

Luna™

Instruction and Reference Guide

Model BLUNA



baby lock

FOR THE LOVE OF SEWING

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If you have questions with registration, visit your Authorized Baby Lock Retailer.

Baby Lock Consumer Helpline: 800-313-4110

www.BabyLock.com

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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 Baby Lock retailer 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 Instruction and Reference Guide 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 Baby Lock retailer.
- In the event a malfunction occurs or adjustment is required, first follow the troubleshooting table in the back of the Instruction and Reference Guide to inspect and adjust the machine yourself. If the problem persists, please consult your local authorized Baby Lock retailer.

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.

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 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 Baby Lock retailer to obtain the correct lead.

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

Responsible Party: Tacony Corporation
1760 Gilsinn Lane, Fenton,
Missouri 63026, U.S.A.

declares that the product

Product Name: Baby Lock Sewing Machine

Model Number: BLUNA

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 Baby Lock retailer 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 Tacony Corporation 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 20 cm 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 20 cm 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.

Para usuarios en México

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.

Laser Notices

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.

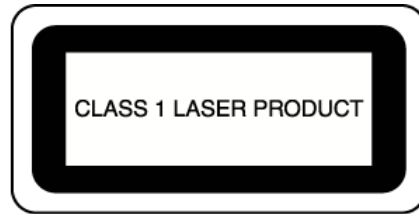
Safety precautions have been designed to prevent any possible laser beam exposure to the operator.

CAUTION

- The external guideline marker has 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.

// For countries except European countries IEC 60825-1 Specification

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



// For U.S.A.

Laser Safety

This product 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.

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.

Trademarks

WPA™, WPA2™ and WPA3™ are trademarks of Wi-Fi Alliance®.

QR Code is a registered trademark of DENSO WAVE INCORPORATED.

Any trade names and product names of companies appearing on Baby Lock products, related documents and any other materials are all trademarks or registered trademarks of those respective companies.

Copyright and License

This product includes software developed by the following vendor: ©2008 Devicescape Software, Inc.

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.

Getting Ready

Note

Be sure to install the latest software.

➤ [Updating Your Machine's Software](#)

[Names of Machine Parts](#)

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Names of Machine Parts

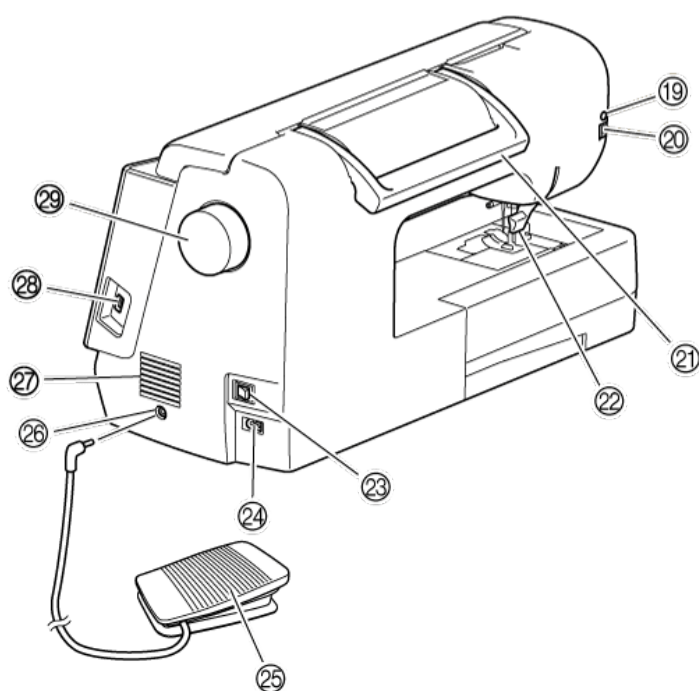
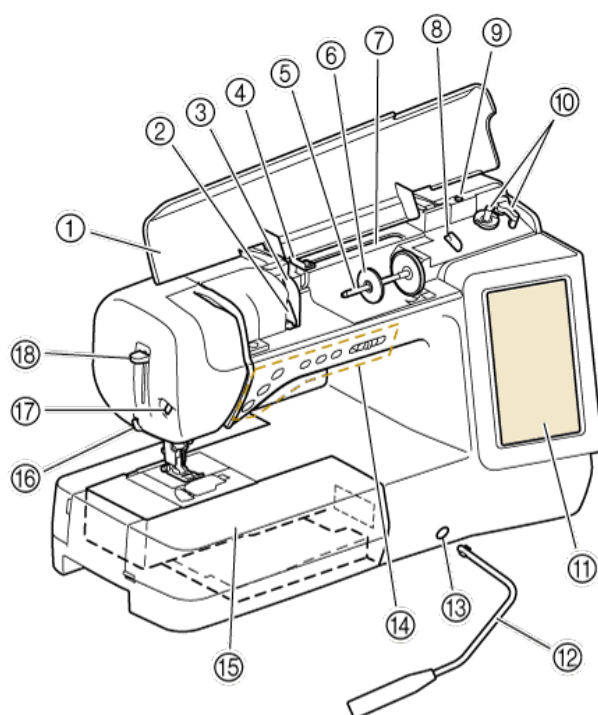
[Main Parts](#)

[Needle and Presser Foot Section](#)

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// Main Parts



- ① Top cover
- ② Thread guide plate
- ③ Thread guide cover
- ④ Bobbin winding thread guide and pretension disk
- ⑤ Spool pin
- ⑥ Spool cap
- ⑦ Touch pen (stylus) tray
- ⑧ Bobbin thread cutter
- ⑨ Slot for extra spool pin
- [Winding the Bobbin without Removing the Upper Thread](#)
- ⑩ Bobbin winder

⑪ **LCD (liquid crystal display)**

➤ [LCD Screen](#)

⑫ **Knee lifter**

⑬ **Knee lifter slot**

⑭ **Operation buttons and sewing speed controller**

➤ [Operation Buttons](#)

⑮ **Flat bed attachment with accessory compartment**

➤ [Flat Bed Attachment](#)

⑯ **Thread cutter**

⑰ **Slot for extension accessory**

⑱ **Needle threader lever**

⑲ **Jack for extension accessory**

➤ [External Guideline Marker](#)

➤ [Attaching Embroidery Foot](#)

⑳ **Connector for extension accessory**

➤ [Compact Digital Dual Feed Foot](#)

㉑ **Handle**

Carry the machine by its handle when transporting the machine.

㉒ **Presser foot lever**

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

㉓ **Main power switch**

➤ [Turning the Machine ON/OFF](#)

㉔ **Power inlet**

㉕ **Foot controller**

➤ [Foot Controller](#)

㉖ **Foot controller jack**

㉗ **Air vent**

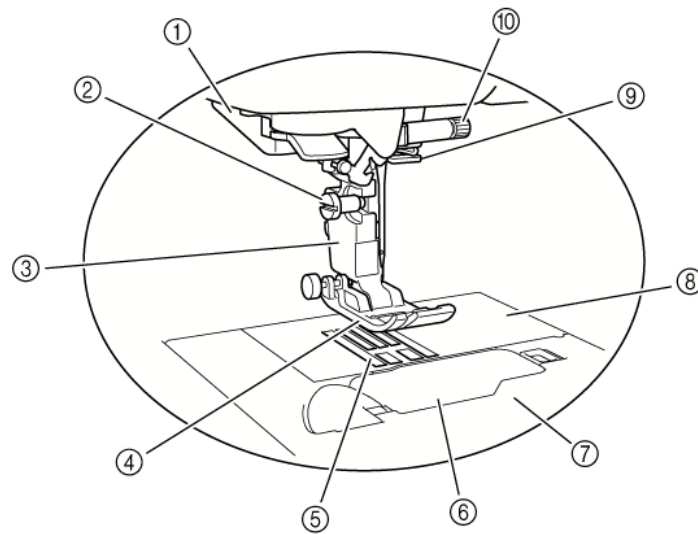
The air vent allows the air surrounding the motor to circulate. Do not cover the air vent while the machine is being used.

㉘ **USB port**

㉙ **Handwheel**

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

// Needle and Presser Foot Section



- ① **Buttonhole lever**
- ② **Presser foot holder screw**
- ③ **Presser foot holder**
- ④ **Presser foot**

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

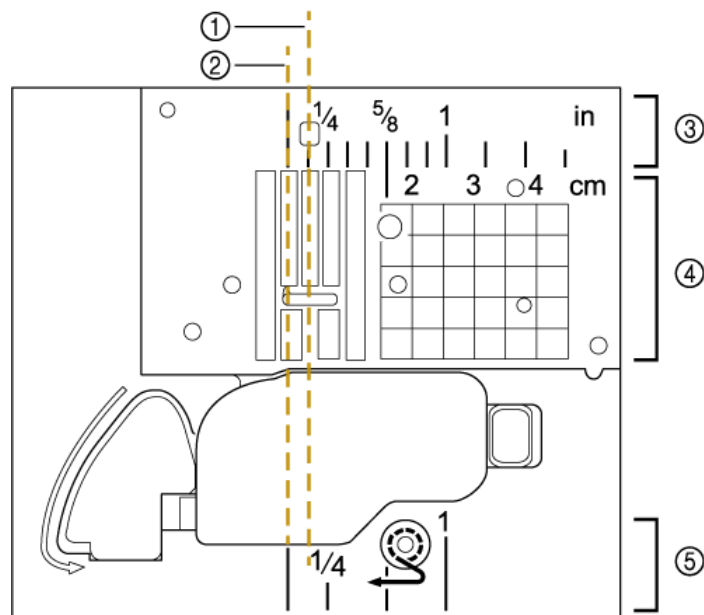
- ⑤ **Feed dogs**

The feed dogs feed the fabric in the sewing direction.

- ⑥ **Bobbin cover**
- ⑦ **Needle plate cover**
- ⑧ **Needle plate**
- ⑨ **Needle bar thread guide**
- ⑩ **Needle clamp screw**

• Measurements on the needle plate

The measurements on the 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 Left needle position on the needle plate cover <inch>

Note

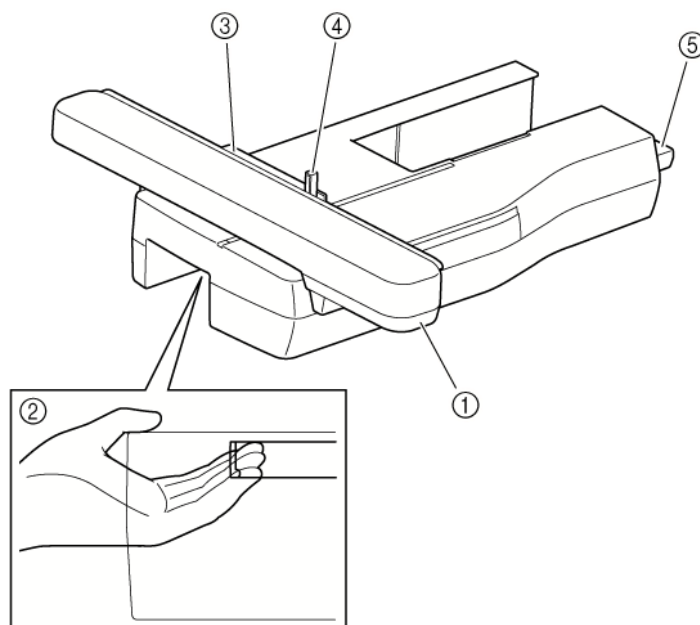
- For included accessories of your machine, refer to the “Included Accessories” sheet provided in the machine’s carton and posted at <https://babylock.com/machine-support-and-updates>.
- After opening the box, check that all accessories are included. If any item is missing or damaged, contact your authorized Baby Lock retailer.

// Embroidery Unit

Attach this when embroidering.

> [Attaching the Embroidery Unit](#)

Before attaching or detaching the embroidery unit, turn off the machine.



① Carriage

The carriage moves the embroidery frame automatically when embroidering.

② Release lever (located under the embroidery unit)

Pull the release lever to remove the embroidery unit.

③ Embroidery frame holder

Insert the embroidery frame into the embroidery frame holder to hold the frame in place.

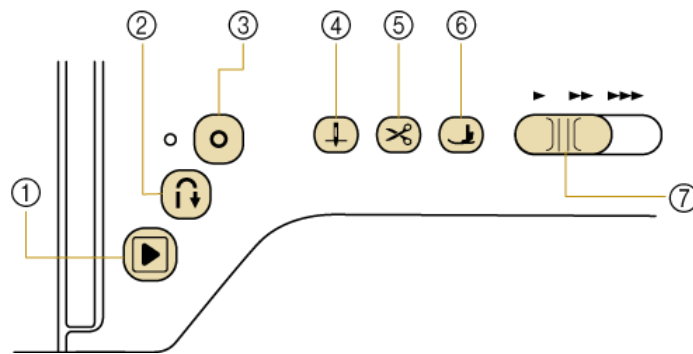
④ Frame-securing lever

Push the frame-securing lever down to secure the embroidery frame.

⑤ Embroidery unit connection

Insert the embroidery unit connection into the connection port when attaching the embroidery unit.

// 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.

If the button flashes green slowly, the machine enters the power saving mode. ([▶ Setting the Power Saving Mode](#))

Red: The machine is not ready.

Orange: The machine is winding the bobbin thread, or the bobbin winder shaft is moved to the right side.

② Reverse stitch button

Press the reverse button to sew reverse or reinforcement stitches depending on the selected stitch pattern.

③ Reinforcement stitch button

Press the reinforcement button to sew a single stitch repeatedly and tie-off.

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.

Memo

Reverse/Reinforcement stitches are generally necessary at the beginning and end of sewing.



① Reverse stitch

② Reinforcement stitch

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.

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

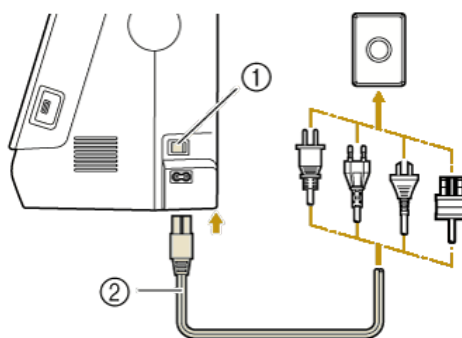
⚠ CAUTION

- 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 Baby Lock retailer for repairs before continuing use.
- Do not insert the plug on the power supply cord into an electrical outlet that is in poor condition.
- (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.

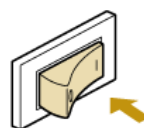
If the plug does not fit fully in the electrical outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper electrical outlet. Do not modify the plug in any way.

- 1 Insert the power supply cord into the power inlet, 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.

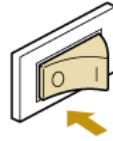


Memo

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.

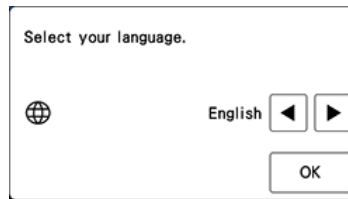


[Setting Your Machine for the First Time](#)

// Setting Your Machine for the First Time

When you first turn on the machine, set the language to your preferred language.

- 1 Touch  and  to set your preferred language and then touch [OK].



- 2 Touch [OK] to read end-user license agreements (EULA).
- 3 The following message about a wireless LAN connection appears. To set up a connection, touch [OK], and then refer to steps [3](#) through [6](#) in the following link.

* To set up Wireless LAN at a later time, select [Not now].

➤ [Using the Wizard to Set Up the Wireless Network 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.

> [General Settings](#)

[Home Page Screen](#)

[Sewing Screen](#)

[Embroidery Screen](#)

// Home Page Screen



① Sewing key

Select a utility stitch or character/decorative stitch pattern.

➤ [Sewing Screen](#)

② Embroidery key

Select an embroidery pattern. Attach the embroidery unit.

➤ [Embroidery Screen](#)

③ Wireless LAN key

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



➤ [Wireless LAN Settings](#)

➤ [Update Procedure Using Wireless LAN Connection](#)

④ Settings key

Customize the various machine settings.

➤ [Machine Settings](#)

⑤ Machine help key

See explanations on how to use the machine. You can see the instructional videos by scanning the QR code displayed on the Help screen.

➤ [Machine Help](#)

⑥ Presser foot/Needle exchange key

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. Touch this key again to unlock all keys and buttons.

➤ [Installing the Bobbin](#)

➤ [Upper Threading](#)

➤ [Changing the Needle](#)

➤ [Changing the Presser Foot](#)

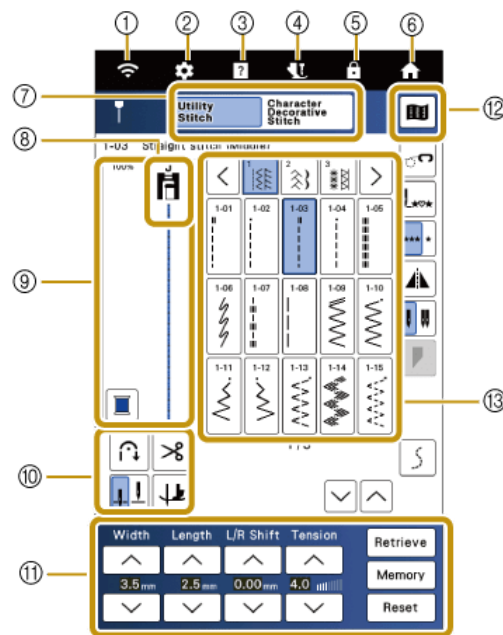
⑦ Screen lock key

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.

⑧ Home page screen key

Return to the home page screen at any time and select a different category - [Sewing] and [Embroidery].

// Sewing Screen



① Wireless LAN key

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 .

- > [Wireless LAN Settings](#)
- > [Update Procedure Using Wireless LAN Connection](#)

② Settings key

Customize the various machine settings.

- > [Machine Settings](#)

③ Machine help key

See explanations on how to use the machine. You can see the instructional videos by scanning the QR code displayed on the Help screen.

- > [Machine Help](#)

④ Presser foot/Needle exchange key

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. Touch this key again to unlock all keys and buttons.

- > [Installing the Bobbin](#)
- > [Upper Threading](#)
- > [Changing the Needle](#)
- > [Changing the Presser Foot](#)

⑤ Screen lock key

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.

⑥ Home screen key

Show the home page screen at any time.

⑦ Stitch tab

Select a stitch pattern from utility stitches or custom character/decorative stitches.

- > [Stitch Types and Key Functions](#)

⑧ Presser foot

Shows the presser foot to be used for the selected stitch pattern.

- > [Changing the Presser Foot](#)

⑨ Stitch preview

Shows the preview of the selected stitch pattern.

⑩ **Functional keys**

Touch the key to use the automatic reinforcement stitching (reverse stitching) setting, automatic thread cutting function, needle stop position to be up or down or pivot function.

⑪ **Stitch adjustment area**

Shows the stitch width, the stitch length, “L/R Shift” (the stitch position), and the thread tension of the selected stitch pattern. You can also adjust them by using the keys.

➤ [Stitch Settings](#)

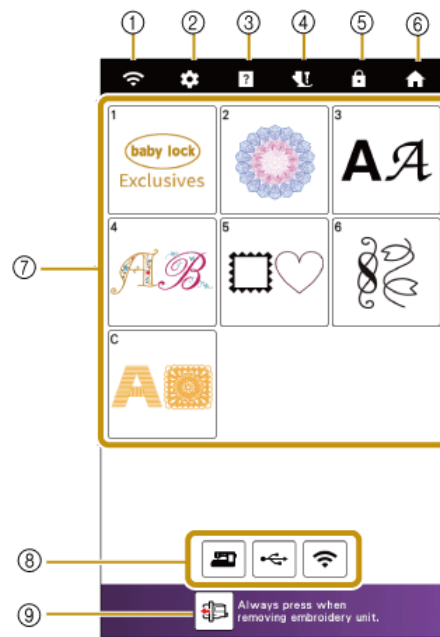
⑫ **Image key**

Display an enlarged image of the selected stitch pattern.

⑬ **Stitch selection area**

Select a stitch pattern.

// Embroidery Screen



① Wireless LAN key

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 .

➤ [Wireless LAN Settings](#)

➤ [Update Procedure Using Wireless LAN Connection](#)

② Settings key

Customize the various machine settings.

➤ [Machine Settings](#)

③ Machine help key

See explanations on how to use the machine. You can see the instructional videos by scanning the QR code displayed on the Help screen.

➤ [Machine Help](#)

④ Presser foot/Needle exchange key

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. Touch this key again to unlock all keys and buttons.

➤ [Installing the Bobbin](#)

➤ [Upper Threading](#)

➤ [Changing the Needle](#)

➤ [Attaching Embroidery Foot](#)

⑤ Screen lock key

Lock the screen. When the screen is locked, you can still embroider, but cannot change any of the screen functions. Touch this key again to unlock the screen.

⑥ Home screen key

Show the home page screen at any time.

⑦ Embroidery pattern selection area

Select an embroidery pattern.

➤ [Selecting Patterns](#)

⑧ Patterns saved in the machine's memory, USB media, etc.

➤ [Retrieving Embroidery Patterns](#)

⑨ Embroidery unit initialization key

Touch this key to position the embroidery unit for storage.

Wireless Network Connection Functions

[Operations Available with a Wireless Network Connection](#)

[Enabling a Wireless Network Connection](#)

[Using the Wizard to Set Up the Wireless Network Connection](#)

// Operations Available with a Wireless Network Connection

[For Updating](#)

[Windows Application](#)

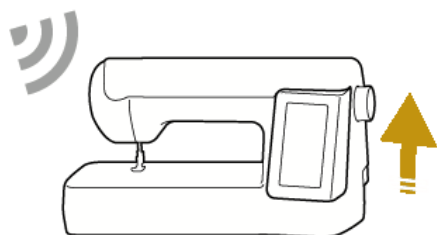
[IQ Intuition Monitoring App \(Mobile Application\)](#)

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.

> [Update Procedure Using Wireless LAN Connection](#)



■ Windows Application



Name	Function
Design Database Transfer	Wirelessly transfer an embroidery pattern from your computer to the machine. This is a free application for use on a Windows based computer and can be downloaded to your computer from the following URL. (https://babylock.com/accessories/software-and-upgrades/software/design-database-transfer) Settings must be specified in Design Database Transfer. For more information about the settings, install the application and refer to its built-in Instruction Manual. Retrieve the embroidery pattern on the machine after transferring from your computer. > Retrieving Embroidery Patterns
Palette version 11 or later (Sold separately)	Wirelessly transfer to the machine an embroidery pattern edited with embroidery editing software (Palette version 11 or later) on a computer. Retrieve the embroidery pattern on the machine after transferring from your computer. > Retrieving Embroidery Patterns Also, transfer to Palette an embroidery pattern edited on the machine. Settings must be specified in Palette. For more information, refer to the manual for Palette. Save the embroidery pattern to the wireless function pocket to transfer to Palette. > Saving Embroidery Patterns

■ IQ Intuition Monitoring App (Mobile Application)

With the IQ Intuition Monitoring App (Mobile Application) installed on your mobile device and the machine and mobile device connected to the same wireless network, you can check the operating status of the machine. In addition, you can receive notifications when the machine stops.

• Installing the App

- 1 Use your mobile device to scan the appropriate QR code below to visit Google Play or the App Store.



Android:

https://www.babylock.com/IQIntuition_MonitoringAndroid



iOS:

https://www.babylock.com/IQIntuition_MonitoringiOS

2 Install [IQ Intuition Monitoring].



IQ Intuition Monitoring

Memo

- To download and install the app, you can also search for [IQ Intuition Monitoring] in Google Play or the App Store.
- Visit the following web site for support information on the app.
(<https://babylock.com/machine-support-and-updates>)

• Monitoring

Memo

The app will be updated from time to time. The following descriptions may differ from the actual screens and operations.

- 1 **Connect the machine to your wireless network.**
▶ [Using the Wizard to Set Up the Wireless Network Connection](#)
- 2 **Confirm that your mobile device and your machine are connected to the same network.**
- 3 **Tap the icon for [IQ Intuition Monitoring] on the mobile device to start the app.**
- 4 **Follow the instructions that appear in the app to connect the app to your machine.**
 - * Select the name that appears beside [Machine name] in the settings screen on your machine.

Machine name

SewingMachineXXX

Change

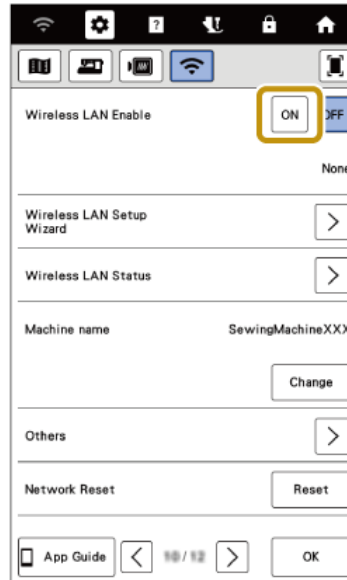
→ The machine can now be monitored.

// Enabling a Wireless Network Connection

The machine can be connected to your wireless network. For requirements for a wireless network connection, refer to the following link.

> [Specifications](#)

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

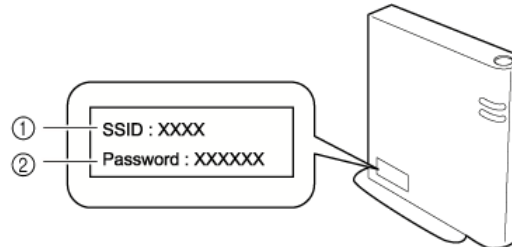


→ The machine begins to emit the wireless network signal.

// 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.



- ① SSID
- ② 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.

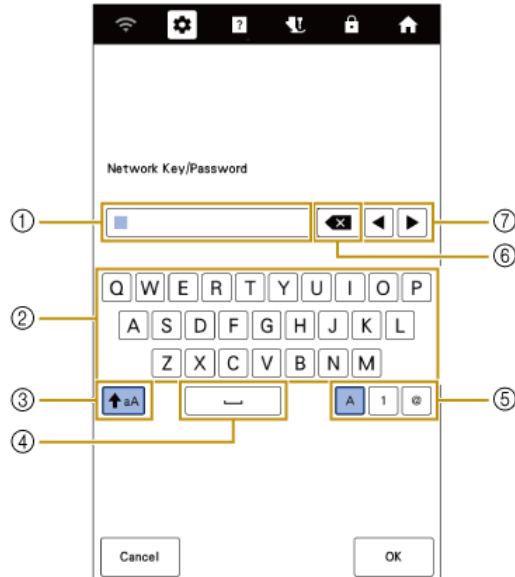


→ The screen for entering the network key (password) appears.

Memo

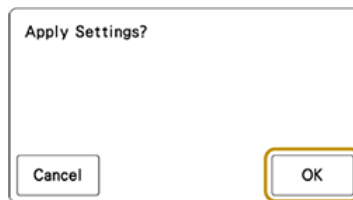
- If the SSID that was noted does not appear in the list, touch [Refresh].
- If the desired network SSID is not displayed, specify it as described below.
 1. Select [New SSID].
 2. Enter the desired network SSID, and then touch [OK].
 3. Select the authentication method and encryption mode.
- If the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



6 Touch [OK] to exit the setup.



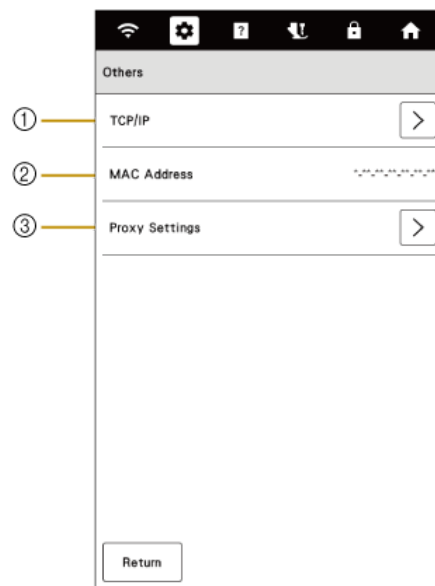
→ The name beside [Machine name] is the name that will be used when registering the machine with embroidery editing software (Palette version 11 or later) or Design Database Transfer in order to transfer files.

Memo

- The name in the [Machine name] field will be used with the IQ Intuition Monitoring App.
- 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.

Machine Settings

Touch  to change the default machine settings (needle stop position, embroidery speed, opening display, etc.). To display the different settings screens, select the category.



: Sewing settings



: General settings



: Embroidery settings



: Wireless LAN settings

Memo

Touch  or  to display a different settings screen.

[Sewing Settings](#)

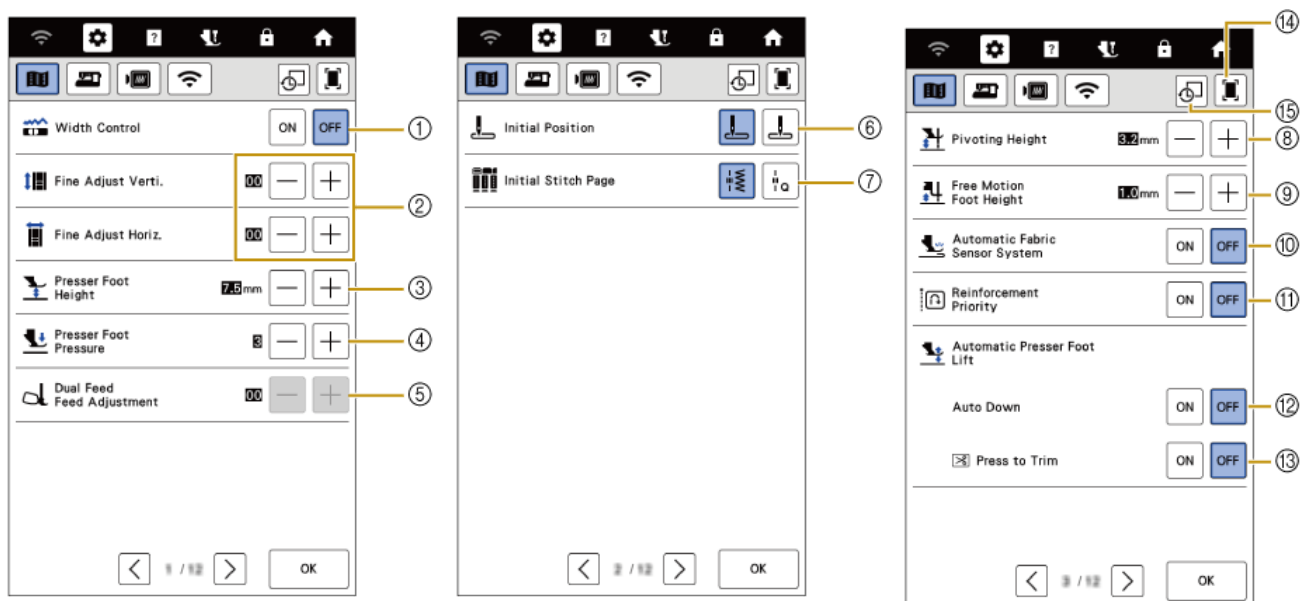
[General Settings](#)

[Embroidery Settings](#)

[Wireless LAN Settings](#)

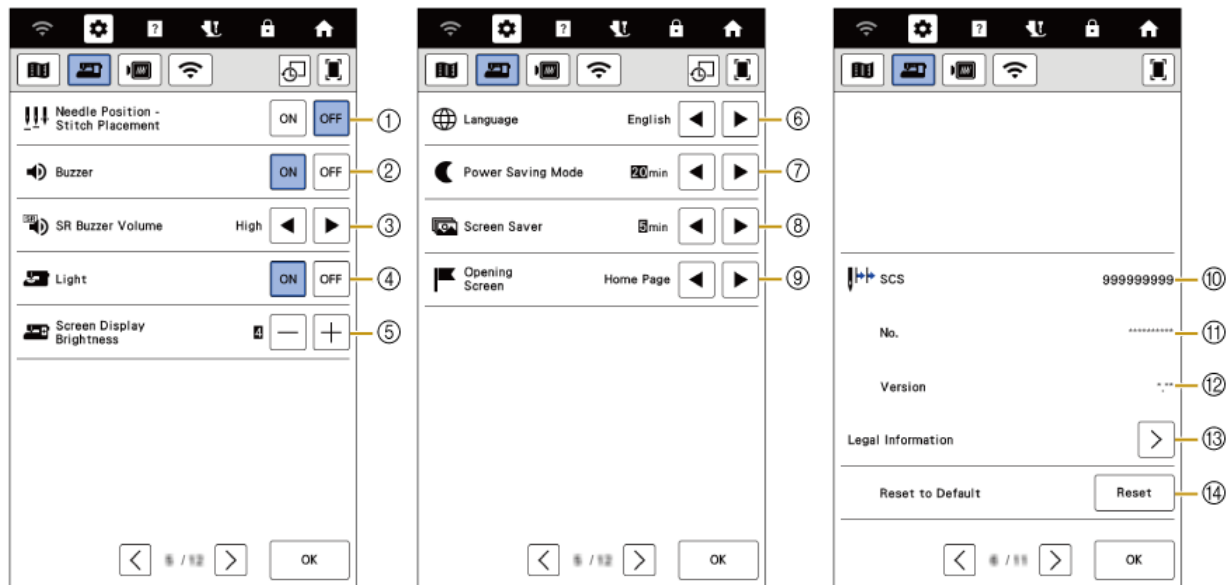
[Setting the Power Saving Mode](#)

// Sewing Settings



- ① Select whether to use the sewing speed controller to determine the zigzag width.
 > [Quilting with Satin Stitches](#)
- 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.
 > [Making Adjustments](#)
- 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 digital dual feed foot.
 > [Adjusting the Amount of Fabric Feeding from the Compact Digital Dual Feed Foot](#)
- 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 Select the height of the presser foot when sewing is stopped when the pivot setting is selected.
 > [Pivoting](#)
- ⑨ Select the height of the presser foot when the machine is set to free motion sewing mode.
 > [Free Motion Quilting](#)
- ⑩ 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.
 > [Automatic Fabric Sensor System \(Automatic Presser Foot Pressure\)](#)
 > [If the Fabric does not Feed](#)
- ⑪ 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.
 > [Reverse Stitches/Reinforcement Stitches](#)
- ⑫ Select whether to lower the presser foot automatically before starting sewing.
 > [Automatic Presser Foot Lowering Function and Thread Cutting Function](#)
- ⑬ Select whether pressing  (Thread cutter button) automatically lowers the presser foot and cuts the thread. The presser foot will be raised after the thread is cut.
 > [Automatic Presser Foot Lowering Function and Thread Cutting Function](#)
- ⑭ 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].
- ⑮ Reset settings on this page to original default. Some settings are not reset.

// General Settings



- ① Select the operation of the [Needle Position - Stitch Placement] to [ON] or [OFF].

> [Needle Position - Stitch Placement](#)

- ② Select whether to hear the beep operation sound.

- ③ Select the beep sound of the stitch regulator (sold separately).

- ④ Select whether to turn work area light on or off.

- ⑤ Select the screen display brightness.

- ⑥ Select the display language.

- ⑦ Set the [Power Saving Mode] to save the machine power.

> [Setting the Power Saving Mode](#)

- ⑧ Select the length of time until the screen saver appears.

- ⑨ Select the initial screen that is displayed when the machine is turned on.

- ⑩ Shows the total number of stitches sewn on this machine, which is a reminder to take your machine in for regular servicing. (Contact your authorized Baby Lock retailer for details.)

- ⑪ Shows the internal machine number for this machine.

- ⑫ Shows the program version.

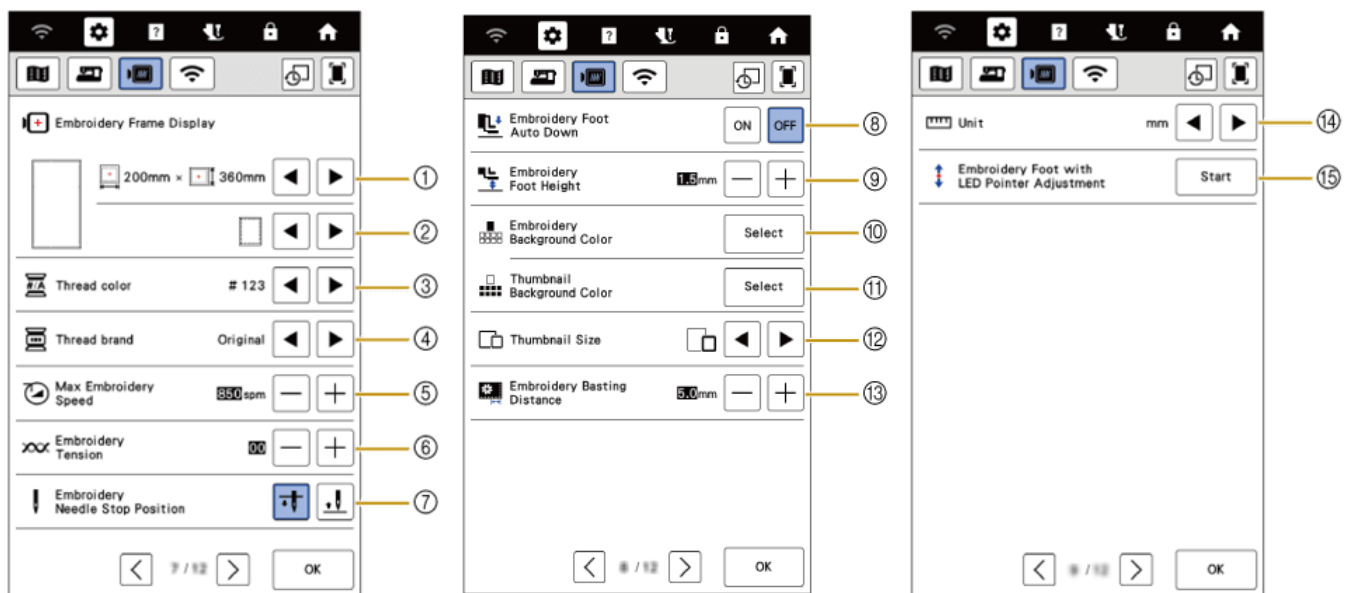
* Be sure to install the latest software.

> [Updating Your Machine's Software](#)

- ⑬ Shows legal information.

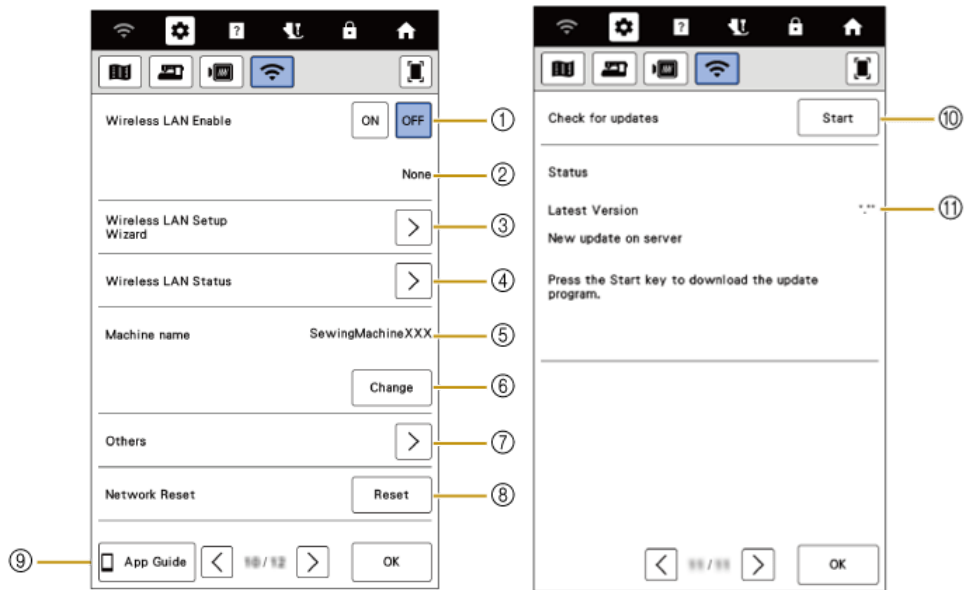
- ⑭ Erase all saved data, customized settings and network information in the machine.

// Embroidery Settings



- ① Select the embroidery frame to be used.
- ② Select the center point marker or grid lines.
- ③ Select the thread color display on the embroidery screen; thread number, color name.
➤ [Changing the Thread Color Display](#)
- ④ Select the thread brand of the thread color display.
➤ [Changing the Thread Color Display](#)
- ⑤ Adjust the maximum embroidery speed.
➤ [Adjusting the Embroidery Speed](#)
- ⑥ Adjust the upper thread tension for embroidering.
➤ [Adjusting Overall Upper Thread Tension](#)
- ⑦ Select the needle stop position (the needle position when the machine is stopped) to be up or down during embroidery.
- ⑧ When set to [ON], pressing the "Start/Stop" button when the embroidery foot is raised automatically lowers the embroidery foot before starting embroidering.
- ⑨ Select the height of the embroidery foot during embroidering.
➤ [Preparing the Fabric](#)
- ⑩ Select the color of the background for the embroidery display area.
- ⑪ Select the color of the background for the thumbnail area.
- ⑫ Select the size of pattern thumbnails.
- ⑬ Adjust the distance between the pattern and the basting stitching.
- ⑭ Select the display units for embroidering (mm/inch).
- ⑮ Adjust the position of the embroidery foot "UH+" with LED pointer (this setting is available if embroidery foot "UH+" with LED pointer has been attached).
➤ [Adjusting the LED Pointer](#)

// Wireless LAN Settings



① Enable/Disable the wireless LAN function.

➤ [Enabling a Wireless Network Connection](#)

② Shows the connected SSID.

③ Set the machine to connect to wireless LAN function.

④ Check the wireless LAN status.

⑤ Shows the machine name used on the wireless network.

⑥ Change the machine name.

⑦ Display other menus.

⑧ Reset network operations.

⑨ Display the introduction to the application. On smart devices with a QR reader app installed, scan the QR code to display a screen that shows how to install the app.



IQ Intuition Monitoring: The machine's embroidering status can be monitored from your mobile device.

➤ [IQ Intuition Monitoring App \(Mobile Application\)](#)

⑩ If there is a new update program, download the update file.

➤ [Update Procedure Using Wireless LAN Connection](#)

⑪ Display update program information.

// Setting the Power Saving Mode

After a certain period of time passes without any operation, the machine will be turned off by the Power saving mode, and “Start/Stop” button will flash green slowly. In order to turn the machine on again, press the “Start/Stop” button or touch anywhere on the LCD screen.

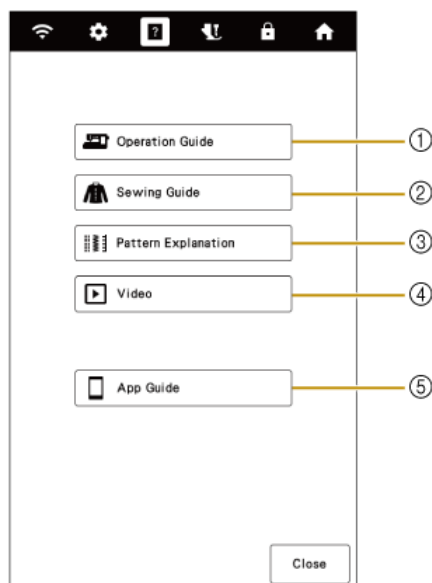
Touch  to display [Power Saving Mode]. ( [General Settings](#))

Memo

- When you restart to operate the machine from the Power saving mode, your project being edited will be deleted. Save your project if you may not operate the machine for 20 minutes or more.
 -  [Saving Stitch Patterns](#)
 -  [Saving Embroidery Patterns](#)
- The time until when the machine changes into the Power saving mode can be specified with the machine's settings. In the shipping state, this mode is turned on.
 -  [General Settings](#)
- For details on condition of the Power saving mode, refer to the following link.
 -  [Specifications](#)

Machine Help

Touch  to display the machine help screen. Available functions from this screen are shown below.



① Explanation for upper threading, winding the bobbin, preparing to embroider a pattern, and how to use the machine

> [Operation Guide Function](#)

② Procedures for sewing utility stitches

> [Sewing Guide Function](#)

③ Explanation of the stitch selected

④ Instructional videos

> [Instructional Videos](#)

⑤ Display the introduction to the application. On mobile devices, scan the QR code to display a screen that shows how to install the application.



IQ Intuition Monitoring: The machine's embroidering status can be monitored from your mobile device.

> [IQ Intuition Monitoring App \(Mobile Application\)](#)

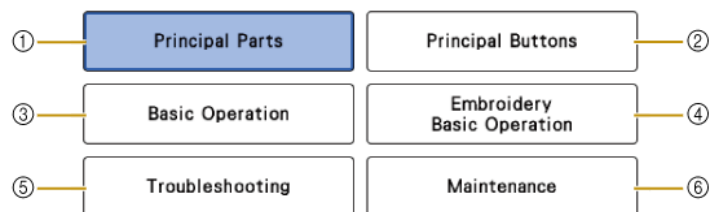
[Operation Guide Function](#)

[Sewing Guide Function](#)

[Instructional Videos](#)

// Operation Guide Function

Touch  **Operation Guide** 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.



- 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 attaching the embroidery unit, preparing fabric for embroidering, etc.
- ⑤ Information about troubleshooting
- ⑥ Information about cleaning the machine, etc.

// Sewing Guide Function

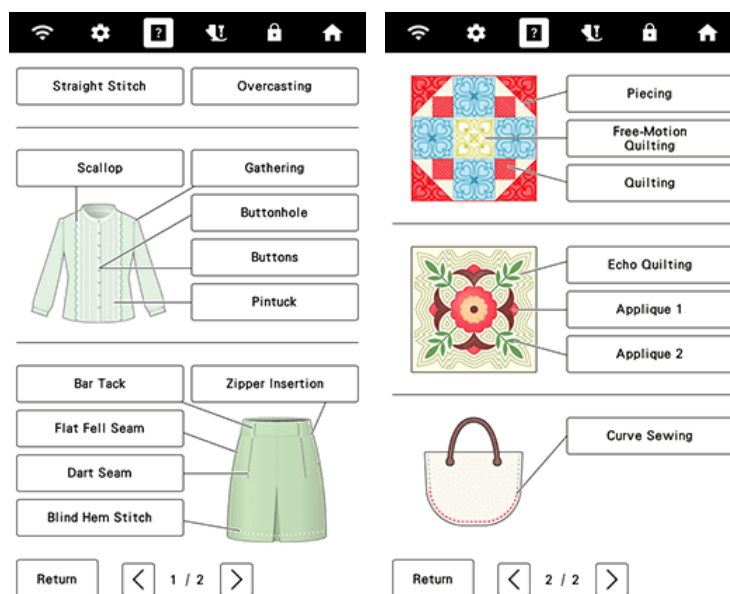
Use this function when you are not sure which stitch to use for your application, or to get advice about sewing particular stitches.

- 1 Touch  then  **Sewing Guide** .
→ The advice screen is displayed.

Memo

To use this function, display the utility stitch selection screen.

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



- 3 Read the explanations and select the appropriate stitch.
→ The screen displays directions for sewing the selected stitch. Follow the directions to sew the stitch.

// Instructional Videos

The instructional videos are available online and can be viewed on any mobile device or computer.



<https://babylock.com/luna-training>

You can also access them using the QR code that appears in the screen. Touch  and  Video to display the QR code.

// Stitch Pattern Explanation Function

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

 **Pattern Explanation** to see an explanation of the stitch selection.

Example: Displaying information about



1 Touch  .

2 Touch  .

3 Touch  **Pattern Explanation** .
→ The screen shows information.

4 Touch [Return] to return to the original screen.

Included Accessories

For included accessories of your machine, refer to the additional sheet “Included Accessories” included with the machine.

After opening the box, check that all accessories are included. If any item is missing or damaged, contact your authorized Baby Lock retailer.

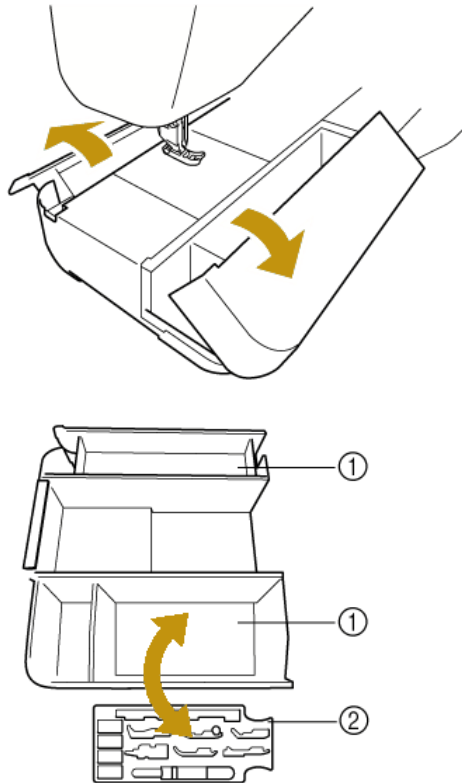
[Flat Bed Attachment](#)

[Spool Stand](#)

// Flat Bed Attachment

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

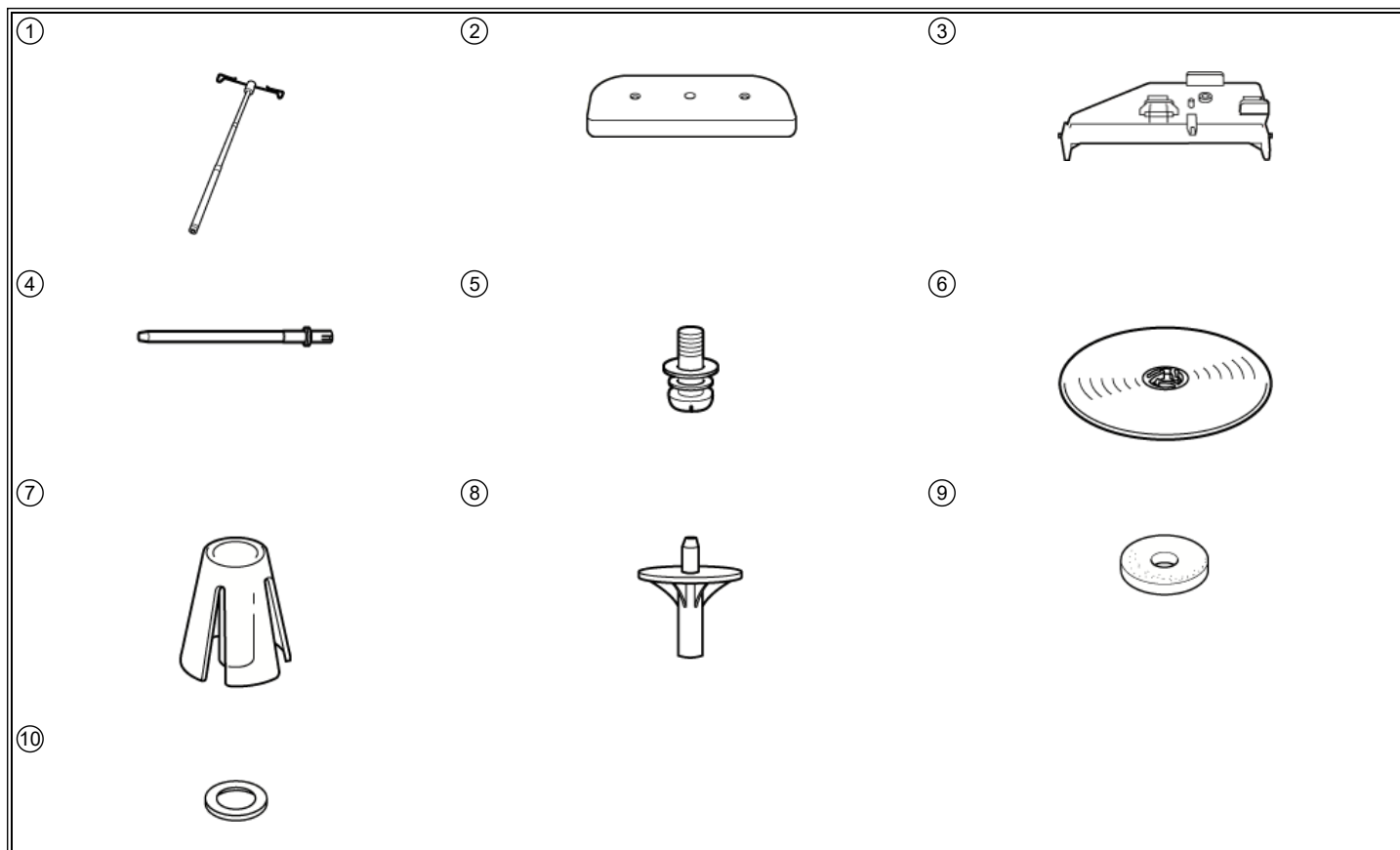
The flat bed attachment is not attached at the time of shipment.



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

// Spool Stand

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



- ① Telescopic thread guide
- ② Upper section of spool support
- ③ Lower section of spool support
- ④ Spool pin × 2
- ⑤ Screw and washer
- ⑥ Spool cap (XL) × 2
- ⑦ Spool holder × 2
- ⑧ Spool cap base × 2
- ⑨ Spool felt × 2
- ⑩ 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.

[Assembling the Spool Stand](#)

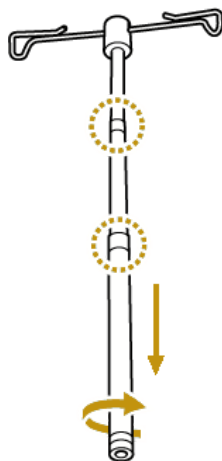
[Thread Spool and Spool Cap for the Spool Stand](#)

[Threading with the Spool Stand](#)

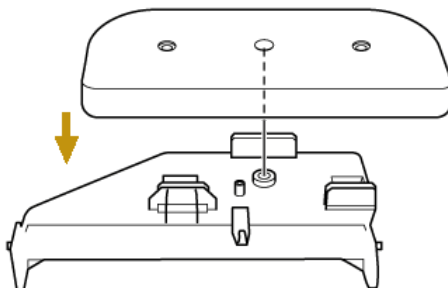
[Removing the Spool Stand](#)

■ Assembling the Spool Stand

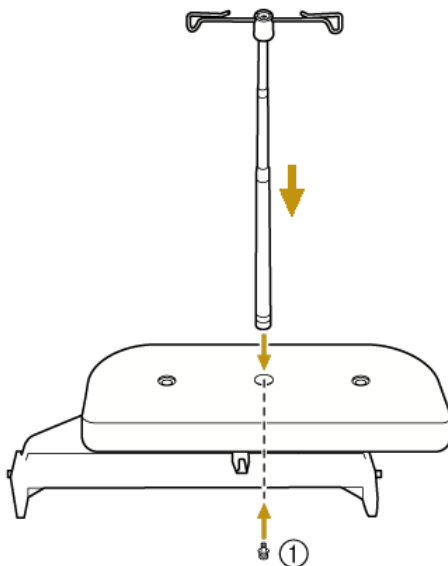
- 1 Fully extend the telescopic thread guide shaft, and then rotate the shaft until the two internal stoppers click into place.



- 2 Assemble the spool support by placing the upper section on top of the lower section. Align the notches on the upper section with the three tabs on the lower section and push them down firmly. Make sure that the screw hole in the lower section is aligned with the screw hole at the center of the upper section.



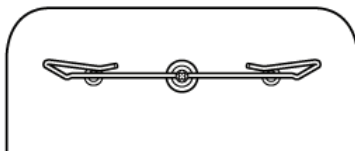
- 3 Insert the telescopic thread guide into the round hole at the center of the spool support, and then use a screwdriver to securely tighten the screw from the reverse side.



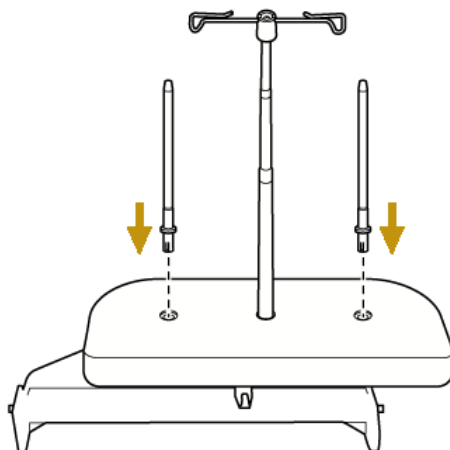
① Screw

Note

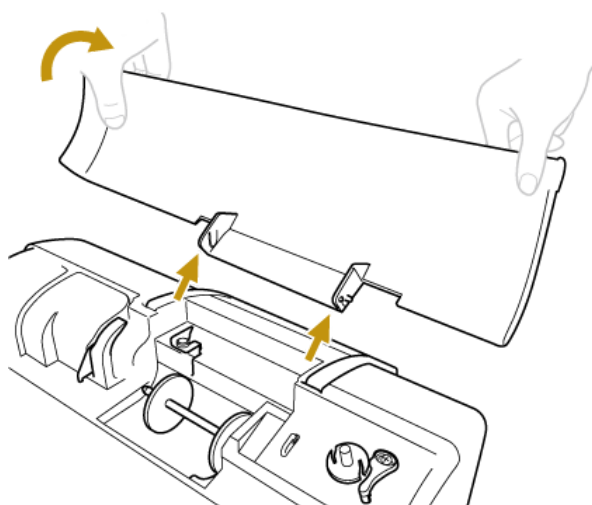
Make sure that the stoppers on the telescopic thread guide shaft are firmly in place and that the thread guide openings are directly above the two holes for spool pins in the spool support. In addition, check that the shaft is securely tightened in the spool support.



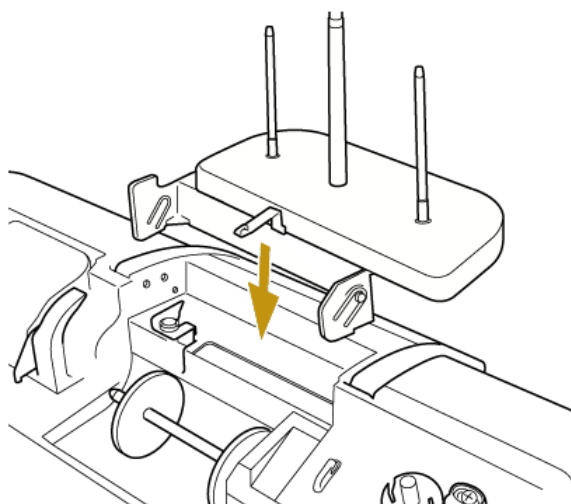
- 4 Firmly insert the two spool pins into the two holes in the spool support.



- 5 Open the top cover of the machine. Firmly push the top cover further toward the back of the machine to remove it.



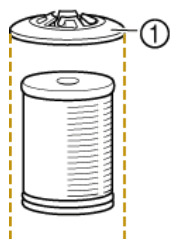
- 6 Install the spool stand so that its projections are aligned with the notches on the machine where the top cover was attached.



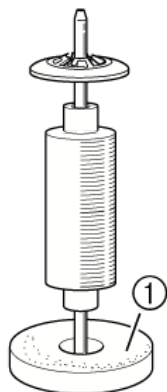
■ Thread Spool and Spool Cap for the Spool Stand

Be sure to use a spool cap (①) that is slightly larger than the spool.

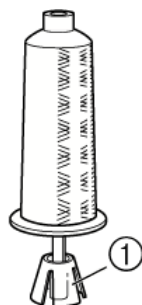
If the spool cap that is used is smaller or much larger than the spool, the thread may catch and sewing performance may suffer.



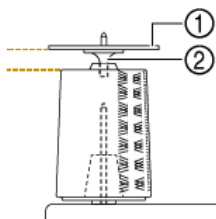
When using thread on a thin spool, place the included spool felt (①) on the spool pin, place the thread spool on the spool pin so that the center of the spool is aligned with the hole at the center of the spool felt, and then insert the spool cap onto the spool pin.



When using a cone spool that is taller than the spool pin, use the spool holder (①). When using cone shaped thread spool with other than cotton thread, it is not necessary to use spool caps.

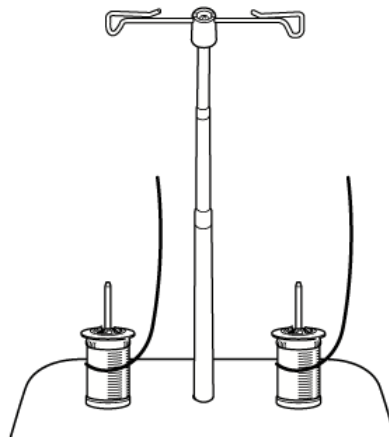


When using fluffy thread such as cotton thread, place a spool cap (①) on the spool cap base (②), as shown in the illustration. Depending on the size of spool or the amount of thread remaining, choose the appropriate sized spool cap. Spool cap (small) cannot be used with the spool cap base.



■ Threading with the Spool Stand

- 1 Place the thread spool on the spool pin so that the spool turns clockwise when the thread feeds off, and then 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.

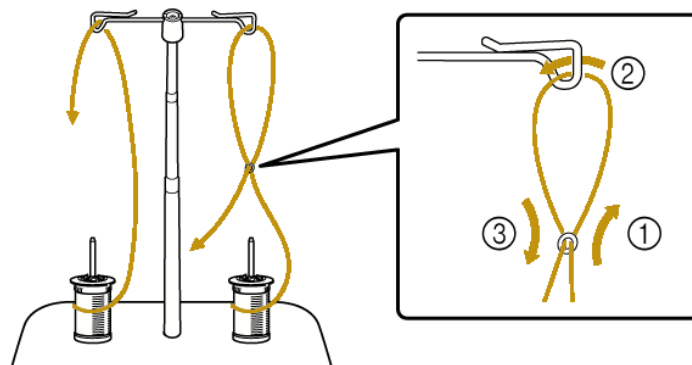
Note

- 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.

2 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.

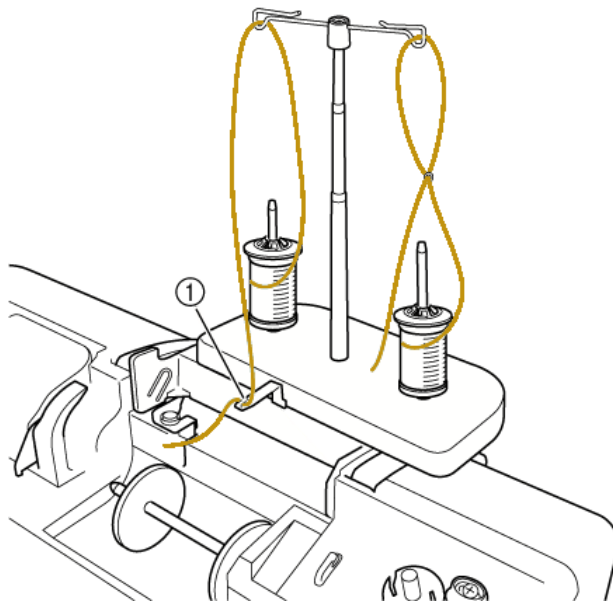
Threading sequence; Pull the thread from the spool, place the thread through the ring from the bottom up (①), into the thread guide (②) and through the ring from the top down (③). When using the ring, do not use the spool cap base.



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.

3 Pass the thread through the machine's thread guide from the right to the left.



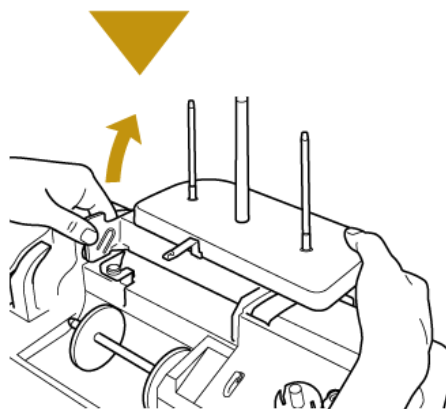
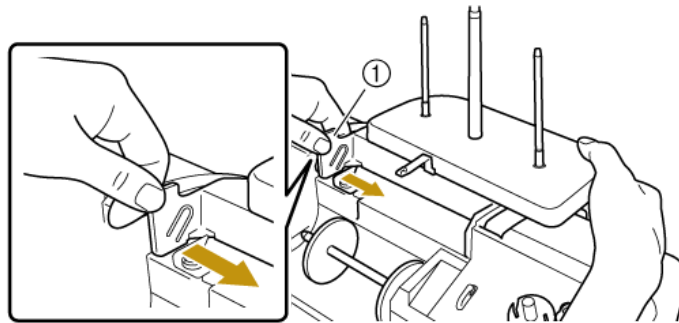
① Thread guide

- 4 Thread the machine according to the steps [7](#) to [17](#) of the following link.

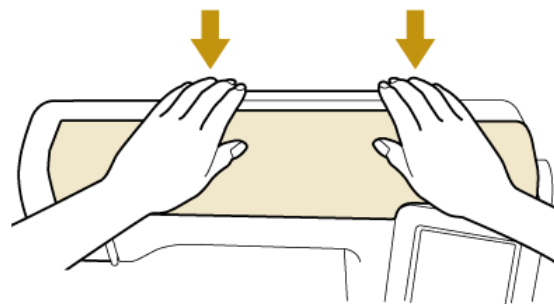
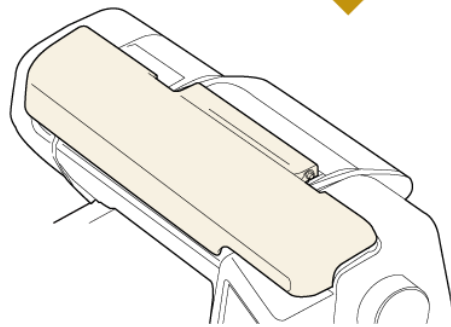
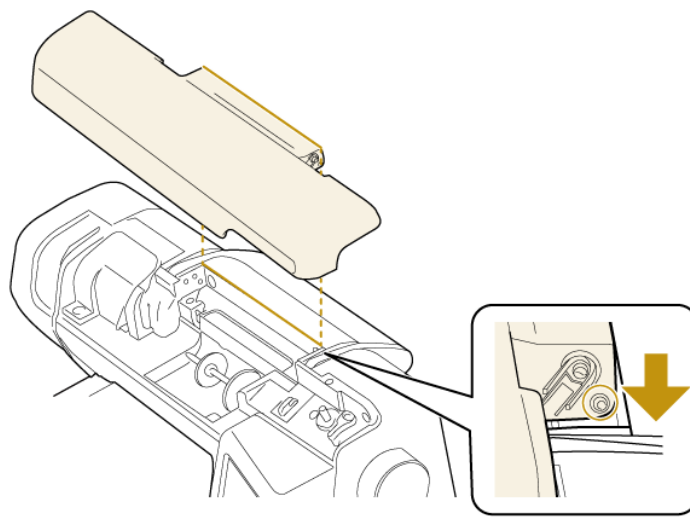
➤ [Upper Threading](#)

■ Removing the Spool Stand

- 1 While pushing the tab (①) on the left side of the spool stand, remove the stand from the machine.



- 2 Insert the two projections of the top cover slightly into the notches on the machine. Ensure the cover is lying flat, and then push it firmly into place.



Basic Operation

[Winding/Installing the Bobbin](#)

[Upper Threading](#)

[Changing the Needle](#)

[Fabric/Thread/Needle Combinations](#)

[Changing the Presser Foot](#)

Winding/Installing the Bobbin

[Winding the Bobbin](#)

[Winding the Bobbin without Removing the Upper Thread](#)

[Installing the Bobbin](#)

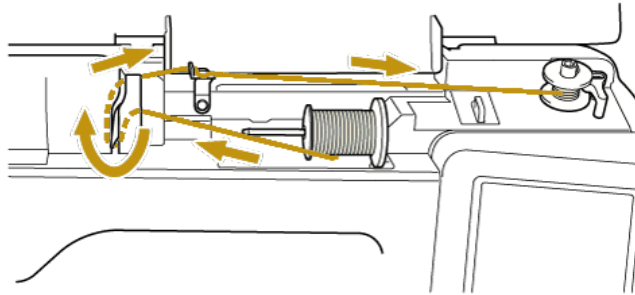
[Pulling Up the Bobbin Thread](#)

// 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 Baby Lock retailer.

This section describes how to wind thread onto a bobbin.



Note

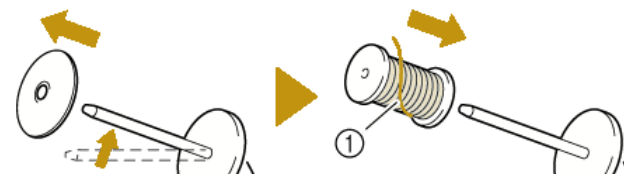
- When winding the bobbin for sewing utility stitches, use thread appropriate for the fabric that you wish to sew (➤ [Fabric/Thread/Needle Combinations](#)).
For most sewing applications, the bobbin thread will be the same as what is used for the upper threading.
- When winding bobbins for embroidery, be sure to use the recommended bobbin thread for this machine.
➤ [Embroidering Attractive Finishes](#)

- 1 Open the top cover.
- 2 Place the bobbin on the bobbin winder shaft so that the notch in the bobbin aligns with the spring on the shaft, and then slide the bobbin winder shaft to the right until it snaps into place.



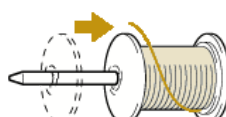
- ① Notch
- ② Bobbin winder shaft spring

- 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 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.



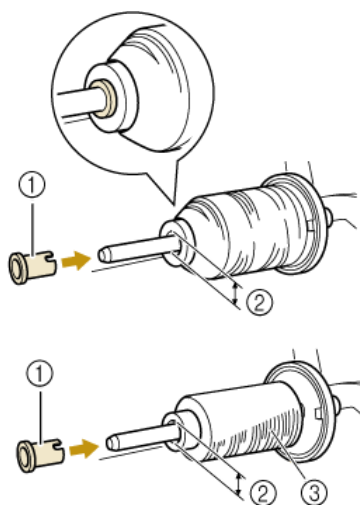
IMPORTANT

- 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 the following "Note".



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.

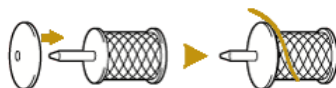


① Thread spool insert (mini king thread spool)

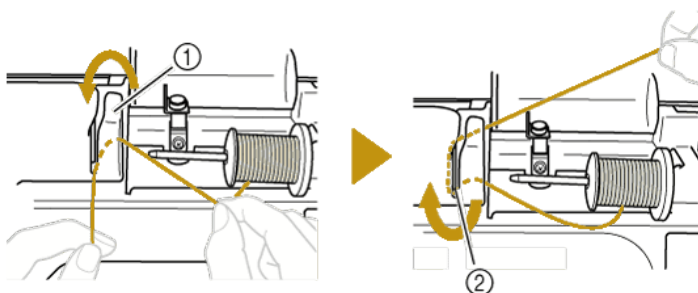
② Hole diameter 8.0 mm to 10.5 mm (approx. 5/16 inch to 13/32 inch)

③ Spool (cross-wound thread)

- 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.



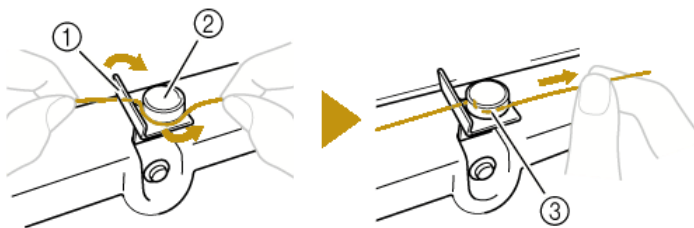
- 5** While holding the thread near the spool, pass the thread through the thread guide cover. And then, pass the thread under the thread guide plate, and pull it to the right.



