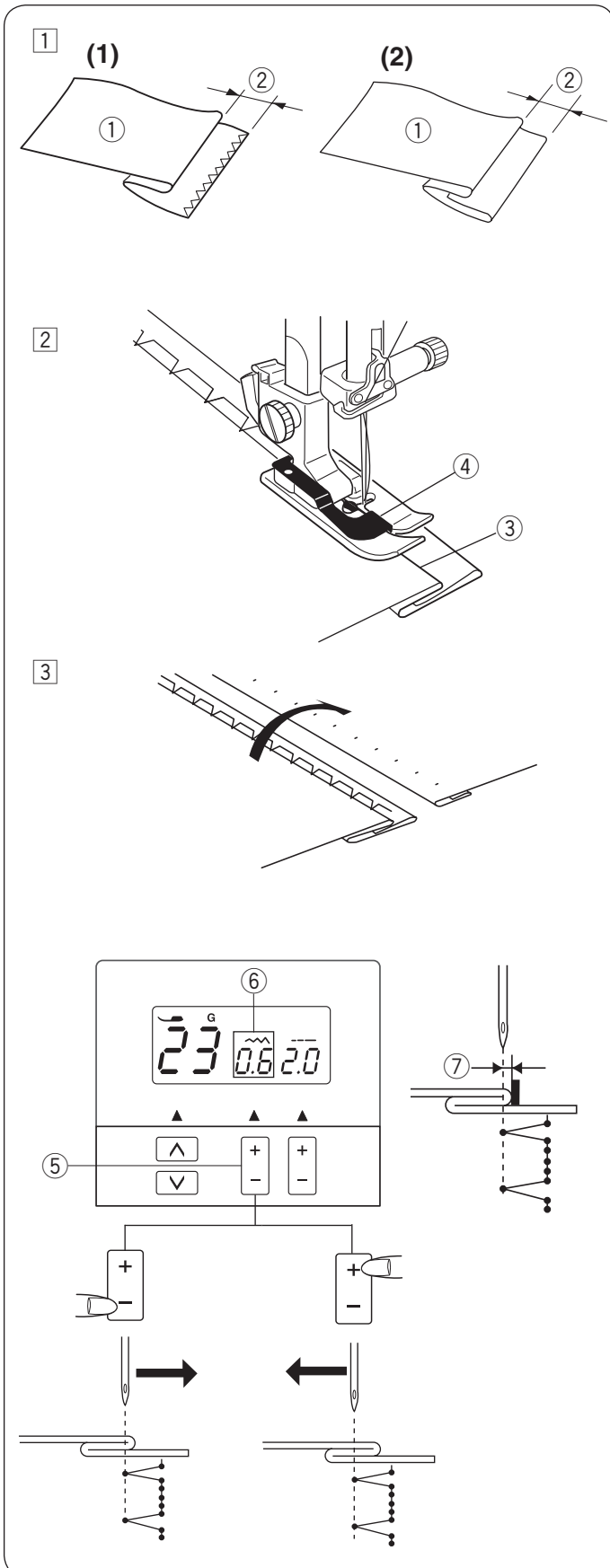
7 Open the zipper, then lower the foot and stitch the remainder of the seam. After sewing is finished, remove the basting stitches on the upper fabric.

- 14 Basting stitches on upper fabric



Blind Hemming

- ① Stitch pattern: 23 or 24
- ② Thread tension dial: 1 to 4
- ③ Presser foot: Blind Hem stitch foot G



- ① Fold a hem with the wrong side of the fabric up to form a 0.5 cm (1/4") allowance.
 - ① Wrong side of fabric
 - ② 0.5 cm (1/4")
- (1) On heavyweight fabrics that tend to ravel, the raw edge should be overcast first.
- (2) Fold the hem under the fabric for lightweight fabrics.

- ② Place the fabric so that the fold is next to the guide on the foot. Lower the presser foot. Adjust the needle drop position if necessary. Sew while guiding the fold along the guide.
 - ③ Fold
 - ④ Guide

- ③ Open the fabric after sewing is finished.

NOTE:

If the needle pierces too far left, the stitch will show through on the right side of the fabric.

Adjusting the needle drop position

Press the “-” sign on the stitch width adjusting key to move the needle to the right.

Press the “+” sign on the stitch width adjusting key to move the needle to the left.

- ⑤ Stitch width adjusting key

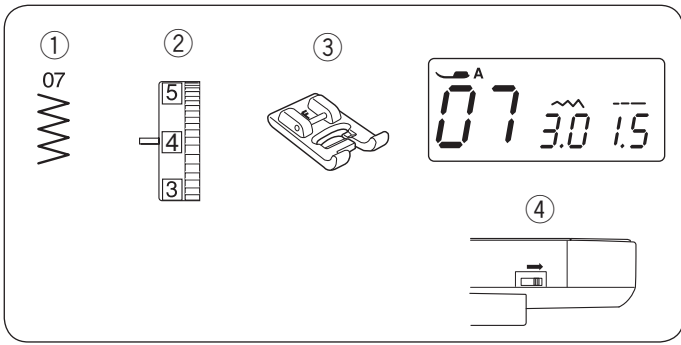
The LCD display shows the left needle drop position from the guide in millimeters.

The needle drop position can be varied from 0.0 to 1.2.

- ⑥ Left needle drop position from guide (in millimeters)
- ⑦ Left needle drop position from guide

NOTE:

The needle drop position can be moved, but the stitch width will remain the same.



Button Sewing

- ① Stitch pattern: 07
- ② Thread tension dial: 3 to 7
- ③ Presser foot: Satin stitch foot F
- ④ Feed dog: Lowered

Lower the feed dog.

Set the speed control slider at a slower speed.

Set the stitch length at the minimum (0.2).

- ① Stitch length (0.2)

Match the holes of button to the horizontal slot of the presser foot and lower the foot to hold the button in place.

Adjust the stitch width so the needle will enter the left hole of the button.

Turn the handwheel so that the needle will enter the right hole of the button. Readjust the stitch width if necessary.

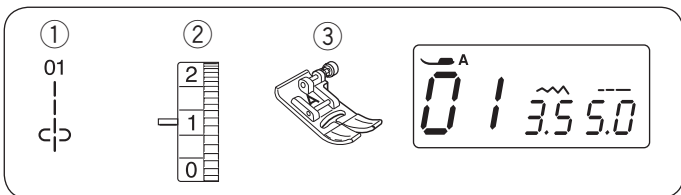
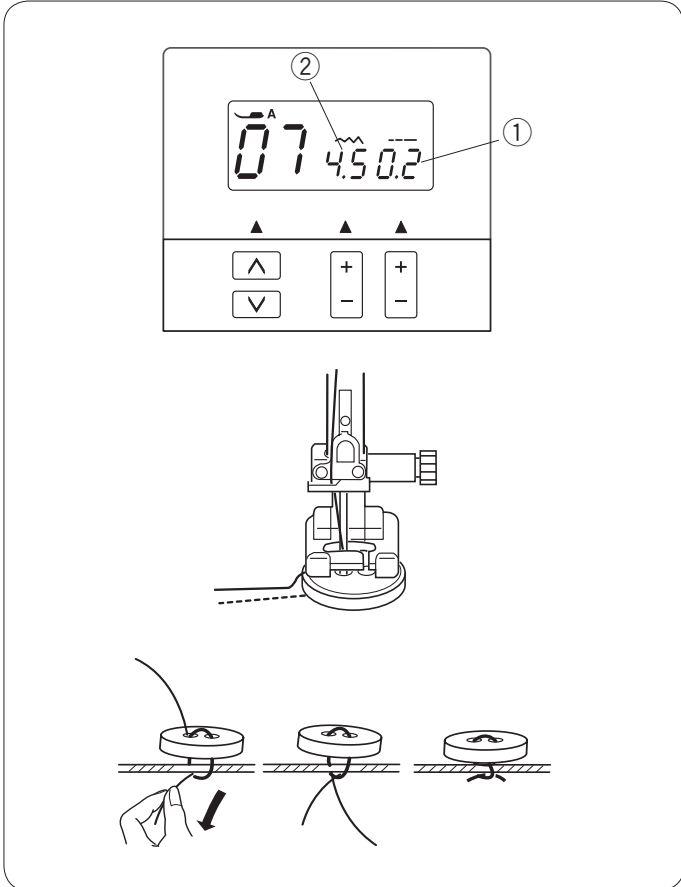
- ② Stitch width (adjust to span of holes)

Stitch several times.

