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b37



Instruction Manual

bernette

SWISS DESIGN

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IMPORTANT

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

Please read the instruction manual carefully before using this machine.

Keep the instruction manual at a suitable place with the machine and hand it over if you give the machine to a third party.

When the machine is not in use or left unattended, always disconnect the machine from the power supply system. Unplug it from the outlet.

WARNING!

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

1. The machine mustn't be used by children under 8 or by people with reduced physical, sensory or mental capabilities or if there is a lack of experience and knowledge how to operate the machine. Unless they have been given instruction concerning the use of the machine and the involved risks by a person who is responsible for their safety.
2. Do not use this machine as a toy. Close attention is necessary when this machine is used by children, near children or people with reduced sensation.
3. Use this machine only for its intended use as described in this manual. Use only accessories recommended by the manufacturer.
4. Children should be supervised to ensure that they do not play with the machine.
5. Never operate this 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 the machine to the nearest authorized dealer or service centre for examination, repair, electrical or mechanical adjustment.
6. Never operate the machine with any air openings blocked. Keep ventilation openings of the machine and the foot control free from accumulation of lint, dust, and loose cloth.
7. Keep fingers away from all moving parts. Special care is required around the machine needle.
8. Always use the proper stitch plate. Using the wrong stitch plate can result in needle breakage.
9. Do not use bent needles.
10. Do not pull or push the fabric while sewing. This can result in needle breakage.
11. Switch the machine off ("O") when making any adjustments in the needle area, such as threading or changing the needle, threading the bobbin, or changing the presser foot, and the like.
12. Always unplug the machine when performing cleaning or maintenance work such as replacing the sewing light or when making any other user maintenance adjustments mentioned in the instruction manual (disconnect the power plug). Cleaning and maintenance work must not be carried out by children without supervision.
13. Never drop or insert any object into any openings.
14. Use this machine only in dry and protected areas. Never operate the machine in a damp or wet environment.
15. Do not operate the machine where aerosol spray products are being used or where oxygen is being administered.
16. To disconnect, turn the power switch to ("O")(off), then remove the plug from the outlet. Do not unplug by pulling the cord, instead grasp the plug to pull it from the outlet.
17. If the supply cord of the foot control is damaged, it must be replaced by the manufacturer or an appropriate service agent or a similar qualified person in order to avoid endangerment.
18. Never place anything on the foot control.
19. The machine may only be used in combination with a foot control of the type YC-485-EC-1 (100-240 V area).

DANGER!

To reduce the risk of electric shock:

1. Never leave the machine unattended when it is plugged in.
2. Always unplug this machine from the electric outlet immediately after using and before cleaning.
3. LED RADIATION: Do not look directly at the LED using an optical instrument.

20. The sound pressure level during normal operation is lower than 75dB(A).
21. This machine is provided with double insulation (except U.S.A/Canada). Use only identical replacement parts. See instructions for Servicing of double-insulated products.

SERVICING OF DOUBLE-INSULATED PRODUCTS

In a double-insulated product, two systems of insulation are provided instead of grounding. No grounding means is provided on a double-insulated product nor should a means for grounding be added to the product. Servicing a double-insulated product requires extreme care and knowledge of the system and should only be done by qualified service personnel. Replacement parts for a double-insulated product must be identical to those parts in the product. A double insulated product is marked with the words «DOUBLE INSULATION» or «DOUBLE INSULATED».

The symbol  may also be marked on the product.

SAVE THESE INSTRUCTIONS!

All rights reserved

For technical and product improvement reasons, the machine's features, parts and accessory are subject to unannounced changes and alterations at any time. The accessory included can differ from country to country.



WARNING:

This machine is intended for household use only. If used intensively or commercially, regular cleaning and especially attentive care is required.

Signs of wear and tear owing to intensive or commercial use are not covered automatically, even if they occur within the warranty period. The decision on how to deal with any such cases rests with the local authorised servicing staff.

PLEASE NOTE:

If the machine is stored in a cold room, it should be brought to a warm room about one hour before use.



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)

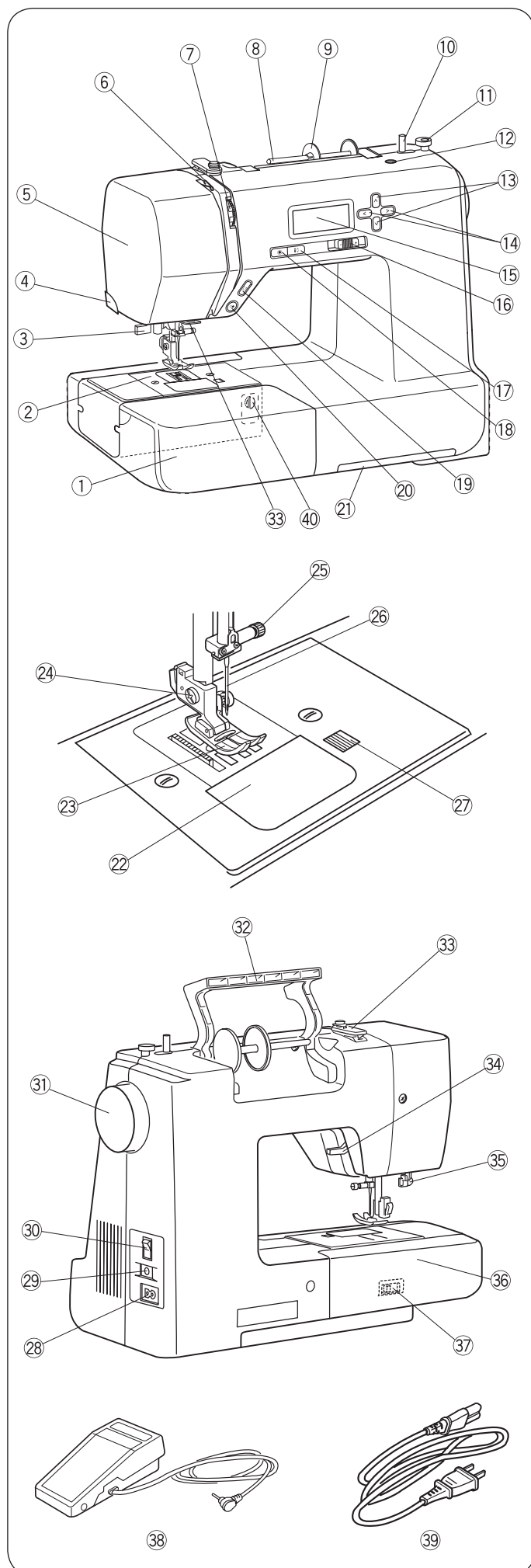
EUROPE ONLY:

This appliance may only be used by children over eight and by persons with reduced physical, sensory or mental capabilities or by persons who lack experience and knowledge of how to operate the machine under supervision, after instruction on how to use the equipment safely and once they have understood the potential dangers. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

OUTSIDE OF EUROPE (EXCEPT FOR THE USA AND CANADA):

This appliance may only be used by persons (including children) with reduced physical, sensory or mental capabilities or by persons who lack experience and knowledge of how to operate the machine under supervision and after instruction on how to use the equipment safely by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.



NAMES OF PARTS

Names of Parts

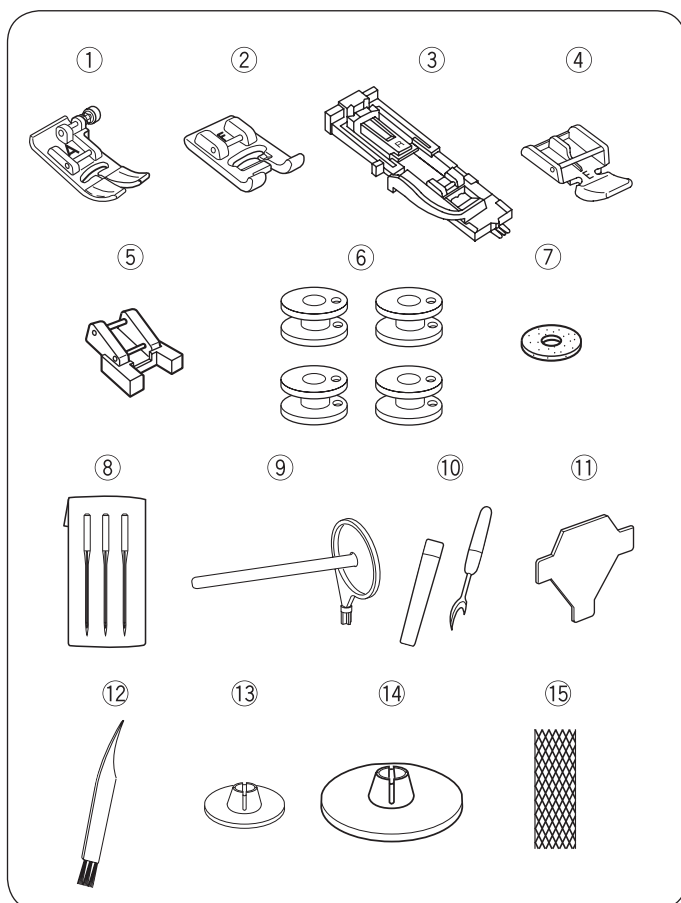
- ① Sewing table (accessory box)
- ② Stitch plate
- ③ Needle Threader
- ④ Thread cutter
- ⑤ Head cover
- ⑥ Thread take-up lever
- ⑦ Thread tension
- ⑧ Spool pin
- ⑨ Spool disc large
- ⑩ Bobbin winder spindle
- ⑪ Bobbin winder stopper
- ⑫ Hole for second spool pin
- ⑬ Value set buttons
- ⑭ Cursor buttons
- ⑮ LCD display
- ⑯ Slide speed control
- ⑰ Needle stop up/down button
- ⑱ Auto-lock button
- ⑲ Reverse sewing button
- ⑳ Start/stop button
- ㉑ Drawer for stitch overview
- ㉒ Bobbin cover
- ㉓ Presser foot (Zigzag foot)
- ㉔ Presser foot holder
- ㉕ Needle clamp screw
- ㉖ Needle
- ㉗ Bobbin cover release button
- ㉘ Power cable connection
- ㉙ Foot control connector
- ㉚ Power switch
- ㉛ Handwheel
- ㉜ Carrying handle
- ㉝ Thread guide
- ㉞ Presser Foot Lever
- ㉟ Buttonhole lever
- ㊱ Free arm
- ㊲ Feed dog lever
- ㊳ Foot control
- ㊴ Power cable*
- ㊵ Balance

PLEASE NOTE:

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

Design and specifications are subject to change without prior notice.

*The power cable included may differ from the illustration.

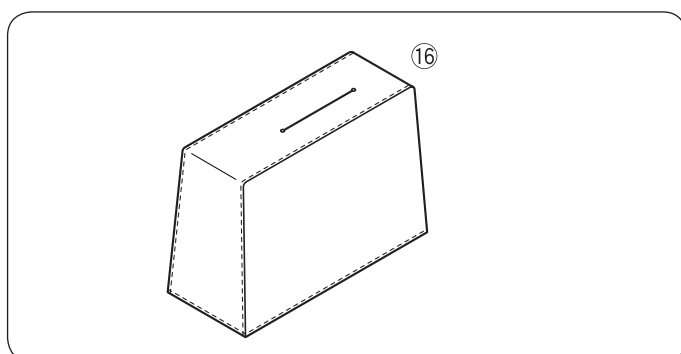


Standard Accessories

- ① Zigzag foot A (set on the machine)
- ② Satin stitch foot F
- ③ Buttonhole foot with slide R
- ④ Zipper foot E
- ⑤ Button sew-on foot T
- ⑥ Bobbin (x4) (1 set on the machine)
- ⑦ Spool pin felt
- ⑧ Needle set
- ⑨ Second spool pin
- ⑩ Seam ripper (buttonhole opener)
- ⑪ T screwdriver
- ⑫ Brush
- ⑬ Spool disc (Small) (x1) (set on the machine)
- ⑭ Spool disc (Large) (x1)
- ⑮ Spool net
- ⑯ Dust Cover

More information on optional accessories can be found on our website:

<http://www.mybernette.com/accessories>

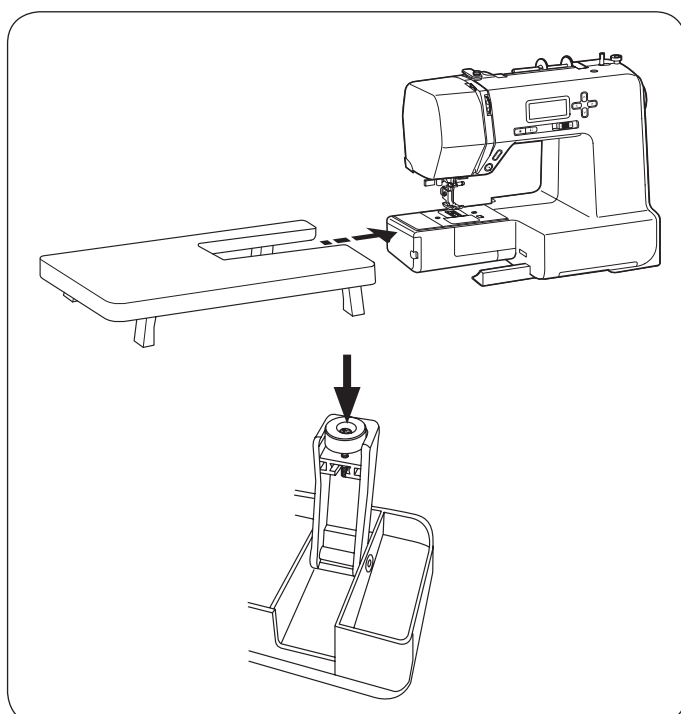


• Dust Cover

Sewing instructions for your own personalized dust cover are available at:



www.mybernette.com/cover



Extension table

• Attaching the table

Pull the table away from the machine.

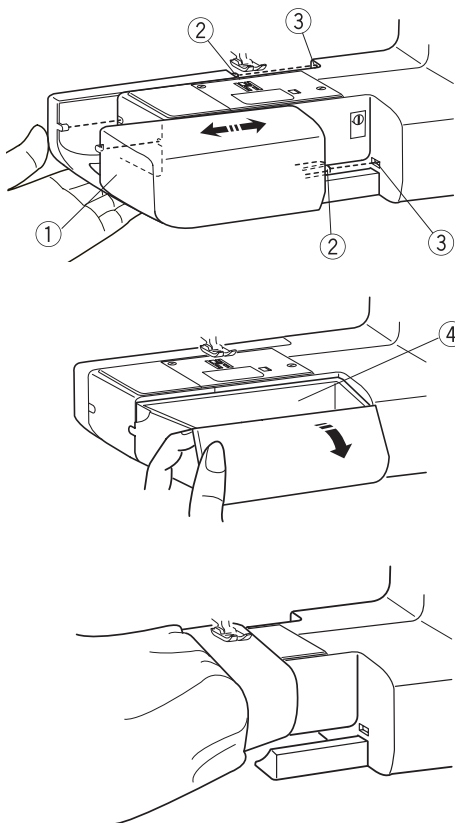
Spread the legs of extension table*.

Holding the table with both hands and slide it gently to the right.

Adjusting the table height

Turn setscrews of the table legs with a screwdriver (optional).

* special accessory



Sewing Table and Accessory box

The sewing table ① provides an extended sewing area and can be easily removed for free arm sewing.

- ① Sewing table
- ② Pin
- ③ Hole

• Removing Sewing Table

Pull the table away from the machine, as illustrated.

• Attaching Sewing Table

Push the sewing table, inserting the pin into the hole until the table snaps into the machine. ② Insert the second spool pin into the hole ③.

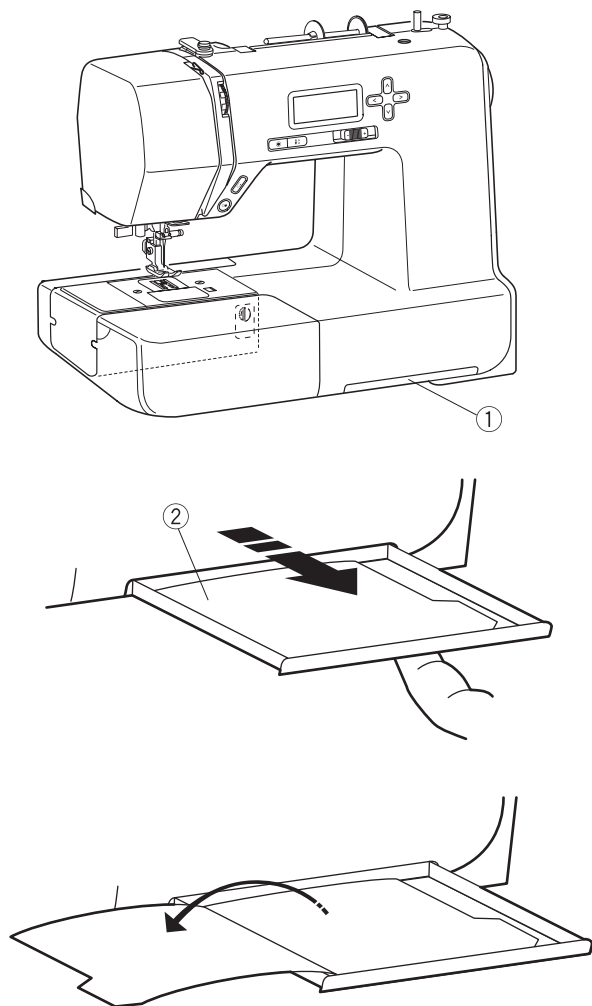
• Accessory box

The accessories are stored inside the sewing table. Pull the lid towards you to open the accessory box ④.

- ④ Accessory box

• Free-arm sewing

Free-arm sewing is useful for darning socks and mending the knee or cuff areas of children's clothes.

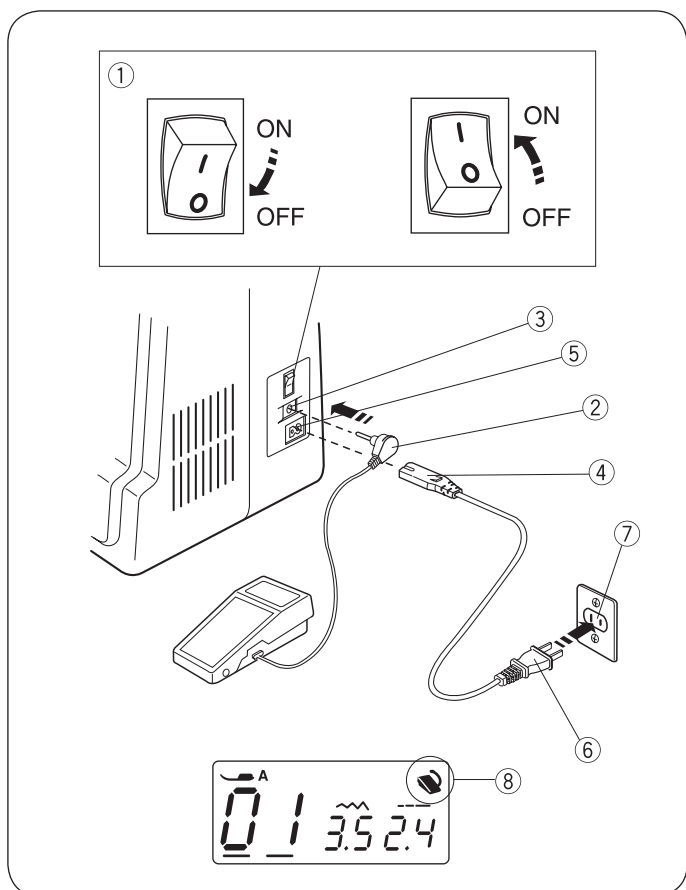


Stitch overview

The stitch overview ② is stored in the drawer ① in the lower part of the sewing machine.

- ① Drawer for stitch overview
- ② Stitch overview

Pull the drawer out with your finger as far as it will go. Turn pages to refer the stitch overview.



GETTING READY TO SEW

Connecting the Power Supply

• Using the foot control

Switch off the power switch ①. Insert the foot control plug ② into the foot control connection ③. Insert the cable plug ④ into the power cable connection ⑤. Insert the power supply plug ⑥ into the wall outlet ⑦. Turn on the power switch ①. The foot control sign ⑧ will be displayed when the foot control is connected to the machine.

- ① Power switch
- ② Foot control plug
- ③ Foot control jack
- ④ Cable plug
- ⑤ Power cable connection
- ⑥ Power supply plug
- ⑦ Wall outlet
- ⑧ Foot control sign



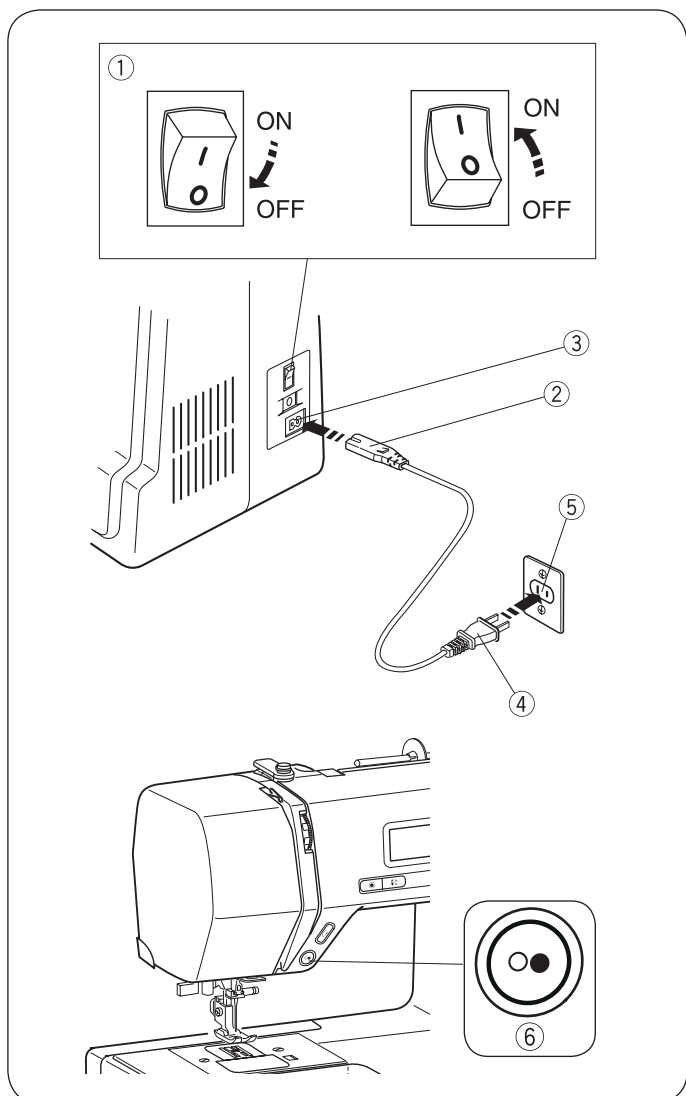
WARNING:

While in operation, always keep your eyes on the sewing area, and do not touch any moving parts such as the thread take-up lever, handwheel or needle.

Always turn off the power switch and unplug from the power supply:

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

Never place anything on the foot control.



• Before Using Your Sewing Machine

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

• Using the start/stop button

Switch off the power switch ①.

Insert the cable plug ② into the power cable connection ③.

Insert the power supply plug ④ into the wall outlet ⑤.

Turn on the power switch ①.

- ① Power switch
- ② Cable plug
- ③ Power cable connection
- ④ Power supply plug
- ⑤ Wall outlet
- ⑥ Start/stop button

PLEASE NOTE:

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

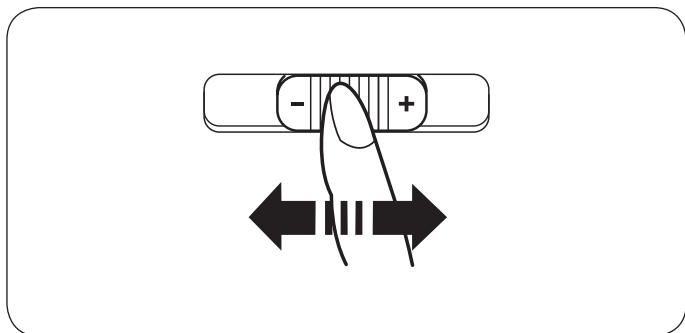
• Operating Instructions:

The symbol "0" on a switch indicates the "off" position of a switch.

