

Operation Manual

Sewing Machine

Product Code: 882-W92



Be sure to read this document before using the machine.

We recommend that you keep this document nearby for future reference. The latest manuals are available at Brother Support website (<https://s.brother/cpeail/>).

INTRODUCTION

Thank you for purchasing this machine. Before using this machine, carefully read the "IMPORTANT SAFETY INSTRUCTIONS", and then study this manual for the correct operation of the various functions. In addition, after you have finished reading this manual, store it where it can quickly be accessed for future reference.

IMPORTANT SAFETY INSTRUCTIONS

Please read these safety instructions before attempting to use the machine.

DANGER

- To reduce the risk of electric shock

- 1** Always unplug the machine from the electrical outlet immediately after using, cleaning, making any user servicing adjustments mentioned in this manual, or if you are leaving the machine unattended.

WARNING

- To reduce the risk of burns, fire, electrical shock, or injury to persons.

- 2** Always unplug the machine from the electrical outlet, or when making any adjustments mentioned in the instruction manual.
 - To unplug the machine, switch the machine to the symbol "O" position to turn it off, then grasp the plug and pull it out of the electrical outlet. Do not pull on the cord.
 - Plug the machine directly into the electrical outlet. Do not use an extension cord.
 - Always unplug your machine if there is a power failure.

3 Electrical Hazards:

- This machine should be connected to an AC power source within the range indicated on the rating label. Do not connect it to a DC power source or inverter. If you are not sure what kind of power source you have, contact a qualified electrician.
- This machine is approved for use in the country of purchase only.

4 Fire Hazards:

Do not use flammable substances, any type of spray, or an organic solvent/liquid containing alcohol or ammonia to clean the inside or outside of the product. Doing so could cause a fire.

5 Never operate this machine if it has a damaged cord

or plug, if it is not working properly, has been dropped or damaged, or water is spilled on the unit or its accessories. Return the machine to the nearest authorized Brother dealer for examination, repair, electrical or mechanical adjustment.

- While the machine is stored or in use if you notice anything unusual, such as an odor, heat, discoloration or deformation, stop using the machine immediately and unplug the power cord.
- When transporting the machine, be sure to carry it by its handle. Lifting the machine by any other part may damage the machine or result in the machine falling, which could cause injuries.
- When lifting the machine, be careful not to make any sudden or careless movements, which may cause a personal injury.

6 Always keep your work area clear:

- Do not install or use in areas where explosive or electrically conductive dusts are generated.
- Never operate the machine with any air openings blocked. Keep ventilation openings of the machine and the foot controller free from the build up of lint, dust, and loose cloth.
- Do not store objects on the foot controller.
- Never drop or insert foreign object into any opening.
- Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
- Do not use the machine near a heat source, such as a stove or iron; otherwise, the machine, power cord or garment being sewn may ignite, resulting in fire or an electric shock.
- Do not place this machine on an unstable surface, such as an unsteady or slanted table, otherwise the machine may fall, resulting in injuries.

7 Special care is required when sewing:

- Always pay close attention to the needle. Do not use bent or damaged needles.
- Keep fingers away from all moving parts. Special care is required around the machine needle.
- Switch the machine to the symbol “O” position to turn it off when making any adjustments in the needle area.
- Do not use a damaged or incorrect needle plate, as it could cause the needle to break.
- Do not push or pull the fabric when sewing, and follow careful instruction when free motion stitching so that you do not deflect the needle and cause it to break.

8 This machine is not a toy:

- Your close attention is necessary when the machine is used by or near children.
- This product contains small parts. Keep the product out of the reach of children to prevent accidental ingestion of small parts.
- The plastic bag that this machine was supplied in should be kept out of the reach of children or disposed of. Never allow children to play with the bag due to the danger of suffocation.
- Do not use the seam ripper in any other way than how it is intended.
- Do not use outdoors.

9 For a longer service life:

- When using and storing this machine, avoid direct sunlight and high humidity locations. Do not use or store the machine near a space heater, iron, halogen lamp, or other hot objects.
- Do not use cleansers or organic solvents, such as thinner, petroleum ether or alcohol, to clean the machine. Otherwise, the finish may peel off or become scratched.
- Always consult the Operation Manual when replacing or installing any assemblies, the presser feet, needle, or other parts to assure correct installation.

10 For repair or adjustment:

- If the light unit is damaged, it must be replaced by an authorized Brother dealer.
- In the event a malfunction occurs or adjustment is required, first follow the troubleshooting table in the back of the Operation Manual to inspect and adjust the machine yourself. If the problem persists, please consult your local authorized Brother dealer.

Use this machine only for its intended use as described in the manual.

Use accessories recommended by the manufacturer as contained in this manual.

The contents of this manual and specifications of this product are subject to change without notice.

SAVE THESE INSTRUCTIONS

This machine is intended for household use.

FOR USERS IN COUNTRIES EXCEPT EUROPEAN COUNTRIES

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.

FOR USERS IN EUROPEAN COUNTRIES

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 USERS IN THE UK, EIRE, MALTA AND CYPRUS ONLY

IMPORTANT

- In the event of replacing the plug fuse, use a fuse approved by ASTA to BS 1362, i.e. carrying the  mark, rating as marked on plug.
- Always replace the fuse cover. Never use plugs with the fuse cover omitted.
- If the available electrical outlet is not suitable for the plug supplied with this equipment, you should contact your authorized Brother dealer to obtain the correct lead.

Federal Communications Commission (FCC) Supplier's Declaration of Conformity (For U.S.A. Only)

Responsible Party: Brother International Corporation
200 Crossing Boulevard
P.O. Box 6911
Bridgewater, NJ 08807-0911
USA
TEL : (908) 704-1700

declares that the product

Product Name: Brother Sewing Machine
Model Number: CX1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is

encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the authorized Brother dealer or an experienced radio/TV technician for help.
- This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Important

Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.

For Users in Canada

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.

For Users in Mexico

The operation of this equipment is subject to the following two conditions:

- (1) it is possible that this equipment or device may not cause harmful interference, and
- (2) this equipment or device must accept any interference, including interference that may cause undesired operation.

La operación de este equipo está sujeta a las siguientes dos condiciones:

- (1) es posible que este equipo o dispositivo no cause interferencias perjudiciales y
- (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Declaration of Conformity (Europe and Turkey only)

We, Brother Industries, Ltd. 15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan declare that this product is in conformity with the essential requirements of all relevant directives and regulations applied within the European Community.

The Declaration of Conformity (DoC) can be downloaded from Brother Support website. Visit support.brother.com

Declaration of Conformity for RE Directive 2014/53/ EU (Europe and Turkey only) (Applicable to models with radio interfaces)

We, Brother Industries, Ltd. 15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan declare that these products are in conformity with the provisions of the RE Directive 2014/53/EU.

The Declaration of Conformity (DoC) can be downloaded from Brother Support website. Visit support.brother.com

Wireless LAN (Models with Wireless LAN function only)

This machine supports wireless interface.

Frequency band(s): 2400-2483.5 MHz

Maximum radio-frequency power transmitted in the frequency band(s): Less than 20 dBm(e.i.r.p)

UK Declaration of Conformity (Great Britain only)

We, Brother Industries, Ltd. 15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan declare that these products are in conformity with the relevant UK legislation.

The Declaration of Conformity (DoC) can be downloaded from Brother Support website. Visit support.brother.com

UK Declaration of Conformity for Radio Equipment Regulation 2017

(Great Britain only) (Applicable to models with radio interfaces)

We, Brother Industries, Ltd. 15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan declare that these products are in conformity with the provisions of the Radio Equipment Regulation 2017.

The Declaration of Conformity (DoC) can be downloaded from Brother Support website. Visit support.brother.com

UK Statements of Compliance for the Product Security and Telecommunications Infrastructure (Security Requirements for Relevant Connectable Products) Regulations 2023 (Great Britain only)

We, Brother Industries, Ltd. 15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, Japan declare that these products are in conformity with the provisions of the Product Security and Telecommunications Infrastructure (Security Requirements for Relevant Connectable Products) Regulations 2023. A copy of the Statements of Compliance can be downloaded from Brother support website. Visit support.brother.com

For Users in Norway

This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund on Svalbard.

Dette underavsnittet gjelder ikke for det geografiske området innenfor en radius av 20 km fra sentrum av Ny-Ålesund på Svalbard.

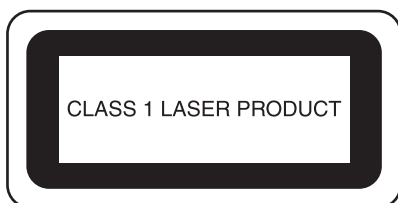
Laser Notices (For U.S.A. only)

Laser Safety

This sewing machine is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the sewing machine does not produce hazardous laser radiation.

IEC 60825-1 Specification

This machine is a Class 1 laser product as defined in IEC 60825-1:2014 specifications.



For guideline marker

The laser beam emitted by the laser unit installed in this machine is restricted to an output at a safe level. However, the machine contains 6-milliwatt, 630-640 nanometer wavelength, 6-12 degree at parallel divergence angle, 28-40 degree at perpendicular divergence angle, InGaAlP laser diodes. Therefore, eye damage may result from disassembling or altering this machine.

Safety precautions have been designed to prevent any possible laser beam exposure to the operator.

For stitch regulator

The invisible laser beam emitted by the laser unit installed in this stitch regulator is restricted to an output at a safe level. The stitch regulator contains 0.6-milliwatt, 840-860 nanometer wavelength, 1.5 mrad divergence angle, pulse duration 26 μ s, pulse frequency 10 kHz, laser module. However, eye damage may result from disassembling or altering this stitch regulator.

Safety precautions have been designed to prevent any possible laser beam exposure to the operator.

FDA Regulations

U.S. Food and Drug Administration (FDA) has implemented regulations for laser products manufactured on and after August 2, 1976. Compliance is mandatory for products marketed in the United States. The label shown on the back of the sewing machine indicates compliance with the FDA regulations and must be attached to laser products marketed in the United States.

Brother Industries, Ltd.

15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, JAPAN

This product complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.



CAUTION

- Use of controls, adjustments or the performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

Laser Notices (For European countries)

EN 60825-1:2014+A11:2021 and EN 50689:2021 Specification

For guideline marker

This machine is Class 1 consumer laser product in EN 60825-1:2014+A11:2021 and EN 50689:2021 specifications.

This laser indicates the needle drop point.

For stitch regulator

This machine is Class 1 consumer laser product in EN 60825-1:2014+A11:2021 and EN 50689:2021 specifications.

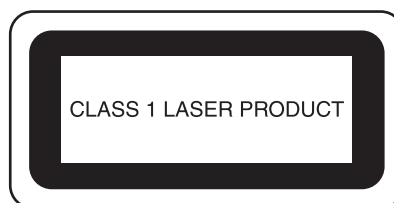
This laser measures the direction and amount of movement of the cloth.



Laser Notices (For countries except U.S.A. and European countries)

IEC 60825-1 Specification

This machine is a Class 1 laser product as defined in IEC 60825-1:2014 specifications.



For countries except U.S.A.

For guideline marker

The laser beam emitted by the laser unit installed in this machine is restricted to an output at a safe level. However, the machine contains 6-milliwatt, 630-640 nanometer wavelength, 6-12 degree at parallel divergence angle, 28-40 degree at perpendicular divergence angle, InGaAlP laser diodes. Therefore, eye damage may result from disassembling or altering this machine. Safety precautions have been designed to prevent any possible laser beam exposure to the operator.

For stitch regulator

The invisible laser beam emitted by the laser unit installed in this stitch regulator is restricted to an output at a safe level. The stitch regulator contains 0.6-milliwatt, 840-860 nanometer wavelength, 1.5 mrad divergence angle, pulse duration 26 μ s, pulse frequency 10 kHz, laser module. However, eye damage may result from disassembling or altering this stitch regulator.

Safety precautions have been designed to prevent any possible laser beam exposure to the operator.



CAUTION

- This machine and the stitch regulator have a Laser module in the Laser Unit. The Laser Unit should not be opened under any circumstances.
- Use of controls, adjustments or the performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

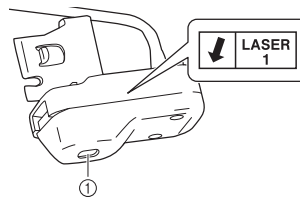
Information for Commission Regulation (EU) 801/2013 (Great Britain only), (EU)2023/ 826 (Europe only)

For related information of these regulations, please visit the Brother support website at support.brother.com

WARNING SIGN

■ Stitch Regulator

The following caution sign pertains to the stitch regulator.



① Laser emitting window



CAUTION

- An invisible laser is emitted from the window indicated by the arrow. Although this product complies with Class 1 laser product regulations to ensure safety, do not look into the laser emitting window since that may be harmful to your eyes.

TRADEMARKS

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OPEN SOURCE LICENSING REMARKS

This product includes open-source software. To see the open source licensing remarks, please go to the manual download section on your model's home page of Brother Support website at <https://s.brother/cpeai/>.

PRECAUTION FOR WIRELESS CONNECTION

Make sure you use a router or firewall when connecting your machine to the Internet to protect it against unauthorized access from the Internet.

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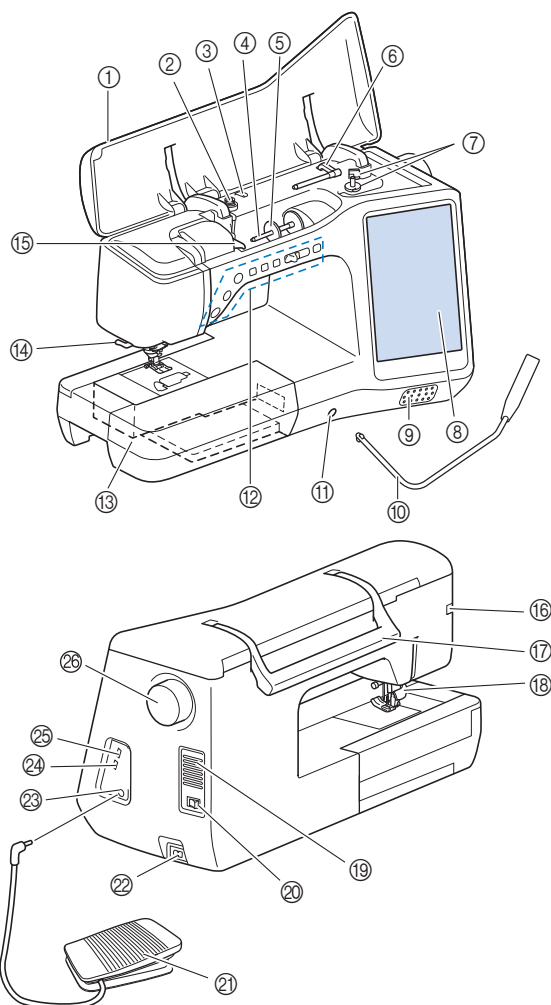
Chapter 1 GETTING READY

Note

- Be sure to install the latest software. Refer to “UPDATING YOUR MACHINE’S SOFTWARE” on page 124.

NAMES OF MACHINE PARTS

Main Parts



- ① Top cover
- ② Pretension disk (page 30)
- ③ Thread guide for bobbin winding (page 30)
- ④ Spool pin (page 35)
- ⑤ Spool cap (page 29)
- ⑥ Supplemental spool pin (page 29)
- ⑦ Bobbin winder (page 29)
- ⑧ LCD (liquid crystal display) (page 16)
- ⑨ Speaker
- ⑩ Knee lifter (page 58)
- ⑪ Knee lifter slot (page 58)
- ⑫ Operation buttons and sewing speed controller (page 10)
- ⑬ Flat bed attachment with accessory compartment (page 11)
- ⑭ Thread cutter (page 36)
- ⑮ Thread guide plate (page 32)
- ⑯ Connector for the presser foot (page 98)
- ⑰ Handle
- ⑱ Presser foot lever
- ⑲ Air vent
- ⑳ Main power switch (page 14)
- ㉑ Foot controller (page 47)
- ㉒ Power cord receptacle (page 14)
- ㉓ Foot controller jack (page 47)
- ㉔ USB port for mouse (page 28)
- ㉕ USB port
- ㉖ Handwheel

- ⑬ Flat bed attachment with accessory compartment (page 11)

- ⑭ Thread cutter (page 36)

- ⑮ Thread guide plate (page 32)

- ⑯ Connector for the presser foot (page 98)

- ⑰ Handle

Carry the machine by its handle when transporting the machine.

- ⑱ Presser foot lever

You cannot use the presser foot lever after the presser foot has been raised using  (Presser foot lifter button).

- ⑲ Air vent

The air vent allows the air surrounding the motor to circulate. Do not cover the air vent while the machine is being used.

- ⑳ Main power switch (page 14)

- ㉑ Foot controller (page 47)

- ㉒ Power cord receptacle (page 14)

- ㉓ Foot controller jack (page 47)

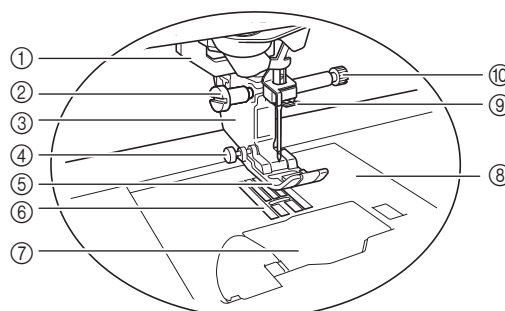
- ㉔ USB port for mouse (page 28)

- ㉕ USB port

- ㉖ Handwheel

Turn the handwheel toward you (counterclockwise) to raise and lower the needle.

Needle and Presser Foot Section



- ① Buttonhole lever (page 80)

- ② Presser foot holder screw (page 43)

- ③ Presser foot holder (page 43)

- ④ Presser foot locking pin (page 61)

- ⑤ Presser foot

The presser foot consistently applies pressure to the fabric as sewing takes place. Attach the appropriate presser foot for the selected stitch.

- ⑥ Feed dogs

The feed dogs feed the fabric in the sewing direction.

- ⑦ Bobbin cover (page 33)

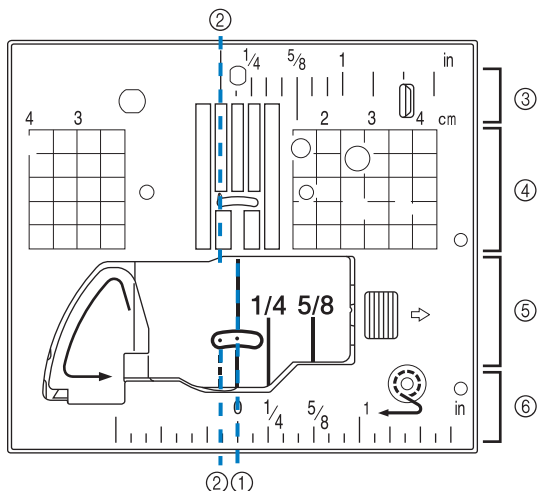
- ⑧ Needle plate (page 64)

- ⑨ Needle bar thread guide (page 36)

- ⑩ Needle clamp screw (page 41)

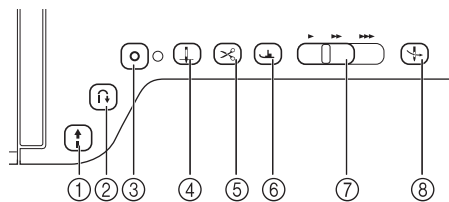
Measurements on the needle plate and the bobbin cover (with mark)

The measurements on the bobbin cover and needle plate are references for stitch patterns with a left or middle (center) needle position.



- ① For stitches with a middle (center) needle position
- ② For stitches with a left needle position
- ③ Left needle position on the needle plate <inch>
- ④ Left needle position on the needle plate <cm>
- ⑤ Middle (center) needle position on the bobbin cover (with mark) <inch>
- ⑥ Middle (center) needle position on the needle plate

■ Operation Buttons



- ① **“Start/Stop” button**

Press the “Start/Stop” button to start or stop sewing. The button changes color according to the machine’s operation mode.

Green: The machine is ready or is operating.

Red: The machine is not ready.
- ② **Reverse stitch button**

Press the reverse button to sew reverse or reinforcement stitches depending on the selected stitch pattern. (page 51)
- ③ **Reinforcement stitch button**

Press the reinforcement button to sew a single stitch repeatedly and tie-off. (page 51)

For character/decorative stitches, press this button to end with a full stitch instead of at a mid-point.

The LED beside the button automatically lights up while the stitch is being sewn and goes off when sewing is finished.
- ④ **Needle position button**

Press the needle position button to raise or lower the needle position. Pressing the button twice sews a single stitch.
- ⑤ **Thread cutter button**

Press the thread cutter button after sewing to automatically trim the excess thread.
- ⑥ **Presser foot lifter button**

Press the presser foot lifter button to lower the presser foot and apply pressure to the fabric. Press this button again to raise the presser foot.
- ⑦ **Sewing Speed controller**

Use the sewing speed controller to adjust the sewing speed. Move the slide to the left to sew at slower speeds. Move the slide to the right to sew at higher speeds.
- ⑧ **Automatic threading button**

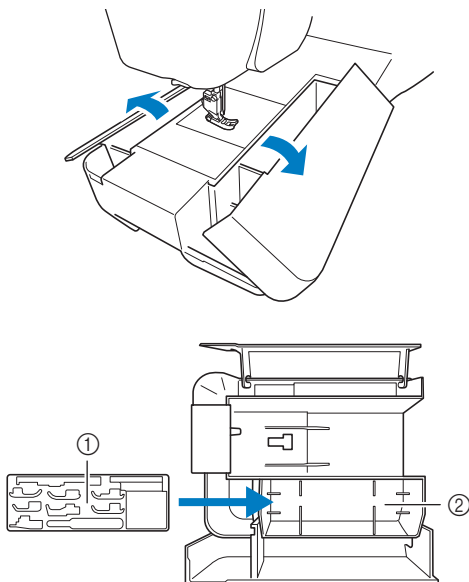
Use the automatic threading button to automatically thread the needle.

INCLUDED ACCESSORIES

For included accessories of your machine, refer to the additional sheet "Included Accessories".

■ Using the Flat Bed Attachment

Pull the top of the flat bed attachment to open the accessory compartment.



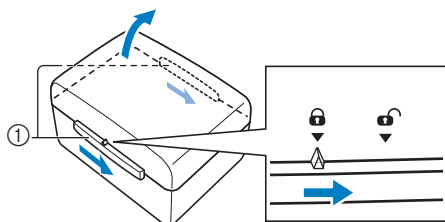
- ① Presser foot storage tray
- ② Presser foot storage space of the flat bed attachment

■ Using the Accessory Case (Included with Some Models)

□ Opening the accessory case

Fully slide the bar on each side of the accessory case to the unlocked position, and then lift off the lid to open the case.

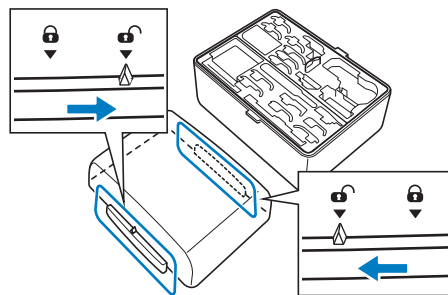
The case can only be opened or locked correctly if both bars are slid in the same direction.



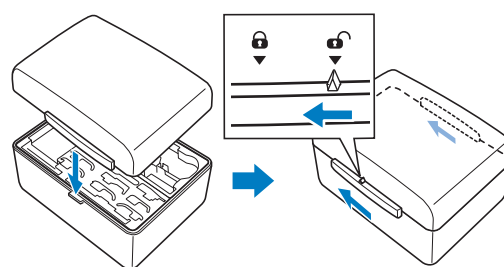
- ① Bars

□ Closing the accessory case

- 1 Fully slide the bar on each side of the accessory case lid to the unlocked position.

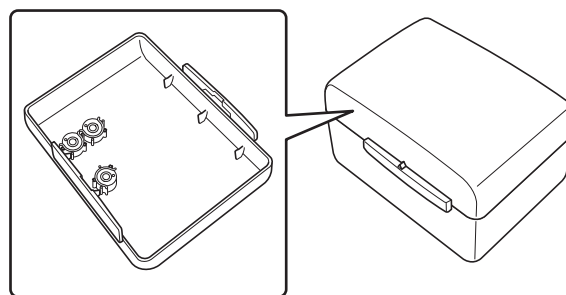


- 2 Place the lid on top of the case so that the notches in the lid align with the tabs on the case, and then slide the bar on each side back to the locked position.



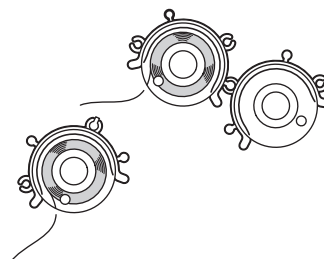
■ Storing Bobbin Clips

Bobbin clips can be stored inside of the accessory case cover.



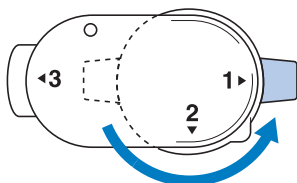
📌 Memo

- Placing bobbin clips on bobbins helps prevent the thread from unwinding from the bobbin. In addition, snapping bobbin clips together allows the bobbins to be conveniently stored and prevents them from rolling around if they are dropped.



Using the Multi-Purpose Screwdriver

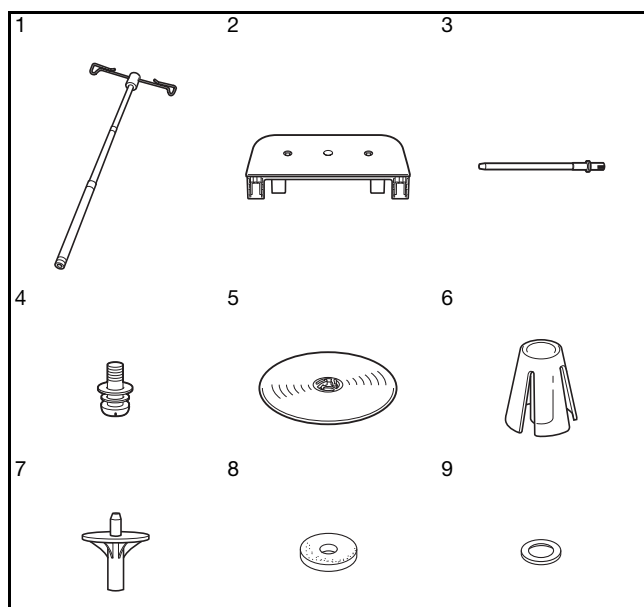
Since the screwdriver can be changed to different positions, it can be extremely useful for the various machine preparations. With this machine, position "1" and position "2" are used.



To remove the needle plate, use the position "1".

Using the Spool Stand

The included spool stand is useful when using thread spools with a large diameter (cross-wound thread). The spool stand can hold two spools of thread.



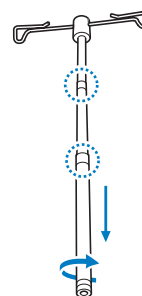
No.	Part Name
1	Telescopic thread guide
2	Spool support
3	Spool pin × 2
4	Screw and washer
5	Spool cap (XL) × 2
6	Spool holder × 2
7	Spool cap base × 2
8	Spool felt × 2
9	Ring × 4

IMPORTANT

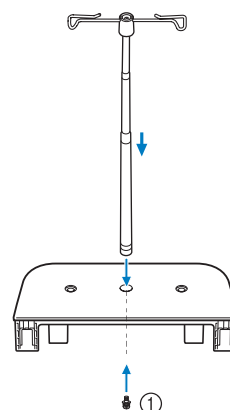
- Do not lift the handle of the machine while the spool stand is installed.
- Do not push or pull the telescopic thread guide or spool pins with extreme force, otherwise damage may result.
- Do not place any object other than spools of thread on the spool support.
- Do not try to wind thread on the bobbin while sewing using the spool stand.

How to Assemble the Spool Stand

- 1 Fully extend the telescopic thread guide shaft, and then rotate the shaft until the two internal stoppers click into place.



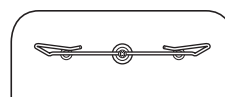
- 2 Insert the telescopic thread guide into the round hole at the center of the spool support, and then use a screwdriver to securely tighten the screw from the reverse side.



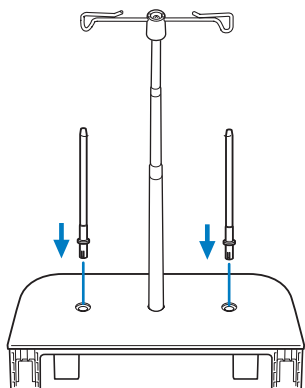
- ① Screw

Note

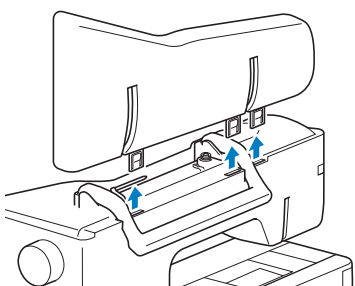
- Make sure that the stoppers on the telescopic thread guide shaft are firmly in place and that the thread guide openings are directly above the two holes for spool pins in the spool support. In addition, check that the shaft is securely tightened in the spool support.



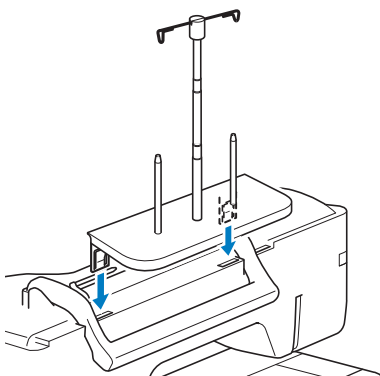
- 3** Firmly insert the two spool pins into the two holes in the spool support.



- 4** Open the upper cover of the machine, and then pull the upper cover up to remove it from the machine.

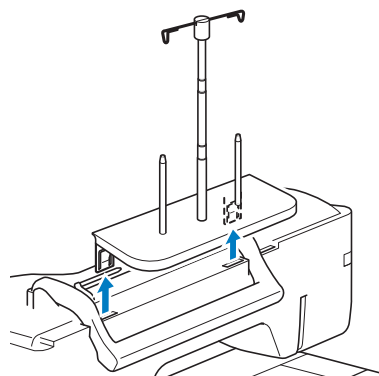


- 5** Insert the spool stand onto the notches of the machine.

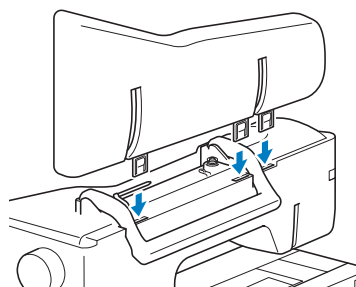


How To Remove

- 1** Pull the spool stand up to remove it from the machine.



- 2** Attach the upper cover to the machine.



TURNING THE MACHINE ON/OFF

⚠ WARNING

- Use only regular household electricity for the power source. Using other power sources may result in fire, electric shock, or damage to the machine.
- Do not touch the plug with wet hands. Electric shock may result.
- Make sure that the plugs on the power cord are firmly inserted into the electrical outlet and the power cord receptacle on the machine. Otherwise, a fire or electric shock may result.
- Turn the main power to OFF and remove the plug in the following circumstances:
 - When you are away from the machine
 - After using the machine
 - When the power fails during use
 - When the machine does not operate correctly due to a bad connection or a disconnection
 - During electrical storms

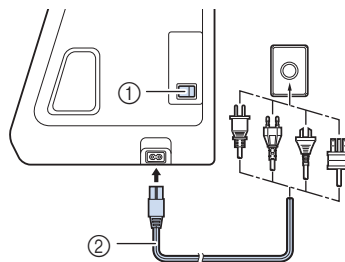
⚠ CAUTION

- Use only the power cord included with this machine.
- Do not use extension cords or multi-plug adapters with many other appliances plugged in to them. Fire or electric shock may result.
- When unplugging the machine, always turn the main power to OFF first. Always grasp the plug to remove it from the outlet. Pulling on the cord may damage the cord, or lead to fire or electric shock.
- Do not allow the power cord to be cut, damaged, modified, forcefully bent, pulled, twisted, or bundled. Do not place heavy objects on the cord. Do not subject the cord to heat. These things may damage the cord, or cause fire or electric shock. If the cord or plug is damaged, take the machine to your authorized Brother dealer for repairs before continuing use.
- Unplug the power cord if the machine is not to be used for a long period of time. Otherwise, a fire may result.

• (For U.S.A only)

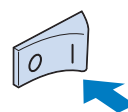
This appliance has a polarized plug (one blade wider than the other). To reduce the risk of electrical shock, this plug is intended to fit in a polarized electrical outlet only one way. If the plug does not fit fully in the electrical outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper electrical outlet. Do not modify the plug in any way.

- 1 Insert the power supply cord into the power cord receptacle, then insert the plug into a wall outlet.



- ① Main power switch
② Power supply cord

- 2 Turn the main power switch to "I" to turn on the machine.

**Memo**

- The light, LCD and the "Start/Stop" button light up when the machine is turned on. The machine will make a sound. This is not a malfunction.

- 3 When the machine is turned on, the opening movie is played. Touch anywhere on the screen.
- 4 Turn the main power switch to "O" to turn off the machine.

■ Setting Your Machine for the First Time

When you first turn on the machine, set the language and time/date to your language and local time/date.

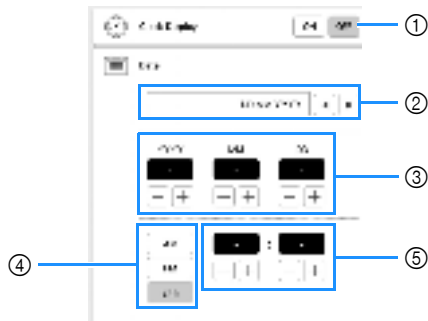
- 1 Touch and to set your local language and then touch .



- 2 Touch to read end-user-license agreement (EULA).

* Read every page. Touch to turn the page.

- 3 The message screen, confirming if you want to set time/date, appears. Touch .
- 4 Touch  or  to set time/date. And then touch .



- ① Select [ON] to display time/date on the screen.
 - ② Touch  or  to select the date display format.
 - ③ Set the year (YYYY), month (MM) and date (DD).
 - ④ Select whether 24h or 12h setting will display.
 - ⑤ Set the current time.
- The clock starts from 0 second of the time you set.

Memo

- The time/date you set may be cleared, if you don't turn on the machine for an extended period of time.

- 5 The following message about a wireless LAN connection appears. To set up a connection, touch , and then refer to steps 3 through 6 in "Using the Wizard to Set Up the Wireless Network Connection" on page 26 to finish setting up a wireless LAN connection.



LCD SCREEN

Touch the LCD screen or a key with your finger or the included touch pen to select a machine function.

IMPORTANT

- Only touch the screen with your finger or the touch pen (stylus) included with the machine. Do not use a mechanical pencil, screwdriver or any other hard or sharp object. In addition, do not press the screen with extreme pressure. Otherwise the screen may be damaged.

Note

- All or part of the screen may sometimes become darker or lighter due to changes in the surrounding temperature or other changes in the environment. This is not a sign of a malfunction. If the screen is difficult to read, adjust its brightness.

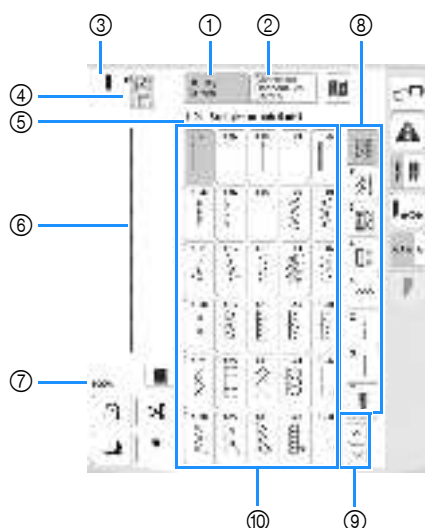
■ Home Page Screen



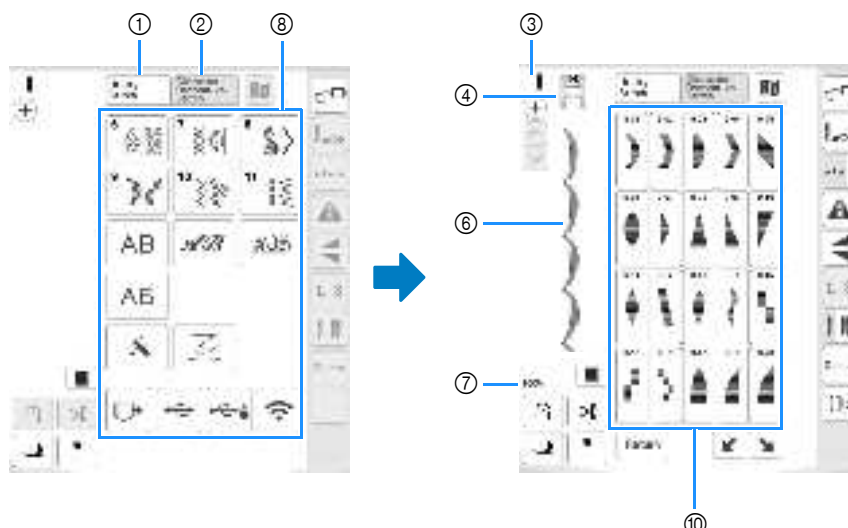
No.	Display	Explanation	Page
	Name		
①		Shows the machine's signal strength. Touch this key to specify the wireless settings. If there is a new update file, the key appears as  .	22, 26
	Wireless LAN key		
②		Change the needle stop position, adjust the pattern or screen, and change other machine settings.	20
	Machine settings key		
③		See explanations on how to use the machine. You can see the tutorial videos and also MP4 movie files that you have saved on USB media.	23
	Machine help key		

No.	Display	Explanation	Page
	Name		
④		Touch this key before changing the needle, the presser foot, etc. This key locks all key and button functions to prevent operation of the machine.	33, 41, 43
	Presser foot/Needle exchange key		
⑤		Lock the screen. When the screen is locked, you can still sew, but cannot change any of the screen functions. Touch this key again to unlock the screen.	—
	Screen lock key		
⑥		Return to the home page screen at any time.	—
	Home page screen key		
⑦		Set the time/date.	14
	Time/Date key		

Utility Stitch Screen

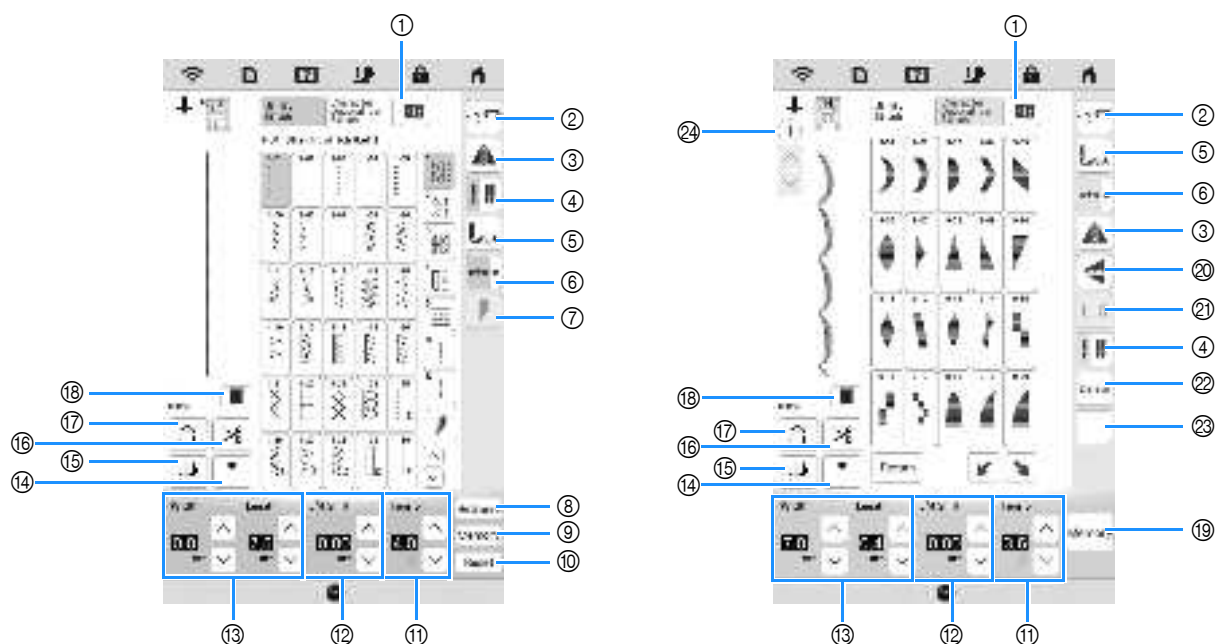


Character/Decorative Stitch Screen



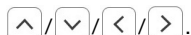
No.	Display	Name	Explanation	Page
①		Utility stitch key	Select a straight stitch, zigzag stitch, buttonhole, blind hem stitch, or other stitch (utility stitch) commonly used in garment making.	45
②		Character/Decorative stitch key	Select character or decorative stitch patterns.	45
③		Needle position setting	Shows single or twin needle mode setting, and the needle stop position. Single needle/down position Twin needle/down position Single needle/up position Twin needle/up position	38, 57
④		Presser foot	Shows the presser foot to be used. Attach the presser foot indicated here before sewing. * The symbols for certain presser feet, such as zipper foot "I", may not appear in the screen. * Advanced monogramming foot "N+" is displayed as "N" on the screen.	43
⑤		Selected stitch display	Shows the name and code number of the selected stitch.	–
⑥		Stitch preview	Shows a preview of the selected stitch. When shown at 100%, the stitch appears in the screen at nearly its actual size.	–
⑦		Stitch pattern display size	Shows the approximate size of the stitch pattern selected. 100%: Nearly the same size as the sewn stitch pattern 50%: 1/2 the size of the sewn stitch pattern 25%: 1/4 the size of the sewn stitch pattern	–
⑧		Category	Select the category of the stitch pattern you want to sew.	45
⑨		Page key	Touch or , to move the pages of stitch selection screen, one page at a time. You can scroll up and down the pages by touching the screen.	–
⑩		Stitch selection screen	Touch the key for the stitch pattern you want to sew.	–

■ Key Functions



Memo

- Some editing functions cannot be used with certain stitch patterns. Only the functions for the displayed keys are available when a stitch pattern is selected.
- The machine default setting is highlighted.