After you finish sewing, cut the thread but leave 10 cm (4") of threads at the end.

With a hand sewing needle, draw the top thread to the reverse side of the fabric and knot the threads.

After the button sewing is completed, raise the feed dogs for normal sewing.



Gathering

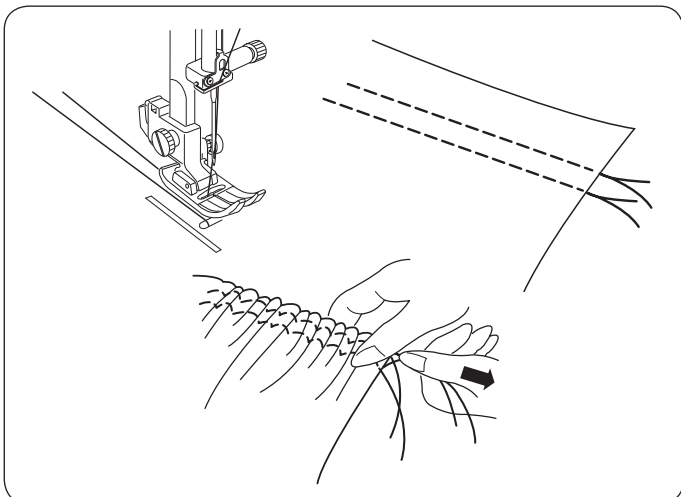
- ① Stitch pattern: 01
- ② Thread tension dial: 1
- ③ Presser foot: Zigzag foot A

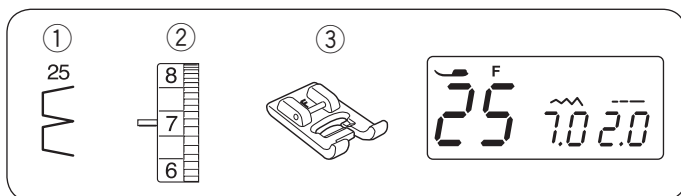
Loosen the thread tension to "1" and increase the stitch length to 5.0.

Sew two rows of straight stitches 0.6 cm (1/4") apart. Knot the threads at the beginning.

Pull the bobbin threads at the end to gather the fabric.

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





DECORATIVE STITCHING

Shelltuck

- ① Stitch pattern: 25
- ② Thread tension dial: 6 to 8
- ③ Presser foot: Satin stitch foot F

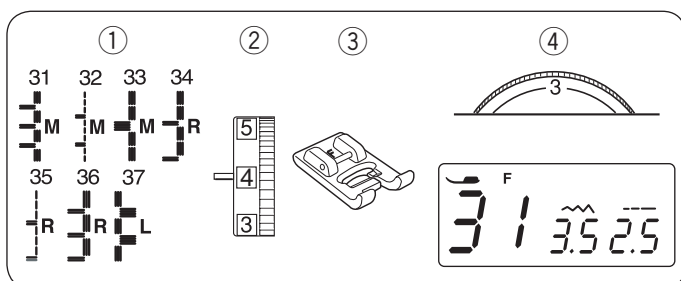
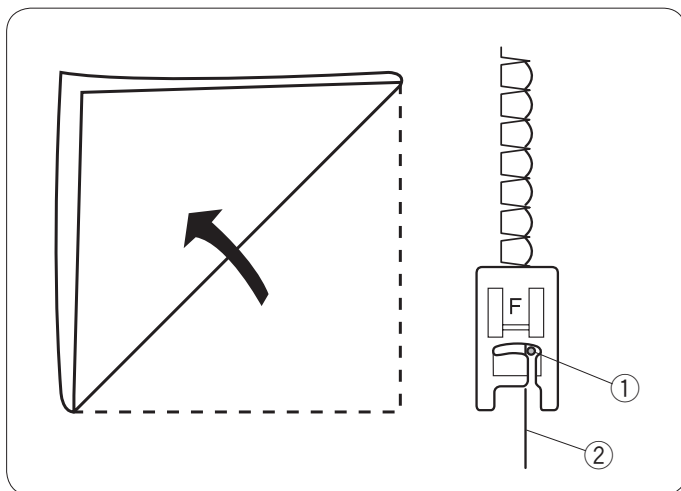
Use a lightweight fabric (tricot, for example).
Fold the fabric in bias as shown and stitch on the fold.

Allow the needle to barely clear the folded edge to create a shelled edge.

- ① Needle
- ② Fold

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

You can also sew shell tuck on knits or soft silky woven fabrics, in any direction.



Applique

- ① Stitch pattern: 31–37
- ② Thread tension dial: 1 to 4
- ③ Presser foot: Satin stitch foot F
- ④ Presser foot pressure dial: 3

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

Reduce the foot pressure to 3 (refer to page 8).

Lower the needle at the outer edge of the applique.

Sew while guiding the fabric so the needle falls along the outer edge of the applique.

- ① Applique
- ② Outer edge

When turning a sharp corner, stop the machine with the needle at the outer edge of the applique.

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

• Adjusting the stitch width

Select pattern 31.

Press the stitch width adjusting key to change the stitch width.

Press “-” to decrease the stitch width ④.

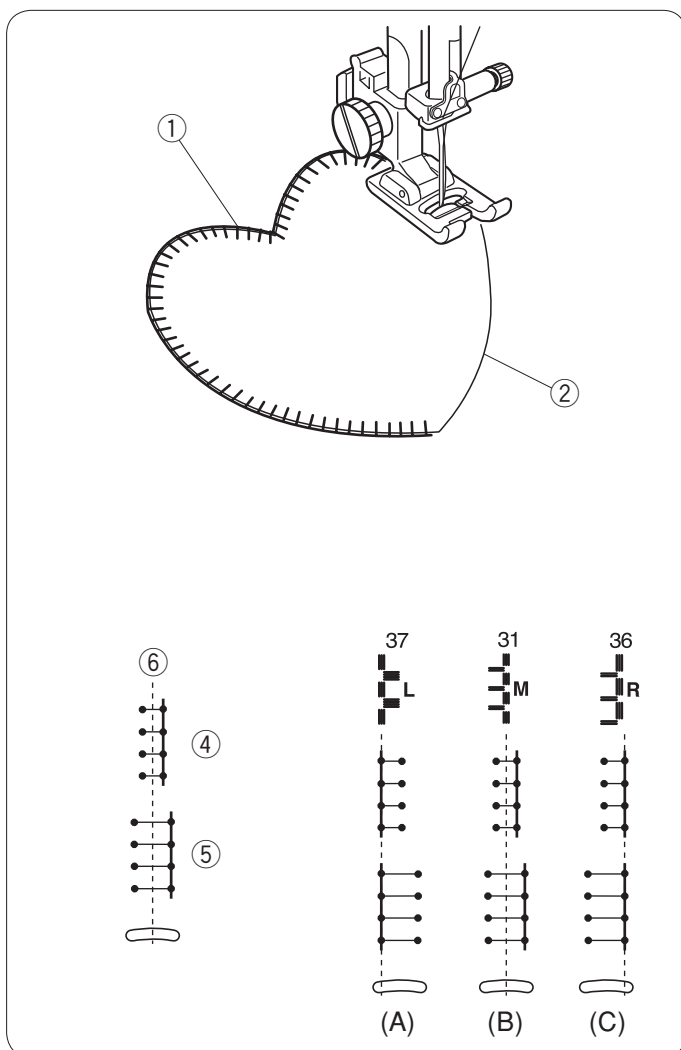
Press “+” to increase the stitch width ⑤.

