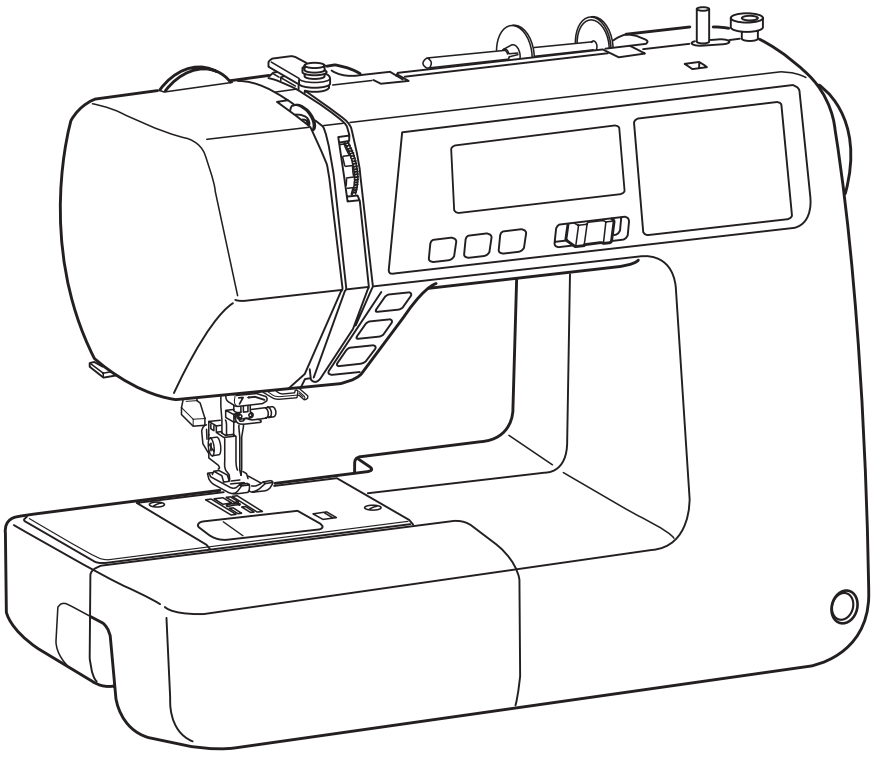
Instruction Book



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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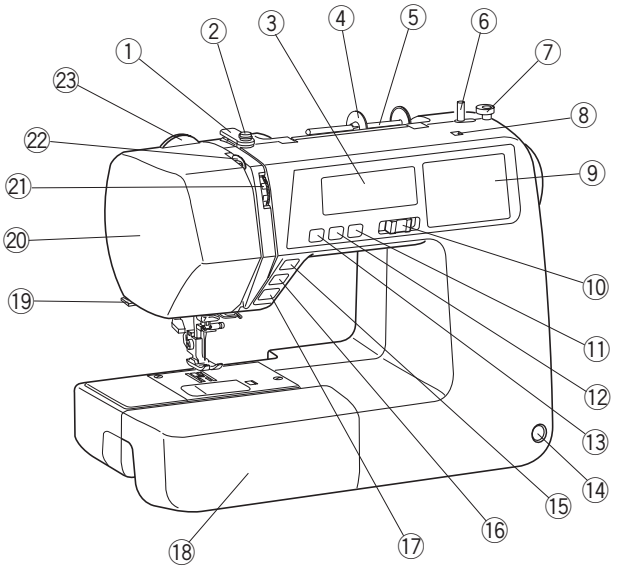
PROGRAMMING A PATTERN COMBINATION

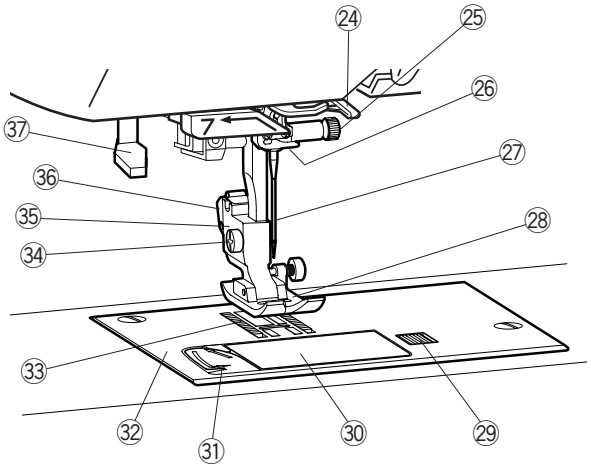
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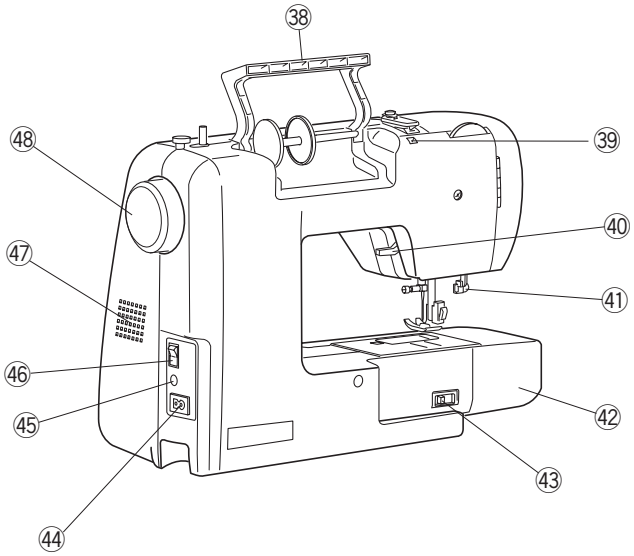
CARE OF YOUR MACHINE

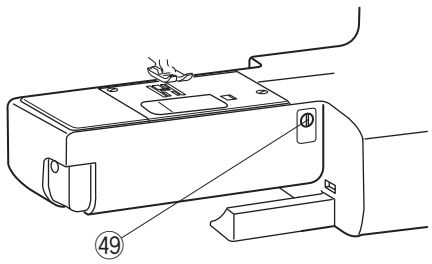
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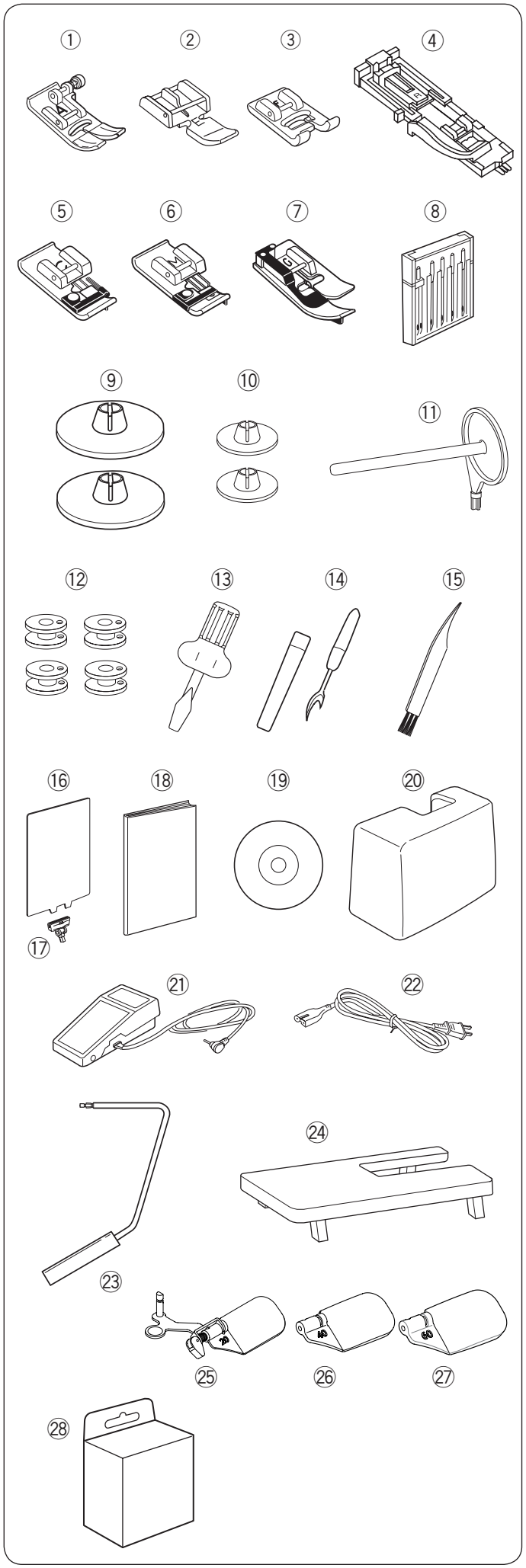
ESSENTIAL PARTS

Names of Parts

① Upper thread guide
② Bobbin winding tension disk
③ LCD display
④ Spool holder (large)
⑤ Spool pin
⑥ Bobbin winder spindle
⑦ Bobbin winder stopper
⑧ Hole for extra spool pin
⑨ Touch panel (function keys)
⑩ Speed control slider
⑪ Twin needle button
⑫ Automatic thread cutter button
⑬ Needle up/down button
⑭ Knee lifter socket
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 Thread take-up lever
㉓ Presser foot pressure dial
㉔ Lower thread guide
㉕ Needle clamp screw
㉖ Needle bar thread guide
㉗ Needle
㉘ Presser foot
㉙ Hook cover release button
㉚ Hook cover plate
㉛ Thread cutter
㉜ Needle plate
㉝ Feed dogs
㉞ Thumb screw
㉟ Foot holder
㊱ Lever
㊲ Needle threader knob
㊳ Carrying handle
㊴ Hole for stitch reference chart
㊵ Presser foot lifter
㊶ Buttonhole lever
㊷ Free-arm
㊸ Drop feed lever
㊹ Power inlet
㊺ Foot control jack
㊻ Power switch
㊼ Ventilation openings
㊽ Handwheel
㊾ Feed balancing dial

NOTE:
To carry the sewing machine, hold the carrying handle with your hand, and support the sewing machine with the other hand.

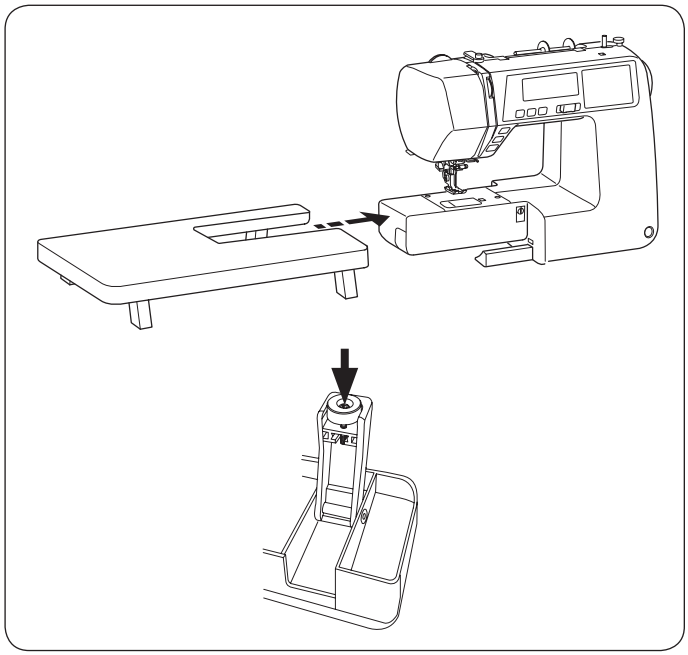
NOTE:
Design and specifications are subject to change without prior notice.



Standard Accessories

No.	Part Name		Part No.
1	Zigzag foot A (Set on the machine)		832523007
2	Zipper foot E		808852003
3	Satin stitch foot F		822804118
4	Automatic buttonhole foot R (stored in the accessory storage)		753801004
5	Overedge foot C		822801001
6	Overcast foot M		822808008
7	Blind hemming foot G		825817009
8	Assorted needle set		820827007
9	Spool holder (large) X 2 (1 set on the machine)		822020503
10	Spool holder (small) X 2		822019509
11	Extra spool pin		809041004
12	Bobbin X 4 (1 set on the machine)		102261103
13	Screwdriver		820832005
14	Seam ripper (Buttonhole opener)		647808009
15	Lint brush		802424004
16	Stitch reference chart		809801A08
17	Chart holder		809809008
18	Instruction book		809851223
19	Instructional video DVD		809861008
20	Hard cover		404701404
21	Foot control		C-1036
22	Power cable*	U.S.A and Canada	856519004
		U.K.	830377008
		Australia	830314018
		Continental Europe	830335004
23	Knee lifter		846811008
24	Large extension table		808401003
25	Optic magnifier 20		858415005
26	Optic magnifier 40		858415500
27	Optic magnifier 60		858415603
28	Quilt attachment kit		200100007

*The power cable included may differ from the illustration.



Large Extension Table

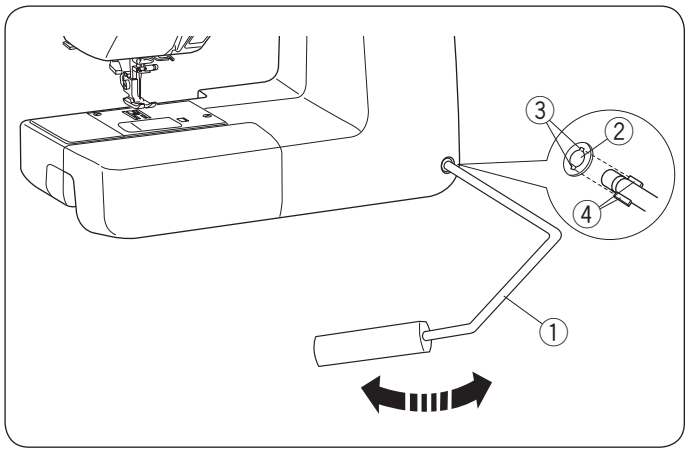
Attaching the table

Pull the table away from the machine.
Spread the legs of large extension table.
Holding the table with both hands and slide it gently to the right.

Adjust the table height

Turn setscrews of the table legs with a screwdriver.

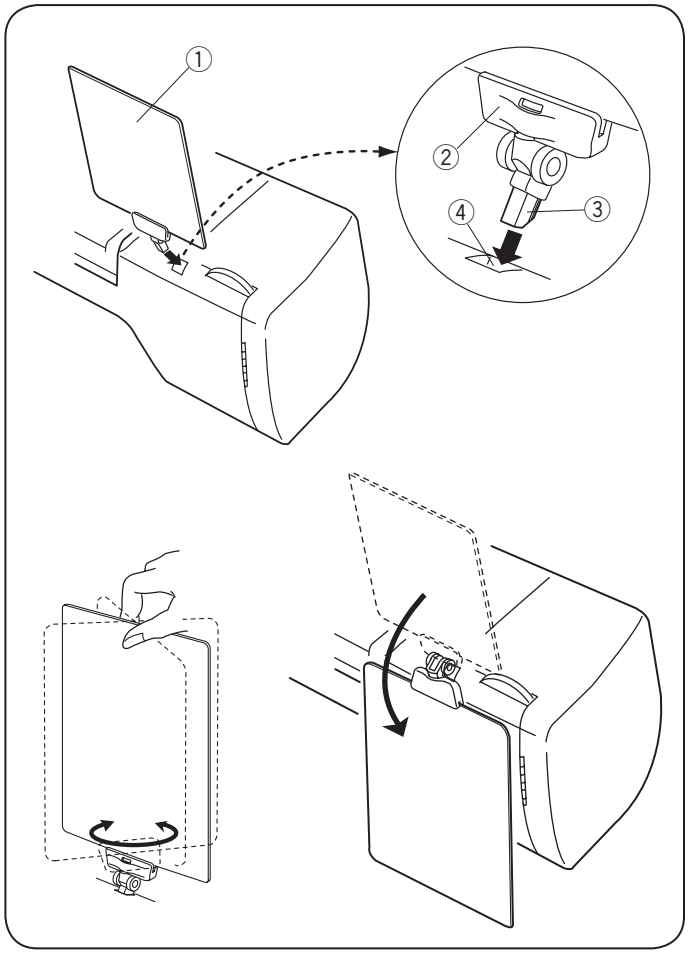
NOTE:
A Phillips screwdriver is required for adjusting the extension table height.



Attaching the Knee Lifter

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

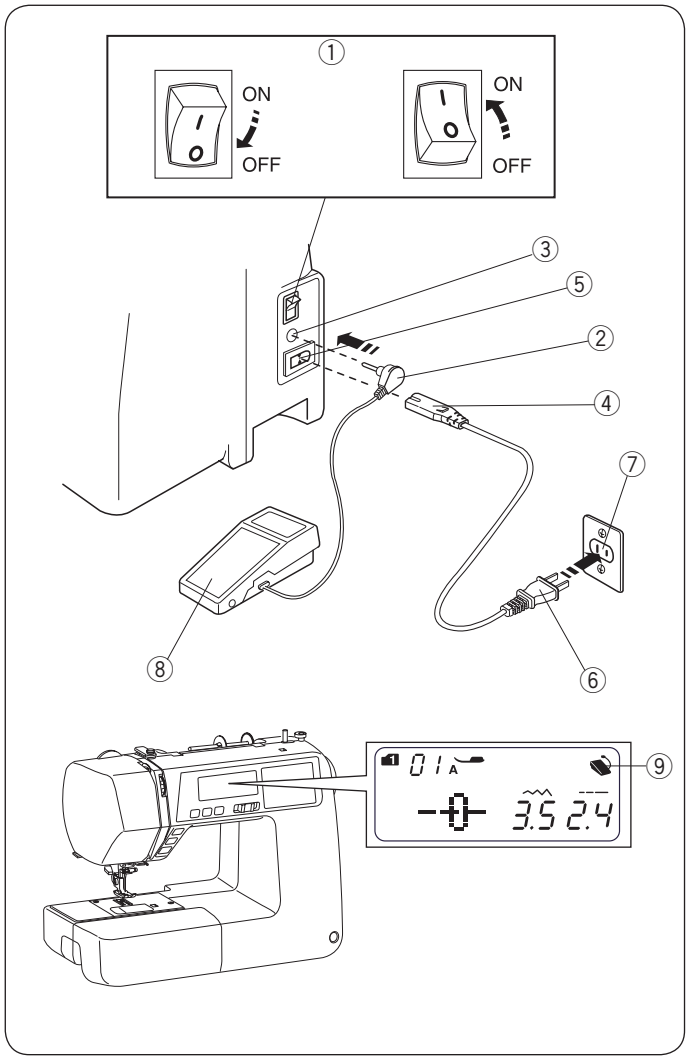


Stitch Reference Chart

Insert the stitch reference chart ① into the chart holder ②.
Insert the pin ③ into the hole for the stitch reference chart ④.

① Stitch reference chart
② Chart holder
③ Pin
④ Hole for stitch reference chart

Both sides of the stitch reference chart can be referred to by flipping it.
You can also flip the chart to the back of the machine when it is not in use.



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
⑧ Foot control

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

⑨ 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.

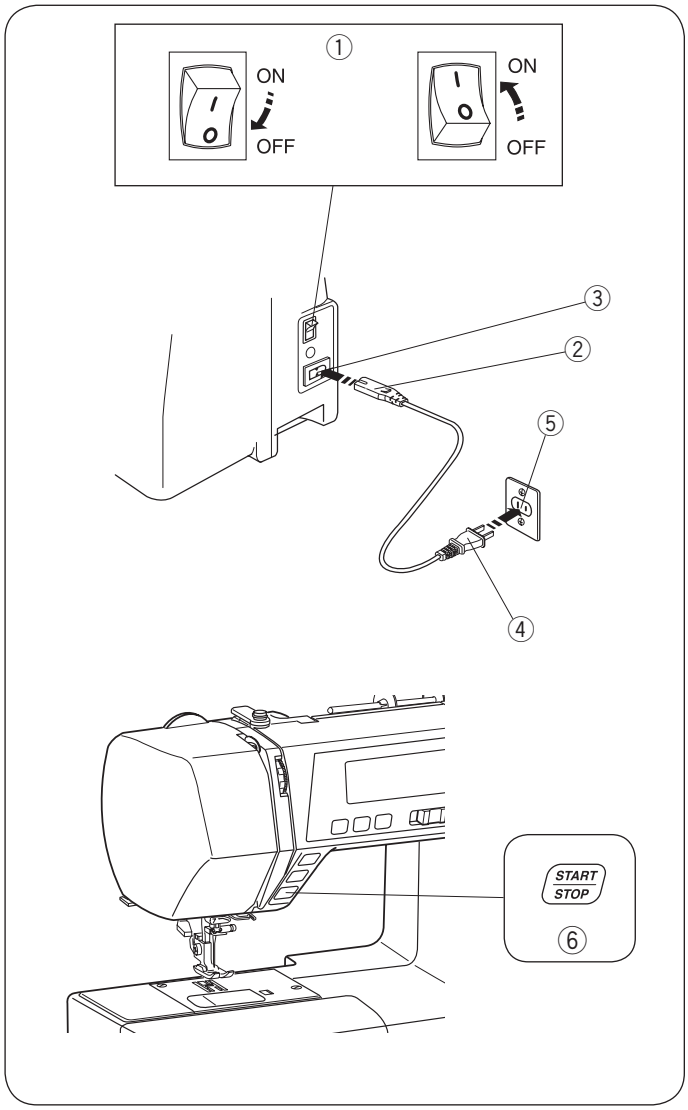
Before Using Your Sewing Machine

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.

Operating Instructions:

The symbol “O” on the switch indicates the “off” position of the switch.
Foot control model 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.

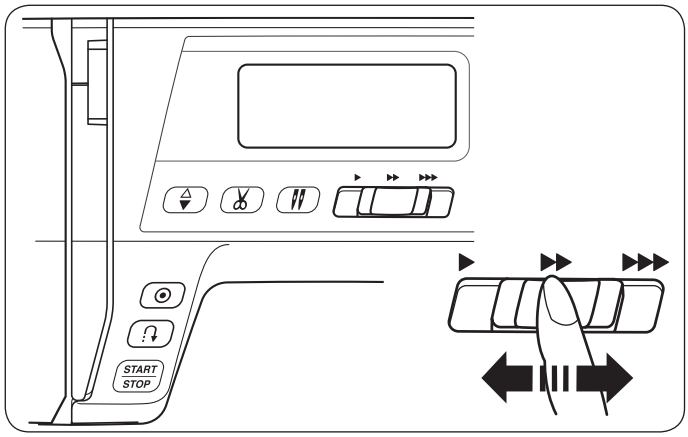


Using the start/stop button

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

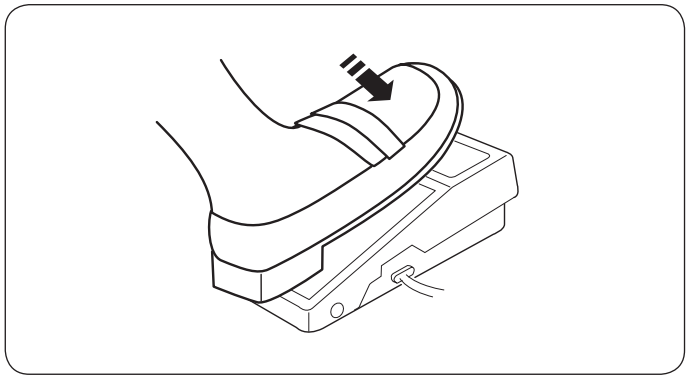
NOTE:
The start/stop button does not work when the foot control is connected.



Controlling Sewing Speed

Speed control slider

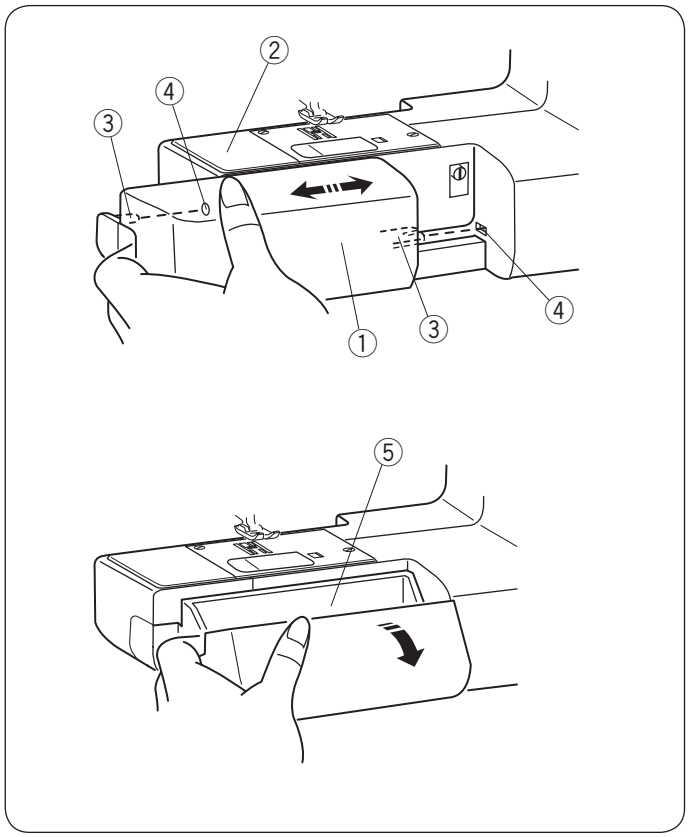
Sewing speed can be varied by the speed control slider according to your sewing needs.
To increase sewing speed, move the slider to the right.
To decrease sewing speed, move the slider to the left.



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.

NOTE:
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 foot control.



Extension Table

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

Detaching the table

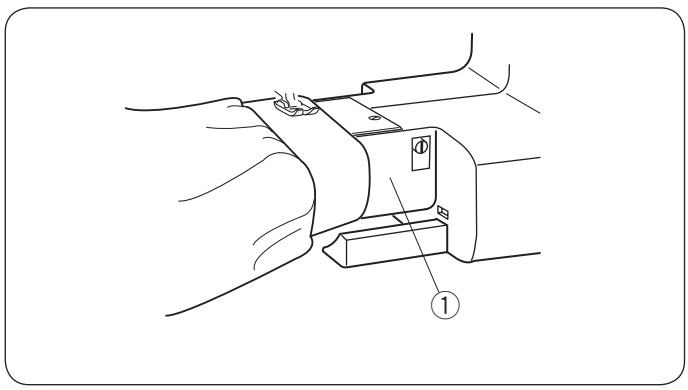
Pull the table away from the machine, as illustrated.
① Extension table

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

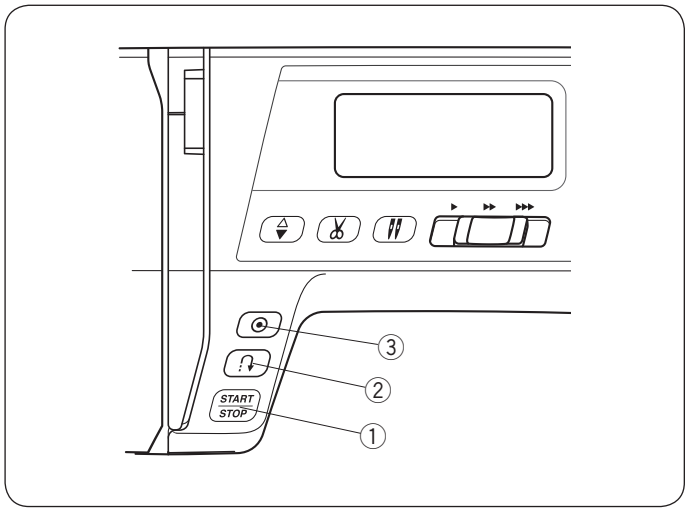
Accessory storage

Accessories are stored inside the extension table.
Pull the lid toward you to open the accessory storage ⑤.
⑤ Accessory storage



Free-arm Sewing

Free-arm is useful for sewing tubular garments and for darning knee or elbow areas.
① Free-arm



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.

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 following stitch patterns are selected;**

Mode 1 and 2	Mode 3
01 04 07 M 08 12 R	10 P 93 1 94 2 95 1 96 2

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 following stitch patterns are selected;**

Mode 1 and 2
02 03 34 35

There will be particular functions of the reverse button when patterns shown above are selected. Refer to pages 30, 44 and 45 for instructions.

- **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.

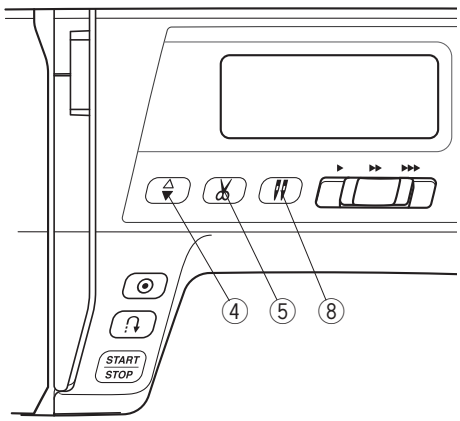
③ Auto-lock button

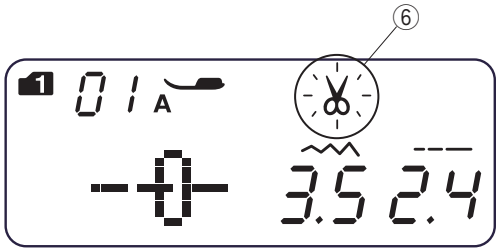
- **When following stitch patterns are selected;**

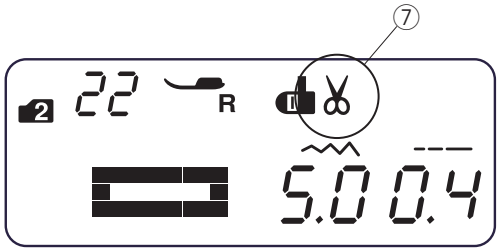
Mode 1 and 2	Mode 3
01 04 07 M 08 12 R	10 P 93 1 94 2 95 1 96 2

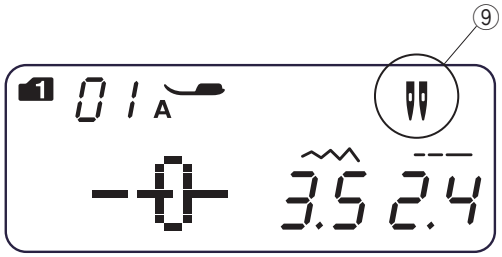
Press the auto-lock button to sew a locking stitch immediately. The machine will automatically stop.

- **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 trim the threads after sewing.
The thread cutter mark will blink ⑥ while the machine cuts the threads.

To trim the threads automatically after sewing, select the desired stitch pattern, then press and hold the thread cutter button until the thread cutter mark appears ⑦.

The machine will trim the threads automatically after the locking stitch then stop when the reverse or auto-lock button is pressed, or a pattern has the auto-lock stitch programmed (refer to page 62).

NOTE:
The thread cutter button does not function:
- directly after turning on the power.
- when the presser foot is raised.
- after being pressed 3 times in a row.

Use the thread cutter on the face cover if the thread is #30 or thicker (refer to page 27).

⑧ **Twin needle button**

Press the twin needle button when using a twin needle. The twin needle mark ⑨ will appear when it is activated.

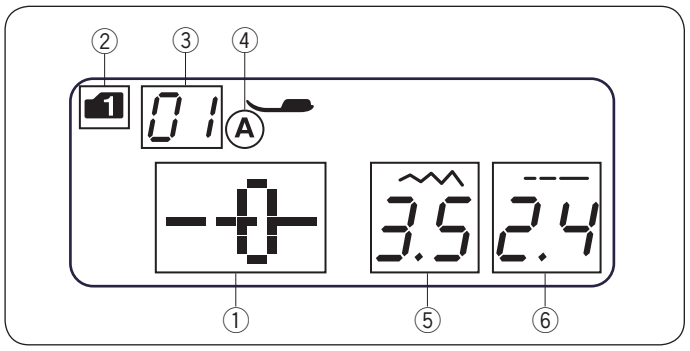
To cancel or finish the twin needle sewing, press the twin needle button twice.

NOTE:
When the twin needle mark is blinking, all the other keys and buttons will not be responding. Press the twin needle button again.

For twin needle sewing, refer to page 60.

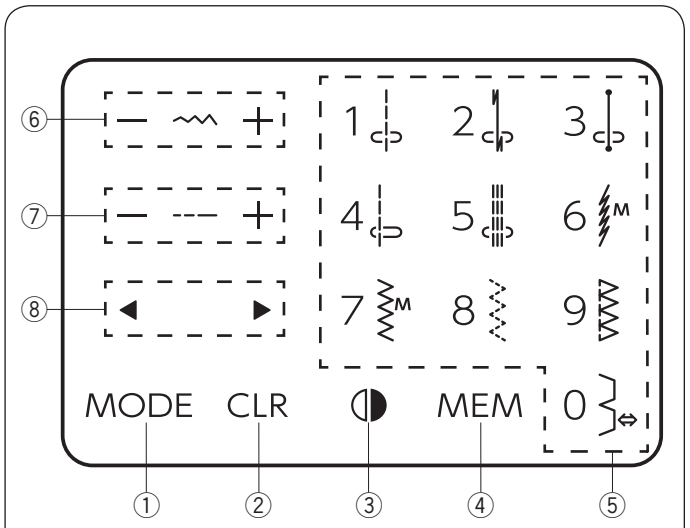
LCD Display

NOTE:
Magnetic or electrostatic interference may cause the LCD display to flicker.
Do not use the machine near appliances that generate a magnetic field or an electrostatic field such as microwave ovens.



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

① Stitch pattern
② Mode
③ Stitch pattern number
④ Identification letter of the recommended foot
⑤ Stitch width
⑥ Stitch length



Touch Panel

① Mode key
When the power switch is turned on, the direct pattern selection (mode 1) is set automatically.
Press the mode key to change the mode. Refer to page 24.

② Clear key
Press the clear key to cancel the input and select the first stitch pattern of the selected mode.

- **In pattern combination:**
Press the clear key to clear the registered stitch pattern.
Press and hold the clear key until the buzzer beeps to clear whole pattern combination. Refer to page 70.

③ Mirror image key
Press the mirror image key to flip the selected stitch pattern vertically. Refer to page 63.

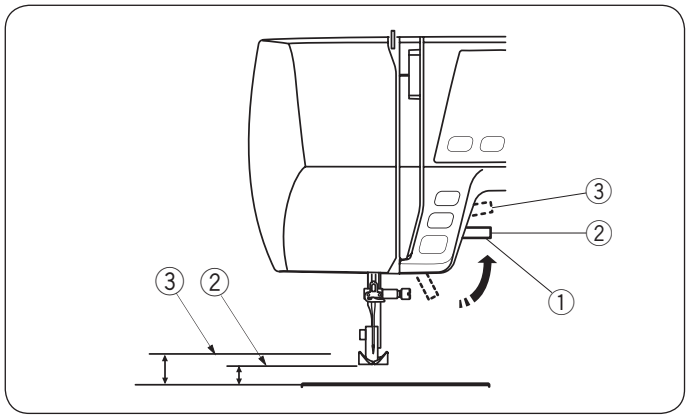
④ Memory key
Press the memory key to register the selected pattern. Refer to page 61.

⑤ Number keys (Refer to page 24)
- **Direct pattern selection**
You can select the stitch patterns from 01 to 10 directly in mode 1 (direct pattern selection mode).
- **Numeric pattern selection**
Enter a 2-digit pattern number to select the desired stitch pattern in modes 2 to 5.

⑥ Stitch width adjusting key
Press “+” or “–” to change the stitch width or needle drop position, depending on the selected stitch pattern. Refer to pages 29, 32, 39 and 50.

⑦ Stitch length adjusting key
Press “+” or “–” to change the stitch length of the selected pattern. You can also adjust the buttonhole density, the evenness of darning, and the size of eyelet with this key. Refer to pages 29, 32, 39, 44 and 46.

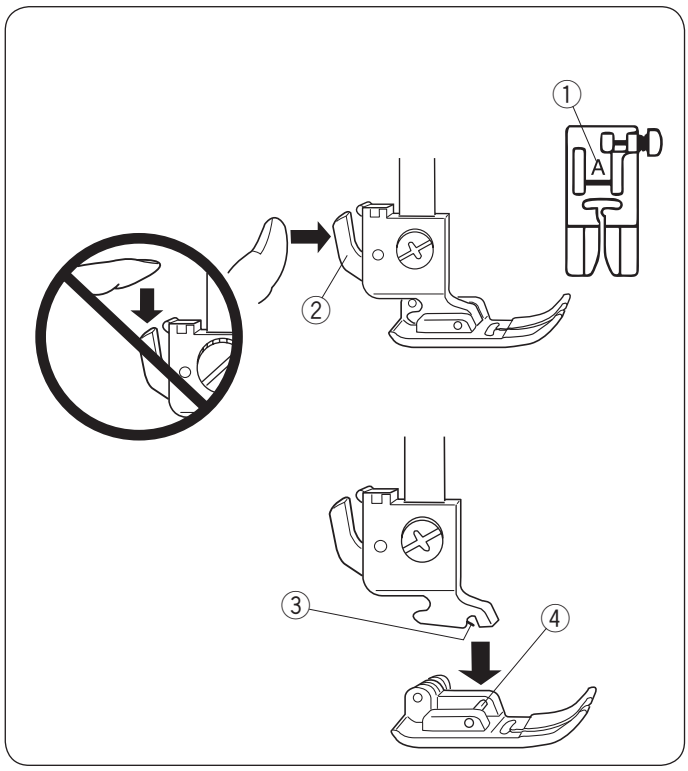
⑧ Cursor key
Press “ ◀ ” or “ ▶ ” to move the cursor to check or edit the pattern combination. Refer to pages 69 and 70.



