

Solaris™ 2

Instruction and Reference Guide Embroidery

Model BLSA2



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HOW TO USE THIS MANUAL

The Instruction and Reference Guides for this machine consist of the Instruction and Reference Guide (Sewing) and the Instruction and Reference Guide (Embroidery). Refer to the appropriate Instruction and Reference Guide according to your needs. For basic information about, for example, the included accessories or the settings screen, refer to chapter 1 of the Instruction and Reference Guide (Sewing). In the screens appearing in the step-by-step instructions, the parts referred to in the operations are marked with . Compare the screen in the directions with the actual screen, and carry out the operation. If, while using the machine, you experience something you do not understand, or there is a function you would like to know more about, refer to the index at the back of the Instruction and Reference Guide in conjunction with the table of contents to find the section of the manual you should refer to.

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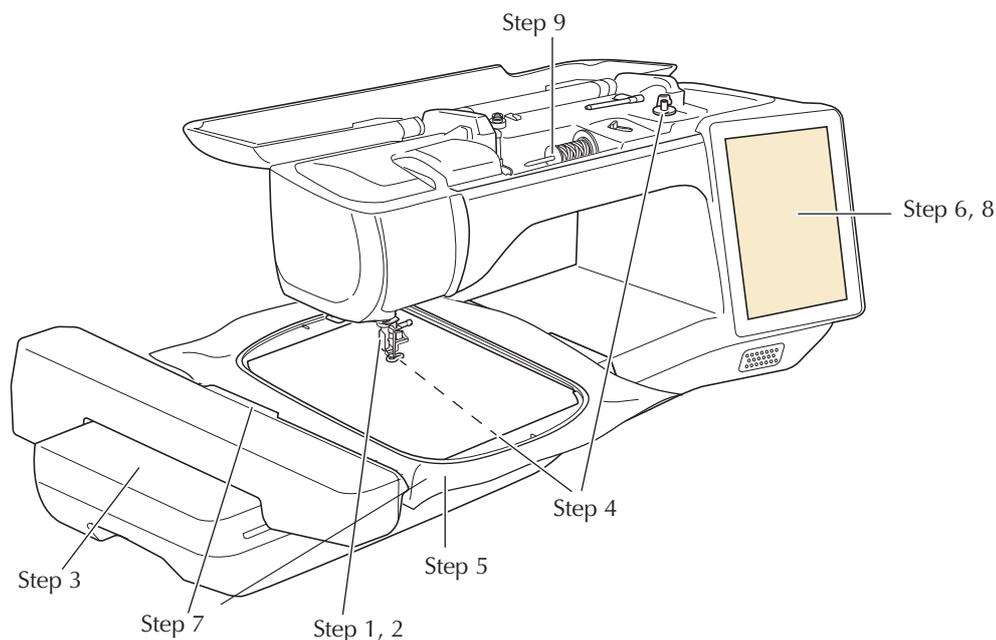


Chapter *1*

Embroidery Step by Step

BEFORE EMBROIDERING

Follow the steps below to prepare the machine for embroidery.



Step #	Aim	Action	Page
1	Presser foot attachment	Attach embroidery foot "W".	9
2	Checking the needle	Use needle 75/11 for embroidery. *	—
3	Embroidery unit attachment	Attach the embroidery unit.	13
4	Bobbin thread setup	For the bobbin thread, wind embroidery bobbin thread and set it in place.	15
5	Fabric preparation	Attach a stabilizer material to the fabric, and hoop it in the embroidery frame.	28
6	Pattern selection	Turn the main power to ON, and select an embroidery pattern.	36
7	Embroidery frame attachment	Attach the embroidery frame to the embroidery unit.	34
8	Checking the layout	Check and adjust the size and position of the embroidery.	46
9	Embroidery thread setup	Set up embroidery thread according to the pattern.	22

* It is recommended that a 90/14 needle should be used when embroidering on heavyweight fabrics or stabilizing products (for example; denim, puffy foam, etc.). Ball point needle (golden colored) 90/14 is not recommended for embroidery.

Using the Machine Setting Mode Key

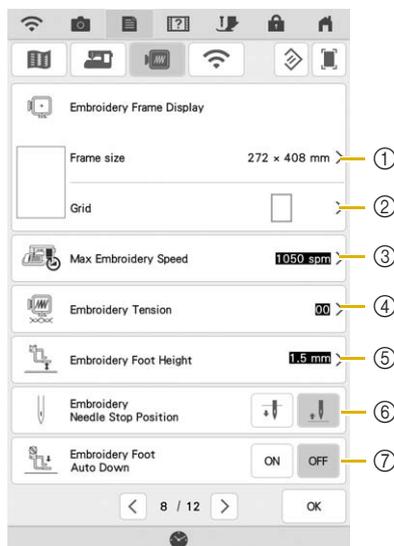
Press  to change the default machine settings (needle stop position, embroidery speed, opening display, etc.). To display the different settings screens, press  for “Sewing settings”,  for “General settings”,  for “Embroidery settings” or  for “Wireless LAN settings”. For details on settings for sewing utility stitches, on common settings and on wireless settings, refer to the Instruction and Reference Guide (Sewing).

Memo

- Press  or  to display a different settings screen.

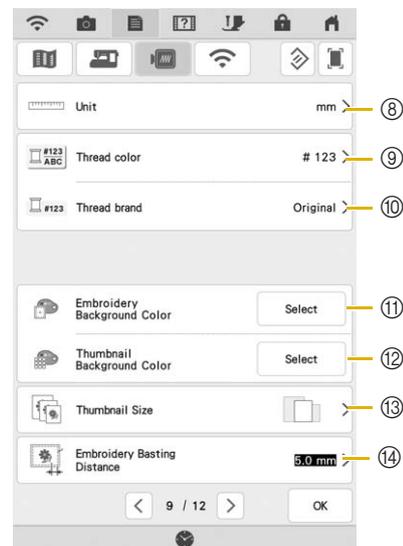
Embroidery Settings

■ Page 8



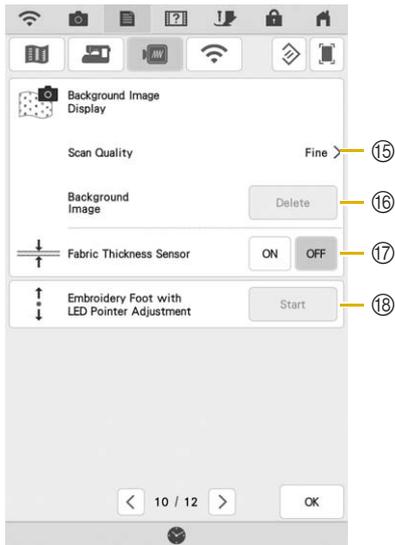
- ① Select the embroidery frame to be used (page 103).
- ② Change the center point marker or grid lines (page 103).
- ③ Adjust the maximum embroidery speed setting (page 103).
- ④ Adjust the upper thread tension for embroidering (page 99).
- ⑤ Select the height of the embroidery foot during embroidering.
- ⑥ Adjust the needle position for embroidering.
- ⑦ When set to “ON”, pressing the “Start/Stop” button when the presser foot is raised automatically lowers the presser foot before starting embroidering.

■ Page 9



- ⑧ Change the display units (mm/inch).
- ⑨ Change the thread color display on the “Embroidery” screen: thread number or color name (page 103).
- ⑩ Select the thread brand of the thread color display (page 103). The thread brand setting is reflected the next time a pattern is imported.
- ⑪ Change the color of the background for the embroidery display area.
- ⑫ Change the color of the background for the thumbnail area.
- ⑬ Press to specify the size of pattern thumbnails.
- ⑭ Adjust the distance between the pattern and the basting stitching (page 96).

■ Page 10



- ⑮ Select the quality for displaying the fabric in the screen (page 94).
- ⑯ Erase the scanned image (page 94).
- ⑰ Set to "ON" when positioning the pattern on thick fabric using the built-in camera (page 95).
- ⑱ Adjust the position and brightness of the embroidery foot "W+" with LED pointer (sold separately). (These settings are not available unless embroidery foot "W+" with LED pointer is installed on the machine.)

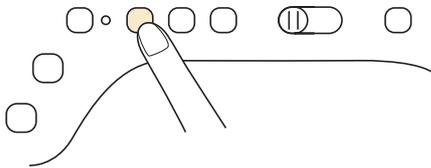
CHANGING THE PRESSER FOOT

⚠ CAUTION

- Always press  on the screen to lock all keys and buttons before changing the presser foot. If  is not pressed and the “Start/Stop” button or another button is pressed, the machine will start and may cause injury.
- Use presser feet made for this machine.

Removing the Presser Foot

- 1** Press the “Needle Position” button to raise the needle.

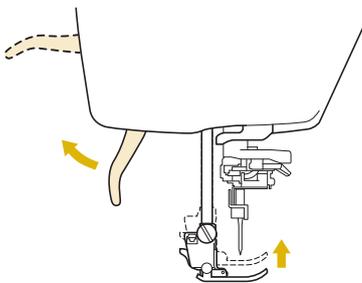


- 2** Press  to lock all keys and buttons.

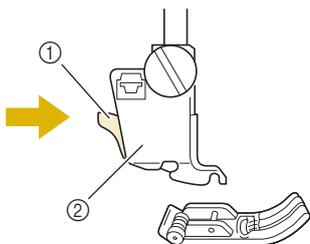
* If the message “OK to automatically lower the presser foot?” appears on the LCD screen, press

to continue.

- 3** Raise the presser foot lever.

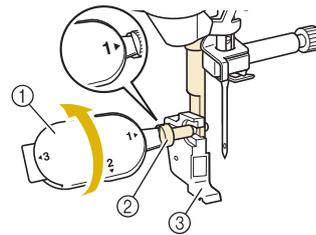


- 4** Press the black button on the presser foot holder and remove the presser foot.



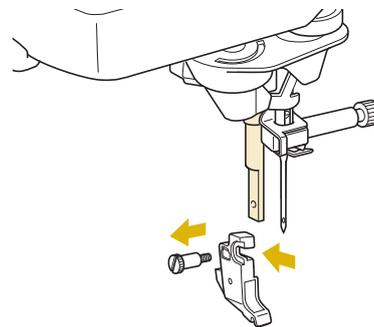
- ① Black button
② Presser foot holder

- 5** Loosen the screw of the presser foot holder to remove the presser foot holder.



- ① Multi-purpose screwdriver
② Presser foot holder screw
③ Presser foot holder

- 6** Remove the screw of the presser foot holder completely from the presser foot shaft.



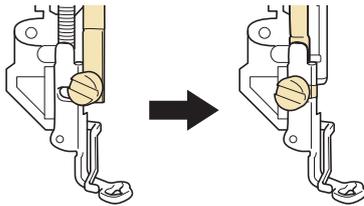
Attaching Embroidery Foot “W”

⚠ CAUTION

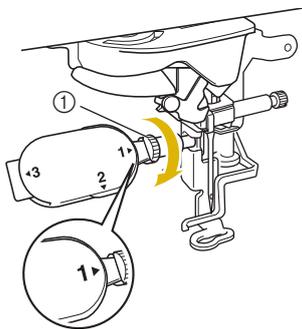
- When attaching an embroidery foot, always press  on the screen. You may accidentally press the “Start/Stop” button and possibly cause injury.
- Be sure to use embroidery foot “W” when doing embroidery. Using another embroidery foot may cause the needle to strike the embroidery foot, causing the needle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

- 1 Remove the presser foot and presser foot holder. For details, refer to “Removing the Presser Foot” on page 9.
- 2 Position the embroidery foot “W” on the presser foot bar by aligning the notch of the presser foot to the large screw.

Side view



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



① Presser foot holder screw

⚠ CAUTION

- Use the included multi-purpose screwdriver to firmly tighten the screw of the presser foot holder. If the screw is loose, the needle may strike the embroidery foot and possibly cause injury.

- 4 Press  to unlock all keys and buttons.

→ All keys and operation buttons are unlocked, and the previous screen is displayed.

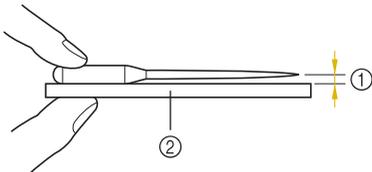
CHANGING THE NEEDLE

⚠ CAUTION

- Always press  on the screen to lock all keys and buttons before changing the needle. If  is not pressed 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 made for home use. Other needles may bend or break and may cause injury.
- Never embroider with a bent needle. A bent needle will easily break and may cause injury.

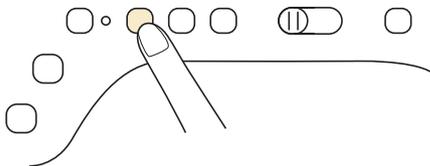
Memo

- 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 Level surface (bobbin cover, glass, etc.)

1 Press the “Needle Position” button to raise the needle.



2 Press to lock all keys and buttons.

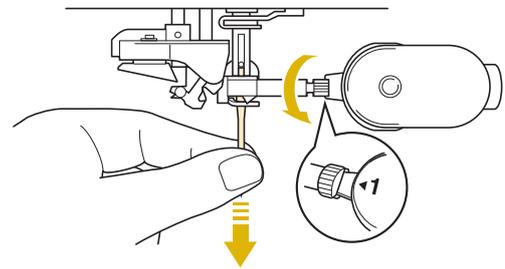
- * If the message “OK to automatically lower the presser foot?” appears on the LCD screen, press

to continue.

Note

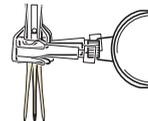
- Before replacing the needle, cover the hole in the needle plate with fabric or paper to prevent the needle from falling into the machine.

3 Use the multi-purpose screwdriver to turn the needle clamp screw toward the front of the machine and loosen the screw. Remove the needle.

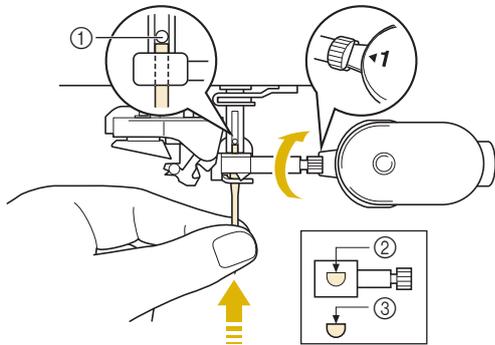


Note

- Do not apply pressure to the needle clamp screw. Doing so may damage the needle or machine.



- 4 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 multi-purpose screwdriver to securely tighten the needle clamp screw.



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

⚠ CAUTION

- Be sure to push in the needle until it touches the stopper, and securely tighten the needle clamp screw with a screwdriver. If the needle is not completely inserted or the needle clamp screw is loose, the needle may break or the machine may be damaged.

- 5 Press  to unlock all keys and buttons.

ATTACHING THE EMBROIDERY UNIT

About the Embroidery Unit

⚠ CAUTION

- Do not move the machine with the embroidery unit attached. The embroidery unit could fall off and cause injury.
- Keep your hands and foreign objects away from the embroidery carriage and frame when the machine is embroidering. Otherwise, injuries or damage may result.
- To avoid distorting your embroidery design, do not touch the embroidery carriage and frame when the machine is embroidering.
- Be sure to turn off the power before installing 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.
- Store the embroidery unit in a safe place to prevent damage to the unit.
- Do not push on the carriage when installing the embroidery unit onto the machine. Moving the carriage may damage the embroidery unit.
- Allow sufficient space around the embroidery unit. Otherwise, the embroidery unit could fall off foreign object, and may cause injury.
- Do not touch the embroidery carriage until the initialization finishes.

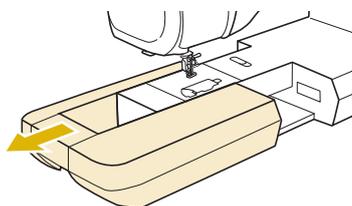


Note

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

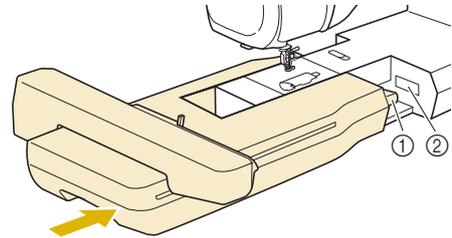
1

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



2

Insert the embroidery unit connection into the machine connection port. Push lightly on the connection port cover until the unit clicks into place.



- ① Embroidery unit connection
- ② Machine connection port



Note

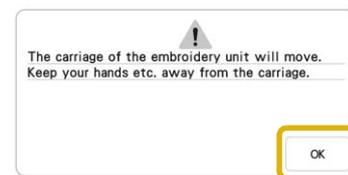
- Be sure there is no gap between the embroidery unit and the machine. If there is a gap, the embroidery patterns will not embroider with the correct registration.

3

Turn the main power to ON.

4

Press .



→ The carriage will move to the initialization position.

Removing the Embroidery Unit

- 1 Press , then press .

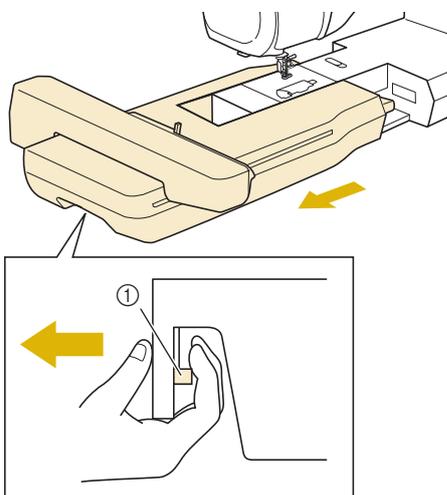
→ The carriage will move to the removal position.

CAUTION

- Always remove the embroidery frame before pressing . Otherwise, the frame may strike the embroidery foot, and possibly cause injury.

- 2 Turn the main power to OFF.

- 3 Press the release button, and pull the embroidery unit away from the machine.



① Release button

CAUTION

- Do not carry the embroidery unit by holding the release button compartment.



LOWER THREADING

Winding the Bobbin

⚠ CAUTION

- The included bobbin was designed specifically for this machine. If bobbins from other models are used, the machine will not operate correctly. Use the included bobbin or bobbins of the same type (part code: X52800-150). X52800-150 is Class 15 type bobbin.

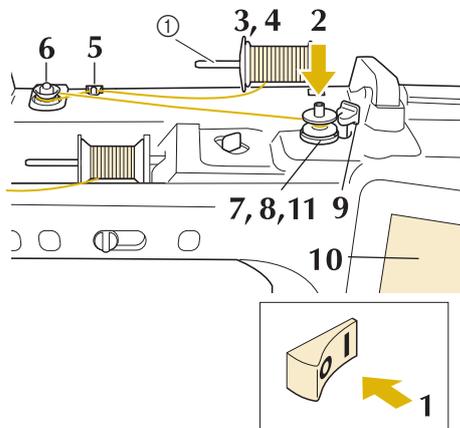


Note

- For most embroidery applications, the bobbin should be wound with the included Finishing Touch bobbin thread. See page 100 for more details regarding bobbin threads.

■ Using the Supplemental Spool Pin

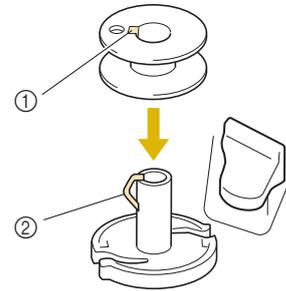
With this machine, you can wind the bobbin during embroidering. While the main spool pin is being used for embroidering, you can wind a bobbin by using the supplemental spool pin.



- ① Supplemental spool pin

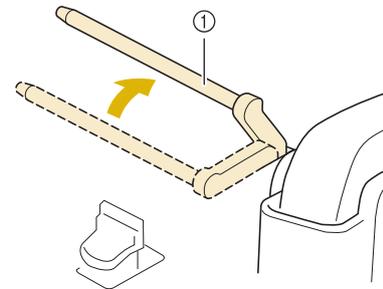
- Turn the main power to ON and open the top cover.

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



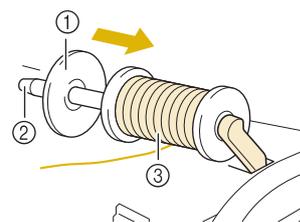
- ① Groove in the bobbin
② Spring on the shaft

- Set the supplemental spool pin in the "up" position.



- ① Supplemental spool pin

- Place the spool of thread on the supplemental spool pin, so that thread unrolls from the front. Push the spool cap onto the spool pin as far as possible to secure the thread spool.



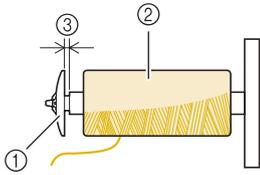
- ① Spool cap
② Spool pin
③ Thread spool

⚠ CAUTION

- If the thread spool and/or spool cap are set incorrectly, the thread may tangle on the spool pin and cause the needle to break.
- Use the spool cap (large, medium, small or mini king) that is closest in size to the thread spool. If a spool cap smaller than the thread spool is used, the thread may become caught in the slit on the end of the spool and cause the needle to break.

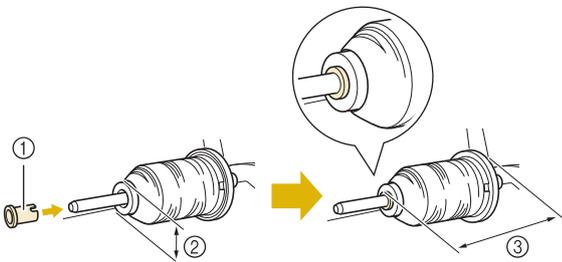
Memo

- When embroidering with fine, cross-wound thread, use the small spool cap, and leave a small space between the cap and the thread spool.



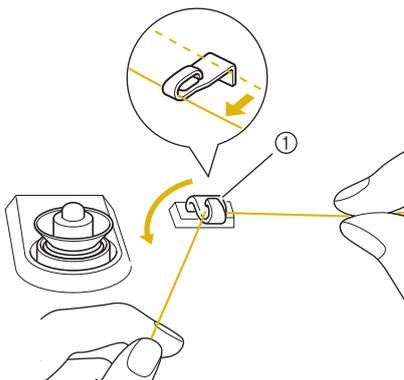
- ① Spool cap (small)
- ② Thread spool (cross-wound thread)
- ③ Space

- If a spool of thread whose core is 12 mm (1/2 inch) in diameter and 75 mm (3 inches) high is inserted onto the spool pin, use the mini spool cap.



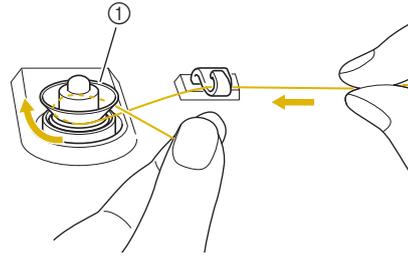
- ① Spool cap (mini king spool insert)
- ② 12 mm (1/2 inch)
- ③ 75 mm (3 inches)

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

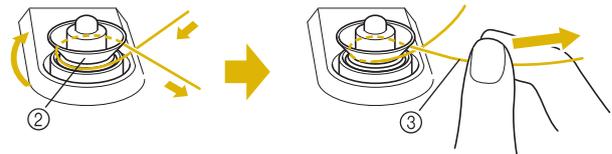


- ① Thread guide

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

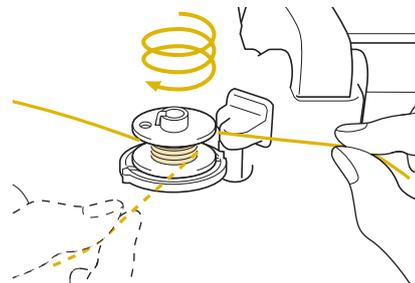


- ① Pretension disk
→ Make sure that the thread passes under the pretension disk.

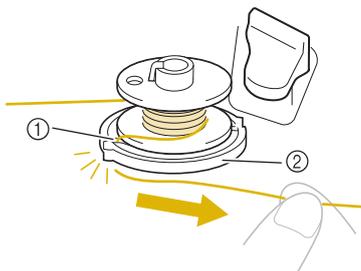


- ② Pretension disk
- ③ Pull it in as far as possible.
→ Check to make sure thread is securely set between pretension disks.

7 Wind the thread clockwise around the bobbin 5-6 times.



- 8 Pass the end of the thread through the guide slit in the bobbin winder seat, and pull the thread to the right to cut the thread with the cutter.

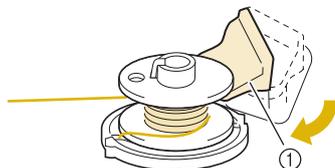


- ① Guide slit (with built-in cutter)
- ② Bobbin winder seat

CAUTION

- Be sure to follow the process described. If the thread is not cut with the cutter, and the bobbin is wound, when the thread runs low it may tangle around the bobbin and cause the needle to break.

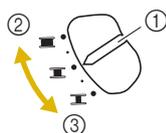
- 9 Set the bobbin winding switch to the left, until it clicks into place.



- ① Bobbin winding switch

Memo

- Sliding the bobbin winding switch to the left switches the machine into bobbin winding mode.
- Use the bobbin winding slider to adjust the amount of thread wound onto the bobbin to one of five levels.

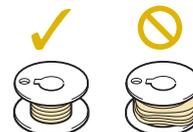


- ① Bobbin winding slider
- ② More
- ③ Less

→ The bobbin winding window appears.

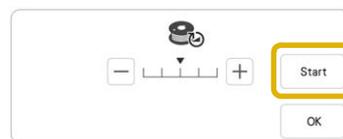
Note

- 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.



- 10 Press **Start**.

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



Note

- Start** changes to **Stop** while the bobbin is winding.
- Stay near the machine while winding the bobbin to make sure the bobbin thread is being wound correctly. If the bobbin thread is wound incorrectly, press **Stop** immediately to stop the bobbin winding.

Memo

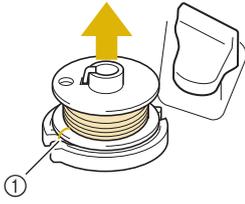
- You can change the winding speed by pressing **-** (to decrease) or **+** (to increase) in the bobbin winding window.



- Press **OK** to minimize the bobbin winding window. Then, you can perform other operations, such as selecting a pattern or adjusting the thread tension, while the bobbin is being wound.
- Press **Bobbin Winding** (in top right of the LCD screen) to display the bobbin winding window again.



11 Cut the thread with cutter and remove the bobbin.



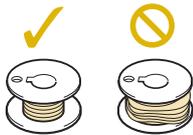
① Cutter

Memo

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

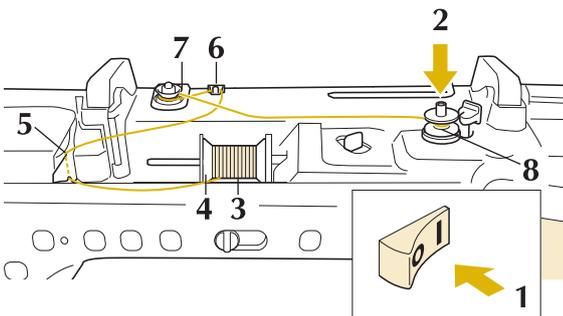
CAUTION

- Setting the bobbin improperly may cause the thread tension to loosen, breaking the needle and possibly resulting in injury.



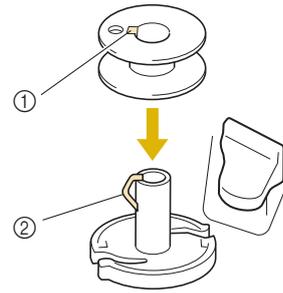
Using the Spool Pin

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



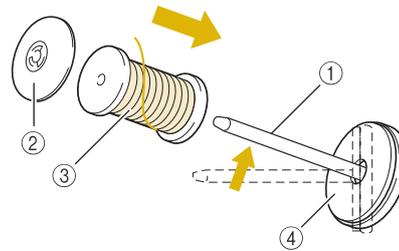
1 Turn the main power to ON and open the top cover.

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



① Groove in the bobbin
② Spring on the shaft

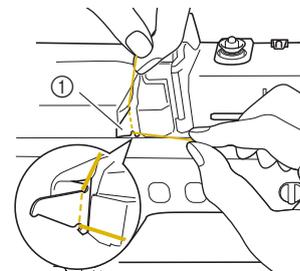
3 Pivot the spool pin so that it angles upward. Set the thread spool on the spool pin so that the thread unwinds from the front of the spool.



① Spool pin
② Spool cap
③ Thread spool
④ Spool felt

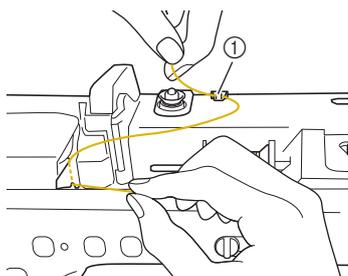
4 Push the spool cap onto the spool pin as far as possible, then return the spool pin to its original position.

5 While holding the thread with both hands, pull the thread up from under the thread guide plate.



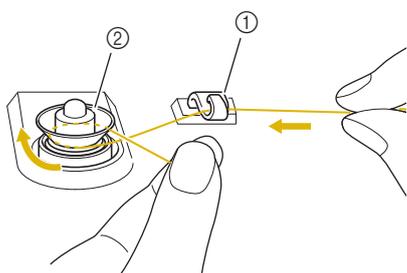
① Thread guide plate

6 Pass the thread through the thread guide.



① Thread guide

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

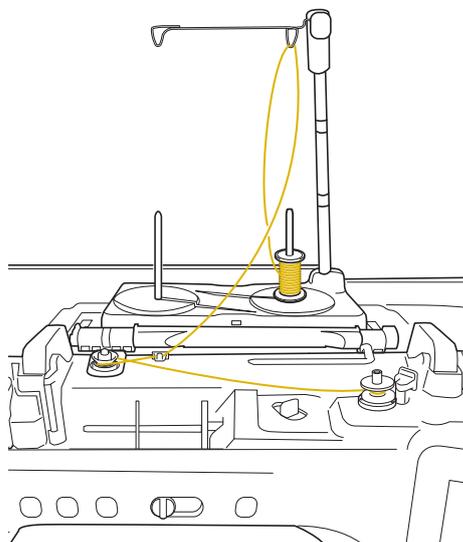


① Thread guide
② Pretension disk

8 Follow steps 7 through 11 on page 16 through 18.

Using the Spool Stand

To wind thread on the bobbin while the spool stand is installed, pass the thread from the spool through the thread guide on the telescopic thread guide, and then wind the bobbin according to steps 5 through 11 of "Using the Supplemental Spool Pin" on page 16 to page 18.



Memo

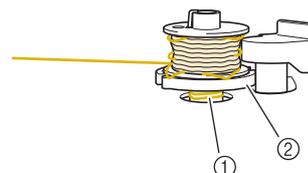
- Refer to the Instruction and Reference Guide (Sewing) to assemble the spool stand.
- Refer to page 25 to thread the machine using the spool stand.

CAUTION

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

Untangling Thread from Beneath 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.

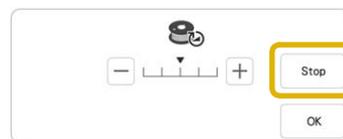


① Thread
② Bobbin winder seat

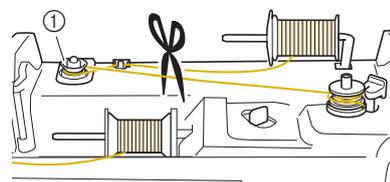
CAUTION

- Do not remove the bobbin winder seat even if the thread becomes tangled under the bobbin winder seat. It may result in injuries.

1 If the thread becomes tangled under the bobbin winder seat, press **Stop** once to stop the bobbin winding.

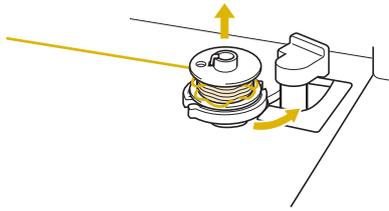


2 Cut the thread with scissors near the pretension disk.

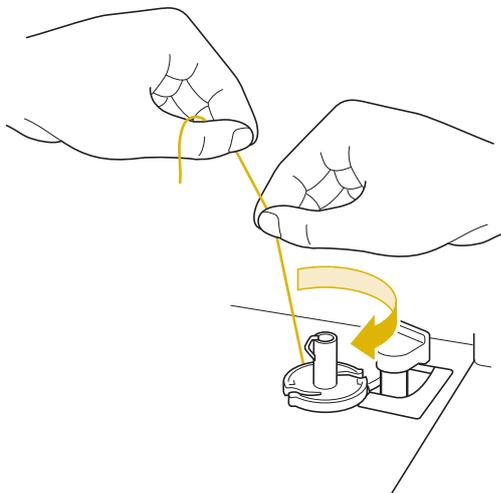


① Pretension disk

- 3** Push the bobbin winder switch to the right, and then raise the bobbin at least 100 mm (4 inches) from the shaft.



- 4** Cut the thread near the bobbin and hold the thread end of the spool with your left hand. Unwind the thread clockwise near the bobbin winder seat with your right hand as shown below.



- 5** Wind the bobbin again.



Note

- Make sure that the thread passes through the pretension disk correctly (page 16).

Setting the Bobbin

⚠ CAUTION

- Use a bobbin thread that has been correctly wound. Otherwise, the needle may break or the thread tension will be incorrect.



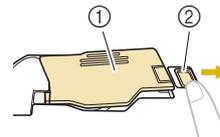
- The included bobbin was designed specifically for this machine. If bobbins from other models are used, the machine will not operate correctly. Use the included bobbin or bobbins of the same type (part code: X52800-150). X52800-150 is Class 15 type bobbin.
- Before inserting or changing the bobbin, be sure to press **U** 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 embroidering.

- 1** Press **U** to lock all keys and buttons and raise the embroidery foot.

* If the message “OK to automatically lower the presser foot?” appears on the LCD screen, press

to continue.

- 2** Slide the bobbin cover latch to the right.



① Bobbin cover

② Latch

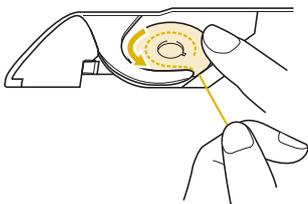
→ The bobbin cover opens.

3 Remove the bobbin cover.

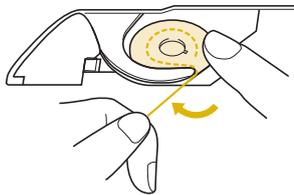
4 Hold the bobbin with your right hand and hold the end of the thread with your left hand.



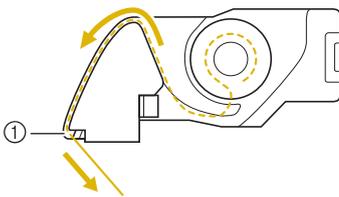
5 Set the bobbin in the bobbin case so that the thread unwinds to the left.



6 Hold the bobbin lightly with your right hand, and then guide the thread with your left hand.



7 Pass the thread through the guide, and then pull the thread out toward the front.



① Cutter
→ The cutter cuts the thread.



Note

- If the thread is not correctly inserted through the tension spring of the bobbin case, it may cause incorrect thread tension. (page 98)

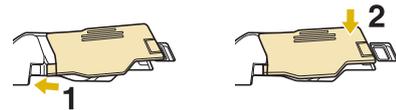


① Tension spring

⚠ CAUTION

- 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.

8 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).



9 Press  to unlock all keys and buttons.

UPPER THREADING

Upper Threading

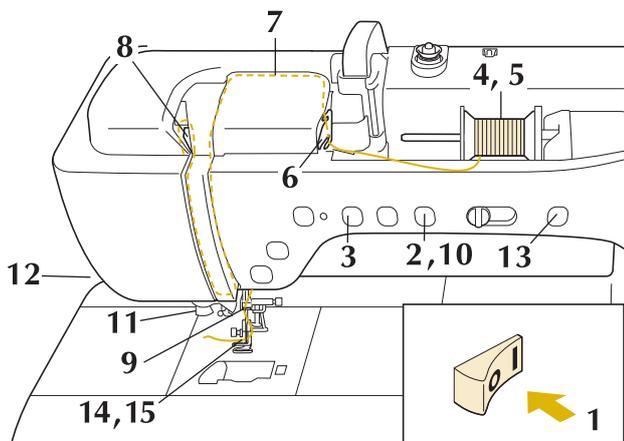
⚠ CAUTION

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

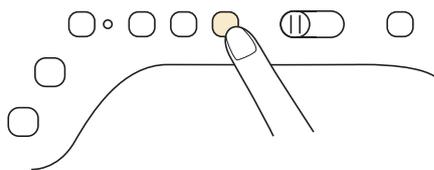


Memo

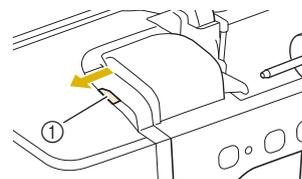
- The automatic threading function can be used with home sewing machine needle sizes 75/11 through 100/16.
- When threads such as transparent nylon monofilament or specialty threads are used, it is not recommended to use the needle threader.
- For most embroidery applications, the upper thread should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



- 1 Turn the main power to ON.
- 2 Press the "Presser Foot Lifter" button to raise the embroidery foot.