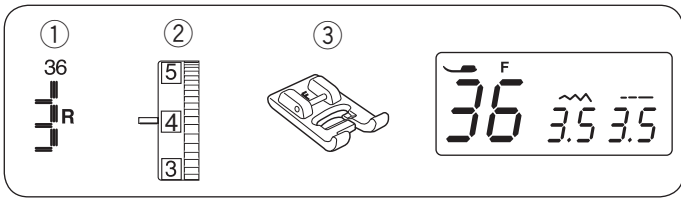
The stitch width will be varied based on the centered needle drop position ⑥.

(A) The stitch pattern 37 has a fixed left needle drop position. When you change the stitch width, the right needle drop position will change.

(B) The stitch patterns 31, 32 and 33 have a fixed center needle drop position. The stitch width changes symmetrically.

(C) The stitch patterns 34, 35 and 36 have a fixed right needle drop position. When you change the stitch width, the left needle drop position will change.





Fringing

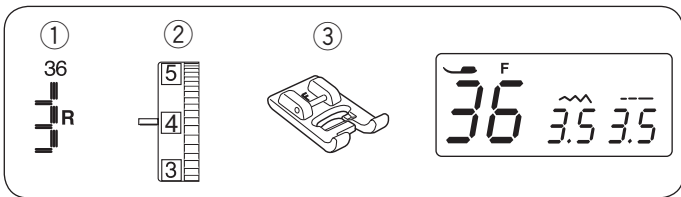
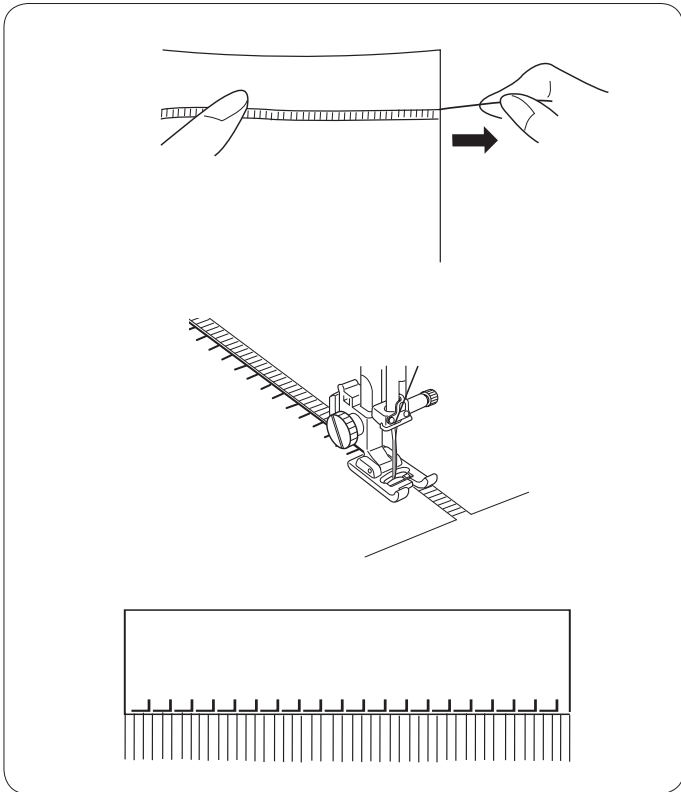
- ① Stitch Pattern: 36
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

Fringing adds a special touch on table linens and shawls. Choose a firm, woven fabric like linen where threads can be removed easily.

Carefully cut the fabric on the grain. Remove a single strand of yarn or thread where the fringing is to begin.

Sew down the left side so the right hand stitches fall in the open space.

Remove all excess yarn located to the right of the stitching and create a fringe.



Drawn Work

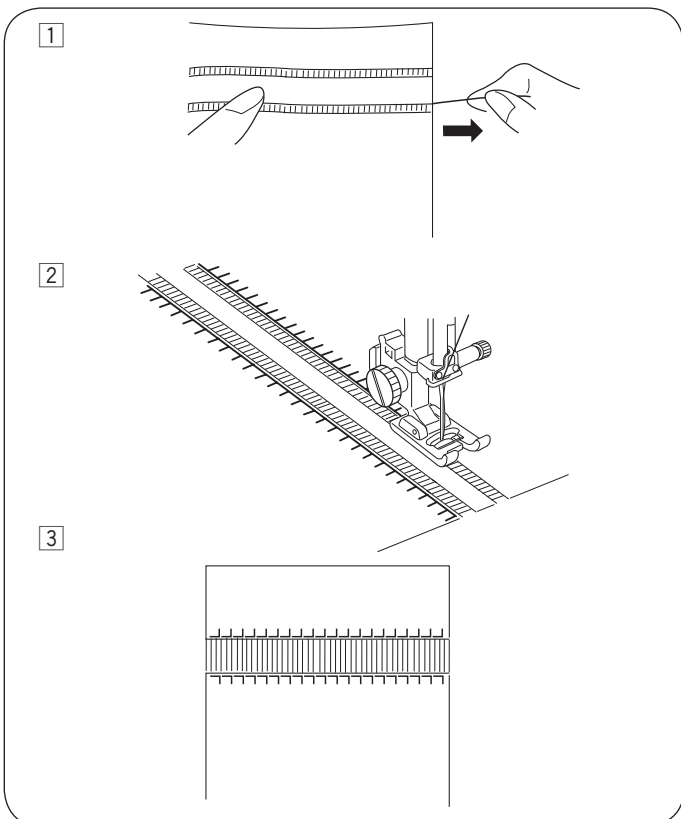
- ① Stitch pattern: 36
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

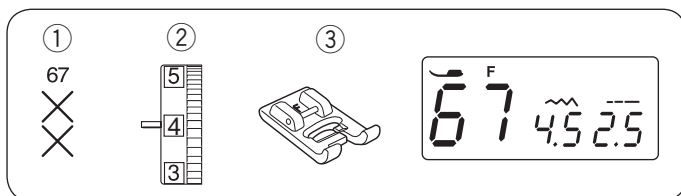
Drawn work uses the same method as fringing. Choose a firm, woven fabric like linen where threads can be removed easily.

① Carefully cut the fabric on the grain. Determine the width of the drawn work and remove one strand of yarn or fabric thread at each end.

② Sew down the left side, guiding the fabric so the right hand stitches fall in open space. After finishing the left side, turn the fabric around 180°. Sew down the other side.

③ Remove the yarn or fabric threads between the stitching.





Cross Stitch

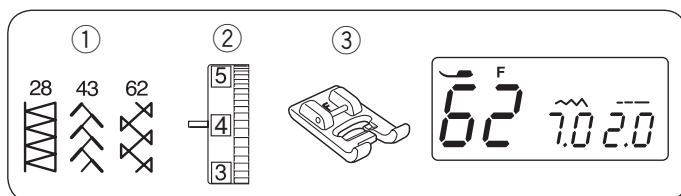
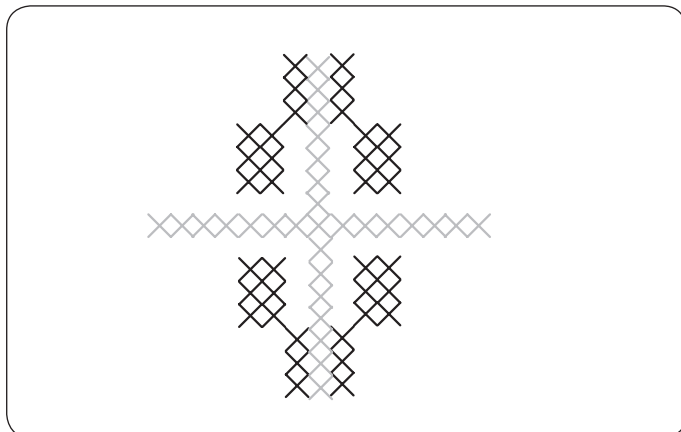
- ① Stitch Pattern: 67
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

You can make cross stitch designs with these patterns, in half the time it would take if embroidered by hand.

Use a plain close woven fabric such as linen or wool flannel. If you use light weight fabric, apply a tear away backing for support.

Sew from the center of the design outward.