Presser Foot Lifter

The presser foot lifter raises and lowers the presser foot. You can raise the foot about 1/4″ (0.7 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

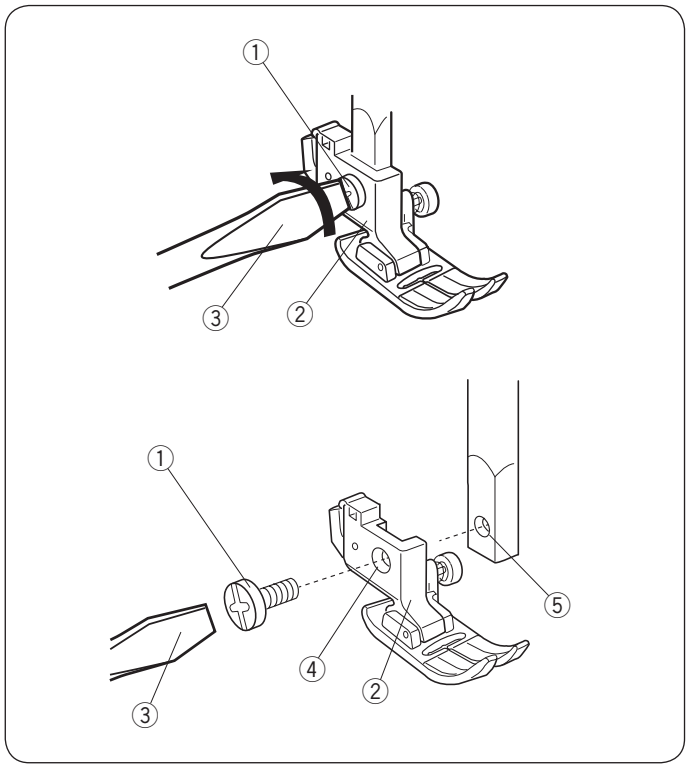
Raise the needle to its highest position by turning the handwheel counterclockwise. Raise the presser foot, and press the lever on the back of the foot holder.

② Lever

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.

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

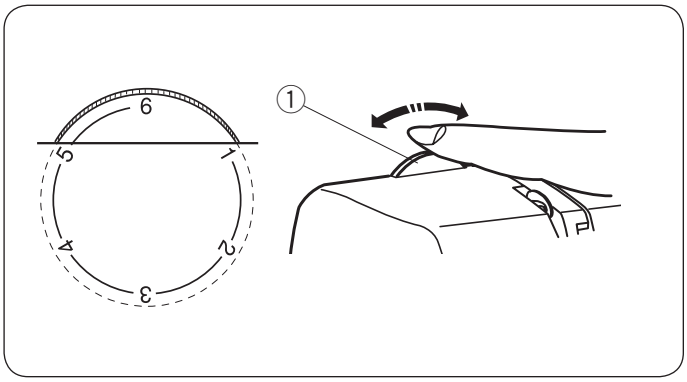
Remove the thumb screw by turning it counterclockwise with a screwdriver.

① Thumb screw
② Foot holder
③ Screwdriver

Attaching the foot holder

Align the hole in the foot holder with the threaded hole in the presser bar.
Fit the thumb screw into the hole.
Tighten the thumb screw by turning it clockwise with the screwdriver.

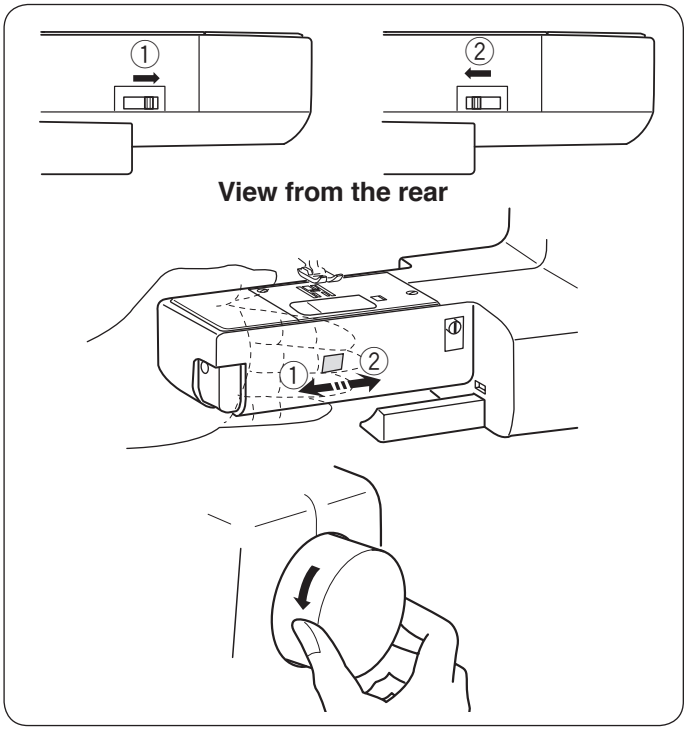
④ Hole
⑤ Threaded hole



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



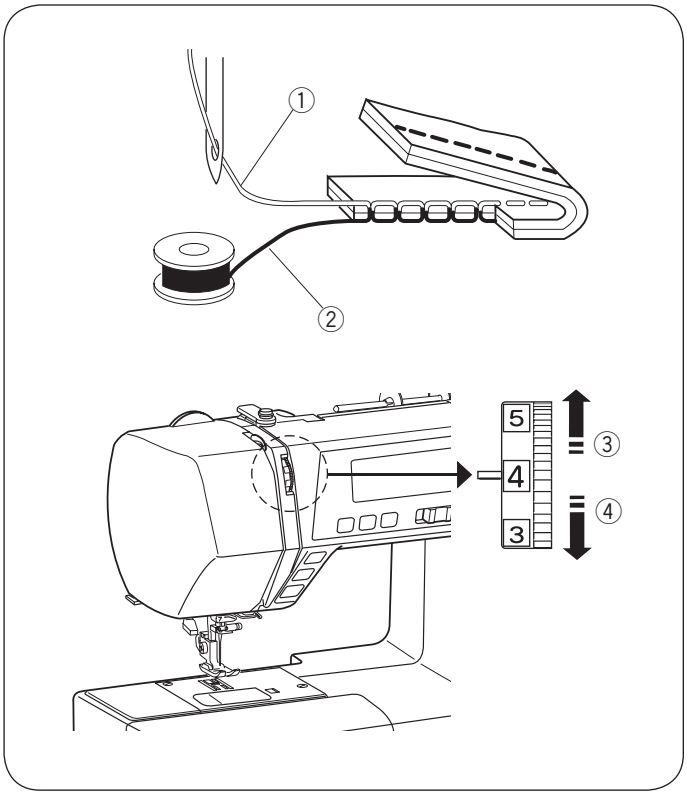
Dropping or Raising the Feed Dog

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.



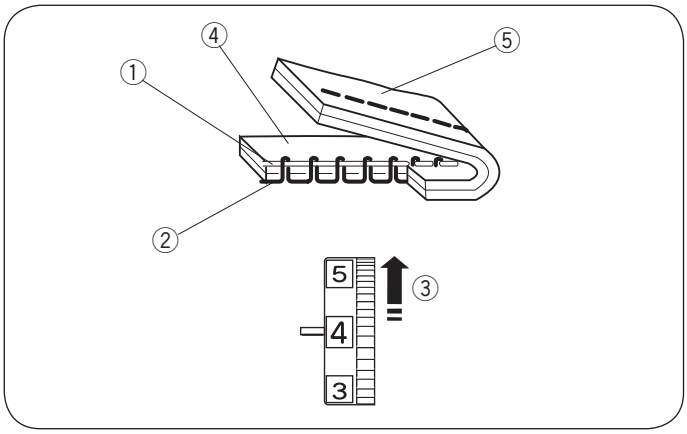
Adjusting the Needle Thread Tension

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

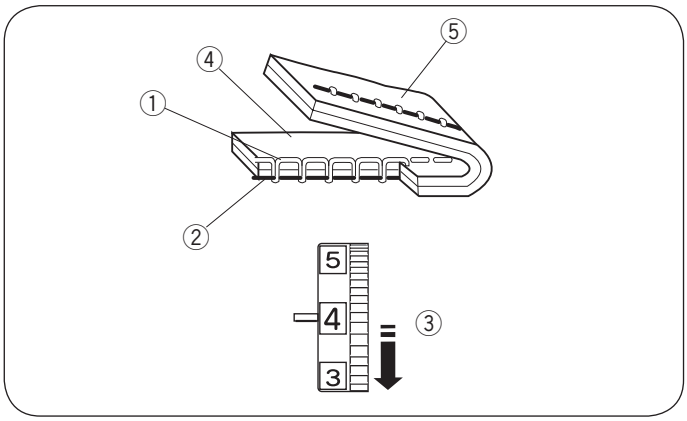
When adjusting the needle thread tension, the higher the number, the tighter the top thread tension.
Results depend on:
- stiffness and thickness of the fabric
- number of fabric layers
- type of stitch



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



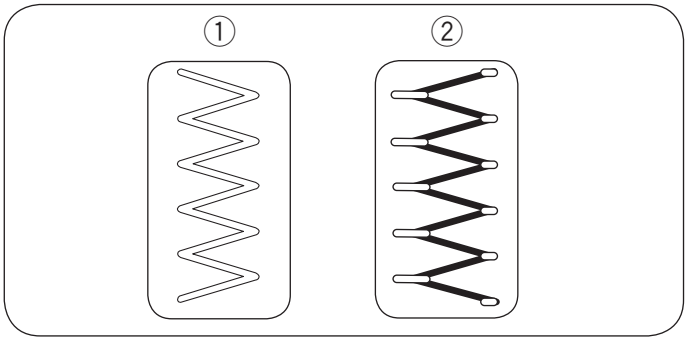
Tension is too loose

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 balanced tension

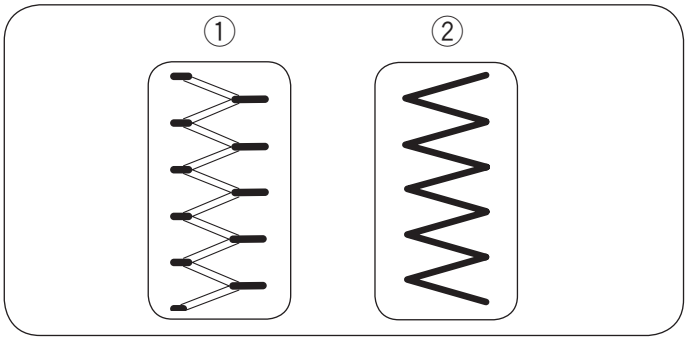
For an ideal zigzag stitch, the bobbin thread does not show on the right side (top side) of the fabric, and the needle thread shows slightly on the wrong side (bottom side) of the fabric.
See the illustrations for the correct appearance.
To match this appearance, adjust the needle tension as necessary.



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.

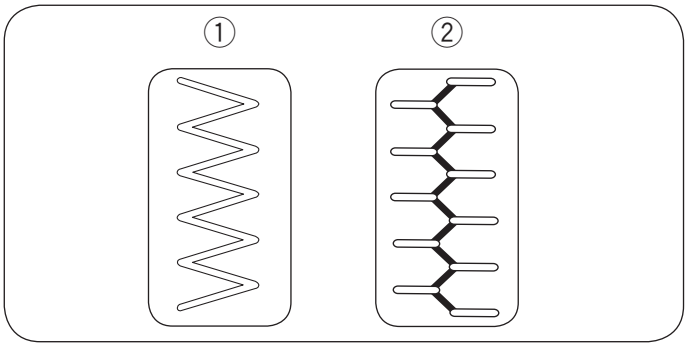
① Right side (top side) of fabric
② Wrong side (bottom side) of fabric



Tension is too tight

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

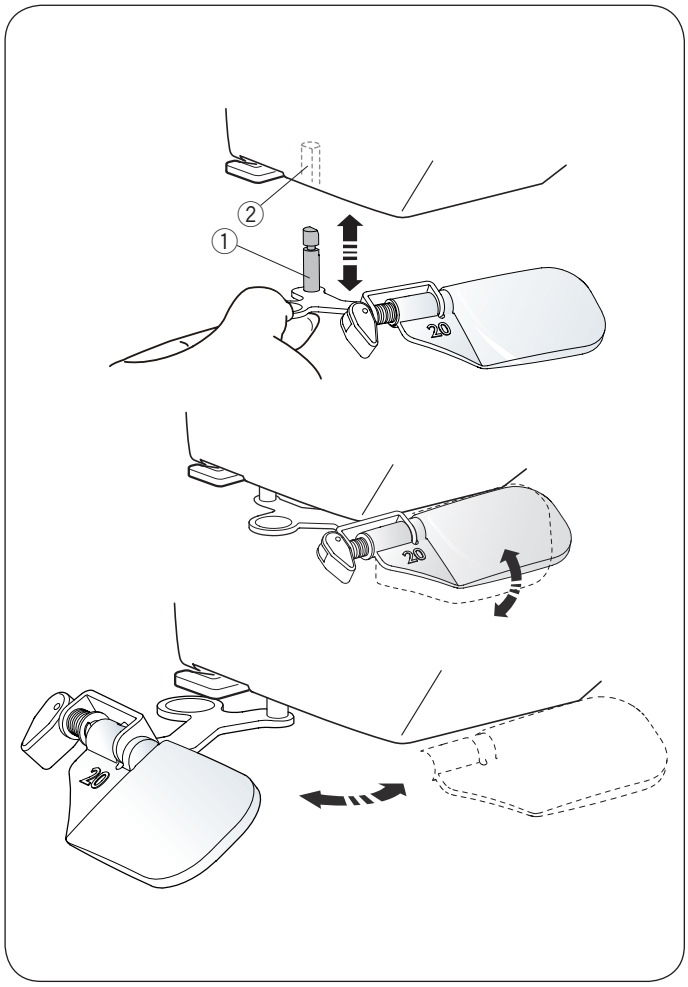
① Right side (top side) of fabric
② Wrong side (bottom side) of fabric



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



Optic Magnifier

Use the magnifier to get a larger view of the needle area.

Attaching the magnifier

Hold the knob with your fingers and insert the pin into the hole in the bottom of the face cover.
Push the magnifier up until it snaps to fit.
Adjust the angle to get the best view.

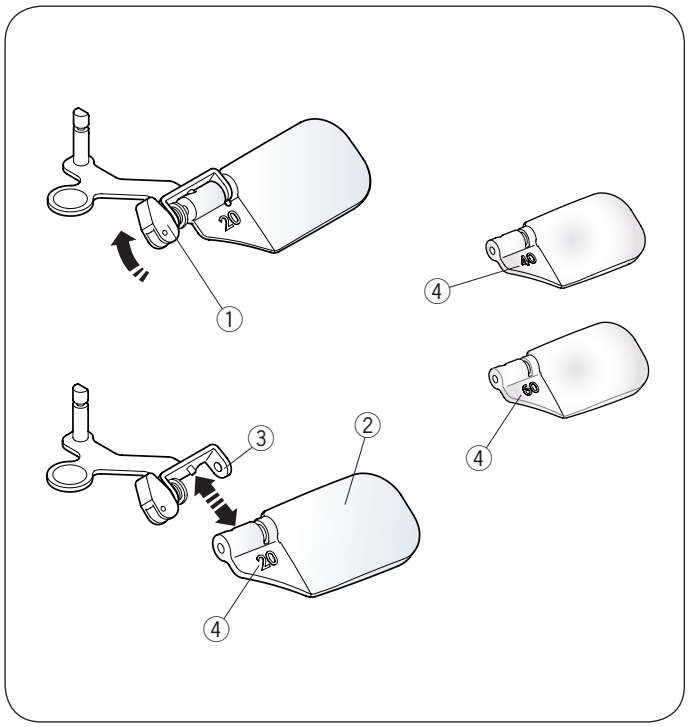
① Pin
② Hole

Removing the magnifier

If the magnifier is not in use, turn it to the left out of sight or pull it down to remove.

⚠ CAUTION:

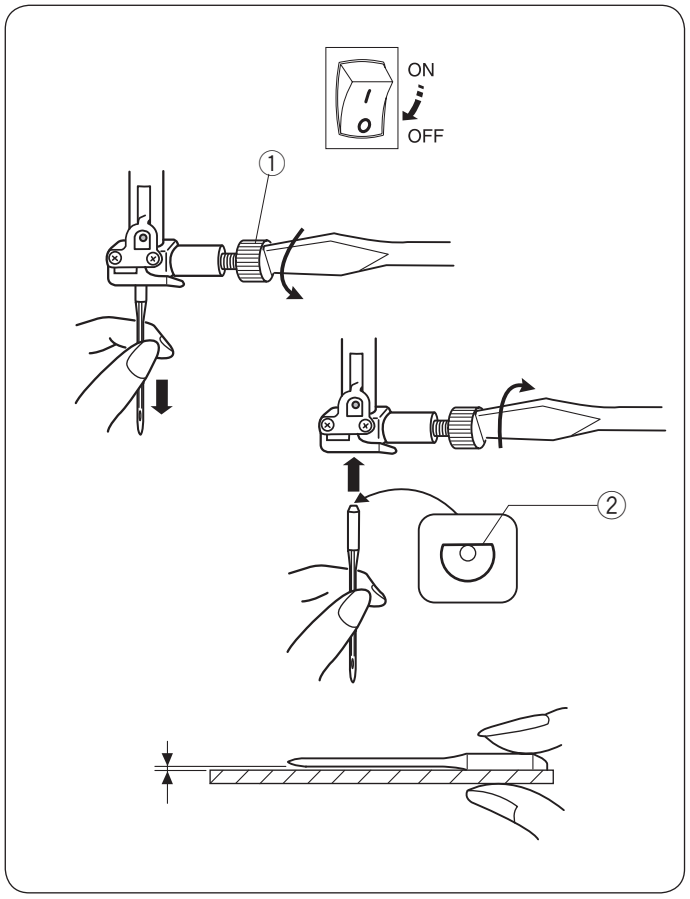
Do not use or leave the magnifier in the direct sunlight, otherwise it may cause a fire or burn.
Do not look at the sun through the magnifier as it can damage your eyes.
Do not hit or exert excessive force on the optic magnifier as this may cause damage when it is attached.



Replacing the magnifier

To remove the lens, push or pull the lever ① to the opposite side to draw the pin out of the lens.
Remove the lens from the metal.
To attach the lens, insert it into the metal part ③ as illustrated.
Push or pull the lever ① to the opposite side to fix the lens.
Higher numbers ④ indicates stronger magnification.

① Lever
② Lens
③ Metal part
④ Number



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.
A loose needle or a loose screw may cause machine malfunction or needle to break.

Loosen the needle clamp screw by turning it counterclockwise with a screwdriver. 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 with a screwdriver.

① Needle clamp screw
② Flat side

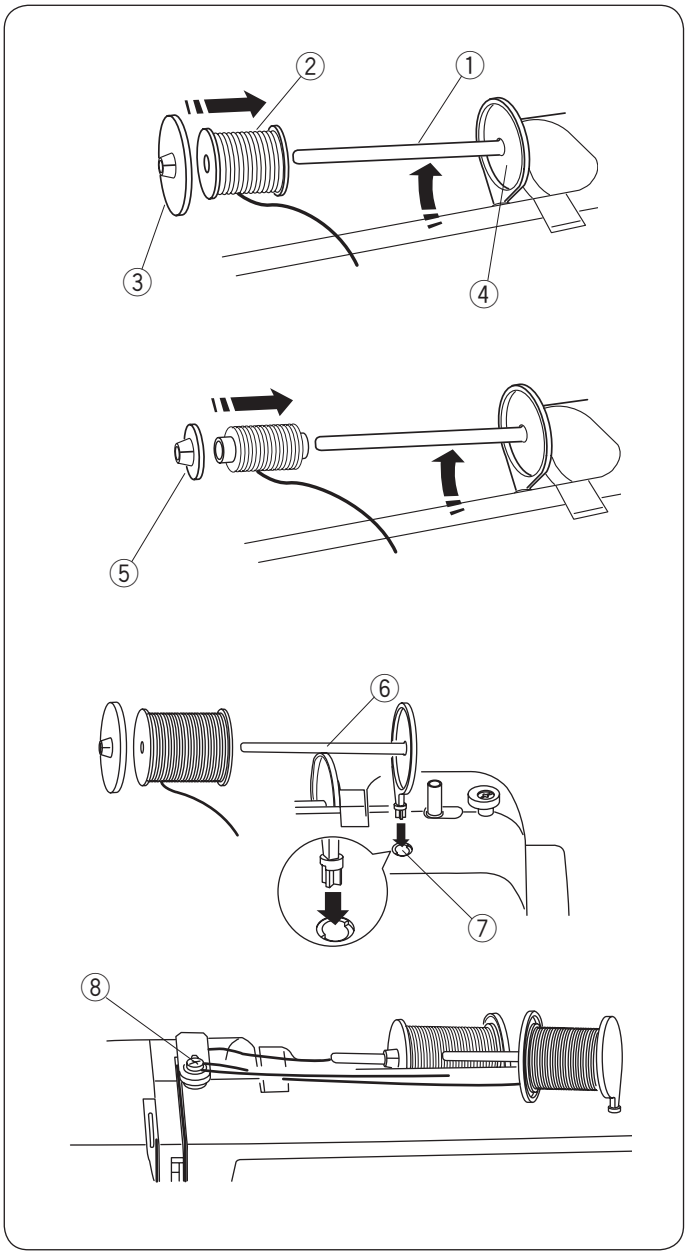
To see if the needle is in good condition, place the flat side of the needle onto something flat (needle plate, glass etc.). The gap between the needle and the flat surface should be consistent. Never use a bent or blunt needle. A damaged needle can cause permanent snags or runs in knits, fine silks and silk-like fabrics.

Fabric, Thread and Needle Chart

- 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.

Fabric		Thread	Needle
Fine	Lawn Georgette Tricot Organza Crepe	Cotton #80-100 Synthetic #80-100	#9/65-11/75 Blue tip needle
Medium	Sheeting Jersey Broadcloth Fleece	Cotton #50-80 Synthetic #50-80	#11/75-14/90
Heavy weight	Denim Tweed Coating Quilting	Cotton #40-50 Synthetic #40-50	#14/90-16/100

NOTE:
1 x twin needle, 1 x blue tip needle (#11/75),
2 x #11/75 needles and 1 x #14/90 needle are included in the needle case (Part No. 820827007).



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

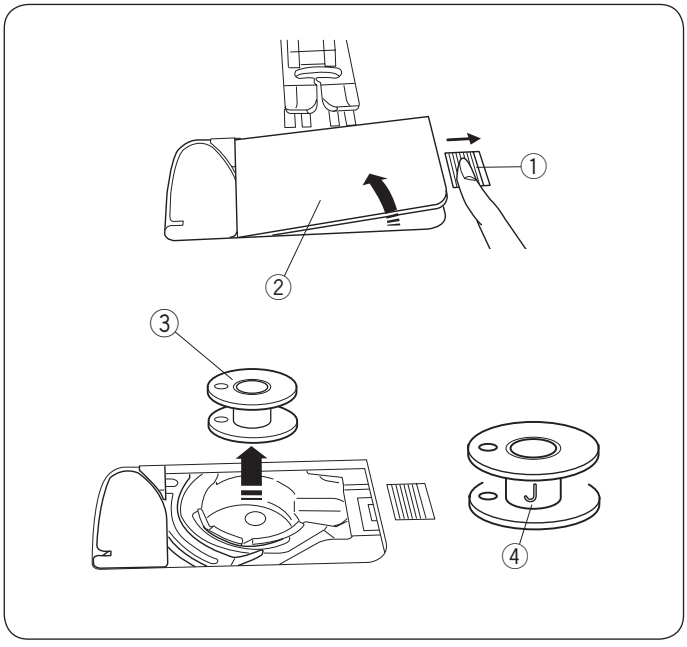
The small spool holder is used with narrow or small spools of thread.

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

⑥ Extra spool pin
⑦ Hole for extra spool pin
⑧ Bobbin winding tension disk



Bobbin Winding

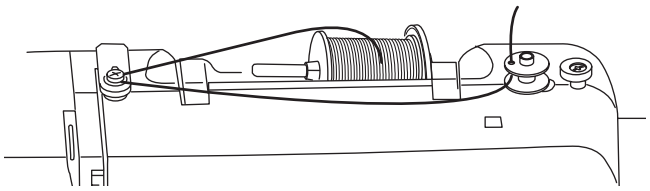
Removing the bobbin

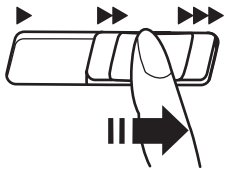
Gently slide the hook cover release button to the right and remove the hook cover plate.
Lift out the bobbin.

① Hook cover release button
② Hook cover plate
③ Bobbin

NOTE:
Use the “J” plastic bobbins for horizontal hook (marked with “J” ④). Using other bobbins, such as pre-wound paper bobbins, may cause stitching problems and/ or damage to the bobbin holder.

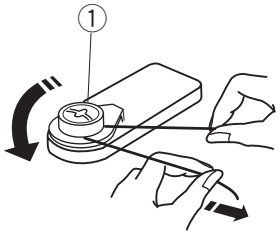
Winding the bobbin





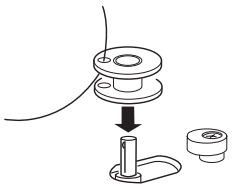
NOTE:
Set the speed control slider at its fastest position for bobbin winding.

1



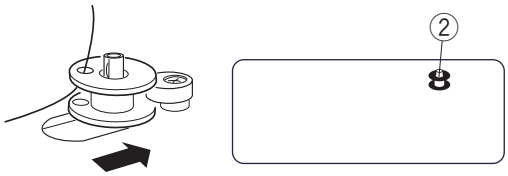
1 Draw the thread from the spool and pass the thread around the bobbin winding tension disk.
① Bobbin winding tension disk

2 3



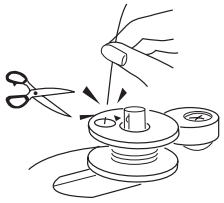
2 Thread through the hole in the bobbin from the inside to the outside.
3 Put the bobbin on the bobbin winder spindle.

4



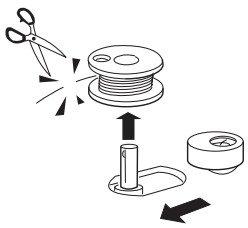
4 Push the bobbin to the right.
The bobbin icon appears on the LCD display.
② Bobbin icon

5



5 With the free end of the thread held in your hand, start the machine. Stop the machine when it has wound a few layers, and then cut the thread close to the hole in the bobbin.

6 7



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.

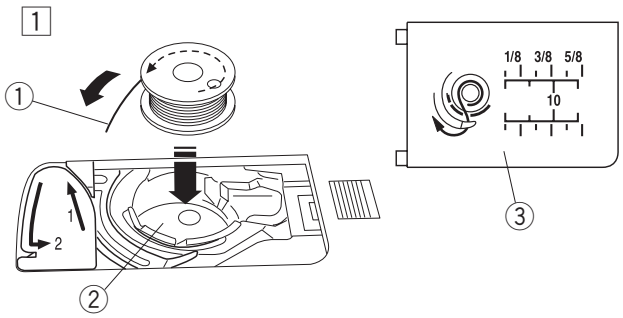
NOTE:
- Do not move the bobbin winder spindle while the machine is running.
- Do not loosen the setscrew of bobbin winder stopper.

7 Remove the bobbin. Cut the thread as shown.
Return the speed control slider position.

Inserting the bobbin

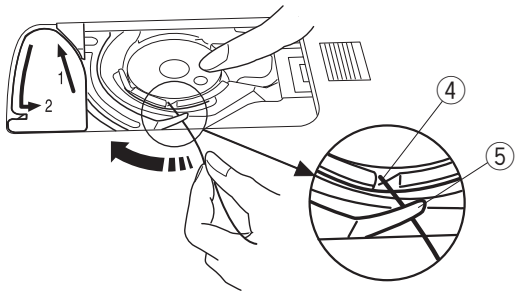
⚠ CAUTION:
Turn OFF the power switch before inserting the bobbin and threading the bobbin holder.

1



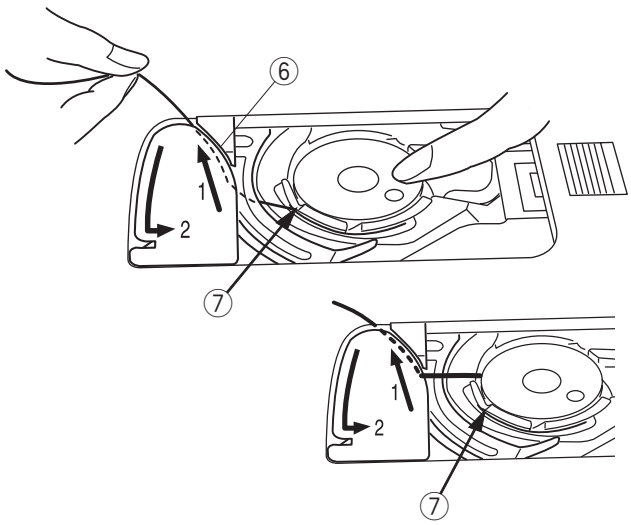
1 Place a bobbin in the bobbin holder with the thread running off counterclockwise as shown on the hook cover plate.
- ① End of thread
- ② Bobbin holder
- ③ Hook cover plate

2



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

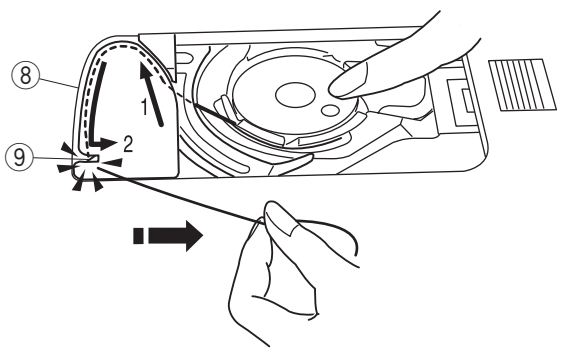
3



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

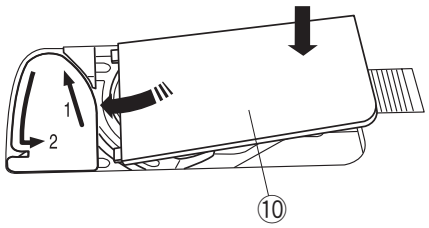
NOTE:
If the thread does not come out from the side notch, rethread from step 1.

4



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)

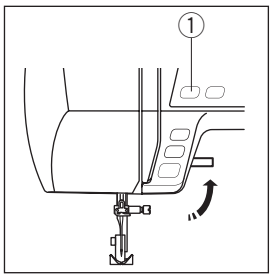
5



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 23 for how to draw up the bobbin thread.

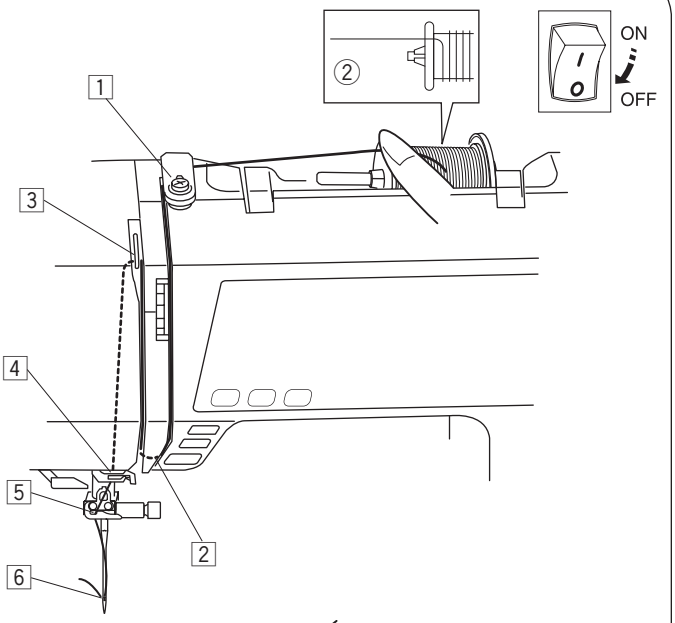
Threading the Machine



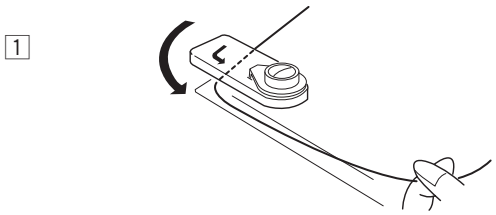
Raise the presser foot. Press the needle up/down button ① to raise the thread take-up lever to its highest position.

① Needle up/down button

⚠ CAUTION:
Turn OFF the power switch before threading the machine.

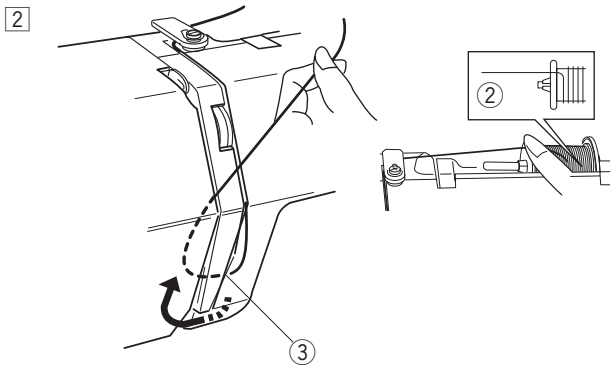


1 Turn the power switch off.
Draw the end of the thread around the upper thread guide.



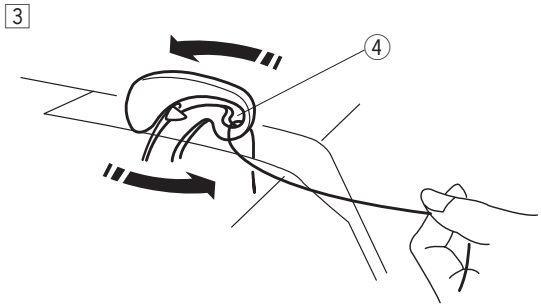
2 While holding the thread near the spool ②, draw the end of the thread down around the check spring holder ③.

② Spool
③ Check spring holder



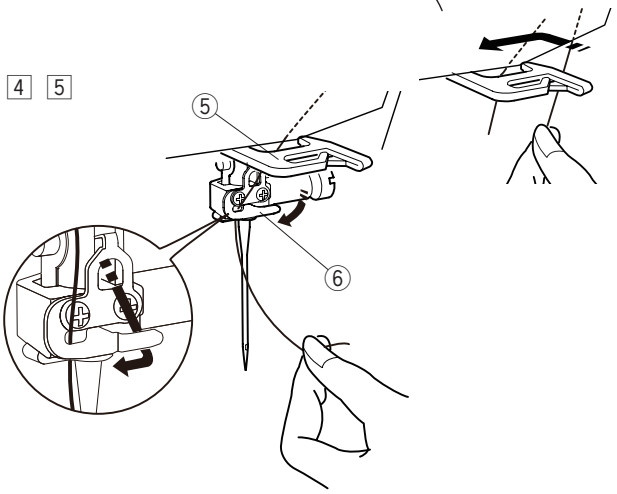
3 Firmly draw the thread up from right to left over the take-up lever, and down into the eye of take-up lever.

④ Eye of take-up lever



4 5 Slide the thread to the left to pass through the lower thread guide. Slide the thread behind the needle bar thread guide from the right.

⑤ Lower thread guide
⑥ Needle bar thread guide



6 Use the needle threader to thread the needle (see page 22).

Needle Threader

⚠ CAUTION:
Turn off the power switch when using the needle threader.

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.
  Do not use thread size 30 or thicker.
- The needle threader cannot be used for a twin needle.

1 Press the needle up/down button ① to raise the needle to its highest position.
Turn the power switch off.

2 Pull the thread up to the left, over the needle threader guide while holding the thread near the spool with your hand.
③ Needle threader guide
④ Slit

NOTE:
Be sure that the thread pass the slit ④ of the needle threader as shown.