① Thread guide cover

② Thread guide plate

- 6** Pass the thread under the hook on the bobbin winding thread guide, and then wind it counterclockwise under the pretension disk.

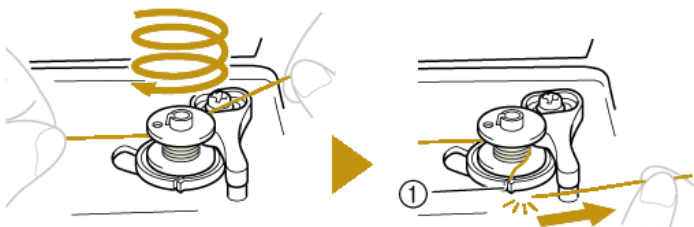


- ① Bobbin winding thread guide
- ② Pretension disk
- ③ Pull it in as far as possible

Note

Make sure that the thread is passed under the pretension disk.

- 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)

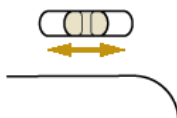
Note

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** Slide the sewing speed controller to adjust the bobbin winding speed. Slide the controller to the right to increase the speed; slide it to the left to reduce the speed.

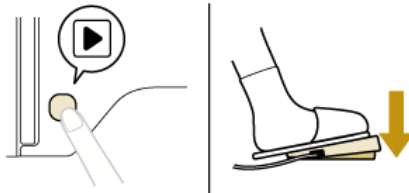


Memo

We recommend winding stretch thread, such as transparent nylon thread, at a low speed since the thread may stretch.

- 9** Turn on the machine.
- The “Start/Stop” button lights up in orange.

- 10** Press the “Start/Stop” button to start winding the bobbin.
When the foot controller is plugged in, press down on the foot controller.



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.

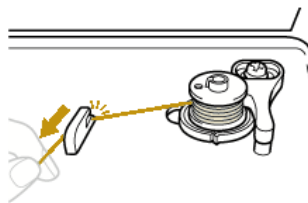


- 11** When the bobbin winding becomes slow, press the “Start/Stop” button to stop the machine.
When the foot controller is plugged in, remove your foot from the foot controller.

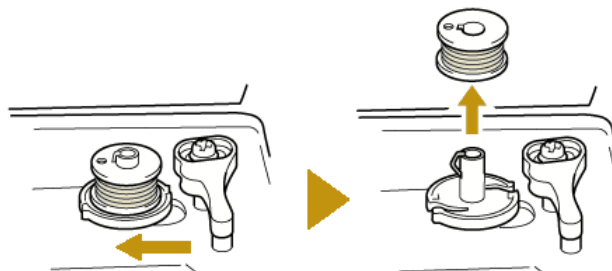
IMPORTANT

When the bobbin winding becomes slow, stop the machine, otherwise the machine may be damaged.

- 12** Cut the thread with the cutter.



- 13** Slide the bobbin winder shaft to the left until it snaps into place, and then remove the bobbin.



- 14** Slide the sewing speed controller to desired sewing speed position.
15 Remove the spool for the bobbin thread from the spool pin.

// Winding the Bobbin without Removing the Upper Thread

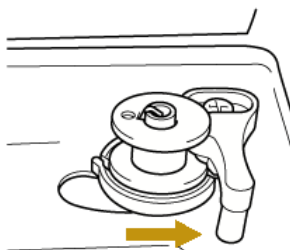
With the extra spool pin, you can wind the bobbin without removing the upper thread.

- 1 Prepare the extra spool pin.

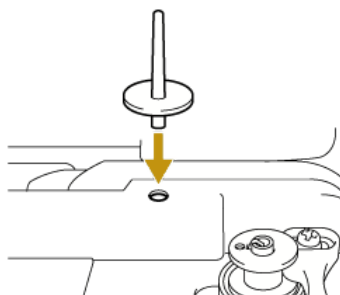


- 2 Set the bobbin to the machine referring to steps [1](#) through [2](#) of “Winding the Bobbin”.

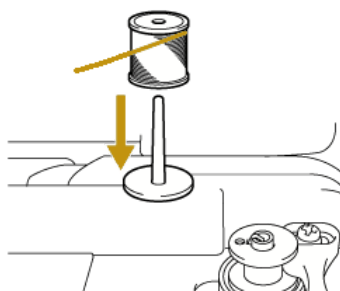
➤ [Winding the Bobbin](#)



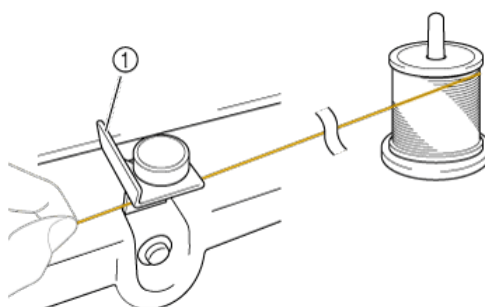
- 3 Insert the extra spool pin into the slot for extra spool pin.



- 4 Place the spool of thread for the bobbin onto the extra spool pin.

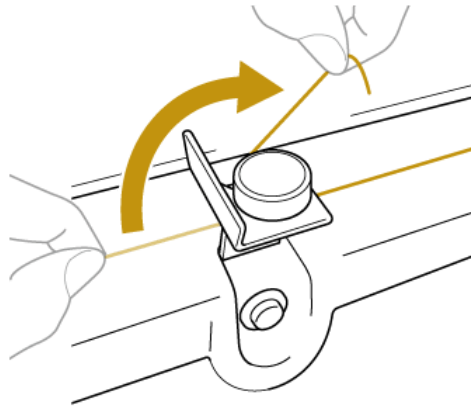


- 5 Pull the thread to pass it under the bobbin winding thread guide.

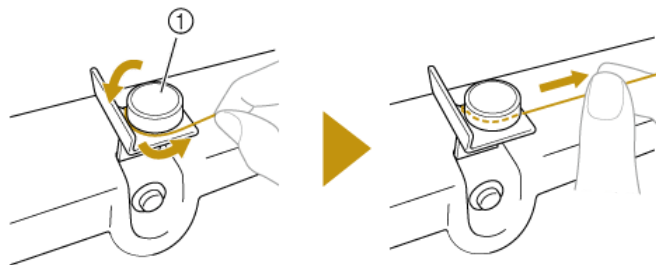


① Bobbin winding thread guide

- 6** Pass the thread clockwise around the bobbin winding thread guide.



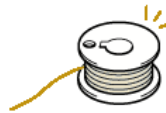
- 7** Wind the thread counterclockwise under the pretension disk.



① Pretension disk

- 8** Wind the bobbin to referring to steps [7](#) through [15](#) of “Winding the Bobbin”.

➤ [Winding the Bobbin](#)



// Installing the Bobbin

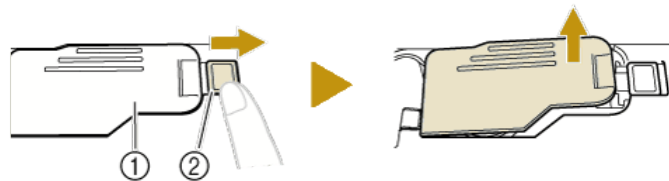
⚠ CAUTION

- 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 Press  (Needle position button) to raise the needle.
- 2 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 [OK] to continue.
- 3 Raise the presser foot lever.
- 4 Slide the bobbin cover latch to the right.

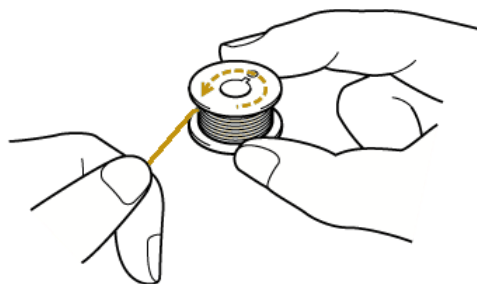


① Bobbin cover

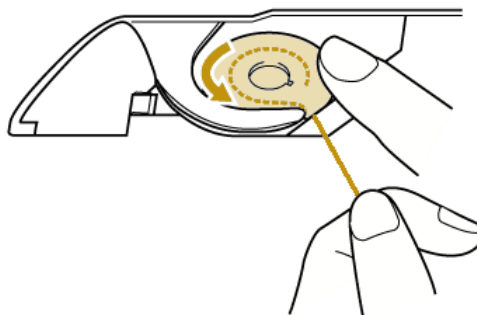
② Latch

→ The bobbin cover opens.

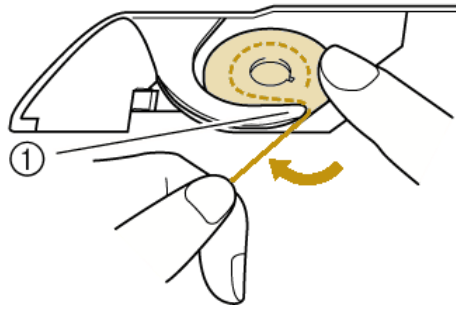
- 5 Remove the bobbin cover.
- 6 Hold the bobbin with your right hand and hold the end of the thread with your left hand.



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



- 8** 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.

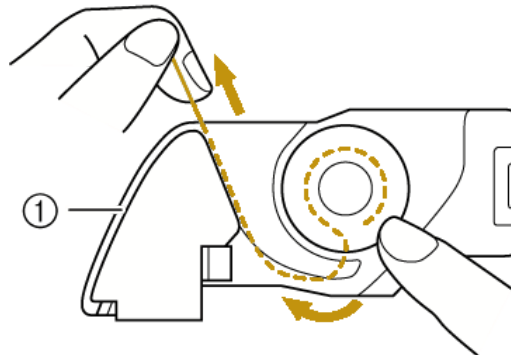


① Tab

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.

- 9** 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.

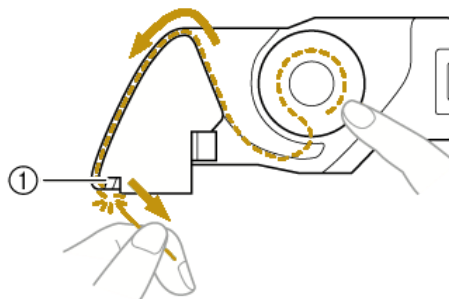


① Slit

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.

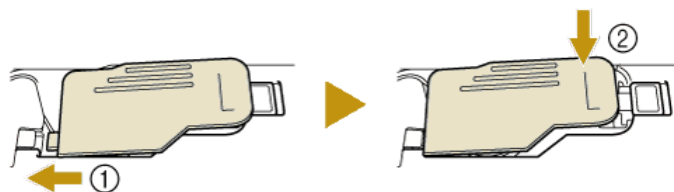
- 10** While lightly holding down the bobbin with your right hand, continue guiding the thread through the slit with your left hand. Then, cut the thread with the cutter.



① Cutter

→ The cutter cuts the thread.

- 11** 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).



- 12 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".

▶ [Pulling Up the Bobbin Thread](#)

// 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 or embroidery.

Memo

You can pull up the bobbin thread after threading the upper thread.

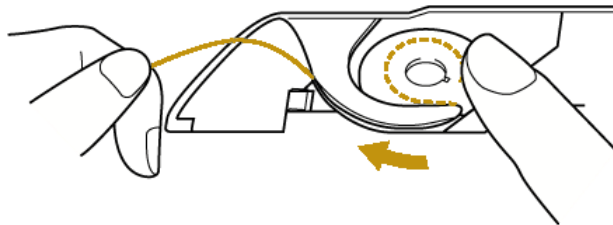
> [Upper Threading](#)

- 1 Follow steps [1](#) to [5](#) in “Installing the Bobbin” for installing the bobbin into the bobbin case.

> [Installing the Bobbin](#)

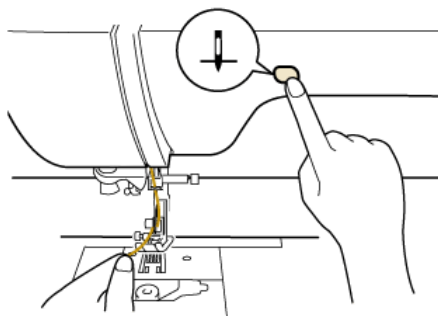
- 2 Guide the bobbin thread through the groove, following the arrow in the illustration.

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

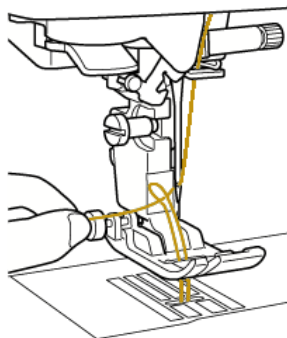


- 3 Touch  to unlock all keys and buttons.

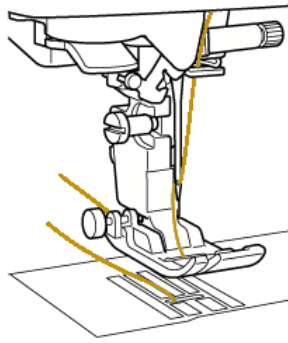
- 4 While lightly holding the upper thread with your left hand, press  (Needle position button) twice to lower and then raise the needle.



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



7 Reattach the bobbin cover.

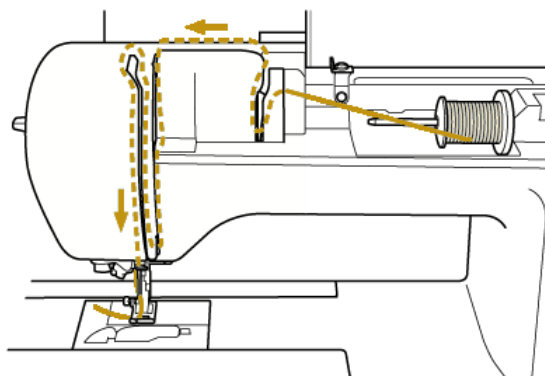
Upper Threading

⚠ CAUTION

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

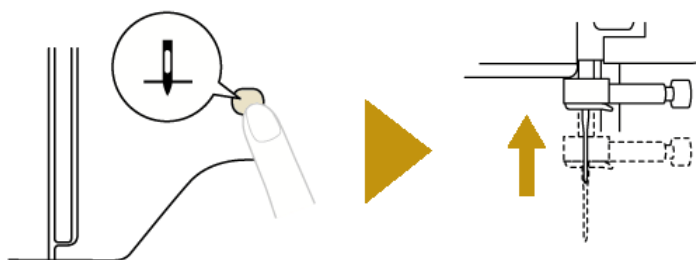
IMPORTANT

- 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".
➤ [Fabric/Thread/Needle Combinations](#)
- When using 65/9 needle, manually thread the needle. If the automatic needle threading function is used, the unit may be damaged.



→ When threading the upper thread, carefully follow the instructions.

- 1 Turn on the machine.
- 2 Press  (Needle position button) once or twice to raise the needle.

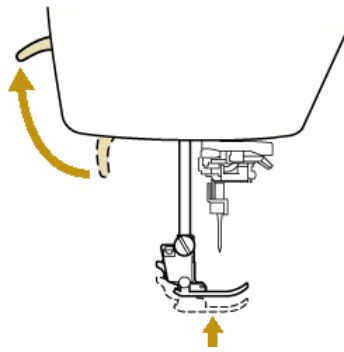


- 3 Touch .
- When the message [OK to automatically lower the presser foot?] appears on the LCD screen, touch [OK] to continue.
→ The screen changes, and all keys and operation buttons are locked (except .

⚠ CAUTION

When threading the needle, be sure that you have touched  on the operation panel 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.

- 4 Raise the presser foot lever to raise the presser foot.

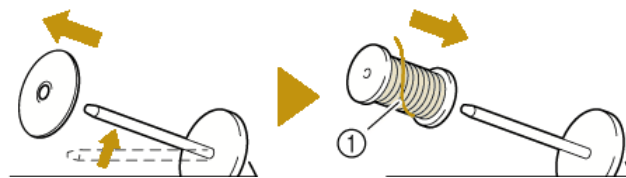


Memo

If the presser foot is not raised, the machine cannot be threaded.

5 Remove the spool cap and place the spool of thread onto the spool pin.

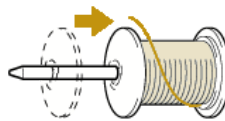
Slide the spool onto the spool pin so that the thread unwinds to the front from the bottom. Otherwise, the thread may become tangled around the spool pin.



① The thread unwinds to the front from the bottom.

6 Slide the spool cap onto the spool pin.

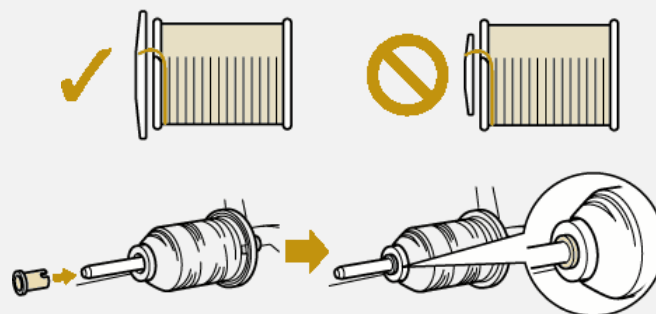
Slide the spool cap as far as possible to the right, as shown, with the rounded side on the left.



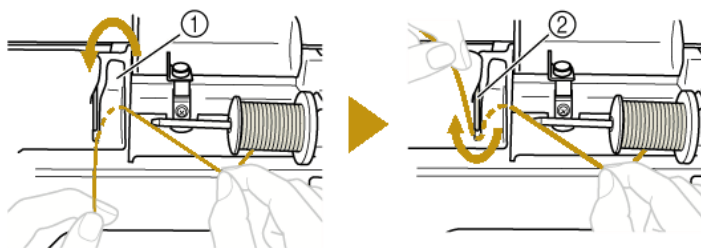
⚠ CAUTION

Choose a spool cap that best fits the size of spool being used.

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.

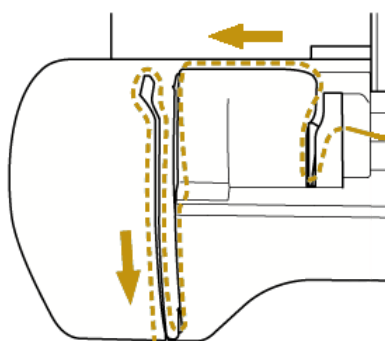


7 While holding the thread near the spool, pass the thread through the thread guide cover. And then, pass the thread under the thread guide plate, and pull it up.



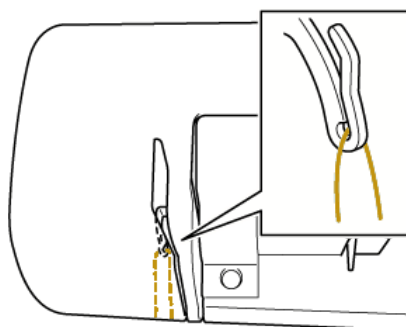
- ① Thread guide cover
- ② Thread guide plate

8 While holding the thread passed under the thread guide plate, pass the thread through the thread channel in the order shown below.



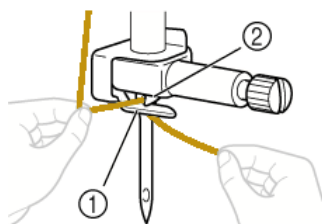
Note

- If the presser foot has been lowered and the shutter is closed, the machine cannot be threaded. Be sure to raise the presser foot to open the shutter before threading the machine. In addition, before removing the upper thread, be sure to raise the presser foot to open the shutter.
- This machine is equipped with a window that allows you to check the position of the take-up lever. Look through this window and check that the thread is correctly fed through the take-up lever.



9 Slide the thread behind the needle bar thread guide.

The thread can easily be slid behind the needle bar thread guide by holding the thread in your left hand, then feeding the thread with your right hand, as shown. Make sure that the thread is passed through to the left of the tab of the needle bar thread guide.

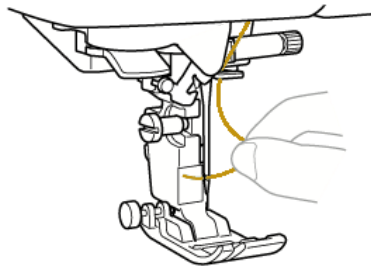


- ① Needle bar thread guide
- ② Tab

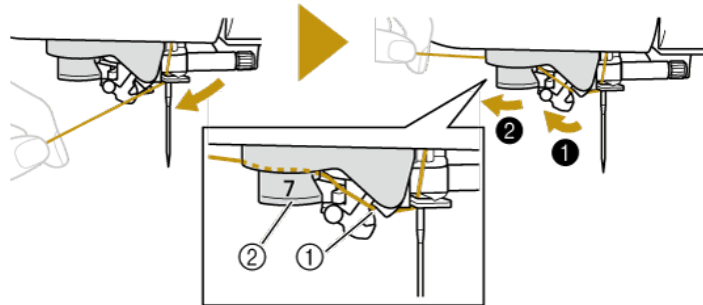
10 Check that the needle and thread are compatible with the needle threader. If they are compatible, continue with the next step.

- The needle threader can be used with machine needles 75/11 through 100/16.
- The needle threader cannot be used with the wing needle or the twin needle.
- When thread such as transparent nylon monofilament or specialty threads are used, it is not recommended to use the needle threader.
- For most embroidery applications, the upper thread should be 40-weight rayon or polyester embroidery thread.

- If the needle threader cannot be used, insert the thread through the eye of the needle from front to back by hand. At this time, be sure to lock all keys and operation buttons described in step [3](#).

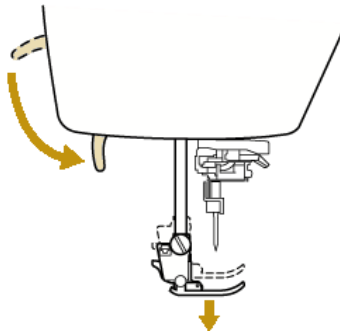


- 11** Pull the end of the thread, which has been passed through the needle bar thread guide, to the left, then pass the thread through the notch of the threader thread guide, and then firmly pull the thread from the front and insert it into the slit of the threader thread guide disk marked "7" all the way.

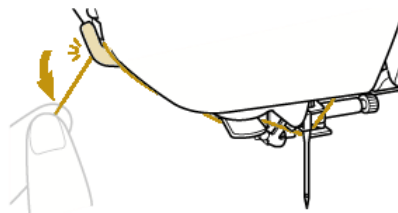


- ① Notch of the threader thread guide
- ② Threader thread guide disk

- 12** Lower the presser foot lever to lower the presser foot.



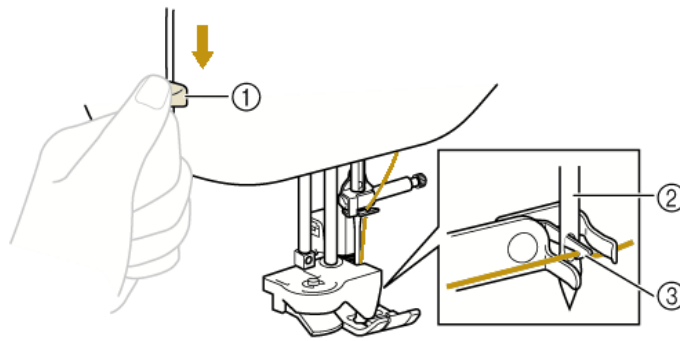
- 13** Cut the thread with the thread cutter on the left side of the machine.



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 threader thread guide disk (marked "7").

- 14** Lower the needle threader lever on the left side of the machine until it clicks, and then slowly return the lever to its original position.



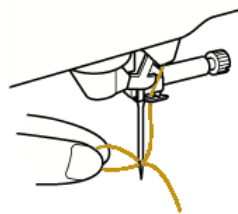
- ① Needle threader lever
- ② Needle
- ③ Hook

Note

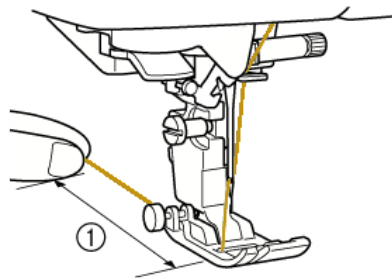
If the needle is not raised to its highest position, the needle threader cannot thread the needle. If the needle is not at the highest position, refer to step [2](#) and press  (Needle position button) to raise the needle.

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

If the needle was not completely threaded, but a loop in the thread was formed in the eye of the needle, carefully pull the loop through the eye of the needle to pull out the end of the thread.



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



- ① About 10 cm (approx. 4 inches)

17 Touch to unlock all keys and buttons.

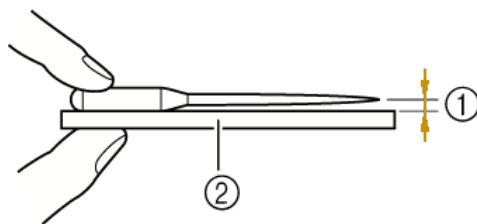
Changing the Needle

⚠ 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 [OK] to continue.

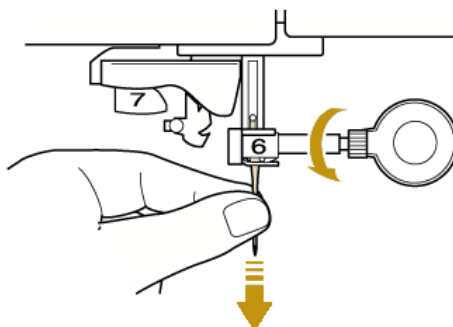
Note

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

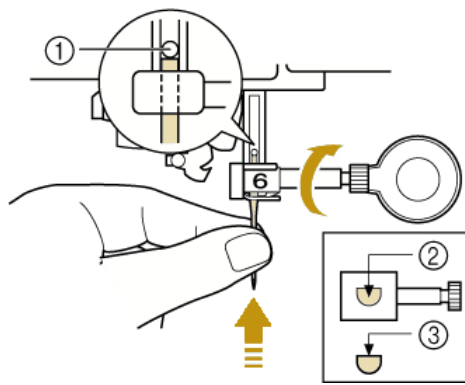
3 Remove the presser foot.

➤ [Replacing the Presser Foot](#)

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.

➤ [Replacing the Presser Foot](#)

7 Touch to unlock the keys and buttons.

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 the 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”.

➤ [Changing the Needle](#)

- 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).

➤ [Stitch Length](#)

When sewing stretch fabrics, refer to “Sewing Buttonholes on Stretch Fabrics”.

➤ [Sewing Buttonholes on Stretch Fabrics](#)

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.		
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](#)

[Sewing Character Stitch Patterns and Decorative Stitch Patterns \(Needles and Threads\)](#)

[Embroidery Needles](#)

// 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.

// Embroidery Needles

It is recommended to use a 75/11 home sewing machine needle. However, if the machine is not stitching well when embroidering on heavy weight fabric, please try a 90/14 needle. When embroidering with short stitches, such as small letters, we recommend using a ball point needle for embroidery.

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. Otherwise, the machine may be damaged.

[Replacing the Presser Foot](#)

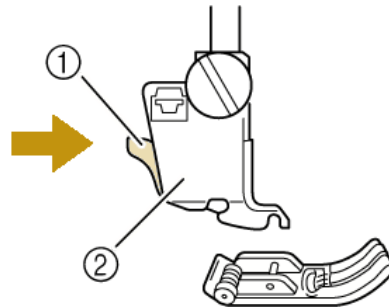
[Removing/Attaching the Presser Foot Holder](#)

[Attaching the Presser Foot with the Included Adapter](#)

[Inserting the Plug of the Attachment](#)

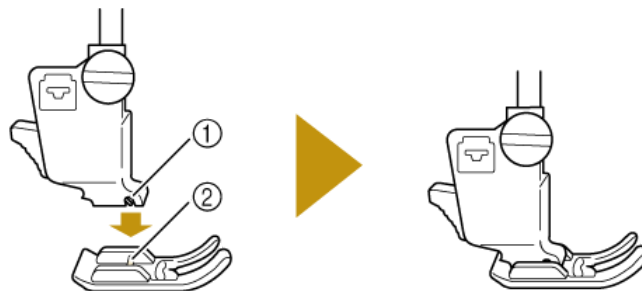
// Replacing the Presser Foot

- 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 [OK] to continue.
- 3 Raise the presser foot lever.
- 4 Press the black button on the presser foot holder and remove the presser foot.



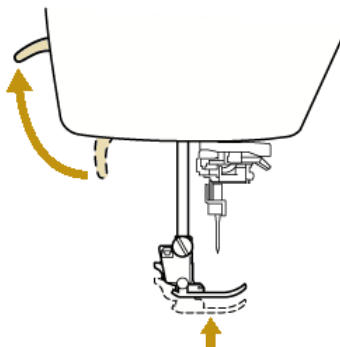
- ① Black button
- ② Presser foot holder

- 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.



- ① Notch
- ② Pin

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



- 7 Touch  to unlock all keys and buttons.

// Removing/Attaching the Presser Foot Holder

• Removing

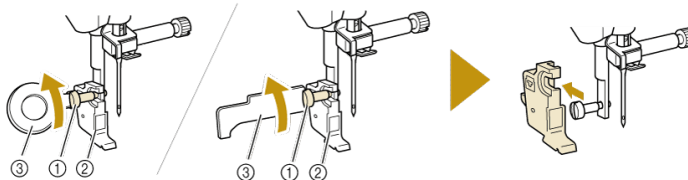
1 Press  (Needle position button) to raise the needle.

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 Loosen the screw to remove the presser foot holder.



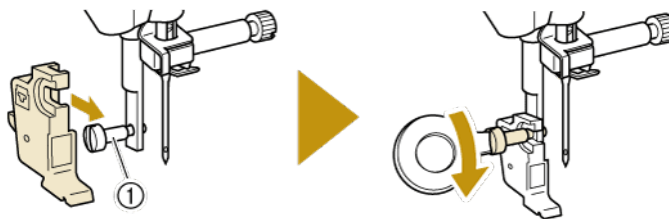
① Presser foot holder screw

② Presser foot holder

③ Screwdriver (Use the screwdriver included in the machine.)

• Attaching

1 Tighten the presser foot holder screw with screwdriver.



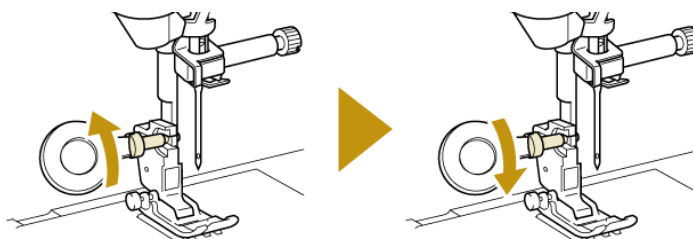
① Presser foot holder screw

2 Attach the presser foot to be used referring to step 5 of “Replacing the Presser Foot”.

➤ [Replacing the Presser Foot](#)



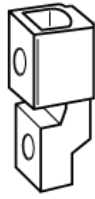
3 While the presser foot is lowered, slightly loosen the presser foot holder screw and securely tighten it in order to fix the presser foot holder at the appropriate position.



4 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 walking foot and so on.



■ Attaching the Walking Foot (Sold Separately)

The walking foot holds the fabric between the presser foot and the feed dogs to feed the fabric. This enables you to have better fabric control when sewing difficult fabrics (such as quilted fabrics or velvet) or fabrics that slip easily (such as vinyl, leather, or synthetic leather).

Note

- Thread the needle manually when using the walking foot, or only attach the walking foot after threading the needle using the needle threader lever.
- When sewing with the walking foot, sew at medium to low speeds.

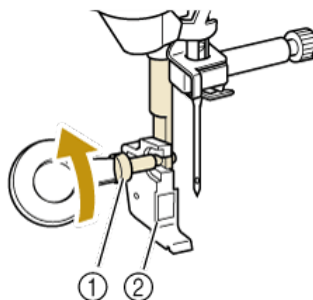
Memo

The walking foot can only be used with straight or zigzag stitch patterns. Reverse stitches cannot be sewn with the walking foot. Only select straight or zigzag stitch patterns with reinforcement stitches.

1 Remove the presser foot.

➤ [Replacing the Presser Foot](#)

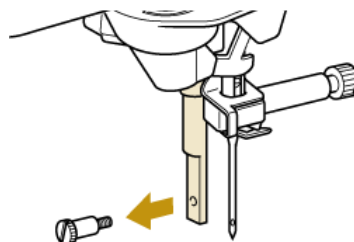
2 Loosen the screw of the presser foot holder to remove the presser foot holder.



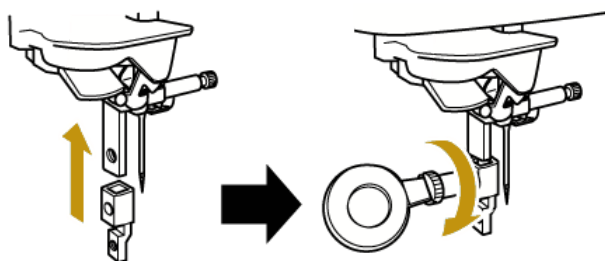
① Presser foot holder screw

② Presser foot holder

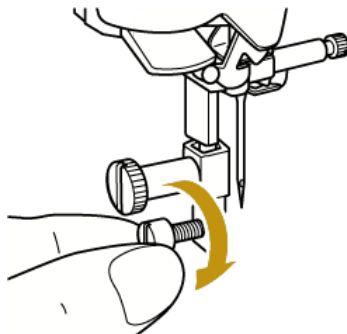
3 Remove the screw of the presser foot completely from the presser foot shaft.



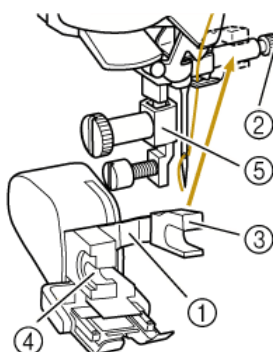
4 Set the adapter on the presser foot bar, aligning the flat side of the adapter opening with the flat side of the presser bar. Align the screw holes in the adapter and presser foot bar, and then securely tighten the screw with the disc-shaped screwdriver.



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

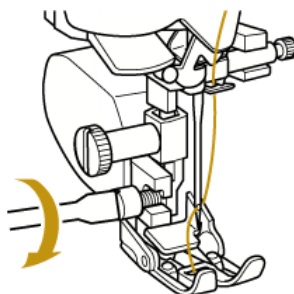


- 6** Set the operation lever of the walking foot so that the needle clamp screw is set in the fork. Position the shank of the walking foot on the presser foot bar.



- ① Operation lever
- ② Needle clamp screw
- ③ Fork
- ④ Walking foot shank
- ⑤ Presser foot bar

- 7** Lower the presser foot lever. Insert the screw, and tighten the screw securely with the screwdriver.



⚠ CAUTION

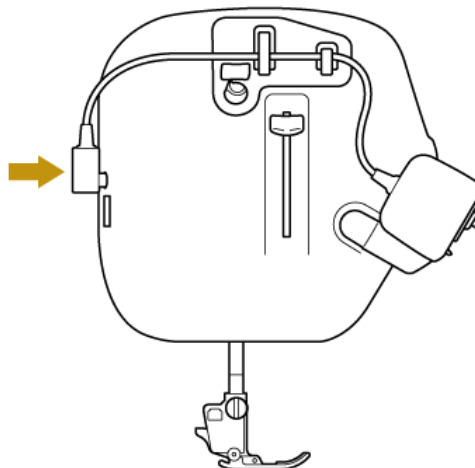
- Use the included screwdriver to tighten the screw securely. If the screw is loose, the needle may strike the presser foot and cause injury.
- Be sure to rotate the handwheel toward you (counterclockwise) to check that the needle does not strike the presser foot. If the needle strikes the presser foot, injury may result.

8 Touch  to unlock all keys and buttons.

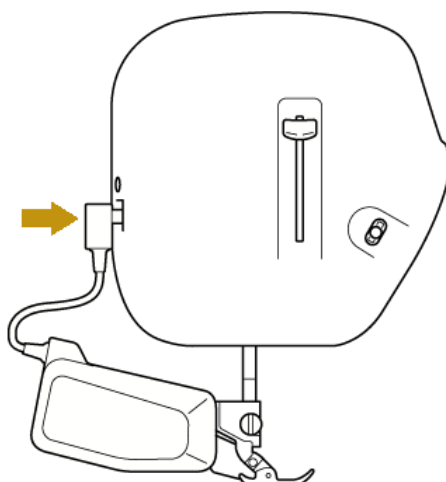
// Inserting the Plug of the Attachment

When using an accessory with a plug such as the external guideline marker or compact digital dual feed, insert the plug into the connector or jack on the back of the machine after attaching the body part to the machine. Insert into a connector or jack according the form of the plug.

- When inserting into a jack (such as installing the external guideline marker)



- When inserting into a connector (such as installing the compact digital dual feed attachment)



IMPORTANT

When plugging or unplugging the cord, touch  (Presser foot/Needle exchange key) to prevent the machine from electrical damage.

Sewing Basics

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 and Key Functions](#)

[Basic Sewing](#)

[Stitch Settings](#)

[Sewing Functions](#)

[Sewing Accessories](#)

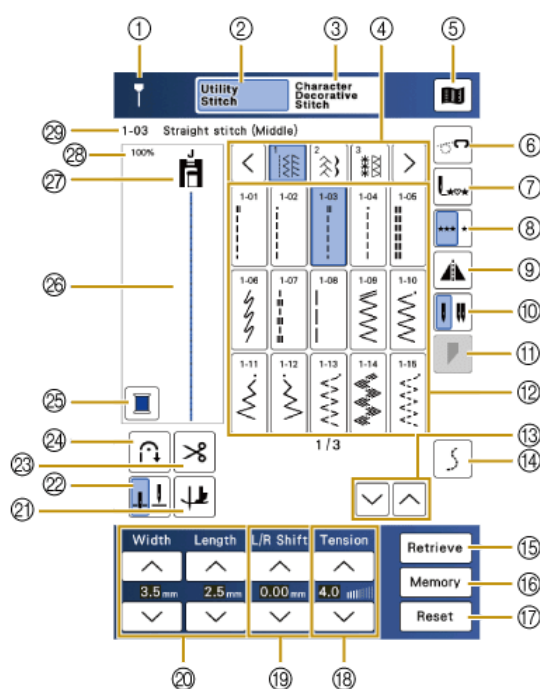
[Sewing Tips](#)

Stitch Types and Key Functions

[Utility Stitches](#)

[Character/Decorative Stitches](#)

// Utility Stitches



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. If the key display is grayed out, you cannot use that function or operation.
- The machine default setting is highlighted.

① Guideline marker key

Shows the status of the external guideline marker. When the marker is attached, touch this key to turn the guideline on or off. The guideline marker makes it easier to align stitches with the fabric edge or other marks on the fabric.

> [External Guideline Marker](#)

② Utility stitch key

Select a straight stitch, zigzag stitch, buttonhole, blind hem stitch, or other stitch (utility stitch) commonly used in garment making.

> [Utility Stitches](#)

③ Character/Decorative stitch key

Select character or decorative stitch patterns.

> [Character/Decorative Stitches](#)

④ Category keys

Select the category of the stitch.

Touch  or  to view other categories.

	Straight/Overcasting
	Decorative Stitches
	Heirloom Stitches
	Buttonholes/Bar tacks
	Multi-directional
	Sewing Quilting Stitches
	Stitch Tapering

⑤ 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  /  /  / .

⑥ Free motion mode key

Enter free motion sewing mode.

The presser foot is raised to an appropriate height and the feed dog is lowered for free motion quilting.

➤ [Free Motion Quilting](#)

⑦ Back to beginning key

When sewing is stopped, touch this key to return to the beginning of the stitch pattern.

⑧ Single/Repeat sewing key

Select single stitches or continuous stitches.

⑨ Horizontal mirror image key

Create a horizontal mirror image of the stitch pattern.

⑩ Needle mode selection key

Select a needle mode (single/twin).

- If a key display is grayed out, you cannot use that function with the selected stitch pattern.

➤ [Twin Needle](#)

⑪ Stitch tapering key

Change the start and end angles of the stitch pattern.

➤ [Stitch Tapering Function \(Changing the Start and End Angles of the Stitch Pattern\)](#)

⑫ Stitch selection area

Select a stitch pattern.

⑬ Page key

Touch  or , to move the pages of stitch selection area.

⑭ Curve sewing key

Set the function to assist with curve sewing.

➤ [Curve Sewing Mode](#)

⑮ Retrieve key

Retrieve a saved stitch pattern.

➤ [Retrieving Saved Settings](#)

⑯ 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 each stitch pattern.

➤ [Saving Settings](#)

⑰ Reset key

Return the stitch settings to the default.

⑱ Thread tension

Shows the thread tension setting of the currently selected stitch pattern. You can use  and  to change the thread tension settings.

➤ [Thread Tension](#)

⑲ “L/R Shift”

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.

➤ [Stitch Width/Stitch Length/“L/R Shift”](#)

⑳ Stitch width and stitch length

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.

➤ [Stitch Width/Stitch Length/"L/R Shift"](#)

②① **Pivot key / Auto up key**

Touch this key to automatically raise the presser foot when the machine is stopped.

While the pivot function is turned on, the presser foot is automatically lowered when sewing is restarted.

➤ [Pivoting](#)

➤ [Automatic Presser Foot Raising Function](#)

②② **Needle stop position setting key**

Touch this key to select the needle stop position to be up or down.

You can also check the needle mode setting (single or twin).



Single needle/down position



Twin needle/down position



Single needle/up position



Twin needle/up position

➤ [Needle Position - Stitch Placement](#)

➤ [Twin Needle](#)

②③ **Automatic thread cutting key**

Turn on this function to set the machine to automatically trim the threads at the end of stitching.

➤ [Automatic Thread Cutting](#)

②④ **Automatic reverse/reinforcement stitch key**

Turn on this function to set the machine to automatically sew reinforcement stitches at the beginning and end of sewing (depending on the stitch pattern, the machine may sew reverse stitches).

➤ [Automatic Reverse/Reinforcement Stitching](#)

②⑤ **Thread color change key**

Change the thread color in the image.

②⑥ **Stitch preview**

Shows an image of the selected stitch. When shown at 100%, the stitch appears in the screen at nearly its actual size.

②⑦ **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.

➤ [Changing the Presser Foot](#)

②⑧ **Stitch pattern display size**

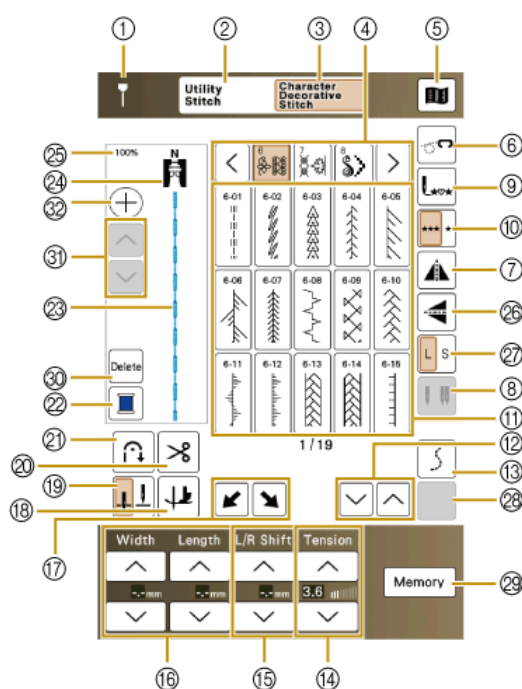
Shows the approximate size of the image of the stitch pattern selected.

The percentage changes depending on the size of the selected stitch pattern.

②⑨ **Stitch name**

Shows the stitch number and name of the selected stitch.

// Character/Decorative Stitches



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.

① Guideline marker key

Shows the status of the external guideline marker. When the marker is attached, touch this key to turn the guideline on or off. The guideline marker makes it easier to align stitches with the fabric edge or other marks on the fabric.

➤ [External Guideline Marker](#)

② Utility stitch key

Select a straight stitch, zigzag stitch, buttonhole, blind hem stitch, or other stitch (utility stitch) commonly used in garment making.

➤ [Utility Stitches](#)

③ Character/Decorative stitch key

Select character or decorative stitch patterns.

➤ [Character/Decorative Stitches](#)

④ Category keys

Select the category of the stitch.

Touch  or  to view other categories.



Decorative stitch patterns



7mm decorative stitch patterns
You can set stitch length and width.



Satin stitch patterns



7mm satin stitch patterns



Cross stitch



Utility decorative stitch patterns



Alphabet characters (gothic font)

	Alphabet characters (handwriting font)
	Alphabet characters (outline)
	Cyrillic font
	Japanese font
	Stitch patterns saved in the machine's memory (▶ Retrieving Embroidery Patterns)

⑤ 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  /  /  / .

⑥ Free motion mode key

Enter free motion sewing mode.

The presser foot is raised to an appropriate height and the feed dog is lowered for free motion quilting.

[▶ Free Motion Quilting](#)

⑦ Horizontal mirror image key

Create a horizontal mirror image of the stitch pattern.

⑧ Needle mode selection key

Select a needle mode (single/twin).

- If a key display is grayed out, you cannot use that function with the selected stitch pattern.

[▶ Twin Needle](#)

⑨ Back to beginning key

When sewing is stopped, touch this key to return to the beginning of the stitch pattern.

⑩ 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.

[▶ Combining Stitch Patterns](#)

⑪ Stitch selection area

Select a stitch pattern.

⑫ Page key

Touch  or , to move the pages of stitch selection area.

⑬ Curve sewing key

Set the function to assist with curve sewing.

[▶ Curve Sewing Mode](#)

⑭ Thread tension

Shows the thread tension setting of the currently selected stitch pattern. You can use  and  to change the thread tension settings.

[▶ Thread Tension](#)

⑮ "L/R Shift"

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.

[▶ Stitch Width/Stitch Length/"L/R Shift"](#)

⑯ Stitch width and stitch length

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.

[▶ Stitch Width/Stitch Length/"L/R Shift"](#)

⑰ Step stitch keys

Make step stitch patterns.

> [Making Step Stitch Patterns \(for 7mm Satin Stitch Patterns Only\)](#)

⑱ Pivot key / Auto up key

Touch this key to automatically raise the presser foot when the machine is stopped.

While the pivot function is turned on, the presser foot is automatically lowered when sewing is restarted.

> [Pivoting](#)

> [Automatic Presser Foot Raising Function](#)

⑲ Needle stop position setting key

Touch this key to select the needle stop position to be up or down.

You can also check the needle mode setting (single or twin).

 Single needle/down position

 Twin needle/down position

 Single needle/up position

 Twin needle/up position

> [Needle Position - Stitch Placement](#)

> [Twin Needle](#)

⑳ Automatic thread cutting key

Turn on this function to set the machine to automatically trim the threads at the end of stitching.

> [Automatic Thread Cutting](#)

㉑ Automatic reverse/reinforcement stitch key

Turn on this function to set the machine to automatically sew reinforcement stitches at the beginning and end of sewing (depending on the stitch pattern, the machine may sew reverse stitches).

> [Automatic Reverse/Reinforcement Stitching](#)

㉒ Thread color change key

Change the thread color in the image.

㉓ Stitch preview

Shows an image of the selected stitch. When shown at 100%, the stitch appears in the screen at nearly its actual size.

㉔ 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.

> [Changing the Presser Foot](#)

㉕ Stitch pattern display size

Shows the approximate size of the image of the stitch pattern selected.

The percentage changes depending on the size of the selected stitch pattern.

㉖ Vertical mirror image key

Create a vertical mirror image of the stitch pattern.

㉗ Size selection key

Select the size of the decorative stitch pattern or character stitch pattern (large, small).

㉘ Keys appearing depending on the selected stitch

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 five 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.

②⑨ **Memory key**

Save stitch pattern combinations.

➤ [Saving Stitch Patterns](#)

③⑩ **Delete key**

Delete the selected stitch pattern.

➤ [Combining Stitch Patterns](#)

③① **Selection key**

Touch this key to select one of the stitch patterns in the combination.

➤ [Inserting Stitch Patterns](#)

③② **Add stitch pattern key**

Touch this key when you want to combine decorative stitch patterns and/or character stitch patterns.

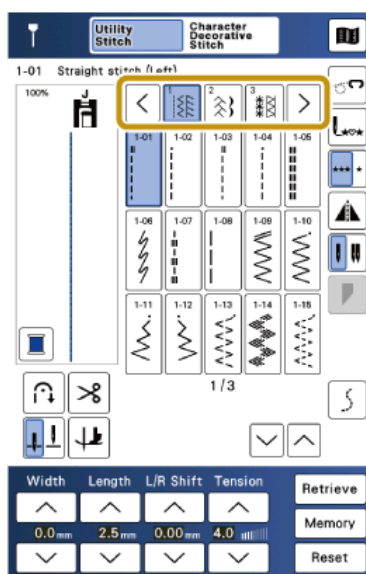
➤ [Combining Stitch Patterns](#)

Basic Sewing

Note

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

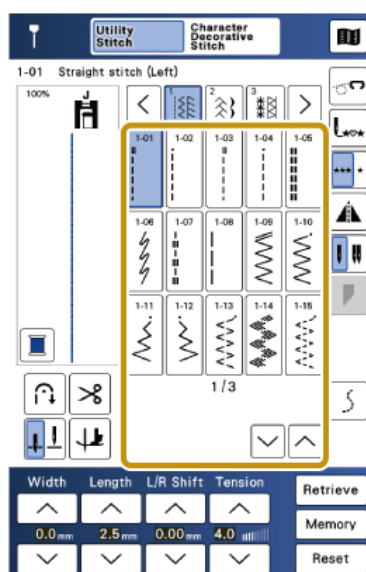
- 1 Turn the machine on and touch  to display the utility stitches, and press  (Needle position button) to raise the needle.
- 2 Select the category you want.



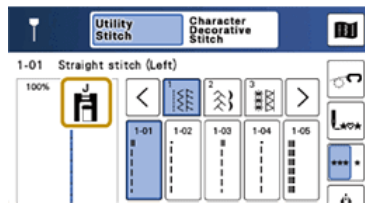
- 3 Touch the key of the stitch you want to sew.

> [Stitch Chart](#)

- If necessary, change settings of the sewing functions.
 - > [Stitch Types and Key Functions](#)
- If necessary, change to the desired stitch width or stitch length.
 - > [Stitch Width/Stitch Length/"L/R Shift"](#)



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



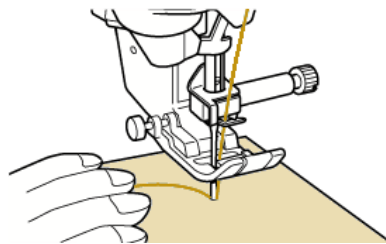
4 Install the presser foot.

> [Changing the Presser Foot](#)

⚠ 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.

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.

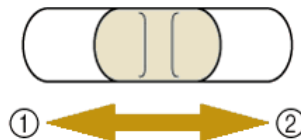


6 Lower the presser foot.

* 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.

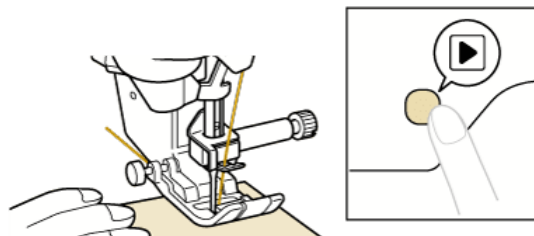


① Slow

② Fast

8 Press the “Start/Stop” button to start sewing.

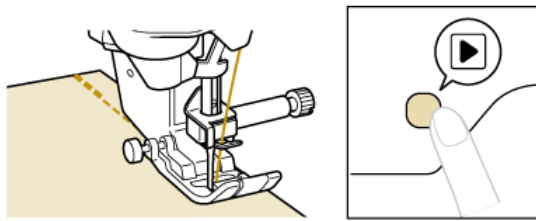
* Guide the fabric lightly by hand.



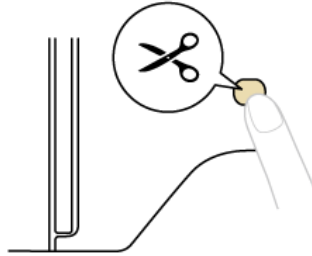
Memo

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.



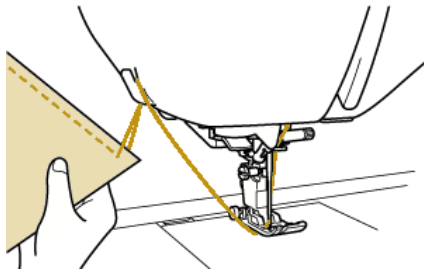
→ The needle will return to the up position automatically.

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.



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

[Foot Controller](#)

[Reverse Stitches/Reinforcement Stitches](#)

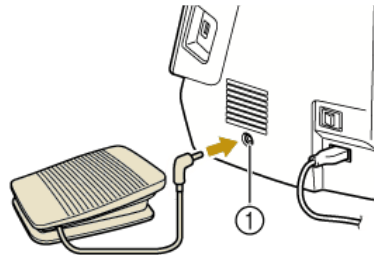
// Foot Controller

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

Memo

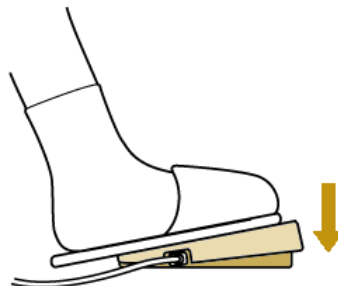
- When the foot controller is connected, the “Start/Stop” button cannot be used to start sewing.
- The foot controller cannot be used when embroidering.
- (For U.S.A. only) Foot controller: Model T
This foot controller can be used on the machine with product code 888-P50/P52. The product code is mentioned on the machine rating plate.

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



① Foot controller jack

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



Memo

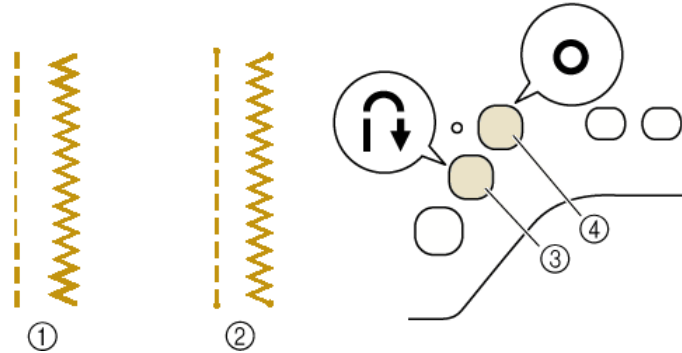
The speed that is set using the sewing speed controller will be the foot controller's maximum sewing speed.

- 5 Release the foot controller to stop the machine.

// 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.

> [Operation Buttons](#)



- ① Reverse stitch
- ② Reinforcement stitch
- ③  (Reverse stitch button)
- ④  (Reinforcement stitch button)

The operation performed when the button is pressed differs depending on the selected stitch pattern.

> [Utility Stitches](#)

Memo

- When you press  (Reinforcement stitch button) while sewing character/decorative stitch pattern, you can end sewing with a full motif 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.

Stitch Settings

[Stitch Width/Stitch Length/"L/R Shift"](#)

[Thread Tension](#)

[Saving Your Stitch Settings](#)

// 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.

> [Utility Stitches](#)

- If you turn off the machine or select another stitch without saving stitch setting changes, the stitch settings will return to their default settings.

Touch **Memory** to save the stitch settings.

> [Saving Your 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.

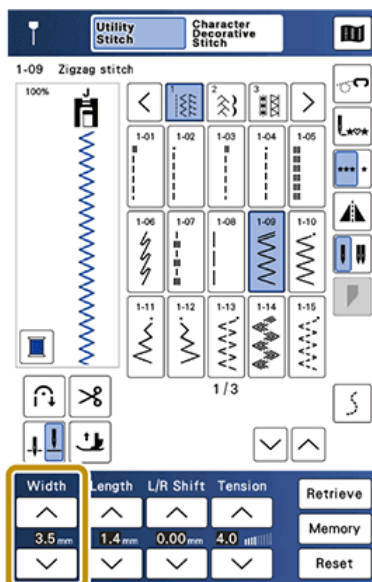
[Stitch Width](#)

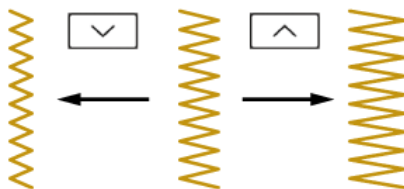
[Stitch Length](#)

[“L/R Shift”](#)

■ Stitch Width

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





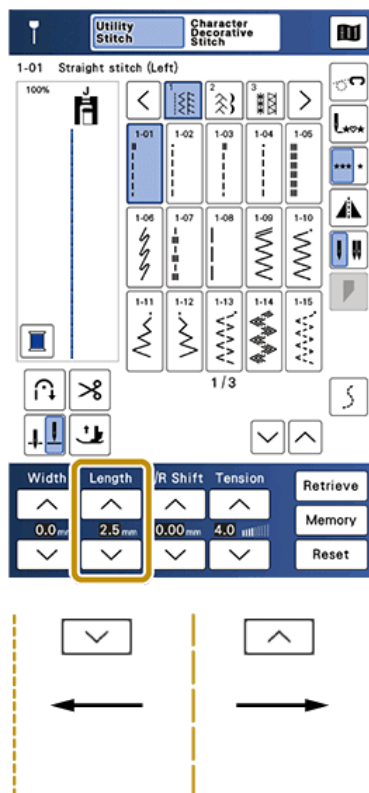
Memo

The stitch width can be also changed using the speed controller with a satin stitch.

> [Quilting with Satin Stitches](#)

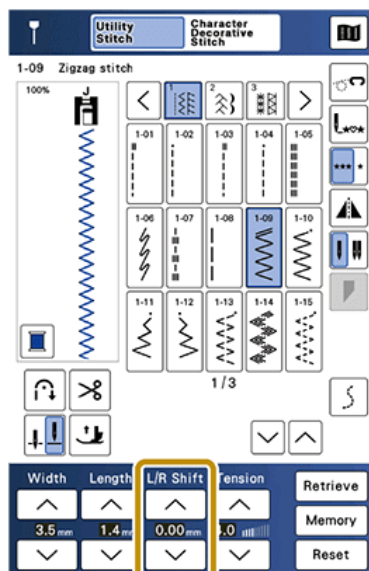
■ Stitch Length

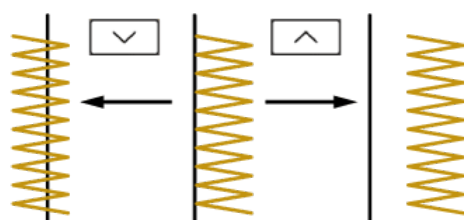
Follow the steps below when you want to change the stitch pattern length.



■ “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.





// 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.

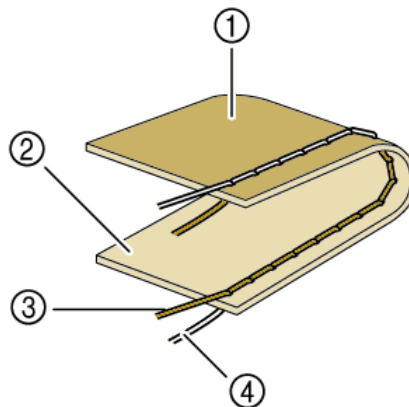
[Proper Thread Tension](#)

[Upper Thread is Too Tight](#)

[Upper Thread is Too Loose](#)

■ 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.



- ① Wrong side
- ② Surface
- ③ Upper thread
- ④ Bobbin thread

Memo

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

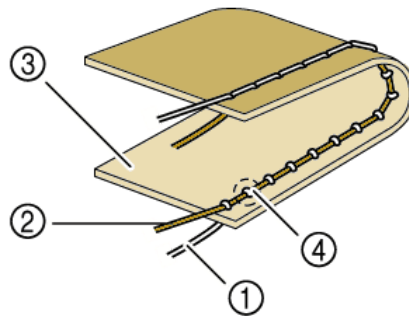
■ Upper Thread is Too Tight

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, rethread the bobbin thread.

> [Installing the Bobbin](#)



- ① Bobbin thread
- ② Upper thread
- ③ Surface
- ④ Locks appear on surface of fabric

Touch to loosen the upper thread.

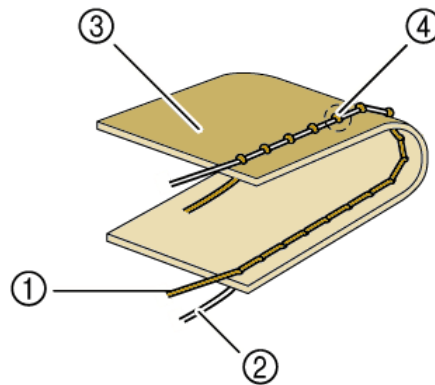
■ Upper Thread is Too Loose

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, rethread the upper thread.

> [Upper Threading](#)



- ① Upper thread
- ② Bobbin thread
- ③ Wrong side
- ④ Locks appear on wrong side of fabric

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](#)

[Retrieving Saved Settings](#)

[Returning the Selected Stitch Pattern to the Default Settings](#)

■ Saving Settings

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



- 3 Touch **Memory**.



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

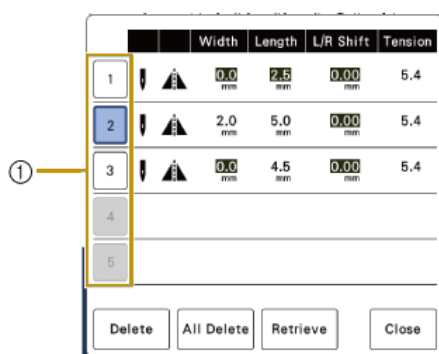
Memo

If you try to save settings when the pocket is full, touch **Retrieve** to delete the saved settings as you choose.

➤ [Retrieving Saved Settings](#)

■ Retrieving Saved Settings

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

- If the pocket is full, delete the saved settings. Touch **Retrieve** and select a numbered key of the setting to be deleted. Touch **Delete**, [OK], and [Close]. Then touch **Memory** to save the current settings.
- You can delete all the saved settings by touching **All Delete**.

■ Returning the Selected Stitch Pattern to the Default Settings

- 1 Touch **Reset**.

* In the default settings, the area around the setting value is black.



Sewing Functions

[Automatic Reverse/Reinforcement Stitching](#)

[Automatic Thread Cutting](#)

[Pivoting](#)

[Automatic Presser Foot Raising Function](#)

[Automatic Fabric Sensor System \(Automatic Presser Foot Pressure\)](#)

[Curve Sewing Mode](#)

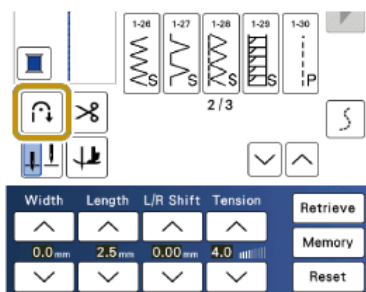
[Needle Position - Stitch Placement](#)

[Automatic Presser Foot Lowering Function and Thread Cutting Function](#)

// Automatic Reverse/Reinforcement Stitching

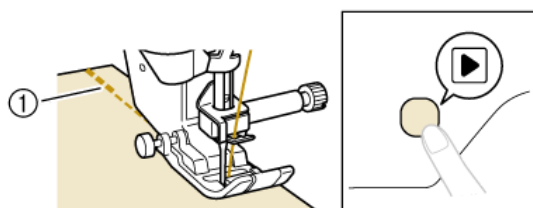
After selecting a stitch pattern, turn on the automatic reinforcement stitching function before sewing, and the machine will automatically sew reinforcement stitches (or reverse stitches, depending on the stitch pattern) at the beginning and end of sewing.

- 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.



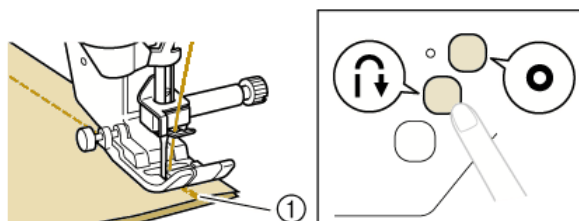
① Reverse stitches (or reinforcement stitches)

→ 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.

■ Operations Performed when the Button is Pressed

The operation performed when the  (Reverse stitch button) or  (Reinforcement stitch button) is pressed differs depending on the selected stitch pattern.


(Reverse stitch button)


(Reinforcement stitch button)

Automatic reverse/reinforcement stitching function is not active. 		
Utility Stitch 	Machine sews reverse stitches while holding 	Machine sews 3 - 5 reinforcement stitches while holding 
Utility Stitch 	Machine sews reverse stitches while holding  *1	Machine sews 3 - 5 reinforcement stitches while holding 
Utility Stitch with a stitch other than reverse or reinforcement stitch pattern selected.	Machine sews 3 - 5 reinforcement stitches while holding 	Machine sews 3 - 5 reinforcement stitches while holding 
Character Decorative Stitch	Machine sews reinforcement stitches while holding 	Machine sews reinforcement stitches after completing the stitch pattern, when  is pressed.
Automatic reverse/reinforcement stitching function is active. 		
Utility Stitch +  	At the beginning of sewing, reverse stitches are sewn automatically when "Start/Stop" button is pressed. Machine sews reverse stitches and stops sewing when the  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  is pressed.
Utility Stitch +  	At the beginning of sewing, reinforcement stitches are sewn automatically when "Start/Stop" button is pressed. Machine sews reverse stitches and stops sewing when  is pressed.*1	At the beginning of sewing, reinforcement stitches are sewn automatically when "Start/Stop" button is pressed. Machine sews reinforcement stitches and stops sewing when  is pressed.
Utility Stitch +  with a stitch other than reverse or reinforcement stitch pattern selected.	At the beginning of sewing, reinforcement stitches are sewn automatically when "Start/Stop" button is pressed. Machine sews reinforcement stitches and stops sewing when  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  is pressed.
Character Decorative Stitch + 	At the beginning of sewing, reinforcement stitches are sewn automatically when "Start/Stop" button is pressed. Machine sews reinforcement stitches and stops sewing when  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  is pressed.

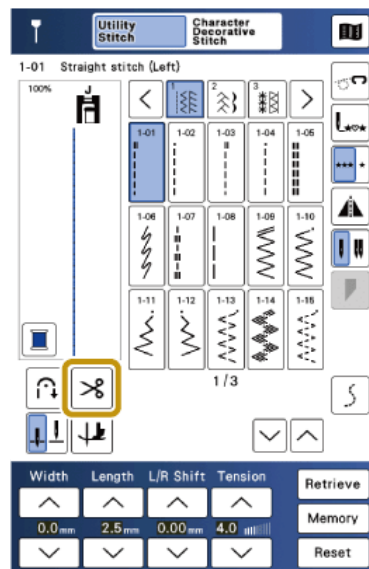
*1 If [Reinforcement Priority] of the settings screen is set to [ON], reinforcement stitches are sewn instead of reverse stitches.

> [Sewing Settings](#)

// 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.

➤ [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.

Some stitch patterns, such as buttonholes and bar tacking, include reinforcement stitches. It is not necessary to select the reverse stitch or reinforcement stitch buttons for these patterns.

→ 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.

// 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

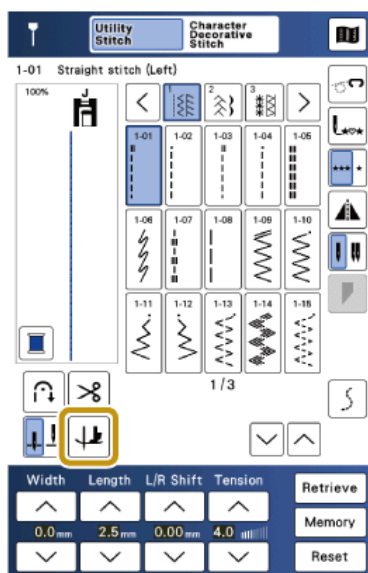
When the pivot setting is selected, the machine starts when the “Start/Stop” button is pressed or the foot controller is pressed down even if the presser foot has been raised. Be sure to keep your hands and other items away from the needle, otherwise injuries may occur.

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.



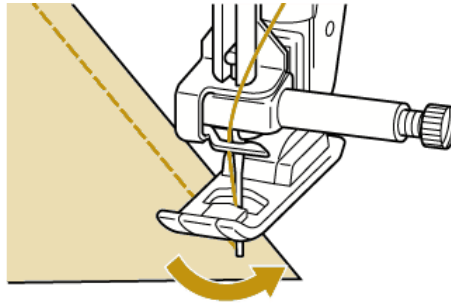
→ The key appears as .

Memo

- If a key display is grayed out, you cannot use that function with the selected stitch pattern.
- If the pivot function is selected,  and  beside [Presser Foot Height] in the settings screen are not available and the setting cannot be changed.

➤ [Sewing Settings](#)

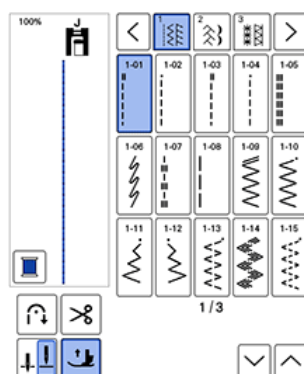
- 3** Place the fabric under the presser foot with the needle at the starting point of the stitching, and then press the “Start/Stop” button. The machine will begin sewing.
- 4** Press the “Start/Stop” button to stop the machine at the point where the sewing direction changes.
→ The machine stops with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

// Automatic Presser Foot Raising Function

When the needle position is set to , auto up key appears instead of pivot key. When the auto up key is set to , the presser foot and needle are raised automatically if the machine is stopped.



// Automatic Fabric Sensor System (Automatic Presser Foot Pressure)

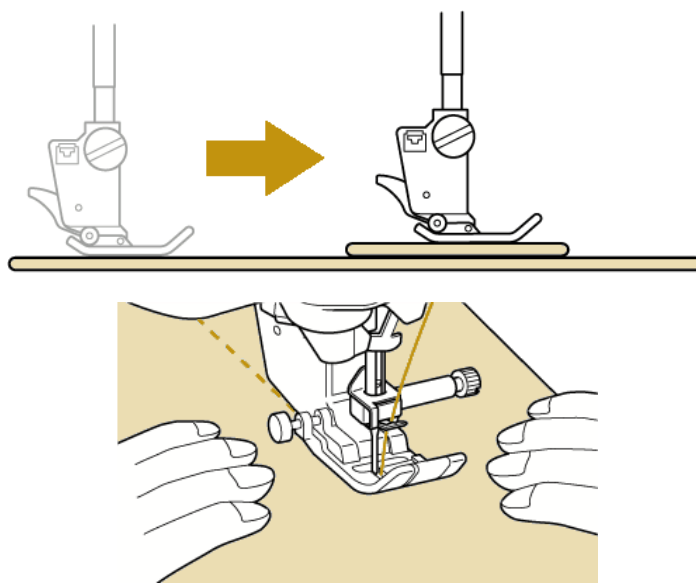
The thickness of the fabric is automatically detected and the presser foot pressure is automatically adjusted with an internal sensor while sewing, to insure that your fabric is fed smoothly. The fabric sensor system works continuously while sewing. This function is useful for sewing heavyweight fabrics,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

> [Sewing Heavyweight Fabrics](#)

> [Quilting](#)

Touch , and then set [Automatic Fabric Sensor System] to [ON].