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



① Upper thread shutter

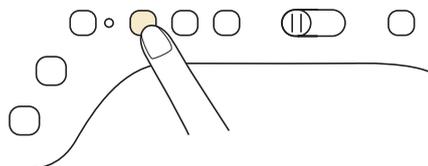


Memo

- This machine is equipped with an upper thread shutter, allowing you to check that the upper threading is performed correctly.

3

Press the "Needle Position" button to raise the needle.

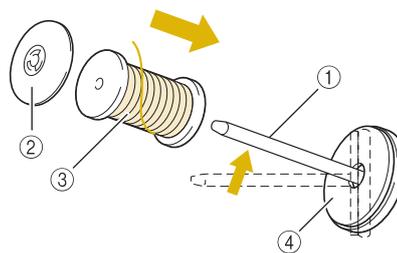


Note

- If you try to thread the needle automatically without raising the needle, the thread may not thread correctly.

4

Pivot the spool pin so that it angles upward. Set the thread spool on the spool pin so that the thread unwinds from the front of the spool.



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

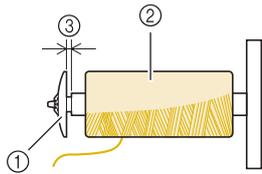
- 5** Push the spool cap onto the spool pin as far as possible, then return the spool pin to its original position.

⚠ CAUTION

- If the thread spool and/or spool cap are set incorrectly, the thread may tangle on the spool pin and cause the needle to break.
- Use the spool cap (large or medium) or the thread spool insert (mini king spool insert) that is closest in size to the thread spool. If a spool cap smaller than the thread spool is used, the thread may become caught in the slit on the end of the spool and cause the needle to break.

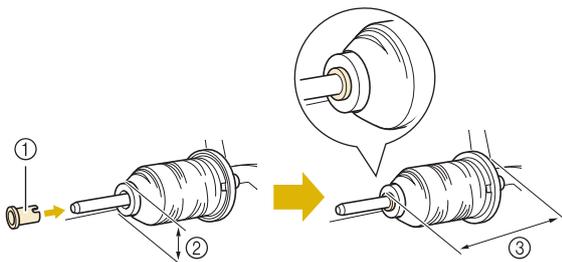
📖 Memo

- When embroidering with fine, cross-wound thread, use the small spool cap, and leave a small space between the cap and the thread spool.



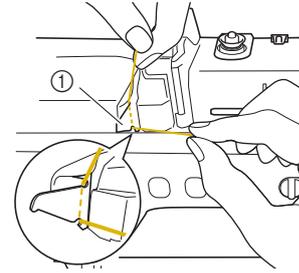
- ① Spool cap (small)
- ② Thread spool (cross-wound thread)
- ③ Space

- If a spool of thread whose core is 12 mm (1/2 inch) in diameter and 75 mm (3 inches) high is inserted onto the spool pin, use the thread spool insert (mini king spool insert).



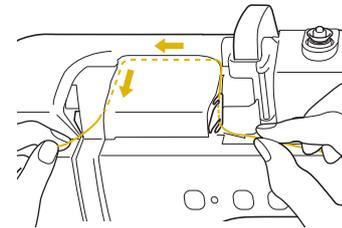
- ① Thread spool insert (mini king spool insert)
- ② 12 mm (1/2 inch)
- ③ 75 mm (3 inches)

- 6** While holding the thread with both hands, pull the thread up from under the thread guide plate.

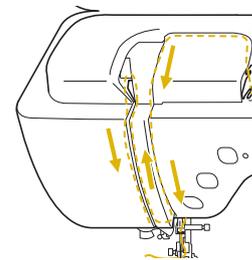


- ① Thread guide plate

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

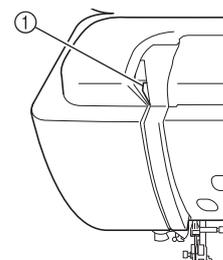


- 8** Guide the thread down, up, then down through the groove, as shown in the illustration.



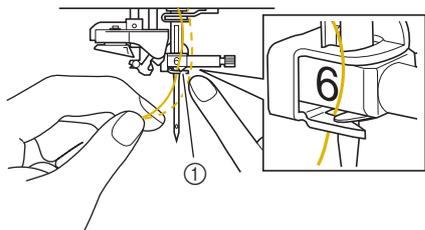
📖 Memo

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



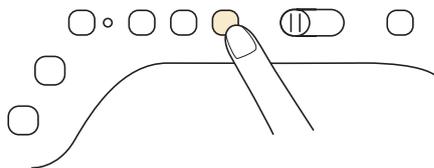
- ① Look in the upper groove area

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

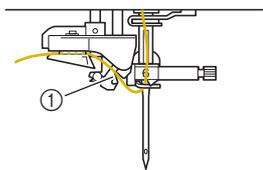


① Needle bar thread guide

- 10** Press the "Presser Foot Lifter" button to lower embroidery foot.

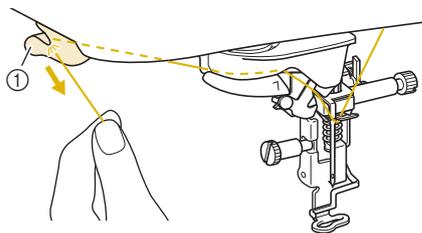


- 11** Pass the thread through the thread guide disks (marked "7"). Make sure that the thread passes through the groove in the thread guide.



① Groove in thread guide

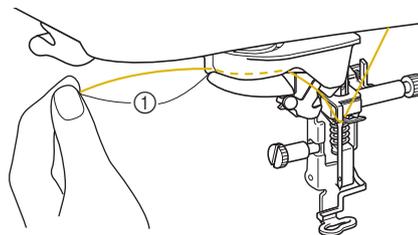
- 12** Pull the thread up through the thread cutter to cut the thread, as shown in the illustration.



① Thread cutter

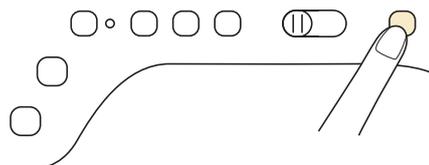
Note

- When using thread that quickly winds off the spool, such as metallic thread, it may be difficult to thread the needle if the thread is cut. Therefore, instead of using the thread cutter, pull out about 80 mm (approx. 3 inches) of thread after passing it through the thread guide disks (marked "7").



① 80 mm (approx. 3 inches) or more

- 13** Press the "Automatic Threading" button to have the machine automatically thread the needle.



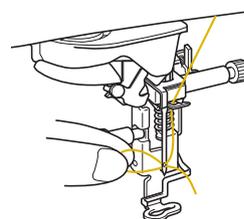
→ The thread passes through the eye of the needle.

Memo

- When the "Automatic Threading" button is pressed, the embroidery foot will be automatically lowered. After threading is finished, the embroidery foot moves back to the position before the "Automatic Threading" button was pressed.

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

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

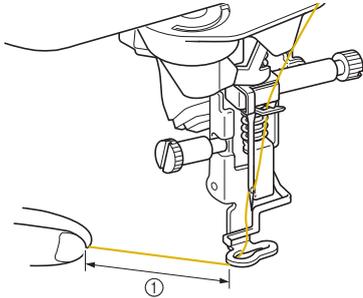


Note

- Pulling the loop of thread gently will avoid needle breakage.

- 15** Pull out about 10-15 cm (approx. 4-6 inches) of the thread, and then pass it under the embroidery foot toward the rear of the machine.

→ Raise the presser foot lever if the embroidery foot is lowered.



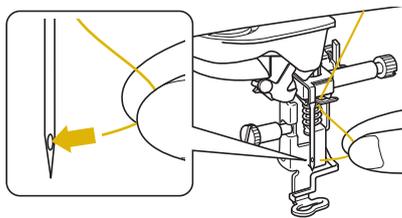
① About 10-15 cm (approx. 4-6 inches)

Memo

- If the needle could not be threaded or the thread was not passed through the needle bar thread guide, perform the procedure again starting from step ③. Then, pass the thread through the eye of the needle after step ⑨.

Note

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



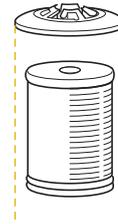
Using the Spool Stand

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

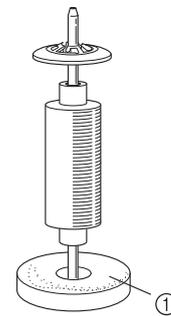
Memo

- Refer to the Instruction and Reference Guide (Sewing) to assemble the spool stand.
- Refer to page 19 to wind the bobbin when using the spool stand.

- Be sure to use a spool cap that is slightly larger than the spool. If the spool cap that is used is smaller or much larger than the spool, the thread may catch and embroidering performance may suffer.

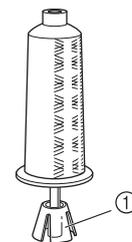


- When using thread on a thin spool, place the included spool felt on the spool pin, place the thread spool on the spool pin so that the center of the spool is aligned with the hole at the center of the spool felt, and then insert the spool cap onto the spool pin.



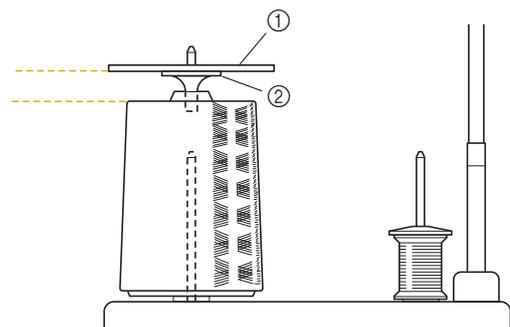
① Spool felt

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



① Spool holder

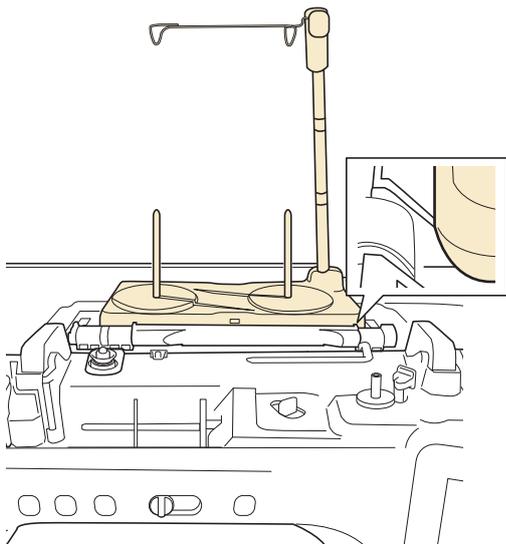
- Depending on the size of spool or the amount of thread remaining, choose the appropriate sized spool cap (large or medium). Spool cap (small) cannot be used with the spool cap base.



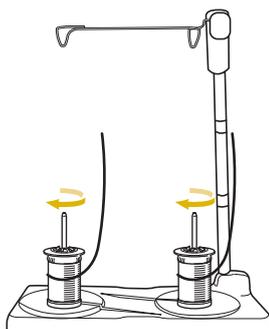
① Spool cap

② Spool cap base

1 Attach the spool stand to the machine.



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

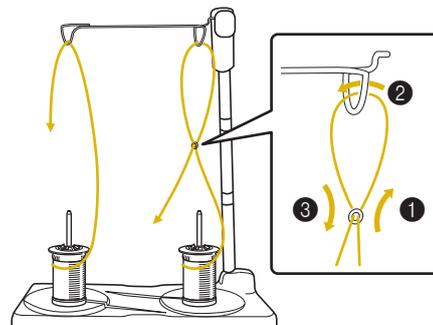


Note

- When using 2 spools of thread, make sure that both spools are feeding in the same direction.
- Make sure that the spools do not touch each other, otherwise the thread will not feed off smoothly, the needle may break, or the thread may break or become tangled. In addition, make sure that the spools do not touch the telescopic thread guide at the center.
- Make sure that the thread is not caught under the spool.

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

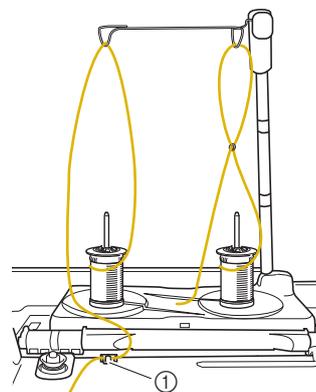
When using thread that quickly feeds off the spool, such as metallic thread, use the enclosed ring to prevent the thread from becoming entangled. Threading sequence: Pull the thread from the spool, place the thread through the ring from the bottom up (1), into the thread guide (2) and through the ring from the top down (3). When using the ring, do not use the spool cap base.



Note

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

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



① Thread guide

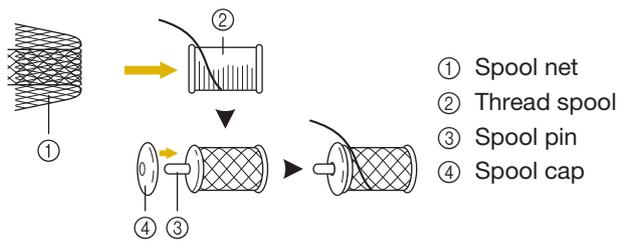
5 Thread the machine according to the steps 6 to 15 of "Upper Threading" on page 22.

Using Threads that Unwind Quickly

■ Using the Spool Net

If using transparent nylon monofilament thread, metallic thread, or other strong thread, place the included spool net over the spool before using it. When using specialty threads, threading must be done manually.

If the spool net is too long, fold it once to match it to the spool size before placing it over the spool.



Memo

- When threading the spool with the spool net on, make sure that 50-60 mm (approx. 2 - 2-1/2 inches) of thread are pulled out.
- It may be necessary to adjust the thread tension when using the spool net.

PREPARING THE FABRIC

⚠ CAUTION

- Use fabrics with a thickness of less than 3 mm (approx. 1/8 inch). Using fabrics thicker than 3 mm (approx. 1/8 inch) may cause the needle to break.



Note

- When embroidering fabric layers filled with thick batting, for example, a better result can be achieved by adjusting the embroidery foot height in the embroidery settings screen. Press , and select page 8. Touch the number beside “Embroidery Foot Height” in the embroidery settings screen. Adjust the embroidery foot height for thick or puffy fabrics.



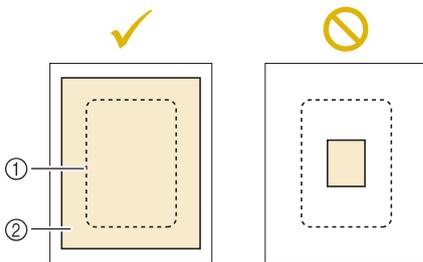
- To increase the space between the embroidery foot and the needle plate, set the “Embroidery Foot Height” to a larger number.
- In the case of thick terry cloth towels, we recommend that you place a piece of water soluble stabilizer on the top surface of the towel. This will help to reduce the nap of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

Attaching Iron-On Stabilizers (Backing) to the Fabric

⚠ CAUTION

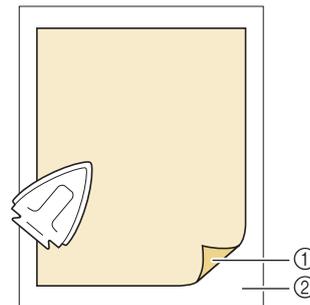
- Always use a stabilizer material for embroidery when embroidering stretch fabrics, lightweight fabrics, fabrics with a coarse weave, or fabrics which cause pattern shrinkage. Otherwise, the needle may break and cause injury. Not using a stabilizer material may result in a poor finish to your project.

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



- ① Size of the embroidery frame
- ② Iron-on stabilizer (backing)

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



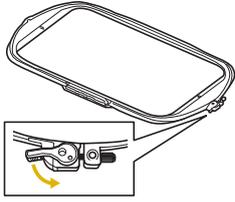
- ① Fusible side of stabilizer
- ② Fabric (wrong side)

Memo

- 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.

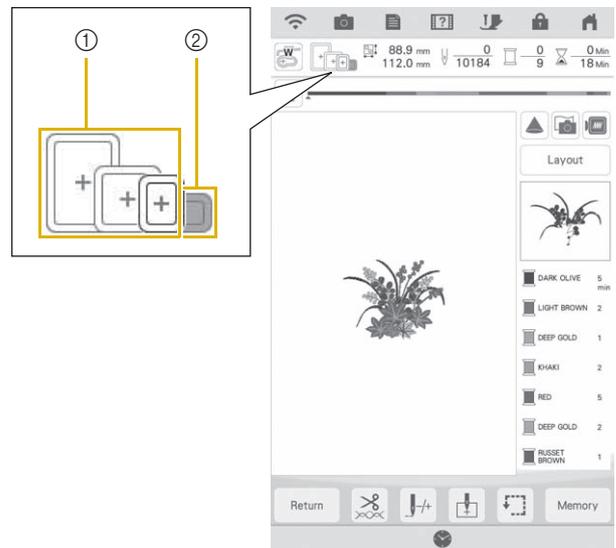
Hooing the Fabric in the Embroidery Frame

Types of Embroidery Frames

			
Embroidery field 408 mm × 272 mm (approx. 16 inches × 10-5/8 inches)	(Sold separately) Embroidery field 240 mm × 240 mm (approx. 9-1/2 inches × 9-1/2 inches)	Embroidery field 180 mm × 130 mm (approx. 7 inches × 5 inches)	Embroidery field 100 mm × 100 mm (approx. 4 inches × 4 inches)

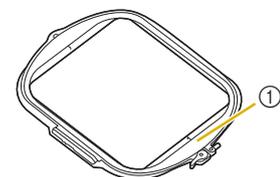
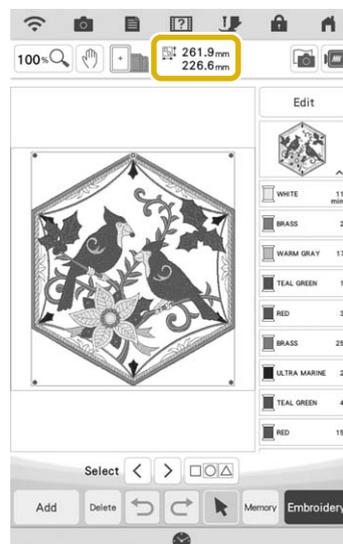
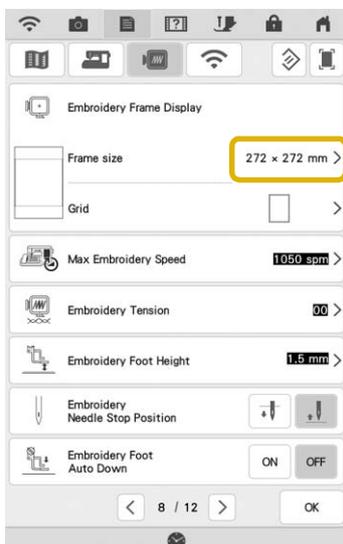
When choosing frames that do not appear on the screen, be sure to check the design size of the embroidery field of the optional frame. Check with your authorized Baby Lock retailer for frame compatibility. Select a frame that matches the pattern size.

- ① Highlighted: Can be used
- ② Shaded: Cannot be used



Note

- To determine if the selected design will fit into a specific embroidery frame, please compare the dimensions of the design (shown at the top of the pattern selection screen or embroidery screen) to the dimensions of the frame's embroidery area. The actual embroidery area is smaller than the frame opening. All available frames which can be used with this machine are listed on page 8 of the Settings screen (by actual embroidery area dimensions). The included 272 mm x 272 mm frame has its embroidery field dimensions etched onto the bottom of the inner frame.



① 272 mm × 272 mm 10-5/8" × 10-5/8"

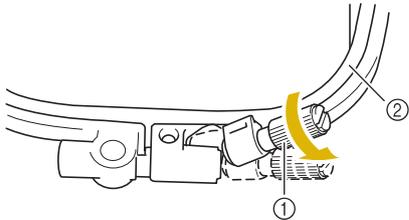
■ Inserting the Fabric



Note

• If the fabric is not securely held in the embroidery frame, the embroidery design will embroider out poorly. Insert the fabric on a level surface, and gently stretch the fabric taut in the frame. Follow the steps below to insert the fabric correctly.

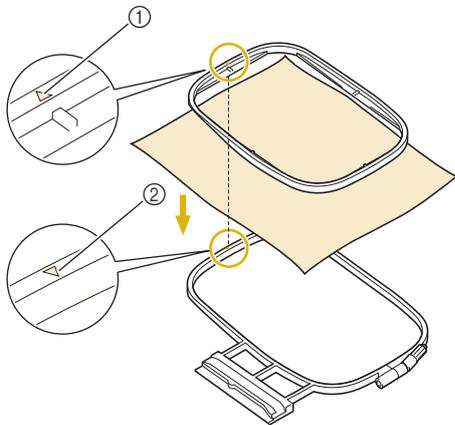
1 Lift-up and loosen the frame adjustment screw and remove the inner frame.



- ① Frame adjustment screw
- ② Inner frame

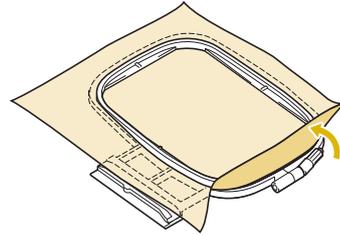
2 Lay the fabric right side up on top of the outer frame.

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



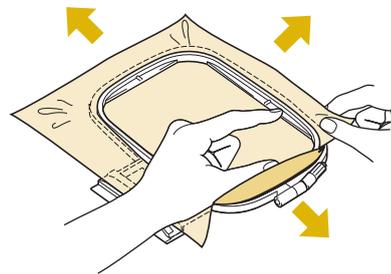
- ① Inner frame's \triangle
- ② Outer frame's ∇

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

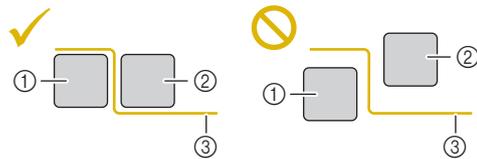


5 Gently smooth out the fabric. Make sure fabric is flat and without wrinkles.

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

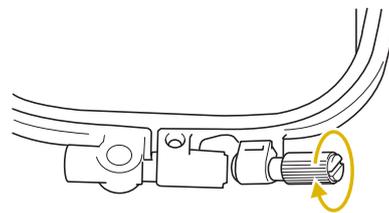


* Make sure the inside and outside frames are even before you start embroidering.

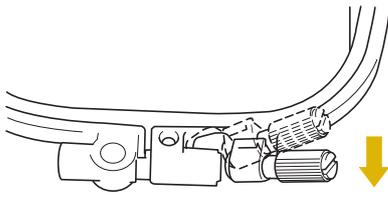


- ① Outer frame
- ② Inner frame
- ③ Fabric

6 Tighten the frame adjustment screw.



- 7** Return the frame adjustment screw to its initial position.



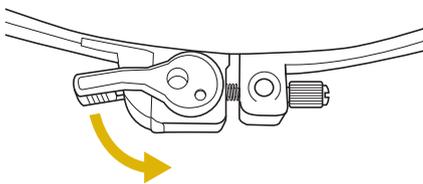
Memo

- You can use the included multi-purpose screwdriver, setting the position to “3”, when you loosen or tighten the frame adjustment screw.

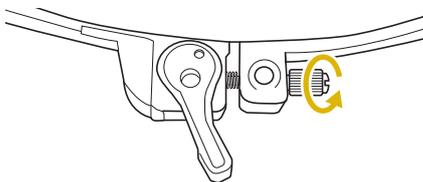


■ Inserting Fabric into Embroidery Frame (Only Embroidery Frames with a Lever)

- 1** Lower the lever.

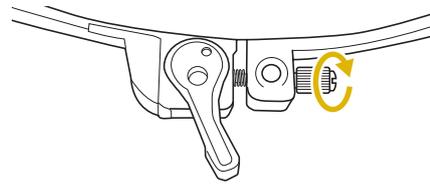


- 2** Loosen the frame adjustment screw by hand, and then remove the inner frame.



- 3** Refer to steps **3** through **6** of “Inserting the Fabric” on page 30 to hoop the fabric.

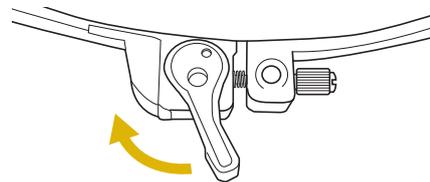
- 4** Tighten the frame adjustment screw by hand.



⚠ CAUTION

- Do not overtighten the screw.

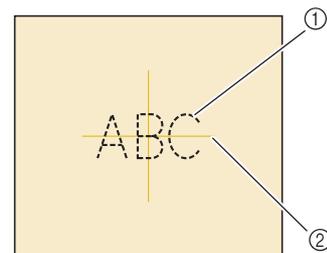
- 5** Return the lever to its original position.



■ Using the Embroidery Sheet (Sold Separately)

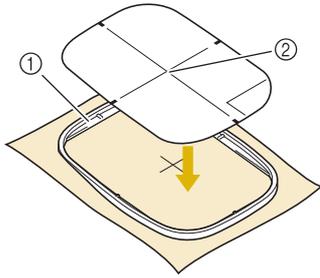
When you want to embroider the pattern in a particular place, use the embroidery sheet with the frame.

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



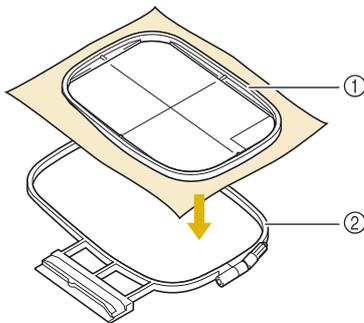
- ① Embroidery pattern
- ② Mark

- 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.



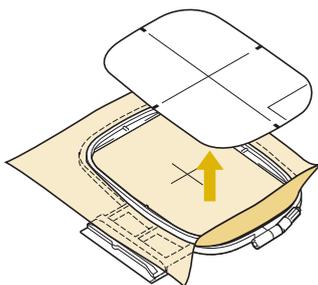
- ① Inner frame
- ② Guide line

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



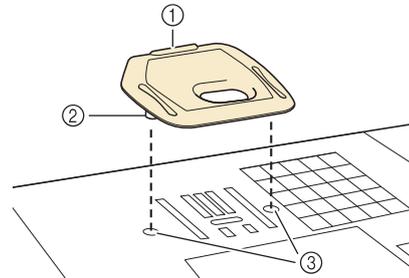
- ① Inner frame
- ② Outer frame

- 4** Remove the embroidery sheet.



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.



Note

- Do not use the embroidery needle plate cover for any applications other than embroidery.

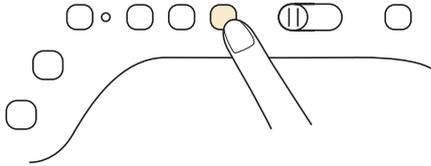
ATTACHING THE EMBROIDERY FRAME



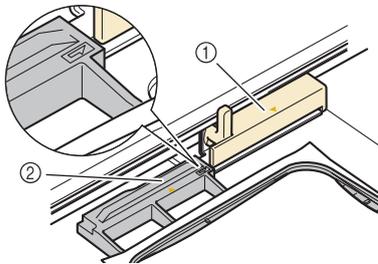
Note

- Wind and insert the bobbin before attaching the embroidery frame.

1 Press the “Presser Foot Lifter” button to raise the embroidery foot.

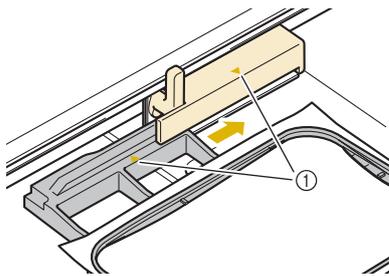


2 Align the embroidery frame guide with the right edge of the embroidery frame holder.



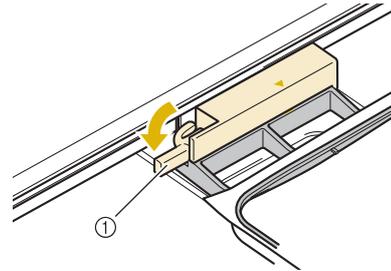
- ① Embroidery frame holder
- ② Embroidery frame guide

3 Slide the embroidery frame into the holder, making sure to align the embroidery frame’s \triangle with the holder’s ∇ .



- ① Arrow mark

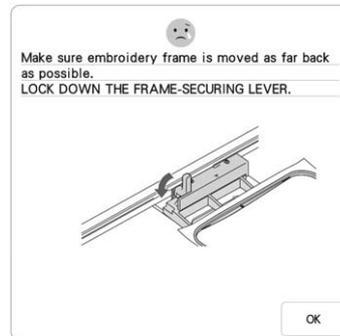
4 Lower the frame-securing lever to be level with the frame to secure the embroidery frame in the embroidery frame holder.



- ① Frame-securing lever

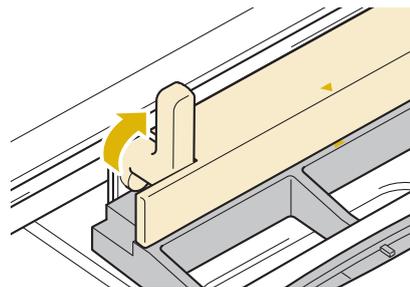
CAUTION

- If the frame-securing lever is not lowered, the following message appears. You cannot start embroidering until you lower the frame-securing lever.

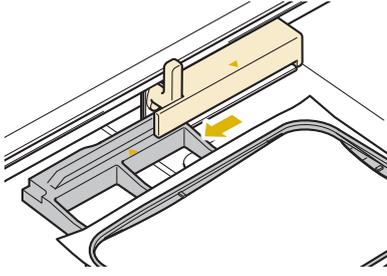


Removing the Embroidery Frame

1 Raise the frame-securing lever.



2 Pull the embroidery frame toward you.



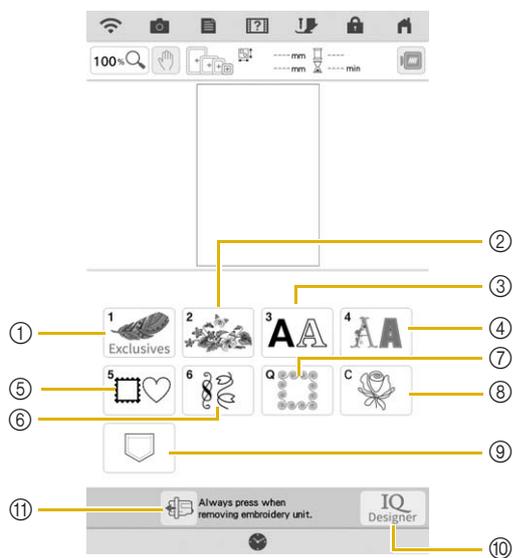
1

Embroidery Step by Step

EMBROIDERY SCREENS

■ 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. There are many character and decorative embroidery patterns stored in the machine's memory. 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 Quilt sashes (page 127)
- ⑧ Couching patterns
- ⑨ Patterns saved in your favorites
- ⑩ IQ Designer (page 154)
- ⑪ Press this key to position the embroidery unit for storage

Pattern Selection Screens



Baby Lock "Exclusives"

Animals	Celebrate	Coastal	Delicate
Floral	Heirloom	Heritage	Holidays
Home Accents	Kids Corner	Monograms	Novelty
Ocean Life	Quilting	Sewlebrities	Vintage



Embroidery Patterns



Alphabet Characters

Exclusive Script			
01 ABC	02 ABC	03 ABC	04 ABC
05 ABC	06 ABC	07 ABC	08 ABC
09 ABC	10 ABC	11 ABC	12 ABC
13 ABC	14 ABC	15 ABC	16 ABG
17 ABC	18 ABC	19 ABC	20 ABC
50 ABCDE	51 ABCDE		
70 ABB	71 ABB		



Decorative Alphabet Patterns



Frame Patterns



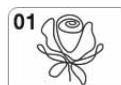
Utility Embroidery Patterns



Quilting Border Patterns

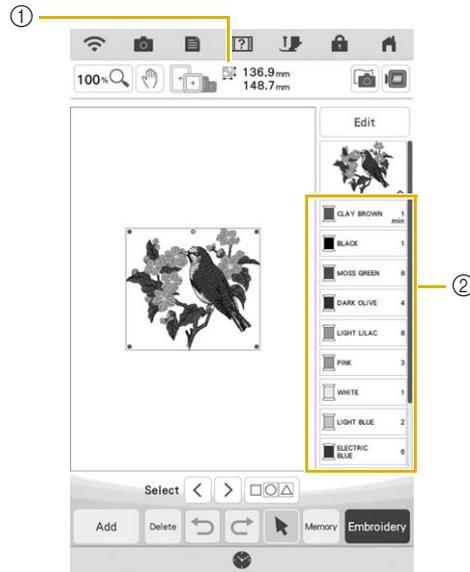


Couching Patterns



KEY FUNCTIONS

Editing Patterns

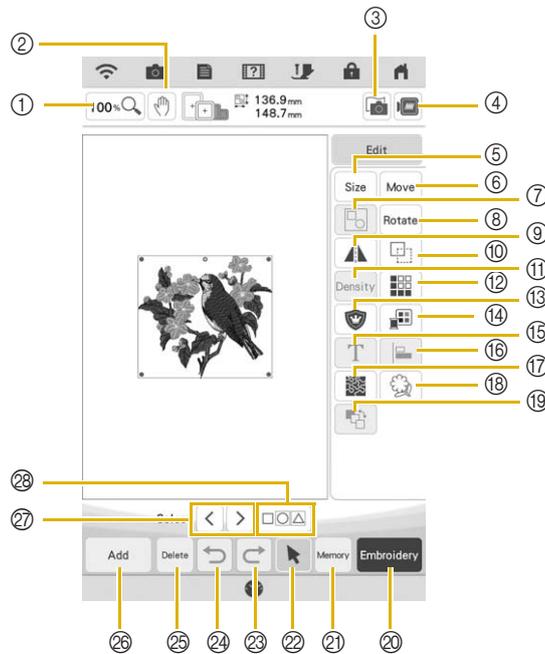


- ① Shows the size of the entire combined pattern.
- ② Shows the color sequence and stitching times of each step of the pattern currently selected.

Memo

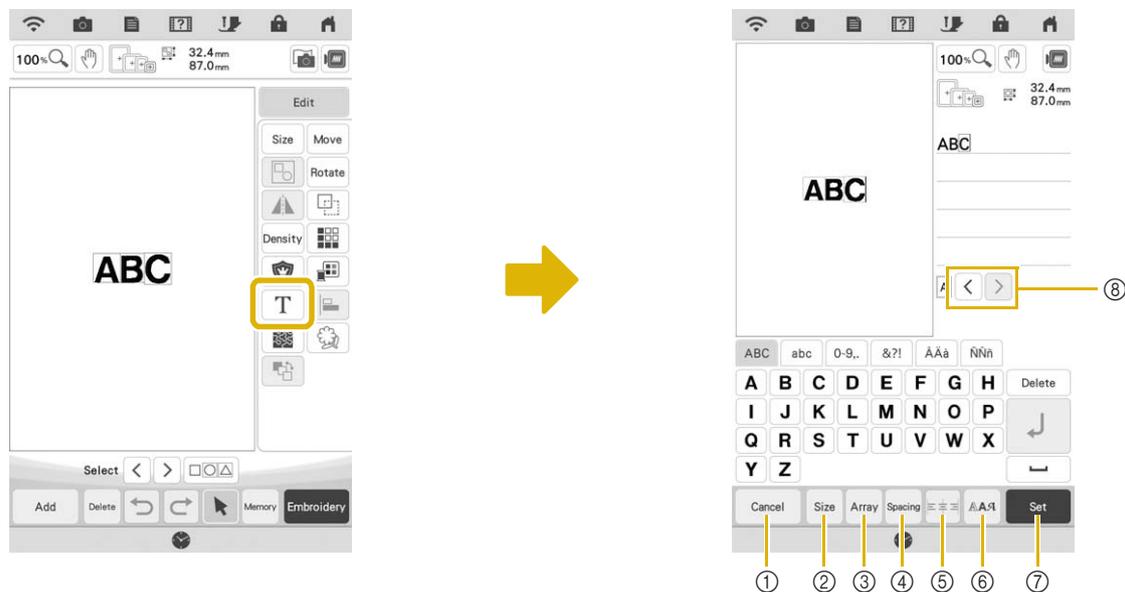
- If a key display is grayed out, you cannot use that function with the selected pattern.