3 Pull the thread up and slip it between the thread cutter and face cover from behind.
Pull the thread toward you to cut.

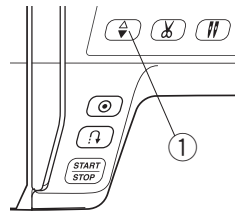
4 Pull down the needle threader knob as far as it will go.

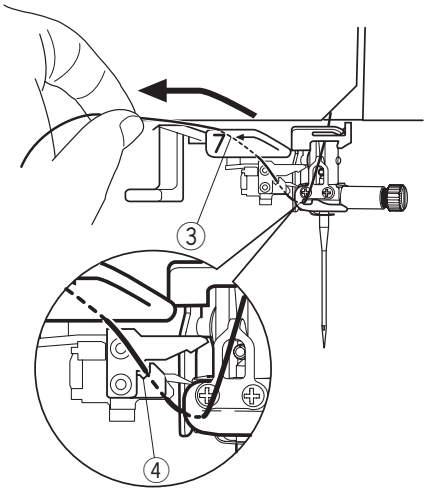
NOTE:
Be sure that there is no thread on the threader knob ⑤ before pulling down the needle threader knob.

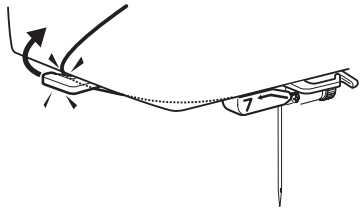
5 Raise the threader slowly so a loop of the thread is pulled up through the needle eye.

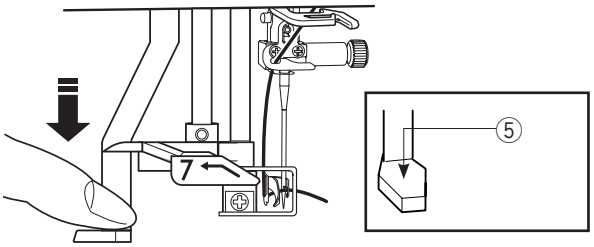
6 Pull the thread loop to take the thread end out through the needle eye to the rear.

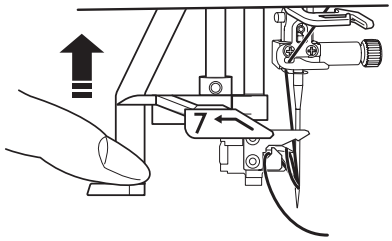
NOTE:
If the thread is caught in the hook and the thread loop is not formed, remove the thread from the hook and pull it to take the thread end out through the needle eye.

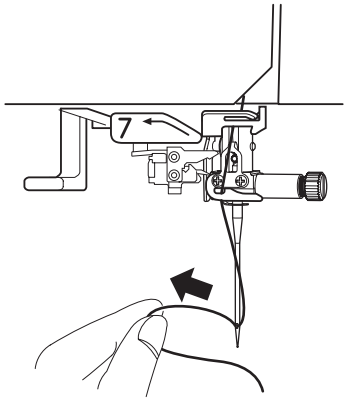
1


2


3


4


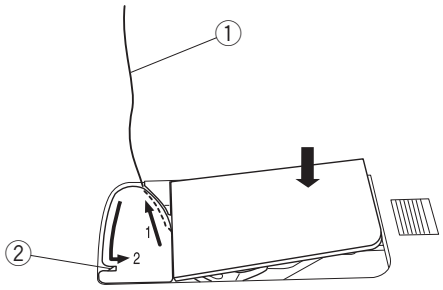
5


6


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.

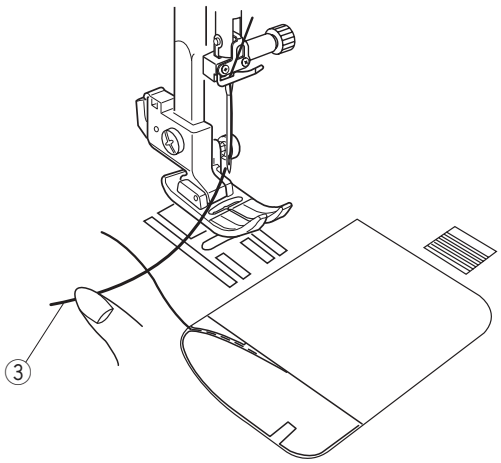
1



1 Remove the bobbin. Insert the bobbin into the bobbin holder again and rethread the bobbin holder according to the instructions on page 20, but leave a 10 cm (4″) tail of bobbin thread as shown.
① Bobbin thread

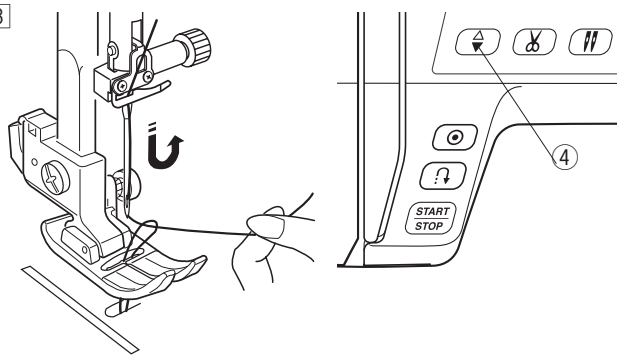
NOTE:
Do not cut the bobbin thread with the thread cutter.
② Thread cutter

2



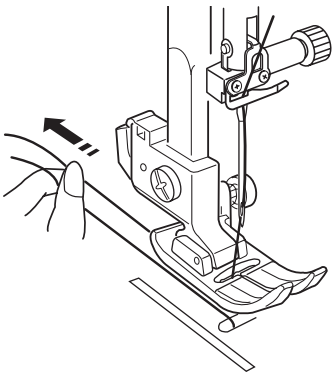
2 Raise the presser foot. Hold the needle thread lightly with your left hand.
③ Needle thread

3

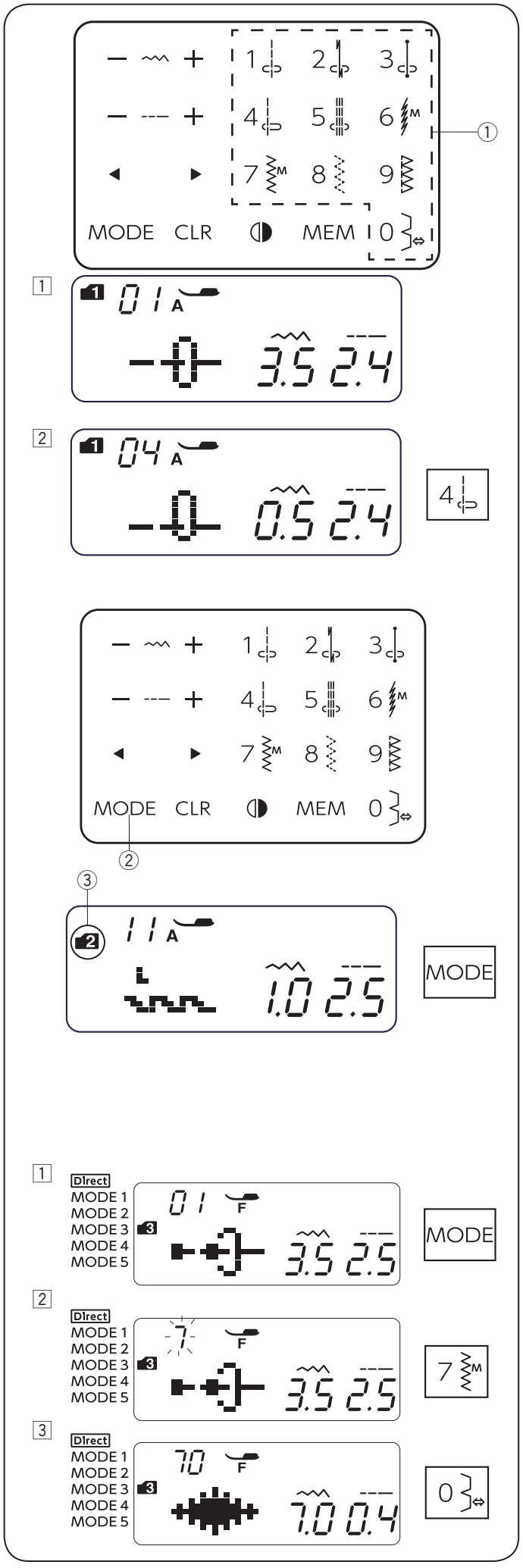


3 Turn the power switch on.
Press the needle up/down button twice to lower and raise the needle to pick up the bobbin thread.
④ Needle up/down button

4



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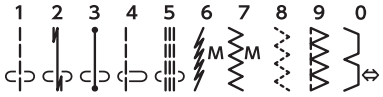


Selecting Stitch Patterns

Mode 1

You can select the following stitch patterns directly by pressing the number keys ①.

① Number keys



Example: To select stitch pattern 4 in mode 1

1 When the power switch is turned on, the direct pattern selection (mode 1) is set automatically.

2 Press the pattern key 4 to select the stitch pattern 4. Now pattern 4 in mode 1 is selected.

Modes 2 – 5

To select stitch patterns in modes 2–5, first press the mode key ② to select your desired mode. Each time you press the mode key, the mode number ③ indicated on the left side of the screen will change, and the mode changes as follows;

Mode 1: Direct pattern selection
Mode 2-3: Utility and decorative stitch pattern selection
Mode 4: Decorative stitch pattern selection
Mode 5: Number and letter selection

The mode number ③ indicates the selected mode number. To refer to the modes and their available stitch patterns for this sewing machine, check the stitch reference chart (refer to page 5) or stitch chart on pages 77-78.

Enter the 2-digit number of the desired stitch pattern with the corresponding number keys.

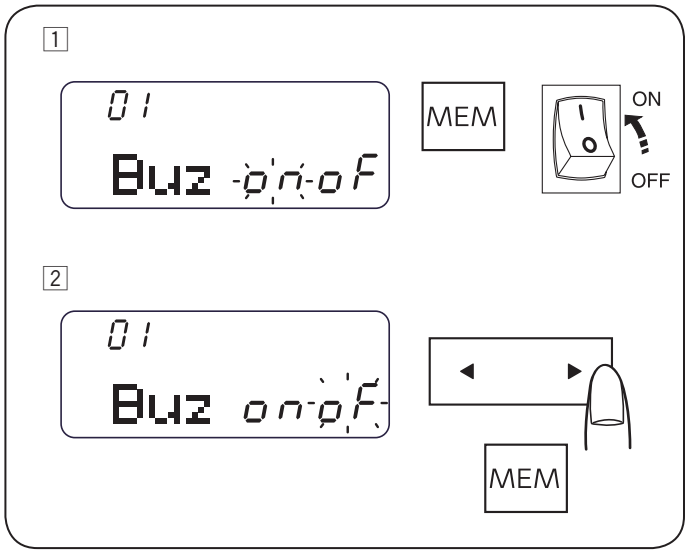
② Mode key
③ Mode number

Example: To select stitch pattern 70 in mode 3

1 Turn the power switch on.
Press the mode key twice to select mode 3.

2 Press the number keys on the touch panel.
First press key 7 and then press key 0.

3 Now pattern 70 in mode 3 is selected.



Setting Mode

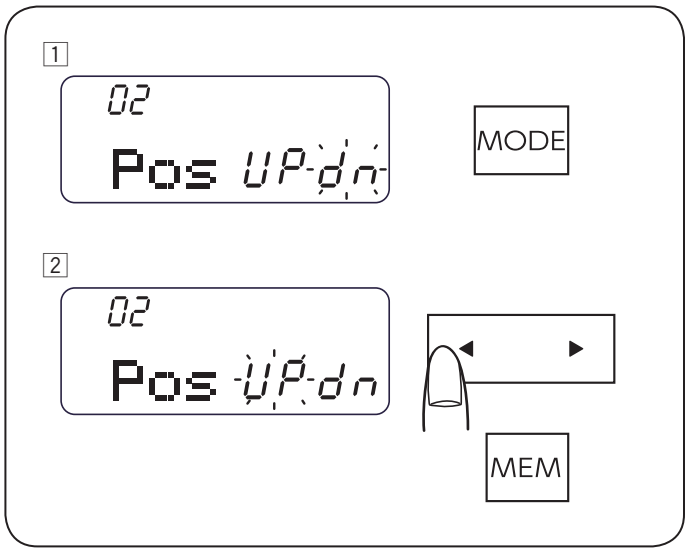
To enter the setting mode, press and hold the memory key and turn the power switch on until the setting mode screen appears.
In this mode you can set the following machine functions.

- **Buzzer sound setting**

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

  1 Enter the setting mode.
  2 To turn off the buzzer sound, press the cursor key and the “oF” mark will blink. Press the memory key to turn the buzzer sound off.

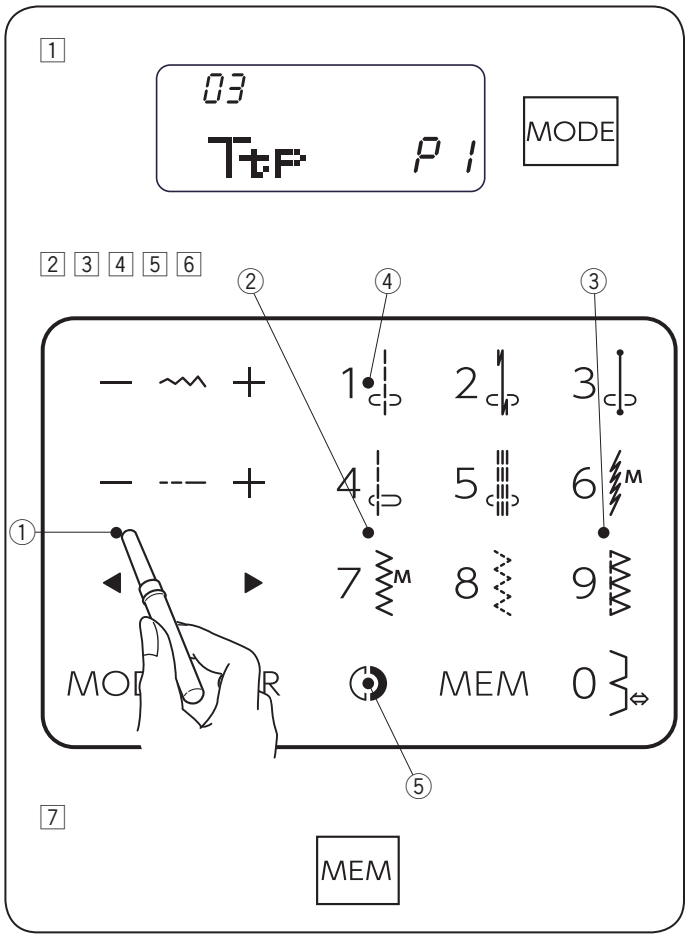
  * Caution buzzer sound cannot be turned off.



- **Needle stop position setting**

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

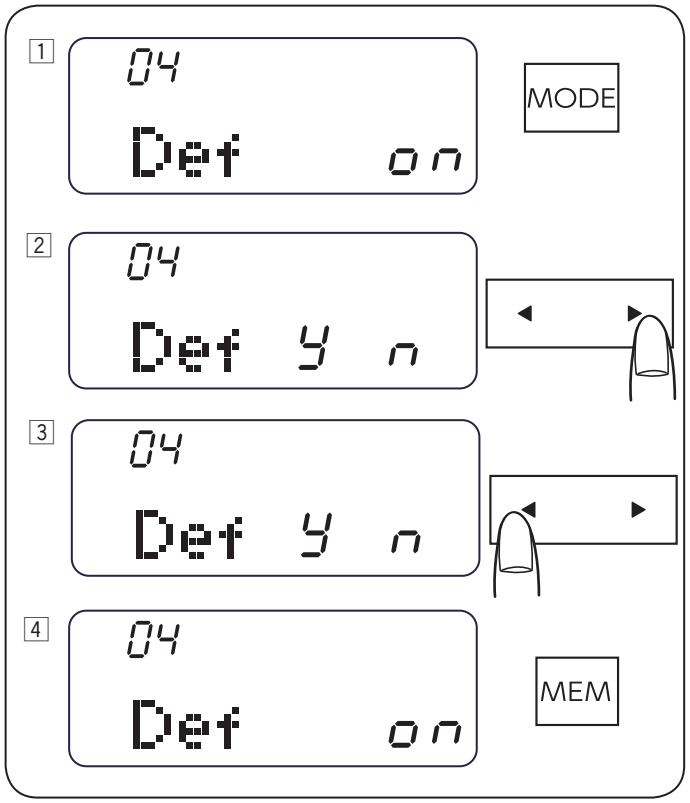
  1 Enter the setting mode. Press the mode key to enter the up/down needle position setting.
  2 The default up/down needle position setting is “dn”. To change the needle position, press the cursor key and the “UP” mark will blink. Press the memory key to change the up/down needle position to “UP”.



- **Key position adjustment**

  You can adjust the key position when you think the key sensor is off from the actual key position.

  1 Enter the setting mode. Press the mode key twice to enter the key position adjustment.
  2 The key position adjustment screen appears and “P1” is shown on the right side of the screen. With a buttonhole opener, press ① on the touch panel of your machine.
  3 “P2” will be shown on the LCD display. Press the ② on the touch panel.
  4 “P3” will be shown on the LCD display. Press the ③ on the touch panel.
  5 “P4” will be shown on the LCD display. Press the ④ on the touch panel.
  6 “P5” will be shown on the LCD display. Press the ⑤ on the touch panel.
  7 The screen will back to the initial screen of the key position adjustment setting screen. Press the memory key to exit the adjustment.



• **Reset all to default**

The following customized settings can be reset to the original settings (factory default settings).

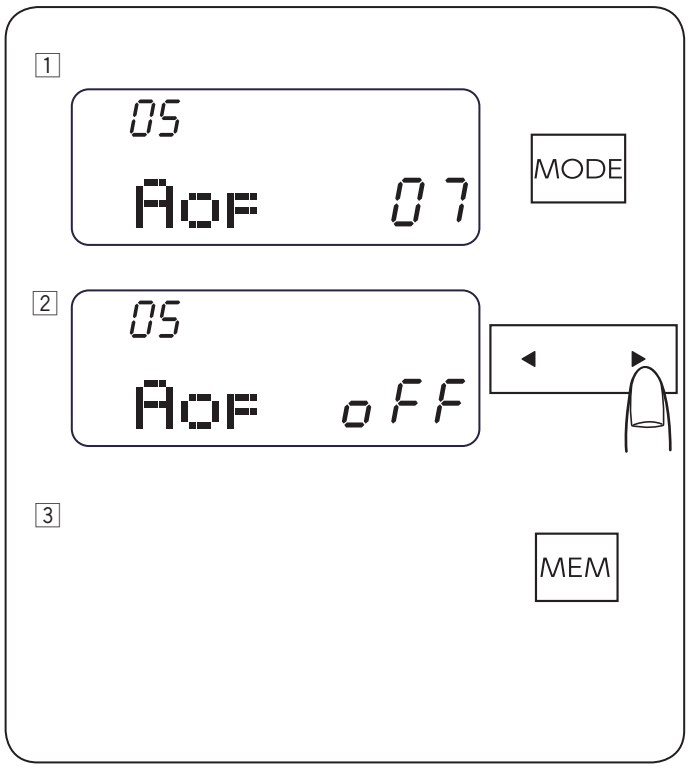
- Buzzer sound setting
- Needle stop position setting
- Key position adjustment
- Auto-off Timer setting

1 Enter the setting mode. Press the mode key 3 times to enter the reset mode.

2 Press " ▸ " on the cursor key.
The confirmation screen appears.

3 To reset the customized settings, press " ◂ " on the cursor key.
To cancel the reset, press " ▸ " on the cursor key.

4 The screen will back to the reset mode.
Press the memory key to exit the reset mode.



• **Auto-off timer**

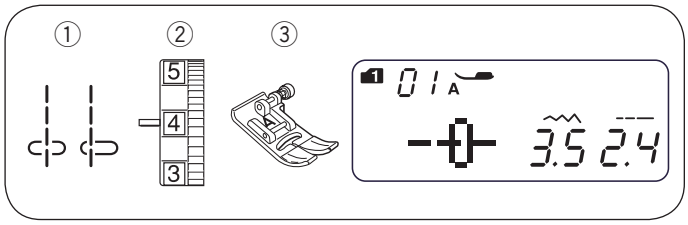
NOTE:
The auto-off timer is available in EU countries and some regions which use 200 - 240 voltage standards.

The machine will be turned off if you do not use the machine within the time period set by this timer.

1 Enter the setting mode. Press the mode key 4 times to enter the auto-off timer setting.
The default auto-off timer setting is 7 hours and "07" sign appears on the screen.

2 Press the cursor key to increase or decrease the setting value.
The auto-off timer can be set from 1 to 12 hours.
If you wish to turn off the timer, press and hold the cursor key until "oFF" sign appears on the screen.

3 Press the memory key to apply the setting.



BASIC SEWING

Straight Stitch Sewing

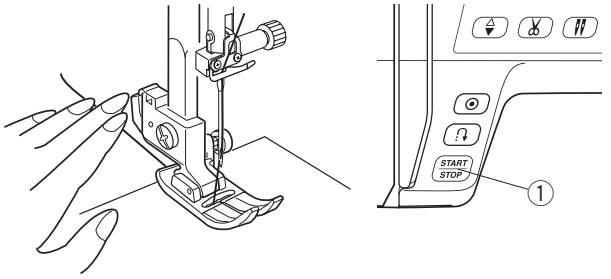
① Stitch pattern:	MODE 1:	1 or 4
	MODE 2:	01 or 04
② Thread tension dial:	2 to 6	
③ Presser foot:	Zigzag foot A	

NOTE:
When sewing with the satin stitch foot F or buttonhole foot R, pull the thread to the left to hold the thread.

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 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

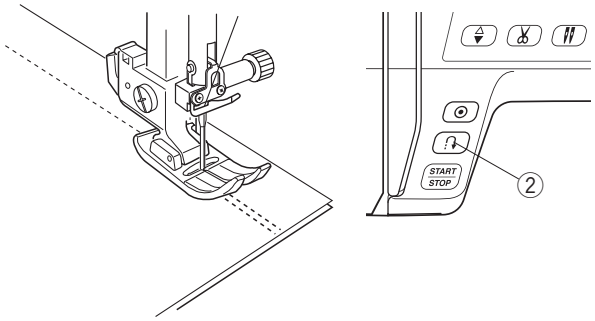


Securing seams

For fastening the ends of seams, press the reverse button and sew several reverse stitches.
The machine sews in reverse as long as you press and hold the reverse button.

② Reverse button

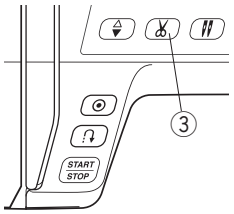
Press the reverse button once when sewing the lock-a-matic stitch (pattern 2 in mode 1) or locking stitch (pattern 3 in mode 1) and the machine will lock the stitches off and stop automatically.



Cutting threads

To cut the threads after finishing sewing, press the thread cutter button. The needle bar automatically rises after trimming the threads.
After cutting the thread, you can start sewing without drawing up the bobbin thread.

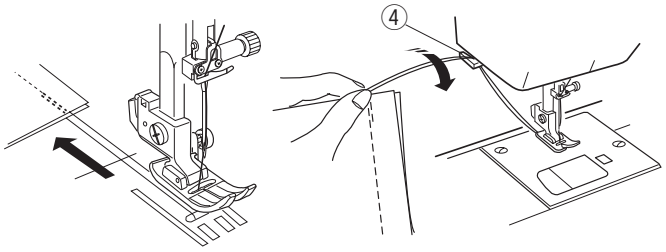
③ Thread cutter button

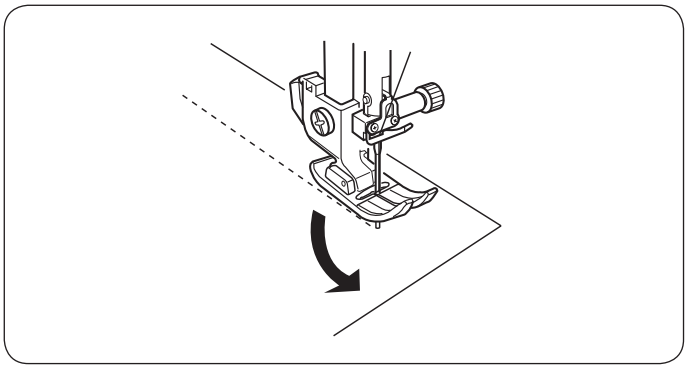


NOTE:
If you press the thread cutter button with the presser foot up, the LCD display will advise you to lower the presser foot.
Lower the presser foot and press the thread cutter button.

Use the thread cutter on the face cover to cut specialized or thick threads (#30 or thicker) if the auto thread cutter does not work well.
To use the thread cutter on the face cover, remove the fabric and draw it to the back.
Pull the threads up and slip them between the thread cutter and face cover from behind.
Pull the threads toward you to cut.

④ Thread cutter

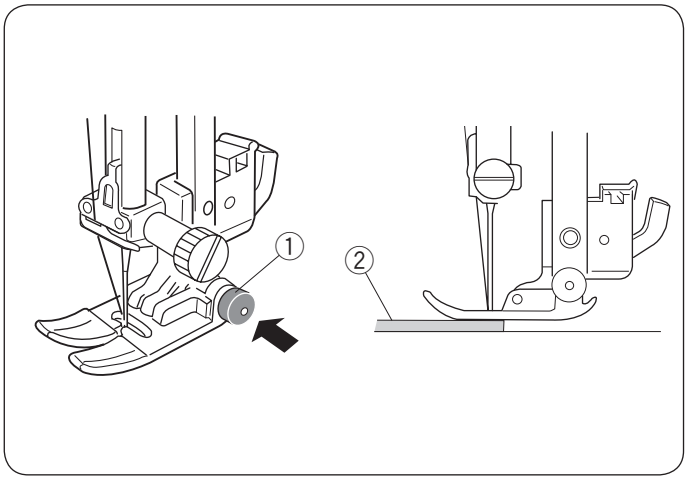




Changing Sewing Direction

Stop the machine.
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.

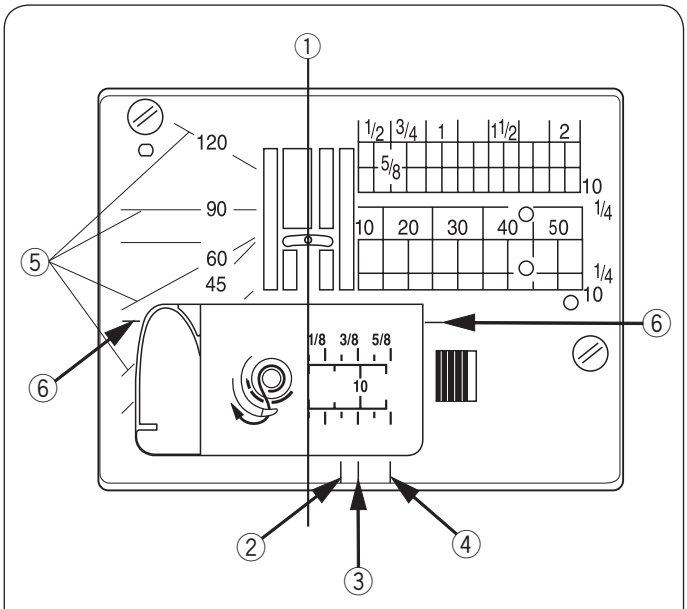
NOTE:
Lower the needle by pressing needle up/down button if the needle stop position is set at up position.



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.

① Black button
② Thick fabrics



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.

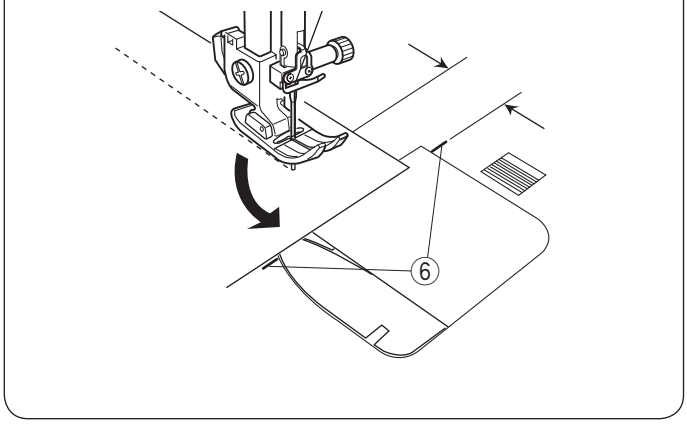
① Center needle position

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 53).

⑤ Angle scales
⑥ Cornering guide

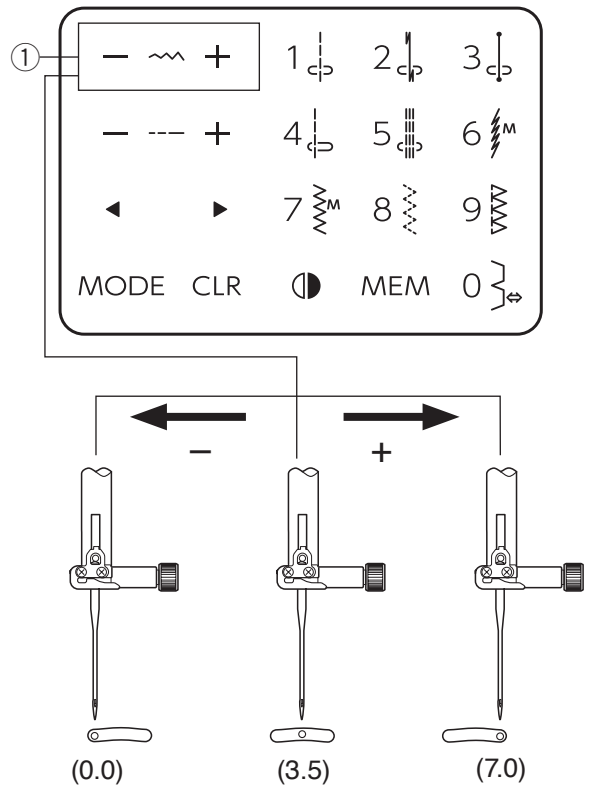


Turning Square Corners

When sewing with fabric edge at 5/8″ seam guide, to turn a square corner so that sewing continues at same distance from edge.
Stop the machine when front edge of fabric reaches the cornering guide lines ⑥.
Raise the presser foot and turn the fabric counterclockwise 90°.
Lower the presser foot, and begin stitching in the new direction.

⑥ Cornering guide

NOTE:
Lower the needle by pressing needle up/down button if the needle stop position is set at up position.



Altering the Needle Drop Position

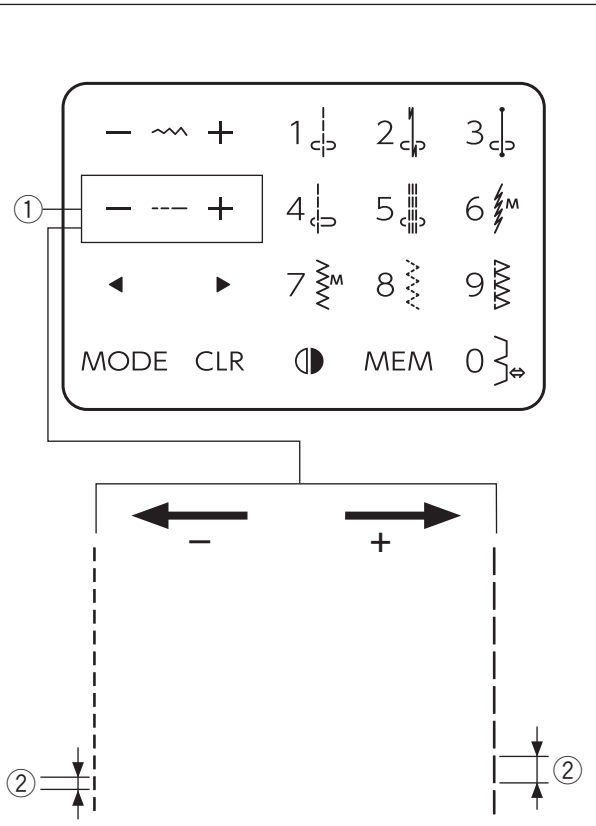
The needle drop position can be altered for straight stitch patterns 01-05 in mode 1 and 2 and 10-14 in mode 3.



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

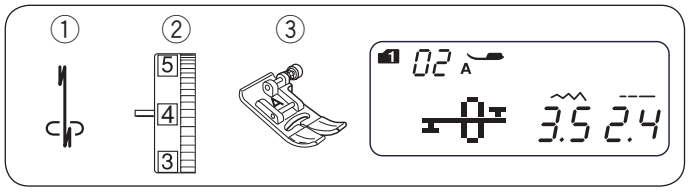
The stitch length can be altered.

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.

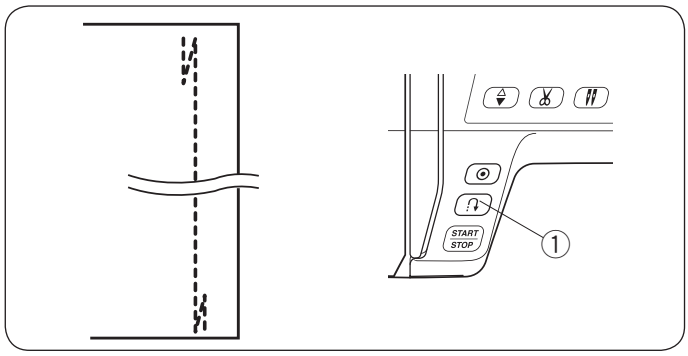
① Stitch length adjusting key
② Stitch length

NOTE:
Reverse stitch length cannot be set longer than 4.0.



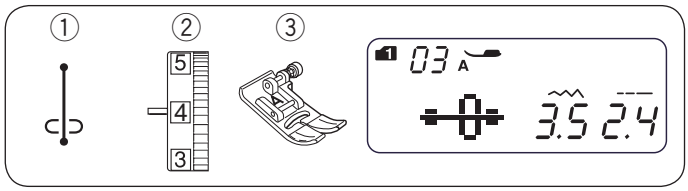
Variety of Straight Stitches
Lock-a-matic Stitch

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



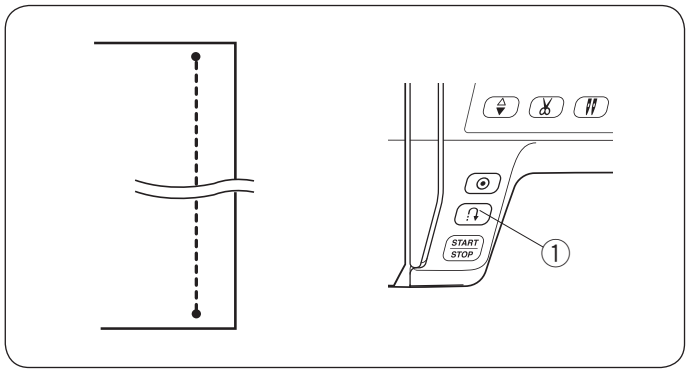
Use this stitch to secure the beginning and the end of a seam with backstitching.
When you reach the end of the seam, press the reverse button once. The machine will sew four reverse stitches, four forward stitches, and then stop sewing automatically.

① Reverse button



Locking Stitch

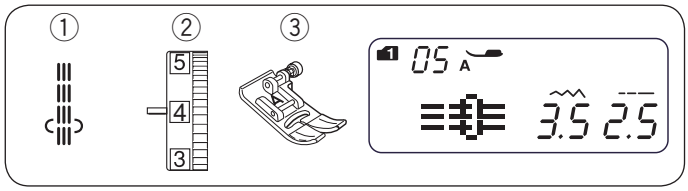
① Stitch pattern: MODE 1: 3
MODE 2: 03
② Thread tension dial: 2 to 6
③ Presser foot: Zigzag foot A



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

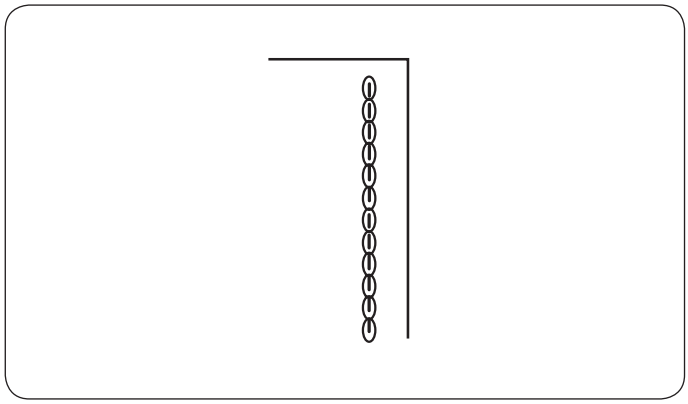
Lower the needle close to the front edge of the fabric. The machine will sew several locking stitches in place and continue sewing forward.
When you press the reverse button at the end of the seam, the machine will sew several locking stitches in place, then stop sewing automatically.