> [Sewing Settings](#)



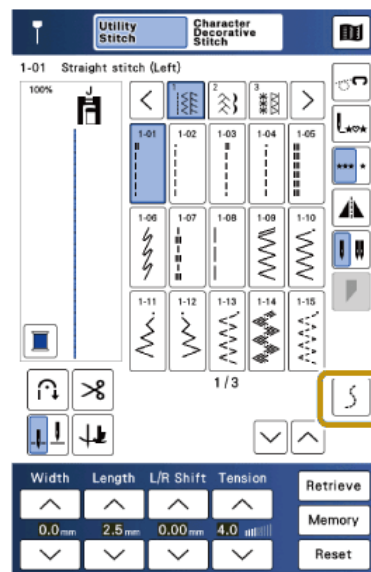
// Curve Sewing Mode

The presser foot pressure changes with the needle movement, ensuring smooth fabric feeding and preventing puckering when turning the fabric.

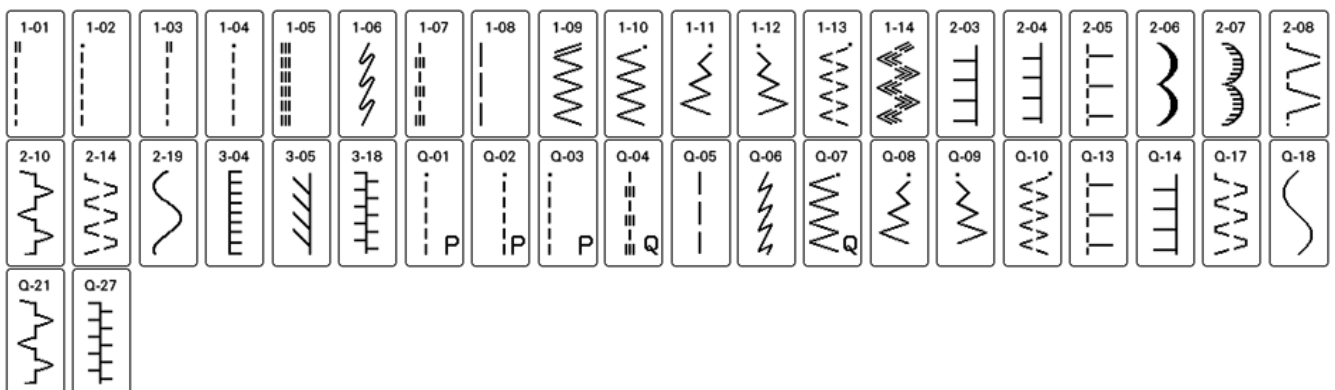
Note

When you change the settings of curve sewing mode or when you turn it off, the presser foot moves. While the presser foot is moving, lightly place your hands on the fabric to prevent the fabric from slipping or falling. Do not operate the machine or adjust the fabric until the presser foot is stopped. Otherwise, it may affect the sewing results.

- 1 Touch  to turn on curve sewing mode.



- 2 Select a stitch pattern. The following stitch patterns are recommended.

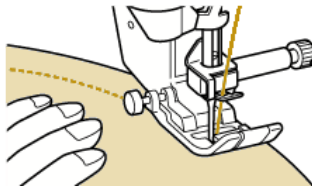


Use the presser foot suitable for the selected stitch pattern.

▶ Changing the Presser Foot

- 3 Place the fabric at the initial sewing position.
 - Before starting your project, we recommend performing a trial sewing using the actual fabric and number of layers you will use.
 - Make sure there are no obstacles such as pins on the fabric so the fabric can be detected correctly.
- 4 Touch [Auto Adjust].
 - The presser foot pressure will be set to match the fabric.

While the presser foot is moving, keep your hands lightly on the fabric.



- 5 Start sewing. We recommend sewing at a medium or lower speed. Make sure that the fabric is feeding properly and the curve is sewn well. If there are no problems, continue sewing.**

If adjustment is needed, select [Fine-tune] to change the presser foot pressure.

- If the fabric does not feed:
Touch [+] to increase the pressure.
- If curves are difficult to sew:
Touch [-] to decrease the pressure.
- The presser foot will move. Lightly place your hands on the fabric.

Note

Whenever you change the type or number of layers of fabric, touch [Auto Adjust] to reset the presser foot pressure.

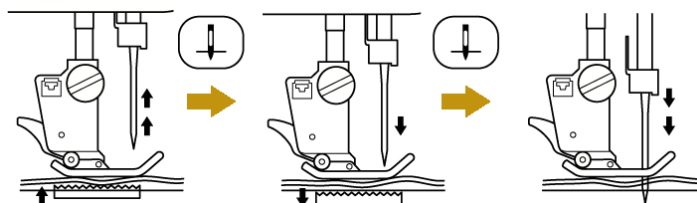
// Needle Position - Stitch Placement

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].

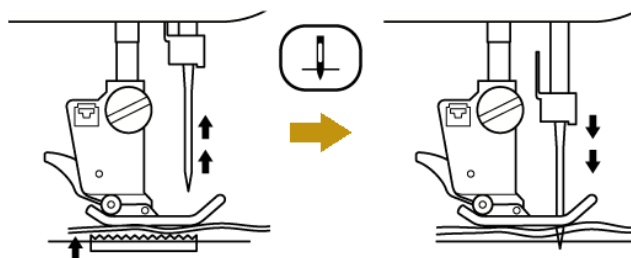
> [General Settings](#)

[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]



// 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.

> [Sewing Settings](#)



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	[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.

Sewing Accessories

[Knee Lifter](#)

[Straight Stitch Needle Plate and the Straight Stitch Foot](#)

[External Guideline Marker](#)

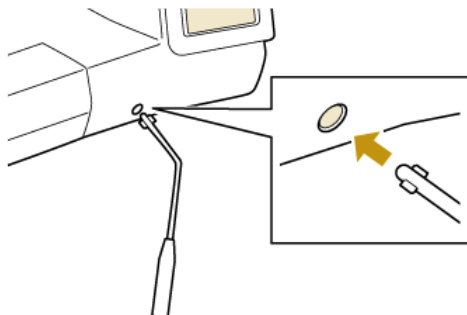
[Compact Digital Dual Feed Foot](#)

[Twin Needle](#)

// 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.

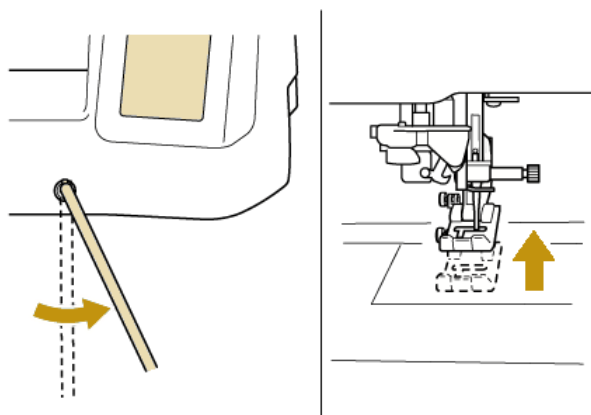
- 1 **Align the tabs on the knee lifter with the notches in the knee lifter slot on the front of the machine. Insert the knee lifter bar as far as possible.**



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.**

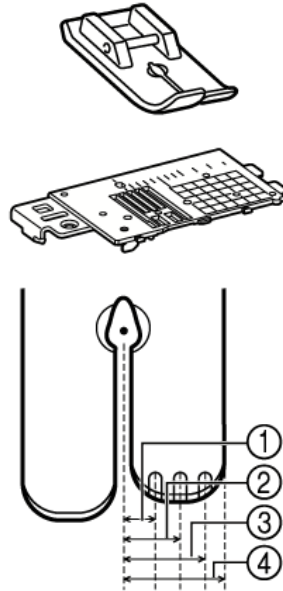


Note

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

// 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.

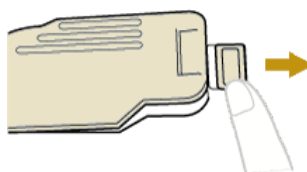


- ① 2.25 mm (approx. 1/8 inch)
- ② 4.25 mm (approx. 3/16 inch)
- ③ 6.25 mm (approx. 1/4 inch)
- ④ 8.5 mm (approx. 5/16 inch)

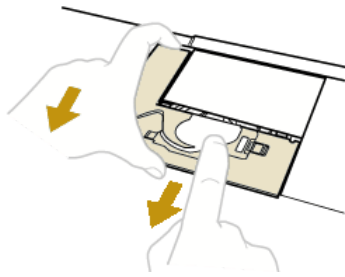
⚠ CAUTION

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

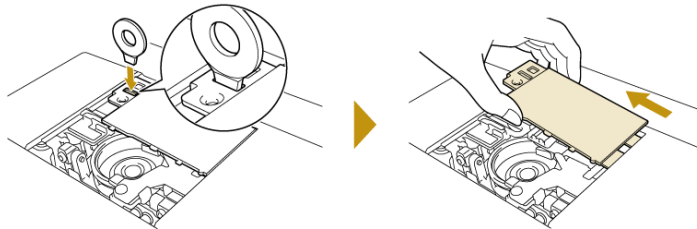
- 1 Press  (Needle position button) to raise the needle.
- 2 Turn off the machine.
- 3 Raise the presser foot to remove the presser foot and needle.
 - [Replacing the Presser Foot](#)
 - [Changing the Needle](#)
- 4 Remove the flat bed attachment.
- 5 Remove the bobbin cover.



- 6 Remove the needle plate cover.

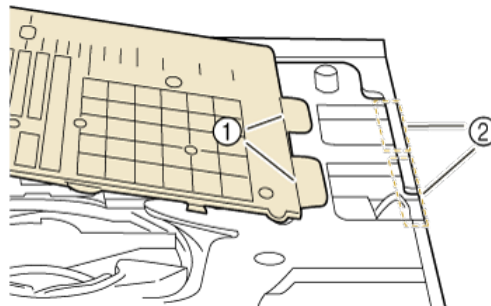


7 Remove the regular needle plate.



► [Removing/Attaching the Needle Plate](#)

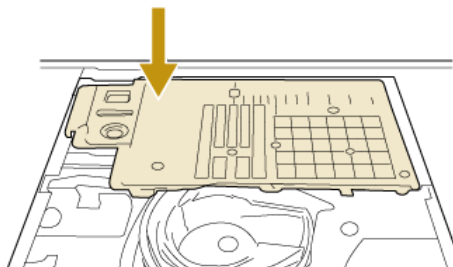
8 Insert the tabs on the straight stitch needle plate into the notches in the machine.



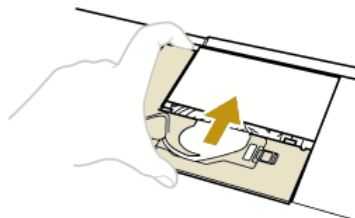
① Tabs

② Notches

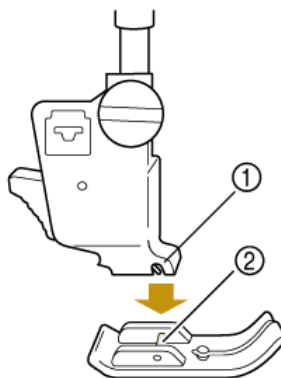
9 Press down on the left side of the straight stitch needle plate to secure it.



10 Attach the needle plate cover.



11 Insert needle and attach the straight stitch foot.



① Notch

② Pin

12 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.

13 Start sewing.

- * After finishing 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 zigzag foot “J”.

// External Guideline Marker

[Attaching the External Guideline Marker](#)

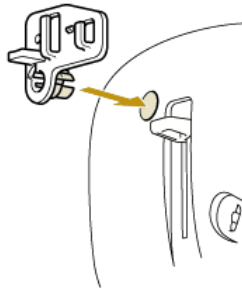
[Activating the Guideline Marker](#)

[Adjusting the Guideline Orientation](#)

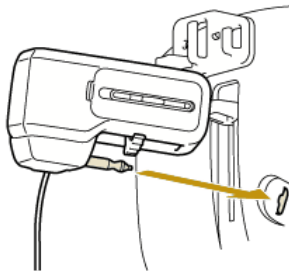
[Changing the Position of the Guideline](#)

■ Attaching the External Guideline Marker

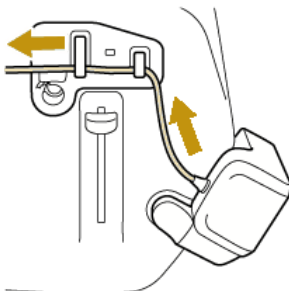
- 1 Touch  (Presser foot/Needle exchange key) to lock all keys and buttons.
- 2 Firmly insert the cord holder into the hole above the needle threader lever.



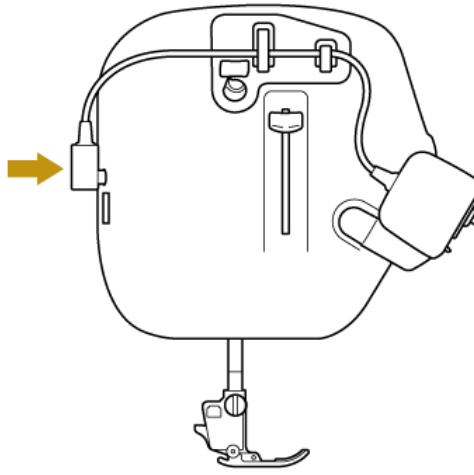
- 3 Firmly insert the external guideline marker into the slot on the left side at the front of the machine.



- 4 Route the cord of the external guideline marker along the top of the cord holder and through the two hooks, and then pass the end of the cord to the back of the machine.



- 5 Insert the plug at the end of the cord into the jack on the machine.



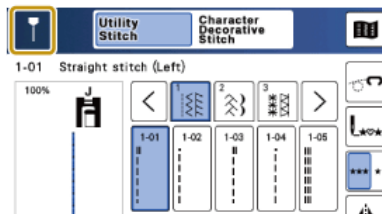
- 6 Touch  (Presser foot/Needle exchange key) to unlock all keys and buttons.

■ Activating the Guideline Marker

- 1 Display the stitch selection screen.
- 2 Touch .
→ The guideline marker function is turned on, and the guideline marker is projected.

Memo

The key indicates the status of the guideline marker function.

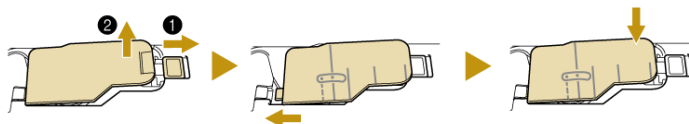


-  : Guideline marker function is off.
-  : Guideline marker function is on.
-  : External guideline marker is not connected to the machine.

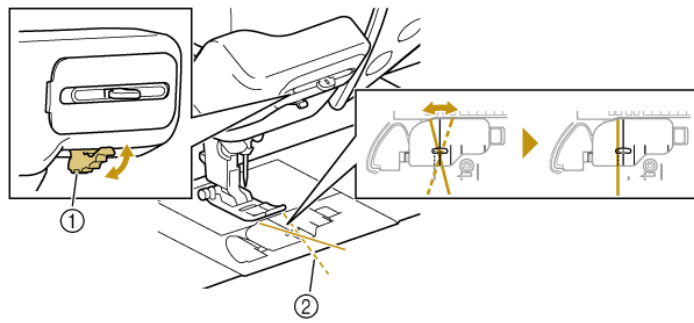
■ Adjusting the Guideline Orientation

After installing the external guideline marker, adjust the orientation of the guideline so that it aligns with the marking on the bobbin cover. If your bobbin cover does not have any markings, replace it with one that does.

- 1 Replace the bobbin cover with one that has markings. Before replacing, touch  (Presser foot/Needle exchange key) to lock all keys and buttons.

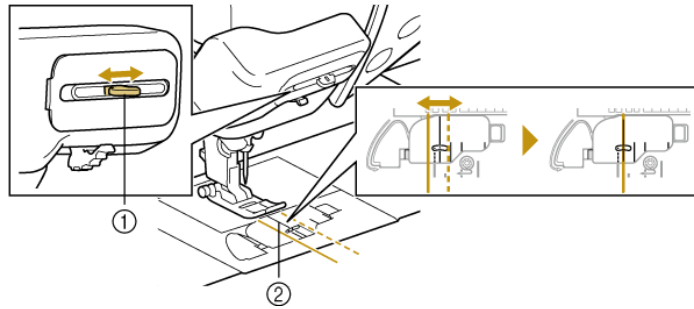


- 2 Correct the orientation of the guideline with the corrector until the guideline is parallel with the markings on the bobbin cover.



- ① Corrector
- ② Guideline

3 Move the slider left or right to align the guideline with the sewing position.

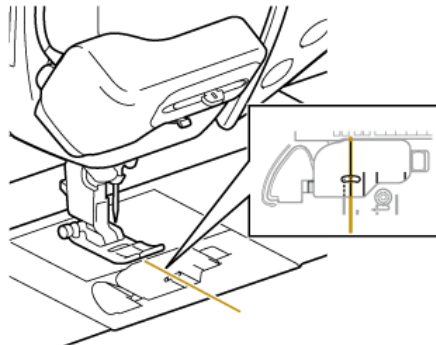


- ① Slider
- ② Markings on the bobbin cover

Note

When changing the position of the guideline, use the slider. Do not use the corrector.

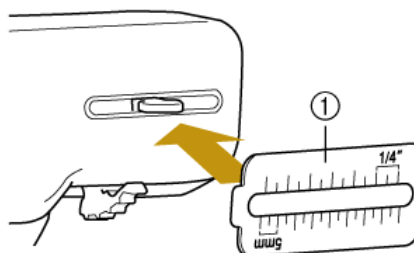
4 Adjust both the corrector and slider to fine-tune the orientation and position of the guideline.



■ Changing the Position of the Guideline

Move the guideline while referring to the guideline scale.

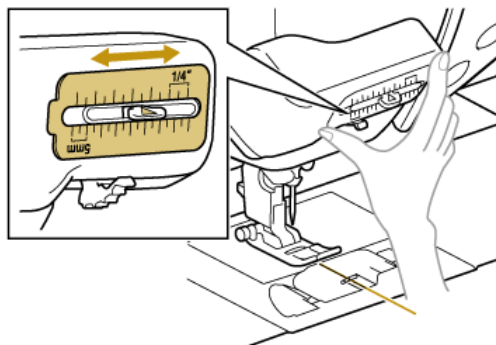
1 Attach the guideline scale to the external guideline marker.



- ① Guideline scale
- The scale is pre-attached on the external guideline marker.
- The back of the scale is magnetic, so it can be attached or detached from the external guideline marker.

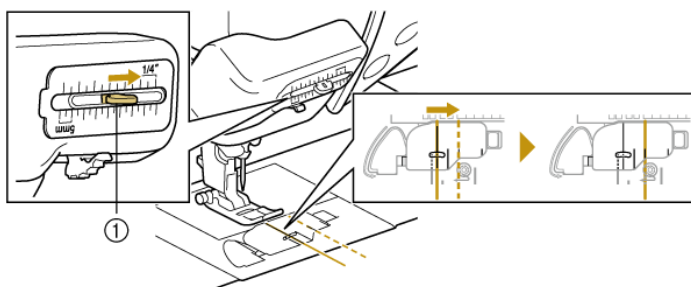
- The scale has two measurement units: millimeters and inches.
- Attach the scale so that the measurement unit that you want to use is at the top.

2 Move the guideline scale to align a guideline scale line with the mark (▲) on the slider.



- Align a guideline scale line with the mark on the slider.
- Aligning the reference point with a marking on the bobbin cover will make it easier to change the guideline position.

3 While referring to the guideline scale line, move the guideline with the slider.



① Slider

- Aligning the guideline with the marking on the bobbin cover is also useful.

// Compact Digital Dual Feed Foot

The compact digital 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 digital dual feed foot, sew at medium to low speeds.

Memo

- When selecting stitches to be used with the compact digital 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 Digital Dual Feed Foot](#)

[Attaching/Detaching Toe](#)

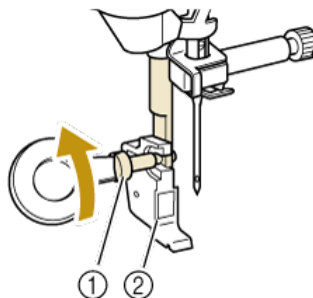
[Adjusting the Amount of Fabric Feeding from the Compact Digital Dual Feed Foot](#)

■ Attaching the Compact Digital Dual Feed Foot

- 1 Remove the presser foot.

▶ [Replacing the Presser Foot](#)

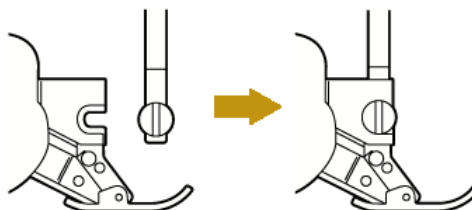
- 2 Loosen the screw of the presser foot holder to remove the presser foot holder.



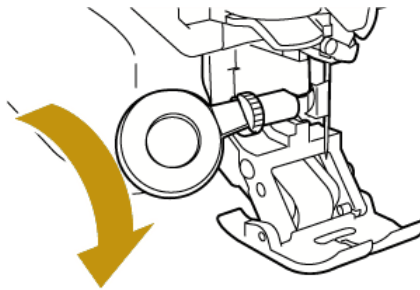
- ① Presser foot holder screw
- ② Presser foot holder

- 3 Position the compact digital dual feed foot to the presser foot bar by aligning the notch of the compact digital dual feed foot to the large screw.

* Side view



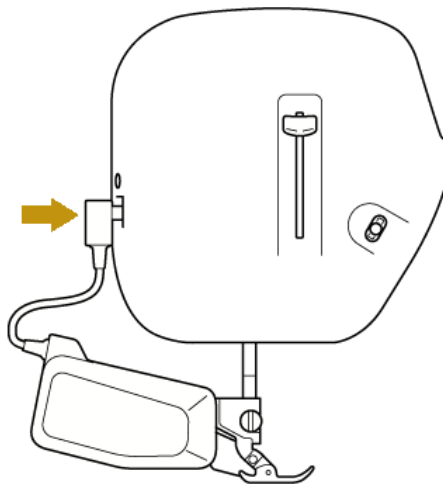
- 4 Hold the compact digital dual feed foot in place with your right hand, then using the disc-shaped screwdriver securely tighten the large screw.



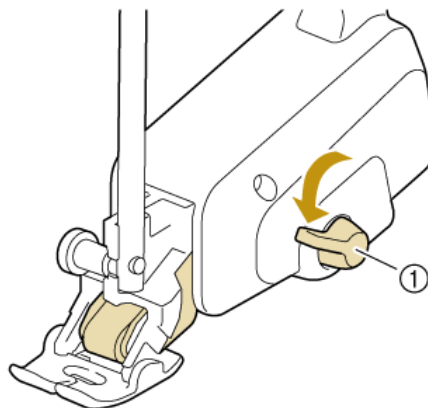
⚠ CAUTION

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 digital 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 digital dual feed foot with the needle at the starting point of the stitching.
- 8 Lower the presser foot.
- 9 Be sure that the feed position lever is pushed down and the compact digital dual feed foot is ready to sew.



- ① Feed position lever

Note

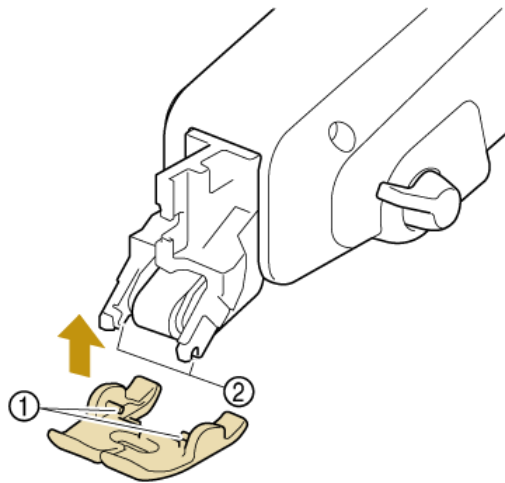
Do not operate the lever while sewing.

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 digital dual feed foot is engaged.

■ Attaching/Detaching Toe

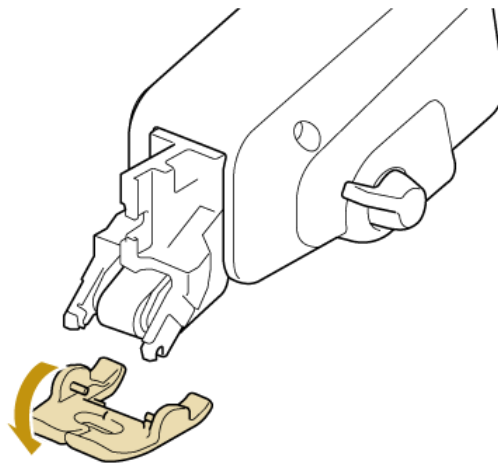
Attach the toe by aligning the pins with the notches and snap it into place.



① Pins

② Notches

If you push down on the front and back part of the compact digital dual feed foot, the toe of the compact digital dual feed foot will snap off.



■ Adjusting the Amount of Fabric Feeding from the Compact Digital 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 digital dual feed foot to the machine. The keys are enabled after the compact digital 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.

 Dual Feed
Feed Adjustment



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 [OK] to return to the original screen.

// Twin Needle

With the twin needle, you can sew two parallel lines of the same stitch with two different threads. Both upper threads should have the same thickness and quality.

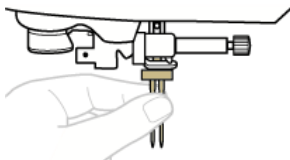
⚠ CAUTION

- 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

Only use the twin needle (2/11 needle), and never use the needle threader with the twin needle. Otherwise, the needle may break or the machine may be damaged.

- 1 Touch  and install the twin needle.



* For details on installing a needle, refer to “Changing the Needle”.

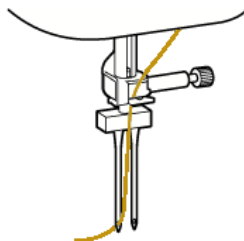
➤ [Changing the Needle](#)

- 2 Pass the first upper thread behind the needle bar thread guide.

➤ [Upper Threading](#)

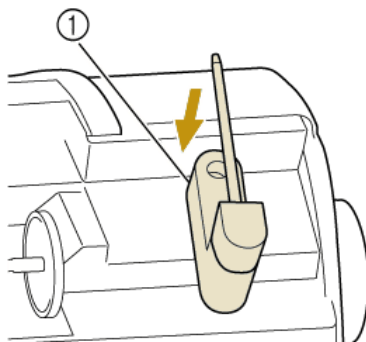
- 3 Manually thread the left needle with the first upper thread.

Pass the thread through the eye of the needle from the front.



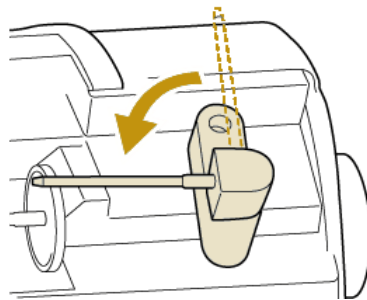
- 4 Insert the horizontal spool pin onto the bobbin winder shaft.

Insert the spool pin so that it is perpendicular to the bobbin winder shaft.

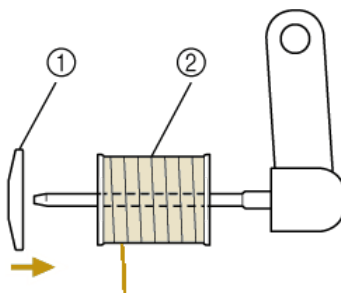


① Bobbin winder shaft

- 5 Swing the spool pin toward the left so that it is horizontal.

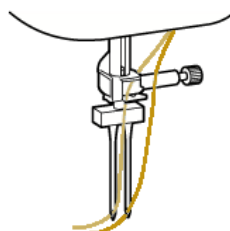


- 6** Place the upper thread spool for the needle on the right side onto the spool pin, and then secure it with the spool cap. The thread should unwind from the front at the bottom of the spool.



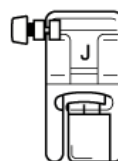
- ① Spool cap
- ② Spool

- 7** Thread the upper thread in the same way that the upper thread for the left side was threaded.
- 8** Without passing the thread through the needle bar thread guide, manually thread the right needle. Insert the thread through the eye of the needle from the front to the back.



- 9** Attach zigzag foot “J”.
- * For details on changing the presser foot, refer to “Replacing the presser foot”.

➤ [Replacing the Presser Foot](#)



⚠ CAUTION

When using the twin needle, be sure to attach zigzag foot “J”. If bunched stitches occur, use monogramming foot “N” or attach stabilizer material.

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

- 11** Display the stitch selection screen and touch .
- The machine switches to twin needle mode.

⚠ 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.

12 Select a stitch.

* For stitches that use a twin needle, refer to the following link.

> [Stitch Chart](#)

13 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.

Sewing Tips

[Trial Sewing](#)

[Changing Sewing Direction](#)

[Sewing Various Fabrics](#)

// 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.

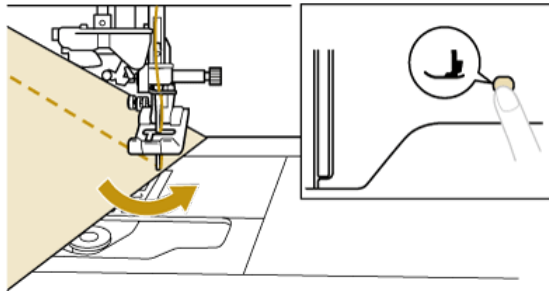
While checking the sewing results, adjust the thread tension as well as the stitch length and width according to the number of fabric layers and stitch that is sewn.

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.

// 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.

 [Pivoting](#)

// Sewing Various Fabrics

[Sewing Heavyweight Fabrics](#)

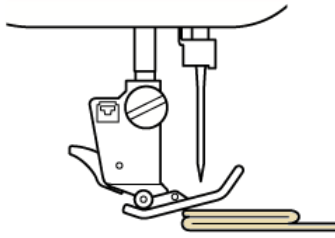
[Sewing Lightweight Fabrics](#)

[Sewing Stretch Fabrics](#)

[Sewing Leathers or Vinyl 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.

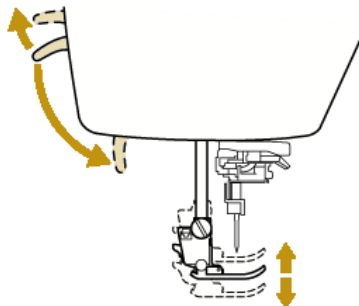
Memo

Thicker fabrics require a larger needle.

▶ [Fabric/Thread/Needle Combinations](#)

• 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, further lift the presser foot lever to raise the presser foot to its highest position. The fabric will now fit under the presser foot.



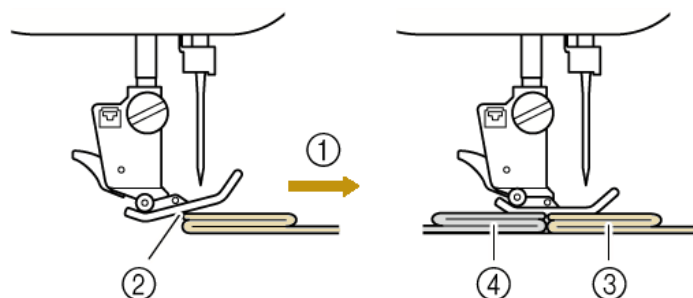
Memo

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.

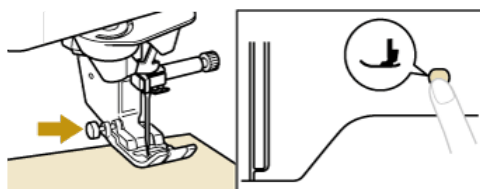
If the presser foot misalignment is too large, place thick paper or fabric (with the same thickness as the fabric being sewn) under the heel of the presser foot to be able to start sewing smoothly.



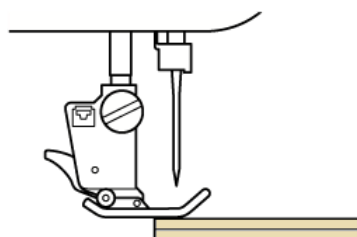
- ① Sewing direction
- ② Misalignment
- ③ Fabric being sewn
- ④ Fabric or thick paper

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.

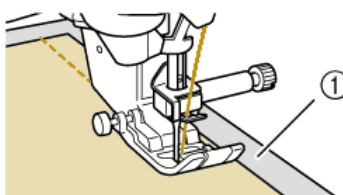
Memo

- 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.

➤ [Automatic Fabric Sensor System \(Automatic Presser Foot Pressure\)](#)

■ 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.



- ① Thin paper

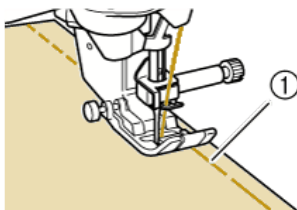
■ Sewing Stretch Fabrics

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.

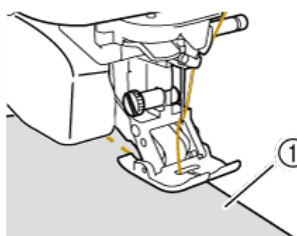
➤ [Sewing Settings](#)



① Basting stitch

■ Sewing Leathers or Vinyl Fabrics

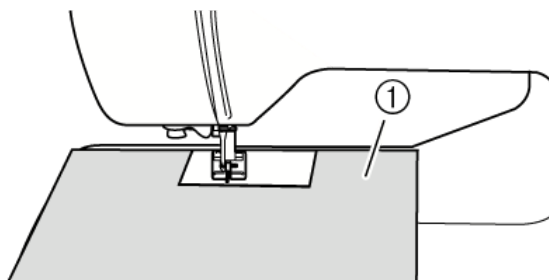
When sewing fabrics that may stick to the presser foot, such as leather or vinyl fabrics, replace the presser foot with the compact digital dual feed foot.



① Leather

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.



① Copy paper or tracing paper

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.

[➤ Replacing the Presser Foot](#)

Note

For details on stitch patterns, refer to the following link.

[➤ Stitch Chart](#)

[Straight Stitches](#)

[Zigzag Stitches](#)

[Overcasting](#)

[Quilting](#)

[Blind Hem Stitches](#)

[Shell Tuck Stitches](#)

[Scallop Stitches](#)

[Smocking Stitches](#)

[Fagoting](#)

[Attaching Tape or Elastic](#)

[Heirloom](#)

[Buttonholes](#)

[Darning](#)

[Bar Tacks](#)

[Button Sewing](#)

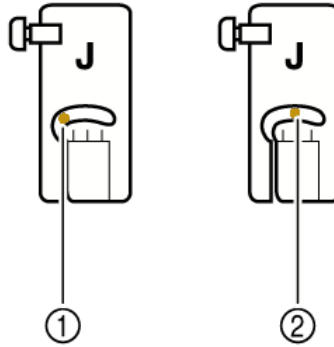
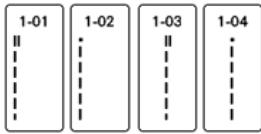
[Eyelet](#)

[Multi-directional Sewing \(Straight Stitch and Zigzag Stitch\)](#)

[Zipper Insertion](#)

[Stitch Tapering Function \(Changing the Start and End Angles of the Stitch Pattern\)](#)

Straight Stitches



- ① Left needle position
- ② Middle needle position

[Changing the Needle Position](#)

[Aligning the Fabric with a Mark on the Needle Plate or Bobbin Cover \(with Mark\)](#)

[Basting](#)

[Dart Seam](#)

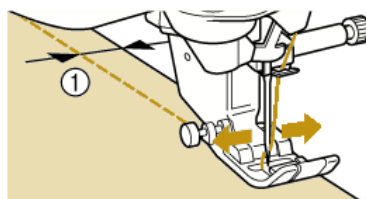
[Gathering](#)

[Flat Fell Seam](#)

[Pintuck](#)

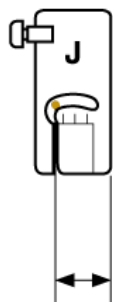
// Changing the Needle Position

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.

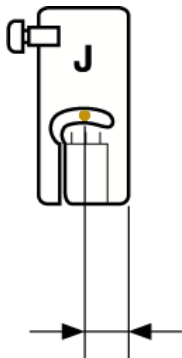


① L/R Shift

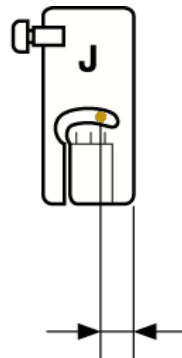
Example: Middle needle position stitches



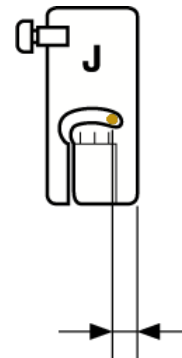
12.0 mm
(approx. 1/2 inch)



8.5 mm
(approx. 5/16 inch)



6.5 mm
(approx. 1/4 inch)

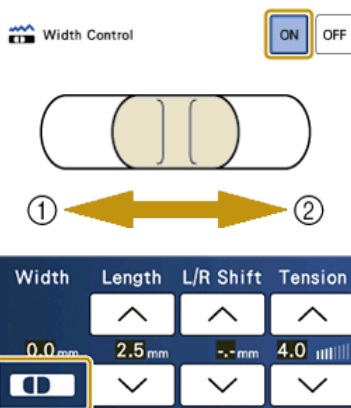


5.0 mm
(approx. 3/16 inch)

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.

➤ [Sewing Settings](#)

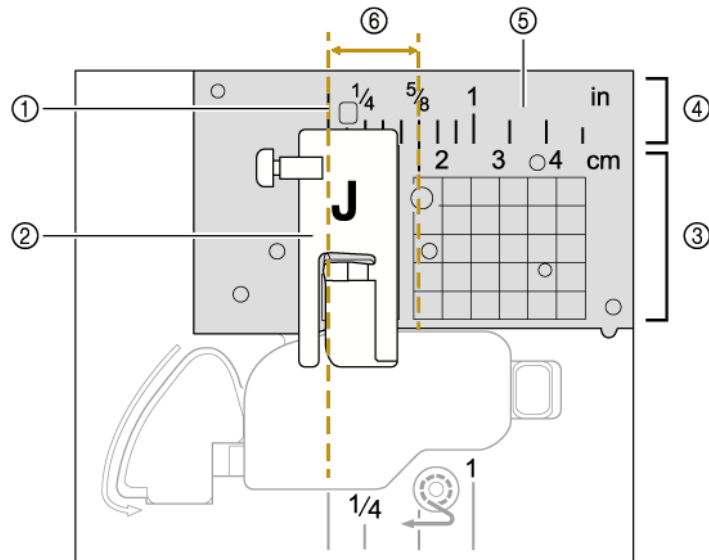


- ① Shift the needle position to the left.
- ② Shift the needle position to the right.

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

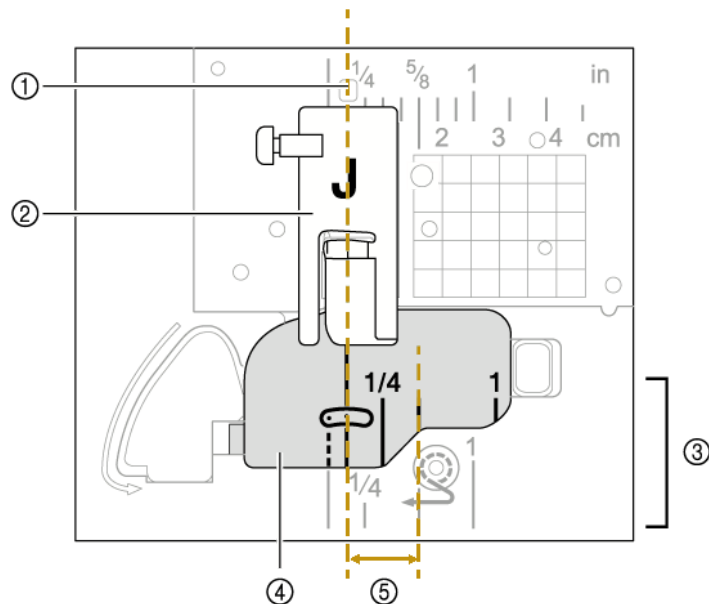
While sewing, align the edge of the fabric with the 5/8 inch (approx. 1.6 cm) mark on the needle plate or bobbin cover (with mark) depending on the needle position (left or middle (center) needle position stitches only).

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 the stitch below and attach presser foot “J”.



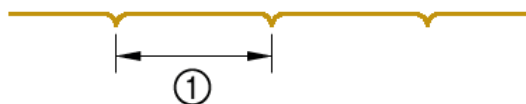
- 2 Keep pressing  (Reverse stitch button) or  (Reinforcement stitch button) to sew 4 stitches of reinforcement stitches, then press “Start/Stop” button to continue sewing.

Memo

- Before sewing, pull up the bobbin thread, align it with the upper thread, and then pull them to the back of the machine. For clean stitching, hold these thread ends when starting to sew.

[Pulling Up the Bobbin Thread](#)

- 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)

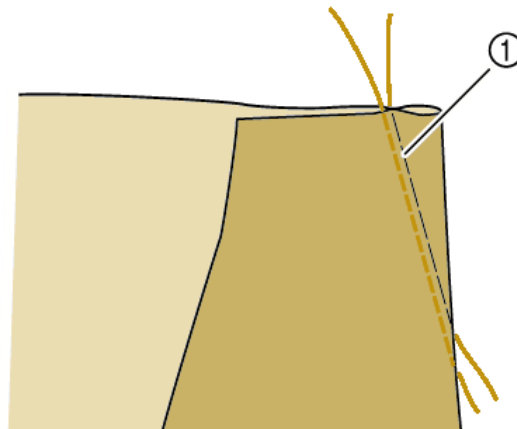
- 3 When sewing is finished, sew reinforcement stitches, and then cut the threads to a generous length.

// Dart Seam

- 1 Select the stitch below and attach presser foot “J”.



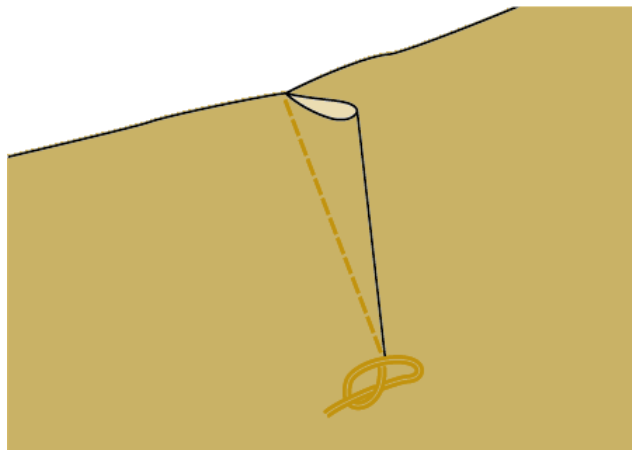
- 2 Sew a reverse stitch at the beginning of the dart and then sew from the wide end to the other end without stretching the fabric.



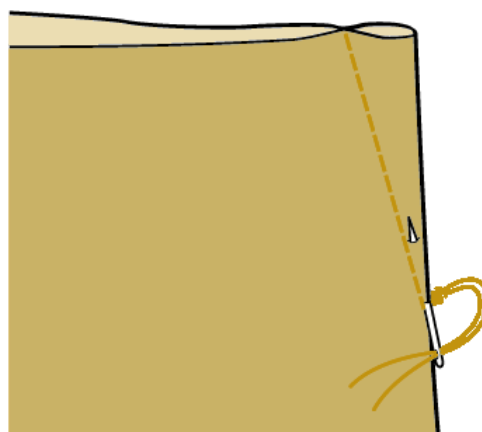
① Basting

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

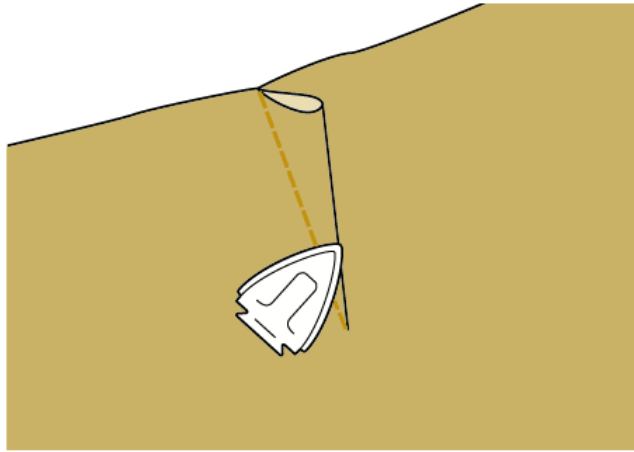
* Do not sew a reverse stitch at the end.



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



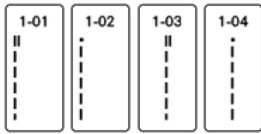
- 5** Iron the dart to one side so that it is flat.



// Gathering

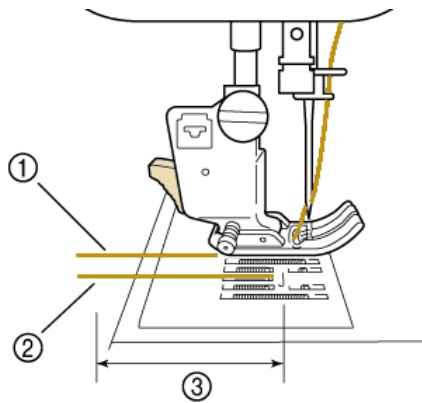
Use on waists of skirts, sleeves of shirts, etc.

- 1 **Select a straight stitch and attach presser foot “J”.**



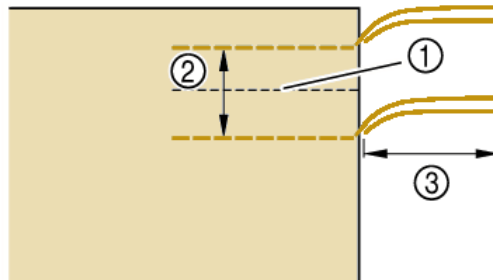
- 2 **Set the stitch length to 4.0 mm (approx. 3/16 inch) and the thread tension to approximately 2.0 (weaker tension).**
- 3 **Pull the bobbin and upper threads out by about 10 cm (approx. 4 inches) .**

▶ [Pulling Up the Bobbin Thread](#)



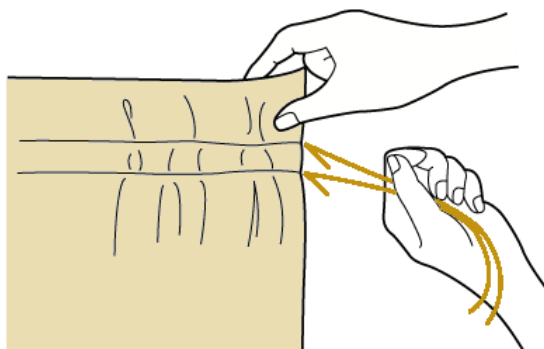
- ① Upper thread
- ② Bobbin thread
- ③ About 10 cm (approx. 4 inches)

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

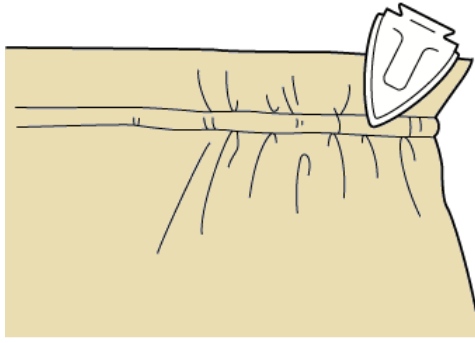


- ① Seam line
- ② 1 cm to 1.5 cm (approx. 3/8 inch to 9/16 inch)
- ③ About 5 cm (approx. 2 inches)

- 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

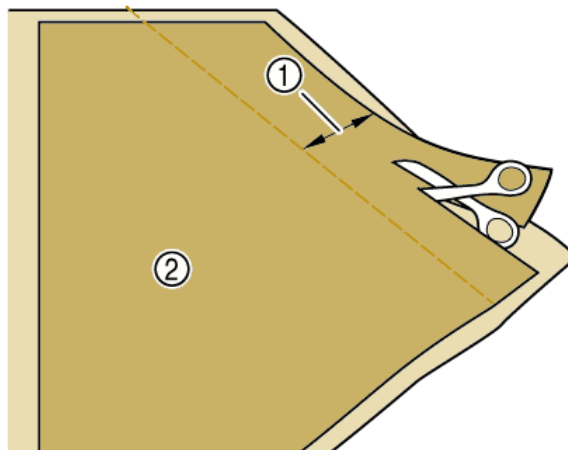
Use for reinforcing seams and finishing edges neatly.

- 1 Select the stitch below and attach presser foot “J”.



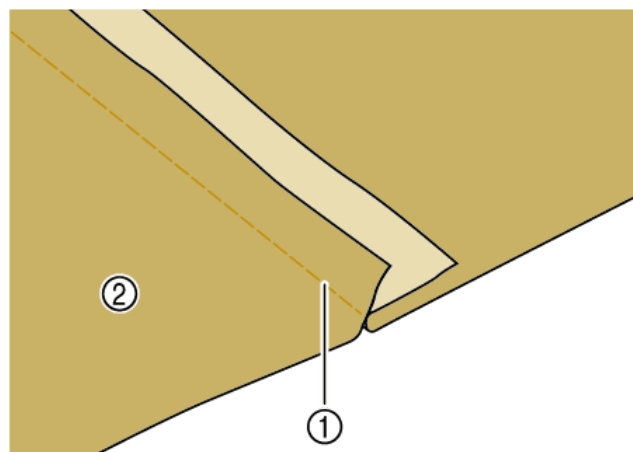
- 2 Sew the seam line, then cut half of the seam allowance from the side on which the flat fell seam will lie.

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



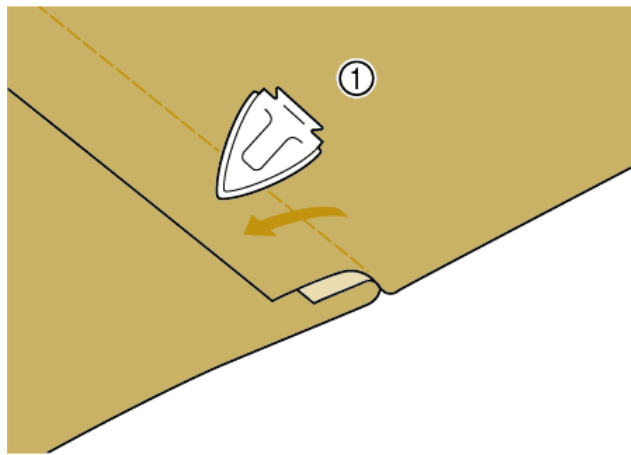
- ① About 1.2 cm (approx. 1/2 inch)
- ② Wrong side

- 3 Spread the fabric out along the seam.



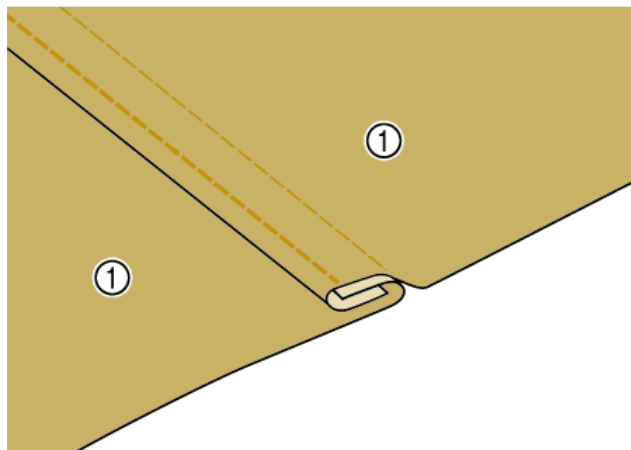
- ① Seam
- ② Wrong side

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



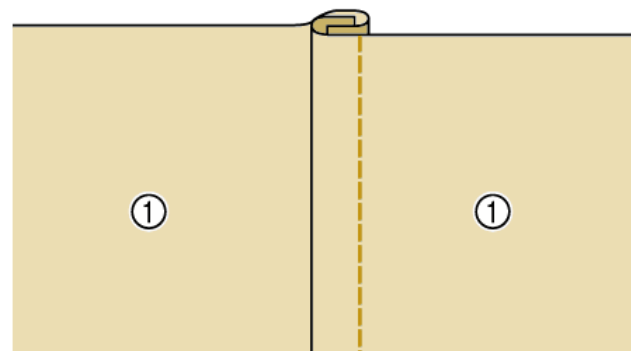
① Wrong side

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



① Wrong side

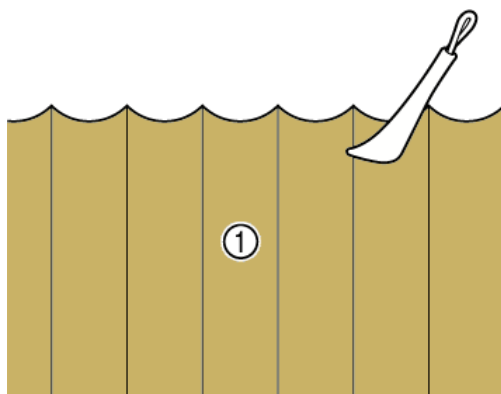
Finished flat fell seam



① Surface

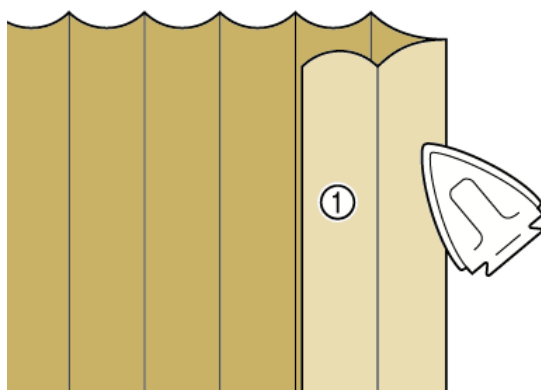
// Pintuck

- 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.

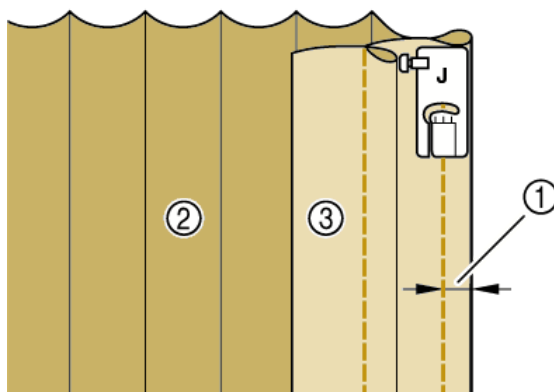


① Surface

- 3 Select the stitch below and attach presser foot “J”.



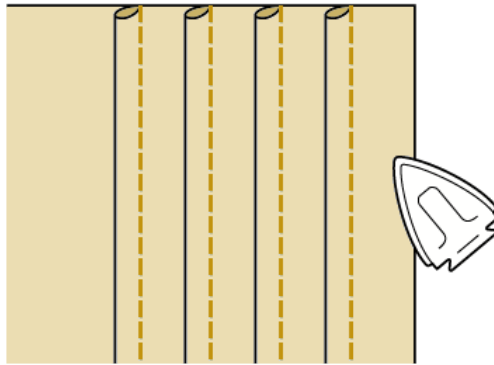
- 4 Sew a straight stitch along the fold.



① Width for pintuck

- ② Wrong side
- ③ Surface

5 Iron the folds in the same direction.



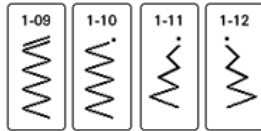
Zigzag Stitches

Zigzag stitches are useful for overcasting, appliqué, patchwork, and many other applications.

> [Overcasting](#)

> [Appliqué](#)

> [Stitch Chart](#)

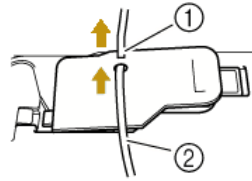


// Using the Cord Guide Bobbin Cover

- 1 Remove the bobbin cover from the machine.

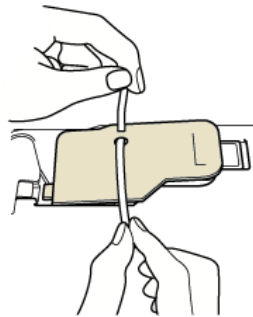
▶ [Installing the Bobbin](#)

- 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.

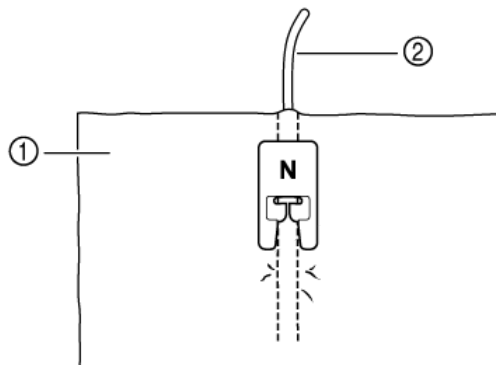


- ① Notch
- ② Gimp thread

- 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.

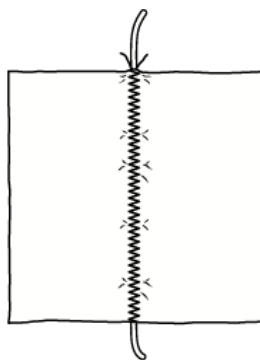


- 4 Set the zigzag width from 2.0-2.5 mm (approx. 1/16 - 3/32 inch).
- 5 Attach the monogramming foot "N".
- 6 Position the fabric right side up on top of the cord and place the cord to the rear of the machine under the presser foot.



- ① Fabric (right side)
- ② Gimp thread

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



Overcasting

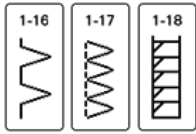
Sew overcasting stitches along the edges of cut fabric to prevent them from fraying.

[Using Overcasting Foot "G"](#)

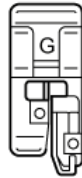
[Using Zigzag Foot "J"](#)

// Using Overcasting Foot “G”

- 1 Select from the stitches below.



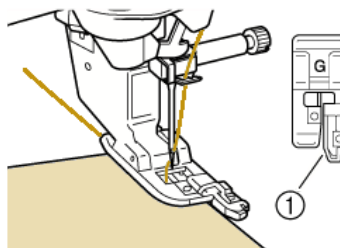
- 2 Attach overcasting foot “G”.



⚠ CAUTION

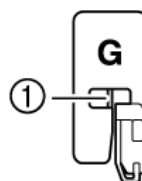
When using overcasting foot “G”, be sure select a stitch that can be used with overcasting foot “G”. If you sew with the incorrect stitch, the needle may strike the presser foot and break, and may cause injury.

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



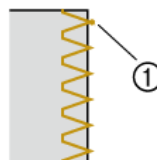
① Guide

- 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

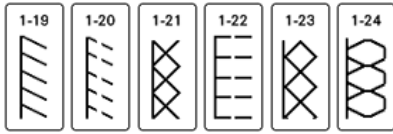
IMPORTANT

- 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 foot lever to remove the presser foot. If the presser foot is raised while entangled with thread, the presser foot may be damaged.

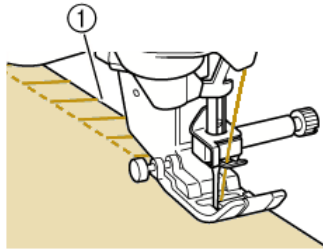
- 6** Press the “Start/Stop” button to stop sewing when you have reached the end of the stitching, and raise the presser foot and needle to pull the fabric under the presser foot towards the back of the machine.

// Using Zigzag Foot “J”

- 1 Select from the stitches below.



- 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.

➤ [Stitch Width/Stitch Length/“L/R Shift”](#)

Quilting

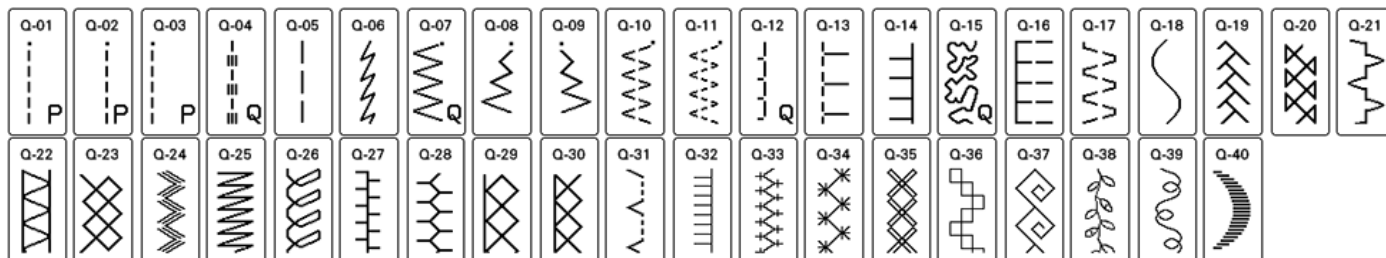
You can make beautiful quilts quickly and easily with this machine. When making a quilt, you will find it convenient to use the knee lifter and foot controller to free your hands for other tasks.

> [Foot Controller](#)

> [Knee Lifter](#)

The 40 quilting stitches Q-01 through Q-40 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.

[Piecing](#)

[Piecing Using the 1/4" Quilting Foot with Guide](#)

[Quilting](#)

[Appliqué](#)

[Quilting with Satin Stitches](#)

[Free Motion Quilting](#)

// Piecing

Sewing two pieces of fabric together is called piecing.

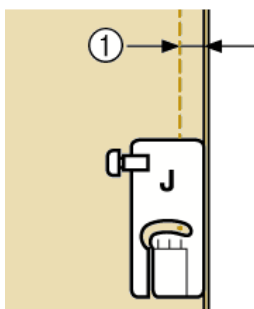
When cutting pieces for quilt blocks, make sure the seam allowance is 6.5 mm (approx. 1/4 inch).

- 1 Select from the stitches below and attach presser foot “J”.



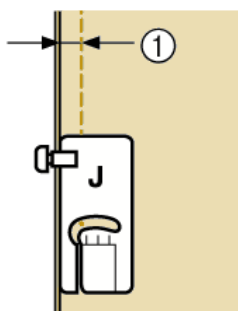
- 2 Align the edge of the fabric with the edge of the presser foot, and start sewing.

- * 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 Q-03 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 setting.

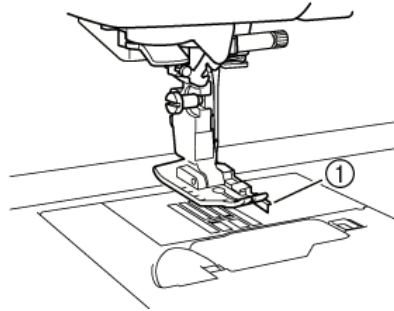


// Piecing Using the 1/4" Quilting Foot with Guide

This quilting 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 the stitch below, and then attach the 1/4" Quilting foot with guide.

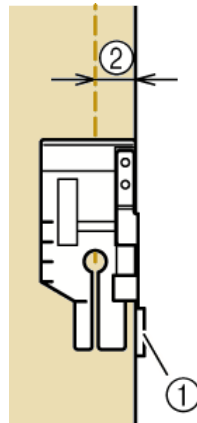


- ① Guide

- 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

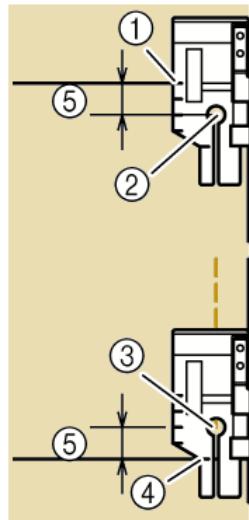
For accurate fabric placement, refer to the marks on the needle plate or bobbin cover.

➤ [Aligning the Fabric with a Mark on the Needle Plate or Bobbin Cover \(with Mark\)](#)

Creating an accurate seam allowance

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

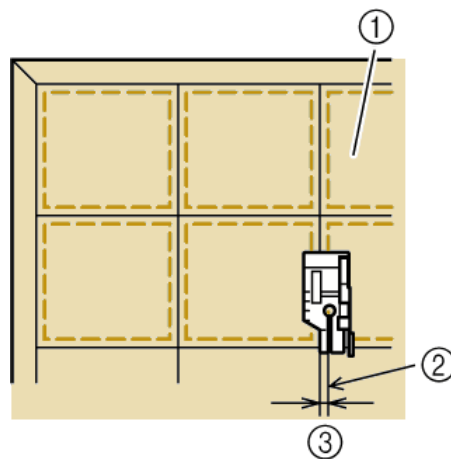
➤ [Pivoting](#)



- 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

Topstitching quilting, 1/8 inch

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



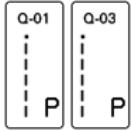
- ① Surface of fabric
- ② Seam
- ③ 1/8 inch

// Quilting

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

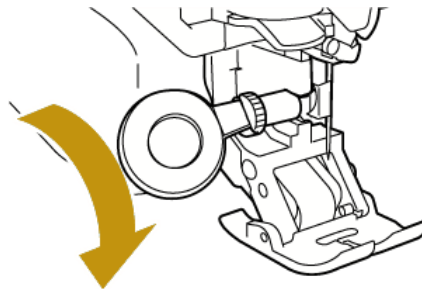
For straight line quilting, use the compact digital dual feed foot and the straight stitch needle plate. Always select a straight stitch (middle needle position) when using the straight stitch needle plate.

- 1 Select from the stitches below.

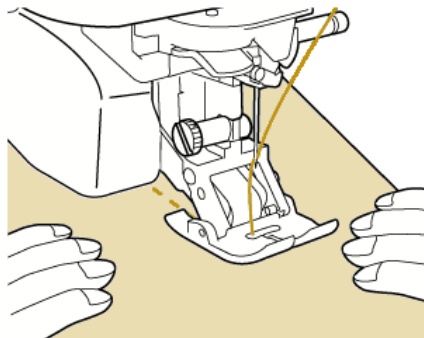


- 2 Attach the compact digital dual feed foot.

▶ [Compact Digital Dual Feed Foot](#)



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



Memo

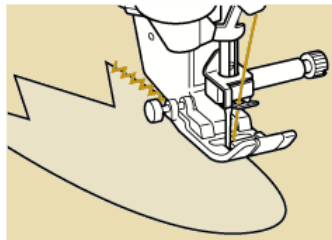
- Sew at slow to medium speed.
- Always check to be sure that your quilting project is securely basted before beginning to sew.

// Appliqué

- 1 Use two-sided stabilizer material to secure the appliqué piece to the base fabric.
- 2 Select from the stitches below.



- 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.

When sewing curved lines, the curve sewing mode may be useful.

> [Curve Sewing Mode](#)

// Quilting with Satin Stitches

For better fabric control, use the foot controller to sew or quilt 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.

> [Foot Controller](#)

- 2 Select the stitch below.



- 3 Attach presser foot “J”.

- 4 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.

- 5 Touch  to use the speed control slide to control the stitch width.

- 6 Set the [Width Control] to [ON].

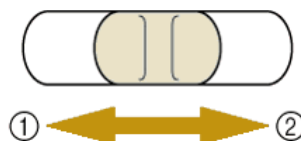


- 7 Touch [OK].

→ The display will return to the original screen.

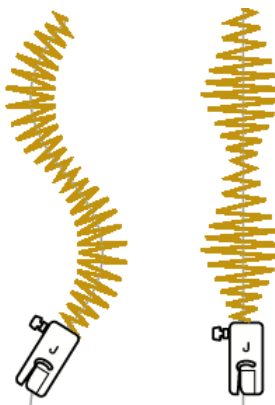
- 8 While sewing, slide the sewing speed controller to adjust the stitch width.

* Adjust the sewing speed with the foot controller.



① narrower

② wider



- 9 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 open toe quilting foot “O” 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.

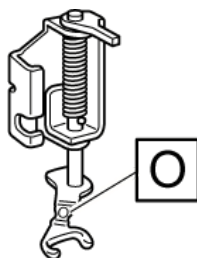
 Free Motion Foot Height



- 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.

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 the following link.

[➤ Stitch Chart](#)



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

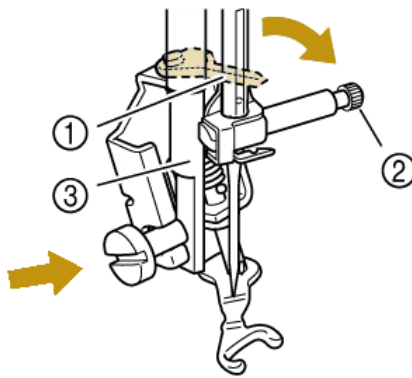
→ The key appears as , the quilting foot is raised to the necessary height, and then the feed dogs are lowered for free motion sewing.

- 2 Select a stitch.

- 3 Remove the presser foot holder.

[➤ Removing/Attaching the Presser Foot Holder](#)

- 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.

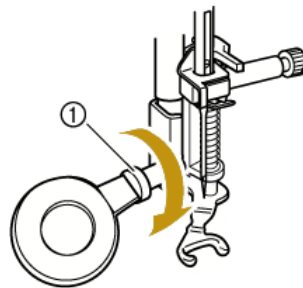


- ① Pin
- ② Needle clamp screw
- ③ Presser bar

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.

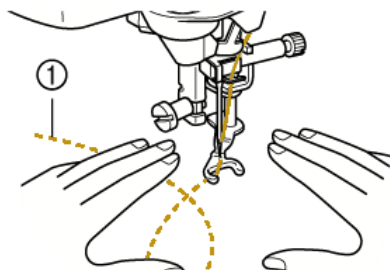


- ① Presser foot holder screw

⚠ 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 the needle 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.

Note

It is also recommended to use the stitch regulator (sold separately).

Blind Hem Stitches

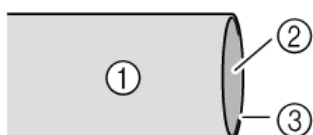
Secure the lower edge of skirts and pants with a blind hem.

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 the following link.

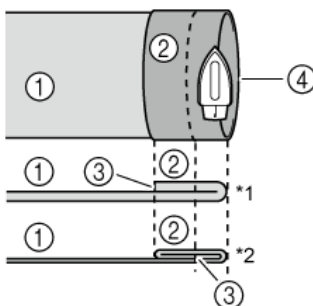
➤ [Stitch Chart](#)

1 Turn the skirt or pants inside out.



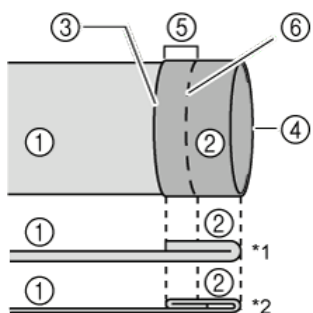
- ① Wrong side of fabric
- ② Right side of fabric
- ③ Lower edge of fabric

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
- *1 Thick fabric
- *2 Normal fabric

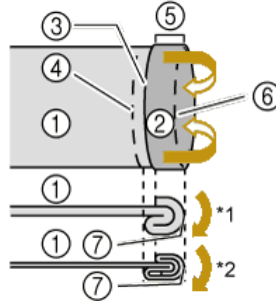
3 Using tailor's chalk, mark the fabric about 5 mm (approx. 3/16 inch) from the edge of the fabric, and then baste it.