Using these keys, you can edit the pattern as you like. Press Edit to display the editing window.

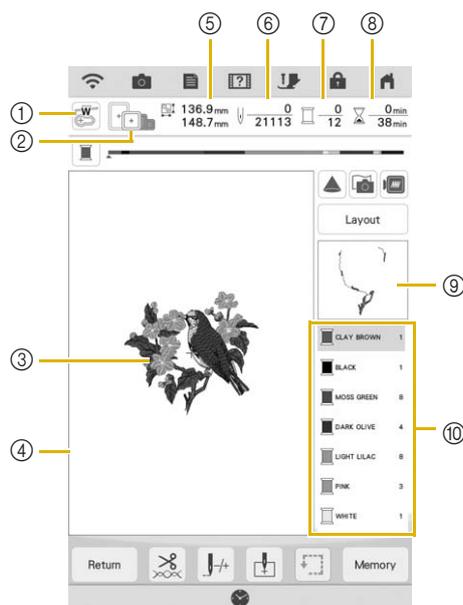


No.	Display	Key Name	Explanation	Page
①		Magnify key	Press this key to select the magnification ratio.	73
②		Hand key	Press this key to move the canvas when it is magnified.	74
③		Fabric scan key	Press this key to scan the fabric to align the embroidery position.	92
④		Image key	Press this key for a preview of the embroidered image.	62
⑤		Size key	Press this key to change the size of the pattern. Patterns can be enlarged or reduced.	64
⑥		Move key	Press this key to display the pattern moving window.	63
⑦		Group key	Press this key to select multiple patterns in the screen at the same time.	89
⑧		Rotate key	Press this key to rotate the pattern.	63
⑨		Horizontal mirror image key	Press this key to make a horizontal mirror image of the selected pattern.	67
⑩		Duplicate key	Press this key to duplicate a pattern.	73
⑪		Density key	Press this key to change the density of frame patterns or character patterns.	66
⑫		Border function key	Press this key to create and edit repeated patterns.	67
⑬		Appliqué piece key	Press this key to create an appliqué piece by sewing an outline around the selected pattern.	116
⑭		Thread palette key	Press this key to change the colors of the displayed pattern.	81
⑮		Letter edit key	Press this key to edit character patterns.	40
⑯		Alignment key	Press this key to arrange multiple patterns on a line.	89
⑰		Stippling key	Press this key to create stippling, echo quilting, or decorative fill around a pattern.	126
⑱		Outline key	Press this key to extract the outline of a pattern. The extracted pattern can be used with IQ Designer.	187
⑲		Embroidering order key	Press this key to change the embroidering order of combined patterns.	97
⑳		Embroidery key	Press this key to call up the embroidering screen.	—
㉑		Memory key	Press this key to save a pattern in the machine's memory, USB media or an SD card. The pattern can also be transferred to a computer via a wireless network connection.	109, 111, 114
㉒		Pattern select key	When a combined pattern is selected, use this key to select a part of the pattern to edit.	—
㉓		Redo key	Press this key to redo the last operation that was undone.	—
㉔		Undo key	Press this key to undo the last operation.	—
㉕		Delete key	Press this key to delete the selected pattern (the pattern outlined by the red box).	73
㉖		Add key	Press this key to add another pattern to the editing pattern.	—
㉗		Select key	Press this key to change a selected pattern when multiple patterns are in the screen.	87
㉘		Grouping key / Multiple selection key	Press this key to make multiple patterns on the screen to be selected at the same time or to be grouped.	88, 89

Editing Letters



No.	Display	Key Name	Explanation	Page
①		Cancel key	Press this key to exit the editing character pattern screen.	—
②		Size key	Press this key to change the size of the character pattern.	77
③		Array key	Press this key to change the configuration of a character pattern.	78
④		Character spacing key	Press this key to change the spacing of character patterns.	79
⑤		Alignment key	Press this key to align the characters at the right, left or center.	76
⑥		Font type key	Press this key to change the font type.	76
⑦		Set key	Press this key to apply the text editing.	—
⑧		Character selection keys	Press these keys to move the cursor and select a character.	—

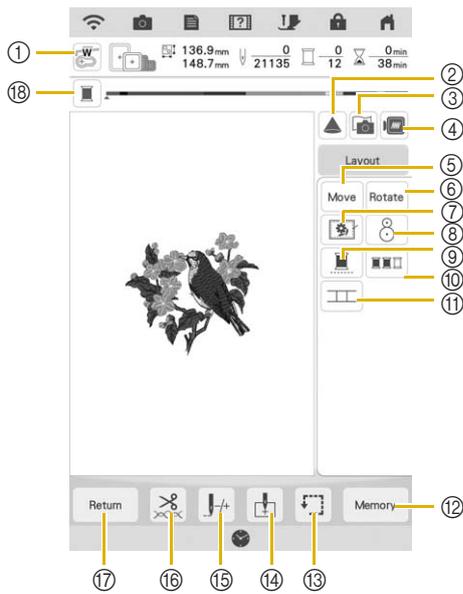


- ① Shows the embroidery foot code.
Attach embroidery foot "W" for all embroidery projects. When the embroidery foot symbol is displayed on the screen, you are able to embroider.
 - ② Shows the embroidery frames that can be used for the selected pattern. Be sure to use the proper frame (page 29).
 - ③ Shows a preview of the selected pattern.
 - ④ Shows the boundary for embroidering with the selected frame in the settings screen (page 103).
 - ⑤ Shows the size of the selected pattern.
 - ⑥ Shows how many stitches are in the selected pattern and how many stitches have been embroidered so far.
 - ⑦ Shows the number of colors in the selected pattern and the number of the color currently being embroidered.
 - ⑧ Shows the time necessary to embroider the pattern and the time already spent embroidering the pattern (not including time for changing thread colors and automatically trimming the thread).
 - ⑨ Shows the part of the embroidery that will be embroidered with the first thread color.
 - ⑩ Shows 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.

**Note**

- There is an explanation of additional key functions on the next page.

Using these keys, you can move or rotate pattern, etc. Press Layout to display the editing window.



Note

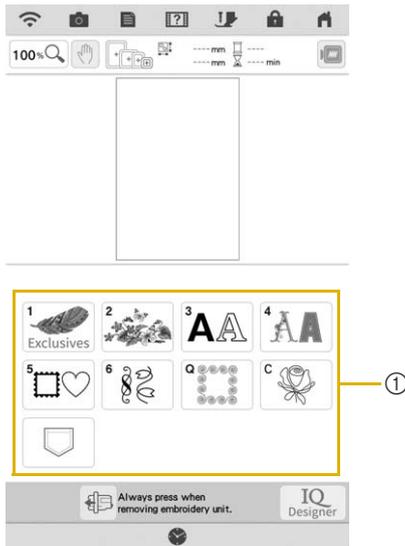
- Some operations or functions are not available for certain patterns. If the key display is darkened, you cannot use that function or operation with the selected pattern.

No.	Display	Key Name	Explanation	Page
①		Needle point check key	Press this key to check the needle drop point with the projector.	47
②		Projector key	Press this key to use the projector to project the pattern.	46
③		Fabric scan key	Press this key to scan the fabric to align the embroidery position.	92
④		Image key	Press this key for a preview of the embroidered image.	62
⑤	Move	Move key	Press this key to display the pattern moving window.	63
⑥	Rotate	Rotate key	Press this key to rotate the pattern. You can rotate a pattern 0.1 degree, 1 degree, 10 degrees or 90 degrees at a time.	63
⑦		Basting key	Press this key to add the basting stitch to the pattern. You can set the desired basting distance.	96
⑧		Embroidery positioning key	Press this key to align the embroidering position using the built-in camera and embroidery positioning sticker.	49
⑨		Uninterrupted embroidery key	Press this key to embroider the selected pattern with a single color (monochrome).	92
⑩		Color sorting key	Press this key to reduce the number of thread color changes by rearranging the embroidering order for the selected pattern to combine parts of the same thread color.	84
⑪		Pattern connect key	Press this key to start pattern connecting embroidering. You can connect the patterns accurately using the built-in camera.	144
⑫	Memory	Memory key	Press this key to save a pattern in the machine's memory, USB media or an SD card. The pattern can also be transferred to a computer via a wireless network connection.	109, 111, 114
⑬		Trial key	Press this key to check the position of the pattern. The carriage moves to the desired position so you can check that there is enough space to embroider the pattern.	52
⑭		Starting point key	Press this key to move the needle start position to align the needle with the pattern position.	104, 105
⑮		Forward/Back key	Press this key to 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.	57, 58
⑯		Cut/Tension key	Press this key to specify automatic thread cutting, thread trimming or the thread tension. For embroidery, these functions are set automatically.	98 - 99
⑰	Return	Return key	Press this key to return to the pattern type selection screen.	—
⑱		Progress bar switching key	Press this key to switch the progress bar (which shows the embroidering progress) between showing only one color or all colors.	—

SELECTING PATTERNS

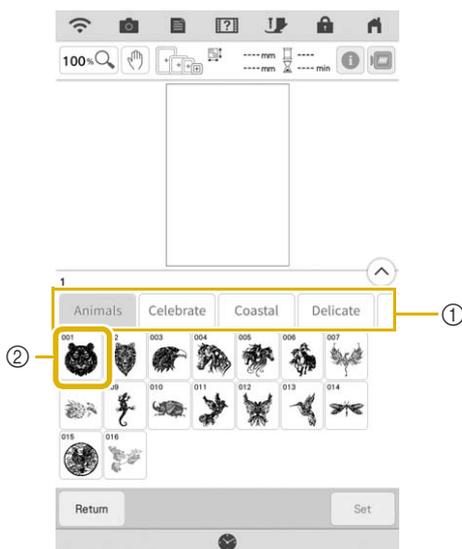
Selecting Embroidery Patterns/ Decorative Alphabet Patterns/ Utility Embroidery Patterns

- 1 Press the category tab you want to embroider.



① Pattern category tabs

- 2 Select the sub-category, and then select the pattern that you want to embroider.



① Sub-category
② Embroidery pattern

- 3 Press **Set**.



→ The pattern selected is outlined in red on the "Edit" display.

Memo

- If you press **i**, you can see detailed information about the pattern.





4 Press **Edit** to edit the selected pattern.

* Refer to "Editing Patterns" on page 38 about the "Edit" display.



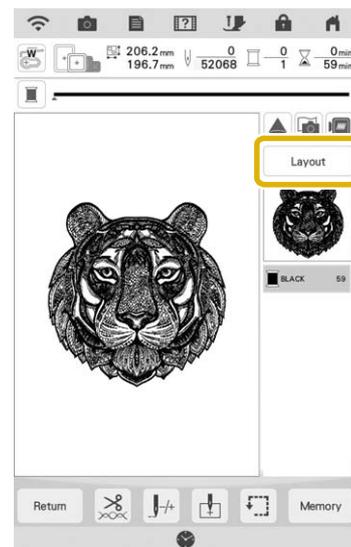
5 Press **Embroidery**.

→ The embroidering screen is displayed.

6 To reposition the pattern in the embroidering screen before embroidering, press **Layout**.

* Refer to "Embroidery Screen" on page 41.

* To return to the previous screen to select another pattern, press **Return**.



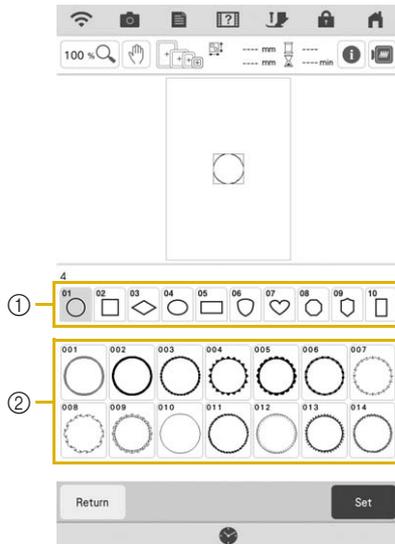
7 Press the "Start/Stop" button to begin embroidering.

* Refer to "Embroidering Patterns" on page 54.

Selecting Frame Patterns

1 Press .

2 Press the key of the frame shape you want to embroider in the top part of the screen.



① Frame shapes

② Frame patterns

→ Various frame patterns are displayed at the bottom part of the screen.

3 Press the key of the frame pattern you want to embroider.

* If you make a mistake selecting the pattern, press the key of the pattern you want to embroider.

→ The selected pattern is displayed on the screen.

4 Follow the steps from 4 to 7 of “Selecting Embroidery Patterns/Decorative Alphabet Patterns/Utility Embroidery Patterns” on page 43.

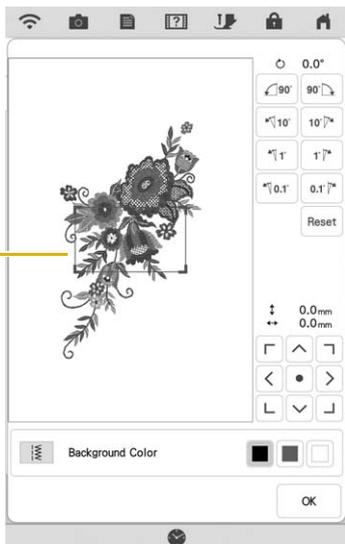
CONFIRMING THE PATTERN POSITION

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, you can check the layout before starting embroidery.

Checking the Embroidery Pattern with the Projector

Using the projector, the selected embroidery pattern can be projected onto the fabric.

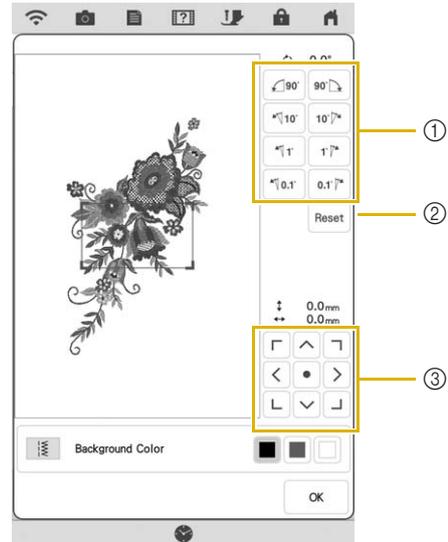
1 Press  in the embroidering screen.



- ① Display area
- The part of the pattern within the display area will be projected onto the fabric.

2 Check the embroidery pattern.

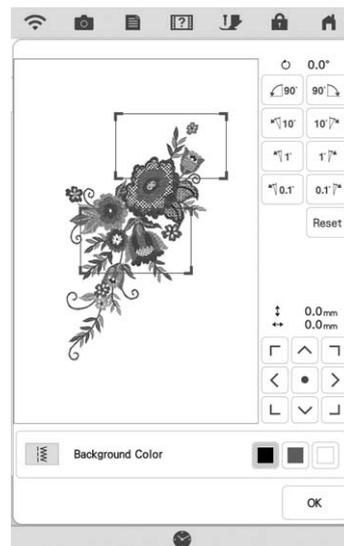
While the display area remains in place, the pattern can be moved.



- ① Press to change the angle.
- ② Press to return the pattern to its original angle.
- ③ Press to move the pattern.

Memo

- To change the position of the display area, drag the display area with your finger. At the same time, the embroidery frame is moved.

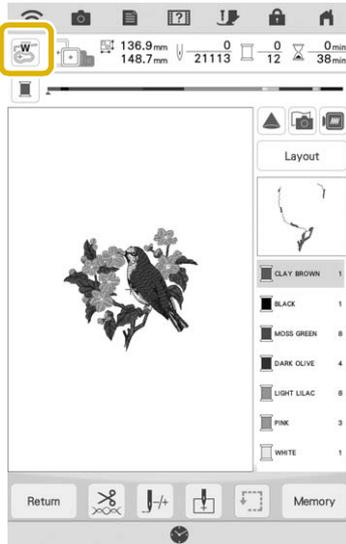


Checking the Needle Drop Point With the Projector

With the projector pointer, you can check the needle drop point before embroidering.

1 Press  in the embroidery screen.

→ The pointer of the projector indicates the needle drop point.



 **Memo**

- When the pointer of the projector is turned on, the embroidery foot height is automatically adjusted according to the fabric thickness.
- If embroidery foot “W+” with LED pointer (sold separately) is installed, the LED pointer is turned on.

* The pointer of the projector turns off automatically by lowering the embroidery foot or returning to the previous page.

 **Note**

- With fabric that has a very uneven surface such as thick fabric or quilting, the fabric thickness may not be correctly measured. In this case, the pointer indication should be used only as a reference.

Aligning the Embroidering Position Using the Built-In Camera

The camera built into this machine can be used to easily align the embroidering position. This is

useful for patterns which need to be embroidered in a particular position as shown below.



1 Use a chalk pencil to draw a cross at the desired embroidering location.



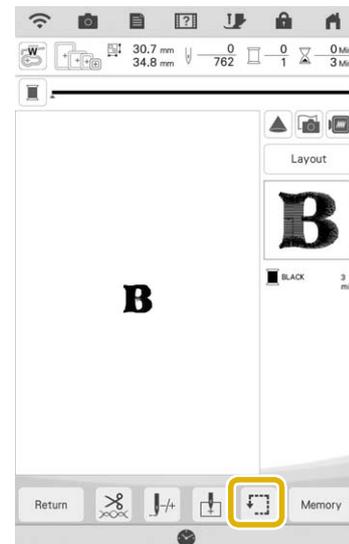
① Chalk pencil mark

2 Hoop the fabric.

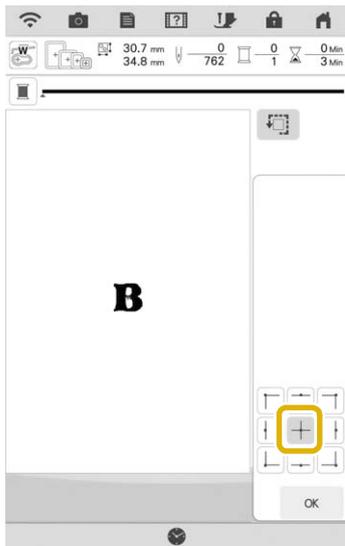


3 Select the pattern on your machine and press .

4 Press  in the embroidering screen.



- 5 Press  to set the starting point to the center of the pattern.



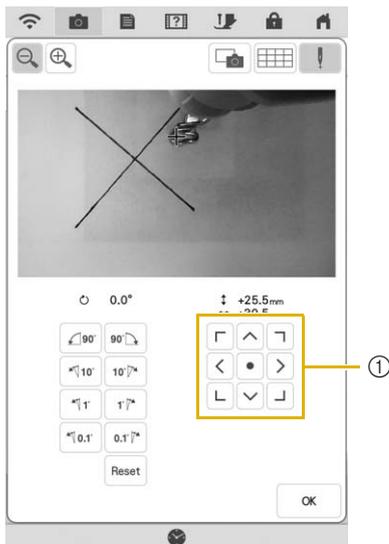
- 6 Press .

- 7 Press the “Presser Foot Lifter” button to lower the embroidery foot.

- 8 Press .

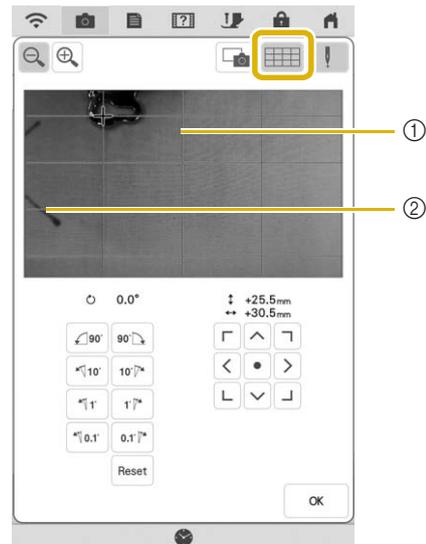


- 9 Press the positioning keys to move the embroidery frame until the cross-shaped chalk mark drawn on the fabric is displayed in the camera view window.



① Positioning keys

- 10 Press  to display the grid lines.

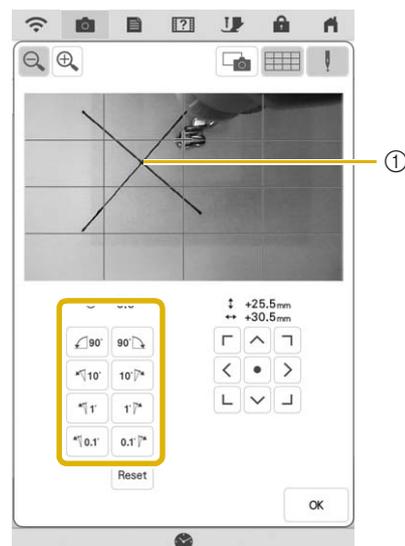


① Grid lines
② Chalk mark on the fabric

 **Memo**

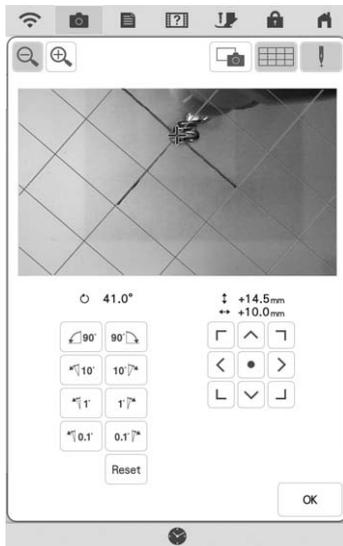
- Press  to enlarge the camera view. By enlarging the camera view, you can make a close adjustment for the center point of the pattern moving the embroidery frame little by little.

- 11 Adjust the orientation of the pattern by pressing the orientation keys until the grid lines are parallel with the chalk mark drawn on the fabric. (Refer to “Rotating the Pattern” on page 63.)



① Center point of the pattern

- 12 Press the positioning keys to move the embroidery frame until the center point of the pattern in the camera view window is aligned with the chalk mark drawn on the fabric.



- 13 Press to return to the previous screen.
- 14 Press the "Start/Stop" button to begin embroidering.

* Refer to "Embroidering Patterns" on page 54.

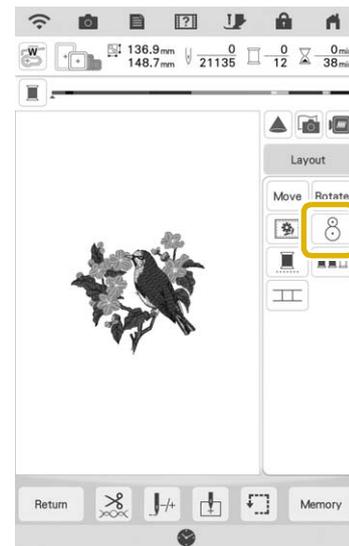
Using the Embroidery Position Sticker to Align the Embroidering Position

The embroidering position can easily be aligned using the machine's built-in camera and the included embroidery positioning sticker.

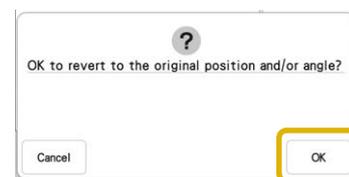
Note

- Depending on the type of fabric that is used, a part of the embroidery positioning sticker may remain attached when it is peeled off. Before using the embroidery positioning sticker, check that it can be cleanly removed from a scrap piece of the fabric to be used.

- 1 Press to display the editing window, and then press .



- 2 Following message appears. Press .



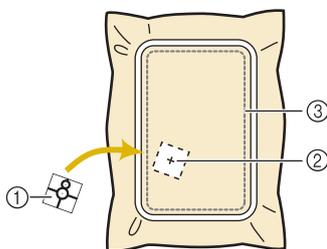
→ The embroidering position will return to the original position, even if you changed before.

3 Select the position you want to set as the reference point.



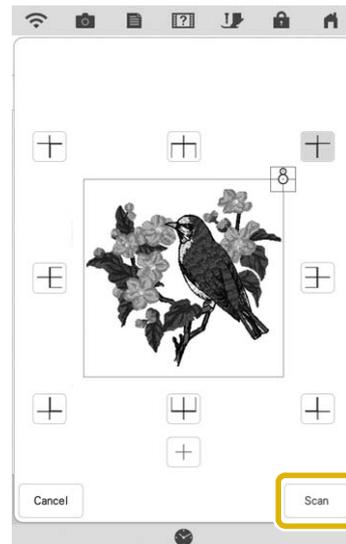
* Select **+** if you want to embroider referring the embroidery positioning sticker as the center of the pattern.

4 Affix the embroidery positioning sticker to the location in the fabric to be embroidered. Place the embroidery positioning sticker so that the center of the larger circle is at the center or edge of the embroidery pattern.



- ① Embroidery positioning sticker
- ② Center or edge of the embroidery pattern
- ③ Embroidery field

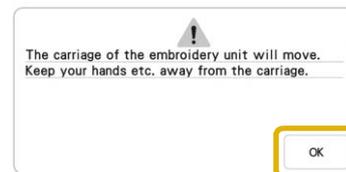
5 Press **Scan**.



Note

- Attach embroidery foot “W” before pressing **Scan**. The embroidery foot “W” lowers and check the fabric thickness, to help the built-in camera recognize the embroidery positioning sticker.

6 Following message appears. Press **OK**.



→ The built-in camera automatically searches for the embroidery positioning sticker, and then the carriage is moved so that the selected reference point of the embroidery pattern is aligned with the embroidery positioning sticker.



Note

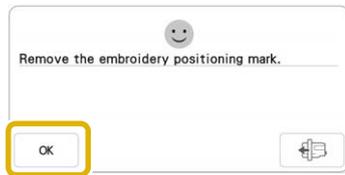
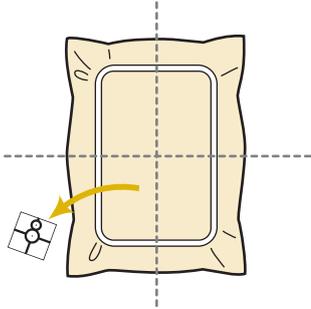
- If the following error message appears, press **OK**, rehoop the fabric so that the pattern is within the embroidery field, and then press **Scan** again.



7 A reminder message appears. Remove the embroidery positioning sticker from the fabric, and press .

- * To remove the embroidery positioning sticker more easily, press  so that the carriage moves slightly forward and away from under the needle. After the embroidery positioning sticker is removed, press

.



8 Press the “Start/Stop” button to begin embroidering.

- * Refer to “Embroidering Patterns” on page 54.



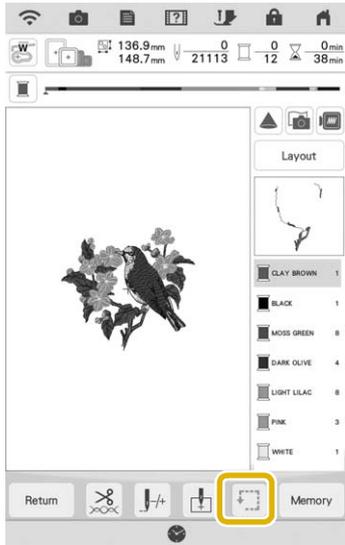
Note

- After the included embroidery positioning stickers are used up, optional stickers are available. For details, refer to the Instruction and Reference Guide (Sewing).

Checking the Pattern Position

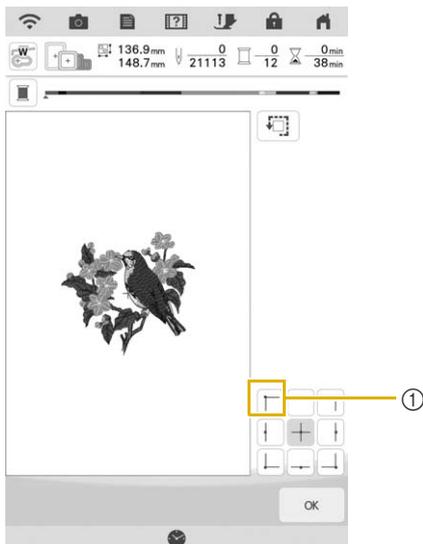
The carriage moves and shows the pattern position. Watch the embroidery frame closely to make sure the pattern will be embroidered in the right place.

1 Press .



→ The following screen is displayed.

2 From , press the key for the position that you want to check.

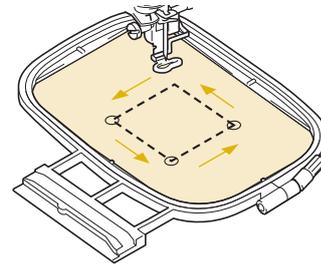


① Selected position

→ The carriage will move to the selected position on the pattern.

Memo

- To see the entire embroidering area, press . The carriage moves and shows the embroidery area.



CAUTION

- Make sure the needle is up when the carriage is moving. If the needle is down, it could break and result in injury.

3 Press .

EMBROIDERING A PATTERN

Embroidering Attractive Finishes

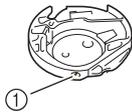
Many factors are involved in achieving a beautiful embroidery result. Using the appropriate stabilizer (page 28) and hooping the fabric in the frame (page 29) are two important factors mentioned earlier. Another important point is the appropriateness of the needle and thread being used. See the explanation of threads below. Included with this machine are two bobbin cases. Follow the explanation below.

Thread	Upper thread	Use embroidery thread intended for use with this machine.
	Bobbin thread	Use embroidery bobbin thread intended for use with this machine.

Memo

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

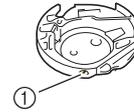
Bobbin case (recommended for sewing and for embroidering with included 60 weight bobbin thread)



- 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.

CAUTION

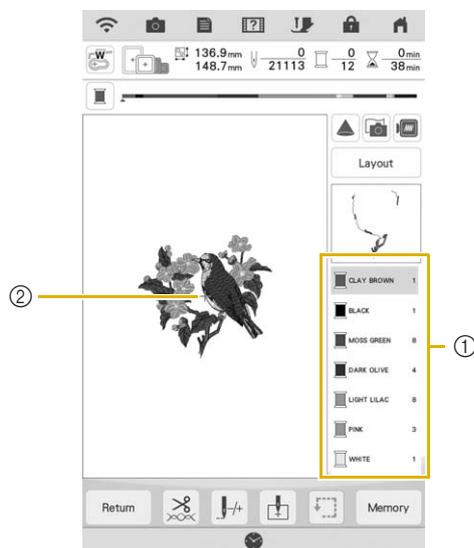
- When embroidering on large garments (especially jackets or other heavy fabrics), do not let the fabric hang over the table. Otherwise, the embroidery unit cannot move freely and the embroidery frame may strike the needle, causing the needle to bend or break and possibly cause injury. Place the fabric so that it does not hang off the table, or hold the fabric to keep it from dragging.

Note

- Before embroidering, check that there is enough thread in the bobbin. If you start to embroider your project without enough thread in the bobbin, you will need to rewind the bobbin in the middle of the embroidery pattern.
- Do not leave objects in the range of motion of the embroidery frame. The frame may strike the object and cause a poor finish to the embroidery pattern.
- When embroidering on large garments (especially jackets or other heavy fabrics), do not let the fabric hang over the table. Otherwise, the embroidery unit cannot move freely, and the pattern may not turn out as planned.

Embroidering Patterns

Example:



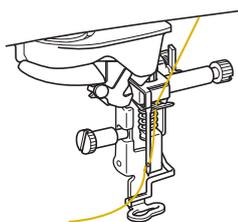
- ① Embroidery color order
- ② Cursor



Memo

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

- 1** Using the automatic needle threader, thread the machine for the first color.



- 2** Lower the embroidery 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.

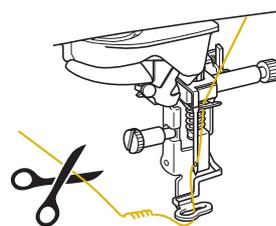


Memo

- A setting in the settings screen can be specified so that pressing the “Start/Stop” button before starting embroidering automatically lowers the embroidery foot (page 7).



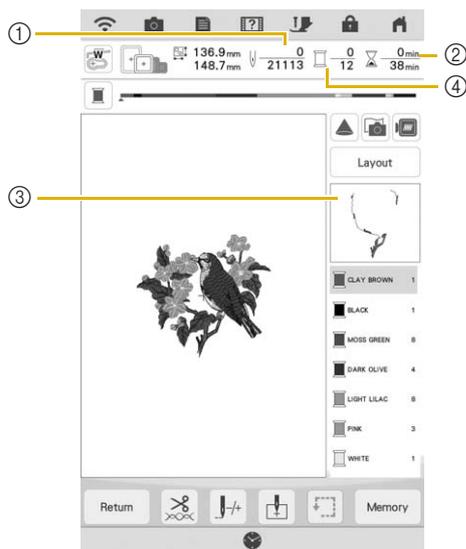
- If you want to get more attractive finishes, try the procedures below;
 - After 5-6 stitches, press the “Start/Stop” button again to stop the machine.
 - Trim the excess thread at the beginning of embroidering. If the thread at the beginning of embroidering is under the embroidery foot, raise the embroidery 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.

- 3** Remove the thread for the first color from the machine. Thread the machine with the next color.

4 Repeat the same steps for embroidering the remaining colors.



- ① Current stitch numbers/Total stitch numbers
 - ② Current time/Total time
 - ③ The 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. Press , 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 page 102 for information on the thread trimming function.

ADJUSTMENTS DURING THE EMBROIDERY PROCESS



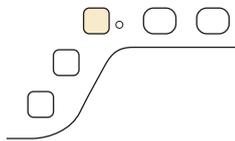
Note

- Be careful not to bump the embroidery unit carriage or the embroidery foot when removing or attaching the embroidery frame. Otherwise, the pattern will not embroider correctly.

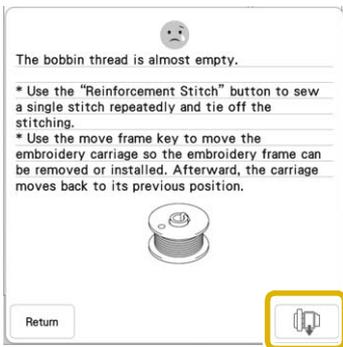
If the Bobbin Runs out of Thread

When the bobbin begins to run out of thread during embroidering, the machine will stop and the message below will appear.

Press the “Reinforcement Stitch” button  to sew reinforcement stitches to prevent stitches from unraveling.



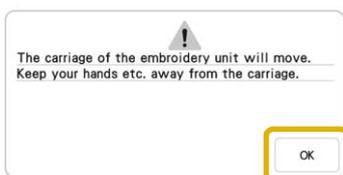
Press  and follow the directions below to replace the bobbin.



Note

- If “Upper and Bobbin Thread Sensor” in the General settings screen of the machine setting mode is set to “OFF”, the message shown above does not appear.
- You can embroider 10 final stitches without replacing the bobbin by pressing .

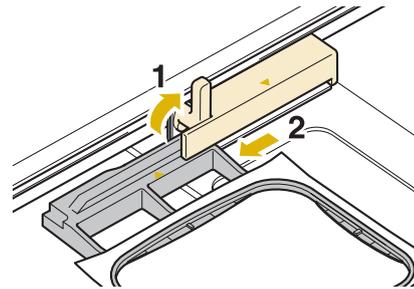
1 Press .



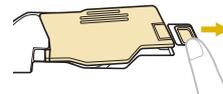
→ After the thread is automatically cut, the carriage will move.

2 Unlock the frame-securing lever and remove the embroidery frame.

- * Be careful not to apply strong force to the fabric at this time. Otherwise, the fabric may loosen in the frame.



3 Insert a wound bobbin into the machine. (Refer to “Setting the Bobbin” on page 20.)



4 Press .

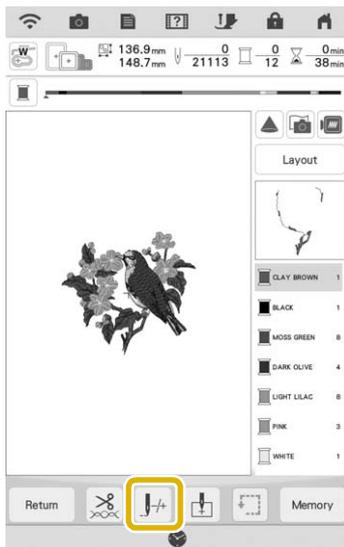
5 Attach the embroidery frame.

6 To return to the spot in the pattern where you stopped embroidering, follow steps **2** through **8** in “If the Thread Breaks during Embroidering” on page 57.