No.	Display	Name	Explanation	Page
①		Image key	Display an enlarged image of the selected stitch pattern. Touch  to change the thread color in the image. To display the enlarged image, touch  . To view any part of the image that extends out of the viewable display area, touch  .	–
②		Free motion mode key	Touch this key to enter free motion sewing mode. The presser foot is raised to an appropriate height and the feed dog is lowered for free motion quilting.	72
③		Horizontal mirror image key	Create a horizontal mirror image of the stitch pattern.	–
④		Needle mode selection key (single/double)	Touch this key to select twin needle mode. The sewing mode changes between single needle mode and twin needle mode each time you touch the key. • If the  key is light gray after selecting the stitch, the selected stitch cannot be sewn in the twin needle mode.	38
⑤		Back to beginning key	When sewing is stopped, touch this key to return to the beginning of the stitch.	–
⑥		Single/Repeat sewing key	Select single stitches or continuous stitches. To finish a complete motif while sewing the stitch pattern continuously, you can touch this key while sewing. The machine will automatically stop when the motif is finished.	105
⑦		Stitch tapering key	Touch this key to change the start and end angles of the stitch pattern.	95
⑧		Retrieve key	Retrieve a saved stitch pattern.	55
⑨		Manual memory key	Change the stitch pattern settings (zigzag width and stitch length, thread tension, etc.), then save them by touching this key. Five sets of settings can be saved for a single stitch pattern.	55
⑩		Reset key	Return the saved settings for the selected stitch pattern to their defaults.	55
⑪		Thread tension key	Shows the automatic thread tension setting of the currently selected stitch pattern. You can use  and  to change the thread tension settings.	54

No.	Display	Name	Explanation	Page
⑫		"L/R Shift" key	Touch  to shift the stitch pattern to the right or touch  to shift the stitch pattern to the left. This feature is not available for all stitch patterns. Only those applicable will be shifted.	54
⑬		Stitch width and stitch length key	Shows the zigzag width and stitch length settings of the currently selected stitch pattern. You can use  and  to adjust the zigzag width and stitch length settings.	53
⑭		Guideline marker key	Display the guideline marker along the sewing line. The guideline marker makes it easier to align stitches with the fabric edge or other marker on the fabric.	56
⑮		Pivot key	Turn on/off the pivot function. When the pivot function is selected, stopping the machine lowers the needle and slightly raises the presser foot automatically. In addition, when sewing is restarted, the presser foot is automatically lowered.	57
⑯		Automatic thread cutting key	Turn on this function to set the machine to automatically sew reinforcement stitches (or reverse stitches, depending on the selected stitch pattern) at the beginning and end of stitching and to trim the threads at the end of stitching.	56
⑰		Automatic reverse/reinforcement stitch key	If you select this setting before sewing, the machine will automatically sew reinforcement stitches at the beginning and end of sewing (depending on the pattern, the machine may sew reverse stitches).	51
⑱		Thread color change key	Change the thread color in the image.	–
⑲		Memory key	Save stitch pattern combinations.	106
⑳		Vertical mirror image key	Create a vertical mirror image of the stitch pattern.	–
㉑		Size selection key	Select the size of the decorative stitch pattern or character stitch pattern (large, small).	–
㉒		Delete key	Delete the selected stitch pattern.	50
㉓	Some of the following keys will appear, depending on the selected stitch pattern.			
		Elongation key	When 7mm satin stitch patterns are selected, you can choose from 5 automatic length settings, without changing the stitch zigzag width or stitch length settings. 	–
		Thread density key	When the satin stitch patterns are selected, you can change the thread density of the stitch pattern.  : Low density  : High density	–
		Character spacing key	Change the spacing of character stitch patterns. The setting is applied to all entered characters.	–
㉔		Add stitch pattern key	Touch this key when you want to combine decorative stitch patterns and/or character stitch patterns.	50

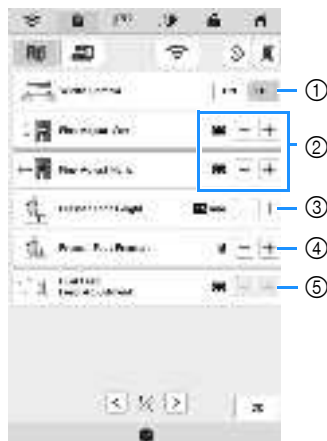
Using the Machine Settings Key

Touch  to change the default machine settings (needle stop position, opening display, etc.). To display the different settings screens, touch  for "Sewing settings",  for "General settings" or  for "Wireless LAN settings".

Memo

- Touch  or  to display a different settings screen.

■ Sewing Settings



- ① Select whether to use the sewing speed controller to determine the zigzag width (page 71). When a straight stitch is selected, the sewing speed controller can be used to change the needle position.
- ② Make adjustments to character or decorative stitch patterns (page 104).
- ③ Adjust the presser foot height. Select the height of the presser foot when the presser foot is raised.
- ④ Adjust the presser foot pressure. The higher the number, the greater the pressure will be. Set the pressure at [3] for normal sewing.
- ⑤ Adjust the amount of fabric feeding of the compact dual feed foot (page 99).
- ⑥ Select whether [1-01 Straight stitch (Left)] or [1-03 Straight stitch (Middle)] is the utility stitch that is automatically selected when the machine is turned on.
- ⑦ Select whether utility stitches  or quilting stitches  are displayed first in the stitch selection screen.
- ⑧ You can activate this setting after connecting the multi-function foot controller (Included with Some Models). (These settings appear when the multi-function foot controller is connected to the machine.) (page 47)
- ⑨ Select the height of the presser foot when sewing is stopped when the pivot setting is selected (page 57).
- ⑩ Select the height of the presser foot when the machine is set to free motion sewing mode (page 72).
- ⑪ When set to [ON], the thickness of the fabric is automatically detected by an internal sensor while sewing. This enables the fabric to be fed smoothly. (page 58, page 61)
- ⑫ When set to [ON], reinforcement stitches are sewn at the beginning and/or end of sewing for a reinforcement stitch pattern, even when  (Reverse stitch button) is pressed (page 51).
- ⑬ Adjust the guideline marker position and brightness (page 57).
- ⑭ Select whether to lower the presser foot automatically before starting sewing. (page 53)
- ⑮ Select whether to raise the presser foot automatically when stopping sewing. (page 53)
- ⑯ Select whether touching  (Thread cutter button) automatically lowers the presser foot before cutting the thread. The presser foot will be raised after the thread is cut. (page 53)
- ⑰ You can save the current settings screen image in a USB media by touching this key when the USB media is inserted into the USB port. The files are saved in a folder labeled [bPocket].
- ⑱ Reset settings on this page to original default. Some settings are not reset.

■ General Settings

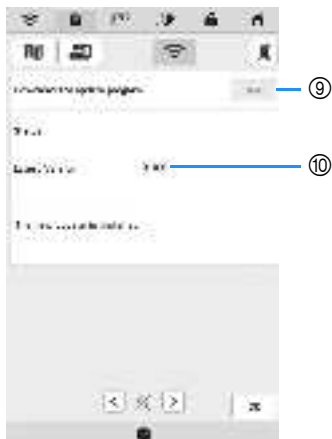


- ① Select the needle stop position (the needle position when the machine is not operating) to be up or down.
- ② Select the operation of the [Needle Position - Stitch Placement] to [ON] or [OFF]. (page 58)
- ③ Select the shape of the pointer when a USB mouse is used.
- ④ Turn both the upper and bobbin thread sensors [ON] or [OFF]. If it is turned [OFF], the machine can be used without thread.
- ⑤ Select the speaker volume. Increase the number for louder volume, decrease for softer volume.
- ⑥ Select the brightness of the work area lights.
- ⑦ Select the screen display brightness.
- ⑧ Adjust the stitch regulator warnings volume. (page 94)
- ⑨ Set the [Eco Mode] and the [Shutoff Support Mode] to save the machine power (page 22).
- ⑩ Select the length of time until the screen saver appears.
- ⑪ Select the image of the screen saver (page 22).
- ⑫ Select the initial screen that is displayed when the machine is turned on.
- ⑬ Select the display language.
- ⑭ Shows the service count which is a reminder to take your machine in for regular servicing. (Contact your authorized Brother dealer for details.)
- ⑮ Shows the total number of stitches sewn on this machine.
- ⑯ Shows the internal machine number for this machine.
- ⑰ Shows the program version.
- ⑱ Erase all saved data, customized settings and network information in the machine.

IMPORTANT

- When [Upper and Bobbin Thread Sensor] is set to [OFF], the machine cannot detect tangled upper thread. Continuing to use the machine with tangled thread may cause damage.

■ Wireless LAN Settings



- ① Enable/Disable the wireless LAN function (page 26).
- ② Shows the connected SSID.
- ③ Set the machine to connect wireless LAN function.
- ④ Shows the machine name.
- ⑤ Change the machine name.
- ⑥ Check the wireless LAN status.
- ⑦ Display other menus.
- ⑧ Reset network operations.
- ⑨ If there is a new update program, download the update file. (page 124)
- ⑩ Display update program information. (page 124)

■ Setting the [Eco Mode] and the [Shutoff Support Mode]

You can save the machine power by setting the [Eco Mode] and the [Shutoff Support Mode].
If you leave the machine turned on without using it for the set period of time, the machine enters in each mode.

Touch  to display [Eco Mode] and [Shutoff Support Mode]. (page 21)

[Eco Mode];

Machine will enter a sleep mode after the set period of time. Touch the screen or press the "Start/Stop" button to continue operating.

[Shutoff Support Mode];

Machine will enter the lower power mode after the set period of time. Turn the machine off and then back on to restart operating.

Memo

- If you turn off the machine while the machine is in the [Eco Mode] or the [Shutoff Support Mode], wait for about 5 seconds before turning on the machine again.
- For details on condition of the [Eco Mode] and [Shutoff Support Mode], refer to "SPECIFICATIONS" on page 123.

■ Changing the Screen Saver Image

Instead of the default image, you can select your own personal images for the screen saver of your machine. Before changing the screen saver image, prepare the image on USB media. For details on compatible image files, refer to "SPECIFICATIONS" on page 123.

- 1 Touch .

→ The settings screen appears.

- 2 Touch .

→ The general settings screen appears.

- 3 Display [Screen Saver] in the general settings screen.



- 4 Touch .

- 5 Touch .



- 6 Connect the USB media that contains your personal image to the USB port of the machine.

- 7 Touch  to select the first image.



8 Select the device that is connected.



→ A list of your personal images appears on the screen.

* : Delete the selected image.

* : Return to the previous page.

9 Select a file name and then touch .



→ The selected image is stored on your machine.

* : Return to the previous page.

10 Repeat steps 7 through 9 to set the remaining images.

11 Touch to return to the original screen.

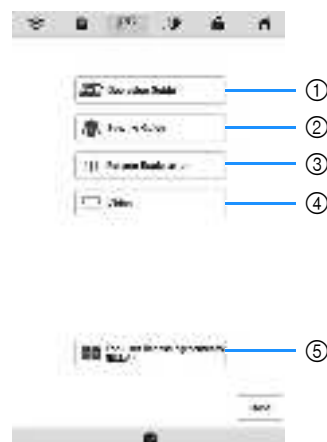
Memo

- Touch [Default] to select default images for the screen saver.



Using the Machine Help

Touch to display the machine help screen. Functions are available from the screen shown below.



- ① Explanation for upper threading, winding the bobbin and how to use the machine (page 24)
- ② Procedures for sewing utility stitches (page 24)
- ③ Explanation of the stitch selected
- ④ Tutorial videos or MPEG-4 (MP4) videos (page 24, page 25)
- ⑤ End-user license agreements (EULA)

■ Using the Operation Guide Function

Touch  to display the screen shown below. Categories are displayed at the top of the screen. Touch a key to see more information about that category. Some of the functions are described in the movies. Watch these movies for a better understanding of the functions.



- ① Information about the main parts of the machine and their functions
- ② Information about the operation buttons
- ③ Information about threading the machine, changing presser feet, etc.
- ④ Information about troubleshooting
- ⑤ Information about cleaning the machine, etc.

■ Using the Sewing Guide Function

Use this function when you are not sure which stitch to use for your application, or to get advice about sewing particular stitches.

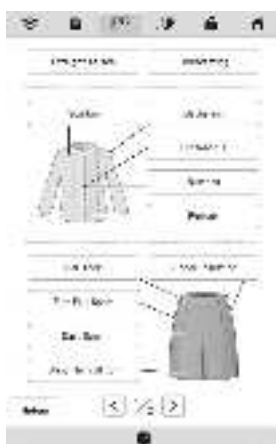
1 Enter Utility Stitch category.

2 Touch .

3 Touch .

→ The advice screen is displayed.

4 Touch the key of the category whose sewing instructions you wish to view.



5 Read the explanations and select the appropriate stitch.

→ The screen displays directions for sewing the selected stitch. Follow the directions to sew the stitch.

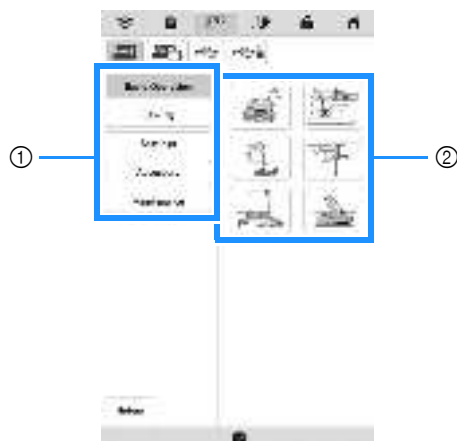
■ Playing a Tutorial Video

This machine provides tutorial videos on how to use the machine.

1 Touch .

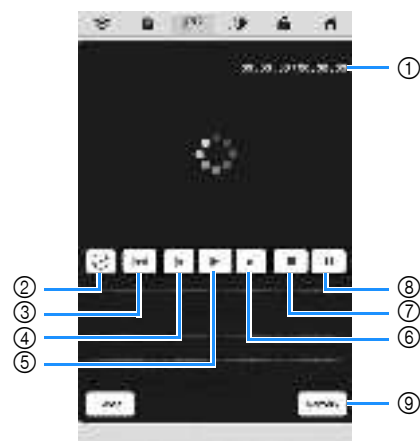
2 Touch .

3 Select the category and the tutorial video.



- ① Category
- ② Tutorial video

4 Play the tutorial video.



- ① Number of seconds elapsed/Total number of seconds
- ② Repeat
- ③ Return to beginning
- ④ Skip back 10 seconds
- ⑤ Play
- ⑥ Skip forward 10 seconds
- ⑦ Stop
- ⑧ Pause
- ⑨ Save to machine (when playing from USB media).

A video can be saved to  (favorites) of the machine, from where it can be played. When playing from the machine's memory,  changes to .

Touch  to delete the video.

Note

- The specifications shown in the movie may differ from the ones on the actual product, in details.
- The movie includes optional parts not included with this product.

5 After you are finished playing the video, touch .

■ Playing MPEG-4 (MP4) Videos

Your MP4 videos can be played from USB media. In addition, the MP4 video can be saved to the machine so that a tutorial video on creating a project, for example, can be viewed at any time. For details on supported file extensions, refer to "SPECIFICATIONS" on page 123.

Memo

- Some types of MP4 file cannot be played with the machine.

- 1 Touch .
- 2 Touch .
- 3 Select the device where the video is saved.



- ① Tutorial videos
- ② Videos saved on the machine (favorites)
- ③ Videos from USB media plugged into the USB port
- ④ Videos from USB media plugged into the USB port for mouse

- 4 Select the video that you want to play.



Note

- Long file names may be shortened when they are displayed.

- 5 Play the video.
 - * Use the operation keys as described in "Playing a Tutorial Video" on page 24.
- 6 After you are finished playing the video, touch .

Using the Stitch Pattern Explanation Function

If you want to know more about the uses of a stitch pattern, select the pattern and touch  and then

 to see an explanation of the stitch selection.

Example: Displaying information about .

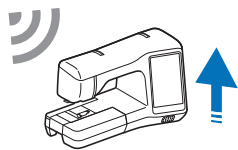
- 1 Touch .
- 2 Touch .
- 3 Touch .
 - The screen shows information.
- 4 Touch  to return to the original screen.

WIRELESS NETWORK CONNECTION FUNCTIONS

Operations Available with a Wireless Network Connection

This machine supports a wireless network connection. The following useful operations will be available if the machine is connected to a wireless network.

- **For updating**
Directly download the update file to the machine. (page 124)
When an updated version of the software is available on our website, the wireless LAN key appears as  (page 124)



Enabling a Wireless Network Connection

The machine can be connected to your wireless network. Refer to “SPECIFICATIONS” on page 123 for requirements for a wireless network connection.

- 1 Touch .
- 2 Set [Wireless LAN Enable] to [ON].



→ The machine begins to emit the wireless network signal.

Using the Wizard to Set Up the Wireless Network Connection

There are multiple ways to set up the wireless network connection. We recommend the method that uses the wizard on this machine.

- 1 In order to connect your machine to a wireless network, the security information (SSID and network key) for your home network will be required. The network key may also be called a password, security key or encryption key. First, find your security information and note it.

SSID	Network Key (Password)

Memo

- The wireless network connection cannot be set up if you do not have the security information.
- How to find the security information
 - ① Check the manual provided with your home network.
 - ② The default SSID may be the manufacturer's name or the model name.
 - ③ If you cannot find the security information, contact the manufacturer of the router, your network administrator or your Internet provider.
 - ④ Some SSIDs and network keys (passwords) are case (upper case and lower case) sensitive. Please properly record your information.

- 2 Touch  beside [Wireless LAN Setup Wizard].



→ A list of available SSIDs appears.

- 3 Touch > beside the SSID that was noted.

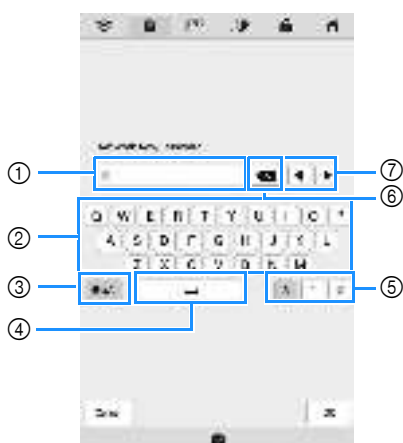


→ The screen for entering the network key (password) appears.

Memo

- If the SSID that was noted does not appear in the list, touch [New SSID].
- If the desired network SSID is not displayed, specify it as described below.
 - ① Select [New SSID].
 - ② Enter the desired network SSID, and then touch [OK].
 - ③ Select the authentication method and encryption mode.
- If the machine had already been connected to the home network, touch [Select SSID], and then select the saved SSID.

- 4 Enter the network key (password) that was noted, and then touch [OK].

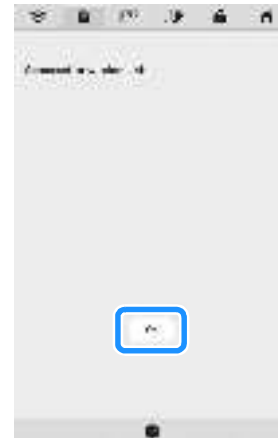


- ① Text input area
- ② Character keys
- ③ Caps key
- ④ Space key
- ⑤ Letters/numbers/symbols key
- ⑥ Backspace key (Deletes the character at the cursor's position.)
- ⑦ Cursor keys (Move the cursor to the left or right.)

- 5 When the following message appears, touch [OK].



→ When a connection is established, the following message appears.



- 6 Touch [Exit] to exit the setup.

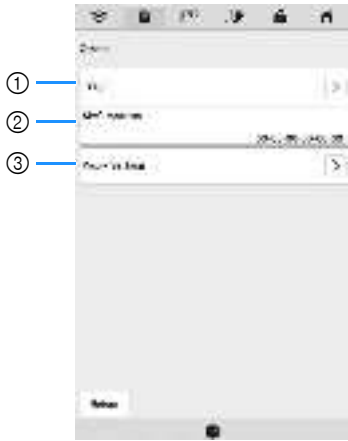


Memo

- While connected, the signal strength is indicated by the icon in the upper-left corner of the display.
- Once a wireless network connection has been set up, a connection will be established each time the machine is turned on. However, [Wireless LAN Enable] in the network settings screen must remain set to [ON].

■ Using the [Others] Menu To Set Up the Wireless Network Connection

The [Others] menu contains the following items.



- ① TCP/IP settings can be manually entered.
- ② Shows the MAC address.
- ③ Use when proxy settings are required.

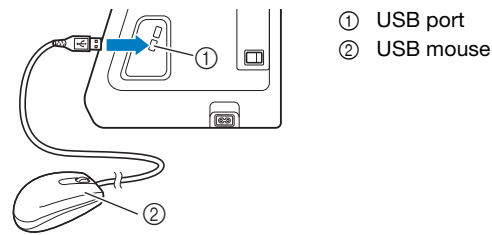
CONNECTING THE ACCESSORY TO THE MACHINE

Using a USB Mouse

A USB mouse, connected to the machine, can be used to perform a variety of operations in the screens. Connect a USB mouse to the USB port.

Memo

- Use a basic computer mouse to operate the machine functions. Some USB mouse devices may not be compatible with this machine.



Note

- The left mouse button can be used to perform operations such as choosing a design and choosing menu keys.
- The mouse pointer does not appear in the screen saver or opening screen.

■ Clicking a Key

When the mouse is connected, the pointer appears on the screen. Move the mouse to position the pointer over the desired key, and then click the left mouse button.

Memo

- Double-clicking has no effect.



- ① Pointer

WINDING/INSTALLING THE BOBBIN

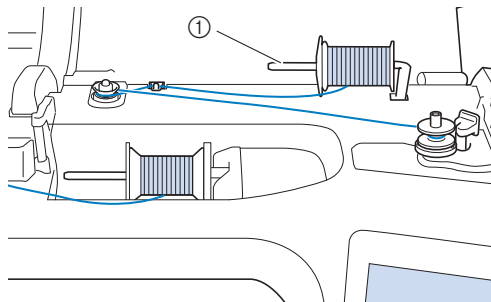
Winding the Bobbin

IMPORTANT

- Use the plastic bobbins that came with this machine or bobbins of the same type: 11.5 mm (approx. 7/16 inch) plastic Class 15 (A style) bobbins, which are available from your Brother dealer.

■ Using the Supplemental Spool Pin

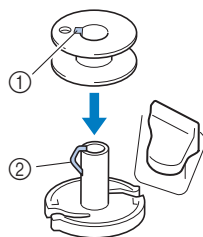
With this machine, you can wind the bobbin during sewing. While using the main spool pin for sewing, you can conveniently wind the bobbin using the supplemental spool pin.



① Supplemental spool pin

- 1 Turn the main power to ON and open the top cover.

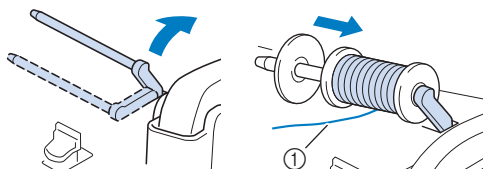
- 2 Align the groove in the bobbin with the spring on the bobbin winder shaft, and set the bobbin on the shaft.



- ① Groove in the bobbin
- ② Spring on the bobbin winder shaft

- 3 Place the spool of thread for the bobbin and the spool cap onto the supplemental spool pin.

Slide the spool onto the supplemental spool pin so that the thread unwinds to the front from the bottom. Otherwise the thread may become tangled around the supplemental spool pin.



- ① The thread unwinds to the front from the bottom.

- 4 Slide the spool cap onto the spool pin as far as possible to the right, with the rounded side on the left.

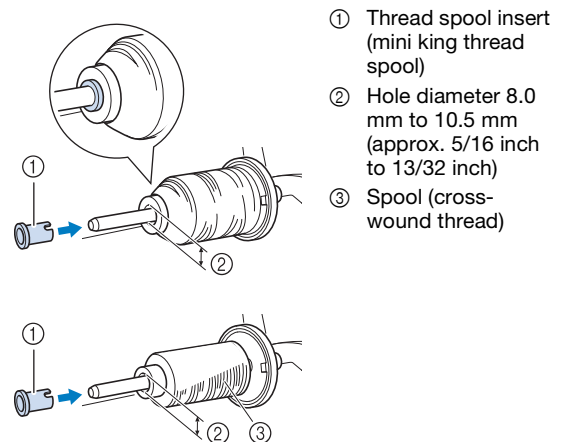
IMPORTANT

- If the spool or the spool cap is not installed correctly, the thread may become tangled around the spool pin, and the machine may be damaged.
- Three spool cap sizes are available, allowing you to choose a spool cap that best fits the size of spool being used. If the spool cap is too small for the spool being used, the thread may catch on the slit in the spool or the machine may be damaged. When using mini king thread spool, use the thread spool insert. For details on thread spool insert (mini king thread spool), refer to "Note" on page 29.

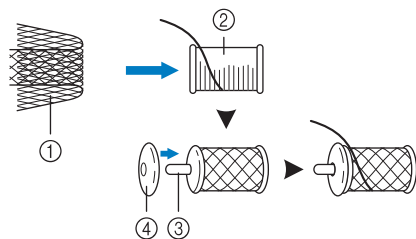


Note

- When using the spool as shown below, use the thread spool insert (mini king thread spool). Make sure that the thread spool insert is firmly inserted. After installing it, pull out some thread, and check that the thread unwinds without getting caught.



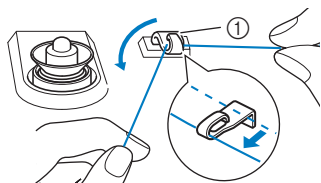
- When using thread that winds off quickly, such as transparent nylon thread or metallic thread, place the spool net over the spool before placing the spool of thread onto the spool pin. If the spool net is too long, fold it to fit the size of the spool.



- ① Spool net
- ② Thread spool
- ③ Spool pin
- ④ Spool cap

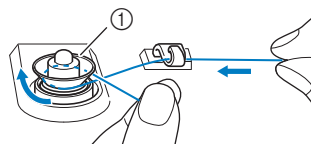
- * When threading the spool with the spool net on, make sure that 5-6cm (approx. 2 - 2-1/2 inches) of thread is pulled out.
- * It may be necessary to adjust the thread tension when using the spool net.

- 5** With your right hand, hold the thread near the thread spool. With your left hand, hold the end of the thread, and use both hands to pass the thread through the thread guide.



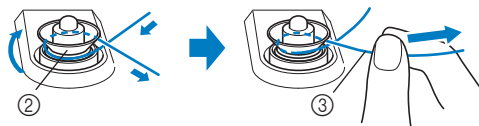
- ① Thread guide

- 6** Pass the thread around the pretension disk making sure that the thread is under the pretension disk.



- ① Pretension disk

→ Make sure that the thread passes under the pretension disk.

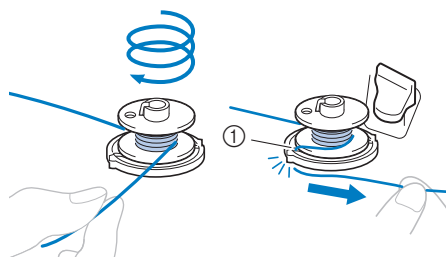


- ② Pretension disk

- ③ Pull it in as far as possible.

→ Check to make sure thread is securely set between pretension disks.

- 7** Wind the thread clockwise around the bobbin 5 or 6 times, pass the thread through the guide slit in the bobbin winder seat, and then pull the thread to cut it.



- ① Guide slit in bobbin winder seat (with built-in cutter)

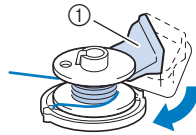
Note

- Be sure to wind the thread clockwise around the bobbin, otherwise the thread may become wrapped around the bobbin winder shaft.

CAUTION

- Be sure to cut the thread as described. If the bobbin is wound without cutting the thread using the cutter built into the guide slit in the bobbin winder seat, the thread may become tangled in the bobbin or the needle may break and cause injury when the bobbin thread starts to run out.

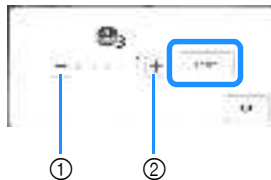
- 8 Set the bobbin winding switch to the left, until it clicks into place.



① Bobbin winding switch

→ The bobbin winding window appears.

- 9 Touch .



① Touch to decrease the winding speed.

② Touch to increase the winding speed.

→ Bobbin winding starts. changes to while the bobbin is winding. The bobbin stops rotating when bobbin winding is completed. The bobbin winding switch will automatically return to its original position.

Memo

- Touch to minimize the bobbin winding window. Then, you can perform other operations, such as selecting a stitch or adjusting the thread tension, while the bobbin is being wound.

- Touch (in top right of the LCD screen) to display the bobbin winding window again.



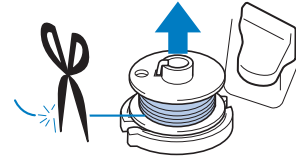
- The sound of winding the bobbin with stiff thread, such as nylon thread for quilting, may be different from the one produced when winding normal thread; however, this is not a sign of a malfunction.

IMPORTANT

- When winding transparent nylon thread on the bobbin, stop bobbin winding when the bobbin is 1/2 to 2/3 full. If the bobbin was fully wound with transparent nylon thread, it may not be wound neatly, or sewing performance may suffer. In addition, extreme pressure may be applied to the bobbin, it may not be possible to remove the bobbin from the bobbin winder shaft, or the bobbin may break.



- 10 After bobbin winding is finished, cut the thread with scissors and remove the bobbin.

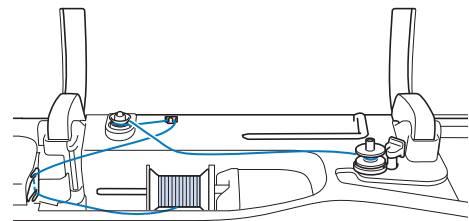


IMPORTANT

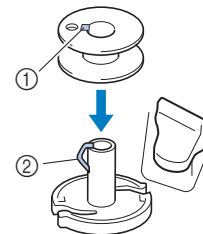
- When removing the bobbin, do not pull on the bobbin winder seat. Doing so could loosen or remove the bobbin winder seat, and could result in damage to the machine.

Using the Spool Pin

You can use the main spool pin to wind the bobbin before sewing. You cannot use this spool pin to wind the bobbin while sewing.



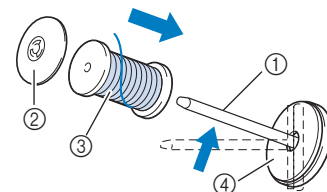
- 1 Turn the main power to ON and open the top cover.
- 2 Align the groove in the bobbin with the spring on the bobbin winder shaft, and set the bobbin on the shaft.



- ① Groove in the bobbin
- ② Spring on the bobbin winder shaft

- 3 Remove the spool cap and place the spool of thread for the bobbin onto the spool pin.

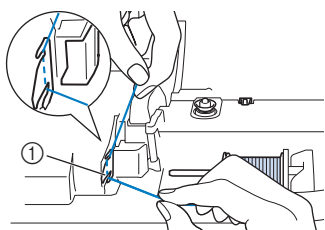
Slide the spool onto the spool pin so that the thread unwinds to the front from the bottom.



- ① Spool pin
- ② Spool cap
- ③ Spool of thread
- ④ Spool felt

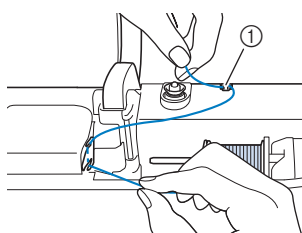
- 4** Slide the spool cap onto the spool pin as far as possible to the right, with the rounded side on the left.

- 5** While holding the thread with both hands, pass the thread through grooves of the thread guide plate.



① Thread guide plate

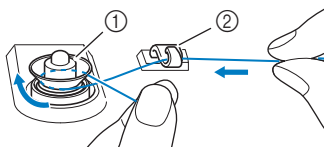
- 6** Pass the thread through the thread guide.



① Thread guide

- 7** Pass the thread around the pretension disk making sure that the thread is under the pretension disk.

Pull the thread as far as possible.



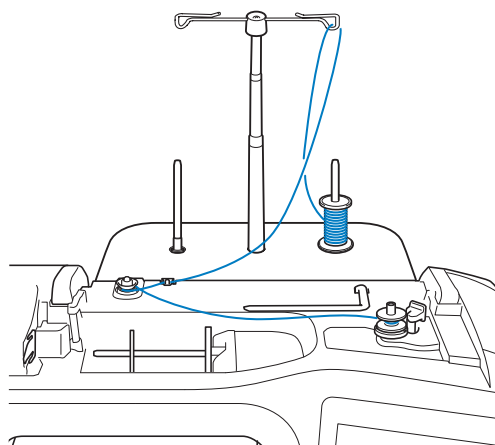
① Pretension disk

② Thread guide

- 8** Follow steps **7** through **10** on page 30 through page 31.

■ Using the Spool Stand

To wind thread on the bobbin while the spool stand is installed, pass the thread from the spool through the thread guide on the telescopic thread guide, and then wind the bobbin according to steps **5** through **10** of “Using the Supplemental Spool Pin” on page 30 to page 31.



IMPORTANT

- When winding thread on the bobbin, do not cross the bobbin winding thread with the upper thread in the thread guides.

Setting the Bobbin

⚠ CAUTION

- Use a bobbin that has been correctly wound with thread, otherwise the thread tension may be incorrect and the needle may break, causing injuries.

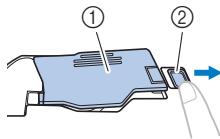


- Before inserting or changing the bobbin, be sure to touch  in the LCD to lock all keys and buttons. Otherwise injuries may occur if the "Start/Stop" button or any other button is pressed and the machine starts sewing.

- 1 Touch  to lock all keys and buttons and raise the presser foot.

* If the message [OK to automatically lower the presser foot?] appears on the LCD screen, touch  to continue.

- 2 Slide the bobbin cover latch to the right.

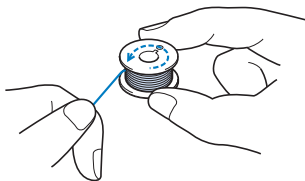


- ① Bobbin cover
② Latch

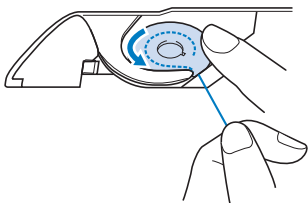
→ The bobbin cover opens.

- 3 Remove the bobbin cover.

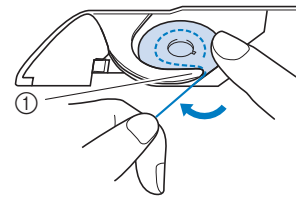
- 4 Hold the bobbin with your right hand and hold the end of the thread with your left hand.



- 5 Set the bobbin in the bobbin case so that the thread unwinds to the left.



- 6 Lightly hold down the bobbin with your right hand, and then guide the end of the thread around the tab of the needle plate with your left hand.

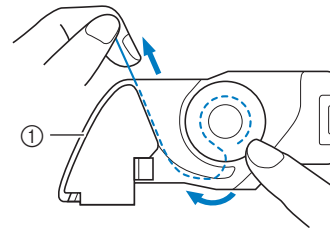


- ① Tab

Note

- Be sure to hold down the bobbin with your finger and unwind the bobbin thread correctly, otherwise the thread may break or the thread tension will be incorrect.

- 7 While lightly holding down the bobbin with your right hand, guide the thread through the slit in the needle plate and lightly pull it with your left hand.

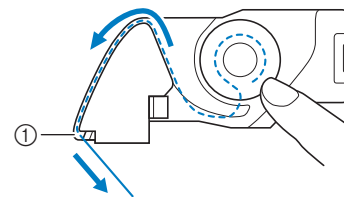


- ① Slit

Memo

- By pulling the thread in this way, the thread will enter the tension spring of the bobbin case to apply the appropriate tension to the bobbin thread during sewing.

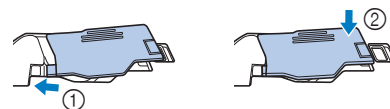
- 8 While lightly holding down the bobbin with your right hand, continue guiding the thread through the slit with your left hand. Then, cut the thread with the cutter.



- ① Cutter

→ The cutter cuts the thread.

- 9 Insert the tab in the lower-left corner of the bobbin cover (①), and then lightly press down on the right side to close the cover (②).



- 10** Touch  to unlock all keys and buttons.

Memo

- You can begin sewing without pulling up the bobbin thread. If you wish to pull up the bobbin thread before starting to sew, pull up the thread according to the procedure in “Pulling Up the Bobbin Thread” on page 34.

Pulling Up the Bobbin Thread

There may be some sewing applications where you want to pull up the bobbin thread; for example, when making gathers, darts or doing free motion quilting.

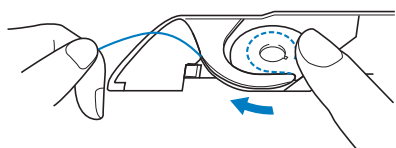
Memo

- You can pull up the bobbin thread after threading the upper thread (“UPPER THREADING” on page 35).

- 1** Follow steps **1** to **5** in “Setting the Bobbin” on page 33 for installing the bobbin into the bobbin case.

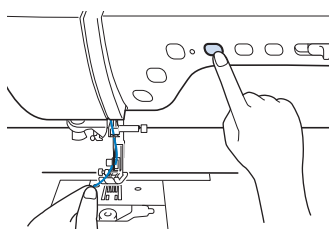
- 2** Guide the bobbin thread through the groove, following the arrow in the illustration.

- * Do not cut the thread with the cutter.
- * Do not replace the bobbin cover.

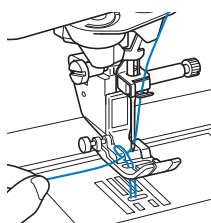


- 3** Touch  to unlock all keys and buttons.

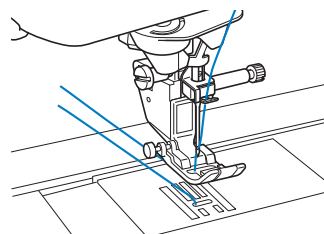
- 4** While lightly holding the upper thread with your left hand, press  (Needle position button) twice to lower and then raise the needle.



- 5** Gently pull the upper thread. A loop of the bobbin thread will come out of the hole in the needle plate.



- 6** Pull up the bobbin thread, pass it under the presser foot and pull it about 10 cm (approx. 4 inches) toward the back of the machine, making it even with the upper thread.



- 7** Reattach the bobbin cover.

UPPER THREADING

Upper Threading

⚠ CAUTION

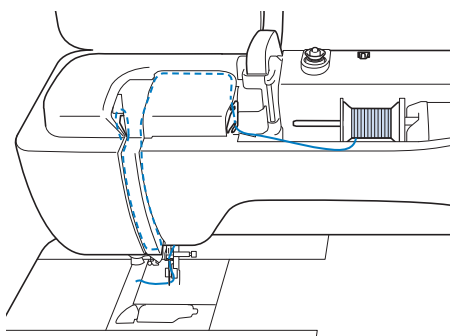
- Be sure to thread the machine properly. Improper threading can cause the thread to tangle and break the needle, leading to injury.

IMPORTANT

- Never use a thread weight of 20 or lower. It may cause the machine to malfunction. Use the needle and the thread in the correct combination. For details on the correct combination of needles and threads, refer to "FABRIC/THREAD/NEEDLE COMBINATIONS" on page 42.
- When using 65/09 needle, manually thread the needle. If the automatic needle threading function is used, the unit may be damaged.

Memo

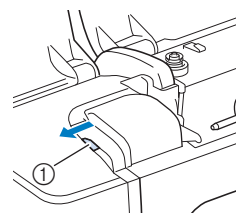
- The automatic threading function can be used with home sewing machine needle sizes 75/11 through 100/16.
- When threads such as transparent nylon monofilament or specialty threads are used, it is not recommended to use the needle threader.
- The automatic threading function cannot be used with the twin needle.



- 1 Turn the main power to ON.

- 2 Press  (Presser foot lifter button) to raise the presser foot.

→ The upper thread shutter opens so the machine can be threaded.



① Upper thread shutter

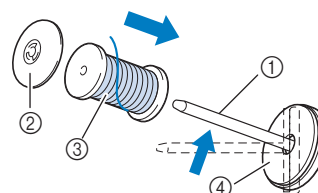
- 3 Press  (Needle position button) to raise the needle.

IMPORTANT

- Be sure to raise the needle before using the automatic needle threader. Otherwise, the needle may not thread correctly and the needle threader may be damaged.

- 4 Remove the spool cap and place the spool of thread onto the spool pin.

Slide the spool onto the spool pin so that the thread unwinds to the front from the bottom.

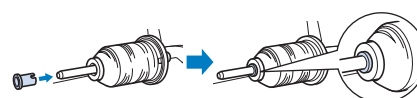


- ① Spool pin
- ② Spool cap
- ③ Spool of thread
- ④ Spool felt

- 5 Slide the spool cap onto the spool pin as far as possible to the right, with the rounded side on the left.

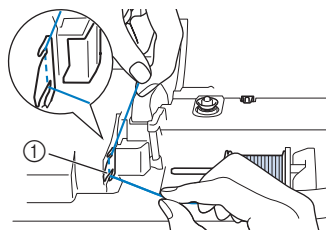
⚠ CAUTION

- Choose a spool cap that best fits the size of spool being used. For more information, refer to "Note" on page 29.



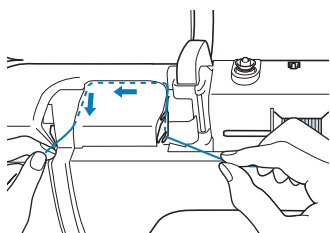
- If the spool or the spool cap is not positioned correctly, the thread may become tangled around the spool pin, possibly causing the needle to break, resulting in injuries.

- 6** While holding the thread with both hands, pass the thread through grooves of the thread guide plate.

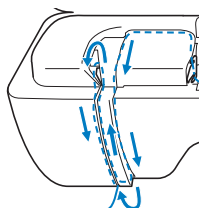


① Thread guide plate

- 7** While holding the thread in your right hand, pass the thread through the thread guide in the direction indicated.

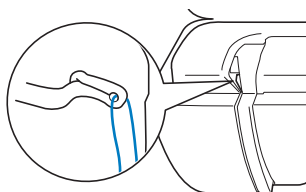


- 8** Guide the thread down, up, then down through the groove, as shown in the illustration.

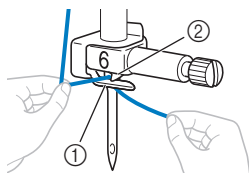


Memo

- Look in the upper groove area to check if the thread catches on the thread take-up lever visible inside the upper groove area.

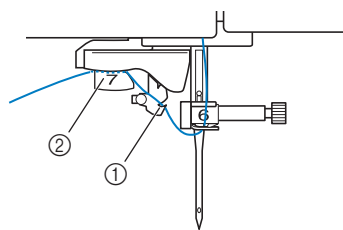


- 9** Pass the thread through the needle bar thread guide (marked "6") by holding the thread with both hands and guiding it as shown in the illustration.



① Needle bar thread guide
② Tab

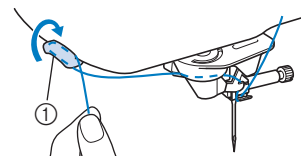
- 10** Pass the thread through the notch in the thread guide. Then firmly pull the thread from front to back into the slit of the thread guide disk (marked "7").



① Notch in thread guide
② Thread guide disk

- 11** Press  (Presser foot lifter button) to lower presser foot.