- 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

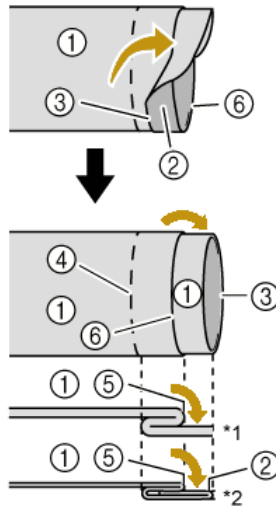
- *1 Thick fabric
- *2 Normal fabric

4 Fold back the fabric inside along the basting.



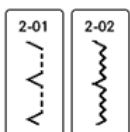
- ① Wrong side of fabric
- ② Right side of fabric
- ③ Lower edge of fabric
- ④ Desired length for hem
- ⑤ 5 mm (approx. 3/16 inch)
- ⑥ Basting
- ⑦ Basting point
- *1 Thick fabric
- *2 Normal fabric

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



- ① Wrong side of fabric
- ② Right side of fabric
- ③ Edge of fabric
- ④ Desired edge of hem
- ⑤ Basting point
- ⑥ Basting
- *1 Thick fabric
- *2 Normal fabric

6 Select from the stitches below.

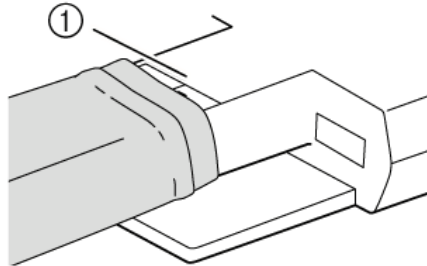


7 Attach blind stitch foot "R".



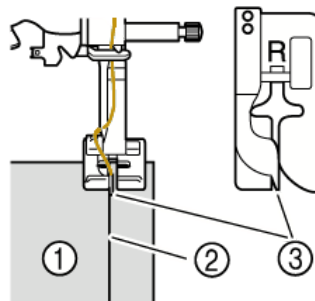
8 Remove the flat bed attachment to use the free arm.

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



① Free arm

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.



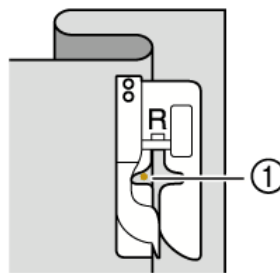
① Wrong side of fabric

② Fold of hem

③ Guide

11 Adjust the stitch width until the needle slightly catches the fold of the hem.

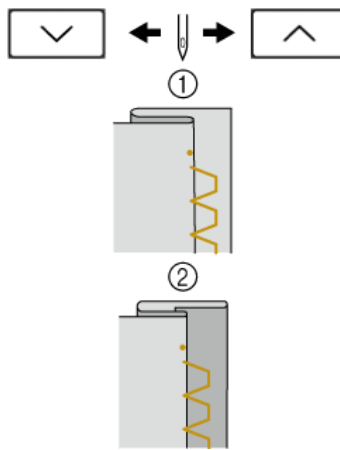
► [Stitch Width/Stitch Length/"L/R Shift"](#)



① Needle drop point

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





- ① Thick fabric
- ② Normal fabric

Memo

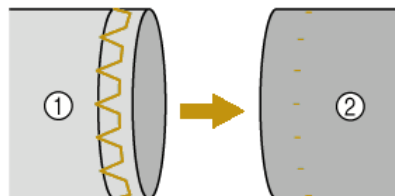
Blind hem stitches cannot be sewn if the left needle drop point does not catch the fold. If the needle catches too much of the fold, the fabric cannot be unfolded and the seam appearing on the right side of the fabric will be very large, leaving an unattractive finish.

- 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 back 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.**

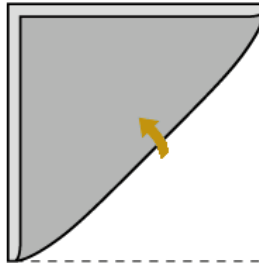


- ① Wrong side of fabric
- ② Right side of fabric

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.

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

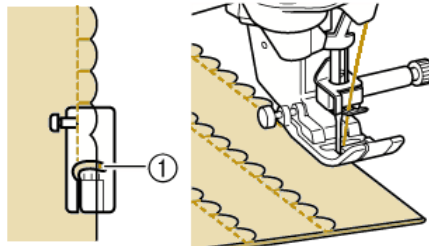


- 2 Select the stitch below.



- 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.

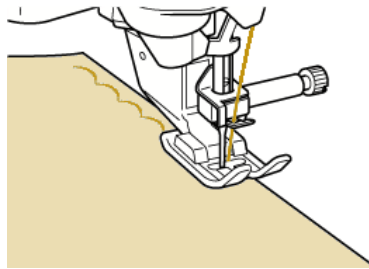
Scallop Stitches

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.

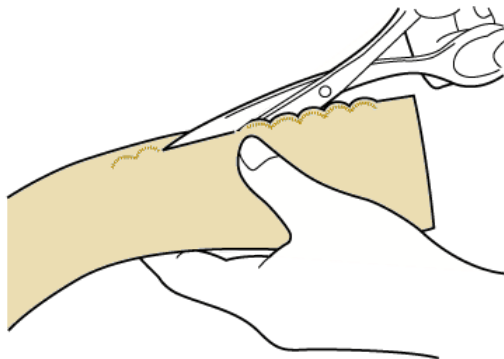
- 1 Select the stitch below.



- 2 Attach 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.

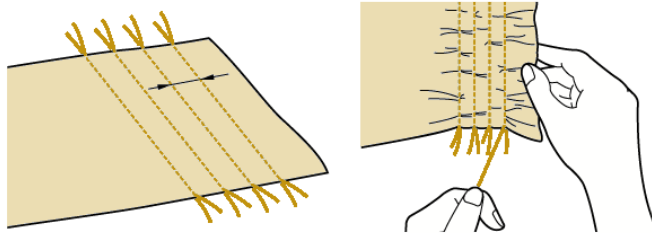
Smocking Stitches

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

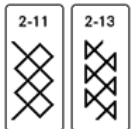
The smocking stitch adds texture and elasticity to fabric.

- 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.**

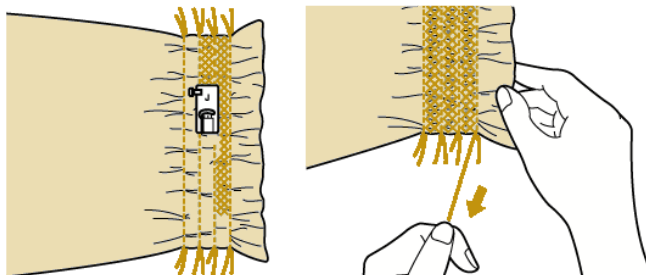
Smooth the gathers by ironing them.



- 4 **Select from the stitches below.**



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

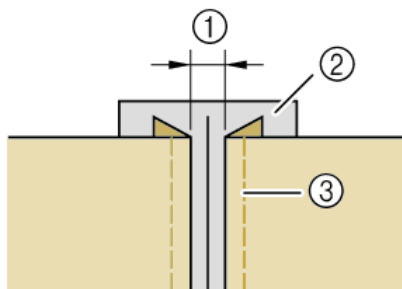


Fagoting

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.

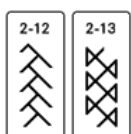
- 1 Use an iron to fold the two pieces of fabric along their seam lines.
- 2 Baste the two pieces of fabric, separated by about 4 mm (approx. 3/16 inch), onto thin paper or a sheet of water soluble stabilizer.

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

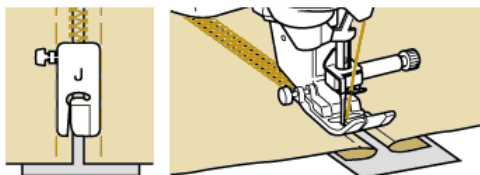


- ① About 4 mm (approx. 3/16 inch)
- ② Thin paper or water soluble stabilizer
- ③ Basting stitching

- 3 Select from the stitches below.



- 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 or water soluble stabilizer.

Attaching Tape or Elastic

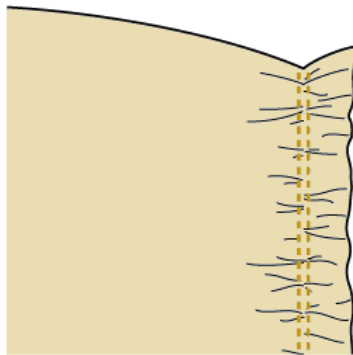
- 1 Select a straight stitch and attach presser foot “J”.
- 2 Set the stitch length to 4.0 mm (approx. 3/16 inch), and loosen the upper thread tension to 2.0.

▶ [Thread Tension](#)

Memo

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

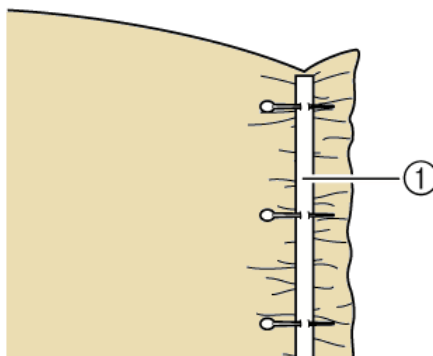
- 3 Sew two rows of straight stitches on the right side of the fabric, then pull the bobbin thread to create the necessary gather.



Memo

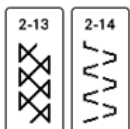
Before sewing the straight stitch, rotate the handwheel toward you (counterclockwise) and pull up the bobbin thread. Holding the top and bobbin thread, pull a length of thread out from the rear of the machine. (Be sure that the presser foot is raised.)

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

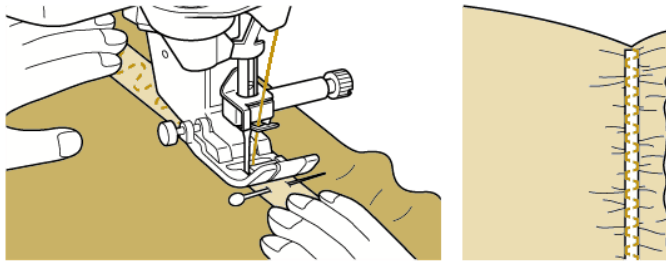


① Tape

- 5 Select from the stitches below.



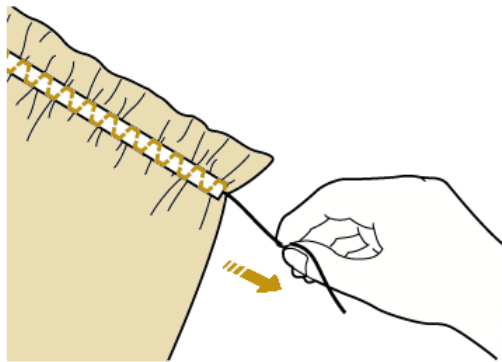
- 6 Sew over the tape (or elastic).



⚠ 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.



// Hemstitching (Daisy Stitch)

Use for sewing tablecloths, decorative hems, and decorative stitching on shirt fronts.

Memo

- Use a light to medium weight homespun fabric with a little stiffness.

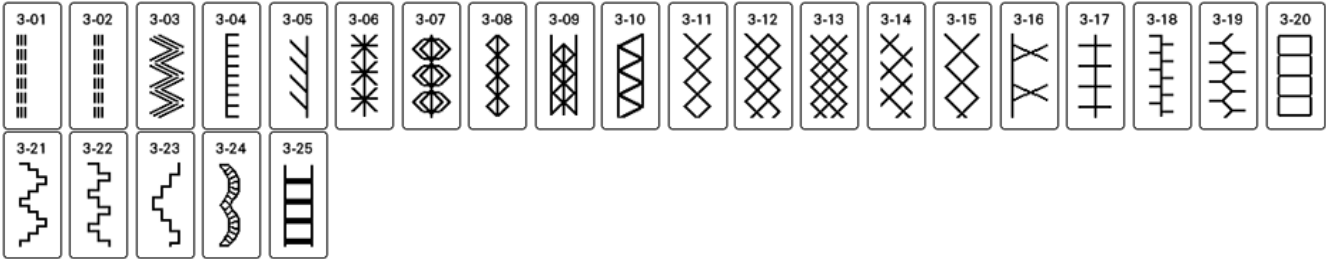
1 Insert a type 130/705H, size 100/16 Wing needle.

* This specialty sewing needle is not furnished with your machine. It must be purchased separately.

⚠CAUTION

- A more attractive finish can be obtained if you use a “130/705H Wing” needle when sewing these stitch patterns. If using a wing needle and the stitch width has been set manually, check that the needle will not touch the presser foot by carefully rotating the handwheel toward you (counterclockwise) before starting to sew.
- When sewing with the wing needle, select a stitch width of 6.0 mm (approx. 15/64 inch) or less, otherwise the needle may bend or break.

2 Select from the stitches below and attach monogramming foot “N”.



3 Start sewing.



Memo

Stiff, homespun fabric is recommended so that the wing needle can push the fibers apart to create heirloom effects.

Buttonholes

[One-Step Buttonholes](#)

[Four-Step Buttonholes](#)

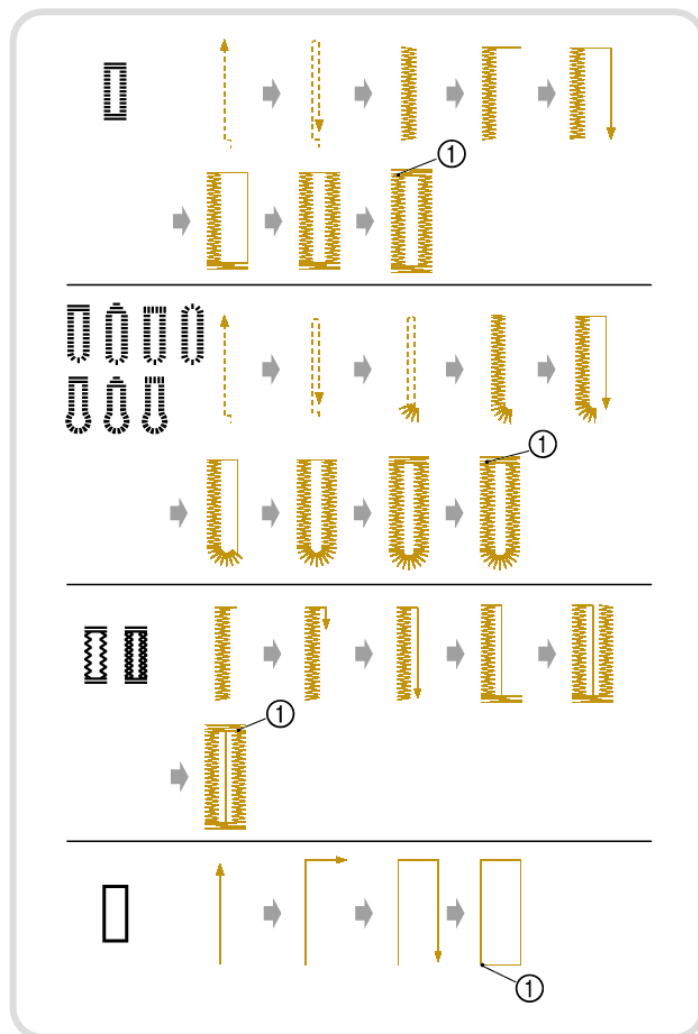
// One-Step Buttonholes

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

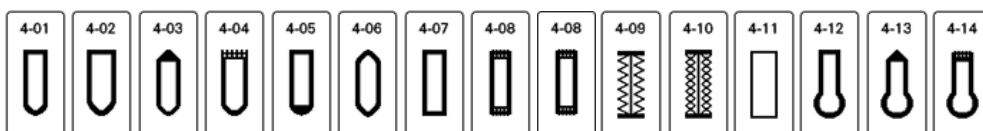
Before sewing a buttonhole, it is recommended to stabilize the fabric.



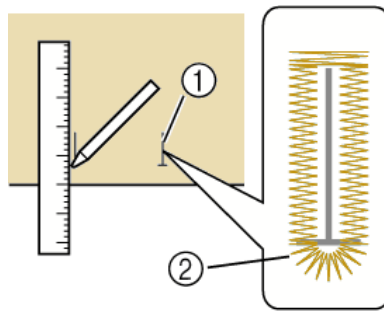
① Reinforcement stitching

1 Select from the stitches below, 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.

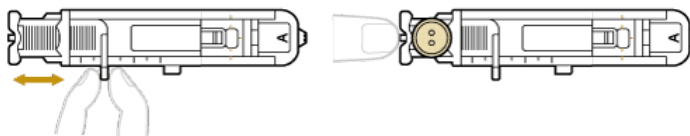


- ① Marks on fabric
- ② Buttonhole sewing

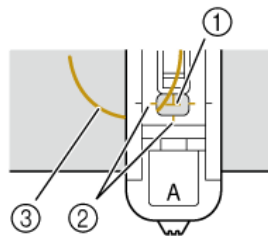
Memo

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

- 3 Pull out the button guide plate of buttonhole foot “A”, and then insert the button that will be put through the buttonhole.**

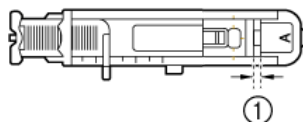
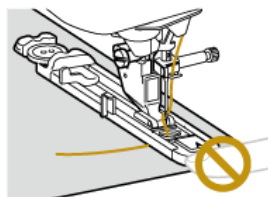


- 4 Position the fabric with the front end of the buttonhole mark aligned with the red marks on the sides of the buttonhole foot, and then lower the presser foot lever.**



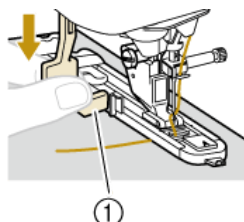
- ① Mark on fabric (front)
- ② Red marks on buttonhole foot
- ③ Upper thread

- When lowering the presser foot, do not push in the front of the presser foot.



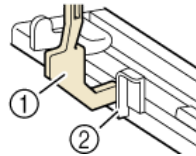
- ① Do not reduce the gap.

- 5 Pull down the buttonhole lever as far as possible.**



① Buttonhole lever

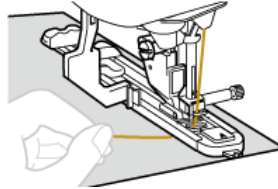
- The buttonhole lever is positioned behind the bracket on the buttonhole foot.



① Buttonhole lever

② Bracket

6 Gently hold the end of the upper thread in your left hand, and then start sewing.



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

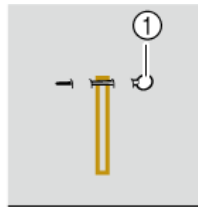
7 Press (Thread cutter button) once. Raise the presser foot, and then remove the fabric.

Memo

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

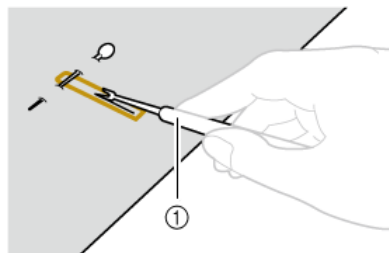
8 Raise the buttonhole lever to its original position.

9 Insert a pin along the inside of one bar tack at the end of the buttonhole stitching to prevent the stitching from being cut.



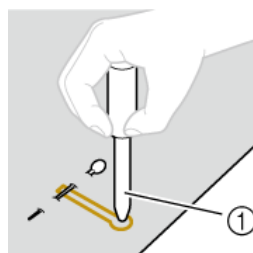
① Pin

10 Use the seam ripper to cut towards the pin and open the buttonhole.



① Seam ripper

For keyhole buttonholes, use the eyelet punch to make a hole in the rounded end of the buttonhole, and then use the seam ripper to cut open the buttonhole.



① Eyelet punch

- When using the eyelet punch, place thick paper or some other protective sheet under the fabric before punching the hole in the fabric.

⚠ 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.

[Sewing Buttonholes on Stretch Fabrics](#)

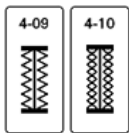
[Odd Shaped Buttons/Buttons that Do Not Fit into the Button Holder Plate](#)

■ Sewing Buttonholes on Stretch Fabrics

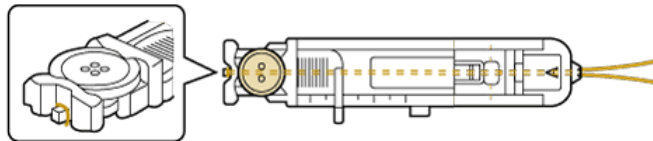
Note

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

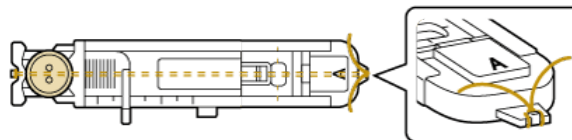
When sewing on stretch fabric with stitch 4-09 or 4-10, sew the buttonhole stitches over a gimp thread.



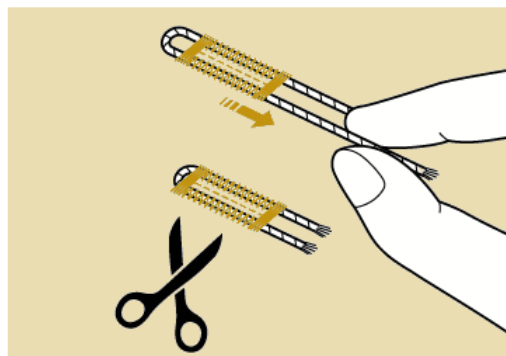
- 1 Hook the gimp thread onto the part of buttonhole foot “A” shown in the illustration.



- 2 It fits into the grooves, and then loosely tie it.

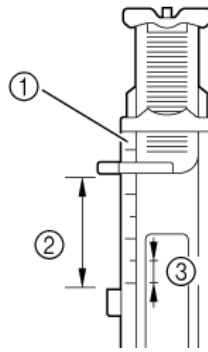


- 3 Adjust the stitch width to the thickness of the gimp thread.
- 4 Lower the presser foot lever and the buttonhole lever, and then start sewing.
- 5 Once sewing is completed, gently pull the gimp thread to remove any slack, and trim off any excess.

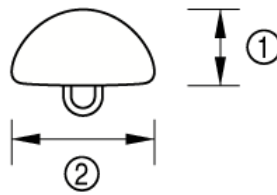


■ Odd Shaped Buttons/Buttons that Do Not Fit into the Button Holder Plate

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 Length of buttonhole (diameter + thickness of button)
- ③ 5 mm (approx. 3/16 inch)



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

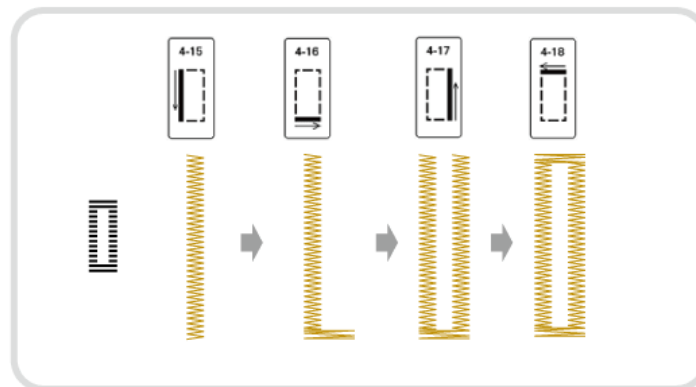
// Four-Step Buttonholes

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.

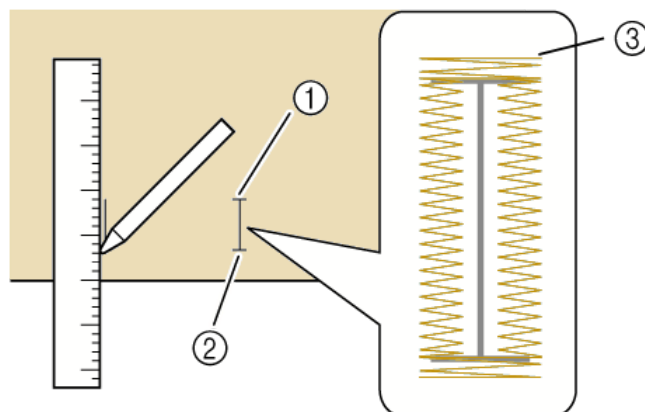
Note

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.

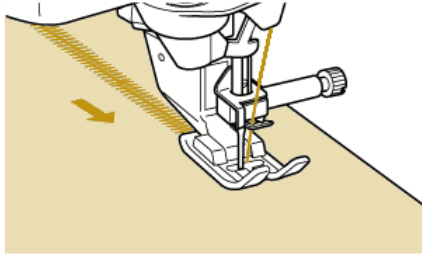


- ① Starting point
- ② End point
- ③ Buttonhole sewing

- 2 Attach monogramming foot “N”, and select the stitch below 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.

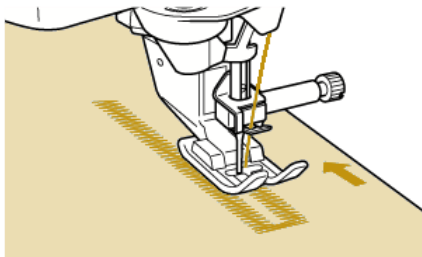


- 5** Select the stitch below to sew the bar tack and press the “Start/Stop” button.



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

- 6** Select the stitch below 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 the stitch below 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.

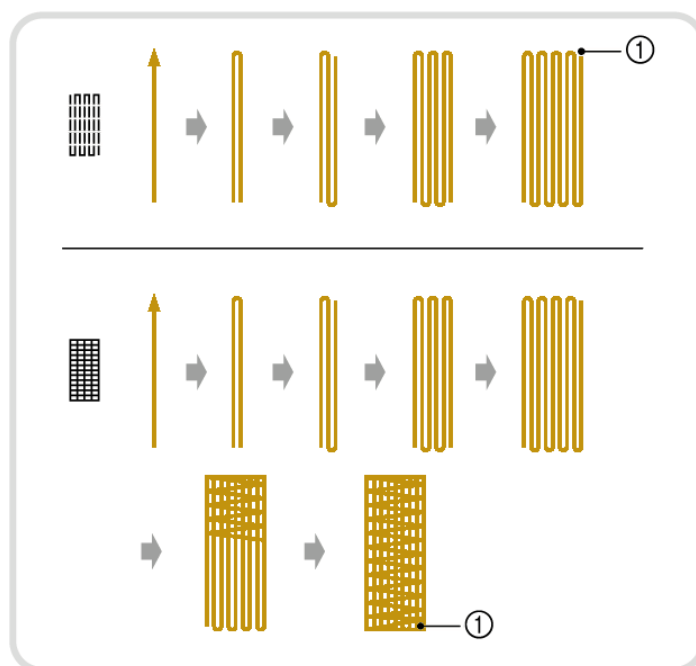
- 9** Raise the presser foot and remove the fabric.

- 10** Open the buttonhole.

► [One-Step Buttonholes](#)

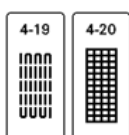
Darning

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

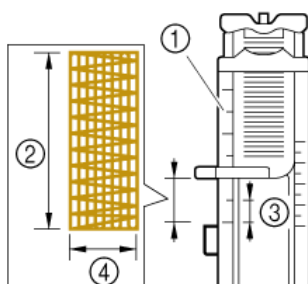
1 Select the stitch below, and attach buttonhole foot “A”.



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 Determine the desired length of the darning.

Set the button guide plate on buttonhole foot “A” to the desired length. (The distance between the markings on the presser foot scale is 5 mm (approx. 3/16 inch).)



① Presser foot scale

② Length of darning

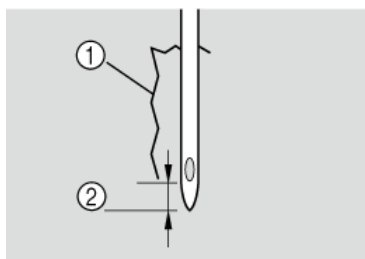
③ 5 mm (approx. 3/16 inch)

④ 7 mm (approx. 1/4 inch)

* Darning can be sewn with a maximum length of about 28 mm (approx. 1-1/8 inches).

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

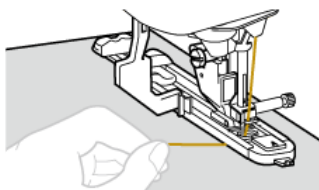
3 Position the fabric so that the needle is 2 mm (approx. 1/16 inch) in front of the area to be darned, and then lower the presser foot.



① Tear

② 2 mm (approx. 1/16 inch)

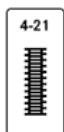
- 4 Pull down the buttonhole lever as far as possible.**
- 5 Gently hold the end of the upper thread in your left hand, and then start sewing.**
- 6 After sewing is finished, raise the presser foot lever, remove the fabric, and then cut the threads.**
- 7 Raise the buttonhole lever to its original position.**



Bar Tacks

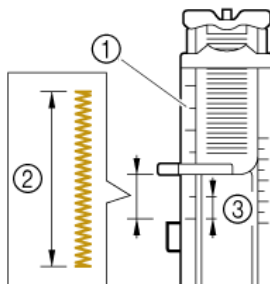
Use bar tacks to reinforce areas that will be subject to strain, such as pocket corners.

- 1 Select the stitch below.



- 2 Determine the desired length of the bar tack.

Set the button guide plate on buttonhole foot "A" to the desired length. (The distance between the markings on the presser foot scale is 5 mm (approx. 3/16 inch).)



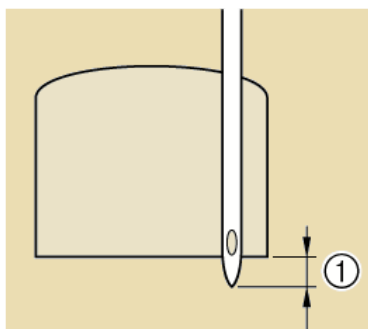
- ① Presser foot scale
- ② Length of bar tack
- ③ 5 mm (approx. 3/16 inch)

* A bar tack can be sewn with a maximum length of about 28 mm (approx. 1-1/8 inches).

- 3 Attach buttonhole foot "A".

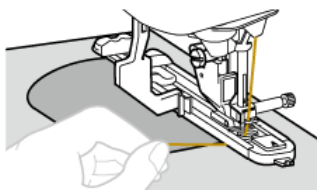
Position the upper thread under the presser foot by guiding thread through the hole in the presser foot before attaching the buttonhole foot "A".

- 4 Position the fabric so that the opening of the pocket faces toward you, and then lower the presser foot lever so that the needle drops 2 mm (approx. 1/16 inch) in front of the pocket opening.



- ① 2 mm (approx. 1/16 inch)

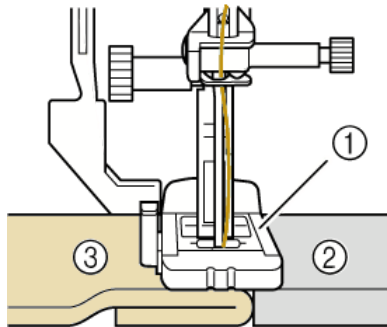
- 5 Pull down the buttonhole lever as far as possible.
- 6 Gently hold the end of the upper thread in your left hand, and then start sewing.



- 7 After sewing is finished, raise the presser foot lever, remove the fabric, and then cut the threads.
- 8 Raise the buttonhole lever to its original position.

// 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.

Note

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

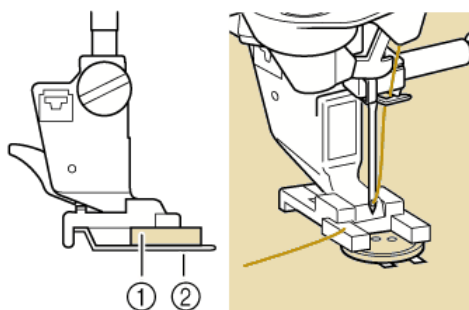
1 Select the stitch below.



→ The feed dogs are lowered automatically.

2 Raise the presser foot.

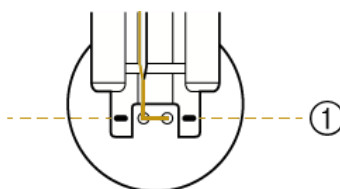
3 Attach button fitting foot “M”, slide the button along the metal plate and into the presser foot, and lower the presser foot.



① Button

② Metal plate

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



① Align the buttonholes with the marks on button fitting foot “M”.

* 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.

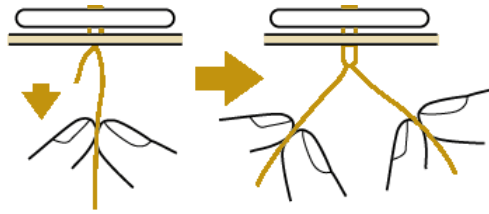
→ The machine stops automatically when sewing is finished.

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.



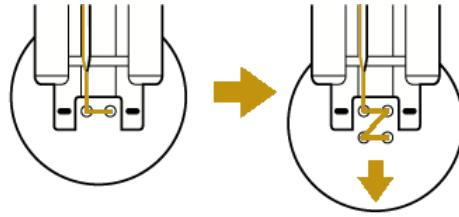
- 7** After the button is attached and the button is no longer in the button fitting foot “M”, select another stitch and rotate the handwheel toward you (counterclockwise) to raise the feed dogs.

[Attaching 4-Hole Buttons](#)

[Attaching a Shank to the Button](#)

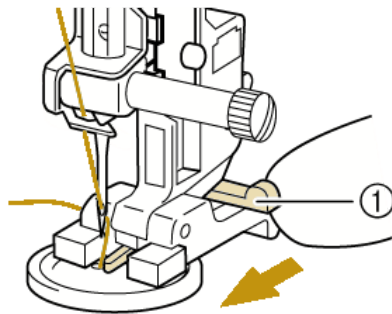
// Attaching 4-Hole Buttons

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.



① Shank lever

- 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.

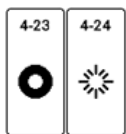


- 3 Tie the ends of the bobbin thread from the beginning and end of sewing together on the wrong side of the fabric.
- 4 Cut off any excess thread.

Eyelet

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

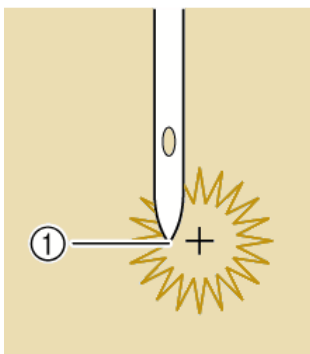
- 1 Select from the stitches below.



- 2 Use   in either the stitch width display or the stitch length display to choose the size of the eyelet.

▶ [Stitch Width/Stitch Length/"L/R Shift"](#)

- 3 Attach the monogramming foot "N", then rotate the handwheel toward you (counterclockwise) to check the needle drop point.

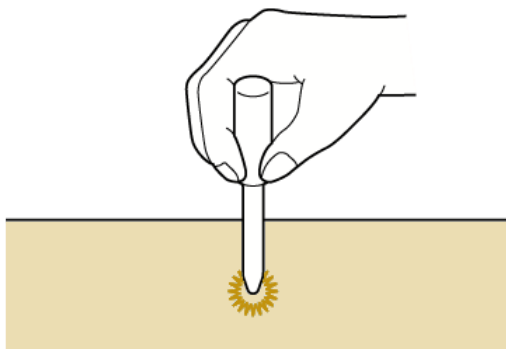


① Needle drop point

- 4 Lower the presser foot and start sewing.

→ When sewing is finished, the machine sews reinforcement stitches and stops automatically.

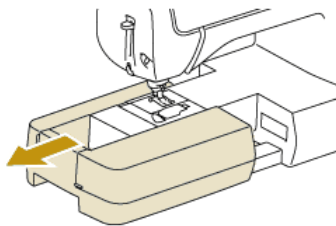
- 5 Use the eyelet punch to make a hole in the center of the stitching.



Multi-directional Sewing (Straight Stitch and Zigzag Stitch)

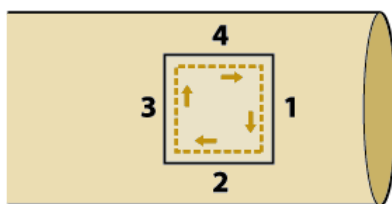
Use these stitch patterns to attach patches or emblems to pant legs, shirt sleeves, etc.

- 1 Remove the flat bed attachment to use the free-arm.



Memo

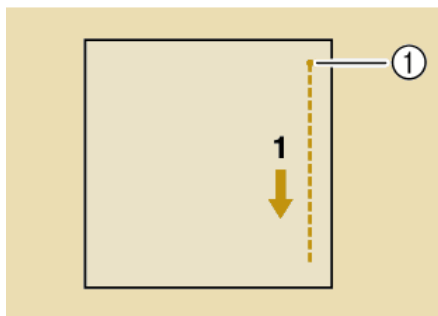
Insert the tubular piece of fabric onto the free-arm, and then sew in the order shown in the illustration.



- 2 Select the stitch below and attach the monogramming foot “N”.

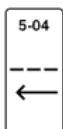


- 3 Set the needle in the fabric at the sewing start point, and sew seam “1” as shown.

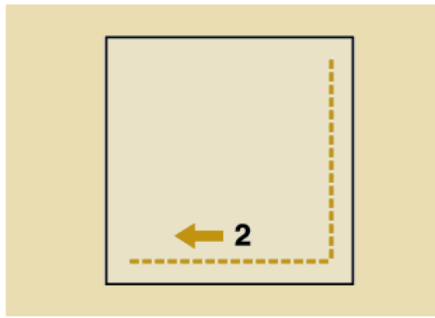


① Start Point

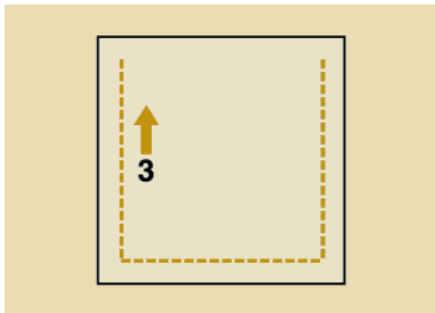
- 4 Select the stitch below and sew seam “2” as shown.



* The fabric will move sideways, guide the fabric by hand to keep sewing straight.

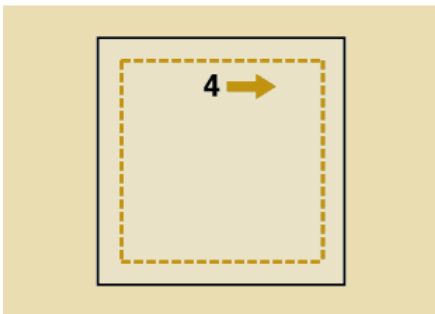
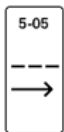


5 Select the stitch below and sew seam “3” as shown.



→ The fabric feeds forward while stitching backward.

6 Select the stitch below and sew seam “4” as shown.



→ The seam will be connected to the starting point of seam 1.

Zipper Insertion

[Centered Zipper](#)

[Inserting a Side Zipper](#)

// Centered Zipper

Use for bags and other such applications.

Note

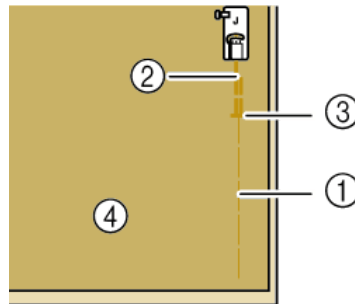
Make sure you sew using the middle needle position.

- 1 Select the stitch below.



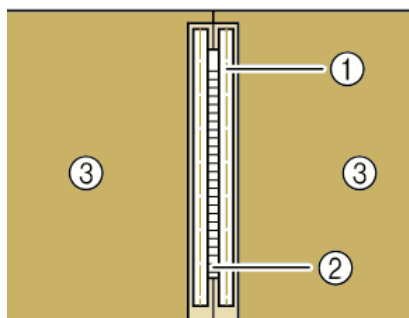
- 2 Attach presser foot “J” and sew straight stitches up to the zipper opening. Change to a basting stitch and sew to the top of the fabric.

> [Basting](#)



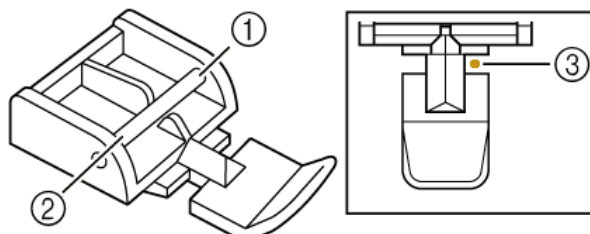
- ① Basting stitches
- ② Reverse stitches
- ③ End of zipper opening
- ④ Wrong side

- 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.

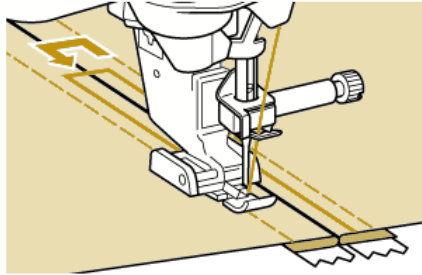


- ① Right
- ② Left
- ③ Needle drop point

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.

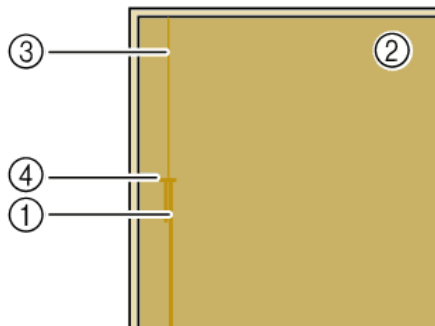
1 Select the stitch below.



Note

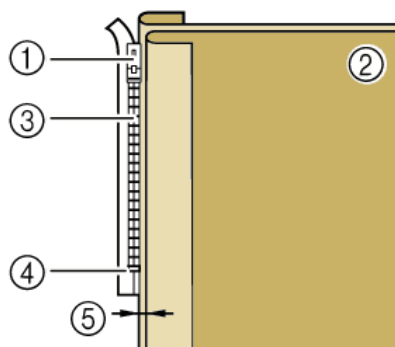
Make sure you sew using the middle needle position.

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

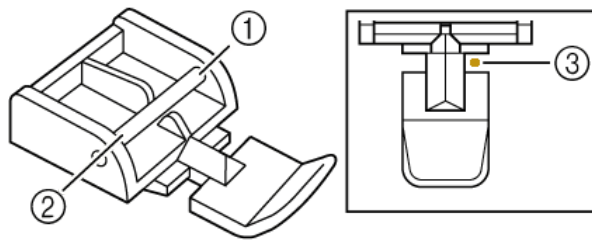
3 Press the seam allowance open and align the folded hem along the teeth of the zipper, while maintaining 3 mm (approx. 1/8 inch) of sewing space.



- 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 “I” with the presser foot holder, and attach the presser foot.



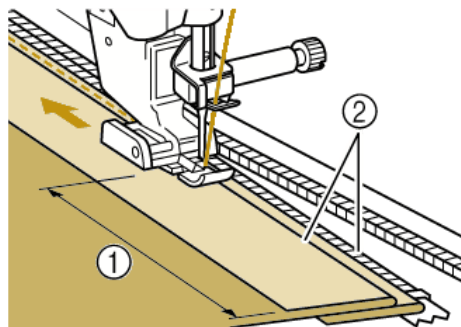
- ① Right
- ② Left
- ③ Needle drop point

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 with the needle lowered.

8 Pull down the zipper slider, then continue sewing to the edge of the fabric.

Raise the presser foot to allow the zipper pull to pass under the zipper presser foot.

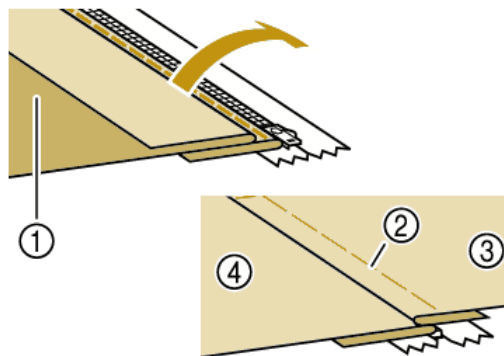


- ① About 5 cm (approx. 2 inches)
- ② 3 mm (approx. 1/8 inch)

⚠ 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.

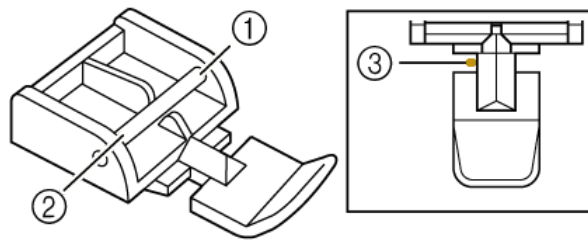
9 Close the zipper, turn the fabric over, and sew a basting stitch.



- 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)

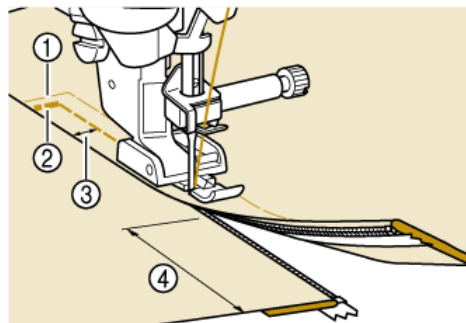
10 Remove the presser foot, and reattach it so that the left side of the pin is attached to the presser foot holder.

* 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

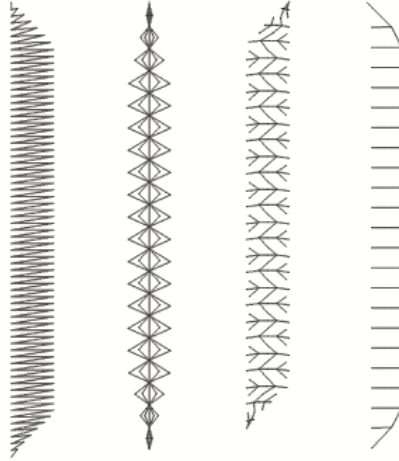
- 11** Set the fabric so that the left edge of the presser foot touches the edge of the zipper teeth.
- 12** Sew reverse stitches at the bottom of the zipper, then continue sewing.
- 13** Stop sewing about 5 cm (approx. 2 inches) from the edge of the fabric, leave the needle in the fabric, and remove 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)

Stitch Tapering Function (Changing the Start and End Angles of the Stitch Pattern)

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 appliqués, 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
➤ [Method 1: Begin Changing the Angle at the End of Sewing by Pressing the “Reverse Stitch” Button](#)
- Method 2: Sewing a Specified Number of Stitch Patterns
➤ [Method 2: Sewing a Specified Number of Stitch Patterns](#)

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](#)

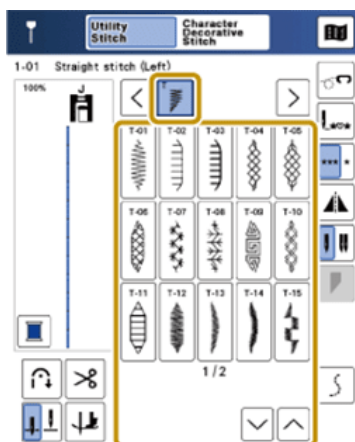
[Method 2: Sewing a Specified Number of Stitch Patterns](#)

[Saving Settings](#)

[Retrieving Saved Settings](#)

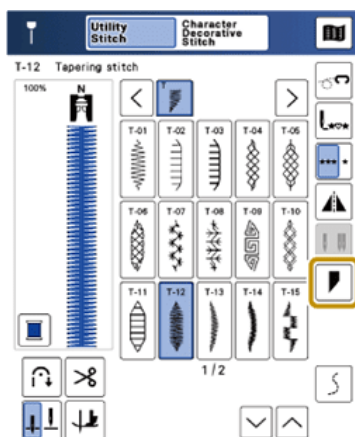
// Method 1: Begin Changing the Angle at the End of Sewing by Pressing the “Reverse Stitch” Button

- 1 Touch **Utility Stitch**, then , and then select a stitch pattern for stitch tapering.



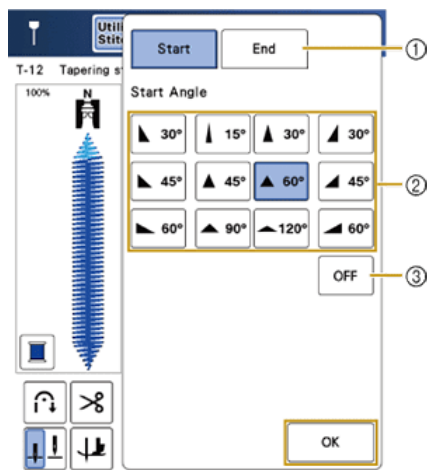
- 2 If necessary, change the stitch width and stitch length.

- 3 Touch .



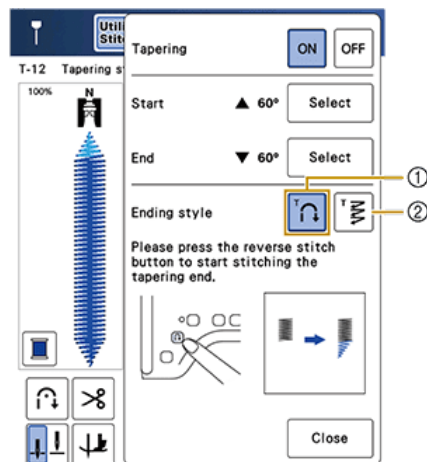
- 4 Touch [Select], select the angle settings for the start and end of sewing, and then touch [OK].





- 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 stitch patterns that are specified includes the number of patterns used to change the angle.

➤ [Method 2: Sewing a Specified Number of Stitch Patterns](#)

- 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 Close.

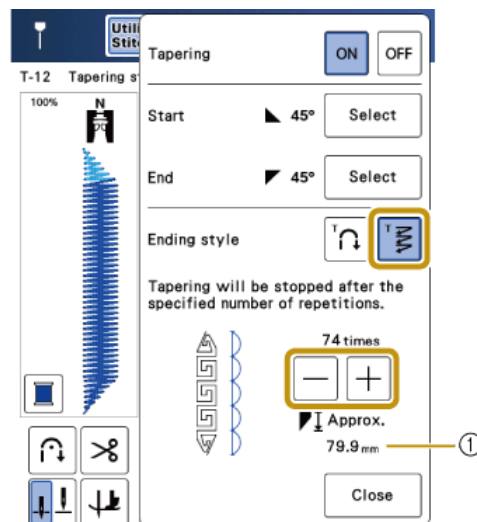
// Method 2: Sewing a Specified Number of Stitch Patterns

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” to select the angle settings for the start and end of sewing.

➤ [Method 1: Begin Changing the Angle at the End of Sewing by Pressing the “Reverse Stitch” Button](#)

- 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 length of the stitches may differ depending on the selected stitch pattern and the angle. Specify the number of repetitions for each stitch pattern and perform trial sewing to check the result.

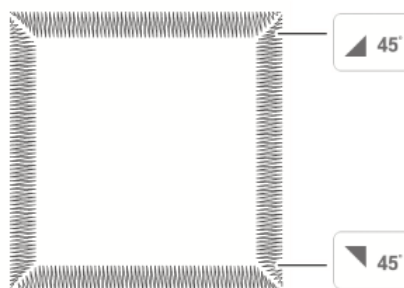
- 3 **Start sewing.**

→ 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.

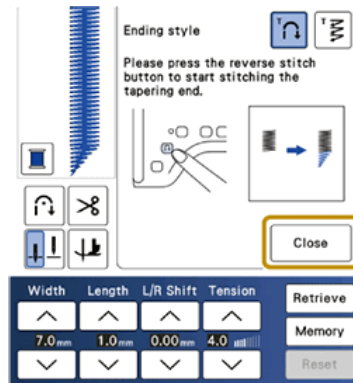
➤ [Pivoting](#)



// 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 [Close].

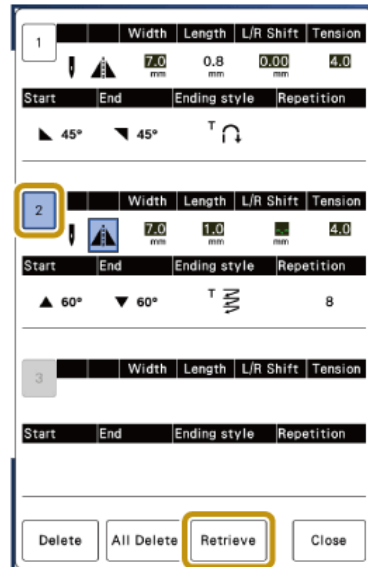


- 2 Touch **Memory**.

// Retrieving Saved Settings

- 1 Touch **Retrieve** to retrieve the saved setting after selecting a stitch pattern.
- 2 Touch the numbered key of the settings to be retrieved and then touch **Retrieve**.

* The settings cannot be retrieved if stitch tapering function is set to [ON].



Memo

For more information on saving and retrieving settings, refer to the following link.

> [Saving Your Stitch Settings](#)

Character/Decorative Stitches

[Sewing Decorative Stitch Patterns](#)

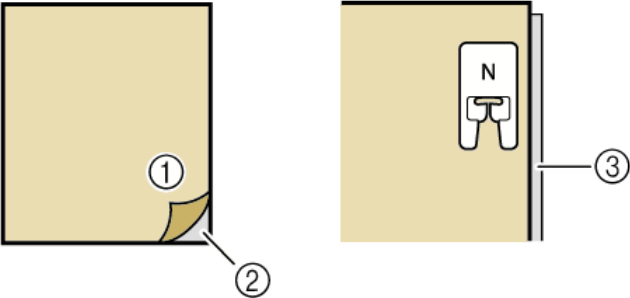
[Combining Stitch Patterns](#)

[Making Adjustments](#)

[Making Step Stitch Patterns \(for 7mm Satin Stitch Patterns Only\)](#)

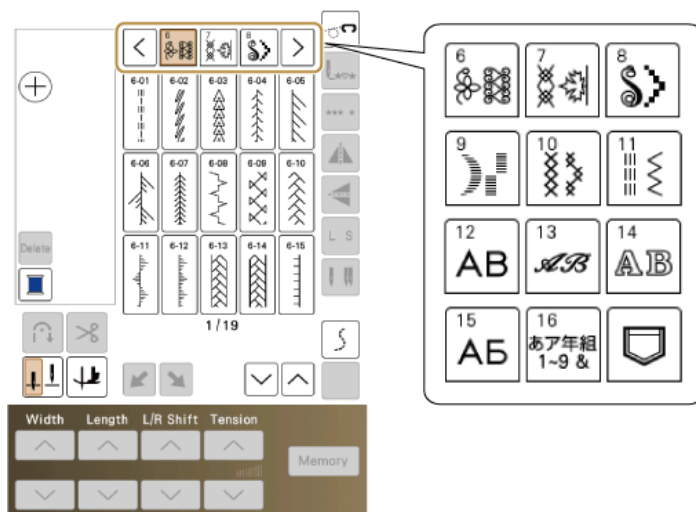
[Using the Memory Function](#)

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	Monogramming foot "N". Using another presser foot may give inferior results.

Combining Stitch Patterns

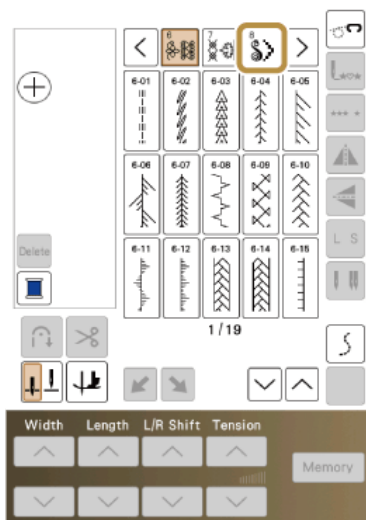
Stitch patterns from the following categories can be combined.



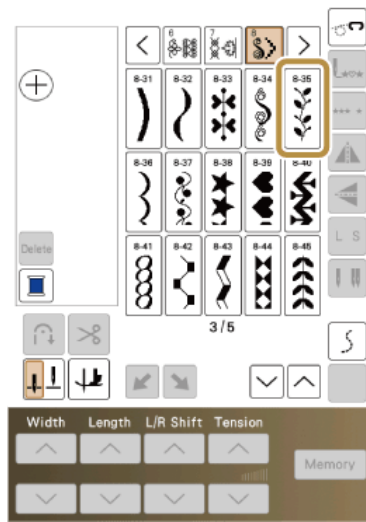
Example:



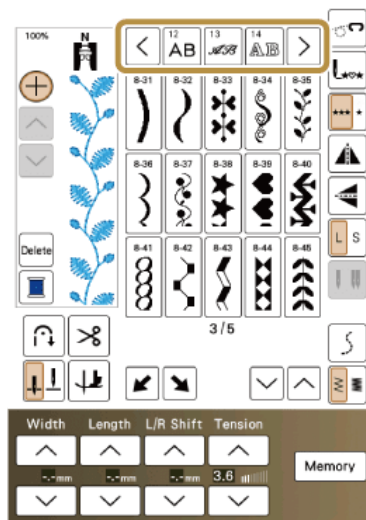
1 Touch .



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



- 3 Touch  so that it displays .
- 4 Select a font.



- 5 Enter characters.
 -   : Move the position where a new stitch pattern will be entered.
 -  : Delete the selected stitch pattern.
 -  : Enter a space.

- 6 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](#)

// Inserting Stitch Patterns

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



- 2 Select a new stitch pattern.



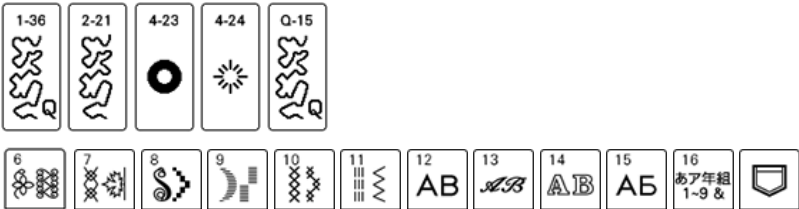
→ The new stitch pattern is added immediately after the stitch pattern selected in step [1](#).

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

This adjustment can be made to 1-36 Quilting stippling stitch, 2-21 Decorative stippling stitch, 4-23 Eyelet stitch, 4-24 Star eyelet stitch, Q-15 Quilting stippling stitch and stitch patterns from the following categories.



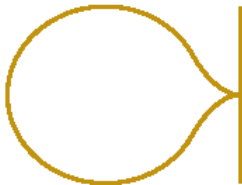
1 Touch  and select stitch (6-268).



2 Attach the monogramming foot “N” and sew the stitch pattern.

Be sure to use the 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.



Problem	Solution
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.
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.

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.
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 [OK] 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.

Example:



- 1 Select stitch (9-11).



- 2 Touch  so that it displays .

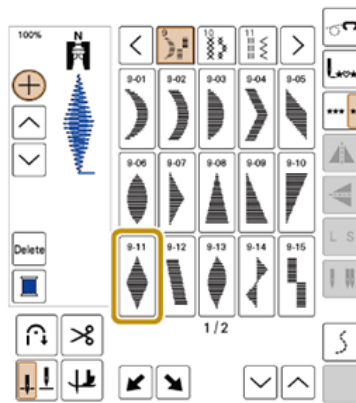
- 3 Touch .



→ The next stitch pattern will move to the right.

- 4 Select stitch (9-11) again.



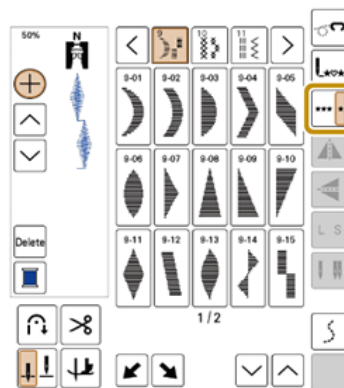


5 Touch .

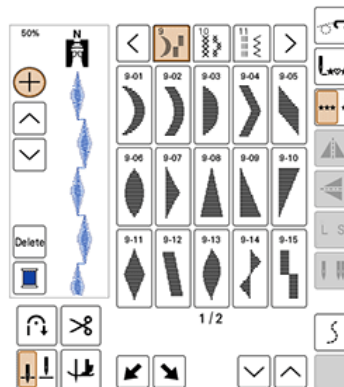


→ The next stitch pattern will move to the left.

6 Touch .



→ The entered stitch pattern is repeated.



Using the Memory Function

[Saving Stitch Patterns](#)

[Retrieving Stitch Patterns](#)

// Saving Stitch Patterns

You can save stitch patterns that you have customized in the machine's memory or USB media.

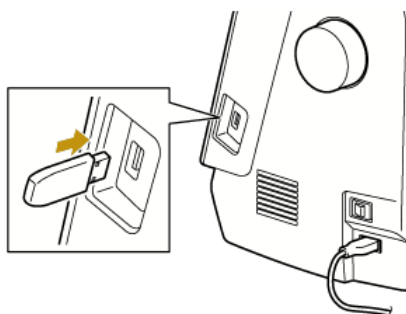
Note

Do not turn the main power to OFF while the [Saving...] screen is displayed. You will lose the stitch pattern you are saving.

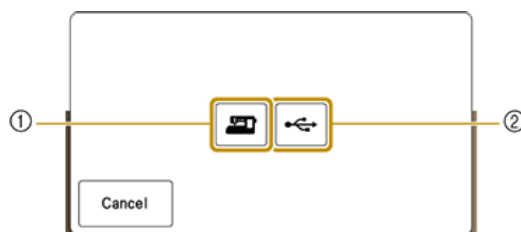
- 1 Touch **Memory**.



- 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.

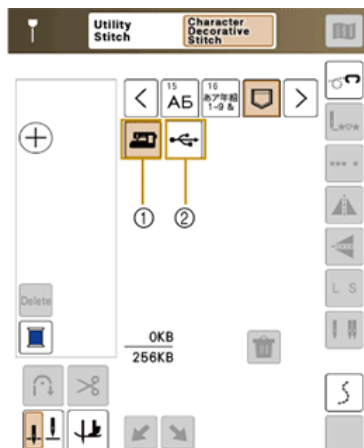


- ① Save to the machine's memory.
- ② Save to the USB media. The stitch pattern is saved in a folder labeled [bPocket].

// Retrieving Stitch Patterns

Retrieve stitch patterns saved in the machine's memory or USB media.

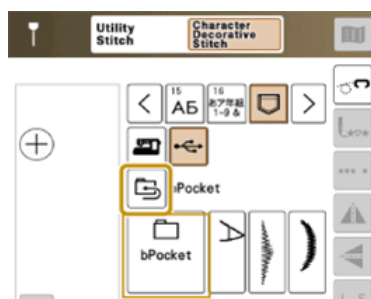
- 1 When retrieving stitch patterns from a USB media, insert the USB media into the USB port on the machine.
- 2 Touch  and select the desired destination.



- 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.

Memo

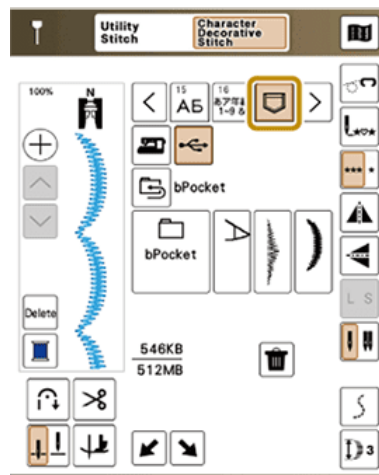
- If the stitch pattern to be retrieved is in a folder of the USB media, touch the key for that folder. Touch  to return to the previous screen.



- Folders in the USB media cannot be created with the machine.
- For details on supported file extensions, refer to the following link.

[> Specifications](#)

- 3 Select the desired stitch pattern.



Note

When you touch , the selected stitch pattern will be deleted permanently.

Basic Embroidery

[Embroidery Step by Step](#)

[Attaching Embroidery Foot](#)

[Attaching the Embroidery Unit](#)

[Preparing the Fabric](#)

[Attaching the Embroidery Frame](#)

[Selecting Patterns](#)

[Editing Patterns](#)

[Confirming the Pattern Position](#)

[Embroidering a Pattern](#)

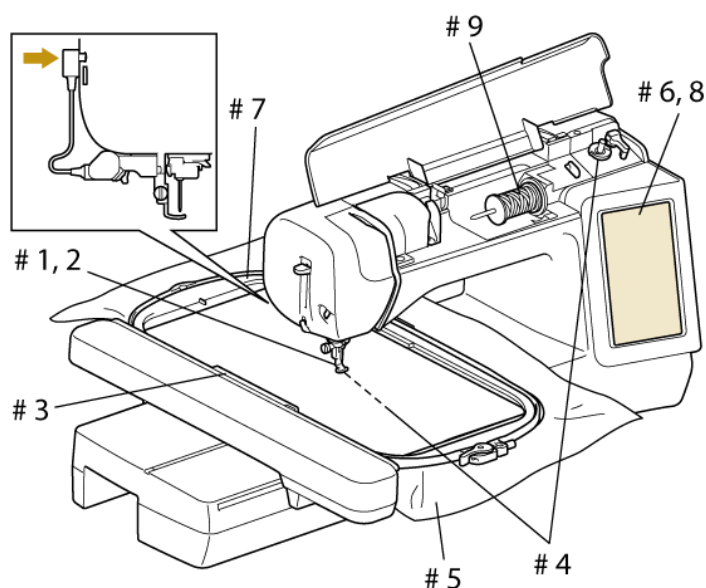
[Adjustments During the Embroidery Process](#)

[Making Embroidery Adjustments](#)

[Using the Memory Function](#)

Embroidery Step by Step

Follow the steps below to prepare the machine for embroidery.



Step #	Aim	Action	Reference
1	Presser foot attachment	Attach embroidery foot "UH+" with LED pointer.	> Attaching Embroidery Foot
2	Checking the needle	Use needle 75/11 for embroidery.	> Changing the Needle
3	Embroidery unit attachment	Attach the embroidery unit.	> Attaching the Embroidery Unit
4	Bobbin thread setup	For the bobbin thread, wind embroidery bobbin thread and set it in place.	> Winding/Installing the Bobbin
5	Fabric preparation	Attach a stabilizer material to the fabric, and hoop it in the embroidery frame.	> Preparing the Fabric
6	Pattern selection	Turn the main power to ON, and select an embroidery pattern.	> Selecting Patterns
7	Embroidery frame attachment	Attach the embroidery frame to the embroidery unit.	> Attaching the Embroidery Frame
8	Checking the layout	Check and adjust the size and position of the embroidery.	> Confirming the Pattern Position
9	Embroidery upper thread setup	Set up embroidery upper thread according to the pattern.	> Upper Threading

Attaching Embroidery Foot

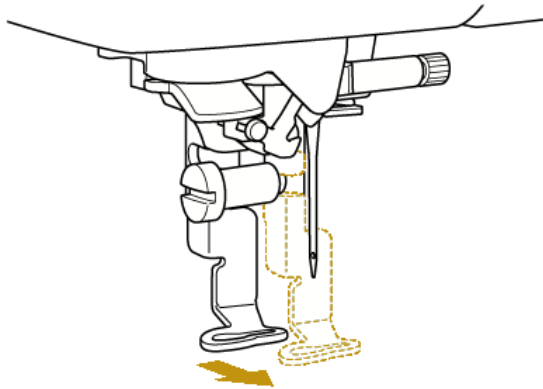
⚠ CAUTION

- When attaching an embroidery foot, always touch  on the screen. You may accidentally press the “Start/Stop” button and possibly cause injury.
- Be sure to use the embroidery foot “UH” or embroidery foot “UH+” with LED pointer when doing embroidery. Using another embroidery foot may cause the needle to strike the embroidery foot, causing the needle to break and possibly causing injury.

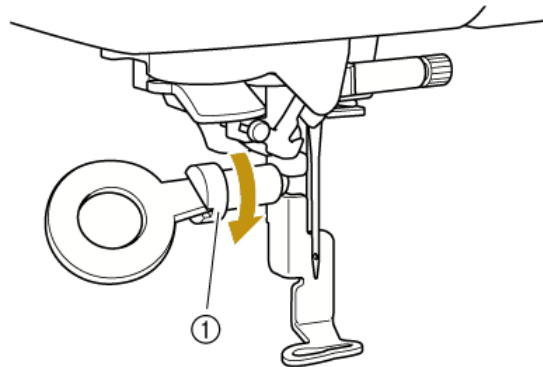
- 1 Remove the presser foot and presser foot holder.

➤ [Removing/Attaching the Presser Foot Holder](#)

- 2 Position the embroidery foot “UH+” with LED pointer on the presser foot bar by aligning the notch of the presser foot to the presser foot holder screw.



- 3 Hold the embroidery foot in place with your right hand, and then use the disc-shaped screwdriver to securely tighten the presser foot holder screw.

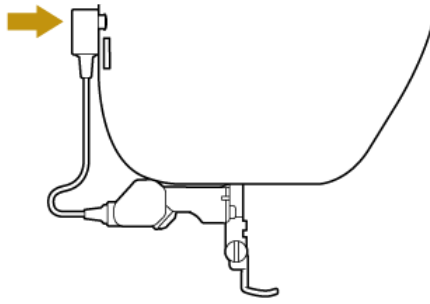


① Presser foot holder screw

⚠ CAUTION

Use the disc-shaped screwdriver to firmly tighten the presser foot holder screw. If the screw is loose, the needle may strike the embroidery foot and break, possibly cause injury.

- 4 Plug the connector of the embroidery foot “UH+” with LED pointer into the jack on the back left side of your machine.



- 5** Touch  to unlock all keys and buttons.
→ All keys and operation buttons are unlocked, and the previous screen is displayed.

Attaching the Embroidery Unit

⚠ CAUTION

Do not move the machine with the embroidery unit attached. The embroidery unit could fall off and cause injury.

IMPORTANT

- Keep your hands and foreign objects away from the embroidery carriage and frame when the machine is embroidering. Damage or malfunction may result.
- Be sure to turn off the power before attaching or removing the embroidery unit. Otherwise, the machine may be damaged.
- Do not touch the inner connector of the embroidery unit. The pins on the embroidery unit connection may be damaged.
- Do not apply strong force to the embroidery unit carriage or pick up the unit by the carriage. Otherwise, the embroidery unit may be damaged.
- Do not push on the carriage when attaching the embroidery unit onto the machine. Moving the carriage may damage the embroidery unit.
- Make sure that there is enough space for the carriage of the embroidery unit to move. If the embroidery frame comes into contact with an object, the pattern may not be embroidered correctly, or damage may result.
- Do not touch the embroidery carriage until the initialization finishes.

Note

- To avoid distorting your embroidery design, do not touch the embroidery carriage and frame when the machine is embroidering.
- Store the embroidery unit in a safe place to prevent damage to the unit.

Memo

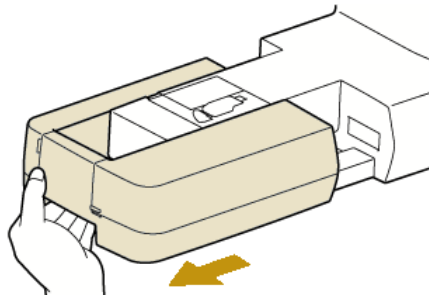
You can also sew utility/decorative stitches with the embroidery unit attached. Touch  and . The feed dogs will automatically raise for utility and decorative stitching.

[Attaching the Embroidery Unit](#)

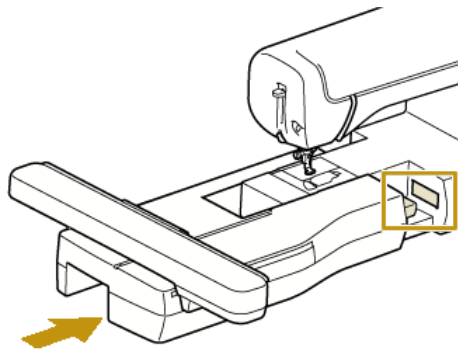
[Removing the Embroidery Unit](#)

■ Attaching the Embroidery Unit

- 1 Turn the main power to OFF, and remove the flat bed attachment.



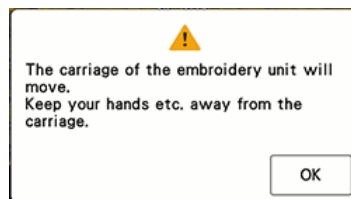
- 2 Insert the embroidery unit connection into the connection port of the machine until it snaps into place.