① Reverse button

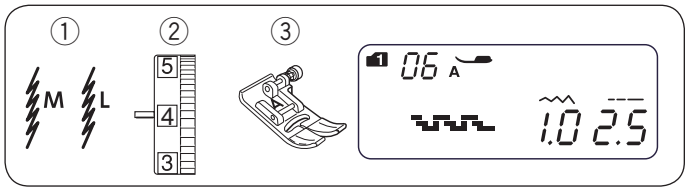


Triple Stretch Stitch

① Stitch pattern: MODE 1: 5
MODE 2: 05
② Thread tension dial: 2 to 6
③ Presser foot: Zigzag foot A

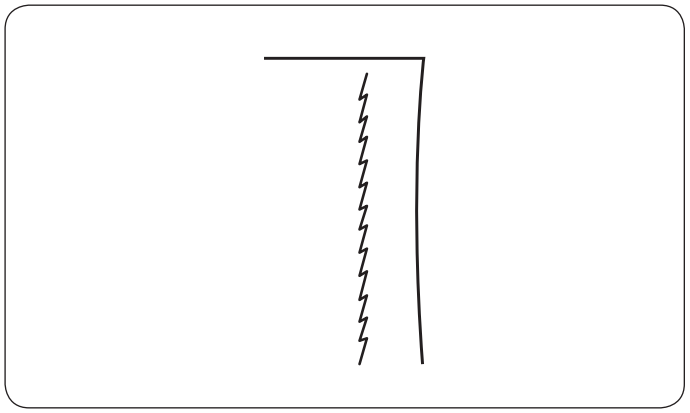


This strong, durable stitch is recommended when both elasticity and strength are necessary in order to insure comfort and durability. Use it to reinforce areas such as crotch and armhole seams. Also use for extra reinforcement when constructing items such as backpacks.

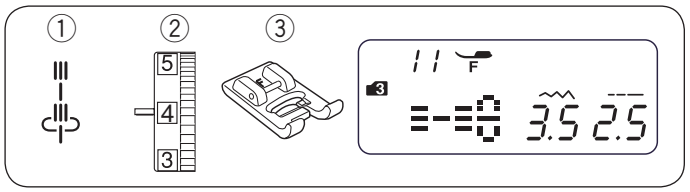


Stretch Stitch

① Stitch pattern: MODE 1: 6
MODE 2: 06 or 11
② Thread tension dial: 3 to 6
③ Presser foot: Zigzag foot A

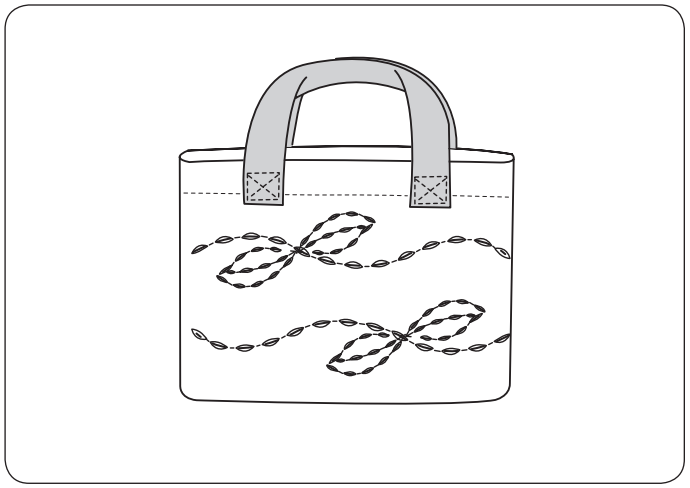


This stitch is a narrow stretch stitch designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely open flat. Use this stitch for seaming fine fabrics.

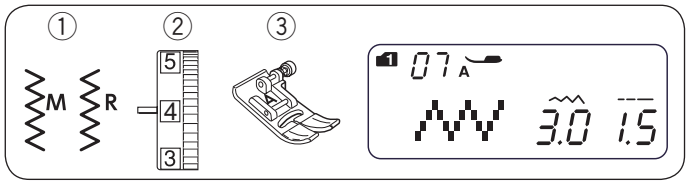


Sculpture Stitch

① Stitch pattern: MODE 3: 11
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F
* The stitch patterns 12 to 14 in mode 3 can also be used.

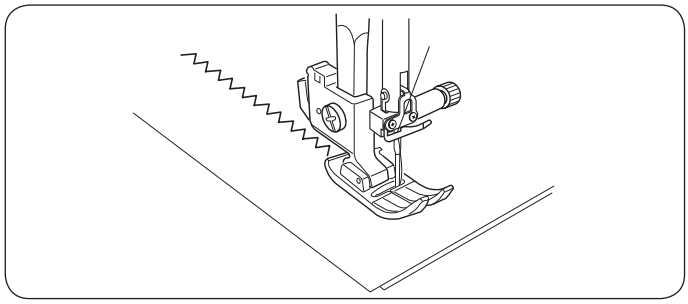


You can achieve a lovely hand-worked look when topstitching suits, blazers, jumpers, and denim outfits with these stitches.



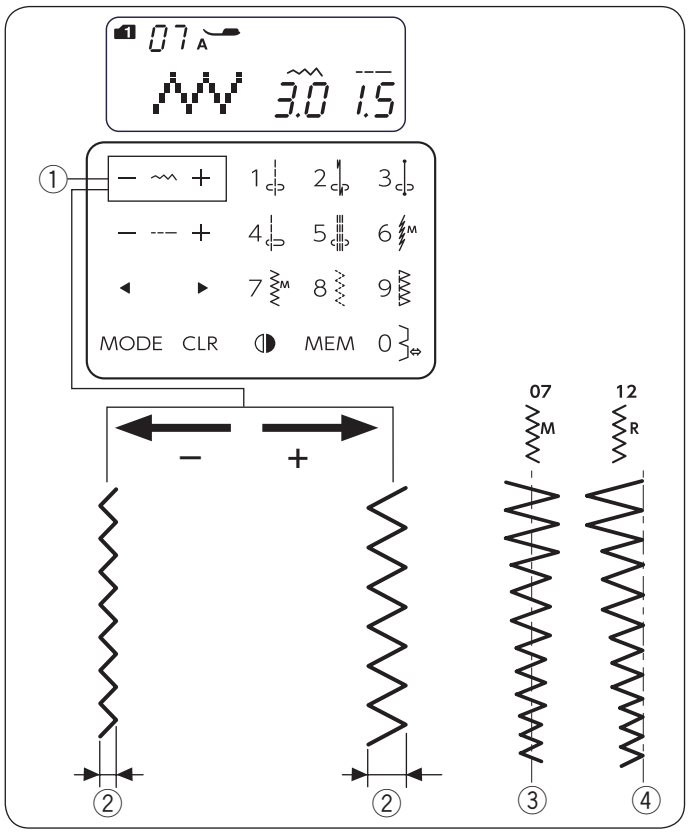
Zigzag Stitch

① Stitch pattern: MODE 1: 7
MODE 2: 07 or 12
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.

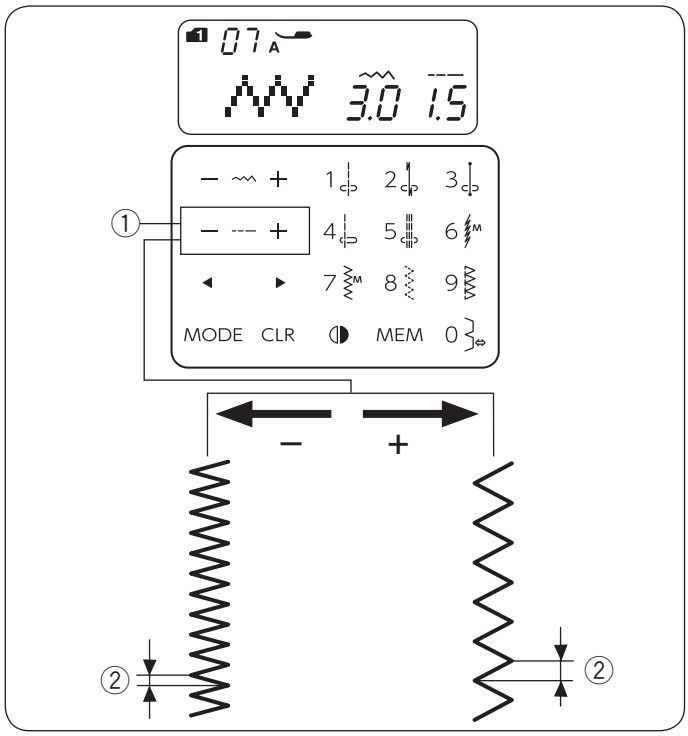
① Stitch width adjusting key
② Stitch width

The stitch width of pattern 07 can be changed without changing its center needle position (M) ③.

③ Center needle position

The stitch width of pattern 12 can be changed without changing its right needle position (R) ④.

④ Right needle position

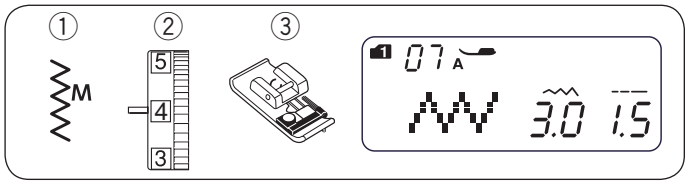


Altering the stitch length

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

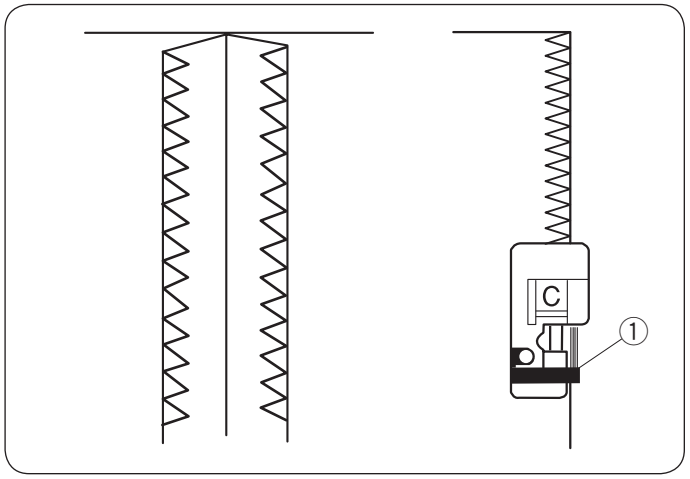
Press the "–" sign on the stitch length adjusting key to decrease the stitch length.

① Stitch length adjusting key
② Stitch length



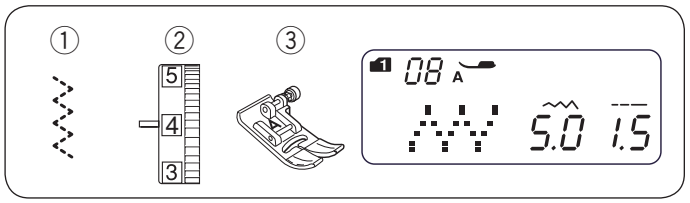
Variety of Overcasting Stitches
Overcasting with Zigzag Stitch

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



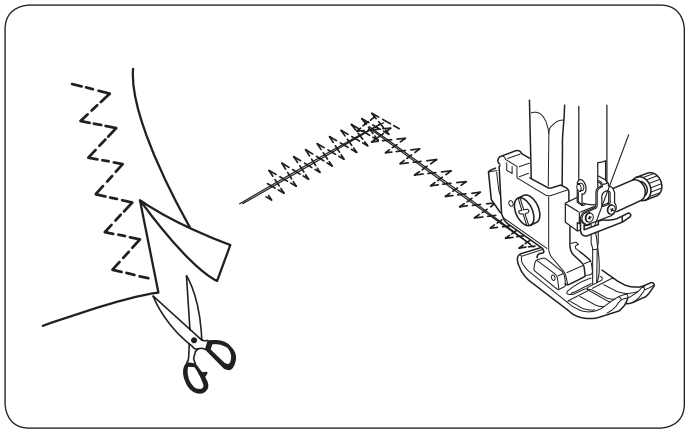
⚠ CAUTION:
- The “A” foot is displayed on the LCD when zigzag stitch pattern 07 is selected. However, use overedge foot C when sewing overcasting.
- When using an overedge foot, make sure to set the stitch width at 5.0-7.0, otherwise the needle may hit the wires on the foot.

Place the fabric edge next to the guide on the foot and sew while guiding the fabric along the guide.
① Guide



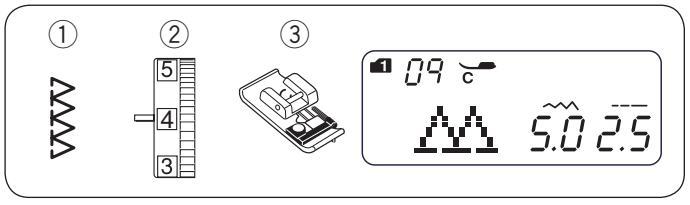
Multiple Zigzag Stitch

① Stitch pattern: MODE 1: 8
MODE 2: 08
② Thread tension dial: 3 to 7
③ Presser foot: Zigzag foot A



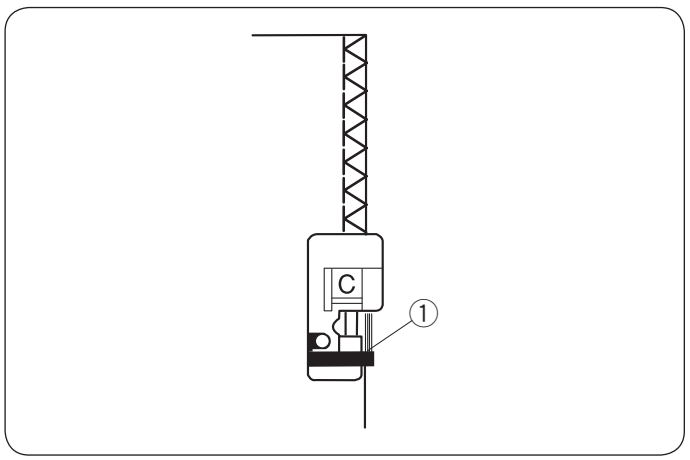
This stitch is used to finish a raw edge of synthetics and other stretch fabrics that tend to pucker.
Sew along the fabric edge leaving an adequate seam allowance.
After sewing, trim off the seam allowance closer to the stitches.

This stitch is also excellent for darning and mending tears.



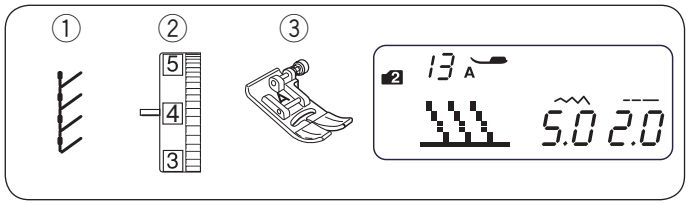
Overedge Stitch

① Stitch pattern: MODE 1: 9
MODE 2: 09
② Thread tension dial: 3 to 7
③ Presser foot: Overedge foot C



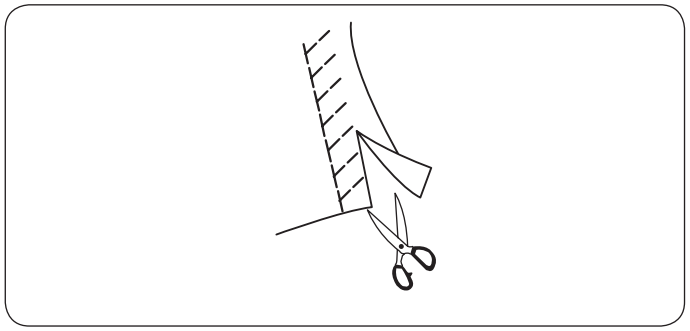
This stitch is used to seam and overcast fabric edges at one time.
Use this stitch when you do not need to open seams flat.
Sew while guiding the fabric edges along the guide on the foot.
① Guide

⚠ CAUTION:
When using an overedge foot, make sure to set the stitch width at 5.0-7.0, otherwise the needle may hit the wires on the foot.

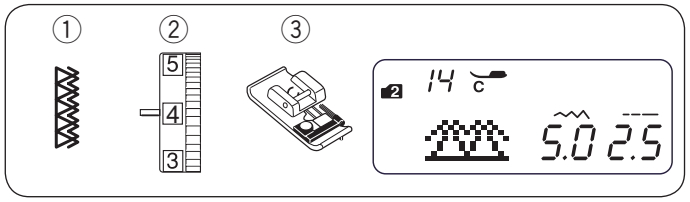


Knit Stitch

① Stitch pattern: MODE 2: 13
② Thread tension dial: 3 to 6
③ Presser foot: Zigzag foot A

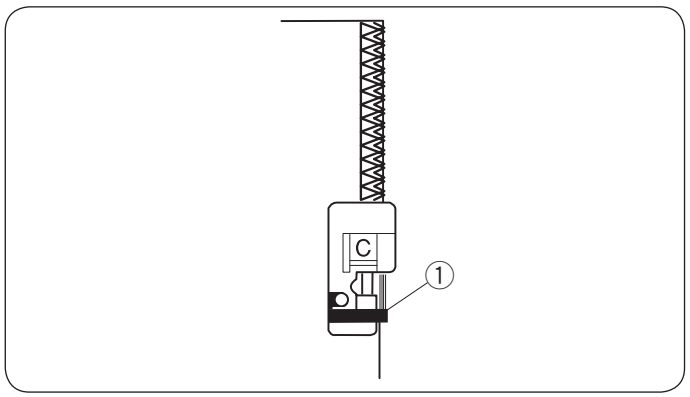


Place your fabric to allow a 5/8″ (1.5 cm) seam. Trim excess close to the stitching. Be careful not to cut the stitches.



Double Overedge Stitch

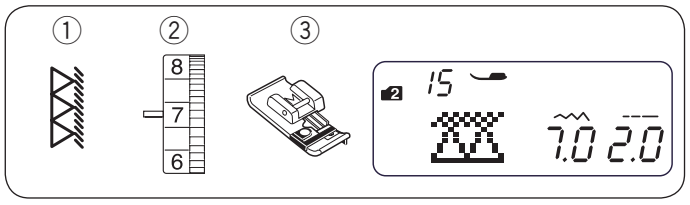
① Stitch pattern: MODE 2: 14
② Thread tension dial: 3 to 7
③ Presser foot: Overedge foot C



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.

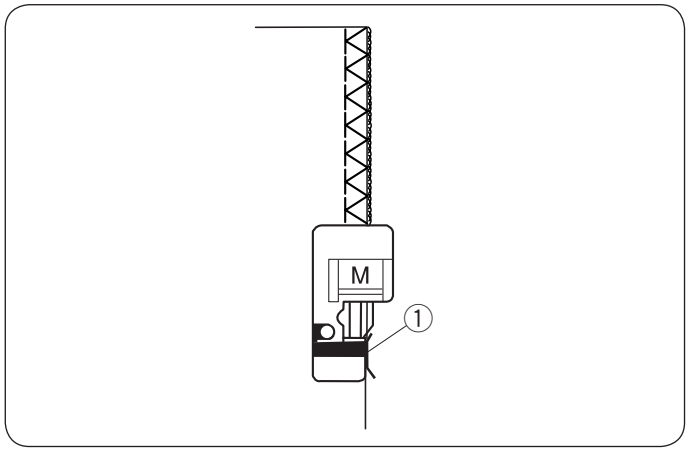
① Guide

⚠ CAUTION:
When using an overedge foot, make sure to set the stitch width at 5.0-7.0, otherwise the needle may hit the wires on the foot.



Overlock Stitch

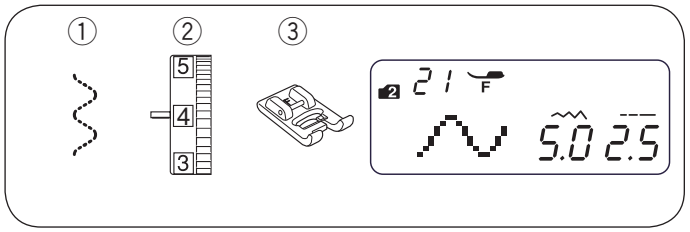
① Stitch pattern: MODE 2: 15
② Thread tension dial: 6 to 8
③ Presser foot: Overcast foot M



NOTE:
The identification letter for the recommended foot will not be displayed on the LCD when the overlock stitch pattern is selected. To sew the overlock stitch pattern, attach the overcast foot M.

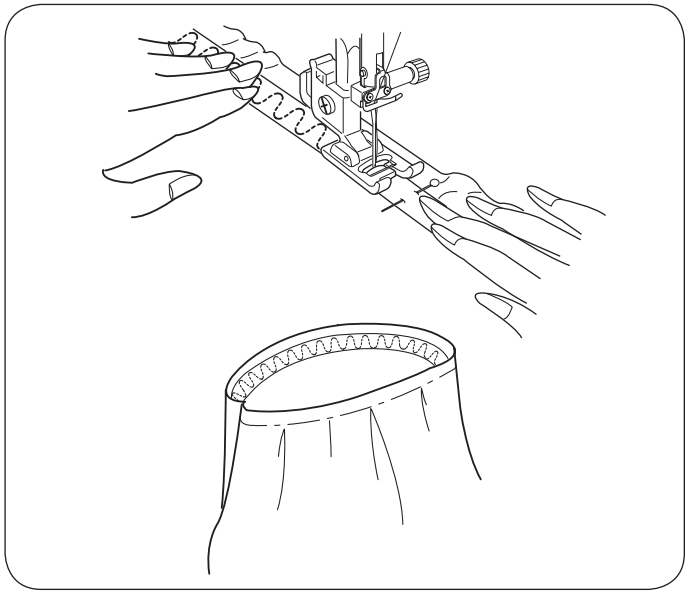
This stitch finishes the edges of fabric in a way similar to a commercial overlocking machine for a professional look.
Place the fabric edge next to the guide of the foot and sew.

① Guide

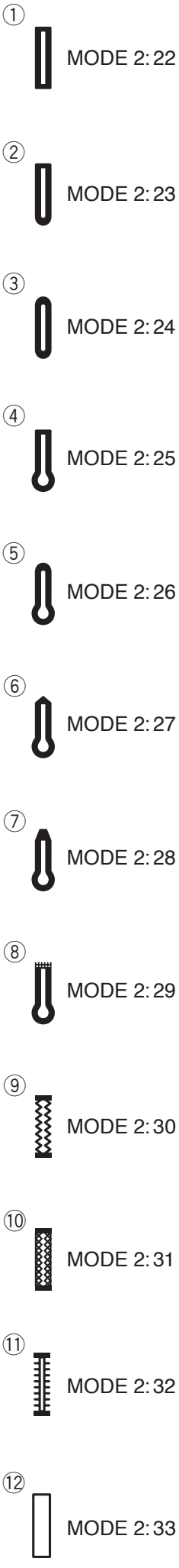


Attaching Elastic

① Stitch pattern: MODE 2: 21
② Thread tension dial: 1 to 4
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 12 types of buttonholes are available.

① **Square buttonhole**
This buttonhole is widely used on medium to heavy fabrics.

② **Round-end buttonhole**
This buttonhole is used on fine to medium weight fabrics, especially for blouses and children's clothes.

③ **Fine fabric buttonhole**
This buttonhole is rounded at both ends and is used on fine, delicate fabrics such as fine silk.

④ **Keyhole buttonhole**
The keyhole buttonhole is widely used on medium to heavy fabrics. It is also suitable for larger and thicker buttons.

⑤ **Rounded keyhole buttonhole**
This buttonhole is used for thicker buttons on medium weight fabrics.

⑥ **Tailored buttonhole**
This durable buttonhole is used with thick buttons and heavy fabrics.

⑦ **Keyhole buttonhole (tapered reinforced end)**
This buttonhole is used for tailored clothing, woven cloth etc.

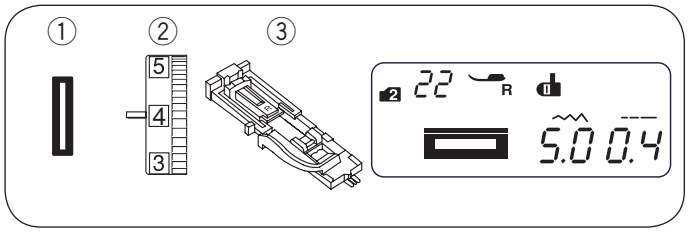
⑧ **Keyhole buttonhole (heavy reinforced end)**
This buttonhole is used for tailored clothing, jackets, particularly men's wear, woven cloth etc.

⑨ **Stretch buttonhole**
This buttonhole is suitable for stretch fabrics. It can also be used as a decorative buttonhole.

⑩ **Knit buttonhole**
This buttonhole is suitable for knit fabrics. It can also be used as a decorative buttonhole.

⑪ **Antique buttonhole**
Resembles a "Hand Worked" buttonhole ideal on fine fabrics featured in Heirloom sewing or for couture fashions.

⑫ **Welted buttonhole (Bound buttonhole)**
This is a template pattern for the hand-sewn welted buttonhole.



Square Buttonhole

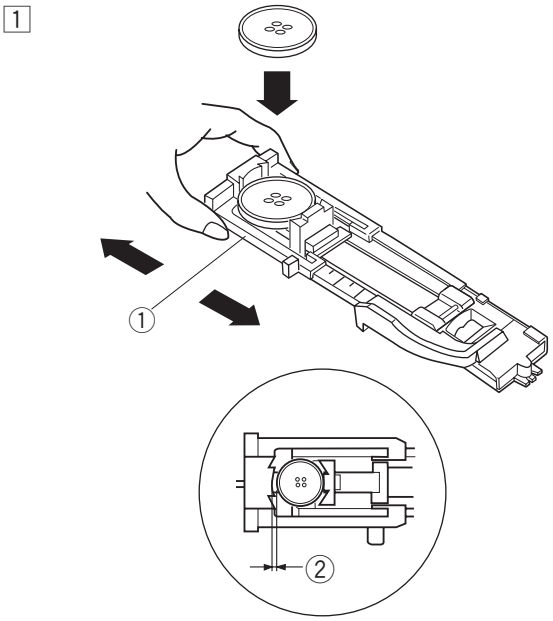
① Stitch pattern: MODE 2: 22
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R

The size of a buttonhole is automatically set by placing a button in the rear of automatic buttonhole foot R.
The button holder of the foot takes a button size of 3/8″ (1 cm) to 1″ (2.5 cm) in diameter.
When selecting the buttonholes, the LCD display advise you to lower the buttonhole lever.

NOTE:
It is sometimes necessary to change buttonhole size to match certain heavy or specific fabrics and threads. Make a test buttonhole on an extra piece of the fabric to check your settings.
The preset width of the buttonhole is suited for ordinary buttons.
Apply an interfacing to stretch or fine fabrics.

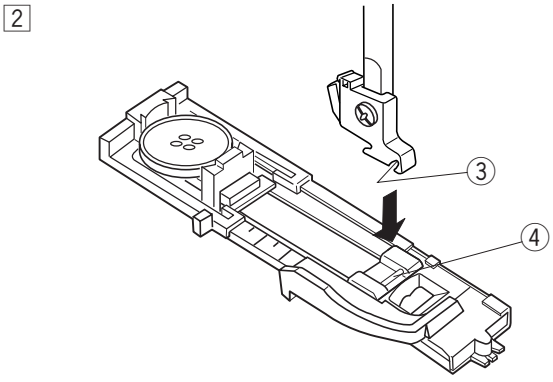
Sewing

1 Pull the button holder to the back, and place the button in it. Push it together tightly on the button.
① Button holder

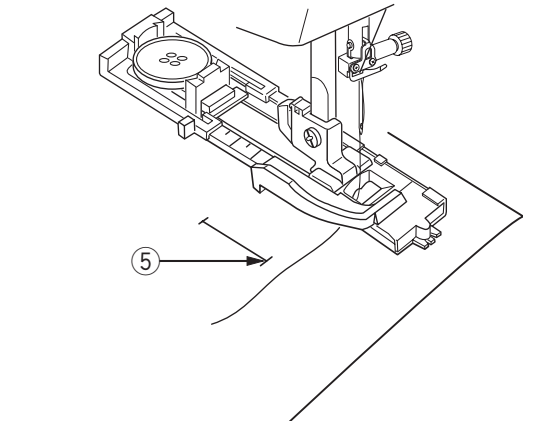


NOTE:
If the button is extremely thick, make a test buttonhole on an extra piece of the fabric.
If it is difficult to fit the button through the test buttonhole, you can lengthen the buttonhole by pulling the button holder back a little. The length of the buttonhole will be increased.
② Extra gap

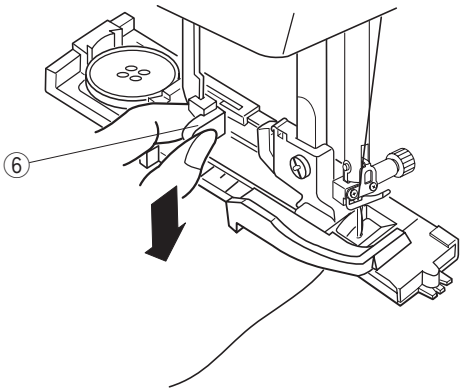
2 Press the needle up/down button to raise the needle. Attach the automatic buttonhole foot R snapping the pin into the groove of the foot holder.
You may lift the presser foot lifter to the extra lifted position when placing the automatic buttonhole foot under the foot holder.
Raise the presser foot.
③ Groove
④ Pin



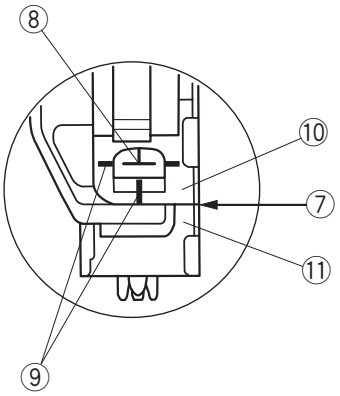
3 Draw the needle thread to the left through the hole of foot. Mark the buttonhole position on the fabric and place it under the buttonhole foot. Lower the needle at the starting point by turning the handwheel.
⑤ Starting point



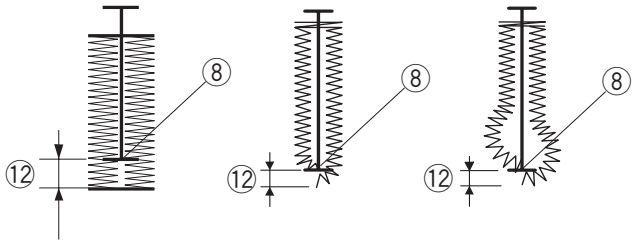
4



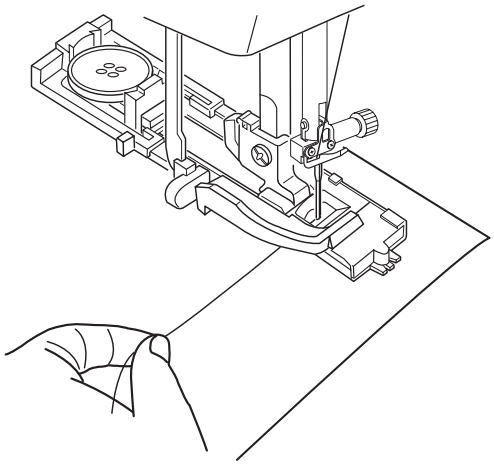
4 Lower the presser foot and pull the buttonhole lever down as far as it will go.
⑥ Buttonhole lever



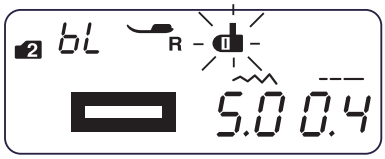
NOTE:
The reference lines on the buttonhole foot can be used as a positioning guide.
Make sure there is no gap between the slider and stopper, otherwise the buttonhole will be out of position or there will be a sewing gap.
⑦ No gap
⑧ Starting point
⑨ Reference lines
⑩ Slider
⑪ Stopper
⑫ Sewing gap



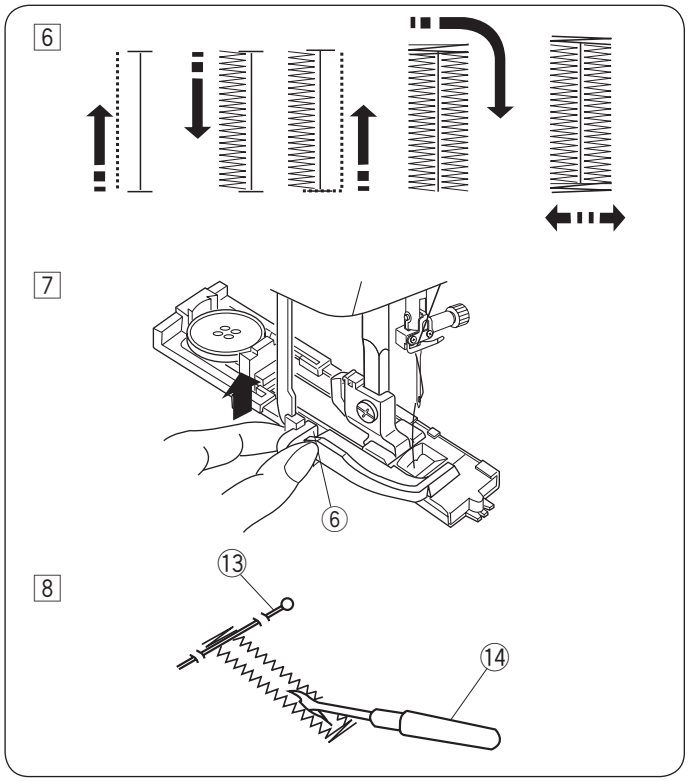
5



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



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



6 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.

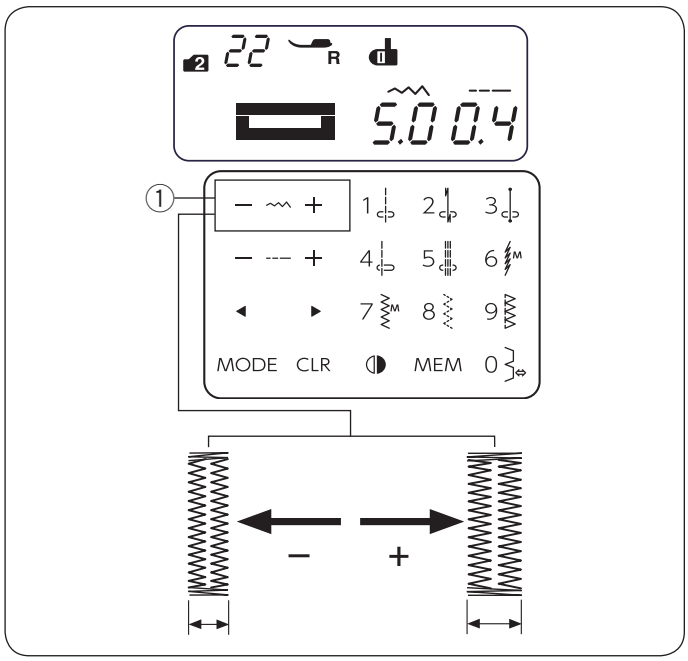
7 When buttonhole sewing is finished, push the buttonhole lever upward as far as it will go.
⑥ Buttonhole lever

8 Remove the fabric and place a pin just below the bartack to prevent accidentally cutting the stitches. Cut the opening with the seam ripper.
⑬ Pin
⑭ Seam ripper

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.

NOTE:
If the fabric is not feeding smoothly when sewing a double layer buttonhole, increase the buttonhole density.



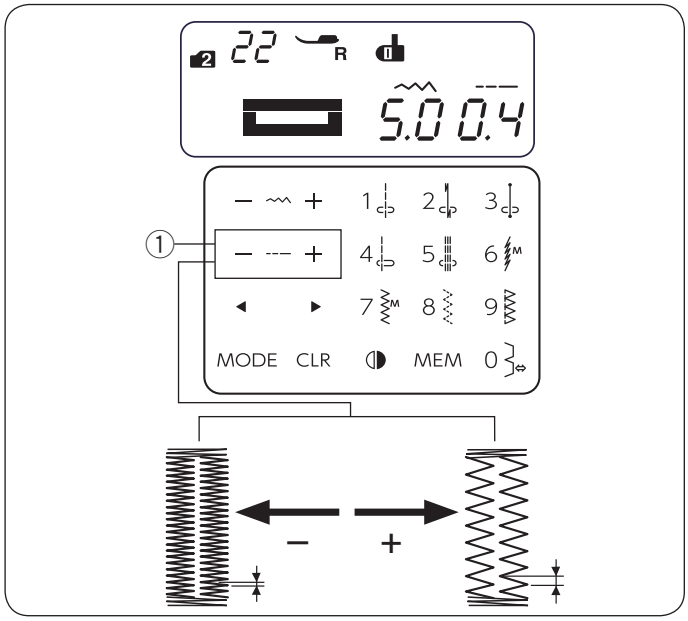
Altering the buttonhole width

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.