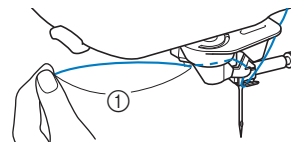
- 12** Pull the thread up through the thread cutter to cut the thread, as shown in the illustration.



① Thread cutter

Note

- When using thread that quickly winds off the spool, such as metallic thread, it may be difficult to thread the needle if the thread is cut. Therefore, instead of using the thread cutter, pull out about 8 cm (approx. 3 inches) of thread after passing it through the thread guide disks (marked "7").



① About 8 cm (approx. 3 inches) or more

- 13** Press  (Automatic threading button) to have the machine automatically thread the needle.

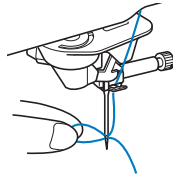
→ The thread passes through the eye of the needle.

Memo

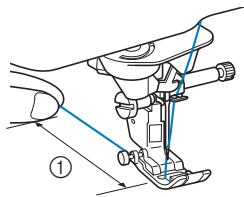
- When  (Automatic threading button) is pressed, the presser foot will be automatically lowered. After threading is finished, the presser foot moves back to the position before  (Automatic threading button) was pressed.

14 Carefully pull the end of the thread that was passed through the eye of the needle.

- * If a loop was formed in the thread passed through the eye of the needle, carefully pull on the loop of thread through to the back of the needle.



15 Raise the presser foot lever and pull out about 10 cm (approx. 4 inches) of the thread, and then pass it under the presser foot toward the rear of the machine.



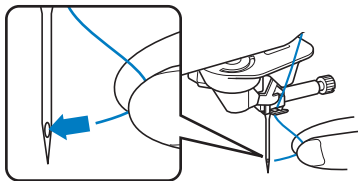
① About 10 cm (approx. 4 inches)

Memo

- If the needle could not be threaded or the thread was not passed through the needle bar thread guides, perform the procedure again starting from step ③.

Note

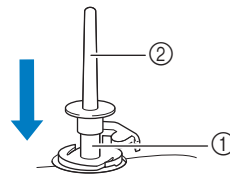
- Some needles and threads cannot be threaded with the needle threader. In this case, instead of using the needle threader after passing the thread through the needle bar thread guide (marked "6"), manually pass the thread through the eye of the needle from the front.



Using the Vertical Spool Pin

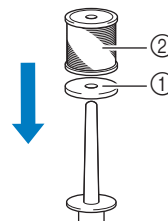
Use the vertical spool pin when using an irregularly shaped thread spool, and when sewing with metallic thread.

1 Insert the vertical spool pin onto the bobbin winder shaft.



① Bobbin winder shaft
② Vertical spool pin

2 Install the spool felt and the thread spool in that order, and then thread the upper thread.



① Spool felt
② Thread spool

Memo

- When setting the thread spool, set it so that the thread winds off from the front of the spool.
- If using metallic thread, we recommend that you use a 90/14 home sewing machine needle.
- This method keeps the thread from twisting as it comes off the spool pin.

Using the Twin Needle Mode

The twin needle can only be used for stitch patterns that show

 after being selected. Before you select a stitch pattern, make sure the stitch can be sewn in the twin needle mode (refer to the "STITCH SETTING CHART" on page 125).

CAUTION

- When using the twin needle, it is recommended to use presser foot "J". Otherwise, the needle may break and cause injury.
- Before changing the needle or threading the machine, be sure to touch  on the LCD screen to lock all keys and buttons, otherwise injuries may occur if the "Start/Stop" button or any other button is pressed and the machine starts sewing.

IMPORTANT

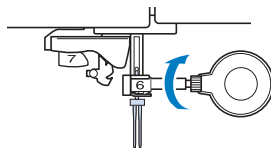
- Twin needle (size 2/11) is recommended for this machine. Contact your authorized Brother dealer for replacement needles.

Note

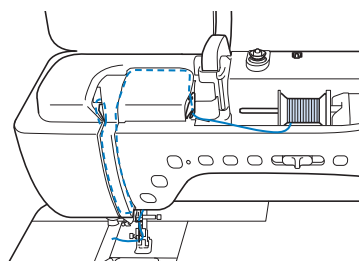
- When the twin needle is used, bunched stitches may occur depending on the types of fabric and thread that are used. Use advanced monogramming foot "N+" or attach stabilizer material.

- 1 Touch  to lock all keys and buttons and then install the twin needle ("CHANGING THE NEEDLE" on page 41).

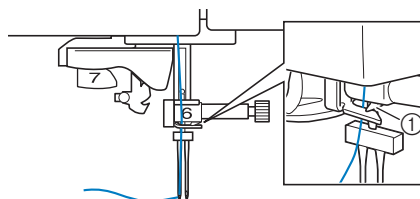
- * If the message [OK to automatically lower the presser foot?] appears on the LCD screen, touch  to continue.



- 2 Thread the machine for the first needle according to the procedure for threading a single needle ("Upper Threading" on page 35).



- 3 Pass the thread through the needle bar thread guides on the needle bar, then thread the needle on the left side manually.

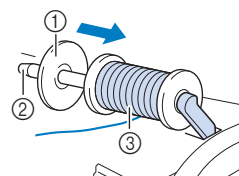


① Needle bar thread guide

IMPORTANT

-  (Automatic threading button) cannot be used. Manually thread the twin needle from front to back. Using  (Automatic threading button) may result in damage to the machine.

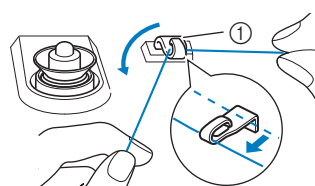
- 4 Pull up the supplemental spool pin and set it in the up position. Place the additional spool of thread on the supplemental spool pin, so that the thread unwinds from the front. Push the spool cap onto the spool pin as far as possible to secure the thread spool.



- ① Spool cap
- ② Spool pin
- ③ Spool of thread

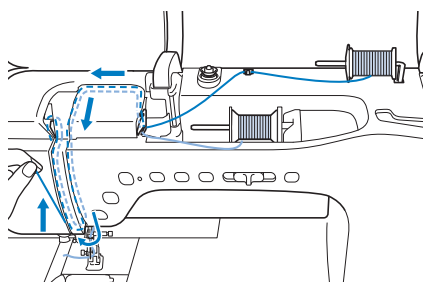
- 5 Hold the thread from the spool with both hands, and place the thread in the thread guide.

- * Do not place the thread in the pretension disks.

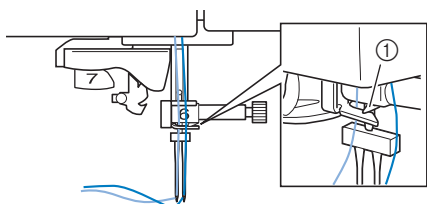


① Thread guide

- 6** While holding the thread from the spool, pull the thread through the lower notch in the thread guide plate, then through the upper notch. Hold the end of the thread with your left hand, and then guide the thread through the groove, following the arrows in the illustration.



- 7** Continue threading; however, do not pass the thread in the needle bar thread guide "6" on the needle bar. Thread the needle on the right side.



① Needle bar thread guide

- 8** Touch  to unlock all keys and buttons.

- 9** Select a stitch pattern.

- * Refer to "Basic Sewing" on page 45 for selecting a stitch pattern.
- * Refer to "STITCH SETTING CHART" on page 125 for the proper stitch to use with presser foot "J".

- 10** Touch  to select the twin needle mode.



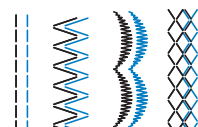
① Single needle/twin needle position setting display

→  appears.

⚠ CAUTION

- Be sure to set the twin needle mode when using the twin needle. Using the twin needle while the machine is in single needle mode could cause the needle to break and cause injury.

- 11** Start sewing.



Memo

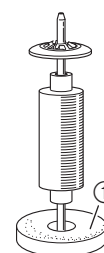
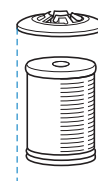
- To change direction when sewing with the twin needle, raise the needle from the fabric, raise the presser foot lever, and then turn the fabric.

Using the Spool Stand

The spool stand is useful when using thread on spools with a large diameter (cross-wound thread). This spool stand can hold two spools of thread.

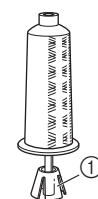
■ Using the Spool Stand

- Be sure to use a spool cap that is slightly larger than the spool. If the spool cap that is used is smaller or much larger than the spool, the thread may catch and sewing performance may suffer.
- When using thread on a thin spool, place the included spool felt on the spool pin, place the thread spool on the spool pin so that the center of the spool is aligned with the hole at the center of the spool felt, and then insert the spool cap onto the spool pin.



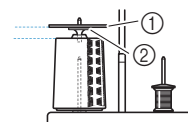
① Spool felt

- When using thread on a cone spool, use the spool holder. When using cone shaped thread spool with other than cotton thread, it is not necessary to use spool caps.



① Spool holder

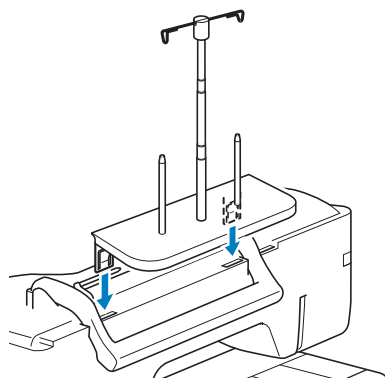
- Depending on the size of spool or the amount of thread remaining, choose the appropriate sized spool cap (large or medium). Spool cap (small) cannot be used with the spool cap base.



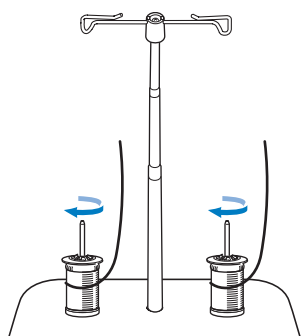
① Spool cap

② Spool cap base

- 1** Attach the spool stand to the machine. (page 12)



- 2** Place the spool of thread on the spool pin so that the thread feeds off the spool clockwise. Firmly insert the spool cap onto the spool pin.



⚠ CAUTION

- Make sure that the spools do not touch each other, otherwise the thread will not feed off smoothly, the needle may break and cause injury. In addition, make sure that the spools do not touch the telescopic thread guide at the center.

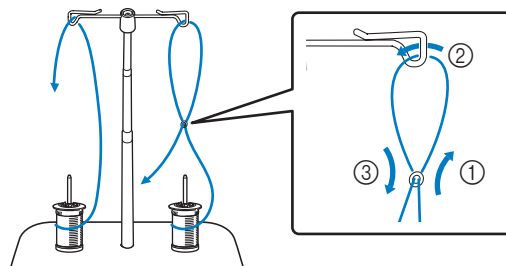
💡 Note

- When using two spools of thread, make sure that both spools are feeding in the same direction.
- Make sure that the thread is not caught under the spool.

- 3** Pull the thread off the spool. Pass the thread from the back to the front through the thread guides at the top.

When using thread that quickly feeds off the spool, such as metallic thread, use the enclosed ring to prevent the thread from becoming entangled.

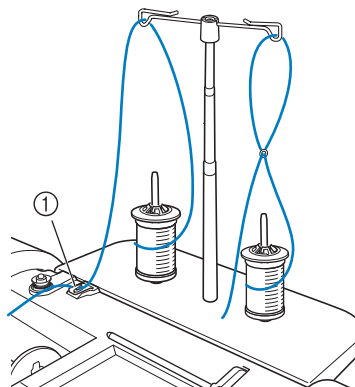
Threading sequence; Pull the thread from the spool, place the thread through the ring from the bottom up (①), into the thread guide (②) and through the ring from the top down (③). When using the ring, do not use the spool cap base.



💡 Note

- Guide the thread so that it does not become entangled with the other thread.
- After feeding the thread as instructed, wind any excess thread back onto the spool, otherwise the excess thread will become tangled.

- 4** Pass the thread through the machine's thread guide from the right to the left.



① Thread guide

- 5** Thread the machine according to the steps ⑥ to ⑮ of "Upper Threading" on page 36.

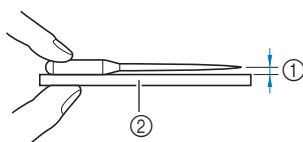
CHANGING THE NEEDLE

! CAUTION

- Always touch  on the screen to lock all keys and buttons before changing the needle. If  is not touched and the “Start/Stop” button or another operation button is pressed accidentally, the machine will start and injury may result.
- Use only home sewing machine needles. Other needles may break and may cause injury.
- Never use a bent needle. This may cause injury.

 Memo

- To check the needle correctly, place the flat side of the needle on a flat surface. Check the needle from the top and the sides. Throw away any bent needles.



- ① Parallel space
- ② Flat surface (bobbin cover, glass, etc.)

- The machine needles are consumables. Replace the needle in cases such as those described below.
 - If an unusual sound is produced when the needle enters the fabric. (The tip of the needle may be broken or dull.)
 - If stitches are skipped. (The needle may be bent.)
 - Generally, after completing one project, such as a piece of clothing.

1 Press  (Needle position button) to raise the needle.

2 Touch  to lock all keys and buttons.

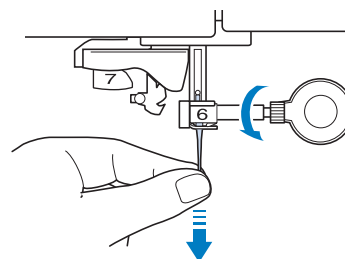
- * If the message [OK to automatically lower the presser foot?] appears on the LCD screen, touch  to continue.

 Note

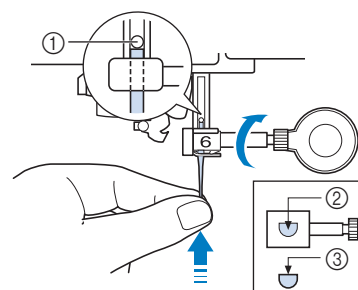
- Before replacing the needle, cover the hole in the needle plate with fabric or paper to prevent the needle from falling into the machine.

3 Remove the presser foot. (page 43)

4 Use the disc-shaped screwdriver to turn the needle clamp screw toward you (counterclockwise) to loosen the screw. Remove the needle.



5 With the flat side of the needle facing the back, insert the new needle all the way to the top of the needle stopper (viewing window) in the needle clamp. Use the disc-shaped screwdriver to securely tighten the needle clamp screw.



- ① Needle stopper
- ② Hole for inserting the needle
- ③ Flat side of the needle

! CAUTION

- Be sure to push in the needle until it touches the stopper, and securely tighten the needle clamp screw with the disc-shaped screwdriver. If the needle is not completely inserted or the needle clamp screw is loose, the needle may break and cause injury.

6 Attach the presser foot. (page 43)

7 Touch  to unlock all keys and buttons.

 Memo

- The automatic threading function can be used with home sewing machine needle sizes 75/11 through 100/16.
- When threads such as transparent nylon monofilament or specialty threads are used, it is not recommended to use the needle threader.

FABRIC/THREAD/NEEDLE COMBINATIONS

- **Needles that can be used with this machine: Home sewing machine needles (size 65/9 - 100/16)**
* The larger the number, the larger the needle. As the numbers decrease, the needles get finer.
- **Thread that can be used with this machine: 30 - 90 weight**
* Never use thread of 20 weight or lower. It may cause machine to malfunction.
* The smaller the number, the heavier the thread. As the numbers increase, the thread gets finer.
- **The machine needle and thread that should be used depends on the type and thickness of the fabric. Refer to the following table when choosing the thread and needle appropriate for the fabric that you wish to sew.**
 - The combinations shown in the table provide a general guideline. Be sure to sew trial stitches on the actual number of layers and type of fabric to be used in your project.
 - The machine needles are consumables. For safety and best results, we recommend replacing the needle regularly. For details on when to replace the needle, refer to "CHANGING THE NEEDLE" on page 41.
- **In principle, use a fine needle and thread with lightweight fabrics, and a larger needle and heavier thread with heavyweight fabrics.**
- **Select a stitch appropriate for the fabric, and then adjust the stitch length. When sewing lightweight fabrics, make the stitch length finer (shorter). When sewing heavyweight fabrics, make the stitch length coarser (longer). (page 54)**
When sewing stretch fabrics, refer to "Sewing Stretch Fabrics" on page 62.

Fabric Type/Application		Thread		Size of needle	Stitch length mm (inch)
		Type	Weight		
Lightweight fabrics	Lawn, georgette, challis, organdy, crepe, chiffon, voile, gauze, tulle, lining, etc.	Polyester thread	60 - 90	65/9 - 75/11	Fine stitches 1.8-2.5 (approx. 1/16-3/32)
		Cotton thread Silk thread	50 - 80		
Medium weight fabrics	Broadcloth, taffeta, gabardine, flannel, seersucker, double gauze, linen, terry cloth, waffle weave, sheeting, poplin, cotton twill, satin, quilting cotton, etc.	Polyester thread	60 - 90	75/11 - 90/14	Regular stitches 2.0-3.0 (approx. 1/16-1/8)
		Cotton thread Silk thread	50 - 60		
Heavyweight fabrics	Denim (12 ounces or more), canvas, etc.	Polyester thread Cotton thread	30	100/16	Coarse stitches 2.5-4.0 (approx. 3/32-3/16)
	Denim (12 ounces or more), canvas, tweed, corduroy, velour, melton wool, vinyl-coated fabric, etc.	Polyester thread	60	90/14 - 100/16	
		Cotton thread Silk thread	30 - 50		
Stretch fabrics (knit fabrics, etc.)	Jersey, tricot, T-shirt fabric, fleece, interlock, etc.	Polyester thread Cotton thread Silk thread	50	Ball point needle 75/11 - 90/14	Setting appropriate for the fabric thickness
For top-stitching		Polyester thread Cotton thread	30	90/14 - 100/16	Setting appropriate for the fabric thickness
			50 - 60	75/11 - 90/14	

■ Transparent Nylon Thread

Use a home sewing machine topstitching needle, regardless of the fabric or thread.

■ Sewing Character Stitch Patterns and Decorative Stitch Patterns (Needles and Threads)

When sewing lightweight, medium weight or stretch fabrics, use a ball point needle (gold colored) 90/14. When sewing heavyweight fabrics, use a home sewing machine needle 90/14.

In addition, #50 to #60 thread should be used.

⚠ CAUTION

- The appropriate fabric, thread and needle combinations are shown in the preceding table. If the combination of the fabric, thread and needle is not correct, particularly when sewing heavy fabrics (such as denim) with thin needles (such as 65/9 to 75/11), the needle may break and cause injury. In addition, the stitching may be uneven or puckered or there may be skipped stitches.

CHANGING THE PRESSER FOOT

! CAUTION

- Always touch  on the screen to lock all keys and buttons before changing the presser foot. If  is not touched and the “Start/Stop” button or another button is pressed, the machine will start and may cause injury.
- Always use the correct presser foot for the selected stitch pattern. If the wrong presser foot is used, the needle may strike the presser foot and break, and may cause injury.
- Make sure that the presser foot is installed in the correct direction, otherwise the needle may strike the presser foot, breaking the needle and causing injuries.

IMPORTANT

- Use presser feet made for this machine.

Replacing the Presser Foot

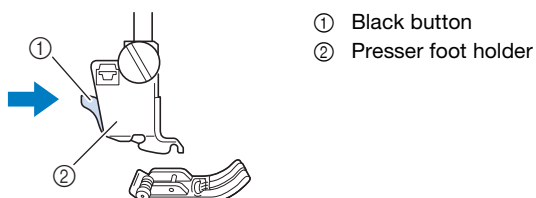
1 Press  (Needle position button) to raise the needle.

2 Touch  to lock all keys and buttons.

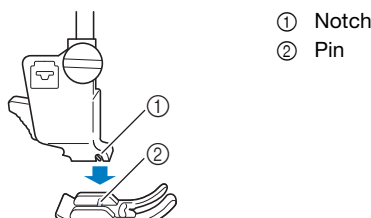
- * If the message [OK to automatically lower the presser foot?] appears on the LCD screen, touch  to continue.

3 Raise the presser foot lever.

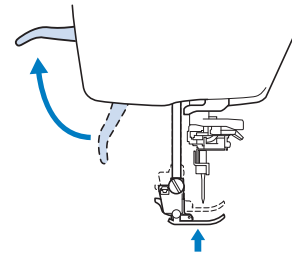
4 Press the black button on the presser foot holder and remove the presser foot.



5 Place the new presser foot under the holder, aligning the foot pin with the notch in the holder. Lower the presser foot lever so that the presser foot pin snaps into the notch in the holder.



6 Raise the presser foot lever to check that the presser foot is securely attached.



7 Touch  to unlock all keys and buttons.

Attaching the Presser Foot with the Included Adapter

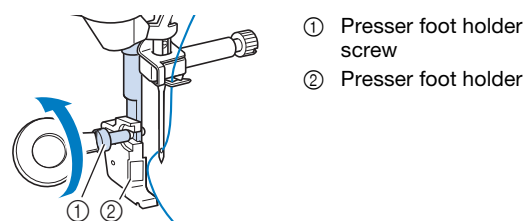
Some presser feet require using the included adapter and small screw, for example, the free motion echo quilting foot “E” and so on.



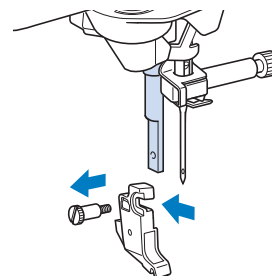
■ Attaching the Included Adapter and Small Screw

1 Follow the steps in “Replacing the Presser Foot” on page 43.

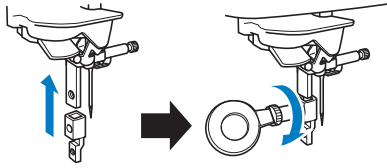
2 Loosen the screw of the presser foot holder to remove the presser foot holder.



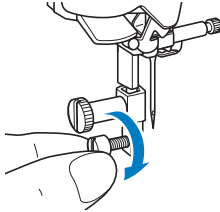
3 Remove the screw of the presser foot completely from the presser foot shaft.



- 4** Set the adapter on the presser foot bar, aligning the flat side of the adapter opening with the flat side of the presser bar. Align the screw holes in the adapter and presser foot bar, and then securely tighten the screw with the disc-shaped screwdriver.



- 5** Turn the included small screw 2 or 3 times with your hand.



- 6** Touch  to unlock all keys and buttons.

Chapter 2 SEWING BASICS

SEWING

CAUTION

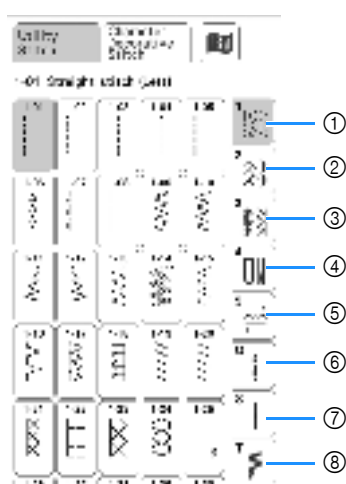
- To avoid injury, pay special attention to the needle while the machine is in operation. Keep your hands away from moving parts while the machine is in operation.
- Do not stretch or pull the fabric during sewing. Doing so may lead to injury.
- Do not use bent or broken needles. Doing so may lead to injury.
- Do not attempt to sew over basting pins or other objects during sewing. Otherwise, the needle may break and cause injury.

IMPORTANT

- If stitches become bunched, lengthen the stitch length setting before continuing sewing. Otherwise, the needle may break and cause injury.

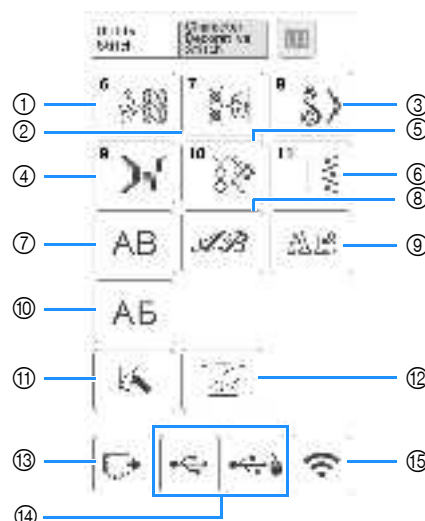
Stitch Types

Utility Stitches



- ① Straight/Overcasting
- ② Decorative Stitches
- ③ Heirloom Stitches
- ④ Buttonholes/Bar tacks
- ⑤ Multi-directional
- ⑥ Sewing Quilting Stitches
- ⑦ Other Stitches
- ⑧ Stitch Tapering

Character/Decorative Stitches



- ① Decorative stitch patterns
- ② 7mm decorative stitch patterns
You can set stitch length and width.
- ③ Satin stitch patterns
- ④ 7mm satin stitch patterns
You can set stitch length and width.
- ⑤ Cross stitch
- ⑥ Utility decorative stitch patterns
- ⑦ Alphabet characters (gothic font)
- ⑧ Alphabet characters (handwriting font)
- ⑨ Alphabet characters (outline)
- ⑩ Cyrillic font
- ⑪ MY CUSTOM STITCH (page 107)
You can design original stitches.
- ⑫ Stitch patterns stored in MY CUSTOM STITCH (page 110)
- ⑬ Stitch patterns saved in the machine's memory (page 106)
- ⑭ Stitch patterns saved in USB media (page 106)
- ⑮ Stitch patterns to be transferred via the wireless network (page 106)

Basic Sewing

Note

- First, perform a trial sewing, using a piece of fabric and thread that are the same as those used for your project.

- 1 Turn the main power to ON and press  (Needle position button) to raise the needle.

2 Select the category you want.



3 Touch the key of the stitch you want to sew.

- For details on stitch patterns, refer to "STITCH SETTING CHART" on page 125.
- For details on the key functions, refer to "Key Functions" on page 18.
- If necessary, change to the desired stitch width or stitch length. (page 53)



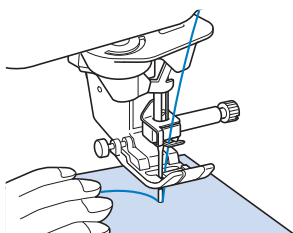
→ The symbol of the correct presser foot will be displayed in the upper left corner of the LCD screen.

4 Install the presser foot (page 43).

! CAUTION

- Always use the correct presser foot. If the wrong presser foot is used, the needle may strike the presser foot and break, possibly resulting in injury. Refer to "STITCH SETTING CHART" on page 125 for presser foot recommendations.

5 Set the fabric under the presser foot. Hold the fabric and thread in your left hand, and rotate the handwheel counterclockwise or press (Needle position button) to set the needle in the sewing start position.

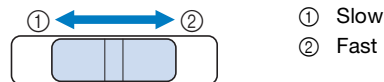


6 Lower the presser foot.

- * You do not have to pull up the bobbin thread.

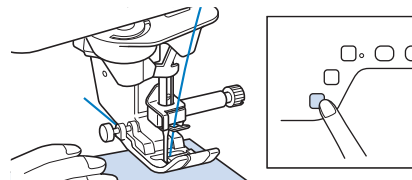
7 Adjust the sewing speed with the speed control slide.

- * You can use this slide to adjust sewing speed during sewing.



8 Press the "Start/Stop" button to start sewing.

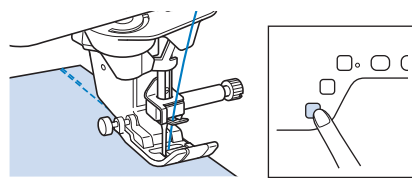
- * Guide the fabric lightly by hand.



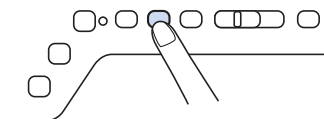
Memo

- When the foot controller is being used, you cannot start sewing by pressing the "Start/Stop" button.

9 Press the "Start/Stop" button again to stop sewing.



10 Press (Thread cutter button) to trim the upper and bobbin threads.



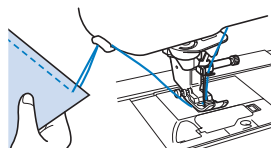
→ The needle will return to the up position automatically.

IMPORTANT

- Do not press (Thread cutter button) after the threads have been cut. Doing so could tangle the thread or damage the machine.
- Do not press (Thread cutter button) when there is no fabric set in the machine or during machine operation. The thread may tangle, possibly resulting in damage.

Note

- When cutting thread thicker than #30, nylon monofilament thread, or other decorative threads, use the thread cutter on the side of the machine.



- When the needle has stopped moving, raise the presser foot and remove the fabric.

Using the Foot Controller

You can also use the foot controller to start and stop sewing.

Memo

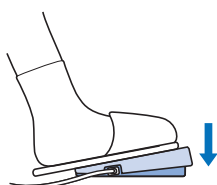
- When the foot controller is connected, the “Start/Stop” button cannot be used to start sewing.

- Turn off the machine.
- Insert the foot controller plug into the foot controller jack on the machine.



① Foot controller jack

- Turn on the machine.
- Slowly depress the foot controller to start sewing.

**Memo**

- The speed that is set using the sewing speed controller will be the foot controller's maximum sewing speed.

- Release the foot controller to stop the machine.

Using Advanced Multi-Function Foot Controller (Included with Some Models)

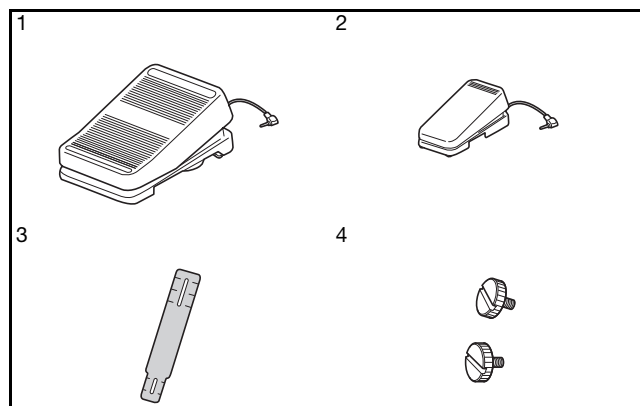
With the advanced multi-function foot controller, various sewing machine operations in addition to starting/stopping sewing, such as thread cutting and reverse stitching, can be specified to be performed.

WARNING

- The advanced multi-function foot controller contains small parts. Keep the product out of the reach of children to prevent accidental ingestion of small parts.

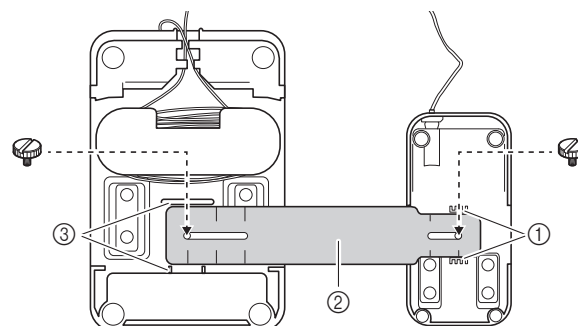
Note

- (For U.S.A. only) Foot controller: Model X
This foot controller can be used on the machine with product code 882-W92. The product code is mentioned on the machine rating plate.



No.	Part Name
1	Main foot controller
2	Side pedal
3	Mounting plate
4	Mounting screw × 2

- Align the smaller end of the mounting plate with the guide on the bottom of the side pedal, and then gently fasten them together with the mounting screw. Align the larger end of the mounting plate with the guide on the bottom of the main foot controller, and then gently fasten them together with the mounting screw.



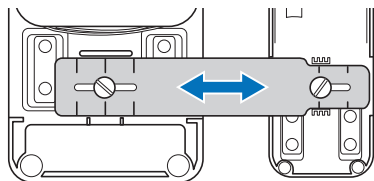
- Guide on side pedal
- Mounting plate
- Guide on main foot controller

Memo

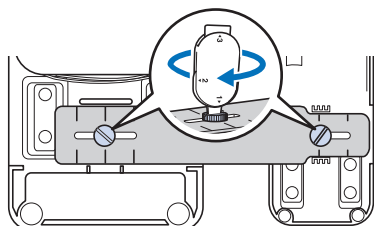
- The side pedal can be mounted on either the left or right side of the main foot controller.
- The main foot controller and side pedal can also be used without installing the mounting plate.

2 Adjust the spacing between the main foot controller and side pedal.

- * Use the markings on the mounting plate as a convenient guide to adjust the spacing.



3 Firmly tighten the mounting screws to secure the main foot controller and side pedal.

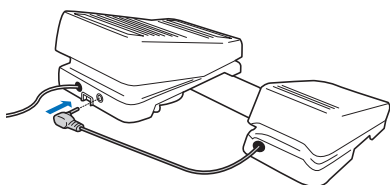


Memo

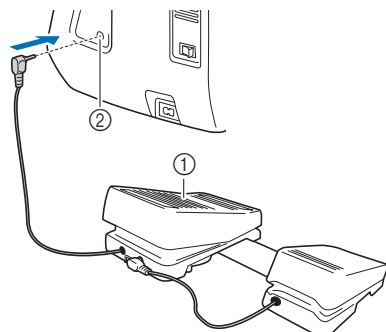
- To readjust the spacing between the main foot controller and side pedal, slightly loosen the mounting screws, and then adjust the positions of the main foot controller and side pedal.

4 Turn off the machine.

5 Insert the plug for the side pedal into the jack on the main foot controller.



6 Insert the plug for the main foot controller into the foot controller jack on the right side of the machine.



- ① Main foot controller
- ② Foot controller jack

Memo

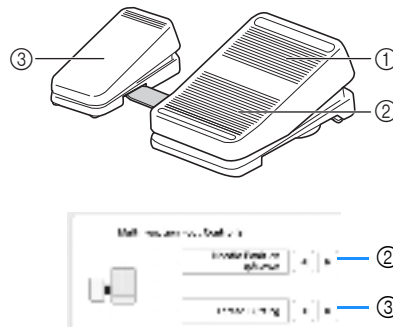
- The length of the cord for the main foot controller can be adjusted. (page 49)

7 Turn on the machine. And then touch and display page 2 of the settings screen.

Memo

- Before specifying the functions, connect the multi-function foot controller to the machine. The settings screen is activated the first time that the machine detects the multi-function foot controller.

8 Select the functions to be performed by the multi-function foot controller.



	Controller	Functions that can be specified
①	Main foot controller	Start/Stop
②	Heel switch	Select any of the following: • [Thread Cutting] • [Needle Position – Up/Down] • [Single Stitch] • [Reverse Stitch] (Reinforcement Stitch) * • [Presser Foot Up/Down] • [No Setting]
③	Side pedal	

- * If you set the “Reverse Stitch” function on the heel switch, machine operates the same as pressing  (Reverse stitch button) on the machine.
- * Reinforcement stitching may be applied depending on the selected stitch pattern. For the details, refer to “Automatic Reverse/Reinforcement Stitching” on page 51.

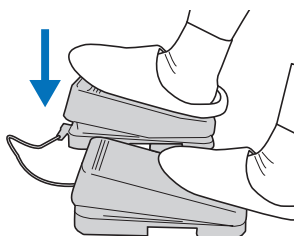
Memo

- If you set [Reverse Stitch] on the side pedal, you can create a darning stitch effect using zigzag stitches. With both feet, keep pressing the main foot controller, and repeat pressing and releasing the side pedal to sew forward and reverse in turn. Machine will reverse at the speed you press the main foot controller.

9 Touch .

10 Sew trial stitches and confirm that the settings are as desired.

Pressing down on the main foot controller increases the sewing speed; releasing the pressure on the main foot controller decreases the sewing speed. Release the main foot controller or side pedal to stop sewing.



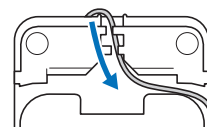
Memo

- The speed that is set using the sewing speed controller will be the main foot controller's maximum sewing speed.
- When the multi-function foot controller is connected, the "Start/Stop" button cannot be used to start sewing.

■ Adjusting the Length of the Cord for the Main Foot Controller

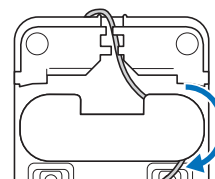
1 Unwind the cord for the main foot controller.

2 Guide the cord between the tabs.

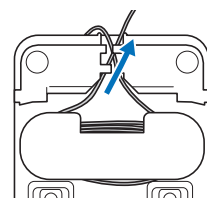


3 Wind the cord until it is the desired length.

- * The cord can be wound either clockwise or counterclockwise.



4 Pass the cord between the tabs.

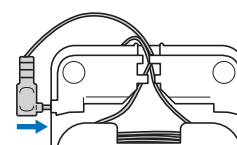


Note

- In order to avoid stepping on the cord with the main foot controller, pass the cord between the tabs.

Memo

- When storing the cord, pass it between the tabs, and then insert the plug into the jack on the main foot controller.

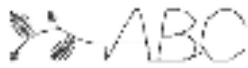


Combining Stitch Patterns

Stitch patterns from the following categories can be combined.



Example:



1 Touch .



2 Select the following stitch pattern (8-35).



3 Touch  so that it displays .

4 Touch .

→ The display returns to the stitch selection screen.

5 Select a font.



6 Enter characters.

-   : Select a stitch pattern individually.
-  : Delete the selected stitch pattern.
-  : Enter a space.

7 If you want to sew the stitch pattern continuously, touch .



→ The stitch pattern turns continuous.

Memo

- When sewing is completed, trim any excess thread between characters.



■ Inserting Stitch Patterns

1 Touch  or  to select the stitch pattern at the position where a new stitch pattern will be added.



2 Touch .

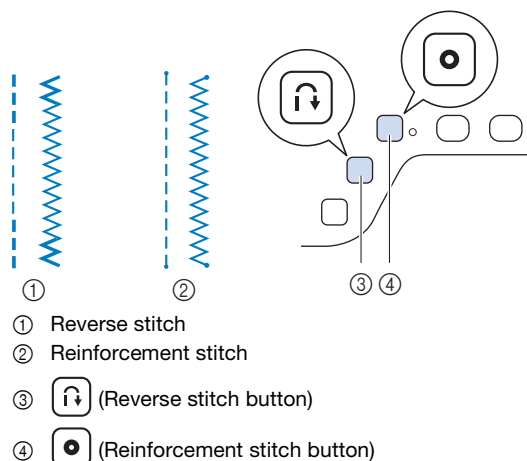
3 Select a new stitch pattern.



→ The new stitch pattern is added immediately after the stitch pattern selected in step 1.

Sewing Reverse Stitches/Reinforcement Stitches

Reverse/reinforcement stitches are generally necessary at the beginning and end of sewing. You can use  (Reverse stitch button) to sew reverse/reinforcement stitches. When you keep pressing , the machine will sew reinforcement stitch at that point 3 to 5 stitches, and then stop. (page 10)



The operation performed when the button is pressed differs depending on the selected stitch pattern. (Refer to “STITCH SETTING CHART” on page 125.)

Memo

- When you press  (Reinforcement stitch button) while sewing character/decorative stitch pattern, you can end sewing with a full stitch instead of at a mid-point.
- The green light on the right of  (Reinforcement stitch button) lights up while the machine is sewing a full motif, and it automatically turns off when the sewing is stopped.

Automatic Reverse/Reinforcement Stitching

After selecting a stitch motif, turn on the automatic reinforcing stitching function before sewing, and the machine will automatically sew reinforcement stitches (or reverse stitches, depending on the stitch motif) at the beginning and end of sewing.

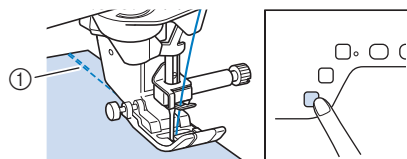
1 Select a stitch pattern.

2 Touch  to set the automatic reinforcement stitching function.



→ The key will display as .

3 Set the needle in the start position and press the “Start/Stop” button to start sewing.



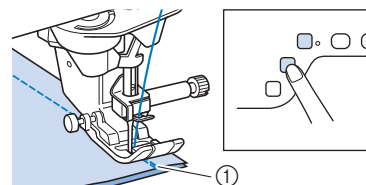
① Reverse stitches (or reinforcement stitches)

→ The machine will automatically sew reverse stitches (or reinforcement stitches) and then continue sewing.

Memo

- Pressing the “Start/Stop” button while the machine is sewing pauses or restarts sewing.

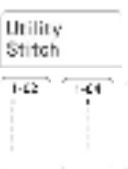
4 Press  (Reverse stitch button) or  (Reinforcement stitch button).

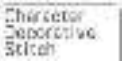


① Reverse stitches (or reinforcement stitches)

→ The machine will sew reverse stitches (or reinforcement stitches) and stop.

The operation performed when the button is pressed differs depending on the selected stitch pattern. Refer to the following table for details on the operation that is performed when the button is pressed.

	 (Reverse stitch button)	 (Reinforcement stitch button)
 + 	Machine sews reverse stitches while holding  (Reverse stitch button).	Machine sews 3 – 5 reinforcement stitches while holding  (Reinforcement stitch button).
 + 	Machine sews reverse stitches while holding  (Reverse stitch button).*	Machine sews 3 – 5 reinforcement stitches while holding  (Reinforcement stitch button).
 with a stitch other than reverse or reinforcement stitch pattern selected.	Machine sews 3 – 5 reinforcement stitches while holding  (Reverse stitch button).	Machine sews 3 – 5 reinforcement stitches while holding  (Reinforcement stitch button).
 + 	Machine sews reinforcement stitches while holding  (Reverse stitch button).	Machine sews reinforcement stitches after completing the stitch pattern, when  (Reinforcement stitch button) is pressed.
 + 	Machine sews reverse stitches and stops sewing when the  (Reverse stitch button) is pressed. (At the beginning of sewing, reverse stitches are sewn automatically when “Start/Stop” button is pressed.)	Machine sews reinforcement stitches and stops sewing when  (Reinforcement stitch button) is pressed. (At the beginning of sewing, reverse stitches are sewn automatically when “Start/Stop” button is pressed.)
 + 	Machine sews reverse stitches and stops sewing when  (Reverse stitch button) is pressed.* (At the beginning of sewing, reinforcement stitches are sewn automatically when “Start/Stop” button is pressed.)	Machine sews reinforcement stitches and stops sewing when  (Reinforcement stitch button) is pressed. (At the beginning of sewing, reinforcement stitches are sewn automatically when “Start/Stop” button is pressed.)

	 (Reverse stitch button)	 (Reinforcement stitch button)
 with a stitch other than reverse or reinforcement stitch pattern selected.	Machine sews reinforcement stitches and stops sewing when  (Reverse stitch button) is pressed. (At the beginning of sewing, reinforcement stitches are sewn automatically when “Start/Stop” button is pressed.)	Machine sews reinforcement stitches and stops sewing when  (Reinforcement stitch button) is pressed. (At the beginning of sewing, reinforcement stitches are sewn automatically when “Start/Stop” button is pressed.)
 + 	Machine sews reinforcement stitches and stops sewing when  (Reverse stitch button) is pressed. (At the beginning of sewing, reinforcement stitches are sewn automatically when “Start/Stop” button is pressed.)	Machine sews reinforcement stitches and stops sewing after completing the stitch pattern, when  (Reinforcement stitch button) is pressed. (At the beginning of sewing, reinforcement stitches are sewn automatically when “Start/Stop” button is pressed.)