Note

Be sure there is no gap between the embroidery unit and the machine. If there is a gap, the embroidery patterns will not embroider with the correct registration.

- 3 Turn the main power to ON.
→ The following message will appear.



- 4 Touch [OK].
→ The carriage will move to the initialization position.

■ Removing the Embroidery Unit

- 1 Remove the embroidery frame.
 - For details on removing the embroidery frame, refer to “Removing the Embroidery Frame”.

➤ [Removing the Embroidery Frame](#)

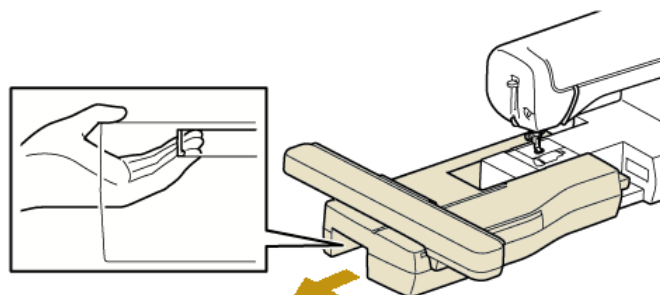
- 2 Touch .

→ The carriage will move to the removal position.

- 3 Touch , then touch [OK].

- 4 Turn the main power to OFF.

- 5 Pull the release lever, and pull the embroidery unit away from the machine.



Preparing the Fabric

CAUTION

Use fabrics with a thickness of less than 2 mm (approx. 1/16 inch). Using fabrics thicker than 2 mm (approx. 1/16 inch) may cause the needle to break and cause injury.

Memo

- When using layers with thicker batting etc., you can embroider more attractive finishes by adjusting the embroidery presser foot height in the embroidery settings screen.

Touch , and use  and  in the [Embroidery Foot Height] in the embroidery settings screen. Adjust the presser foot height for thick or puffy fabrics.



- To increase the space between the embroidery foot and the needle plate, set the [Embroidery Foot Height] to a larger number.
- In the case of thick terry cloth towels, we recommend that you place a piece of water soluble stabilizer on the top surface of the towel. This will help to reduce the nap of the toweling and result in more attractive embroidery.

[Attaching Iron-on Stabilizers \(Backing\) to the Fabric](#)

[Hooping the Fabric in the Embroidery Frame](#)

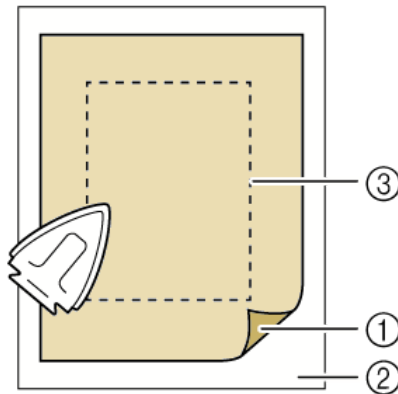
// Attaching Iron-on Stabilizers (Backing) to the Fabric

⚠ CAUTION

Always use a stabilizer material for embroidery when embroidering on stretch fabrics, lightweight fabrics, fabrics with a coarse weave, or fabrics which cause pattern shrinkage. Otherwise, the needle may break and cause injury.

1 Iron the iron-on stabilizer material to the wrong side of the fabric.

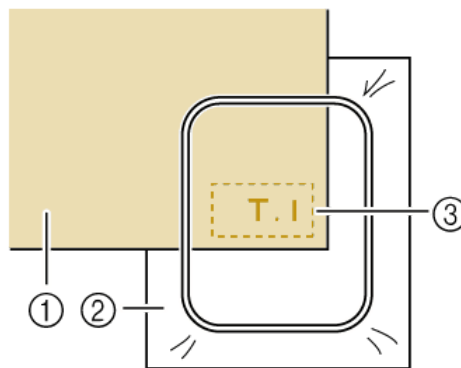
- Use a piece of stabilizer which is larger than the embroidery frame being used.



- ① Fusible side of stabilizer
- ② Fabric (wrong side)
- ③ Size of the embroidery frame

Memo

- When embroidering small pieces of fabric that cannot be hooped in an embroidery frame, use stabilizer material as a base. After lightly ironing the fabric to the stabilizer material, hoop it in the embroidery frame. If stabilizer material cannot be ironed onto the fabric, attach it with a basting stitch. After completing the embroidery, remove the stabilizer material carefully.



- ① Fabric
- ② Stabilizer
- ③ Basting

- When embroidering on thin fabrics such as organdy or lawn, or on napped fabrics such as towel or corduroy, use water soluble stabilizer (sold separately) for best results. The water soluble stabilizer material will dissolve completely in water, giving the project a more attractive finish.

// Hooping the Fabric in the Embroidery Frame

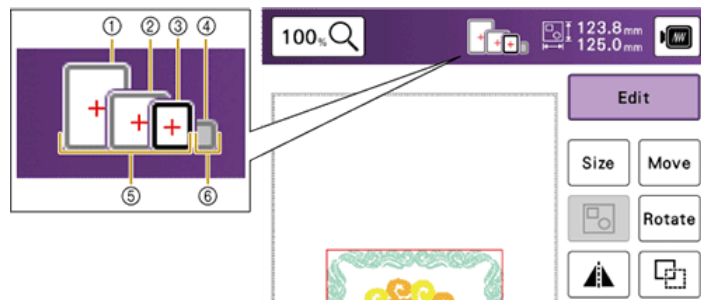
[Types of Embroidery Frames](#)

[Inserting the Fabric](#)

[Adjusting the Embroidery Position with the Embroidery Sheet](#)

■ Types of Embroidery Frames

Optional embroidery frames can be used. When choosing frames that do not appear on the screen, be sure to check the design size of the embroidery field of the optional frame. Check with your authorized Baby Lock retailer for frame compatibility. Select a frame that matches the pattern size. Available frame options are displayed on the LCD.



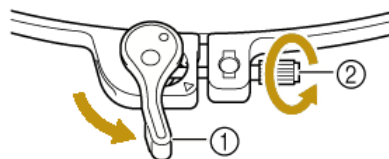
- ① 360 mm × 200 mm (approx. 14 inches × 8 inches)
- ② 200 mm × 200 mm (approx. 8 inches × 8 inches)
- ③ 180 mm × 130 mm (approx. 7 inches × 5 inches)
- ④ 100 mm × 100 mm (approx. 4 inches × 4 inches)
- ⑤ White: Can be used
- ⑥ Gray: Cannot be used

■ Inserting the Fabric

- When Using Embroidery Frame with Lever (360 mm × 200 mm (approx. 14 inches × 8 inches))

- 1 Loosen the lever on the outer frame, and then remove the inner frame.

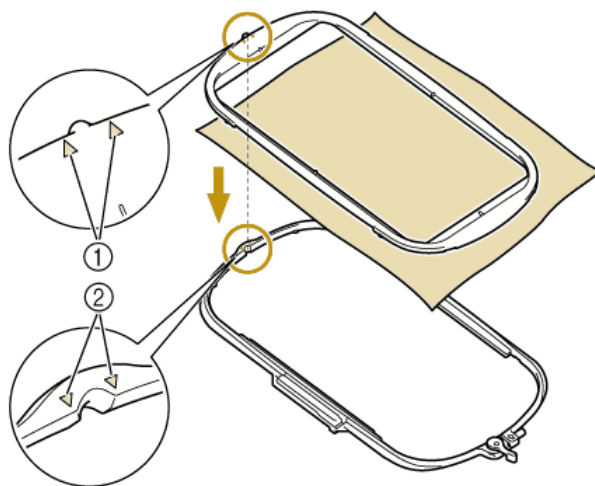
* If the inner frame cannot be removed, loosen the frame adjustment screw.



- ① Lever
- ② Frame adjustment screw

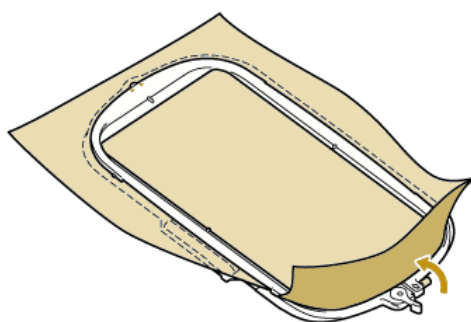
- 2 Lay the fabric right side up on top of the outer frame.

- 3 Re-insert the inner frame making sure to align the inner frame's  with the outer frame's .



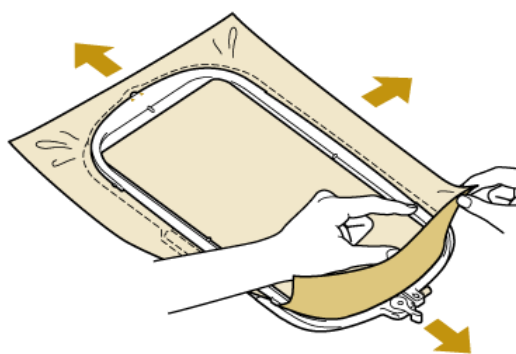
- ① Inner frame's 
- ② Outer frame's 

4 Slightly tighten the frame adjustment screw, and then remove the slack in the fabric by pulling on the edges and corners.

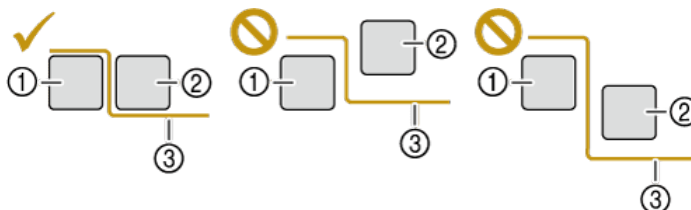


5 Gently smooth out the fabric. Make sure fabric is flat and without wrinkles.

* After stretching the fabric, make sure the fabric is taut.



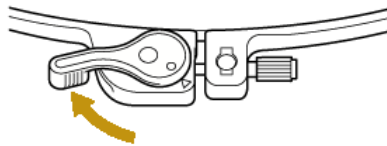
* Make sure the inner and outer frames are even before you start embroidering.



- ① Outer frame
- ② Inner frame
- ③ Fabric

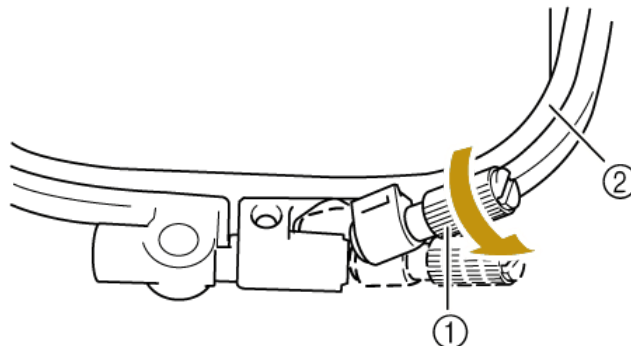
6 Tighten the lever at the bottom.

* If the lever cannot be tightened, loosen the frame adjustment screw.



• **When Using Embroidery Frame without Levers**

- 1** Lift-up and loosen the frame adjustment screw and remove the inner frame.

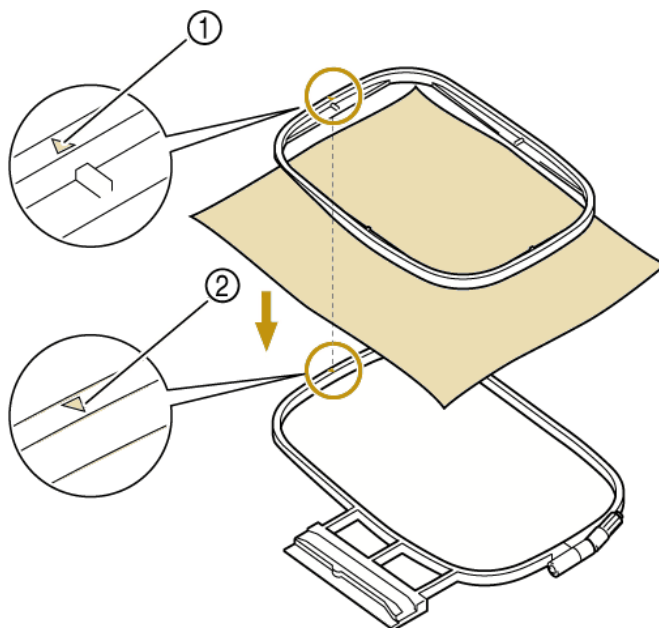


① Frame adjustment screw

② Inner frame

- 2** Lay the fabric right side up on top of the outer frame.

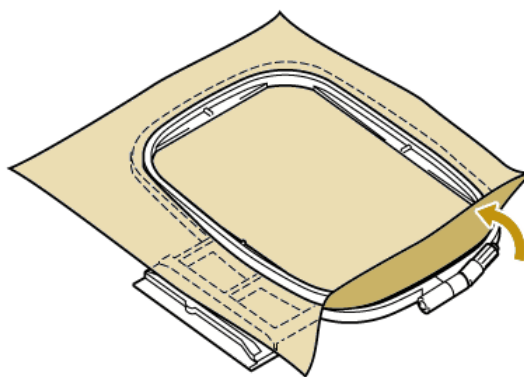
- 3** Insert the inner frame making sure to align the inner frame's  with the outer frame's .



① Inner frame's 

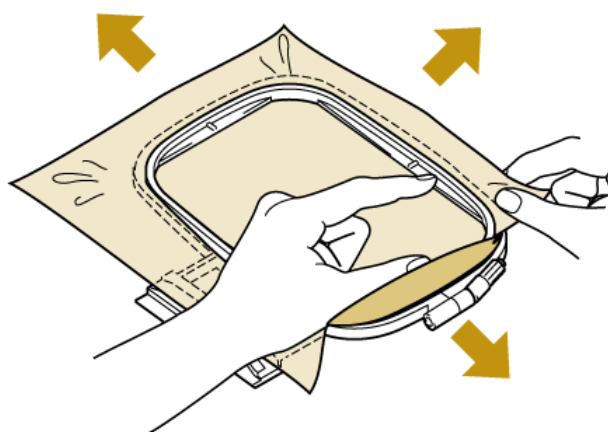
② Outer frame's 

- 4** Slightly tighten the frame adjustment screw.

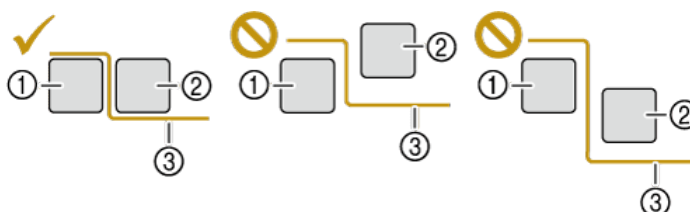


5 Gently smooth out the fabric. Make sure fabric is flat and without wrinkles.

* After stretching the fabric, make sure the fabric is taut.

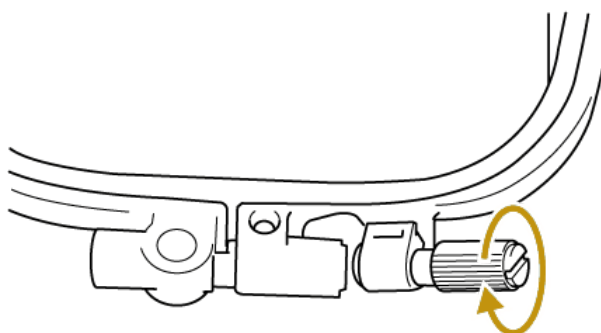


* Make sure the inside and outside frames are even before you start embroidering.

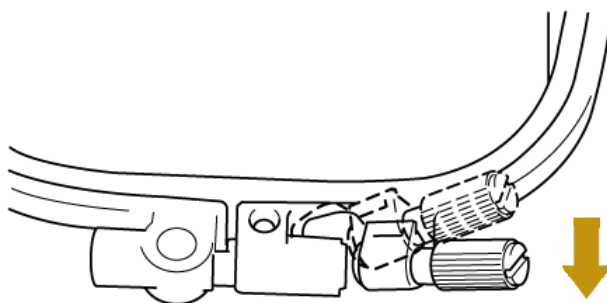


- ① Outer frame
- ② Inner frame
- ③ Fabric

6 Tighten the frame adjustment screw to keep the fabric from loosening while stitching.

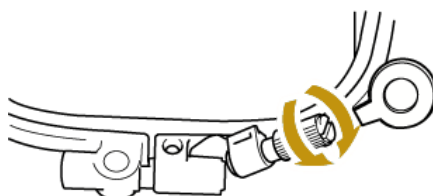


7 Return the frame adjustment screw to its initial position.



Memo

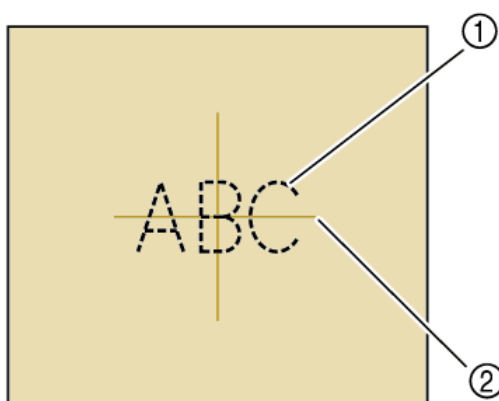
You can use the disc-shaped screwdriver when you loosen or tighten the frame adjustment screw.



■ Adjusting the Embroidery Position with the Embroidery Sheet

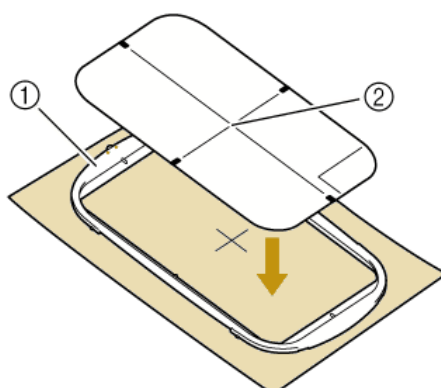
When you want to embroider the pattern in a particular place, use the embroidery sheet with the frame.

- 1 With a chalk pencil, mark the area of the fabric you want to embroider.



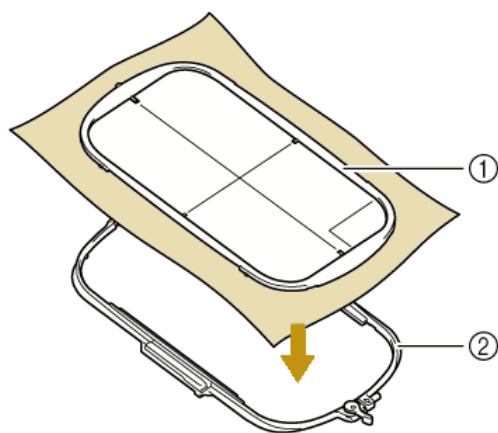
- ① Embroidery pattern
- ② Mark

- 2 Place the embroidery sheet on the inner frame. Align the guide lines on the embroidery sheet with the mark you made on the fabric.



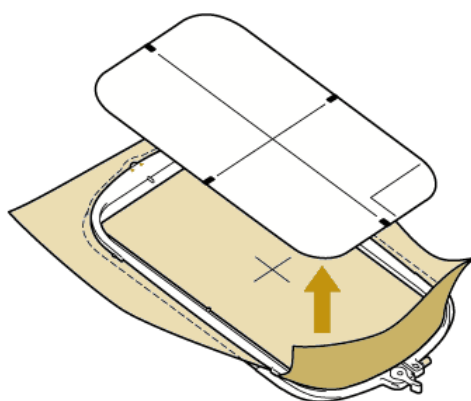
- ① Inner frame
- ② Guide line

- 3** Gently stretch the fabric so there are no folds or wrinkles, and press the inner frame into the outer frame.



- ① Inner frame
- ② Outer frame

- 4** Remove the embroidery sheet.



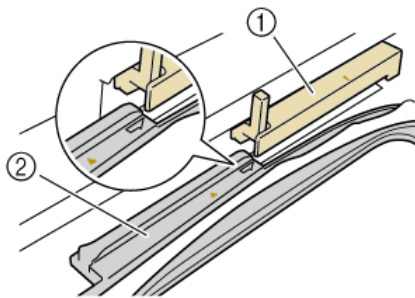
Attaching the Embroidery Frame

[Removing the Embroidery Frame](#)

Note

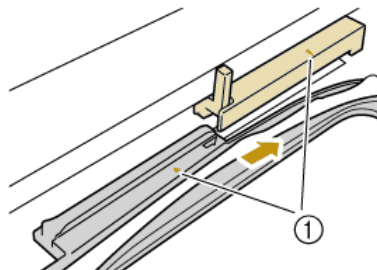
- Wind embroidery bobbin thread and insert the bobbin before attaching the embroidery frame. Check that there is enough thread in the bobbin.
- Make sure that the frame-securing lever is correctly lowered after the embroidery frame has been installed in the embroidery frame holder.

- 1 Press  (Presser foot lifter button) to raise the presser foot.
- 2 Align the embroidery frame guide with the right edge of the embroidery frame holder.



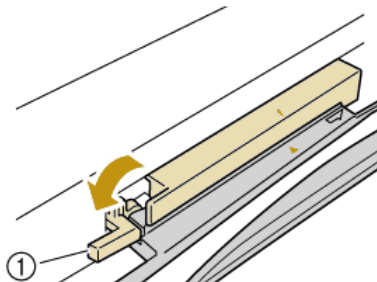
- ① Embroidery frame holder
- ② Embroidery frame guide

- 3 Slide the embroidery frame into the holder, making sure to align the embroidery frame's  with the holder's .



- ① Arrow mark

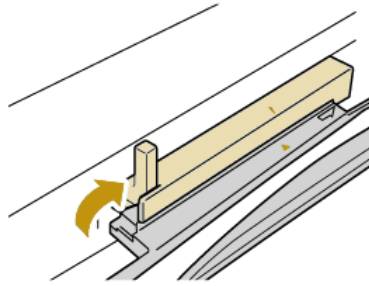
- 4 Lower the frame-securing lever to be level with the frame to secure the embroidery frame in the embroidery frame holder.



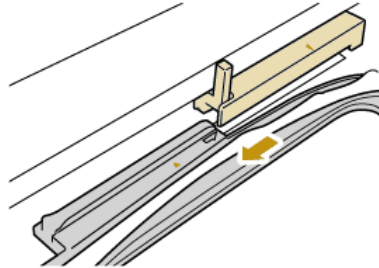
- ① Frame-securing lever

■ Removing the Embroidery Frame

- 1 Press  (Presser foot lifter button) to raise the presser foot.
- 2 Raise the frame-securing lever.



3 Pull the embroidery frame toward you.



Selecting Patterns

[Copyright Information](#)

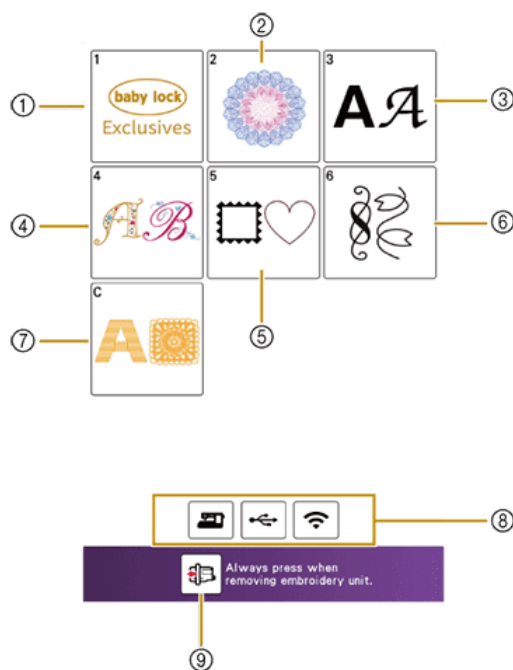
[About Embroidery Patterns](#)

■ Copyright Information

The patterns stored in the machine and patterns sold separately are intended for private use only. Any public or commercial use of copyrighted patterns is an infringement of copyright law and is strictly prohibited.

■ About Embroidery Patterns

There are many character and decorative embroidery patterns stored in the machine's memory (see the "Embroidery Design Guide" for a full summary of patterns in the machine's memory or visit <https://babylock.com/machine-support-and-updates>). You can also use patterns sold separately.



① Baby Lock "Exclusives"

② Embroidery patterns

③ Character patterns

④ Decorative alphabet patterns

⑤ Frame patterns

⑥ Utility embroidery patterns

⑦ Couching patterns

➤ [Embroidering Couching Patterns](#)

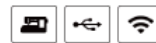
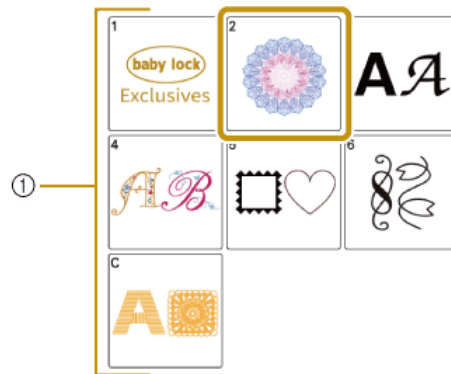
⑧ Patterns saved in the machine's memory, USB media, etc.

➤ [Retrieving Embroidery Patterns](#)

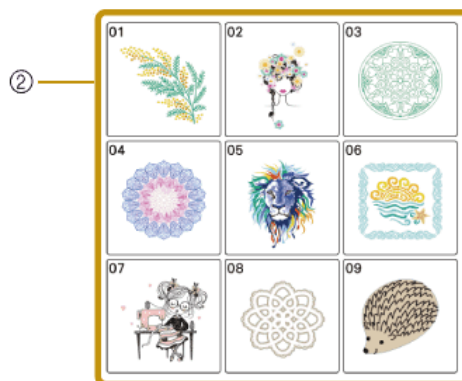
⑨ Touch this key to position the embroidery unit for storage.

// Selecting Embroidery Patterns

- 1 Touch the category key and pattern key you want to embroider.



Always press when removing embroidery unit.



Return

- ① Pattern category key
- ② Pattern type/pattern selection key

- 2 Select a pattern.

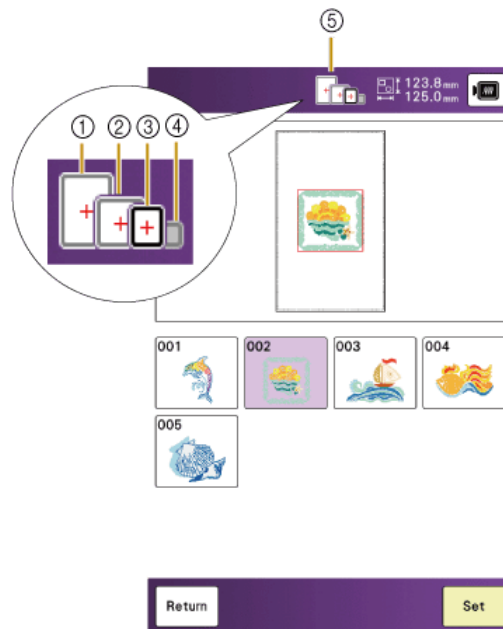


* Touch [Return] to return to the previous screen.

→ The selected pattern is displayed.

3 Touch [Set] to set the pattern.

- Available frame options are displayed on the screen.



- ① 360 mm × 200 mm (approx. 14 inches × 8 inches)
- ② 200 mm × 200 mm (approx. 8 inches × 8 inches)
- ③ 180 mm × 130 mm (approx. 7 inches × 5 inches)
- ④ 100 mm × 100 mm (approx. 4 inches × 4 inches)
- ⑤ Available frame options

White: Can be used

Gray: Cannot be used

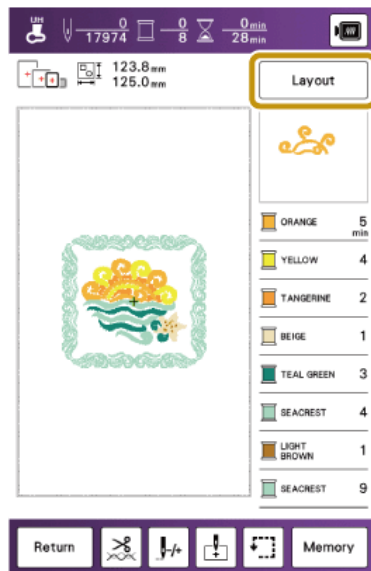
→ The pattern is designated with a red box around it on the edit screen.

4 Touch [Edit] to edit the selected pattern.

➤ [Editing Patterns](#)



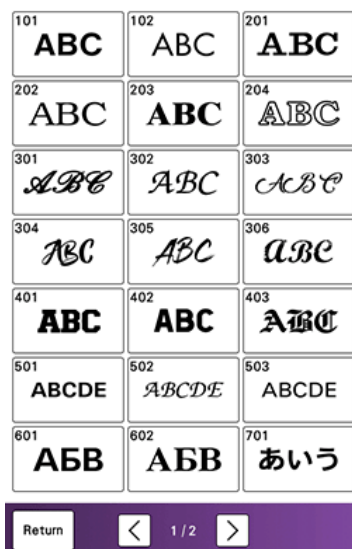
- 5 Touch [Embroidery].
→ The embroidery screen appears.
- 6 Touch [Layout] to edit the pattern before embroidering. (▶ [Viewing the Embroidery Screen](#))
* To return to the edit screen, touch [Return].



- 7 Start embroidering.
(▶ [Embroidering a Pattern](#))

// Selecting Character Patterns

- 1 Touch .
- 2 Touch the key of the font you want to embroider.



- *  : View the next page.
-  : View the previous page.

- 3 Select the character category and then type in the text.

▶ [Character Pattern Edit Functions](#)

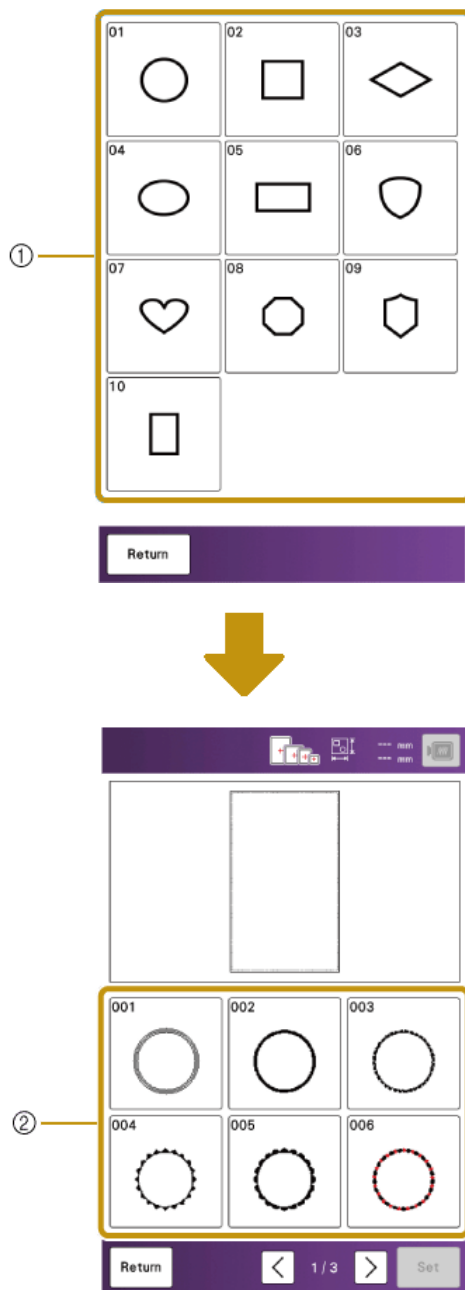


- 4 Touch [Set].
→ The edit screen appears.
- 5 Follow the steps from 4 to 7 of “Selecting Embroidery Patterns”.

▶ [Selecting Embroidery Patterns](#)

// Selecting Frame Patterns

- 1 Touch .
- 2 Touch the key of the frame shape you want to embroider in the top part of the screen.



① Frame shapes

② Frame patterns

*  : View the next page.

 : View the previous page.

- 3 Touch the key of the frame pattern you want to embroider.
→ The selected pattern is displayed on the screen.
- 4 Touch [Set].
→ The edit screen appears.
- 5 Follow the steps from 4 to 7 of “Selecting Embroidery Patterns”.

➤ [Selecting Embroidery Patterns](#)

// Combining Patterns

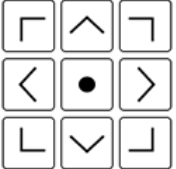
Example:



- 1 Select a pattern and then touch [Set].
- 2 Touch [Add].



- 3 Touch .
- 4 Select  and enter "ABCD".
→ The characters you enter will be displayed in the center of the embroidery pattern area.
- 5 Touch [Set].
- 6 Touch [Edit] and then touch .

- 7 Use  to move the characters.

* Characters can also be moved by directly dragging them with your finger or the touch pen.

- 8 Touch [OK].
- 9 Touch  to change the color of the characters.

► [Changing the Thread Color](#)



10 Touch [OK].

11 When all editing is finished, touch [Embroidery].

Memo

Combined patterns will be embroidered in the order they were entered.

■ Selecting a Pattern

If multiple patterns have been combined, use **Select**   to select the pattern to be edited. Patterns can also be selected by directly touching the screen with your finger or touch pen.

The pattern being selected is outlined in red.



Editing Patterns

You can edit the pattern as you like.

Memo

If a key display is grayed out, you cannot use that function with the selected pattern.



① Size of the entire combined pattern

② Pattern edit keys

➤ [Pattern Edit Functions](#)

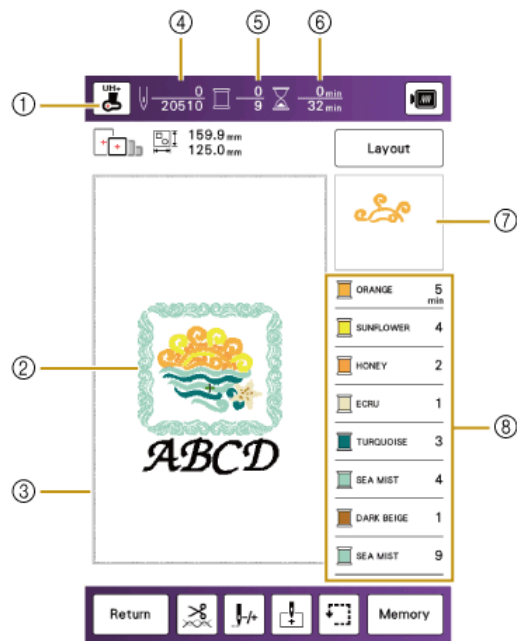
Confirming the Pattern Position

The pattern is normally positioned in the center of the embroidery frame. If the pattern needs to be repositioned for better placement on the garment or project, you can check the layout before starting embroidery.

[Viewing the Embroidery Screen](#)

[Checking the Needle Drop Point with the Embroidery Foot “UH+” with LED Pointer](#)

// Viewing the Embroidery Screen



* This screen appears when embroidery starts.

① Presser foot (Needle point check key)

Shows presser foot to be used.

If the embroidery foot "UH +" with LED pointer is used, the needle drop point can be checked with the light of the LED by touching the key.

➤ [Checking the Needle Drop Point with the Embroidery Foot "UH+" with LED Pointer](#)

② A preview of the pattern

③ The boundary for embroidering with the frame selected in the settings screen

④ Total number of stitches in the selected pattern and number of stitches that have already been embroidered

⑤ The number of colors in the pattern, and the number of the color currently being embroidered

⑥ The time necessary to embroider the pattern, and the time already spent embroidering the pattern (not including time for changing and automatically trimming the thread)

⑦ The part of the embroidery pattern that will be embroidered with the thread color at the top of the list

⑧ The order for thread color changes and the embroidering time for each thread color

* The displayed time is the approximate time that will be required. The actual embroidering time may be longer than the displayed time, depending on the embroidery frame that is used. In addition, the amount of time required to change thread colors is not included.

// Checking the Needle Drop Point with the Embroidery Foot “UH+” with LED Pointer

- 1 Touch  in the embroidery screen.
→ The LED pointer indicates the needle drop point.



Memo

- When the LED pointer turns on, the presser foot height is automatically adjusted according to the fabric thickness.
-  appears when the embroidery foot “UH+” with LED pointer is connected to the machine.
- If  is not displayed, you cannot use the LED pointer.
- The LED pointer turns off automatically by lowering the presser foot or returning to the previous page.

Note

- With spongy fabric, the position may not be accurate due to the various depths of the fabric.
- With fabric that has a very uneven surface such as quilting, the fabric thickness may not be correctly measured. In this case, the pointer indication should be used only as a reference.

■ Adjusting the LED Pointer

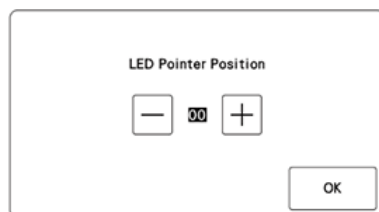
Adjust the LED pointer if it indicates a point different than the actual needle drop point. Before adjusting the LED pointer, mark the actual needle drop point on the fabric to be embroidered, and attach the embroidery frame.

- 1 Touch .
→ The settings screen appears.
- 2 Touch .
→ The embroidery settings screen appears.
- 3 Display [Embroidery Foot with LED Pointer Adjustment] in the embroidery setting screen.

↑ Embroidery Foot with
↓ LED Pointer Adjustment

Start

- 4 Touch [Start].
→ The LED Pointer Position screen appears.



Note

- The specified setting is saved in the machine's memory. This is useful for positioning during continuous embroidering.
- For normal use, return the setting to [00].

5 Use  or  to adjust the LED pointer so that it indicates the actual needle drop point.

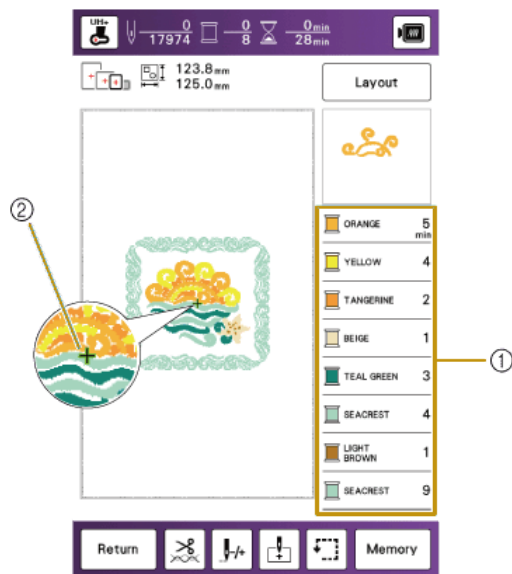
Memo

In order to more accurately check the needle drop point, turn the handwheel toward you (counterclockwise) to lower the needle.

6 Touch [OK] to return to the original screen.

Embroidering a Pattern

- 1 Prepare embroidery threads of the colors shown on the screen.



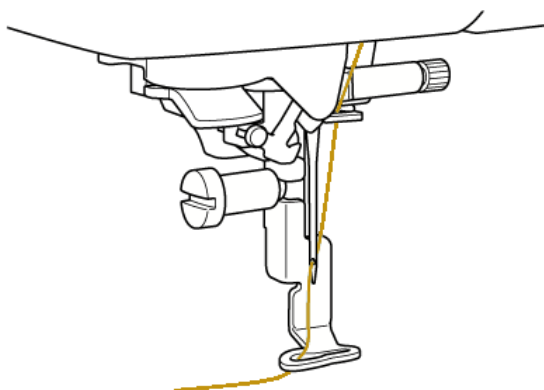
- ① Embroidery color order
- ② Cursor

Memo

The [+] cursor moves over the pattern, showing which part of the pattern is being embroidered.

- 2 Thread the machine for the first color.

➤ [Upper Threading](#)



Note

Make sure that the bobbin wound with bobbin thread is installed before attaching the embroidery frame.

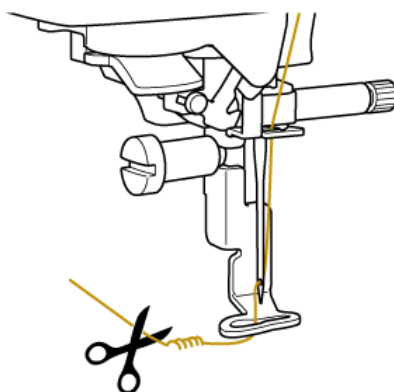
- 3 Lower the presser foot, then press the “Start/Stop” button to start embroidering.

→ When the first color is completely embroidered, the machine will automatically trim the threads and stop. The embroidery foot will then automatically be raised.
On the embroidery color order display, the next color will move to the top.

Memo

- If you want to get more attractive finishes, try the procedures below;
 - After 5-6 stitches, press the “Start/Stop” button again to stop the machine.

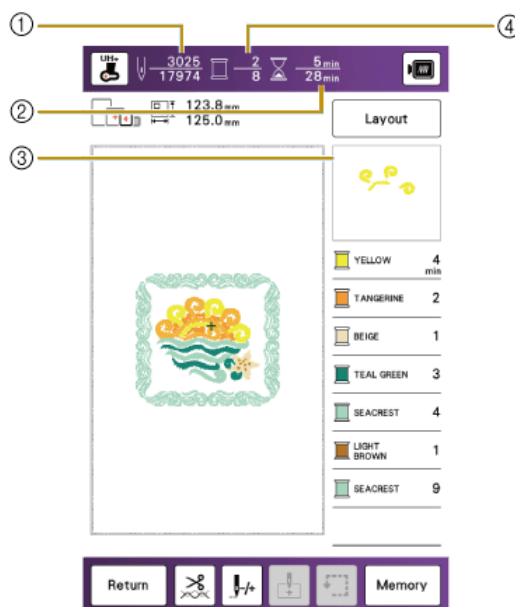
- Trim the excess thread at the beginning of the pattern. If the excess thread tail is under the embroidery foot, raise the embroidery foot, then trim the excess thread.



- If there is thread left over from the beginning of embroidering, it may be embroidered over as you continue embroidering the pattern, making it very difficult to deal with the thread after the pattern is finished. Trim the threads at the beginning of each thread change.

4 Remove the upper thread for the first color from the machine. Thread the machine with the next color.

5 Repeat the same steps for embroidering the remaining colors.



- ① Current stitch numbers/Total stitch numbers
- ② Current time/Total time
- ③ Part of pattern to be embroidered next
- ④ Embroidered colors/Total colors

→ When the last color is embroidered, [Finished embroidering] will appear on the display. Touch [OK], and the display will return to the original screen.

Memo

The thread trimming function is originally set to trim excess thread jumps (threads linking parts of the pattern, etc.). Depending on the type of thread and fabric that are used, an end of upper thread may remain on the surface of the fabric at the beginning of the stitching. After embroidering is finished, cut off this excess thread.

If the setting has been turned off, trim the excess thread jumps using scissors after the pattern is finished. Refer to "Using the Thread Trimming Function (Jump Stitch Trim)" for information on the thread trimming function.

➤ [Using the Thread Trimming Function \(Jump Stitch Trim\)](#)

// Embroidering Attractive Finishes

Many factors are involved in achieving a beautiful embroidery result. Using the appropriate stabilizer and hooping the fabric in the frame are two important factors mentioned earlier. Another important point is the appropriateness of the needle and thread being used. See the explanation of threads below.

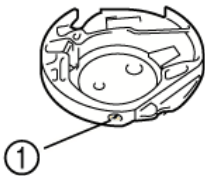
- > [Attaching Iron-on Stabilizers \(Backing\) to the Fabric](#)
- > [Hooping the Fabric in the Embroidery Frame](#)

Thread	Upper thread	Use embroidery thread intended for use with this machine. For most embroidery applications, the upper thread should be 40-weight rayon or polyester embroidery thread.
	Bobbin thread	Use the included embroidery bobbin thread or recommended embroidery bobbin thread.

Memo

If you use threads other than those listed above, the embroidery may not embroider out correctly.

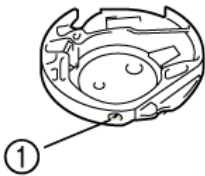
Bobbin case (recommended for sewing and for embroidering with included 60 weight bobbin thread)



- ① Standard bobbin case (green marking on the screw)

Standard bobbin case originally installed in the machine has a green marking on the screw. We recommend using the included embroidery bobbin thread with this bobbin case. Do not adjust the tension screw on this bobbin case with the green marked screw.

Bobbin case (for prewound or other embroidery bobbin threads)



- ① Bobbin case (no color on the screw)

The bobbin case with no color on the screw is set with tighter tension for embroidery with different weights of bobbin threads and a variety of embroidery techniques. This bobbin case is identified with a dark colored mark on the inside of the bobbin cavity. The tension screw on this case can be adjusted if necessary.

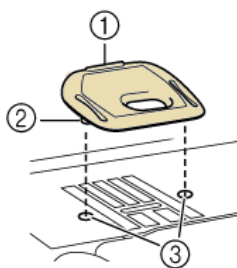
- > [Adjusting the Bobbin Case \(with No Color on the Screw\)](#)

⚠ CAUTION

When embroidering on large items (especially jackets or quilts), do not let the fabric hang off of the table. Otherwise, the embroidery unit cannot move freely and the embroidery frame may strike the needle, causing the needle to break and possibly causing injury.

■ Embroidery Needle Plate Cover

Under some conditions, based on the type of fabric, stabilizer, or thread being used, there may be some looping in the upper thread. In this case, attach the included embroidery needle plate cover to the needle plate. Attach the cover by inserting the two projections on the underside of the cover into the notches on the needle plate as shown below.



- ① Groove
- ② Projection
- ③ Notch

To remove the embroidery needle plate cover, place your fingernail in the groove and lift the plate out.

⚠ CAUTION

Push the embroidery needle plate cover as far as possible to attach it. If the embroidery needle plate cover is not securely attached, it may cause the needle to break and cause injury.

Adjustments During the Embroidery Process

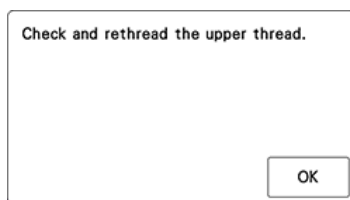
[If the Thread Breaks or the Bobbin Runs out of Thread During Embroidering](#)

[Resuming Embroidery after Turning off the Power](#)

// If the Thread Breaks or the Bobbin Runs out of Thread During Embroidering

1 Redo the upper threading or replace the bobbin.

If the upper thread breaks, stop the machine, carefully check for and remove broken upper thread, trim the bobbin thread, and then rethread the machine.



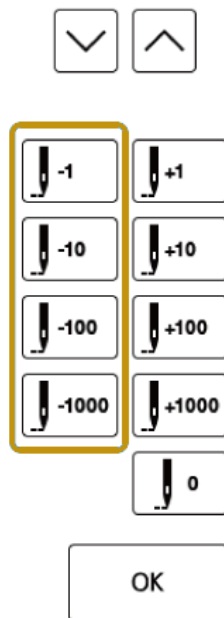
If the bobbin thread is almost empty or broken, touch  of the displayed message, remove the embroidery frame, and then replace the bobbin.



2 Touch .

3 Touch , , , or  to move the needle back the correct number of stitches before the area where the thread broke, and then touch [OK].

- Touch  to restart from the beginning.



Memo

If you cannot move back to the spot where the thread broke, touch  or  to select the color and move to the beginning position of that color, then use , , , or  to move ahead to slightly before where the thread broke.

- 4 Lower the presser foot and press the “Start/Stop” button to continue embroidering.

// Resuming Embroidery after Turning off the Power

The current color and stitch number are saved when embroidery is stopped. The next time the machine is turned on, you have the option to continue or delete the pattern.

OK to recall and resume previous memory?

Cancel

OK

Making Embroidery Adjustments

[Adjusting Thread Tension](#)

[Adjusting the Bobbin Case \(with No Color on the Screw\)](#)

// Adjusting Thread Tension

Adjust thread tension according to the situation.

[Correct Thread Tension](#)

[Upper Thread Is Too Tight](#)

[Upper Thread Is Too Loose](#)

[Adjusting the Tension of the Upper Thread](#)

[Adjusting Overall Upper Thread Tension](#)

■ Correct Thread Tension

Upper thread slightly appears on the wrong side of fabric.



- ① Right side
- ② Wrong side

■ Upper Thread Is Too Tight

Bobbin thread appears slightly on the right side of fabric. In this case, loosen the upper thread tension.



- ① Right side
- ② Wrong side

Note

If the bobbin thread was incorrectly threaded, the upper thread may appear to be too tight. In this case, rethread the bobbin thread.

➤ [Installing the Bobbin](#)

■ Upper Thread Is Too Loose

Loops appear on the right side of the fabric. In this case, tighten the upper thread tension.



- ① Right side

② Wrong side

Note

If the upper thread was incorrectly threaded, the upper thread may appear to be too loose. In this case, carefully rethread the upper thread and test-embroider again.

> [Upper Threading](#)

If necessary, tighten the upper thread tension.

■ Adjusting the Tension of the Upper Thread

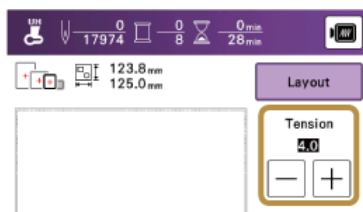
1 On the embroidery screen, touch .



2 Adjust the upper thread tension.

→ Touch  to loosen the upper thread tension. (The tension number will decrease.)

→ Touch  to tighten the upper thread tension. (The tension number will increase.)



Note

If the thread tension setting is made extremely loose, the machine may stop during embroidering. In this case, reset the bobbin (ensuring it has passed under the tension spring) and test-embroider again. If necessary, slightly increase the upper thread tension.

■ Adjusting Overall Upper Thread Tension

When embroidering, if the overall tension of the upper thread is too tight or too loose, adjust it from the setting screen. If an individual embroidery pattern needs additional fine tuning, refer to the following.

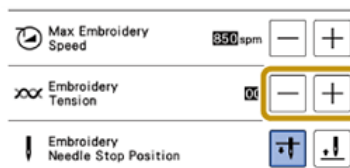
> [Adjusting the Tension of the Upper Thread](#)

1 Touch .

2 In the [Embroidery Tension], adjust the upper thread tension.

* Increase to tighten the upper thread tension.

* Decrease to loosen the upper thread tension.

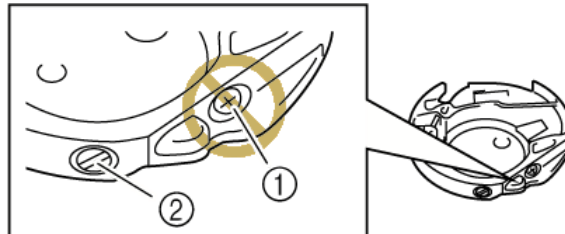


// Adjusting the Bobbin Case (with No Color on the Screw)

Use the green marked bobbin case when performing utility stitch sewing and when using the provided embroidery bobbin thread for embroidery functions. When in the embroidery function mode, the bobbin case (with no color on the screw) should be selected when substitute embroidery bobbin threads (other than what is packaged with your machine) are being used. The bobbin case (with no color on the screw) can be easily adjusted when bobbin tension changes are required to accommodate different bobbin threads.

> [Embroidering Attractive Finishes](#)

To adjust the bobbin tension for embroidery function, using the bobbin case (with no color on the screw), turn the slotted screw (-) with a (small) screwdriver.



- ① Do not turn a phillips screw (+).
- ② Adjust with a screwdriver (small).

[Correct Tension](#)

[Bobbin Thread Is Too Loose](#)

[Bobbin Thread Is Too Tight](#)

■ Correct Tension

Upper thread slightly appears on the wrong side of fabric.



- ① Right side
- ② Wrong side

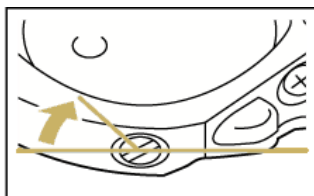
■ Bobbin Thread Is Too Loose

Bobbin thread appears slightly on the right side of fabric.



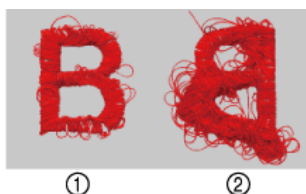
- ① Right side
- ② Wrong side

If this occurs, turn the slotted screw (-) clockwise, being careful not to over-tighten the screw, approximately 30-45 degrees to increase bobbin tension.



■ Bobbin Thread Is Too Tight

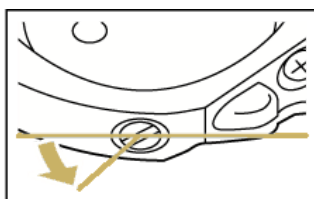
Upper thread on the right side of fabric seems to be lifting/ looping and bobbin thread is not seen on the wrong side of fabric.



① Right side

② Wrong side

If this occurs, turn the slotted screw (-) counterclockwise, being careful not to over-loosen the screw, approximately 30-45 degrees to decrease bobbin tension.



IMPORTANT

- DO NOT adjust the position of the phillips (+) screw on the bobbin case as this may result in damage to the bobbin case, rendering it unusable.
- If the slotted screw (-) is difficult to turn, do not use force. Turning the screw too much or providing force in either (rotational) direction may cause damage to the bobbin case. Should damage occur, the bobbin case may not maintain proper tension.

Note

When adjusting the bobbin case, be sure to remove the bobbin from the bobbin case.

Using the Memory Function

[Saving Embroidery Patterns](#)

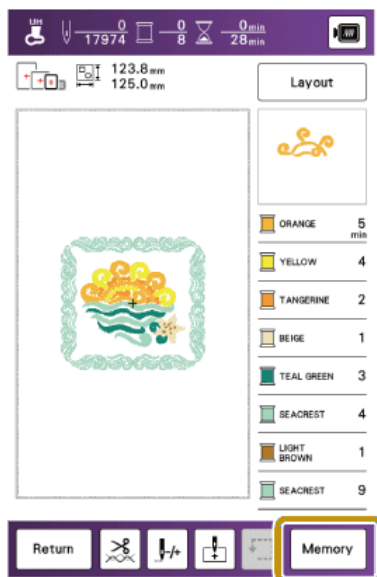
[Retrieving Embroidery Patterns](#)

// Saving Embroidery Patterns

Note

Do not turn the main power to OFF while the [Saving...] screen is displayed. You will lose the pattern you are saving.

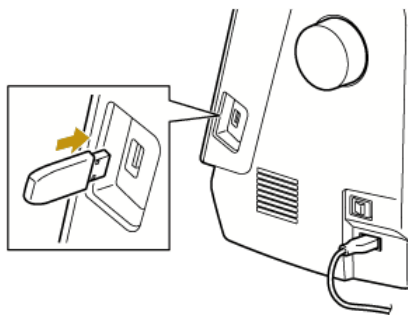
- 1 Touch [Memory] when the pattern you want to save is in the embroidering screen.



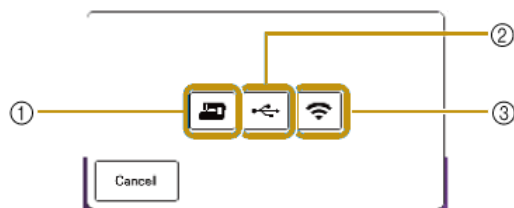
Memo

You can also save the pattern by touching [Memory] in the embroidery edit screen.

- 2 When saving the embroidery 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 pattern is saved in a folder labeled [bPocket].

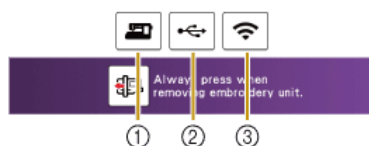
③ Save to the wireless function pocket. For the detailed procedure, refer to the manual for Palette (version 11 or later) or Design Database Transfer.

Note

- Embroidery patterns which were saved to the wireless function pocket will be deleted from the pocket when turning the machine off or entering the Power saving mode. Import the embroidery patterns to Palette (version 11 or later) before turning the machine off or entering the Power saving mode.
- Do not turn off the machine while saving patterns. Turning off the power may corrupt the pattern data being saved or any pattern data that has already been saved.

// Retrieving Embroidery Patterns

- 1 When retrieving the embroidery patterns from a USB flash drive, insert the USB flash drive into the USB port on the machine. To retrieve embroidery patterns via wireless network, use Palette (version 11 or later) or Design Database Transfer to transfer the patterns in advance. For details on transferring embroidery patterns, refer to the manual for Palette or Design Database Transfer.



- ① Retrieve from the machine's memory.
- ② Retrieve from a USB media.
- ③ Retrieve the pattern via the wireless network connection. For detailed procedures, refer to Palette manual (Version 11 or later).

Memo

Embroidery patterns which were uploaded via wireless network will be deleted from the machine when turning the machine off or entering the Power saving mode. Save patterns to the machine memory if necessary.

For details on supported file extensions, refer to the following link.

➤ [Specifications](#)

Memo

- If the embroidery 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.
- You can save all or multiple data to the machine by touching .



- To select multiple patterns, touch their thumbnails.
- **Select all**: Select all patterns.
- **Deselect all**: Deselect all patterns.
- **Memory**: Save the selected patterns to the machine.

* To cancel the selection, touch  again.

2 Touch [Set].

- * Touch **Delete** to delete the embroidery pattern.

Embroidery Functions

[Pattern Edit Functions](#)

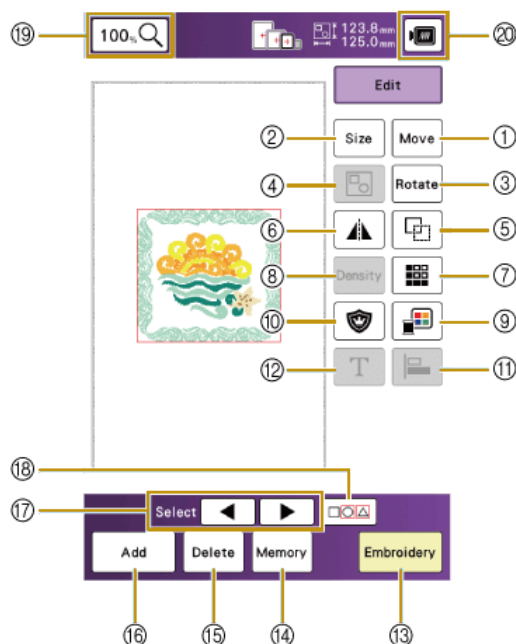
[Character Pattern Edit Functions](#)

[Embroidering Functions](#)

[Embroidering Functions of the Machine Settings](#)

Pattern Edit Functions

After selecting a pattern, you can edit the pattern by touching [Edit].



① Move key

➤ [Moving/Rotating the Pattern](#)

② Size key

➤ [Changing the Size and the Density of the Pattern](#)

③ Rotate key

➤ [Moving/Rotating the Pattern](#)

④ Group key

Group selected multiple patterns.

➤ [Grouping Patterns](#)

⑤ Duplicate key

⑥ Horizontal mirror image key

Change the pattern to a horizontal mirror image.

⑦ Border key

➤ [Creating Repeated Patterns](#)

⑧ Density key

Allows the thread density to change for some Alphabet characters and frame patterns.

Other patterns' density can be modified after the pattern size is changed.

⑨ Thread palette key

Change the thread color.

➤ [Changing the Thread Color](#)

⑩ Appliqué key

Create an appliqué outline of the pattern.

➤ [Creating an Appliqué Piece](#)

⑪ Alignment key

Touch this key to arrange multiple patterns on a line.

➤ [Aligning the Embroidery Patterns](#)

⑫ Letter Edit key

Edit character patterns.

➤ [Character Pattern Edit Functions](#)

⑬ **Embroidery key**

Proceed to the embroidery screen.

➤ [Embroidering a Pattern](#)

⑭ **Memory key**

Save a pattern in the machine's memory or USB media. The pattern can also be transferred to a computer via a wireless network connection.

➤ [Saving Embroidery Patterns](#)

⑮ **Delete key**

Delete the selected pattern (the pattern outlined by the red box).

⑯ **Add key**

Add another pattern to the editing screen.

➤ [Combining Patterns](#)

⑰ **Pattern select key**

Select the pattern to edit when there are multiple patterns.

➤ [Selecting a Pattern](#)

⑱ **Multiple selection key**

Make multiple patterns to be selected at the same time.

➤ [Selecting Multiple Patterns at the Same Time](#)

⑲ **Magnify keys**

Select the percent of magnification. You can select from 100%, 125%, 150%, 200%, 250% and 300%.

⑳ **Image key**

Preview the embroidered image.

➤ [Previewing the Pattern](#)

[Moving/Rotating the Pattern](#)

[Selecting Multiple Patterns at the Same Time](#)

[Grouping Patterns](#)

[Previewing the Pattern](#)

[Changing the Size and the Density of the Pattern](#)

[Creating Repeated Patterns](#)

[Changing the Thread Color](#)

[Aligning the Embroidery Patterns](#)

// Moving/Rotating the Pattern

Using these keys, you can move or rotate the pattern.

■ Move key

- 








- : Move the pattern in the direction shown by the arrow.
- 








- : Center the pattern.

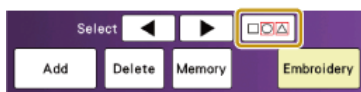
■ Rotate key

-  0.0° : Shows the degree of rotation of the pattern.
-  : Rotates the pattern 90 degrees to the left.
-  : Rotates the pattern 90 degrees to the right.
-  : Rotates the pattern 10 degrees to the left.
-  : Rotates the pattern 10 degrees to the right.
-  : Rotates the pattern 1 degree to the left.
-  : Rotates the pattern 1 degree to the right.
-  : Rotates the pattern 0.1 degrees to the left.
-  : Rotates the pattern 0.1 degrees to the right.
-  : Reset the angle.

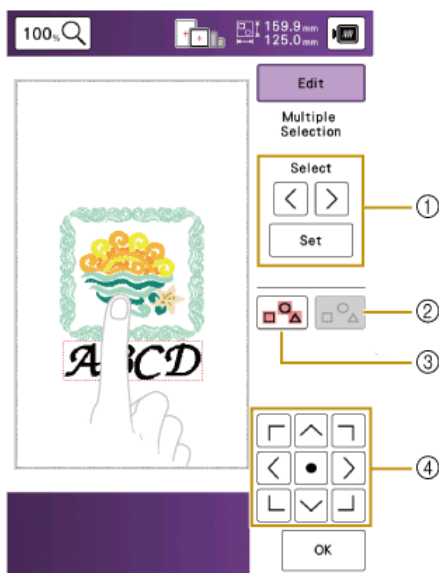
// Selecting Multiple Patterns at the Same Time

Multiple patterns can easily be edited, for example, when moving patterns, if they are all selected together.

1 Touch .



2 Touch each pattern to be selected.



① Touch  or  to check the patterns to be selected, and then touch . The selected patterns are highlighted with a red box. To deselect the selected patterns, touch .

② Touch this key to deselect all selected patterns.

③ Touch this key to select all patterns in the pattern display area.

④ Patterns can be moved with these keys.

Memo

You can also select multiple patterns by dragging your finger to specify the area of selection.

3 Touch [OK] to return to the edit screen.

→ Each selected pattern is surrounded with a red box.

Memo

The following functions are available while multiple patterns are selected.

- Moving
- Copying
- Grouping

// Grouping Patterns

If the multiple patterns are grouped, they can be edited as a single pattern.

1 Select patterns you want to group.

> [Selecting Multiple Patterns at the Same Time](#)

2 Touch .

→ The selected patterns are grouped.



- * To ungroup a grouped pattern, select the grouped pattern, and then touch . At this time, multiple patterns are selected. To cancel the multiple selection, touch any other pattern or the blank area.

Memo

If a key display is grayed out, you cannot use that function with the selected pattern.

// Previewing the Pattern

- 1 Touch .



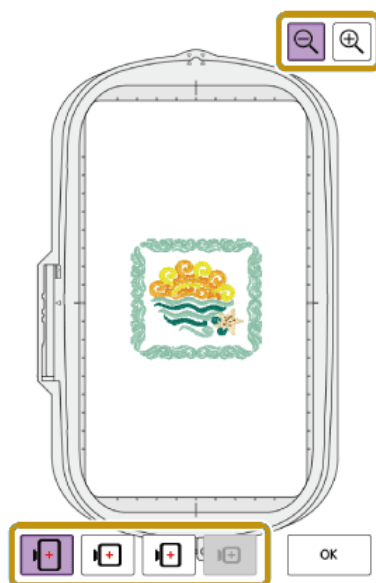
→ An image of the pattern as it will be embroidered appears.

- 2 Touch     to select the frame used in the preview.

* Frames displayed in gray cannot be selected.

* Touch   to enlarge the image of the pattern.

* The pattern can be embroidered as it appears in the display.

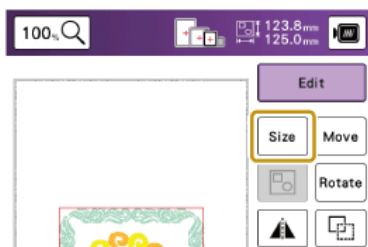


- 3 Touch [OK].

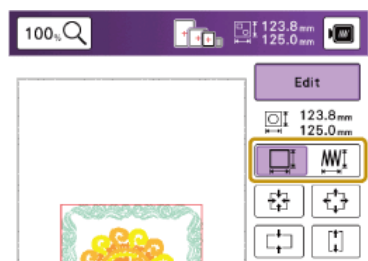
// Changing the Size and the Density of the Pattern

If  is selected, you can change the pattern size while maintaining the thread density. The machine recalculates the stitch count automatically. With this function, the pattern will be enlarged or reduced at a larger ratio than with normal pattern resizing.

- 1 Touch [Edit], and then touch **Size**.



- 2 Select the size changing method.

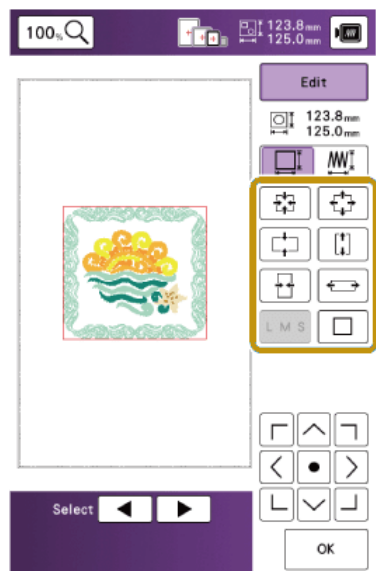


- * : Change the pattern size while maintaining the number of stitches. Enlarged patterns will be less dense, and reduced patterns will be more dense. In order to maintain embroidering quality, there is a limit to how much the embroidery pattern can be enlarged or reduced.
- * : Change the pattern size while maintaining the thread density. After the pattern size is changed, the thread density can be changed in the edit screen. The number of stitches is recalculated depending on the pattern size.

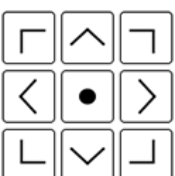
Memo

- If a key display is grayed out, you cannot use that function with the selected pattern.
- When you change the size changing method, the pattern settings of the size, angle, and position are reset.

- 3 Select the direction in which to change the pattern size.



- : Decrease the pattern proportionately.

-  : Decrease the pattern vertically.
-  : Decrease the pattern horizontally.
-  : Enlarge the pattern proportionately.
-  : Stretch the pattern vertically.
-  : Stretch the pattern horizontally.
-  L M S : Change the size of the character patterns.
-  : Reset the size. (except for character patterns.)
-  : Move the pattern in the direction shown by the arrow.

4 When you select , touch [OK], and then touch  to change the thread density.



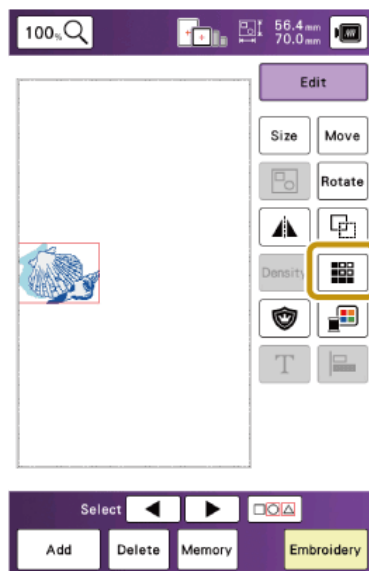
- *  : Make the pattern less dense.
- *  : Make the pattern more dense.

5 Touch [OK].

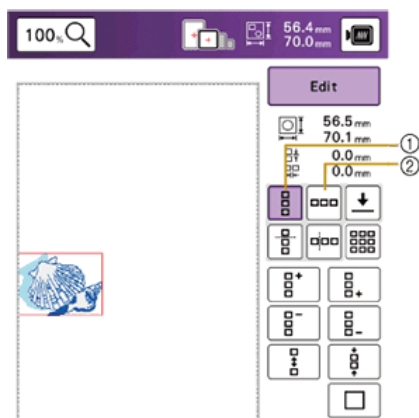
// Creating Repeated Patterns

Using the border function, you can create repeated patterns.
You can also adjust the spacing of the patterns.

- 1 Touch [Edit], and then touch .



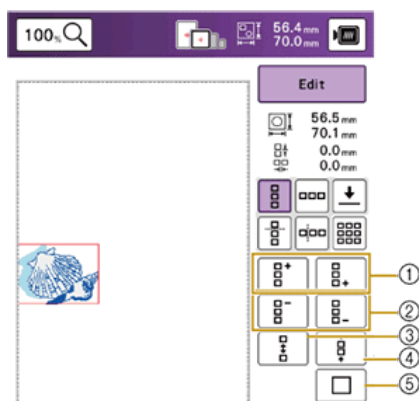
- 2 Select the direction.



- ① Vertical direction
- ② Horizontal direction

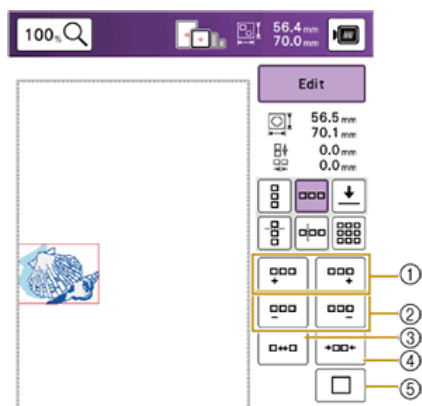
- 3 Touch keys to repeat the patterns.

Vertical direction 



- ① Repeat patterns
- ② Delete patterns
- ③ Widen spacing
- ④ Tighten spacing
- ⑤ Cancel the repetition

Horizontal direction 

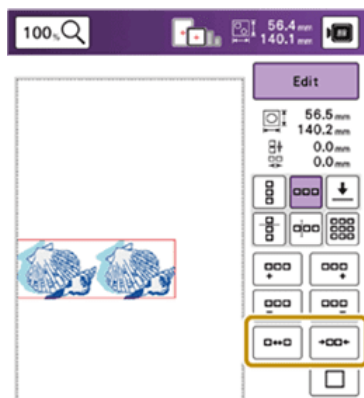
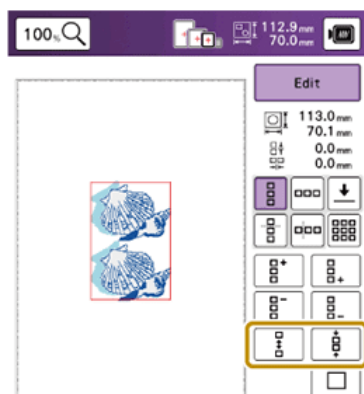


- ① Repeat patterns
- ② Delete patterns
- ③ Widen spacing
- ④ Tighten spacing
- ⑤ Cancel the repetition

4 Adjust the spacing of the repeated pattern.

*   : Widen spacing.

*   : Tighten spacing.