For appliances with a polarized plug (one blade wider than the other): To reduce the risk of electric shock, this plug is intended to fit in a polarized outlet only one way.

If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way (U.S.A. and Canada only).

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



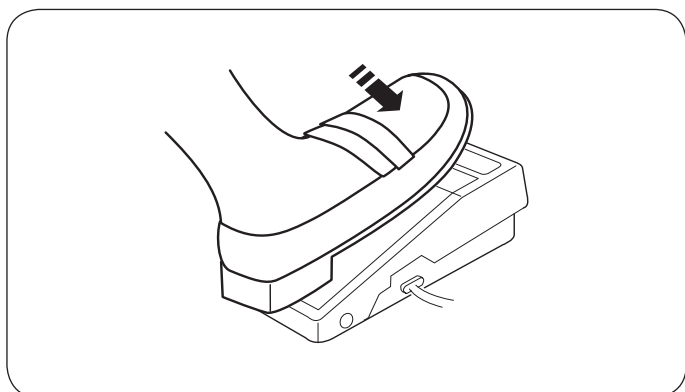
Controlling Sewing Speed

- **Slide speed control**

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

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

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

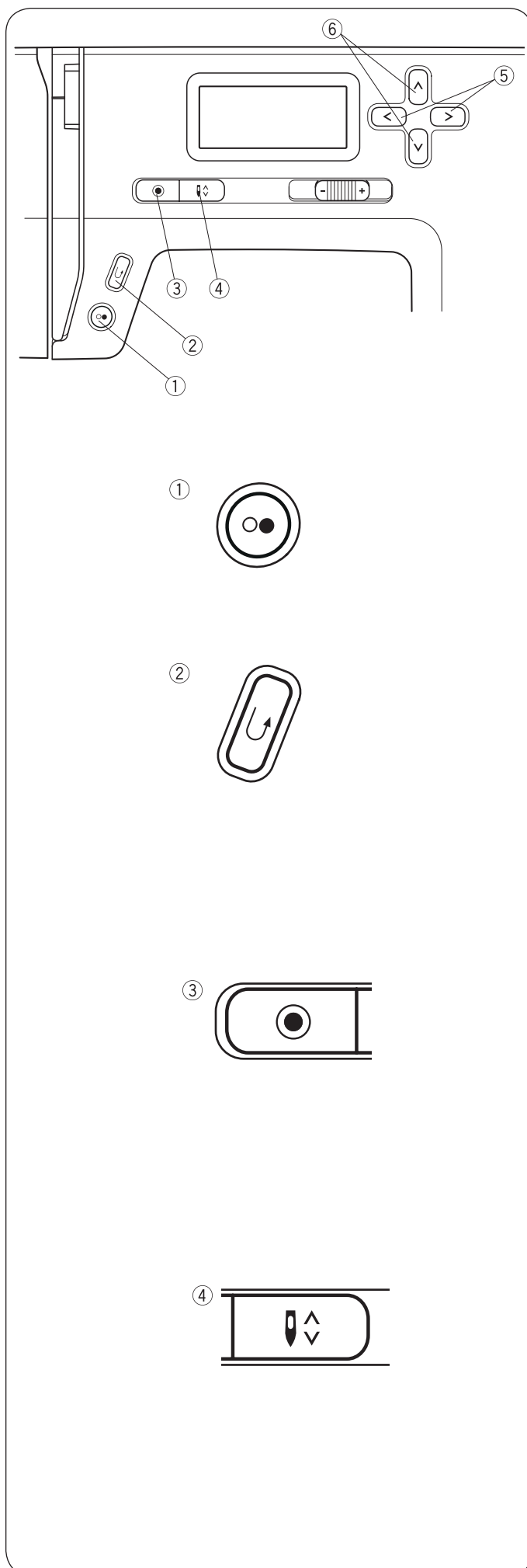


- **Foot control**

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 slide speed control.



Machine Operating Buttons

• Start/stop button ①

Press this button to start or stop the machine.

The machine will sew the left row first. The machine starts running slowly for the first few stitches, and it then runs at the speed set by the slide speed control.

PLEASE NOTE:

The machine runs slowly as long as this button is being pressed.
The start/stop button cannot be used when the foot control is connected to the machine.

• Reverse sewing button ②

When stitch pattern  (01, 02, 05, 06) is selected;

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

When any other stitches are selected

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

PLEASE NOTE:

There will be particular functions of the reverse sewing button  when pattern is selected.

Refer to page 26, 36 and 37 for instructions.

• Auto-lock button ③

When stitch pattern  (01, 02, 05, 06) is selected;

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

When any other stitches are selected

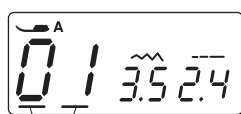
Press the auto-lock button to sew a locking stitch at the end of current pattern. The machine will automatically stop.

• Needle stop up/down button ④

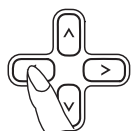
Press the needle stop up/down Button to bring the needle up or down.

In the case of sewing stop, the needle hold in the desired position until the Needle stop up/down button is pressed again.

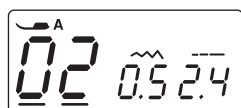
⑤



⑦



⑥



• **Cursor buttons** ⑤

Use these buttons to move the cursor ⑦.

Press > button to move the cursor to right.

Press < button to move the cursor to left.

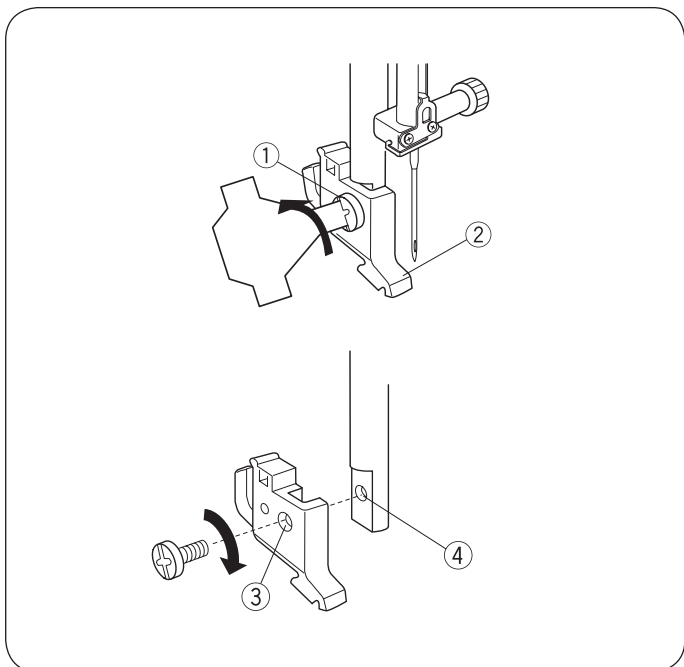
• **Value set buttons** ⑥

Use these buttons to change the set value.

Move the cursor under the digit you would like to change.

Press ^ button to increase the value.

Press v button to decrease the value.



Attaching and removing the presser foot holder



CAUTION:

Turn OFF the power switch before removing or attaching the presser foot holder.

Removing Presser foot holder

Remove the setscrew by turning it counterclockwise with a screwdriver.

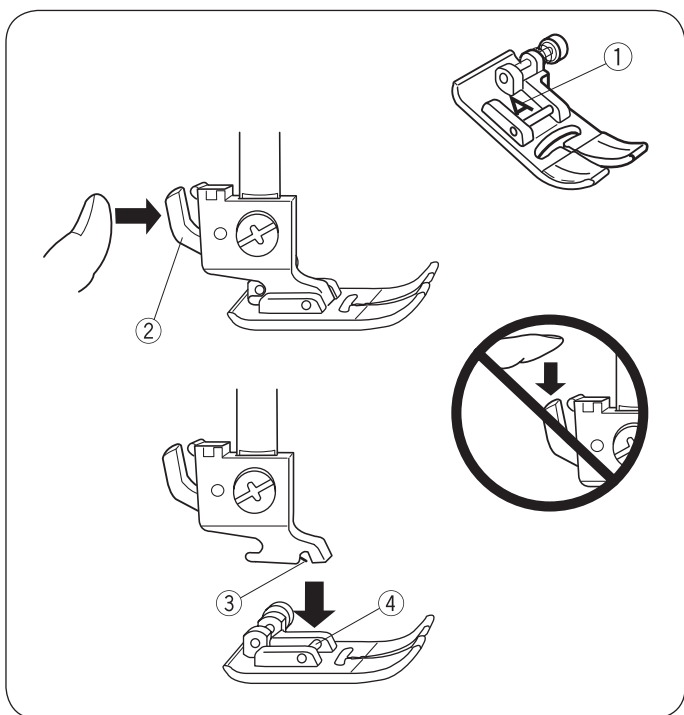
Attaching Presser foot holder

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

Fit the setscrew into the hole.

Tighten the setscrew by turning it clockwise with the screwdriver.

- ① Setscrew
- ② Presser foot holder
- ③ Hole
- ④ Threaded hole



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 presser foot holder.

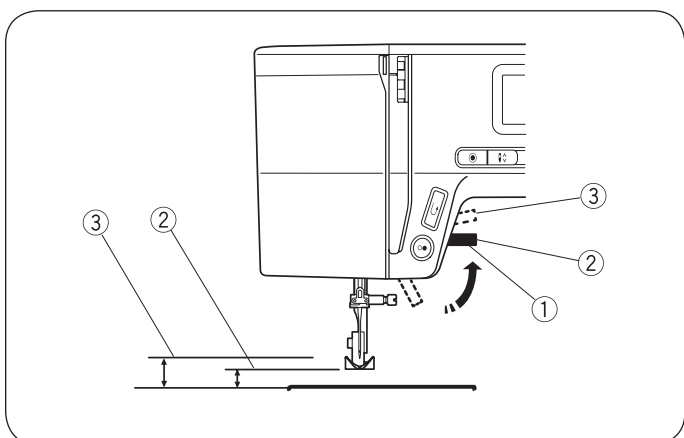
- ② Lever

Attaching the presser foot

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

Lower the presser foot lever to lock the foot in place.

- ③ Groove
- ④ Pin

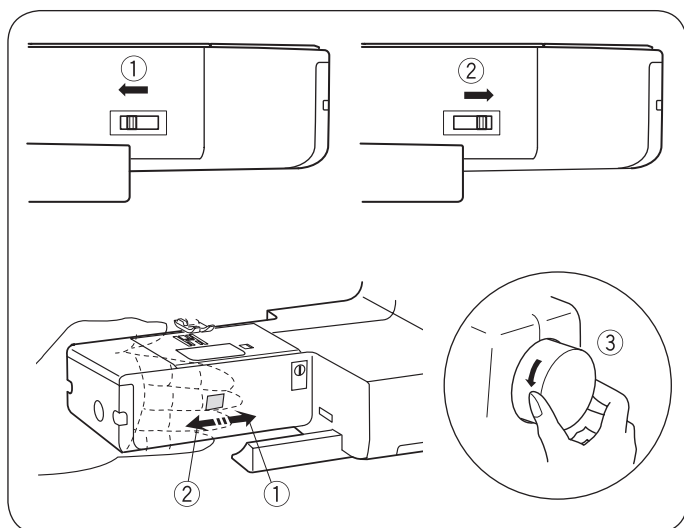


Presser Foot Lever

The presser foot lever raises and lowers the presser foot.

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

- ① Presser Foot Lever
- ② Normal up position
- ③ Highest position



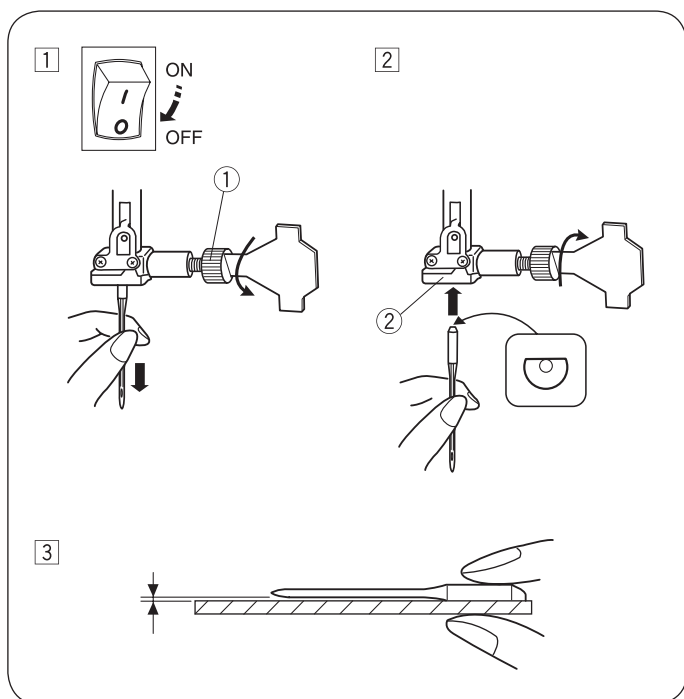
Dropping or Raising the Feed Dog

The drop feed dog 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 ③ toward you.

The feed dog must be up for normal sewing.



Changing the needle



CAUTION:

Turn OFF the power switch before changing the needle.

- ① Turn OFF the power switch. Raise the needle to its highest position by turning the handwheel counterclockwise, and lower the presser foot. Loosen the needle clamp screw ① by turning it counterclockwise. Remove the needle from the needle clamp ②.
- ② Insert a new needle into the needle clamp ② with the flat side to the rear. When inserting the needle into the needle clamp ②, push it up as far as it goes. Tighten the needle clamp screw ① firmly by turning it clockwise.
- ③ To see if the needle is good, place the flat side of the needle onto something flat (stitch 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.

- ① Needle clamp screw
- ② Needle clamp

Fabric		Thread	Needle
Fine	Lawn	Silk #80-100 Cotton #80-100 Synthetic #80-100	#9/65-11/75
	Georgette		
	Tricot		
	Organza		
	Crepe		
Medium	Sheeting	Silk #50 Cotton #50-80 Synthetic #50-80	#11/75-14/90
	Jersey		
	Broadcloth		
	Fleece		
Heavy weight	Denim	Silk #30-50 Cotton #40-50 Synthetic #40-50	#14/90-16/100
	Tweed		
	Coating		
	Quilting		

PLEASE NOTE:

Three no. 14/90 needles are included in the needle set. For optimal sewing results, it is recommend using Organ needles.

Fabric and Needle Chart

Use a needle size of 11/75 or 14/90 for general sewing work.

A fine thread and needle should be used for sewing lightweight fabrics, so the fabric will not be marred.

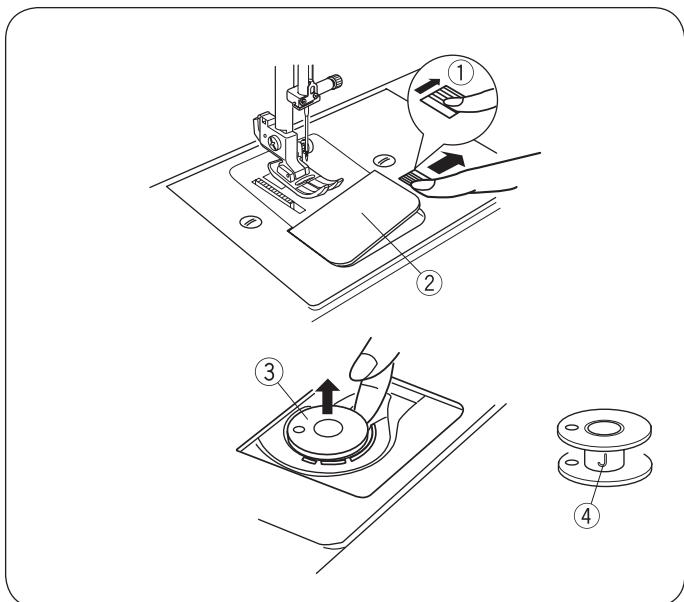
Heavy fabric requires a needle large enough to pierce the fabric without the needle thread fraying.

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.

PLEASE NOTE:

Use a blue shank needle (available separately) when sewing flexible fabrics, very fine fabrics and synthetic fabrics. The blue shank needle effectively prevents skipped stitches.



Bobbin Winding and Inserting

• Removing the bobbin

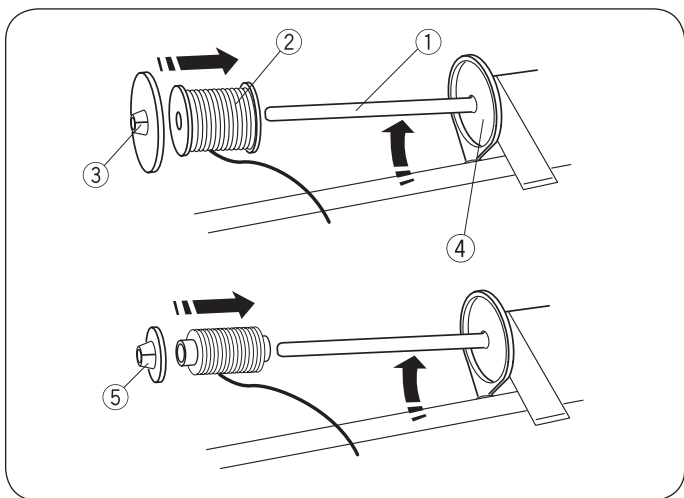
Gently slide the hook cover release button to the right and remove the hook cover plate.

Lift out the bobbin.

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

PLEASE 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.



• Setting the Spool of Thread

Horizontal spool pin

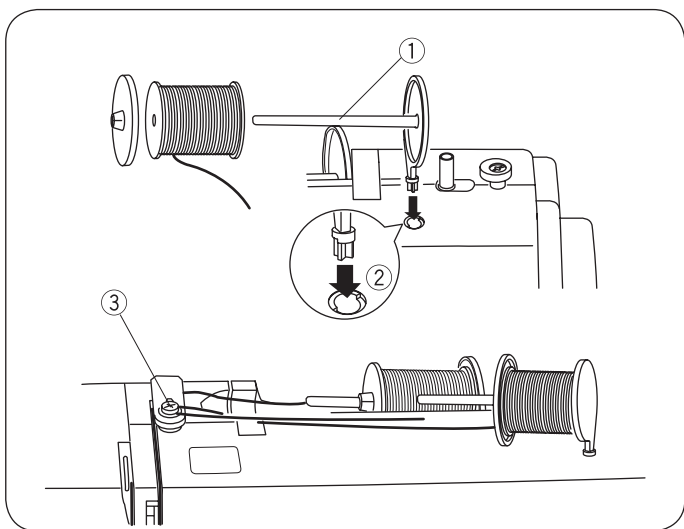
Lift up the spool pin. Place a spool of thread on the spool pin.

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

- ① Spool pin
- ② Spool
- ③ Large spool disc
- ④ Supporter

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

- ⑤ Small spool disc



Second spool pin

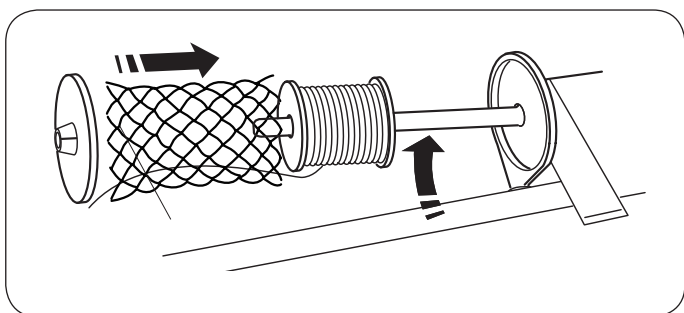
The second spool pin is for winding bobbins without unthreading the machine.

Insert the second spool pin into the hole.

The second spool pin should point to the bobbin winder tension disc.

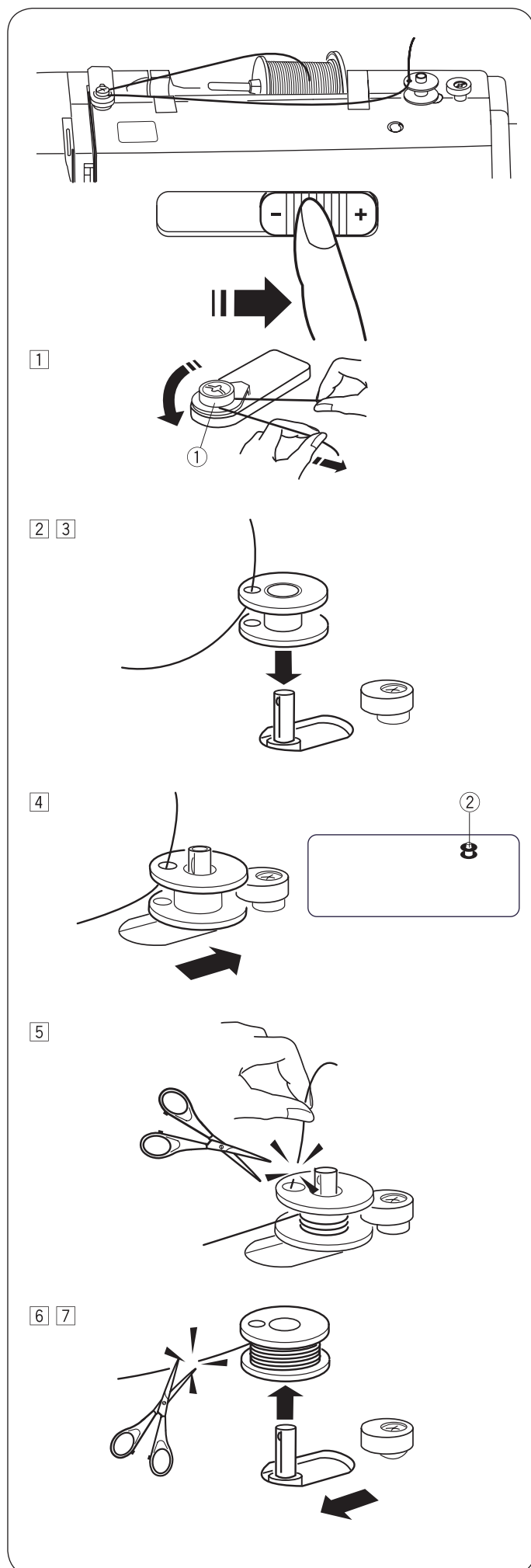
Draw the thread from the spool and pass the thread around the bobbin winding tension disc as shown.

- ① Second spool pin
- ② Hole for second spool pin
- ③ Bobbin winder tension disc



• Spool net

Polyester or bulky nylon threads become loose while unwinding. To keep consistent feeding of such threads, pull the spool net over the spool.



• Bobbin Winding

PLEASE NOTE:

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

- 1 Draw the thread from the spool and pass the thread around the bobbin winding tension disc.
 - ① Bobbin winder tension disc

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

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

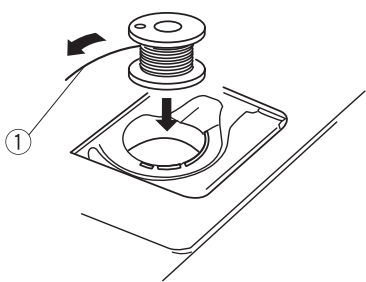
- 5 With the free end of the thread held in your hand, start the machine. Stop the machine when it has wound a few layers, and then cut the thread close to the hole in the bobbin.

PLEASE NOTE:

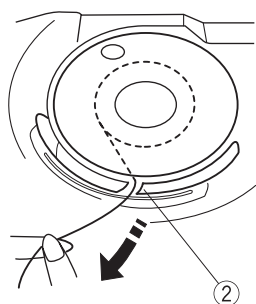
For safety purposes, the machine will automatically stop 1.5 minutes after starting bobbin winding.

- 6 Start the machine. When the bobbin is fully wound, it will stop automatically. Stop the machine and return the slide speed control position. Shift the bobbin winder spindle to the left for stitching. Cut the thread as shown.
- 7 Remove the bobbin. Cut the thread as shown. Return the slide speed control position.