If the Thread Breaks during Embroidering

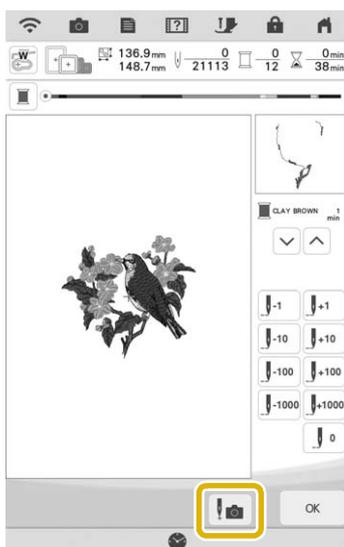
1 If the upper thread is broken, redo the upper threading. If the bobbin thread is broken, press  and follow the directions in steps **1** through **5** in “If the Bobbin Runs out of Thread” on page 56.

2 Press .



3 Press the “Presser Foot Lifter” button to lower the embroidery foot.

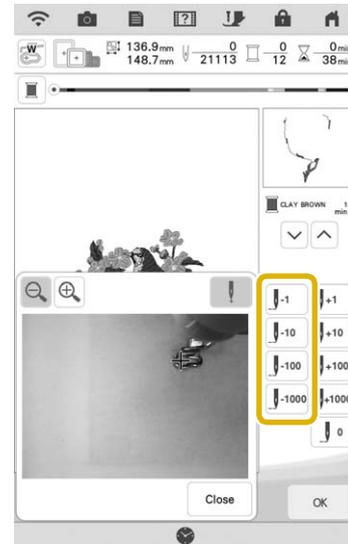
4 Press .



→ The camera view window appears.

5 Press  or  to move the needle back the correct number of stitches before the spot where the thread broke.

- * If you cannot move back to the spot where the thread broke, press  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.



- * Press  to enlarge the image in the screen.
- * Press  to remove “+” from the screen.

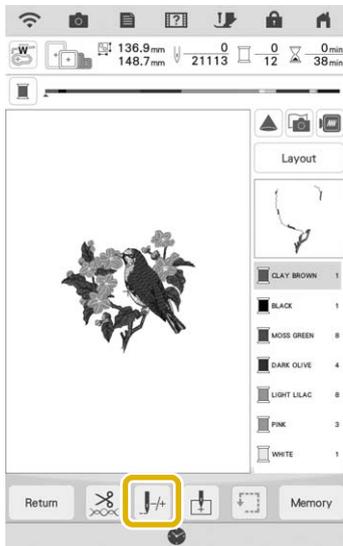
6 Press  to close the camera view window.

7 Press  to return to the original screen.

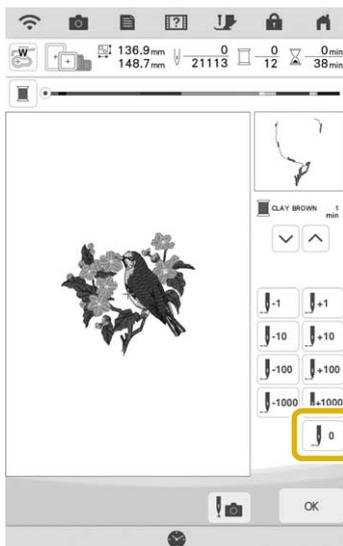
8 Press the “Start/Stop” button to continue embroidering.

Restarting from the Beginning

1 Press .



2 Press .



→ The carriage moves, returning the needle to the pattern's beginning position.

3 Press the "Presser Foot Lifter" button to lower the embroidery foot and start embroidering.

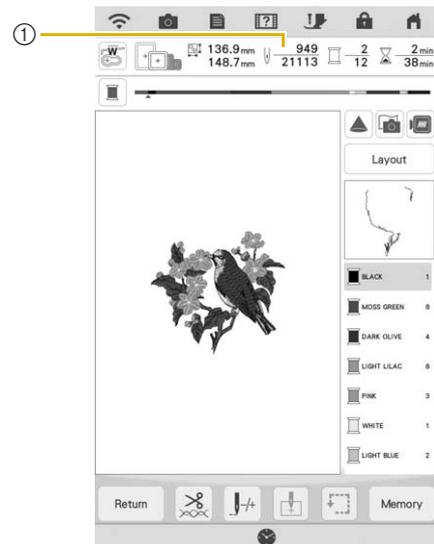
Resuming Embroidery after Turning Off the Power

The current position, angle, 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.



Memo

- Even if the power goes out in the middle of embroidery, the machine returns to the point where embroidery was stopped when the machine is turned on again.



① Current stitch number when embroidery was stopped



Note

- Do not remove the embroidery unit or the memory will no longer remember your design.

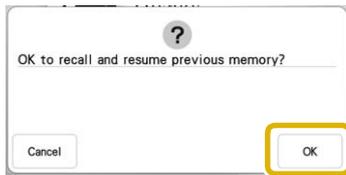
1 Turn the main power to ON.

2 Follow the instructions shown on the screen and remove the embroidery frame.

→ The following message will appear.

3 Attach the embroidery frame and press

OK .

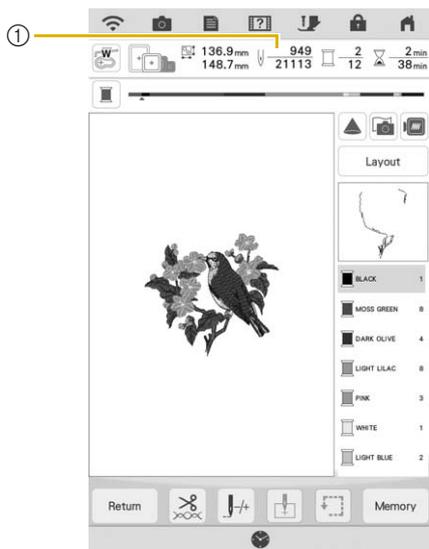


→ The previous embroidering screen displayed before the machine was turned off appears.

Memo

- If you want to start a new embroidery pattern, press so the pattern selection screen appears.
- If embroidery was interrupted before a color segment was completed, follow the steps on page 57 to move the needle back to overlap the previous stitching by a few stitches to avoid unraveling.

4 Continue embroidering.



① Stitch number when embroidery is resumed

IQ INTUITION MONITORING APP

With the IQ Intuition Monitoring App installed on your smart device and the machine and smart 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 smart 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://www.babylock.com/support>

■ 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.**
 - * Refer to "Specifying Wireless Network Connection Settings" in the machine's Instruction and Reference Guide (Sewing).
- 2 **Confirm that your smart device and your machine are connected to the same network.**
- 3 **Tap the icon for “IQ Intuition Monitoring” on the smart 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.
 - The machine can now be monitored.



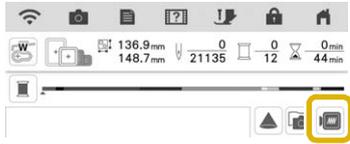
Chapter **2**

Basic Editing

BASIC EDITING

Previewing the Pattern

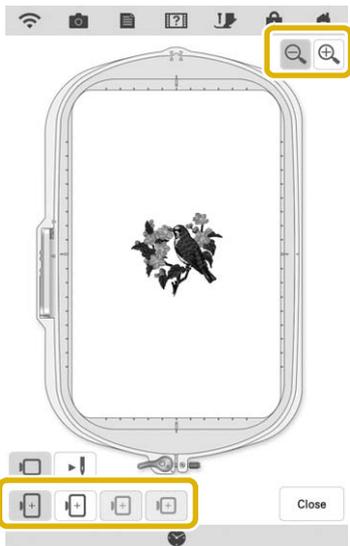
1 Press .



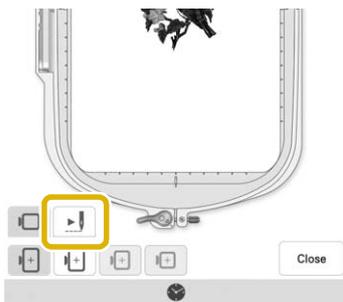
→ An image of the pattern as it will be embroidered appears.

2 Press  to select the frame used in the preview.

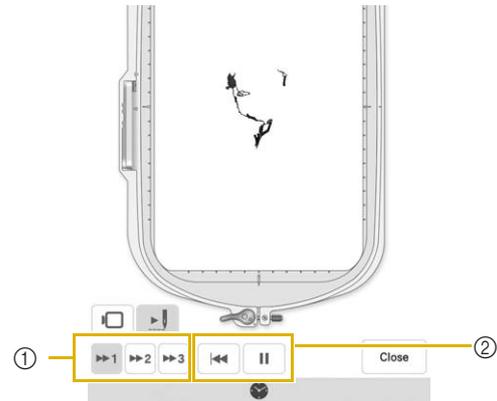
- * Frames displayed in dark gray cannot be selected.
- * Press  to enlarge the image of the pattern.
- * The pattern can be embroidered as it appears in the following display.



3 Press  to check the embroidering order.



→ The stitch simulator screen appears.



① Select the simulation speed. Press ,  or  to change the speed. The speed can even be changed while the simulation is running.

② Operation keys

: Press to start the simulation at the set speed. When pressing , icon changes to .

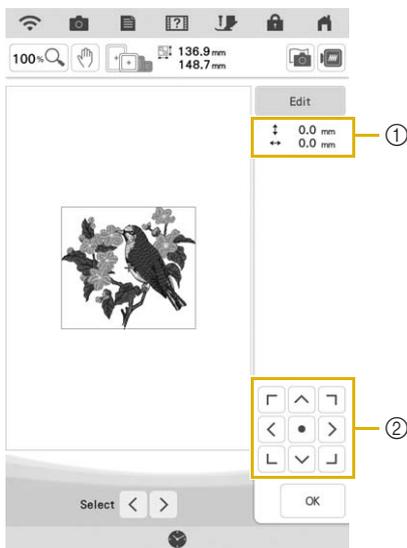
: Press this key while the simulation is running to pause it. When pressing , icon changes to .

- Press  to return to the embroidery frame holder/ embroidery frame selection screen.

4 Press .

Moving the Pattern

- 1 Press **Edit**, and then press **Move** to display the pattern move window.
- 2 Select the desired pattern by pressing **<** **>** if there are multiple patterns on the screen.
- 3 Use  to move the pattern in the direction shown by the arrow. Press  to center the pattern.



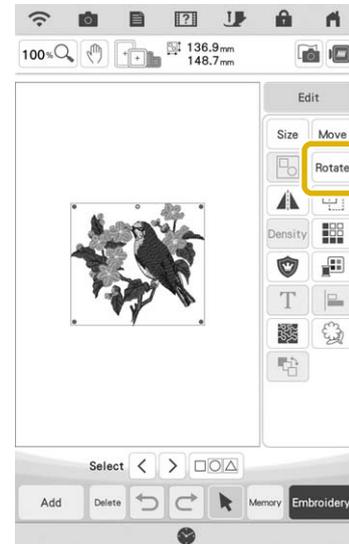
- ① Distance from the center
- ② Pattern movement keys

The pattern can be dragged by selecting it directly in the screen with your finger or the dual purpose stylus.

- 4 Press **OK**.

Rotating the Pattern

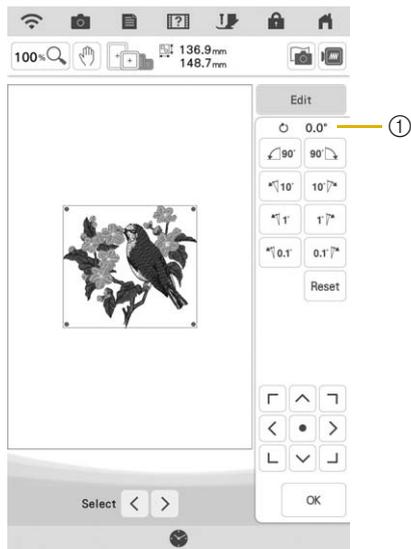
- 1 Press **Edit**, and then press **Rotate**.



- 2 Select the key indicating the desired direction and angle for rotating the pattern. (Example:  rotates 90 degrees clockwise.)



- * Press **Reset** to return the pattern to its original position.



① Degree of rotation

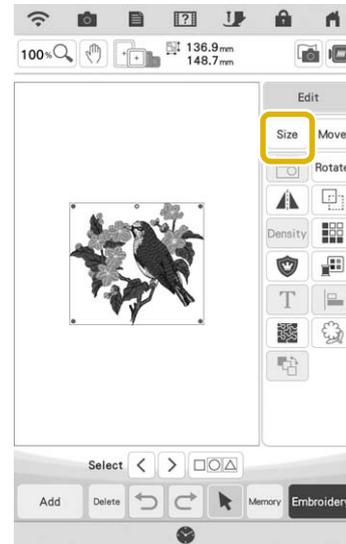
Memo

- You can move patterns using  on the window.
- You can also rotate patterns by dragging  at the top of the pattern.

- 3 Press **OK**.

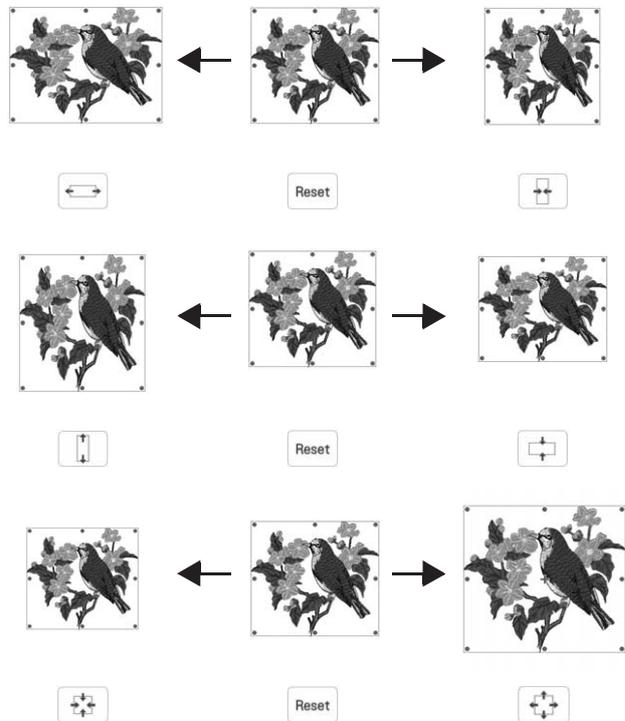
Changing the Size of the Pattern

- 1 Press **Edit**, and then press **Size**.



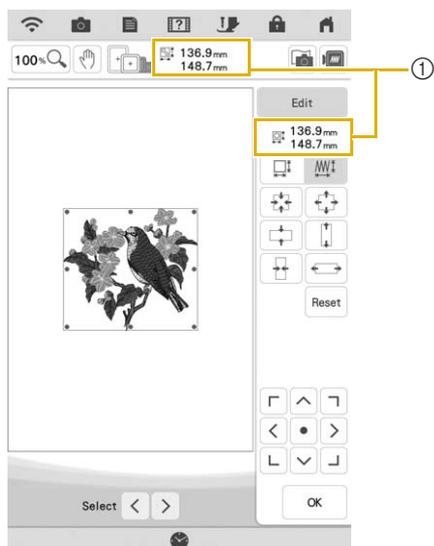
- 2 Select the direction in which to change the size.

Example:



Memo

- Press **Reset** to return the pattern to its original size.



① Size of the pattern

Memo

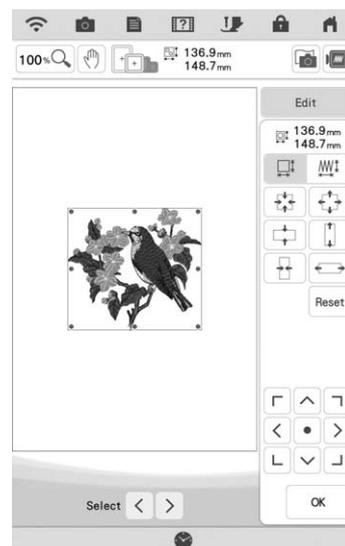
- In order to maintain embroidering quality, there is a limit to how much the embroidery pattern can be enlarged or reduced.
- Some patterns or characters can be enlarged to a greater degree if they are rotated 90 degrees.

- You can move patterns using  on the window.

3 Press .

■ Changing the Size by Dragging

You can also change the pattern size by dragging the red point on the pattern image.



Note

- You can change the pattern size with one finger. Using two or more fingers does not work.

■ Changing the Size and the Density of the Pattern

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

Note

- Be sure to do trial embroidery using same fabric and threads as project in order to check the embroidering results.
- This function cannot be used with character patterns, frame patterns or border patterns. However, a border pattern can be edited after this function has been used.
- Patterns with a large number of stitches cannot be resized while maintaining a thread density.

Memo

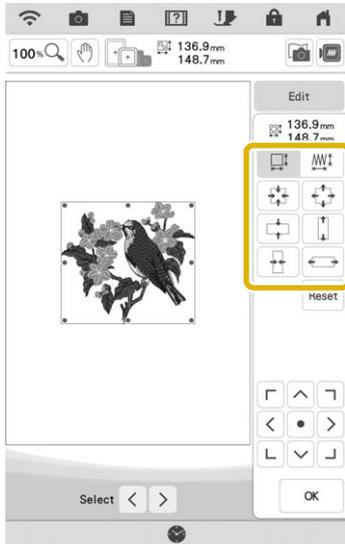
- Depending on the pattern, the size of the pattern increases up to 200 % or reduces to 60 %.

1 Press  in the size window.

- *  : When you want to increase or decrease the density of the design. When the pattern size is changed, the thread density for the pattern increases or decreases, but the number of stitches is maintained.

*  : When changing the size, the pattern keeps the original density. The number of stitch is recalculated.

2 Select the direction in which to change the size.



Note

- If the pattern is enlarged and there is space between stitches, a better effect can be achieved by increasing the thread density.
- If the pattern is reduced and the stitching is too thick, a better effect can be achieved by reducing the thread density.

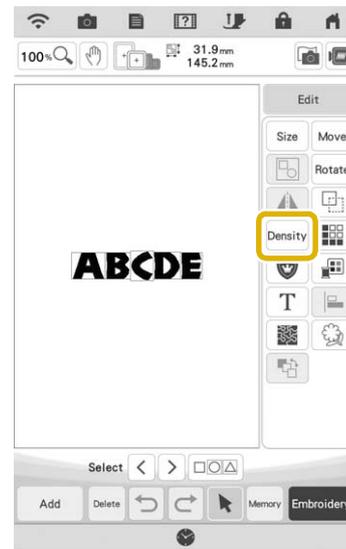
3 Press .

Changing the Density

The thread density can be changed. A setting between 80% and 120% in 5% increments can be specified.

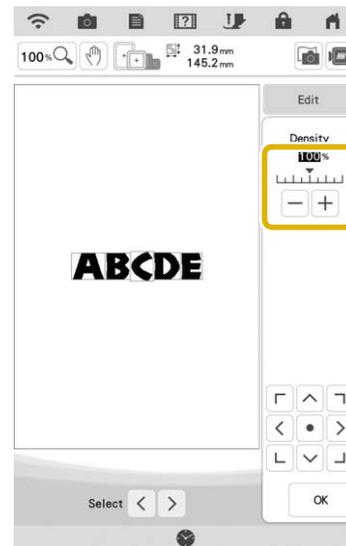
This setting is available for some alphabet character patterns, frame patterns and so on. Other patterns are available after enabling patterns to change the density. For details, refer to “Changing the Size and the Density of the Pattern” on page 65.

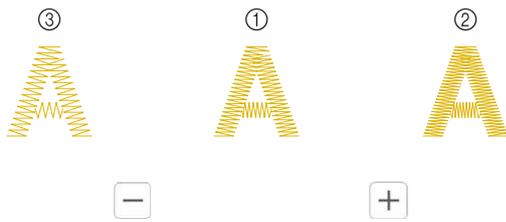
1 Press , and then press .



2 Change the density.

- * Press  to make the pattern less dense.
- * Press  to make the pattern more dense.





- ① Normal
 - ② Fine (stitches closer together)
 - ③ Coarse (stitches farther apart)
- The pattern density changes each time you press a button.

3 Press .

Creating a Horizontal Mirror Image

Press , and then press to create a horizontal mirror image of the selected pattern.



Designing Repeated Patterns

■ Embroidering Repeated Patterns

Using the border function, you can create repeated patterns. You can also adjust the spacing of the patterns.

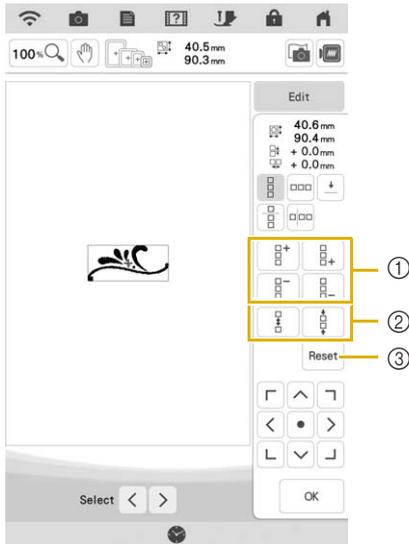
1 Press , and then press .



2 Select the direction in which the pattern will be repeated. Use to repeat the pattern above and to repeat the pattern below.

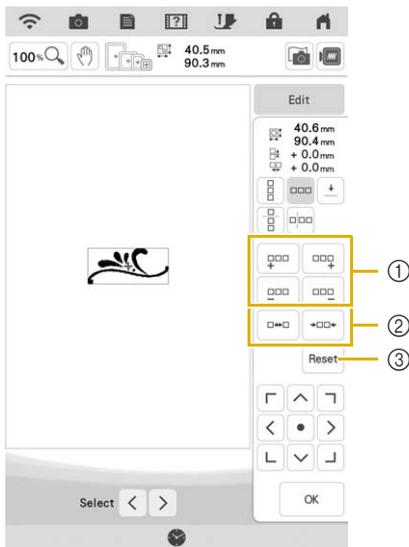
- * To delete above pattern, press .
- * To delete below pattern, press .

Vertical direction 



- ① Repeating and deleting keys
- ② Spacing keys
- ③ Key to cancel pattern repeating

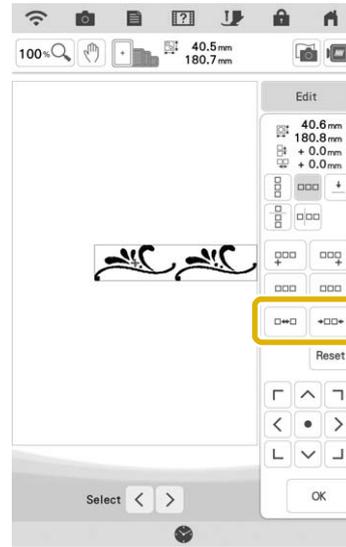
Horizontal direction 



- ① Repeating and deleting keys
 - ② Spacing keys
 - ③ Key to cancel pattern repeating
- The pattern direction indicator will change depending on the direction selected.

3 Adjust the spacing of the repeated pattern.

- * To widen spacing, press .
- * To tighten spacing, press .

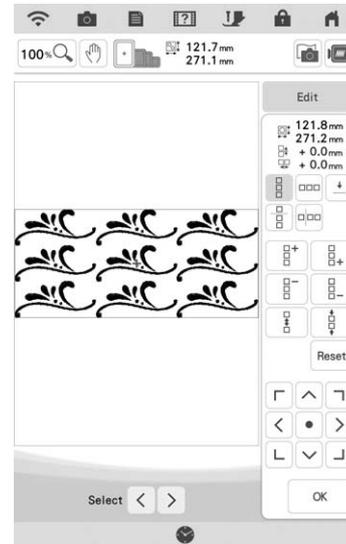


4 Complete repeated patterns by repeating steps 2 through 3.

5 Press .

 **Memo**

- When there are two or more patterns, all patterns will be grouped together as one pattern in the red frame.



- When changing the direction in which the pattern will be repeated, all of the patterns in the red frame will automatically be grouped as one repeating unit. Refer to the following section on how to repeat one element of a repeated pattern.

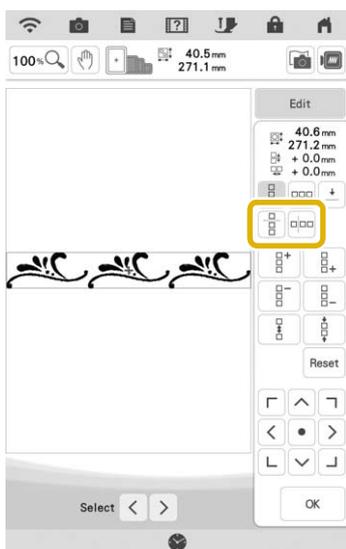
■ Repeating One Element of a Repeated Pattern

By using the Cut function, you can select one element of a repeated pattern and repeat only that single element. This function allows you to design complex repeated patterns.

1 Press .

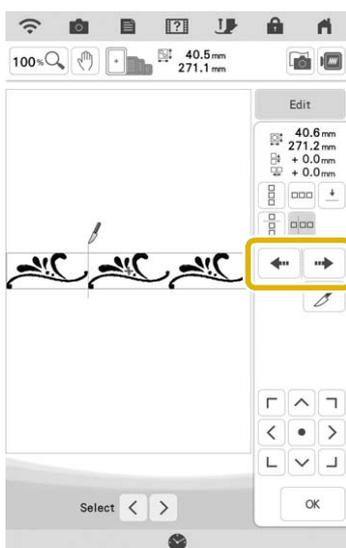
2 Choose the direction in which the repeated pattern will be cut.

- * Press  to cut vertically.
- * Press  to cut horizontally.



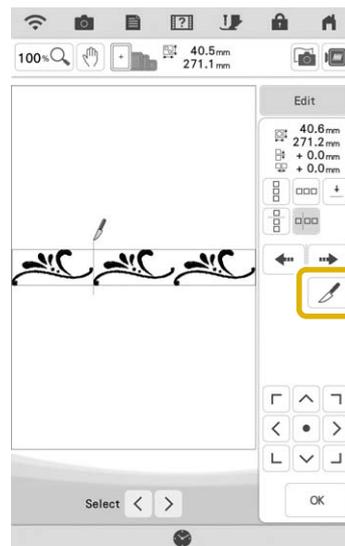
→ The pattern direction indicator will change depending on the direction selected.

3 Use  and  to select the cut line.



→ The cut line will move.

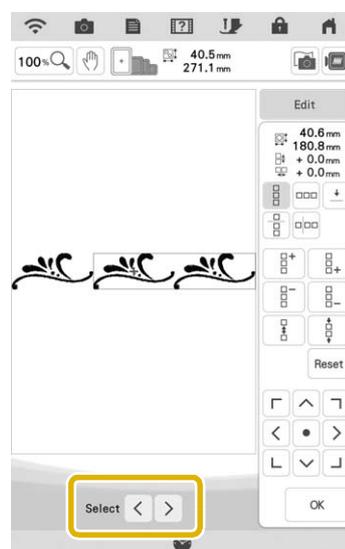
4 Press  and then press .



→ The repeated pattern will be divided into separate elements.

5 Press  and then press .

6 Use  and  to select the element to repeat.



7 Repeat the selected element.

8 Press .



Note

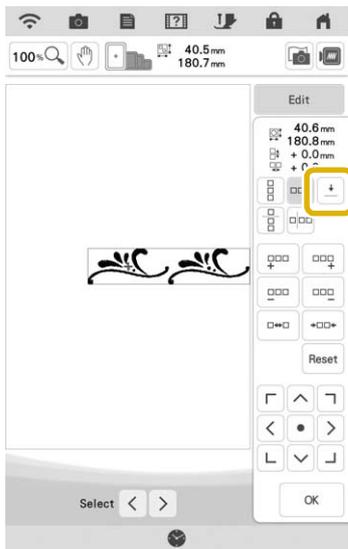
- Once you have cut a repeated pattern into separate elements, you cannot return to the original repeated pattern.
- Each element can be edited separately in the edit screen. Refer to “Selecting Combined Embroidery Patterns” on page 87.
- Press **Embroidery** to change the embroidering order in order to minimize the number of the thread color changes.

Assigning Thread Marks

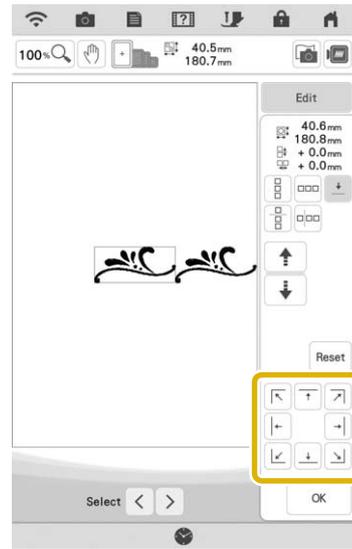
By embroidering thread marks, you can easily align patterns when embroidering a series. When embroidering is finished on a pattern, a thread mark in the shape of an arrow will be sewn using the final thread. When embroidering a series of patterns, use the point of this arrow for positioning the following designs to be embroidered.

1 Press **Edit**, and then press .

2 Press .



3 Press  to select the thread mark to be sewn.



Memo

- When there are two or more elements, use  and  or  and  to select a pattern that you want to assign a thread mark(s) to.

4 Press **OK**.

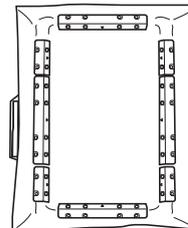
Embroidering the Pattern Repeatedly

After creating the repeated pattern, rehoop the embroidery frame and keep embroidering for the next pattern.



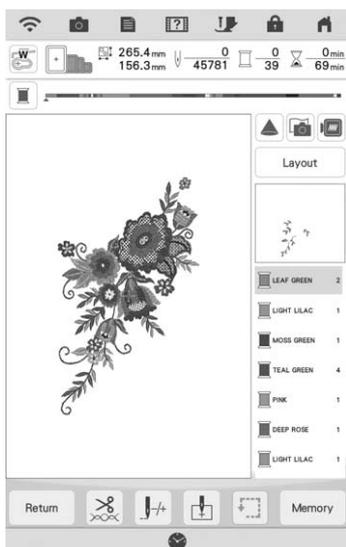
Memo

- Using the optional magnetic sash frame, the fabric can be easily rehooped. For details, refer to the manual included with magnetic sash frame.



1 Select the border pattern with the thread mark at the center of the end of the pattern.

* Refer to "Assigning Thread Marks" on page 70.



2 Press **OK**, then **Embroidery**.

3 Press the "Start/Stop" button to begin embroidering.

→ When embroidering is finished, the thread mark is sewn with the last thread color.

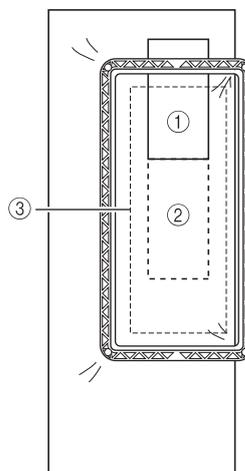


4 Remove the embroidery frame.

5 Rehoop the fabric in the embroidery frame.

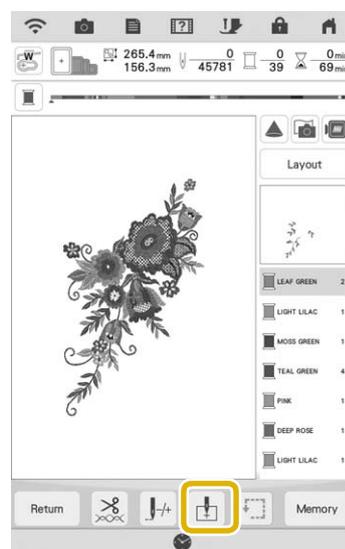
Note

- Adjust the position of the fabric so that the embroidering area for the next pattern is within the embroidering area of the embroidery sheet.

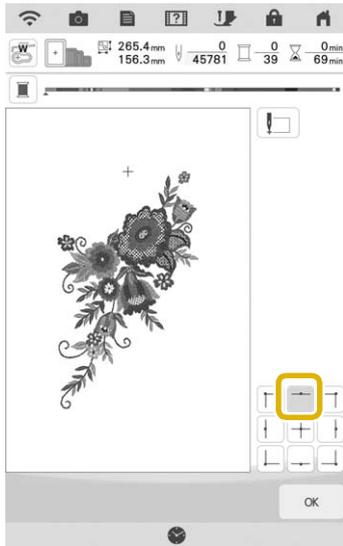


- ① Pattern embroidered first
- ② Position of pattern to be embroidered next
- ③ Embroidering area of embroidery sheet

6 Attach the embroidery frame to the machine, and then touch .



- 7** Touch  to set the starting point to the top center of the pattern.

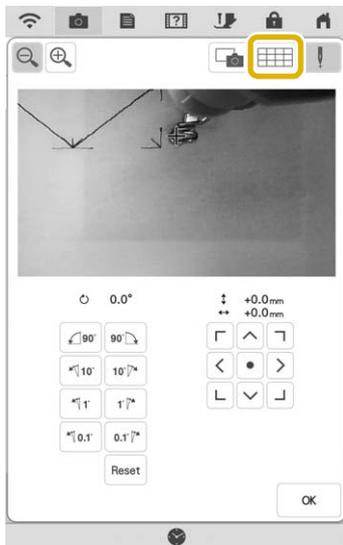


- 8** Touch .

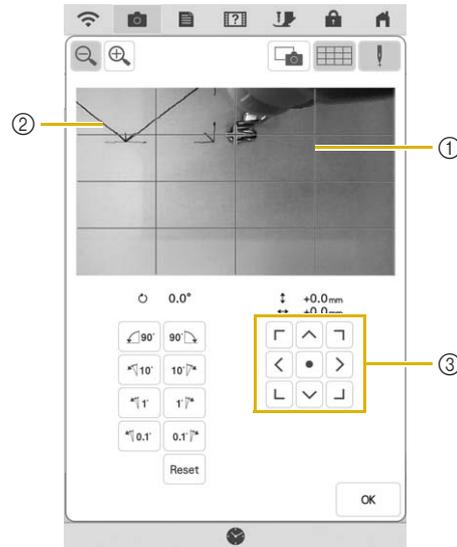
- 9** Press the “Presser Foot Lifter” button to lower the embroidery foot.

- 10** Press .

- 11** Press .



- 12** Press the positioning keys to move the embroidery frame until the thread mark on the fabric is aligned on the starting point in the camera view window.



- ① Grid lines
- ② Thread mark on the fabric
- ③ Positioning keys

 **Memo**

- Press  to enlarge the camera view. By enlarging the camera view, you can make a close adjustment for the needle drop point moving the embroidery frame little by little.

- 13** If the pattern position cannot be aligned using the positioning keys, rehoop the fabric, and then try again to align the position with the positioning keys.

 **Note**

- When embroidering the repeated pattern, you cannot rotate the pattern in the camera view window. If the pattern is rotated in the camera view window, you cannot embroider the pattern properly aligned even if the thread mark and the starting point are aligned in the camera view window.

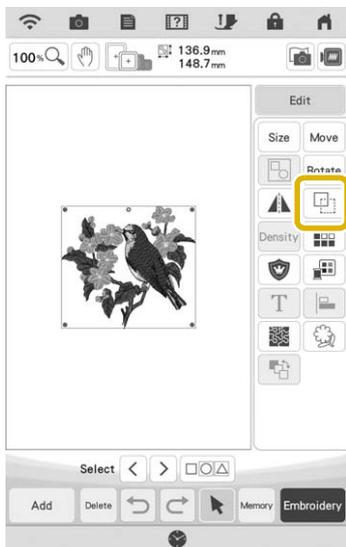
- 14** Press  to return to the previous screen.

- 15** Remove the thread mark.

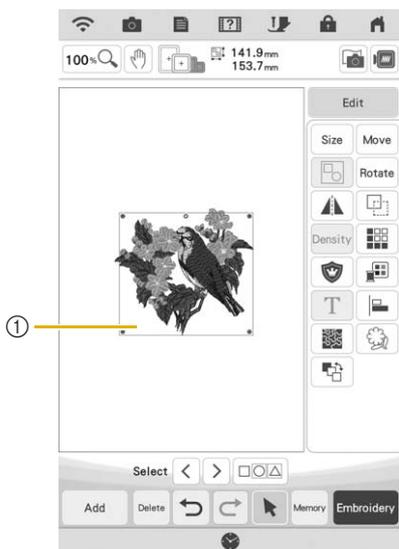
16 Press the “Start/Stop” button to begin embroidering.

Duplicating a Pattern

1 Press **Edit**, and then press .



→ The duplicate is positioned.