- 5 Complete repeated patterns by repeating steps 2 through 3.
- 6 Touch [OK].

[Repeating Patterns Using the Matrix Copy](#)

[Repeating One Element of a Repeated Pattern](#)

[Color Sorting Repeated Patterns](#)

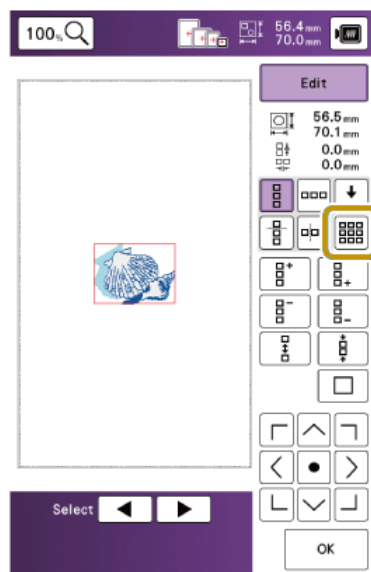
[Assigning Thread Marks](#)

■ Repeating Patterns Using the Matrix Copy

Place the pattern repeatedly throughout the embroidery area.

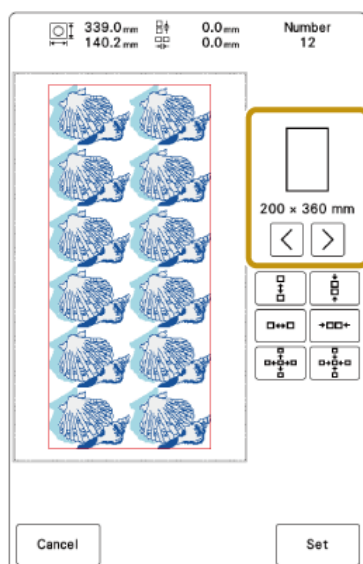
1 Touch .

2 Touch .



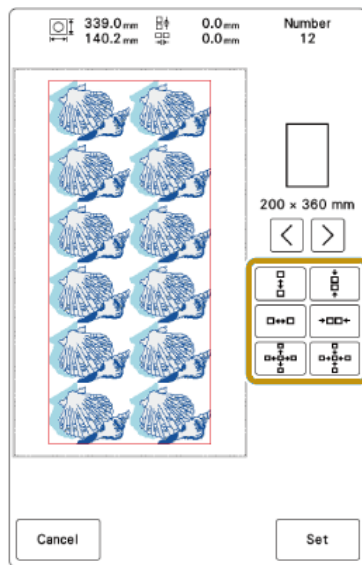
→ The repeated pattern is displayed positioned throughout the area.

3 Specify the embroidery frame size to be used.



4 Adjust the spacing of the repeated pattern.

-    : Widen spacing.
-    : Tighten spacing.



→ Every time the key is pressed, the image of the repeated patterns will be updated and the number of repeats may be changed.

5 Touch [Set].

6 Touch [OK].

■ Repeating One Element of a Repeated Pattern

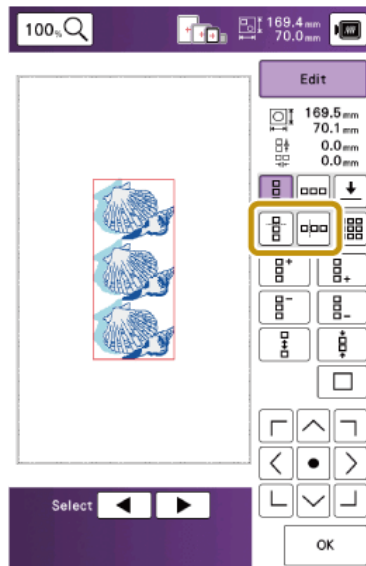
You can select one element of a repeated pattern and repeat only that single element. This function allows you to create complex repeated patterns.

1 Touch .

2 Choose the direction in which the repeated pattern will be cut.

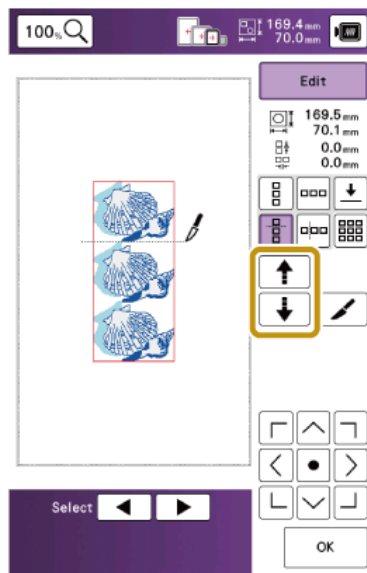
*  : Cut horizontally.

*  : Cut vertically.

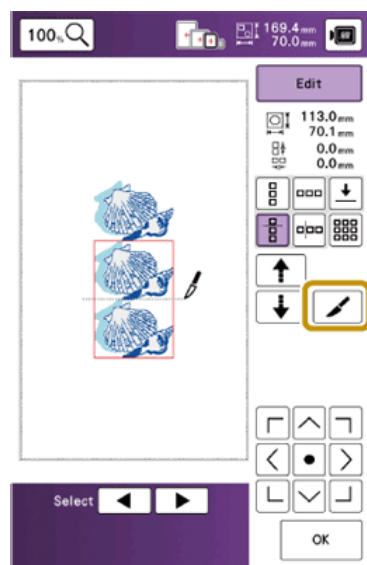


→ The pattern direction indicator will change depending on the direction selected.

3 Use  and  to select the placement (or position) of the cut line.



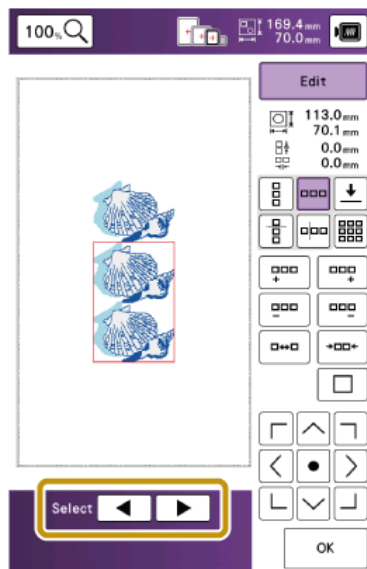
4 Touch .



→ The repeated pattern will be divided into separate elements.

5 Touch .

6 Use  and  to select the element to repeat.

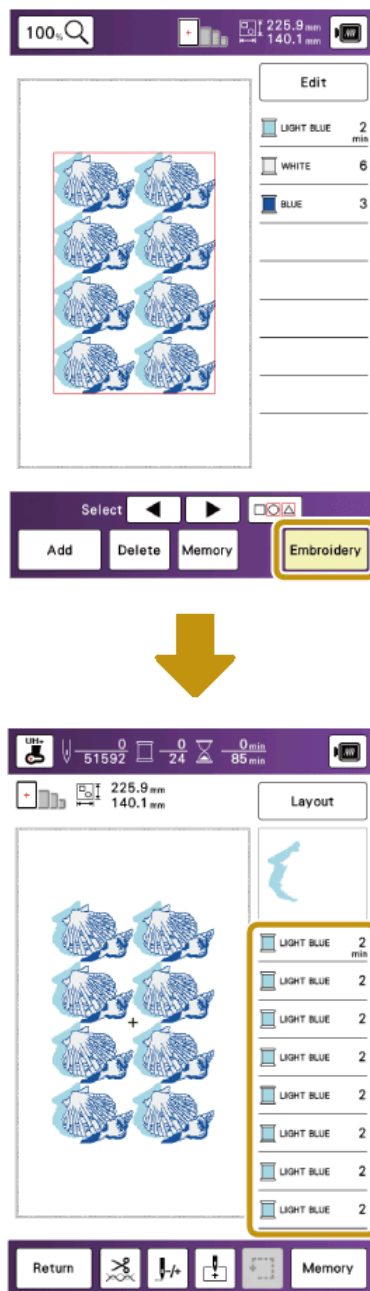


7 Repeat the selected element.

■ Color Sorting Repeated Patterns

Touch [Embroidery] to automatically change the embroidering order of colors in combined border embroidery patterns so that the same color can be continuously embroidered.

This allows you to continue embroidering without repeatedly changing the upper thread or changing the embroidering order manually.



Memo

- When a grouped pattern is repeated, the embroidering order is changed in each pattern.
- If there are repeated patterns with other repeated patterns or other patterns, the embroidering order of only the repeated patterns is changed.

■ Assigning Thread Marks

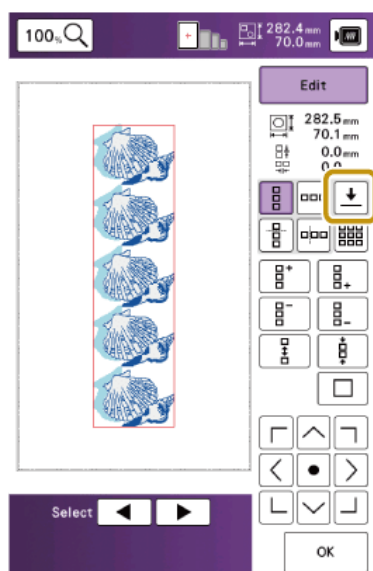
By sewing thread marks, you can easily align patterns when rehooping the fabric to embroider a series. When embroidering is finished on a pattern, a thread mark will be sewn using the final thread.

When embroidering a series of patterns, use the thread marks for positioning adjacent patterns.

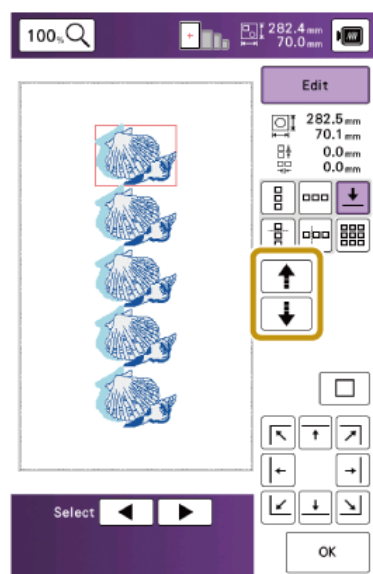
➤ [Embroidering the Pattern Repeatedly](#)

1 Touch .

2 Touch .



3 Touch to select the position where the thread mark will be sewn.



Memo

When there are two or more elements, use  or  to select an element to assign a thread mark(s) to.

4 Touch [OK].

// Changing the Thread Color

You can change the thread color by moving the color to be changed to the top of the embroidering order and selecting a new color from the thread colors in the machine.

- 1 Touch [Edit], and then touch .

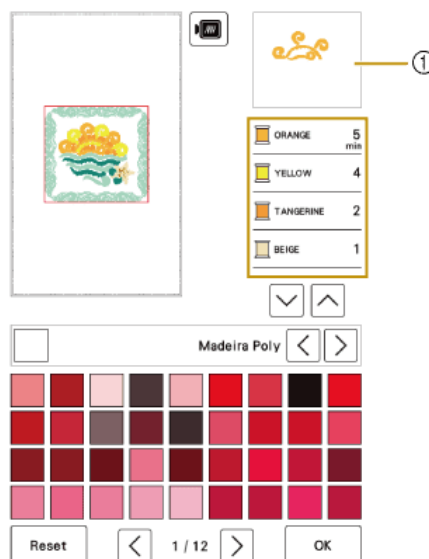


→ The thread color palette appears.

- 2 Touch the color of the part to be changed.

* Touch  or  to display the thread color that is not on the screen.

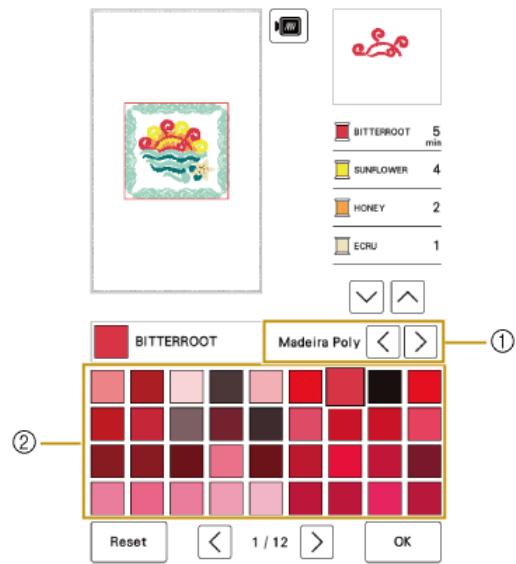
→ The selected thread color image appears.



① Selected thread color image

- 3 Select a new color from the thread color palette, and then touch [OK].

* To return to the original color, touch [Reset]. If multiple colors have been changed, this command will return all colors to their original colors.



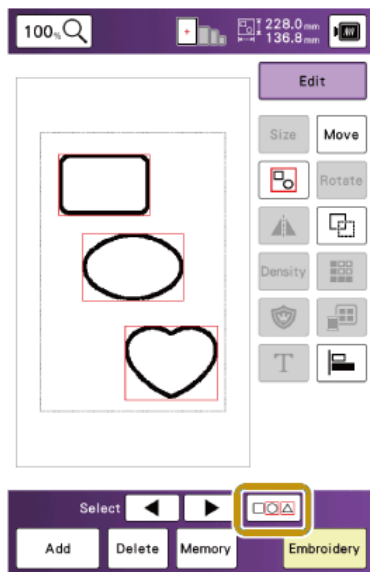
① Thread brand for colors

② Thread color palette

→ The display shows the changed colors.

// Aligning the Embroidery Patterns

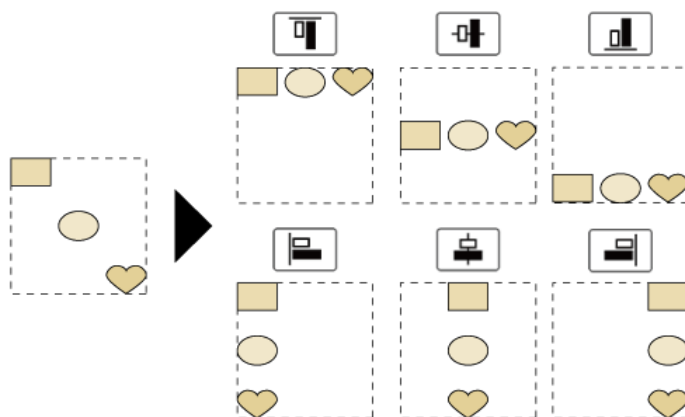
- 1 Touch , select each pattern that you want to align, and then press [OK].



- 2 Touch [Edit], , and then press the key for the desired alignment.

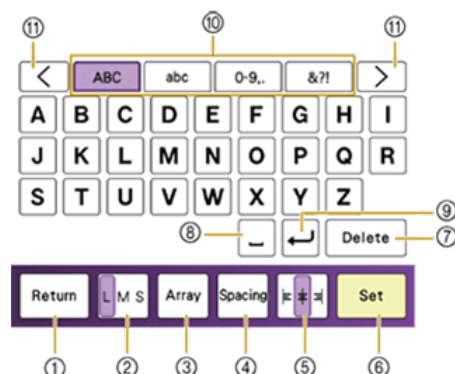
- 3 Touch the key for the desired alignment.

Example:



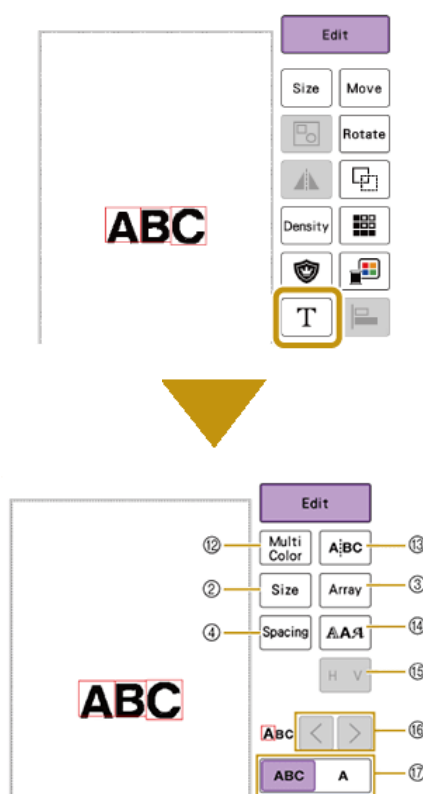
Character Pattern Edit Functions

• Character Input Screen



• Character Pattern Editing Screen

Touch [Edit], and then touch



① Return key

Return to the previous screen.

② Size key

Change the size of the character patterns.

When editing from the character pattern editing screen, fine adjustments are possible.

➤ [Changing the Size and the Density of the Pattern](#)

③ Array key

Change the configuration of the character patterns.

- To arrange the character patterns on an arc, touch  ,  ,  or .



: Make the arc flatter.



: Make the arc rounder.

- To arrange the character patterns on an incline, touch .



: Change the incline counterclockwise.



: Change the incline clockwise.

- : Reset the layout.

④ Character spacing key

Change the spacing of the character patterns.

- : Increase the character spacing.
- : Decrease the character spacing.
- : Reset the spacing.

⑤ Alignment key

Switch alignment. This function is available when multiple lines of characters are input.



ABCDE
FGH
IJKLMNOP

ABCDE
FGH
IJKLMNOP

ABCDE
FGH
IJKLMNOP

⑥ Set key

Apply the character pattern editing.

⑦ Delete key

Delete the character.

⑧ Space key

Enter a space.

⑨ Line feed key

Make a new line.

⑩ Category keys

Select the category of character.

⑪ Category Page key

Touch  or  to move through the category selection screen pages one at a time.

⑫ Multi color key

Touch this key when you want to change the thread color, character by character in character embroidery. Since the machine stops at the end of each character, the upper thread can be changed as you embroider.

⑬ Separate key

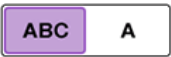
Separate the continuous character patterns to adjust the spacing or edit separately afterwards.

-  : Select where the pattern is to be separated.
- : Separate the pattern. A separated character pattern cannot be combined again.

⑭ Font Type key

Change the font of the characters.

Depending on the font that was selected, it may not be possible to change the font.

- To change the font of one character, touch  to display  and then select the character. The font of the selected character is changed.

⑮ **Vertical/horizontal text key**

Touch this key to switch between text written vertically and horizontally.

(Japanese font only)

⑯ **Character selection keys**

Move the cursor and select a character.

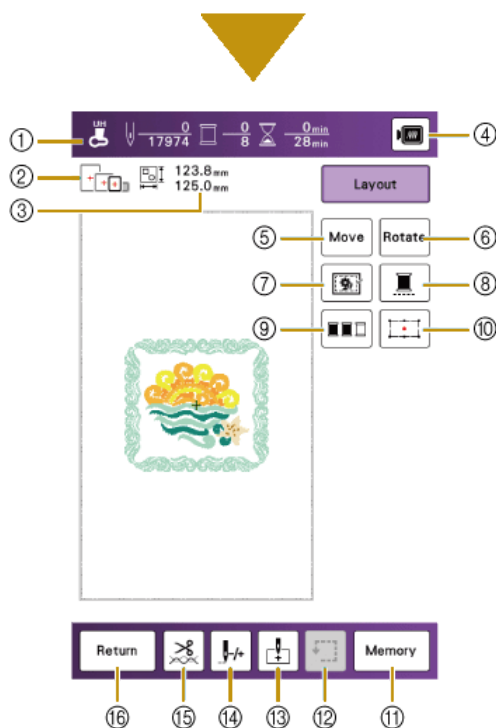
⑰ **Select one/all key**

Select to edit all characters or one character.

-  : Edit all characters.
-  : Edit one character.
- To change the size of one character, touch  to display  and then select the character. The size of the selected character is changed.

Embroidering Functions

Using these keys, you can move or rotate pattern, etc.
Touch [Layout] to display the editing window.



Note

Some operations or functions are not available for certain patterns. If the key display is grayed out, you cannot use that function or operation with the selected pattern.

① Needle point check key

Turn on the light of the LED pointer.

Touch this key to check the needle drop point with the light of the LED pointer.

> [Checking the Needle Drop Point with the Embroidery Foot "UH+" with LED Pointer](#)

② Available frames

Shows the embroidery frames that can be used for the selected pattern.

Be sure to use the proper frame.

➤ [Types of Embroidery Frames](#)

③ **Pattern size**

Shows the size of the selected pattern.

④ **Image key**

Preview the embroidery image.

➤ [Previewing the Pattern](#)

⑤ **Move key**

Move the pattern.

-  0.0 mm : Shows the distance between the embroidering position and the center (when the embroidery pattern is moved).
0.0 mm

➤ [Moving/Rotating the Pattern](#)

⑥ **Rotate key**

Rotate the pattern.

-  0.0° : Shows the degree of rotation of the pattern.

➤ [Moving/Rotating the Pattern](#)

⑦ **Basting key**

Add the basting stitch around the pattern. You can select the distance from the pattern to the basting stitching.

➤ [Basting Embroidery](#)

⑧ **Uninterrupted embroidery key**

Change the setting to embroider the pattern with a single color.

Touch the key again to return to the original setting.

Even if uninterrupted embroidery  has been set, the automatic thread cutting function and the thread trimming function can be used.

The icons of the spool of thread are grayed out.

⑨ **Thread color sorting key**

➤ [Thread Color Sorting](#)

⑩ **2-point embroidery positioning function on/off key**

Switch on/off the 2-point embroidery positioning function.

➤ [The 2-Point Embroidery Positioning Function](#)

⑪ **Memory key**

Save the pattern to the machine's memory or USB media. The pattern can also be transferred to a computer via a wireless network connection.

➤ [Saving Embroidery Patterns](#)

⑫ **Trace key**

Check the position of the pattern.

➤ [Checking the Pattern Position](#)

⑬ **Starting point key**

Specify the needle start position.

➤ [Aligning the Pattern and the Needle](#)

➤ [Embroidering Linked Characters](#)

⑭ **Forward/Back key**

Move the needle forward or back in the pattern; useful if the thread breaks while embroidering or if you want to start again from the beginning.

➤ [If the Thread Breaks or the Bobbin Runs out of Thread During Embroidering](#)

⑮ **Cut/Tension key**

Set automatic thread cutting or the thread tension. For embroidery, these functions are set automatically.

➤ [Adjusting Thread Tension](#)

➤ [Using the Automatic Thread Cutting Function \(End Color Trim\)](#)

➤ [Using the Thread Trimming Function \(Jump Stitch Trim\)](#)

⑯ **Return key**

Return to the edit screen.

[Aligning the Pattern and the Needle](#)

[Checking the Pattern Position](#)

[The 2-Point Embroidery Positioning Function](#)

[Basting Embroidery](#)

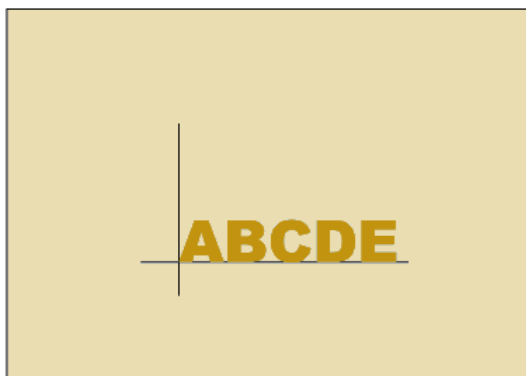
[Thread Color Sorting](#)

[Using the Automatic Thread Cutting Function \(End Color Trim\)](#)

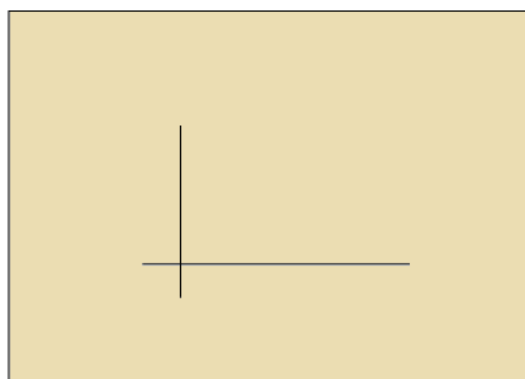
[Using the Thread Trimming Function \(Jump Stitch Trim\)](#)

// Aligning the Pattern and the Needle

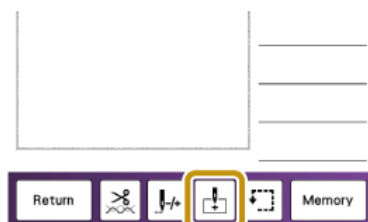
Example: Aligning the lower left side of a pattern and the needle



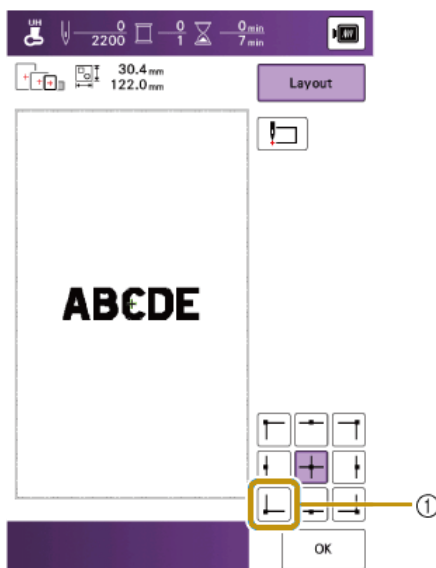
- 1 Mark the embroidery start position on the fabric, as shown.



- 2 Touch



- 3 Touch



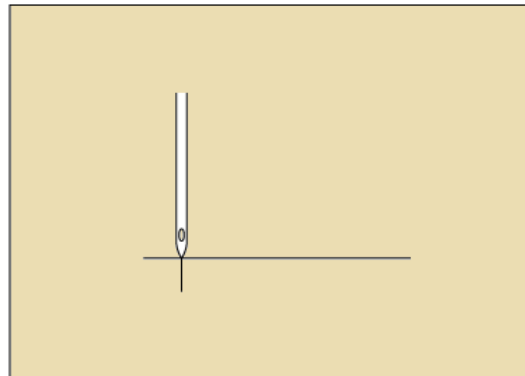
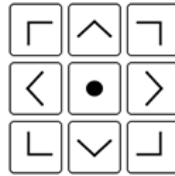
① Start position

→ The needle is positioned in the lower-left corner of the pattern. The carriage moves so that the needle is positioned correctly.

4 Touch [OK].

5 Touch [Layout], and then touch Move.

6 Use the following keys to align the needle and the mark on the fabric, and start embroidering the pattern.



// Checking the Pattern Position

The carriage moves and shows the pattern position. Watch the embroidery frame closely to make sure the pattern will be embroidered in the right place.

-  : Move the carriage to trace the embroidery area of the pattern. This allows you to check that there is enough space to embroider the pattern.



-  : Move the carriage to the selected position.



-  : Set the needle start position to the lower-left corner of the pattern. This setting is useful when connecting patterns since it allows you to continue embroidering until the first stitch of the next pattern.



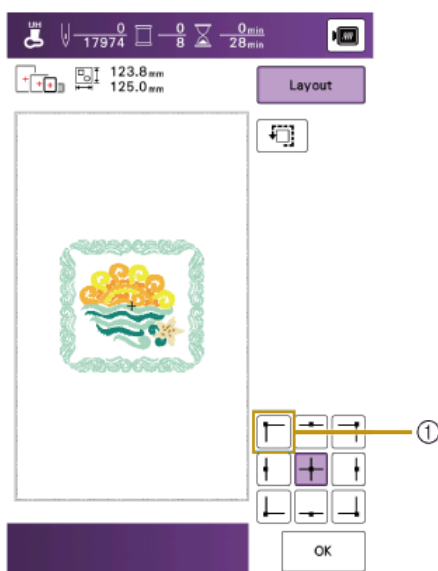
-  : Move the carriage to the selected position.



- 1 Touch .



- 2 Touch the key for the position that you want to check.

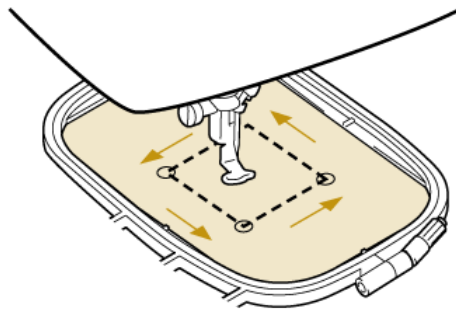


① Selected position

→ The carriage will move to the selected position on the pattern.

Memo

To see the entire embroidering area, touch . The carriage moves and shows the embroidery area.



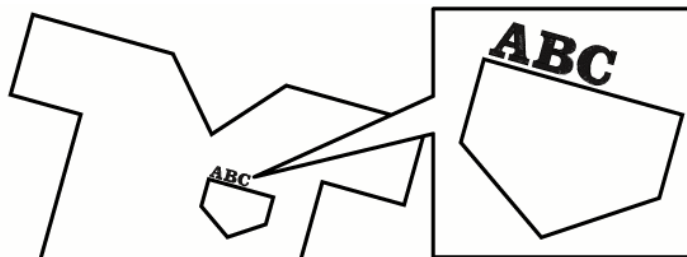
CAUTION

Do not lower the needle when the embroidery frame is moving. If the needle is down, it could break and result in injury.

3 Touch [OK].

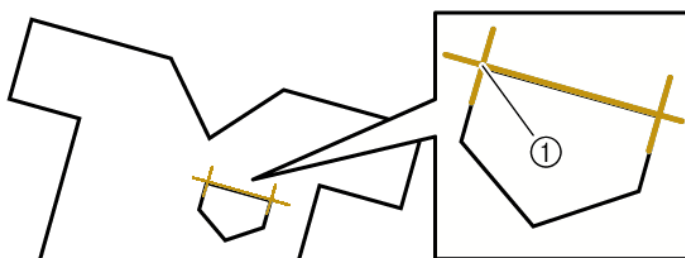
The 2-Point Embroidery Positioning Function

By using the 2-point embroidery positioning function, the embroidering position can easily be aligned. This is useful when embroidering in an area where it is necessary to align the pattern, as shown below.



1 Use a chalk pencil to mark the desired embroidering position.

The line drawn for the reference direction should be longer.

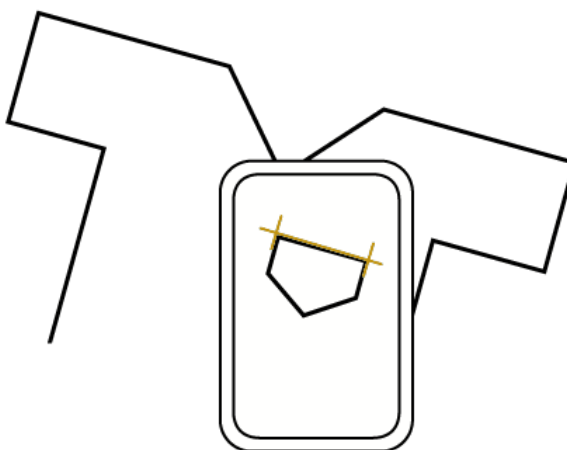


① Chalk pencil mark

Memo

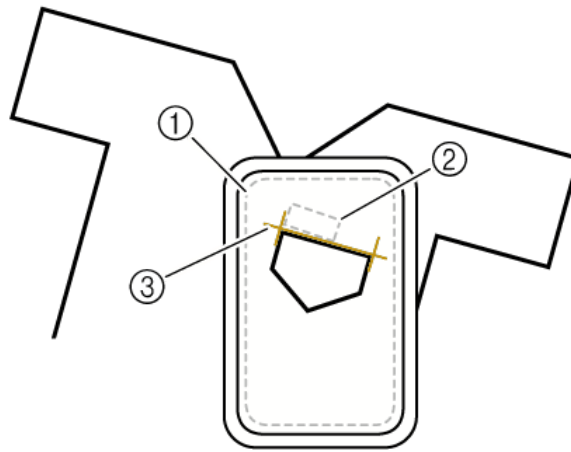
If the desired position of the pattern can be clearly established, such as when embroidering along a pocket, it is not necessary to mark the position with a chalk pencil.

2 Hoop the fabric in the embroidery frame.



Note

When hooping the fabric in the embroidery frame, make sure that the embroidery pattern will fit within the embroidering area of the frame being used.

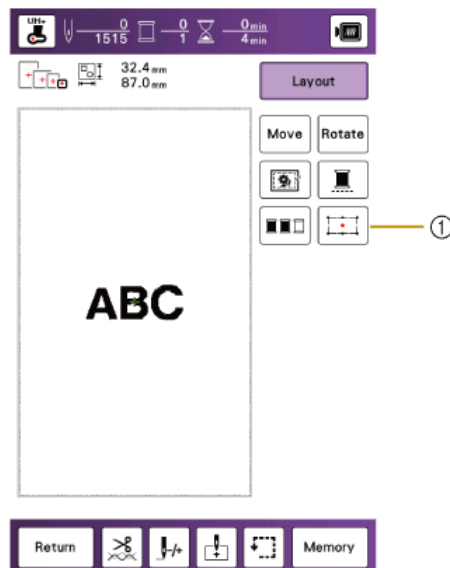


- ① Embroidering area
- ② Embroidery pattern size
- ③ Chalk pencil mark

3 Select the pattern.

4 Touch [Embroidery] to display the embroidery screen.

5 Touch [Layout] and then touch  **.**



① Switch on/off the 2-point embroidery positioning function.

Note

This function can be used without an LED pointer. In that case, refer to the needle drop point instead of the light of the LED pointer.

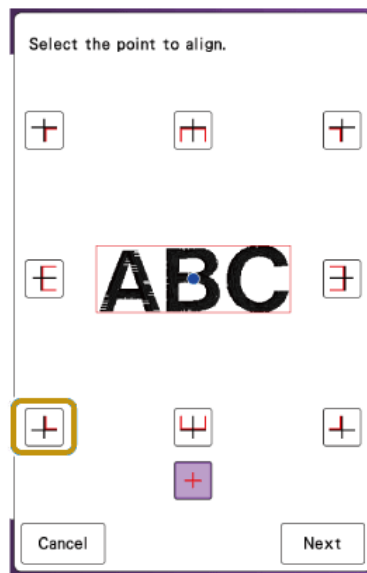
Memo

- The LED pointer lights up to indicate the needle drop point.
- When the LED pointer is turned on, the embroidery foot height is automatically adjusted according to the fabric thickness.
- If the surface of the fabric is too uneven or rough, check and adjust the alignment of the light of the LED pointer and the needle drop point before starting to embroider.

6 If a message appears, indicating that the move and rotate settings will return to the original ones, touch [OK].

7 From the reference points shown in the screen, select the point to be used for aligning the pattern.

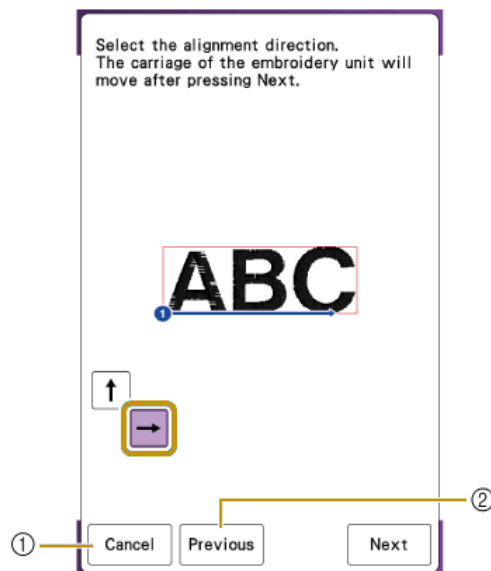
For this example, select the point in the lower-left corner of the pattern.



8 Touch [Next].

9 Select the direction (from the reference point) to be used as a reference for aligning the pattern.

For this example, select the arrow pointing to the right as the reference direction.



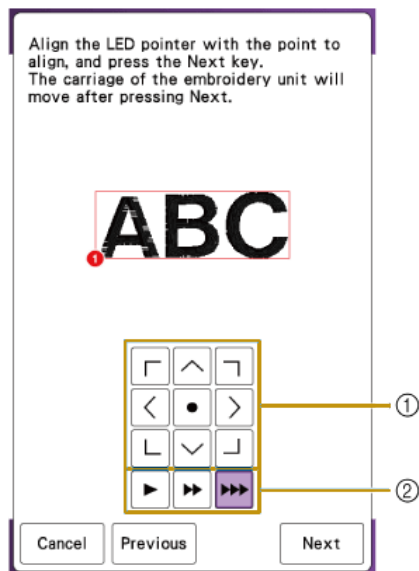
① Cancel the pattern alignment settings.

② Return to the previous screen.

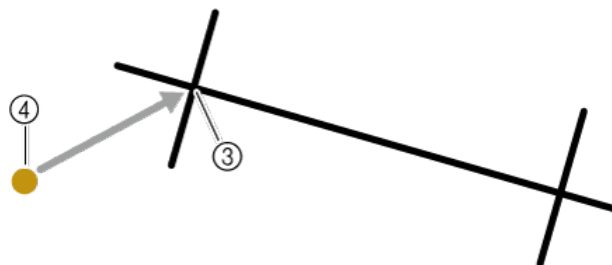
10 Touch [Next].

11 Touch the positioning keys to move the embroidery frame until the position of the LED pointer and the first point are aligned.

To change the speed that the frame moves, use the frame movement speed keys. If it is difficult to make a precision alignment, touch a frame movement speed key for a slower speed.



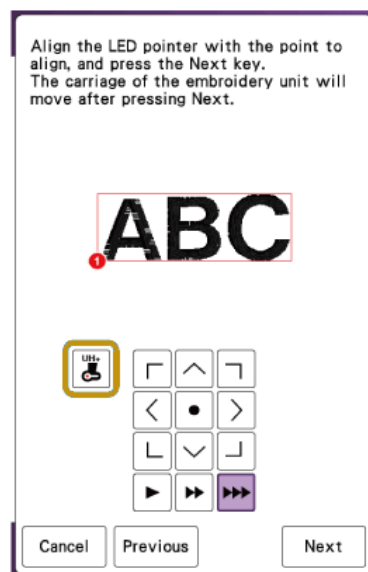
- ① Positioning keys
- ② Frame movement speed keys



- ③ First point
- ④ Light of the LED pointer

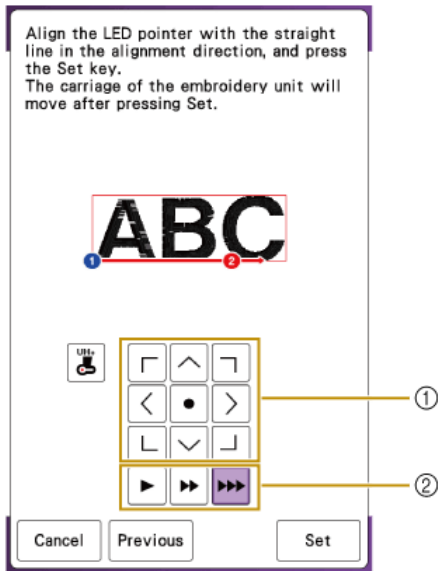
Note

If  is displayed to the left of the positioning keys, the LED pointer has shifted from its initial position. Touch  to adjust the position.

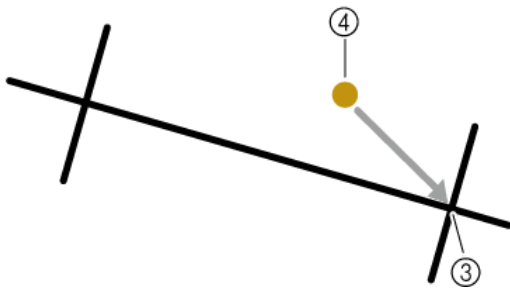


- 12 Touch [Next].
- 13 Touch the positioning keys to move the embroidery frame until the position of the LED pointer is aligned with the reference direction line (as there is no second point marked).

To change the speed that the frame moves, use the frame movement speed keys. If it is difficult to make a precision alignment, touch a frame movement speed key for a slower speed.



- ① Positioning keys
- ② Frame movement speed keys

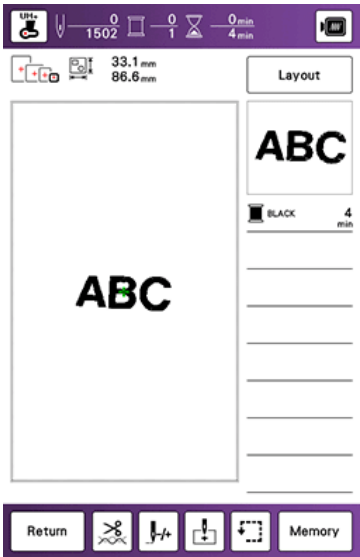


- ③ Second point along reference line
- ④ Light of the LED pointer

Note

- Set the position of the LED pointer to a position that is not too close to the first reference point. If it is too close, a message will appear, prompting you to reposition it.
- In order to increase the accuracy of the pattern alignment, align the position of the LED pointer above the second point (③) and as far away from the first point as possible.

14 Touch [Set].
→ The pattern is repositioned.

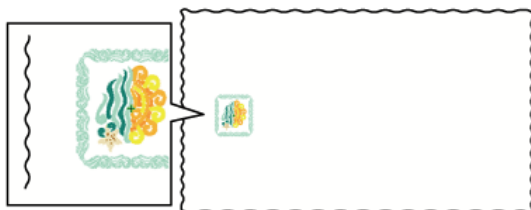


15 Press the “Start/Stop” button to start embroidering.

■ Another example

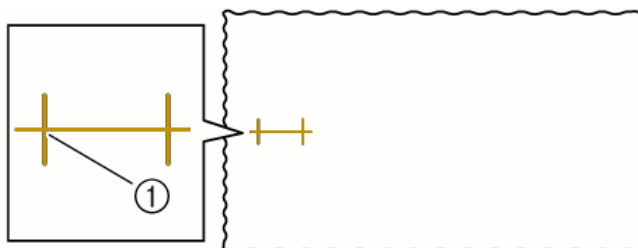
By specifying an alignment point and direction, embroidery patterns can be positioned and aligned for various purposes.

In this example, a pattern is aligned at the left center of the towel.



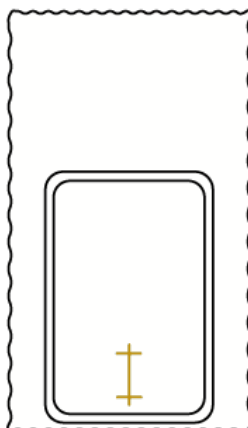
1 Use a chalk pencil to mark the desired embroidering position.

The line drawn for the reference direction should be longer.



① Chalk pencil mark

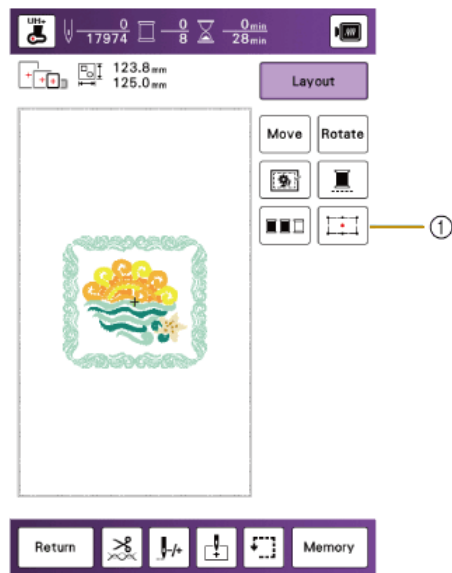
2 Hoop the fabric in the embroidery frame.



3 Select the pattern.

4 Touch [Embroidery] to display the embroidery screen.

5 Touch [Layout] and then touch .

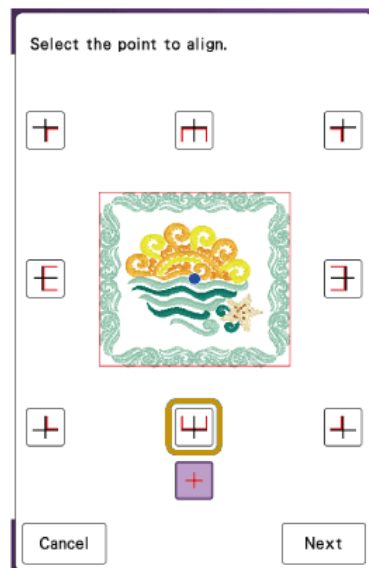


① Switch on/off the 2-point embroidery positioning function.

6 If a message appears, indicating that the move and rotate settings will return to the original ones, touch [OK].

7 From the reference points shown in the screen, select the point to be used for aligning the pattern.

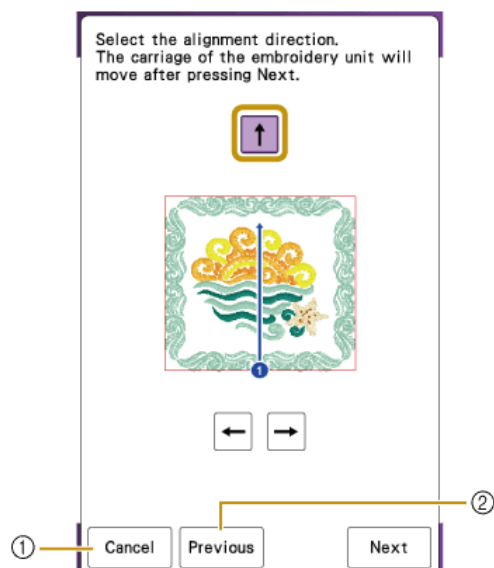
For this example, select the point in the lower-center of the pattern.



8 Touch [Next].

9 Select the direction (from the reference point) to be used as a reference for aligning the pattern.

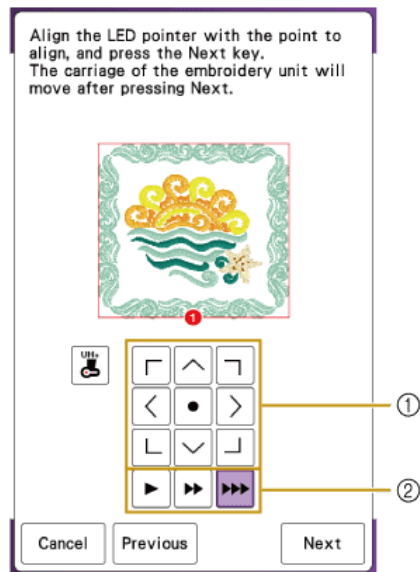
For this example, select the arrow pointing upward as the reference direction.



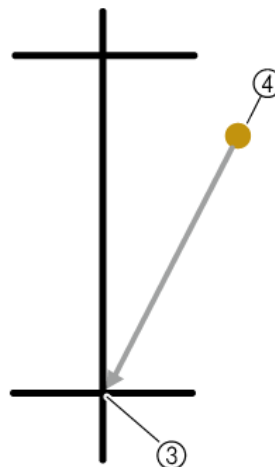
- ① Cancel the pattern alignment settings.
- ② Return to the previous screen.

10 Touch [Next].

11 Touch the positioning keys to move the embroidery frame until the position of the LED pointer and the first point are aligned.



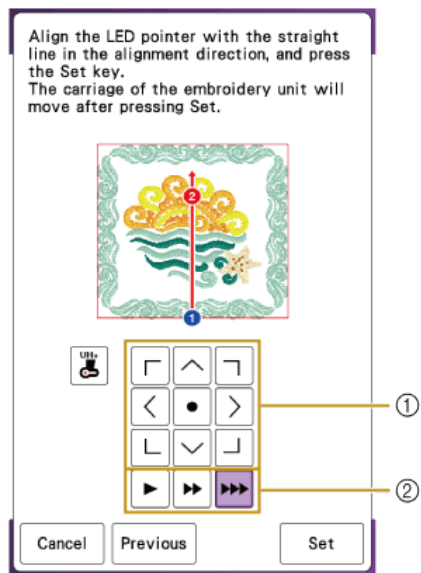
- ① Positioning keys
- ② Frame movement speed keys



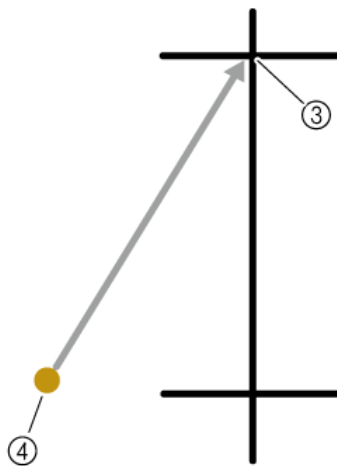
- ③ First point
- ④ Light of the LED pointer

12 Touch [Next].

13 Touch the positioning keys to move the embroidery frame until the position of the LED pointer is aligned with the reference direction line (as there is no second point marked).



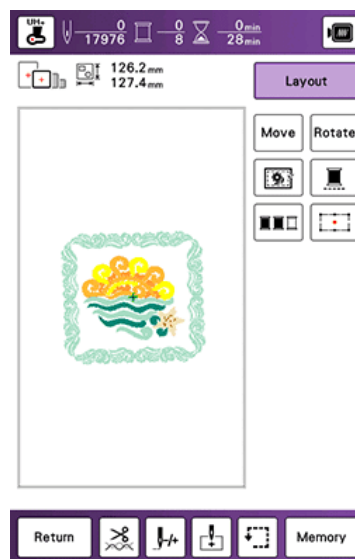
- ① Positioning keys
- ② Frame movement speed keys



- ③ Second point along reference line
- ④ Light of the LED pointer

14 Touch [Set].

→ The pattern is repositioned.



15 Press the “Start/Stop” button to start embroidering.

// Basting Embroidery

Before embroidering, basting stitches can be sewn along the outline of the pattern. This is useful for embroidering fabric that cannot have stabilizer material affixed with an iron or adhesive. Basting stitches can be used to attach material that cannot be hooped to stabilizer, making it possible to be embroidered.

Note

It is recommended to finish combining and editing the pattern before selecting the basting setting. If the pattern is edited after selecting the basting setting, the basting and pattern may become misaligned, and the basting under the pattern may be difficult to remove after embroidering is complete.

- 1 Touch .
- 2 Display [Embroidery Basting Distance].
- 3 Use  and  to specify the distance from the pattern to the basting stitching.



Memo

- The higher the setting, the farther the basting is from the pattern.
- The setting remains selected even if the machine is turned off.

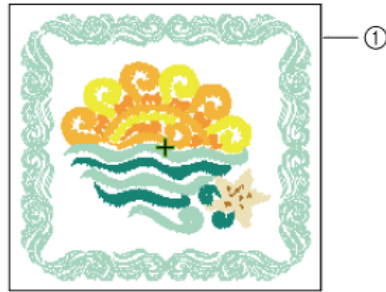
- 4 Touch [OK] to return to the embroidering screen.
- 5 Touch [Layout], and then touch  to select the basting setting.



Note

When  is touched, the pattern is moved to the center. After selecting the basting setting, move the pattern to the desired position.

→ Basting is added to the beginning of the embroidering order.



① Basting

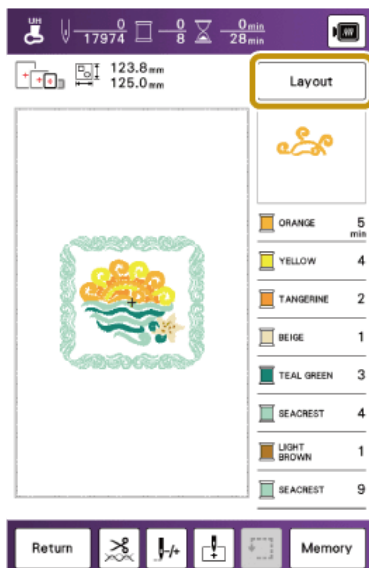
- 6** Press the “Start/Stop” button to start embroidering.
- 7** When embroidering is finished, remove the basting stitching.

// Thread Color Sorting

This function allows you to embroider while replacing the thread spool a minimal number of times.

Before starting to embroider, touch  in the embroidery screen to rearrange the embroidery order and sort it by thread colors.

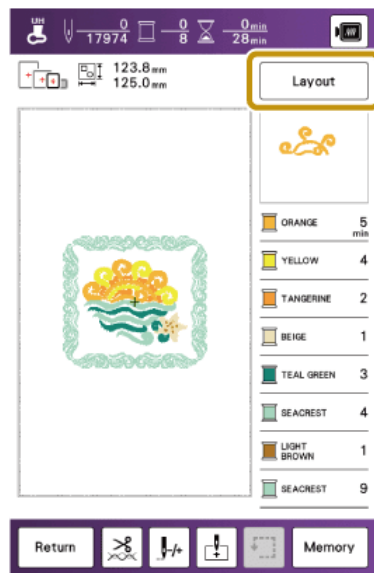
1 Touch [Layout] in the embroidery screen.



2 Touch .



* Touch [Layout] again to check the sorted thread colors.



→ The embroidery color order is rearranged and sorted by thread colors.

- Touch [Layout], then  to cancel color sorting and embroider with the original embroidery color order.

Note

This function does not work on overlapping patterns.

// Using the Automatic Thread Cutting Function (End Color Trim)

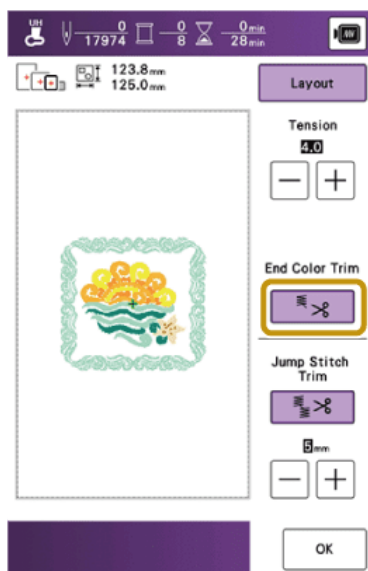
The automatic thread cutting function  will cut the thread at the end of embroidering each color. This function is initially turned ON. To turn this function OFF, touch  and then .

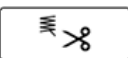
* This setting returns to its default  when the machine is turned off.

1 Touch .



2 Touch  to turn off the automatic thread cutting function.



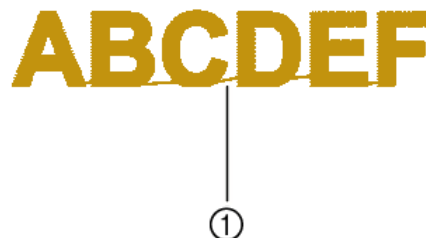
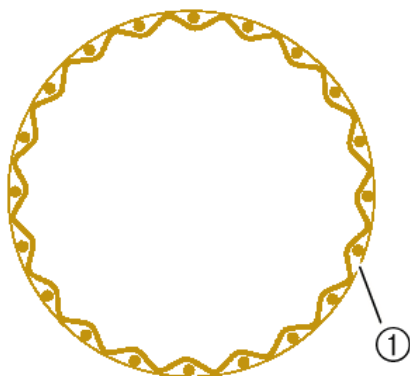
→ The key will display as . When one color thread is embroidered, the machine will stop without cutting the thread.

// Using the Thread Trimming Function (Jump Stitch Trim)

The thread trimming function  will automatically trim any excess thread jumps within the color. This function is initially turned ON.

To turn this function OFF, touch  key and then .

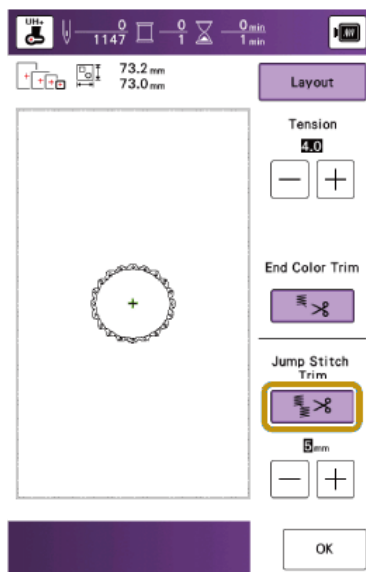
* Your customized setting remains after turning the machine off and on.

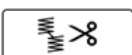


① Jump stitch

1 Touch .

2 Touch  to turn off the thread trimming function.



→ The key will display as . The machine will not trim the thread before moving to the next stitching.

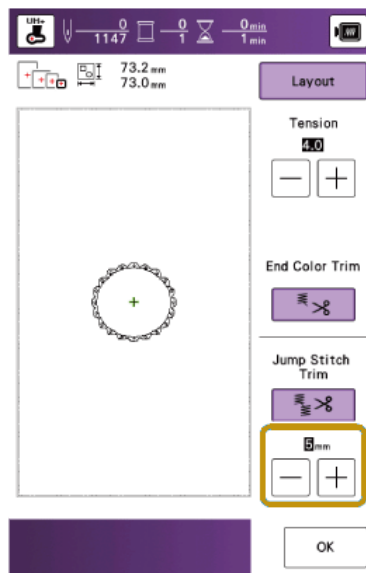
■ Selecting the Length of Jump Stitch Not to Trim

When the thread trimming function  is turned on, you can select the length of the jump stitch. Select a setting from 5 mm (approx. 3/16 inch) to 50 mm (approx. 2 inches) in 5 mm increments.

* Your customized setting remains after turning the machine off and on.

Touch  or  to select the length of jump stitch.

For example: Touch  to select 25 mm (approx. 1 inch) and the machine will not trim a jump stitch of 25 mm or less before moving to the next stitching.



Note

- If design has many trims it is recommended to select a higher jump stitch trim setting in order to reduce the amount of excess tails on backside of fabric.
- The higher number of the jump stitch length selected, the fewer number of times the machine will trim. In this case, more jump stitches remain on the surface of the fabric.

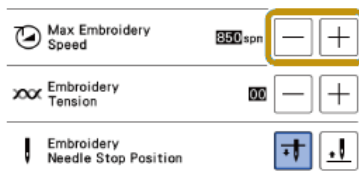
Embroidering Functions of the Machine Settings

[Adjusting the Embroidery Speed](#)

[Changing the Thread Color Display](#)

// Adjusting the Embroidery Speed

- 1 Touch .
→ The settings screen appears.
- 2 Touch .
→ The embroidery settings screen appears.
- 3 Display [Max Embroidery Speed] in the embroidery settings screen.
- 4 Use   to change the maximum embroidery speed.



Memo

- SPM is the number of stitches embroidered in one minute.
- Decrease the embroidery speed when embroidering on thin, thick, or heavy fabrics and when using a specialty thread like a metallic thread.
- The setting specified before the main power is set to OFF remains selected the next time that the machine is turned ON.

- 5 Touch [OK].

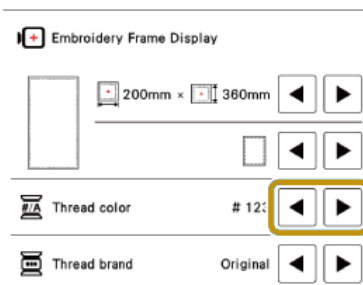
// Changing the Thread Color Display

You can display the name of the thread colors or embroidery thread number.

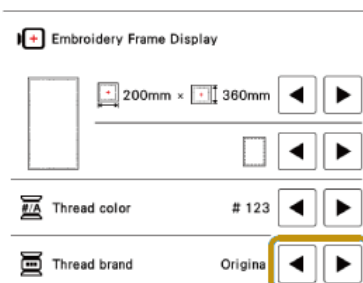
Memo

- Colors on the screen may vary slightly from actual spool colors.
- [Original] retains the brand thread specified in the imported pattern.

- 1 Touch .
→ The settings screen appears.
- 2 Touch .
→ The embroidery settings screen appears.
- 3 Display [Thread color] in the embroidery settings screen.
- 4 Use   to display the name of the thread colors or the embroidery thread number.



- 5 Use   to select a thread brand.



- 6 Touch [OK].

Various Embroidery Patterns

[Embroidering the Pattern Repeatedly](#)

[Embroidering Linked Characters](#)

[Appliqué Patterns](#)

[Creating an Appliqué Piece](#)

[Using a Frame Pattern to Make an Appliqué](#)

[Embroidering Couching Patterns](#)

[Embroidering Split Embroidery Patterns](#)

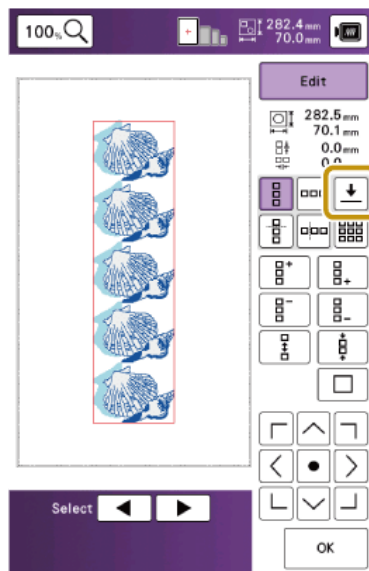
Embroidering the Pattern Repeatedly

After creating the repeated pattern, rehoop the embroidery frame and keep embroidering for the next pattern.

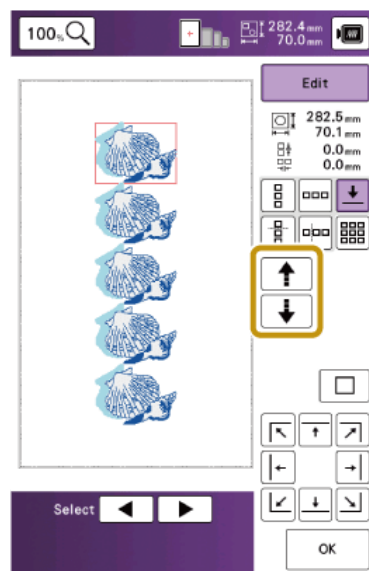
1 Select a pattern and touch [Edit].

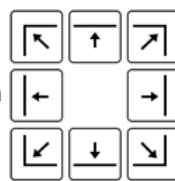
2 Touch .

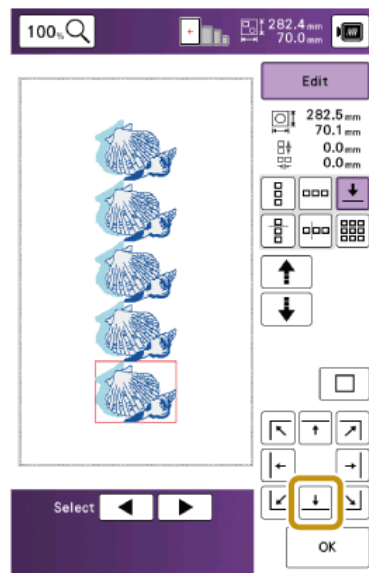
3 Touch .



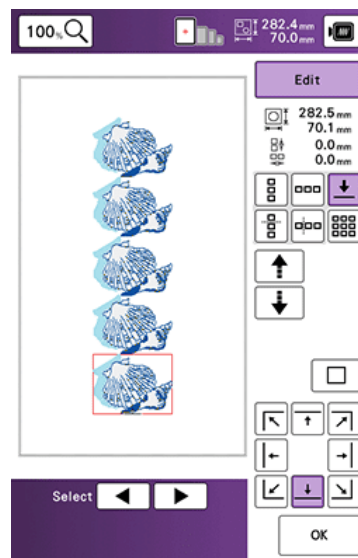
4 When there are two or more elements, use  or  to select an element to assign a thread mark(s) to.



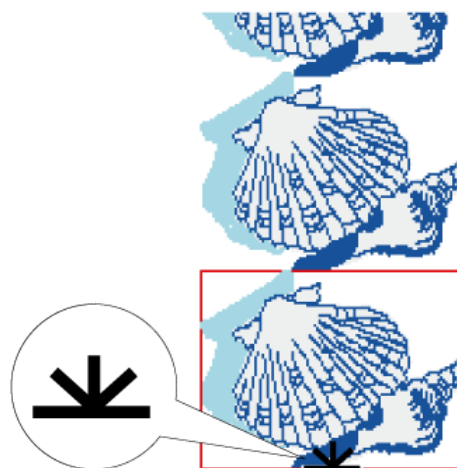
5 Touch  to select the thread mark to be sewn.



- 6 Touch [OK], then [Embroidery].



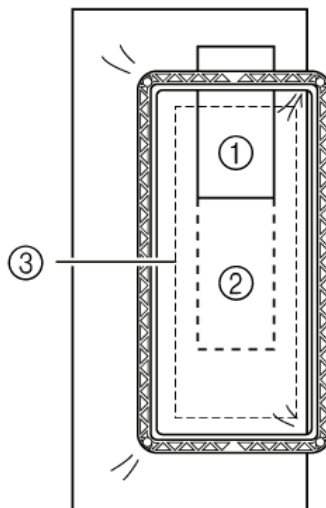
- 7 Press the “Start/Stop” button to start embroidering.
→ When embroidering is finished, the thread mark is embroidered with the last thread color.



- 8 Remove the embroidery frame.
9 Rehoop the fabric in the embroidery frame.

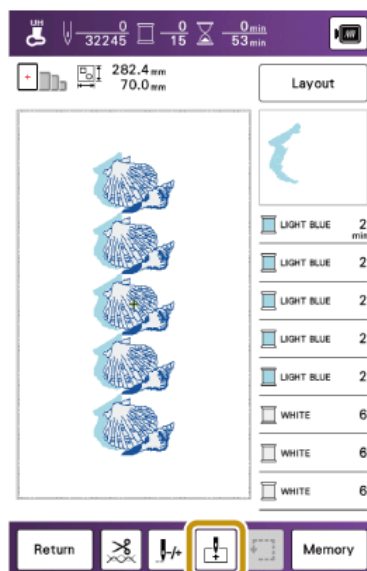
Note

Adjust the position of the fabric so that the embroidering area for the next pattern is within the embroidering area.

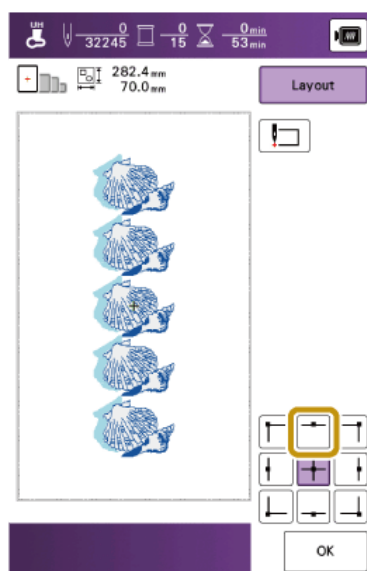


- ① Pattern embroidered first
- ② Position of pattern to be embroidered next
- ③ Embroidering area

10 Attach the embroidery frame to the machine, and then touch

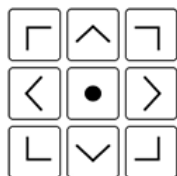


11 Touch to set the starting point to the center top of the pattern.



12 Touch [OK].

13 Touch [Layout], and then touch **Move**.

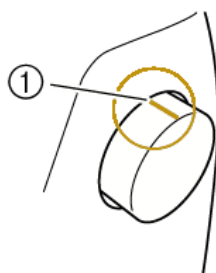


14 Touch    to move the embroidery frame until the thread mark on the fabric is aligned with the light of the LED pointer.

To check the needle drop point with the light of the LED pointer, touch .

Memo

For the accurate needle drop point, slowly turn the handwheel toward you (counterclockwise) to lower the needle. Then, turn the handwheel away from you (clockwise) until the mark on the handwheel is at the top. The carriage cannot move if the mark on the handwheel is not at the top.



① Mark

15 Touch [OK].

16 Remove the thread mark.

17 Start embroidering.

// Embroidering Linked Characters

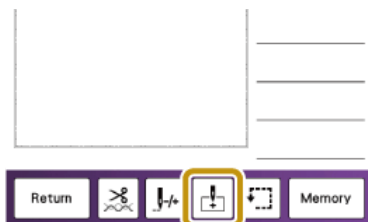
Follow the procedure described below to embroider linked characters in a single row when the entire pattern extends beyond the embroidery frame.

Example: Linking “FG” to the characters “ABCDE”

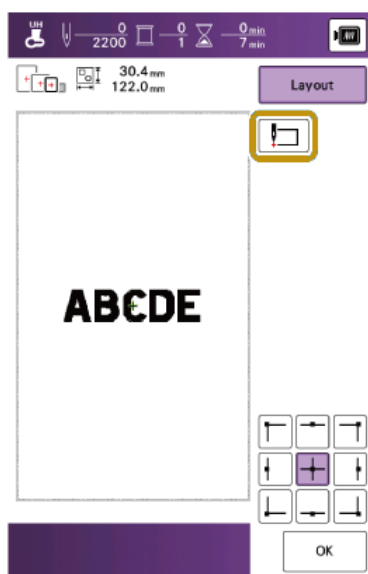
A B C D E F G

1 Select the character patterns for “ABCDE”.

2 Touch .



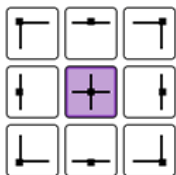
3 Touch .



→ The needle is positioned in the lower-left corner of the pattern. The carriage moves so that the needle is positioned correctly. The machine is set to embroider until the first stitch of the next character pattern (F).

Note

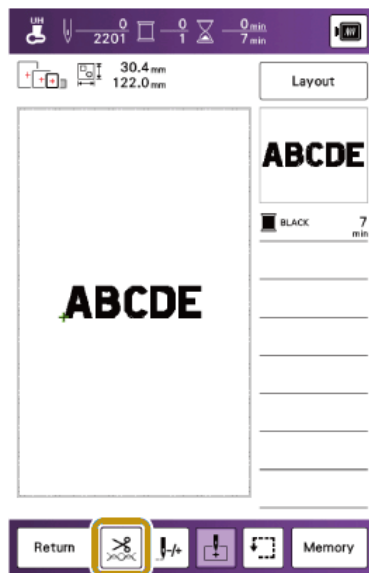
- To cancel the starting point setting and return the starting point to the center of the pattern, touch  or .



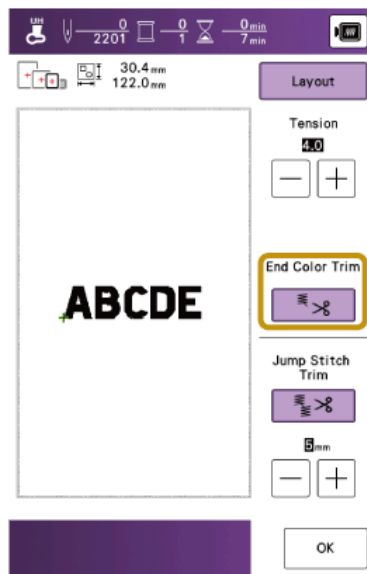
- Using  can select a different starting point for embroidering. However, the starting point setting is canceled.

4 Touch [OK].

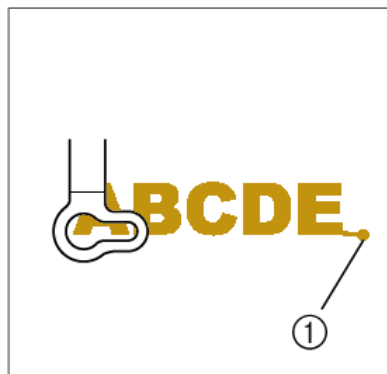
5 Touch .



- 6 Touch  to turn off the thread cutting function and then touch [OK].



- 7 Press the “Start/Stop” button.
- 8 After the characters are embroidered, cut the threads to a generous length, remove the embroidery frame, reposition the fabric in the hoop so that the remaining characters (“FG”) can be embroidered, and then attach the embroidery frame.



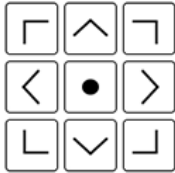
① End of the embroidering

- 9 As in step 1, select the character patterns for “FG”.

- 10 Touch .

- 11 Touch .

→ The needle is positioned in the lower-left corner of the pattern. The carriage moves so that the needle is positioned correctly.

- 12 Touch [Layout], then **Move** and use  to align the needle with the end of embroidering for the previous pattern.