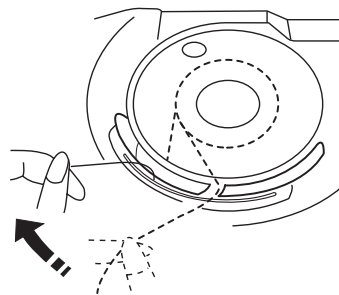
1



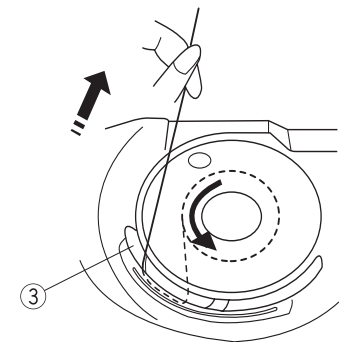
2



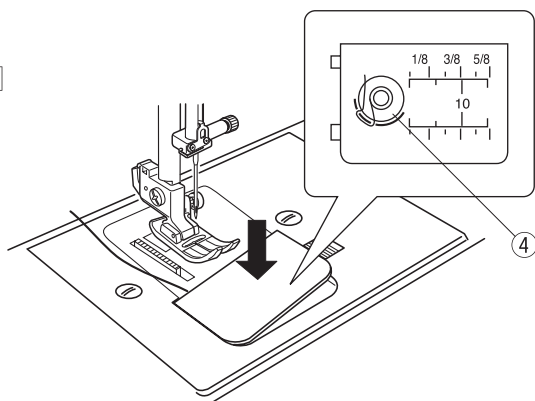
3



4



5



• Insert the bobbin

- 1 Put one bobbin on the bobbin winder spindle. Place a bobbin in the bobbin holder with the thread running off counter-clockwise.

① End of thread

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

② Notch

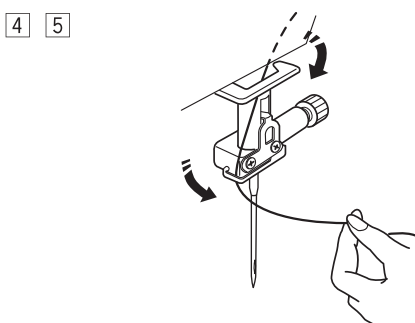
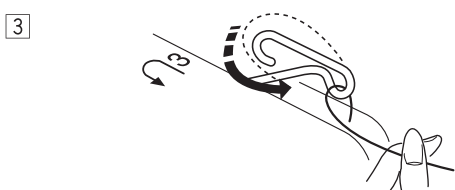
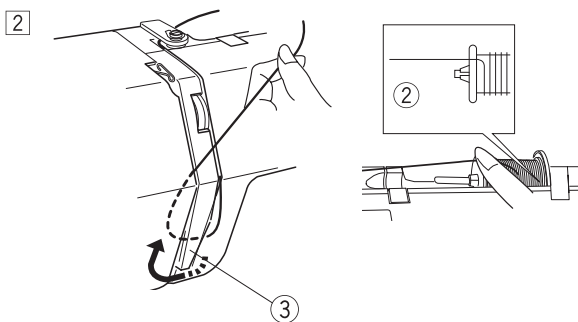
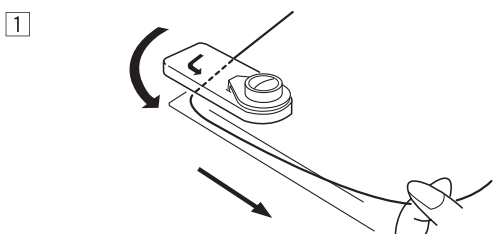
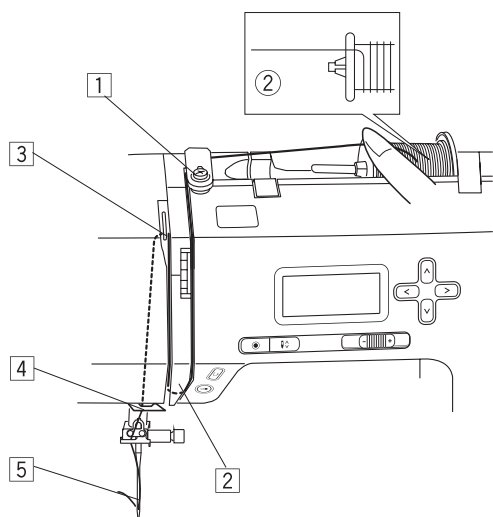
- 3 Draw the thread to the left, sliding it between the tension spring blades.

- 4 Continue to draw the thread lightly until the thread slips into the second notch ③. Pull out about 6" (15 cm) of thread.

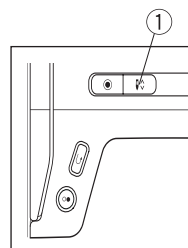
③ Notch

- 5 Attach the hook cover plate. Check the threading. Refer to the diagram ④ shown on the hook cover plate.

④ Threading diagramm



Threading the Machine



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

① Needle stop up/down button



CAUTION:

Turn OFF the power switch before threading the machine.

• Threading the Machine

① 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.

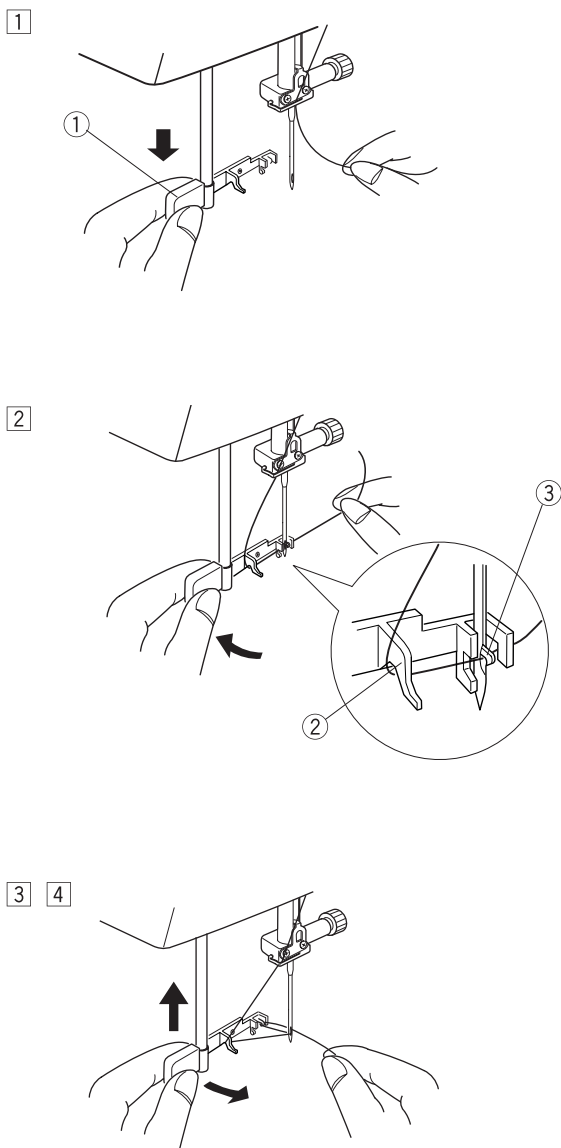
② Spool

③ Check spring holder

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

④ Pass the thread through the lower thread guide. Slide the thread behind the needle bar thread guide on the left.

⑤ Thread the needle from front to back, or use the needle threader.



CAUTION:

Turn OFF the power switch when using the needle threader.

Needle threader

- 1 Lower the presser foot. Raise the needle to its highest position. Pull down the needle threader ① as far as it will go.

① Needle Threader

- 2 Turn the needle threader away from you so the hook comes out through the needle eye. Draw the thread around the guide ② and under the hook ③.

② Guide

③ Hook

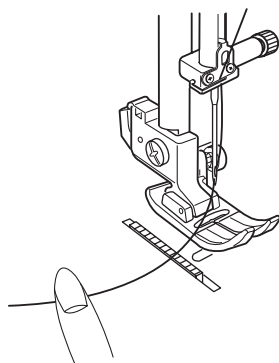
- 3 Turn the needle threader toward you to pull the thread through the needle eye. Raise the needle threader in the direction of the arrow, drawing the thread loop through the needle.

- 4 Pull the thread through the needle eye.

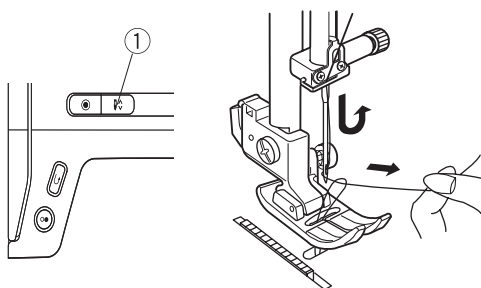
PLEASE NOTE:

The needle threader can be used with a #11 to #16 needle or a blue shank needle. Thread sizes 50 to 90 are recommended.

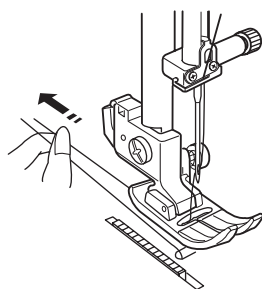
1



2



3



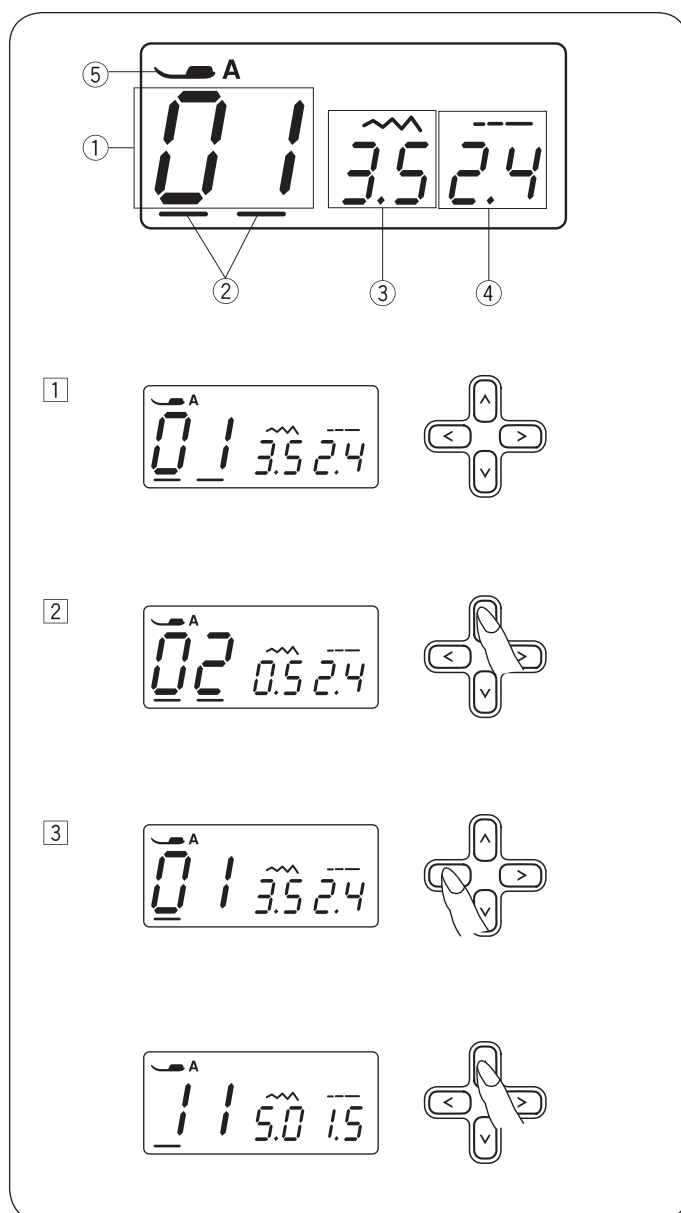
Drawing up the Bobbin Thread

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

2 Press the needle stop up/down button ① twice to lower and raise the needle to pick up the bobbin thread.

① Needle stop up/down button

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



LCD display

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

- ① Stitch pattern number
- ② Cursors
- ③ Stitch width
- ④ Stitch length
- ⑤ Presser foot

- 1 Press the cursor buttons < > to move the cursor under the stitch pattern number.

The cursors appear under both digits when turning the power on.

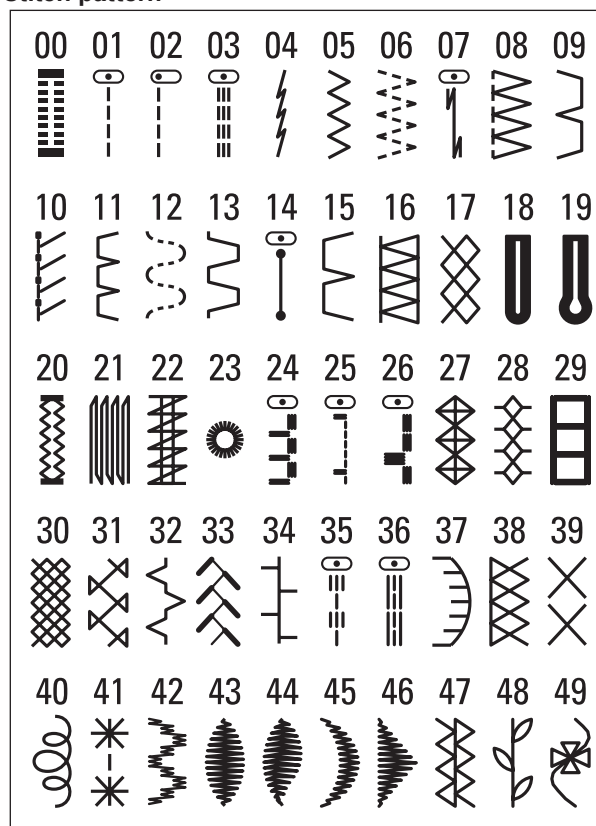
- 2 Press the value set buttons ^ v to change the stitch pattern number until the pattern number of the desired stitch is indicated.

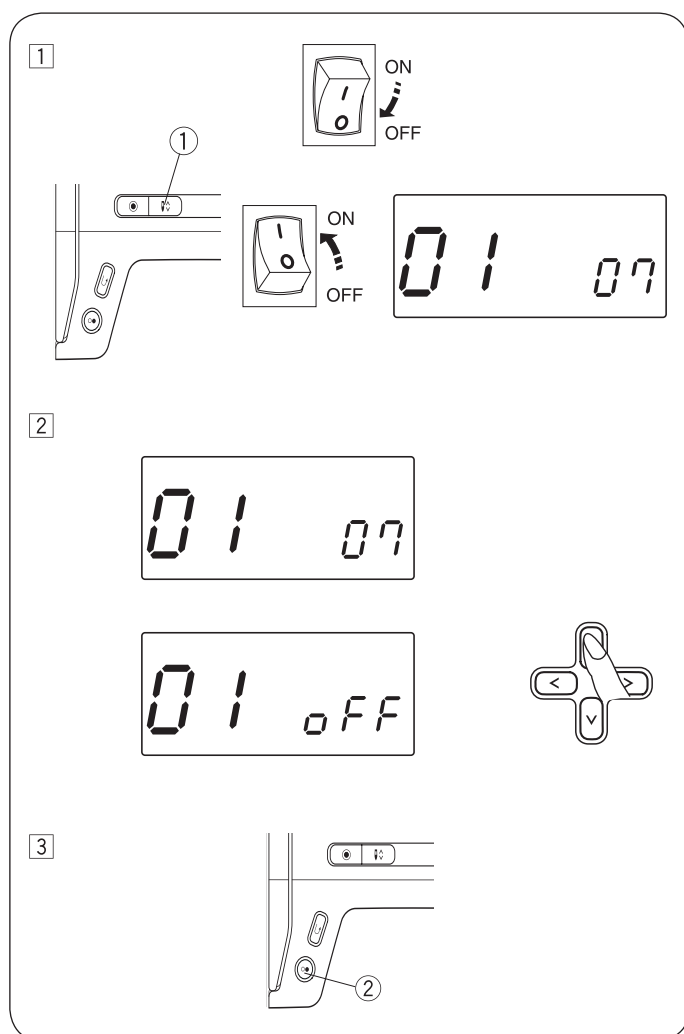
The number will increase or decrease by 1 each time you press the value set button.

- 3 Press the < button to move the cursor under the tens digit of the stitch pattern number.

The number will increase or decrease by 10 each time you press the value set button.

Stitch pattern





Setting Mode

• Auto-off timer

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

The auto-off timer can be set from 1 to 12 hours.

The default auto-off timer setting is 7 hours and "07" sign appears on the screen.

1 To enter the setting mode, press and hold the needle stop up/down button ① and turn the power switch on until the setting screen "Auto-off timer" is shown (01).

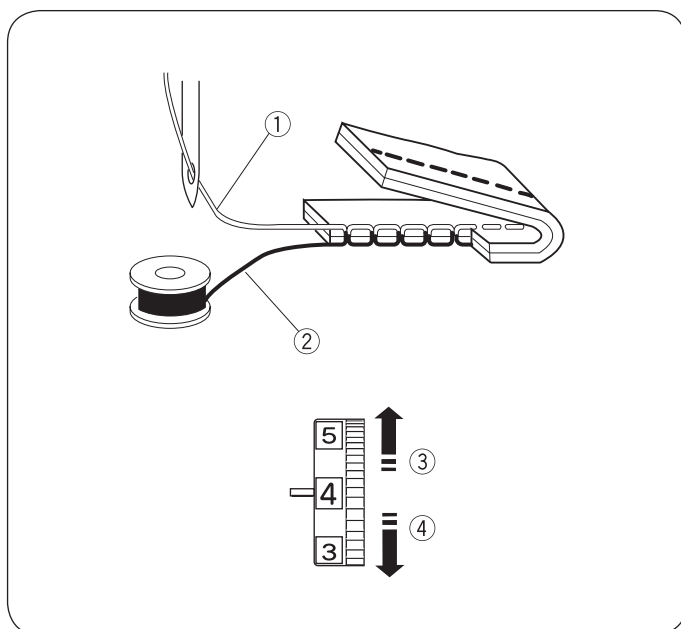
2 Press **▲** or **▼** button to increase or decrease the setting value.

If you wish to turn off the timer, press and hold **▲** or **▼** button until "oFF" sign appears on the screen.

3 Press the start/stop button ② to apply the setting.

PLEASE NOTE:

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



Adjusting the Thread Tension for a Straight Stitch

• Correct tension

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

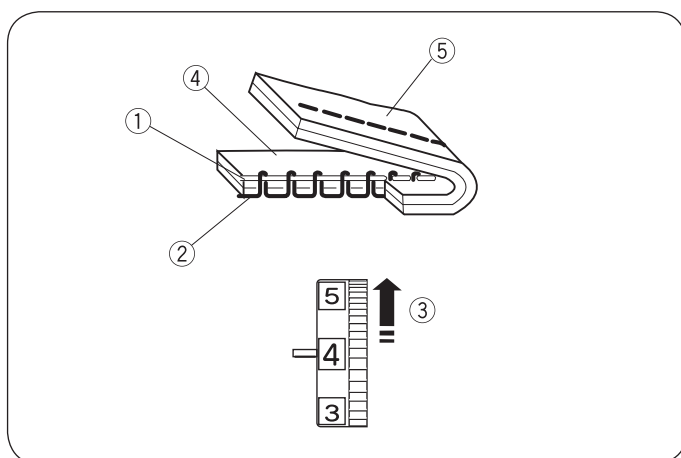
The ideal straight stitch has threads locked between two layers of fabric, as illustrated (magnified to show detail).

If you look at the top and bottom of the seam, notice that the stitches are evenly balanced.

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

Results depend on:

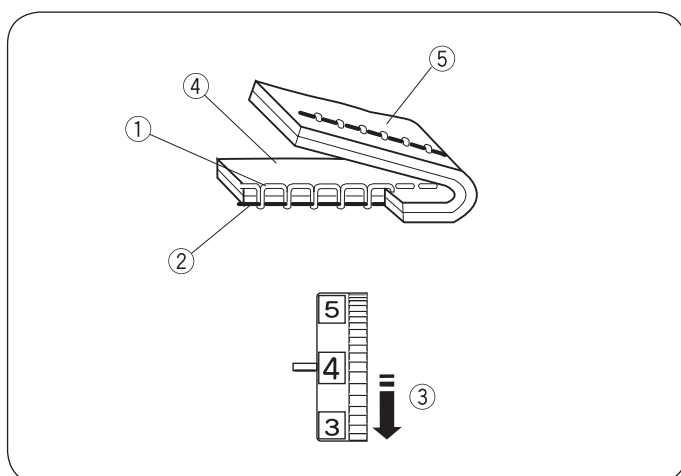
- stiffness and thickness of the fabric
- number of fabric layers
- Stichtyp



• Loosen the 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

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



• Tighten the 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

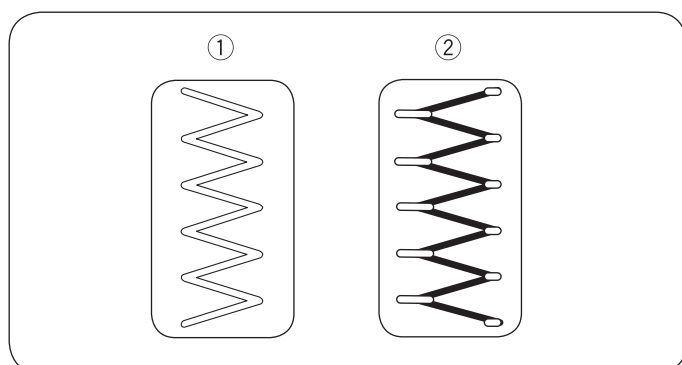
The needle thread shows through on the wrong side of the fabric, and the stitch feels bumpy. Turn the dial to a higher tension setting number to tighten the thread tension.

Adjusting the Needle Thread Tension for a Zigzag Stitch

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

See the illustrations for the correct appearance.

To match this appearance, adjust the needle tension as.

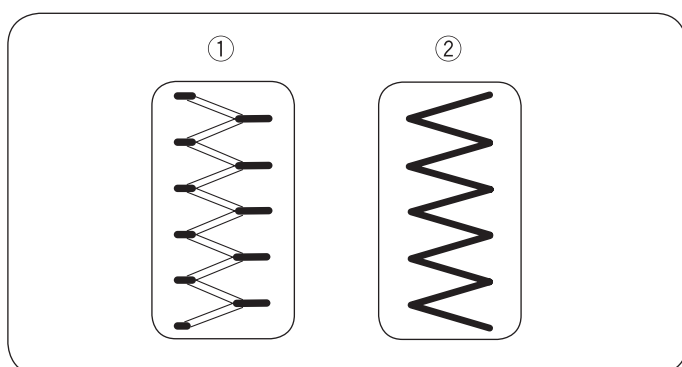


• Correct tension

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

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.

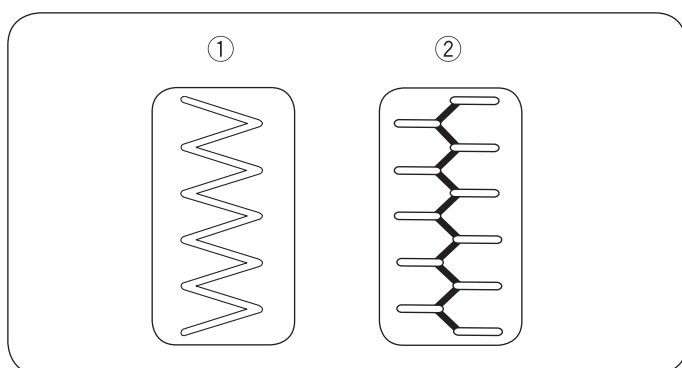
Results vary with fabric, thread and sewing conditions.



• Tension is too tight

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

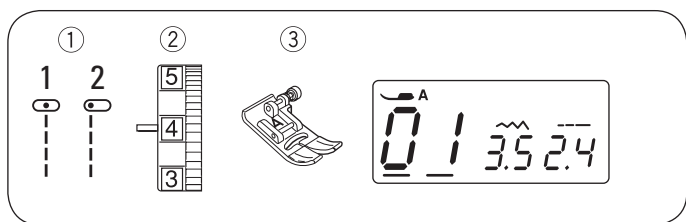
The corner of each zigzag pulls together on the right side of the fabric.