If you press the auto-lock key before sewing, the machine will sew one unit of the cross stitch and stop automatically.



Fagoting

- ① Stitch pattern: 28, 43 or 62
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

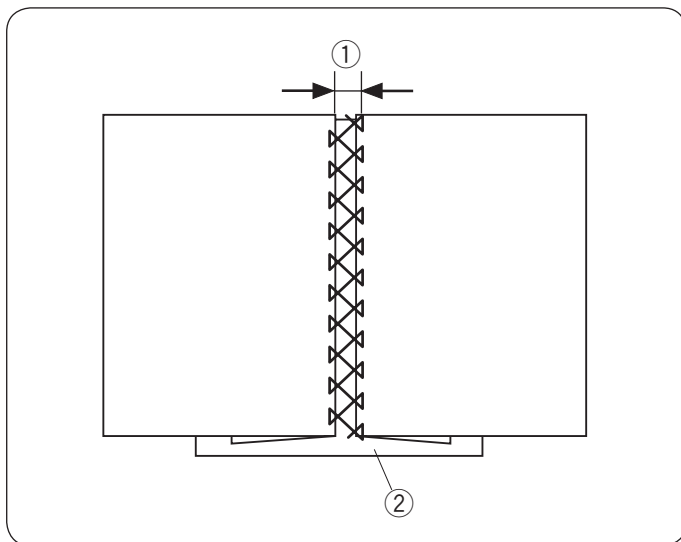
Use these stitches to join two pieces of fabric to create an open work appearance and add design interest.

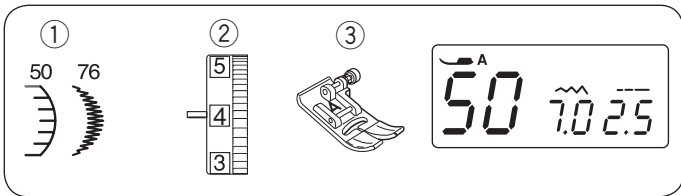
Fold under each fabric edge 1.5 cm (5/8") and press. Pin the two edges to paper or tear backing 0.3–0.4 cm (1/8") apart.

Sew slowly, guiding the fabric so the needle catches the folded edge on each side.

After sewing is finished, tear away the paper.

- ① 0.3–0.4 cm (1/8")
- ② Paper



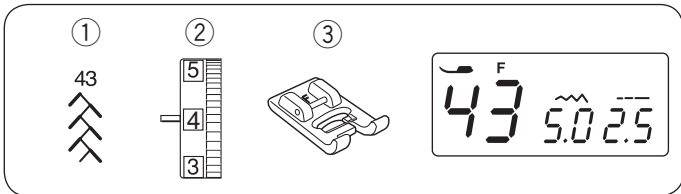
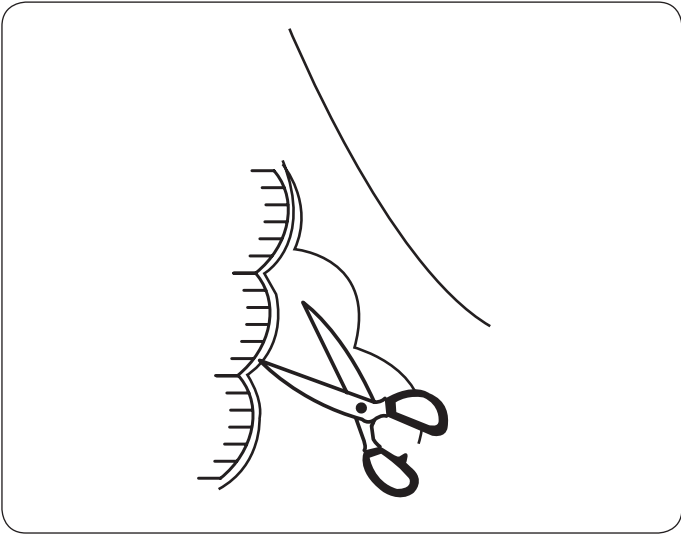


Scallop Stitch

- ① Stitch pattern: 50 or 76
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Zigzag foot A

Sew the stitches approximately 1 cm (3/8") inside the fabric edge.

Trim the outside of the stitches as shown. Make sure not to cut the thread.



Smocking

- ① Stitch pattern: 43
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

* The stitch patterns 51, 52, 54, 56 and 62 can also be used.

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

Use a soft and lightweight fabric such as batiste, gingham or challis.

Cut the fabric three times wider than the projected width.

Select straight stitch, set stitch length at "5.0" and loosen the thread tension.

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 to distribute the gathers evenly.

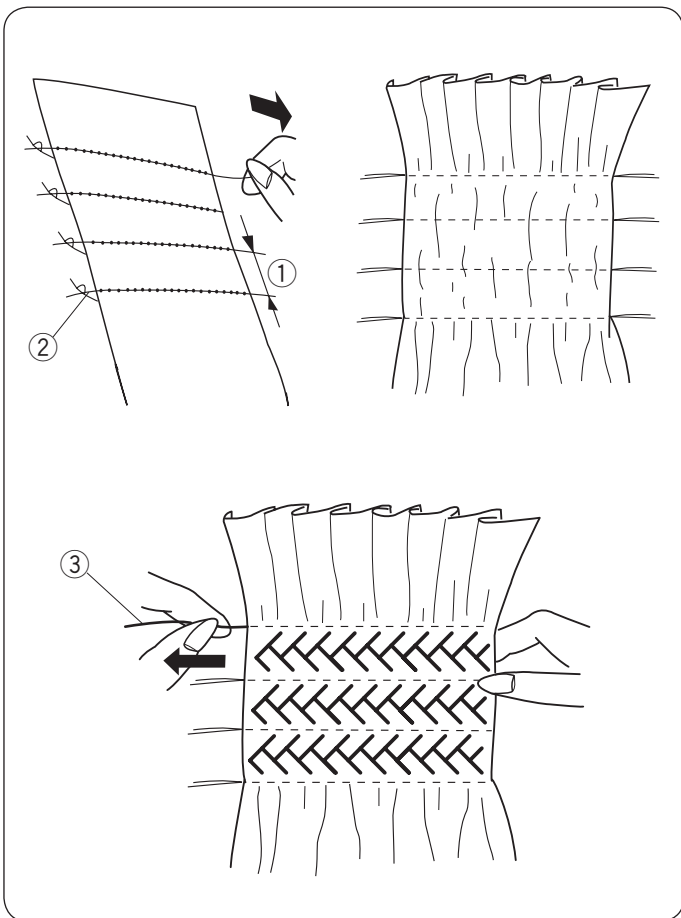
- ① 1 cm (3/8")
- ② Knotted thread

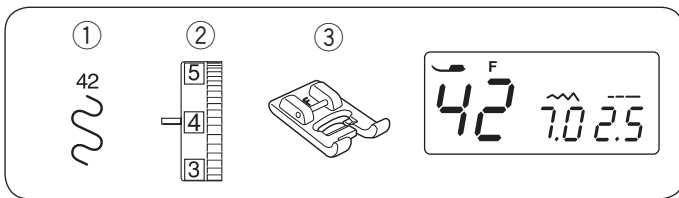
Set the thread tension to 3–6 and select a smocking stitch pattern.

Sew the smocking stitch pattern between the rows of straight stitches.

Remove the straight stitches by pulling them out.