* If [Reinforcement Priority] of the settings screen is set to [ON] (page 20), reinforcement stitches are sewn instead of reverse stitches.

Automatic Presser Foot Lowering Function and Thread Cutting Function

By setting the machine to automatically raise and lower the presser foot, sewing operations can be performed more smoothly.



No.	Key Name	Explanation
①	[Auto Down]	When [Auto Down] is set to [ON], pressing the "Start/Stop" button or depressing the foot controller automatically lowers the presser foot (if it is raised) before starting to sew.
②	[Auto Up]	When [Auto Up] is set to [ON], the presser foot is raised when stopping sewing. The presser foot is raised to the height specified for [Presser Foot Height] (page 20). When the pivot setting () is selected, the presser foot is raised to the height specified for [Pivoting Height] (page 20).
③	[Press to Trim]	When [Press to Trim] is set to [ON], pressing  (Thread cutter button) automatically lowers the presser foot (if it is raised) before cutting the thread. The presser foot will be raised after the thread is cut.

STITCH SETTINGS

Setting the Stitch Width/Stitch Length/"L/R Shift"

When you select a stitch, your machine automatically selects the appropriate stitch width, stitch length, and L/R Shift. However, if needed, you can change any of the individual settings.

Memo

- Settings for some stitches cannot be changed (page 125).
- If you turn off the machine or select another stitch without saving stitch setting changes (page 55), the stitch settings will return to their default settings.
- Touch **Memory** to save the stitch settings.
- Touch  to check changes made to the stitch.
- Touch **Reset** to return the original setting.

Note

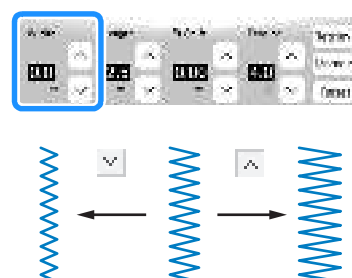
- After adjusting the stitch width or the "L/R Shift", slowly turn the handwheel toward you (counterclockwise) and check that the needle does not touch the presser foot.

IMPORTANT

- If the stitches get bunched together, lengthen the stitch length and continue sewing. Do not continue sewing without lengthening the stitch length. Otherwise, the needle may bend or break.

Setting the Stitch Width

Follow the steps below when you want to change the zigzag stitch pattern width.



Memo

- For an alternate method of changing the stitch width using the speed controller, refer to page 71.

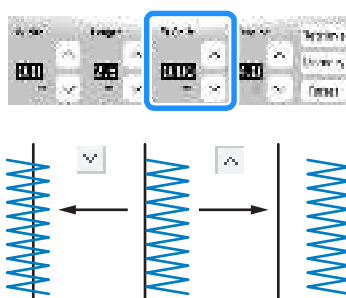
■ Setting the Stitch Length

Follow the steps below when you want to change the stitch pattern length.



■ Setting the "L/R Shift"

Follow the steps below when you want to change the placement of the zigzag stitch pattern by moving it left and right.



Setting the Thread Tension

You may need to change the thread tension, depending on the fabric and thread being used. Follow the steps below to make any necessary changes.



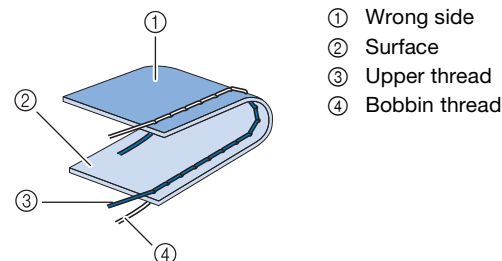
Memo

- Touch **Reset** to return the thread tension to the original setting.

■ Proper Thread Tension

The upper thread and the bobbin thread should cross near the center of the fabric. Only the upper thread should be visible from the right side of the fabric, and only the

bobbin thread should be visible from the wrong side of the fabric.



Memo

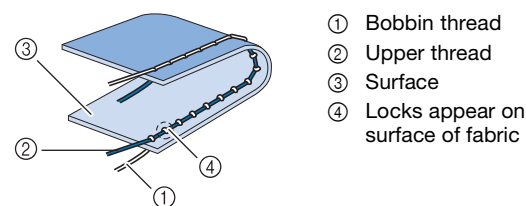
- Many decorative stitches and satin stitches are designed so that the upper thread wraps to the back slightly for a more attractive finish.

■ Upper Thread is Too Tight

If the bobbin thread is visible from the right side of the fabric, the upper thread is too tight.

Note

- If the bobbin thread was incorrectly threaded, the upper thread may be too tight. In this case, refer to "Setting the Bobbin" on page 33 and rethread the bobbin thread.



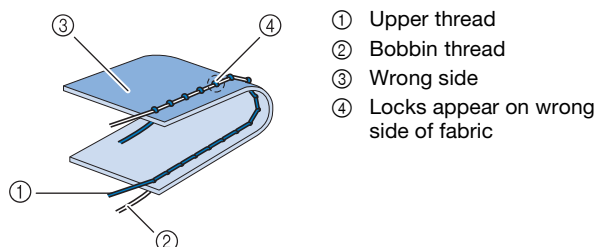
Touch , to loosen the upper thread.

■ Upper Thread is Too Loose

If the upper thread is visible from the wrong side of the fabric, the upper thread is too loose.

Note

- If the upper thread was incorrectly threaded, the upper thread may be too loose. In this case, refer to "Upper Threading" on page 35 and rethread the upper thread.



Touch , to tighten the upper thread.

Saving Your Stitch Settings

The settings for the zigzag stitch width, stitch length, thread tension, etc., are preset in the machine for each stitch. However, if you have specific settings that you wish to reuse later for a stitch, you can change the settings so that they can be saved for that stitch. Five sets of settings can be saved for a single stitch.

■ Saving Settings

- 1 Select a stitch.
- 2 Specify your preferred settings.



- 3 Touch **Memory**.



→ The settings are saved and the original screen automatically appears.

Memo

- If you try to save settings when there are already 5 sets of settings saved for a stitch, delete a setting referring to “Retrieving Saved Settings” on page 55.

■ Retrieving Saved Settings

- 1 Select a stitch.
- 2 Touch **Retrieve**.
- 3 Touch the numbered key of the settings to be retrieved.

* Touch **Reset** to return to the original screen without retrieving settings.



① Numbered keys

- 4 Touch **Retrieve**.

→ The selected settings are retrieved, and the original screen automatically appears.

Memo

- To save new settings when there are already 5 sets of settings saved for a stitch, touch **Retrieve**. Touch the numbered key of the setting to be deleted.

Touch **Reset**, touch **Memory** and then **Memory**. The new setting will be saved in place of the recently deleted setting.

- You can delete all the saved settings by touching

All Data.

■ Returning the Selected Stitch Pattern Saved Settings to the Default Settings

- 1 Touch **Reset**.



- 2 Touch **Memory**.



USEFUL FUNCTIONS

Automatic Thread Cutting

After selecting a stitch pattern, turn on the automatic thread cutting function before sewing, and the machine will automatically sew reinforcement stitches (or reverse stitches, depending on the stitch pattern) at the beginning and end of sewing, and trim the threads at the end of sewing. This function is useful when sewing buttonholes and bar tacks.

- 1 Select a stitch pattern.
- 2 Touch  to set the automatic thread cutting function.



→ The keys will display as  , and the machine is set for automatic thread cutting function and automatic reverse/reinforcement stitching.

Memo

- To turn off the automatic thread cutting function, touch  again, so it appears as .

- 3 Set the needle into the fabric and start sewing.

→ The machine will automatically sew reverse stitches (or reinforcement stitches) and then continue sewing.

- 4 Once you have reached the end of the stitching, press

 (Reverse stitch button) or  (Reinforcement stitch button) once.

If stitching, such as buttonholes and bar tacking, that includes reinforcement stitching has been selected, this operation is unnecessary.

→ After the reverse stitching (or reinforcement stitching) has been done, the machine stops, and the threads are cut.



- ① The point where the "Start/Stop" button was pressed.
- ② The point where  (Reverse stitch button) or  (Reinforcement stitch button) was pressed.
- ③ The thread is cut here.

Adjusting the Needle Drop Point with the Guideline Marker

The red guideline marker indicates the sewing position on the fabric. You can adjust the sewing position by moving the guideline marker while checking the guideline marker on the fabric.

WARNING

- The guideline marker is a laser; therefore, do not stare at the laser light directly. Otherwise it may cause blindness.

- 1 Touch  to display the guideline marker.



→ The guideline marker scale appears.

- * Depending on the setting of [Initial Position] in the settings screen, the initial needle drop point is scaled as either 0.0 mm or 3.5 mm.

- 2 Use  or  to move the needle drop point.

→ Adjust the position from 15.5 mm (approx. 5/8 inch) to the right of the left needle to -3.5 mm (approx. -1/8 inch) to the left of the left needle.



- ① Touch to flip the guideline marker position on the center needle position.

- 3 Touch  again to stop using the guideline marker.

■ Adjusting the Guideline Marker Position

If the guideline marker indicates the position incorrectly in the center needle position, adjust the initial position in the settings screen.

- 1 Touch  .
→ The settings screen appears.
- 2 Touch  .
→ The sewing settings screen appears.
- 3 Display [Guideline Marker Adjustment] in the sewing settings screen.
- 4 Touch  .



- 5 Use  or  to adjust the guideline marker position.

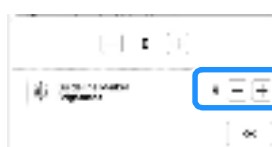


- *  : Move the guideline marker to the left.
 : Move the guideline marker to the right.

- 6 Touch  twice to return to the original screen.

■ Adjusting the Brightness of the Guideline Marker

- 1 Follow steps from 1 to 4 to display the [Guideline Marker Adjustment] screen.
- 2 Use  or  to adjust the brightness of the guideline marker.
→ Set the brightness of the guideline marker from [1] for a dim marker, to [5] for the brightest marker, on the fabric.



- 3 Touch  twice to return to the original screen.

Pivoting

If the pivot function is selected, the machine stops with the needle lowered (in the fabric) and the presser foot is automatically raised to an appropriate height when the "Start/Stop" button is pressed. When the "Start/Stop" button is pressed again, the presser foot is automatically lowered and sewing continues. This function is useful for stopping the machine to rotate the fabric.

⚠ CAUTION

- When the pivot setting is selected, the machine starts when the "Start/Stop" button is pressed or the foot controller is pressed down even if the presser foot has been raised. Be sure to keep your hands and other items away from the needle, otherwise injuries may occur.

Memo

- When the pivot setting is selected, the height of the presser foot when sewing is stopped can be changed according to the type of fabric being sewn. Touch  to display [Pivoting Height] of the settings screen. Touch  or  to select the height. To raise the presser foot further, increase the setting.



- 1 Select a stitch.
- 2 Touch  to select the pivot setting.

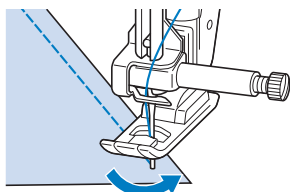


→ The key appears as .

Memo

- If  appears as light gray when the stitch pattern was selected, the pivot function cannot be used.
- If the pivot function is selected,  and  beside [Presser Foot Height] in the settings screen are not available and the setting cannot be changed.

- 3 Place the fabric under the presser foot with the needle at the starting point of the stitching, and then press the "Start/Stop" button. The machine will begin sewing.
- 4 Press the "Start/Stop" button to stop the machine at the point where the sewing direction changes.
→ The machine stops with the needle in the fabric, and the presser foot is raised.
- 5 Rotate the fabric, and then press the "Start/Stop" button.

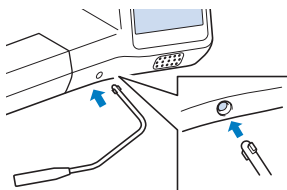


→ The presser foot is automatically lowered, and sewing continues.

Using the Knee Lifter

Using the knee lifter, you can raise and lower the presser foot with your knee, leaving both hands free to handle the fabric.

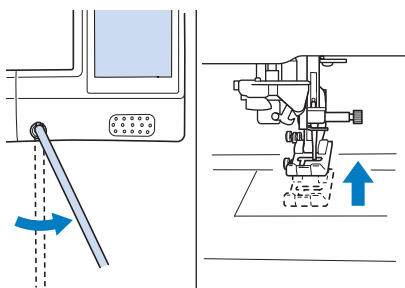
- 1 Align the tabs on the knee lifter with the notches in the knee lifter slot on the front of the machine. Insert the knee lifter bar as far as possible.



Memo

- If the knee lifter bar is not pushed into the mounting slot as far as possible, it may come out during use.

- 2 Use your knee to move the knee lifter bar to the right in order to raise the presser foot. Slowly return the knee lifter bar to the left to lower the presser foot.



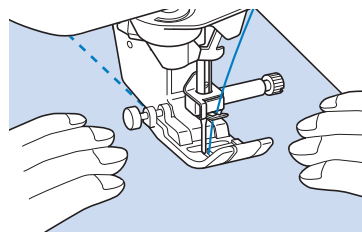
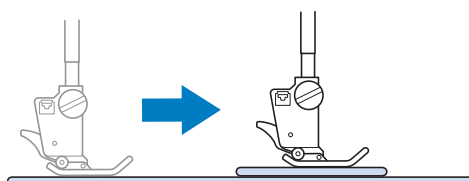
Note

- Be sure to keep your knee away from the knee lifter during sewing.

Automatic Fabric Sensor System (Automatic Presser Foot Pressure)

The thickness of the fabric is automatically detected and the presser foot pressure is automatically adjusted with an internal sensor while sewing, to insure that your fabric is fed smoothly. The fabric sensor system works continuously while sewing. This function is useful for sewing heavyweight fabrics (page 61), or quilting (page 70).

Touch , and then set [Automatic Fabric Sensor System] to [ON]. (page 20)

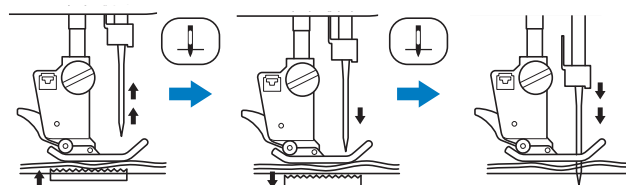


Needle Position - Stitch Placement

When the [Needle Position - Stitch Placement] is [ON], the needle will be partially lowered for precise stitch placement and then completely lowered when you press  (Needle Position button). Each press of  (Needle Position button) changes the needle to the next position. When the [Needle Position - Stitch Placement] is [OFF], each press of  (Needle Position button) simply raises and then lowers the needle.

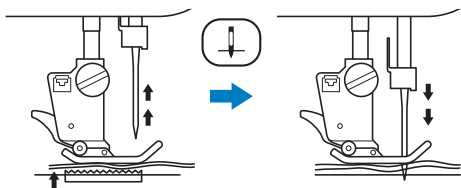
Touch , and then set [Needle Position - Stitch Placement] to [ON] or [OFF]. (page 21)

[Needle Position - Stitch Placement] is [ON]



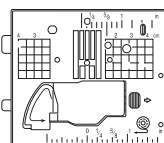
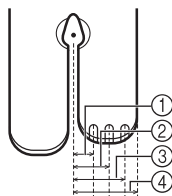
- * When the needle is nearly lowered by pressing  (Needle position button), the feed dogs are lowered. At this time, the fabric can be shifted to finely adjust the needle drop point.

[Needle Position - Stitch Placement] is [OFF]



Using the Straight Stitch Needle Plate and the Straight Stitch Foot

The straight stitch needle plate and the straight stitch foot can only be used for straight stitches (middle needle position stitches). Use the straight stitch needle plate and the straight stitch foot when sewing thin fabrics or when sewing small pieces which tend to sink into the hole of the regular needle plate during sewing. The straight stitch foot is perfect to reduce puckering on lightweight fabrics. The small opening on the foot provides support for the fabric as the needle travels through the fabric.



- ① 2.25 mm (1/8 inch)
- ② 4.25 mm (3/16 inch)
- ③ 6.25 mm (1/4 inch)
- ④ 8.5 mm (5/16 inch)

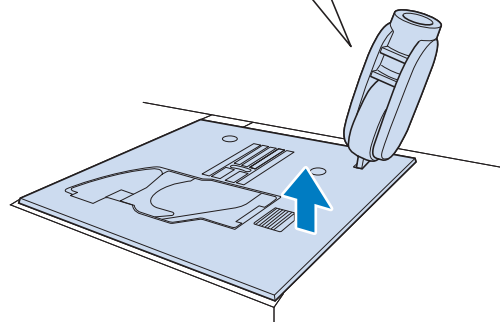
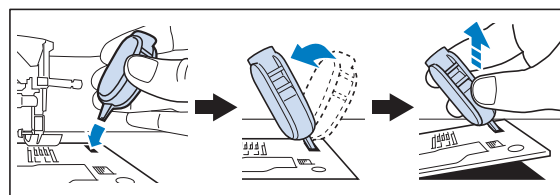
CAUTION

- Always use the straight stitch foot in combination with the straight stitch needle plate. Otherwise, the needle may break and cause injury.

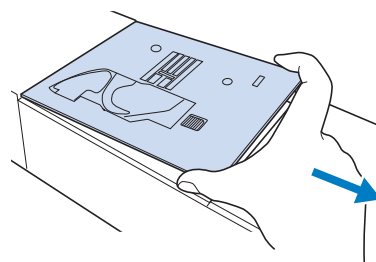
1 Press  (Needle position button) to raise the needle, raise the presser foot and turn the main power to OFF. And then unplug the machine.

2 Remove the needle and the presser foot. (page 41, page 43)

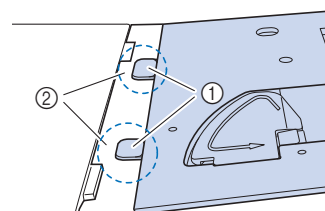
3 Insert the multi-purpose screwdriver into the hole, and tilt the multi-purpose screwdriver to the left and then to the back, as shown in the illustration.



4 Slide out the regular needle plate with your right hand to remove it.

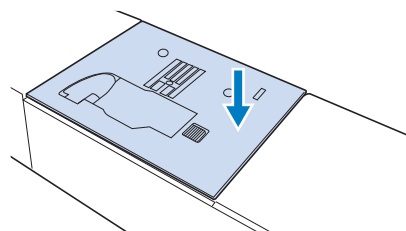


5 Insert the tabs on the straight stitch needle plate into the notches in the machine.

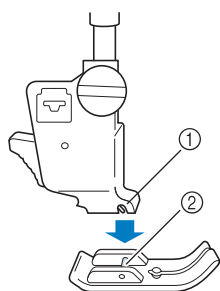


- ① Tabs
- ② Notches

6 Press down on the right side of the straight stitch needle plate to secure it.



7 Insert needle and attach the straight stitch foot.



- ① Notch
- ② Pin

8 Select any of the straight stitches.

Memo

- Selecting unavailable stitches will cause an error message to be displayed.
- When the straight stitch needle plate is on the machine, the needle will automatically move to the middle position.

Note

- Slowly rotate the handwheel toward you (counterclockwise) before sewing and make sure that the needle is not contacting the straight stitch foot and straight stitch needle plate.

9 Start sewing.

- * After sewing, make sure to turn off the machine and to remove the straight stitch needle plate and the straight stitch foot. Reinstall the regular needle plate and the presser foot "J".

USEFUL SEWING TIPS

Sewing Tips

■ Trial Sewing

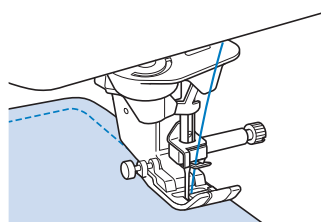
Before starting your sewing project, we recommend sewing trial stitches using thread and scrap fabric that are the same as those used for your project. While checking the sewing results, adjust the thread tension as well as the stitch length and width according to the number of fabric layers and stitch that is sewn.

Note

- Other factors, such as fabric thickness, stabilizer material, etc., also have an effect on the stitch, so you should always sew a few trial stitches before beginning your project.
- When sewing satin stitch or 7 mm satin stitch patterns, there may be shrinking or bunching of stitches, so be sure to use a stabilizer material.

■ Sewing Curves

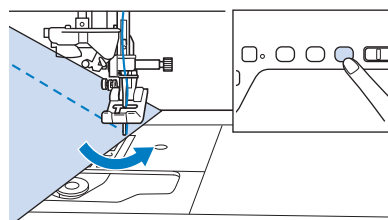
Sew slowly while keeping the seam parallel with the fabric edge as you guide the fabric around the curve.



Shorten the stitch length setting to obtain a fine stitch. Sew slowly, keeping the seams parallel with the fabric edge as you guide the fabric around the curve.

■ Changing Sewing Direction

Stop the machine. Leave the needle in the fabric, and press  (Presser foot lifter button) to raise the presser foot. Using the needle as a pivot, turn the fabric so that you can sew in the new direction. Press  (Presser foot lifter button) to lower the presser foot and start sewing.

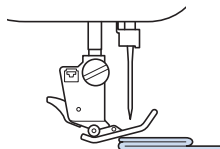


The pivot setting is useful when changing the sewing direction. (page 57)

Sewing Various Fabrics

■ Sewing Heavyweight Fabrics

If the thickness of a seam causes the presser foot to rest at an angle, help guide the fabric by hand and sew on the downward slope.



⚠ CAUTION

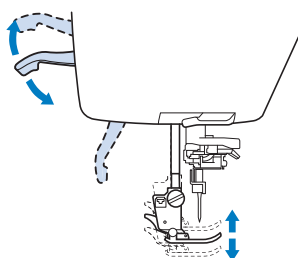
- If fabric more than 6 mm (approx. 1/4 inch) thick is sewn or if the fabric is pushed with too much force, the needle may break and cause injury.

📖 Memo

- Thicker fabrics require a larger needle. (page 42)

□ If the Fabric does not Fit under the Presser Foot

If the presser foot is in the up position, and you are sewing heavyweight or multiple layers of fabric which do not fit easily under the presser foot, use the presser foot lever to raise the presser foot to its highest position. The fabric will now fit under the presser foot.



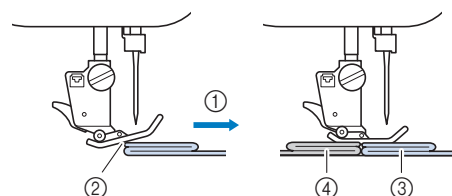
📖 Memo

- You cannot use the presser foot lever after the presser foot has been raised using  (Presser foot lifter button).

□ If the Fabric does not Feed

When sewing thick fabric such as denim or quilting layers, the fabric may not feed at the start of sewing if the presser foot is not level, as shown below. In this case, use the presser foot locking pin (black button on the left side) of zigzag foot "J" so that the presser foot remains level while sewing, allowing the fabric to be fed smoothly.

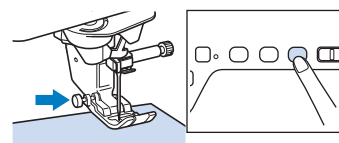
If the presser foot misalignment is too large, place thick paper or fabric (with the same thickness as the fabric being sewn) under the heel of the presser foot to be able to start sewing smoothly.



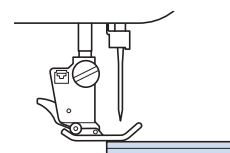
- ① Sewing direction
- ② Misalignment
- ③ Fabric being sewn
- ④ Fabric or thick paper

1 Raise the presser foot.

2 While keeping the black button on the left side of presser foot "J" pressed in, press (Presser foot lifter button) to lower the presser foot.



3 Release the presser foot locking pin.



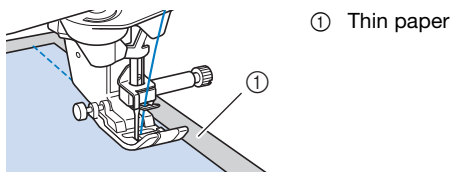
→ The presser foot remains level, enabling the fabric to be fed.

📖 Memo

- Once the trouble spot has been passed, the foot will return to its normal position.
- When [Automatic Fabric Sensor System] (Automatic Presser Foot Pressure) in the machine settings screen is set to [ON], the thickness of the fabric is automatically detected by the internal sensor so the fabric can be fed smoothly for best sewing results (page 58).

■ Sewing Lightweight Fabrics

Place thin paper or tear away embroidery stabilizer under thin fabrics to make sewing easier. Gently tear off the paper or the stabilizer after sewing.



 Memo

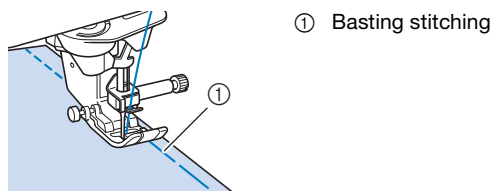
- Use the center hole of the Adjustable Zipper/Piping Foot on page 90.

■ Sewing Stretch Fabrics

First, baste together the pieces of fabric, and then sew without stretching the fabric. In addition, a better result can be achieved by using thread for knits or a stretch stitch.

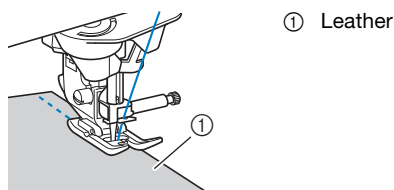
 Memo

- For best results when sewing stretch fabrics, decrease the pressure of the presser foot (page 20).
- Use the center hole of the Adjustable Zipper/Piping Foot on page 90.



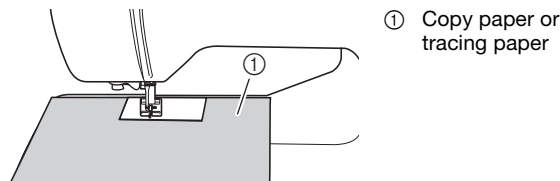
■ Sewing Leathers or Vinyl Fabrics

When sewing fabrics that may stick to the presser foot, such as leather or vinyl fabrics, replace the presser foot with the compact dual feed foot.

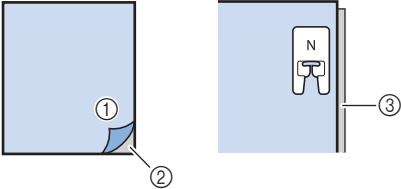


If the leather or vinyl fabric sticks to the flat bed attachment, sew with copy paper or tracing paper placed on top of the flat bed attachment so the fabric moves smoothly.

If the paper is positioned so that it does not cover the needle plate, the paper will not be sewn together with the fabric.



Sewing Decorative Stitch Patterns

Fabric	When sewing on stretch fabrics, lightweight fabrics, or fabrics with coarse weaves, attach stabilizer on the wrong side of the fabric. An alternative would be to place the fabric on thin paper such as tracing paper.  ① Fabric ② Stabilizer ③ Thin paper
Thread	#50 - #60
Needle	With lightweight, regular, or stretch fabrics: the Ball point needle (golden colored) 90/14 With heavyweight fabrics: home sewing machine needle 90/14
Presser foot	Advanced monogramming foot "N+." Using another presser foot may give inferior results.

Chapter 3 VARIOUS STITCHES

UTILITY STITCHES

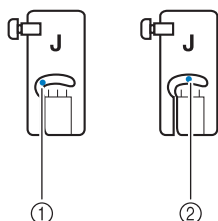
CAUTION

- Before replacing the presser foot, be sure to touch  to lock all keys and buttons, otherwise injuries may occur if the "Start/Stop" button or any other button is pressed and the machine starts. For details on changing the presser foot, refer to "Replacing the Presser Foot" on page 43.

Straight Stitches

Memo

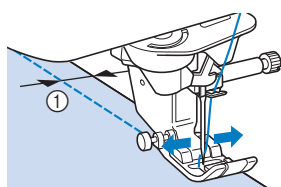
- For details on stitch patterns, refer to "STITCH SETTING CHART" on page 125.



- ① Left needle position
- ② Middle needle position

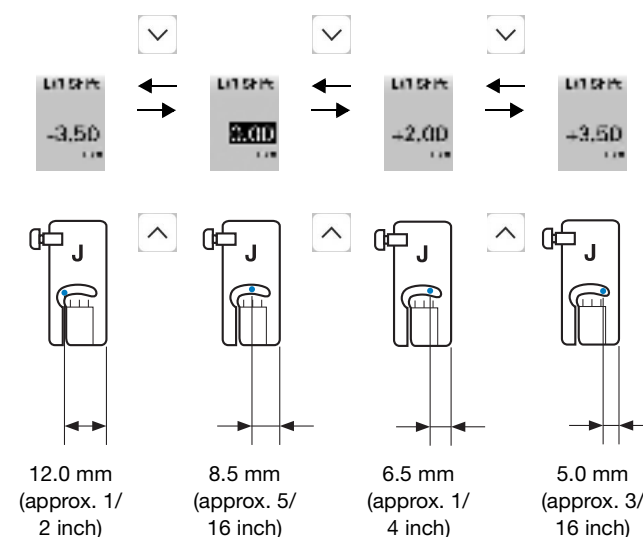
Changing the Needle Position (Left or Middle Needle Position Stitches Only)

When you select left or middle needle position stitches, you can use  and  in the L/R Shift display to change the position of the needle. Match the distance from the right edge of the presser foot to the needle with the L/R Shift, then align the edge of the presser foot with the edge of the fabric during sewing for an attractive finish.



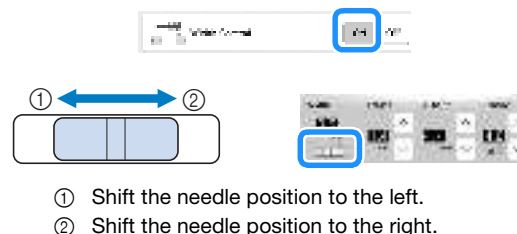
① L/R Shift

Example: Middle needle position stitches



Memo

- Stitch Q-01 will not permit using the L/R Shift function.
- When [Width Control] in the Sewing settings screen is set to [ON], the needle position of a straight stitch can be changed with the sewing speed controller. And use the foot controller to operate the machine.

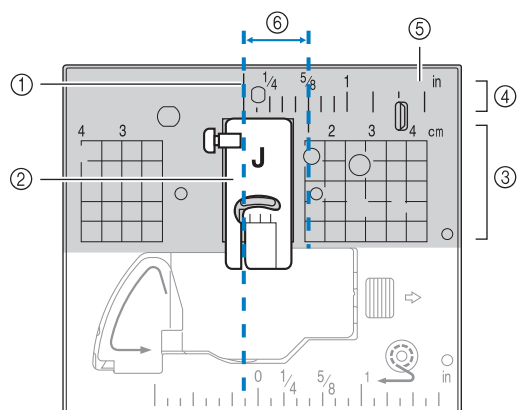


- ① Shift the needle position to the left.
- ② Shift the needle position to the right.

■ Aligning the Fabric with a Mark on the Needle Plate or Bobbin Cover (with Mark)

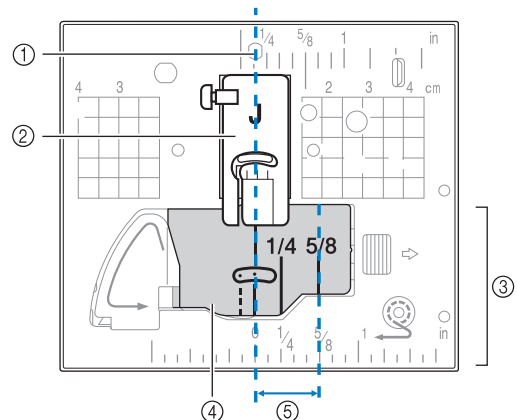
While sewing, align the edge of the fabric with the 5/8 inch (approx. 1.6 cm) mark on the needle plate or bobbin cover (with mark) depending on the needle position (left or middle (center) needle position stitches only).

**For stitches with a left needle position
(Stitch width: 0.0 mm)**



- ① Seam
- ② Presser foot
- ③ Centimeters
- ④ Inches
- ⑤ Needle plate
- ⑥ 5/8 inch (approx. 1.6 cm)

**For stitches with a middle (center) needle position
(Stitch width: 3.5 mm)**



- ① Seam
- ② Presser foot
- ③ Inches
- ④ Bobbin cover (with mark)
- ⑤ 5/8 inch (approx. 1.6 cm)

■ Basting

- 1 Select  and attach presser foot "J".
- 2 Keep pressing  (Reverse stitch button) or  (Reinforcement stitch button) to sew 4 stitches of reinforcement stitches, then press "Start/Stop" button to continue sewing.

Memo

- Before sewing, pull up the bobbin thread, align it with the upper thread, and then pull them to the back of the machine. (page 34) For clean stitching, hold these thread ends when starting to sew.
- You can set the stitch length between 5 mm (approx. 3/16 inch) and 30 mm (approx. 1-3/16 inches).



- ① Between 5 mm (approx. 3/16 inch) and 30 mm (approx. 1-3/16 inches)

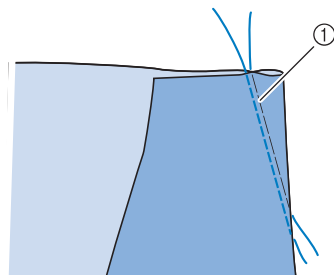
- 3 When sewing is finished, sew reinforcement stitches, and then cut the threads to a generous length.

■ Basting with the Stitch Regulator

The stitch regulator allows free-motion basting with a set stitch length. Refer to "Free-Motion Quilting/Basting with the Stitch Regulator" on page 90.

■ Dart Seam

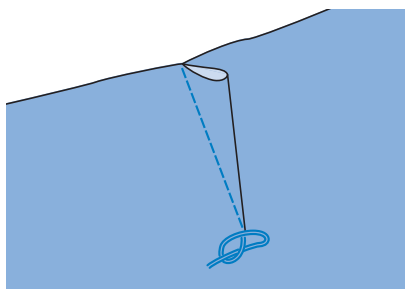
- 1 Select  and attach presser foot "J".
- 2 Sew a reverse stitch at the beginning of the dart and then sew from the wide end to the other end without stretching the fabric.



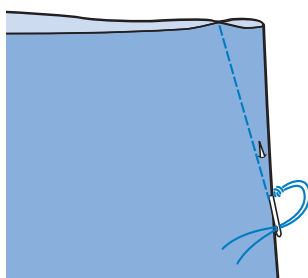
① Basting

- 3 Cut the thread at the end leaving 5 cm (approx. 2 inches), and then tie both ends together.

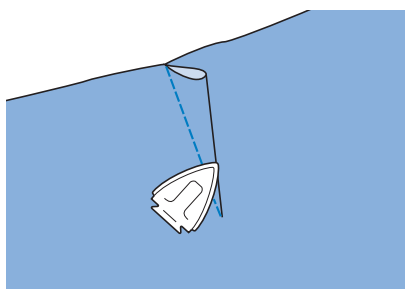
* Do not sew a reverse stitch at the end.



- 4 Insert the ends of the thread into the dart with a hand sewing needle.



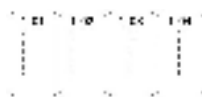
- 5 Iron the dart to one side so that it is flat.



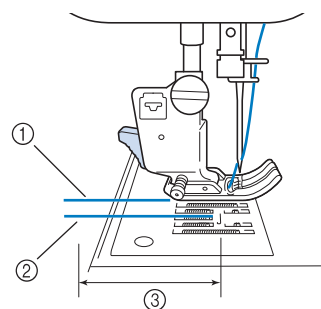
■ Gathering

Use on waists of skirts, sleeves of shirts, etc.

- 1 Select a straight stitch and attach presser foot "J".

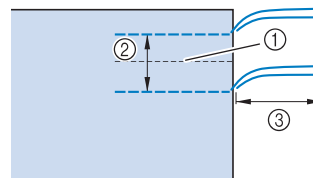


- 2 Set the stitch length to 4.0 mm (approx. 3/16 inch) and the thread tension to approximately 2.0 (weaker tension).
- 3 Pull the bobbin and upper threads out by about 10 cm (approx. 4 inches) (page 34).



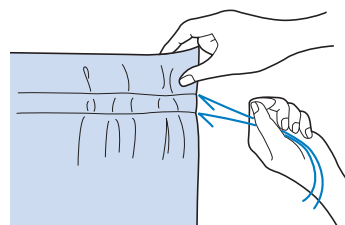
- ① Upper thread
- ② Bobbin thread
- ③ About 10 cm (approx. 4 inches)

- 4 Sew two rows of straight stitches parallel to the seam line, then trim excess thread leaving about 5 cm (approx. 2 inches).

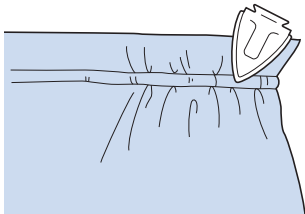


- ① Seam line
- ② 1 cm to 1.5 cm (approx. 3/8 inch to 9/16 inch)
- ③ About 5 cm (approx. 2 inches)

- 5 Pull the bobbin threads to obtain the desired amount of gather, then tie the threads.



- 6 Smooth the gathers by ironing them.



- 7 Sew on the seam line and remove the basting stitch.

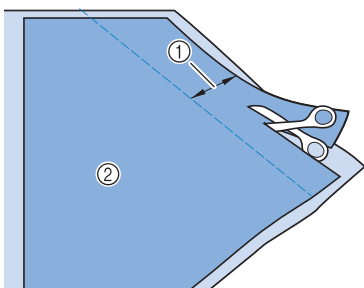
Flat Fell Seam

Use for reinforcing seams and finishing edges neatly.

- 1 Select  and attach presser foot "J".

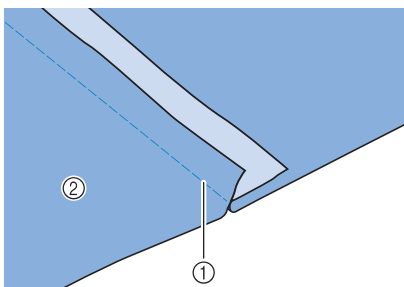
- 2 Sew the seam line, then cut half of the seam allowance from the side on which the flat fell seam will lie.

* When the automatic thread cutting and automatic reinforcement stitching are preset, reverse stitches will be sewn automatically at the beginning of sewing. Press  (Reinforcement stitch button) to sew a reinforcement stitch and trim the thread automatically at the end of sewing.



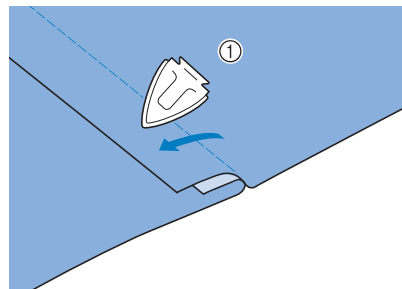
- ① About 1.2 cm (approx. 1/2 inch)
② Wrong side

- 3 Spread the fabric out along the seam.



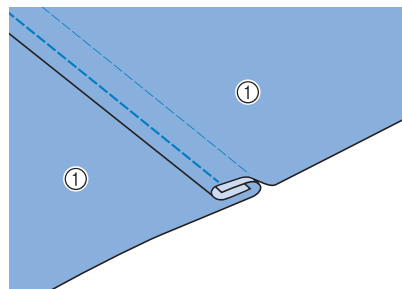
- ① Seam
② Wrong side

- 4 Lay both seam allowances on the side of the shorter seam (cut seam) and iron them.

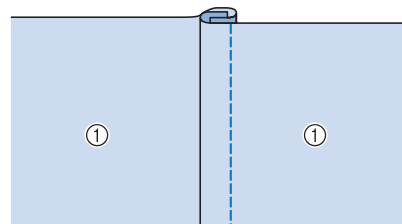


- ① Wrong side

- 5 Fold the longer seam allowance around the shorter one, and sew the edge of the fold.



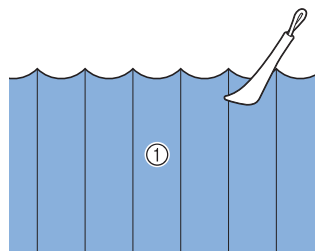
- ① Wrong side
Finished flat fell seam



- ① Surface

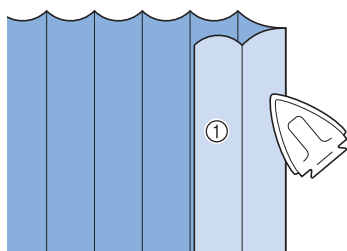
Pintuck

- 1 Mark along the folds on the wrong side of the fabric.



- ① Wrong side

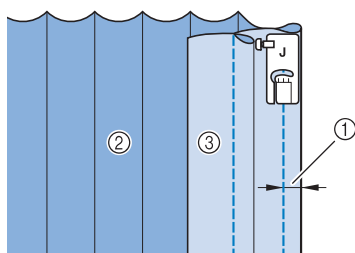
- 2 Turn the fabric and iron the folded parts only.



① Surface

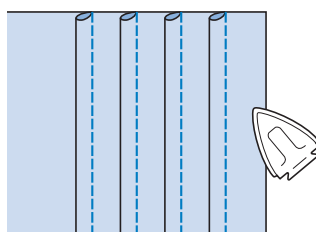
- 3 Select  and attach presser foot "J".

- 4 Sew a straight stitch along the fold.



① Width for pintuck
② Wrong side
③ Surface

- 5 Iron the folds in the same direction.

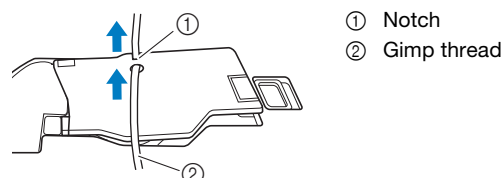


Zigzag Stitches

■ Cord Guide Bobbin Cover (Using a Zigzag Stitch)

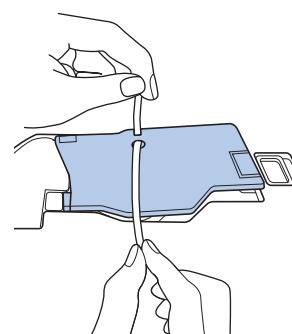
- 1 Remove the bobbin cover from the machine (page 33).

- 2 Thread the gimp thread through the hole in the cord guide bobbin cover from bottom to top. Position the thread in the notch at the back of the cord guide bobbin cover.



- 3 Snap the cord guide bobbin cover into place, making sure that the gimp thread can be fed freely.

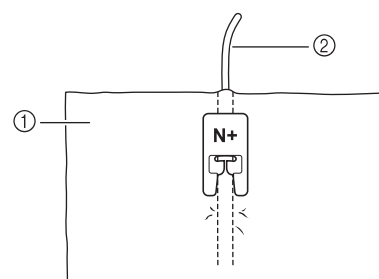
* Make sure there are no restrictions when feeding the thread.



- 4 Set the zigzag width from 2.0-2.5 mm (approx. 1/16 - 3/32 inch).

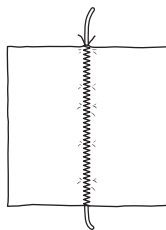
- 5 Attach advanced monogramming foot "N+".

- 6 Position the fabric right side up on top of the cord and place the cord to the rear of the machine under the presser foot.