• Tension is too loose

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

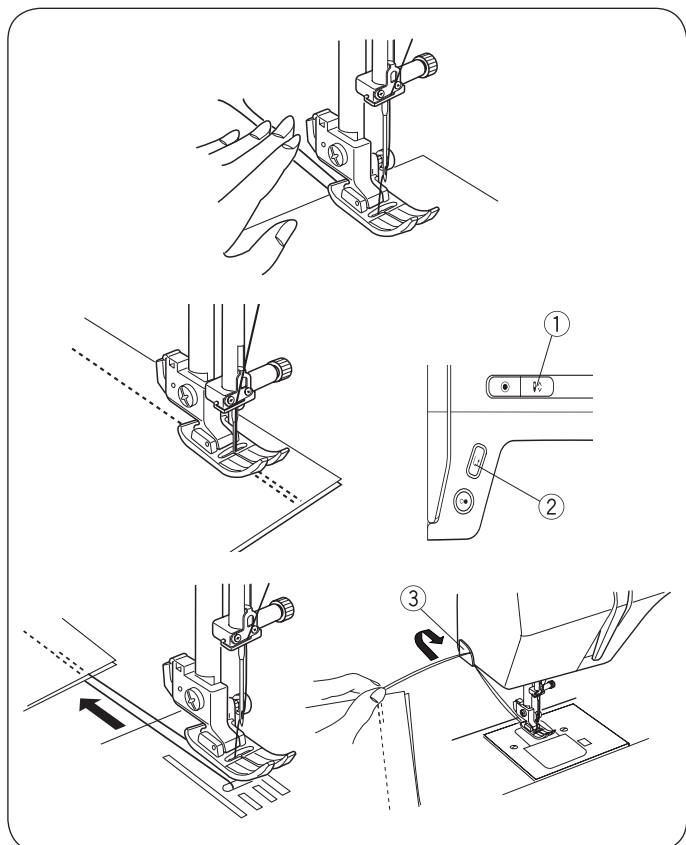
The corner of each zigzag point pulls together on the wrong side of the fabric.



BASIC SEWING

Straight Stitch sewing

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



• Starting to sew

Raise presser foot and position the fabric next to a seam guide line on the stitch plate (5/8" (1.6 cm) is most common). Lower the needle to the point where you want to start. Lower the presser foot and pull the threads toward the back. Start the machine. Gently guide the fabric along a seam guide line letting the fabric feed naturally.

• Changing sewing direction

Stop the machine and bring the needle down into the fabric by pressing the needle stop up/down button ①.

Raise the presser foot.

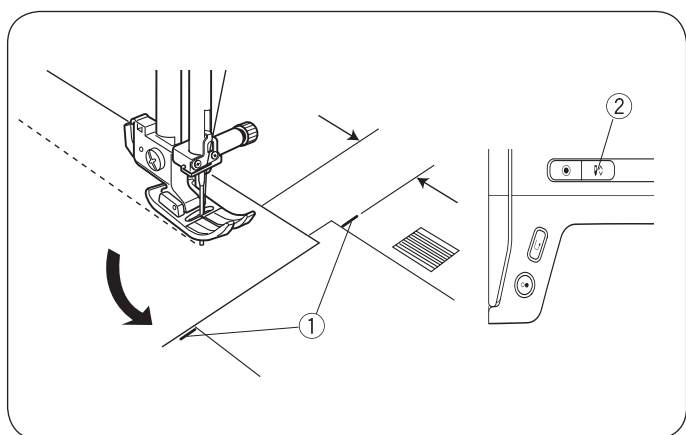
Pivot the fabric around the needle to change the sewing direction as desired. Lower the presser foot.

- ① Needle stop up/down button

• Finishing sewing

To fasten the ends of a seam, press the reverse sewing button ② and sew several Reverse sewing stitches. Raise the presser foot. Remove the fabric, draw the threads to the back and cut them with the thread cutter ③. The threads are cut a proper length to begin sewing the next seam.

- ② Reverse sewing button
③ Thread cutter



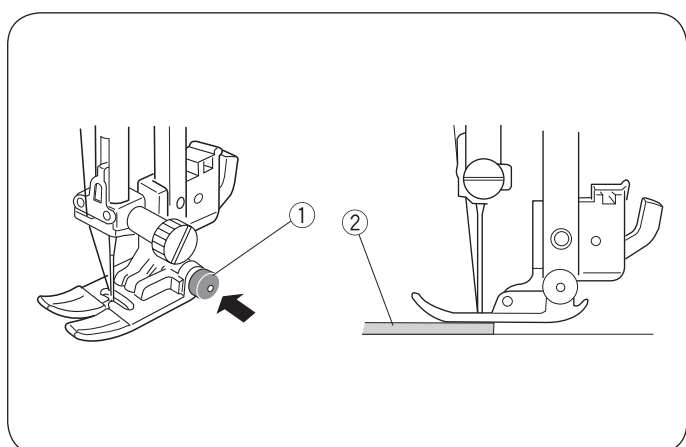
• Turning square corners

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 ①.

Lower the needle by pressing needle stop up/down button ②. Raise the presser foot and turn the fabric counterclockwise 90°.

Lower the presser foot, and begin stitching in the new direction.

- ① Cornering guide
② Needle stop up/down button



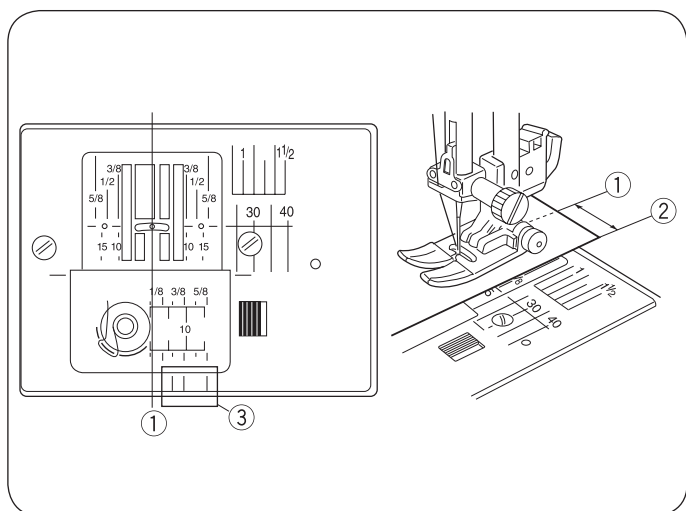
• Sewing from the edge of thick fabric

The black button ① on the zigzag foot locks the foot in the horizontal position.

This is helpful when starting to sew from the far edge of thick fabrics ② 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 in the black button ①. 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



• Stitch plate

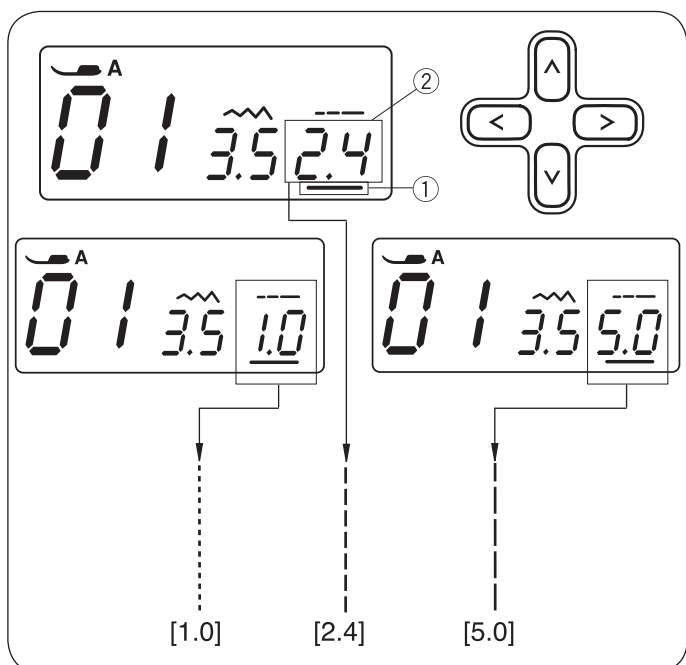
The seam guides on the stitch plate and the hook cover help you to measure seam allowance. The numbers on the stitch plate indicate the distance between the center needle position ① and the edge of the fabric ②.

- ① Center needle position
- ② Edge of the fabric

Number	10	15	30	40	3/8	1/2	5/8	1	1 1/2
Distance (cm)	1.0	1.5	3.0	4.0	—	—	—	—	—
Distance (inch)	—	—	—	—	3/8	1/2	5/8	1	1 1/2

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

- ③ Front seam guides



• Adjusting the stitch length

Press the cursor buttons <> to move the cursor ① under the stitch length value "2.4" ② (default setting).

Press the ▽ button to decrease stitch length.

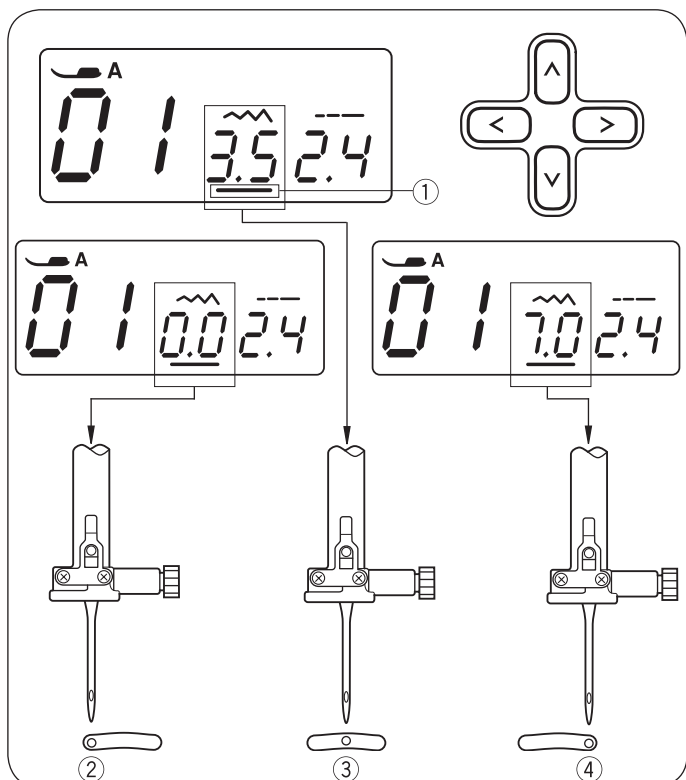
Press the ▲ button to increase stitch length.

The stitch length can be varied from 0.0 to 5.0.

- ① Cursor
- ② Stitch length (2.4)

PLEASE NOTE:

Reverse sewing stitch length cannot be set longer than 4.0.



• Adjusting the needle position

The needle position can be adjusted for straight stitch patterns 01–03, 07, 14, 35 and 36.

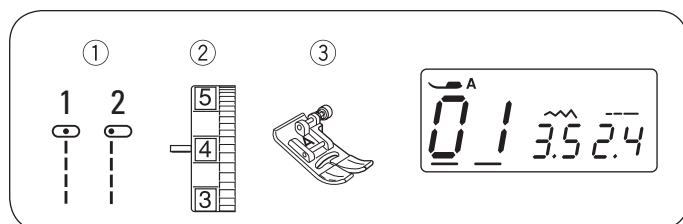


Press the cursor buttons <> to move the cursor ① under the stitch width value "3.5" (default setting).

Press the ▽ button to move the needle to the left ②.

Press the ▲ button to move the needle to the right ④.

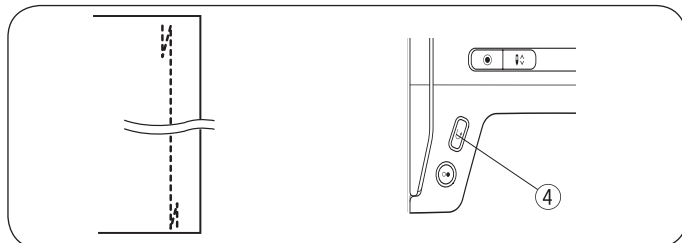
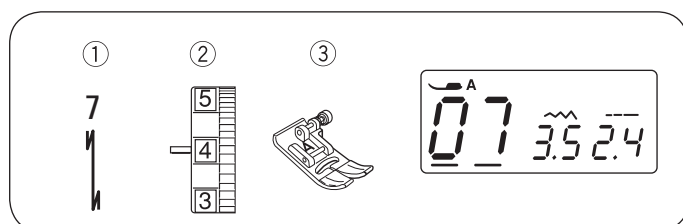
- ① Cursor
- ② Left (0.0)
- ③ Middle (3.5)
- ④ Right (7.0)



Straight stitch

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

For seaming garments, zipper application and more.

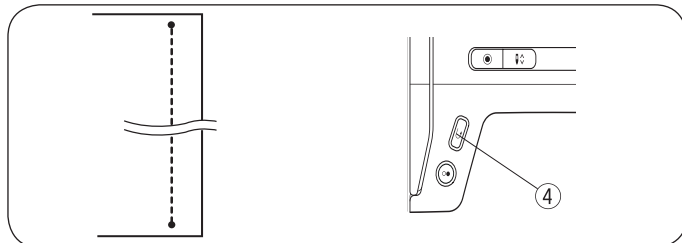
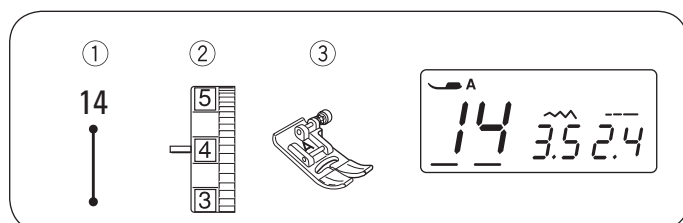


Securing stitch

- ① Stitch pattern: 07
- ② Thread tension: 2 - 6
- ③ Presser foot: Zigzag foot
- ④ Reverse sewing button

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 sewing button ④ once. The machine will sew four reverse sewing stitches, four forward stitches, and then stop sewing automatically.



Locking Stitch

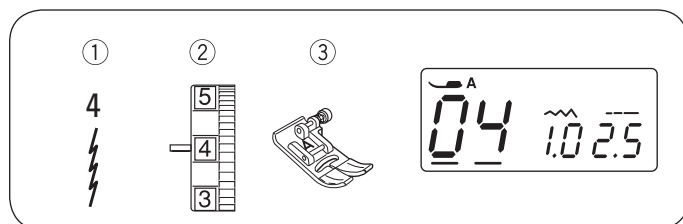
- ① Stitch pattern: 14
- ② Thread tension: 2 - 6
- ③ Presser foot: Zigzag foot
- ④ Reverse sewing button

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.

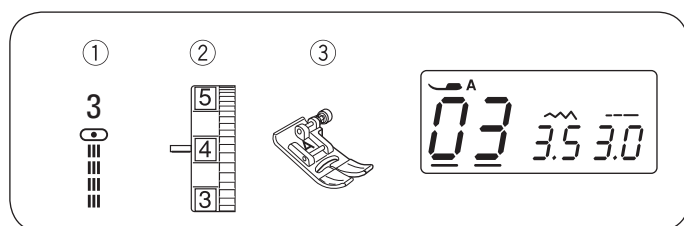
When you press the reverse sewing button ④ at the end of the seam, the machine will sew several locking stitches in place, then stop sewing automatically.



Stretch Stitch

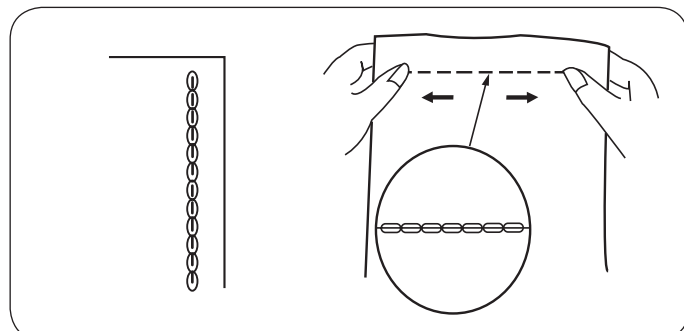
- ① Stitch pattern: 04
- ② Thread tension: 3 - 6
- ③ Presser foot: Zigzag foot

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.

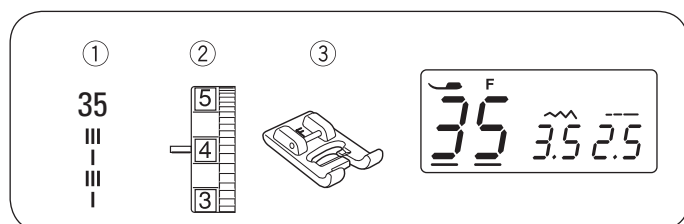


Triple straight stitch

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

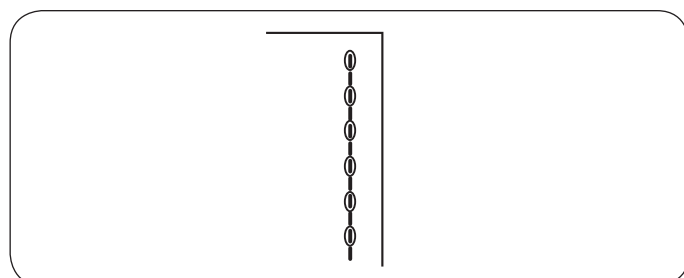


This strong, durable stitch is recommended when both elasticity and strength are necessary in order to insure comfort and durability. Use it to reinforce areas such as crotch and armhole seams. Also use for extra reinforcement when constructing items such as backpacks.

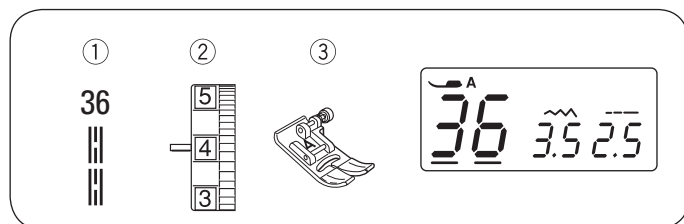


Sculpture Stitch

- ① Stitch pattern: 35
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch

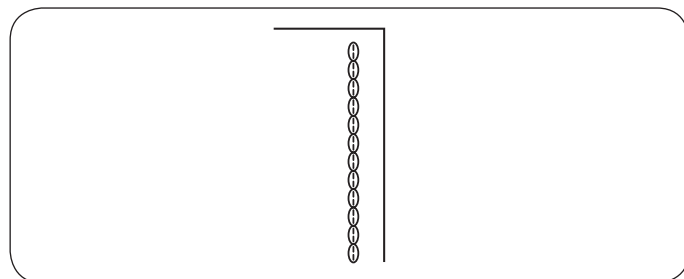


For top stitching and outlining designs.
Sew slowly at the corners.



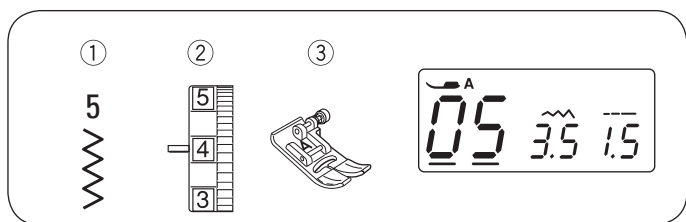
Saddle Stitch

- ① Stitch pattern: 36
- ② Thread tension: 3 - 6
- ③ Presser foot: Zigzag foot



This saddle stitch is formed with one stitch forward, two stitches backward, and a fourth stitch forward.

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



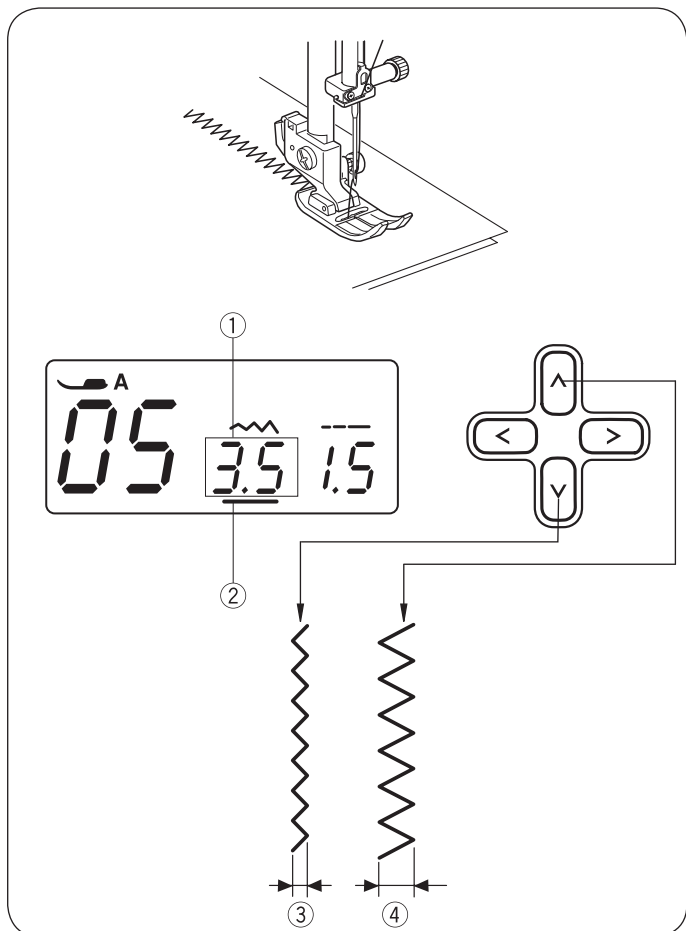
Zigzag

- | | | |
|---|-----------------|-------------|
| ① | Stitch pattern: | 05 |
| ② | Thread tension: | 2 - 6 |
| ③ | Presser foot: | Zigzag foot |

The zigzag stitch is one of the most useful and versatile stitches. It is used for overcasting, darning, appliqué, and also used as a decorative stitch.

PLEASE NOTE:

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



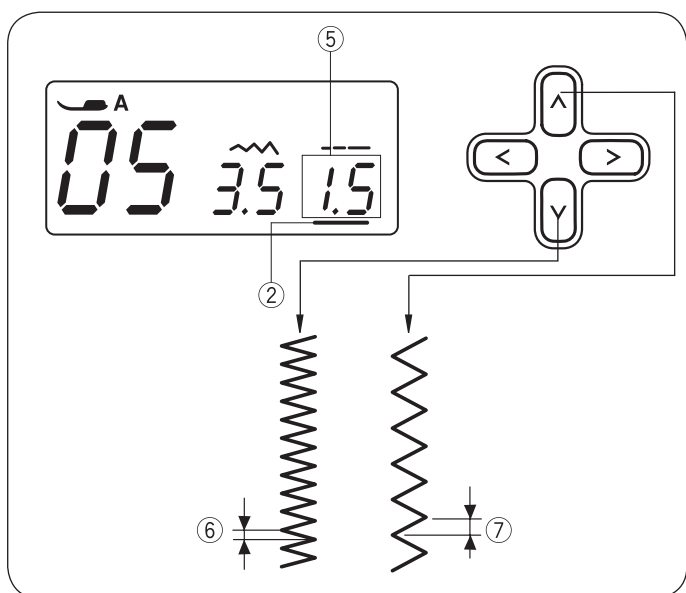
• To adjust the stitch width

Press the cursor buttons **<>** to move the cursor ② under the stitch width value "3.5" ① (default setting).

Press the **v** button to decrease stitch width ③.

Press the **^** button to increase stitch width ④.

The stitch width can be varied from 0.0 to 7.0.



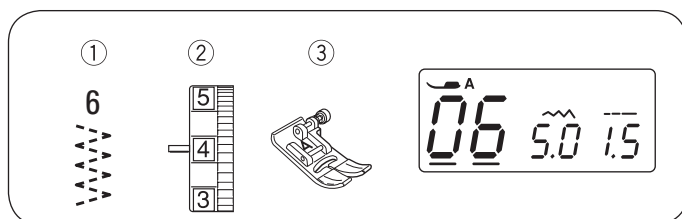
• Adjusting the stitch length

Press the cursor buttons **<>** to move the cursor ② under the stitch length value "1.5" ⑤ (default setting).

Press the **v** button to decrease stitch length ⑥.

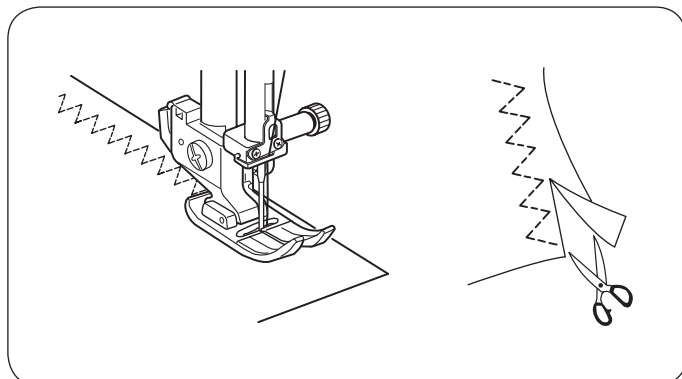
Press the **^** button to increase ⑦ stitch length.