① Duplicated pattern

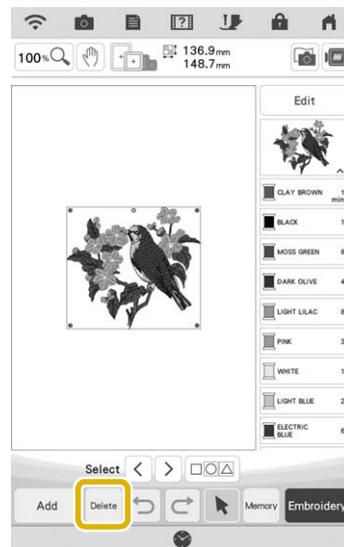


Note

- If multiple patterns are displayed in the screen, only the pattern selected using **<** and **>** is duplicated.
- Move and edit each duplicated pattern individually.

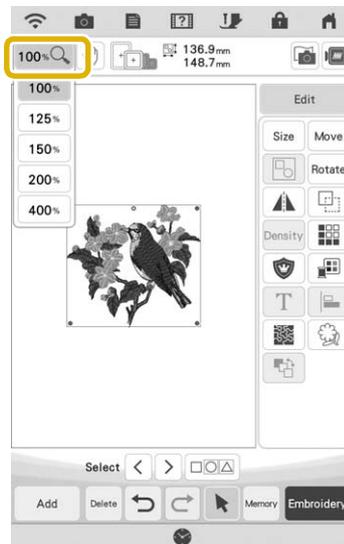
Deleting the Pattern

Press **Delete** to delete the pattern from the screen.

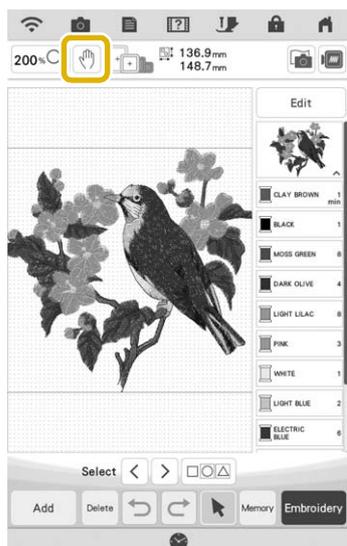


Displaying Patterns in the Screen Magnified

1 Press **100%** to magnify the image.



2 Check the displayed pattern.



Memo

- When magnifying, pressing  enables you to move displayed area. At this time, the embroidery pattern in the location in the embroidery field does not move.

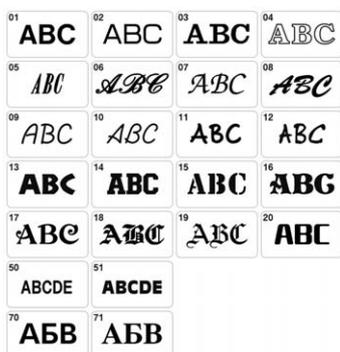
EDITING LETTERS

Selecting Alphabet Character Patterns

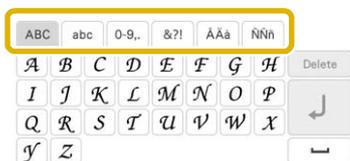
Example: Entering "The Sky is Blue".

1 Press **AA**.

2 Press the key of the font you want to embroider.



3 Press the tab to select a character type.



4 Press **ABC** and then enter "T".

- * If you want to change the size of a character, select the character and then press **LMS** to change the size. The size changes each time you press the key, from large to medium to small.
- * If you make a mistake, press **Delete** to erase the mistake.



Memo

- If you continue adding characters after changing the size, the new characters will be entered in the new size.

5 Press **abc** and enter "he".



6 Press **␣** to enter a space.



7 Press **ABC** again and enter “S”.



8 Press **abc** and then enter “ky_is”.



9 Press **↵** to make a new line.

10 Enter “Blue” according to step 4 and 5.

11 Press **Set**.

→ The embroidering screen is displayed.

12 Follow the steps from 4 to 7 of “Selecting Embroidery Patterns/Decorative Alphabet Patterns/Utility Embroidery Patterns” on page 43.

Character Alignment

After entering the characters but before pressing **Set**, you can adjust the character alignment.

Each press of **≡≡≡** switches between right alignment, left alignment and center alignment, in that order.



≡≡≡ Right alignment

≡≡≡ Left alignment

ABCDE
FGH
IJKLMN

ABCDE
FGH
IJKLMN

≡≡≡ Center alignment

ABCDE
FGH
IJKLMN



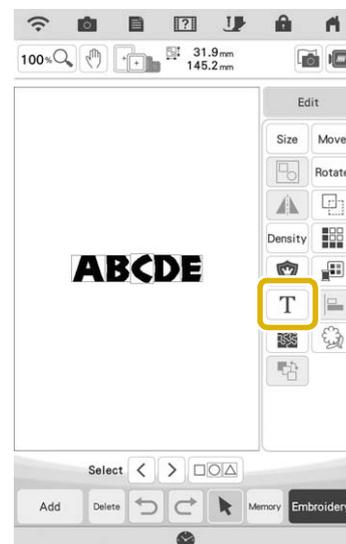
Note

- Adding a line feed with a second line of text will disable the text editing functions described on pages 76-80.

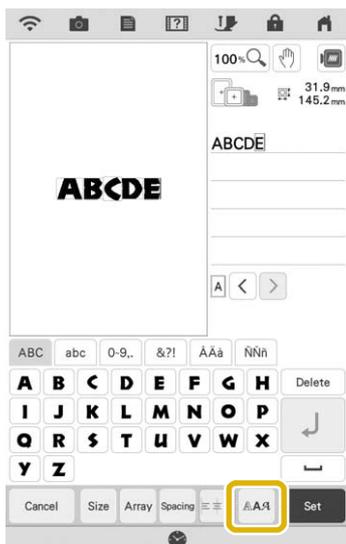
Changing Font Type

1 Before changing the font type, press

Edit, and then press **T**.

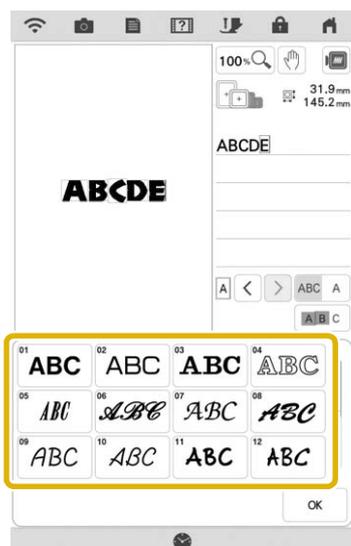


2 Press **AA**.



3 Select the font type.

→ All the characters in the screen change into the selected font type.



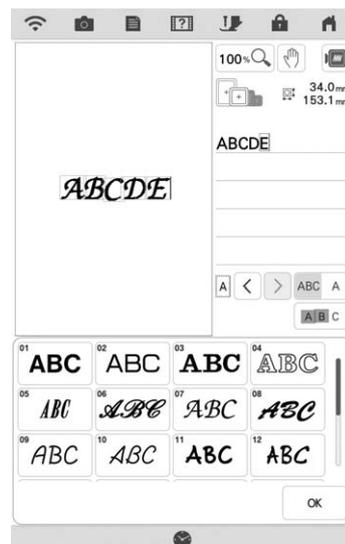
* Scroll the bar to display the font type that is not on the screen.

Memo

- To change the character font type for only the selected character, press **ABC A**. The font type on the left side of the selected character is changed.
- To select more than one character individually, press **ABC**. Touch the character patterns to be selected. To cancel the selection, press the character pattern again.

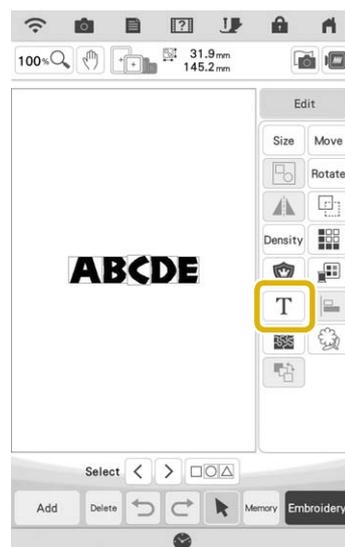
4 Press **OK**.

→ The new font is selected.

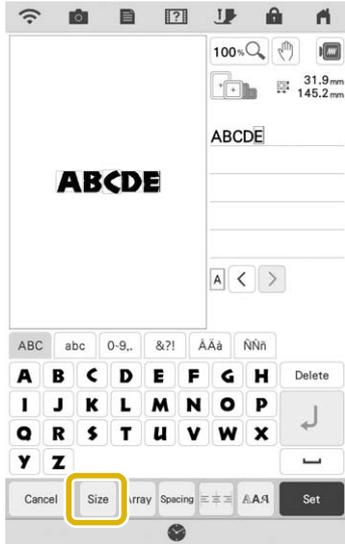


Changing Letter Size

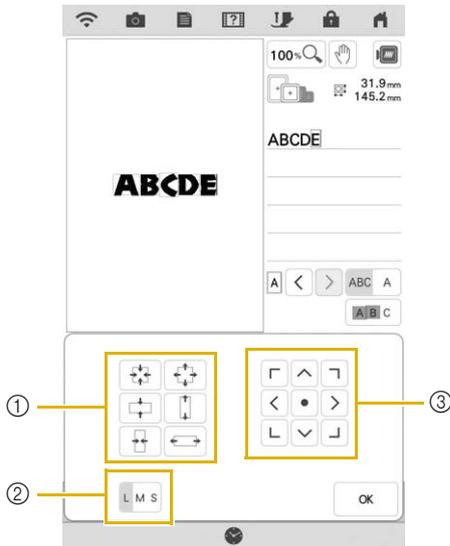
1 Press **Edit**, and then press **T**.



2 Press **Size** .



3 Change the size of letters.



- ① Change the size to the specific direction.
- ② Change the size from L, M or S size.
- ③ Move the text.

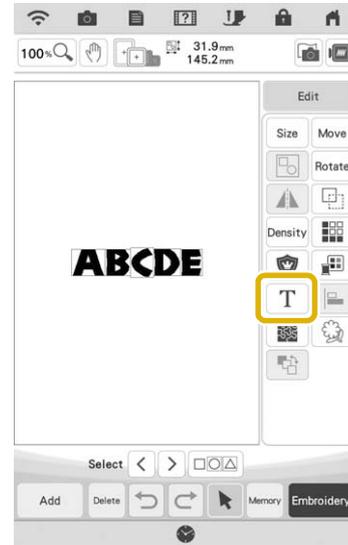
Memo

- To change the character letter size for only the selected character, press **ABC A** . The letter size on the left side of the selected character is changed.
- To select more than one character individually, press **ABC** . Touch the character patterns to be selected. To cancel the selection patterns, press the character pattern again.

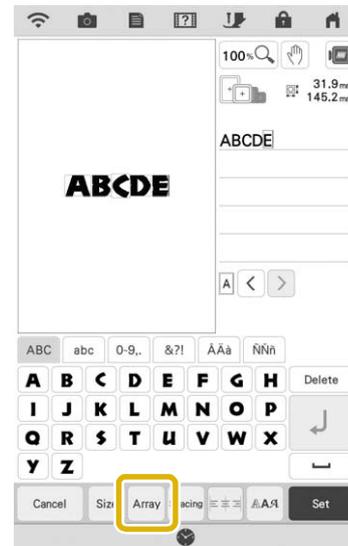
4 Press **OK** .

Changing the Configuration of Alphabet Character Patterns

1 Press **Edit** , and then press **T** .



2 Press **Array** .

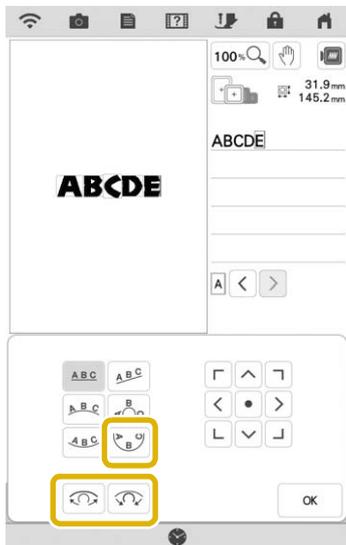


3 Select the layout. (Example: )

When selecting an arc, use  and  to change the degree of the arc.

* Press  to make the arc flatter.

* Press  to make the arc rounder.



 **Memo**

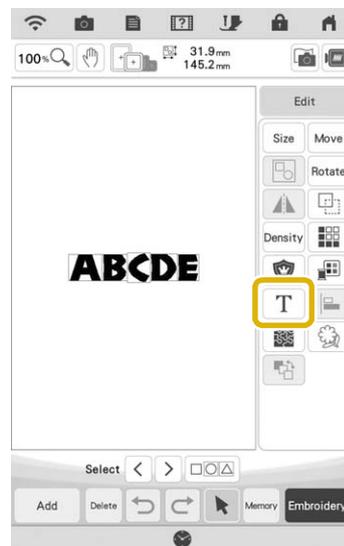
• When selecting , these keys ( and ) change to look like ( and ) . So you can increase or decrease the incline.

• You can move patterns using  on the screen.

4 Press  .

Changing Alphabet Character Spacing

1 Press  , and then press  .

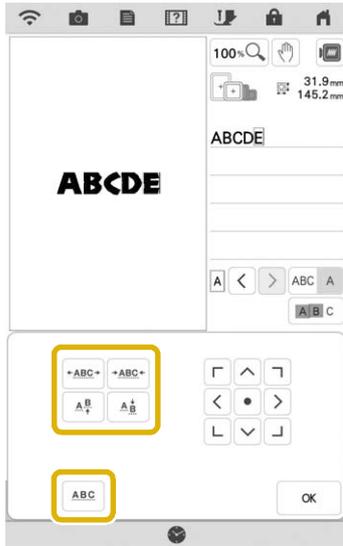


2 Press  .



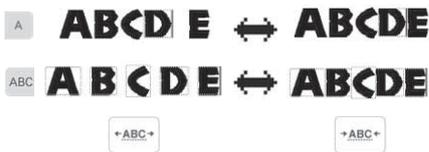
3 Select the spacing.

- * Press **←ABC→** to increase the character spacing.
- * Press **→ABC←** to decrease the character spacing.
- * Press **ABC** to return the pattern to its original appearance.
- * Press **A^B_↑** to move the text up.
- * Press **A^B_↓** to move the text down.



Memo

- To change the character spacing for only the selected character, press **ABC A**. The spacing on the left side of the selected character is changed.



- To select more than one character individually, press **ABC**. Touch the character patterns to be selected. To cancel the selection, press the character pattern again.

- You can move patterns using on the screen.

4 Press **OK**.

Note

- It is not recommended to edit data and transfer to other or older version machines. Some features do not apply in other machines, so problems may occur.
- Character spacing can be reduced only when characters are arranged normally on a straight line.

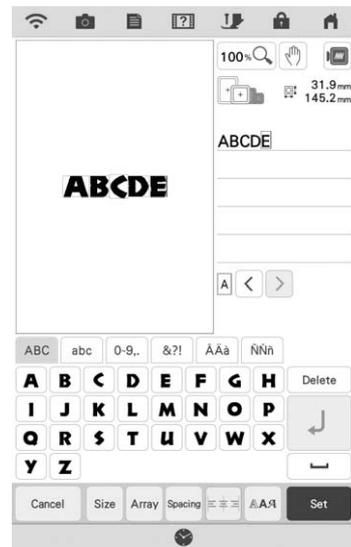
Memo

- The spacing between characters can be reduced to 50% of the narrowest character in the group.

Re-editing Character Patterns

Even after text has been entered, the characters can be re-edited.

1 Press **Edit**, and then press **T**.



→ The character pattern can be re-edited.

Note

- A line feed cannot be added when re-editing character patterns.

EDITING COLORS

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.

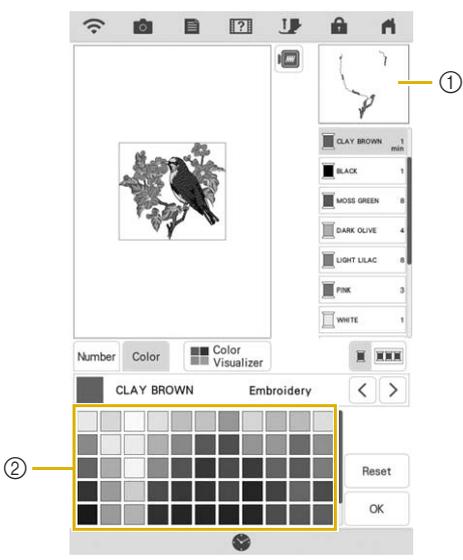
1 Press **Edit**, and then press .



→ The thread color palette screen displays.

2 Press the color of the part to be changed.

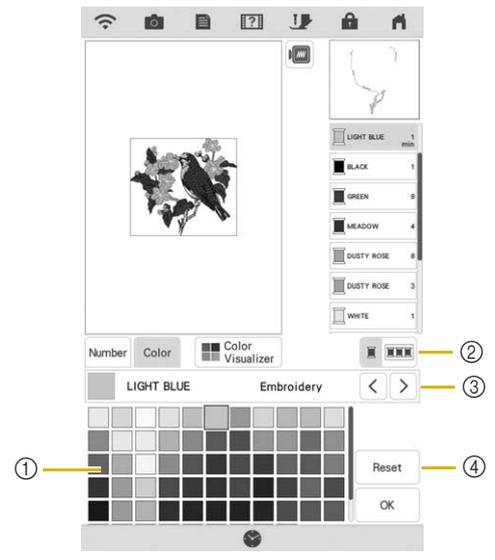
- * Scroll color palette area to display the thread color that is not on the screen.
- The selected thread color image is displayed.



- ① Selected thread color image
- ② 64 Embroidery thread color palette

3 Select a new color from the color palette, and then press **OK**.

- * To return to the original color, press **Reset**. If multiple colors have been changed, this command will return all colors to their original colors.

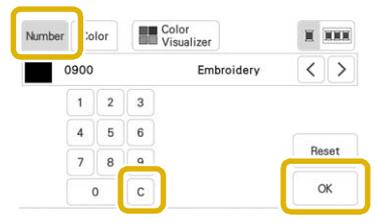


- ① Color palette
- ② Switch between selecting a single color and selecting all colors.
- ③ Select a different thread brand to preview the design with specific thread spools you may already have on hand.
- ④ Revert to the original color.
 - The selected color appears at the top of the embroidering order.
 - The display shows the changed colors.

4 Press **OK**.

Memo

- Press **Number** to find a thread color by entering its number. If you enter the wrong number, press **C**, and then enter the correct number. After entering the number, press **OK**.

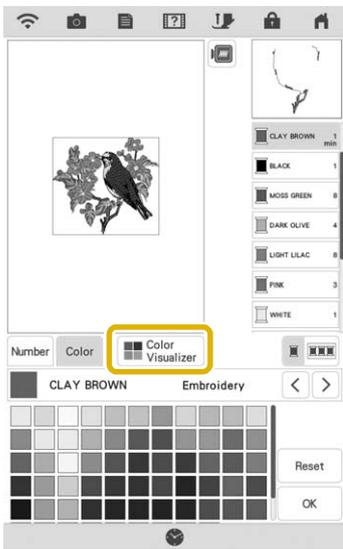


Find New Color Schemes with the Color Visualizer Function

With the color visualizer function, the machine suggests new color schemes for the embroidery pattern that you have selected. After you select the desired effect from the four available (“Random”, “Vivid”, “Gradient” and “Soft”), sample color schemes for the selected effect are displayed.

1 Press **Edit**, and then press .
→ The thread color palette screen appears.

2 Press .



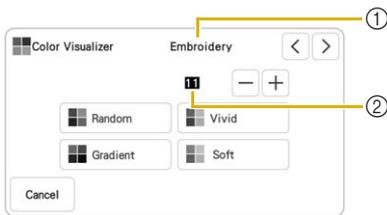
→ The color visualizer screen appears.



Note

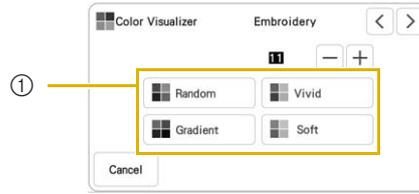
- This function may not be available depending on the pattern you select (ex. a bordered embroidery pattern, licensed pattern).

3 Select the thread brand for colors and the number of colors you want to create the pattern with.



- ① Thread brand for colors
- ② Number of colors to be used.

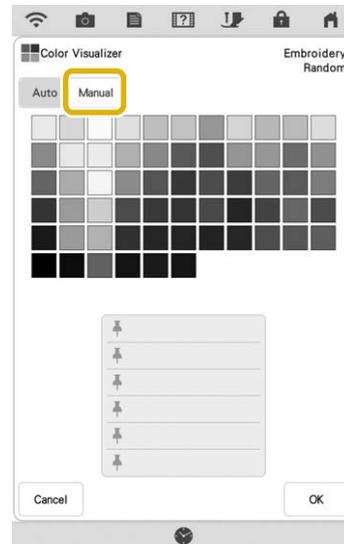
4 Select the desired effect.



- ① Effects for schemes
 - If you select “Random” or “Gradient”, the color specifying screen will appear.
 - * If you select “Vivid” or “Soft”, proceed to step **6**.

5 Press **Manual** and specify the thread color to use in the desired effect.

- * If you don’t need to specify the thread color, just set to **Auto**.



“Manual” setting for “Random”

You can select up to 6 colors to be used in the “Random” effect.

The effect will be created using the selected colors.

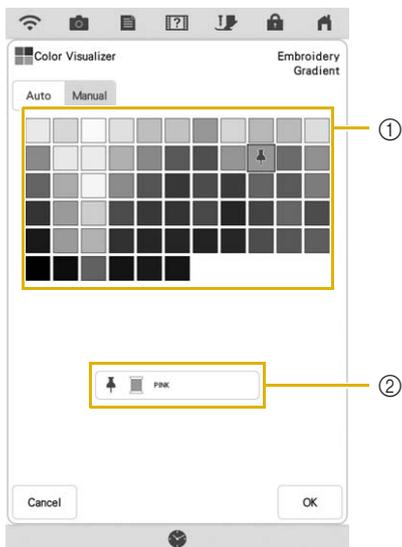


- ① Select colors from the palette.
- ② Selected colors are listed.

“Manual” setting for “Gradient”

You can select one color to be used in the “Gradient” effect.

The effect will be created with a color you select.

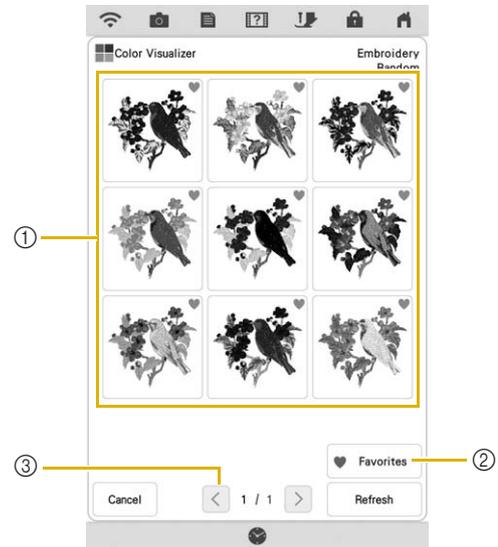


- ① Select a color from the pallet.
- ② Selected color is displayed.

6 Press .

7 Press the desired color scheme from samples.

* Press to display the new schemes.



- ① Press to temporarily register your favorite schemes. A maximum of nine color schemes can be registered as favorites. To release a favorite color scheme, press again.
- ② Press to display the color scheme favorites screen. Press to remove the color scheme on color scheme favorites screen.
- ③ Press to review the previous schemes.



Note

- Maximum 20 pages of schemes can be reviewed.

8 Press and then select the displayed color scheme.

- * Press to return to the previous screen.
- * You can continue selecting color schemes from the selected page prior to pressing .

* Press or to display the other color schemes.



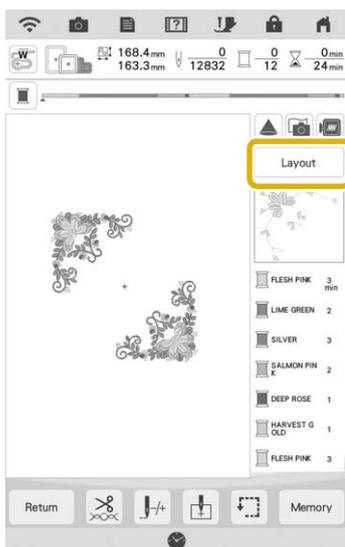
→ The thread color palette screen will appear.

Thread Color Sorting

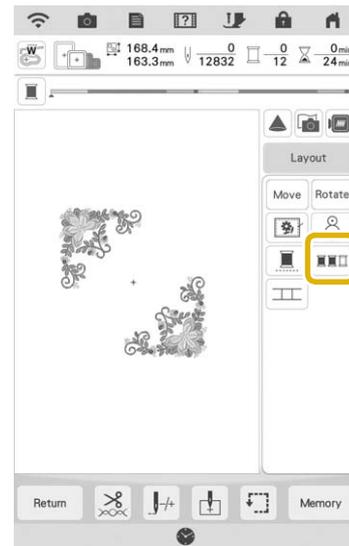
This function allows you to embroider while replacing the thread spool a minimal number of times.

Before starting to embroider, press in the embroidery screen to rearrange the embroidery order and sort it by thread colors.

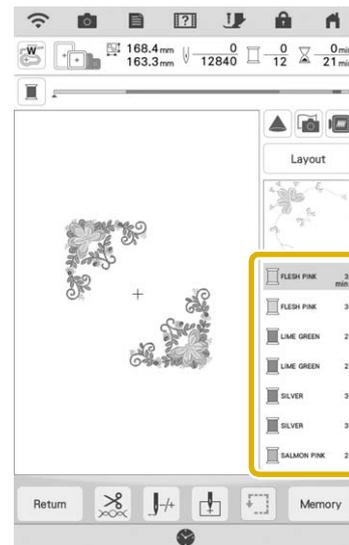
1 Press in the embroidery screen.



2 Press .



* Press again to check the sorted thread colors.



The embroidery color order is rearranged and sorted by thread colors.

Press , then to cancel color sorting and embroider with the original embroidery color order.



Note

- This function does not work on overlapping designs.

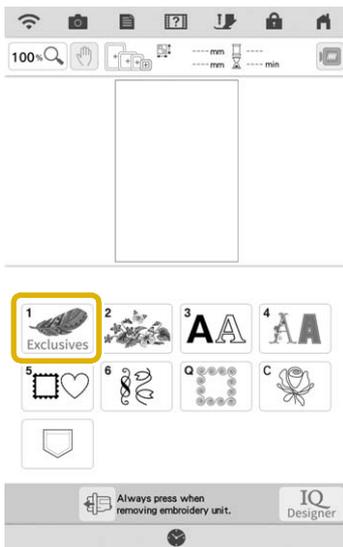
COMBINING PATTERNS

Editing Combined Patterns

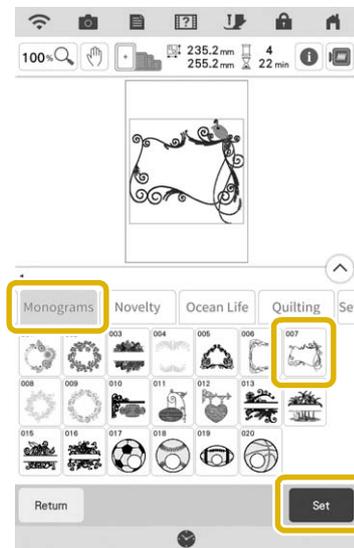
Example: Combining alphabet characters with an embroidery pattern and editing



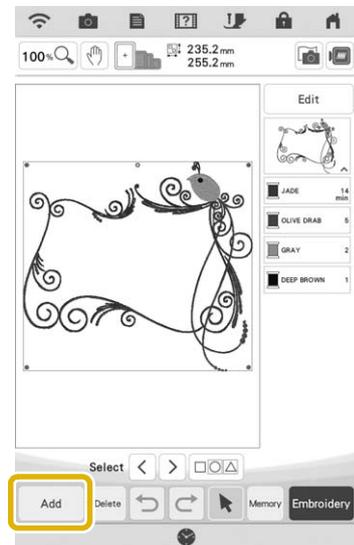
1 Press  to select an embroidery pattern.



2 Select **Monograms**, press  and then press **Set**.



3 Press **Add**.



2

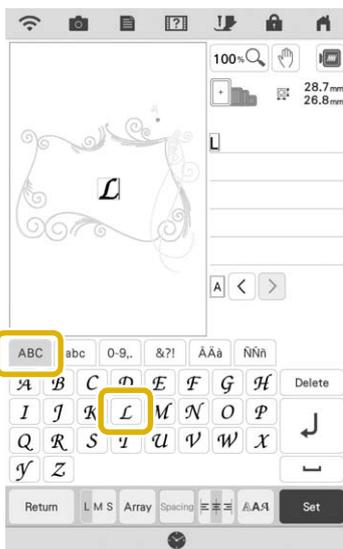
Basic Editing

4 Press **AA** to enter the alphabet characters.

* Press **Return** to return to the previous screen.



5 Select **ABC** and enter "LOVE".



→ The characters you enter will be displayed in the center of the display.

6 Press **Array** to change the layout of the characters. Press **OK**.



* Refer to page 78 for more information about changing the layout.

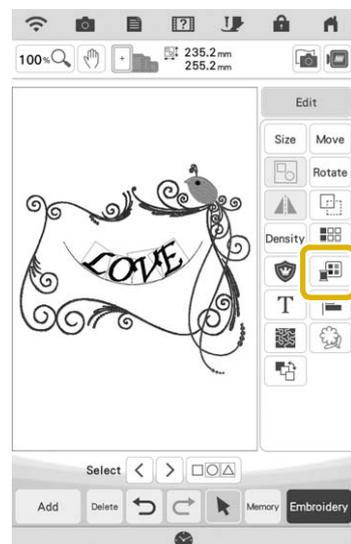
7 Press **Set** and then press **Edit**.

8 Press **Move** and then use **← ● →** to move the characters. Press **OK**.

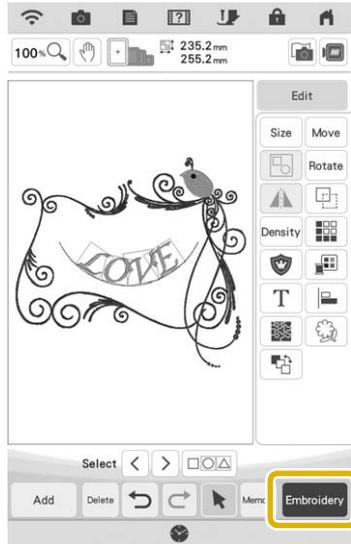
* With your finger or the dual purpose stylus, drag the characters to move them.

9 Press **Color** to change the color of the characters. Press **OK**.

* Refer to page 81 for more information about changing the color.



10 When all editing is finished, press **Embroidery**.



Memo

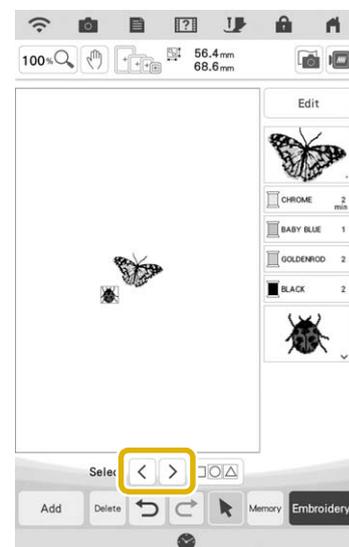
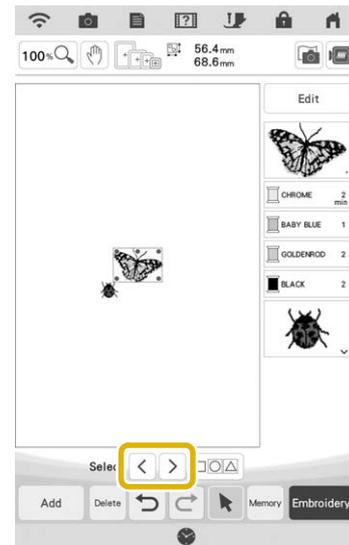
- Combined patterns will be embroidered in the order they were entered.
- For details on changing the embroidering order, refer to “Changing the Embroidering Order of Combined Patterns” on page 97.

Selecting Combined Embroidery Patterns

If multiple patterns have been combined, use **<** **>** to select the pattern to be edited. Patterns can also be selected by directly touching the screen with your finger or dual purpose stylus.

Memo

- Use **<** **>** to select patterns that are overlapping and cannot be selected by clicking them or by touching the screen.



Selecting Multiple Patterns at the Same Time

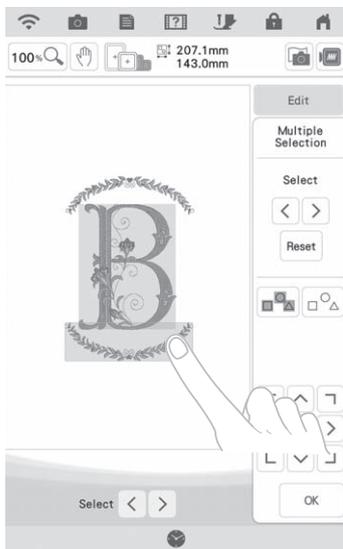
Multiple patterns can easily be edited, for example, when moving patterns that are combined, if they are all selected together.

1 Press .



→ The Multiple Selection screen appears.

2 Touch each pattern to select multiple patterns.



Memo

- Multiple patterns can also be selected by dragging your finger in the screen.
- Multiple patterns can be selected or deselected from the Multiple Selection screen. Press  or  to check the patterns to be selected, and then press

.



The selected patterns are surrounded with a red box.

- Press  to select all patterns in the pattern display area.
- Press  to deselect all selected patterns.
- The patterns can also be selected by touching them directly in the screen.
- While the Multiple Selection screen is displayed, patterns can be moved with



- The following functions cannot be used while multiple patterns are selected.
 - Resizing
 - Rotating
 - Appliqué
 - Border
 - Thread color changing
 - Mirror-image
 - Text editing

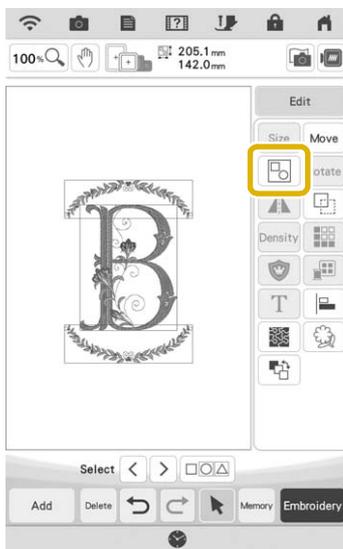
3 Press  to return to the embroidery edit screen.

* Each selected pattern is surrounded with a red box.

Grouping Multiple Selected Patterns

If the multiple patterns selected in “Selecting Multiple Patterns at the Same Time” on page 88 are grouped, they can be edited as a single pattern.

- 1 Press  .
- 2 Touch each pattern to select multiple patterns and then press  .
- 3 Press  .



→ The selected patterns are grouped.

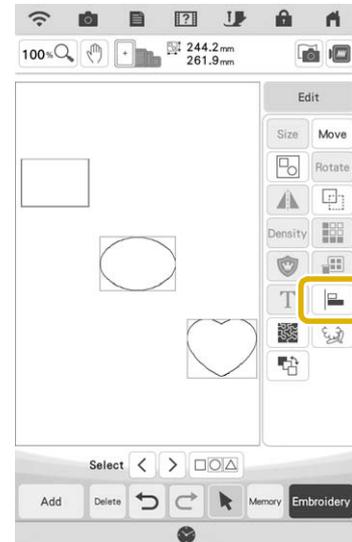
- * Press  to ungroup the patterns. If there are multiple grouped patterns, the selected pattern group is ungrouped.

Memo

- When patterns are grouped, the following functions are applied to all patterns in the pattern group.
 - Moving
 - Rotating
 - Appliqué
 - Border
 - Extracting pattern outlines
 - Simple stippling or echo quilting
 - Thread color changing

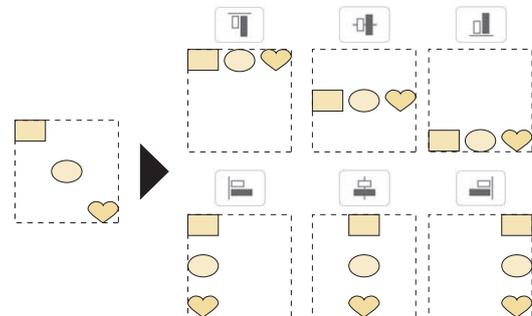
Aligning the Embroidery Patterns

- 1 Select patterns that you want to align (page 87).
- 2 Press  and then press  .