① Fabric (right side)
② Gimp thread

- 7** Lower the presser foot and start sewing to make a decorative finish.



Overcasting

Sew overcasting stitches along the edges of cut fabric to prevent them from fraying.

Memo

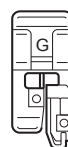
- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

■ Using Overcasting Foot “G”

- 1** Select a stitch.



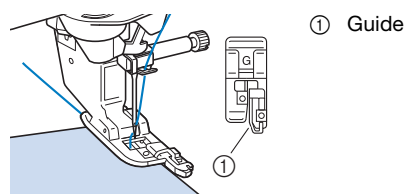
- 2** Attach overcasting foot “G”.



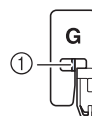
CAUTION

- When using overcasting foot “G”, be sure select a stitch that can be used with overcasting foot “G”. If you sew with the incorrect stitch, the needle may strike the presser foot and break, and may cause injury.

- 3** Position the fabric with the edge of the fabric against the guide of the presser foot, and then lower the presser foot lever.

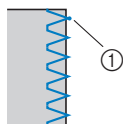


- 4** Rotate the handwheel toward you (counterclockwise). Check that the needle does not touch the presser foot.



- 1** The needle should not touch the center bar

- 5 Sew with the edge of the fabric against the presser foot guide.



① Needle drop point

IMPORTANT

- Be sure to pull the fabric backward after finished sewing. If you pull the fabric toward side or forward, the presser foot pin may be damaged.
- If thread is tangled on the presser foot, remove the entangled thread, and then raise the presser lever to remove the presser foot. If the presser foot is raised while entangled with thread, the presser foot may be damaged.

- 6 Press the "Start/Stop" button to stop sewing when you have reached the end of the stitching, and raise the presser foot and needle to pull the fabric under the presser foot towards the back of the machine.

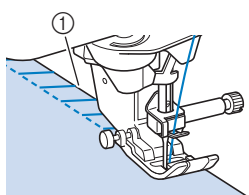
■ Using Zigzag Foot "J"

- 1 Select a stitch.



- 2 Attach zigzag foot "J".

- 3 Sew along the edge of the fabric with the needle dropping off the edge at the right.



① Needle drop point

Note

- Fine adjustment of the stitching on the fabric can be done with "L/R Shift". Before sewing your project, be sure to sew trial stitches using the same conditions as in the actual project.

Quilting

You can make beautiful quilts quickly and easily with this machine. When making a quilt, you will find it convenient to use the knee lifter and foot controller to free your hands for other tasks ("Using the Foot Controller" on page 47, "Using Advanced Multi-Function Foot Controller (Included with Some Models)" on page 47 and /or "Using the Knee Lifter" on page 58)

The 40 quilting stitches Q-01 through Q-40, stitches S-02 through S-04 and the utility stitches with "P" or "Q" indicated on their key are useful for quilting.

The "P" or "Q" at the bottom of the key display indicates that these stitches are intended for ("Q") quilting and ("P") piecing.



Memo

- When a stitch pattern in the quilting stitches category (only quilting stitches marked with "Q") is selected, a finer stitch width can be set than that available with stitch patterns in other categories.
- For details on stitch patterns, refer to "STITCH SETTING CHART" on page 125.

■ Piecing

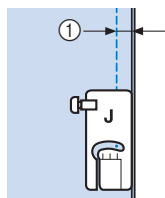
Sewing two pieces of fabric together is called piecing. When cutting pieces for quilt blocks, make sure the seam allowance is 6.5 mm (approx. 1/4 inch).

- 1 Select a stitch and attach presser foot "J".



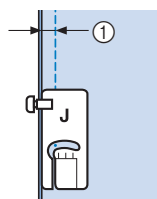
2 Align the edge of the fabric with the edge of the presser foot, and start sewing.

- * To sew a 6.5 mm (approx. 1/4 inch) seam allowance along the right edge of the presser foot with  (Q-02) selected, the width (which is the needle position) should be set to 5.50 mm (approx. 7/32 inch).



① 6.5 mm (approx. 1/4 inch)

- * To sew a 6.5 mm (approx. 1/4 inch) seam allowance along the left edge of the presser foot with  selected, the width should be set to 1.50 mm (approx. 1/16 inch).



① 6.5 mm (approx. 1/4 inch)

- * To change the needle position, use  or  in the L/R Shift display.



Memo

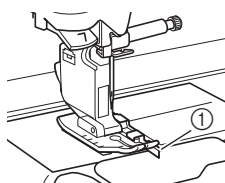
- In the case Q-01(center, at L/R Shift 3.5 mm) is selected, if the guideline marker is set at 10.0 mm (3.5 mm plus 6.5 mm, close to 1/4 inch), you can sew piecing by referring to the guideline marker.

■ Piecing Using the 1/4 Piecing Foot with Guide

This piecing foot can sew an accurate 1/4 inch or 1/8 inch seam allowance.

It can be used for piecing together a quilt or for topstitching.

1 Select , and then attach the 1/4 piecing foot with guide.

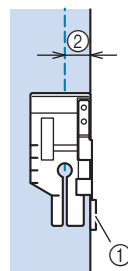


① Guide

2 Use the guide and marks on the presser foot to sew accurate seam allowances.

Piecing a 1/4 inch seam allowance

Sew keeping the edge of the fabrics against the guide.



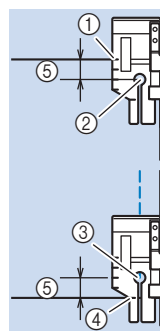
① Guide
② 1/4 inch

Memo

- For accurate fabric placement, refer to “Aligning the Fabric with a Mark on the Needle Plate or Bobbin Cover (with Mark)” on page 64.

Creating an accurate seam allowance

Use the mark on the foot to begin, end, or pivot 1/4 inch from edge of fabric.



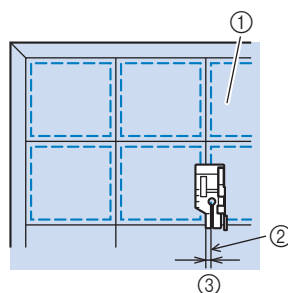
① Align this mark with edge of fabric to begin.
② Beginning of stitching
③ End of stitching
④ Opposite edge of fabric to end or pivot
⑤ 1/4 inch

Memo

- For details on pivoting, refer to “Pivoting” on page 57.

Topstitching quilting, 1/8 inch

Sew with the edge of the fabric aligned with the left side of the presser foot's front section.



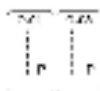
① Surface of fabric
② Seam
③ 1/8 inch

■ Quilting

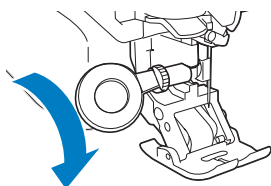
Sewing the quilt top, batting, and backing together is called quilting. You can sew the quilt with the compact dual feed foot to keep the quilt top, batting, and backing from sliding. The compact dual feed foot has a motorized belt that moves together with the feed dogs in the needle plate during sewing.

For straight line quilting, use the compact dual feed foot and the straight stitching needle plate. Always select a straight stitch (middle needle position) when using the straight stitch needle plate.

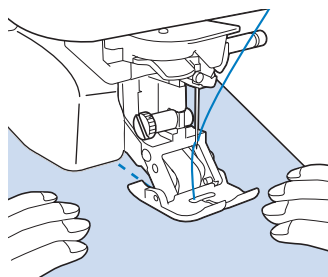
- 1 Select a stitch.



- 2 Attach the compact dual feed foot (page 98).



- 3 Place one hand on each side of the presser foot to hold the fabric secure while sewing.

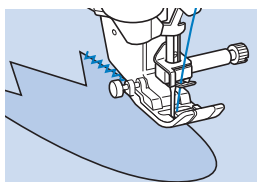


Memo

- Sew at slow to medium speed.
- Always check to be sure that your quilting project is securely basted before beginning to sew.

■ Appliqué

- 1 Use two-sided stabilizer material to secure the appliqué piece to the base fabric.
- 2 Select .
- 3 Attach the zigzag foot "J".
- 4 Turn the handwheel toward you (counterclockwise), and then begin sewing around the edge of the appliqué, making sure that the needle drops just outside of the appliqué.



When sewing around corners, stop the machine with the needle in the fabric just outside of the appliqué, raise the presser foot lever, and then turn the fabric as needed to change the sewing direction.

■ Quilting with Satin Stitches

For better fabric control, use the foot controller to sew with satin stitches. Set the speed control slide to control the stitch width to make subtle changes in the stitch width during sewing.

- 1 Attach the foot controller (page 47).
- 2 Select  and attach presser foot "J".
- 3 Touch  in the length display to shorten the stitch length.



Memo

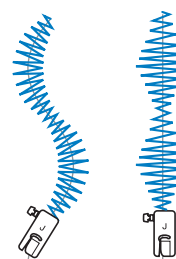
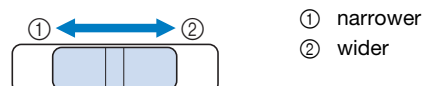
- The setting will vary according to the kind of fabric and the thickness of the thread, but a length of 0.3 to 0.5 mm (approx. 1/64 to 1/32 inch) is best for satin stitches.

- 4 Touch  to use the speed control slide to control the stitch width.
- 5 Set the [Width Control] to [ON].



- 6 Touch .
→ The display will return to the original screen.
- 7 While sewing, slide the sewing speed controller to adjust the stitch width.

* Adjust the sewing speed with the foot controller.



- 8 When you are finished sewing, set the [Width Control] back to [OFF].

■ Free Motion Quilting

With free motion quilting, the feed dogs can be lowered by touching , so that the fabric can be moved freely in any direction.

For free motion quilting, use free motion quilting foot “C” or free motion open toe quilting foot “O” depending on the stitch that is selected, and set the machine to free motion sewing mode. In this mode, the presser foot is raised to the necessary height for free motion sewing. We recommend attaching the foot controller and sewing at a consistent speed. You can adjust the sewing speed with the speed control slide on the machine.

⚠ CAUTION

- With free motion quilting, control the feeding speed of the fabric to match the sewing speed. If the fabric is moved faster than the sewing speed, the needle may break and cause injury.

📖 Memo

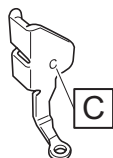
- When starting to sew, the internal sensor detects the thickness of the fabric, and the quilting foot is raised to the height specified in the machine settings screen. Touch  to display [Free Motion Foot Height] of the settings screen. Touch  or  to select the height that the quilting foot is raised above the fabric.



- In order to sew with a balanced tension, it may be necessary to adjust the upper thread tension. Test with a sample piece of fabric that is similar to your chosen fabric.
- Do not be discouraged with your initial results. The technique requires practice.

□ Using free motion quilting foot “C” (Included with some models)

Use the free motion quilting foot “C” with straight stitch needle plate for free motion sewing.

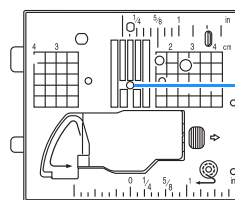


Free motion quilting foot “C”

⚠ CAUTION

- When using free motion quilting foot “C”, be sure to use the straight stitch needle plate. If the needle is moved to any position other than the middle (center) needle position, the needle may break, which may result in injuries.

1 Attach the straight stitch needle plate (page 59).



① Round hole

⚠ CAUTION

- The machine must be turned off and unplugged when switching the needle plate.

2 Select a stitch.



3 Touch to set the machine to free motion sewing mode.



→ The key appears as , the quilting foot is raised to the necessary height, and then the feed dogs are lowered for free motion sewing.

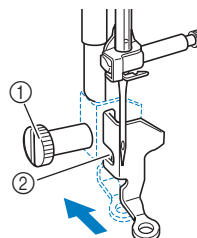


① Free motion quilting foot “C”

→ When stitch Q-01 or 1-31 is selected, free motion quilting foot “C” is indicated in the upper-left corner of the screen.

4 Remove the presser foot holder (page 43).

5 Attach free motion quilting foot “C” at the front with the presser foot holder screw aligned with the notch in the foot.



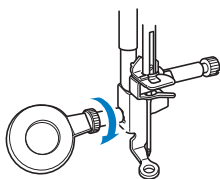
① Presser foot holder screw

② Notch

💡 Note

- Make sure that the free motion quilting foot “C” is attached properly and not slanted.

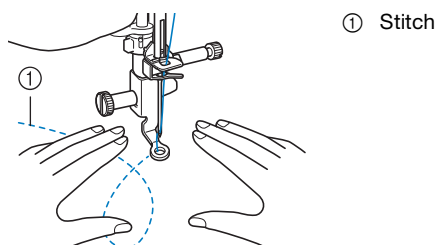
- 6 Hold the free motion quilting foot “C” in place with your right hand, and tighten the presser foot holder screw using the disc-shaped screwdriver with your left hand.



CAUTION

- Be sure to securely tighten the screws with the disc-shaped screwdriver. Otherwise, the needle may touch the free motion quilting foot “C”, causing it to break and causing injury.

- 7 Use both hands to stretch the fabric taut, and then move the fabric at a consistent pace in order to sew uniform stitches roughly 2.0-2.5 mm (approx. 1/16 - 3/32 inch) in length.



- 8 Touch  to cancel the free motion sewing mode.

→ Rotate the handwheel toward you (counterclockwise) to raise the feed dogs.

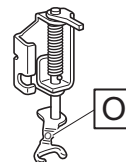
- 9 After sewing, make sure to remove the straight stitch needle plate and free motion quilting foot “C”, and reinstall the regular needle plate.

Note

- Free motion open toe quilting foot “O” can also be used with the straight stitch needle plate. We recommend using free motion open toe quilting foot “O” with free motion sewing of fabrics of uneven thicknesses.

- Using free motion open toe quilting foot “O”

The free motion open toe quilting foot “O” is used for free motion quilting with zigzag or decorative stitches or for free motion quilting of straight lines on fabric with an uneven thickness. Various stitches can be sewn using free motion open toe quilting foot “O”. For details on the stitches that can be used, refer to “STITCH SETTING CHART” on page 125.



Free motion open toe quilting foot “O”

Memo

- The standard needle plate must be used if zigzag or decorative stitch patterns are selected.

- 1 Touch  to set the machine to free motion sewing mode.

→ The key appears as , the quilting foot is raised to the necessary height, and then the feed dogs are lowered for free motion sewing.

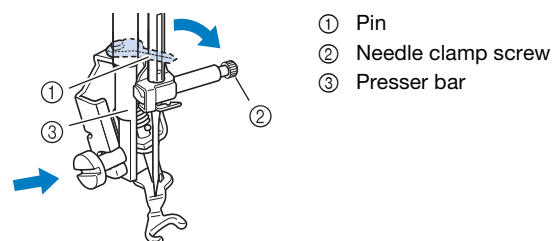
- 2 Select a stitch.

Memo

- When stitch Q-01 or 1-31 is selected, free motion quilting foot “C” is indicated in the upper-left corner of the screen. When the other stitches are selected, free motion open toe quilting foot “O” is indicated in the screen.

- 3 Remove the presser foot holder (page 43).

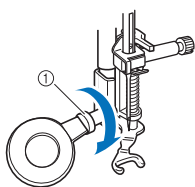
- 4 Attach free motion open toe quilting foot “O” by positioning the pin of the foot above the needle clamp screw and aligning the lower-left of the foot and the presser bar.



Note

- Make sure that the free motion open toe quilting foot “O” is not slanted.

- 5** Hold the free motion open toe quilting foot “O” in place with your right hand, and tighten the presser foot holder screw using the disc-shaped screwdriver with your left hand.

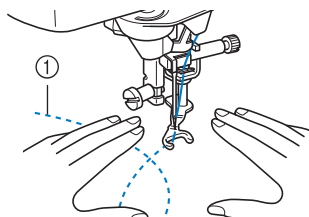


① Presser foot holder screw

⚠ CAUTION

- Be sure to securely tighten the screws with the disc-shaped screwdriver. Otherwise, the needle may touch the free motion open toe quilting foot “O”, causing it to break and causing injury.

- 6** Use both hands to stretch the fabric taut, and then move the fabric at a consistent pace in order to sew uniform stitches roughly 2.0-2.5 mm (approx. 1/16 - 3/32 inch) in length.



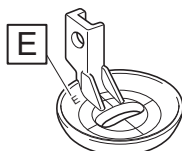
① Stitch

- 7** Touch  to cancel the free motion sewing mode.

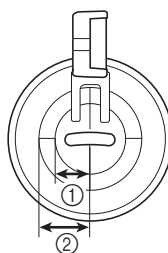
→ Rotate the handwheel toward you (counterclockwise) to raise the feed dogs.

■ Echo Quilting Using the Free Motion Echo Quilting Foot “E” (Included with Some Models)

Sewing quilting lines at equal distances around a motif is called echo quilting. The quilting lines, which appear as ripples echoing away from the motif, are the distinguishing characteristic of this quilting style. Use the free motion echo quilting foot “E” for echo quilting. Using the measurement on the presser foot as a guide, sew around the motif at a fixed interval. We recommend attaching the foot controller and sewing at a consistent speed.

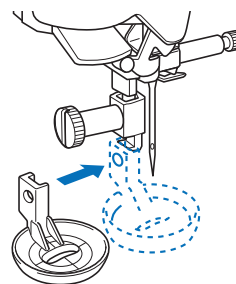


Free motion echo quilting foot “E” measurements

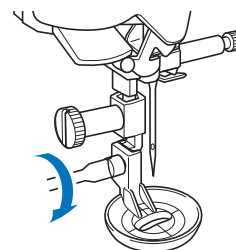
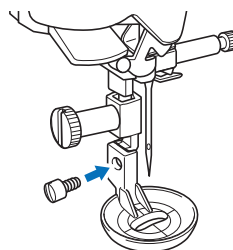


- ① 6.4 mm (approx. 1/4 inch)
- ② 9.5 mm (approx. 3/8 inch)

- 1** Select .
- 2** Touch  to set the machine to free motion sewing mode.
→ The key appears as , the quilting foot is raised to the necessary height, then the feed dogs are lowered for free motion sewing.
- 3** Remove the presser foot holder and then attach the adapter. (page 43)
- 4** Position the free motion echo quilting foot “E” on the left side of the presser bar with the holes in the foot and presser bar aligned.



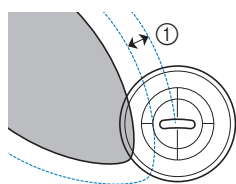
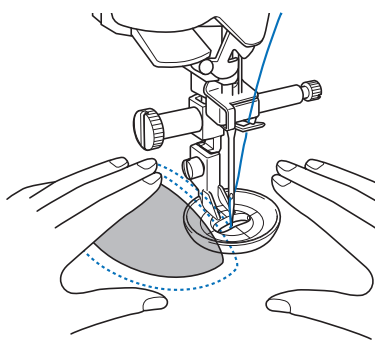
- 5** Tighten the screw with the included screwdriver (large).



⚠ CAUTION

- Be sure to securely tighten the screws with the included screwdriver (large). Otherwise, the needle may touch the free motion echo quilting foot “E”, causing it to break and causing injury.

- 6** Using the measurement on the free motion echo quilting foot “E” as a guide, sew echo quilting around the motif.



Finished project

① 6.4 mm (approx.
1/4 inch)

- 7** Touch  to cancel the free motion sewing mode.
→ Rotate the handwheel toward you
(counterclockwise) to raise the feed dogs.

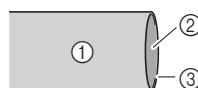
Blind Hem Stitches

Secure the lower edge of skirts and pants with a blind hem.

Memo

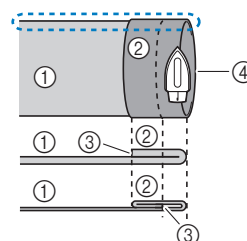
- When the size of cylindrical pieces is too small to slide onto the arm or the length is too short, the fabric will not feed and desired results may not be achieved.
- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

- 1** Turn the skirt or pants inside out.



- ① Wrong side of fabric
② Right side of fabric
③ Lower edge of fabric

- 2** Fold the lower edge of fabric to the desired length to be hemmed and then press.



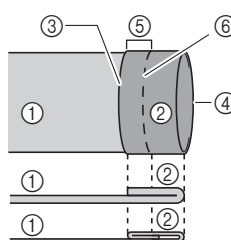
- ① Wrong side of fabric
② Right side of fabric
③ Lower edge of fabric
④ Desired length for hem

<Thick fabric>

<Normal fabric>

<Seen  from the side>

- 3** Using tailor's chalk, mark the fabric about 5 mm (approx. 3/16 inch) from the edge of the fabric, and then baste it.



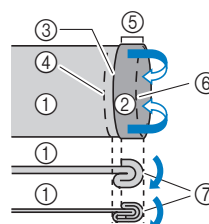
- ① Wrong side of fabric
② Right side of fabric
③ Lower edge of fabric
④ Desired length for hem
⑤ 5 mm (approx. 3/16 inch)
⑥ Basting

<Thick fabric>

<Normal fabric>

<Seen from the side>

- 4** Fold back the fabric inside along the basting.



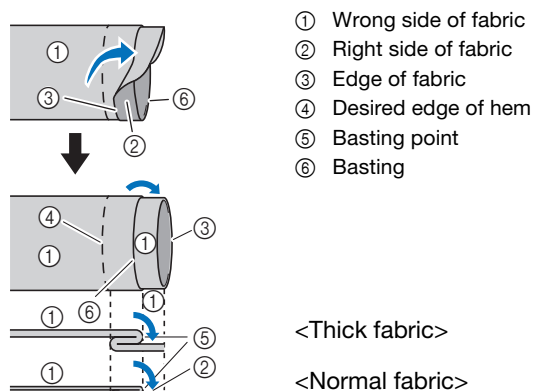
- ① Wrong side of fabric
② Right side of fabric
③ Lower edge of fabric
④ Desired length for hem
⑤ 5 mm (approx. 3/16 inch)
⑥ Basting
⑦ Basting point

<Thick fabric>

<Normal fabric>

<Seen from the side>

- 5** Unfold the edge of fabric, and position the fabric with the wrong side facing up.

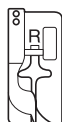


<Seen from the side>

- 6** Select a stitch.

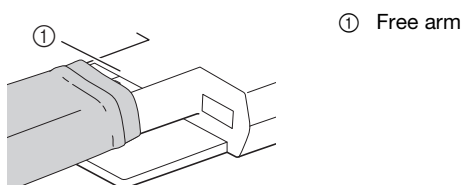


- 7** Attach blind stitch foot “R”.

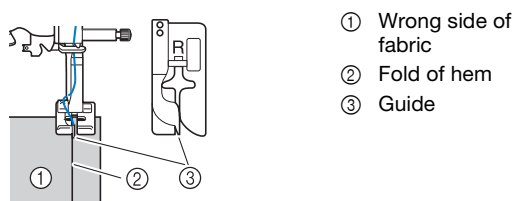


- 8** Remove the flat bed attachment to use the free arm.

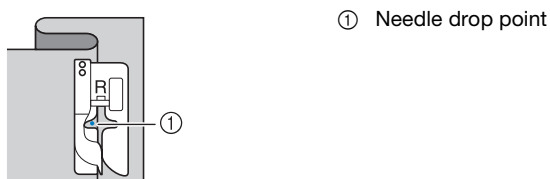
- 9** Slide the item that you wish to sew onto the free arm, make sure that the fabric feeds correctly.



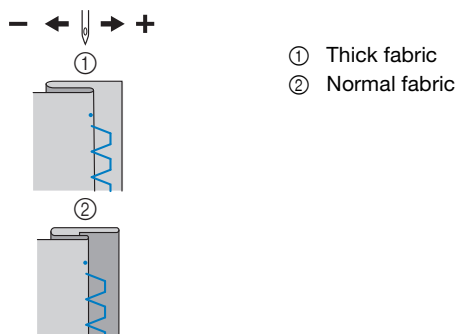
- 10** Position the fabric with the edge of the folded hem against the guide of the presser foot, and then lower the presser foot lever.



- 11** Adjust the stitch width until the needle slightly catches the fold of the hem. (page 53)



When you change the needle drop point, raise the needle, and then use and to decide the needle drop point. (The stitch width setting is in neither millimeters nor inches.)



Memo

- Blind hem stitches cannot be sewn if the left needle drop point does not catch the fold. If the needle catches too much of the fold, the fabric cannot be unfolded and the seam appearing on the right side of the fabric will be very large, leaving an unattractive finish.

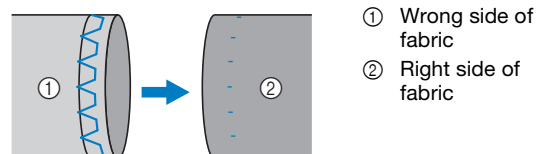
- 12** Sew with the fold of the hem against the presser foot guide.

- 13** Press the “Start/Stop” button to stop sewing when you are finished, and raise the presser foot and needle to pull the fabric under the presser foot towards the left of the machine.

IMPORTANT

- Be sure to pull the fabric towards the back of the machine after sewing. If you pull the fabric toward side or forward, the presser foot may be damaged.

- 14** Remove the basting stitching and turn the fabric with the right side facing out.



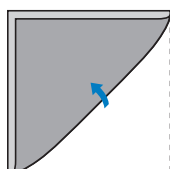
Shell Tuck Stitches

The gathers that look like shells are called “shell tucks”. They are used to decorate trims, the front of blouses or cuffs made of thin fabrics.

Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

- 1 Draw equally spaced lines along the bias, and then fold the fabric along the lines.

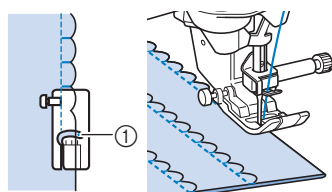


- 2 Select , and then increase the thread tension.

- 3 Attach zigzag foot “J”.

- 4 Sew while making sure that the needle drops slightly off the edge of the fabric.

One fold at a time, continue folding the fabric along the line, then sewing it.



① Needle drop point

- 5 After sewing is finished, remove the fabric. Unfold the fabric, and then iron the tucks down to one side.

Scallop Stitches

The wave-shaped satin stitch is called “scalloping”. Use this stitch to decorate the edges of blouse collars and handkerchiefs or use it as a hem accent.

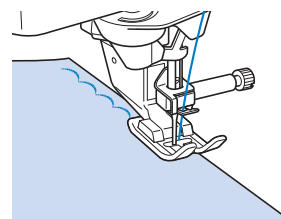
Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

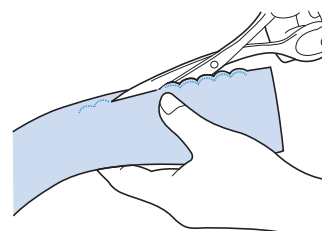
- 1 Select .

- 2 Attach advanced monogramming foot “N+”.

- 3 Stitch along the edge of the fabric, making sure not to sew directly on the edge of the fabric.



- 4 Trim along the stitches.



- Be careful not to cut the stitches.

Smocking Stitches

The decorative stitch created by stitching over gathers is called “smocking”. It is used to decorate the front of blouses or cuffs.

The smocking stitch adds texture and elasticity to fabric.

Memo

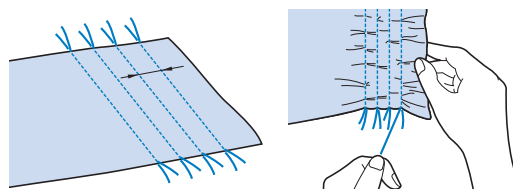
- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

- 1 Select the straight stitch, and then adjust the stitch length to 4.0 mm (approx. 3/16 inch) and loosen the thread tension.

- 2 Attach zigzag foot “J”.

- 3 Sew parallel stitching at intervals of 1 cm (approx. 3/8 inch) and pull the bobbin threads to create gathers.

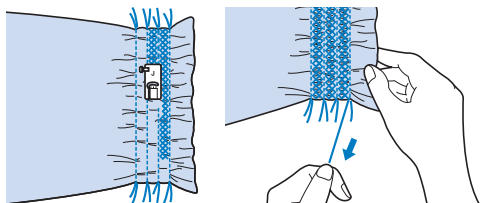
Smooth the gathers by ironing them.



- 4 Select a stitch.



- 5** Stitch between the straight stitches and pull out the threads for the straight stitches.



Fagoting

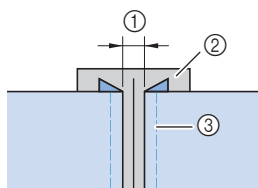
Stitching across an open seam is called “fagoting”. It is used on blouses and children’s clothing. This stitch is more decorative when thicker thread is used.

Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

- 1 Use an iron to fold the two pieces of fabric along their seams.
- 2 Baste the two pieces of fabric, separated by about 4 mm (approx. 3/16 inch), onto thin paper or a sheet of water soluble stabilizer.

If you draw a line down the middle of the thin paper or water soluble stabilizer, sewing is easier.

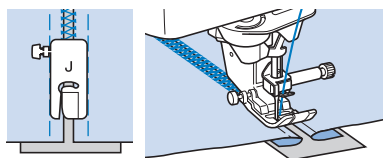


- ① About 4 mm (approx. 3/16 inch)
- ② Thin paper or water soluble stabilizer
- ③ Basting stitching

- 3 Select a stitch.



- 4 Attach zigzag foot “J”.
- 5 Set the stitch width to 7.0 mm (approx. 1/4 inch).
- 6 Sew with the center of the presser foot aligned along the center of the two pieces of fabric.



- 7 After sewing is finished, remove the paper.

Attaching Tape or Elastic

Memo

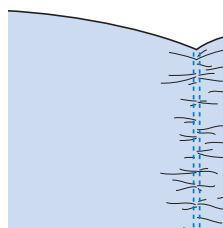
- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

- 1 Select a straight stitch and attach presser foot “J”.
- 2 Set the stitch length to 4.0 mm (approx. 3/16 inch), and loosen the upper thread tension to 2.0 (page 54).

Memo

- Be sure that neither automatic reinforcement  nor automatic thread cutting  is selected.

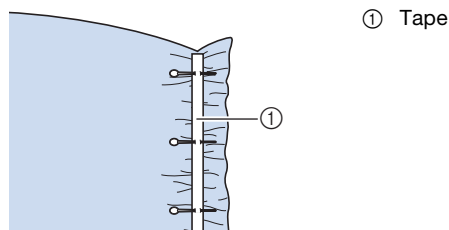
- 3 Sew two rows of straight stitches on the right side of the fabric, then pull the bobbin thread to create the necessary gather.



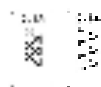
Memo

- Before sewing the straight stitch, rotate the handwheel toward you (counterclockwise) and pull up the bobbin thread. Holding the top and bobbin thread, pull a length of thread out from the rear of the machine. (Be sure that the presser foot is raised.)

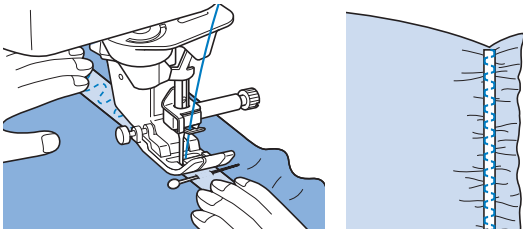
- 4 Place the tape over the gather, and hold it in place with basting pins.



- 5 Select a stitch.



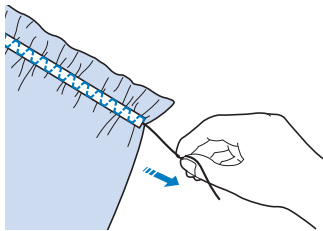
6 Sew over the tape (or elastic).



⚠ CAUTION

- Be sure the needle does not strike a basting pin, or any other objects, during sewing. The thread could tangle or the needle could break, causing injury.

7 Pull out the straight stitch threads.



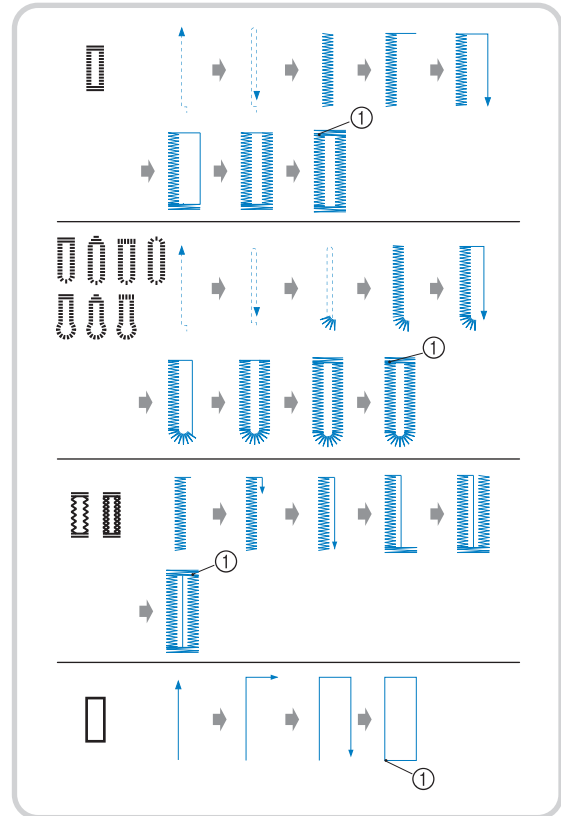
One-Step Buttonholes

With one-step buttonholes, you can make buttonholes appropriate to the size of your button.

One-step buttonholes are sewn from the front of the presser foot to the back, as shown below.

Memo

- For details on stitch patterns, refer to "STITCH SETTING CHART" on page 125.



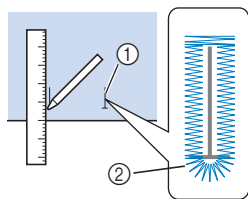
① Reinforcement stitching

1 Select a buttonhole stitch, and attach buttonhole foot "A".

Position the upper thread under the presser foot by guiding thread through the hole in the presser foot before attaching the buttonhole foot "A".



- 2** Mark the position and length of the buttonhole on the fabric.

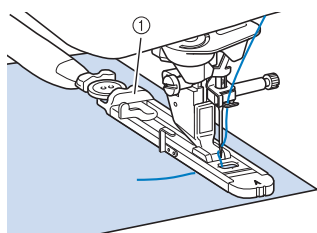


- ① Marks on fabric
② Buttonhole sewing

Memo

- The maximum buttonhole length is about 28 mm (approx. 1-1/16 inches) (diameter + thickness of the button).

- 3** Pull out the button holder plate on the presser foot, and insert the button that will be put through the buttonhole. Then tighten the button holder plate around the button.

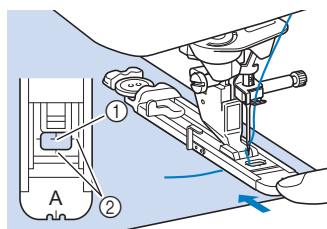


- ① Button holder plate

Memo

- The size of the buttonhole is determined by the size of the button in the button holder plate.

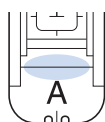
- 4** Align the presser foot with the mark on the fabric, and lower the presser foot.



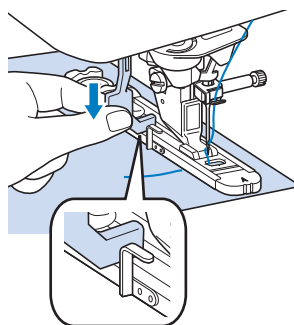
- ① Mark on the fabric
② Marks on the presser foot

Note

- Slide the outside frame of the buttonhole foot backward as far as possible as shown in the illustration, making sure that there is no gap behind the part of the foot marked "A". If the buttonhole foot is not slid back as far as possible, the buttonhole will not be sewn at the correct size.

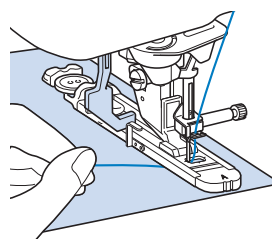


- 5** Lower the buttonhole lever so that it is positioned behind the metal bracket on the buttonhole foot.



- 6** Gently hold the end of the upper thread, and then start sewing.

- * Feed the fabric carefully by hand while the buttonhole is sewn.



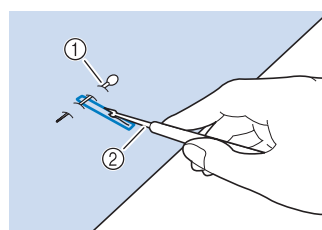
→ Once sewing is completed, the machine automatically sews reinforcement stitches, and then stops.

- 7** Press the "Thread Cutter" button once. Raise the presser foot, and then remove the fabric.

Memo

- When using the thread cutter on the left side of the machine or scissors to cut the threads, press the "Needle Position" button to raise the needle, raise the presser foot, and then pull out the fabric before cutting the threads.

- 8** Insert a pin along the inside of one of the bar tacks, and then insert the seam ripper into the center of the buttonhole and cut towards the pin.



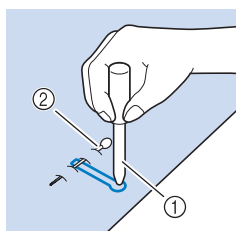
- ① Basting pin
② Seam ripper

CAUTION

- When using the seam ripper to open the buttonhole, do not put your hand or finger in the path of the ripper. The ripper may slip and cause injury.

Memo

- For keyhole buttonholes, use the eyelet punch to make a hole in the rounded end of the buttonhole. Then insert a pin along the inside of one of the bar tacks, insert a seam ripper into the hole made with the eyelet punch, and cut towards the pin.



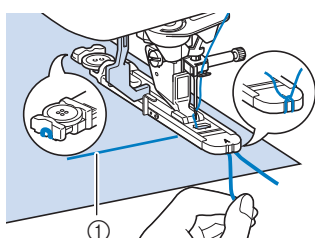
- ① Eyelet punch
② Basting pin

Sewing Stretch Fabrics**Note**

- Attach stabilizer material to the back of stretch fabrics to prevent them from stretching.

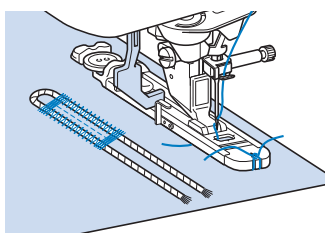
When sewing on stretch fabric with  or , sew the buttonhole stitches over a gimp thread.

- 1** Hook the gimp thread onto the back of presser foot “A”. Insert the ends into the grooves at the front of the presser foot, and then temporarily tie them there.

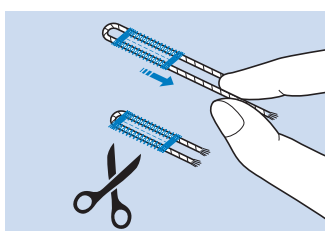


- ① Upper thread

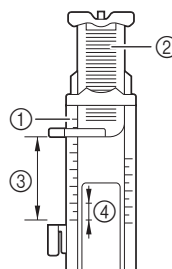
- 2** Lower the presser foot and start sewing.



- 3** Once sewing is completed, gently pull the gimp thread to remove any slack, and trim off any excess.

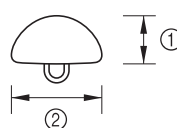
**Odd Shaped Buttons/Buttons that Do Not Fit into the Button Holder Plate**

Add together the diameter and thickness of the button, and then set the button holder plate to the calculated length. (The distance between the markings on the presser foot scale is 5 mm (approx. 3/16 inch).)



- ① Presser foot scale
② Button holder plate
③ Combined measurement of diameter + thickness
④ 5 mm (approx. 3/16 inch)

Example: For a button with a diameter of 15 mm (approx. 9/16 inch) and a thickness of 10 mm (approx. 3/8 inch), the scale should be set at 25 mm (approx. 1 inch).



- ① 10 mm (approx. 3/8 inch)
② 15 mm (approx. 9/16 inch)

Four-Step Buttonholes

You can sew 4-step buttonholes using the following 4 stitches together. You can sew any desired length for the buttonhole when using 4-step buttonholes. 4-step buttonholes are a good option when attaching oversize buttons.

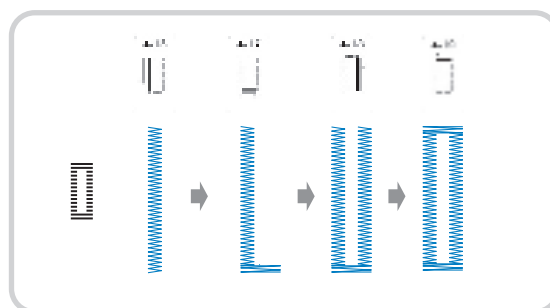
Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

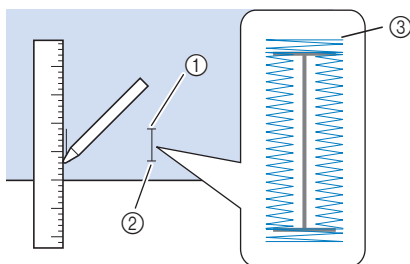
Note

- When changing the stitch settings, make sure that all stitch settings are changed to match.

Four-step buttonholes are sewn as shown below.



- 1** Mark the position and length of the buttonhole on the fabric.

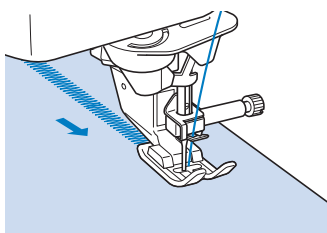


- ① Starting point
② End point
③ Buttonhole sewing

- 2** Attach advanced monogramming foot “N+”, and select stitch  to sew the left side of the buttonhole.

- 3** Press the “Start/Stop” button to start sewing.

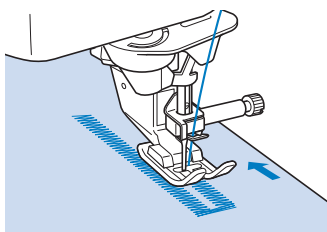
- 4** Sew the desired length for the buttonhole and press the “Start/Stop” button again.



- 5** Select stitch  to sew the bar tack and press the “Start/Stop” button.

→ The machine will automatically stop after sewing the bar tack.

- 6** Select stitch  to sew the right side of the buttonhole, and press the “Start/Stop” button to begin sewing.



- 7** Sew the right side of the buttonhole and press the “Start/Stop” button again.

* Sew the right side of the buttonhole the same length as the left.

- 8** Select stitch  to sew the bar tack and then press the “Start/Stop” button.

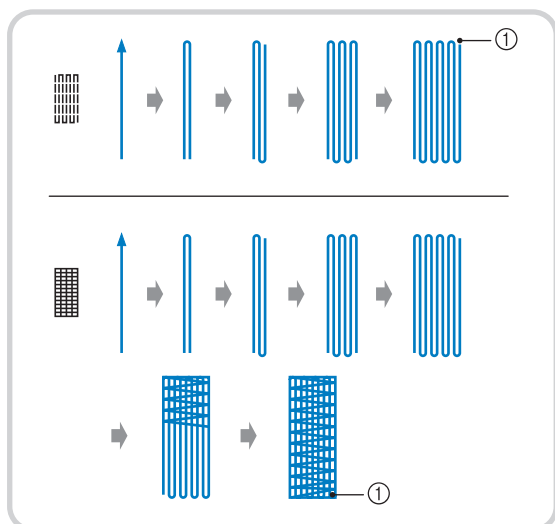
→ The machine will automatically sew off the bar tack tie and stop when the bar tack is complete.