The stitch length can be varied from 0.2 to 5.0.



3-step zigzag

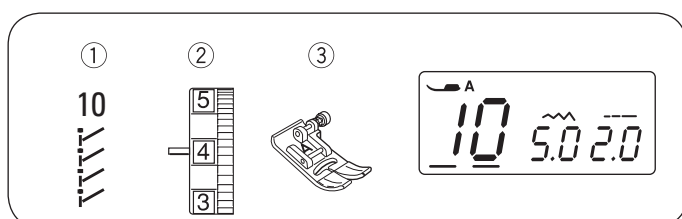
- ① Stitch pattern: 06
- ② Thread tension: 3 - 6
- ③ Presser foot: Zigzag foot



This stitch is used to finish seams on synthetics and other fabrics that tend to pucker. The stitch is also excellent for darning and mending tears.

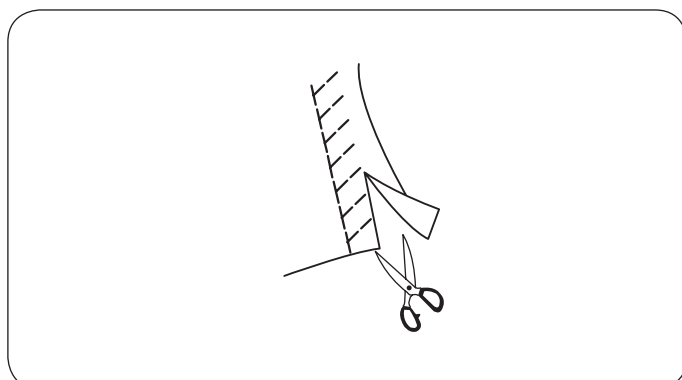
Place your fabric to allow a 5/8" (1.5 cm) seam.

Trim excess close to stitching. Be careful not to cut the stitches.

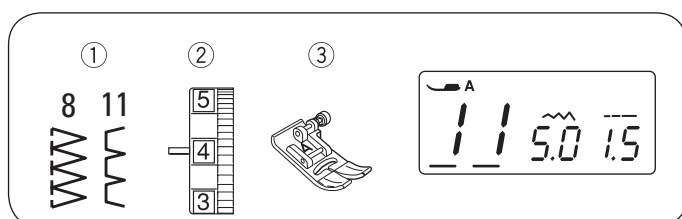


Stretch Overlock

- ① Stitch pattern: 10
- ② Thread tension: 3 - 6
- ③ Presser foot: Zigzag foot



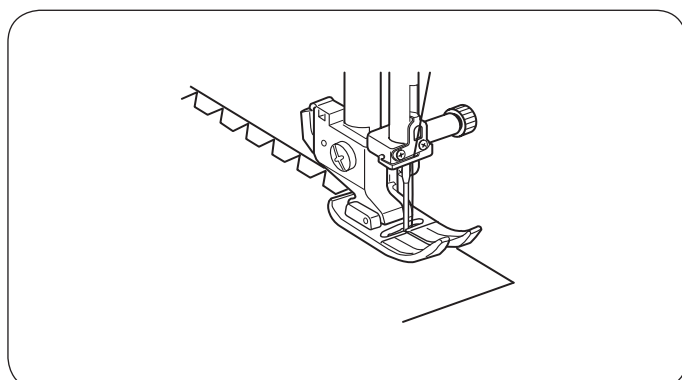
Place your fabric to allow a 5/8" (1.5 cm) seam. Trim excess close to stitching. Be careful not to cut the stitches.



Overlock Stitches

Machine setting

- ① Stitch pattern: 8 or 11
- ② Thread tension: 3 - 7
- ③ Presser foot: Zigzag foot



Carefully guide the fabric so the needle falls off the edge when it swings to the right.



Various Kinds of Buttonholes and Their Uses

① Standard Buttonhole

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

② Round-End Buttonhole

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

③ Keyhole Buttonhole

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

④ Stretch Buttonhole

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

PLEASE NOTE:

To sew the buttonholes 18 to 20, follow the same procedure as standard buttonhole (See pages 32 to 33).

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

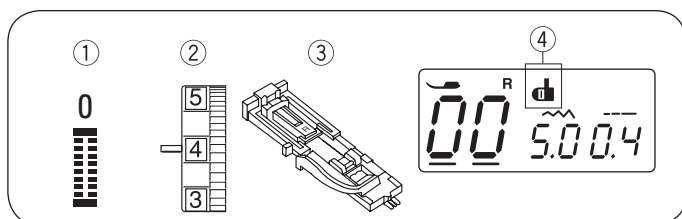
The button holder of the foot takes a button size of up to 1" (2.5 cm) in diameter.

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

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

Place the button on the fabric and mark the top and bottom to determine the position of the buttonhole on the fabric.

Use interfacing on stretch fabrics.



Standard Buttonhole

- ① Stitch pattern: 00
- ② Thread tension: 1 - 5
- ③ Presser foot: Buttonhole foot with slide
- ④ Buttonhole lever sign

• To sew

- ① Press the needle stop up/down button to raise the needle. Attach the buttonhole foot with slide R snapping the pin ② into the groove ① of the presser foot holder.

- ① Groove
- ② Pin

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

PLEASE NOTE:

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

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

- ③ Button holder
- ④ Extra gap

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

- ⑤ Buttonhole lever

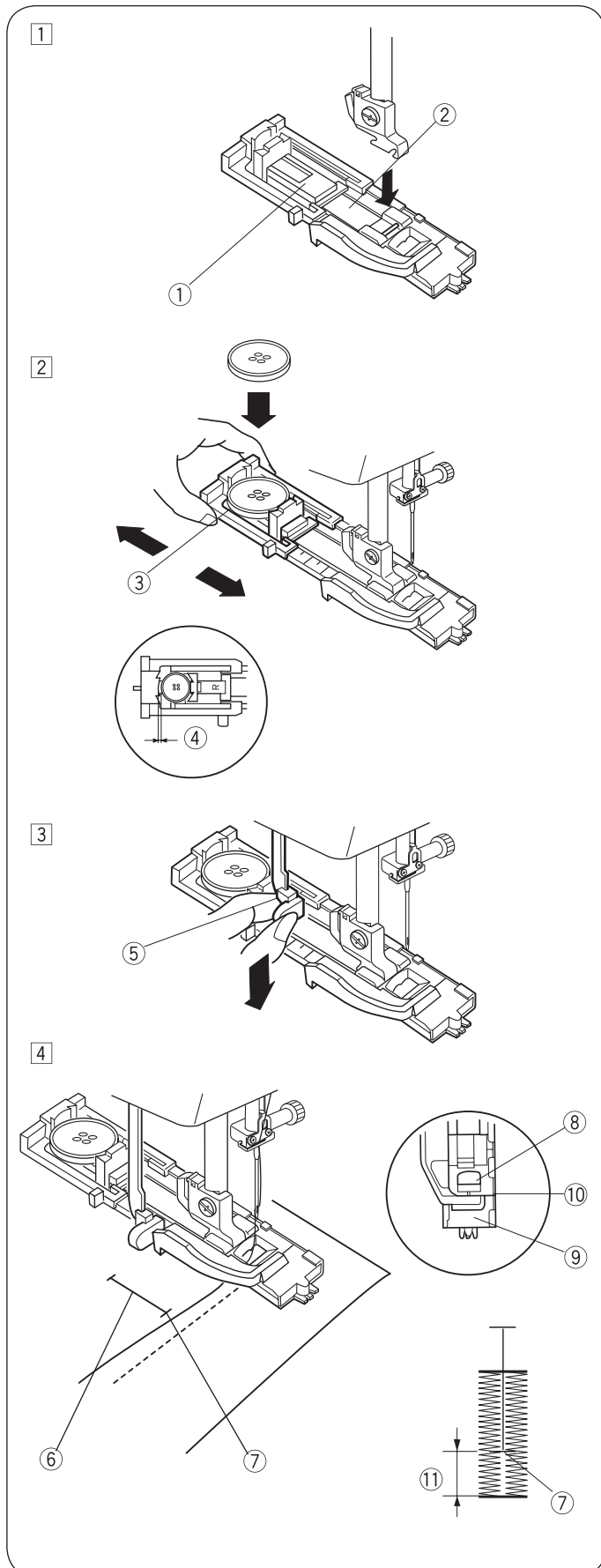
- ④ Insert the corner of the fabric under the foot. Press the needle stop up/down button twice. Remove the fabric to the left to draw the needle thread through the hole of the foot. Place the fabric under the foot, and lower the needle at the starting point of the buttonhole mark ⑥. Then lower the buttonhole foot with slide R.

- ⑥ Buttonhole mark
- ⑦ Starting point
- ⑧ Slider
- ⑨ Stopper

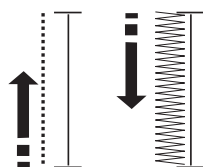
PLEASE NOTE:

Make sure that is no gap between slider and stopper.⑩
Otherwise the buttonhole is not sewn properly.

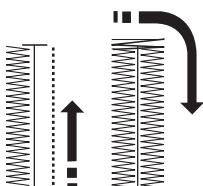
- ⑩ No gap
- ⑪ Sewing gap



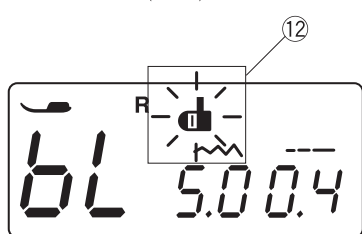
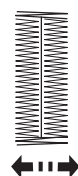
5



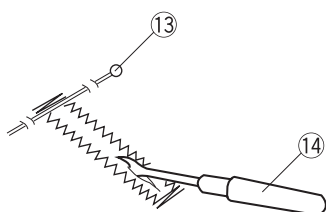
6



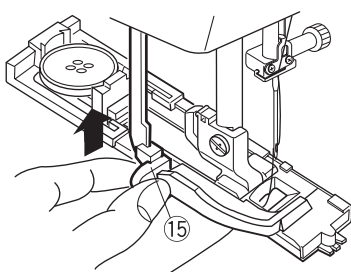
7



8



9



- 5 Start the machine to sew the buttonhole.
The buttonhole will be automatically sewn.
The machine will sew the left row first.

- 6 The machine will sew the back bartack and the right row.

- 7 The machine will sew the front bartack, then it stops automatically.

PLEASE NOTE:

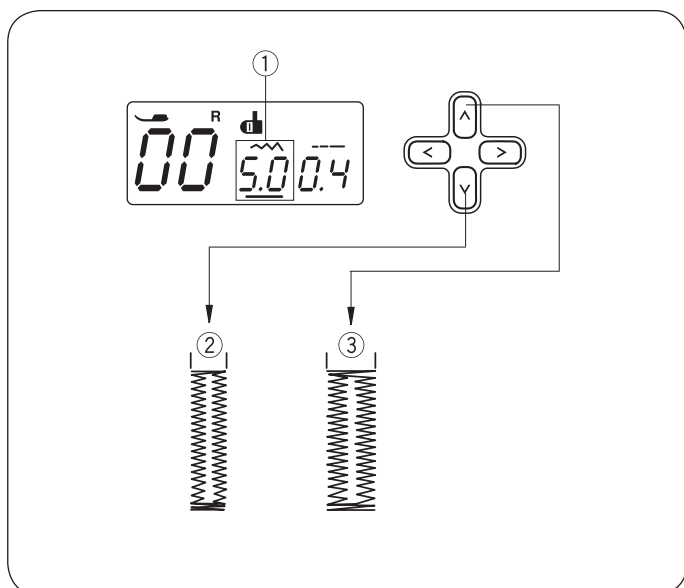
If you start sewing the buttonhole without lowering the buttonhole lever, the LCD display will show "bL" message and the buttonhole lever sign (12) will blink.
Lower the buttonhole lever, then restart the machine.

- 8 Remove the fabric and place a pin (13) just below the bartack at each end to prevent accidentally cutting stitches. Cut the opening with the seam ripper (14).

- (13) Pin
(14) Seam ripper

- 9 When buttonhole sewing is finished, push the buttonhole lever (15) upward as far as it will go.

- (15) Buttonhole lever



Adjusting the Stitch Width and Density for Buttonholes

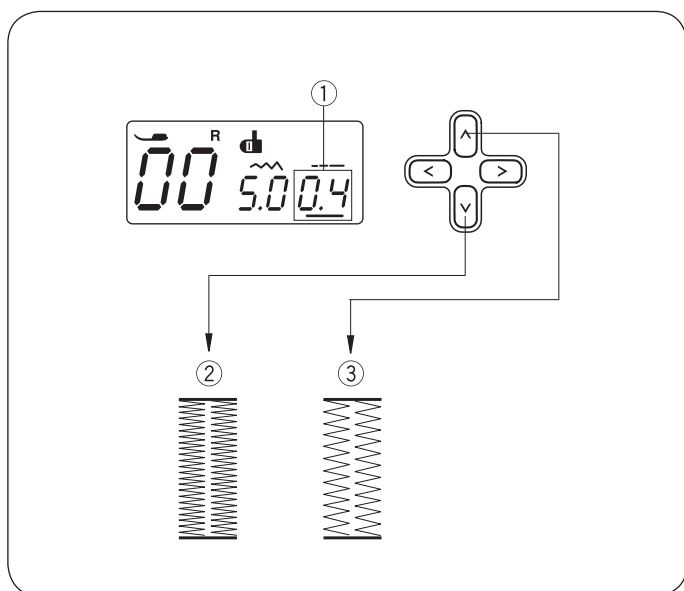
• To adjust the stitch width

Press the cursor buttons **<>** to move the cursor under the stitch width value "5.0" ① (default setting).

Press the **▼** button to decrease stitch width ②.

Press the **▲** button to increase ③ stitch width.

The stitch width can be varied from 2.5 to 7.0 depending on the selected buttonhole.



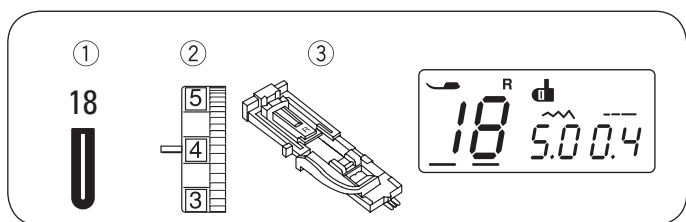
• Adjusting the stitch density

Press the cursor buttons **<>** to move the cursor under the stitch density value "0.4" ① (default setting).

Press the **▼** button to make the buttonhole stitch dense ②.

Press the **▲** button to make the buttonhole stitch less dense ③.

The stitch density can be varied from 0.2 to 0.8 depending on the selected buttonhole.



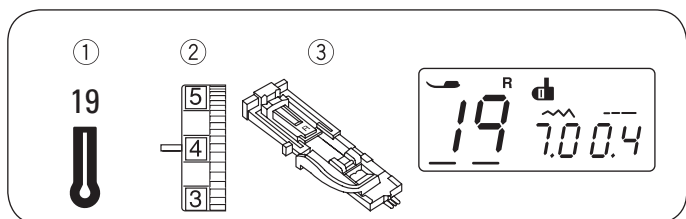
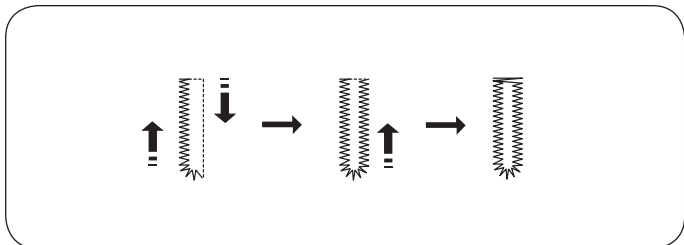
Round-End Buttonhole

- ① Stitch pattern: 18
- ② Thread tension: 1 - 4
- ③ Presser foot: Buttonhole foot with slide

Sewing procedure is the same as standard buttonhole.

The stitch width can be varied from 2.5 to 5.5.

To change the stitch width or stitch density, refer to page 34.



Keyhole Buttonhole

- ① Stitch pattern: 19
- ② Thread tension: 1 - 4
- ③ Presser foot: Buttonhole foot with slide

Sewing procedure is the same as standard buttonhole.

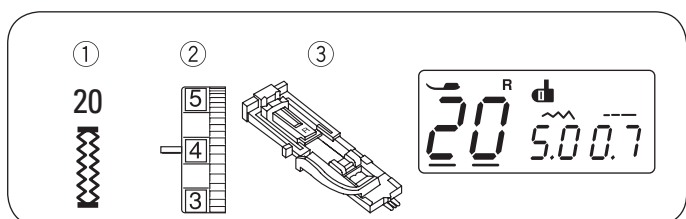
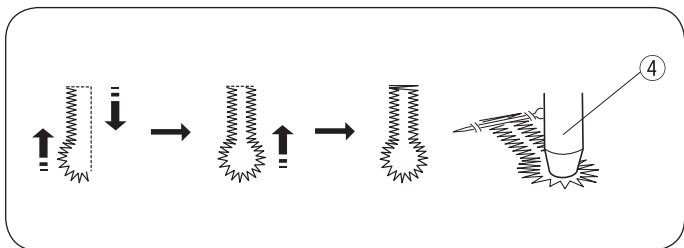
Use the seam ripper and an eyelet punch ④ to open the buttonhole.

④ Eyelet punch*

The stitch width can be varied from 5.5 to 7.0.

To change the stitch width or stitch density, refer to page 34.

* special accessory



Stretch Buttonhole

- ① Stitch pattern: 20
- ② Thread tension: 1 - 4
- ③ Presser foot: Buttonhole foot with slide

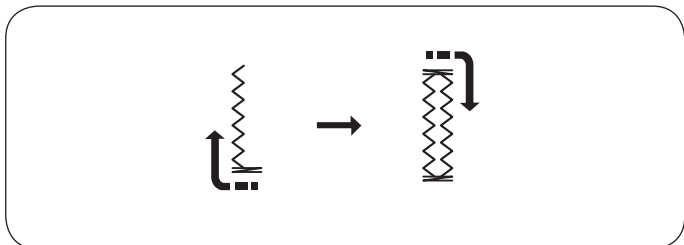
The machine will sew the front bartack and left row first.

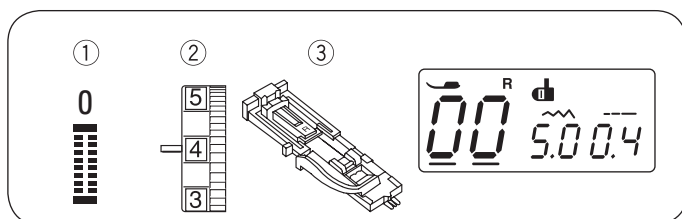
The machine will sew the back bartack, the right row and will stop automatically.

The stitch width can be varied from 2.5 to 7.0.

The stitch density can be varied from 0.5 to 1.0.

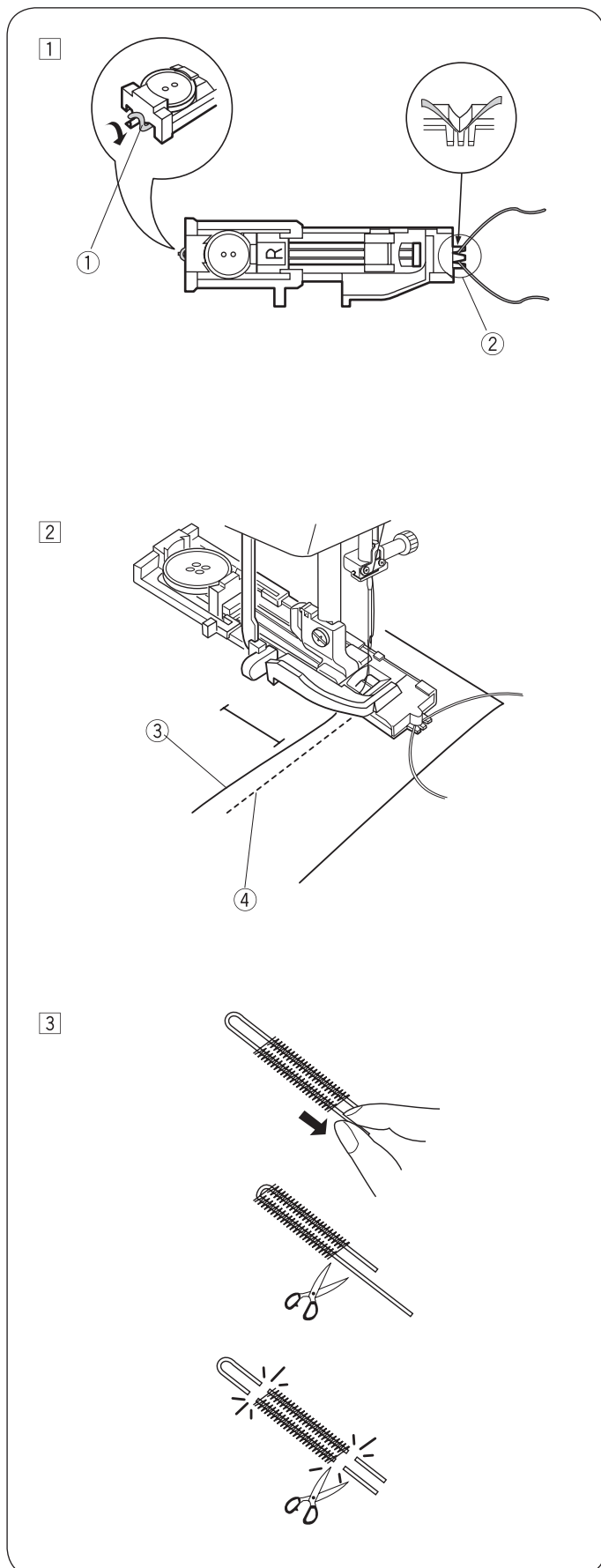
To change the stitch width or stitch density, refer to page 34.





Buttonhole with cord

- ① Stitch pattern: 00
- ② Thread tension: 1 - 5
- ③ Presser foot: Buttonhole foot with slide



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

With the buttonhole foot raised, hook the filler cord on the spur ① 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 ② on the front of the buttonhole foot with slide to hold them tight.

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

- ① Spur
- ② Forks.

- ② Start the machine and sew the buttonhole. Both sides of the buttonhole and the bartacks are sewn over the filler cord.

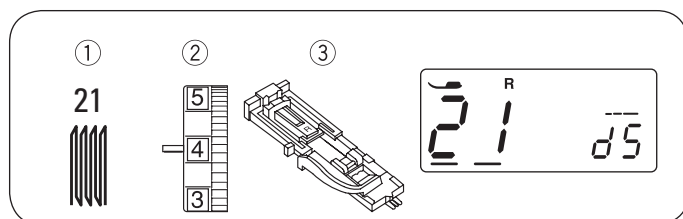
Remove the fabric from the machine, and cut the sewing threads only.