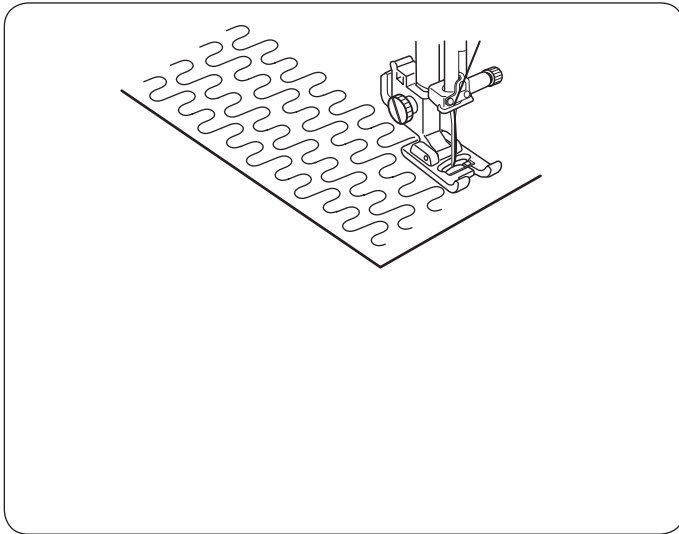
- ③ Straight stitch



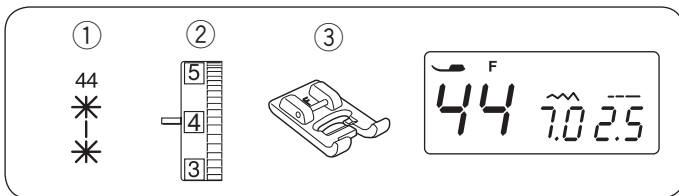


Stippling

- ① Stitch pattern: 42
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F

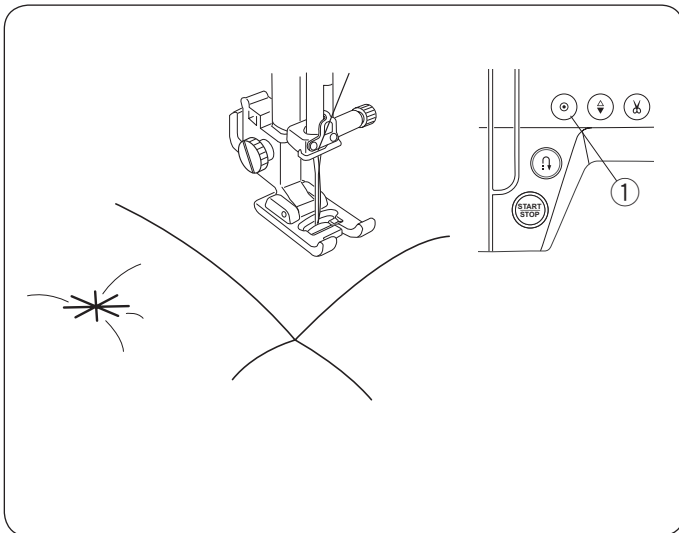


A pre-programmed stippling stitch is a fast and easy method to quilt small areas. Place a quilt layer and sew.



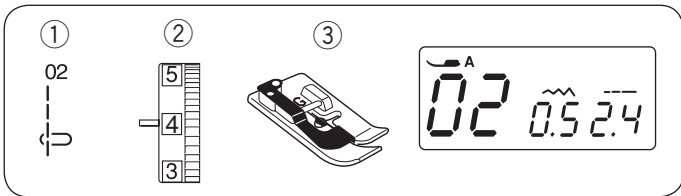
Clasp Stitches

- ① Stitch pattern: 44
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F



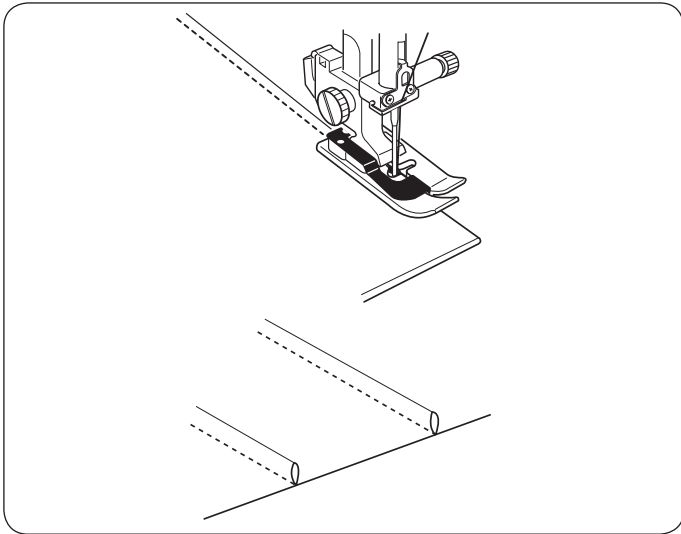
You can close quilt layers and using the clasp stitch. Select stitch pattern 44. Press the auto-lock button. Start sewing. The machine sews clasp stitch and locking stitch then stops automatically.

- ① Auto-lock button



Pintucking

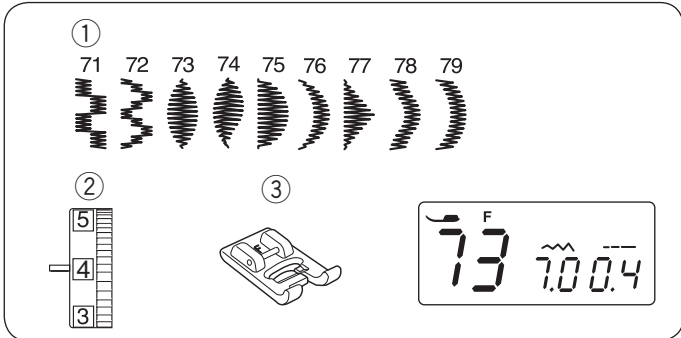
- ① Stitch pattern: 02
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Blind hem stitch foot G



Fold a fabric with right side together.
Place the folded fabric under the foot.
Align the folded edge with the guide on the foot and lower the foot.

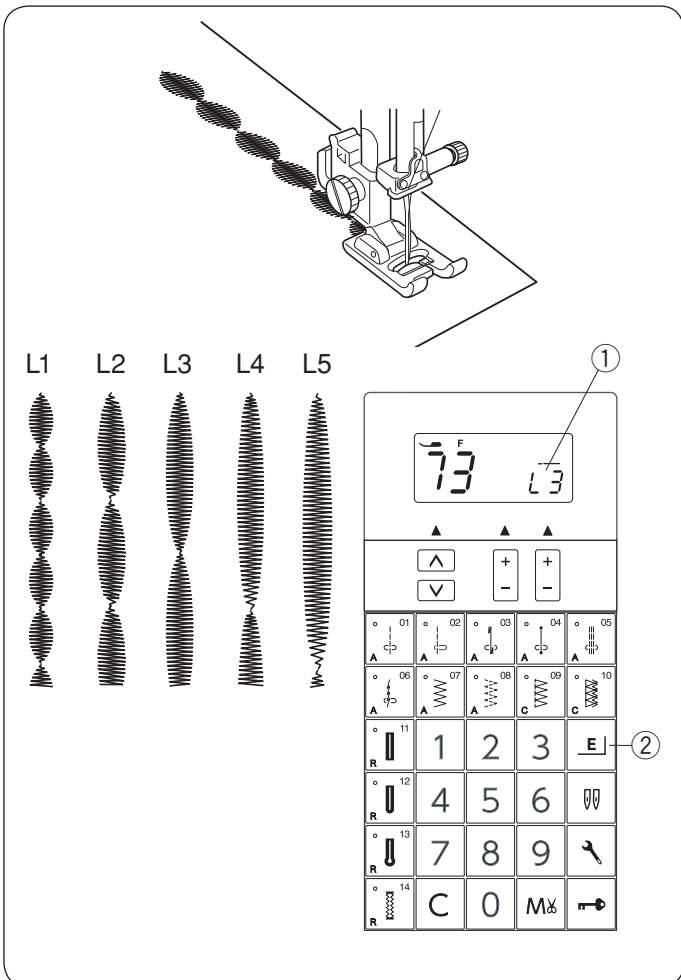
Sew while guiding the folded edge along the guide.

Open the fabric and press the tucks to one side.



Satin Stitches

- ① Stitch pattern: 71–79
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Satin stitch foot F



Satin stitches are used as decorative stitches on table linen etc.

Test sew if you reduce the stitch length to ensure smooth feed of the fabric.