- 9** Raise the presser foot and remove the fabric.

- 10** Open the buttonhole (page 80).

■ Darning

Use darning stitches for mending and other applications. Darning is performed by sewing from the front of the presser foot to the back as shown below.

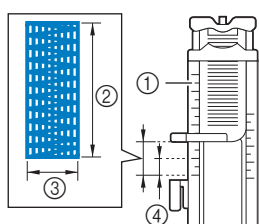


① Reinforcement stitches

- 1** Select  or , and attach buttonhole foot “A”.

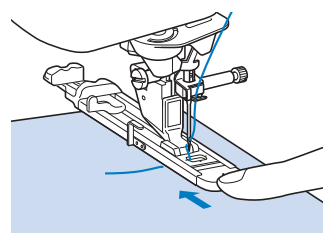
Position the upper thread under the presser foot by guiding thread through the hole in the presser foot before attaching the buttonhole foot “A”.

- 2** Set the scale to the desired length of the darning.



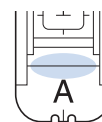
- ① Presser foot scale
- ② Completed length measurement
- ③ Width 7 mm (approx. 1/4 inch)
- ④ 5 mm (approx. 3/16 inch)

- 3** Check that the needle drops at the desired position and lower the presser foot, making sure the upper thread passes underneath the buttonhole foot.

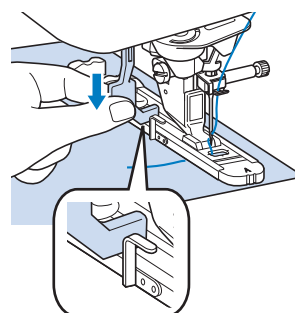


Note

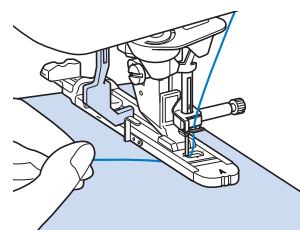
- Slide the outside frame of the buttonhole foot backward as far as possible as shown in the illustration, making sure that there is no gap behind the part of the foot marked “A”. If the buttonhole foot is not slid back as far as possible, the buttonhole will not be sewn at the correct size.



- 4** Lower the buttonhole lever so that it is positioned behind the metal bracket on the buttonhole foot.



- 5** Gently hold the end of the upper thread, and then press the “Start/Stop” button to start the machine.



→ Once sewing is completed, the machine automatically sews reinforcement stitches, and then stops.

Bar Tacks

Use bar tacks to reinforce areas that will be subject to strain, such as pocket corners.

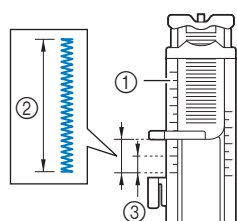
Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

1 Select .

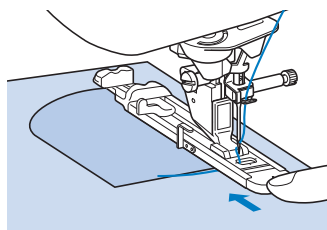
2 Attach buttonhole foot “A” and set the scale to the length of the bar tack you wish to sew.

Position the upper thread under the presser foot by guiding thread through the hole in the presser foot before attaching the buttonhole foot “A”.



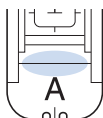
- ① Presser foot scale
- ② Completed length measurement
- ③ 5 mm (approx. 3/16 inch)

3 Set the fabric so that the pocket moves toward you during sewing.

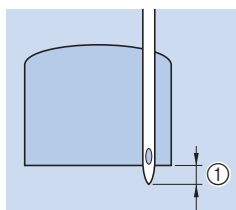


Note

- Slide the outside frame of the buttonhole foot backward as far as possible as shown in the illustration, making sure that there is no gap behind the part of the foot marked “A”. If the buttonhole foot is not slid back as far as possible, the buttonhole will not be sewn at the correct size.

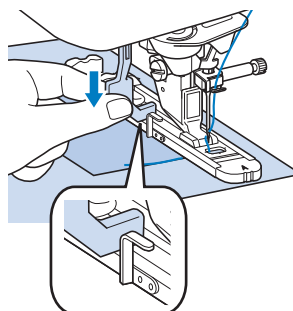


4 Check the first needle drop point and lower the presser foot.

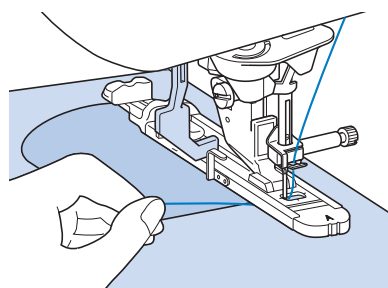


- ① 2 mm (approx. 1/16 inch)

5 Lower the buttonhole lever so that it is positioned behind the metal bracket on the buttonhole foot.



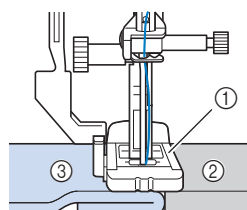
6 Gently hold the end of the upper thread and start sewing.



→ When sewing is completed, the machine will sew reinforcement stitches and stop automatically.

■ Bar Tacks On Thick Fabrics

Place a piece of folded fabric or cardboard beside the fabric being sewn to level the buttonhole foot and allow for easier and even feeding.



- ① Presser foot
- ② Thick paper
- ③ Fabric

Button Sewing

Buttons with 2 or 4 holes can be attached, using the machine.

Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

Note

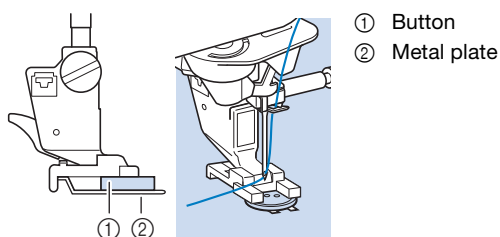
- Do not use the automatic thread cutting function when sewing buttons. Otherwise, you will lose the thread ends.

1 Select

→ The feed dogs are lowered automatically.

2 Raise the presser foot.

3 Attach button fitting foot “M”, slide the button along the metal plate and into the presser foot, and lower the presser foot.



4 Rotate the handwheel toward you (counterclockwise) to check that the needle goes into each hole correctly.



- * If the needle does not reach the holes on the left side, adjust the stitch width.

5 Gently hold the end of the upper thread and start sewing.

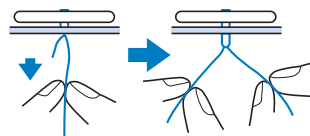
→ The machine stops automatically when sewing is finished.

IMPORTANT

- Make sure the needle does not strike the button during sewing.

- * To attach the button more securely, repeat the process.

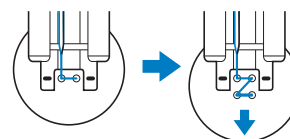
6 From the wrong side of the fabric, pull the end of the bobbin thread to pull the upper thread through to the wrong side of the fabric. Tie the two thread ends together and cut the threads.



7 After the button is attached, select another stitch and rotate the handwheel toward you (counterclockwise) to raise the feed dogs.

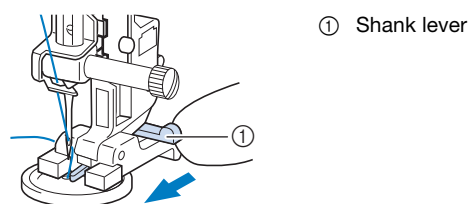
■ Attaching 4-Hole Buttons

Sew the two holes closest to you. Then raise the presser foot and move the fabric so that the needle goes into the next two holes, and sew them in the same way.

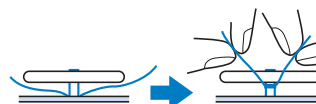


■ Attaching a Shank to the Button

1 Pull the shank lever toward you before sewing.



2 After sewing is finished, pull the two ends of the upper thread between the button and the fabric, wind them around the shank, and then tie them firmly together.



3 Tie the ends of the bobbin thread from the beginning and end of sewing together on the wrong side of the fabric.

4 Cut off any excess thread.

Eyelet

Use this stitch for making belt holes and other similar applications.

Memo

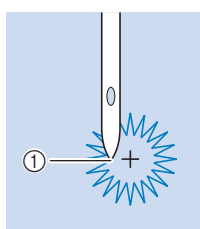
- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

1 Select a stitch.



2 Use in either the stitch width display or the stitch length display to choose the size of the eyelet (page 53).

3 Attach advanced monogramming foot “N+”, then rotate the handwheel toward you (counterclockwise) to check the needle drop point.

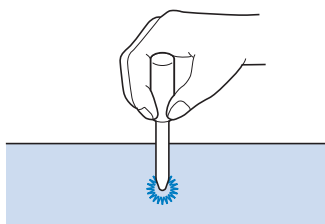


① Needle drop point

4 Lower the presser foot and start sewing.

→ When sewing is finished, the machine sews reinforcement stitches and stops automatically.

5 Use the eyelet punch to make a hole in the center of the stitching.



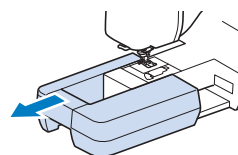
Multi-directional Sewing (Straight Stitch and Zigzag Stitch)

Use these stitch patterns to attach patches or emblems to pant legs, shirt sleeves, etc.

Memo

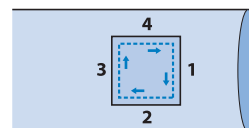
- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.

1 Remove the flat bed attachment to use the free-arm.



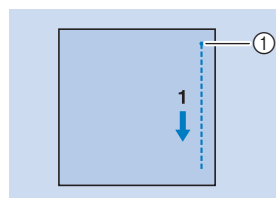
Memo

- Insert the tubular piece of fabric onto the free-arm, and then sew in the order shown in the illustration.



2 Select and attach advanced monogramming foot “N+”.

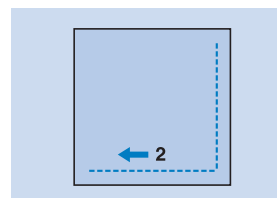
3 Set the needle in the fabric at the sewing start point, and sew seam “1” as shown.



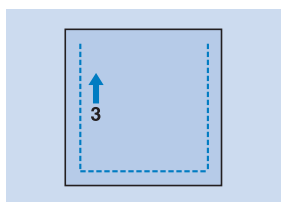
① Start Point

4 Select and sew seam “2” as shown.

* The fabric will move sideways, guide the fabric by hand to keep sewing straight.

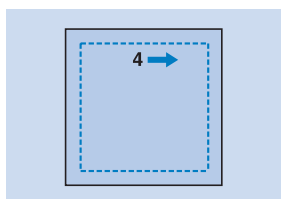


- 5 Select  and sew seam "3" as shown.



→ The fabric feeds forward while stitching backward.

- 6 Select  and sew seam "4" as shown.



→ The seam will be connected to the starting point of seam 1.

Zipper Insertion

■ Centered Zipper

Use for bags and other such applications.

Memo

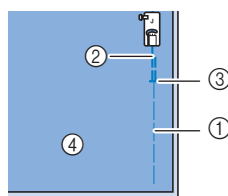
- For details on stitch patterns, refer to "STITCH SETTING CHART" on page 125.

Note

- Make sure you sew using the middle needle position.

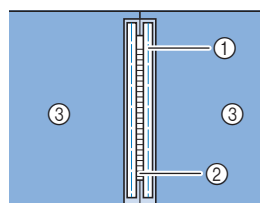
- 1 Select .

- 2 Attach presser foot "J" and sew straight stitches up to the zipper opening. Change to a basting stitch (page 64) and sew to the top of the fabric.



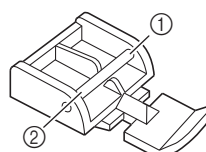
- ① Basting stitches
- ② Reverse stitches
- ③ End of zipper opening
- ④ Wrong side

- 3 Press the seam allowance open and attach the zipper with a basting stitch in the middle of each side of the zipper tape.



- ① Basting stitches
- ② Zipper
- ③ Wrong side

- 4 Remove presser foot "J". Align the right side of the pin in zipper foot "I" with the presser foot holder, and attach the zipper foot.

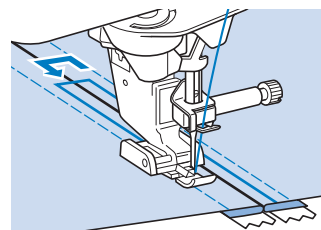


- ① Right
- ② Left
- ③ Needle drop point

Note

- When using zipper foot "I", make sure the straight stitch, middle needle position is selected. Rotate the handwheel toward you (counterclockwise) to make sure the needle does not strike the presser foot.

- 5 Topstitch 7 to 10 mm (approx. 1/4 to 3/8 inch) from the seamed edge of the fabric, then remove the basting.



⚠ CAUTION

- Make sure the needle does not strike the zipper during sewing. If the needle strikes the zipper, the needle may break, leading to injury.

■ Inserting a Side Zipper

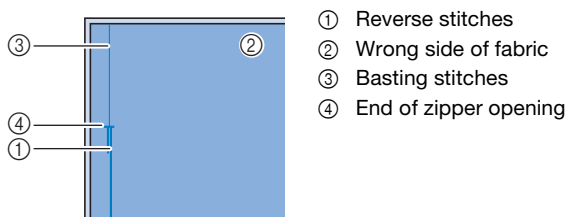
Use for side zippers in skirts or dresses.

- 1 Select .

Note

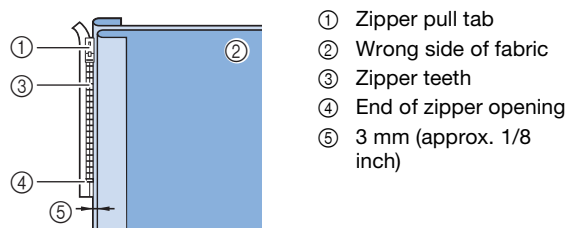
- Make sure you sew using the middle needle position.

- 2** Attach presser foot “J” and sew straight stitches up to the zipper opening. Change to a basting stitch and sew to the top of the fabric.



- ① Reverse stitches
- ② Wrong side of fabric
- ③ Basting stitches
- ④ End of zipper opening

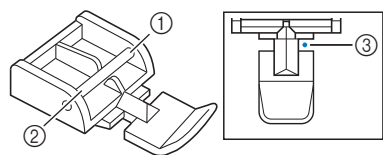
- 3** Press the seam allowance open and align the folded hem along the teeth of the zipper, while maintaining 3 mm (approx. 1/8 inch) of sewing space.



- ① Zipper pull tab
- ② Wrong side of fabric
- ③ Zipper teeth
- ④ End of zipper opening
- ⑤ 3 mm (approx. 1/8 inch)

- 4** Remove presser foot “J”.

- 5** Align the right side of the pin in zipper foot “1” with the presser foot holder, and attach the presser foot.

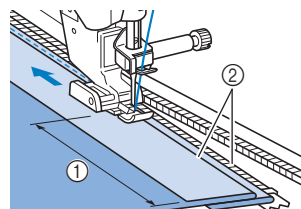


- ① Right
- ② Left
- ③ Needle drop point

- 6** Set the presser foot in the 3 mm (approx. 1/8 inch) margin.

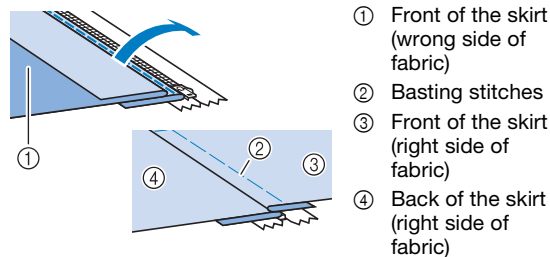
- 7** Starting from the end of the zipper opening, sew to a point about 5 cm (approx. 2 inches) from the edge of the fabric, then stop the machine.

- 8** Pull down the zipper slider, then continue sewing to the edge of the fabric.



- ① About 5 cm (approx. 2 inches)
- ② 3 mm (approx. 1/8 inch)

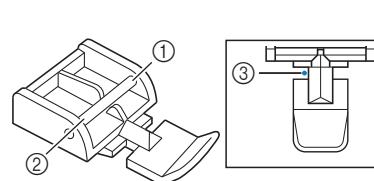
- 9** Close the zipper, turn the fabric over, and sew a basting stitch.



- ① Front of the skirt (wrong side of fabric)
- ② Basting stitches
- ③ Front of the skirt (right side of fabric)
- ④ Back of the skirt (right side of fabric)

- 10** Remove the presser foot, and reattach it so that the left side of the pin is attached to the presser foot holder.

* When sewing the left side of the zipper, the needle should drop on the right side of the presser foot. When sewing the right side of the zipper, the needle should drop on the left side of the presser foot.



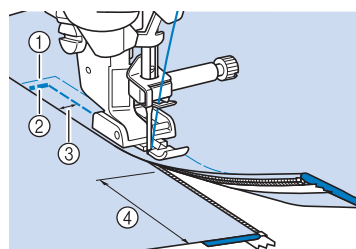
- ① Right
- ② Left
- ③ Needle drop point

- 11** Set the fabric so that the left edge of the presser foot touches the edge of the zipper teeth.

- 12** Sew reverse stitches at the top of the zipper, then continue sewing.

- 13** Stop sewing about 5 cm (approx. 2 inches) from the edge of the fabric, leave the needle in the fabric, and remove the basting stitches.

- 14** Open the zipper and sew the rest of the seam.



- ① Basting stitches
- ② Reverse stitches
- ③ 7 to 10 mm (approx. 1/4 inch to 3/8 inch)
- ④ About 5 cm (approx. 2 inches)

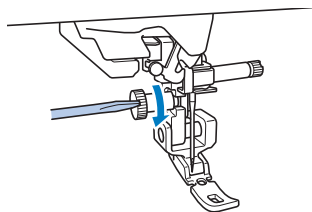
! CAUTION

- Make sure the needle does not strike the zipper during sewing. If the needle strikes the zipper, the needle may break, leading to injury.

Adjustable Zipper/Piping Insertion

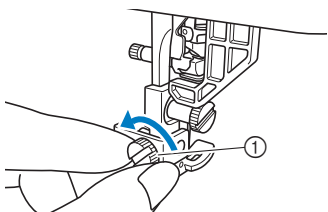
■ Centered Zipper

- 1 Refer to step 1 to 3 of “Centered Zipper” on page 87.
- 2 Remove presser foot “J” and the presser holder to attach the adjustable zipper/piping foot.



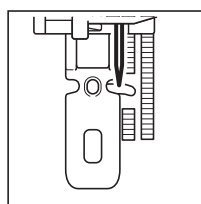
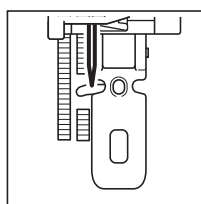
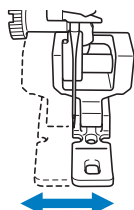
- 3 Select .

- 4 Loosen the positioning screw on the back of the presser foot.



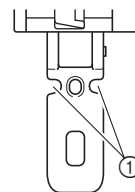
① Positioning screw

- 5 Slide the presser foot over either the left or right feed dog.



- 6 Change the needle position so that the needle does not touch the presser foot.

For details, refer to “Setting the Stitch Width” on page 53.

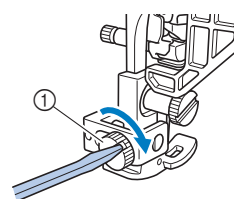


① Needle drop point

Note

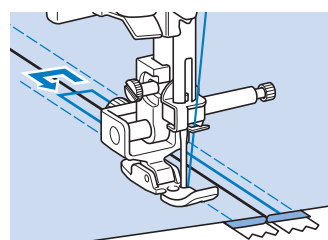
- Slowly rotate the handwheel toward you (counterclockwise) before sewing and make sure that the needle is not contacting the presser foot.

- 7 Securely tighten the positioning screw with a screwdriver.



① Positioning screw

- 8 Topstitch 7 to 10 mm (approx. 1/4 to 3/8 inch) from the seamed edge of the fabric, then remove the basting.

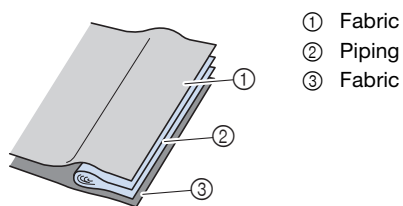


⚠ CAUTION

- Make sure the needle does not strike the zipper during sewing. If the needle strikes the zipper, the needle may break, leading to injury.

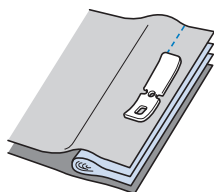
■ Inserting a Piping

- 1 Place the piping between two fabrics inside out, as shown below.

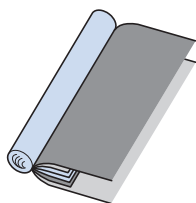


- 2 Refer to the steps of attaching the adjustable zipper/piping foot on the previous page.

- 3 Sew along the piping.

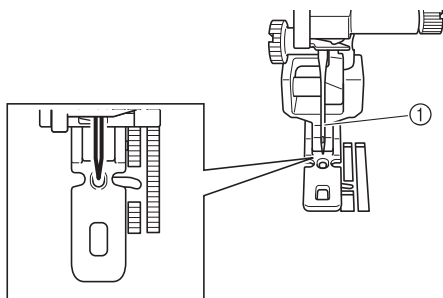


- 4 After sewing, turn them over.



📖 Memo

- The center hole of the presser foot is also available for sewing straight stitches. This is useful for stable sewing for elastic or thin fabric.



① Left needle position

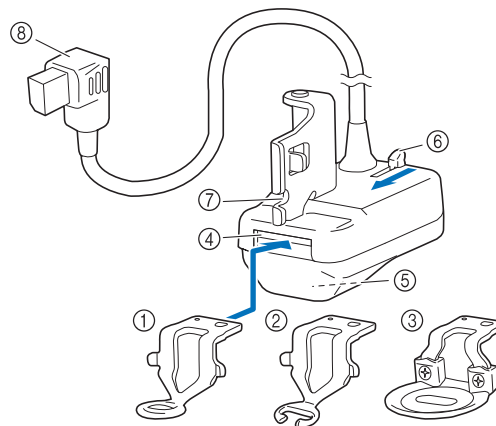
- Make sure that the needle does not touch the presser foot.

Free-Motion Quilting/Basting with the Stitch Regulator

The stitch regulator allows free-motion quilting and free-motion basting with a set stitch length. The machine detects how the fabric is being moved and makes adjustments to ensure the set stitch length.

■ Names of Parts and Their Functions

Replace the presser foot to be used with the stitch regulator, according to your needs.



① **Stitch regulator quilting foot**

Used for general quilting.

② **Stitch regulator open toe quilting foot**

This presser foot enables you to easily check the needle and stitching. Carefully sew, making sure that the fabric does not catch on the tips of the presser foot. **Do not use this foot when selecting [Basting mode].**

③ **Stitch regulator echo quilting foot**

Used for echo quilting. This presser foot is also suitable for sewing furry fabric or fabric with an uneven surface or for sewing different types of fabric together.

④ **Presser foot slot**

⑤ **Stitch regulator window**

The inner sensor detects fabric movement.

⑥ **Presser foot release button**

Push this toward you to remove the presser foot.

⑦ **Notch in the stitch regulator**

⑧ **Connector of the stitch regulator**

■ Attaching the Stitch Regulator and Presser Foot

⚠ CAUTION

- Before installing or removing the stitch regulator or replacing the presser foot, be sure to touch  to lock all keys and buttons. Unintentional operations such as pressing a button may cause the machine to start operating, resulting in injuries.
- We strongly advise to not use the stitch regulator open toe quilting foot when in [Basting mode], as the possibility of needle breakage is increased.

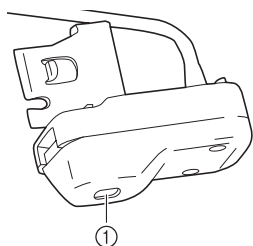


IMPORTANT

- Do not install the stitch regulator onto the machine if the stitch regulator is wet or has been damaged from being dropped. The laser sensor may have been damaged.

💡 Note

- Before using the stitch regulator, check the window at the bottom. Remove any accumulated dust or lint with a cotton swab or other soft object without damaging the built-in lens. Do not use hard objects such as needles or tweezers.



① Stitch regulator window

- 1 Press  (Needle position button) to raise the needle.

- 2 Touch  to lock all keys and buttons.

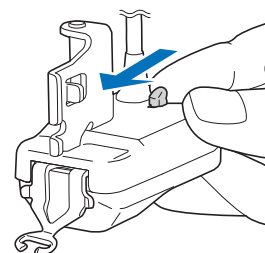
* If the message [OK to automatically lower the presser foot?] appears on the LCD screen, touch [OK] to continue.

- 3 Raise the presser foot lever.

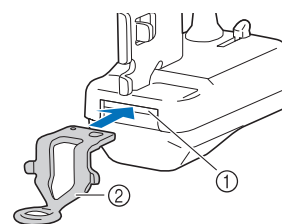
- 4 Remove the presser foot and presser foot holder. (page 43)

- 5 Prepare the presser foot to be used with the stitch regulator.

- 6 If the presser foot already attached to the stitch regulator will not be used, slowly push the presser foot release button toward you as far as it will go, and then remove the presser foot after it has been ejected.



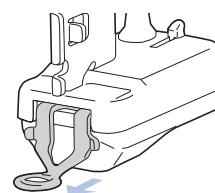
- 7 Correctly orient the presser foot, insert it horizontally into the presser foot slot, and then push it in as far as it will go.



① Presser foot slot

② Presser foot

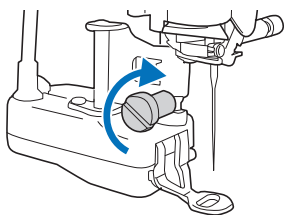
- 8 Pull the presser foot slightly toward you to check if it is firmly secured. If the presser foot comes out, reinsert it as far as it will go.



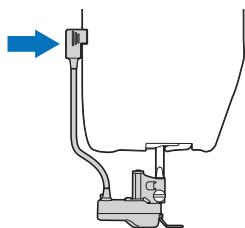
⚠ CAUTION

- Make sure that the presser foot is firmly secured. Otherwise, the presser foot may come off or the needle may break, causing injuries.

- 9 Align the notch in the stitch regulator with the screw on the presser bar, and then firmly tighten the screw.

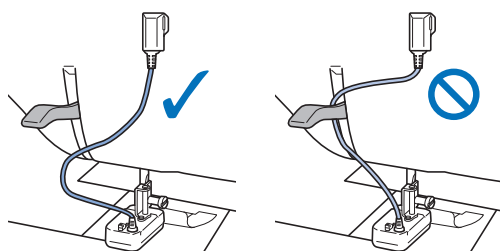


- 10 Plug the connector of the stitch regulator into the jack on the back of your machine.



Memo

- Make sure that the stitch regulator harness does not catch on the presser foot lever.



- 11 Touch  to unlock all keys and buttons.

Replacing the Presser Foot with the Stitch Regulator Installed

⚠ CAUTION

- When replacing the presser foot, make sure that the needle does not strike your fingers or the presser foot. Otherwise, injuries may result, or the needle or presser foot may become damaged.

📖 Memo

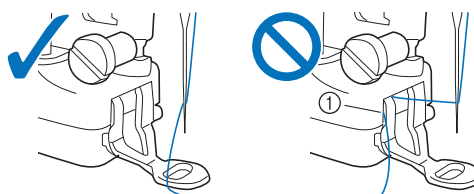
- We recommend removing the fabric from the machine before replacing the presser foot.

- Press  (Needle position button) to raise the needle.
- Touch  to lock all keys and buttons.
- To replace the presser foot, refer to steps 6 through 8 of “Attaching the Stitch Regulator and Presser Foot” on page 91. After replacing the presser foot, make sure that the thread is not caught in the stitch regulator.

* If the presser foot has been raised, lowering it will make it easier to replace it.

IMPORTANT

- If the thread has been caught in the stitch regulator, remove the presser foot, and then reattach it, making sure to avoid the thread.



① The machine cannot sew if the thread is caught.

- Touch  to unlock all keys and buttons.

■ Selecting the Stitch Pattern and Stitch Regulator Mode

1 Install the stitch regulator onto the machine.

→ When the message appears, touch [OK]. The stitch regulator sewing screen appears.

Memo

- If the stitch regulator was installed with a screen other than the utility stitch screen displayed, touch

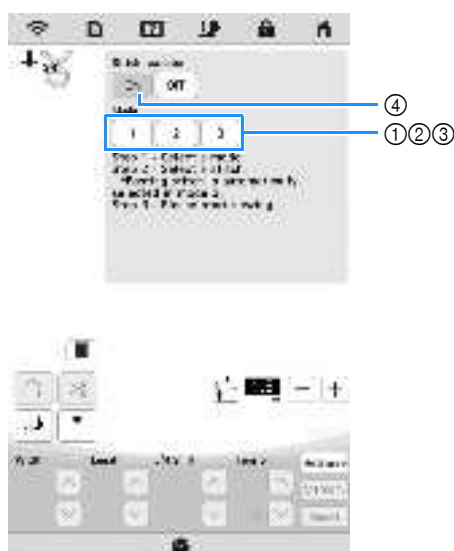


to display the stitch regulator sewing screen.

2 Touch a key to select the appropriate mode.

- * If using the foot controller with any mode, stepping on the foot controller starts sewing when the stitch regulator detects fabric movement. Release the foot controller to stop sewing.

If using the “Start/Stop” button, pressing the button starts sewing when the stitch regulator detects fabric movement. Press the button again to stop sewing. Depending on the selected mode, the machine performs differently when the fabric is not being moved.



① Intermittent mode:

Stitches are sewn when the fabric is moved the set length. When the fabric is not being moved, the needle is raised, the machine enters standby, and the “Start/Stop” button flashes. Sewing starts when the fabric is moved while the button is flashing.

A message appears and sewing ends when the fabric has not been moved for a certain period of time.

② Continuous mode:

Stitches are continuously sewn after sewing has been started. This is suitable for sewing shapes with corners such as rectangles.

If the fabric is not being moved, stitches are slowly sewn at the same location. Since stitches continue to be sewn at the same location, be careful that the thread does not become tangled.

③ Basting mode:

Stitches are sewn spaced far apart. Stitches are sewn when the fabric is moved the set length. When the fabric is not being moved, the needle is raised, the machine enters standby, and the “Start/Stop” button flashes. Sewing starts when the fabric is moved while the button is flashing.

A message appears and sewing ends when the fabric has not been moved for a certain period of time.

Sew trial stitches, check the stitching and how easily the thread can be removed, and then adjust the thread tension if necessary.

- ④ Turn on or off [Stitch regulator]. When switched off, normal free-motion sewing is possible. Since the machine does not detect fabric movement, feed the fabric at a constant speed while you sew.

CAUTION

- While using the stitch regulator open toe quilting foot with [Stitch regulator] switched off, be careful not to pull the fabric forcefully, which could cause the needle to break.

3 Select a stitch pattern, and then set the stitch length.



Memo

- When using a straight stitch to sew small parts or stippling, we recommend setting the stitch length between 1 mm (approx. 1/16 inch) and 1.5 mm (approx. 1/16 inch).
- Zigzag stitch patterns are suitable for thread painting.

4 Specify any other settings.



- ① Adjust the height of the stitch regulator presser foot.

Memo

- For details on the other keys, refer to “Key Functions” on page 18.

■ Free-Motion Quilting/Basting with the Stitch Regulator

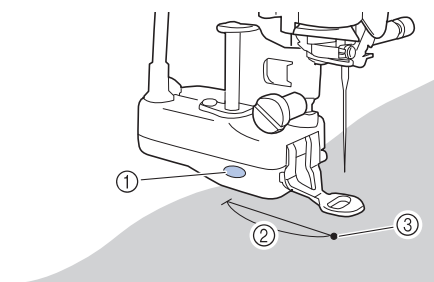
Note

- Before sewing your project, sew trial stitches with fabric and thread that are the same as those used in your project.
The result may vary depending on the fabric and thread used, stitch regulator mode, presser foot height, and fabric movement.
- If stitches are skipped or the thread becomes frayed, try sewing test stitches under the following conditions.
 - Use the included ball point needle (gold colored).
 - Specify a stitch length of 2 mm (1/16 inch) or less (when selecting [Intermittent mode] or [Continuous mode]).

CAUTION

- If the thread tension is too tight, pulling on the fabric could cause needle breakage.
- Move the fabric, making sure that your hands keep away from the needle during sewing. Otherwise, injuries may result.

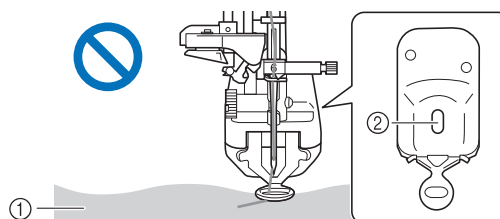
- 1 Position the fabric on the machine. At this time, correctly orient the fabric and position it so that it is under the stitch regulator sensor during sewing.



- ① Sensor location
② About 4 cm (approx. 1 1/2 inches)
Distance from the needle drop point to the sensor location
③ Needle drop point

Note

- If there is no fabric under the sensor, it will not be able to detect fabric movement and will not be able to sew at the set stitch length. If necessary, make sure that the fabric has a size that the sensor can detect.



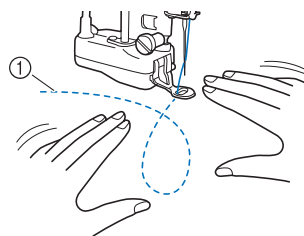
- ① The fabric cannot be detected because it is in front of the position where the sensor can detect it.
② Sensor location

- 2 Pull the bobbin thread up through the fabric.

* Refer to “Pulling Up the Bobbin Thread” on page 34.

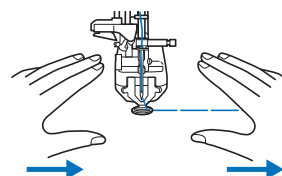
- 3 Lower the presser foot. Depress the foot controller or press the “Start/Stop” button, and then move the fabric.

Quilting



- ① Stitching

Basting



→ Stitches will be sewn at the set stitch length in response to the speed at which the fabric is moved.

Note

- Before sewing, make sure that a presser foot has been attached to the stitch regulator.
- Adjust the height of the stitch regulator presser foot so that the fabric can be smoothly moved. If the distance between the stitch regulator sensor and the fabric is too large, the sensor may not be able to accurately detect fabric movement. In that case, lower the height of the stitch regulator presser foot without hindering fabric movement.



- When the needle is up, move the fabric slowly and carefully. If the fabric is moved too quickly, an alarm will sound.
- Do not rotate the fabric while sewing. Otherwise, the stitch regulator sensor will not be able to correctly detect fabric movement.
- In order to sew stitches with a uniform length, move the fabric at a speed that does not cause the alarm to sound. The alarm volume can be adjusted in the settings screen.



- In order to sew stitches at the set stitch length, move the fabric at least as much as the set stitch length.

4 Release the foot controller or press the “Start/Stop” button to stop sewing.

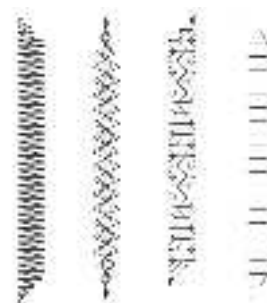
Memo

- With the needle stop position set to (down), the needle remains lowered when sewing stops. When the foot controller is released after you stop moving the fabric, or when the “Start/Stop” button is pressed to finish sewing, an alarm sounds, and then the needle is lowered.
- Touch **Memory** to save the current settings. To retrieve the settings at a later time, touch **Retrieve**. For details, refer to “Saving Your Stitch Settings” on page 55.



Changing the Start and End Angles of the Stitch Pattern (Stitch Tapering Function)

The angles of the start and end of stitch patterns can be changed. This is useful when sewing projects with sharply defined angles or decorative stitching, attaching appliques, etc.



Use the method for finishing sewing the stitch pattern, according to your needs.

- Method 1: Begin Changing the Angle at the End of Sewing by Pressing the “Reverse Stitch” Button (page 95)
- Method 2: Sewing a Specified Number of Stitch Patterns (page 97)

Note

- Using the same material and stitch pattern as your project, sew trial stitches to check the result. If necessary, attach a stabilizer material.
- If reinforcement stitches at the beginning and end of sewing are needed, use (Reinforcement stitch button). (Reverse stitch button) cannot be used for reinforcement stitching when stitch tapering function is on.

■ Method 1: Begin Changing the Angle at the End of Sewing by Pressing the “Reverse Stitch” Button

- 1 Touch **Utility Stitch**, then , and then select a stitch pattern for stitch tapering.

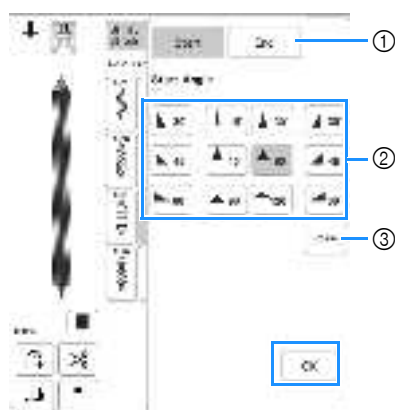


2 If necessary, change the stitch width and stitch length.

3 Touch .

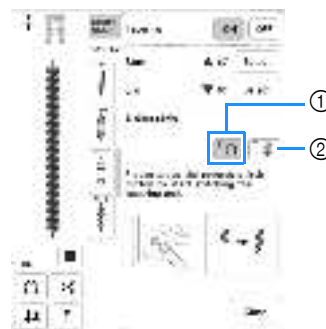


4 Touch , select the angle settings for the start and end of sewing, and then touch .



- ① Select the start or end of sewing.
- ② Select an angle.
- ③ Specify that the angle does not change.

5 Select the method for finishing sewing. For this example, since the angle at the end of sewing will begin changing when  (Reverse stitch button) is pressed, select .

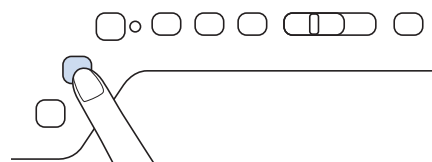


- ① Press  (Reverse stitch button) for the angle at the end of sewing to start changing; the machine stops when sewing is finished.
- ② The machine stops when the specified number of stitch patterns have been sewn. The number of patterns that are specified includes the number of patterns used to change the angle. (page 97)

6 If necessary, use a chalk pencil to draw a line at the location to be sewn.

7 Start sewing.

8 After sewing the desired length, press  (Reverse stitch button).



→ When  (Reverse stitch button) is pressed, the angle at the end of sewing begins to change, and the machine stops when sewing is finished.

Memo

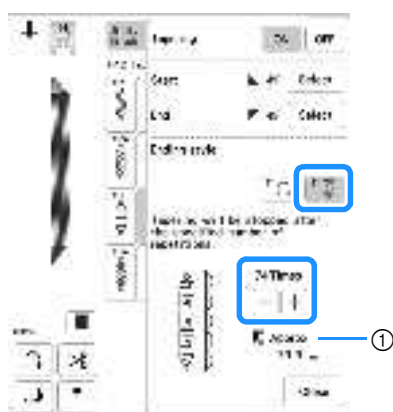
- If you stop sewing at the point where end tapering should begin (either by pressing the “Start/Stop” button or by lifting your foot from the foot controller), press  (Reverse stitch button) and resume sewing by either pressing the “Start/Stop” button or pressing on the foot controller. End tapering will begin as soon as sewing resumes.

9 When finished sewing, set [Tapering] to [OFF], and then touch .

■ Method 2: Sewing a Specified Number of Stitch Patterns

With this method, the number of stitch patterns (including those used to change the angle) are specified. This allows stitch patterns of the same length to be repeatedly sewn.

- 1 Refer to steps 1 through 4 of “Method 1: Begin Changing the Angle at the End of Sewing by Pressing the “Reverse Stitch” Button” on page 95 to select the angle settings for the start and end of sewing.
- 2 Touch , and then specify the number of stitch patterns (including those used to change the angle).



① Approximate length of the stitch pattern

Memo

- The number of stitch patterns used to change the angle depends on the pattern and angle. Perform trial sewing to check the result.

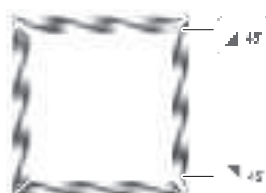
3 Start sewing.

→ The machine stops automatically when sewing is finished.

Memo

- To sew stitching in a square, select  45° for the start of sewing and  45° for the end of sewing, and then continue sewing the same stitch pattern, rotating the fabric 90° after sewing each line of stitching.

The pivot setting is useful when changing the sewing direction. (page 57)



■ Saving Settings

Specified angles for start and end, finish tapering method, and stitch settings can be saved in machine's memory.

- 1 After setting the tapering function, touch .



- 2 Touch .

■ Retrieving Saved Settings

- 1 Touch  to retrieve the saved setting after selecting pattern.
- 2 Touch the numbered key of the settings to be retrieved and then touch .

* The settings cannot be retrieved if stitch tapering function is set to [ON].



Memo

- For more information on saving and recalling settings, refer to “Saving Your Stitch Settings” on page 55.

USING THE COMPACT DUAL FEED FOOT

The compact dual feed foot enables you to have best fabric control when sewing difficult fabrics that slip easily, such as quilted fabrics or fabrics that tend to stick to the bottom of a presser foot, such as vinyl, leather or synthetic leather.

Note

- When sewing with the compact dual feed foot, sew at medium to low speeds.

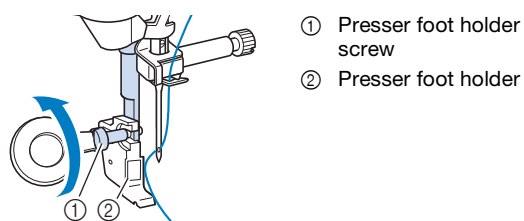
Memo

- When selecting stitches to be used with the compact dual feed foot, only the stitches that can be used will be activated on the display.
- When sewing fabric that easily sticks together, a more attractive finish can be achieved by basting the beginning of sewing.

■ Attaching the Compact Dual Feed Foot

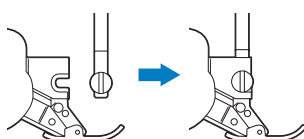
1 Remove the presser foot. (page 43)

2 Loosen the screw of the presser foot holder to remove the presser foot holder.

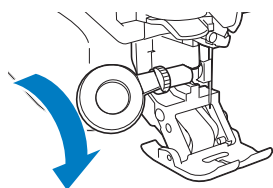


3 Position the compact dual feed foot to the presser foot bar by aligning the notch of the compact dual feed foot to the large screw.