- ③ Needle thread (top thread)
- ④ Bobbin thread (bottom thread)

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

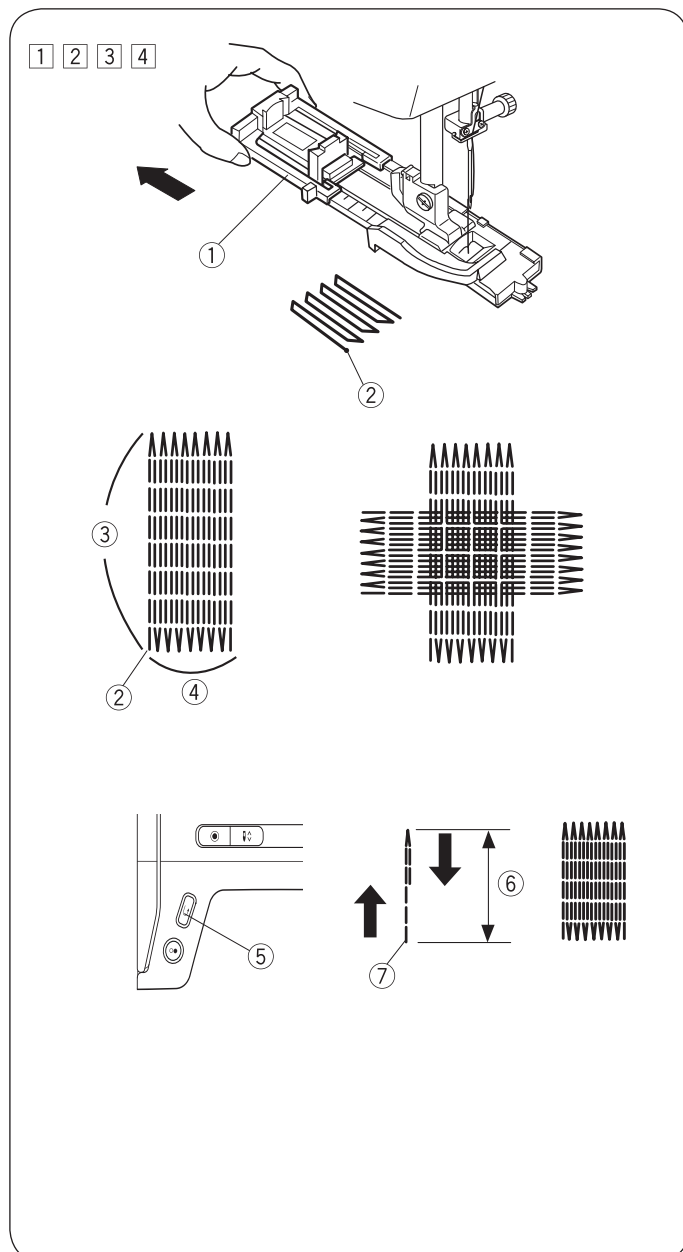
PLEASE NOTE:

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



Darning program

- ① Stitch pattern: 21
- ② Thread tension: 3 - 6
- ③ Presser foot: Buttonhole foot with slide



• Starting to sew

- ① Pull the button holder ① to the back.
- ② Place the garment under the foot. Press the needle stop up/down button twice. Move the fabric to the left to draw both threads under the foot.
- ③ Lower the foot and start the machine. The machine will lock stitch, sew 16 rows of darning, lock stitch again and stop automatically.
- ④ Turn the fabric and repeat sewing.
 - ① Button holder
 - ② Starting point
 - 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 sewing button ⑤.

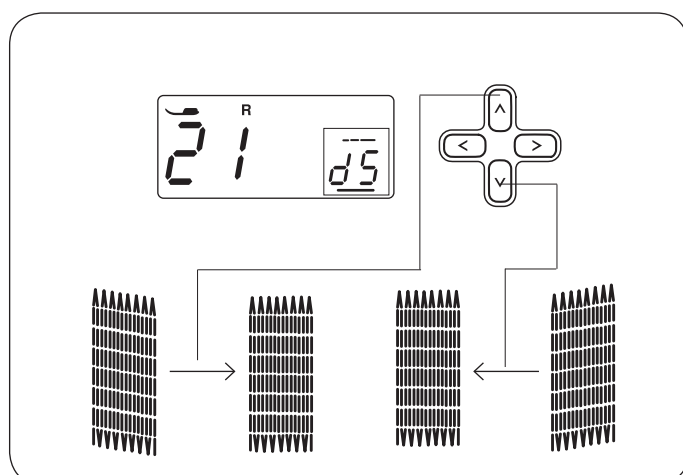
The required length ⑥ has been determined.

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

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

• Sewing a same-sized darning

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



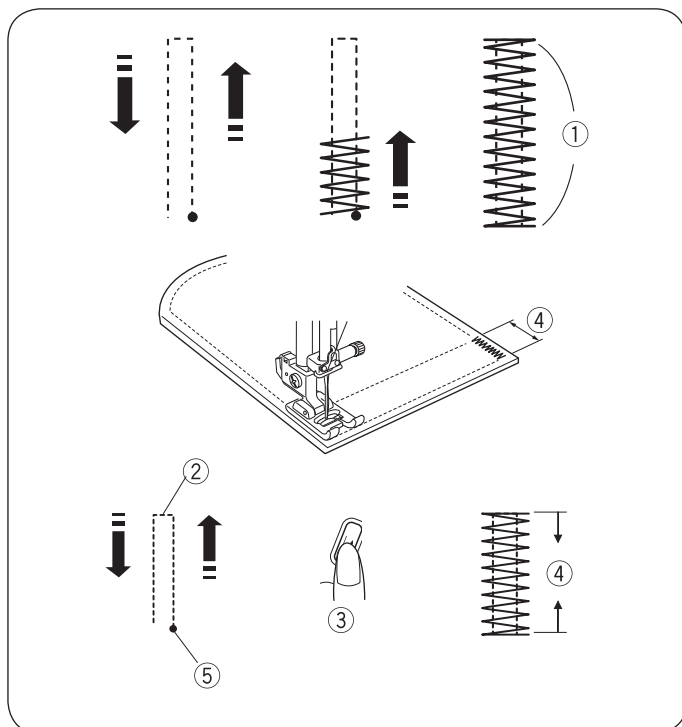
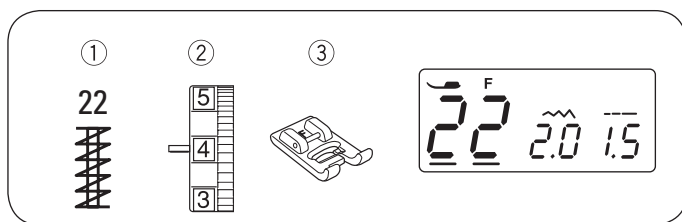
• Darning balance

Correct the evenness of the darning as follows:

Press the cursor buttons < > to move the cursor under the value "d5" (default setting).

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

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



Bartack

- ① Stitch pattern: 22
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot

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

• Starting to sew

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

- ① 5/8" (1.5 cm)

• Sewing shorter bartack

* Set the slide speed control at low speed setting.

To sew a bartack shorter than 5/8" (1.5 cm), first stop the machine after sewing the required length ②, then press the reverse sewing button ③.

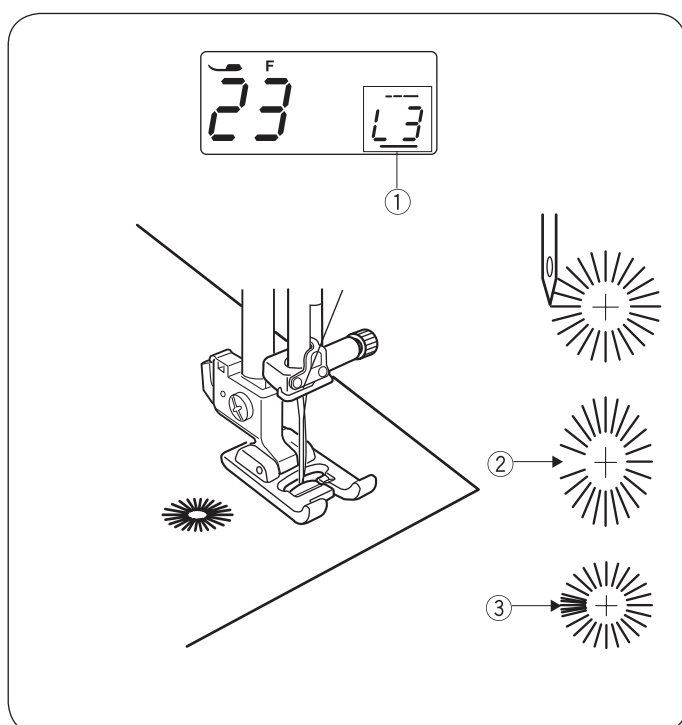
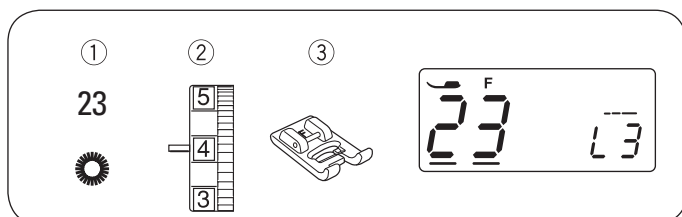
The bartack length ④ has been determined.

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

- ② Required length
- ③ Reverse sewing button
- ④ Bartack length
- ⑤ Starting point

• Sewing a same-sized bartack

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



Eyelet

- ① Stitch pattern: 23
- ② Thread tension: 1 - 4
- ③ Presser foot: Satin stitch foot

The eyelet is used for belt holes etc.

Starting to sew

Attach the satin stitch foot F.

Start the machine. The machine will stop automatically when completed.

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

• Adjusting the shape of an eyelet

Correct the shape of the eyelet as follows:

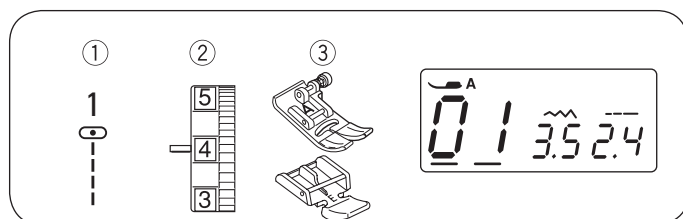
Press the cursor buttons <> to move the cursor under the value "L3" (default setting) ①.

If the eyelet is stretched ②, press the ▼ button to make the darn even. (L1~L2)

If the eyelet overlaps ③, press the ▲ button to make the darn even. (L4~L5)

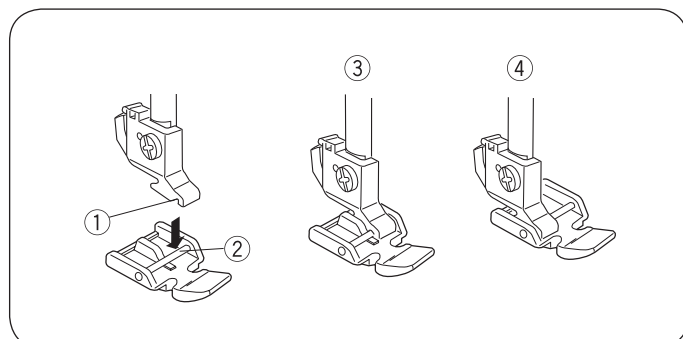
PLEASE NOTE:

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



Zipper Sewing

- ① Stitch pattern: 01
- ② Thread tension: 1 - 4
- ③ Presser foot: Zigzag foot
Zipper foot



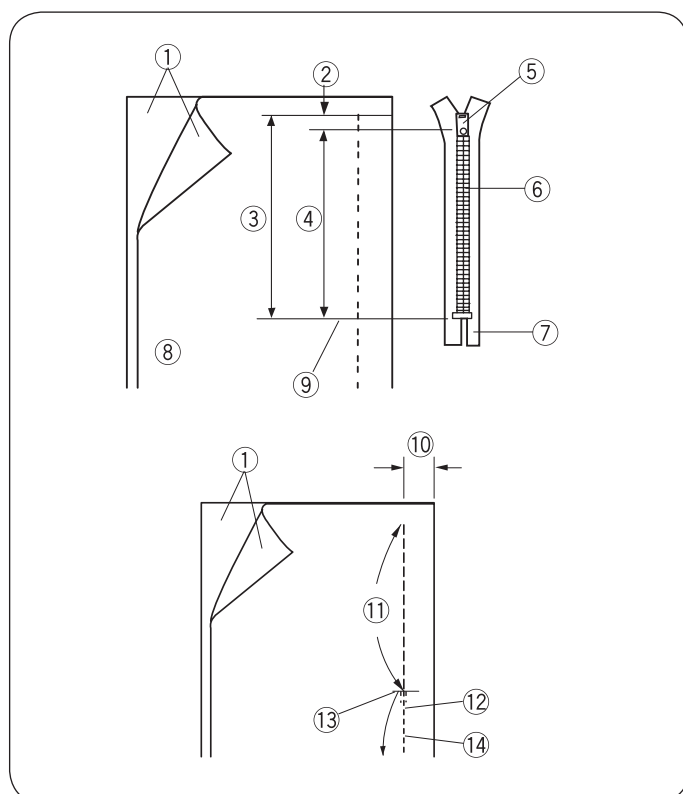
• Attaching the zipper foot

Fit the pin ② on the zipper foot into the groove ① in the presser foot holder.

To sew the left-side of the zipper, attach the zipper foot with the right-hand side of the pin ③.

To sew the right-side of the zipper, attach the zipper foot with the left-hand side of the pin ④.

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



• Fabric preparation

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

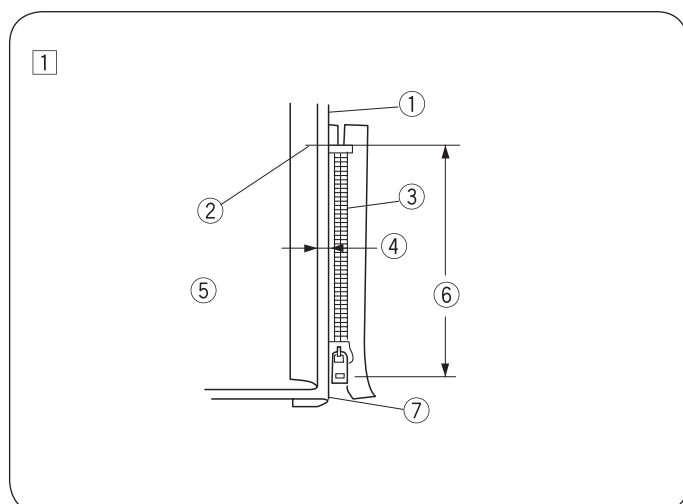
- ① Right side of the fabric
- ② 3/8" (1 cm)
- ③ Opening size
- ④ Zipper length
- ⑤ Slider
- ⑥ Zipper teeth
- ⑦ Zipper tape
- ⑧ Wrong side of the fabric
- ⑨ End of the opening

Lay the foreheads of the fabric together and sew until the end of the zipper opening. Taken into account in a seam allowance of 13/16" (2 cm). Reverse the stitch to fasten the seam. Attach the zigzag foot. Baste along the zipper opening with the stitch length 4.5.

- ⑩ 2 cm (13/16")
- ⑪ Zipper opening (Basting)
- ⑫ Reverse sewing stitches
- ⑬ End of the opening
- ⑭ Seam

PLEASE NOTE:

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

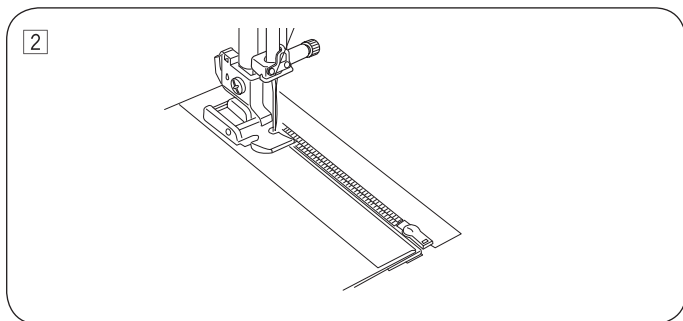


• Starting to sew

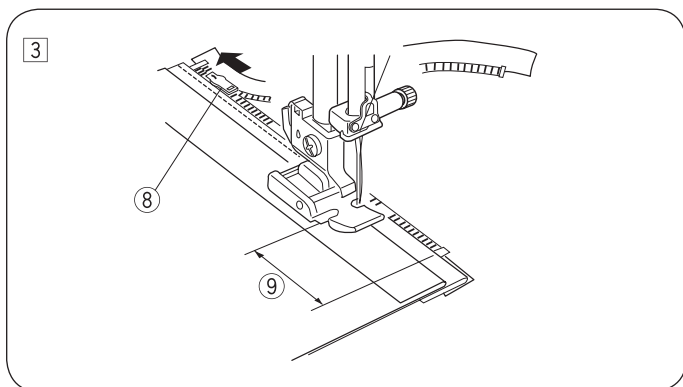
- ① Fold up the upper seam allowance. Fold back the bottom seam allowance to form a 1/8" (0.3 cm) fold.

Place the zipper teeth next to the fold and pin it in place.

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

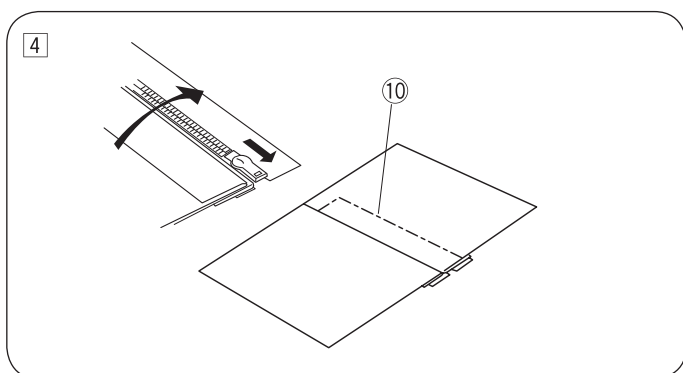


- 2 Attach the zipper foot with the pin on the right. Sew through all the layers from the end of the zipper opening, guiding the zipper teeth along the edge of the foot. 3 Stop the machine 2" (5 cm) before the foot reaches the slider on the zipper tape. Lower the needle into the fabric, and raise the foot.



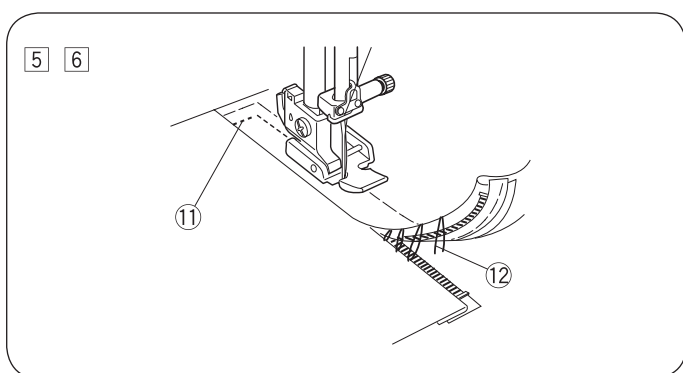
Open the zipper, then lower the foot and stitch the remainder of the seam.

- 8 Slider
- 9 2" (5 cm)



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

- 10 Basting stitch

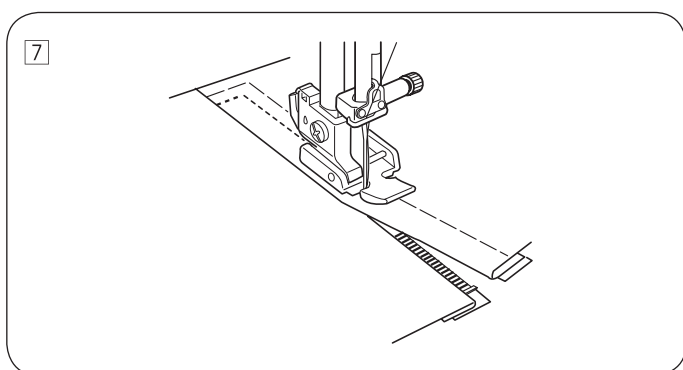


- 5 Attach the zipper foot with the pin on the left. Sew reverse stitches 3/8" (1 cm) over the end of the zipper opening. Turn the fabric 90 degrees and stitch through the garment and zipper tape.

- 11 Reverse stitches

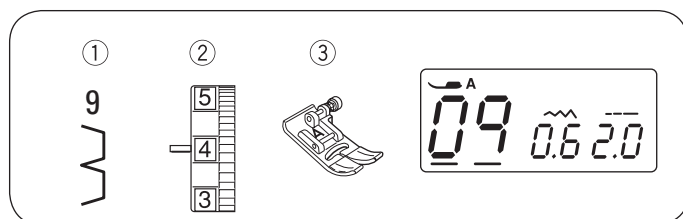
- 6 Stop the machine 2" (5 cm) before the foot reaches the slider on the zipper tape. Lower the needle into the fabric, and raise the foot. Remove the basting stitches.

- 12 Basting stitch



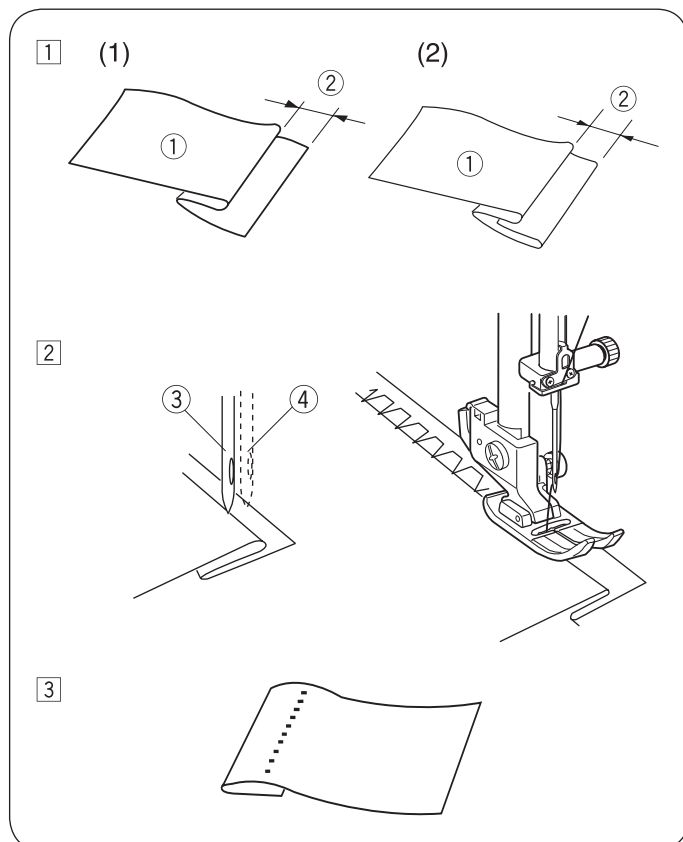
- 7 Open the zipper, then lower the foot and stitch the remainder of the seam.

After finished sewing, remove the basting stitches on the upper fabric.



Blindstitch

- ① Stitch pattern: 09
- ② Thread tension: 1 - 4
- ③ Presser foot: Zigzag foot



- ① Fold a hem with the wrong side of the fabric up to form a 1/4" – 7/16" (0.4 – 0.7 cm) allowance.

- ① Wrong side of the fabric
- ② 1/4" – 7/16" (0.4 – 0.7 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.

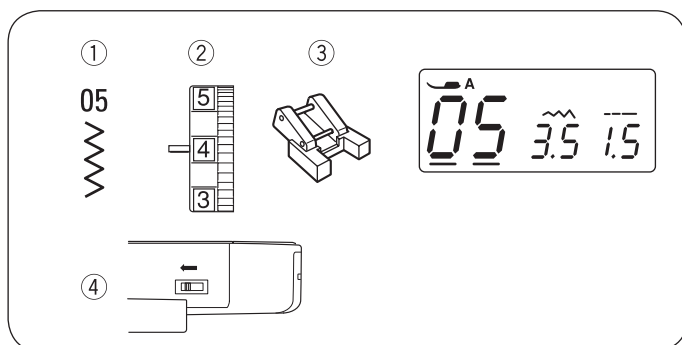
- ② Position the fabric, so that the needle at its leftmost position just pierces the edge of the fold.

- ③ When the needle comes to the left
- ④ When the needle comes to the right

- ③ Open the fabric after sewing is finished.