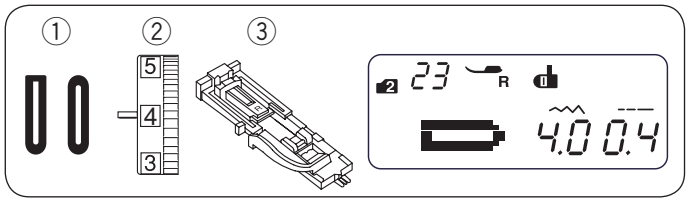
Altering the buttonhole density

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

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

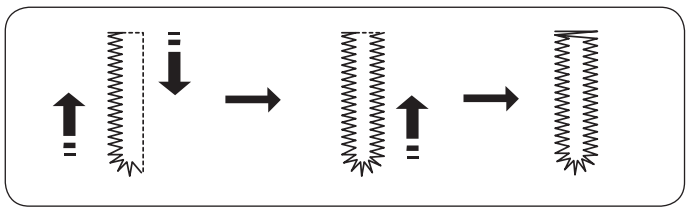
① Stitch length adjusting key

NOTE:
The buttonhole density can be adjusted from 0.2 to 0.8.

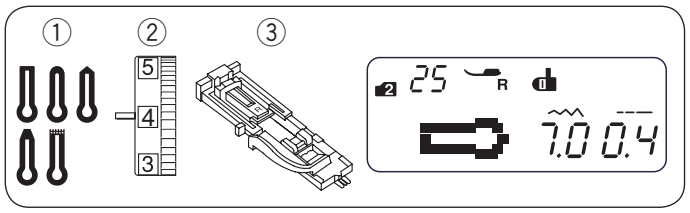


Round-end and Fine Fabric Buttonhole

① Stitch pattern: MODE 2: 23 and 24
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R

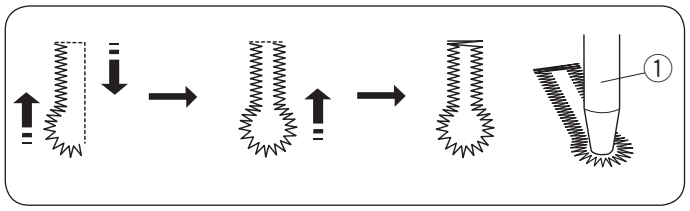


Sewing procedure is the same as square buttonhole.
The buttonhole width can be varied from 2.5 to 5.5.
The stitch density can be varied from 0.2 to 0.8.



Keyhole Buttonholes

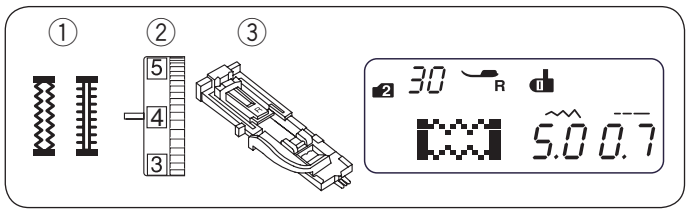
① Stitch pattern: MODE 2: 25- 29
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R



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.

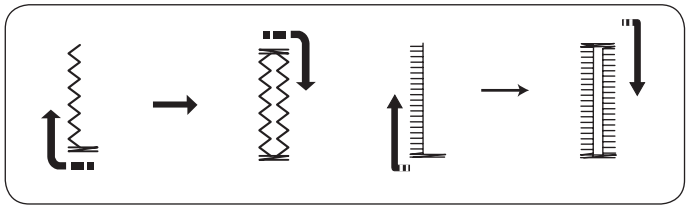
Use the seam ripper and an eyelet punch to open the buttonhole.

① Eyelet punch (not provided with the machine)

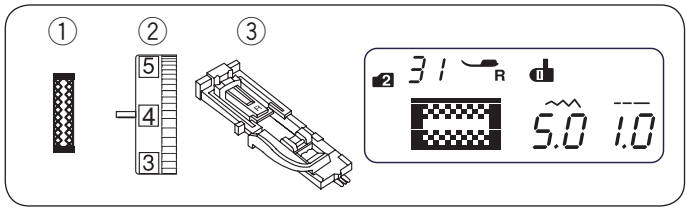


Stretch Buttonhole and Antique Buttonhole

① Stitch pattern: MODE 2: 30 and 32
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R

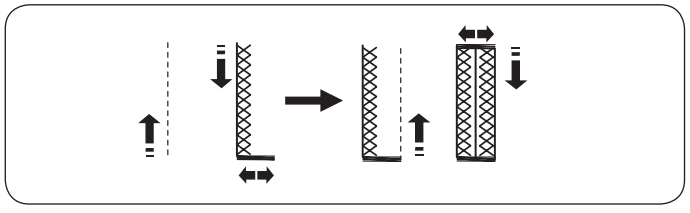


The machine will sew the front bartack and left row first.
The machine will sew the back bartack and right row, then it stops automatically.
The stitch width can be varied from 2.5 to 7.0.
The stitch density can be varied from 0.5 to 1.0 (Stretch buttonhole), 0.5 to 2.5 (Antique buttonhole).

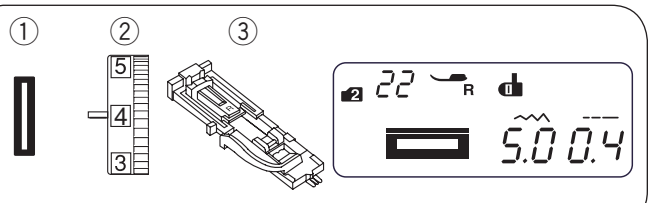


Knit Buttonhole

① Stitch pattern: MODE 2: 31
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R



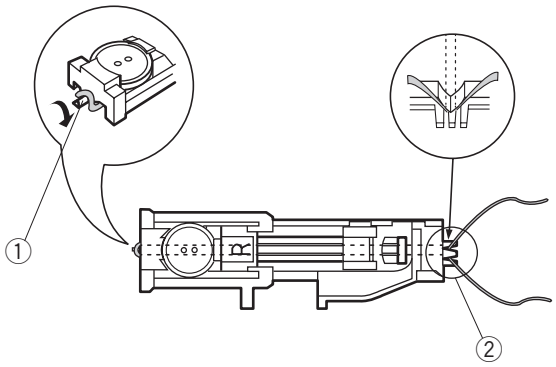
Sewing procedure is the same as square buttonhole.
The buttonhole width can be varied from 2.5 to 7.0.
The stitch density can be varied from 0.7 to 1.2.



Corded Buttonhole

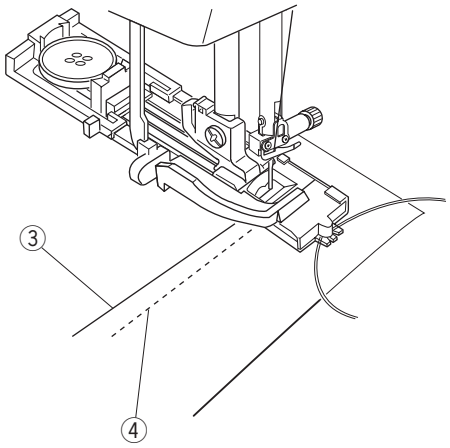
① Stitch pattern: MODE 2: 22
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R

1



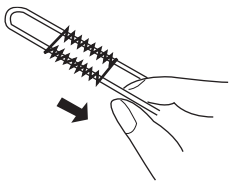
1 Use the same procedure as the square buttonhole sewing. Set the stitch width to match the thickness of the cord used.
With the buttonhole foot raised, hook the filler cord on the spur at the back of the buttonhole foot. Bring the ends toward you under the buttonhole foot, clearing the front end.
Hook 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

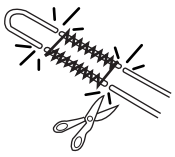


2 Start the machine and sew the buttonhole.
Each side of the buttonhole and the bartacks will be sewn over the cord.
Remove the fabric from the machine, and cut the sewing threads only.
③ Needle thread
④ Bobbin thread

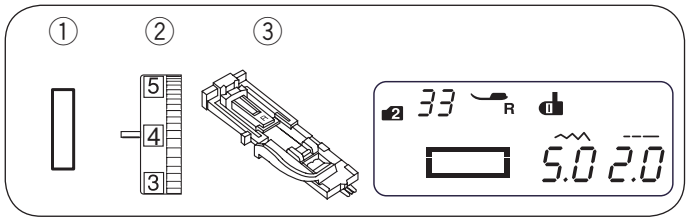
3



3 Pull the loose ends of the filler cord to tighten it.
Thread the each end of the cord through a hand-sewing needle. Then draw the both ends to the wrong side of the fabric and knot.



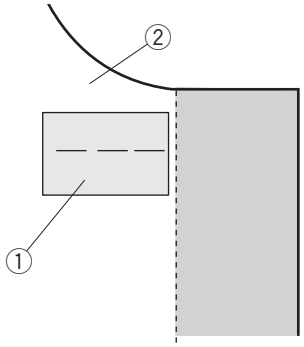
NOTE:
Cut the filler cord at both ends, if the filler cord is stitched on the fabric and cannot be pulled.



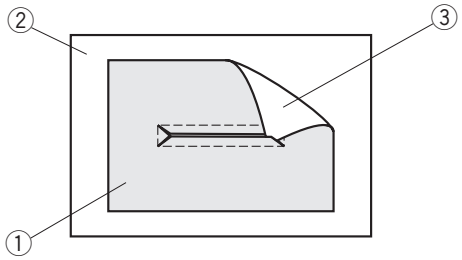
Welted Buttonhole

① Stitch pattern: MODE 2: 33
② Thread tension dial: 1 to 4
③ Presser foot: Automatic buttonhole foot R

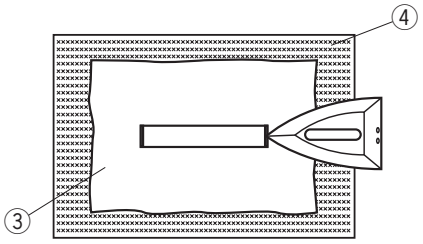
A welted buttonhole is made by stitching a strip or patch of fabric to the buttonhole.
Welted buttonholes are particularly suitable for tailored garments, but are not recommended for sheer or delicate fabrics where the patch might show through or add bulk.

1


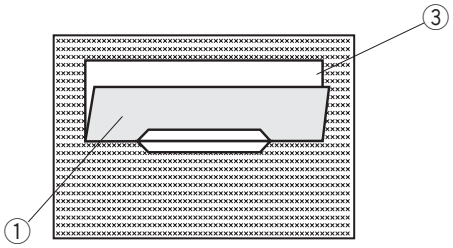
1 Baste a patch to the garment fabric with the right sides together.
① Wrong side of patch
② Right side of garment fabric

2


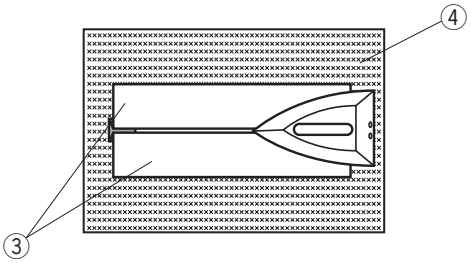
2 Select pattern 33 in mode 2.
Sew the welted buttonhole on both fabrics together. Cut the buttonhole opening as illustrated then pull the patch out through the slit to the other side.
① Wrong side of patch
② Right side of garment fabric
③ Right side of patch

3


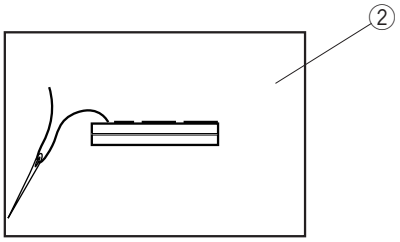
3 Pull out the patch until the right side of the patch is showing. Use an iron to press both corner ends until they are squared off.
③ Right side of patch
④ Wrong side of garment fabric

4


4 Fold back each side of the patch to form buttonhole lips.
① Wrong side of patch
③ Right side of patch

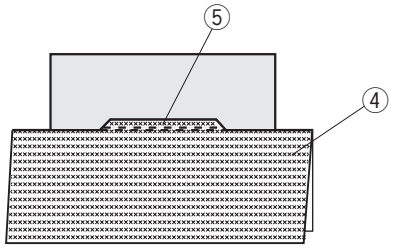
5


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

6


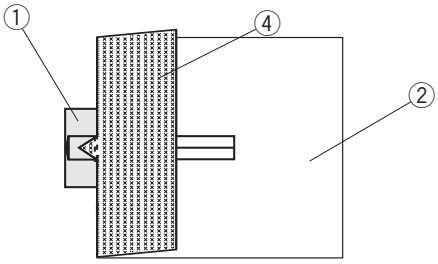
6 Baste both edges of the seam with a needle and thread by hand.
② Right side of garment fabric

7



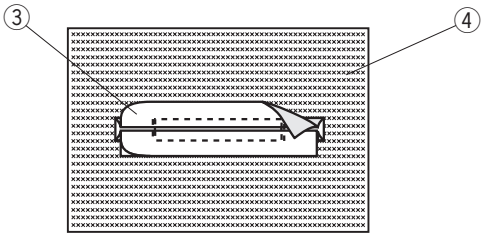
7 Fold over the length of the garment fabric, sew back and forth beside the original seam to secure flaps of the patch.
④ Wrong side of garment fabric
⑤ Sew back and forth

8



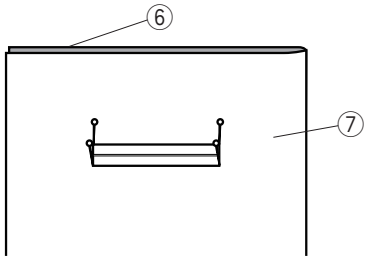
8 Fold over the end of fabric and sew back and forth three times over the triangular end.
① Wrong side of patch
② Right side of garment fabric
④ Wrong side of garment fabric

9



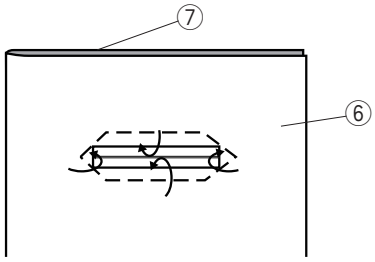
9 The patch should be cut 7/16″- 5/8″(1 to 1.5 cm) away from the hole. The corners should be cut rounded off as shown.
③ Right side of patch
④ Wrong side of garment fabric

10



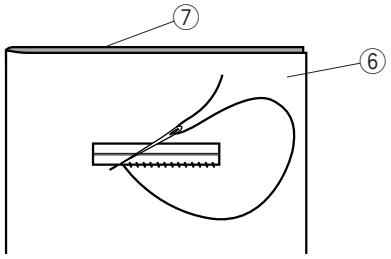
10 Place the facing on the wrong side of the garment fabric. Mark the 4 corners with pins as shown.
⑥ Facing
⑦ Garment fabric

11



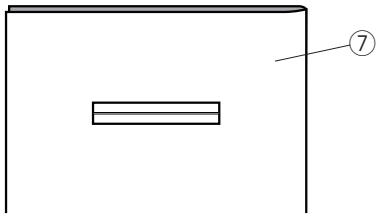
11 Turn all the layers over and cut the buttonhole opening on the facing in the same way as step 2.
Four marker pins show you the corner points on the facing. Fold back each flap between the facing and patch.
⑥ Facing
⑦ Garment fabric

12

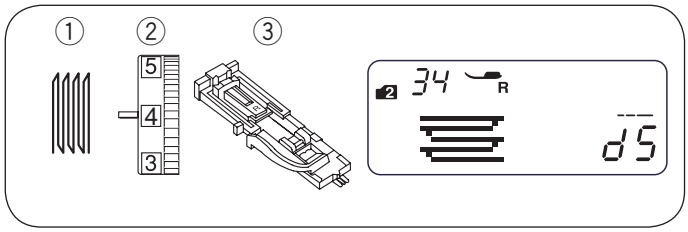


12 Stitch around the opening with a needle and thread as shown.
⑥ Facing
⑦ Garment fabric

13

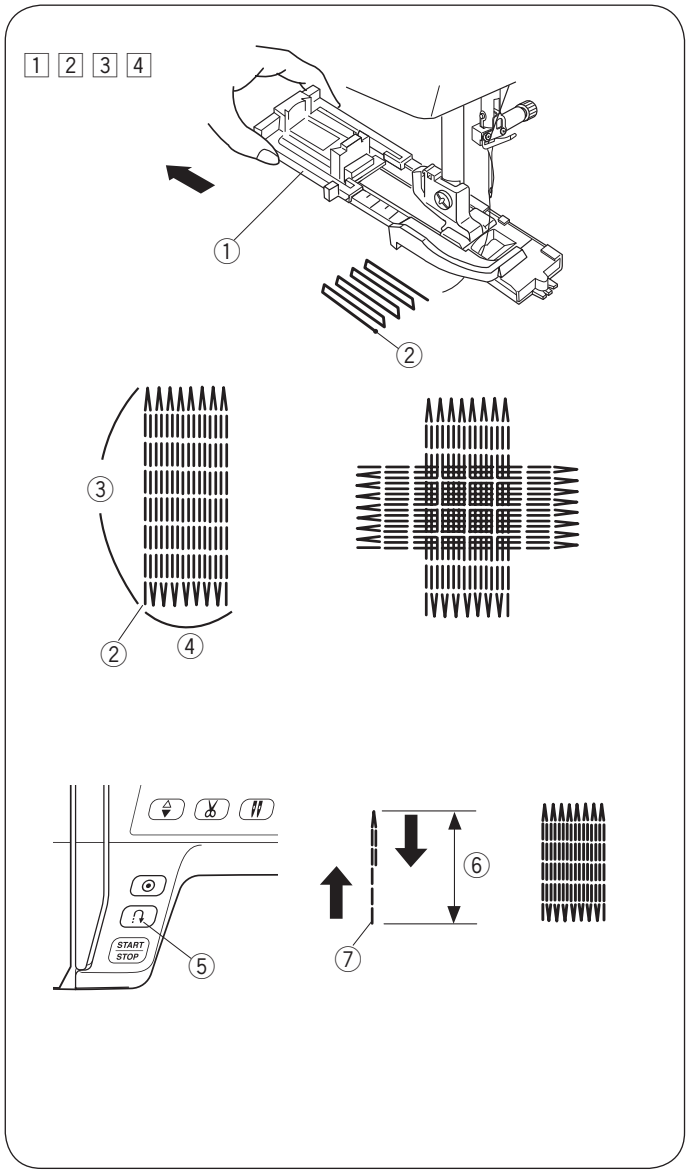


13 The welted buttonhole is complete.
⑦ Garment fabric



Darning Stitch

① Stitch pattern: MODE 2: 34
② Thread tension dial: 3 to 6
③ Presser foot: Automatic buttonhole foot R



Starting to sew

1 Attach the automatic buttonhole foot R and pull the button holder ① all the way out.
Draw the needle thread to the left through the hole of foot.
① Button holder

2 Place the fabric under the foot, and lower the needle at the starting point ②. Then lower the foot.
② Starting point

3 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.
③ 3/4″ (2 cm)
④ 9/32″ (0.7 cm)

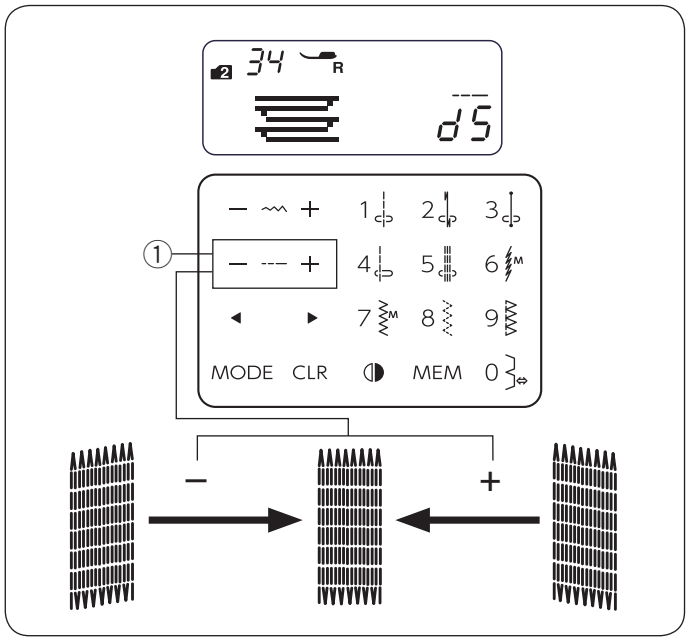
Sewing a shorter darning

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.

NOTE:
To reset the size of the darning, select the other stitch pattern and reselect the darning stitch.



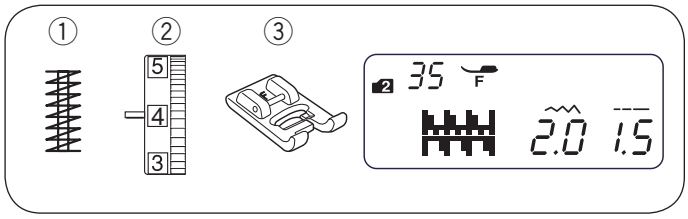
Adjusting the evenness of darning

Correct the evenness of the darning as follows:
“d5” is the default setting value.

When the right side of the darn is lower than the left side, press the “+” sign on the stitch length adjusting key ① to set the value to “d6” to “d9”, and make the darn even.

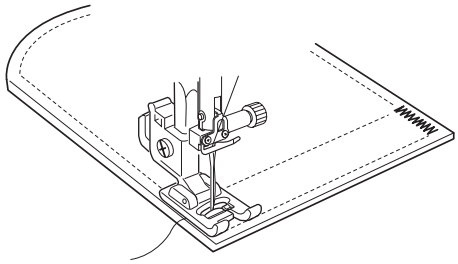
When the left side of the darn is lower than the right side, press the “–” sign on the stitch length adjusting key ① to set the value to “d1” to “d4”, and make the darn even.

① Stitch length adjusting key

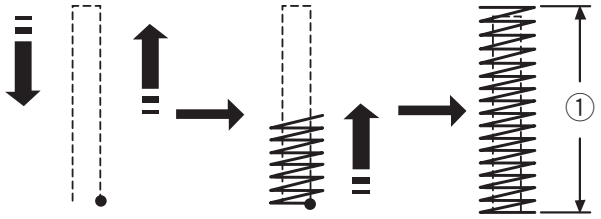


Tacking

① Stitch pattern: MODE 2: 35
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F



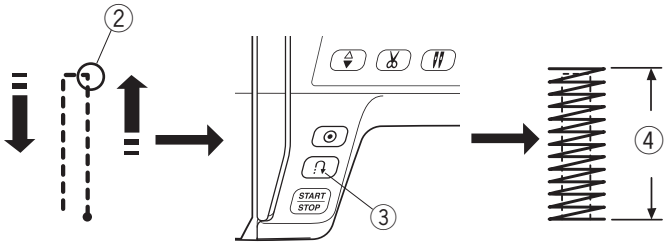
Tacking is used to reinforce pockets, crotches and belt carriers where extra strength is needed.



Start sewing

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

① 5/8″ (1.5 cm)



Sewing a shorter tack

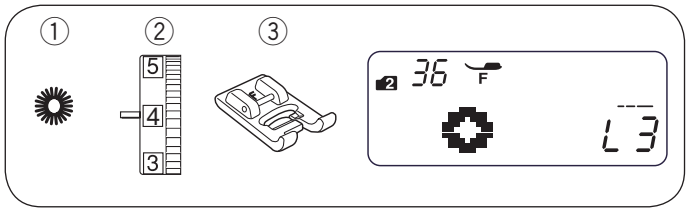
To sew a tack shorter than 5/8″ (1.5 cm), first stop the machine after sewing the required length, then press the reverse button.
The tack length has been determined.
Start the machine again and continue sewing until the machine stops automatically.

② Required length
③ Reverse button
④ Tack length

Sewing a same-size tacking

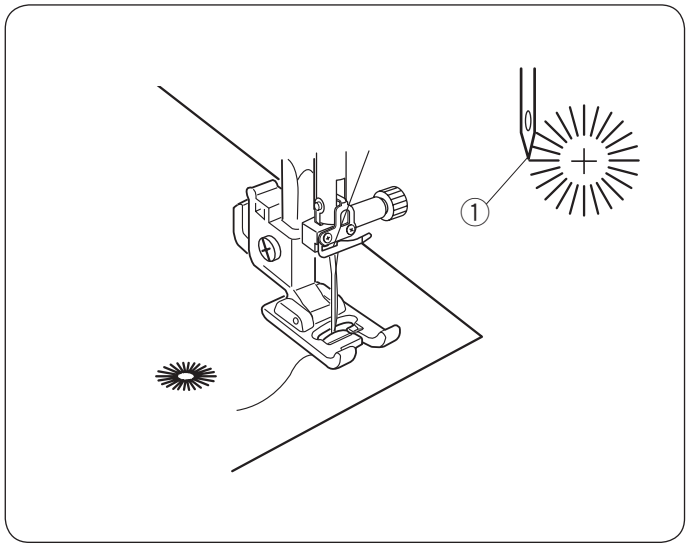
Simply start the machine to sew another tack at the same size.

NOTE:
To reset the size of the tacking, select the other stitch pattern and reselect the tacking.



Eyelet

① Stitch pattern: MODE 2: 36
② Thread tension dial: 1 to 4
③ Presser foot: Satin stitch foot F



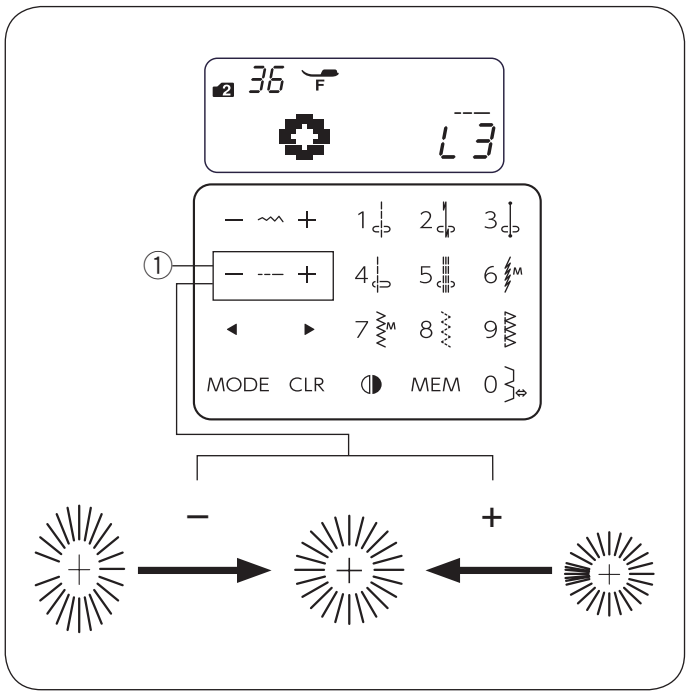
The eyelet is used for belt holes etc.

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 (an awl, eyelet punch or pointed scissors are not provided with the machine).



Adjusting the shape of an eyelet

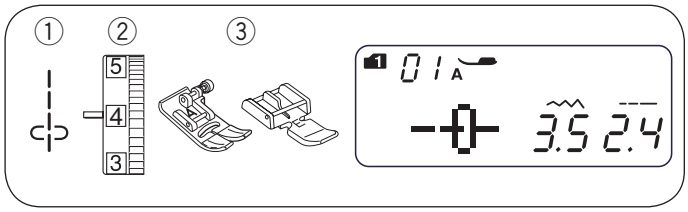
Correct the shape of the eyelet as follows:
"L3" is the default setting value.

If the eyelet gap overlaps, press the "+" sign on the stitch length adjusting key to make the darn even.

If the eyelet gap opens, press the "–" sign on the stitch length adjusting key to make the darn even.

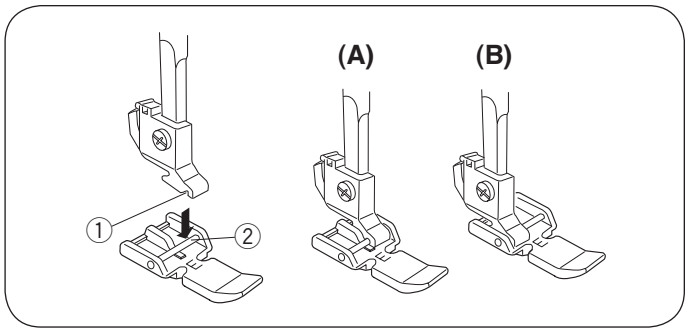
① Stitch length adjusting key

NOTE:
The shape can be adjusted within L1 to L5.



Zipper Sewing

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



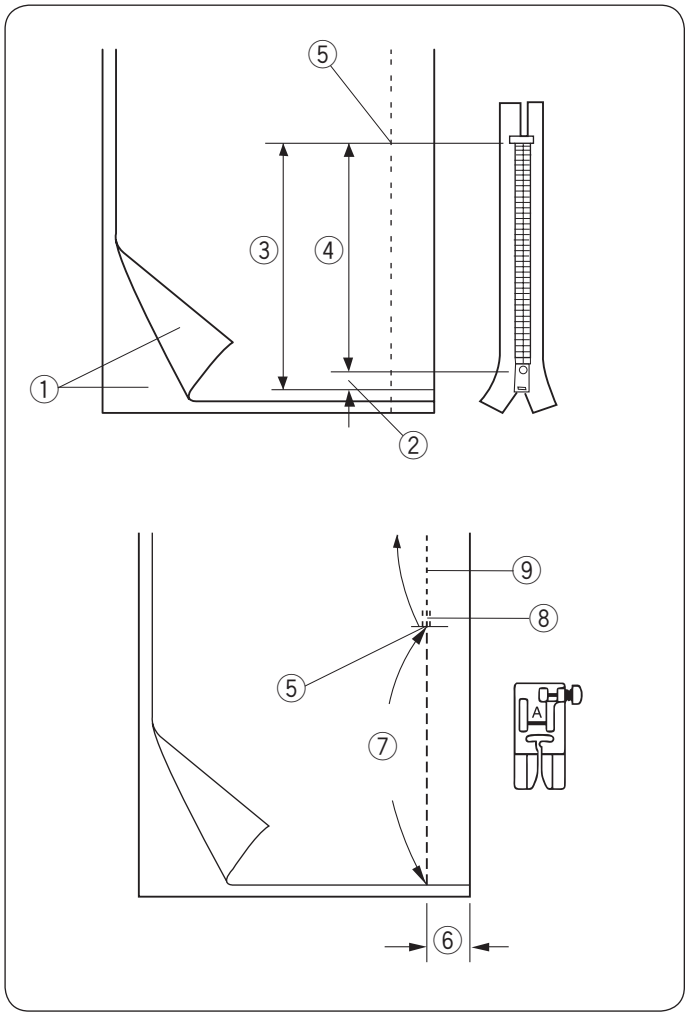
Attaching the zipper foot

Fit the pin on zipper foot E to the groove on the foot holder.

① Groove
② Pin

(A): To sew the left side of the zipper, attach the zipper foot with the pin on the right-hand side.

(B): To sew the right side of the zipper, attach the zipper foot with the pin on the left-hand side.



Fabric preparation

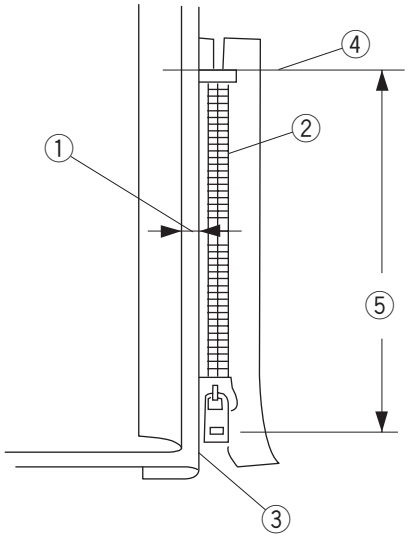
Add 1 cm (3/8″) to the zipper length. This is the overall opening size.

① Right side of the fabric
② 1 cm (3/8″)
③ Opening size
④ Zipper length
⑤ End of the zipper opening

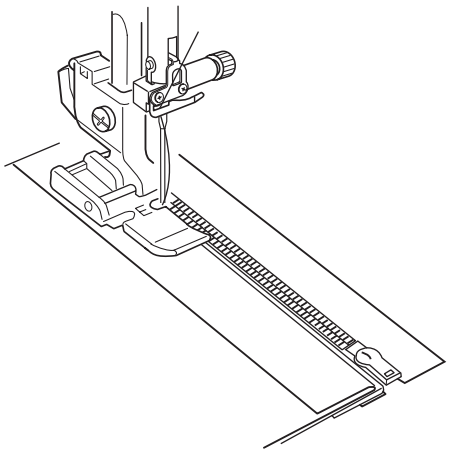
Place the right sides of the fabric together.
Attach the zigzag foot and seam up to the end of the zipper opening, with a 2 cm (13/16″) seam allowance.
Reverse the stitch to fasten the seam.
Manually increase the stitch length to 5.0 and baste the zipper opening with the thread tension loosened to 1-3.

⑤ End of the zipper opening
⑥ 2 cm (13/16″)
⑦ Basting
⑧ Reverse stitches
⑨ Seam stitches

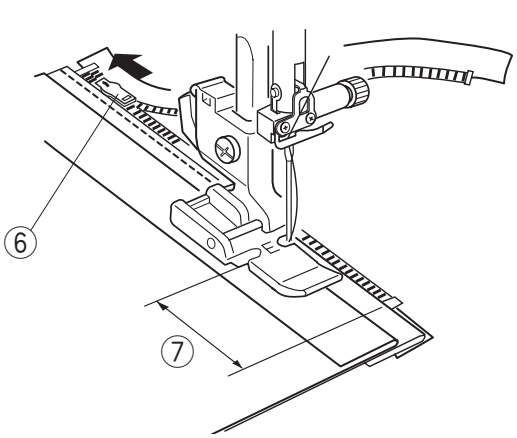
1



2



3



Start sewing

1 Fold back the left seam allowance. Turn the right seam allowance under to form a 0.2 to 0.3 cm (1/8″) margin. Place the zipper teeth next to the fold and pin in place. Set the stitch length and thread tension back to the original setting.

① 0.2 to 0.3 cm (1/8″) margin
② Zipper teeth
③ Fold
④ End of the zipper opening
⑤ Opening size

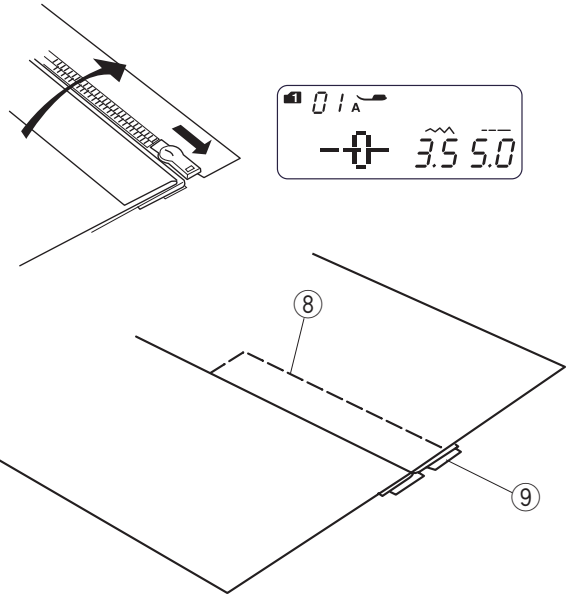
2 Attach the zipper foot E with the pin on the right hand side.
Lower the foot onto the topside at the end of the zipper opening so that the needle pierces the fabric next to the fold and the zipper tape.

⚠ CAUTION:
Be sure that the needle does not strike the presser foot or zipper teeth when the zipper foot is attached.

3 Sew through all layers next to the fold.
Stop the machine 5 cm (2″) before the foot reaches the slider on the zipper tape.
Lower the needle slightly into the fabric.
Raise the foot and open the zipper to clear the slider.
Lower the foot and stitch the remainder of the seam.