Side view



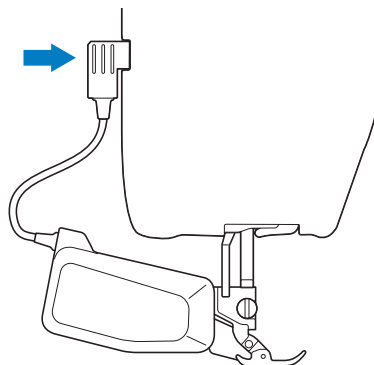
4 Hold the compact dual feed foot in place with your right hand, then using the disc-shaped screwdriver securely tighten the large screw.



⚠ CAUTION

- Use the included screwdriver to firmly tighten the screw. If the screw is loose, the needle may strike the presser foot and possibly cause injury.

5 Plug the connector of the compact dual feed foot into the jack on the back of your machine.

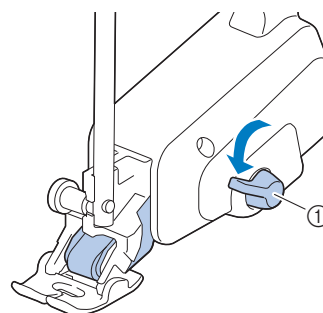


6 Touch  to unlock all keys and buttons.

→ All keys and operation buttons are unlocked, and the previous screen is displayed.

7 Place the fabric under the compact dual feed foot with the needle at the starting point of the stitching.

8 Be sure that the feed position lever is pushed down and the compact dual feed foot is ready to sew.



Note

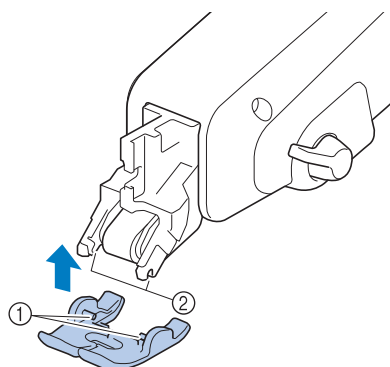
- Do not operate the lever while sewing.

Memo

- When the feed position lever is up, dual feed function is not effective. When the feed position lever is down, the black roller belt on the compact dual feed is engaged.

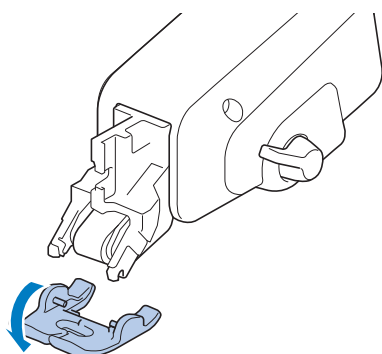
■ Attaching/Detaching Toe

Attach the toe by aligning the pins with the notches and snap it into place.



- ① Pins
- ② Notches

If you push down on the front and back part of the compact dual feed foot, the toe of the compact dual feed foot will snap off.



■ Adjusting the Amount of Fabric Feeding from the Compact Dual Feed Foot

The dual feed mechanism pulls the top fabric according to the set stitch length. With troublesome fabrics, fine tune the set length, by changing [Dual Feed Feed Adjustment] in the settings screen.

Note

- As a default, some keys mentioned in the following procedures appear in light gray and are not available. To enable the keys for specifying the settings, attach the compact dual feed foot to the machine. The keys are enabled after the compact dual feed foot is detected.

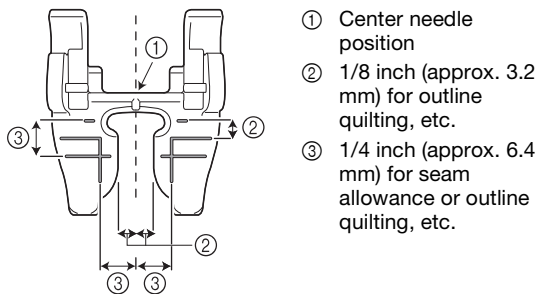
- 1 Touch .
→ The settings screen appears.
- 2 Touch .
→ The sewing settings screen appears.
- 3 Display [Dual Feed Feed Adjustment] in the sewing settings screen.
- 4 Use or to increase or decrease the feeding of the top fabric.
 - * Select [00] for sewing in most cases.
 - * If the feed amount for the top fabric is too little, causing the fabric to be longer than the bottom fabric, touch to increase the feed amount for the top fabric.
 - * If the feed amount for the top fabric is too much, causing the fabric to be shorter than the bottom fabric, touch to decrease the feed amount for the top fabric.
- 5 Touch to return to the original screen.

Open Toe for Dual Feed Foot

The open toe provides expanded visibility of the needle and area directly in front of the needle.

■ **Presser Foot Marks**

When sewing using the marks, select a stitch with a middle (center) needle position.



💡 **Note**

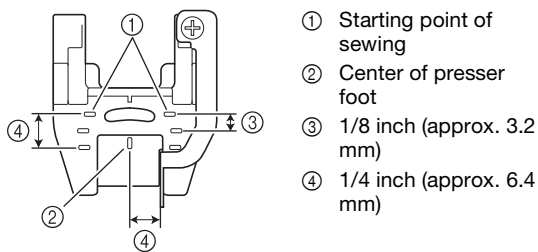
- When sewing the edge of quilted fabric, upper fabric may be pulled in under the open toe. Be sure to pin or baste the fabric edge before sewing.

Dual Feed 1/4 Inch Guide Foot

The fabric can be smoothly fed when piecing with a uniform seam allowance.

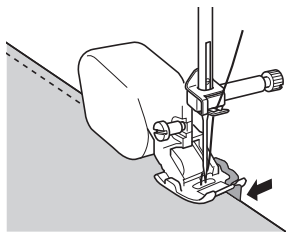
■ **Presser Foot Marks**

The marks on this presser foot can be used to check the starting point of sewing and the center of the presser foot as well as to stop sewing before the edge of the fabric.



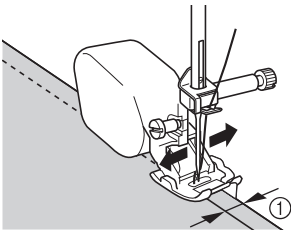
■ **Piecing a 1/4 Inch Seam Allowance**

- 1 Select
- 2 Align the edge of the fabric with the guide.



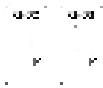
■ **Specifying the Seam Allowance and Needle Position**

The seam allowance can be changed by adjusting the needle position with the stitch width key.



① Seam allowance

To adjust the needle position, select Q-02 (piecing stitch (right)) or Q-03 (piecing stitch (left)).



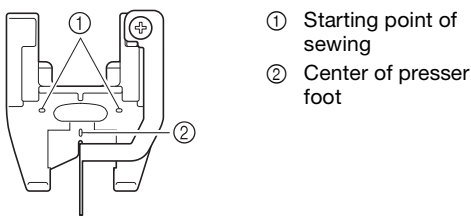
Seam allowance	Stitch width (needle position)
3.2 mm (1/8 inch)	6.75 mm
6.4 mm (1/4 inch)	3.50 mm
7 mm (approx. 9/32 inch)	3.00 mm
1 cm (approx. 3/8 inch)	0.00 mm

Stitch in the Ditch Dual Feed Foot

The fabric can be smoothly fed when sewing quilt bindings or concealed seams on clothes.

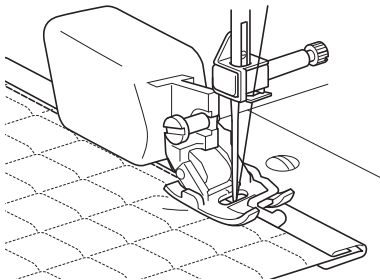
■ **Presser Foot Marks**

The marks on this presser foot can be used to check the starting point of sewing and the center of the presser foot.

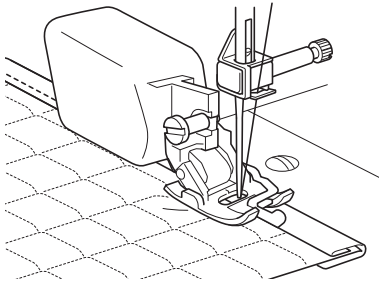


■ **Attaching a quilt binding**

- 1 Select
- 2 Position the front side of the fabric up, and then sew with the presser foot guide aligned with the edges of the fabric and binding tape.
Sewing binding tape



Sewing the edge of binding tape



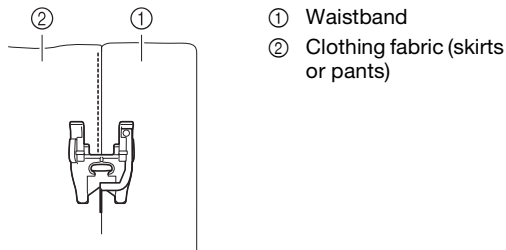
Stitch width: 5 - 5.5 mm (3/16 - 7/32 inch)

■ Sewing Concealed Seams

When attaching belted waistbands to skirts or pants, sew with the presser foot guide aligned with the edge of the clothing fabric and seam of the belted waistband.

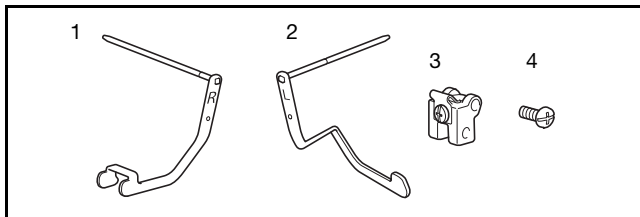
1 Select

2 Align the right side of the presser foot guide with the edge of the belted waistband.



Using the Dual Feed Quilting Guide

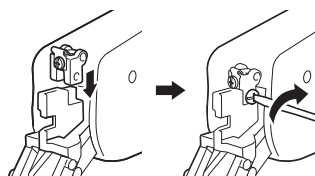
The fabric can be smoothly fed while sewing stitching at equal intervals.



No.	Part Name
1	Right guide
2	Left guide
3	Quilting guide base
4	Screw

■ Prepare for Dual Feed Quilting Guide

1 Attach the quilting guide base to the dual feed attachment, and then use the included screwdriver (small) to tighten the screw.

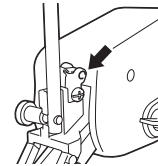


Note

- Tighten the screw just enough to secure the quilting guide base. Overtightening may break the screw.

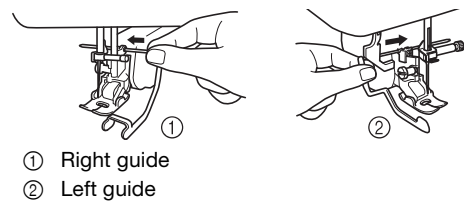
2 Attach the dual feed attachment to the machine.

3 Insert the right guide or the left guide straight into the hole in the quilting guide base.



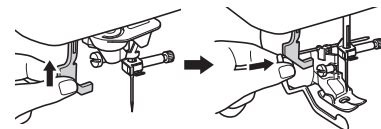
Memo

- Use the right guide or the left guide as needed.

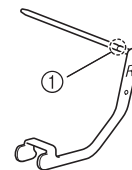


Note

- Be sure to check that the guide is inserted straight into the hole in the quilting guide base. Inserting it at an angle may bend the guide.
- When installing the left guide, raise the buttonhole lever, and then insert the guide into the hole from behind the buttonhole lever.



- Do not insert the guide further than the notch in the shaft.



① Notch

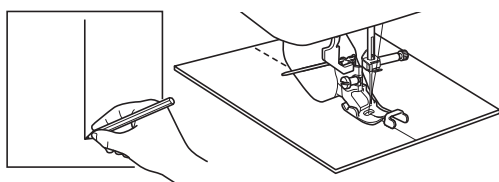
- Before automatic threading, remove the left guide.

■ Sewing with Quilting Guide

When quilting, start stitching from the center of the fabric.

1 Mark a reference line through the center of the fabric.

- 2 Select the straight stitch with the center needle position, align the inside guide of the right guide with the reference line, and then sew over the line.

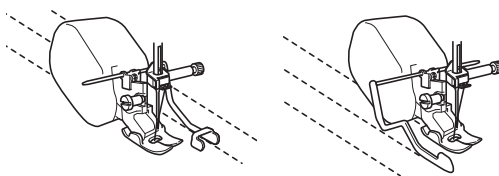


- 3 Decide at what distance from the first quilting line to sew the second line. Insert the right guide or the left guide, and then hold the base of the shaft on the guide to adjust it so that the guide is positioned at the determined distance from the needle position.

Memo

- When sewing with a narrow distance between quilting lines, use the inside guide of the right guide.

- 4 Position the fabric to align the first quilting line with the guide, and then sew the stitching. Repeat the steps to sew stitching at equal intervals.



Couching Dual Feed Foot

The fabric can be smoothly fed when decorative stitching is sewn using yarn.

CAUTION

- When using yarn, we recommend selecting yarn of weight 4 (MEDIUM ). Medium yarn is often referred to as worsted weight, 20 knitted stitches per 10 cm, or 9-11 wraps per inch. The diameter of the yarn is approximately 2-3 mm (approx. 1/12-1/8 inch). If the yarn is extremely thin or thick, has an unusual shape (flat or furry), or more than 2 yarns, the best finishing results may not be achieved, or injuries or damage may result.

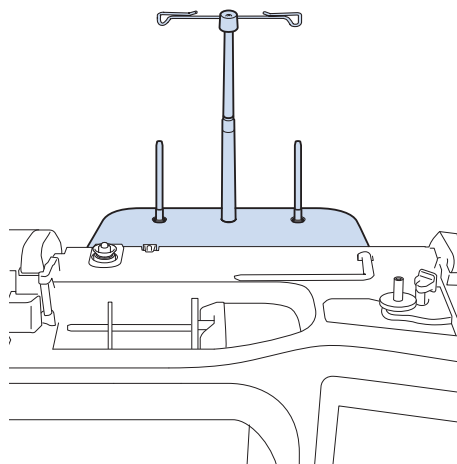
Note

- We recommend using a stabilizer material when sewing stretch fabrics, lightweight fabrics, fabrics with a coarse weave, or fabrics which are prone to fabric shrinkage.

■ Prepare for Couching

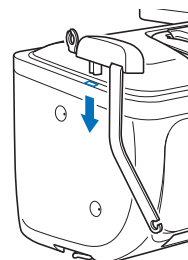
- 1 Attach the spool stand to the machine.

At this time, do not raise the telescopic thread guide shaft.



* Refer to "Using the Spool Stand" on page 39.

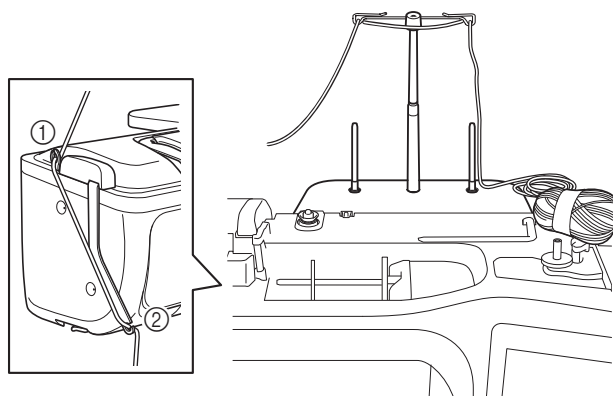
- 2 Insert the yarn guide for couching into the slot on the top left of the machine.



- 3 Touch  to lock all keys and buttons, and then raise the presser foot lever.

- 4 Attach the compact dual feed attachment to the machine without attaching the couching dual feed foot.

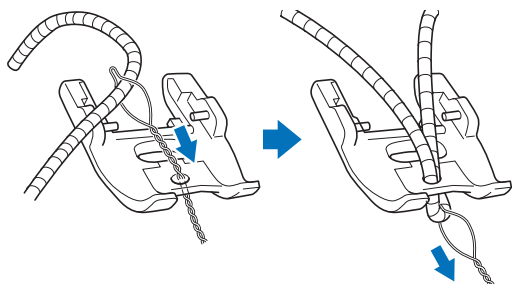
- 5 Pass the yarn through the telescopic thread guide and the yarn guide (①) to (②).



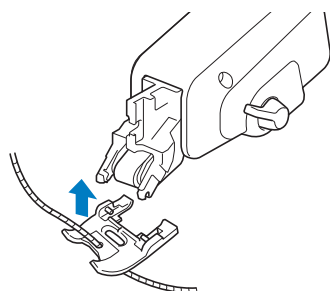
Note

- Make sure that the yarn does not become entangled as you work.

- 6 Thread the yarn through the couching dual feed foot. Pass the yarn through the loop in the yarn threader, and then pass the threader from top to bottom through the hole on the couching dual feed foot.



- 7 Attach the couching dual feed foot shown below to the compact dual feed.



- 8 Pull out the yarn for about 10 cm (approx. 4 inches) to the back of the machine.

- 9 Touch  to unlock all keys and buttons.

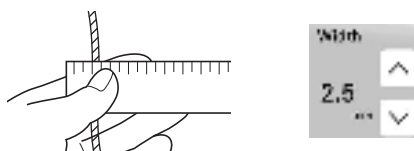
- 10 Thread the machine with the upper thread.

Note

- Do not use the spool stand for the upper thread. Otherwise thread may tangle with yarn.

Sewing Couching

- 1 Select .
- 2 Measure the width of the yarn and set the stitch width according to the width of the yarn.



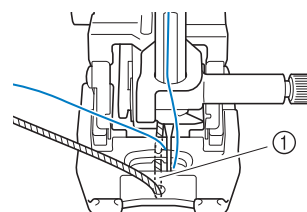
Note

- Make sure that there is enough width to wrap over the yarn.



- 3 Rotate the handwheel to set the needle in the sewing start position. Start sewing on the right side of the yarn.

- 4 Make sure that the yarn passes straight through the channel in the back of the couching dual feed foot, and then lower the presser foot.

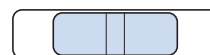


① Channel

Note

- Pull off an appropriate amount of yarn from the ball or skein so the yarn does not become taut.

- 5 Set sewing speed to a medium speed.



- 6 Press the "Start/Stop" button to start sewing.

- While lightly holding down the fabric with both hands, adjust the sewing direction.

Memo

- The multi-function foot controller can also be very useful for sharp angle sewing when set to single stitch sewing. (page 47)
- Pivoting is also useful when rotating fabric with both hands. (page 57)
- When guideline marker is set to on, it is easy to sew couching straight. (page 56)

MAKING ADJUSTMENTS

Your stitch pattern may sometimes turn out poorly, depending on the type or thickness of fabric, the stabilizer material used, sewing speed, etc. If your sewing does not turn out well, sew trial stitches using the same conditions as the real sewing, and adjust the stitch pattern as explained below. If the stitch pattern does not turn out well even after making adjustments based on the stitch pattern described below, make adjustments for each stitch pattern individually.

Memo

- For details on stitch patterns, refer to “STITCH SETTING CHART” on page 125.
- This adjustment can be made to  (1-36 Quilting stippling stitch),  (2-21 Decorative stippling stitch),  (4-24 Eyelet stitch),  (4-25 Star eyelet stitch),  (Q-15 Quilting stippling stitch) and stitch patterns from the following categories.



1 Touch  and select  (6-284).

2 Attach advanced monogramming foot “N+” and sew the stitch pattern.

Be sure to use advanced monogramming foot “N+”. Adjustments may not be made correctly with any other presser foot.

3 Compare the finished stitch pattern to the illustration of the correct stitch pattern below.



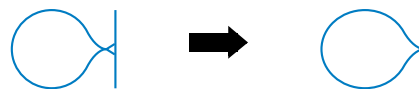
4 Touch , and then adjust the stitch pattern with the [Fine Adjust Verti.] or [Fine Adjust Horiz.] displays.



□ If the stitch pattern is bunched:

Touch  in the [Fine Adjust Verti.] display.

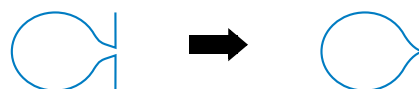
→ The displayed value increases each time the button is touched and the stitch pattern will lengthen.



□ If the stitch pattern has gaps:

Touch  in the [Fine Adjust Verti.] display.

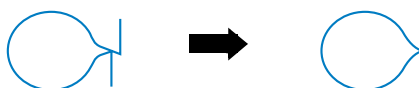
→ The displayed value decreases each time the button is touched and the stitch pattern will shorten.



□ If the stitch pattern is skewed to the left:

Touch  in the [Fine Adjust Horiz.] display.

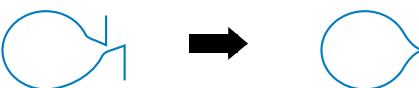
→ The displayed value increases each time the button is touched and the stitch pattern will slide to the right.



□ If the stitch pattern is skewed to the right:

Touch  in the [Fine Adjust Horiz.] display.

→ The displayed value decreases each time the button is touched and the stitch pattern will slide to the left.



5 Sew the stitch pattern again.

* If the stitch pattern still comes out poorly, make adjustments again. Adjust until the stitch pattern comes out correctly.

Memo

- You can sew with the setting screen on the display.

6 Touch  to return to the original screen.

MAKING STEP STITCH PATTERNS (FOR 7MM SATIN STITCH PATTERNS ONLY)

You can use   keys to create a step effect, also called step stitch patterns.

- Touch   to move the stitch pattern a distance equal to half of the stitch pattern's size to the left or right.
- To combine the stitch patterns, refer to page 49.

Example:



- 1 Select  (9-11).
- 2 Touch  so that it displays .
- 3 Touch .



→ The next stitch pattern will move to the right.

- 4 Select  (9-11) again.



- 5 Touch .

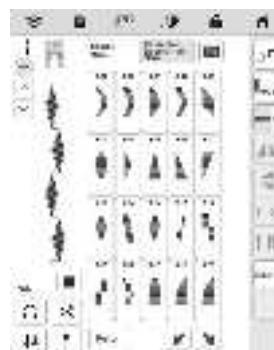


→ The next stitch pattern will move to the left.

- 6 Touch .



→ The entered stitch pattern is repeated.



USING THE MEMORY FUNCTION

Memo

- For more information about the memory function, refer to “SPECIFICATIONS” on page 123.

Saving Stitch Patterns

You can save stitch patterns that you have customized in the machine's memory or USB media.

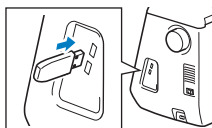
Note

- Do not turn the main power to OFF while the [Saving...] screen is displayed. You will lose the stitch pattern you are saving.

1 Touch .



2 When saving the stitch pattern in a USB media, insert the USB media into the USB port on the machine.



3 Touch the desired destination to start saving.



- ① Save to the machine's memory.
- ② Save to the USB media.
The stitch pattern is saved in a folder labeled [bPocket].

Retrieving Stitch Patterns

Retrieve stitch patterns saved in the machine's memory or USB media.

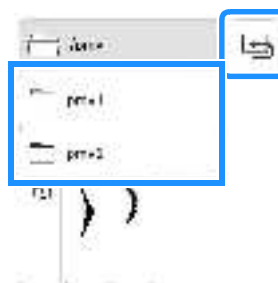
- 1 When retrieving stitch patterns from a USB media, insert the USB media into the USB port on the machine.
- 2 Touch the desired destination.



- ① Retrieve from the machine's memory.
- ② Retrieve from a USB media.
When retrieving stitch patterns from a USB media, insert the USB media into the USB port on the machine.
- ③ Retrieve via the wireless network.

Memo

- If the stitch pattern to be retrieved is in a folder of the USB media, touch the key for that folder. Touch  to return to the previous screen.



- Folders in the USB media cannot be created with the machine.
- Touch  to retrieve stitch patterns via the wireless network. For detailed procedures, refer to PE-DESIGN manual (Version 11 or later).
- For details on supported file extensions, refer to “SPECIFICATIONS” on page 123.

- 3 Select the desired stitch pattern, and then touch .



Note

- When you touch , the selected stitch pattern will be deleted permanently.

MY CUSTOM STITCH

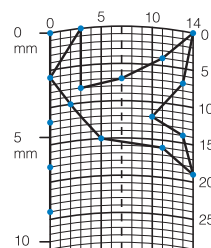
■ Designing a Stitch

By using the MY CUSTOM STITCH function, you can register stitches you have created yourself. You can also sew designs combining MY CUSTOM STITCH creations with built-in characters (page 49).

Memo

- Stitches that you create with MY CUSTOM STITCH can be a maximum of 7 mm (approx. 9/32 inch) wide and 37 mm (approx. 1-1/3 inches) long.

- 1 Draw the stitch design on the grid sheet.
Place points where the stitch pattern intersects with the grid, and connect all the points with a line.



Memo

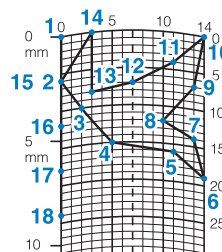
- Simplify the design so that it can be sewn as a continuous line. For a more attractive stitch, close the design by intersecting lines.



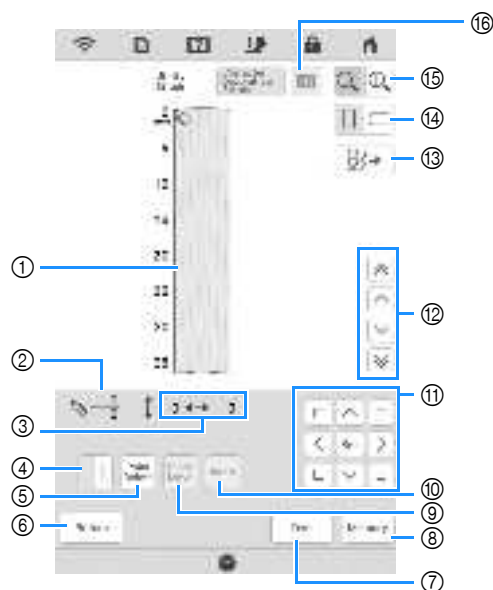
If the design is to be repeated and linked, the start point and end point of the design should be at the same height.



- 2 Determine the x and y coordinates of each of the marked points.



■ MY CUSTOM STITCH Screen



- ① This area displays the stitch being created.
- ② Displays the number of the present set point over the total number of points in the stitch.
- ③ Displays the y-coordinate of over the x-coordinate of .

No.	Display	Explanation	Page
	Key Name		
④		Touch this key to select whether one or three stitches will be sewn between two points.	109
	Single/triple stitching key		
⑤		Touch this key to delete a selected point.	—
	Point delete key		
⑥		Touch this key to exit the entering stitch data screen.	—
	Return key		
⑦		Touch this key to sew a test of the stitch.	—
	Test key		
⑧		Touch this key to store the stitch being created.	—
	MY CUSTOM STITCH memory key		
⑨		Touch this key to group points together and move them together.	109
	Block move key		
⑩		Touch this key to insert new points on the stitch design.	109
	Insert key		
⑪		Use these keys to move over the display area, and touch the set key in the center to set a point on the stitch design.	108-109
	Arrow keys and set key		

No.	Display	Explanation	Page
	Key Name		
⑫		Use these keys to move from point to point on the stitch, or to the first or last point entered on the stitch.	109
	Point-to-point key		
⑬		Touch this key to edit the utility stitches in the machine.	—
	Stitch edit key		
⑭		Touch this key to change the direction of the grid sheet.	—
	Grid direction key		
⑮		Touch this key to see an enlarged version of the stitch being created.	—
	Enlarger key		
⑯		Touch this key to view an image of the stitch.	—
	Image key		

1 Touch .

2 Touch .



3 Use to move to the coordinates of the first point on the grid.

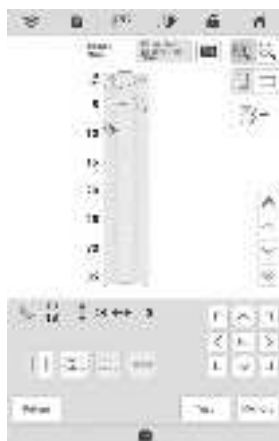
4 Touch to add the point indicated by .



- 5 Select whether single stitch or triple stitches will be sewn between the first two points.

* To sew three stitches, touch the key so that it appears as .

- 6 Repeat the steps for each point that you have drawn on the grid sheet until the stitch design is drawn on the screen as a continuous line.



- 7 Once you finish entering the stitch data, touch  to save the stitch pattern.

■ Moving a Point

- 1 Touch  or  to move  to the point that you want to move.

- 2 Use   to move the point.

■ Moving Part or All of the Design

- 1 Touch  or  to move  to the first point of the section that you want to move.



- * To move  to the first point, touch .
- * To move  to the last point, touch .

- 2 Touch .

→ The selected point and all points that were entered after it are selected.

- 3 Touch  or  to move the section and touch .



→ The section will be moved.

■ Inserting New Points

- 1 Touch  or  to move  to a place on the design where you want to add a new point.



- * To move  to the first point, touch .
- * To move  to the last point, touch .

- 2 Touch  to insert a new point.

- 3 Use   to move the point.

Retrieving Saved Stitch Patterns

- 1 Touch .



- 2 Select the device to retrieve the stitch pattern from.



- 3 Select the stitch pattern.

* You can start sewing when this screen is displayed.



- ① Stored stitch patterns
- ② Edit the stitch pattern.
- ③ Delete the stitch pattern.

Chapter 4 APPENDIX

CARE AND MAINTENANCE

⚠ CAUTION

- Be sure to unplug the machine before cleaning it. Otherwise, injury may result.

Cleaning the LCD

If the surface of the LCD is dirty, lightly wipe it with a soft dry cloth.

Cleaning the machine surface

When wiping dirt off the machine, firmly wring a soft cloth soaked in (lukewarm) water.

After cleaning the machine, dry it with a soft, dry cloth.

Restrictions on Oiling

In order to prevent damaging this machine, it must not be oiled by the user. This machine was manufactured with the necessary amount of oil applied to ensure correct operation, making periodic oiling unnecessary.

If problems occur, such as difficulty turning the handwheel or an unusual noise, immediately stop using the machine, and contact your authorized Brother dealer or the nearest Brother authorized service center.

Precautions on Storing the Machine

Do not store the machine in any of the locations described below, otherwise damage to the machine may result, for example, rust caused by condensation.

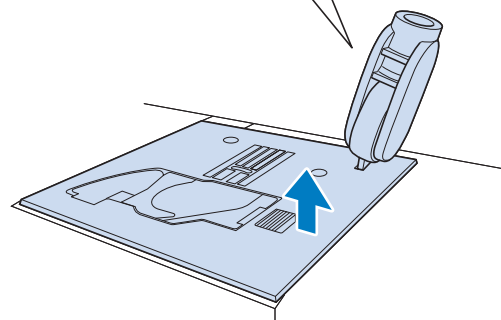
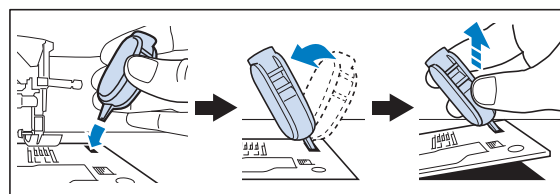
- * Exposed to extremely high temperatures
- * Exposed to extremely low temperatures
- * Exposed to extreme temperature changes
- * Exposed to high humidity or steam
- * Near a flame, heater or air conditioner
- * Outdoors or exposed to direct sunlight
- * Exposed to extremely dusty or oily environments

💡 Note

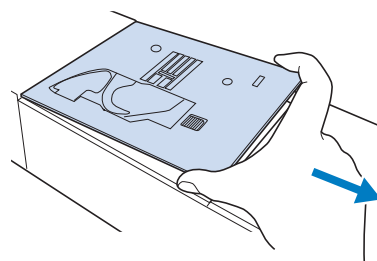
- In order to extend the life of this machine, periodically turn it on and use it. Storing this machine for an extended period of time without using it may reduce its efficiency.

Cleaning the Race

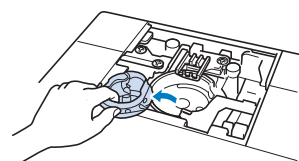
- 1 Press  (Needle position button) to raise the needle.
- 2 Turn the main power to OFF, and then unplug the machine.
- 3 Remove the needle and presser foot (page 41, page 43).
- 4 Remove the flat bed attachment if it is attached.
- 5 Insert the multi-purpose screwdriver into the hole, and tilt the multi-purpose screwdriver to the left and then to the back, as shown in the illustration.



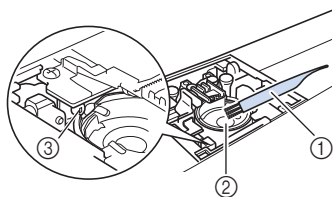
- 6 Slide out the needle plate with your right hand to remove it.



- 7 Grasp the bobbin case, and then gently lift out.



- 8** Use the cleaning brush or a vacuum cleaner to remove any lint and dust from the race and bobbin thread sensor and the surrounding area.



- ① Cleaning brush
- ② Race
- ③ Bobbin thread sensor

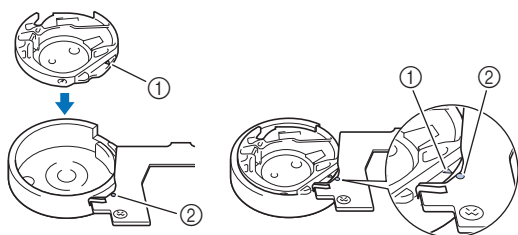
IMPORTANT

- Do not apply oil to the bobbin case.

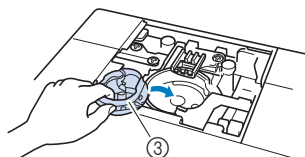
Memo

- If lint or dust collects on the bobbin thread sensor, the sensor may not operate correctly.

- 9** Insert the bobbin case so that the ▲ mark on the bobbin case aligns with the ● mark on the machine.



- * Align the ▲ and ● marks.



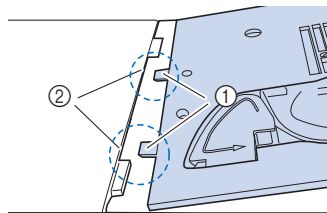
- ① ▲ mark
- ② ● mark
- ③ Bobbin case

- * Make sure that the indicated points are aligned before installing the bobbin case.

CAUTION

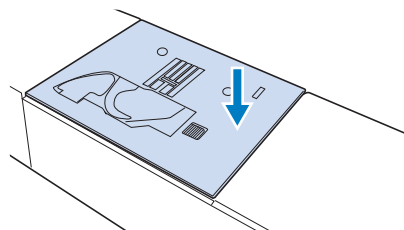
- Never use a bobbin case that is scratched or has a burr on it. Otherwise the upper thread may become tangled, and the needle may break and cause injury. For a new bobbin case, contact your nearest Brother authorized service center.
- Be sure that the bobbin case is correctly installed, otherwise the needle may break and cause injury.

- 10** Insert the tabs on the needle plate into the notches in the machine.



- ① Tabs
- ② Notches

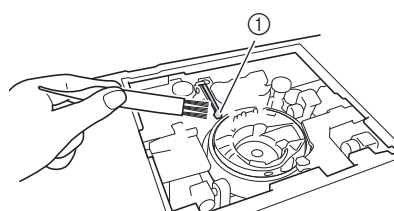
- 11** Press down on the right side of the needle plate to secure it.



Cleaning the Cutter in the Bobbin Case Area

The cutter below the needle plate should be cleaned. If dust or lint accumulate on the cutter, it will be difficult to cut the thread when  (Thread cutter button) is pressed or the automatic thread cutting function is used. Clean the cutter when the thread is not easily cut.

- 1** Follow steps ① through ⑦ in “Cleaning the Race” to remove the needle plate and the bobbin case.
- 2** Use the cleaning brush or a vacuum cleaner to remove any lint and dust from the cutter in the bobbin case area.



- ① Cutter

CAUTION

- Do not touch the cutter, otherwise injuries may result.

- 3** Insert the bobbin case and attach the needle plate following steps ⑨ through ⑪ in “Cleaning the Race”.

Note

- If the needle plate has been removed, check machine operations to confirm that installation has been completed correctly. Refer to “Checking Machine Operations” on page 116.

BEFORE LENDING OR DISPOSING OF THE PRODUCT

Please be sure to reset the settings of your machine to delete the following data.

- all saved data
- customized settings
- network information

1 Touch , and then touch  beside [Reset to Default].

2 Touch  .

Note

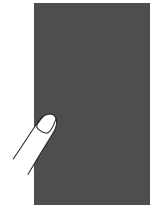
- Do not turn the main power to OFF while the [Deleting...] screen is displayed.

ADJUSTING THE SCREEN

Touch Panel is Malfunctioning

If the screen does not respond correctly when you touch a key (the machine does not perform the operation or performs a different operation), follow the steps below to make the proper adjustments.

1 Holding your finger on the screen, turn the main power switch to OFF and back to ON.



→ The touch panel adjustment screen appears.

2 Using the included touch pen, lightly touch the center of each +, in order from 1 to 13.



Note

- Only use the included touch pen to touch the screen. Do not use a mechanical pencil, pin, or other sharp object. Do not press too hard on the screen. Otherwise, damage may result.

3 Turn the main power to OFF, then turn it back to ON.

Note

- If you finish the screen adjustment and the screen still does not respond, or if you cannot do the adjustment, contact your authorized Brother dealer.

TROUBLESHOOTING

If the machine stops operating correctly, check the following possible problems before requesting service. You can solve most problems by yourself. If you need additional help, the Brother Support website offers the latest FAQs and troubleshooting tips.

Visit us at <https://s.brother/cpeai/>.

If the problem persists, contact your authorized Brother dealer or the nearest Brother authorized service center.

Frequent Troubleshooting Topics

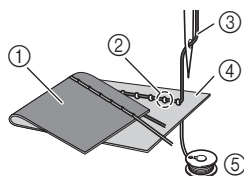
Detailed causes and remedies for common troubleshooting topics are described below. Be sure to refer to this before contacting your authorized Brother dealer.

■ Upper Thread is Too Tight	page 114
■ Tangled Thread on Wrong Side of Fabric	page 114
■ Incorrect Thread Tension	page 115
■ Fabric is Caught in the Machine and Cannot Be Removed	page 115
■ If the Thread Becomes Tangled Under the Bobbin Winder Seat	page 116

Upper Thread is Too Tight

■ Symptom

- * The upper thread appears as a single continuous line.
- * The bobbin thread is visible from the right side of the fabric. (Refer to the illustration below.)
- * The upper thread has tightened up, and comes out when pulled.
- * The upper thread has tightened up, and wrinkles appear in the fabric.
- * The upper thread tension is tight, and the results do not change even after the thread tension is adjusted.



- ① Wrong side of fabric
- ② Bobbin thread visible from right side of fabric
- ③ Upper thread
- ④ Right side of fabric
- ⑤ Bobbin thread

■ Cause

Incorrect bobbin threading

If the bobbin thread is incorrectly threaded, instead of the appropriate tension being applied to the bobbin thread, it is pulled through the fabric when the upper thread is pulled up. For this reason, the thread is visible from the right side of the fabric.

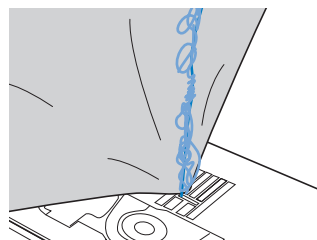
■ Remedy

Correctly install the bobbin thread. (page 33)

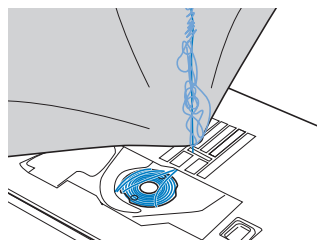
Tangled Thread on Wrong Side of Fabric

■ Symptom

- * The thread becomes tangled on the wrong side of the fabric.



- * After starting sewing, a rattling noise is made and sewing cannot continue.
- * Looking under the fabric, there is tangled thread in the bobbin case.



■ Cause

Incorrect upper threading

If the upper thread is incorrectly threaded, the upper thread passed through the fabric cannot be firmly pulled up and the upper thread becomes tangled in the bobbin case, causing a rattling noise.

■ Remedy

Remove the tangled thread, and then correct the upper threading.

1 Remove the tangled thread. If it cannot be removed, cut the thread with scissors.

- * Refer to "Cleaning the Race" on page 111.

2 Remove the upper thread from the machine.

3 Correct the upper threading by following the instructions in "Upper Threading" on page 35.

- * If the bobbin was removed from the bobbin case, refer to "Setting the Bobbin" on page 33 to correctly install the bobbin.

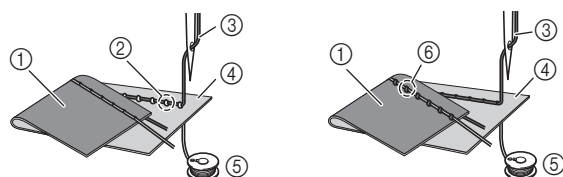
Incorrect Thread Tension

Symptoms

- Symptom 1: The bobbin thread is visible from the right side of the fabric.
- Symptom 2: The upper thread appears as a straight line on the right side of the fabric.
- Symptom 3: The upper thread is visible from the wrong side of the fabric.
- Symptom 4: The bobbin thread appears as a straight line on the wrong side of the fabric.
- Symptom 5: The stitching on the wrong side of the fabric is loose or has slack.

☐ Symptom 1

☐ Symptom 3



- ① Wrong side of fabric
- ② Bobbin thread visible on right side of fabric
- ③ Upper thread
- ④ Right side of fabric
- ⑤ Bobbin thread
- ⑥ Upper thread visible from wrong side of fabric

Cause/Remedy

☐ Cause 1

The machine is not correctly threaded.

<With symptoms 1 and 2 described above>

The bobbin threading is incorrect.

Return the upper thread tension to the standard setting, and then refer to "Setting the Bobbin" on page 33 to correct lower threading.

<With symptoms 3 through 5 described above>

The upper threading is incorrect.

Return the upper thread tension to the standard setting, and then refer to "UPPER THREADING" on page 35 to correct the upper threading.

☐ Cause 2

A needle and thread appropriate for the fabric are not being used.

The machine needle that should be used depends on the type of fabric sewn and the thread thickness.

If a needle and thread appropriate for the fabric are not being used, the thread tension will not be adjusted correctly, causing wrinkles in the fabric or skipped stitches.

- * Refer to "FABRIC/THREAD/NEEDLE COMBINATIONS" on page 42 to check that a needle and thread appropriate for the fabric are being used.

☐ Cause 3

An appropriate upper tension is not selected.

Select an appropriate thread tension. Refer to "Setting the Thread Tension" on page 54.

The appropriate thread tension differs according to the type of fabric and thread being used.

- * Adjust the thread tension while test sewing on a piece of scrap fabric that is the same as that used in your project.

Note

- If the upper threading and bobbin threading are incorrect, the thread tension cannot be adjusted correctly. Check the upper threading and bobbin threading first, and then adjust the thread tension.

* When the bobbin thread is visible on the right side of the fabric.

Set the upper thread tension to a lower number. (Loosen the thread tension.)

* When the upper thread is visible on the wrong side of the fabric.

Set the upper thread tension to a higher number. (Tighten the thread tension.)