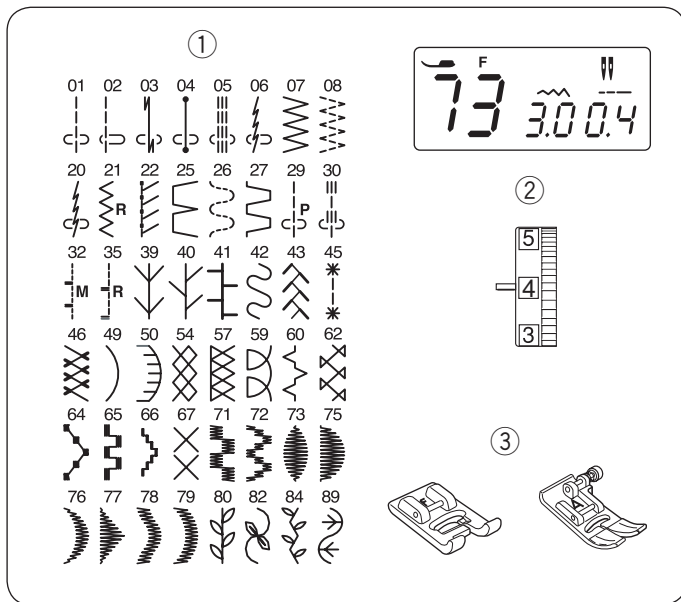
These stitches can be elongated up to 5 times their original length while the stitch density remains the same.

Press the elongation key to select the desired elongation ratio.

Elongation ratio is indicated in multiples of the original pattern length; L1 (original length) to L5.

- ① Elongation ratio
- ② Elongation key

The stitch length and width can also be changed.



Twin Needle Sewing



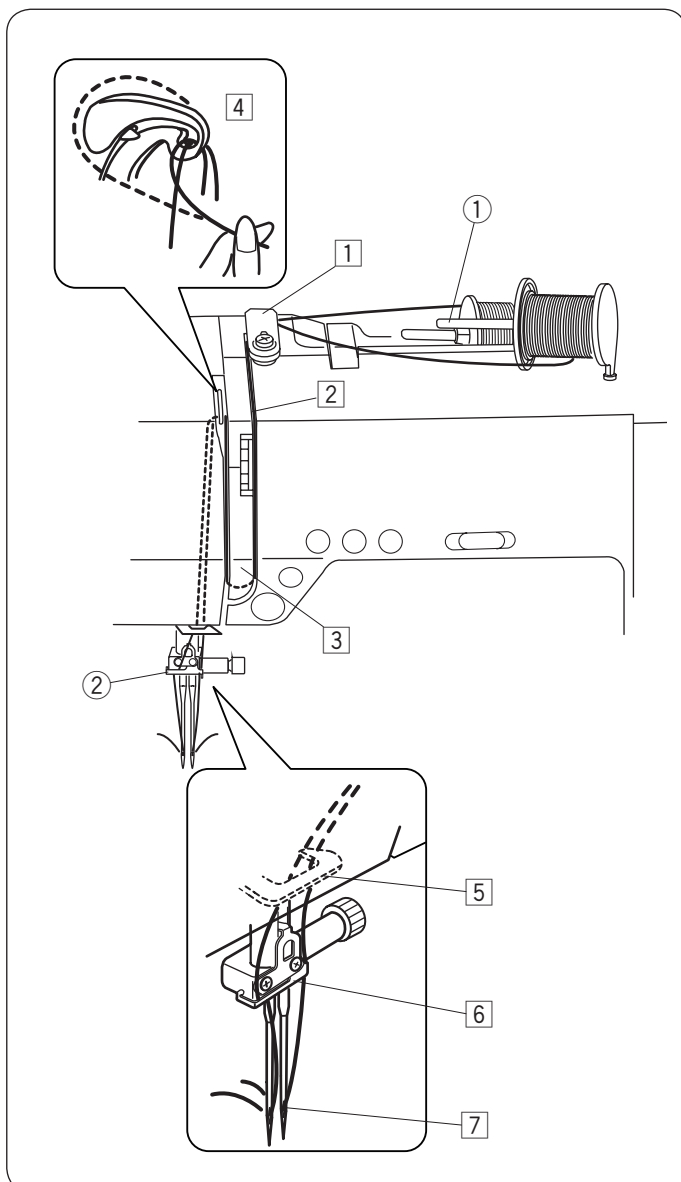
CAUTION:

Turn off or lock out the machine before changing the needle or threading the machine.
 Make sure to press the twin needle key before sewing with twin needle.
 Do not use twin needles other than one included in the standard accessories, otherwise the needle may hit the needle plate, foot or hook and break.

- ① Stitch pattern: See left
- ② Thread tension dial: 3 to 6
- ③ Presser foot: Zigzag foot A or Satin stitch foot F

NOTE:

- Use #60 or finer threads.
- Test the stitches before you begin to sew.
- Twin needle sewing is available only for the specific patterns. For pattern identification, these patterns are shaded in light grey on the stitch chart.



Threading the machine for twin needle

Raise the needle to the highest position and raise the presser foot.

Attach the extra spool pin and place a spool of thread on the extra spool pin (refer to page 13).

- ① Extra spool pin

Draw both threads from the spools and pass them through the points from ① to ⑦.
 Make sure that the two strands of thread do not get tangled.

Pass one of the threads through the needle bar thread guide on the left, and the other on the right.

- ② Needle bar thread guide

Thread the needles from the front to back by hand.

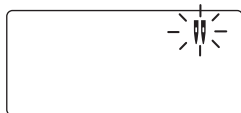
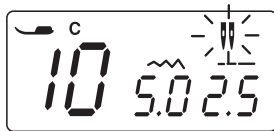
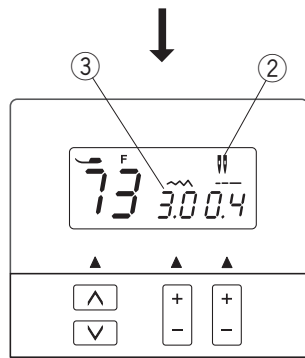
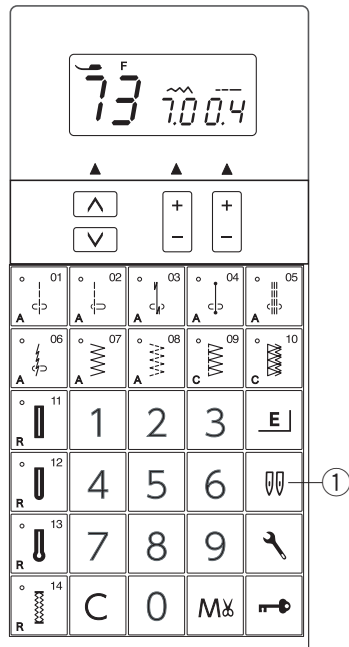
NOTE:

Threading of points ① to ⑤ is the same as for single needle.
 The needle threader cannot be used for the twin needle.

Selecting the patterns

Select the desired pattern suitable for twin needle sewing.
Press the twin needle key.

- ① Twin needle key



The LCD display shows a twin needle icon and the maximum permissible stitch width is restricted to 3.0 mm. The needle drop position of straight stitches is restricted to between 2.0 and 5.0.

- ② Twin needle icon
- ③ Maximum width (3.0)

NOTE:

- If you press the twin needle key, a warning signal sounds and the twin needle icon blinks when a pattern not suitable for twin needle sewing is selected.
- When the twin needle icon appears on the screen, the patterns not suitable for twin needle sewing cannot be selected.
- If you press the twin needle key again, the LCD display shows only the blinking twin needle icon and all the keys and buttons except for the twin needle key will be deactivated. Press the twin needle key again to change the setting to single needle sewing.