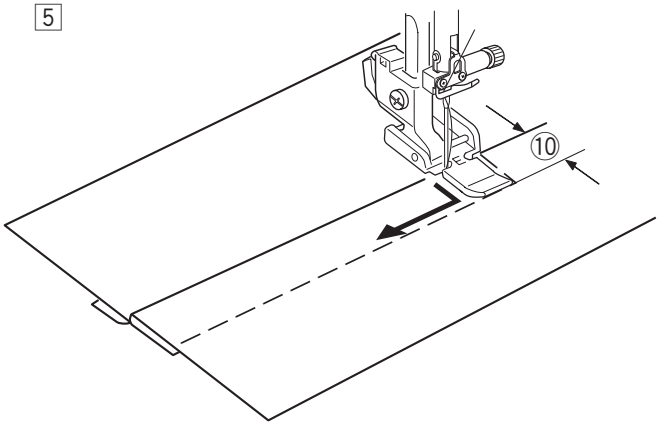
⑥ Slider
⑦ 5 cm (2″)

4



4 Close the zipper and spread the fabric open flat with the right side facing up.
Attach the Zigzag foot A.
Adjust the stitch length to 5.0, stitch width to 3.5 (default value) and the thread tension dial to 1-3.
Baste the opened fabric and zipper tape together.
⑧ Basting stitch
⑨ Zipper tape

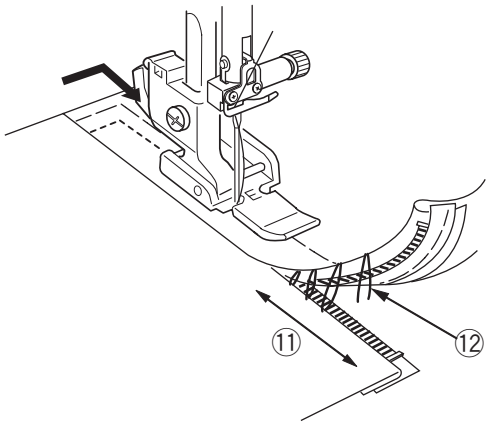
5



5 Attach the zipper foot E with the left pin.
Adjust the stitch length and the stitch width to default value, and thread tension dial to “4”.
Backstitch across the end of the opening 0.7-1 cm (3/8″) and turn the fabric 90 degrees.
⑩ 0.7-1 cm (3/8″)

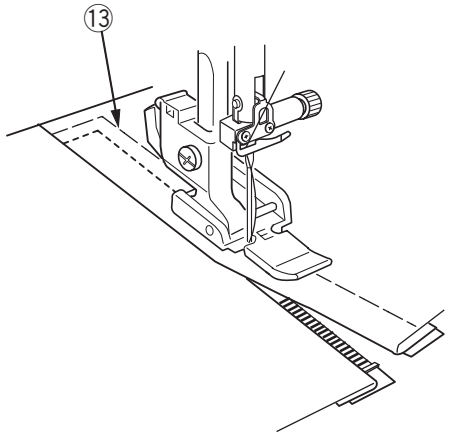
⚠ CAUTION:
Be sure that the needle does not strike the presser foot or zipper teeth when the zipper foot is attached.

6

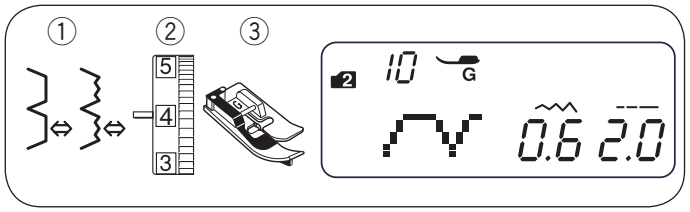


6 Stitch through the garment and zipper tape, guiding the zipper teeth along the side edge of the foot.
Stop the machine 5 cm (2″) before the foot reaches the slider on the zipper tape. Lower the needle into the fabric, and raise the foot. Remove the basting stitches.
⑪ 5 cm (2″)
⑫ Basting stitches

7

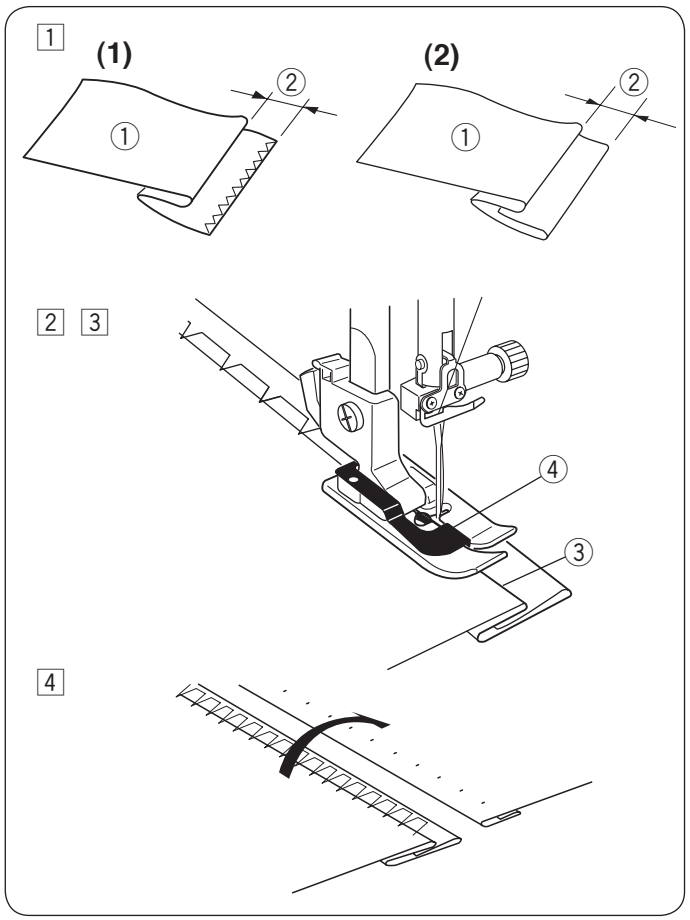


7 Open the zipper, then lower the foot and stitch the remainder of the seam.
After sewing is finished, remove the basting stitches on the upper fabric.
⑬ Basting stitches on upper fabric



Blind Hemming

① Stitch pattern: MODE 1: 0
MODE 2: 10 or 16
② Thread tension dial: 3 to 6
③ Presser foot: Blind hem foot G



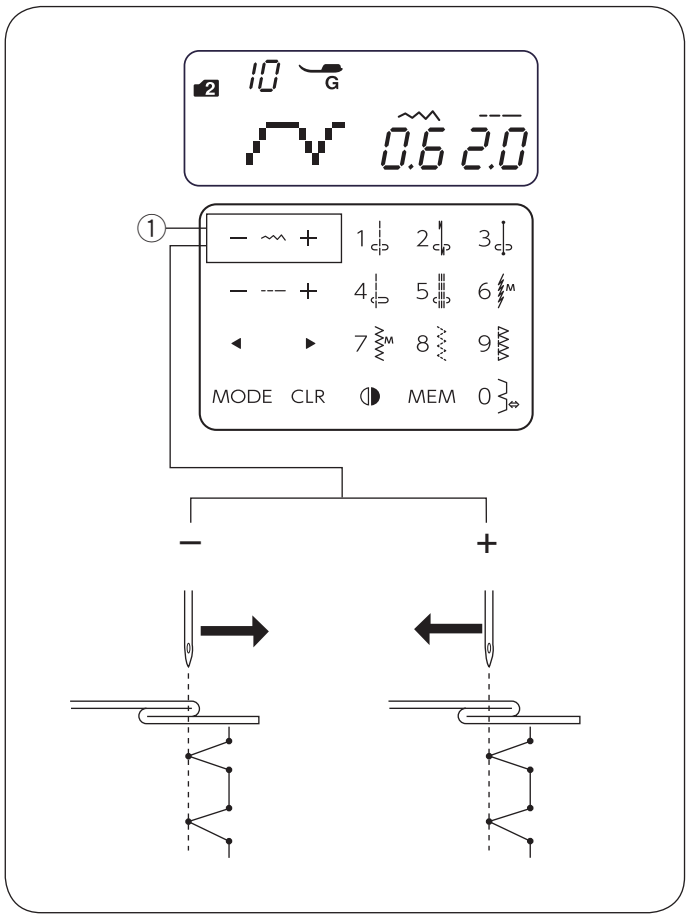
1 Fold a hem with the wrong side of the fabric up to form a 1/4″ (0.6 cm) allowance.
① Wrong side of fabric
② 1/4″ (0.6 cm)
(1) On heavyweight fabrics that tend to ravel, the raw edge should be overcast first.
(2) Fold the hem under the fabric for lightweight fabrics.

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.

3 Sew while guiding the folded edge.
③ Folded edge
④ Guide

4 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.

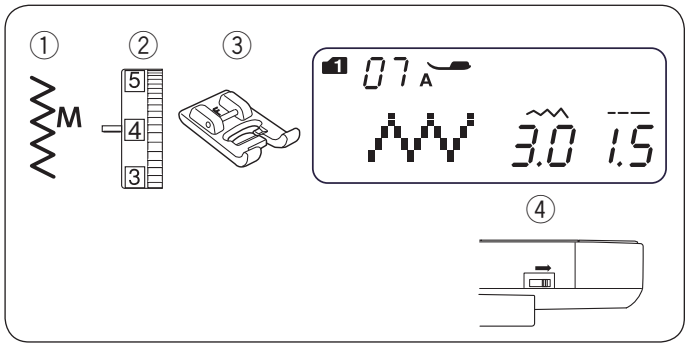


Adjusting the needle drop position

Adjust the needle drop position as follows:
Press the "–" sign on the stitch width adjusting key ① to move the needle to the right.
Press the "+" sign on the stitch width adjusting key ① to move the needle to the left.
① Stitch width adjusting key

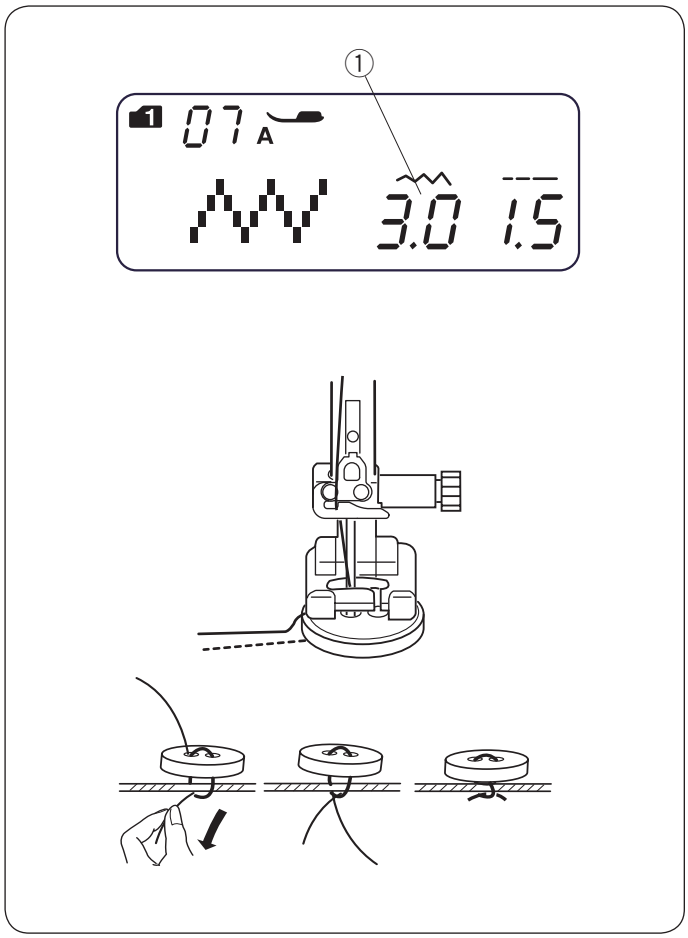
The LCD display shows the distance between the guide and left needle drop position in millimeters.
The needle drop position can be varied from 0.0 to 1.2.

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



Button Sewing

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



Lower the feed dog (refer to page 13).
Set the speed control slider at a slower speed.

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

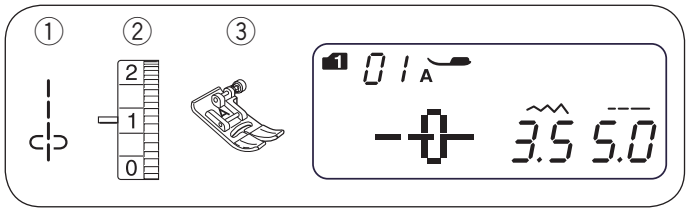
Adjust the stitch width so the needle will enter the left hole of the button.
Turn the handwheel so that the needle will enter the right hole of the button. Readjust the stitch width if necessary.
① Stitch width (adjust to span of holes)

Stitch several times.

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

Pull the bobbin thread to draw the top thread to the reverse side of the fabric and knot the threads.

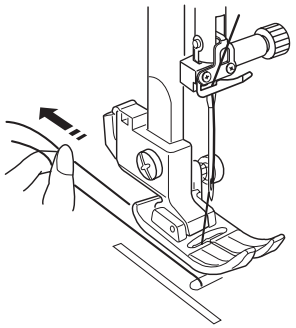
After the button sewing is completed, raise the feed dogs for normal sewing.



Gathering

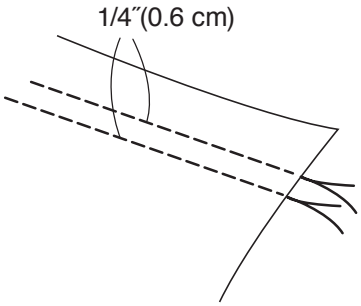
① Stitch pattern: MODE 1: 1
MODE 2: 01
② Thread tension dial: 1 to 4
③ Presser foot: Zigzag foot A

1



1 Loosen the thread tension to “1” and increase the stitch length to 5.0.
Pull both threads 4″(10 cm) under and behind the presser foot (refer to page 23).

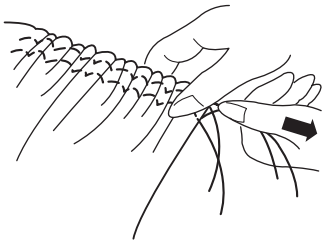
2



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

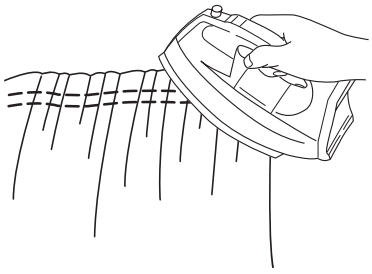
NOTE:
Use the thread cutter on the face cover when cutting the threads (refer to page 27).

3



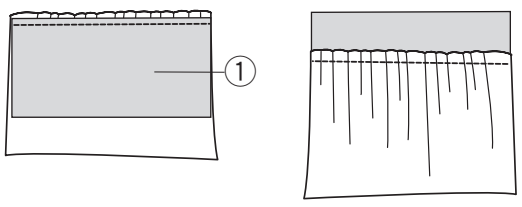
3 Pull the bobbin threads at the end to gather the fabric.

4



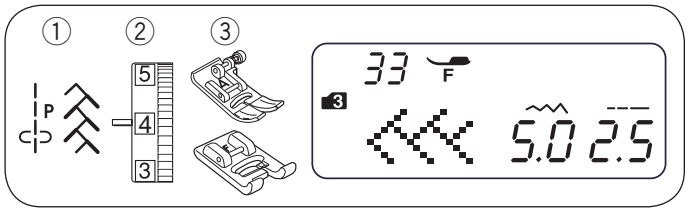
4 Knot the threads at the end and distribute the gathers evenly.

5



5 Prepare the fabric to attach the gathering.
Tighten the thread tension to “4” and decrease the stitch length to “2.4” (default settings).
Place the wrong side of the fabric ① under the gathering.
Sew the straight stitch between the two gathering rows.
Remove the two rows of straight stitches.

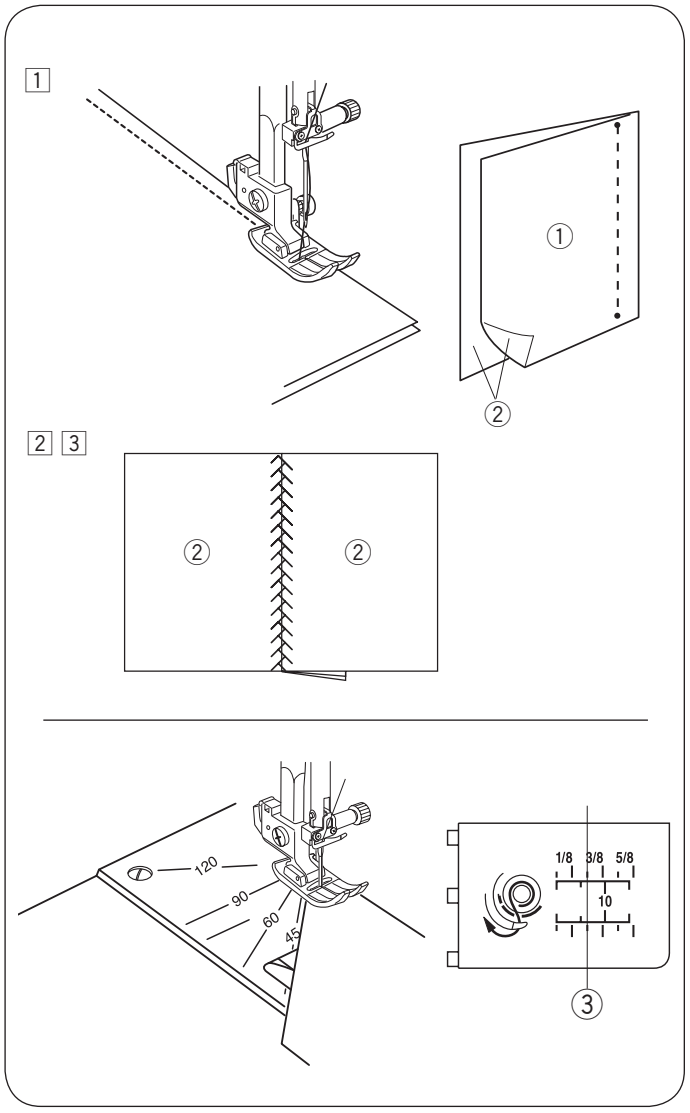
NOTE:
You may sew the straight stitch under the two gathering rows to cover the remains of gathering rows.



DECORATIVE STITCHES

Patchwork

① Stitch pattern: MODE 3: 10 and 33
② Thread tension dial: 3 to 6
③ Presser foot: Zigzag foot A
Satin stitch foot F



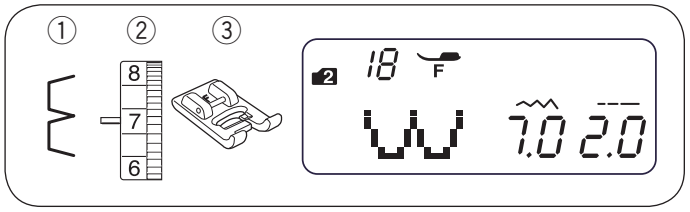
1 Attach the zigzag foot A.
Place the patchwork pieces right sides together. Select stitch pattern 10 in mode 3. Sew while guiding the edge of the fabric to keep a precise 1/4″ seam allowance.
① Wrong side of fabric
② Right side of fabric

2 Replace the presser foot with satin stitch foot F. Select the patchwork pattern 33 in mode 3.
The stitch patterns 29-34 in mode 3 can also be used.

3 Press the seam allowance to open. Sew the stitch pattern on the right side of the garment centering over the seam line.

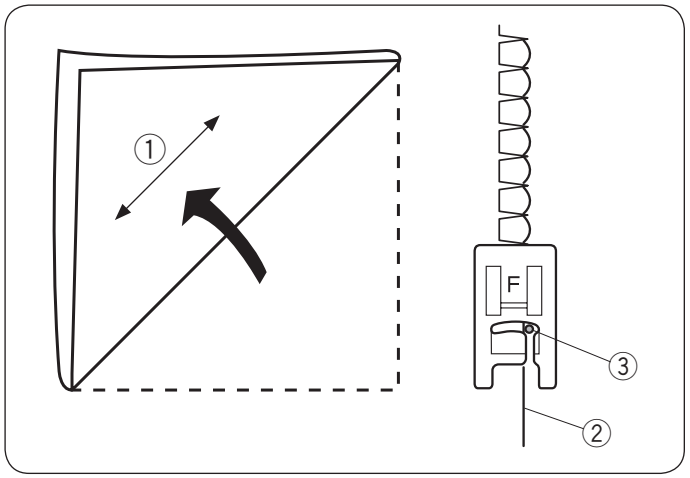
Angle scale on the needle plate

You can easily seam patchwork pieces at the desired angles without marking, by using the unique angle scales on the needle plate.
The angle scales are marked at 45°, 60°, 90° and 120° degrees.
Attach Zigzag foot A when using the angle scale.
Align the edge of the fabric to the 1/4″ seam guide line.
③ 1/4″ seam guide line



Shelltuck

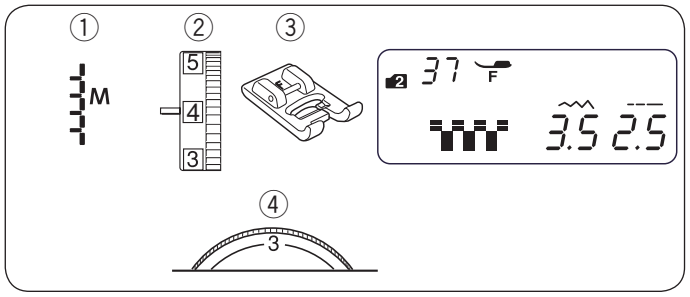
① Stitch pattern: MODE 2: 18
② Thread tension dial: 6 to 8
③ Presser foot: Satin stitch foot F



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 Bias
② Folded edge
③ Right needle drop position

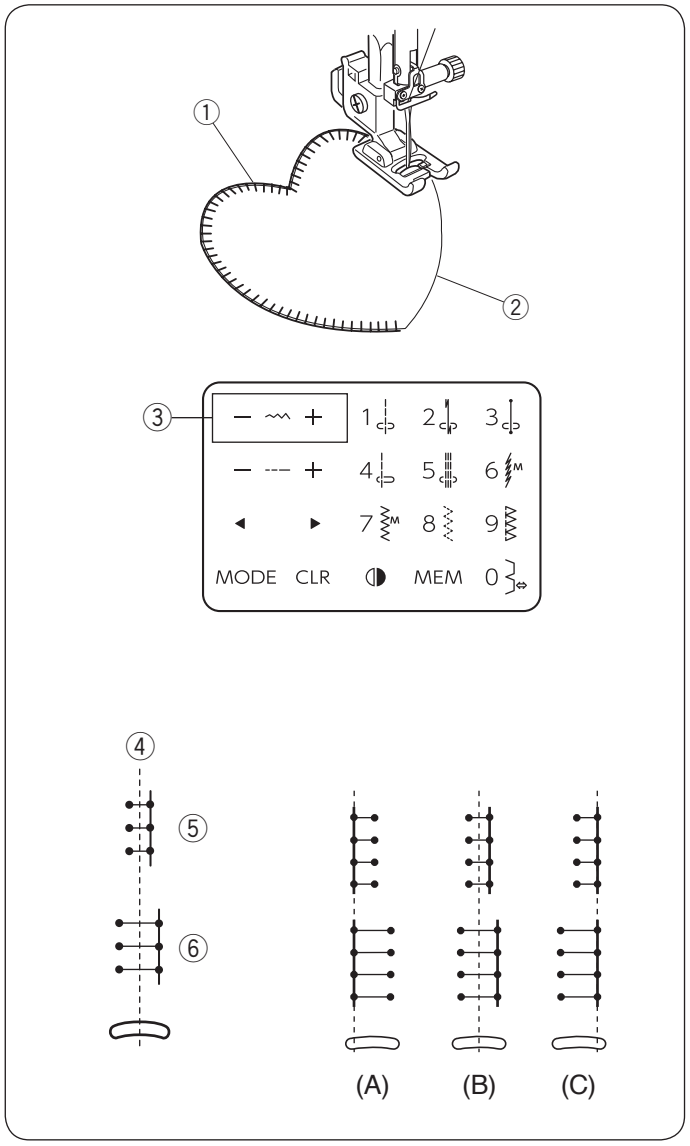
If you sew rows of shell tuck, space the rows at least 5/8″ (1.5 cm) apart.
You can also sew shell tuck on knits or soft silky woven fabrics, in any direction.



Applique

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

* The stitch patterns 38-53 in mode 2 can also be used.



Place an applique on the fabric and baste or pin it in place.
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 37 in mode 2.
Press the "–" sign on the stitch width adjusting key ③ to decrease the stitch width ⑤.
Press the "+" sign on the stitch width adjusting key ③ to increase the stitch width ⑥.

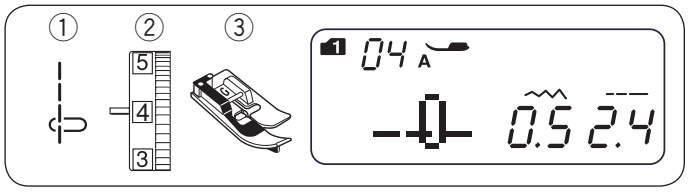
③ Stitch width adjusting key

The stitch width will be varied based on the centered needle drop position ④.

(A) Stitch patterns 49-51 have a fixed left needle drop position. When you change the stitch width, the right needle drop position will change.

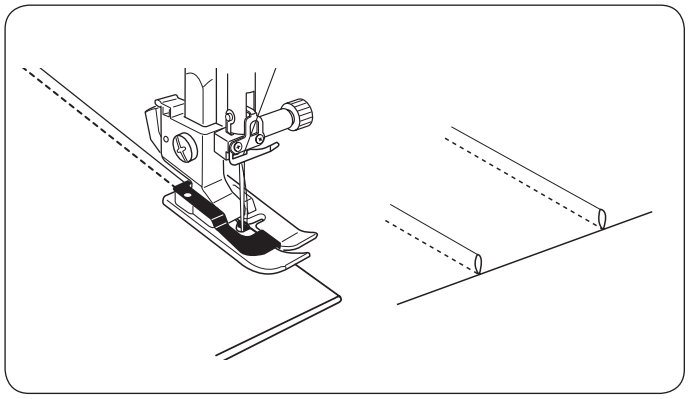
(B) Stitch patterns 37-40 have a fixed center needle drop position. The stitch width changes symmetrically.

(C) Stitch patterns 41-48 and 52-53 have a fixed right needle drop position. When you change the stitch width, the left needle drop position will change.



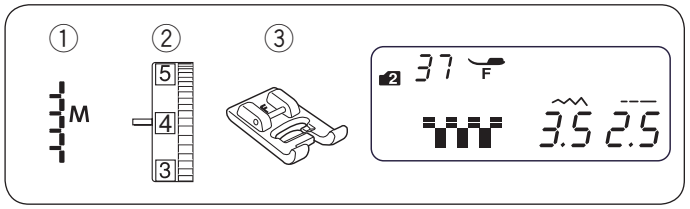
Pintucking

① Stitch pattern: MODE 1: 4
MODE 2: 04
② Thread tension dial: 3 to 6
③ Presser foot: Blind hem foot G



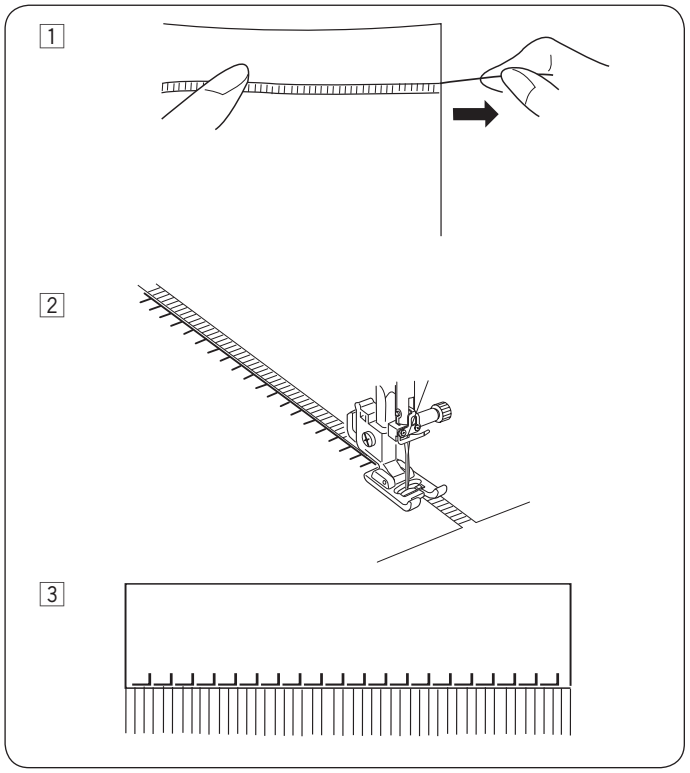
NOTE:
The “A” foot is displayed on the LCD when straight stitch pattern 04 is selected. However, use blind hem foot G when sewing pintuck.

Fold the fabric with the wrong sides together.
Place the folded fabric under the blind hem foot.
Align the edge of the fold with the guide on the foot, and lower the foot.
Sew while guiding the edge of the fold along the guide.
Open the fabric and press the tuck to one side.



Fringing

① Stitch pattern: MODE 2: 37
② Thread tension dial: 1 to 4
③ Presser foot: Satin stitch foot F

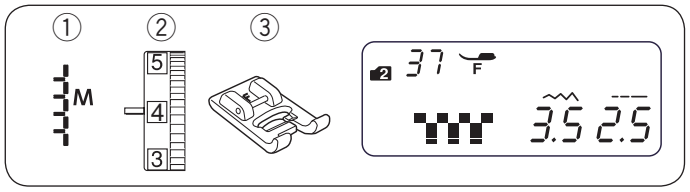


Fringing adds a special touch on table linens and shawls. Choose a firm, woven fabric like linen where threads can be removed easily.

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

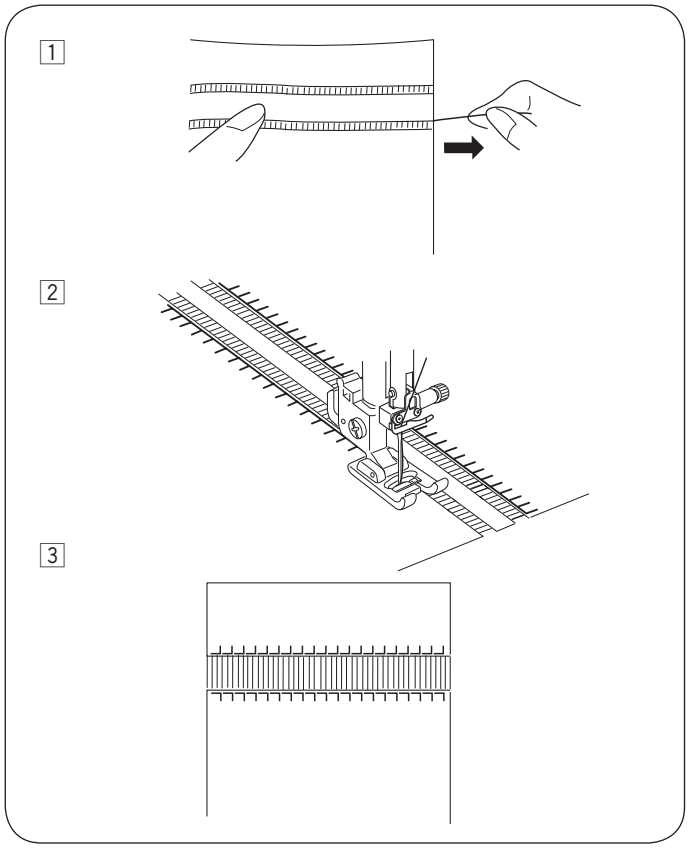
2 Sew down the left side so the right hand stitches fall in the open space.

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



Drawn Work

① Stitch pattern: MODE 2: 37
② Thread tension dial: 1 to 4
③ Presser foot: Satin stitch foot F

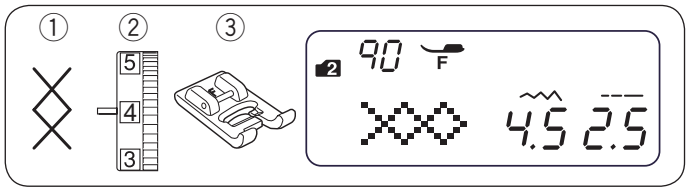


Drawn work uses the same method as fringing. Choose a firm, woven fabric like linen where threads can be removed easily.

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.

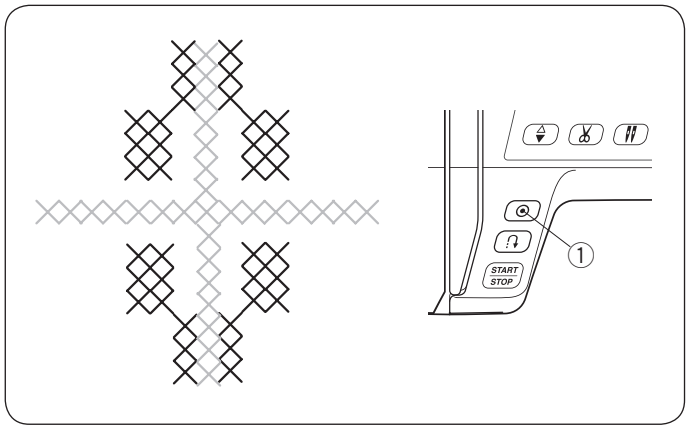
2 Sew down the left side, guiding the fabric so the right hand stitches fall in open space. After finishing the left side, turn the fabric around 180°. Sew down the other side.

3 Remove the yarn or fabric threads between the stitching.



Cross Stitch

① Stitch pattern: MODE 2: 90
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F
* The stitch patterns 91-93 in mode 2 can also be used.



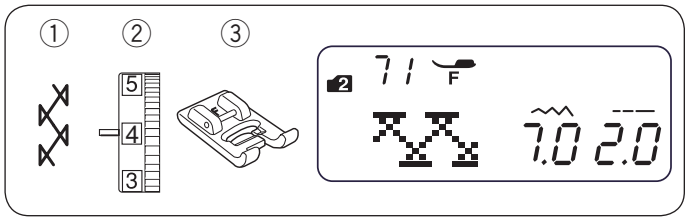
You can make cross stitch designs with these patterns, in half the time it would take if embroidered by hand.

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.

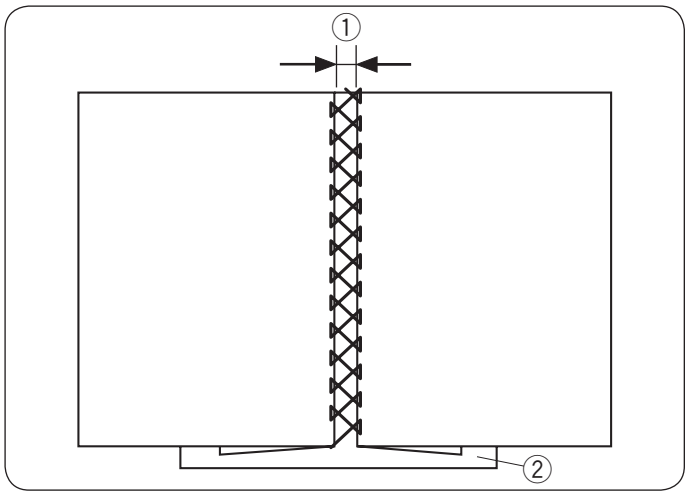
If you press the auto-lock button before sewing, the machine will sew one unit of the cross stitch and stop automatically.

① Auto-lock button



Fagoting

① Stitch pattern: MODE 2: 71
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F
* The stitch patterns 72, 79 in mode 2 and 33, 34 in mode 3 can also be used.

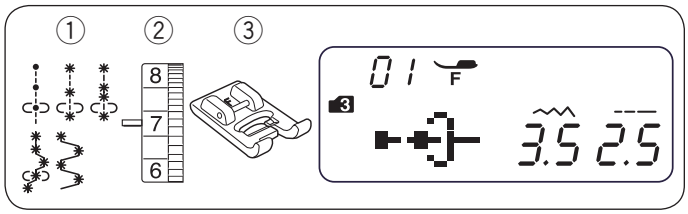


Use these stitches to join two pieces of fabric to create an open work appearance and add design interest.

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

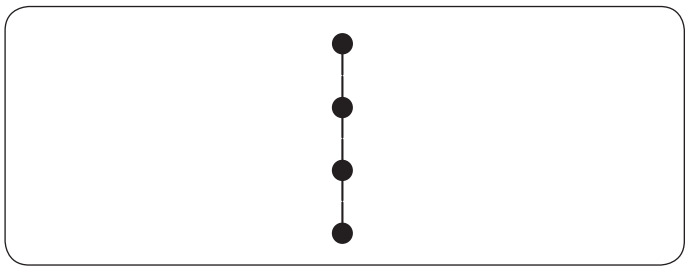
Sew slowly, guiding the fabric so the needle catches the folded edge on each side.
After sewing is finished, tear away the paper.