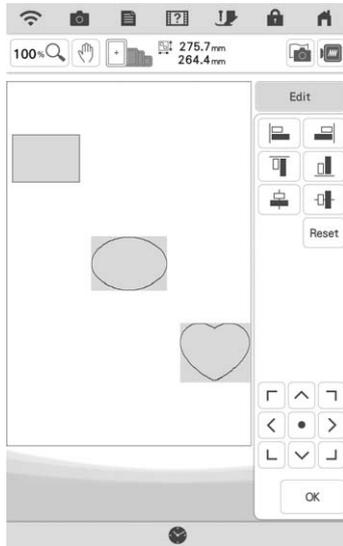
- 3 Press the key for the desired alignment.

Example:



 **Memo**

- You can select desired multiple patterns by directly touching each pattern on this screen.



- Touch  to move the pattern.
- Touch  to reset the alignment.



Chapter **3**

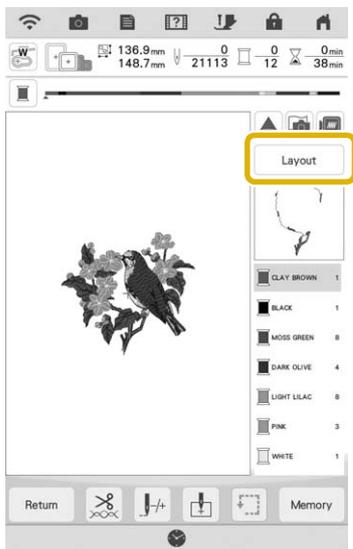
Advanced Editing

VARIOUS EMBROIDERING FUNCTIONS

Uninterrupted Embroidering (Using a Single Color: Monochrome)

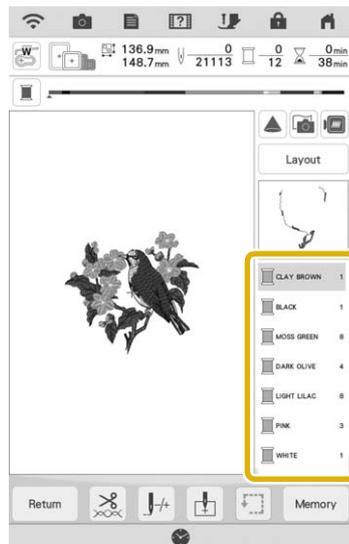
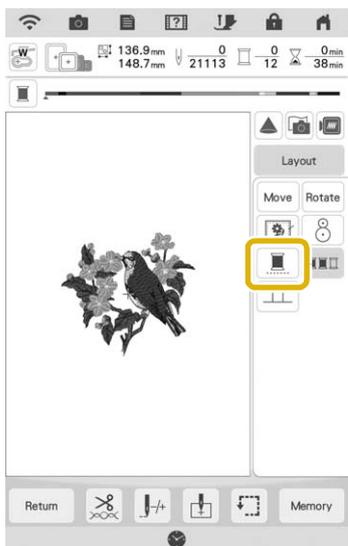
A selected pattern can be stitched out in one color instead of multicolor. The machine will continue stitching without stopping for thread changes until the pattern is completed.

1 In the embroidery screen, press  .



2 Press  .

* Press the key again to return to the original setting.



→ The thread color displayed on the screen will be grayed out.

Memo

- Even if uninterrupted embroidering  has been set, the automatic thread cutting function and the thread trimming function can be used (page 101 and 102).

Display the Fabric while Aligning the Embroidering Position

The fabric hooped in the embroidery frame can be displayed on the LCD so that the embroidery position can be easily aligned.

Example:



Note

- When embroidery frame (small: H 2 cm × W 6 cm (H 1 inch × W 2-1/2 inches)) is installed, the built-in camera cannot be used to align the embroidering position.
- For details on using thicker fabric such as quilting, refer to “Positioning the Pattern on Thick Fabric” on page 95.

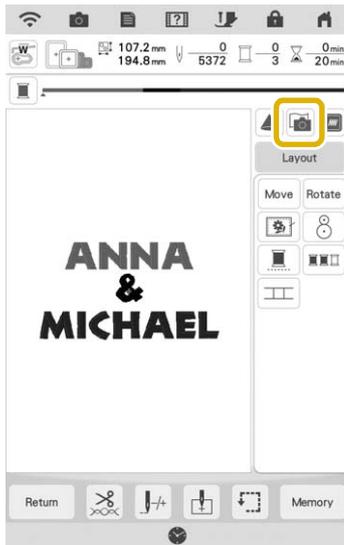
- 1 Hoop the fabric in the embroidery frame, and then attach the frame to the machine.
- 2 Select the pattern and, if necessary, edit the pattern and press **Embroidery**.



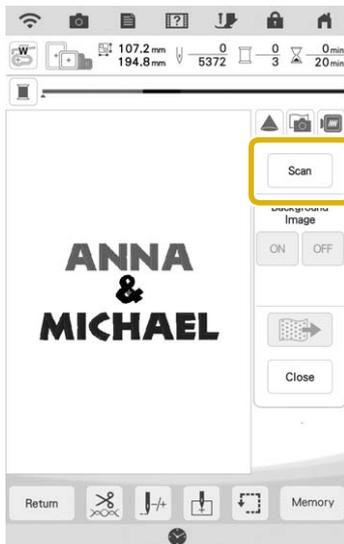
Note

- When using light to medium weight fabrics, check the settings screen to make sure “Fabric Thickness Sensor” is set to “OFF”.

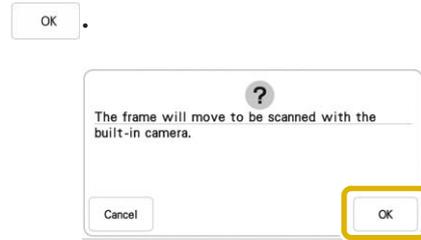
- 3 Press .



- 4 Press **Scan**.



- 5 When the following message appears, press **OK**.

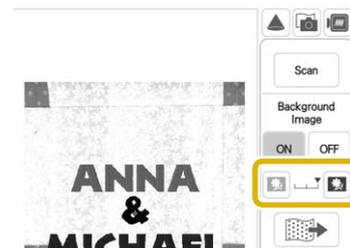


→ The carriage moves so the fabric can be scanned.



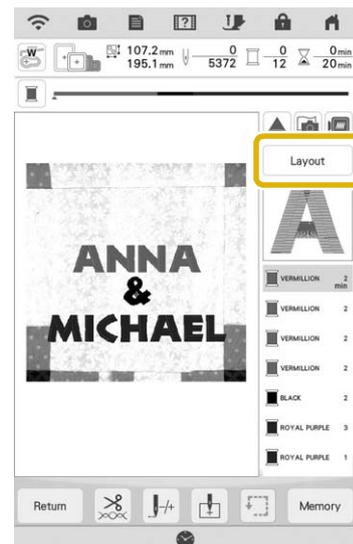
Memo

- If you do not wish the upper thread to be scanned together with the fabric, scan the fabric without the needle threaded with the upper thread.
- The density of the scanned background image can be adjusted.



- 6 When the fabric appears as a background for the pattern, press **Close** then **Layout** to display the editing window.

- * The pattern can be moved to the desired position by dragging on the screen using your finger or the dual purpose stylus without displaying the editing window. If you need some fine adjustment, move the pattern from the editing window.



7 Press **Move** to display the pattern moving window.



8 Use  to align the pattern to the desired embroidery position.



9 Press **OK**.

Memo

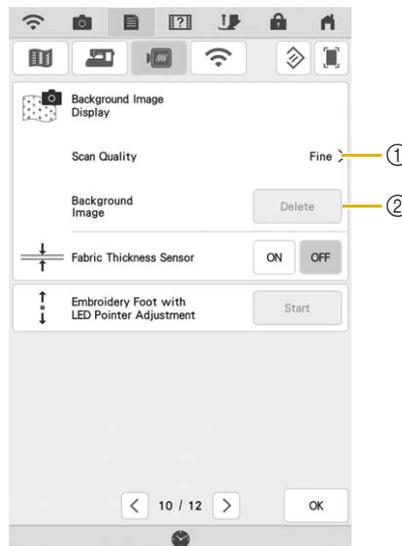
- The pattern can also be rotated for best alignment with the scanned background fabric.
- If necessary, press  to display a preview in order to check the pattern position.

10 Press the “Start/Stop” button to start embroidering.

- * Refer to “Embroidering Patterns” on page 54.
- When embroidery is finished, the fabric displayed in the background disappears.

Specify Fabric Display from the Settings Screen

Whether the fabric disappears or remains displayed can be specified from the settings screen.



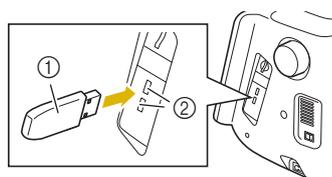
- ① Set to “Fine” to scan clearer than setting to “Standard”.
- ② Press **Delete** to remove the background image completely.

Note

- The fabric background will remain if the embroidery is not finished. In this case, erase the background image from the settings screen.

Saving Scanned Image to USB Media

1 Insert the USB media into the USB port on the machine.



- ① USB media
- ② USB port

2 Press  and select the USB port to save image.

3 Press .

→ The image file will be saved to the USB media.

4 Remove the USB media, and then check the saved image using a computer.

- The files for scanned images are saved with the name “BG**.PNG” in a folder labeled “bPocket”.
- * “**” in the name “BG**.PNG” will automatically be replaced with a number between 00 and 99.

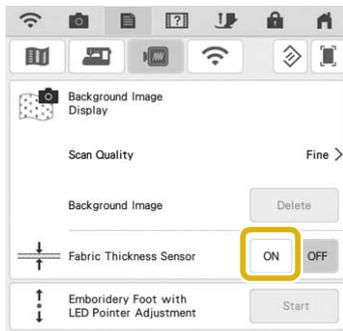
■ Positioning the Pattern on Thick Fabric

When positioning the pattern on thick fabric such as quilting, the fabric may not be detected correctly. In order for the fabric to be correctly detected, its thickness must first be measured.

Memo

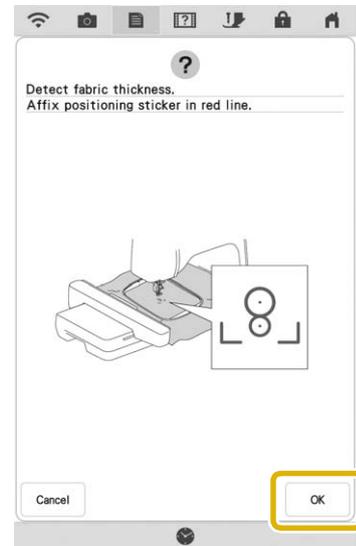
- This feature is functional only when the fabric is scanned. It will not affect embroidering if it is turned on with normal embroidering.

- 1 Hoop the fabric in the embroidery frame, and then attach the frame to the machine.
- 2 Select the pattern and, if necessary, edit the pattern and press **Embroidery**.
- 3 Display page 10 of the settings screen, and then set "Fabric Thickness Sensor" to "ON".



- 4 Press **OK**.
- 5 Press .
- 6 Press **Scan**.

- 7 Affix the embroidery positioning sticker to the fabric within the area indicated by the red frame displayed with the projector, and then press **OK**.



- 8 When the following message appears, remove the embroidery positioning sticker, and then press **OK**.



→ The carriage is moved, and the embroidery positioning sticker affixed to the fabric is detected.

- 9 Continue with step 6 on page 93 to align the pattern with the desired embroidery position.

CAUTION

- Use fabrics with a thickness of less than 3 mm (approx. 1/8 inch). Using fabrics thicker than 3 mm (approx. 1/8 inch) may cause the needle to break.

Basting Embroidery

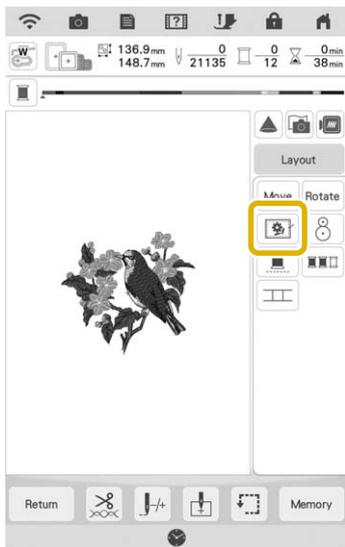
Before embroidering, basting stitches can be sewn along the outline of the pattern. This is useful for embroidering fabric that cannot have stabilizer material affixed with an iron or adhesive. By stitching stabilizer material to the fabric, shrinkage of the stitching or misaligned pattern can be minimized.



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.

- Press **Layout**, and then press to select the basting setting.



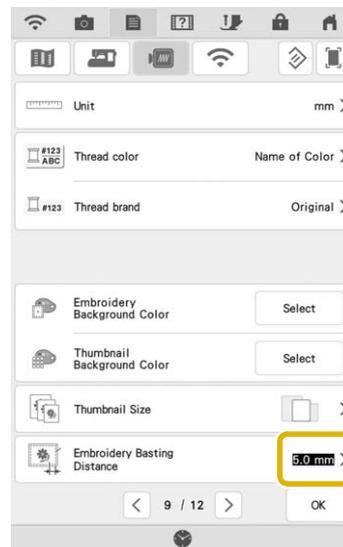
Memo

- To cancel the setting, press .

→ Basting is added to the beginning of the embroidering order.

- Press .

- Touch the number 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.

- Press **OK** to return to the previous screen.
- Press the "Start/Stop" button to begin embroidering.
- When embroidering is finished, remove the basting stitching.

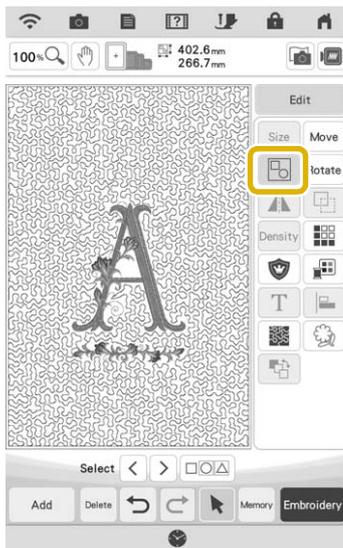




Changing the Embroidering Order of Combined Patterns

The embroidering order of combined patterns can be changed.

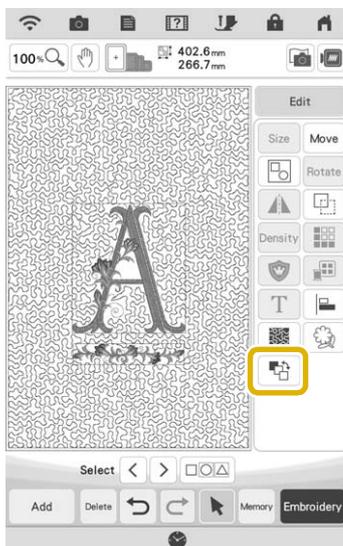
- 1 Select a pattern, add additional pattern(s), adjust the layout of the patterns, and then display the editing window.
- 2 If necessary, press to ungroup the pattern.



Memo

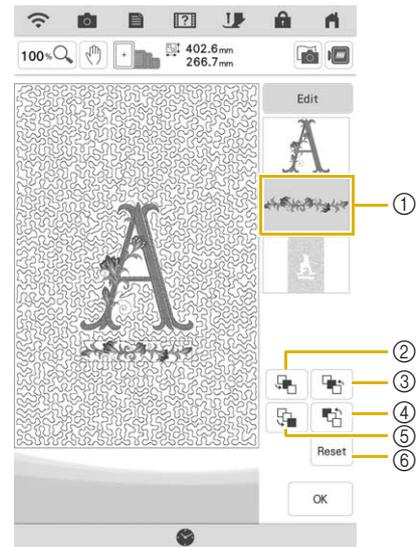
- The embroidering order for grouped patterns is changed group by group. To change the embroidering order of a pattern within a group, ungroup the pattern first.

- 3 Press .



→ The embroidering order change screen appears.

- 4 Select the pattern whose order is to be changed, and then press a key to change its position in the embroidering order.



- ① Selected pattern
- ② Move the selected pattern ahead one position in the embroidery order.
- ③ Move the selected pattern back one position in the embroidery order.
- ④ Move the selected pattern to the beginning of the embroidery order.
- ⑤ Move the selected pattern to the end of the embroidery order.
- ⑥ Revert to the original embroidering order.

Memo

- To cancel the selection of the pattern, select another pattern.
- The positions of overlapping patterns can be checked in the preview on the left side of the screen.

- 5 Press .

MAKING EMBROIDERY ADJUSTMENTS

Adjusting Thread Tension

When embroidering, the thread tension should be set so that the upper thread can slightly be seen on the wrong side of the fabric.

Correct Thread Tension

The pattern can be seen from the wrong side of the fabric. If the thread tension is not set correctly, the pattern will not finish well. The fabric may pucker or the thread may break.



- ① Right side
- ② Wrong side

Follow the operations described below to adjust thread tension according to the situation.



Note

- If the thread tension setting is made extremely loose, the machine may stop during embroidering. This is not the sign of a malfunction. Increase the thread tension slightly, and begin embroidering again.



Memo

- If you turn the main power to OFF or select a different pattern, the thread tension will reset to the automatic setting.

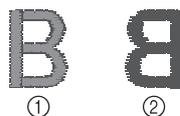
Upper Thread is Too Tight

The tension of the upper thread is too tight, resulting in the bobbin thread being visible from the right side of the fabric.



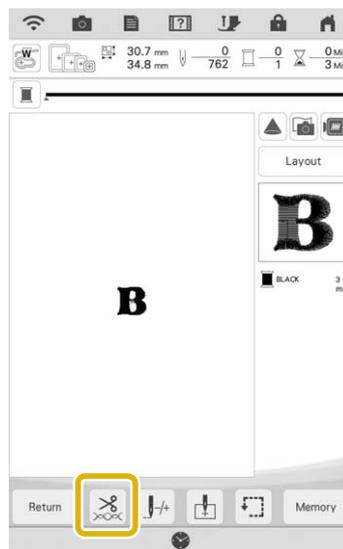
Note

- If the bobbin thread was incorrectly threaded, the upper thread may appear to be too tight. In this case, refer to “Setting the Bobbin” on page 20 and rethread the bobbin thread.

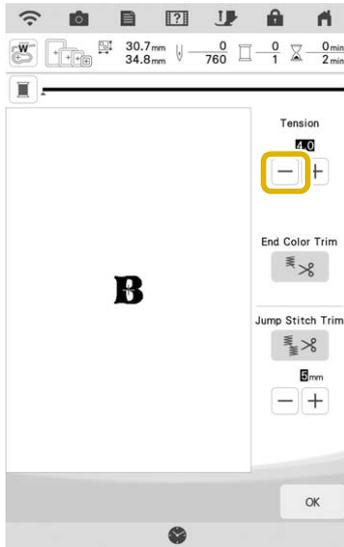


- ① Right side
- ② Wrong side

1 Press .



- 2 Press **-** to loosen the upper thread tension. (The tension number will decrease.)



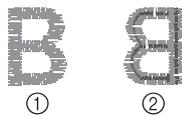
- 3 Press **OK**.

Upper Thread is Too Loose

The tension of the upper thread is too loose, resulting in a loose upper thread, loose thread locks, or loops appearing on the right side of the fabric.

Note

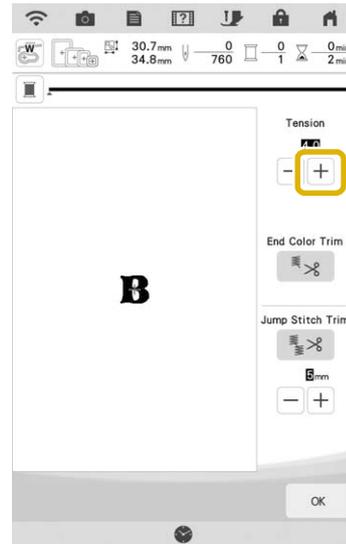
- If the upper thread was incorrectly threaded, the upper thread may appear to be too loose. In this case, refer to “Upper Threading” on page 22 and rethread the upper thread.



- ① Right side
- ② Wrong side

- 1 Press **✂**.

- 2 Press **+** to tighten the upper thread tension. (The tension number will increase.)



- 3 Press **OK**.

Note

- The tension of the upper thread can be adjusted for embroidering on page 8 of the embroidery settings screen. The selected setting will be applied to all patterns. When embroidering, if the overall tension of the upper thread is too tight or too loose, adjust it from the setting screen. Increase the number to tighten the upper thread and decrease the number to loosen the upper tension.



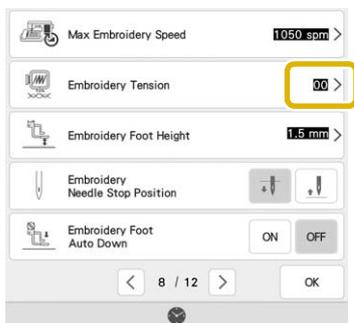
Adjusting Overall Upper Thread Tension

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 “Adjusting Thread Tension” on page 98.

- 1 Press **☰**, and then press **⏏**.

2 In the “Embroidery Tension”, touch the number to adjust the upper thread tension.

- * Increase to tighten the upper thread tension.
- * Decrease to loosen the upper thread tension.

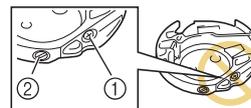


3 Press .

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

When using the embroidery bobbin thread provided, please be sure to choose the green marked bobbin case when performing utility stitch sewing and embroidery functions. When in the embroidery function mode, the alternate 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 alternate bobbin case (with no color on the screw) can be easily adjusted when bobbin tension changes are required to accommodate different bobbin threads. Refer to the Instruction and Reference Guide (Sewing).

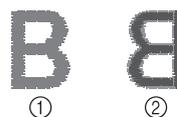
To adjust the bobbin tension for embroidery function, using the alternate bobbin case (with no color on the screw), turn the slotted screw (-) with a (small) screwdriver.



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

■ Correct Tension

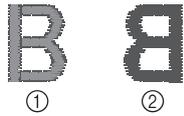
Upper thread slightly appears on the wrong side of fabric.



- ① Right side
- ② Wrong side

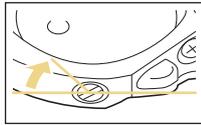
■ Bobbin Thread is Too Loose

Bobbin thread appears slightly on the right side of fabric.



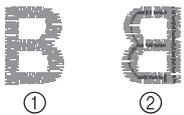
- ① Right side
- ② Wrong side

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



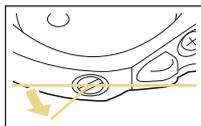
■ Bobbin Thread is Too Tight

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.



⚠ CAUTION

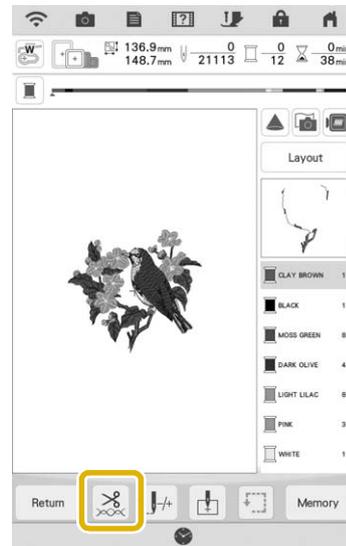
- When adjusting the alternate bobbin case, be sure to remove the bobbin from the alternate bobbin case.
- DO NOT adjust the position of the phillips (+) screw on the alternate bobbin case as this may result in damage to the bobbin case, rendering it unusable.
- If the slotted screw (-) is difficult 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.

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, press  key and then .

* This setting returns to its default  when the machine is turned off.

1 Press .



2 Press  to turn off the automatic thread cutting function.



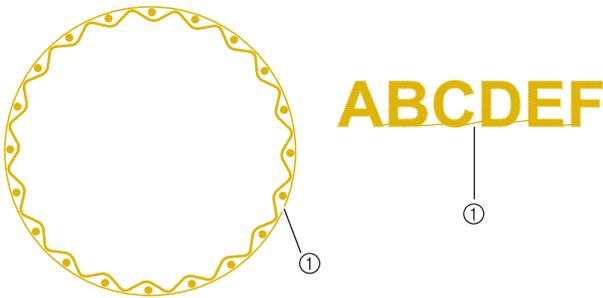
→ The key will display as .

* 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, press  key and then . This function can be turned on or off during embroidering.

* Your customized setting remains after turning the machine off and on.

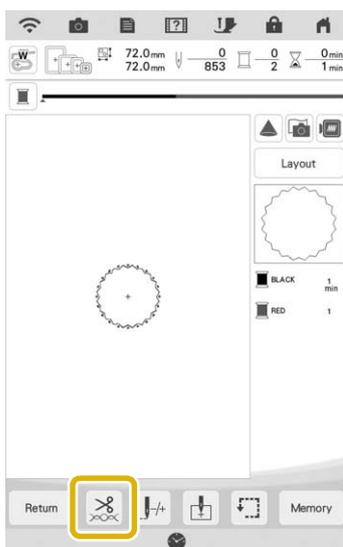


① Jump stitch

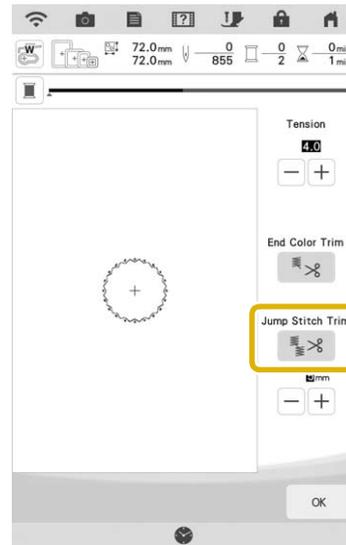
Note

- When this function is turned on, use the included ball point needle 75/11 for embroidering patterns with short jump stitches such as alphabet characters. Using other needles may cause the thread to break.

1 Press .



2 Press  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 Trim Function to Adjust Jump Stitch Length

When the thread trimming function  is turned on, you can select the length of the jump stitch. Stitches below the value will not be trimmed. This function can be turned ON or OFF during embroidering.

Select a setting from 5 mm to 50 mm in 5 mm increments.

* Your customized setting remains after turning the machine off and on.

Press  or  to select the length of jump stitch.

For example: Press  to select 25 mm (1 inch) and the machine will not trim a jump stitch of 25 mm or less before moving to the next stitching.



Note

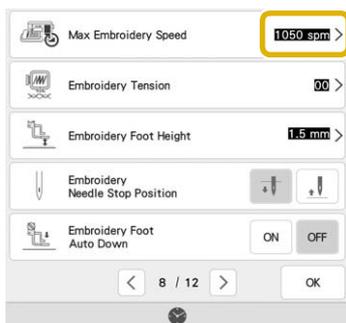
- If design has many trims, it is recommended to select a higher jump stitch trim setting in order to reduce the amount of excess tails on backside of fabric.
- The higher number of the jump stitch length selected, the fewer number of times the machine will trim. In this case, more jump stitches remain on the surface of the fabric.

Adjusting the Embroidery Speed

1 Press , and then press .

2 In the “Max Embroidery Speed”, touch the number to change the maximum embroidery speed.

* You can choose from 8 different speed levels.



Memo

- SPM is the number of stitches embroidered in one minute.
- Decrease the embroidery speed when embroidering on thin, thick, or heavy fabrics.
- The embroidery speed can be changed while embroidery is being done.
- The setting specified before the main power is set to OFF remains selected the next time that the machine is turned ON.
- Decrease the embroidery speed to 600 spm when using a speciality thread like a metallic thread.

3 Press .

Changing the Thread Color Display

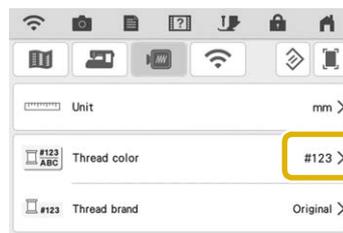
You can display the name of the thread colors or embroidery thread number.

Memo

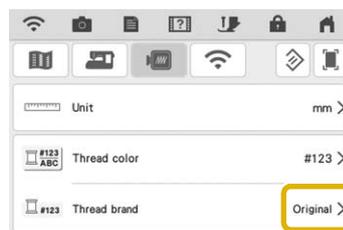
- Colors on the screen may vary slightly from actual spool colors.
- “Original” is set as a default and will retain the brand thread used by the designer who created the pattern.

1 Press , and then press .

2 In the “Thread color”, touch the status to display the name of the thread colors or the embroidery thread number.



3 If "#123" is selected, select a thread brand.



Memo

- The thread brand setting is reflected the next time a pattern is imported.

4 Press .

Changing the Embroidery Frame Display

1 Press and .

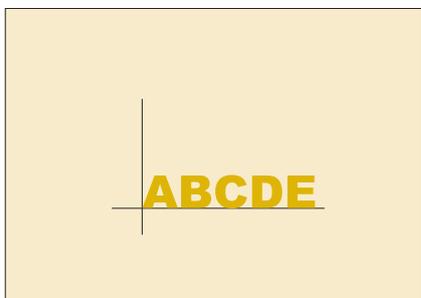
2 In the “Embroidery Frame Display”, touch to change the embroidery frame display mode.



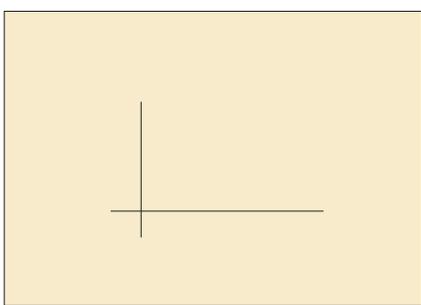
3 Press .

Aligning the Pattern and the Needle

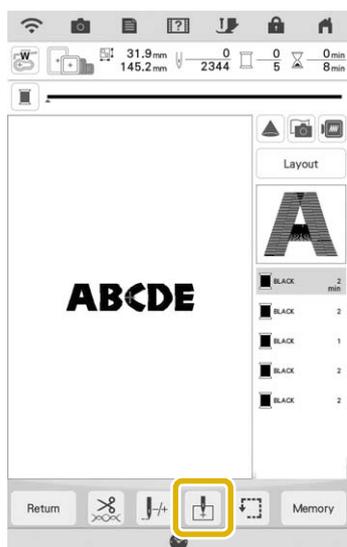
Example: Aligning the lower left side of a pattern and the needle



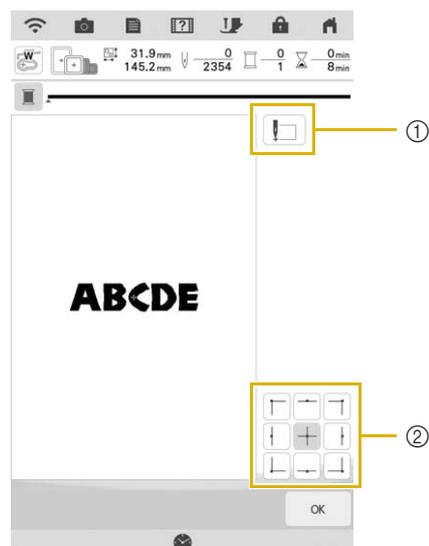
1 Mark the embroidery start position on the fabric, as shown.



2 Press .



3 Press  then press .



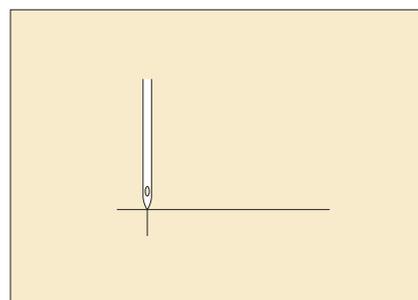
① This key is used for aligning linked characters (page 105).

② Start position

→ The needle position moves to the bottom left corner of the pattern (the embroidery frame moves so that the needle is positioned correctly).

4 Press , and then press .

5 Use  to align the needle and the mark on the fabric, and begin embroidering the pattern.



Memo

- You can use camera positioning function. For details, refer to “Aligning the Embroidering Position Using the Built-In Camera” on page 47.

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

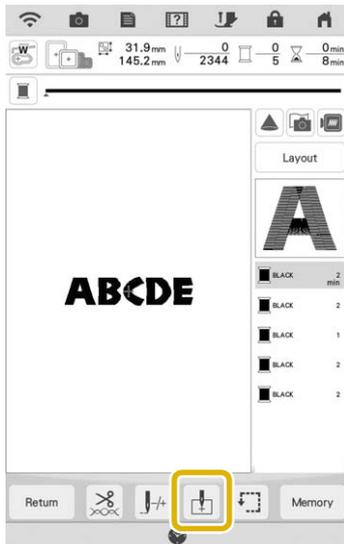
1 Select the character patterns for “ABCDE”.



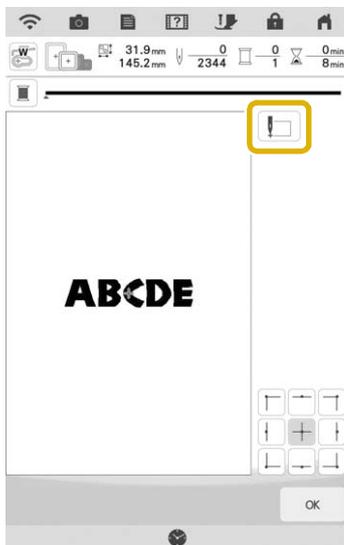
Note

• For details on selecting character patterns, refer to “Selecting Alphabet Character Patterns” on page 75.

2 On the Embroidery screen, press .



3 Press .



→ The needle is positioned in the lower-left corner of the pattern. The carriage moves so that the needle is positioned correctly.



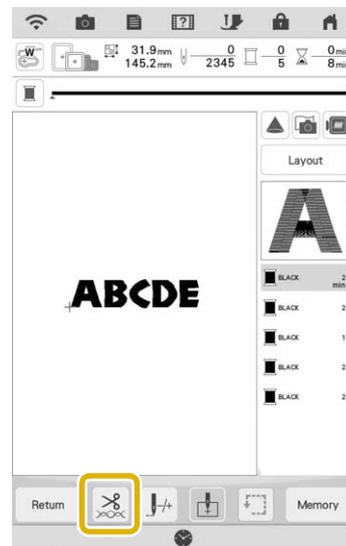
Note

• To cancel the starting point setting and return the starting point to the center of the pattern, press .

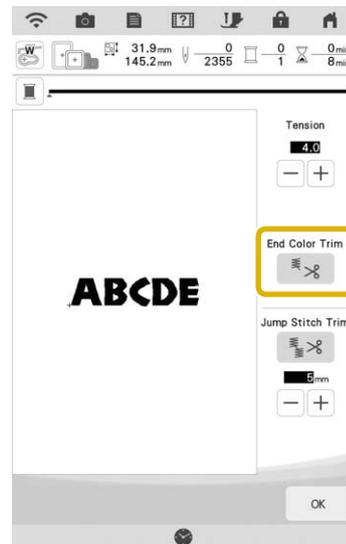
• Use  to select a different starting point for embroidering.

4 Press .

5 Press .

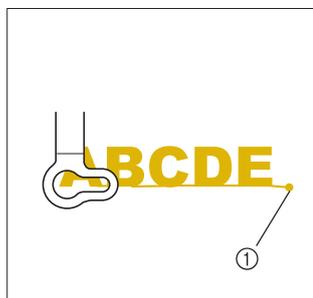


6 Press  to turn off the thread cutting function and then press .



7 Press the “Start/Stop” button.

- 8** After the characters are embroidered, cut the threads to a generous length, remove the embroidery frame, rehoop the fabric so that the remaining characters (“FG”) can be embroidered, and then attach the embroidery frame again.

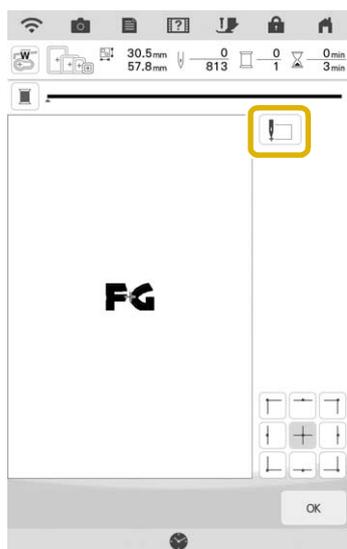


① End of the embroidering

- 9** As in step **1**, select the character patterns for “FG”.

- 10** Press .

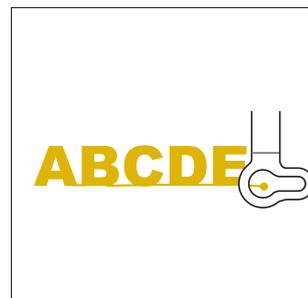
- 11** Press .



→ The carriage moves so that the needle is positioned in the lower-left corner of the pattern. You will need to match this point to the end of embroidering for the previous pattern.