- 13 Touch [OK].
- 14 Press the “Start/Stop” button to start embroidering the remaining character patterns.



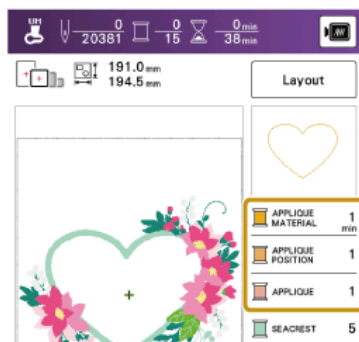
Appliqué Patterns

The embroidery pattern contains an appliqué when the embroidery color order display shows

[ ✂ (APPLIQUE MATERIAL)],

[ (APPLIQUE POSITION)] or

[  (APPLIQUE)].



[Appliqué 1](#)

// Appliqué 1

The following procedure is for the appliqué patterns marked with the  in the “Embroidery Design Guide”.

For details, refer to “Embroidery Design Guide”.

<https://babylock.com/machine-support-and-updates>

Required materials

- Fabric for the appliqué piece
- Fabric for the appliqué base
- Stabilizer material
- Craft glue
- Embroidery thread

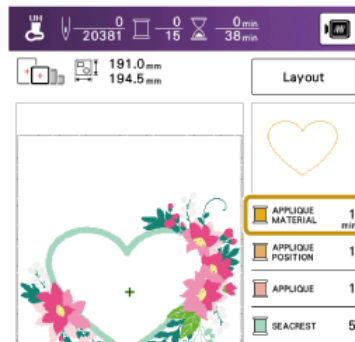
Note

Use thread colors that coordinate with the appliqué pattern and fabrics. The embroidery color order display does not specify the color of the appliqué pieces or appliqué position.

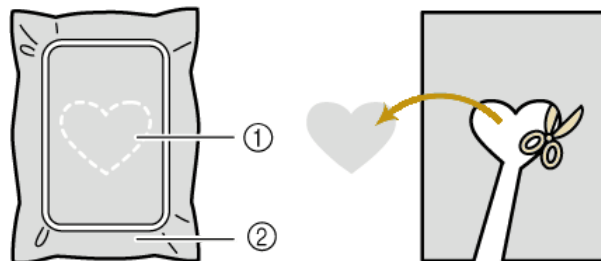
1 Creating an Appliqué Piece

(a) Attach stabilizer material to the wrong side of the fabric for the appliqué piece.

(b) Hoop the fabric in the embroidery frame, attach the embroidery frame to the machine, and then start the machine to sew the cutting line of the appliqué piece.



(c) Remove the fabric for the appliqué piece from the embroidery frame, and then carefully cut along the sewn cutting line.



- ① Cutting line for appliqué piece
- ② Fabric for appliqué piece

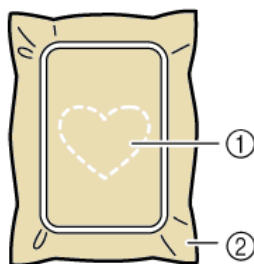
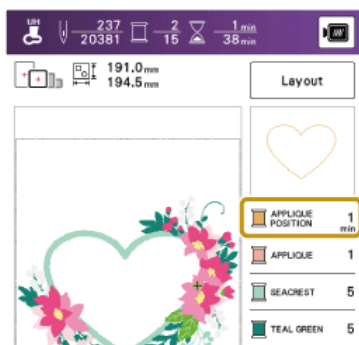
Note

- If the appliqué piece is cut out along the inside of the cutting line, it may not be correctly attached to the fabric. Therefore, carefully cut out the appliqué piece along the cutting line.
- After cutting out the appliqué piece, carefully remove the thread.

2 Sewing the Appliqué Position on the Base Fabric

(a) Attach stabilizer material to the wrong side of the fabric for the appliqué base.

(b) Hoop the fabric in the embroidery frame, attach the embroidery frame to the machine, and then start the machine to sew the outline of the appliqué position.



- ① Appliqué position
- ② Base fabric

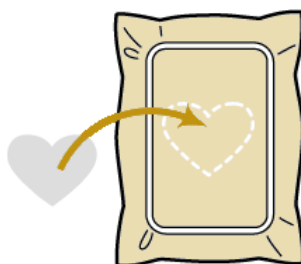
(c) Remove the embroidery frame from the embroidery unit.

Note

Do not remove the base fabric from the embroidery frame until all embroidering is finished.

3 Affixing the Appliqué Piece to the Base Fabric

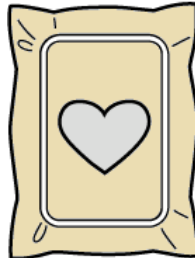
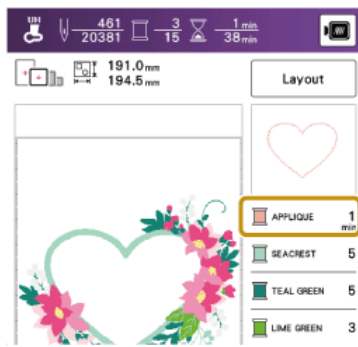
(a) Lightly apply craft glue to the back of the appliqué piece, and then attach it to the base fabric within the outline of the appliqué position.



Note

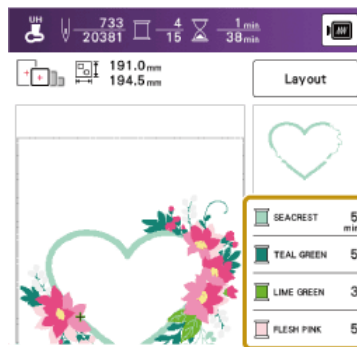
- If the appliqué piece cannot be attached to the base fabric with craft glue, securely baste it in place with basting stitches.
- If thin fabric is used for the appliqué piece, reinforce and secure it in place with an iron-on adhesive sheet. An iron can be used to attach the appliqué piece to the appliqué position.

(b) After the appliqué piece is attached to the base fabric, attach the embroidery frame to the machine. Thread the machine with the embroidery thread, and then start the machine to embroider the appliqué.



4 Embroidering the Remainder of the Pattern

(a) Change the embroidery thread according to the embroidery color order display, and then finish embroidering the remainder of the pattern.



Note

- Since glue may become attached to the presser foot, needle or needle plate, clean off any glue after finishing embroidering the appliqué pattern.
- For best results, trim all excess threads each time the thread color is changed.

Creating an Appliqué Piece

Creating an appliqué piece is convenient for fabrics that cannot be embroidered or when you wish to attach an appliqué to a garment. The following pattern will be used to create an appliqué piece.



Note

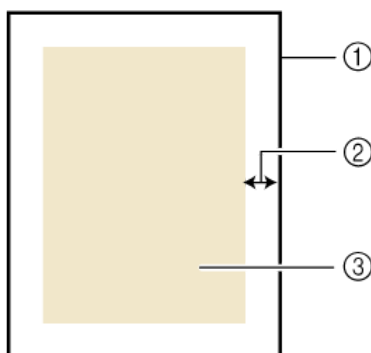
- Felt or denim fabrics are recommended to make the appliqué piece. Depending on the pattern and fabric used, lighter weight fabrics may cause the stitching to appear smaller.
- For best results, be sure to use stabilizer material for embroidering.
- When making appliqué pieces, do not use the optional border embroidery frame. Depending on the pattern density and fabric used, shrinkage of the stitching may occur.

1 Select the pattern, and edit it if necessary.



Note

- Finish combining and editing the pattern before selecting the appliqué setting. If the pattern is edited after selecting the appliqué setting, the appliqué stitching and pattern may become misaligned.
- Since an outline is added, the pattern for an appliqué piece (when the appliqué setting is selected) will be larger than the original pattern. First, adjust the size and position of the pattern as shown below.



- ① Embroidering area
- ② About 1cm (approx. 1/2 inch)
- ③ Pattern size

- 2 Touch [Edit], and then touch .



- 3 Specify the distance between the pattern and the appliqué outline, and then touch [OK].



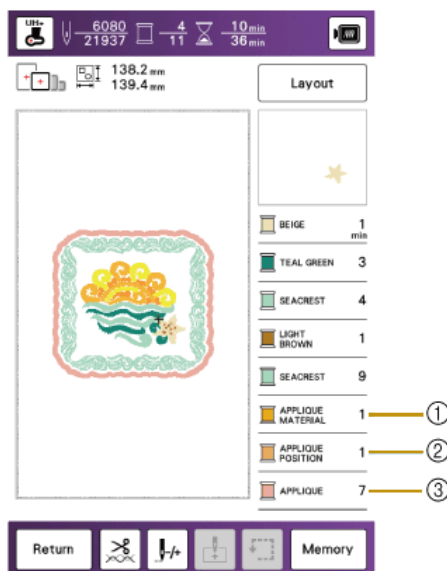
→ The pattern and appliqué outline are grouped.

- 4 Touch [Embroidery].

→ The steps for creating the appliqué piece are added to the embroidering order.

Memo

- Three steps are added to the embroidering order: appliqué cutting line, position of pattern placement on the stabilizer material, and appliqué stitching.



- ① Cutting line for appliqué
- ② Position of pattern placement on stabilizer material
- ③ Appliqué stitching

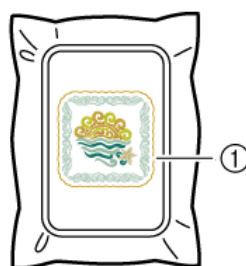
- When setting the [Thread color] to [#123] (thread number) in the settings screen, the following screen is displayed.



Note

An appliqué piece cannot be created if the pattern is too large or too complicated or a combined pattern is separated. Even if the selected pattern fits within the embroidering area, the entire appliqué pattern may exceed the embroidering area when the outline is added. If an error message appears, select a different pattern or edit it.

- 5 Fuse or stick a piece of stabilizer to the back of the felt or denim fabric to be used as the appliqué piece.
- 6 Hoop the fabric for the appliqué piece in the embroidery frame, attach the embroidery frame to the machine, and then start embroidering.
- 7 After the pattern is embroidered, thread the machine with the thread for the cutting line, and then sew the cutting line (APPLIQUE MATERIAL).

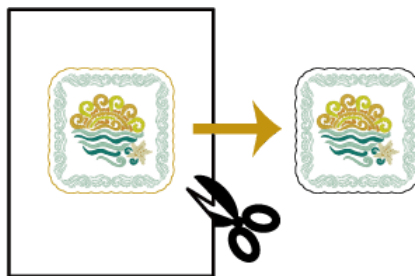


- ① Cutting line for appliqué

Note

We recommend using thread for the cutting line that is closest to the color of the fabric.

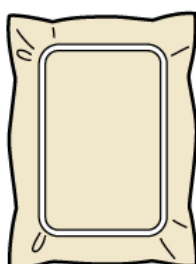
- 8 Remove the fabric for the appliqué piece from the embroidery frame, and then carefully cut along the stitching. After cutting, carefully remove all of the cutting line thread.



Note

- Depending on the pattern density and fabric used, there may be shrinking of the pattern, or the appliqué may be misaligned with the placement line. We recommend cutting slightly outside of the cutting line.
- When using patterns that are vertically and horizontally symmetrical, use a chalk pencil to indicate the pattern orientation before cutting it out.
- Carefully cut out the pattern on the outline you just sewed. Do not cut inside the cutting line, otherwise the appliqué fabric will not be caught by the appliqué stitch.

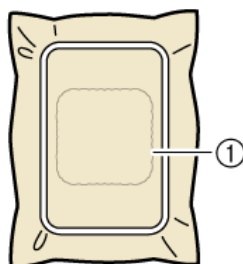
- 9 Use two layers of adhesive water soluble stabilizer material with their sticky sides together, and then hoop them in the embroidery frame.**



Note

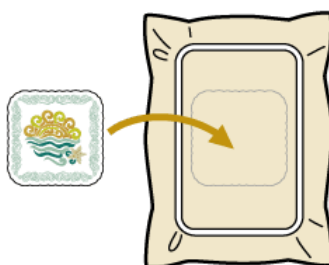
- If water soluble stabilizer is used, it is not necessary to remove the stabilizer material after sewing the appliqué outline. To reduce shrinkage of the pattern, we recommend using water soluble stabilizer.
- Put together two layers of water soluble stabilizer, otherwise the stabilizer material may tear during embroidering.

- 10 Thread the machine with the thread for the outline, and then sew the placement line for the appliqué position (APPLIQUE POSITION).**



① Pattern placement line

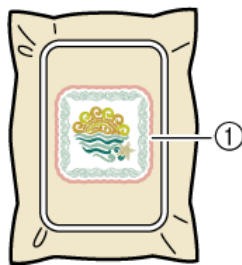
- 11 Lightly apply glue or spray adhesive, and paste the appliqué piece so that it aligns with the placement line.**



Note

Before pasting the appliqué piece down, make sure the appliqué piece is positioned correctly within the placement line.

12 With the machine threaded using the thread for the outline from step [10](#), embroider the outline (APPLIQUE).



① Outline of appliqué piece

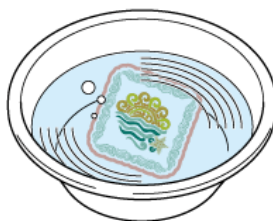
Memo

- The outline is sewn using satin stitching.
- Since glue may become attached to the presser foot, needle or needle plate, clean off any glue after finishing embroidering the appliqué pattern.

13 After embroidering is finished, remove the stabilizer material from the embroidery frame.

14 Use scissors to cut the excess water soluble stabilizer from outside the appliqué outline.

15 Soak the appliqué piece in water to dissolve the water soluble stabilizer.



16 Dry the appliqué piece, and then iron it if necessary.

Note

Do not apply a strong force when ironing, otherwise the stitching may be damaged.

Using a Frame Pattern to Make an Appliqué

Note

If you change the size or position of the patterns when making an appliqué, make a note of the size and the location.

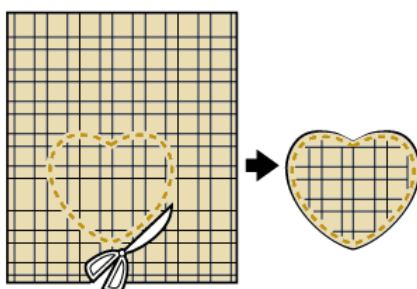
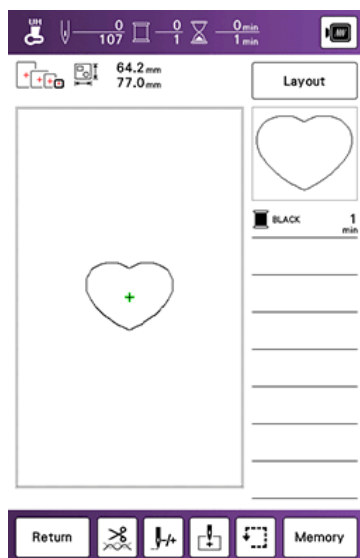
[Method 1](#)

[Method 2](#)

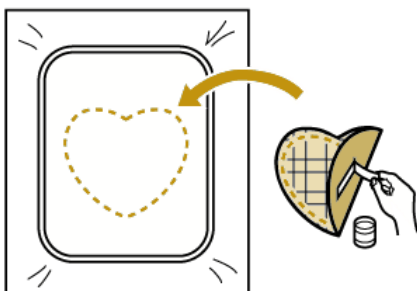
// Method 1

You can use framed patterns of the same size and shape to create an appliqué. Embroider one pattern with a straight stitch and one pattern with a satin stitch.

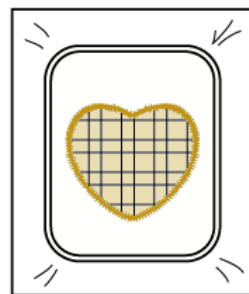
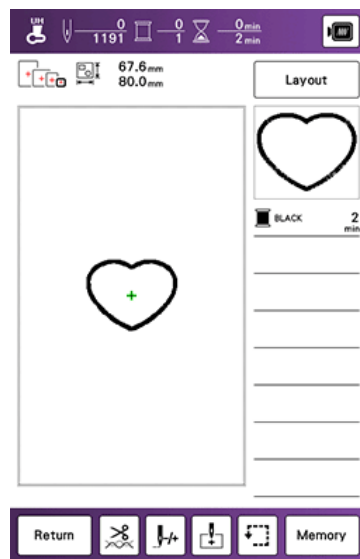
- 1 **Select a straight stitch frame pattern. Embroider the pattern onto the stabilized fabric for the appliqué piece, then cut neatly around the outside of the shape.**



- 2 Embroider the same pattern from step [1](#) onto the base fabric.
- 3 Apply two-sided stabilizer material to the back of the fabric for the appliqué piece created in step [1](#). Attach the appliqué to the base fabric matching the shapes.

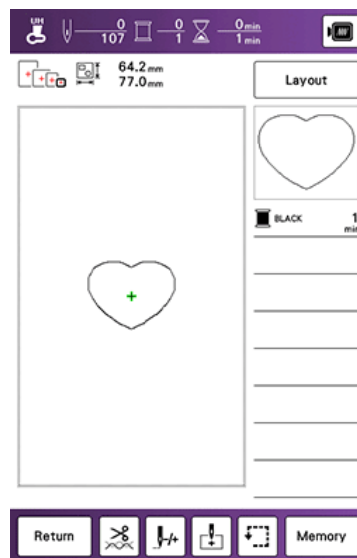


- 4 Select the satin stitch frame pattern of the same shape as the appliqué. Embroider over the fabric for the appliqué piece and base fabric from step [3](#) to create the appliqué.



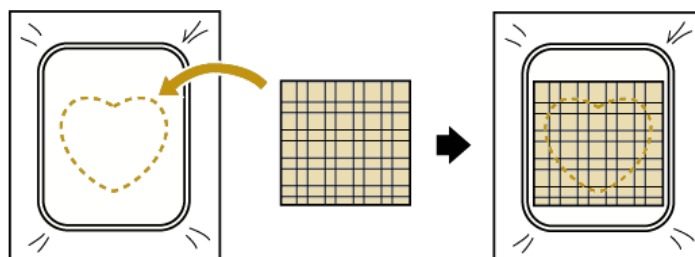
// Method 2

- 1 Select a straight stitch frame pattern, and embroider the pattern onto the base fabric.

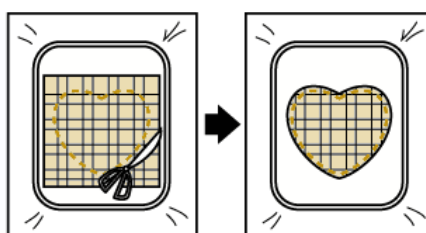


- 2 Place the fabric for the appliqué piece over the pattern embroidered in step 1 and embroider the same pattern on the fabric for the appliqué piece.

* Be sure that the fabric for the appliqué piece completely covers the stitched line.



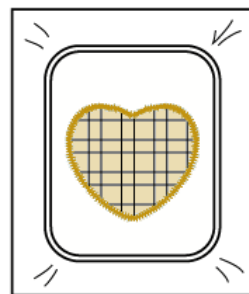
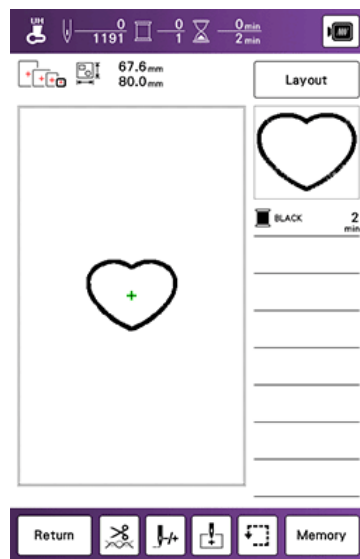
- 3 Remove the embroidery frame from the embroidery unit, and cut around the outside of the stitches of the fabric for the appliqué piece. And then, reattach the embroidery frame to the embroidery unit.



Note

Do not remove the fabric from the embroidery frame to cut it. Also, do not pull or push on the fabric. Otherwise, the fabric may loosen in the frame.

- 4 Select the satin stitch frame pattern of the same shape as the appliqué and embroider the satin stitch pattern to create an appliqué.



Embroidering Couching Patterns

Couching patterns can be embroidered using yarn.

Note

Before embroidering your project, do trial embroidery on a scrap piece of fabric that is the same as that used in your project.

There are two categories of couching patterns in the machine: Normal embroidery couching and Crochet couching.

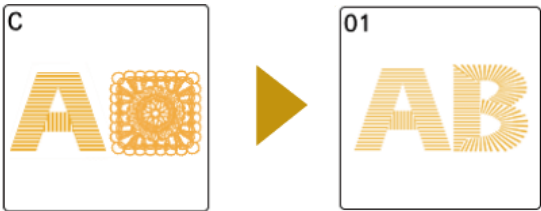
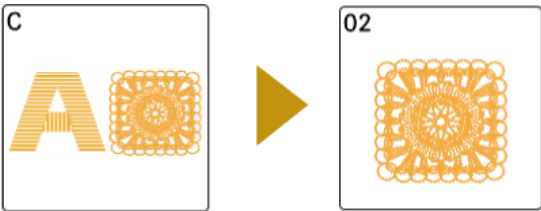
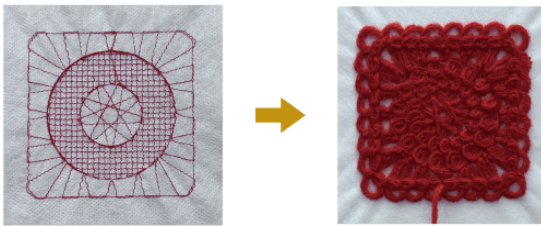
For both categories, the machine setting-up steps are the same, except that only crochet couching patterns include steps to form underlayment stitches without using yarn.

For details on the procedure of each category, refer to the following.

> [Embroidery Couching](#)

> [Crochet Couching](#)

Comparison chart

Couching styles	Normal Embroidery Couching	Crochet Couching
Category to be selected		
Stitched onto	Stabilized fabric	Two layers of water-soluble stabilizer (non-woven type)
Types of yarn	Yarn of weight 4 (MEDIUM )	Washable yarn of weight 4 (MEDIUM )
Types of stitches	All couching stitches with embroidery thread and yarn	Underlayment stitches with only embroidery thread and couching stitches with embroidery thread and yarn. Patterns may have multiple parts with each start and stop.
Samples		
Starting	Hold a 20 cm (approx. 8 inches) yarn tail near the front of the embroidery frame. Keep the tail intact.	Start with a 20 cm (approx. 8 inches) yarn tail, embroider a few stitches, and trim the tail off.
Ending	Leave a 20 cm (approx. 8 inches) yarn tail.	For the final part, leave a 20 cm (approx. 8 inches) yarn tail. For other parts, trim the tail at the end of each part.
Finishing	Pull the tails to the backside of the work, tie a knot, and trim the tails.	Tie a knot or glue the tail to the backside of the work and trim the tail.

// Embroidery Couching

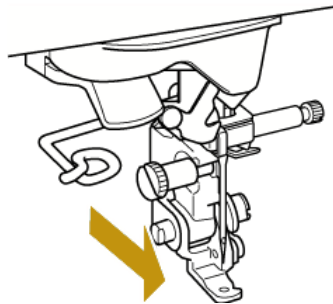
⚠ CAUTION

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 plies, the best finishing results may not be achieved, or injuries or damage may result.

■ Preparing for Embroidery Couching

- 1 Turn off the machine.
Attach the embroidery unit.
- 2 Install a bobbin wound with embroidery bobbin thread.
- 3 Turn on the machine.
- 4 Touch [Embroidery] in the home page screen.
- 5 Touch  to lock all keys and buttons, and then raise the presser foot lever.
- 6 Remove the presser foot and attach the embroidery couching foot “Y”.

▶ [Attaching Embroidery Foot](#)



⚠ CAUTION

When using the embroidery couching foot “Y”, make sure the machine is in embroidery mode. Otherwise, the needle will strike the embroidery couching foot, causing the needle to break and possibly causing injury.

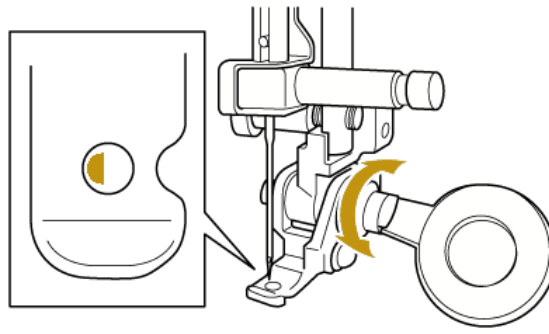
Note

This specific design of the embroidery couching foot “Y” is exclusively for this product.
When embroidering couching patterns, use the presser foot included with this machine.

- 7 Rotate the handwheel and check that the needle is in the left half of the hole in embroidery couching foot “Y”.

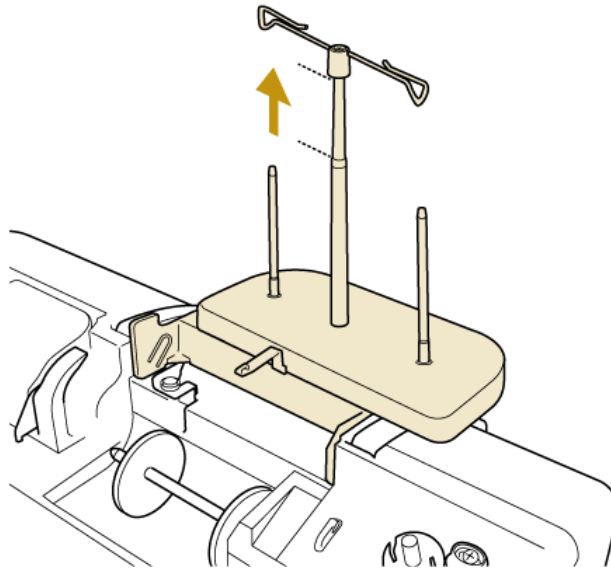
If the needle is not in the left half, turn the screw of embroidery couching foot “Y” to adjust the position of the embroidery foot. Turn the screw toward you to move the embroidery foot to the right. Turn the screw toward the back to move the embroidery foot to the left.

After making adjustments, rotate the handwheel and check that the needle does not touch the presser foot.



8 Attach the spool stand to the machine.

At this time, raise the telescopic thread guide shaft by about one level (refer to the height shown in the illustration).



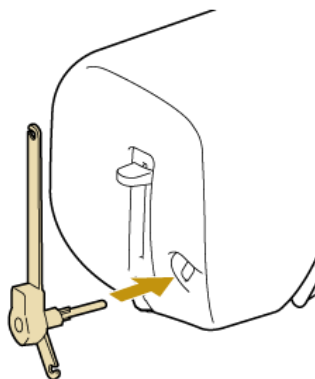
* For details on attaching the spool stand, refer to the following.

> [Spool Stand](#)

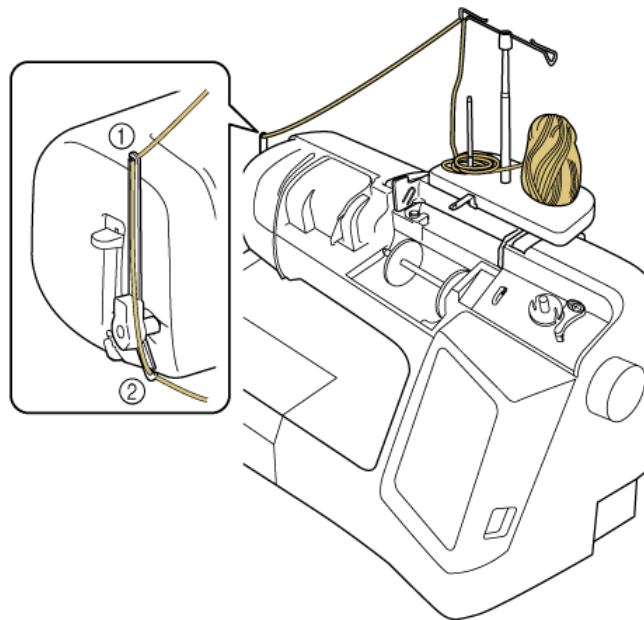
Note

Do not extend the telescopic thread guide shaft of the spool stand to its maximum height. A lower thread guide height keeps the yarn twist steadier and reduces the chance of tangles.

9 Insert the yarn guide into the slot for extension accessory.



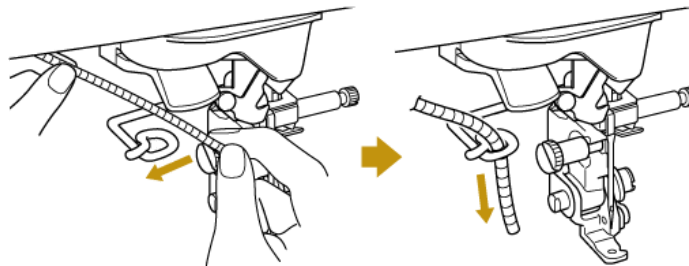
10 Pass the yarn through the telescopic thread guide and the yarn guide (①) to (②).



Note

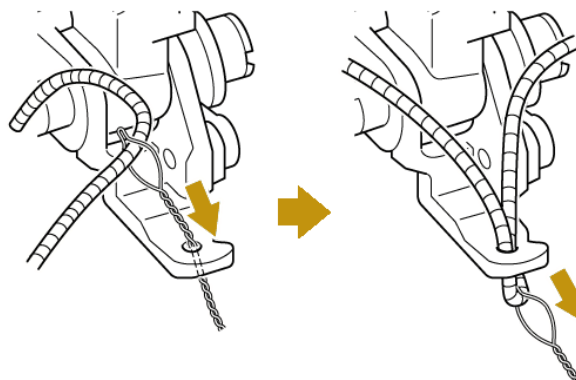
- Pull off an appropriate amount of yarn from the ball so that the yarn does not become taut.
- Make sure that the yarn does not become entangled as you work.

11 Pass the yarn through the guide on embroidery couching foot “Y”.



12 Thread the yarn through embroidery couching foot “Y”.

Pass the yarn through the loop in the yarn threader, and then pass the threader from top to bottom through the hole in embroidery couching foot “Y”. Pull the yarn to the front of the machine.



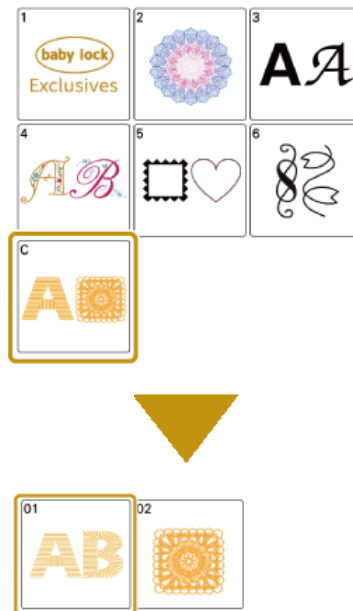
Note

- Place a sheet of paper under the presser foot to smoothly pass the yarn threader through the hole in embroidery couching foot “Y”.
- It may be helpful to lower the embroidery couching foot “Y” after the yarn threader has passed through the foot if the yarn is snagging on the needle.

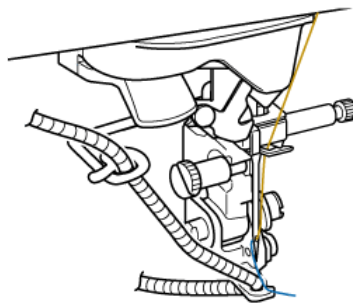
13 Touch to unlock all keys and buttons.

■ Selecting a Pattern and Upper Threading

- 1 Touch the category keys for couching patterns.



- 2 Select a pattern and touch [Set].
- 3 If not already done, install a bobbin with enough embroidery bobbin thread in the machine.
- 4 Thread the upper thread on the machine's spool pin.



Note

Do not use the spool stand for upper thread. Otherwise, thread may tangle with yarn.

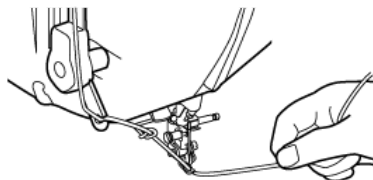
Memo

For best results, use an upper thread that is the same color as the yarn.

- 5 Press  (Presser foot lifter button) twice to raise the presser foot and then attach the embroidery frame to the embroidery unit.

■ Embroidering a Couching Pattern

- 1 Touch [Embroidery].
- 2 Make sure that about 20 cm (approx. 8 inches) of yarn is pulled to the front of the machine.
- 3 While holding the yarn in your hand in front of you, press the “Start/Stop” button.



⚠ CAUTION

Pulling the yarn upwards may cause it to catch on the needle, causing it to break. Be careful not to allow the yarn to catch on the needle.

Note

- Before embroidering, make sure that there is enough yarn, upper thread and bobbin thread.
- Make sure that the yarn passes smoothly through the guides. Unravel as much yarn from the ball as necessary so that the yarn does not become taut.
- Use yarn that has no knots.

4 After embroidering several stitches, release the yarn.

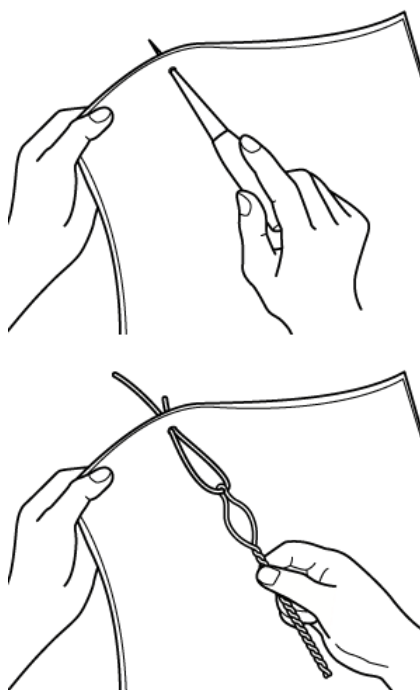
→ When embroidering is finished, the machine will automatically trim the threads and stop.

Memo

When using a high-density yarn, the upper thread tension may be disturbed. If this happens, it is possible to improve it by raising the [Embroidery Foot Height] by about 1 mm (approx. 1/32 inch) on the settings screen.

5 Cut the yarn, leaving about 20 cm (approx. 8 inches).

6 Punch a hole through the fabric with an awl or tapestry needle and then use the yarn threader to pull the excess yarn to the wrong side of the fabric.



7 Tie the end of the yarn so it cannot be pulled out, and then use scissors to cut off any excess yarn.

// Crochet Couching

[Before You Start Crochet Couching \(Overview\)](#)

[Preparing for Embroidery Couching](#)

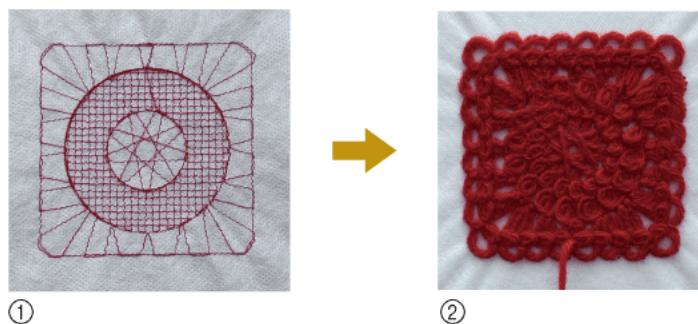
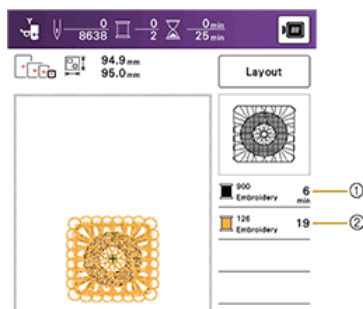
[Selecting a Pattern and Stitching the Underlay](#)

[Setting the Yarn](#)

[Couching Embroidery and Finishing off Yarn Ends](#)

■ Before You Start Crochet Couching (Overview)

In crochet couching, first embroider the underlay onto a water soluble stabilizer. Next, set the yarn in the machine and perform the couching embroidery. After embroidery is complete, dissolve the water soluble stabilizer and finish off the yarn ends.



- ① Embroider the underlay. The thread color of the underlay embroidery is displayed as [BLACK].
- ② Perform couching embroidery (secure the 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 plies, the best finishing results may not be achieved, or injuries or damage may result.

Note

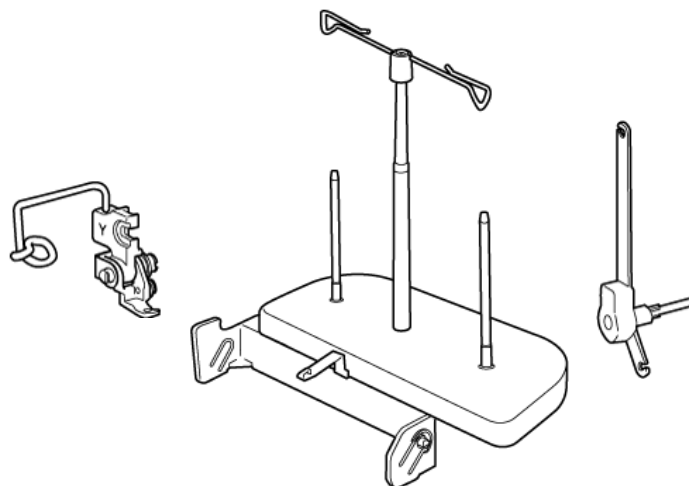
- Use washable yarn and non-woven type water soluble stabilizer.
- Before embroidering your project, do trial embroidery with the same materials as your project.

Memo

For best results, use upper embroidery thread that matches the color of the yarn.

■ Preparing for Embroidery Couching

Attach the embroidery couching foot "Y", the spool stand, and the yarn guide.



For details, refer to the following.

➤ [Preparing for Embroidery Couching](#)

■ Selecting a Pattern and Stitching the Underlay

1 Touch the category keys for couching patterns.

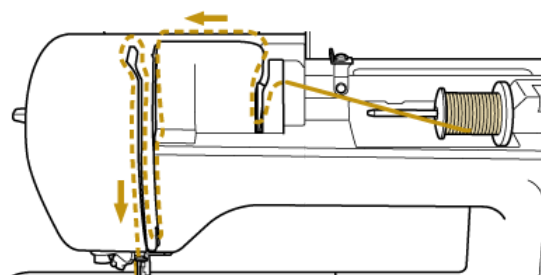


2 Select a pattern of crochet couching.

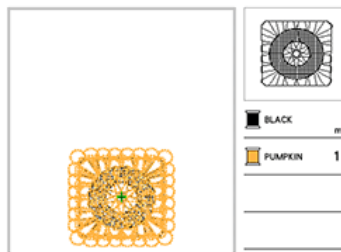
3 Touch [Set] then [Embroidery].

4 Install a bobbin fully wound with embroidery bobbin thread in the machine.

5 Prepare the spool of upper thread that matches the color of the yarn for the underlay, which is indicated as [BLACK] on the thread color list on the screen. Set it on the machine's spool pin and thread the machine.



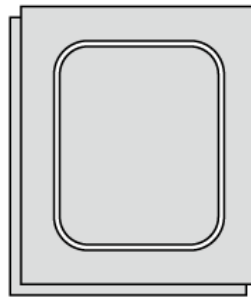
* For best results, use an upper thread that matches the color of the yarn; this will make the underlay less noticeable.



Note

Do not use the spool stand for the upper thread. Otherwise, the thread may tangle with the yarn.

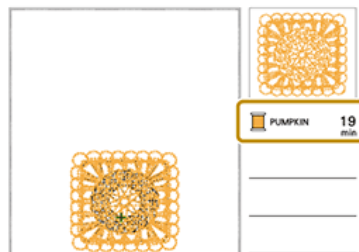
- 6 Layer two pieces of non-woven water soluble stabilizer, hoop them in the embroidery frame, and attach the frame to the machine.



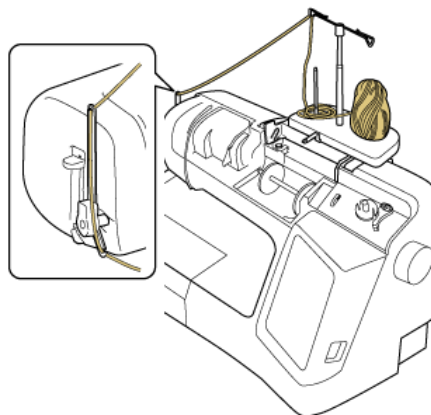
- 7 Embroider the first color (the underlay).

■ Setting the Yarn

- 1 Prepare washable yarn.



- 2 Touch **U** to lock all keys and buttons.
- 3 Pass the yarn through the spool stand and the yarn guide.



For details, refer to the following link.

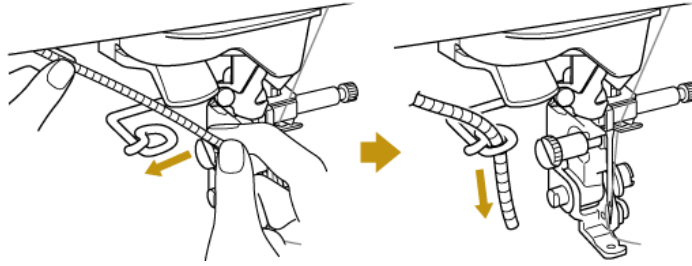
➤ [Preparing for Embroidery Couching](#)

Note

- Pull off an appropriate amount of yarn from the ball so that the yarn does not become taut.

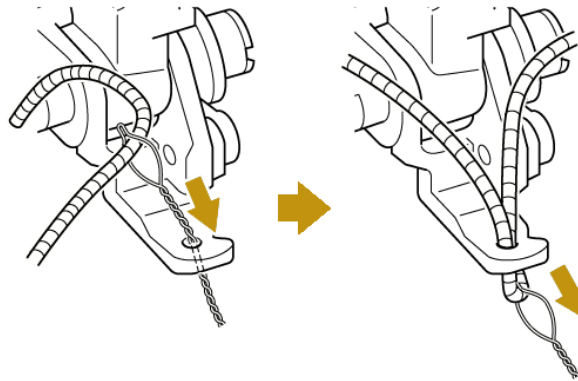
- Make sure that the yarn does not become entangled as you work.

4 Pass the yarn through the guide on embroidery couching foot “Y”.



5 Thread the yarn through embroidery couching foot “Y”.

Pass the yarn through the loop in the yarn threader, and then pass the threader from top to bottom through the hole in embroidery couching foot “Y”. Pull the yarn to the front of the machine.

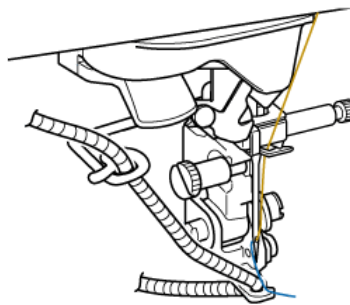


Note

- Place a sheet of paper under the presser foot to smoothly pass the yarn threader through the hole in embroidery couching foot “Y”.
- It may be helpful to lower the presser foot after the guide has passed through the foot if the yarn is snagging on the needle.

6 Touch to unlock all keys and buttons.

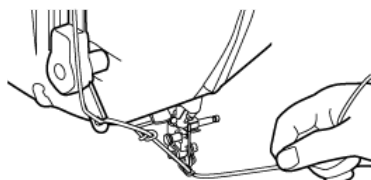
7 If necessary, replace the upper thread.



- * For best results, use an upper thread that matches the color of the yarn.

■ Couching Embroidery and Finishing off Yarn Ends

- 1 Make sure that about 20 cm (approx. 8 inches) of yarn is pulled to the front of the machine.**
- 2 While holding the yarn in your hand in front of you, press the “Start/Stop” button.**



⚠ CAUTION

Pulling the yarn upwards may cause it to catch on the needle, causing it to break. Be careful not to allow the yarn to catch on the needle.

Note

- Before embroidering, make sure that there is enough yarn, upper thread and bobbin thread.
- Make sure that the yarn passes smoothly through the guides. Unravel as much yarn from the ball as necessary so that the yarn does not become taut.
- Use yarn that has no knots.

3 After a few stitches, press the “Start/Stop” button to stop the machine.

4 Cut the beginning yarn tail at the edge of the stitches.

5 Press the “Start/Stop” button to resume embroidery.

Memo

When using a high-density yarn, the upper thread tension may be disturbed. If this happens, it is possible to improve it by raising the [Embroidery Foot Height] by about 1 mm (approx. 1/32 inch) on the settings screen.

6 When the embroidery is finished, cut the yarn according to the embroidery order.

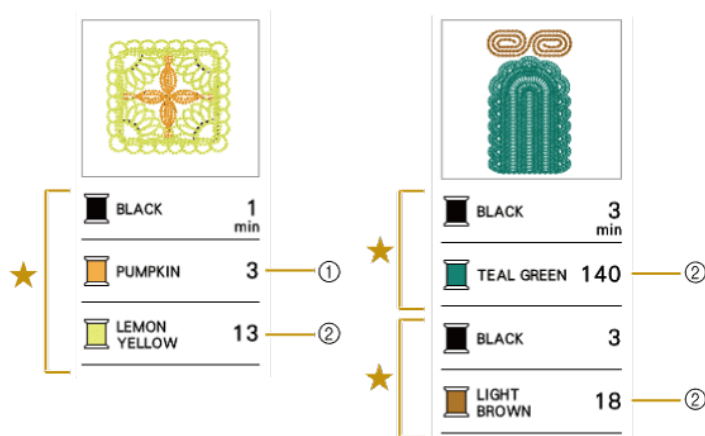
In this example, since the last thread color of the part is embroidered with couching, leave about 20 cm (approx. 8 inches) of yarn when cutting to finish off the end.

Note

Check the thread color list for the selected pattern, and after embroidering each color, cut the yarn.

Patterns composed of multiple parts are designed so that you do the underlay stitching and then the couching embroidery for each part (★). Before starting the underlay for the next part, remove the yarn.

- For a thread color used in the middle of a part (①), cut the yarn at the edge of the stitches after embroidery is finished.
- For the last thread color of a part (②), leave about 20 cm (approx. 8 inches) of yarn and then cut it after embroidery is finished.



7 Remove the embroidery frame and remove the water soluble stabilizer.

8 Cut off the unnecessary portions of the water soluble stabilizer and wash or soak the embroidered piece in warm water until it no longer feels slippery. After the final rinse, dry the embroidery motif until slightly damp, shape by hand, and allow to dry completely.

9 Finish off the end of the yarn.

- * To finish, for example, you can thread the yarn through a tapestry needle and tie it at the back, or fold the yarn to the back side and secure it with glue. Trim any excess yarn.



Memo

The Embroidery Design Guide contains a list of thread colors and examples of arrangements for each pattern.

<https://babylock.com/machine-support-and-updates>

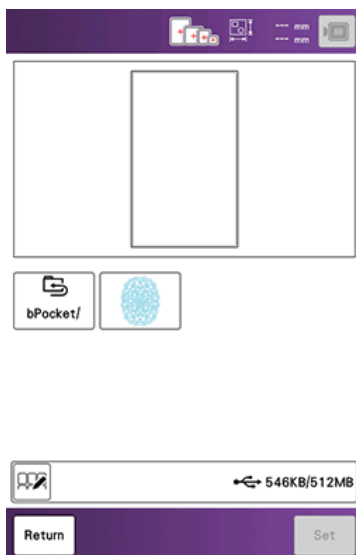
Embroidering Split Embroidery Patterns

Split embroidery patterns created with Palette Ver. 7 or later can be embroidered. With split embroidery patterns, embroidery patterns larger than the embroidery frame are divided into multiple sections, which combine to create a single pattern after each section is embroidered.

For details on creating split embroidery patterns and for more detailed embroidery instructions, refer to the Instruction manual included with Palette Ver. 7 or later.

- 1 Insert the USB media containing the created split embroidery pattern, and then select the split embroidery pattern to be embroidered.

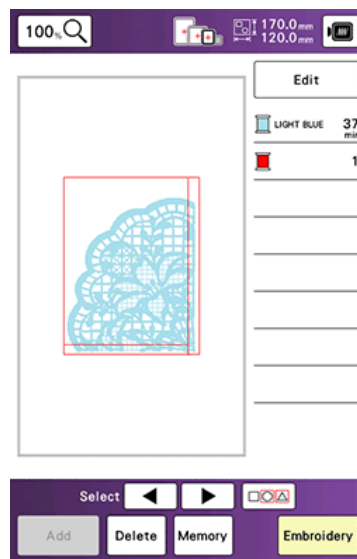
➤ [Retrieving Embroidery Patterns](#)



- 2 Select section  to be embroidered.



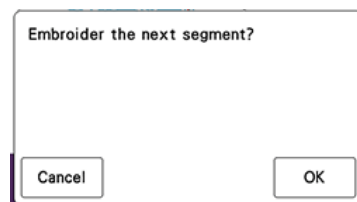
- 3 Touch [Set].
- 4 If necessary, touch [Edit] and edit the pattern.
 - * Do not change the size of the pattern.



- 5 Touch [Embroidery] to display the embroidery screen.
- 6 Embroider the pattern section.



- 7 When embroidering is finished, the following screen appears. Touch [OK].



→ A screen appears so that a section of the split embroidery pattern can be selected.

- 8 Repeat steps [2](#) through [6](#) to embroider the remaining sections of the pattern.

Maintenance and Troubleshooting

[Care and Maintenance](#)

[Updating Your Machine's Software](#)

[Before Lending or Disposing of the Product](#)

[Adjusting the Screen](#)

[Troubleshooting](#)

[Error Messages](#)

Care and Maintenance

CAUTION

Be sure to unplug the machine before cleaning it. Otherwise, injury may result.

[Cleaning the LCD](#)

[Cleaning the Machine Surface](#)

[Restrictions on Oiling](#)

[Precautions on Storing the Machine](#)

[Cleaning the Race](#)

[Removing/Attaching the Needle Plate](#)

[Cleaning the Bobbin Case](#)

// 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 Baby Lock retailer.

// 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.

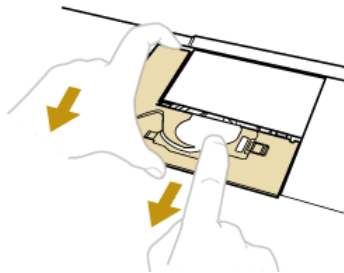
- * Exposed to extremely high temperatures
- * Exposed to extremely low temperatures
- * Exposed to extreme temperature changes
- * Exposed to high humidity or steam
- * Near a flame, heater or air conditioner
- * Outdoors or exposed to direct sunlight
- * Exposed to extremely dusty or oily environments

Note

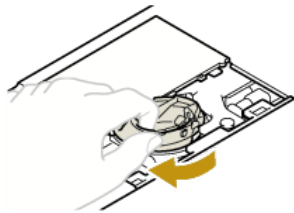
In order to extend the life of this machine, periodically turn it on and use it. Storing this machine for an extended period of time without using it may reduce its efficiency.

// Cleaning the Race

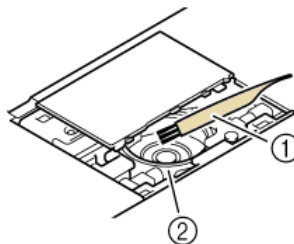
- 1 Press  (Needle position button) to raise the needle.
- 2 Turn off the machine.
- 3 Unplug the power cord from the power supply jack on the right side of the machine.
- 4 Raise the presser foot to remove the needle and presser foot.
 - [Changing the Needle](#)
 - [Replacing the Presser Foot](#)
- 5 Remove the flat bed attachment or the embroidery unit if either is attached.
- 6 Remove the bobbin cover.
- 7 Remove the needle, presser foot, and needle plate cover.



- 8 Grasp the bobbin case, and then pull it out.



- 9 Use the cleaning brush or a vacuum cleaner to remove any lint and dust from the race and the surrounding area.



① Cleaning brush

② Race

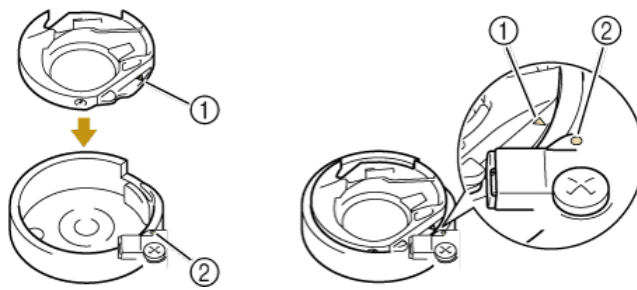
IMPORTANT

Do not apply oil to the bobbin case.

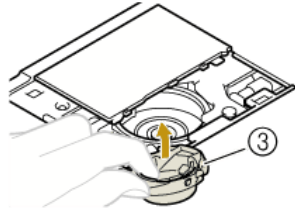
Memo

If lint or dust collects on the bobbin thread sensor, the sensor may not operate correctly.

- 10 Insert the bobbin case so that the ▲ mark on the bobbin case aligns with the ● mark on the machine.



* Align the ▲ and ● marks.



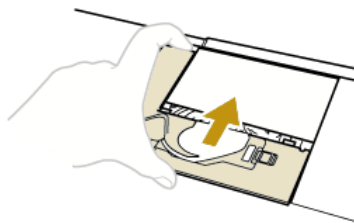
- ① ▲ mark
- ② ● mark
- ③ Bobbin case

* 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 authorized Baby Lock retailer.
- Be sure that the bobbin case is correctly installed, otherwise the needle may break and cause injury.

11 Insert the tabs on the needle plate cover into the needle plate, and then slide the cover back on. Reattach the bobbin cover.



// Removing/Attaching the Needle Plate

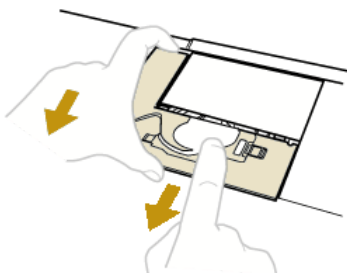
[Removing the Needle Plate](#)

[Attaching the Needle Plate](#)

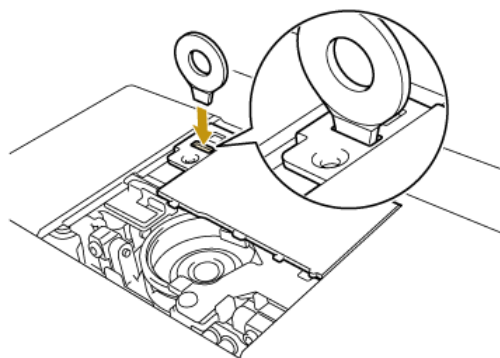
■ Removing the Needle Plate

- 1 Press  (Needle position button) to raise the needle.
- 2 Turn off the machine.
- 3 Remove the bobbin cover, needle, presser foot, and needle plate cover.

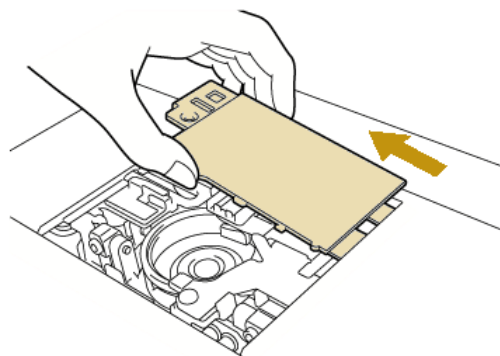
▶ [Cleaning the Race](#)



- 4 Insert the screwdriver into the hole on the needle plate and push to detach the plate.

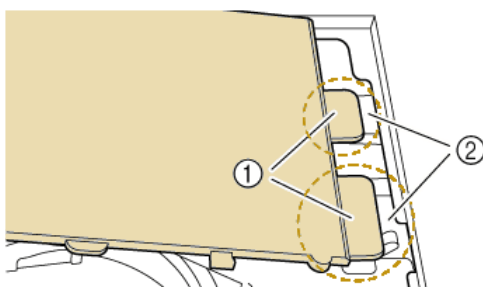


- 5 Slide out the needle plate from the left side and remove it.



■ Attaching the Needle Plate

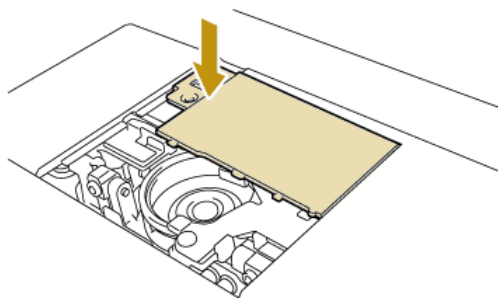
- 1 Insert the tabs on the needle plate into the notches on the machine.



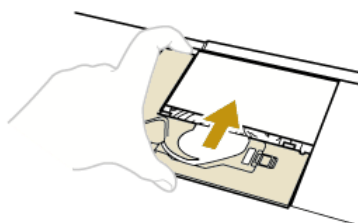
① Tabs

② Notches

2 Press down on the left side of the needle plate to snap it into place.



3 Reattach the needle plate cover.



4 Reattach the presser foot and needle.

// Cleaning the Bobbin Case

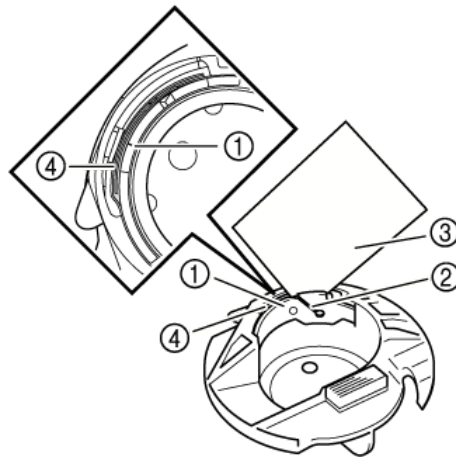
Thread wax and dust easily collect around the notch in the tension spring on the bobbin case, resulting in an incorrect thread tension. Therefore, the bobbin case should be cleaned as necessary should tension problems arise.

When cleaning the bobbin case, use card stock or another type of paper of similar thickness and sturdiness in order to prevent pieces of paper tearing off and getting lodged in the bobbin case.

- 1 Follow steps [1](#) to [8](#) in “Cleaning the Race” to remove the bobbin case.

▶ [Cleaning the Race](#)

- 2 Using a piece of paper of adequate thickness and sturdiness, slide the paper between the tension plate base and the tension spring and also slide the paper behind the notch of the spring to remove any dirt or dust.



- ① Tension plate base
- ② Notch
- ③ Paper (e.g. business card type)
- ④ Tension spring

Memo

Do not bend the tension spring. In addition, do not use anything other than recommended paper to clean the bobbin case.

- 3 Use the cleaning brush to remove any lint and dust from inside the bobbin case.
- 4 Replace the bobbin case and needle plate.

Updating Your Machine's Software

You can update your machine's software using the following two procedures.

[Update Procedure Using USB Media](#)

[Update Procedure Using Wireless LAN Connection](#)

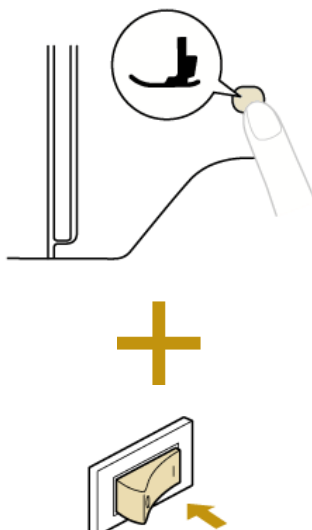
// Update Procedure Using USB Media

When an update program is available on www.babylock.com, please download the files following the instructions on the website.

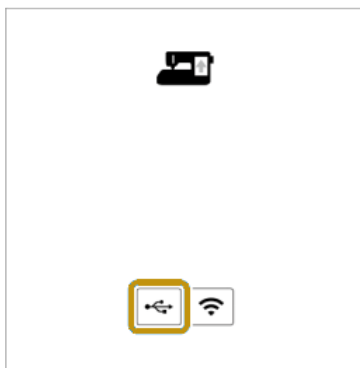
Note

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.

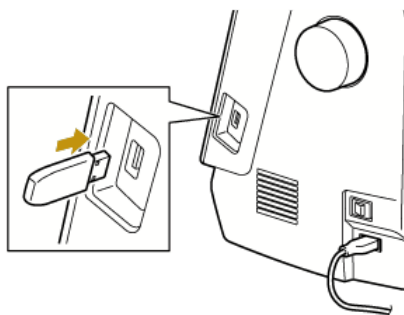
- 1 Turn on the machine while pressing and holding  (Presser foot lifter button).



- 2 Touch .



- 3 Insert the USB media into the USB port on the machine.



- 4 Touch [Load].

* Do not turn off the machine during the update.

→ When updating is finished, the completion message [Update complete.] appears.

- 5** Remove the USB flash drive, and turn the machine off and on again.
- 6** Go to the Settings and confirm that the updated version number is displayed.

// 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.

➤ [Using the Wizard to Set Up the Wireless Network Connection](#)

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 .

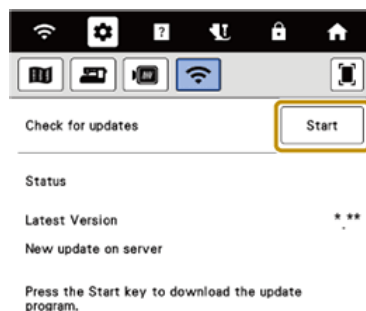


- 1 Display page 11 of the settings screen.
- 2 Touch [Check] to check whether there is a new update file on the server.
 - * The machine starts to download the update file if there is a new update file on server.



① The key appears as  (being connected to the wireless LAN).

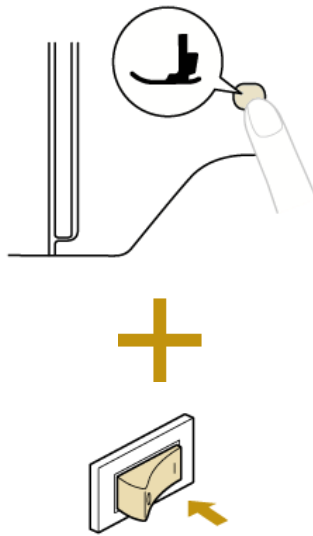
- 3 If there is a new file, touch [Start] on the screen to start the download.
 - * If there is no new file, the display does not change. Return to the original screen.



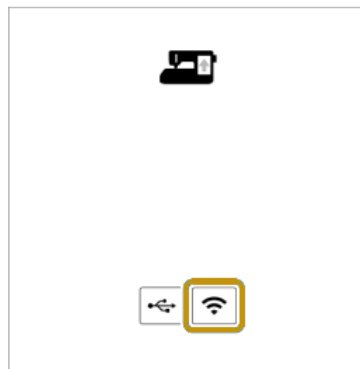
Note

- Do not turn off the machine during the download.
- Touch [Pause] to pause the download. To restart, touch [Start].

- 4 When downloading is finished, turn off the machine, then hold down  (Presser foot lifter button) while turning on the machine.



5 Touch .



6 Touch [Load] to update the machine.

* Do not turn off the machine during the update.

→ When updating is finished, the completion message [Update complete.] appears.

Memo

If there are changes or additions to functions, manuals available on the machine may be updated.

7 Turn the machine off and on again.

* Follow instructions displayed on the screen.

8 Go to the Settings and confirm that the updated version number is displayed.

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  to display the settings screen.
- 2 Touch  and move to the page for [Reset to Default], and then touch [Reset].
[Sewing Screen](#)
- 3 Touch [Reset].

Note

Do not turn the main power to OFF while the [Deleting...] screen is displayed.

Adjusting the Screen

[Calibrating the Touch Screen](#)

// Calibrating the Touch Screen

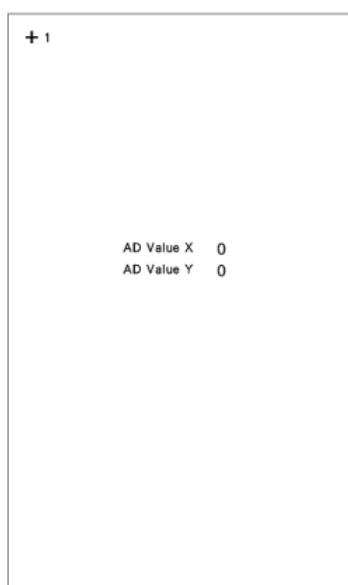
If the screen does not respond correctly when you touch a key (the machine does not perform the operation or performs a different operation), follow the steps below to make the proper adjustments.

- 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 5.**



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 Baby Lock retailer.

Troubleshooting

If the machine stops operating correctly, check the following possible problems before requesting service.

You can solve most problems yourself by reviewing the "List of Symptoms" or the procedures in this Instruction and Reference Guide.

If the problem persists, contact your authorized Baby Lock retailer.

Visit us at www.babylock.com.

[Frequently Asked Questions](#)

[Upper Thread is Too Tight](#)

[Tangled Thread on Wrong Side of Fabric](#)

[Incorrect Thread Tension](#)

[Fabric is Caught in the Machine and Cannot be Removed](#)

[If the Thread Becomes Tangled under the Bobbin Winder Seat](#)

[List of Symptoms](#)

// Frequently Asked Questions

Detailed causes and remedies for common troubleshooting topics are described below. Be sure to refer to this before contacting your authorized Baby Lock retailer.

- > [Upper Thread is Too Tight](#)
- > [Tangled Thread on Wrong Side of Fabric](#)
- > [Incorrect Thread Tension](#)
- > [Fabric is Caught in the Machine and Cannot be Removed](#)
- > [If the Thread Becomes Tangled under the Bobbin Winder Seat](#)

// Upper Thread is Too Tight

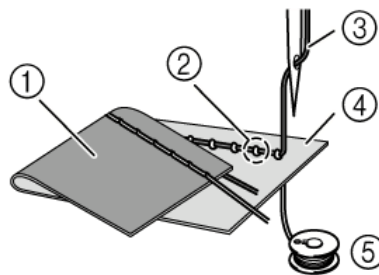
[Symptom](#)

[Cause](#)

[Remedy](#)

■ 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.

➤ [Installing the Bobbin](#)

// Tangled Thread on Wrong Side of Fabric

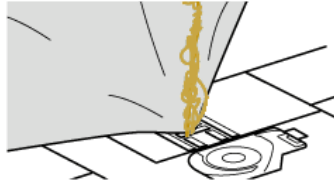
[Symptom](#)

[Cause](#)

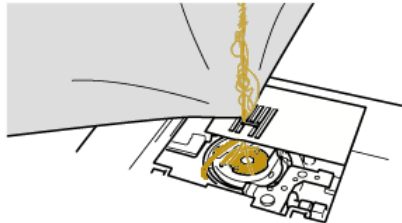
[Remedy](#)

■ 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 passing 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".

➤ [Cleaning the Race](#)

2 Remove the upper thread from the machine.

3 Correct the upper threading by following the instructions in "Upper Threading".

➤ [Upper Threading](#)

- * If the bobbin was removed from the bobbin case, refer to "Installing the Bobbin" to correctly install the bobbin.

➤ [Installing the Bobbin](#)

// Incorrect Thread Tension

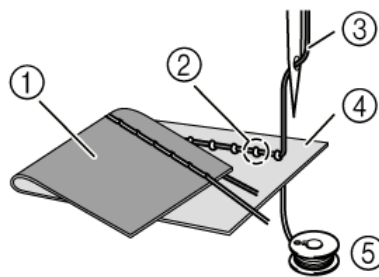
[Symptom](#)

[Cause/Remedy](#)

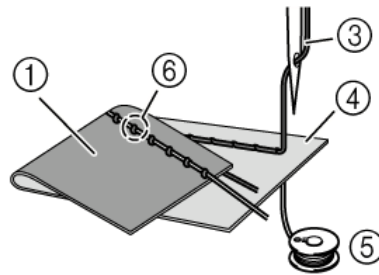
■ Symptom

- 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 “Installing the Bobbin” to correct lower threading. (➤ [Installing the Bobbin](#))

<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” to correct the upper threading. (➤ [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” to check that a needle and thread appropriate for the fabric are being used.
(▶ [Fabric/Thread/Needle Combinations](#))

- **Cause 3**

An appropriate upper tension is not selected.

Select an appropriate thread tension. Refer to “Thread Tension”. (▶ [Thread Tension](#))

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 Baby Lock retailer.

■ 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".

➤ [Changing the Needle](#)

4 Remove the presser foot and presser foot holder.

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".

➤ [Changing the Presser Foot](#)

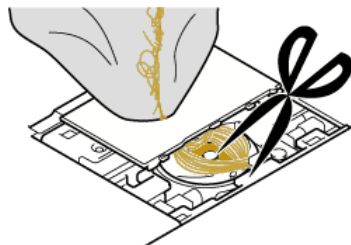
5 Lift up the fabric and cut the threads below it.

If the fabric can be removed, remove it. Continue with the following steps to clean the race.

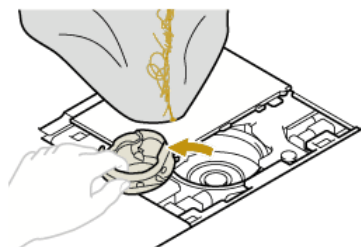
6 Remove the needle plate cover.

➤ [Cleaning the Race](#)

7 Cut out the tangled threads, and then remove the bobbin.



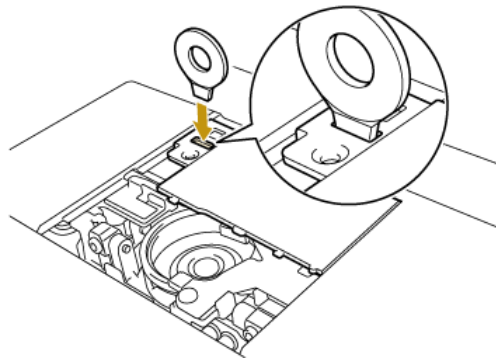
8 Remove the bobbin case.



If the fabric could be removed, continue with step [11](#).

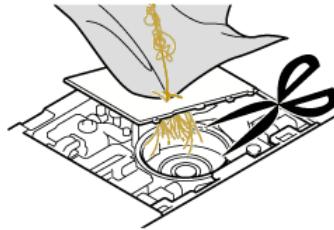
If the fabric could not be removed, continue with the following steps.

9 Insert the screwdriver into the hole on the needle plate and push to detach the plate.



10 Slightly lift up the needle plate from the left side, cut any tangled threads, and then remove the needle plate.

Remove the threads from the needle plate and around the feed dogs.



If the fabric cannot be removed, even after completing these steps, contact your nearest Baby Lock retailer.

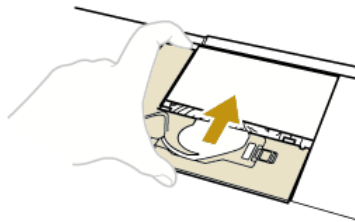
11 Remove any threads and clean the race and the surrounding area.

> [Cleaning the Race](#)

12 Insert the bobbin case and then attach the needle plate.

* Refer to steps [9](#) to [11](#) of "Cleaning the Race".

> [Cleaning the Race](#)



13 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".

> [Changing the Needle](#)

■ Checking Machine Operations

If the needle plate has been removed, check machine operations to confirm that installation has been completed correctly.

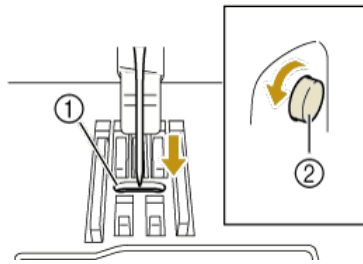
1 Turn on the machine.

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.



- ① Opening in the needle plate
- ② Handwheel

If the needle or feed dogs contact the needle plate, the machine may be malfunctioning; therefore, contact your authorized Baby Lock retailer.

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 “Installing the Bobbin” and “Changing the Presser Foot”.