Sewing

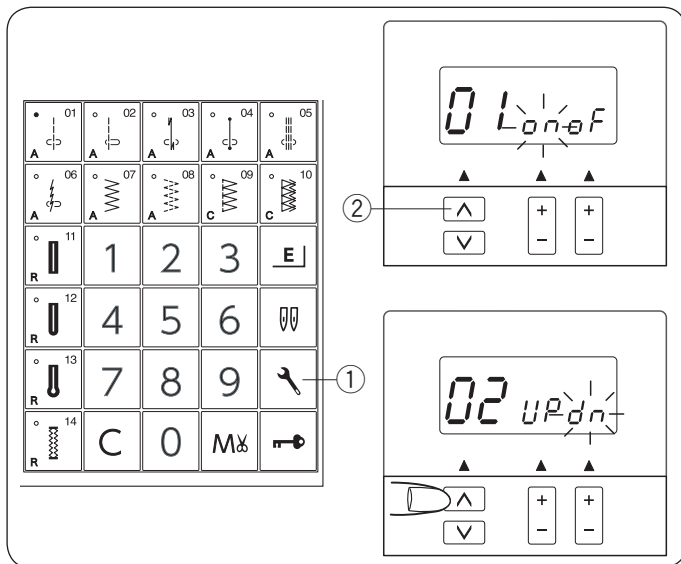
Sew at a medium speed.

When changing the sewing direction, raise the needle from the fabric.

NOTE:

Use the thread cutter on the face cover when sewing with the twin needle.

After twin needle sewing is finished, turn off the machine and replace the needle.



MACHINE SETTINGS

Machine Setting Mode

In the setting mode buzzer sound and needle stop position can be set to your preference.

Entering the setting mode

Press the setting mode key.

The LCD display shows the buzzer sound setting mode (01onof).

Press the upper arrow key to go to the needle stop position setting mode (02UPdn).

- ① Setting mode key
- ② Upper arrow key ()

Buzzer sound setting

The buzzer sound can be turned on or off using the buzzer sound setting. The default setting is ON and “on” sign is blinking.

Press the “+” of the stitch length adjusting key to turn off the buzzer sound.

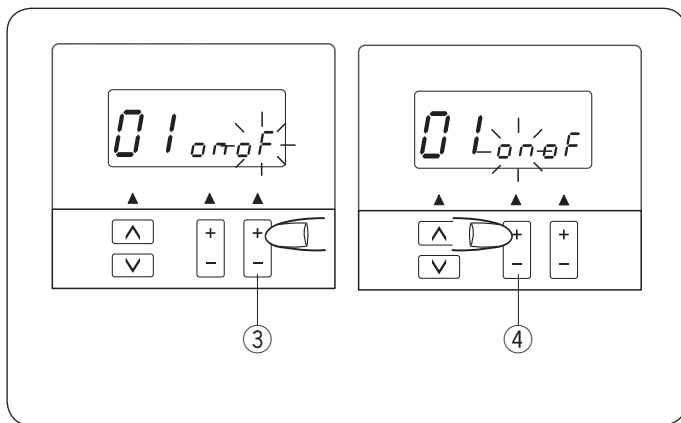
Press the “+” of the stitch width adjusting key to turn on the buzzer sound.

- ③ Stitch length adjusting key
- ④ Stitch width adjusting key

Press the setting mode key to return to the normal sewing mode.

NOTE:

Caution buzzer sound cannot be turned off.



Needle stop position setting

You can set the needle stop position to up or down when the machine stops.

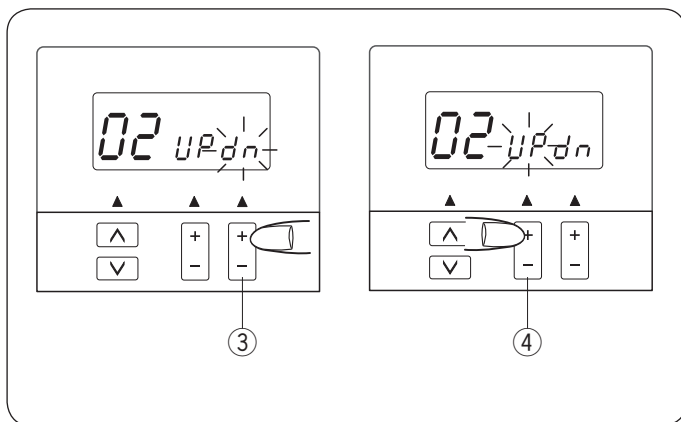
The default setting is DOWN and “dn” sign is blinking.

Press the “+” of the stitch length adjusting key to select the needle stop position down.

Press the “+” of the stitch width adjusting key to select the needle stop position up.

- ③ Stitch length adjusting key
- ④ Stitch width adjusting key

Press the setting mode key to return to the normal sewing mode.



Correcting Deformed Stitch Patterns

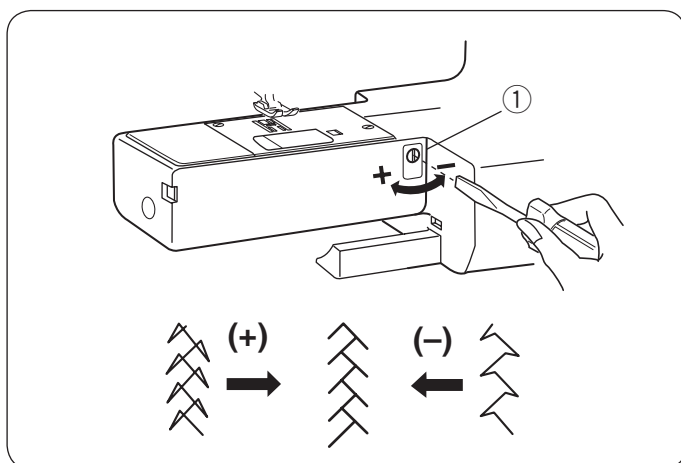
The sewing results of stretch stitch patterns may vary depending on sewing conditions, such as sewing speed, fabric type, number of layers etc.

If stretch stitch patterns are deformed, correct them by turning the feed balancing dial with the screwdriver.

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

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

- ① Feed balancing dial



CARE OF YOUR MACHINE

Cleaning the Hook Race and Feed Dog

! WARNING:

Turn the power switch off and unplug the machine before cleaning.
Do not dismantle the machine other than as explained in this section.

! CAUTION:

Do not store the machine in a high-humidity area, near a heat radiator, or in direct sunlight.

NOTE:

Clean the outside of the machine with a soft cloth and neutral soap.

Press the needle up/down button to raise the needle, then unplug the sewing machine.
Remove the needle and presser foot.
Remove the hook cover plate by sliding the hook cover plate release button to the right. Take out the bobbin. Brush out dust and lint. (You may also use a vacuum cleaner.)

1 Remove the setscrews on the left hand side of the needle plate with the screwdriver supplied with the machine. Remove the needle plate.

- 1 Setscrew
- 2 Needle plate

2 Lift up the bobbin holder and remove it.

- 3 Bobbin holder

3 Clean the bobbin holder with a lint brush.

- 4 Lint brush

4 Clean the feed dog, thread cutter mechanism and hook race with the lint brush.

- 5 Feed dog
- 6 Thread cutter mechanism
- 7 Hook race

5 Clean the inside of the hook race with a dry cloth. You may also use a vacuum cleaner.

Installing the Bobbin Holder

Insert the bobbin holder so that the knob fits next to the stopper in the hook race.