- 12** Press .

- 13** Press , then  to align the needle with the end of embroidering for the previous pattern.



- 14** Press the “Start/Stop” button to begin embroidering the remaining character patterns.



Memo

- You may want to use the camera positioning function (with the grid displayed) to ensure the next set of characters are precisely aligned with the first set of characters. For details, refer to “Aligning the Embroidering Position Using the Built-In Camera” on page 47.

USING THE MEMORY FUNCTION

Embroidery Data Precautions

Observe the following precautions when using embroidery data other than that created and saved in this machine.

CAUTION

- 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.

■ Types of Embroidery Data that Can Be Used

- Only .pes, .pha, .phb, .phc, .dst and .phx embroidery data files can be used with this machine. Using data other than that saved using our data design systems or machines may cause this machine to malfunction. When the machine is used to save a file with any extension, it is saved as a .phx data file.

■ Types of USB Devices/Media that Can Be Used

Embroidery data can be saved to or recalled from USB media. Use media that meets the following specifications.

- USB Flash drive (USB Flash memory)

Embroidery data can be recalled only.

- USB external CD/DVD drives

You can also use the following types of USB media with the USB Memory Card Reader/USB card writer module.

- Secure Digital (SD) Card
- CompactFlash
- Memory Stick
- Smart Media
- Multi Media Card (MMC)
- xD-Picture Card



Note

- The processing speed may vary by port selection and quantity of data stored.
- Some USB media may not be usable with this machine. Please visit our website for more details.
- The access lamp will begin blinking after inserting USB devices/media, and it will take about 5 to 6 seconds to recognize the devices/media. (Time will differ depending on the USB device/media).



Memo

- To create file folders, use a computer.
- Letters and numerals can be used in the file names. In addition, if the file name contains no more than eight characters, the entire file name will appear on the screen. If the file name is more than eight characters long, only the first six characters followed by “~” and a number appear as the file name.

■ Precautions on Using the Computer to Create and Save Data

- If the name of the embroidery data file/folder cannot be identified, for example, because the name contains special characters, the file/folder is not displayed. If this occurs, change the name of the file/folder. We recommend using the 26 letters of the alphabet (uppercase and lowercase), the numbers 0 through 9, "-", and "_".
- If embroidery data larger than 408 mm (H) × 272 mm (W) (approx.16 inches (H) × 10-5/8 inches (W)) is selected, a message is shown asking if you wish to rotate the pattern 90 degrees. Even after being rotated 90 degrees, embroidery data larger than 408 mm (H) × 272 mm (W) (approx.16 inches (H) × 10-5/8 inches (W)) cannot be used. (All designs must be within the 408 mm (H) × 272 mm (W) (approx.16 inches (H) × 10-5/8 inches (W)) design field size.)
- .pes files saved with the number of stitches or the number of colors exceeding the specified limits cannot be displayed. The combined design cannot exceed a maximum number of 750,000 stitches or a maximum number of 127 color changes (above numbers are approximate, depending on the overall size of the design). Use one of our design software programs to edit the embroidery pattern so that it meets these specifications.
- Embroidery data stored in a folder created in USB media can be retrieved.
- Even if the embroidery unit is not attached, the machine will recognize embroidery data.

■ Tajima (.dst) Embroidery Data

- .dst data is displayed in the pattern list screen by file name (the actual image cannot be displayed). Only the first eight characters of the file name can be displayed.
- 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.

Saving Embroidery Patterns in the Machine's Memory

You can save embroidery patterns that you have customized and will use often; for example, your name, patterns that have been rotated or had the size changed, patterns that have had the embroidering position changed, etc. A total of about 10 MB of patterns can be saved in the machine's memory.



Note

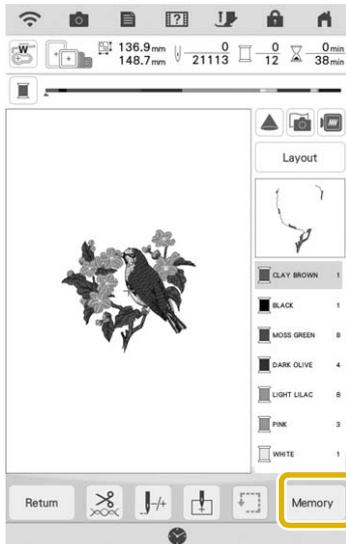
- Do not turn the main power to OFF while the "Saving..." screen is displayed. You will lose the pattern you are saving.



Memo

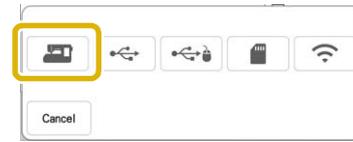
- It takes a few seconds to save a pattern to the machine's memory.
- Refer to page 110 for information on retrieving a saved pattern.

- 1 Press **Memory** when the pattern you want to save is in the embroidering screen.



- 2 Press **Memory**.

- * Press **Cancel** to return to the original screen without saving.



- The "Saving..." screen is displayed. When the pattern is saved, the display returns to the original screen automatically.

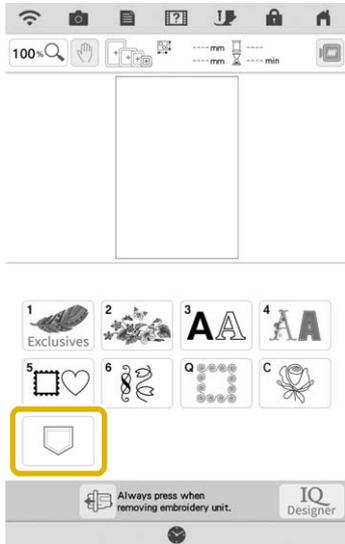
■ If the Memory Is Full

If the screen below displays, either the maximum number of patterns have been saved or the pattern you want to save takes a lot of memory, and the machine cannot save it. Refer to "Retrieving Patterns from the Machine's Memory" on page 110.



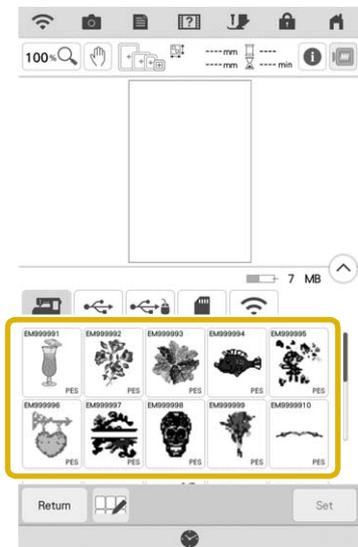
Retrieving Patterns from the Machine's Memory

1 Press  .



→ The machine displays the patterns currently in the memory.

2 Press the key of the pattern you want to retrieve.



3 Press  .

* Press  to delete the embroidery pattern. For details, refer to “Saving/Deleting Multiple Patterns” on page 114.



→ The embroidering screen is displayed.

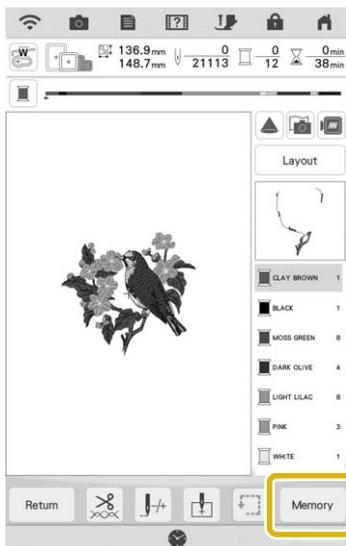
Saving Embroidery Patterns to USB Media/SD Card

When sending embroidery patterns from the machine to USB media/SD card, plug the USB media/SD card into the machine's USB port/SD card slot.

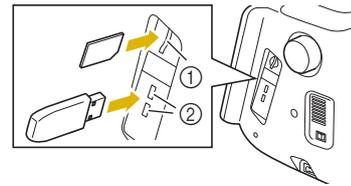
Memo

- USB media is commercially available, but some USB media may not be usable with this machine. Please visit our website for more details.
- Depending on the type of USB media being used, either directly plug the USB device into the machine's USB port or plug the USB media Reader/Writer into the machine's USB port.
- The USB media/SD card can be inserted or removed at any time.

- 1 Press **Memory** when the pattern you want to save is in the embroidering screen.



- 2 Insert the USB media/SD card into the USB port/SD card slot on the machine.



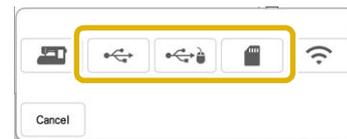
- ① SD card slot
- ② USB port

Note

- Do not insert anything other than USB media into the USB media port. Otherwise, damage to the machine may result.
- Do not insert anything other than SD card into the SD card slot. Otherwise, damage to the machine may result.

- 3 Press the key for the corresponding media.

- * Press **Cancel** to return to the original screen without saving.



→ The "Saving..." screen is displayed. When the pattern is saved, the display returns to the original screen automatically.

Note

- Do not insert or remove USB media/SD card while "Saving..." screen is displayed. You will lose some or all of the pattern you are saving.

Recalling from USB Media/SD Card

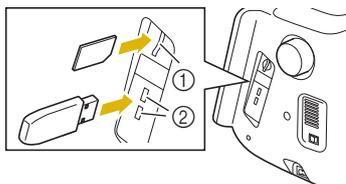
You can recall a specific embroidery pattern from either direct USB media/SD card or a folder in the USB media/SD card. If the pattern is in a folder, check each folder to find the embroidery pattern.



Note

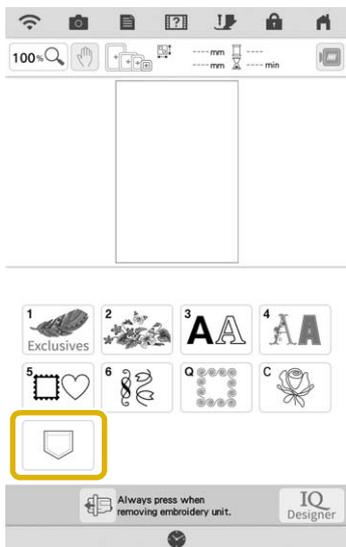
- The processing speed may vary by quantity of data.

1 Insert the USB media/SD card into the USB port/SD card slot on the machine.



- ① SD card slot
- ② USB port

2 Press .

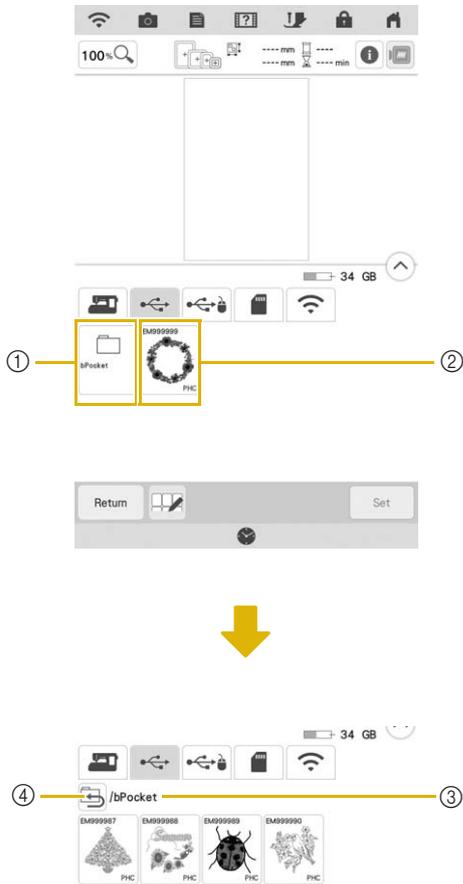


3 Press the key for the corresponding media.



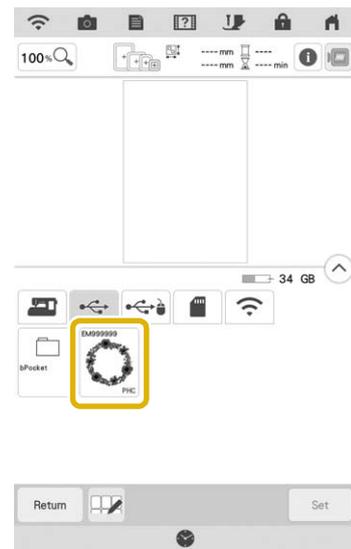
→ Folders and embroidery patterns not in folders are displayed.

- 4** Press  when there is a folder or subfolder with embroidery patterns. The embroidery patterns in the selected folder are displayed.



- ① Folder name
- ② Embroidery patterns in USB media/SD card
- ③ Path
- * The path to show the current folder at the top of the list.
Embroidery patterns and subfolders within a folder are displayed.
- ④ Press  to return to the previous folder.
- * Use the computer to create folders. Folders cannot be created with the machine.

- 5** Press the key of the pattern you want to retrieve.



→ The pattern is selected.

* Press  to return to the original screen.

- 6** Press .

Saving/Deleting Multiple Patterns

It may be useful to save all or multiple data from USB media/SD card, for example, to the machine. The data can only be saved to the machine's memory (bPocket).

- 1 Press , and then press the key for the corresponding media.
- 2 Press .
- 3 Select the thumbnails of the patterns or press .



→ The thumbnails of selected patterns appear in blue.

Memo

- To deselect the pattern, either press the thumbnail again or press .
- To delete the pattern, press .
- When selecting USB media or SD card,  is displayed. When  is selected, all the selected files are saved to the machine's memory.

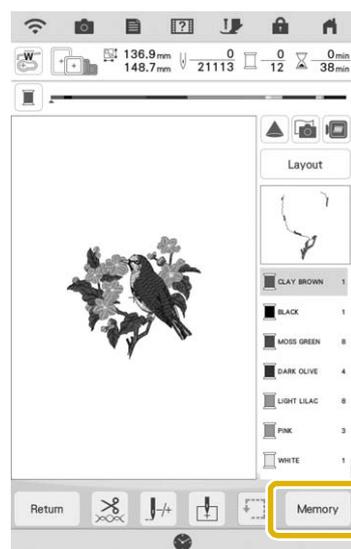
Transferring Embroidery Patterns

For detailed procedures, refer to Palette manual (Version 11 or higher).

Memo

- Embroidery patterns cannot be transferred if the computer and machine are connected to different home networks. Be sure to connect to the same home network.

- 1 Set the desired pattern on the Embroidery screen, then select .



- 2 Then press .



→ The pattern is saved in a folder to be transferred via the wireless network.

Receiving Embroidery Patterns on the Machine

For detailed procedures, refer to Palette manual (Version 11 or higher).

Memo

- Embroidery patterns cannot be transferred if the computer and machine are connected to different home networks. Be sure to connect to the same home network.

1 In the pattern type selection screen on the machine, press , and then press .



2 Select from the list the pattern to be recalled

EMBROIDERY APPLICATIONS

Creating an Appliqué Piece

Appliqué pieces can be created from the built-in patterns and imported patterns. This is convenient for fabrics that cannot be embroidered or when you wish to attach an appliqué to a garment.

■ Creating an Appliqué Piece

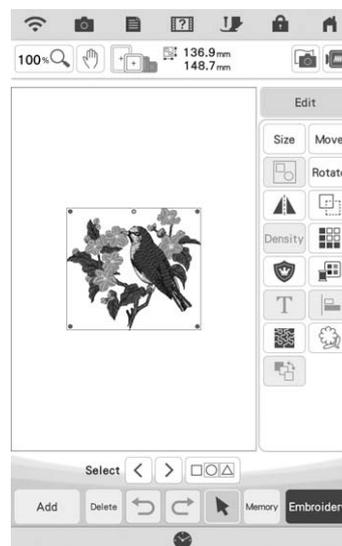
The following pattern will be used to create an appliqué piece.



Note

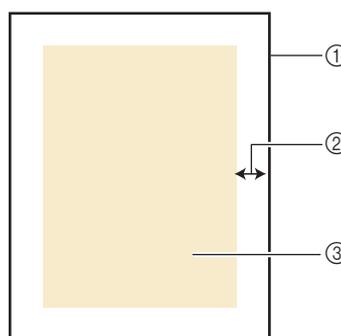
- Felt or denim fabrics are recommended to make the appliqué piece. Depending on the pattern and fabric used, lighter weight fabrics may cause the stitching to appear smaller.
- For best results, be sure to use stabilizer material for embroidering.
- Select a frame that matches the pattern size. Frame options are displayed on the LCD screen.
- 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.



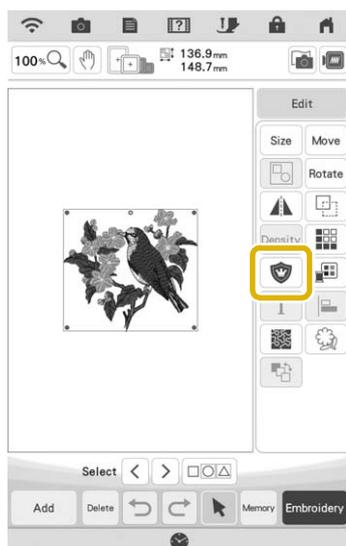
Note

- 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.

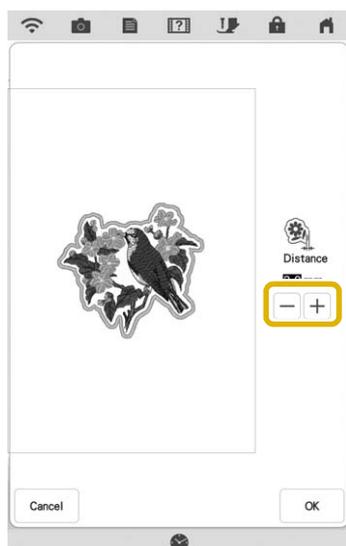


- ① Embroidering area
- ② Approx. 10 mm (3/8 inch)
- ③ Pattern size

- 2 Press **Edit**, and then press  to position the satin stitching around design.



- 3 Specify the distance between the pattern and the appliqué outline.



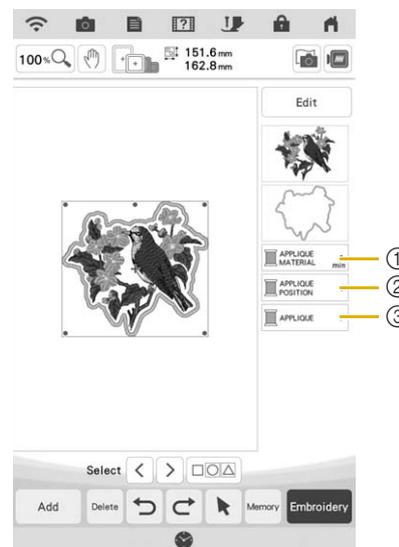
Memo

- At this time, the pattern and appliqué piece are grouped.

→ 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 garment, and appliqué stitching.



- Cutting line for appliqué
- Position of pattern placement on garment
- Appliqué stitching

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.

- 4 Press **OK**.

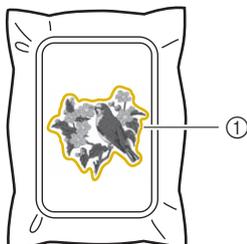
- 5 Fuse or stick a piece of stabilizer to the back of the felt or denim fabric to be used as the appliqué piece.

Note

- For best results, be sure to use stabilizer material for embroidering.

6 Hoop the appliqué fabric 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).



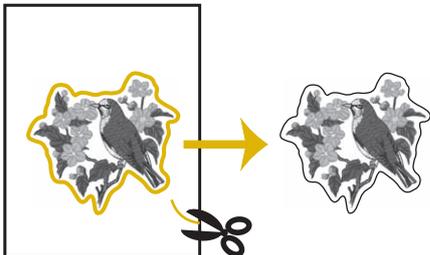
① Cutting line for appliqué



Memo

- We recommend using thread for the cutting line that is closest to the color of the fabric.

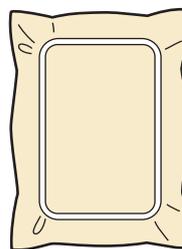
8 Remove the appliqué material from the embroidery frame, and then carefully cut along the stitching. After cutting, carefully remove all of the cutting line thread.



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.

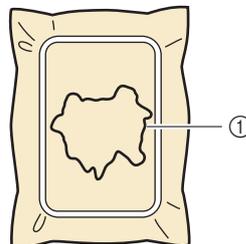
9 Use two layers of adhesive water soluble stabilizer material with their sticky sides together, and then hoop them in the embroidery frame.



Note

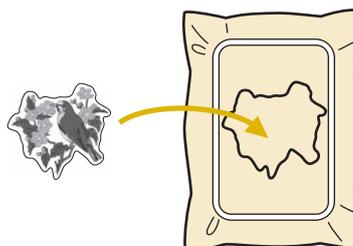
- If water soluble stabilizer is used, it is not necessary to remove the stabilizer material after sewing the appliqué outline. To reduce shrinkage of the pattern, we recommend using water soluble stabilizer.
- Put together two layers of water soluble stabilizer, otherwise the stabilizer material may tear during embroidering.

10 Thread the machine with the thread for the outline from step 12, and then sew the placement line for the appliqué position (APPLIQUE POSITION).



① Pattern placement line

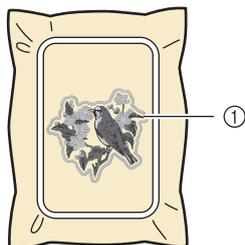
11 Lightly apply glue or spray adhesive, and paste the appliqué piece so that it aligns with the placement line.



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, sew the outline (APPLIQUE).



① Outline of appliqué piece

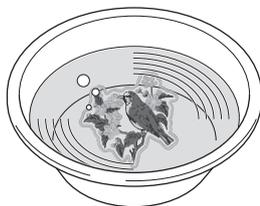
Memo

- The outline is sewn using satin stitching.
- Some glue may get onto the embroidery foot, needle, and needle plate at this time. Finish embroidering the appliqué pattern, and then clean off the glue.

- 13** After sewing 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

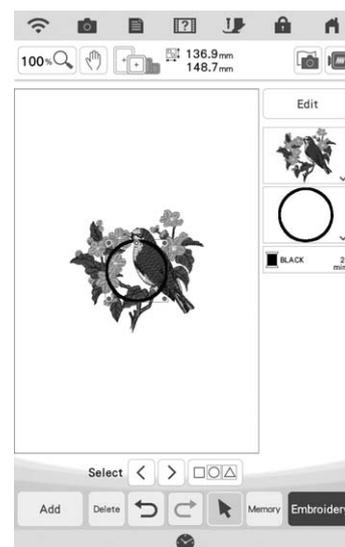
- Do not apply a strong force when ironing, otherwise the stitching may be damaged.

■ Using a Frame Pattern for the Outline

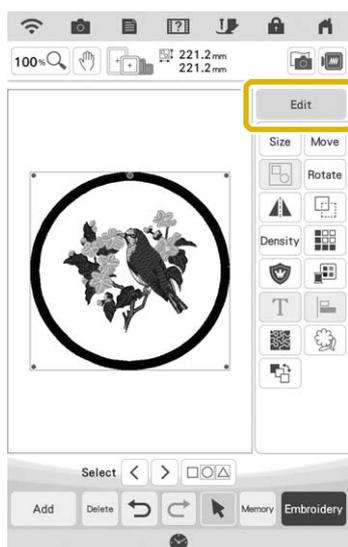
Using a frame pattern, the desired shape can be added as the outline of the appliqué. To select the desired frame, refer to “Selecting Frame Patterns” on page 45.



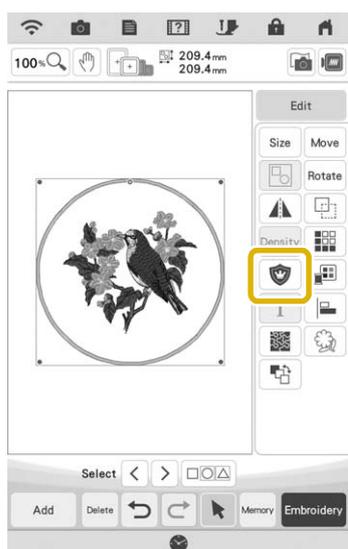
- 1** Select the pattern and edit, if necessary.
- 2** Select the desired frame shape and pattern, and add it to the appliqué pattern.



- 3** Press **Edit** to edit the frame pattern to fit the size of the appliqué pattern.

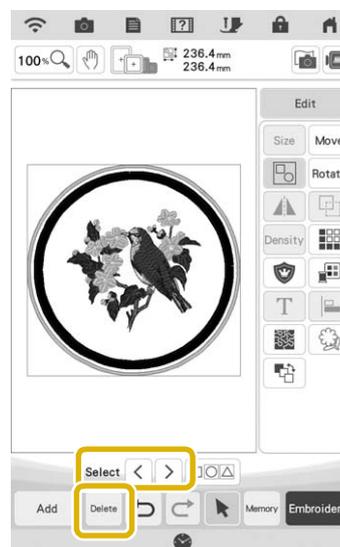


- 4** Press **[Shield Icon]** to select the appliqué piece setting.



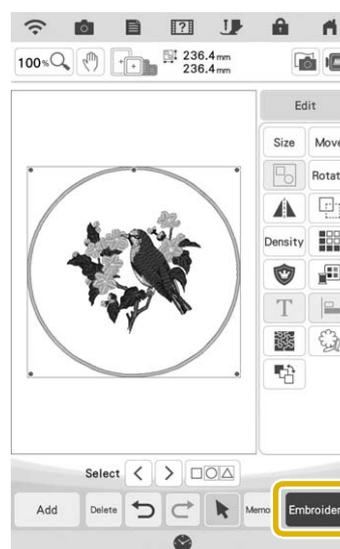
- 5** Press **[Ungroup Icon]** to ungroup the patterns.

- 6** Use **[Left Arrow]** **[Right Arrow]** to select the frame pattern, and then press **Delete** and **OK**.



→ The frame pattern is deleted.

- 7** Press **Embroidery**.



- 8** Continue with step **5** of “Creating an Appliqué Piece” on page 117 to complete the appliqué piece.

Using Appliqués

This machine can embroider patterns that contain an appliqué. Follow the procedure described below to embroider patterns with  APPLIQUE MATERIAL (appliqué piece),  APPLIQUE POSITION (appliqué position) and  APPLIQUE (appliqué) in the embroidery color order display.

1. Create the appliqué piece.
↓
2. Sew the appliqué position on the base fabric.
↓
3. Affix the appliqué piece to the base fabric.
↓
4. Embroider the remainder of the pattern.

Required materials

- Fabric for the appliqué piece
- Fabric for the appliqué base
- Stabilizer material
- Craft glue
- Embroidery thread

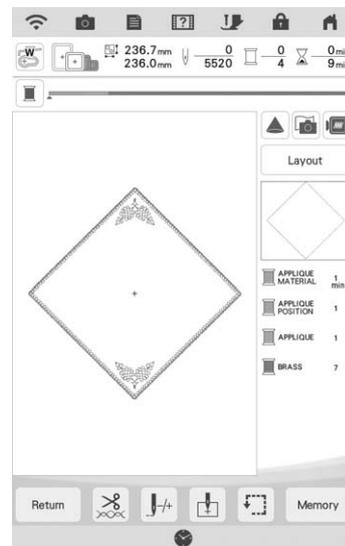


Note

- If  APPLIQUE MATERIAL (appliqué piece),  APPLIQUE POSITION (appliqué position) and  APPLIQUE (appliqué) appear in the embroidery color order display, the names and numbers of the thread colors to be used will not appear. Select the thread colors according to those in the appliqué pattern.

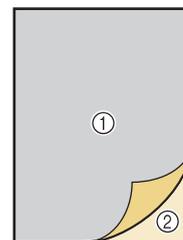
1. Creating the Appliqué Piece

- 1 Select the appliqué pattern, and then continue to the embroidering screen.



- 2 Attach stabilizer material to the wrong side of the appliqué fabric.

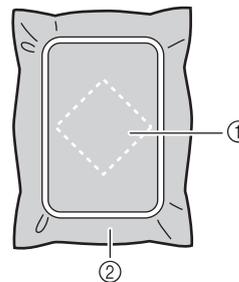
Hoop the fabric in the embroidery frame, and then attach the embroidery frame to the embroidery unit.



- ① Appliqué (cotton, felt, etc.)
- ② Stabilizer

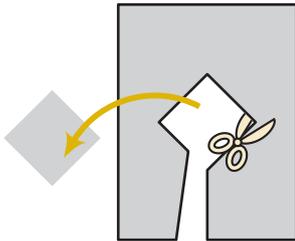
- 3 Thread the machine with the embroidery thread, lower the presser foot lever, and then press the "Start/Stop" button to sew the cutting line of the appliqué piece.

→ The outline of the appliqué piece is sewn, and then the machine stops.



- ① Cutting line for appliqué piece
- ② Fabric for appliqué piece

- 4** Remove the fabric for the appliqué piece from the embroidery frame, and then carefully cut along the sewn cutting line.



Note

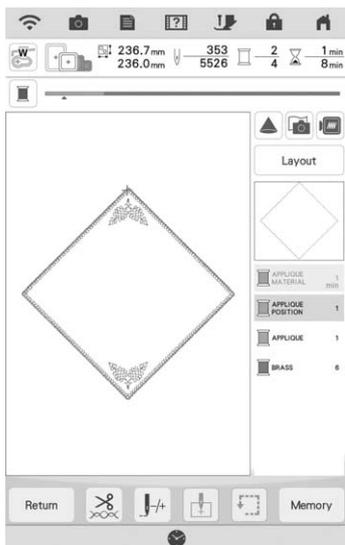
- If the appliqué piece is cut out along the inside of the cutting line, it may not be correctly attached to the fabric. Therefore, carefully cut out the appliqué piece along the cutting line.
- After cutting out the appliqué piece, carefully remove the thread.

2. Sewing the Appliqué Position on the Base Fabric

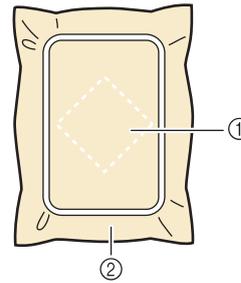
- 1** Attach stabilizer material to the wrong side of the fabric for the appliqué base.

Hoop the fabric in the embroidery frame, and then attach the embroidery frame to the embroidery unit.

- 2** Thread the machine with the embroidery thread, lower the presser foot lever, and then press the “Start/Stop” button to sew the appliqué position.



→ The position of the appliqué is sewn, and then the machine stops.



- ① Appliqué position
- ② Base fabric

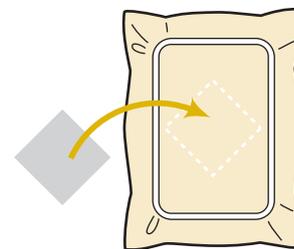
- 3** Remove the embroidery frame from the embroidery unit.

Note

- Do not remove the base fabric from the embroidery frame until all sewing is finished.

3. Affixing the Appliqué Piece to the Base Fabric

- 1** Lightly apply craft glue to the back of the appliqué piece, and then attach it to the base fabric within the outline of the position sewn in step ② of “2. Sewing the Appliqué Position on the Base Fabric”.

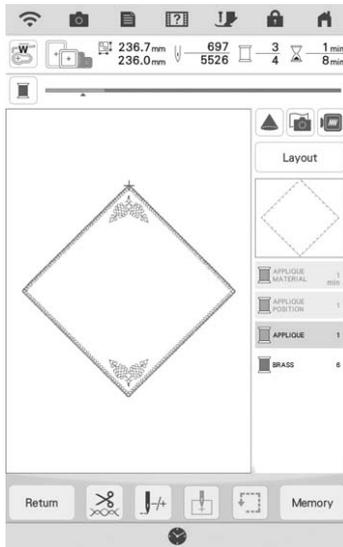


Note

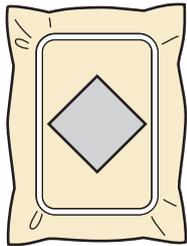
- If the appliqué piece is not securely attached to the base fabric, the appliqué piece may lift off the base fabric during embroidering, causing misalignment.
- If the appliqué piece cannot be attached to the base fabric with craft glue, securely baste it in place with basting stitches.
- If thin fabric 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 location.
- Do not remove the fabric from the embroidery frame when attaching the appliqué piece to the base fabric.

2 After the appliqué piece is attached, attach the embroidery frame to the machine.

Thread the machine with the embroidery thread, lower the presser foot lever, and then press the "Start/Stop" button to embroider the appliqué.



→ The appliqué piece is embroidered to the base fabric, and then the machine stops.

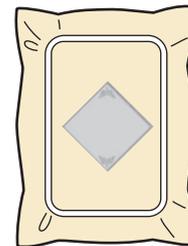
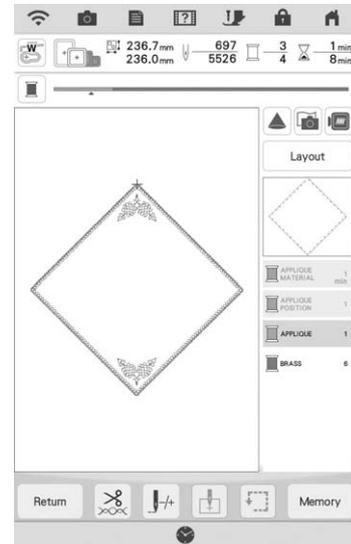


Memo

- Depending on the pattern that is selected,
 -  APPLIQUE MATERIAL (appliqué piece),  APPLIQUE POSITION (appliqué position) and  APPLIQUE (appliqué) for all three steps may not appear. If  APPLIQUE (appliqué) appears as a color, embroider using thread with a color appropriate for your project.

4. Embroidering the Remainder of the Pattern

- 1 Change the embroidery thread according to the embroidery color order display, and then finish embroidering the remainder of the pattern.



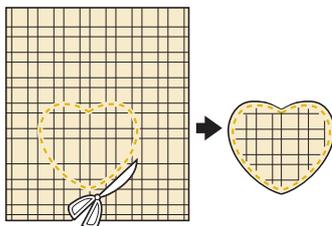
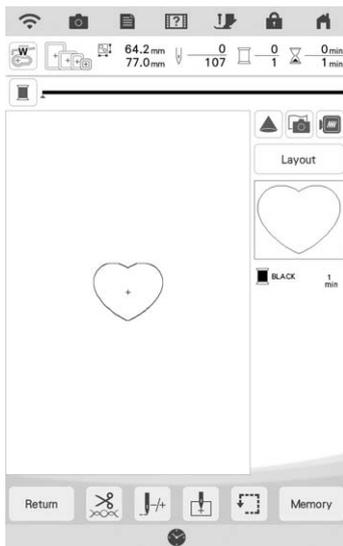
Memo

- Since glue may become attached to the embroidery foot, needle or needle plate, clean off any glue off after finishing embroidering the appliqué pattern.
- For best results, trim all excess threads each time the thread color is changed.

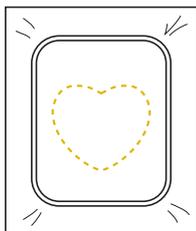
Using a Frame Pattern to Make an Appliqué (1)

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.

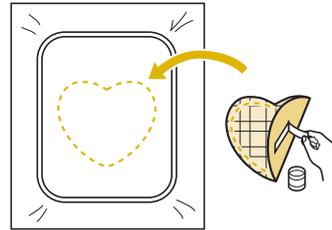
- 1 Select a straight stitch frame pattern. Embroider the pattern onto the appliqué material, then cut neatly around the outside of the shape.



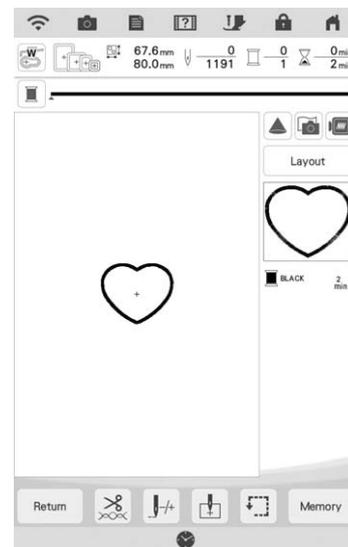
- 2 Embroider the same pattern from step 1 onto the base fabric.



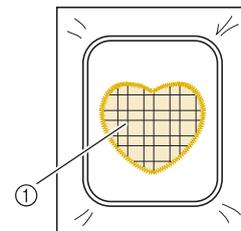
- 3 Apply a thin layer of fabric glue or a temporary spray adhesive to the rear of the appliqué created in step 1. Attach the appliqué to the base fabric matching the shapes.



- 4 Select the satin stitch frame pattern of the same shape as the appliqué. Embroider over the appliqué and base fabric from step 3 to create the appliqué.



- Note**
- If you change the size or position of the patterns when selecting them, make a note of the size and location.