➤ [Installing the Bobbin](#)

➤ [Changing the Presser Foot](#)

5 Correctly thread the machine.

- * For details on the machine, refer to “Upper Threading”.

➤ [Upper Threading](#)

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.

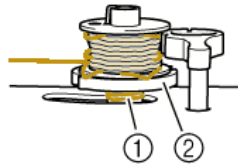
Note

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.

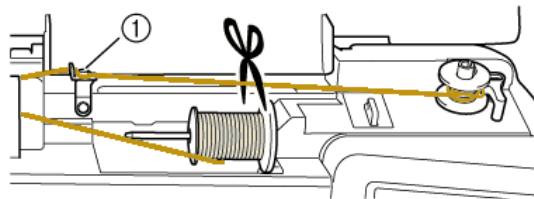


- ① Thread
- ② Bobbin winder seat

⚠ CAUTION

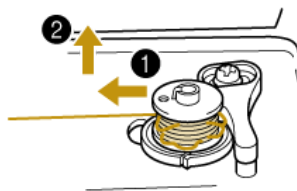
Do not remove the bobbin winder seat even if the thread becomes tangled under the bobbin winder seat. The cutter in the bobbin winder seat may cause injury.

- 1 Stop the bobbin winding.
- 2 Cut the thread with scissors beside the bobbin winding thread guide.

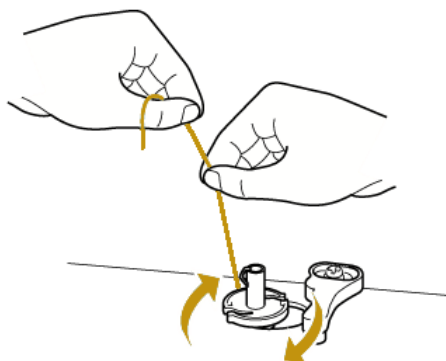


- ① Bobbin winding thread guide

- 3 Slide the bobbin winder shaft to the left, 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

[Getting Ready](#)

[While Operating](#)

[After Sewing or Embroidering](#)

Check the following possible problems before requesting service. If the problem persists or the reference is “*”, contact your authorized Baby Lock retailer.

■ 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.	▶ Operation Buttons
Needle is installed incorrectly.	▶ Changing the Needle
Needle is turned, bent or the point is dull.	▶ Changing the Needle
Upper threading is incorrect.	▶ Upper Threading
The needle threader lever is not lowered until it clicks.	▶ Upper Threading
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.	▶ Upper Threading
Cannot lower the presser foot with the presser foot lever.	
Presser foot was raised using  • Press  (Presser foot lifter button) to lower the presser foot.	▶ Operation Buttons
Bobbin thread does not wind neatly on the bobbin.	
The thread is not passed through the bobbin winding thread guide correctly.	▶ Winding the Bobbin
Bobbin spins slowly.	▶ Winding the Bobbin
The thread that was pulled out was not wound onto the bobbin correctly.	▶ Winding the Bobbin
The empty bobbin was not set on the pin properly.	▶ Winding the Bobbin
While winding the bobbin, the bobbin thread was wound below the bobbin winder seat.	
Remove any entangled thread, and then wind the bobbin.	▶ Winding the Bobbin ▶ If the Thread Becomes Tangled under the Bobbin Winder Seat
The bobbin thread cannot be pulled up.	
Needle is turned, bent or the point is dull.	▶ Changing the Needle
Bobbin is set incorrectly.	▶ Installing the Bobbin

Machine does not operate.	
All keys and buttons have been locked by  (Presser foot/Needle exchange key).	▶ Home Page Screen
Nothing appears in the LCD.	
Main power switch is not turned on.	▶ Turning the Machine ON/OFF
The machine is not plugged in.	▶ Turning the Machine ON/OFF
The machine enters the Power saving mode. Press the “Start/Stop” button flashing green slowly or touch anywhere on the LCD screen.	▶ Setting the Power Saving Mode
The LCD screen does not look very clear.	
The brightness of the screen is not adjusted.	▶ General Settings
Nothing happens, even if the LCD display is touched.	
Adjust the screen.	▶ Adjusting the Screen
The screen has been locked. Touch either of the following keys to unlock the screen. 	▶ Home Page Screen
The LCD screen is fogged up.	
Condensation has formed on the LCD screen. After a while, the cloudiness will disappear.	—
Edited project has been deleted.	
The machine once entered the Power saving mode. Save your project if you may not operate the machine for a certain period of time.	▶ Setting the Power Saving Mode
Embroidery unit does not operate.	
Embroidery unit is not attached correctly.	▶ Attaching the Embroidery Unit
Embroidery frame was attached before the unit was initialized.	▶ Attaching the Embroidery Unit
Pointer of the embroidery foot “UH+” with LED pointer does not indicate the position correctly.	
With thick elastic fabric, the position will be misaligned only at raised parts in the fabric.	▶ Adjusting the LED Pointer
With fabric having a very uneven surface, the position is not correctly aligned. The pointer indication should be used only as a reference.	—
Machine cannot connect to the wireless network.	
You are connecting to 5 GHz network frequency band. This machine only supports 2.4 GHz network frequency band.	—
The wireless network setting is not activated.	▶ Enabling a Wireless Network Connection
The security information (SSID/password (network key)/authentication method) is incorrect. Reconfirm the SSID and security information and re-enter the correct information as necessary.	▶ Using the Wizard to Set Up the Wireless Network Connection
The wireless access point/router cannot be detected. Make sure that the wireless access point/router is powered on.	—

• Move your machine to an area where no items can obstruct the wireless network signal, such as metal doors or walls, or closer to the wireless access point/router. • Temporarily place your machine within about 1 m (3.3 feet) from the wireless access point when you are configuring the wireless settings. • If your wireless access point/router is using MAC address filtering, confirm the MAC address of this machine is allowed in the filter.	
This machine does not support the authentication or encryption method used by the wireless access point/router.	➤ Specifications

■ While Operating

Symptom, Cause/Solution	Reference
Machine does not operate.	
"Start/Stop" button was not pressed.	➤ Operation Buttons
There is no stitch pattern selected.	➤ Basic Sewing
There is no embroidery pattern selected.	➤ Selecting Patterns
Presser foot is not lowered.	➤ Operation Buttons
"Start/Stop" button was pressed with the foot controller attached.	➤ Foot Controller
The "Start/Stop" button was pressed while the machine is set for the sewing speed controller to control the zigzag stitch width.	➤ Sewing Settings ➤ Foot Controller
The bobbin winder shaft is pushed to the right.	➤ Winding the Bobbin
Needle breaks.	
Needle is installed incorrectly.	➤ Changing the Needle
Needle clamp screw is not tightened.	➤ Changing the Needle
Needle is turned or bent.	➤ Changing the Needle
Using improper needle or thread for the selected fabric.	➤ Fabric/Thread/Needle Combinations
Using improper needle, thread or the fabric prepared insufficiently for embroidering.	➤ Changing the Needle ➤ Preparing the Fabric ➤ Embroidering Attractive Finishes ➤ Attaching Iron-on Stabilizers (Backing) to the Fabric
Wrong presser foot was used.	➤ Stitch Chart
Upper thread tension is too tight.	➤ Thread Tension ➤ Adjusting Thread Tension
Fabric is pulled during sewing.	—
Spool cap is set incorrectly.	➤ Upper Threading
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. 	*

There are scratches around the opening in the presser foot.	*
There are scratches on the bobbin case.	*
Needle is defective.	> Changing the Needle
A bobbin designed specifically for this machine is not used.	> Winding the Bobbin
Upper threading is incorrect.	> Upper Threading
Bobbin is set incorrectly.	> Installing the Bobbin
Presser foot is attached incorrectly.	> Replacing the Presser Foot
Screw of the presser foot holder is loose.	> Attaching the Presser Foot with the Included Adapter
Fabric is too thick.	> Sewing Heavyweight Fabrics
Fabric is fed forcefully when sewing thick fabric or thick seams.	> Sewing Heavyweight Fabrics
Stitch length is too short.	> Stitch Length
Stabilizer is not attached to fabric being embroidered.	> Attaching Iron-on Stabilizers (Backing) to the Fabric
Bobbin thread is incorrectly wound.	> Winding the Bobbin
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.)	> Upper Threading
There are knots or tangles in the thread. • Remove any knots or tangles.	—
The selected needle is not appropriate for the thread being used.	> Fabric/Thread/Needle Combinations
Upper thread tension is too tight.	> Thread Tension > Adjusting Thread Tension
Thread is twisted.	—
Needle is turned, bent or the point is dull.	> Changing the Needle
Needle is installed incorrectly.	> Changing the Needle
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. 	*
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.	> Fabric/Thread/Needle Combinations
Using improper needle, thread or the fabric prepared insufficiently for embroidering.	> Changing the Needle > Preparing the Fabric

	› Embroidering Attractive Finishes › Attaching Iron-on Stabilizers (Backing) to the Fabric
A bobbin designed specifically for this machine is not used.	› Winding the Bobbin
The ball point needle for embroidery is not being used when embroidering patterns with short stitches, such as small letters.	› Changing the Needle
The thread is tangled on the wrong side of the fabric.	
Upper threading is incorrect.	› Tangled Thread on Wrong Side of Fabric › Upper Threading
Using improper needle or thread for the selected fabric.	› Fabric/Thread/Needle Combinations
Using improper needle, thread or the fabric prepared insufficiently for embroidering.	› Changing the Needle › Attaching Iron-on Stabilizers (Backing) to the Fabric
The ball point needle for embroidery is not being used when embroidering patterns with short stitches, such as small letters.	› Tangled Thread on Wrong Side of Fabric › Changing the Needle
The upper thread is too tight.	
The bobbin thread is incorrectly installed.	› Installing the Bobbin
Bobbin thread breaks.	
Bobbin is set incorrectly.	› Installing the Bobbin
Bobbin thread is incorrectly wound.	› Winding the Bobbin
There are scratches on the bobbin or it doesn't rotate properly.	› Installing the Bobbin
Thread is twisted.	—
A bobbin designed specifically for this machine is not used.	› Winding the Bobbin
Fabric puckers.	
There is a mistake in the upper or bobbin threading.	› Installing the Bobbin › Upper Threading
Spool cap is set incorrectly.	› Upper Threading
Using improper needle or thread for the selected fabric.	› Fabric/Thread/Needle Combinations
Using improper needle, thread or the fabric prepared insufficiently for embroidering.	› Changing the Needle › Attaching Iron-on Stabilizers (Backing) to the Fabric
Needle is turned, bent or the point is dull.	› Changing the Needle
Stitches are too long when sewing thin fabrics.	› Stitch Length
Thread tension is set incorrectly.	› Thread Tension › Adjusting Thread Tension
Wrong presser foot was used.	› Stitch Chart

The stitch is not sewn correctly. The pattern is not embroidered correctly.	
The presser foot that is used is not appropriate for the stitch you have selected.	Stitch Chart
The thread tension is incorrect.	Thread Tension Adjusting Thread Tension
There are knots or tangles in the thread, for example, in the bobbin case.	Cleaning the Race
Skipped stitches	
Machine is threaded incorrectly.	Upper Threading
Using improper needle or thread for the selected fabric.	Fabric/Thread/Needle Combinations
Using improper needle, thread or the fabric prepared insufficiently for embroidering.	Changing the Needle Preparing the Fabric Embroidering Attractive Finishes Attaching Iron-on Stabilizers (Backing) to the Fabric
Needle is turned, bent or the point is dull.	Changing the Needle
Needle is installed incorrectly.	Changing the Needle
Needle is defective.	Changing the Needle
Dust or lint has collected under the needle plate.	Cleaning the Race
Thin or stretch fabrics are being sewn.	Sewing Lightweight Fabrics
No stitching	
Needle is turned, bent or the point is dull.	Changing the Needle
Bobbin is set incorrectly.	Installing the Bobbin
Upper threading is incorrect.	Upper Threading
High-pitched sound while embroidering	
Dust or lint is caught in the feed dogs.	Cleaning the Race
Pieces of thread are caught in the race.	Cleaning the Race
Upper threading is incorrect.	Upper Threading
A bobbin designed specifically for this machine is not used.	Winding the Bobbin
There are needle holes or friction scratches in the bobbin case.	Cleaning the Race
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.	Free Motion Quilting
Stitches are too close together.	Stitch Length
Wrong presser foot was used.	Stitch Chart
Needle is turned, bent or the point is dull.	Changing the Needle
Thread is entangled.	Fabric is Caught in the Machine and Cannot be

	Removed
Zigzag foot “J” is slanted on a thick seam at the beginning of stitching.	➤ If the Fabric does not Feed
The fabric feeds in the opposite direction.	
The feed mechanism is damaged.	*
The needle contacts the needle plate.	
The needle clamp screw is loose.	➤ Changing the Needle
Needle is turned, bent or the point is dull.	➤ Changing the Needle
Fabric being sewn with the machine cannot be removed.	
Thread is tangled below the needle plate.	➤ Tangled Thread on Wrong Side of Fabric
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 Baby Lock retailer.	—
The handwheel feels sluggish when it is turned.	
Thread is tangled in the bobbin case.	➤ Tangled Thread on Wrong Side of Fabric ➤ Cleaning the Race

■ After Sewing or Embroidering

Symptom, Cause/Solution	Reference
Thread tension is incorrect.	
Upper threading is incorrect.	➤ Upper Threading
Bobbin is set incorrectly.	➤ Installing the Bobbin
Using improper needle or thread for the selected fabric. Using improper needle, thread or the fabric prepared insufficiently for embroidering.	➤ Fabric/Thread/Needle Combinations ➤ Changing the Needle ➤ Preparing the Fabric ➤ Embroidering Attractive Finishes ➤ Attaching Iron-on Stabilizers (Backing) to the Fabric
Presser foot holder is not attached correctly.	➤ Attaching the Presser Foot with the Included Adapter
Thread tension is set incorrectly.	➤ Thread Tension ➤ Adjusting Thread Tension
Bobbin thread is incorrectly wound.	➤ Winding the Bobbin
Needle is turned, bent or the point is dull.	➤ Changing the Needle
A bobbin designed specifically for this machine is not being used.	➤ Winding the Bobbin

Character or decorative stitch patterns are misaligned.	
Stitch pattern adjustment settings were set incorrectly.	➤ Making Adjustments
Stitch pattern does not turn out.	
Wrong presser foot was used.	➤ Stitch Chart
Did not use a stabilizer material on thin fabrics or stretch fabrics.	➤ Sewing Decorative Stitch Patterns
Thread tension is set incorrectly.	➤ Thread Tension ➤ Adjusting Thread Tension
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.	➤ Basic Sewing
The thread is tangled, for example, in the bobbin case.	➤ Tangled Thread on Wrong Side of Fabric
The pattern is not embroidered correctly.	
Thread is twisted.	—
Thread tension is set incorrectly.	➤ Thread Tension ➤ Adjusting Thread Tension
Fabric was not inserted into the frame correctly (fabric was loose, etc.).	➤ Inserting the Fabric
Stabilizing material was not attached. Always use stabilizing material, especially with stretch fabrics, lightweight fabrics, fabrics with a coarse weave, or fabrics that often cause pattern shrinkage. See your authorized Baby Lock retailer for the proper stabilizer.	➤ Attaching Iron-on Stabilizers (Backing) to the Fabric
There was an object placed near the machine, and the carriage or embroidery frame hit the object during embroidering.	➤ Attaching the Embroidery Unit
Fabric outside the frame edges interferes with the arm, so the embroidery unit cannot move. Reinsert the fabric in the embroidery frame so that the excess fabric is away from the arm, and rotate the pattern 180 degrees.	➤ Inserting the Fabric
Fabric is too heavy, so the embroidery unit cannot move freely. Place a large thick book or similar object under the arm head to lightly lift the heavy side and keep it level.	—
Fabric is hanging off the table. If the fabric is hanging off the table during embroidery, the embroidery unit will not move freely. Place the fabric so that it does not hang off the table or hold the fabric to keep it from dragging.	➤ CAUTION in "Embroidering Attractive Finishes"
Fabric is snagged or caught on something. Stop the machine and place the fabric so that it does not get caught or snagged.	—
Embroidery frame was removed during embroidering (for example, to reset the bobbin). The presser foot was bumped or moved while removing or attaching the embroidery frame, or the embroidery unit was moved.	➤ If the Thread Breaks or the Bobbin Runs out of Thread During Embroidering
Stabilizer is incorrectly attached, for example, it is smaller than the embroidery frame.	➤ Attaching Iron-on Stabilizers (Backing) to the Fabric
Loops appear on the surface of the fabric when embroidering.	
The thread tension is incorrectly set.	➤ Adjusting Thread Tension

The tension of the upper thread is incorrectly set for the combination of the fabric, thread and pattern being used. • Use the embroidery needle plate cover.	▶ Embroidery Needle Plate Cover
The combination of the bobbin case and bobbin thread is incorrect.	▶ Embroidering Attractive Finishes

Error Messages

Below is an explanation of error messages. Refer to these when necessary (if you touch [OK] or do the operation correctly while the error message is displayed, the message disappears).

	Error messages	Cause/Solution
1	Includes a special pattern that cannot be saved to external memory. Save the pattern in the machine's memory.	This message is displayed when you try to save a copyright protected pattern to USB media. According to copyright laws, patterns that are illegal to reproduce or edit cannot be saved to USB media. If this message displays, save the pattern in the machine's memory.
2	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.
3	OK to recall and resume previous memory?	This message appears if the machine is turned off while embroidering, then turned on again. Touch [OK] to return the machine to the condition (pattern position and number of stitches) when it was turned off. Follow the procedure described in "If the Thread Breaks or the Bobbin Runs out of Thread" to align the needle position and embroider the remainder of the pattern. ▶ If the Thread Breaks or the Bobbin Runs out of Thread During Embroidering
4	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 Baby Lock retailer for a regular maintenance check. Although this message will disappear and the machine will continue to function once you touch [OK], the message will display several more times until the appropriate maintenance is performed.
5	The bobbin thread is almost empty.	This message is displayed when the bobbin thread is running out. When embroidering, touch  , touch [OK], remove the embroidery frame, and then replace the bobbin with one wound with plenty of embroidery bobbin thread.
6	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 Baby Lock retailer.
7	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 Baby Lock retailer.
8	This file cannot be used.	This message appears if the file format is incompatible with this machine. ▶ Specifications
9	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 straight stitch (middle needle position) while the straight stitch needle plate is installed.
10	USB media cannot be used.	This message is displayed when you try to use incompatible media. ▶ Specifications
11	F**	If error message [F**] appears in the LCD while the machine is being used, the machine may be malfunctioning. Contact your authorized Baby Lock retailer.

Appendix

[Specifications](#)

[Stitch Chart](#)

Specifications

Item	Specification	
Dimensions of machine	Approx. 577 mm (W) × 285 mm (H) × 310 mm (D) (approx. 22-23/32 inches (W) × 11-7/32 inches (H) × 12-21/32 inches (D))	
Weight of machine	Approx. 13.7 kg (approx. 31 lb)	
Dimensions of machine with embroidery unit attached	Approx. 815 mm (W) × 524 mm (H) × 310 mm (D) (approx. 32-3/32 inches (W) × 20-5/8 inches (H) × 12-21/32 inches (D))	
Weight of machine with embroidery unit attached	Approx. 17.5 kg (approx. 39 lb)	
Sewing speed	70 to 850 stitches per minute	
Maximum embroidery speed	850 stitches per minute	
Interfaces	Wireless LAN ^{*1}	
Memory	Stitch patterns	Up to 256 KB or 35 stitch patterns
	Embroidery patterns	Up to 2 MB or 20 embroidery patterns (Up to 500,000 stitches per pattern)
Data Types	Stitch patterns ^{*2}	.pmv .pmx .pmu
	Embroidery patterns ^{*3}	.pes .phc .dst
Number of decorative stitch pattern combinations	Up to 70	
Maximum embroidering area	360 mm (H) x 200 mm (W) (approx. 14 inches (H) x 8 inches (W))	
Types of USB Devices	- 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 [Power Saving Mode]	Available time	OFF, 20 minutes, 1 - 4 hour(s)
	"Start/Stop" button	Green slow flashing
	Suspended function	All functions
	After recovering	Start the operation again from the beginning. When the machine enters the power saving mode during embroidering, you have the option to continue or delete the pattern.

^{*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™/WPA3™ Enterprise.

Use Design Database Transfer or Palette version 11 or later to transfer data from your computer to the machine. For the operating systems compatible with the software, visit our website www.babylock.com.

^{*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 creates ".pmu" data file, may cause the machine to malfunction.

^{*3} Using data other than that saved using our data design systems or this machine may cause this machine to malfunction.

When the machine is used to save a file with any extension, it is saved as a .phc data file.

Since Tajima (.dst) data does not contain specific thread color information, it is displayed with our default thread color sequence.

Check the preview and change the thread colors as desired.

* 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.

IMPORTANT

When using embroidery data other than our original patterns, the thread or needle may break when embroidering with a stitch density that is too fine or when embroidering three or more overlapping stitches. In that case, use one of our original data design systems to edit the embroidery data.

Stitch Chart

[Utility Stitches](#)

[Decorative Stitches](#)

[Character Stitches](#)

// Utility Stitches

Memo

- When any of the following stitches (reverse stitch patterns and reinforcement stitch patterns) are selected, pressing  (Reverse stitch button) will sew reverse stitches.

1-01

1-02

1-03

1-04

1-09

1-10

1-11

1-12

1-13

1-15

1-30

1-31

1-32

1-34

Q-01

Q-02

Q-03

Q-07

Q-08

Q-09

Q-10

Q-11

Q-41

When any other stitch is selected, pressing  (Reverse stitch button) will sew reinforcement stitches.

- The stitch pattern symbols indicate the following.

①





①

②





②

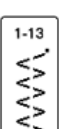
① Reverse stitch pattern

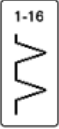
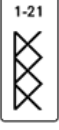
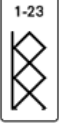
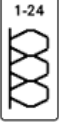
② Reinforcement stitch pattern

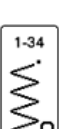
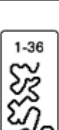
- The presser foot that is displayed on each screen when Free motion mode is OFF/ON is shown in the table under “Presser foot”.

* Twin needle can be used by attaching zigzag foot “J”.

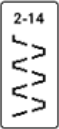
Stitch	Presser foot	Stitch name/Applications	Stitch width (mm)		Stitch length (mm)	
			Auto. Manual		Auto. Manual	
	J*/O	Straight stitch (Left) General sewing, gather, pintuck, etc.	0.0 0.0 - 7.0		2.5 0.2 - 5.0	
	J*/O	Straight stitch (Left) General sewing, gather, pintuck, etc.	0.0 0.0 - 7.0		2.5 0.2 - 5.0	
	J*/O	Straight stitch (Middle) General sewing, gather, pintuck, etc.	3.5 0.0 - 7.0		2.5 0.2 - 5.0	
	J*/O	Straight stitch (Middle) General sewing, gather, pintuck, etc.	3.5 0.0 - 7.0		2.5 0.2 - 5.0	

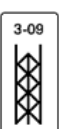
	J*/O	Triple stretch stitch General sewing for reinforcement and decorative topstitching	0.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Stem stitch Reinforced stitching, sewing and decorative applications	1.0 0.0 - 7.0	2.5 0.4 - 5.0
	N*/O	Decorative stitch Decorative stitching, top stitching	0.0 0.0 - 7.0	2.5 0.4 - 5.0
	J/O	Basting stitch For basting.	0.0 0.0 - 7.0	20 5 - 30
	J*/O	Zigzag stitch For overcasting, mending.	3.5 0.0 - 7.0	1.4 0.0 - 5.0
	J*/O	Zigzag stitch For overcasting, mending.	3.5 0.0 - 7.0	1.4 0.0 - 5.0
	J*/O	Zigzag stitch (Right) Start from right needle position, zigzag sew at left.	3.5 2.5 - 5.0	1.4 0.3 - 5.0
	J*/O	Zigzag stitch (Left) Start from left needle position, zigzag sew at right.	3.5 2.5 - 5.0	1.4 0.3 - 5.0
	J*/O	2 steps elastic zigzag Overcasting (medium weight and stretch fabrics), tape and elastic	5.0 0.0 - 7.0	1.0 0.2 - 5.0
	J*/O	2 steps elastic zigzag Overcasting (medium weight and stretch fabrics), tape and elastic	5.0 0.0 - 7.0	1.0 0.2 - 5.0
	J*/O	3 steps elastic zigzag Overcasting (medium, heavyweight and stretch fabrics), tape and elastic	5.0 0.0 - 7.0	1.0 0.2 - 5.0

	G	Overcasting stitch Reinforcing of light and medium weight fabrics	3.5 2.5 - 5.0	2.0 0.4 - 5.0
	G	Overcasting stitch Reinforcing of heavyweight fabric	5.0 2.5 - 5.0	2.5 0.4 - 5.0
	G	Overcasting stitch Reinforcing of medium, heavyweight and easily friable fabrics or decorative stitching.	5.0 3.5 - 5.0	2.5 0.4 - 5.0
	J*/O	Overcasting stitch Reinforced seaming of stretch fabric	5.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Overcasting stitch Reinforcing of medium stretch fabric and heavyweight fabric, decorative stitching	5.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Overcasting stitch Reinforcement of stretch fabric or decorative stitching	4.0 0.0 - 7.0	4.0 0.4 - 5.0
	J/O	Overcasting stitch Stretch knit seam	5.0 0.0 - 7.0	4.0 0.4 - 5.0
	J*/O	Single diamond overcast Reinforcement and seaming stretch fabric	6.0 0.0 - 7.0	3.0 0.4 - 5.0
	J*/O	Single diamond overcast Reinforcement of stretch fabric	6.0 0.0 - 7.0	1.8 0.4 - 5.0
	S	With side cutter Straight stitch while cutting fabrics	0.0 0.0 - 2.5	2.5 0.2 - 5.0
	S	With side cutter Zigzag stitch while cutting fabrics	3.5 3.5 - 5.0	1.4 0.0 - 5.0

	S	With side cutter Overcasting stitch while cutting fabrics	3.5 3.5 - 5.0	2.0 0.4 - 5.0
	S	With side cutter Overcasting stitch while cutting fabrics	5.0 3.5 - 5.0	2.5 0.4 - 5.0
	S	With side cutter Overcasting stitch while cutting fabrics	5.0 3.5 - 5.0	2.5 0.4 - 5.0
	J/O	Piecing stitch (Right) Piecework/patchwork 6.5 mm (approx. 1/4 inch) right seam allowance	5.5 0.0 - 7.0	2.0 0.2 - 5.0
	J/C	Piecing stitch (Middle) Piecework/patchwork	—	2.0 0.2 - 5.0
	J/O	Piecing stitch (Left) Piecework/patchwork 6.5 mm (approx. 1/4 inch) left seam allowance	1.5 0.0 - 7.0	2.0 0.2 - 5.0
	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 - 7.0	2.5 0.4 - 5.0
	J/O	Quilting appliqué zigzag stitch Zigzag stitch for quilting and sewing on appliqué quilt pieces	3.5 0.0 - 7.0	1.4 0.0 - 5.0
	J/O	Quilting appliqué stitch Quilting stitch for invisible appliqué or attaching binding	1.5 0.0 - 7.0	1.8 0.4 - 5.0
	J/O	Quilting stippling Background quilting	7.0 0.0 - 7.0	1.6 0.4 - 5.0
	R	Blind hem stitch Hemming woven fabrics * The stitch width setting is in neither millimeters nor inches.	00 3← - →3	2.0 0.4 - 5.0

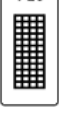
	R	Blind hem stitch stretch Hemming stretch fabric * The stitch width setting is in neither millimeters nor inches.	00 3← - →3	2.0 0.4 - 5.0
	J*/O	Blanket stitch Appliqués, decorative blanket stitch	3.5 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	New Blanket stitch Appliqués, decorative blanket stitch	2.5 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Shell tuck edge Shell tuck edge finish on fabrics	4.0 0.0 - 7.0	2.5 0.2 - 5.0
	N*/O	Satin scallop stitch Decorating collar of blouse, edge of handkerchief	5.0 0.0 - 7.0	0.5 0.1 - 5.0
	N/O	Scallop stitch Decorating collar of blouse, edge of handkerchief	7.0 0.0 - 7.0	1.4 0.4 - 5.0
	J*/O	Patchwork join stitch Patchwork stitches, decorative stitching	4.0 0.0 - 7.0	1.2 0.2 - 5.0
	J*/O	Patchwork double overlock stitch Patchwork stitches, decorative stitching	5.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Couching stitch Decorative stitching, attaching cord and couching	5.0 0.0 - 7.0	1.2 0.2 - 5.0
	J*/O	Smocking stitch Smocking, decorative stitching	5.0 0.0 - 7.0	1.6 0.4 - 5.0
	J*/O	Feather stitch Fagoting, decorative stitching	5.0 0.0 - 7.0	2.5 0.4 - 5.0

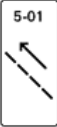
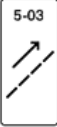
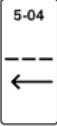
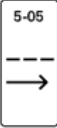
	J*/O	Fagoting cross stitch Fagoting, bridging and decorative stitching	5.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Tape attaching Attaching tape to seam in stretch fabric	4.0 0.0 - 7.0	1.0 0.2 - 5.0
	J/O	Ladder stitch Decorative stitching	4.0 0.0 - 7.0	3.0 0.4 - 5.0
	J*/O	Rick-rack stitch Decorative top stitching	4.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Decorative stitch Decorative stitching	1.0 0.0 - 7.0	2.5 0.4 - 5.0
	J*/O	Decorative stitch Decorative stitching	5.5 0.0 - 7.0	1.6 0.4 - 5.0
	N*/O	Serpentine stitch Decorative stitching and attaching elastic	5.0 0.0 - 7.0	1.0 0.2 - 5.0
	N*/O	Decorative stitch Decorative stitching and appliqué	6.0 0.0 - 7.0	1.0 0.2 - 5.0
	N/O	Decorative stippling stitch Decorative stitching	7.0 0.0 - 7.0	1.6 0.4 - 5.0
	N*/O	Hemstitching Decorative hems, triple straight at left	1.0 0.0 - 7.0	2.5 0.4 - 5.0
	N*/O	Hemstitching Decorative hems, triple straight at center	3.5 0.0 - 7.0	2.5 0.4 - 5.0

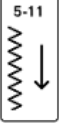
	N*/O	Hemstitching zigzag Decorative hems, top stitching	6.0 0.0 - 7.0	3.0 0.4 - 5.0
	N/O	Hemstitching Decorative hems, lace attaching pin stitch	3.5 0.0 - 7.0	2.5 0.4 - 5.0
	N/O	Hemstitching Decorative hems	3.0 0.0 - 7.0	3.5 0.4 - 5.0
	N/O	Hemstitching Decorative hems daisy stitch	6.0 0.0 - 7.0	3.0 0.4 - 5.0
	N/O	Hemstitching Heirloom, decorative hems	5.0 0.0 - 7.0	3.5 0.4 - 5.0
	N/O	Hemstitching Heirloom, decorative hems	5.0 0.0 - 7.0	3.5 0.4 - 5.0
	N*/O	Hemstitching Heirloom, decorative hems	5.0 0.0 - 7.0	3.5 0.4 - 5.0
	N*/O	Hemstitching Heirloom, decorative hems	5.0 0.0 - 7.0	4.0 0.4 - 5.0
	N*/O	Hemstitching Heirloom, decorative hems	4.0 0.0 - 7.0	2.5 0.4 - 5.0
	N*/O	Honeycomb stitch Heirloom, decorative hems	5.0 0.0 - 7.0	2.5 0.4 - 5.0
	N*/O	Honeycomb stitch Heirloom, decorative hems	6.0 0.0 - 7.0	3.5 0.4 - 5.0

	N*/O	Hemstitching Heirloom, decorative hems	6.0 0.0 - 7.0	1.6 0.4 - 5.0
	N/O	Hemstitching Heirloom, decorative hems	6.0 0.0 - 7.0	3.0 0.4 - 5.0
	N*/O	Hemstitching Heirloom, decorative hems	6.0 0.0 - 7.0	4.0 0.4 - 5.0
	N/O	Hemstitching Heirloom, decorative hems	4.0 0.0 - 7.0	2.5 0.4 - 5.0
	N*/O	Hemstitching Heirloom, decorative hems	5.0 0.0 - 7.0	2.0 0.4 - 5.0
	N*/O	Hemstitching Decorative hems and bridging stitch	6.0 0.0 - 7.0	2.0 0.4 - 5.0
	N*/O	Hemstitching Decorative hems. Fagoting, attaching ribbon	5.0 0.0 - 7.0	3.0 0.4 - 5.0
	N/O	Hemstitching Decorative hems, smocking	6.0 0.0 - 7.0	1.6 0.4 - 5.0
	N/O	Hemstitching Decorative hems, smocking	5.0 0.0 - 7.0	1.6 0.4 - 5.0
	N/O	Hemstitching Decorative hems, smocking	5.0 0.0 - 7.0	1.6 0.4 - 5.0
	N/O	Hemstitching Decorative hems	5.0 0.0 - 7.0	1.6 0.4 - 5.0

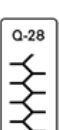
	N/O	Ladder stitch Decorative hems. Fagoting, attaching ribbon	7.0 0.0 - 7.0	1.6 0.4 - 2.5
	A	Narrow rounded buttonhole Buttonhole on light to medium weight fabrics	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Wide round ended buttonhole Buttonholes with extra space for larger buttons	5.5 3.5 - 6.0	0.4 0.2 - 1.0
	A	Tapered round ended buttonhole Reinforced waist tapered buttonholes	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Round ended buttonhole Buttonholes with vertical bar tack in heavyweight fabrics	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Round ended buttonhole Buttonholes with bar tack	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Round double ended buttonhole Buttonholes for fine, medium to heavyweight fabrics	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Narrow squared buttonhole Buttonholes for light to medium weight fabrics	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Squared buttonhole Heavy-duty buttonholes with vertical bar tacks	5.0 3.0 - 6.0	0.4 0.2 - 1.0
	A	Stretch buttonhole Buttonholes for stretch or woven fabrics	6.0 3.0 - 6.0	1.0 0.5 - 2.0
	A	Heirloom buttonhole Buttonholes for heirloom and stretch fabrics	6.0 3.0 - 6.0	1.5 1.0 - 3.0

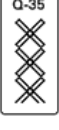
	A	Bound buttonhole The first step in making bound buttonholes	5.0 0.0 - 6.0	2.0 0.2 - 4.0
	A	Keyhole buttonhole Buttonholes in heavyweight or thick fabrics for larger flat buttons	7.0 3.0 - 7.0	0.5 0.3 - 1.0
	A	Tapered keyhole buttonhole Buttonholes in medium to heavy weight fabrics for larger flat buttons	7.0 3.0 - 7.0	0.5 0.3 - 1.0
	A	Keyhole buttonhole Buttonholes with vertical bar tack for reinforcement in heavyweight or thick fabrics	7.0 3.0 - 7.0	0.5 0.3 - 1.0
	N/O	4 step buttonhole 1 Left side of 4 step buttonhole	5.0 1.5 - 7.0	0.4 0.2 - 1.0
	N/O	4 step buttonhole 2 Bar tack of 4 step buttonhole	5.0 1.5 - 7.0	0.4 0.2 - 1.0
	N/O	4 step buttonhole 3 Right side of 4 step buttonhole	5.0 1.5 - 7.0	0.4 0.2 - 1.0
	N/O	4 step buttonhole 4 Bar tack of 4 step buttonhole	5.0 1.5 - 7.0	0.4 0.2 - 1.0
	A	Darning Darning of medium weight fabric	7.0 2.5 - 7.0	2.0 0.4 - 2.5
	A	Darning Darning of heavyweight fabric	7.0 2.5 - 7.0	2.0 0.4 - 2.5
	A	Bar tack Reinforcement at opening of pocket, etc.	2.0 1.0 - 3.0	0.4 0.3 - 1.0

4-22 	M	Button sewing Attaching buttons	3.5 2.5 - 4.5	—
4-23 	N/O	Eyelet For making eyelets, holes on belts, etc.	7.0 7.0 6.0 5.0	7.0 7.0 6.0 5.0
4-24 	N/O	Star eyelet For making star-shaped eyelets on holes.	—	—
5-01 	N/O	Diagonally left up (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
5-02 	N/O	Reverse (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
5-03 	N/O	Diagonally right up (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
5-04 	N/O	Sideways to left (Straight) For attaching appliqué on tubular pieces of fabric	—	—
5-05 	N/O	Sideways to right (Straight) For attaching appliqué on tubular pieces of fabric	—	—
5-06 	N/O	Diagonally left down (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
5-07 	N/O	Forward (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—
5-08 	N/O	Diagonally right down (Straight) For attaching appliqué on tubular pieces of fabric and mitering corners	—	—

	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 0.2 - 5.0
	J/O	Piecing stitch (Right) Piecework/patchwork 6.5 mm (approx. 1/4 inch) right seam allowance	5.50 0.00 - 7.00	2.0 0.2 - 5.0
	J/O	Piecing stitch (Left) Piecework/patchwork 6.5 mm (approx. 1/4 inch) left seam allowance	1.50 0.00 - 7.00	2.0 0.2 - 5.0
	J/O	Hand-look quilting Quilting stitch made to look like hand quilting stitch	3.50 0.00 - 7.00	2.5 0.4 - 5.0
	J/O	Basting stitch Basting	3.50 0.00 - 7.00	20 5 - 30
	J/O	Stem stitch Reinforced stitching, sewing and decorative applications	1.00 0.00 - 7.00	2.5 0.4 - 5.0
	J/O	Quilting appliqué zigzag stitch Zigzag stitch for quilting and sewing on appliqué quilt pieces	3.50 0.00 - 7.00	1.6 0.0 - 5.0

	J/O	Zigzag stitch (Right) Start from right needle position, zigzag sew at left	3.50 2.50 - 5.00	1.6 0.3 - 5.0
	J/O	Zigzag stitch (Left) Start from left needle position, zigzag sew at right	3.50 2.50 - 5.00	1.6 0.3 - 5.0
	J/O	2 steps elastic zigzag Overcasting (medium weight and stretch fabrics), tape and elastic	5.00 0.00 - 7.00	1.0 0.2 - 5.0
	J/O	3 steps elastic zigzag Overcasting (medium, heavyweight and stretch fabrics), tape and elastic	5.00 0.00 - 7.00	1.0 0.2 - 5.0
	J/O	Quilting appliqué stitch Quilting stitch for invisible appliqué or attaching binding	2.00 0.00 - 7.00	2.0 0.4 - 5.0
	J/O	Shell tuck edge Shell tuck edge finish on fabrics	4.00 0.00 - 7.00	2.5 0.2 - 5.0
	J/O	Blanket stitch Appliqués, decorative blanket stitch	3.50 0.00 - 7.00	2.5 0.4 - 5.0
	J/O	Quilting stippling Background quilting	7.00 0.00 - 7.00	1.6 0.4 - 5.0
	J/O	Overcasting stitch Stretch knit seam	5.00 0.00 - 7.00	4.0 0.4 - 5.0
	J/O	Tape attaching Attaching tape to seam in stretch fabric	5.50 0.00 - 7.00	1.4 0.2 - 5.0
	N/O	Serpentine stitch Decorative stitching and attaching elastic	5.00 0.00 - 7.00	2.0 0.2 - 5.0

	J/O	Feather stitch Fagoting, decorative stitching	5.00 0.00 - 7.00	2.5 0.4 - 5.0
	J/O	Fagoting cross stitch Fagoting, bridging and decorative stitching	5.00 0.00 - 7.00	2.5 0.4 - 5.0
	J/O	Couching stitch Decorative stitching, attaching cord and couching	5.00 0.00 - 7.00	1.2 0.2 - 5.0
	J/O	Patchwork double overlock stitch Patchwork stitches, decorative stitching	5.00 0.00 - 7.00	2.5 0.4 - 5.0
	J/O	Smocking stitch Smocking, decorative stitching	5.00 0.00 - 7.00	1.6 0.4 - 5.0
	J/O	Rick-rack stitch Decorative top stitching	4.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching and appliqué	6.00 0.00 - 7.00	1.0 0.2 - 5.0
	J/O	Decorative stitch Decorative stitching	5.50 0.00 - 7.00	1.6 0.4 - 5.0
	N/O	Hemstitching Heirloom, decorative hems	5.00 0.00 - 7.00	2.0 0.4 - 5.0
	N/O	Hemstitching Decorative hems and bridging stitch	6.00 0.00 - 7.00	2.0 0.4 - 5.0
	J/O	Single diamond overcast Reinforcement and seaming stretch fabric	6.00 0.00 - 7.00	3.0 0.4 - 5.0

	J/O	Overcasting stitch Reinforcement of stretch fabric or decorative stitching	4.00 0.00 - 7.00	4.0 0.4 - 5.0
	N/O	Appliqué stitch Appliqués, decorative stitch	3.00 0.00 - 7.00	2.0 0.4 - 5.0
	N/O	Blanket stitch Appliques, decorative blanket stitch	4.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N*/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	2.5 0.4 - 5.0
	N*/O	Decorative stitch Decorative stitching	7.00 0.00 - 7.00	0.4 0.4 - 5.0

	X	Free motion couching stitch Free motion couching stitch	3.50 2.75 - 3.75	—
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	1.0 0.1 - 5.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	5.0 2.5 - 7.0	2.5 1.4 - 5.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	5.0 2.5 - 7.0	2.5 1.4 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	2.0 1.0 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	3.5 2.5 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	3.0 2.0 - 5.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 3.0 - 7.0	3.0 2.5 - 5.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 3.0 - 7.0	2.5 2.5 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	2.5 1.4 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 3.0 - 7.0	2.5 2.0 - 4.0

	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 4.0 - 7.0	3.0 2.5 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	1.0 0.4 - 5.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	6.0 4.0 - 7.0	0.3 0.2 - 2.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	6.0 4.0 - 7.0	0.3 0.2 - 2.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 3.5 - 7.0	0.3 0.1 - 2.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 4.0 - 7.0	3.5 2.5 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 4.0 - 7.0	2.5 2.0 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 4.5 - 7.0	2.5 2.0 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing.	7.0 2.5 - 7.0	2.5 1.6 - 4.0
	N/O	Tapering stitch Stitch pattern can be tapered at the beginning or at the end of sewing	7.0 4.0 - 7.0	2.5 2.0 - 4.0

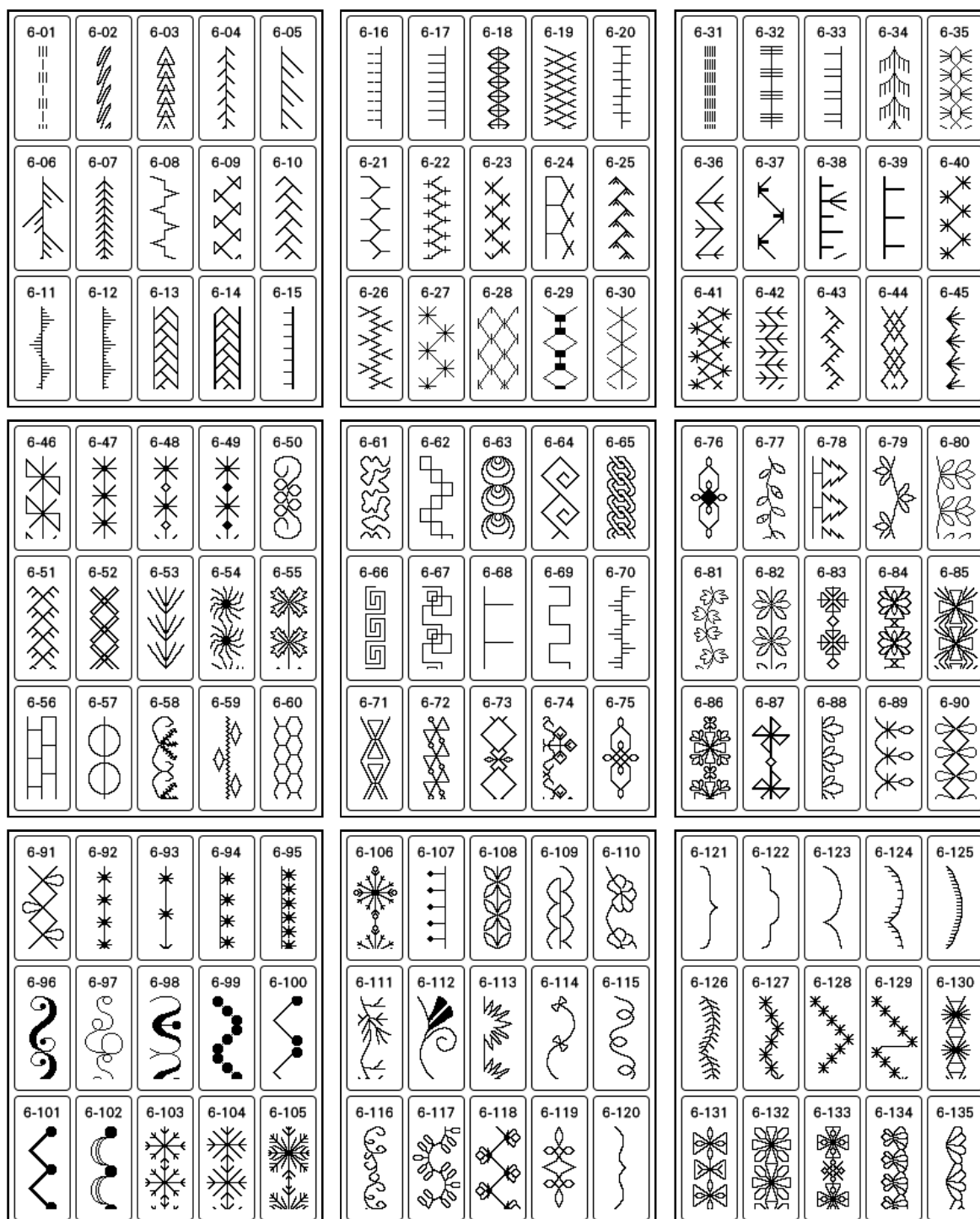
// Decorative Stitches

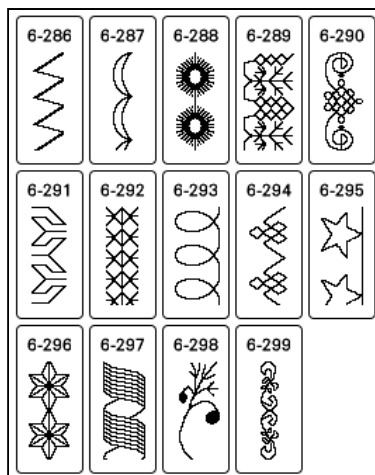
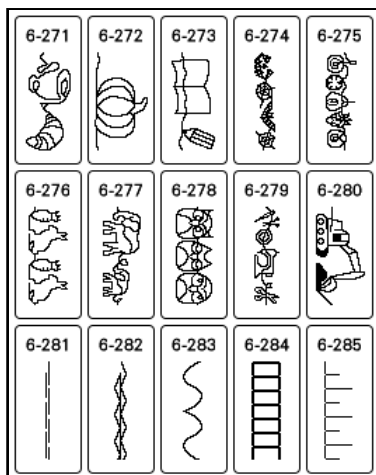
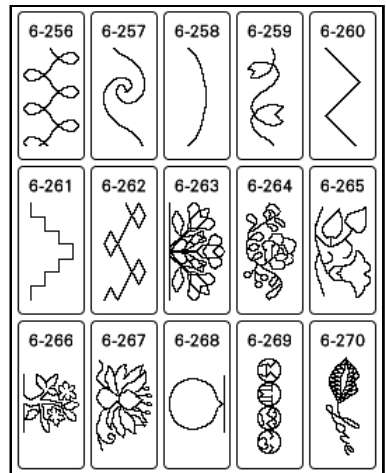
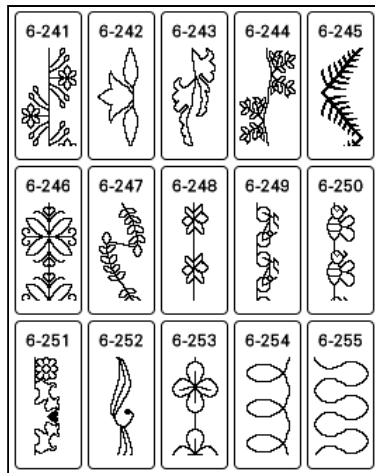
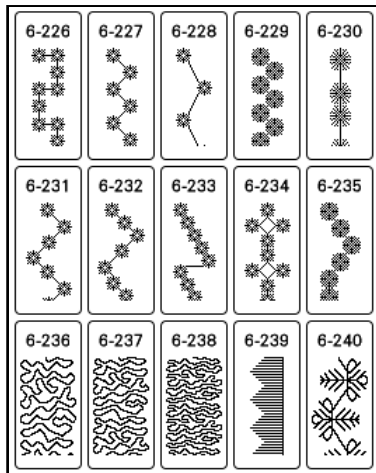
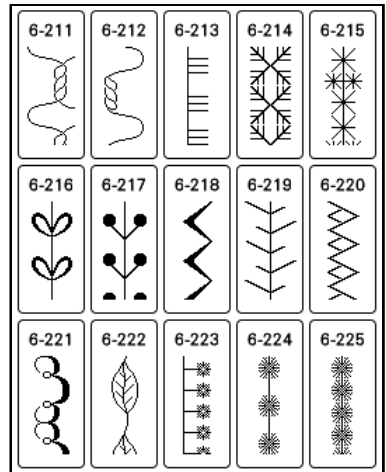
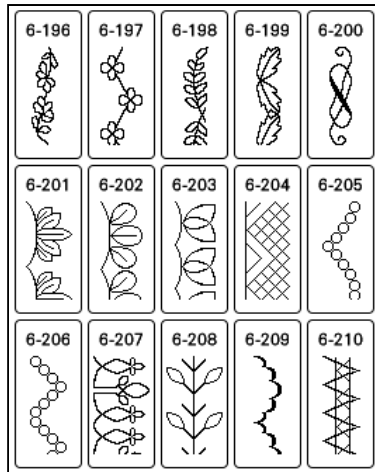
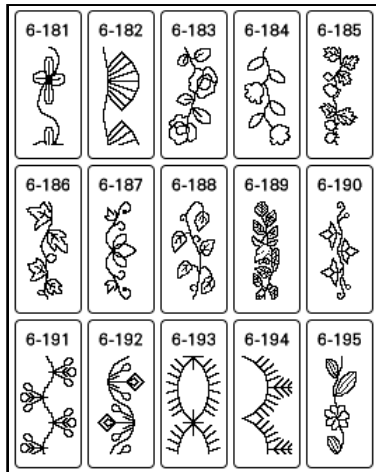
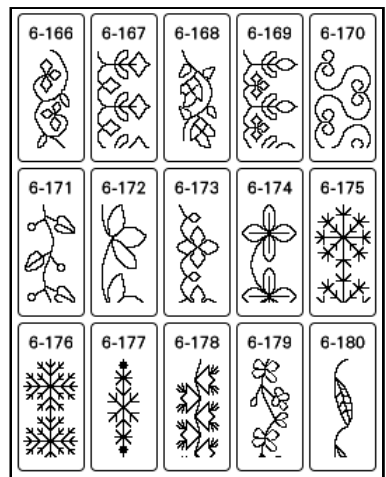
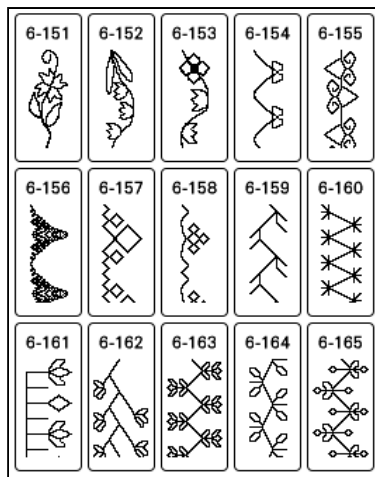
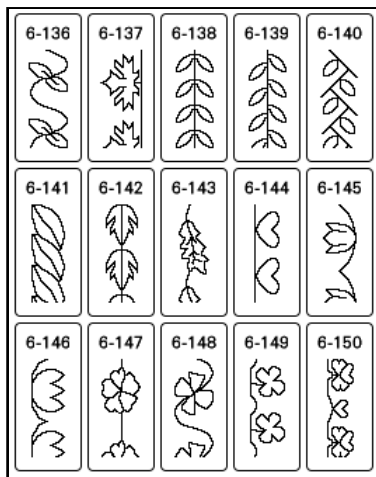
Use monogramming foot “N”.

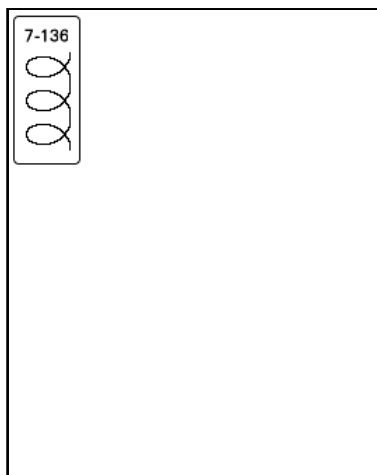
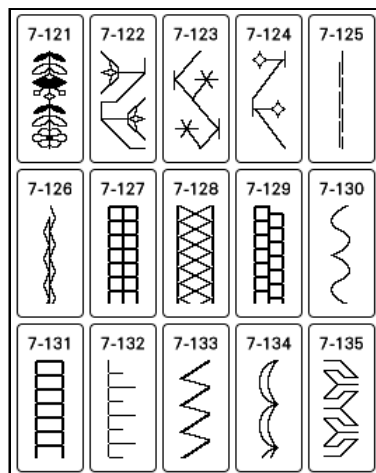
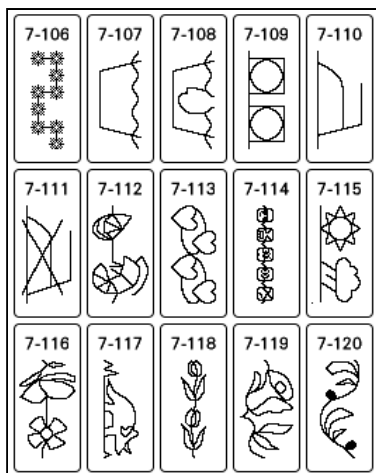
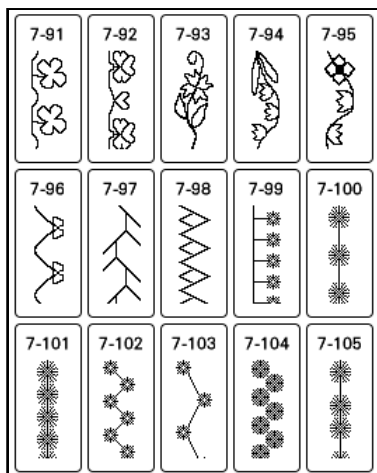
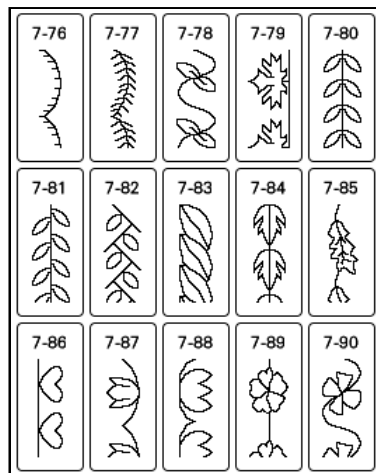
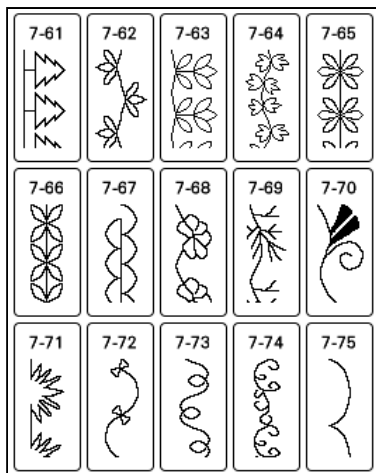
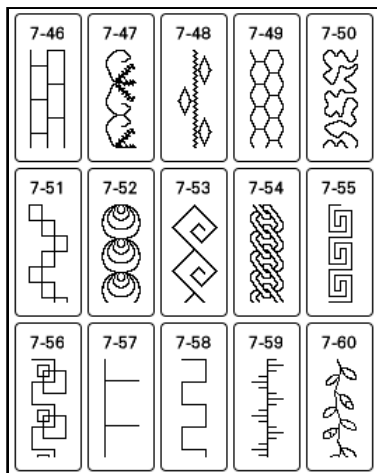
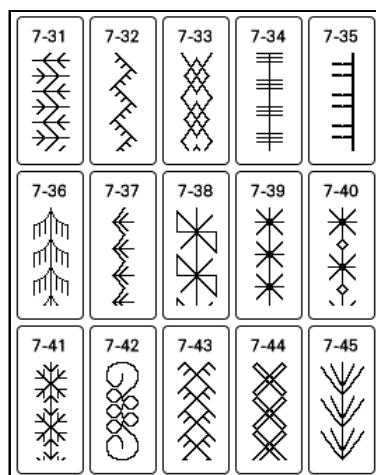
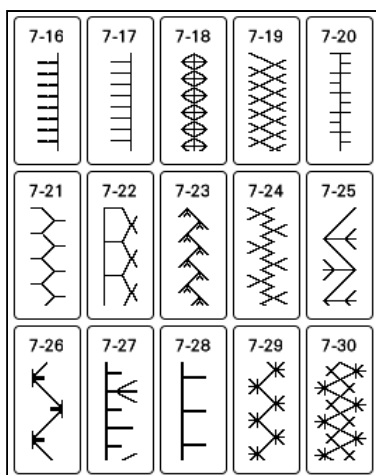
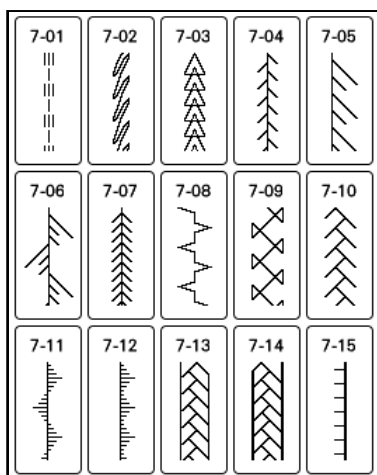
The twin needle can only be used with 7mm satin stitch patterns

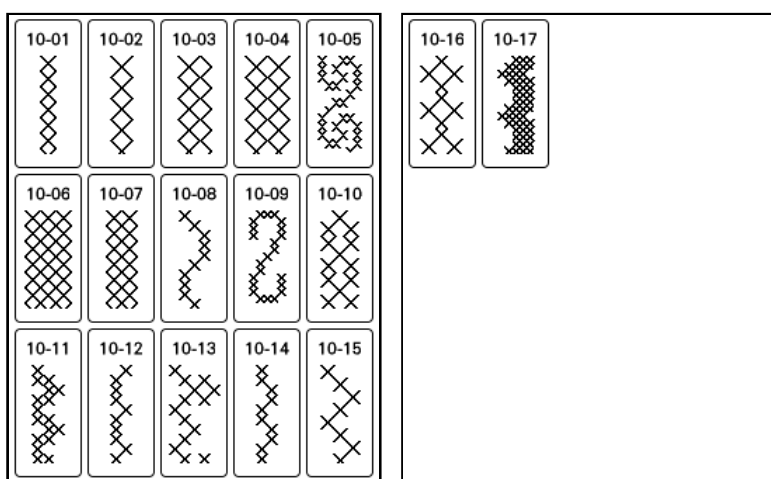
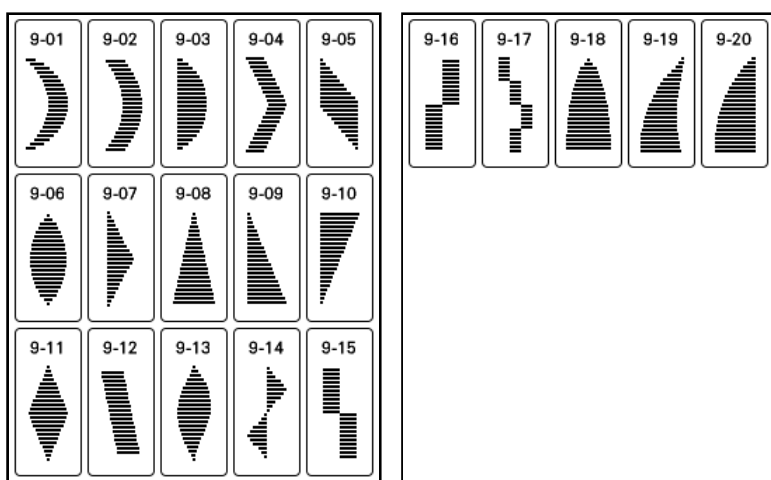
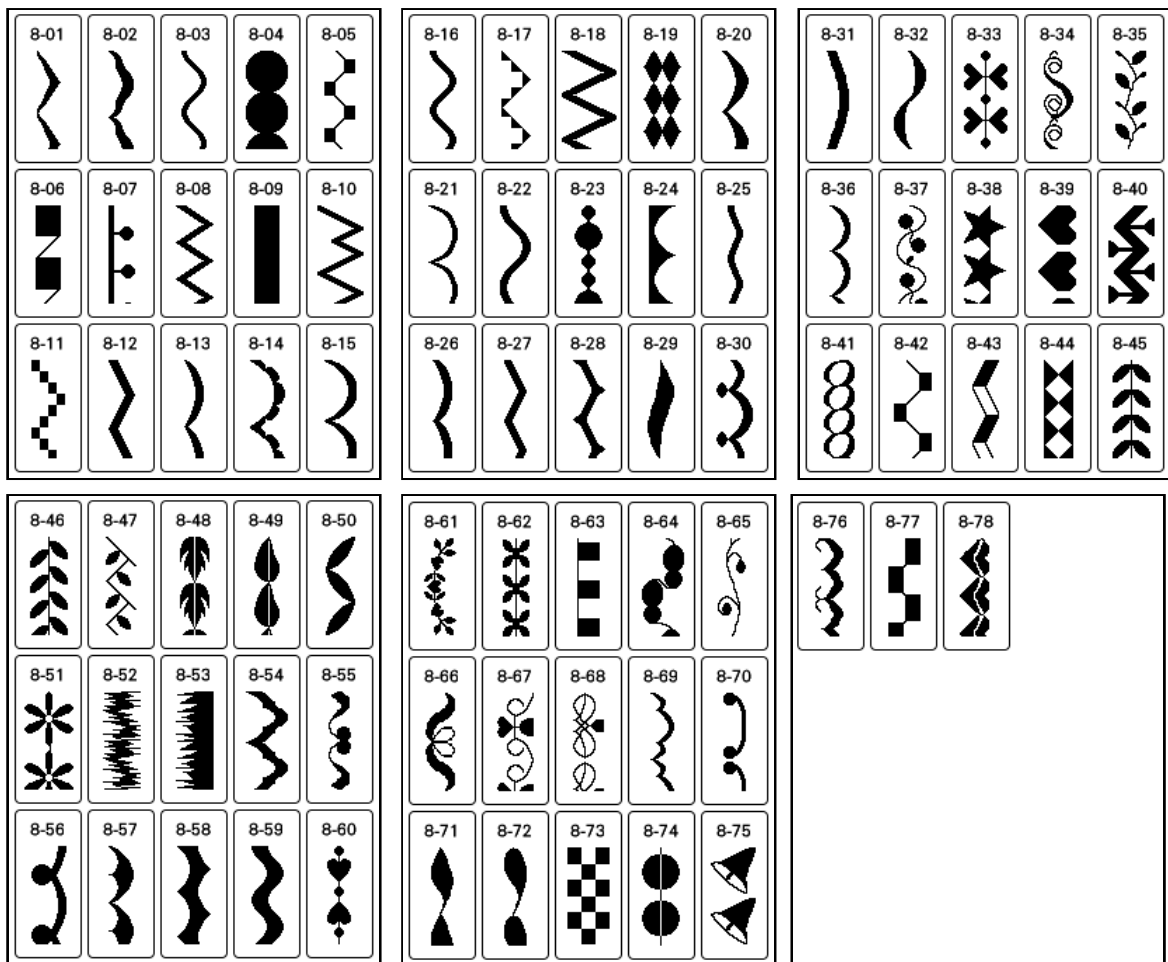


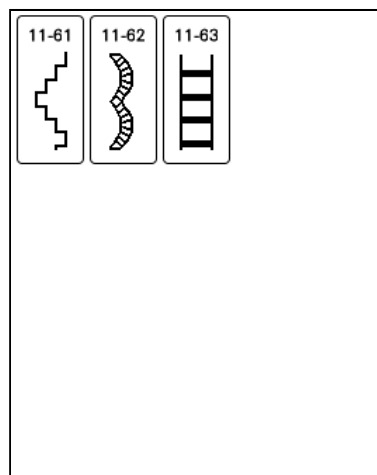
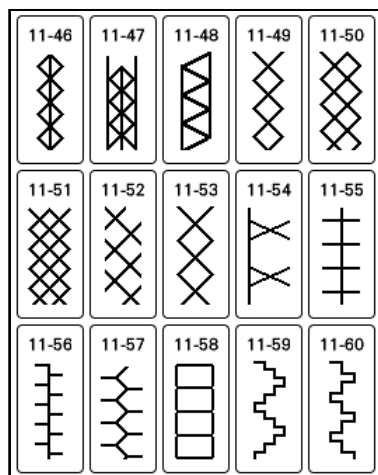
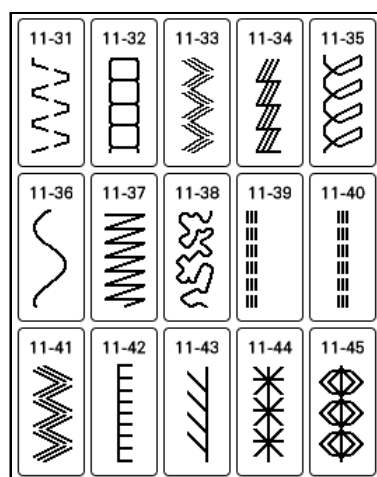
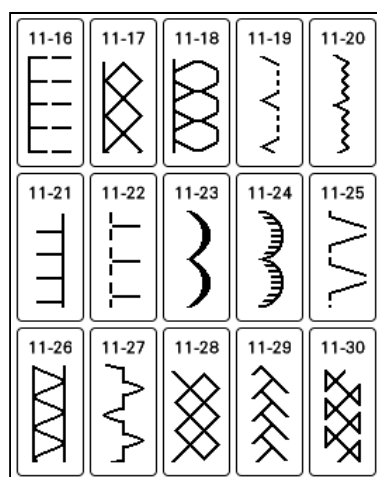
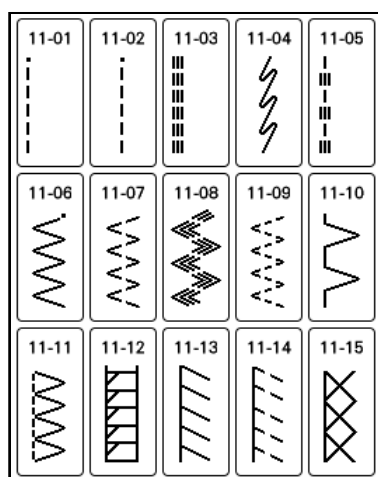
. Be sure to attach zigzag foot “J” when using the twin needle.











// Character Stitches

Use monogramming foot "N".
The twin needle cannot be used.

12
AB

ABC abc	0~9 &?! &?! aaa	AAA aaa			
A	B	C	D	E	
F	G	H	I	J	
K	L	M	N	O	
P	Q	R	S	T	
U	V	W	X	Y	
					—

ABC abc	0~9 &?! &?! aaa	AAA aaa			
Z	a	b	c	d	
e	f	g	h	i	
j	k	l	m	n	
o	p	q	r	s	
t	u	v	w	x	
					—

ABC abc	0~9 &?! &?! aaa	AAA aaa			
y	z				
					—

ABC abc	0~9 &?! &?! aaa	AAA aaa			
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'	'	'			
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É	Ê	Ë	è	é	
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					—

ABC abc	0~9 &?! &?! aaa	AAA aaa			
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ñ	ñ	ô	ö	ø	
ó	œ	ò	ó	ô	
ö	ø	õ	æ	í	
ı	û	ü	ù	ú	
					—

ABC abc	0~9 &?! &?! aaa	AAA aaa			
û	ü	z	þ	þ	
ß					
					—

[illegible]

АБВ	абв	0~9 &?!		
А	Б	В	Г	Д
Е	Ё	Ж	З	И
Й	К	Л	М	Н
О	П	Р	С	Т
У	Ф	Х	Ц	Ч
				—

АБВ	абв	0~9 &?!		
Ш	Щ	Ъ	Ы	Ь
Э	Ю	Я	Г	Е
І	Ї	Ў	Һ	Ҳ
Ј	Љ	Њ	Џ	Ѓ
Ѕ	Њ			
				—

АБВ	абв	0~9 &?!		
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е	ё	ж	з	и
й	к	л	м	н
о	п	р	с	т
у	ф	х	ц	ч
				—

АБВ	абв	0~9 &?!		
Ш	Щ	Ъ	Ы	Ь
Э	Ю	Я	Г	Е
І	Ї	Ў	Һ	Ҳ
Ј	Љ	Њ	Џ	Ѓ
Ѕ	Њ			
				—

АБВ	абв	0~9 &?!		
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あいう	アイウ	0~九 &?!	年組	
あ行	か行	さ行	た行	な行
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あいう	アイウ	0~九 &?!	年組	
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は行	ま行	や行	ら行	わ行
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				—

あいう	アイウ	0~九 &?!	年組	
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は行	ま行	や行	ら行	わ行
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あいう	アイウ	0~九 &?!	年組	
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あいう	アイウ	0~九 &?!	年組	
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あいう	アイウ	0~九 &?!	年組	
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あいう	アイウ	〇～九 &?!	年組	
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あいう	アイウ	〇～九 &?!	年組	
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あいう	アイウ	〇～九 &?!	年組	
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あいう	アイウ	〇～九 &?!	年組	
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H V		—		

あいう	アイウ	〇～九 &?!	年組	
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ア	イ	ウ	エ	オ
ヴ				
H V		—		

あいう	アイウ	〇～九 &?!	年組	
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ハ行	マ行	ヤ行	ラ行	ワ行
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H V		—		

あいう	アイウ	〇～九 &?!	年組	
ア行	カ行	サ行	タ行	ナ行
ハ行	マ行	ヤ行	ラ行	ワ行
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H V			—	

あいう	アイウ	〇～九 &?!	年組	
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H V		—		

あいう	アイウ	〇～九 &?!	年組	
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ハ行	マ行	ヤ行	ラ行	ワ行
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H V		—		

あい	アイ	〇～九 &?!	年組	
ア行	カ行	サ行	タ行	ナ行
ハ行	マ行	ヤ行	ラ行	ワ行
ハ	ヒ	フ	ヘ	ホ
バ	ビ	ブ	ベ	ボ
パ	ピ	プ	ペ	ポ
H V		—		

あいう	アイウ	〇～九 &?!	年組	
ア行	カ行	サ行	タ行	ナ行
ハ行	マ行	ヤ行	ラ行	ワ行
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あいう	アイウ	〇～九 &?!	年組			
ア行	カ行	サ行	タ行	ナ行		
ハ行	マ行	ヤ行	ラ行	ワ行		
ヤ	ユ	ヨ				
ヤ	ユ	ヨ				
H V		—				

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