PLEASE NOTE:

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



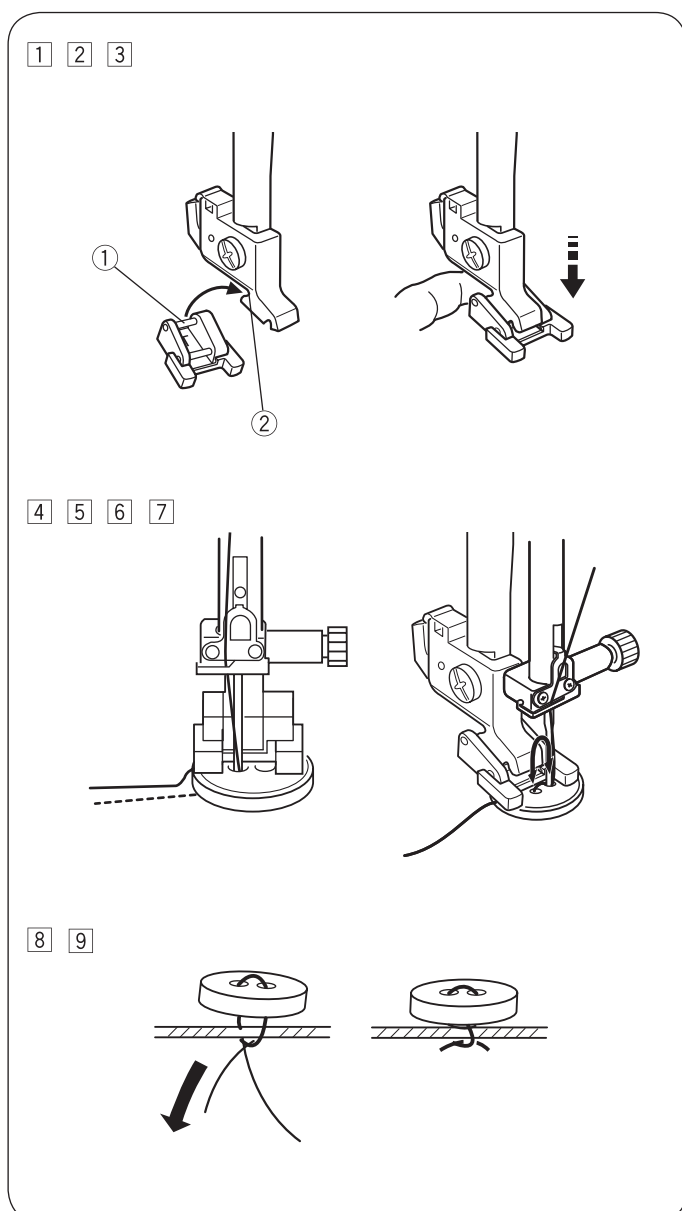
Button Sewing

- | | | |
|---|-----------------|--------------------------|
| ① | Stitch pattern: | 05 |
| ② | Thread tension: | 3 - 7 |
| ③ | Presser foot: | Buttonhole sew-on foot T |
| ④ | Feed dog: | Lowered |



CAUTION:

Turn OFF the power switch before changing the foot.

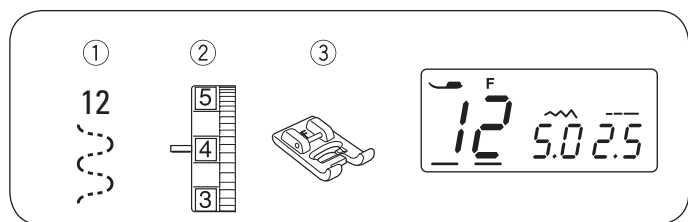


- ① Lower the feed dog. Set the slide speed control at low speed setting.
- ② Place the presser foot so that the back pin on the foot lines up directly below the back notch of the presser foot holder.
 - ① Back pin
 - ② Notch on presser foot holder
- ③ Lower the presser foot holder and help with fingers to hold der presser foot until it place. Raise the presser foot.

- ④ Place the button on the fabric, turn the handweel and pierce the needle in the left buttonhole.
- ⑤ Hold the button in position by lowering the presser foot and align the holes from the button horizontally to the presser foot.
- ⑥ Turn the handweel so that the needle will enter the right hole of the button. Readjust the stitch width if necessary.
- ⑦ Stitch several times.

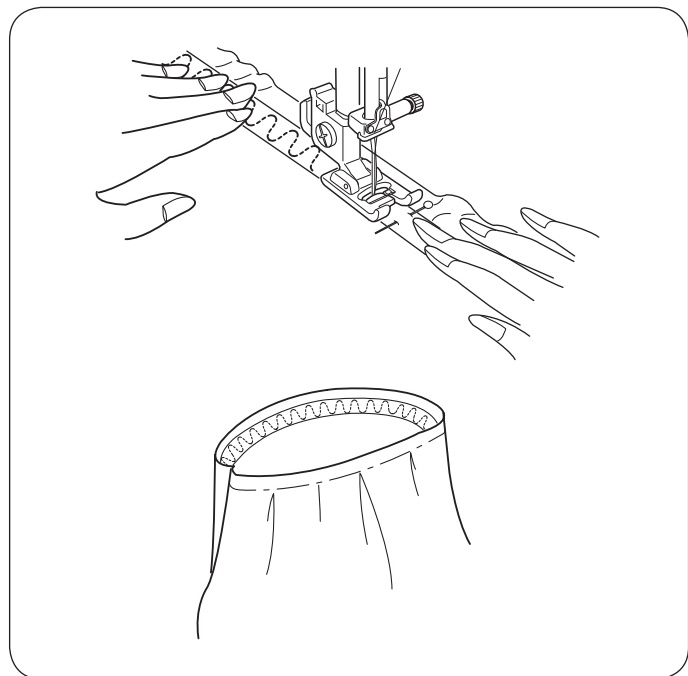
- ⑧ After the sewing process has finished, cut the thread. Keep 3 – 4 cm of the thread on the knob.
- ⑨ With a hand sewing needle, draw the top thread to the reverse side of the fabric and knot the threads.

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



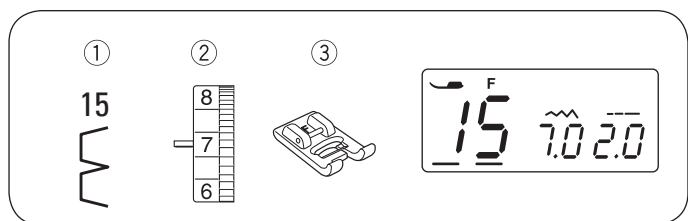
Attaching Elastic

- ① Stitch pattern: 12
- ② Thread tension: 3 - 7
- ③ Presser foot: Satin stitch foot



Mark the elastic into quarters. Match those to the center front, center back and side seams, and pin the elastic to the fabric.

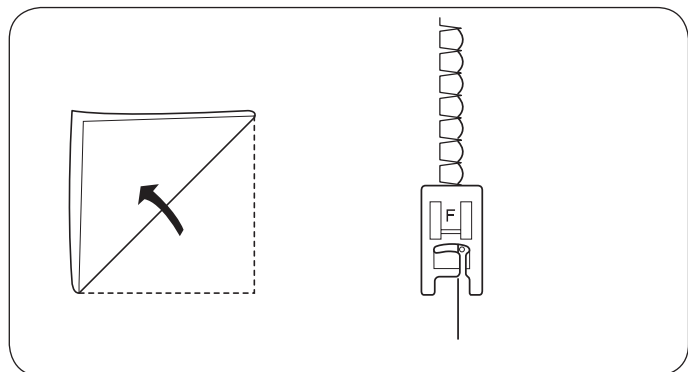
Place the elastic under the foot and stitch into place while stretch the elastic evenly.



DECORATIVE STITCHING

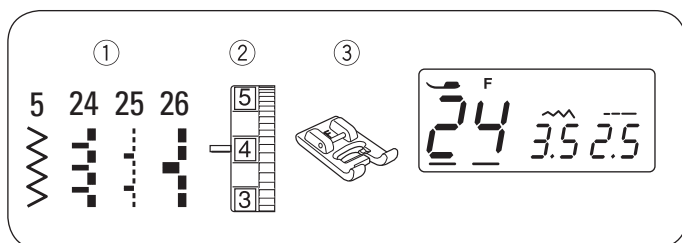
Vari-Overlock (Scallop seam)

- ① Stitch pattern: 15
- ② Thread tension: 6 - 8
- ③ Presser foot: Satin stitch foot



Use a lightweight fabric (tricot, for example). Fold the fabric as shown and stitch on the fold. Allow the needle to just pierce next to the folded edge to create a Vari-Overlock edge. The thread tension may need to be increased slightly.

The Vari-Overlock can also be sewn in any direction on knitted fabrics or fabrics with a soft and smooth texture.



Appliqué

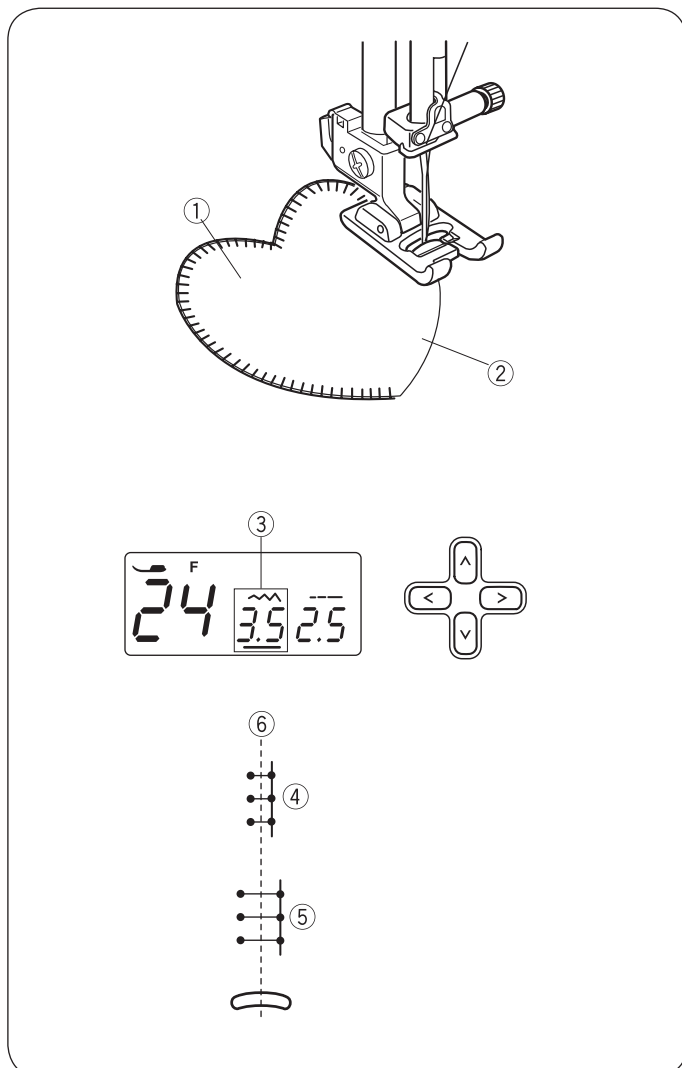
- ① Stitch pattern: 5, 24, 25 or 26
- ② Thread tension: 1 - 4
- ③ Presser foot: Satin stitch foot

* The stitch width of pattern 5, 24, 25 or 26 can be changed without changing its center needle position.

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

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

- ① Appliqué
- ② Outer edge



• To adjust the stitch width

Select pattern 24.

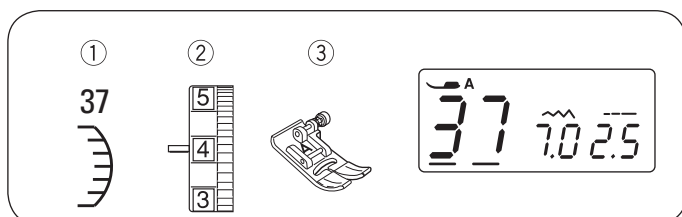
Press the cursor buttons < > to move the cursor under the stitch width value "3.5" ③ (default setting).

Press the V button to decrease stitch width ④.

Press the ^ button to increase stitch width ⑤.

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

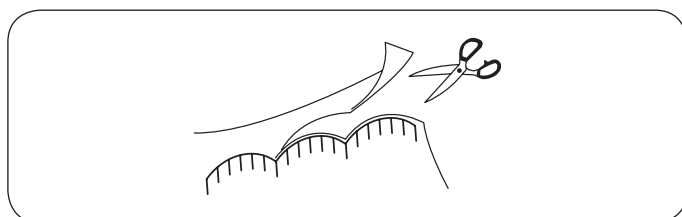
- ③ Stitch width (3.5)
- ④ Stitch pattern 24 (stitch width decreased)
- ⑤ Stitch pattern 24 (stitch width increased)
- ⑥ Center needle position



Scallop Stitch

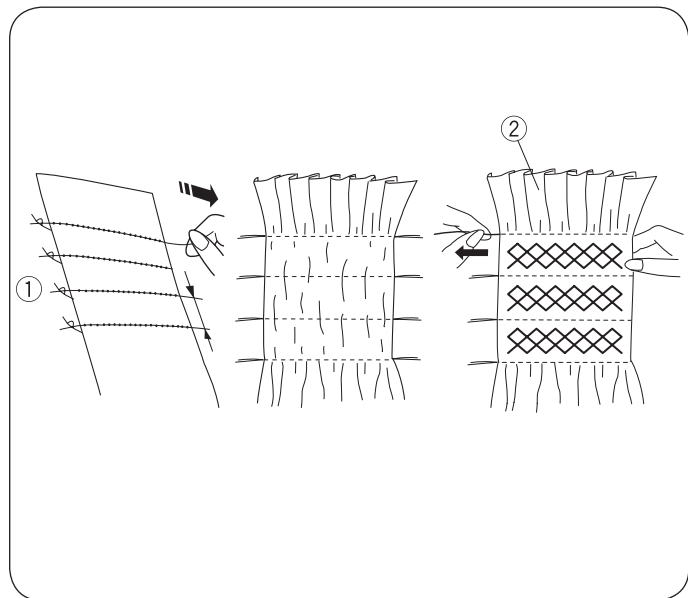
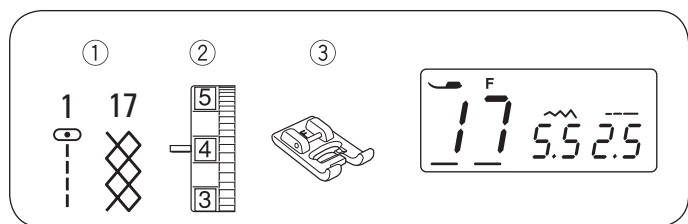
- ① Stitch pattern: 37
- ② Thread tension: 3 - 6
- ③ Presser foot: Zigzag foot

* Stitch pattern 45 can also be used.



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

Trim the outside of the stitches as shown. Make sure you don't cut the thread.



Smocking

- ① Stitch pattern: 01 and 17
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot

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

Choose a soft and lightweight fabric, e.g. batiste. Cut the fabric three times wider than the projected width. Set stitch length at "5.0" and sew rows of straight stitches $3/8"$ (1.0 cm) apart across the area to be smocked.

PLEASE NOTE:

Pull up the bobbin thread and draw a 4" to 6" thread tail to the back under the presser foot before start sewing.

Knot the threads along one edge ①. From the other edge, pull the bobbin threads (bottom threads) to distribute the gathers ② evenly.

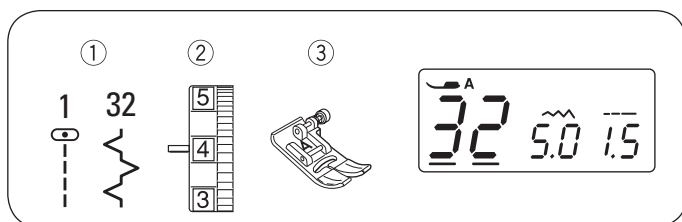
Sew the smocking stitches between the gathered rows.

Remove the straight stitches by pulling them out.

- ① Knotted edge
- ② Gathers

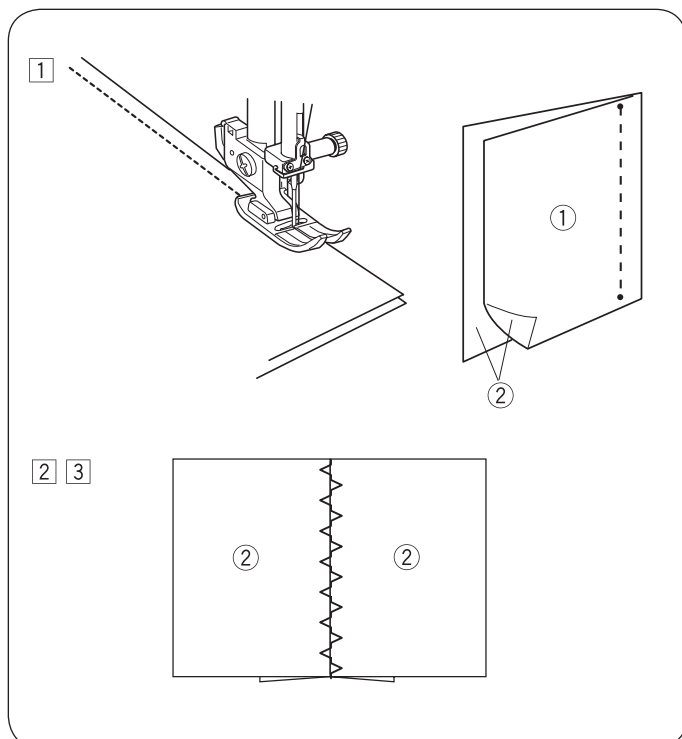
PLEASE NOTE:

A similar effect can be achieved by using an elastic thread as the bottom thread. Wind the elastic thread by hand. Use a straight stitch.



Patchwork Piecing

- ① Stitch pattern: 01 and 32
- ② Thread tension: 3 - 6
- ③ Presser foot: Zigzag foot



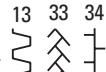
- ① Place the patchwork pieces right sides together. Select stitch pattern 01. Sew a precise 1/4" (0,6 cm) seam allowance.

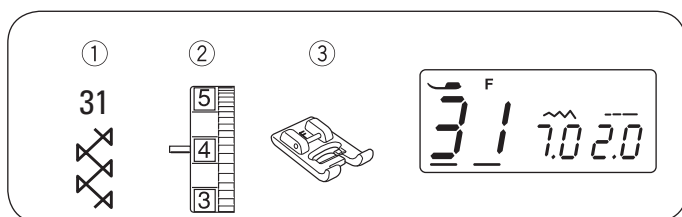
- ① Wrong side of the fabric
- ② Right side of the fabric

- ② Select stitch pattern 32.

- ③ Press the seam allowance to open.

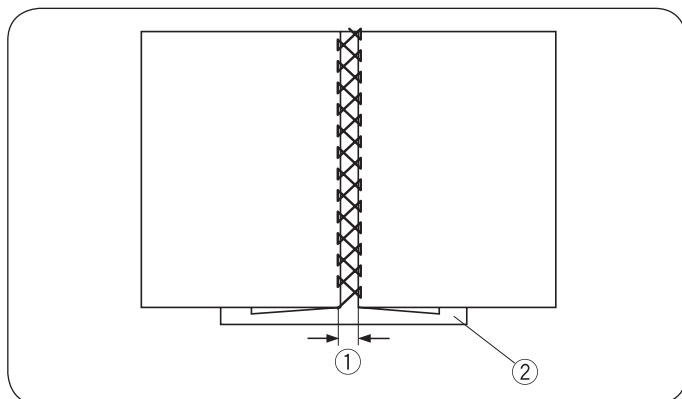
Sew stitch pattern 32 on the right side of the garment centering over the seam line.

* Stitch patterns 13, 33, 34  can also be used.



Fagoting

- ① Stitch pattern: 31
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot



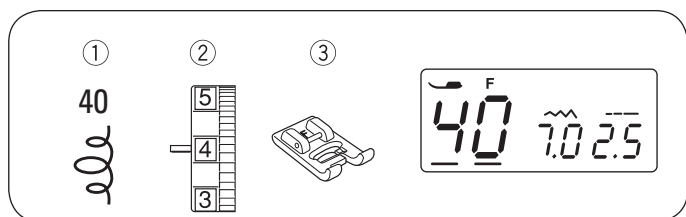
Use this stitch to join two pieces of fabric to create an open work appearance and add design interest.

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

After finishing the sewing, take off the paper.

- ① 0,3 - 0,4 cm (1/8")
- ② Paper

* Stitch patterns 13, 16  can also be used.

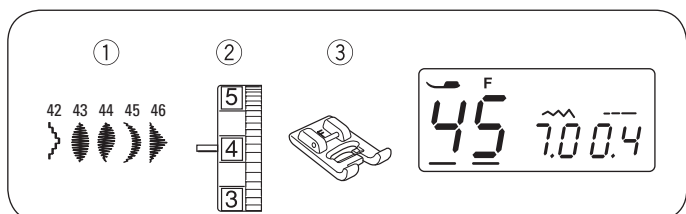
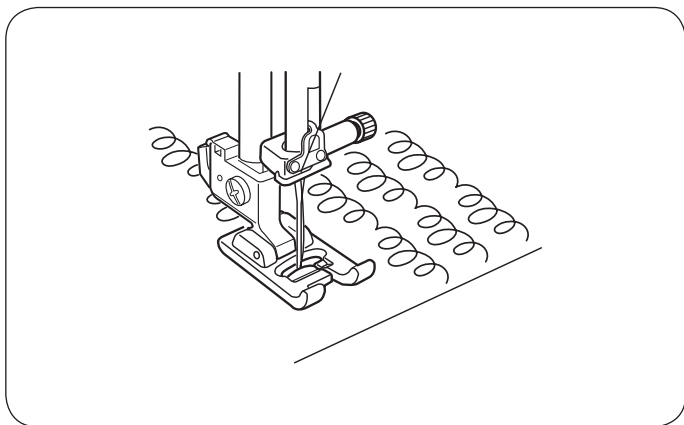


Quilt Stitch

- ① Stitch pattern: 40
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot

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.



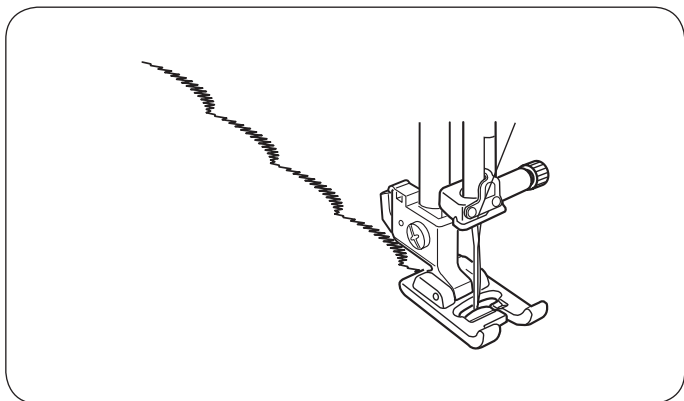
Satin Stitches

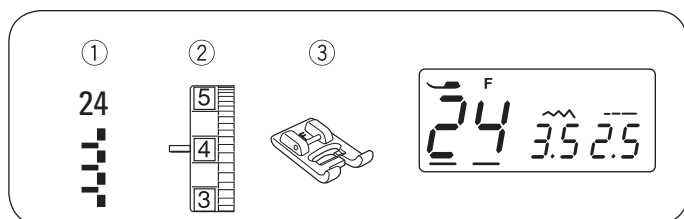
- ① Stitch pattern: 45
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot

* Stitch patterns 42–44 and 46 can be used for satin stitches.

For better sewing results, interfacing should be used on the wrong side of the fabric when you use stretch or elastic fabrics.

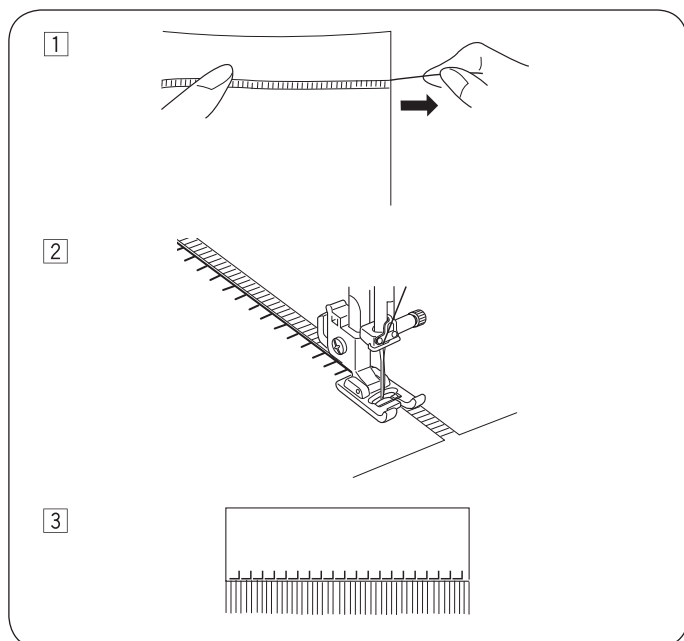
Press the auto-lock button to finish the end of the pattern.