① 1/8″ (0.3–0.4 cm)
② Paper



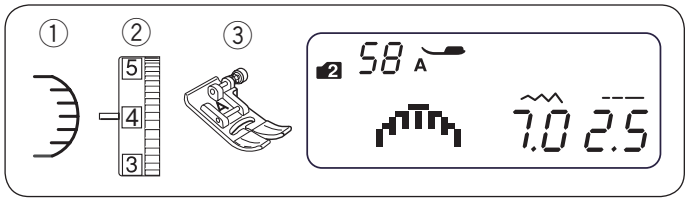
French Knots and Candlewick Knots

① Stitch pattern: MODE 3: 01 - 05
② Thread tension dial: 5 to 8
③ Presser foot: Satin stitch foot F



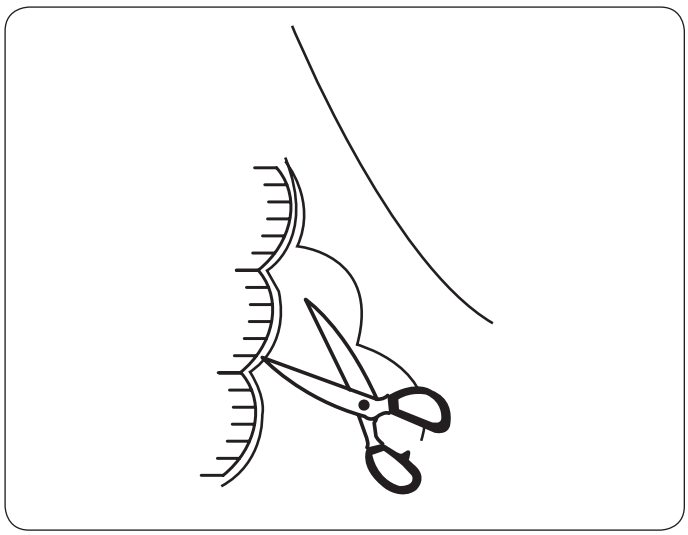
Select the stitch pattern 01 in mode 3 for French knots.
Select the stitch pattern 02-05 in mode 3 for Candlewick knots.

Tighten the thread tension to 5-8 when sewing.



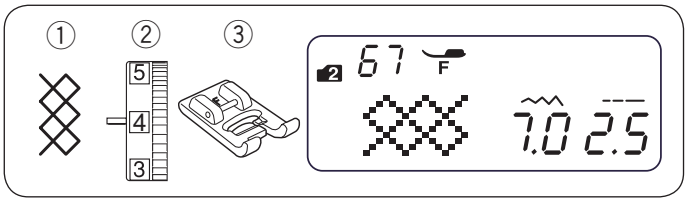
Scallop Stitch

① Stitch pattern: MODE 2: 58
② Thread tension dial: 3 to 6
③ Presser foot: Zigzag foot A
* The stitch patterns 73 and 90 in mode 3 can also be used.



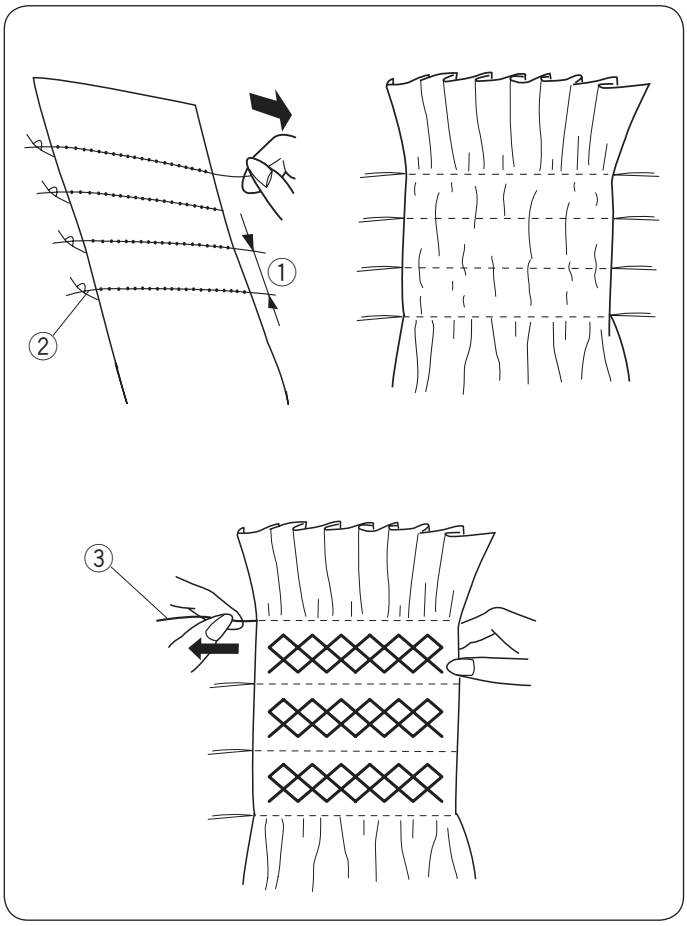
Sew the stitches approximately 3/8″ (1 cm) inside the fabric edge.

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



Smocking

① Stitch pattern: MODE 2: 67
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F
* The stitch patterns 71, 72, 81-86 and 33-34 in mode 3 can also be used.



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

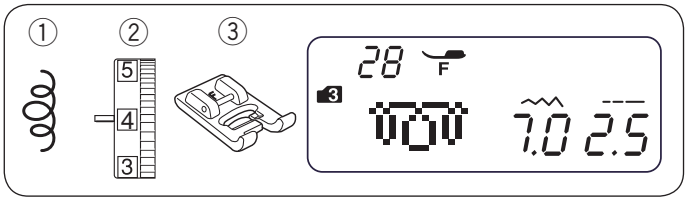
Use a soft and lightweight fabric such as batiste, gingham or challis.
Cut the fabric three times wider than the projected width.

Select straight stitch, set stitch length at "5.0" and loosen the thread tension.
Sew rows of straight stitches 3/8″(1 cm) apart across the area to be smocked. Knot the threads along one edge.

NOTE:
Use the thread cutter on the face cover when cutting the threads (refer to page 27).

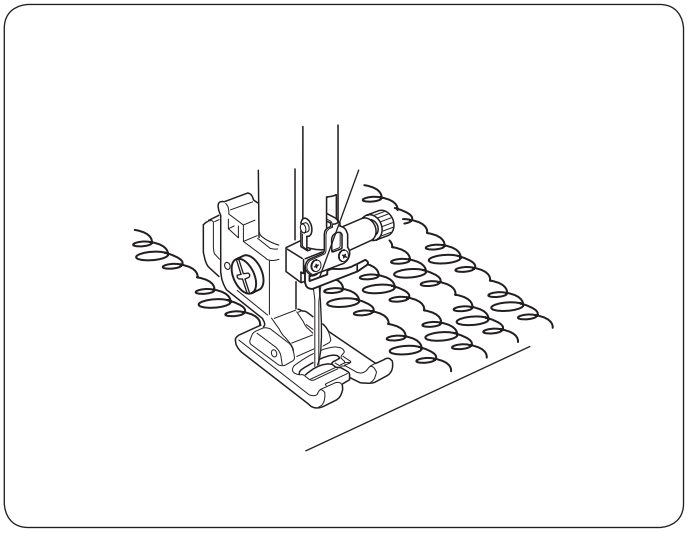
From the other edge, pull the bobbin threads to distribute the gathers evenly.
① 3/8″(1 cm)
② Knotted thread

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

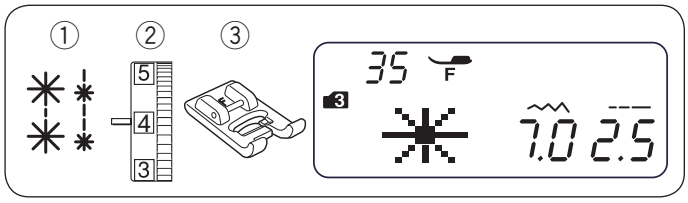


Stippling Stitch

① Stitch pattern: MODE 3: 28
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F
* The stitch patterns 23-27 in mode 3 can also be used.

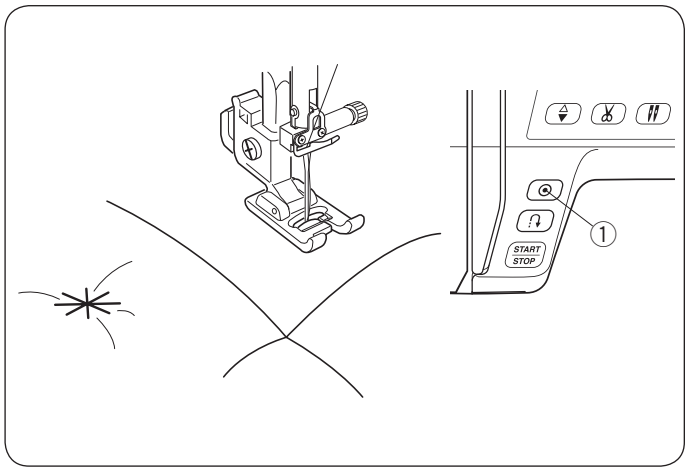


A pre-programmed stippling stitch is a fast and easy method to quilt small areas.
Place a batting (wadding) between quilt top and backing fabric.



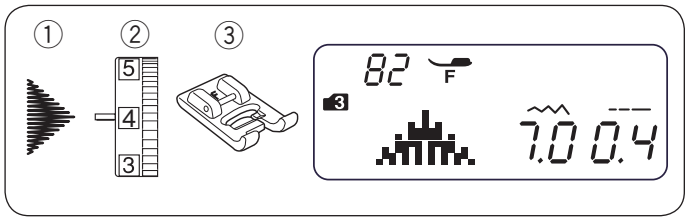
Clasp Stitch

① Stitch pattern: MODE 3: 35 or 36
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 the clasp stitch.
Press the auto-lock button.
Start sewing.
The machine sews clasp stitch and locking stitch then stops automatically.

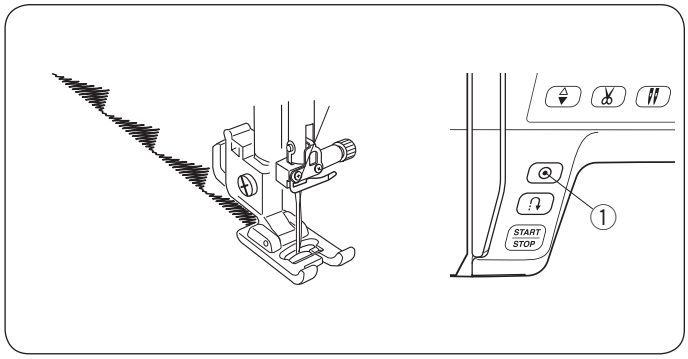
① Auto-lock button



Satin Stitches

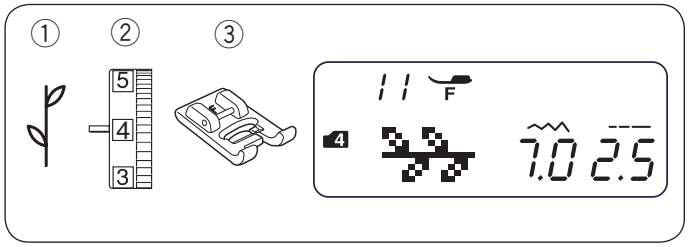
① Stitch pattern: MODE 3: 82
② Thread tension dial: 1 to 4
③ Presser foot: Satin stitch foot F

* The stitch patterns 67-86 and 89-92 in mode 3 can also be used.



For better sewing results, interfacing should be used on the wrong side of the fabric when you use stretch or elastic fabrics.
Press the auto-lock button to finish the end of the pattern.

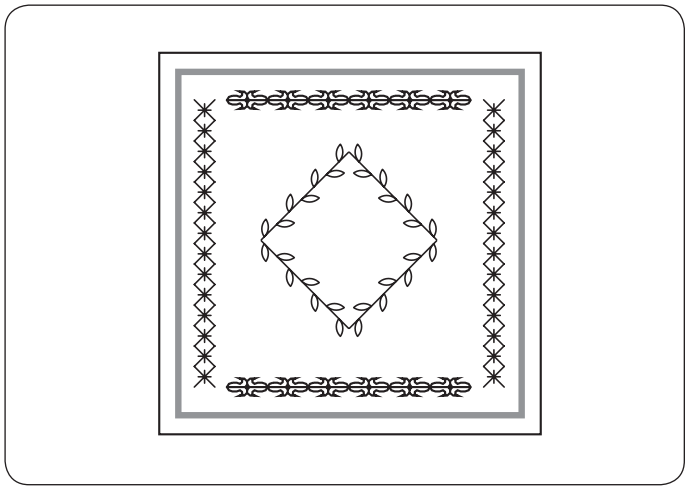
① Auto-lock button



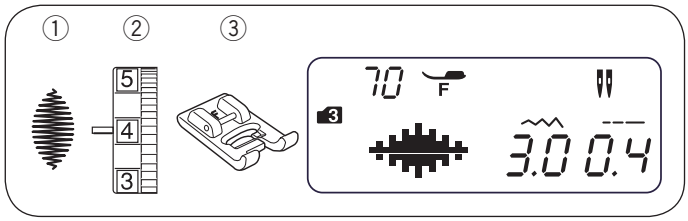
Decorative Stitches

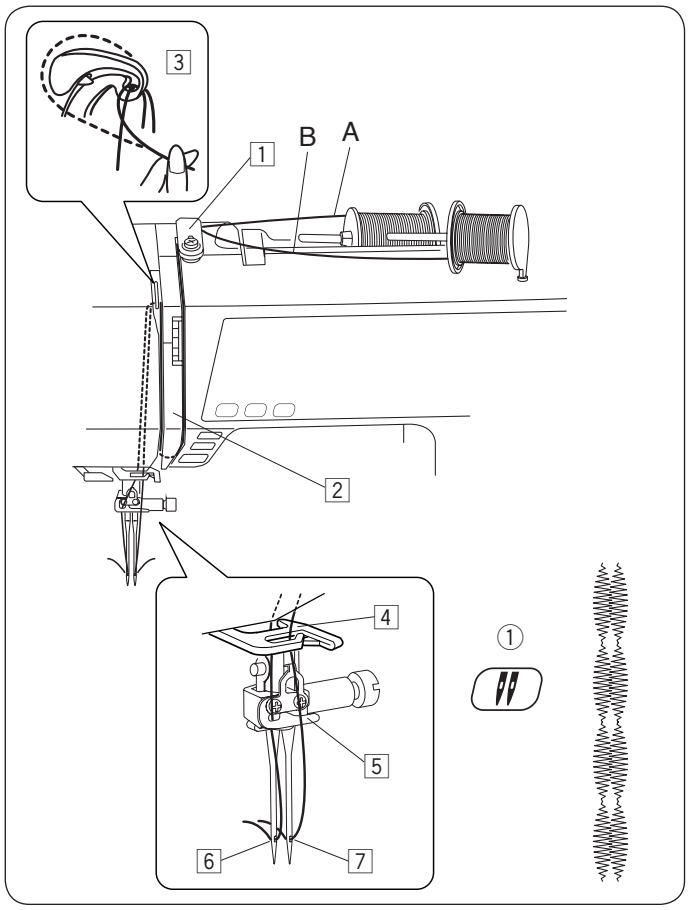
① Stitch pattern: MODE 4: 11
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F

* Stitch patterns in mode 4 can also be used.



For the best sewing results, carefully align and guide the fabric when you sew with decorative stitches.
Use a tear-way backing if necessary.





Twin Needle Sewing

① Stitch pattern: Mode 3: 70 (example)
② Thread tension dial: 3 to 6
③ Presser foot: Satin stitch foot F

NOTE:
- When you sew patterns with the twin needle, test the stitches before you begin to sew.
- Use zigzag foot A or satin stitch foot F for twin needle sewing.
- Turn off the machine before changing the needle.
- Replace the twin needle with a single needle when twin needle sewing is finished.

- **Starting to sew**

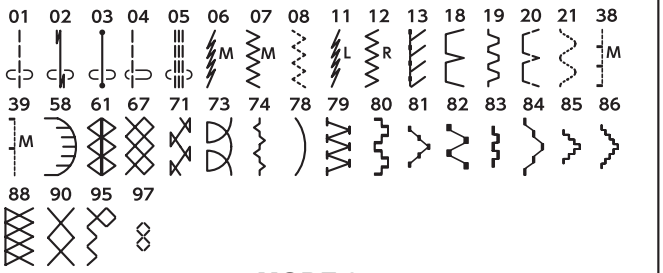
Use the extra spool pin for twin needle sewing.
Place two spools of thread as shown.
Draw both threads from the spools and thread them through the points from 1 to 3.
Slip the thread A through the lower thread guide 4, then pass through points and 5, 6 as illustrated.
Slip the thread B through the front hole of lower thread guide 4, then pass it through the needle hole 7.
Make sure that the two strands of thread do not get tangled.
Turn the power switch on and select the desired pattern.
Press the twin needle button ①, draw the both threads to the back or left of the foot.

① Twin needle button

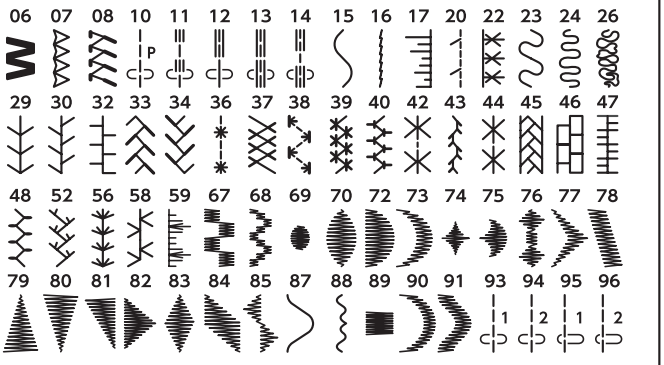
NOTE:
- When changing the sewing direction, raise the needle and turn the fabric.
- When you select stitch patterns not for twin needle sewing and press the twin needle button, the twin needle mark will blink on the LCD display and the caution buzzer sound.
- Stitch patterns cannot be registered in the twin needle mode.
- Use the thread cutter on the face cover when trimming threads.
- Use thin threads #60 or larger number for the twin needle sewing.

Stitch Patterns for Twin Needle Sewing

MODE 1, 2



MODE 3



MODE 4

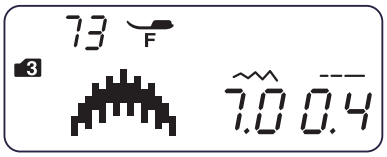


PROGRAMMING A PATTERN COMBINATION

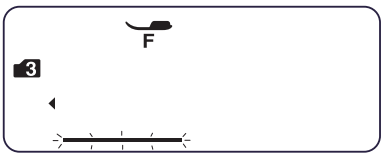
Pattern Combination

Example: Pattern 73 and 82 (mode 3)

NOTE:
- Patterns in the different mode can also be programmed.
- Check tension balance by test sewing. Manual tension adjustment may be required when sewing a pattern combination.
- Up to 50 stitch patterns combination can be registered.
- Stitch patterns selected in mode 1 (direct pattern selection) cannot be registered (refer to page 24).

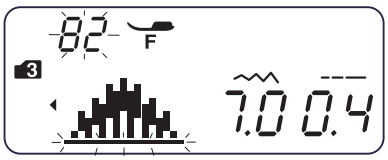
1 

1 Select pattern 73 in mode 3.

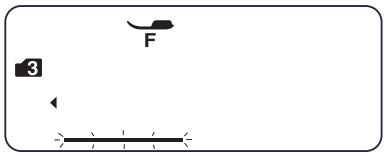
2 

MEM

2 Press the memory key.

3 

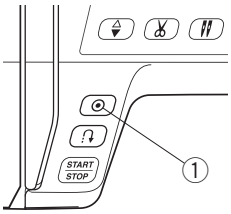
3 Select pattern 82 in mode 3.

4 

MEM

4 Press the memory key.

5 

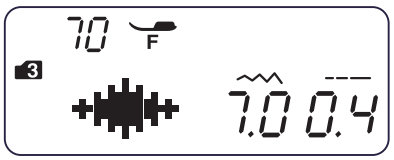


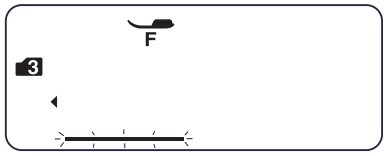
5 Start sewing. Combination of patterns 73 and 82 will be sewn repeatedly.

NOTE:
If you press the auto-lock button in the middle of sewing, the machine will sew to the end of the current pattern, sew locking stitches and stop automatically.
① Auto-lock button

Programming the Auto-lock Stitch

Example: Pattern 70 (mode 3)

1 



MEM

1 Select pattern 70 in mode 3.
Press the memory key.

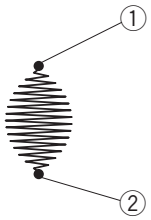
2 

MODE

MEM

2 Press the mode key.
Select pattern 00 in mode 4.
Press the memory key.

3



3 Place the fabric and sew.
The machine will sew a locking stitch ①, stitch pattern 70, locking stitch ② and stop.
① Initial locking stitch
② End locking stitch

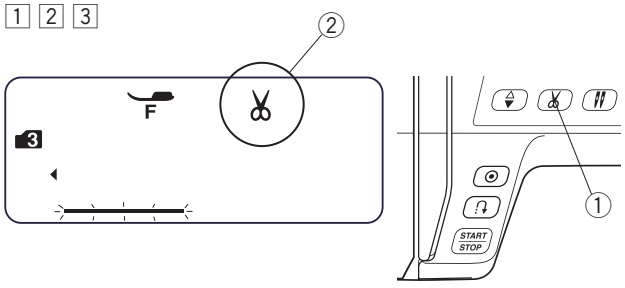
NOTE:
The locking stitch at the beginning ① is pre-programmed.

Programming Auto-thread Cutting

Example: Auto-thread Cutting with Patterns 73 and 82 (mode 3)

1 Refer to procedure 1 to 5 on “Pattern Combination” on page 61 to enter the stitch patterns 73 and 82 in mode 3.

1 2 3





2 Press and hold the thread cutter button until the thread cutter mark appears on the LCD display.
① Thread cutter button
② Thread cutter mark

3 Start sewing. A pattern combination series will be sewn and the machine will trim the threads automatically after locking stitch.

Pattern Combination with a Mirror Image

Example: Pattern 73 (mode 3) and its mirror image

1 Select pattern 73 in mode 3.

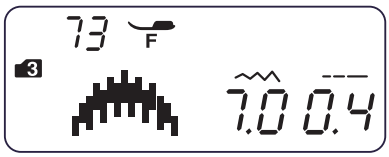
2 Press the memory key.

3 Select pattern 73 in mode 3.
Press the mirror image key.
The mirror sign will appear on the LCD screen.
① Mirror sign

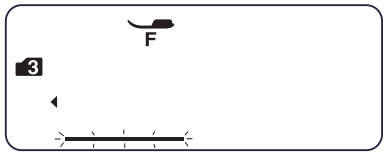
4 Press the memory key.

5 Start sewing.
The machine will sew the pattern combination repeatedly.

1

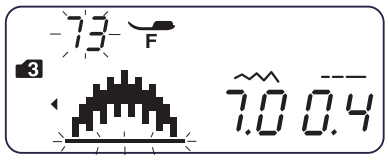


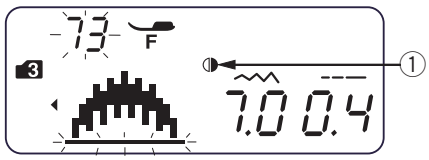
2



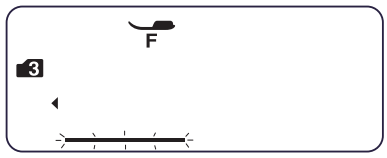
MEM

3





4



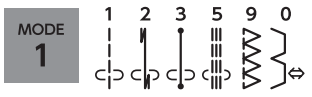
MEM

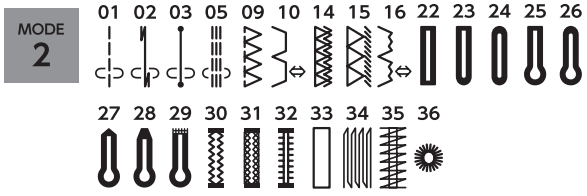
5



NOTE:
Mirror image cannot be applied to stitch patterns below:

Mode 1: Stitch patterns 1, 2, 3, 5, 9 and 0.
Mode 2: Stitch patterns 01, 02, 03, 05, 09, 10, 14, 15, 16, and 22 to 36.
Mode 3: Stitch patterns 01, 02, 03, 10 to 14, 61, 93, 94 and 97 to 00.
Mode 4: Stitch pattern 00.
Mode 5: All stitch patterns.

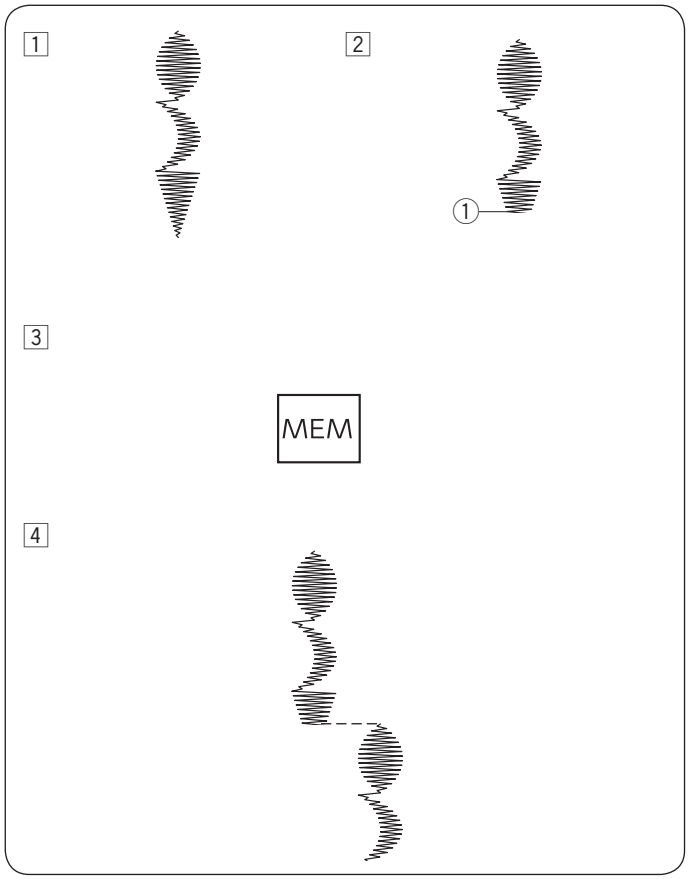








MODE 5 All stitch patterns.



Resuming a Pattern from the Beginning

If you have to stop sewing in the middle of a pattern and wish to sew it over again, press the memory key to sew the pattern from the beginning.

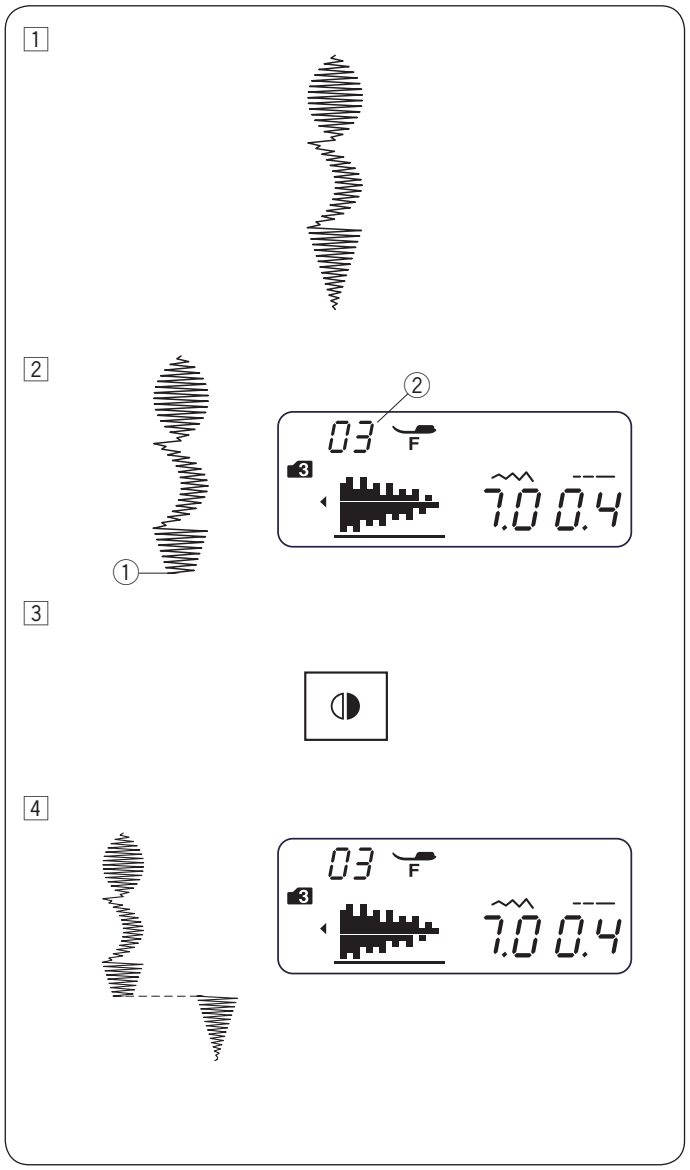
Example: Pattern combination 70, 73 and 80 (mode 3)

1 Program the pattern combination 70, 73 and 80 in mode 3.
Start sewing.

2 Sewing stopped.
① Stopped position

3 Press the memory key.

4 Sewing starts from the beginning of the pattern.



Resuming the Current Pattern from the Beginning

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

Example: Pattern combination 70, 73 and 80 (mode 3)

1 Program the pattern combination 70, 73 and 80 in mode 3.
Start sewing.

2 Sewing stopped. The number of sewing order appears on the LCD screen.
① Stopped position
② Sewing order

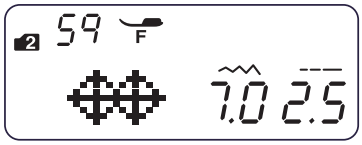
3 Press the mirror image key.

4 Press the start/stop button.
Sewing starts from the current pattern from the beginning.

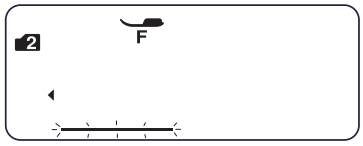
Bridge Stitches

Stitch patterns number 93 to 99 and 00 in mode 3 are bridge stitches, which are used to insert straight stitches after a stitch pattern.

Example: Combination of pattern 59 (mode 2) and pattern 97 (mode 3).

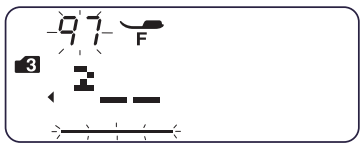
1 

1 Select pattern 59 in mode 2.

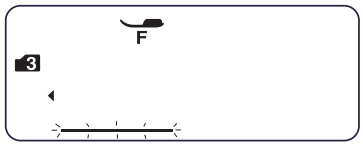
2 

MEM

2 Press the memory key.

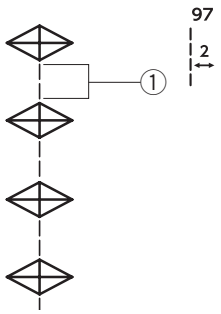
3 

3 Select pattern 97 in mode 3.

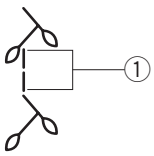
4 

MEM

4 Press the memory key.

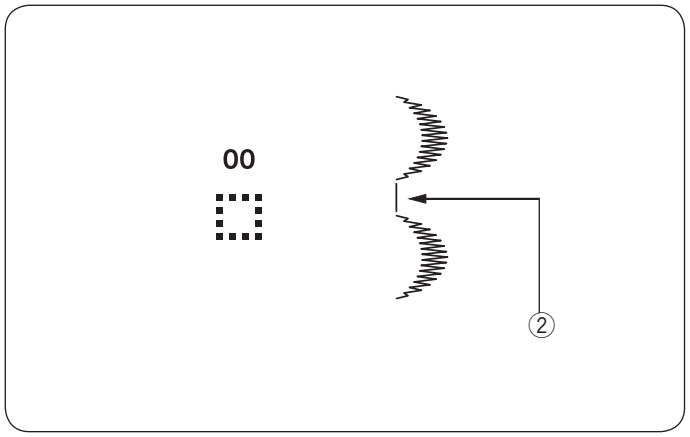
5 

5 Start sewing.
Two counts of the straight stitch are added to pattern 59.
① Bridge stitch



NOTE:
The number on the right of the stitch image indicates stitch counts to be inserted.
The stitch length and needle drop position of patterns 93 to 96 and 99 in mode 3 are independent from those of the combined pattern.
Patterns 97, 98 and 00 in mode 3 will inherit the stitch length and needle drop position of a previous pattern in the programmed pattern combination.
① Pattern 97

Use patterns 99 or 00 in mode 3 if you wish to add triple stretch stitches.

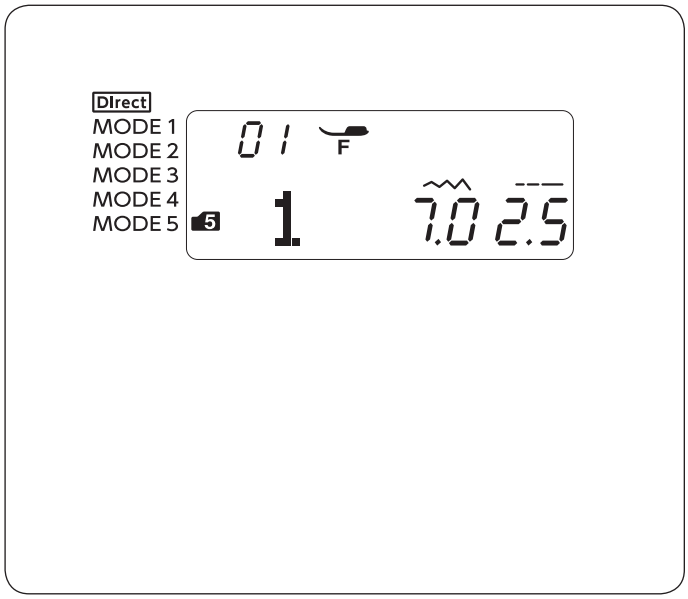


Use the stitch pattern 00 (blank space) in mode 5 if you wish to insert a space between stitch patterns.

② Blank space

Spaces (Default stitch length)	
Pattern 98 (Mode 5)	2.5 mm
Pattern 99 (Mode 5)	3.5 mm
Pattern 00 (Mode 5)	5 mm

NOTE:
The space can be varied from 0.5 to 5.0 by adjusting its stitch length.

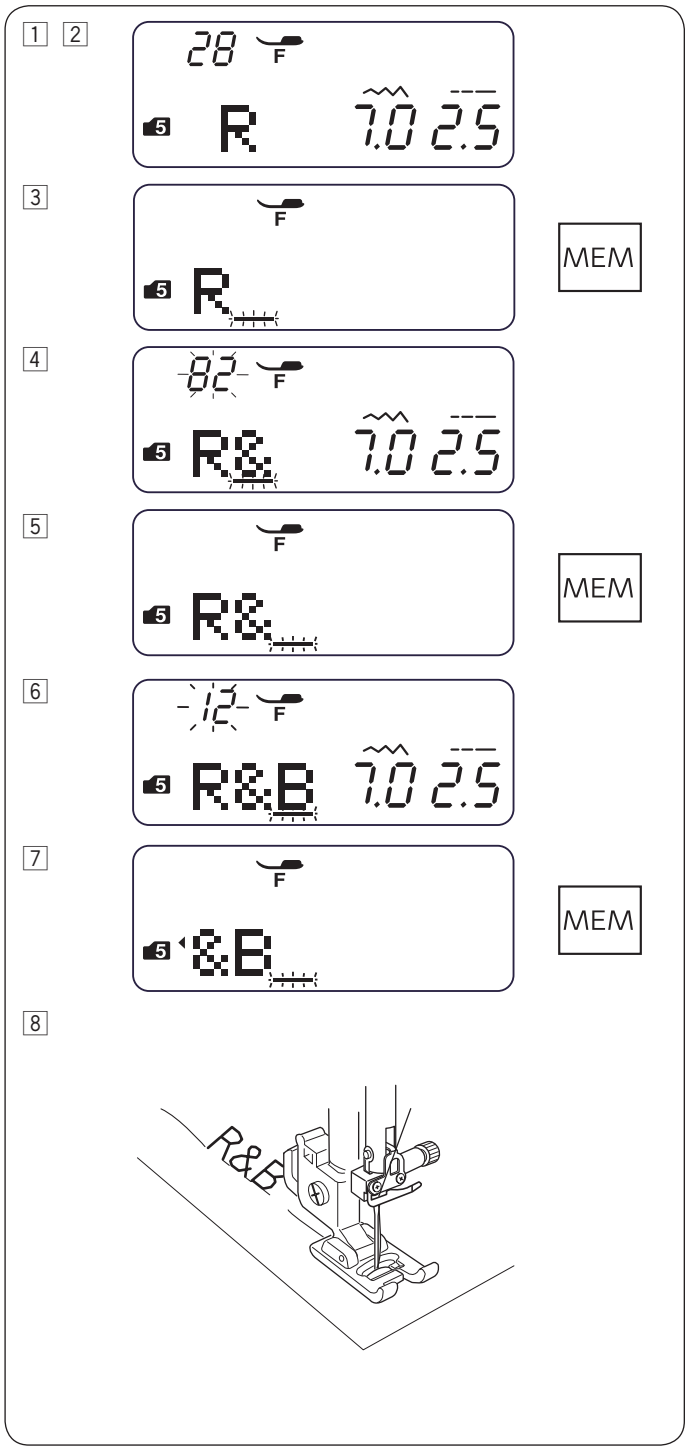


Monogramming

Selecting a character

In MODE 5, you can program text by entering the number and alphabets.