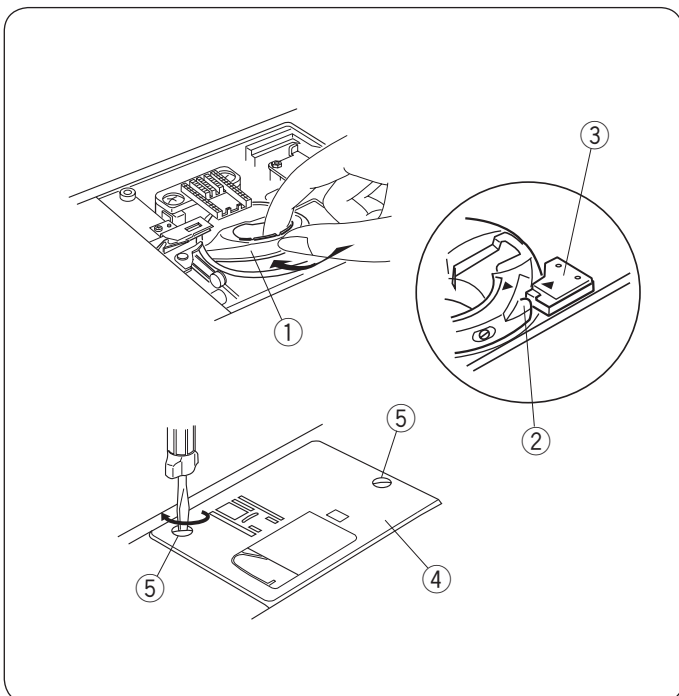
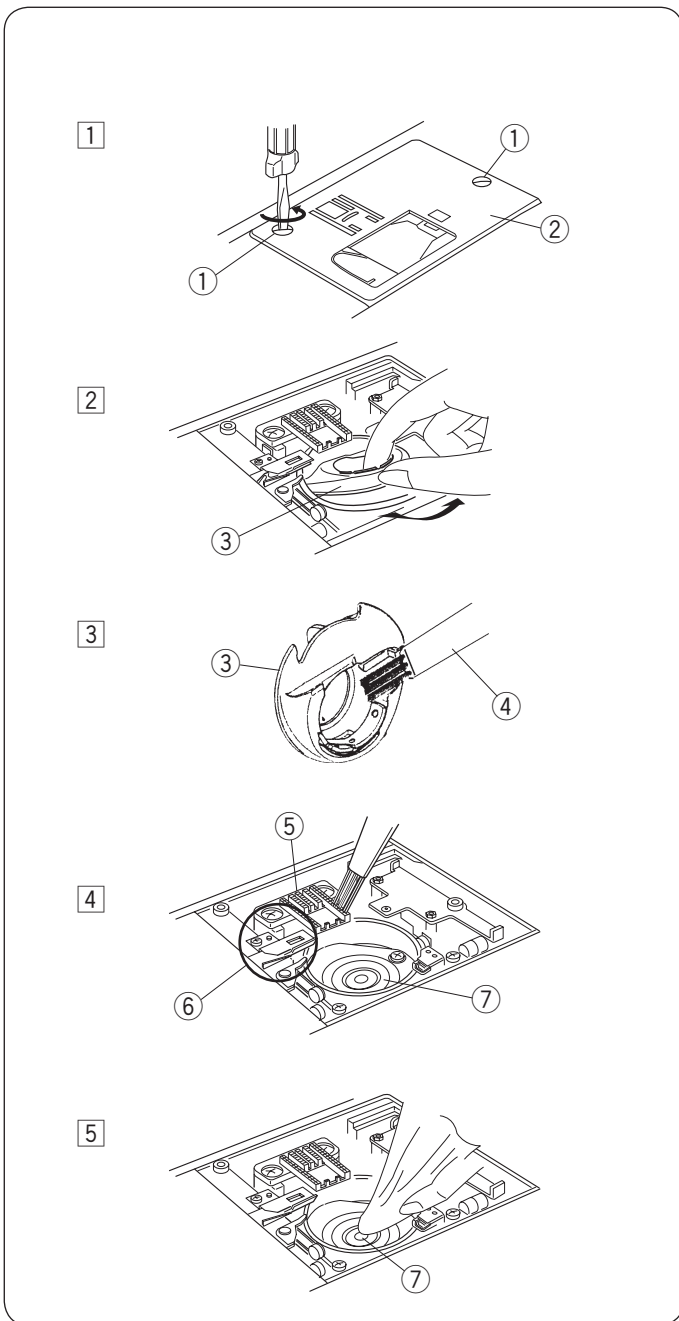
- 1 Bobbin holder
- 2 Knob
- 3 Stopper

Insert the bobbin.

Attach the needle plate with the setscrews.


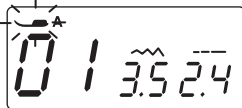
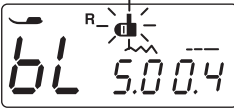




After cleaning the machine, make sure the needle and presser foot are attached.

- 4 Needle plate
- 5 Setscrew



Problems and Warning Signs

Audible signal	The buzzer sounds when:
Pip	Normal operation
Pip-pip-pip	Invalid operation
Pip-pip-peep	Buttonhole sewing completed
Peep	Malfunction

Warning sign	Cause	Try this
	The machine will not sew with the start/stop button because the foot control is connected.	Disconnect the foot control and start the machine.
	The machine will not sew because the presser foot is not lowered.	Lower the presser foot lifter and start the machine.
	A buttonhole is sewn without lowering the buttonhole lever.	Lower the buttonhole lever and restart the machine.
	The bobbin winder spindle is moved to the right.	Move the bobbin winder spindle to the left.
	The machine is restarted too soon after it has halted due to the overload.	Wait for at least 15 seconds to restart. If threads are jamming, remove the jammed threads.
	Auto thread cutting error due to a problem in the electronic components or tangled threads in hook area.	Remove the jammed threads in the hook area. If the error occurs again after cleaning the hook area, contact the service center or the store from where the machine was purchased.
	The twin needle key is pressed when the machine has been in the twin needle sewing mode.	Press the twin needle key to return to the twin needle sewing mode. Or turn off the machine and change to the single needle for normal sewing.

Clean the outside of the machine with a soft cloth. Do not use chemical solvent.

Store the machine in cool dry place.

Do not store the machine in area of high humidity, near a radiator or in direct sunshine.

It is not abnormal that a faint humming sound comes out from inside the machine.

LCD display and pattern selection keys may get warm when the machine has been used for hours.

Accumulated bobbin thread residues may cause auto thread cutting errors. Contact an authorized dealer or service center to remove thread residues from inside the free arm cover.

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 is not set under the presser foot when sewing is started. 6. The thread is either too heavy or too fine for the needle. 	<p>See page 16</p> <p>See page 9, 10</p> <p>See page 12</p> <p>See page 12</p> <p>See page 19</p> <p>See page 12</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. 4. The thread is wound loosely on the bobbin. 	<p>See page 15</p> <p>See page 54</p> <p>Replace the bobbin.</p> <p>See page 14</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 were not drawn to the rear after sewing. 4. The needle is too fine for the fabric being used. 5. The presser foot is not appropriate for the stitch pattern being sewn. 	<p>See page 12</p> <p>See page 12</p> <p>See page 20</p> <p>See page 12</p> <p>Change the presser foot.</p>
Skipped stitches	<ol style="list-style-type: none"> 1. The needle is incorrectly inserted, bent or blunt. 2. The needle and/or threads are not suitable for the work being sewn. 3. A Blue Tip needle is not being used for sewing stretch, very fine fabrics and synthetics. 4. The needle thread is not threaded properly. 5. A poor quality needle is used. 	<p>See page 12</p> <p>See page 12</p> <p>See page 12</p> <p>See page 16</p> <p>Replace 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 9, 10</p> <p>See page 16</p> <p>See page 12</p> <p>Make the stitches shorter.</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 54</p> <p>Make the stitches longer.</p> <p>See page 11</p>
Stitches form loops below the works.	<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 9, 10</p> <p>See page 12</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 3</p> <p>See page 54</p> <p>See page 14</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. Suitable interface material has not been used for the stretch or synthetic fabric. 3. Buttonhole lever is not pulled down. 	<p>See page 32</p> <p>Use an interfacing.</p> <p>See page 29</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 54</p> <p>See page 54</p>
Auto thread cutting fails.	<ol style="list-style-type: none"> 1. Thread being used is too thick. 2. Threads are tangled in auto thread cutter mechanism. 	<p>See page 20</p> <p>See page 54</p>

Stitch Chart

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
A	A	A	A	A	A	A	A	C	C	R	R	R	R	R
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
R	R	F	F	A	A	A	G	G	F	F	F	F	A	F
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
F	A	F	A	A	F	F	F	F	F	F	F	F	F	A
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
91	92	93	94	95	96	97	98	99	00					
F	F	F	F	F	F	F	F	F	F					

* Stitch patterns shaded in light grey can be used for the twin needle sewing (refer to page 51).