Fabric is Caught in the Machine and Cannot Be Removed

If the fabric is caught in the machine and cannot be removed, the thread may have become tangled under the needle plate. Follow the procedure described below to remove the fabric from the machine. If the operation cannot be completed according to the procedure, instead of attempting to complete it forcefully, contact your nearest Brother authorized service center.

Removing the Fabric From the Machine

1 Immediately stop the machine.

2 Turn off the machine.

3 Remove the needle.

If the needle is lowered into the fabric, turn the handwheel away from you (clockwise) to raise the needle out of the fabric, and then remove the needle.

- * Refer to "CHANGING THE NEEDLE" on page 41.

4 Remove the presser foot.

If the thread is entangled on the presser foot, remove the entangled thread, and then raise the presser foot lever to remove the presser foot. Otherwise, the presser foot may be damaged.

- * Refer to "CHANGING THE PRESSER FOOT" on page 43.

5 Lift up the fabric and cut the threads below it.

If the fabric can be removed, remove it. Continue with the following steps to clean the race.

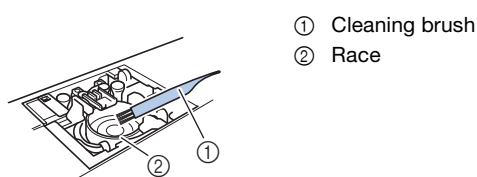
6 Remove the needle plate and bobbin case.

If threads remain in the bobbin case, remove them.

- * Refer to "Cleaning the Race" on page 111.

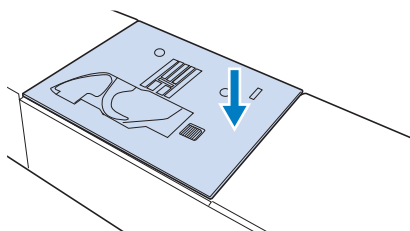
7 Remove any threads in the race and around the feed dogs.

* Refer to step 8 on page 112.



8 Insert the bobbin case and then attach the needle plate.

* Refer to steps 9 through 11 on page 112.



9 Check the condition of the needle, and then install it.

If the needle is in a poor condition, for example, if it is bent, be sure to install a new needle.

* Refer to "CHANGING THE NEEDLE" on page 41.

■ Checking Machine Operations

If the needle plate has been removed, check machine operations to confirm that installation has been completed correctly.

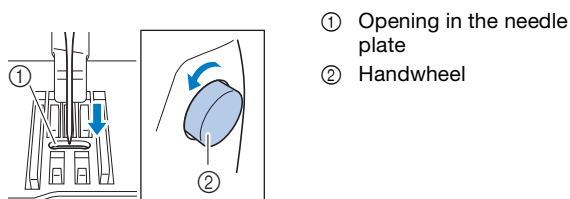
1 Turn on the machine.

2 Select Straight stitch (Middle).

Note

- Do not yet install the presser foot and thread.

3 Slowly turn the handwheel toward you (counterclockwise), and look from all sides to check that the needle falls at the center of the opening in the needle plate.



If the needle or feed dogs contact the needle plate, the machine may be malfunctioning; therefore, contact your authorized Brother dealer or the nearest Brother authorized service center.

4 Turn off the machine, and then install the bobbin and presser foot.

Never use a scratched or damaged presser foot. Otherwise, the needle may break, or sewing performance may suffer.

* Refer to "Setting the Bobbin" on page 33 and "CHANGING THE PRESSER FOOT" on page 43.

5 Correctly thread the machine.

* For details on the machine, refer to "UPPER THREADING" on page 35.

Note

- The thread may have become tangled as a result of incorrect upper threading. Make sure that the machine is correctly threaded.

6 Perform trial sewing with normal fabric.

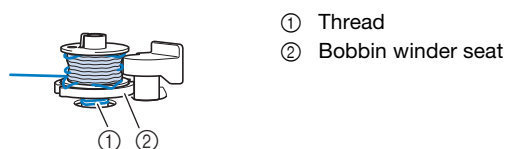
Note

- Incorrect sewing may be the result of incorrect upper threading or sewing thin fabrics. If there are poor results from the trial sewing, check the upper threading or the type of fabric being used.

If the Thread Becomes Tangled Under the Bobbin Winder Seat

If the bobbin winding starts when the thread is not passed through the pretension disk correctly, the thread may become tangled beneath the bobbin winder seat.

Wind off the thread according to the following procedure.



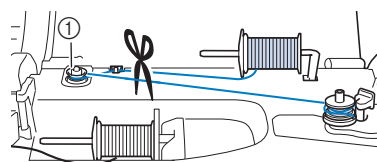
⚠ CAUTION

- Do not remove the bobbin winder seat even if the thread becomes tangled under the bobbin winder seat. The cutter in the bobbin winder seat may cause injury.

1 Touch to stop the bobbin winding.

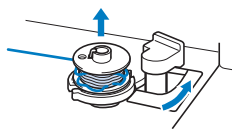


2 Cut the thread with scissors near the pretension disk.

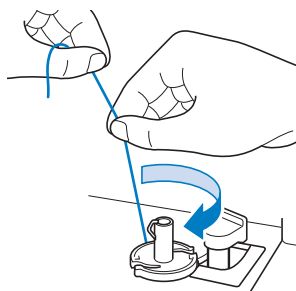


① Pretension disk

- 3 Push the bobbin winder switch to the right, and then remove the bobbin from the shaft and cut the thread leading to the bobbin in order to be able to completely remove the bobbin from shaft.



- 4 Hold the thread end with your left hand, and wind off the thread clockwise from under the bobbin winder seat with your right hand as shown below.



List of Symptoms

Check the following possible problems before requesting service. If the reference page is "*", contact your authorized Brother dealer or the nearest Brother authorized service center.

Getting Ready

Symptom, Cause/solution	Reference
Cannot thread the needle.	
Needle is not in the correct position. • Press  (Needle position button) to raise the needle.	10
Needle is installed incorrectly.	41
Needle is turned, bent or the point is dull.	41
Upper threading is incorrect.	35
The needle threader hook is bent and does not pass through the eye of the needle.	*
The needle threader lever cannot be moved or returned to its original position.	*
A size 65/9 needle is being used. • The needle is incompatible with the needle threader. Manually pass the thread through the eye of the needle.	37

Cannot lower the presser foot with the presser foot lever.

Presser foot was raised using  (Presser foot lifter button). • Press  (Presser foot lifter button) to lower the presser foot.	10
---	----

Bobbin thread does not wind neatly on the bobbin.

The thread is not passed through the bobbin winding thread guide correctly.	30
Bobbin spins slowly.	31
The thread that was pulled out was not wound onto the bobbin correctly.	30
The empty bobbin was not set on the pin properly.	29

While winding the bobbin, the bobbin thread was wound below the bobbin winder seat.

You have not wound the bobbin thread properly when you initially wound thread on the bobbin. Ensure that the bobbin thread was properly set in the guides.	29
--	----

Symptom, Cause/solution	Reference
The bobbin thread cannot be pulled up.	
Needle is turned, bent or the point is dull.	41
Bobbin is set incorrectly.	33

Machine does not operate	
All keys and buttons have been locked by  .	41, 43

Nothing appears in the LCD.	
Main power switch is not turned on.	14
The plug of the power cord is not inserted into an electrical outlet.	14

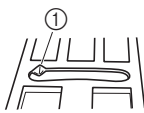
The LCD screen does not look very clear.	
The brightness of the screen is not adjusted.	21

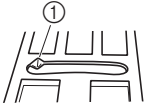
Nothing happens, even if the LCD display is touched	
Adjust the screen.	113
The screen has been locked. • Touch either of the following keys to unlock the screen.  	—

The LCD screen is fogged up.	
Condensation has formed on the LCD screen. • After a while, the cloudiness will disappear.	—

■ While Operating

Symptom, Cause/solution	Reference
Machine does not operate.	
“Start/Stop” button was not pressed.	10
There is no stitch pattern selected.	45
Presser foot is not lowered.	10
“Start/Stop” button was pressed with the foot controller attached.	47
The “Start/Stop” button was pressed while the machine is set for the sewing speed controller to control the zigzag stitch width.	20, 47

Needle breaks.	
Needle is installed incorrectly.	41
Needle clamp screw is not tightened.	41
Needle is turned or bent.	41
Using improper needle or thread for the selected fabric.	42
Wrong presser foot was used.	125
Upper thread tension is too tight.	54
Fabric is pulled during sewing.	—
Spool cap is set incorrectly.	35
There are scratches around the opening in the needle plate. * There is a notch on the left side of the opening in the needle plate. This is not a scratch.	*
 ① Notch	
There are scratches around the opening in the presser foot.	*
There are scratches on the bobbin case.	*
Needle is defective.	41
A bobbin designed specifically for this machine is not used.	29
Upper threading is incorrect.	35
Bobbin is set incorrectly.	33
Presser foot is attached incorrectly.	43
Screw of the presser foot holder is loose.	43
Fabric is too thick.	61
Fabric is fed forcefully when sewing thick fabric or thick seams.	61
Stitch length is too short.	54
Bobbin thread is incorrectly wound.	29

Symptom, Cause/solution	Reference
Upper thread breaks.	
Machine is not threaded correctly (used the wrong spool cap, spool cap is loose, the thread did not catch the needle bar threader, etc.)	35
Knotted or tangled thread is being used.	—
The selected needle is not appropriate for the thread being used.	42
Upper thread tension is too tight.	54
Thread is twisted.	—
Needle is turned, bent or the point is dull.	41
Needle is installed incorrectly.	41
There are scratches around the opening of the needle plate. * There is a notch on the left side of the opening in the needle plate. This is not a scratch.	*
 ① Notch	
There are scratches around the opening in the presser foot.	*
There are scratches on the bobbin case.	*
Using improper needle or thread for the selected fabric.	42
A bobbin designed specifically for this machine is not used.	29

The thread is tangled on the wrong side of the fabric.	
Upper threading is incorrect.	35
Using improper needle or thread for the selected fabric.	42

The upper thread is too tight.	
The bobbin thread is incorrectly installed.	33

Bobbin thread breaks.	
Bobbin is set incorrectly.	33
Bobbin thread is incorrectly wound.	29
There are scratches on the bobbin or it doesn't rotate properly.	33
Thread is twisted.	—
A bobbin designed specifically for this machine is not used.	29

Symptom, Cause/solution	Reference
Fabric puckers.	
There is a mistake in the upper or bobbin threading.	33, 35
Spool cap is set incorrectly.	35
Using improper needle or thread for the selected fabric.	42
Needle is turned, bent or the point is dull.	41
Stitches are too long when sewing thin fabrics.	54
Thread tension is set incorrectly.	54
Wrong presser foot was used.	125

The stitch is not sewn correctly.	
The presser foot that is used is not appropriate for the type of stitch that you wish to sew.	125
The thread tension is incorrect.	54
The thread is tangled, for example, in the bobbin case.	111

Skipped stitches	
Machine is threaded incorrectly.	35
Using improper needle or thread for the selected fabric.	42
Needle is turned, bent or the point is dull.	41
Needle is installed incorrectly.	41
Needle is defective.	41
Dust or lint has collected under the needle plate.	111
Thin or stretch fabrics are being sewn.	62

No stitching	
Needle is turned, bent or the point is dull.	41
Bobbin is set incorrectly.	33
Upper threading is incorrect.	35

High-pitched sound while sewing	
Dust or lint is caught in the feed dogs.	111
Pieces of thread are caught in the race.	111
Upper threading is incorrect.	35
A bobbin designed specifically for this machine is not used.	29
There are needle holes or friction scratches in the bobbin case.	111

Symptom, Cause/solution	Reference
Fabric does not feed through the machine.	
Feed dogs are set in the down position. • Touch  , and then turn the handwheel to raise the feed dogs.	72
Stitches are too close together.	54
Wrong presser foot was used.	125
Needle is turned, bent or the point is dull.	41
Thread is entangled.	115
Zigzag foot "J" is slanted on a thick seam at the beginning of stitching.	61

The fabric feeds in the opposite direction.	
The feed mechanism is damaged.	*

The needle contacts the needle plate.	
The needle clamp screw is loose.	41
Needle is turned, bent or the point is dull.	41

Fabric being sewn with the machine cannot be removed.	
Thread is tangled below the needle plate.	114

A broken needle has fallen into the machine.	
Turn off the machine, and then remove the needle plate. If the needle that fell into the machine can be seen, use tweezers to remove it. After removing the needle, return the needle plate to its original position. Before turning on the machine, slowly turn the handwheel toward you to check that it turns smoothly. If the handwheel does not turn smoothly or the needle that fell into the machine cannot be removed, consult your authorized Brother dealer.	115

The handwheel feels sluggish when it is turned.	
Thread is tangled in the bobbin case.	114

■ After Sewing

Symptom, Cause/solution	Reference
Thread tension is incorrect.	
Upper threading is incorrect.	35
Bobbin is set incorrectly.	33
Using improper needle or thread for the selected fabric.	42
Presser foot holder is not attached correctly.	43
Thread tension is set incorrectly.	54
Bobbin thread is incorrectly wound.	29
Needle is turned, bent or the point is dull.	41
A bobbin designed specifically for this machine is not being used.	29

Character or decorative stitch patterns are misaligned.	
Stitch pattern adjustment settings were set incorrectly.	104

Stitch pattern does not turn out.	
Wrong presser foot was used.	125
Did not use a stabilizer material on thin fabrics or stretch fabrics.	62
Thread tension is set incorrectly.	54
Fabric was pulled, pushed or fed at an angle while it was being sewn. Sew while guiding the fabric with your hands so that the fabric is fed in a straight line.	45
The thread is tangled, for example, in the bobbin case.	114

ERROR MESSAGES

Below is an explanation of error messages. Refer to these when necessary (if you touch  or do the operation correctly while the error message is displayed, the message disappears).

	Error messages	Cause/solution
1	Cannot change the configuration of the characters.	This message is displayed when there are too many characters and the curved character configuration is impossible.
2	Data volume is too large for this pattern.	This message is displayed when the stitch patterns you are editing take up too much memory, or if you are editing too many stitch patterns for the memory. For a combined pattern, reduce the number of patterns.
3	Failed to save file.	This message is displayed when no more images can be saved on the USB media. In this case, delete a file from the USB media or use different USB media.
4	Lower the presser foot lever.	This message is displayed when  (Presser foot lifter button) is pressed while the presser foot lever is raised and the needle is lowered.
5	Not enough available memory to save the data. Delete some patterns or use a different media.	This message is displayed when the memory is full and the stitch pattern cannot be saved.
6	Preventive maintenance is recommended.	This message is displayed when the machine needs to be maintained. Once this message appears, it is recommended to take your machine to an authorized Brother dealer or the nearest Brother authorized service center for a regular maintenance check. Although this message will disappear and the machine will continue to function once you touch  , the message will display several more times until the appropriate maintenance is performed.
7	Set the clock.	This message appears when the time/date is not set. Set time/date. (page 14)
8	The "Start/Stop" button does not operate with the foot controller attached. Remove the foot controller.	This message is displayed when the "Start/Stop" button is pushed to sew Utility stitches or Character/Decorative stitches while the foot controller is connected.
9	The bobbin thread is almost empty.	This message is displayed when the bobbin thread is running out. Although a few stitches can be sewn when the "Start/Stop" button is pressed, replace with a wound bobbin immediately. If [Upper and Bobbin Thread Sensor] in the general settings screen of the machine setting mode is set to [OFF], this message does not appear.
10	The bobbin winder safety device has activated. Is the thread tangled?	This message is displayed when the bobbin is being wound, and the motor locks because the thread is tangled, etc.
11	The safety device was activated since the main shaft motor was heated. Is the thread tangled?	This message is displayed when the temperature of the motor increases, activating the safety device. Wait until the temperature decreases. If the error persists, contact your nearest authorized Brother dealer.
12	The safety device was activated since the main shaft motor seized. Is the thread tangled?	This message is displayed when the motor locks due to tangled thread or for other reasons related to thread delivery.
13	The safety device was activated since the needle position sensor malfunctioned.	This message is displayed when an error in the needle position sensor is detected, activating the safety device. Turn the machine off, then on again. If the message continues to appear, the machine may be damaged. Contact your nearest authorized Brother dealer.
14	Turn off the machine before attaching or removing the needle plate.	This message is displayed when you try to sew with a stitch other than a middle needle position stitch while the straight stitch needle plate is installed. This message is displayed when the needle plate is removed with the machine on.
15	This file cannot be used.	This message appears if the file format is incompatible with this machine. Check the list of compatible file formats. (page 123)
16	This file exceeds the data capacity and cannot be used. Use a suitable size file.	This message is displayed when the file size exceeds the data capacity of the machine. Confirm the file size and format. (page 123)

	Error messages	Cause/solution
17	This key cannot be used at this time.	This message is displayed when you touch [Sewing Guide] in the screen other than the Utility Stitch.
18	This USB media cannot be used.	This message is displayed when you try to use incompatible media. For a list of compatible USB media, visit https://s.brother/cpeai/ .
19	Turn off the power and replace the needle plate.	• This message is displayed when the machine is set to utility decorative stitch mode while the straight stitch needle plate or no needle plate is installed. • This message is displayed when the straight stitch needle plate is installed while a stitch pattern that cannot be used with that needle plate is selected.
20	USB media error	This message is displayed when an error occurs with the USB media. For a list of compatible USB media, visit https://s.brother/cpeai/ .
21	When the speed controller is set to control the zigzag stitch width, the "Start/Stop" button does not operate.	This message is displayed when the speed control lever is set to control the zigzag stitch width, and the "Start/ Stop" button is pressed. Set [Width Control] to [OFF] in the settings screen to use the "Start/Stop" button (page 20), or use the foot controller to operate the machine (page 71).

SPECIFICATIONS

Item	Specification		
Dimensions of machine	Approx. 662 mm (W) × 348 mm (H) × 321 mm (D) (approx. 26-1/16 inches (W) × 13-11/16 inches (H) × 12-5/8 inches (D))		
Weight of machine	Approx. 17 kg (approx. 37.5 lb)		
Sewing speed	70 to 1050 stitches per minute		
Interfaces	Wireless LAN* ¹		
Memory	Stitch patterns	1 MB	
Data Types	Stitch patterns* ²	.pmv .pmx .pmu .pmi	
Number of decorative stitch pattern combinations	Up to 70		
Types of USB Devices/Media that can be Used	• USB Flash drive (Type A) Supported formats: FAT32 Recommended size: 32 GB or less • Some USB media may not be usable with this machine.		
Condition of the [Eco Mode] and [Shutoff Support Mode]	[Eco Mode]	Available time	OFF, 10 - 120 (minute)
		“Start/Stop” button	Green flashing
		Suspended function	Machine light, Screen display, LED pointer, Guideline marker
		After recovering	The machine starts from the previous operation.
	[Shutoff Support Mode]	Available time	OFF, 1 - 12 (hour)
		“Start/Stop” button	Green slow flashing
		Suspended function	All functions
		After recovering	An error message appears. You need to turn off and on the machine to restart.
Compatible image files of the Screen Saver Image	Format	.jpg	
	File size	Max. 150 KB for each image	
	File dimension	1280 × 1280 pixels or less (If the width is between 800 and 1279 pixels, the image will be displayed at 800 pixels.)	
	Number allowed	5 or less	
Videos that can be played	MP4 file format	Video - H.264/MPEG-4 AVC, Audio – AAC	
	Size	450 (H) × 800 (W)	
	Maximum file size	1 GB	

*¹ The wireless network connection complies with IEEE 802.11b/g/n standards and uses the 2.4 GHz frequency.
A wireless network cannot be set up with WPA™/WPA2™ Enterprise.

*² ".pmu" stitch data files can be retrieved; however, when the machine is used to save the file, it is saved as a ".pmv" stitch data file.
Using data other than that created using this machine or the machine which create ".pmu" data file, may cause the machine to malfunction.

* Please be aware that some specifications may change without notice.

Note

- We recommend using the 26 letters of the alphabet (uppercase and lowercase), the numbers 0 through 9, "-", and "_" for the name of the file/folder.

UPDATING YOUR MACHINE'S SOFTWARE

You can update your machine's software using the following two procedures.

Update Procedure Using USB Media

When an update program is available on <https://s.brother/cpeai/>, please download the files following the instructions on the website and steps below.

Note

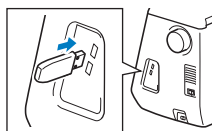
- When using USB media to update the software, check that no data other than the update file is saved on the USB media being used before starting to update.

1 While pressing  (Automatic threading button), turn the main power to ON.

2 Touch .



3 Insert the USB media into the primary (top) USB port on the machine.



4 Touch .

→ When updating is finished, the completion message appears.

5 Turn the machine off, remove the USB media, and turn the machine on again.

Update Procedure Using Wireless LAN Connection

If the machine is connected to a wireless network with a strong, reliable connection, update files can be downloaded directly to the machine using this network.

For details on the wireless LAN connection, refer to page 26.

Memo

- The machine periodically checks if there is a new update file on the server. When there is a new update file, the wireless LAN key is displayed as .



1 Display page 8 of the settings screen.

2 Touch .

- * The machine starts to download the update file, if there is a new update file on server.

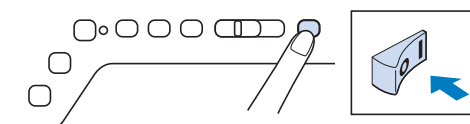


- ① When the wireless LAN key appears as , touching  causes the machine to check if there is a new update file. If there is a new file, downloading begins.

Note

- Do not turn off the machine during the download.
- Touch  to pause the download. To restart, touch .

3 When downloading is finished, turn off the machine, then hold down  (Automatic threading button) while turning on the machine.



4 Touch .



5 Touch to update the machine.

* Do not turn off the machine during the update.

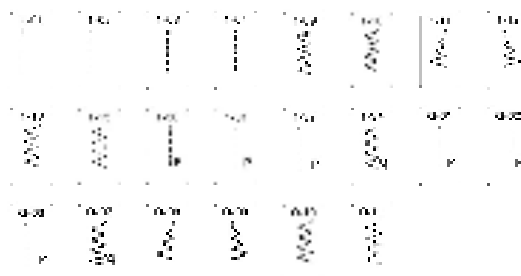
Memo

- If there are changes or additions to functions, manuals available on the machine may be updated.

STITCH SETTING CHART

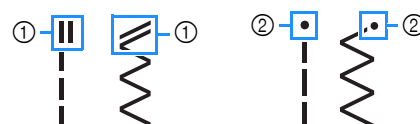
Memo

- When any of the following stitches (reverse stitch patterns and reinforcement stitch patterns) are selected, pressing  (Reverse stitch button) will sew reverse stitches.



When any other stitch is selected, pressing  (Reverse stitch button) will sew reinforcement stitches.

- The stitch pattern symbols indicate the following.



- ① Reverse stitch pattern
- ② Reinforcement stitch pattern

- Advanced monogramming foot “N+” is displayed as “N” on the screen.
- Values and measurements provided in inches are approximate. Actual values are provided in the metric unit of measurement.

Note

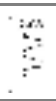
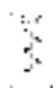
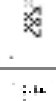
- The presser foot that is displayed on each screen when Free motion mode is OFF/ON is shown in the table under “Presser foot”.

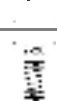
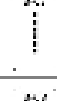
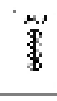
* Twin needle can be used by attaching zigzag foot “J”.

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	J*/O	Straight stitch (Left) General sewing, gather, pintuck, etc.	0.0 (0) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)
	J*/O	Straight stitch (Left) General sewing, gather, pintuck, etc.	0.0 (0) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)
	J*/O	Straight stitch (Middle) General sewing, gather, pintuck, etc.	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)
	J*/O	Straight stitch (Middle) General sewing, gather, pintuck, etc.	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	J*/O	Triple stretch stitch General sewing for reinforcement and decorative topstitching	0.0 (0) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*/O	Stem stitch Reinforced stitching, sewing and decorative applications	1.0 (1/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Decorative stitch Decorative stitching, top stitching	0.0 (0) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Basting stitch For basting.	0.0 (0) 0.0 - 7.0 (0 - 1/4)	20 (3/4) 5 - 30 (3/16 - 1-1/4)
	J*/O	Zigzag stitch For overcasting, mending.	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	1.4 (1/16) 0.0 - 5.0 (0 - 3/16)
	J*/O	Zigzag stitch For overcasting, mending.	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	1.4 (1/16) 0.0 - 5.0 (0 - 3/16)
	J*/O	Zigzag stitch (Right) Start from right needle position, zigzag sew at left.	3.5 (1/8) 2.5 - 5.0 (3/32 - 3/16)	1.4 (1/16) 0.3 - 5.0 (1/64 - 3/16)
	J*/O	Zigzag stitch (Left) Start from left needle position, zigzag sew at right.	3.5 (1/8) 2.5 - 5.0 (3/32 - 3/16)	1.4 (1/16) 0.3 - 5.0 (1/64 - 3/16)
	J*/O	2 steps elastic zigzag Overcasting (medium weight and stretch fabrics), tape and elastic	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J*/O	2 steps elastic zigzag Overcasting (medium weight and stretch fabrics), tape and elastic	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J*/O	3 steps elastic zigzag Overcasting (medium, heavyweight and stretch fabrics), tape and elastic	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	G	Overcasting stitch Reinforcing of light and medium weight fabrics	3.5 (1/8) 2.5 - 5.0 (3/32 - 3/16)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	G	Overcasting stitch Reinforcing of heavyweight fabric	5.0 (3/16) 2.5 - 5.0 (3/32 - 3/16)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	G	Overcasting stitch Reinforcing of medium, heavyweight and easily friable fabrics or decorative stitching.	5.0 (3/16) 3.5 - 5.0 (1/8 - 3/16)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*/O	Overcasting stitch Reinforced seaming of stretch fabric	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*/O	Overcasting stitch Reinforcing of medium stretch fabric and heavyweight fabric, decorative stitching	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	J*/O	Overcasting stitch Reinforcement of stretch fabric or decorative stitching	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	4.0 (3/16) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Overcasting stitch Stretch knit seam	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	4.0 (3/16) 0.4 - 5.0 (1/64 - 3/16)
	J*/O	Single diamond overcast Reinforcement and seaming stretch fabric	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	J*/O	Single diamond overcast Reinforcement of stretch fabric	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	1.8 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	S	With side cutter Straight stitch while cutting fabrics	0.0 (0) 0.0 - 2.5 (0 - 3/32)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)
	S	With side cutter Zigzag stitch while cutting fabrics	3.5 (1/8) 3.5 - 5.0 (1/8 - 3/16)	1.4 (1/16) 0.0 - 5.0 (0 - 3/16)
	S	With side cutter Overcasting stitch while cutting fabrics	3.5 (1/8) 3.5 - 5.0 (1/8 - 3/16)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	S	With side cutter Overcasting stitch while cutting fabrics	5.0 (3/16) 3.5 - 5.0 (1/8 - 3/16)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	S	With side cutter Overcasting stitch while cutting fabrics	5.0 (3/16) 3.5 - 5.0 (1/8 - 3/16)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Piecing stitch (Right) Piecework/patchwork 6.5 mm (approx. 1/4 inch) right seam allowance	5.5 (7/32) 0.0 - 7.0 (0 - 1/4)	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/C	Piecing stitch (Middle) Piecework/patchwork	—	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Piecing stitch (Left) Piecework/patchwork 6.5 mm (approx. 1/4 inch) left seam allowance	1.5 (1/16) 0.0 - 7.0 (0 - 1/4)	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Hand-look quilting Quilting stitch made to look like hand quilting when using transparent nylon thread for the upper thread and a thread color matching the quilt for the bobbin thread. Sew with a tight thread tension so that the bobbin thread is visible from the right side of the fabric. Use a needle between 90/14 and 100/16.	0.0 (0) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Quilting appliqué zigzag stitch Zigzag stitch for quilting and sewing on appliqué quilt pieces	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	1.4 (1/16) 0.0 - 5.0 (0 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	J/O	Quilting appliqué stitch Quilting stitch for invisible appliqué or attaching binding	1.5 (1/16) 0.0 - 7.0 (0 - 1/4)	1.8 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Quilting stippling Background quilting	7.0 (1/4) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	R	Blind hem stitch Hemming woven fabrics * The stitch width setting is in neither millimeters nor inches.	00 3← - →3	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	R	Blind hem stretch stitch Hemming stretch fabric * The stitch width setting is in neither millimeters nor inches.	00 3← - →3	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Blanket stitch Appliqués, decorative blanket stitch	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Blanket stitch Appliqués, decorative blanket stitch	2.5 (3/32) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Shell tuck edge Shell tuck edge finish on fabrics	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)
	N*O	Satin scallop stitch Decorating collar of blouse, edge of handkerchief	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	0.5 (1/32) 0.1 - 5.0 (1/64 - 3/16)
	N/O	Scallop stitch Decorating collar of blouse, edge of handkerchief	7.0 (1/4) 0.0 - 7.0 (0 - 1/4)	1.4 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Patchwork join stitch Patchwork stitches, decorative stitching	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.2 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J*O	Patchwork double overlock stitch Patchwork stitches, decorative stitching	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Couching stitch Decorative stitching, attaching cord and couching	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.2 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J*O	Smocking stitch Smocking, decorative stitching	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Feather stitch Fagoting, decorative stitching	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Fagoting cross stitch Fagoting, bridging and decorative stitching	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Tape attaching Attaching tape to seam in stretch fabric	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	J/O	Ladder stitch Decorative stitching	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Rick-rack stitch Decorative top stitching	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Decorative stitch Decorative stitching	1.0 (1/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J*O	Decorative stitch Decorative stitching	5.5 (7/32) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N*O	Serpentine stitch Decorative stitching and attaching elastic	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	N*O	Decorative stitch Decorative stitching and appliqué	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	N/O	Decorative stippling stitch Decorative stitching	7.0 (1/4) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N*O	Hemstitching Decorative hems, triple straight at left	1.0 (1/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N*O	Hemstitching Decorative hems, triple straight at center	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N*O	Hemstitching zigzag Decorative hems, top stitching	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems, lace attaching pin stitch	3.5 (1/8) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems	3.0 (1/8) 0.0 - 7.0 (0 - 1/4)	3.5 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems daisy stitch	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Heirloom, decorative hems	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	3.5 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Heirloom, decorative hems	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	3.5 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N*O	Hemstitching Heirloom, decorative hems	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	4.0 (3/16) 0.4 - 5.0 (1/64 - 3/16)
	N*O	Hemstitching Heirloom, decorative hems	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	N*/O	Honeycomb stitch Heirloom, decorative hems	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Honeycomb stitch Heirloom, decorative hems	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	3.5 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Hemstitching Heirloom, decorative hems	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Heirloom, decorative hems	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Hemstitching Heirloom, decorative hems	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	4.0 (3/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Heirloom, decorative hems	4.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Hemstitching Heirloom, decorative hems	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Hemstitching Decorative hems and bridging stitch	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N*/O	Hemstitching Decorative hems. Fagoting, attaching ribbon	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems, smocking	6.0 (15/64) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems, smocking	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/16 - 3/16)
	N/O	Hemstitching Decorative hems, smocking	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems	5.0 (3/16) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Ladder stitch Decorative hems. Fagoting, attaching ribbon	7.0 (1/4) 0.0 - 7.0 (0 - 1/4)	1.6 (1/16) 0.4 - 2.5 (1/64 - 3/32)
	A	Narrow rounded buttonhole Buttonhole on light to medium weight fabrics	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Wide round ended buttonhole Buttonholes with extra space for larger buttons	5.5 (7/32) 3.5 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Tapered round ended buttonhole Reinforced waist tapered buttonholes	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	A	Round ended buttonhole Buttonholes with vertical bar tack in heavyweight fabrics	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Round ended buttonhole Buttonholes with bar tack	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Round double ended buttonhole Buttonholes for fine, medium to heavyweight fabrics	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Narrow squared buttonhole Buttonholes for light to medium weight fabrics	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Wide squared buttonhole Buttonholes with extra space for larger decorative buttons	5.5 (7/32) 3.5 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Squared buttonhole Heavy-duty buttonholes with vertical bar tacks	5.0 (3/16) 3.0 - 6.0 (1/8 - 15/64)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Stretch buttonhole Buttonholes for stretch or woven fabrics	6.0 (15/64) 3.0 - 6.0 (1/8 - 15/64)	1.0 (1/16) 0.5 - 2.0 (1/32 - 1/16)
	A	Heirloom buttonhole Buttonholes for heirloom and stretch fabrics	6.0 (15/64) 3.0 - 6.0 (1/8 - 15/64)	1.5 (1/16) 1.0 - 3.0 (1/16 - 1/8)
	A	Bound buttonhole The first step in making bound buttonholes	5.0 (3/16) 0.0 - 6.0 (0 - 15/64)	2.0 (1/16) 0.2 - 4.0 (1/64 - 3/16)
	A	Keyhole buttonhole Buttonholes in heavyweight or thick fabrics for larger flat buttons	7.0 (1/4) 3.0 - 7.0 (1/8 - 1/4)	0.5 (1/32) 0.3 - 1.0 (1/64 - 1/16)
	A	Tapered keyhole buttonhole Buttonholes in medium to heavy weight fabrics for larger flat buttons	7.0 (1/4) 3.0 - 7.0 (1/8 - 1/4)	0.5 (1/32) 0.3 - 1.0 (1/64 - 1/16)
	A	Keyhole buttonhole Buttonholes with vertical bar tack for reinforcement in heavyweight or thick fabrics	7.0 (1/4) 3.0 - 7.0 (1/8 - 1/4)	0.5 (1/32) 0.3 - 1.0 (1/64 - 1/16)
	N/O	4 steps buttonhole 1 Left side of 4 step buttonhole	5.0 (3/16) 1.5 - 7.0 (1/16 - 1/4)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	N/O	4 steps buttonhole 2 Bar tack of 4 step buttonhole	5.0 (3/16) 1.5 - 7.0 (1/16 - 1/4)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	N/O	4 steps buttonhole 3 Right side of 4 step buttonhole	5.0 (3/16) 1.5 - 7.0 (1/16 - 1/4)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	N/O	4 steps buttonhole 4 Bar tack of 4 step buttonhole	5.0 (3/16) 1.5 - 7.0 (1/16 - 1/4)	0.4 (1/64) 0.2 - 1.0 (1/64 - 1/16)
	A	Darning Darning of medium weight fabric	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	2.0 (1/16) 0.4 - 2.5 (1/64 - 3/32)
	A	Darning Darning of heavyweight fabric	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	2.0 (1/16) 0.4 - 2.5 (1/64 - 3/32)
	A	Bar tack Reinforcement at opening of pocket, etc.	2.0 (1/16) 1.0 - 3.0 (1/16 - 1/8)	0.4 (1/64) 0.3 - 1.0 (1/64 - 1/16)
	M	Button sewing Attaching buttons	3.5 (1/8) 2.5 - 4.5 (3/32 - 3/16)	—
	N/O	Eyelet For making eyelets, holes on belts, etc.	7.0 (1/4) 7.0 6.0 5.0 (1/4 15/64 3/16)	7.0 (1/4) 7.0 6.0 5.0 (1/4 15/64 3/16)
	N/O	Star eyelet For making star-shaped eyelets on holes.	—	—
	N/O	Diagonally left up (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	N/O	Reverse (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	N/O	Diagonally right up (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	N/O	Sideways to left (Straight) For attaching appliqué on tubular pieces of fabric	—	—
	N/O	Sideways to right (Straight) For attaching appliqué on tubular pieces of fabric	—	—
	N/O	Diagonally left down (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	N/O	Forward (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	N/O	Diagonally right down (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	N/O	Sideways to left (Zigzag) For attaching appliqué on tubular pieces of fabric	—	—
	N/O	Sideways to right (Zigzag) For attaching appliqué on tubular pieces of fabric	—	—
	N/O	Forward (Zigzag) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	N/O	Reverse (Zigzag) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
	J/C	Piecing stitch (Middle) Piecework/patchwork	—	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Piecing stitch (Right) Piecework/patchwork 6.5 mm (approx. 1/4 inch) right seam allowance	5.50 (7/32) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Piecing stitch (Left) Piecework/patchwork 6.5 mm (approx. 1/4 inch) left seam allowance	1.50 (1/16) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Hand-look quilting Quilting stitch made to look like hand quilting stitch	3.50 (1/8) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Basting stitch Basting	3.50 (1/8) 0.00 - 7.00 (0 - 1/4)	20 (3/4) 5 - 30 (3/16 - 1-1/4)
	J/O	Stem stitch Reinforced stitching, sewing and decorative applications	1.00 (1/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Quilting appliqué zigzag stitch Zigzag stitch for quilting and sewing on appliqué quilt pieces	3.50 (1/8) 0.00 - 7.00 (0 - 1/4)	1.6 (1/16) 0.0 - 5.0 (0 - 3/16)
	J/O	Zigzag stitch (Right) Start from right needle position, zigzag sew at left	3.50 (1/8) 2.50 - 5.00 (3/32 - 3/16)	1.6 (1/16) 0.3 - 5.0 (1/64 - 3/16)
	J/O	Zigzag stitch (Left) Start from left needle position, zigzag sew at right	3.50 (1/8) 2.50 - 5.00 (3/32 - 3/16)	1.6 (1/16) 0.3 - 5.0 (1/64 - 3/16)
	J/O	2 steps elastic zigzag Overcasting (medium weight and stretch fabrics), tape and elastic	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	3 steps elastic zigzag Overcasting (medium, heavyweight and stretch fabrics), tape and elastic	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Quilting appliqué stitch Quilting stitch for invisible appliqué or attaching binding	2.00 (1/16) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	J/O	Shell tuck edge Shell tuck edge finish on fabrics	4.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Blanket stitch Appliqués, decorative blanket stitch	3.50 (1/8) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Quilting stippling Background quilting	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Overcasting stitch Stretch knit seam	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	4.0 (3/16) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Tape attaching Attaching tape to seam in stretch fabric	5.50 (7/32) 0.00 - 7.00 (0 - 1/4)	1.4 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	N/O	Serpentine stitch Decorative stitching and attaching elastic	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Feather stitch Fagoting, decorative stitching	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Fagoting cross stitch Fagoting, bridging and decorative stitching	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Couching stitch Decorative stitching, attaching cord and couching	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	1.2 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Patchwork double overlock stitch Patchwork stitches, decorative stitching	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Smocking stitch Smocking, decorative stitching	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Rick-rack stitch Decorative top stitching	4.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching and appliqué	6.00 (15/64) 0.00 - 7.00 (0 - 1/4)	1.0 (1/16) 0.2 - 5.0 (1/64 - 3/16)
	J/O	Decorative stitch Decorative stitching	5.50 (7/32) 0.00 - 7.00 (0 - 1/4)	1.6 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Heirloom, decorative hems	5.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Hemstitching Decorative hems and bridging stitch	6.00 (15/64) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Single diamond overcast Reinforcement and seaming stretch fabric	6.00 (15/64) 0.00 - 7.00 (0 - 1/4)	3.0 (1/8) 0.4 - 5.0 (1/64 - 3/16)
	J/O	Overcasting stitch Reinforcement of stretch fabric or decorative stitching	4.00 (3/16) 0.00 - 7.00 (0 - 1/4)	4.0 (3/16) 0.4 - 5.0 (1/64 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	N/O	Appliqué stitch Appliqués, decorative stitch	3.00 (1/8) 0.00 - 7.00 (0 - 1/4)	2.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Blanket stitch Appliques, decorative blanket stitch	4.00 (3/16) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	2.5 (3/32) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Decorative stitch Decorative stitching	7.00 (1/4) 0.00 - 7.00 (0 - 1/4)	0.4 (1/64) 0.1 - 5.0 (1/64 - 3/16)
	X	Free motion couching stitch Free motion couching stitch	3.50 (1/8) 2.75 - 3.75 (3/32 - 1/8)	—
	J/O	Hand-look quilting Quilting stitch made to look like hand quilting stitch	0.0 (0) 0.0 - 7.0 (0 - 1/4)	—
	J/O	Hand-look quilting Quilting stitch made to look like hand quilting stitch	0.0 (0) 0.0 - 7.0 (0 - 1/4)	—
	J/O	Hand-look quilting Quilting stitch made to look like hand quilting stitch	0.0 (0) 0.0 - 7.0 (0 - 1/4)	—
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	1.0 (1/16) 0.1 - 5.0 (1/64 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	5.0 (3/16) 2.5 - 7.0 (3/32 - 1/4)	2.5 (3/32) 1.4 - 5.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	5.0 (3/16) 2.5 - 7.0 (3/32 - 1/4)	2.5 (3/32) 1.4 - 4.0 (1/16 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	2.0 (1/16) 1.0 - 4.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	3.5 (1/8) 2.5 - 4.0 (3/32 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	3.0 (1/8) 2.0 - 5.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 3.0 - 7.0 (1/8 - 1/4)	3.0 (1/8) 2.5 - 5.0 (3/32 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 3.0 - 7.0 (1/8 - 1/4)	2.5 (3/32) 2.5 - 4.0 (3/32 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	2.5 (3/32) 1.4 - 4.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 3.0 - 7.0 (1/8 - 1/4)	2.5 (3/32) 2.0 - 4.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 4.0 - 7.0 (3/16 - 1/4)	3.0 (1/8) 2.5 - 4.0 (3/32 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	1.0 (1/16) 0.4 - 5.0 (1/64 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	6.0 (15/64) 4.0 - 7.0 (3/16 - 1/4)	0.3 (1/64) 0.2 - 2.0 (1/64 - 1/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	6.0 (15/64) 4.0 - 7.0 (3/16 - 1/4)	0.3 (1/64) 0.2 - 2.0 (1/64 - 1/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 3.5 - 7.0 (1/8 - 1/4)	0.3 (1/64) 0.1 - 2.0 (1/64 - 1/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 4.0 - 7.0 (3/16 - 1/4)	3.5 (1/8) 2.5 - 4.0 (3/32 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 4.0 - 7.0 (3/16 - 1/4)	2.5 (3/32) 2.0 - 4.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 4.5 - 7.0 (3/16 - 1/4)	2.5 (3/32) 2.0 - 4.0 (1/16 - 3/16)

Stitch	Presser foot	Stitch name/ Applications	Stitch width (mm (inch))	Stitch length (mm (inch))
			Auto. Manual	Auto. Manual
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 2.5 - 7.0 (3/32 - 1/4)	2.5 (3/32) 1.6 - 4.0 (1/16 - 3/16)
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 (1/4) 4.0 - 7.0 (3/16 - 1/4)	2.5 (3/32) 2.0 - 4.0 (1/16 - 3/16)
	SR	Straight stitch (Middle) Straight stitch for the stitch regulator mode	—	2.5 (3/32) 1.0 - 4.5 (1/16 - 3/16)
	SR	Zigzag stitch Zigzag stitch for the stitch regulator mode	2.5 (3/32) 0.0 - 3.0 (0 - 1/8)	1.6 (1/16) 1.0 - 3.0 (1/16 - 1/8)
	SR	Free-motion basting Basting stitch for the stitch regulator mode	—	20.0 (5/8) 10.0 - 30.0 (1/2 - 1 1/4)

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