MODE 5: Alphabets/number/symbol



Programming a monogram

Example: To program “R&B”

1 Press the mode key 4 times to enter mode 5.

2 Select pattern 28.

3 Press the memory key.

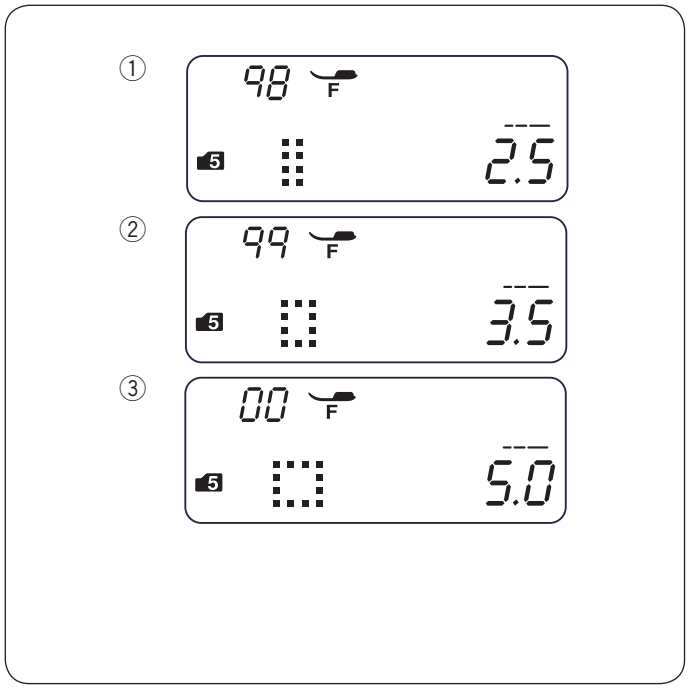
4 Select pattern 82.

5 Press the memory key.

6 Select pattern 12.

7 Press the memory key.

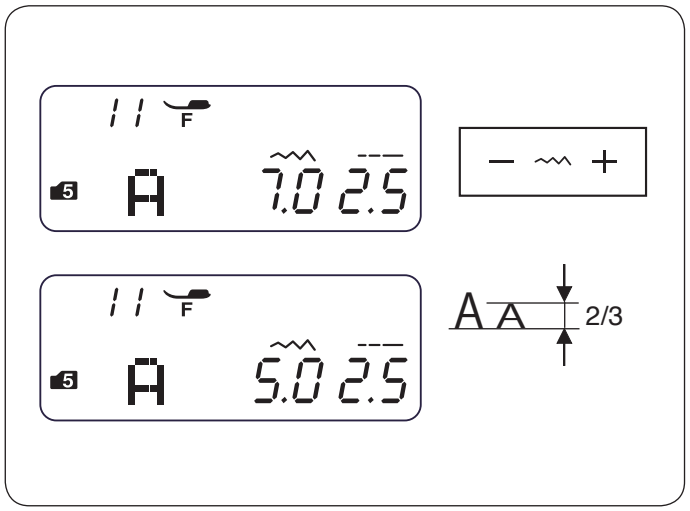
8 Start sewing.
The machine will sew “R&B” and stop automatically.



Spacing

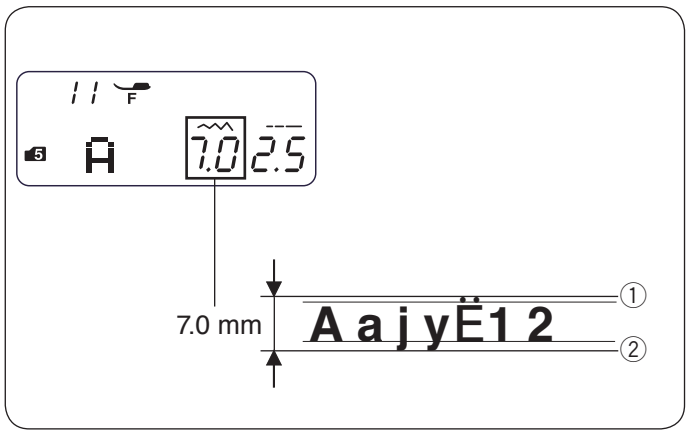
To enter the space in monogramming, select the stitch pattern 98, 99 or 00 in mode 5.

① Pattern 98: Small-size space (2.5 mm)
② Pattern 99: Medium-size space (3.5 mm)
③ Pattern 00: Large-size space (5.0 mm)



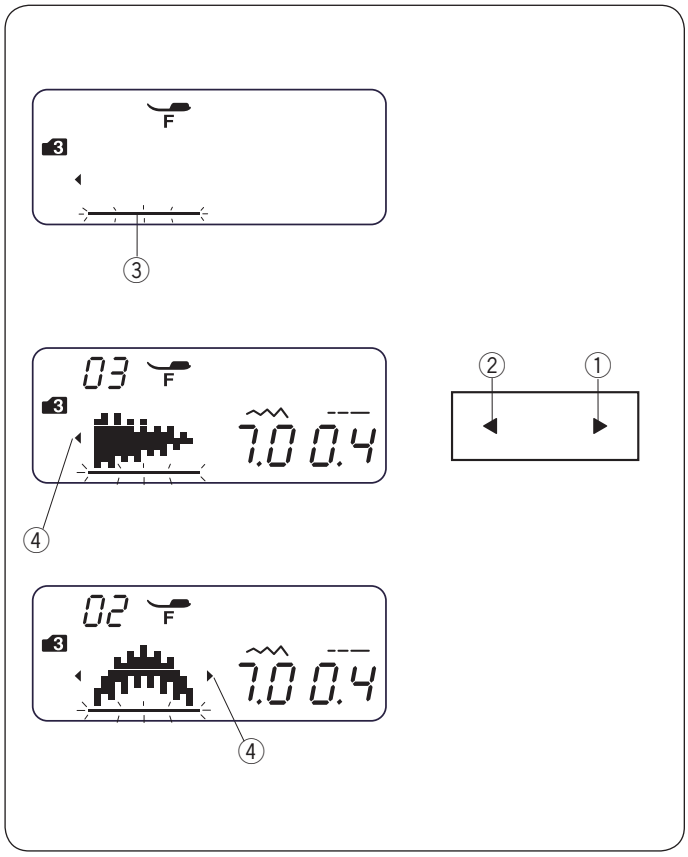
Reducing the height of letters

To reduce the height of character to approximately 2/3 of its original size, select the character with the cursor key and press "–" of the stitch width adjusting key.



NOTE:
The stitch width of monogramming does not indicate the actual size of character. That is an overall height including before-edge and after-edge.

① Before-edge
② After-edge



Viewing a long combination

The LCD screen only shows one pattern at a time.
If the entire combination is not displayed, press the cursor key to view the rest of the combination.

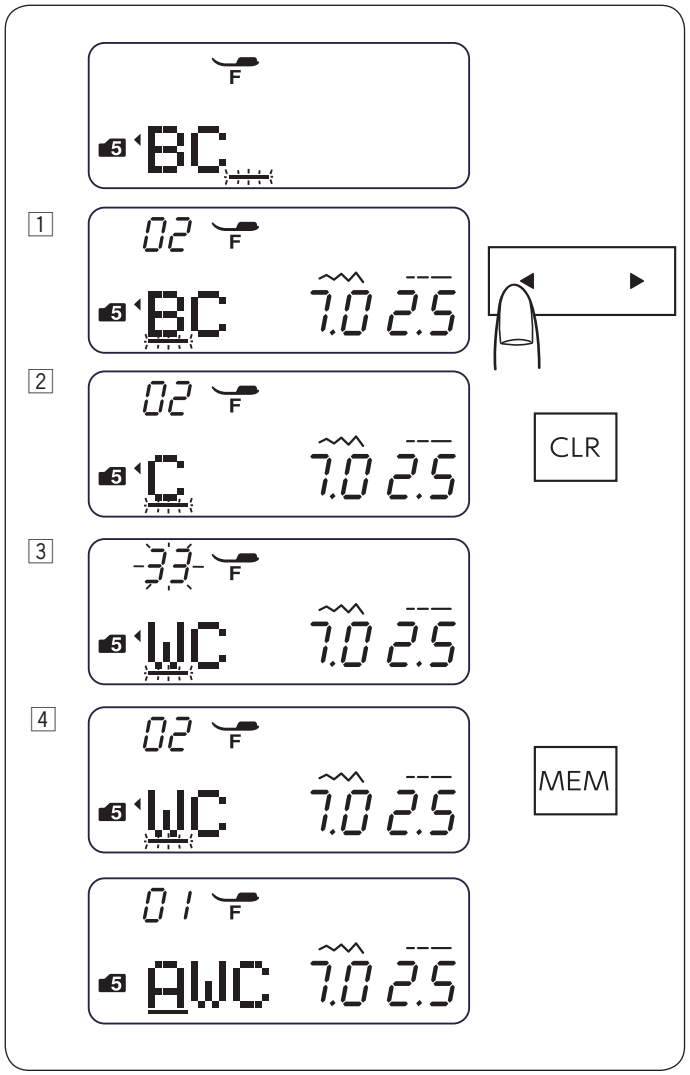
Press the right arrow " ▶ " ① on the cursor key to shift the cursor to the right.
Press the left arrow " ◀ " ② on the cursor key to shift the cursor to the left.

NOTE:
Arrow signs (◀ , ▶) ④ on the LCD screen indicate that there is the rest of the combination in that direction.

Once sewing has started, the cursor appears under the first pattern and will shift to the right as you sew.

Press the cursor key again to view the hidden patterns or to edit the pattern combination.
The cursor will blink and can be moved to the desired position.

① Right arrow
② Left arrow
③ Cursor
④ Arrow sign



Deleting and Inserting a Pattern

Example: Deleting pattern “B” and inserting “W” from “ABC”.

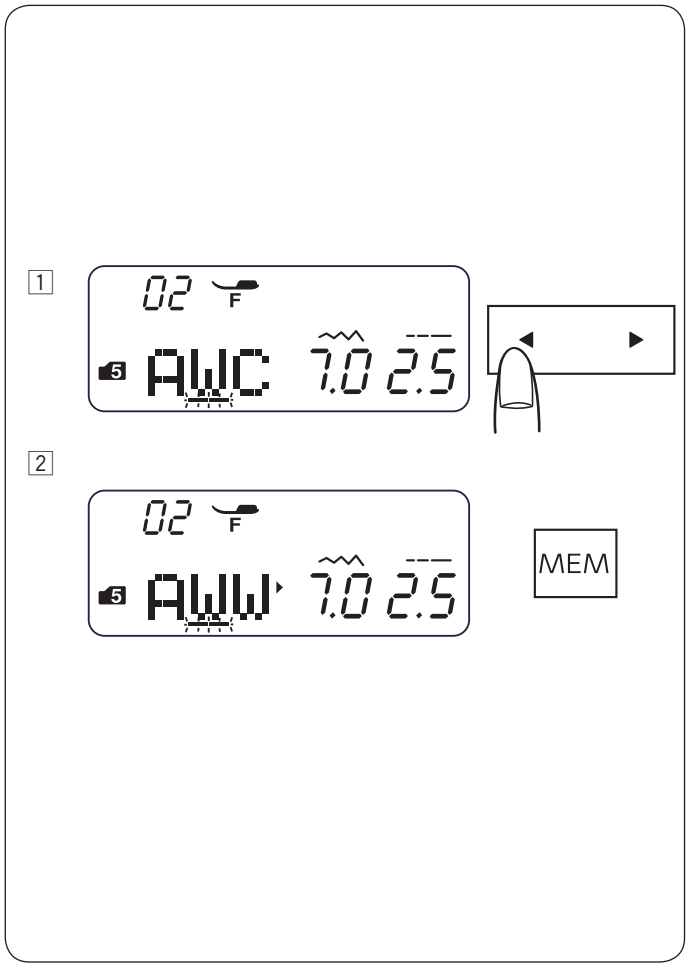
1 Press the cursor key to shift the cursor under the pattern to be deleted.
Move the cursor under the pattern “B”.

2 Press the clear key.
Pattern “B” will be deleted.

3 Enter “W”.
Pattern “W” will be inserted between “A” and “C”.

4 Press the memory key to register the new pattern combination.

NOTE:
Pressing and holding the clear key will delete all the programmed patterns and the LCD screen will return to the display prior to programming.



Duplicating a Pattern

Example: Duplicating a “W”.

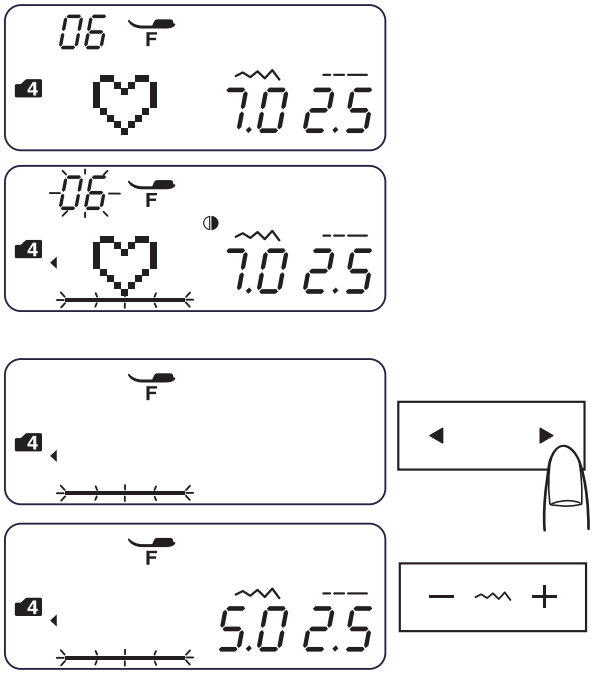
1 Press the cursor key to shift the cursor under the pattern to be duplicated.

2 Press the memory key and “W” will be duplicated after the pattern “W”.

Uniform Stitch Adjustment

The stitch width and length of the programmed patterns can be uniformly adjusted.

Example: Adjusting the stitch width of the programmed pattern 06 in mode 4 and its mirror image.

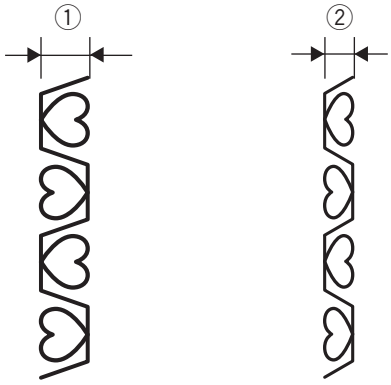


Shift the cursor to the right of the last programmed pattern.

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

NOTE:
Stitch length can be uniformly adjusted if the programmed patterns in the same category (satin stitches or stretch stitches) have been programmed.

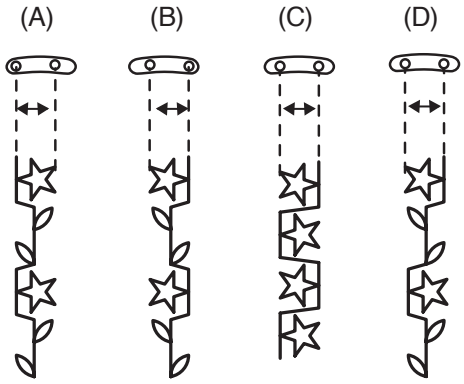
The stitch width of the programmed patterns will be adjusted uniformly.



① Original width
② Uniformly adjusted width

Unified Needle Drop Position

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



(A) Unified to the left when combining the patterns with the left needle position and the center needle position.

(B) Unified to the right when combining the patterns with the center needle position and the right needle position.

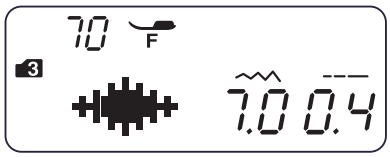
(C) Unified to the center when combining the patterns with the left needle position and the right needle position.

(D) Unified to the center when combining the patterns with the left, center and right needle positions.

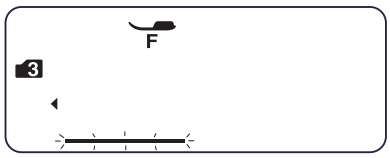
Individual Stitch Adjustment

The stitch width and length can be individually adjusted for each pattern in a programmed combination.

Example: Changing the stitch width of the one pattern in the combination

1 

1 Select pattern 70 in mode 3.
Press the memory key.

2 

2 Press the memory key again.

3 

3 Press the cursor key to shift the cursor under the second pattern.

4 

4 Press the stitch width adjusting key to adjust the width to “3.5”.

5 

5 Press the start/stop button.
The machine will sew the pattern combination.
The stitch width of the second pattern in the combination is adjusted.

NOTE:
To view the stitch settings of each pattern, shift the cursor under the desired pattern then press the stitch width or length adjusting key. The settings will be displayed at the bottom of the LCD screen.
If you press the stitch width or length adjusting key when the cursor is to the right of the last programmed pattern, individual adjustments will be cancelled and uniform adjustment will be applied.

CARE OF YOUR MACHINE

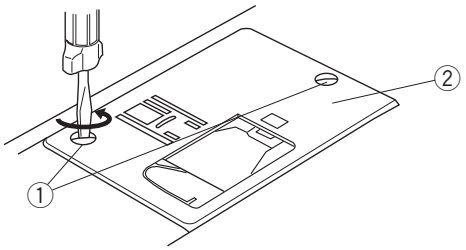
Cleaning the Hook Race and Feed Dog

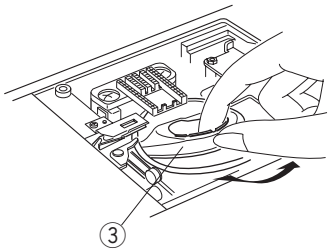
⚠ WARNING:
Turn the power switch off and unplug the machine before cleaning.
Do not dismantle the machine other than as explained in this section.

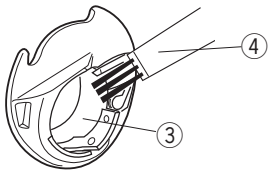
⚠ CAUTION:
Do not store the machine in a high-humidity area, near a heat radiator, or in direct sunlight. Store the machine in cool dry place.

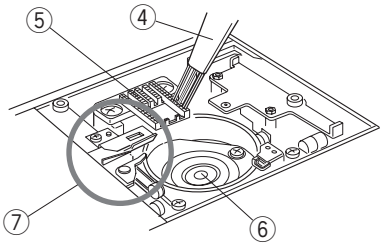
NOTE:
- Clean the outside of the machine with a soft cloth and neutral soap.
- This machine does not require oiling.

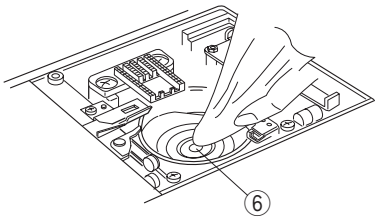
Press the needle up/down button to raise the needle, turn the power switch off, then unplug the sewing machine. Remove the needle and presser foot.
Remove the hook cover plate by sliding the hook cover release button to the right. Take out the bobbin. Brush out dust and lint. (You may also use a vacuum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

1 

2 

3 

4 

5 

1 Remove the setscrews on the needle plate with the screwdriver supplied with the machine. Remove the needle plate.
- ① Setscrew
- ② Needle plate

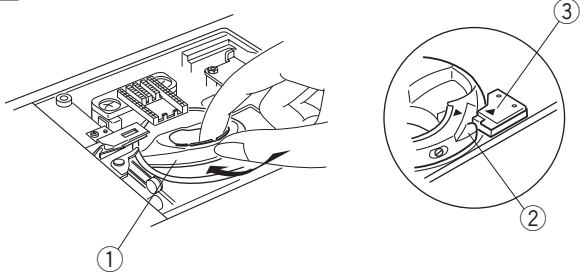
2 Lift up the bobbin holder and remove it.
- ③ Bobbin holder

3 Clean the bobbin holder with a lint brush.
- ④ Lint brush

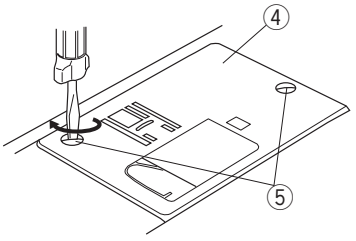
4 Clean the feed dog, hook race and auto thread cutter device with the lint brush.
- ⑤ Feed dog
- ⑥ Hook race
- ⑦ Auto thread cutter device

5 Clean the inside of the hook race with a dry cloth.

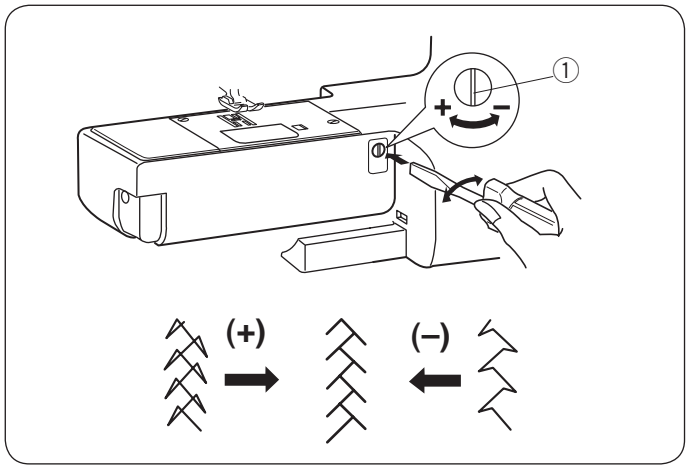
Installing the Bobbin Holder

1 

1 Insert the bobbin holder so that the knob fits next to the stopper in the hook race.
- ① Bobbin holder
- ② Knob
- ③ Stopper

2 

2 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



Correcting Deformed Stitch Patterns

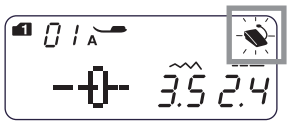
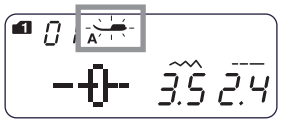
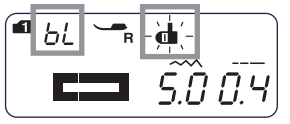
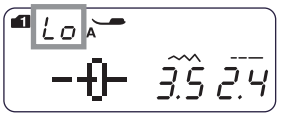
The sewing results of stretch stitch patterns may vary depending on sewing conditions, such as sewing speed, fabric type, number of layers etc.
If stretch stitch patterns are deformed, correct them by turning the feed balancing dial with the screwdriver.

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

Problems and Warning Signals

If a buzzer sounds and the LCD screen shows a warning sign, follow the guidance below.

Warning Sign	Cause	Try this
	1. The start/stop button is pressed with the foot control connected. 2. The foot control is out of order. (The foot control sign keeps blinking.)	Disconnect the foot control. Contact the service center or the store from whom the machine was purchased.
	1. The machine is started without lowering the presser foot. 2. The machine will stop if the presser foot is raised while sewing.	Lower the presser foot and start the machine. Lower the presser foot and start the machine again.
	The bobbin winder spindle is shifted to the right.	Shift the bobbin winder spindle to the left for stitching.
	The machine will stop if the buttonhole is sewn without lowering the buttonhole lever.	Lower the buttonhole lever and start the machine again.
	The twin needle key is pressed when a pattern unsuitable for twin needle sewing has been selected.	Select the pattern suitable for twin needle sewing.
	The twin needle key is pressed when the twin needle sign is indicated on the LCD screen.	Replace the twin needle with a single needle and press the twin needle key.
	The machine is started after halting due to overload.	Wait for at least 15 seconds to restart. Remove tangled threads around take-up lever, hook race and automatic thread cutting mechanism. Do not lower the feed dog, raise presser foot or shift bobbin winder spindle while the machine is running.
(E1-E7) 	The machine does not work properly due to a problem in the control circuit.	Contact the service center or the store from whom the machine was purchased.

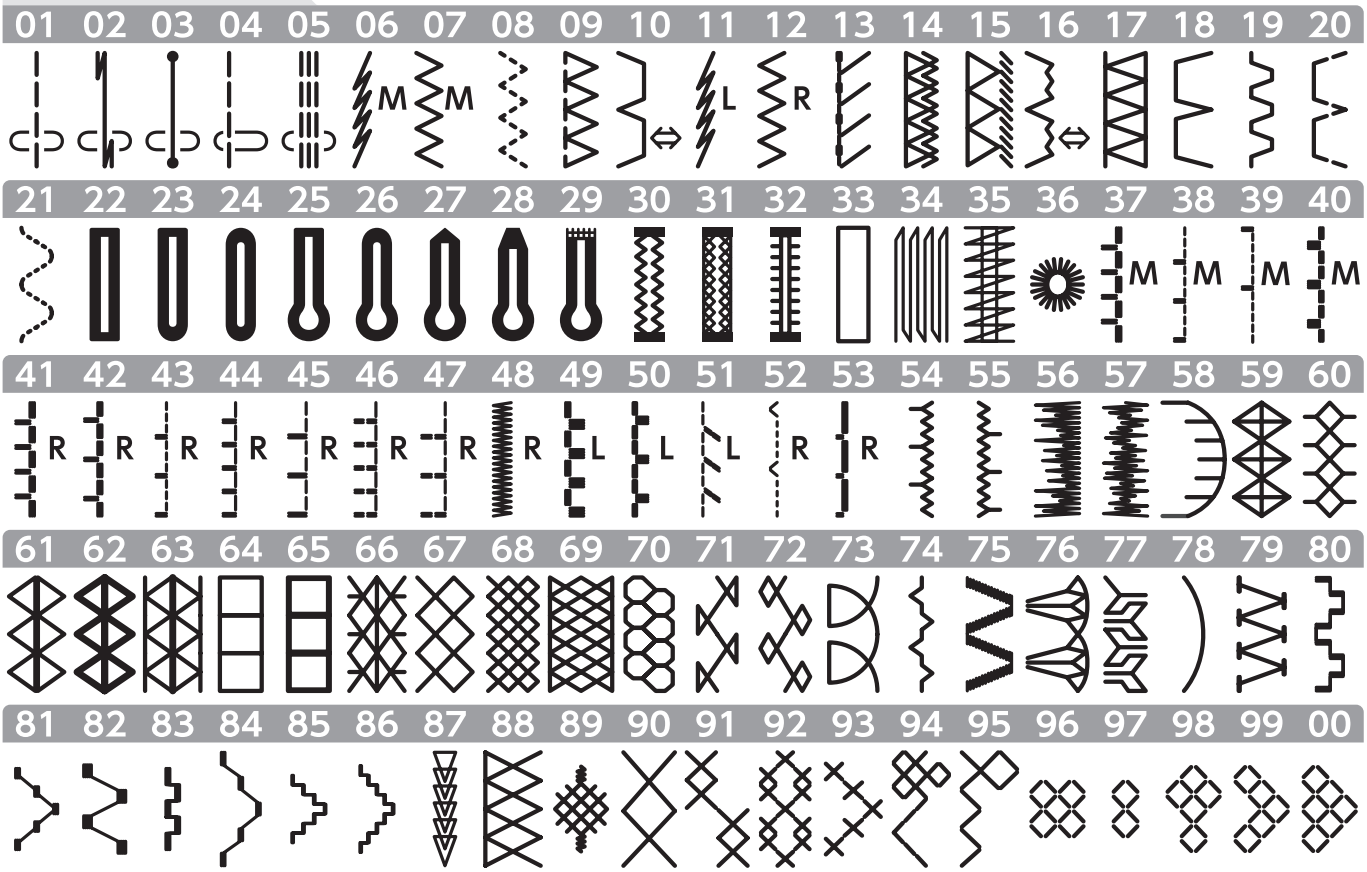
Audible Signal	The Buzzer sounds when:
pip	Normal operation.
pip-pip-pip	Invalid operation or malfunction.
peep	E1-E7 error occurred.
pip pi-pi-pi-peep	Buttonhole is completed.

It is not abnormal that a faint humming sound comes out from inside the machine.
LCD display may get warm when the machine has been used for hours.

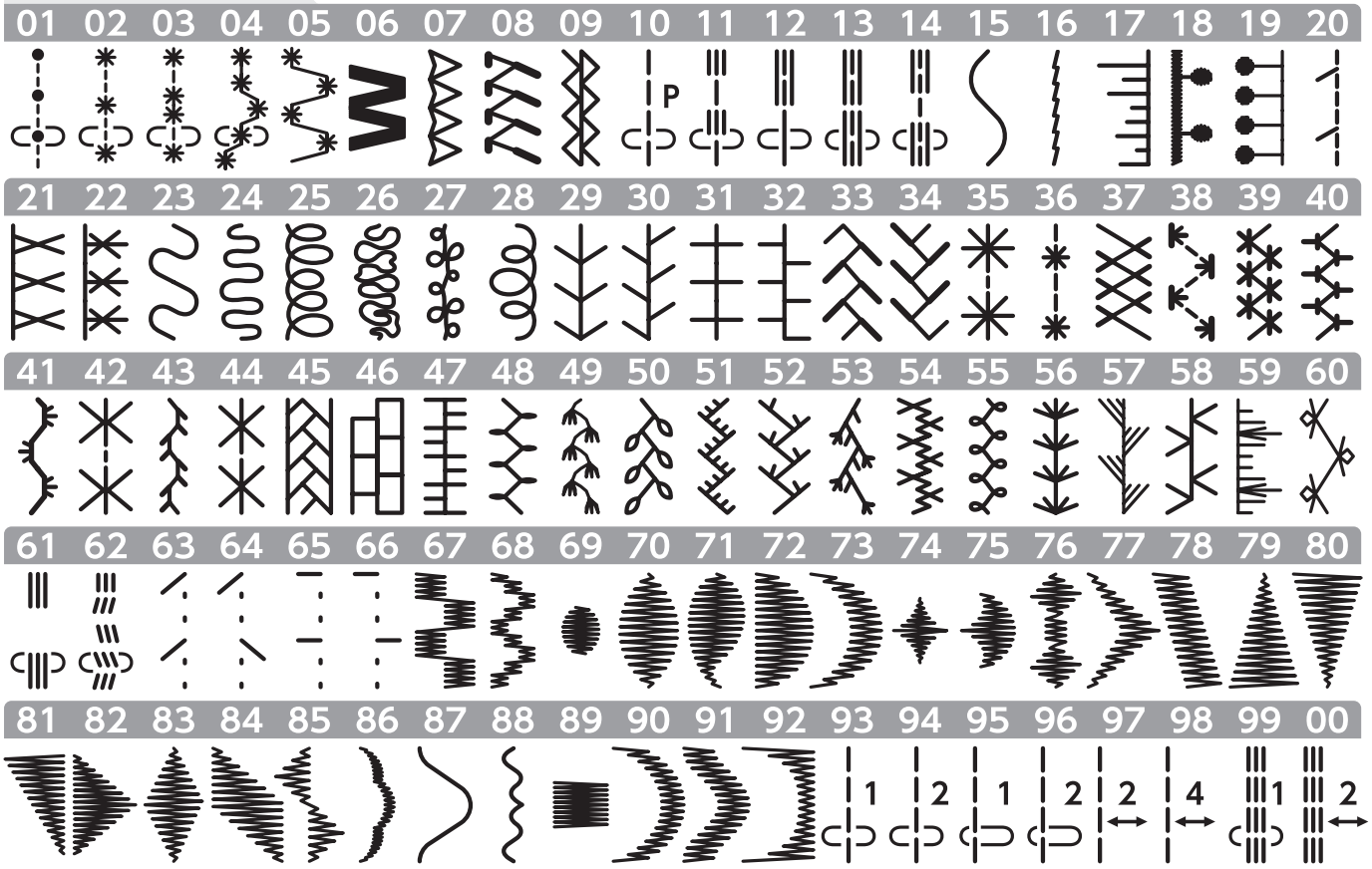
Troubleshooting

Condition	Cause	Reference
The needle thread breaks	1. The needle thread is not threaded properly.	Page 21
	2. The needle thread tension is too tight.	Page 13-14
	3. The needle is bent or blunt.	Page 16
	4. The needle is incorrectly inserted.	Page 16
	5. The needle and bobbin threads are not set under the presser foot when start sewing.	Page 23
	6. The thread is either too heavy or too fine for the needle.	Page 17
The bobbin thread breaks	1. The bobbin thread is not threaded properly in the bobbin holder.	Page 20
	2. Lint has collected in the bobbin holder.	Page 73
	3. The bobbin is damaged and does not turn smoothly.	Change the bobbin.
	4. The thread is wound loosely on the bobbin.	Page 19
The needle breaks	1. The needle is incorrectly inserted.	Page 16
	2. The needle clamp screw is loose.	Page 16
	3. The threads were not drawn to the rear after sewing.	Page 27
	4. The needle is too fine for the fabric being used.	Page 17
	5. An inappropriate presser foot is used.	Use the correct foot.
Skipped stitches	1. The needle is incorrectly inserted, bent or blunt.	Page 16
	2. The needle and/or threads are not suitable for the work being sewn.	Page 17
	3. A blue tip needle is not being used for sewing stretch, very fine fabrics and synthetics.	Use the stretch stitch needle.
	4. The needle thread is not threaded properly.	Page 21
	5. A poor quality needle is used.	Change the needle.
Seam puckering	1. The needle thread tension is too tight.	Page 13-14
	2. The needle thread is not threaded properly.	Page 21
	3. The needle is too heavy for the fabric being sewn.	Page 17
	4. The stitch length is too long for the fabric.	Make stitch shorter.
	5. A stabilizer is not used when sewing very fine fabrics.	Apply a stabilizer.
The fabric is not feeding smoothly	1. The feed dog is packed with lint.	Page 73
	2. The stitches are too fine.	Make stitch longer.
	3. The feed dog is not raised after “drop feed” sewing.	Page 13
Loops on the seams	1. The needle thread tension is too loose.	Page 13-14
	2. The needle is too thick or too fine for the fabric.	Page 17
The machine does not work	1. The machine is not plugged in.	Page 6-7
	2. Thread has been caught in the hook race.	Page 73
	3. The bobbin winder spindle is not returned to the left after bobbin winding.	Page 19
Buttonhole sewing is not sewn properly	1. The stitch density is not suitable for the fabric being sewn.	Page 39
	2. The interfacing has not been used for the stretch or synthetic fabric.	Apply an interfacing.
	3. The buttonhole lever is not lowered.	Page 38
The machine is noisy	1. Thread has been caught in the hook race.	Page 73
	2. Lint has built up in the hook race or bobbin holder.	Page 73
Auto thread cutting failed	1. Thread is too thick for the auto thread cutting.	Page 27
	2. Threads have been caught in the thread cutter mechanism.	Page 73

MODE 2


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

MODE 3


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

MODE 4

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20



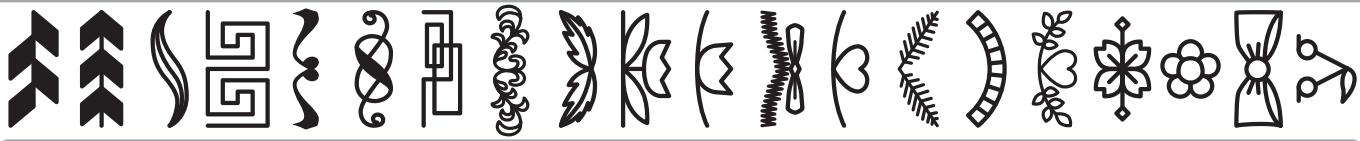
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40



41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60



61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80



81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00



MODE 5

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20

1 2 3 4 5 6 7 8 9 0 A B C D E F G H I J

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

K L M N O P Q R S T U V W X Y Z a b c d

41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

e f g h i j k l m n o p q r s t u v w x

61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

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81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00



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3/12/2019