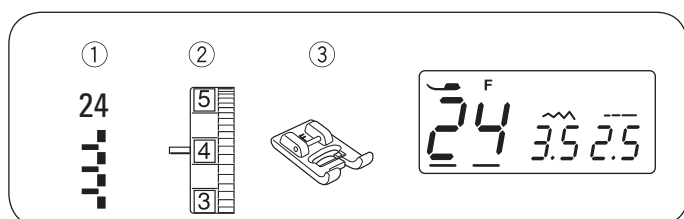
Fringing

- ① Stitch pattern: 24
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot



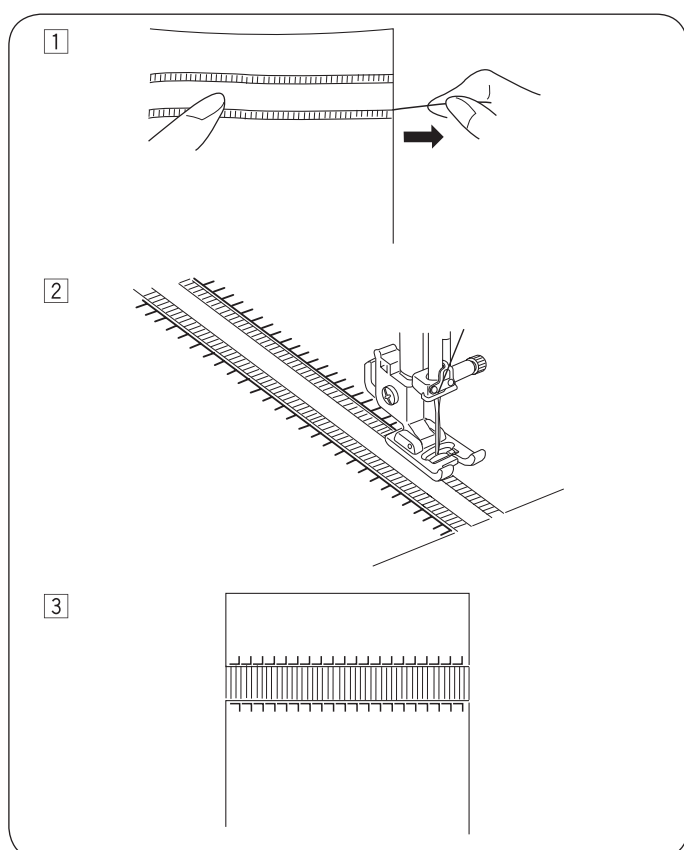
Fringing adds a special touch on table linens and shawls. Choose a firm, woven fabric like linen where threads can be removed easily.

- 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.



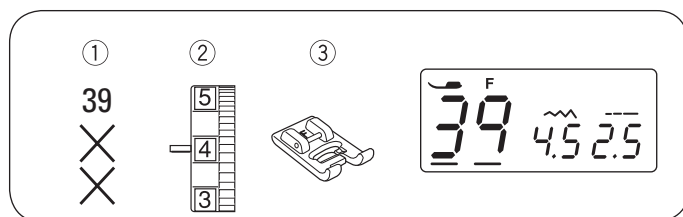
Drawn work

- ① Stitch pattern: 24
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot



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: 39
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot

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

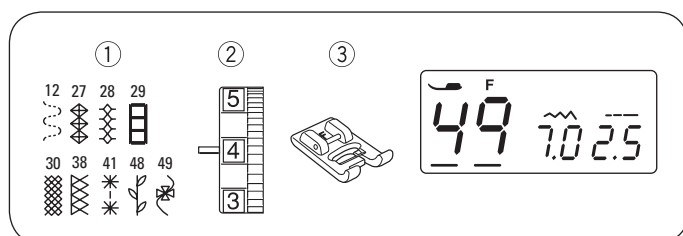
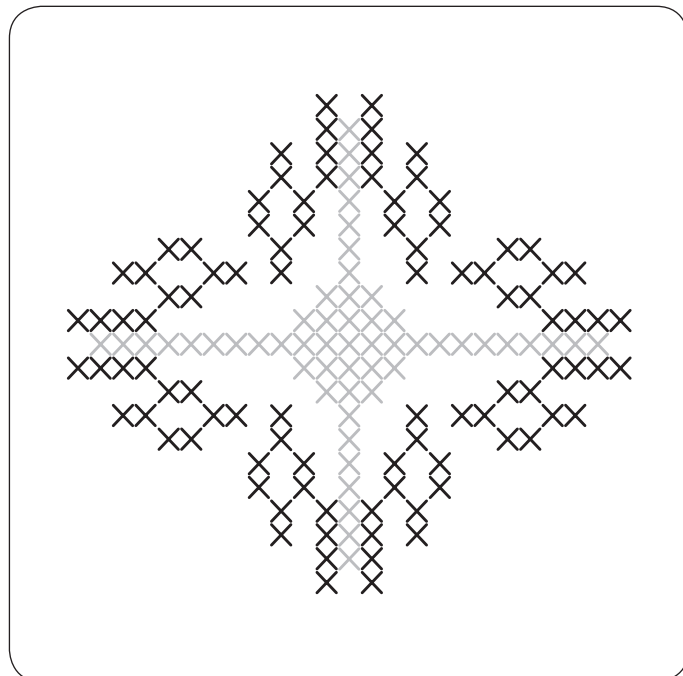
* If you press the auto-lock button before sewing, the machine will sew one unit of the cross stitch and stop automatically.

Choose a plain close weave fabric such as linen or wool flannel for the background fabric. If you choose light weight fabric, use a tear away backing for support.

Adjust the stitch width and length as you desire to match the pattern.

Find the center of the design, or if the design is a border, choose a starting point.

Use auto-lock button to begin and end.

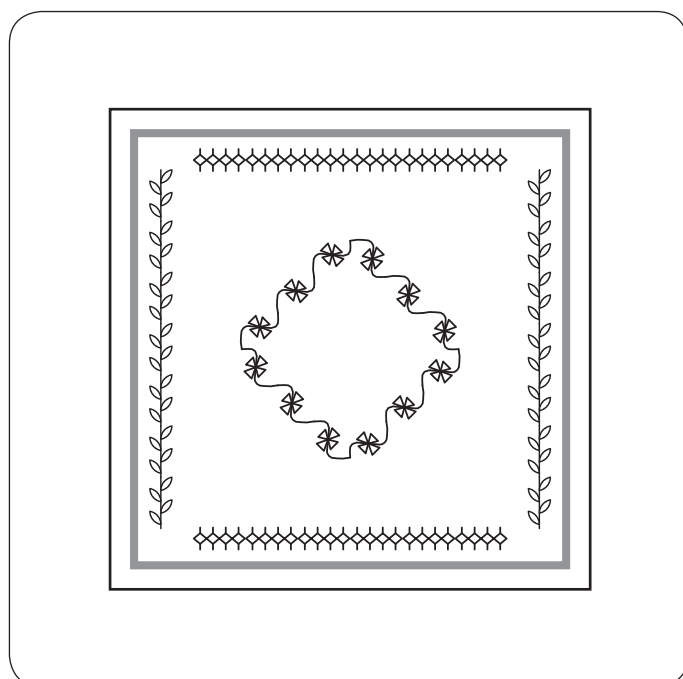


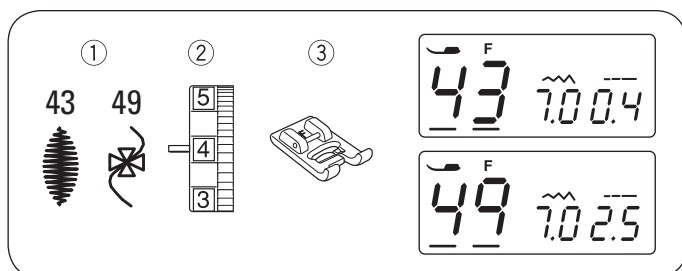
Decorative Stitches

- ① Stitch pattern: 12, 27-30, 38, 41, 48 or 49
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot

For the best sewing results, carefully align and guide the fabric when you sew with decorative stitches.

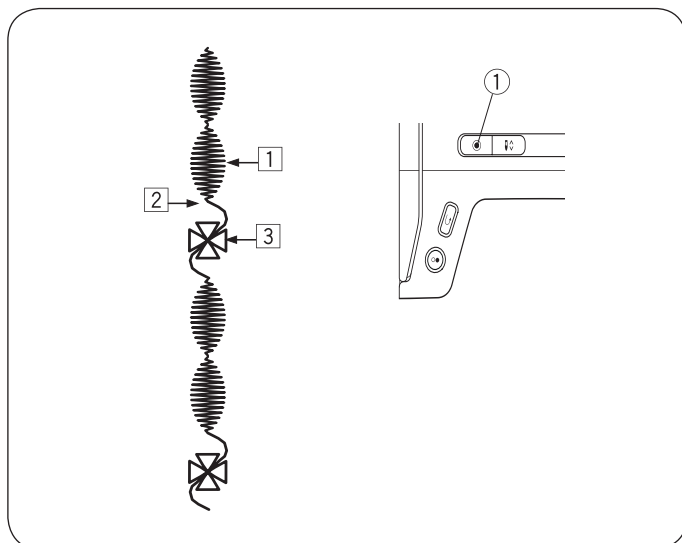
Use a tear-way backing if necessary.





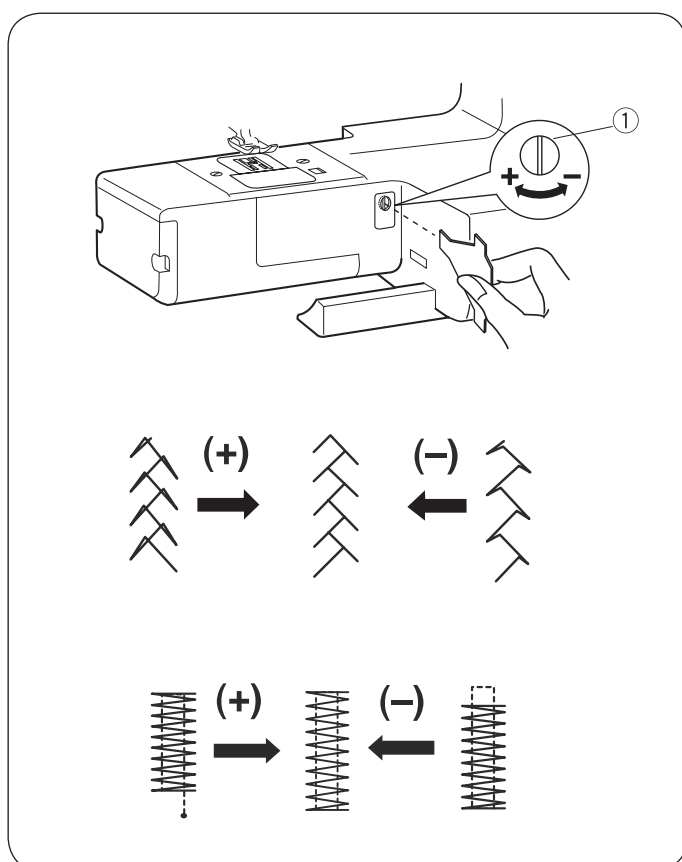
Decorative Stitch Combinations

- ① Stitch pattern: 43 and 49
- ② Thread tension: 3 - 6
- ③ Presser foot: Satin stitch foot



Example: To combine two units of pattern 43 and 49.

- ① Sew pattern 43 and press the auto-lock button while sewing the second unit. The machine will stop automatically when the second unit is completed.
- ② Auto-lock button
- ③ Select stitch pattern 49. Use auto-lock button to start sewing.
- ④ Machine will sew one unit of pattern 43 and stop automatically.
- ⑤ Repeat the procedure above.



Balance

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

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

If stretch patterns are distorted, correct it with the balance.

- ① Balance

• Stretch stitch pattern

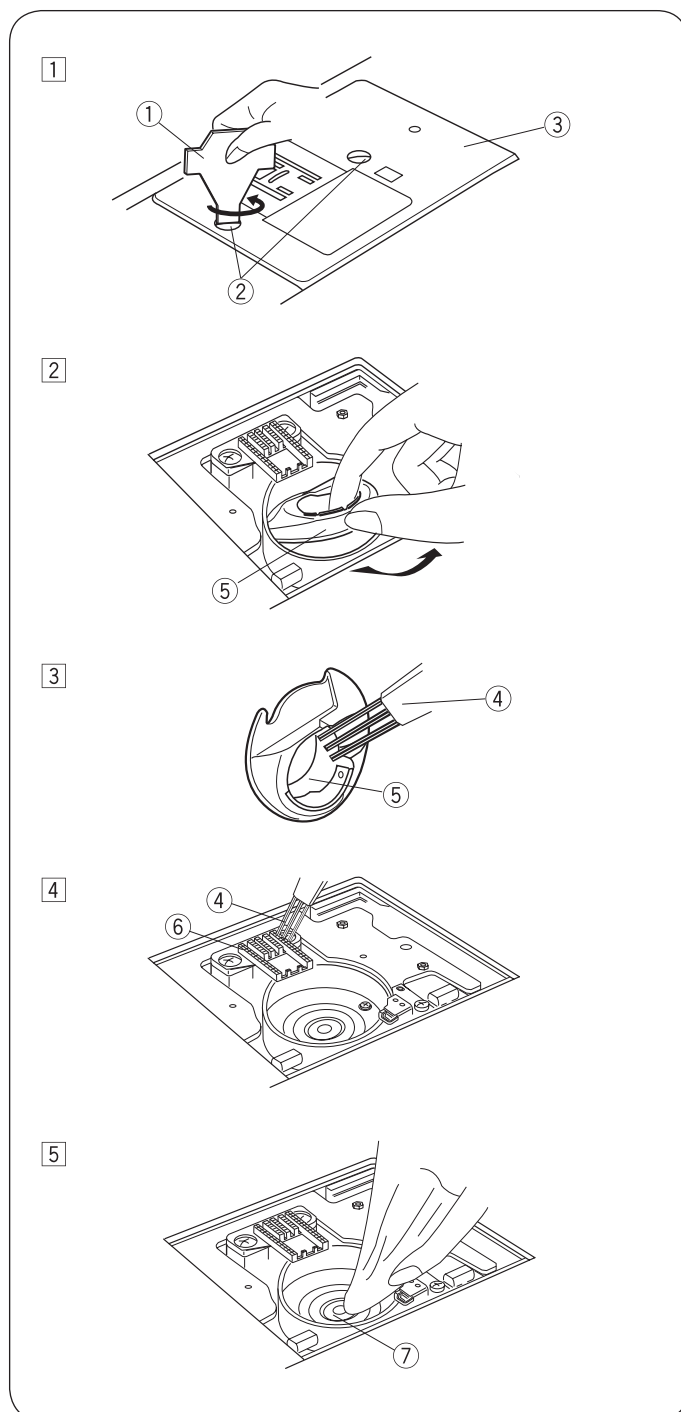
If the pattern is compressed, turn the balance in the direction of “+”.

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

• Evenness of Bartack

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

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



CARE OF YOUR MACHINE

Cleaning the Hook Race and Feed Dog



WARNING:

Turn the power switch off and unplug the machine before cleaning.
The machine must only be disassembled as described in this section.



CAUTION:

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

PLEASE NOTE:

Clean the outside of the machine with a soft cloth and soap. After cleaning the machine, make sure the needle and presser foot are attached.

Press the needle stop up/down button to raise the needle. Turn off the power switch.

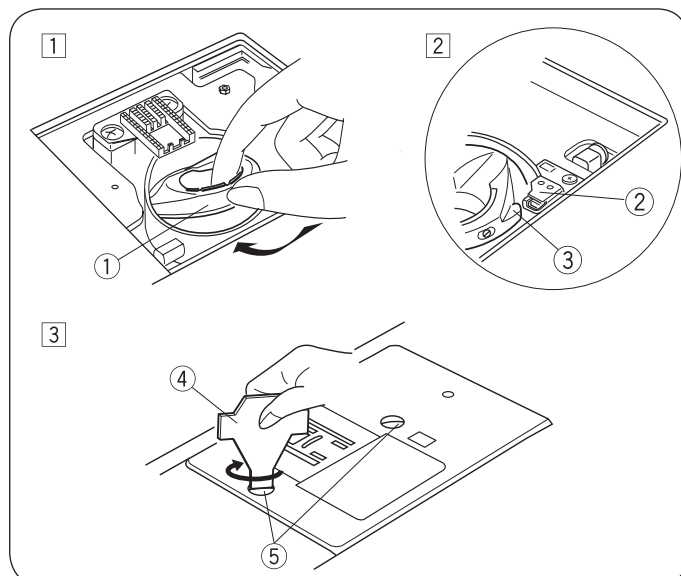
Remove the needle and presser foot.

Remove the cover plate by sliding the cover plate release button to the right. Take out the bobbin. Brush out dust and lint. (You may also use a vacuum cleaner.)

- 1 Remove the setscrew (2) out of the stitch plate (3). Use the T-screwdriver (1) supplied with the machine. Remove the stitch plate (3).
- 2 Lift up the bobbin holder (5) and remove it.
- 3 Clean the bobbin holder (5) with a lint brush (4).
- 4 Clean the feed dog (6) and hook race (7) with the lint brush.
- 5 Clean the center of the hook race with a dry cloth.

- 1 T screwdriver
- 2 Setscrews
- 3 Stitch plate
- 4 Lint brush
- 5 Bobbin holder
- 6 Feed dog
- 7 Hook race

* The machine does not require oiling.

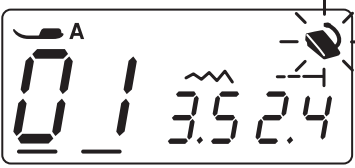
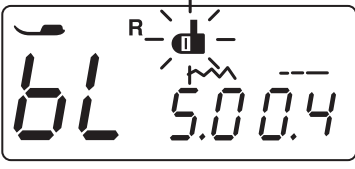


Installing the Bobbin Holder

- 1 Insert the bobbin holder (1) so that the knob (3) fits next to the stopper (2) in the hook race.
- 2 Insert the bobbin.
- 3 Attach the stitch plate with the setscrews (5). After cleaning the machine, make sure the needle and presser foot are attached.

- 1 Bobbin holder
- 2 Stopper
- 3 Knob
- 4 T screwdriver
- 5 Setscrews

Problems and Warning Signs

Warning sign	Cause	Remedy
	The start/stop button is pressed with the foot control connected. 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.
	The machine will stop if the buttonhole is sewn without lowering the buttonhole lever.	Lower the buttonhole lever 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 is started after halting due to overload.	Wait for at least 15 seconds to restart. Switch off the power switch. Remove tangled threads around take-up lever, hook race.

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

Troubleshooting

Condition	Cause	Remedy
The needle thread breaks	1. The thread is not threaded properly. 2. The thread tension is too tight. 3. The needle is bent or blunt. 4. The needle is incorrectly inserted. 5. The needle thread and the bobbin thread are not set under the presser foot when start sewing. 6. The threads were not drawn to the rear after sewing. 7. The thread is either too heavy or too fine for the needle.	Page 18, 19 Page 23, 24 Change the needle. Page 14 Page 20 Page 25 Page 14
The bobbin thread breaks	1. The bobbin thread is not threaded properly in the bobbin holder. 2. Lint has collected in the bobbin holder. 3. The bobbin is damaged and doesn't turn smoothly. 4. The thread is wound loosely on a bobbin.	Page 17 Page 51 Replace the bobbin. Page 15, 16
The needle breaks	1. The needle is incorrectly inserted. 2. The needle clamp screw is loose. 3. The threads were not drawn to the rear after sewing. 4. The needle is too fine for the fabric being used. 5. The presser foot is not appropriate for the stitch pattern being sewn. 6. The needle is incorrectly inserted, bent or blunt.	Page 14 Page 15 Page 25 Page 14 Use proper foot. Change the needle.
Skipped stitches	1. The needle and/or threads are not suitable for the work being sewn. 2. A blue shank needle is not being used for sewing stretch, very fine fabrics and synthetics. 3. The thread is not threaded properly. 4. A poor quality needle is used. 5. The thread tension is too tight.	Page 14 Page 14 Page 18, 19 Page 14 Page 23, 24
Seam puckering	1. The needle is too heavy for the fabric being sewn. 2. The stitch length is too long for the fabric.	Page 14 Make the stitches shorter.
The cloth is not feeding smoothly	1. Accumulation of lint on the feed dog. 2. The stitches are too fine. 3. The feed dog is not raised after "drop feed" sewing.	Page 51 Make the stitches longer. Page 14
Stitches form loops below the works	1. The thread tension is too tight. 2. The needle is either too heavy or too fine for the thread.	Page 23, 24 Page 14
The machine does not work	1. The machine is not plugged in. 2. Thread has been caught in the hook race. 3. The bobbin winder spindle is not returned to the left after bobbin winding.	Page 9 Page 51 Page 16
Buttonhole sewing is not sewn properly	1. The stitch density is not suitable for the fabric being sewn. 2. Suitable interface material has not been used for the stretch or synthetic fabric.	Page 34 Use an interfacing.
The machine does not run smoothly and is noisy	1. Thread has been caught in the hook race. 2. Lint has built up in the hook race or bobbin holder.	Page 51 Page 51
Abnormal noise from the hook area and faulty stitches	1. The bobbin holder is worn or damaged.	Replace the bobbin holder.

Stitch pattern

Overview

Stitch pattern	Needle position	Stitch length	Stitch width
00 	M	0.2 – 0.8	2.5 – 7.0
01 	M	0.0 – 5.0	0.0 – 7.0
02 	L	0.0 – 5.0	0.0 – 7.0
03 	M	1.0 – 4.0	0.0 – 7.0
04 	M	1.0 – 4.0	0.0 – 3.0
05 	M	0.2 – 5.0	0.0 – 7.0
06 	M	0.2 – 5.0	0.0 – 7.0
07 	M	1.0 – 5.0	0.0 – 7.0
08 	M	1.0 – 2.5	4.5 – 7.0
09 	M	0.2 – 5.0	0.0 – 1.2
10 	M	1.0 – 2.5	2.5 – 7.0
11 	M	1.0 – 5.0	2.5 – 7.0
12 	M	1.0 – 2.5	2.5 – 7.0
13 	M	1.0 – 2.5	2.5 – 7.0
14 	M	1.0 – 5.0	0.0 – 7.0
15 	L	0.2 – 5.0	0.0 – 7.0
16 	M	1.0 – 2.5	2.5 – 7.0
17 	M	1.0 – 2.5	2.5 – 7.0
18 	M	0.2 – 0.8	2.5 – 5.5
19 	M	0.3 – 0.8	5.5 – 7.0
20 	M	0.5 – 1.0	2.5 – 7.0
21 	–	d1 – d9	–
22 	M	1.0 – 2.5	1.0 – 5.0
23 	–	L1 – L5	–
24 	M	1.0 – 2.5	1.0 – 7.0

Stitch pattern	Needle position	Stitch length	Stitch width
25 	M	1.0 – 2.5	1.0 – 7.0
26 	M	1.0 – 2.5	1.0 – 7.0
27 	M	1.0 – 2.5	2.5 – 7.0
28 	M	1.0 – 2.5	2.5 – 7.0
29 	M	1.0 – 4.0	2.5 – 7.0
30 	M	1.0 – 2.5	2.5 – 7.0
31 	M	1.0 – 2.5	2.5 – 7.0
32 	M	0.2 – 2.5	0.0 – 7.0
33 	M	1.0 – 2.5	2.5 – 7.0
34 	M	1.0 – 2.5	2.5 – 7.0
35 	M	1.0 – 4.0	0.0 – 7.0
36 	M	1.0 – 4.0	0.0 – 7.0
37 	M	1.0 – 2.5	2.5 – 7.0
38 	L	1.0 – 2.5	2.5 – 7.0
39 	M	1.0 – 2.5	2.5 – 7.0
40 	M	1.0 – 2.5	2.5 – 7.0
41 	M	1.0 – 2.5	2.5 – 7.0
42 	L	0.2 – 0.8	2.5 – 7.0
43 	M	0.2 – 0.8	2.5 – 7.0
44 	M	0.2 – 0.8	2.5 – 7.0
45 	L	0.2 – 0.8	2.5 – 7.0
46 	L	0.2 – 0.8	2.5 – 7.0
47 	M	1.0 – 2.5	2.5 – 7.0
48 	M	1.0 – 2.5	2.5 – 7.0
49 	L	1.0 – 2.5	2.5 – 7.0



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