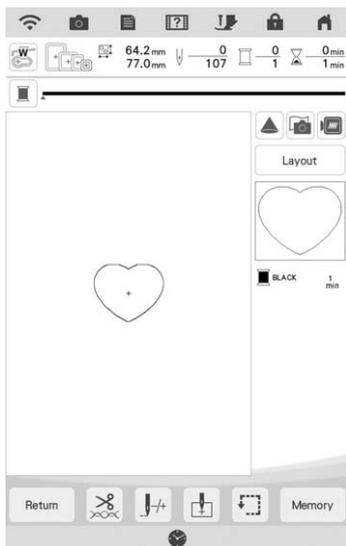


① Appliqué material

Using a Frame Pattern to Make an Appliqué (2)

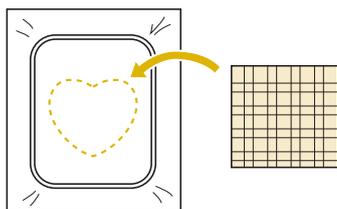
This is a second method to make appliqué using embroidery patterns. You do not have to change the fabric in the embroidery frame using this method. Embroider one pattern with a straight stitch and one pattern with a satin stitch.

- 1 Select a straight stitch frame pattern, and embroider the pattern onto the base fabric.

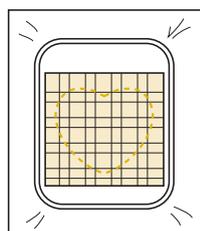


- 2 Place the appliqué fabric over the pattern embroidered in step 1.

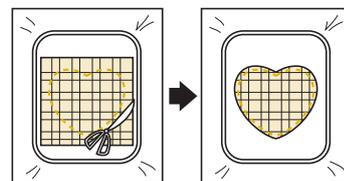
* Be sure that the appliqué fabric completely covers the stitching.



- 3 Embroider the same pattern on the appliqué fabric.



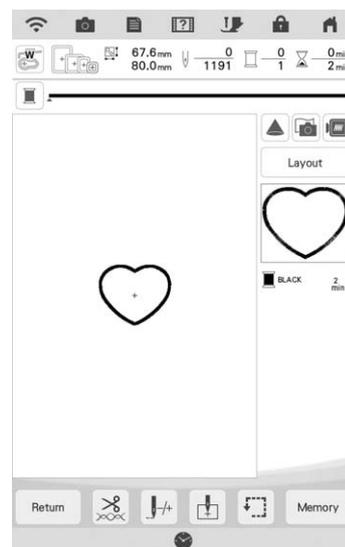
- 4 Remove the embroidery frame from the embroidery unit, and cut around the outside of the stitches.



Note

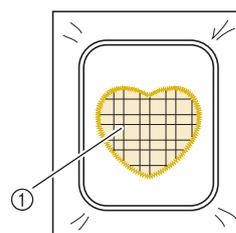
- Do not remove the fabric from the embroidery frame to cut it. Also, do not pull strongly on the fabric. Otherwise, the fabric may loosen in the frame.

- 5 Select the satin stitch frame pattern of the same shape as the appliqué.



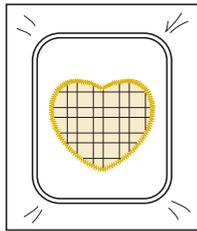
Note

- Do not change the size or position of the pattern.
- If you change the size or position of the patterns when selecting them, make a note of the size and location.



① Appliqué material

- 6 Reattach the embroidery frame to the embroidery unit, and embroider the satin stitch pattern to create an appliqué.



Creating Stippling, Echo Quilting, or Decorative Fill Patterns around a Design

Stippling, echo quilting, and decorative fill patterns (from IQ Designer) can be created around the machine's built-in patterns or original embroidery data without using IQ Designer.

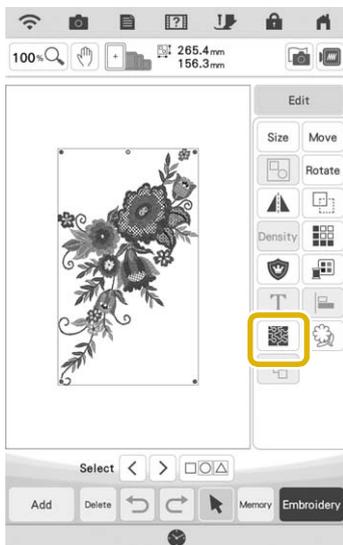
Memo

- If this simple stippling operation is used with batting sandwiched between two layers of fabric, the embroidery pattern and stippling may become misaligned. For quilting, refer to "Decorative Stitching Around a Pattern in Embroidery (a Quilting Function)" on page 187.

- 1 Select the pattern that stippling will be added around.

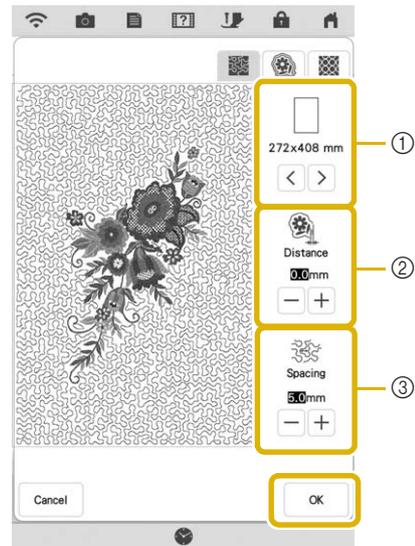
* To select multiple patterns, refer to "Selecting Multiple Patterns at the Same Time" on page 88.

- 2 Press  in the embroidery edit screen.

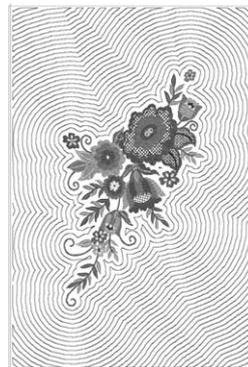


→ Stippling is automatically applied around the selected pattern.

- 3 After specifying the stitch settings for the stippling, press .



- ① The stippling is added within the area of the selected frame size. If the pattern is larger than the selected frame size, the area indicating the frame size will appear in gray, and stippling will not be added.
- ② Specify the distance from the outline of the pattern to the stippling.
- ③ Specify the spacing for the stippling.
- * Press  in the stippling settings screen to create an echo quilting pattern.
- * Press  in the stippling settings screen to create a decorative fill pattern.



①



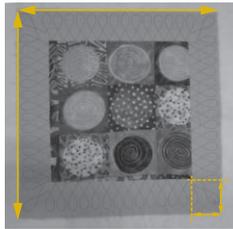
②

- ① Echo quilting pattern
- ② Decorative fill pattern

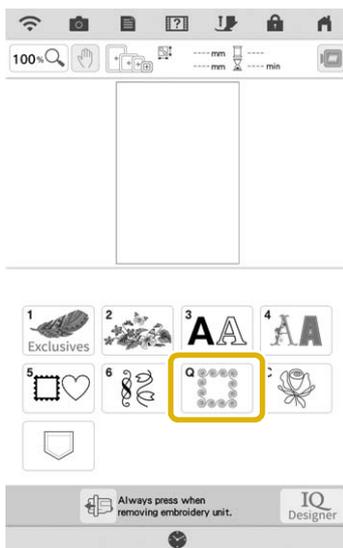
Embroidering Quilting Border Patterns (Auto Split Quilt Sash)

Quilting border patterns up to 760 mm x 500 mm (approx. 29-7/8 inches x 19-5/8 inches) can be split into four sections to be stitched in the 408 mm x 272 mm (16 inches x 10-5/8 inches) embroidery frame. The built-in camera will assist with placement.

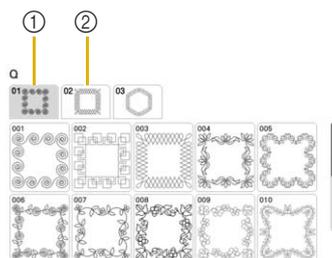
It is recommended to measure the size of quilting border you want to embroider in the beginning.



1 Press .



2 Select one of the rectangular quilting border categories. For this example, select single-color rectangular quilting border patterns.



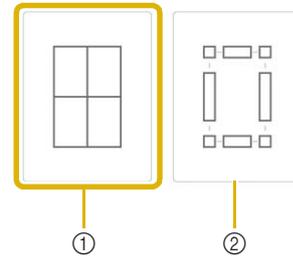
- ① Single-color rectangular quilting border patterns
- ② Two-color rectangular quilting border patterns

Memo

- The hexagonal quilt borders patterns are not available for this function.

3 Select the quilt border pattern, and then press .

4 Select how to divide the pattern. For this example, select "Auto split quilt sash".

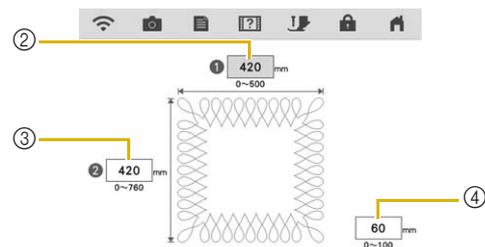


- ① Auto split quilt sash
 - ② Semi-Auto split quilt sash
- For details, refer to "Embroidering Quilting Border Patterns (Semi-Auto Split Quilt Sash)" on page 129

Note

- The size of item that can be created differs depending on the type of split that was selected. Check the layout of "Auto split quilt sash", and then select "Semi-Auto split quilt sash" if the layout did not appear as desired.

5 Specify the size of embroidery frame to be used. Enter values for the width and height of the sash and quilting border, and then press . After entering all three values, press .

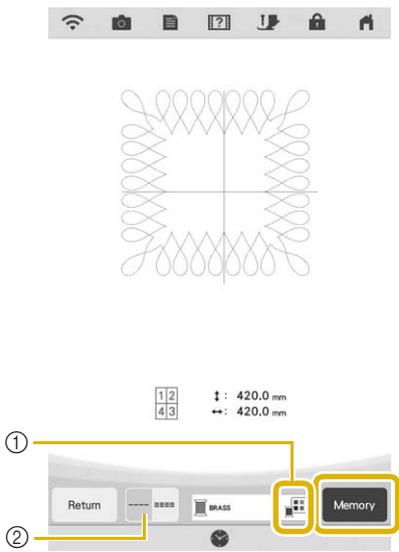


- ① Embroidery frame size
- ② Width
- ③ Height
- ④ Quilting border

* To clear the value, press .

→ The pattern appears with the specified settings applied.

6 Check the split pattern, and then press **Memory**.

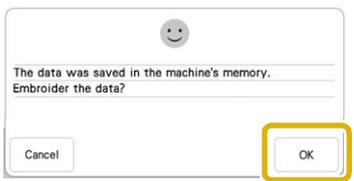


- ① You can change the thread color.
 - ② Select single stitching or triple stitching.
- The data for the split embroidery pattern is saved on the machine.

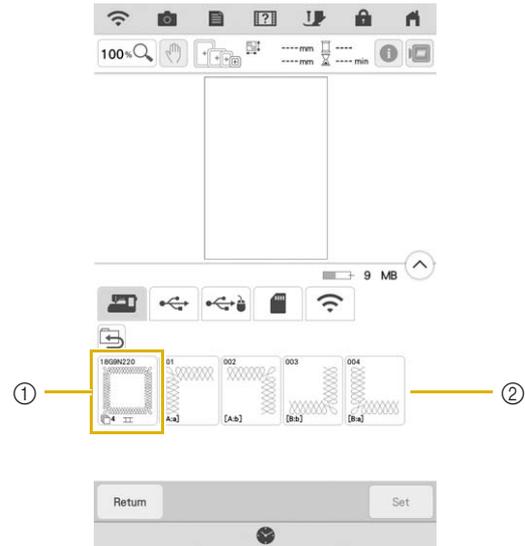
Note

- The data for the split embroidery pattern cannot be saved on external media such as USB media.

7 To embroider the pattern, press **OK**.



8 Select the embroidering method, and then press **Set**.

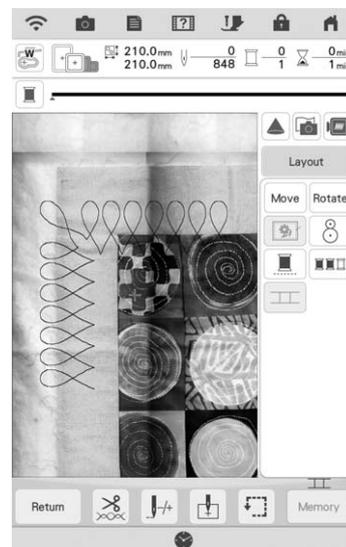


- ① To embroider using the built-in camera for aligning the embroidering position, press the key showing the entire pattern.
 - ② To embroider by visually aligning the pattern sections, press the pattern section to be embroidered.
- * This manual shows method ①. For method ②, refer to “Embroidering Split Embroidery Patterns” on page 139.

9 Press **Embroidery**.

10 Attach the embroidery frame along with the first section being embroidered, and scan the frame. For scanning the background, refer to “Display the Fabric while Aligning the Embroidering Position” on page 92.

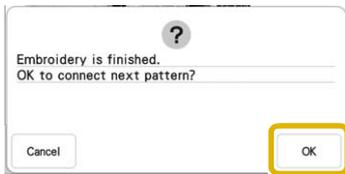
11 Move and rotate the pattern to align with the background.



- For moving the pattern, refer to “Moving the Pattern” on page 63.
- For rotating the pattern, refer to “Rotating the Pattern” on page 63.

12 Embroider the first section.

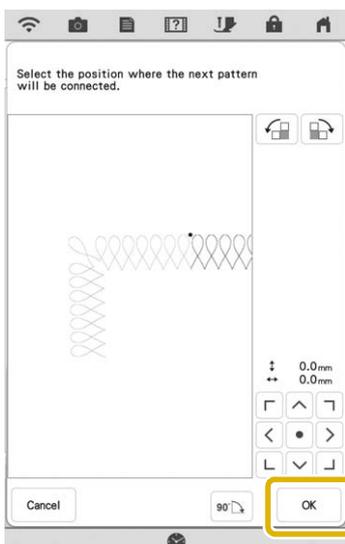
13 After embroidering the first section, the following message appears. Press .



14 Press .



15 Press .



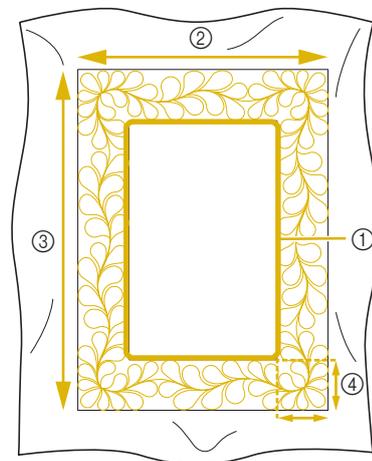
16 Embroider the remaining sections following the step 13 on page 146 through step 19 on page 149 of "Connecting Three Patterns".

Embroidering Quilting Border Patterns (Semi-Auto Split Quilt Sash)

By rehooping the fabric to embroider connecting patterns, a quilting border of up to 3 m × 3 m (approx. 118 inches × 118 inches) can be created. The pattern is positioned manually.

■ Creating Quilting Border Data

1 With a chalk pencil, mark the quilt top with the inner outline of the quilting border to be embroidered. Measure the size of the quilting border.



- ① Inner outline (used for positioning)
- ② Width (includes the width of borders)
- ③ Height (includes the height of borders)
- ④ Width of quilting border

Memo

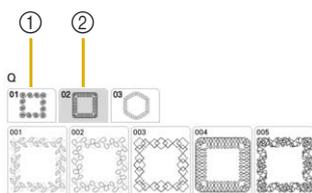
- Be sure to cut the quilt layers (quilt top, batting, and quilt backing) with an excess of about 10 cm (4 inches) so that the quilt will extend to the edges of the embroidery frame.

2 Press .

3

Advanced Editing

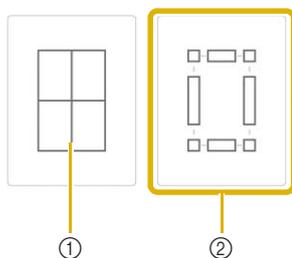
- 3** Select a sub-category.
For this example, select two-color rectangular quilting border patterns.



- ① Single-color rectangular quilting border patterns
- ② Two-color rectangular quilting border patterns

- 4** Select the pattern that you want to embroider, and then press **Set**.

- 5** Select how to divide the pattern. For this example, select "Semi-Auto split quilt sash".



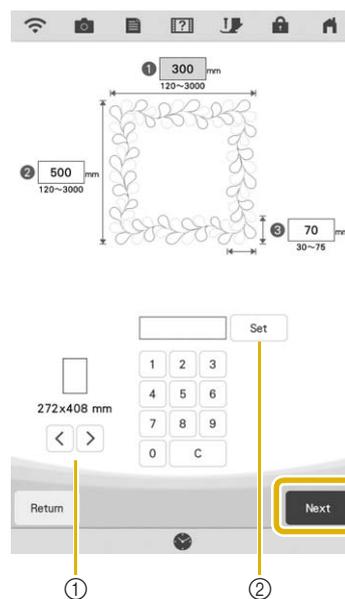
- ① Auto split quilt sash
For details, refer to "Embroidering Quilting Border Patterns (Auto Split Quilt Sash)" on page 127
- ② Semi-Auto split quilt sash

- 6** Specify the size of embroidery frame to be used and the size of the quilting border, and then press **Next**.



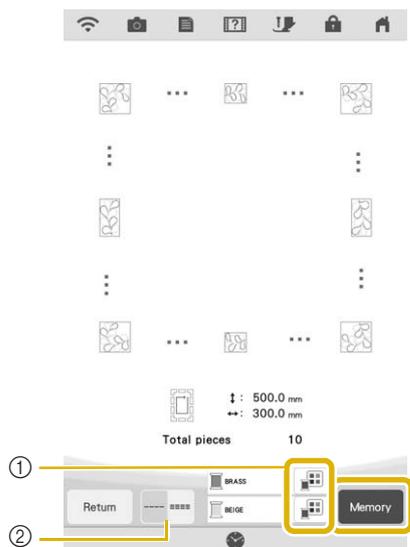
Memo

- Mark the upper-right corner of the quilt border with a chalk pencil. On the machine's screen, enter the horizontal and vertical measurements to match the orientation of the quilt with the marked corner positioned in the upper right.



- ① Press **<** or **>** to select the embroidery frame size.
- ② Specify the width (1), height (2) and quilting border width (3), and then press **Set**.

7 Check the pattern, and then press **Memory** to save it.

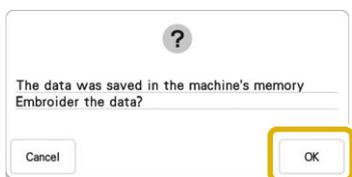


- ① The thread colors can be changed.
- ② Select single stitching or triple stitching.

Memo

- The edges of the pattern may be shortened when they are displayed.

8 After the following message appears, press **OK**.



→ A screen appears so that a pattern from the machine's memory can be selected.

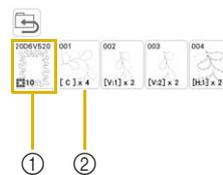
Embroidering a Quilting Border

1 In the screen for selecting a pattern from the machine's memory, select the saved data.

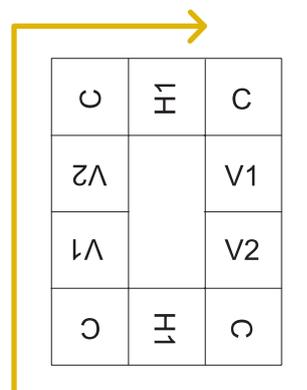


→ A thumbnail of the entire quilting border and thumbnails of the parts in each section appear.

2 For this example, since we will embroider the quilting border according to the on-screen instructions, select the thumbnail for the entire quilting border. And then press **Set**.



- ① Press this key to embroider the quilting border according to the on-screen instructions. The number in the lower-left corner indicates the total number of segments for the quilt border.
- ② To embroider by visually aligning the pattern sections, press each pattern section to be embroidered. You can check where and how many times the part will be embroidered with the codes written on each key.



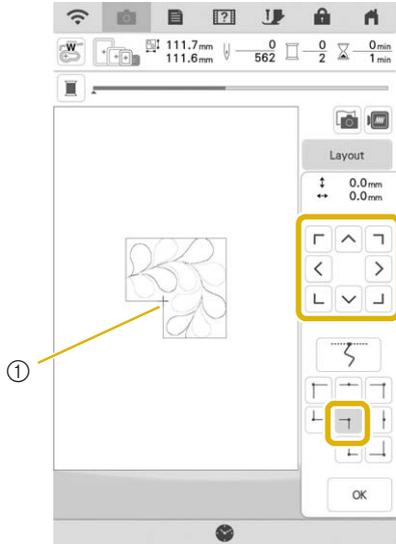
C: Corner
 V1: The first part of the vertical side
 V2: The second part of the vertical side
 H1: The first part of the horizontal side

3 Hoop the quilt in the embroidery frame so that the the marked upper-right corner of the quilting border is in the embroidering area, and then attach the embroidery frame.

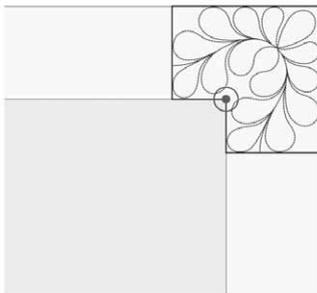
3

4 Align the position for the part in the upper-right corner.

With  selected, move the needle to the inner corner. Use the move pattern keys to align the inside upper-right corner of the reference lines previously drawn on the quilt with the inner corner of the part projected by the projector.



① Inner corner



Note

- The needle drop point projected by the projector can be corrected on the settings screen. For the procedure, refer to "Needle Calibration Using the Built-in Camera" in the machine's Instruction and Reference Guide (Sewing).

Memo

- If necessary, rotate the pattern so that it is aligned between the chalk reference lines.

5 Press  to display the embroidering screen.

6 Press the "Start/Stop" button to embroider the first part.

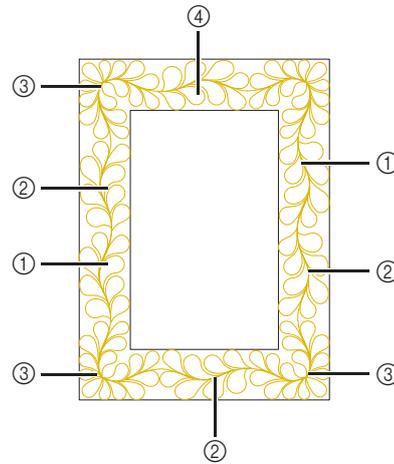
7 When embroidering is finished and the following message appears, press .



→ The next part to be embroidered appears.

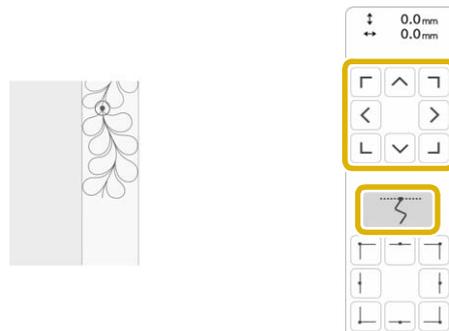
8 Position each part and embroider it according to the on-screen instructions.

You will be prompted to align the starting point, rotate the design, and to rehoop the quilt when necessary.



① **When embroidering the edge part**

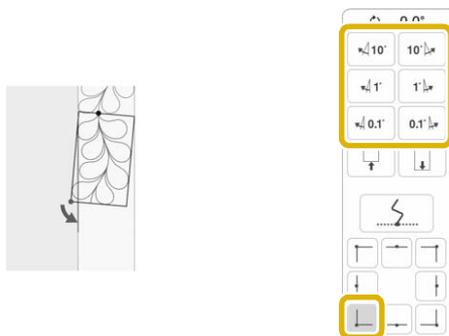
Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press .



Note

- For precise positioning of the start point, rotate the handwheel toward you to check the needle drop point. After checking the needle position, be sure to use the needle up/down key to return the needle to its highest position.

Rotate the pattern to align the corner with the reference line, and then press **OK**.

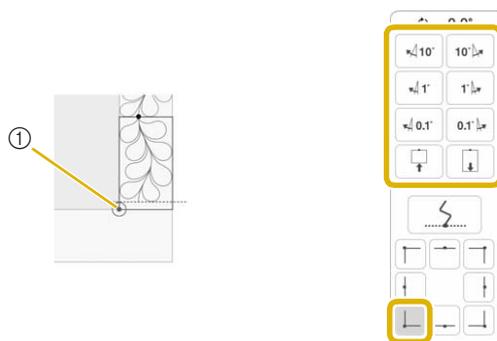


② When embroidering the edge part immediately before a corner

Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press **OK**.

Then, align the lower-left point (inner corner of the next pattern to be embroidered) with the lower-left corner of the reference lines. If the pattern is not angled correctly, rotate it. If the length of the pattern does not match, enlarge or reduce the pattern so that the lower-left point is at the lower-left corner of the reference lines.

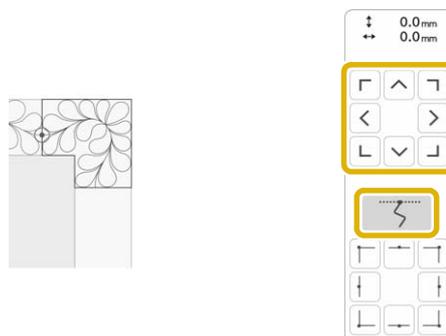
After making adjustments, press **OK**.



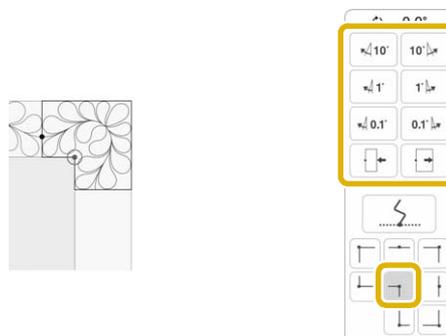
① Inner corner of next pattern to be embroidered

③ When embroidering the corner part

Rotate the quilt 90 degrees counterclockwise, rehoop it, and then attach the embroidery frame to the machine. Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press **OK**.



Then, align the inner corner of the pattern with the corner of the reference lines.



Note

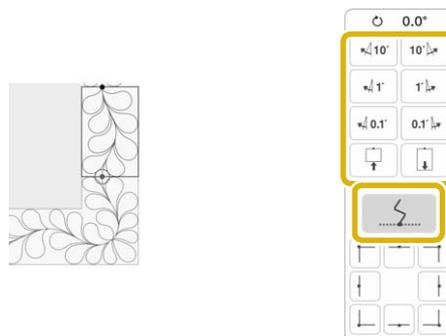
- The width of the corner segment can be adjusted to best fit the inner corner. However, make adjustments so that the shape is not deformed.

④ When embroidering the last edge part

Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press **OK**.

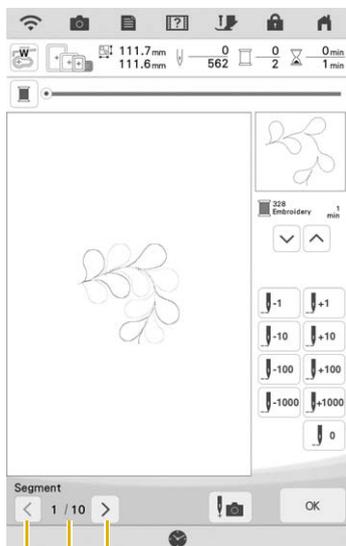
Then, align the end point of the part with the start point of the first part. If the pattern is not angled correctly, rotate it. If the length of the pattern does not match, enlarge or reduce the pattern.

After making adjustments, press **OK**.



Memo

- If you need to restitch a segment or skip a segment, you can press  in the embroidering screen to continue to the next pattern or return to the previous pattern. Select the desired pattern in the embroidering order, and then press .

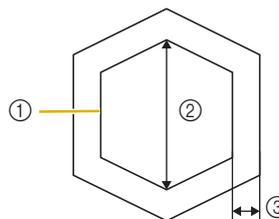


- ① Return to the previous pattern.
- ② Embroidering order of current pattern/Total number of segments
- ③ Continue to the next pattern.

Hexagonal Quilting Borders

■ Creating Quilting Border Data

- ① With a chalk pencil, mark the quilt top with the inner outline of the quilting border to be embroidered. Measure the longest diagonal of the inner outline and the width of the quilting border.



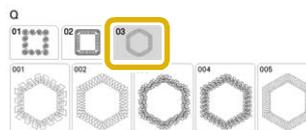
- ① Inner outline (used for positioning)
- ② Longest diagonal
- ③ Width of quilting border

Memo

- Be sure to cut the quilt layers (quilt top, batting, and quilt backing) with an excess of about 10 cm (4 inches) so that the quilt will extend to the edges of the embroidery frame.
- Hexagonal patterns can be sewn with a diagonal width of maximum 2600 mm (approx. 102 inches) and a quilting border width of maximum 100 mm (approx. 4 inches).

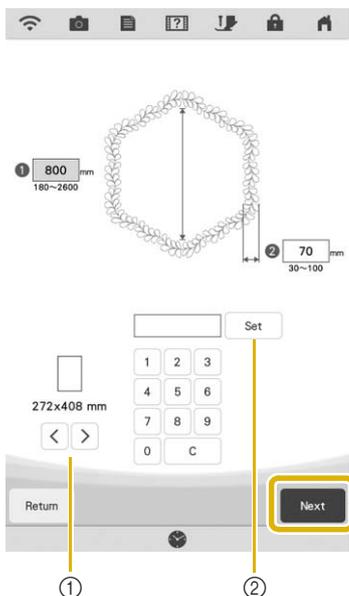
- ② Press .

- ③ Press .



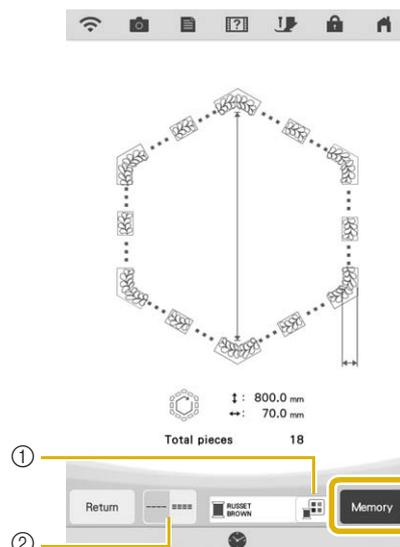
- ④ Select the pattern that you want to embroider, and then press .

- 5** Specify the size of embroidery frame to be used and the measurements for the quilting border, and then press **Next**.



- ① Press **<** or **>** to select the embroidery frame size.
- ② Specify the length of the longest diagonal for the inner outline (①) and the quilting border width (②), and then press **Set**.

- 6** Check the pattern, and then press **Memory** to save it.

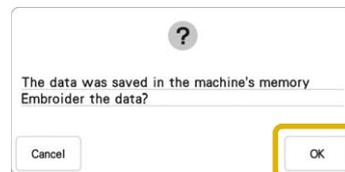


- ① The thread colors can be changed.
- ② Select single stitching or triple stitching.

Memo

- The edges of the pattern may be shortened when they are displayed.

- 7** After the following message appears, press **OK**.



→ A screen appears so that a pattern from the machine's memory can be selected.

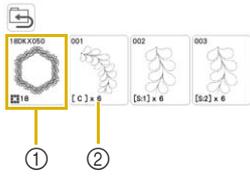
Embroidering a Quilting Border

- 1** In the screen for selecting a pattern from the machine's memory, select the saved data.

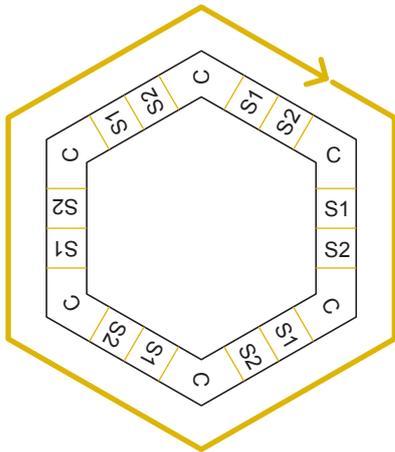


→ A thumbnail of the entire quilting border and thumbnails of the parts in each section appear.

2 For this example, since we will embroider the quilting border according to the on-screen instructions, select the thumbnail for the entire quilting border. And then press

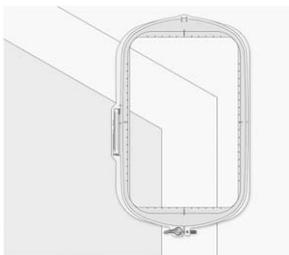


- ① Press this key to embroider the quilting border according to the on-screen instructions. The number in the lower-left corner indicates the total number of segments for the quilt border.
- ② To embroider by visually aligning the pattern sections, press each pattern section to be embroidered. You can check where and how many times the part will be embroidered with the codes written on each key.



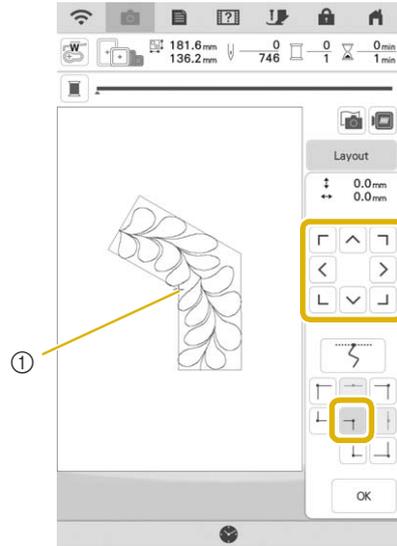
C: Corner
S: Side

3 Hoop the quilt in the embroidery frame so that the one of the corners of the quilting border is in the embroidering area, and then attach the embroidery frame.

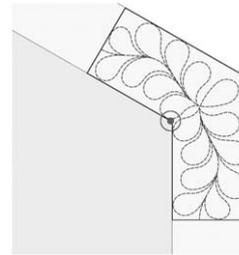


4 Align the position for the part in the corner.

Use the move pattern keys to align the inside corner of the reference lines previously drawn on the quilt with the inner corner of the part projected by the projector.



① Inner corner



Note

- The needle drop point projected by the projector can be corrected on the settings screen. For the procedure, refer to "Needle Calibration Using the Built-in Camera" in the machine's Instruction and Reference Guide (Sewing).



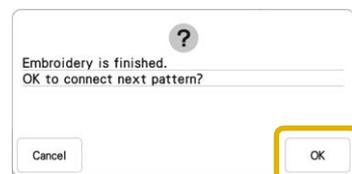
Memo

- If necessary, rotate the pattern so that it is aligned between the chalk reference lines.

5 Press to display the embroidering screen.

6 Press the "Start/Stop" button to embroider the first part.

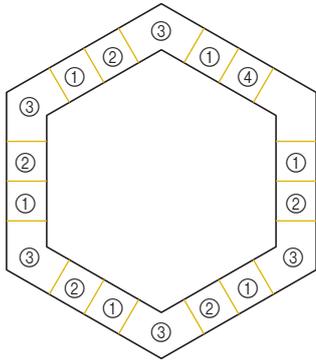
7 When embroidering is finished and the following message appears, press .



→ The next part to be embroidered appears.

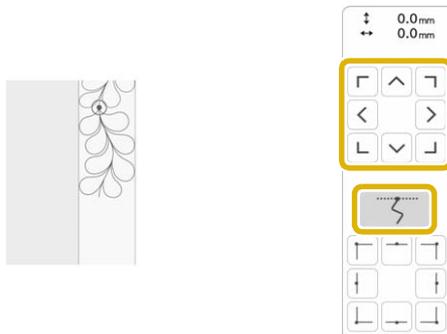
8 Position each part and embroider it according to the on-screen instructions.

You will be prompted to align the starting point, rotate the design, and to rehoop the quilt when necessary.



1 When embroidering the edge part

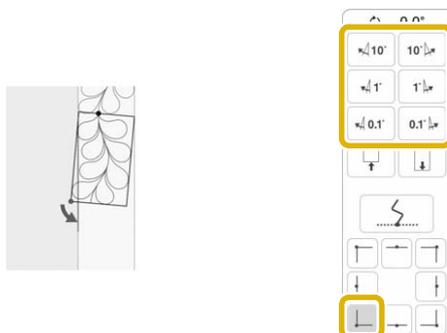
Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press **OK**.



Note

- For precise positioning of the start point, rotate the handwheel toward you to check the needle drop point. After checking the needle position, be sure to use the needle up/down key to return the needle to its highest position.

Rotate the pattern to align the corner of the projected segment with the reference line on the quilt, and then press **OK**.

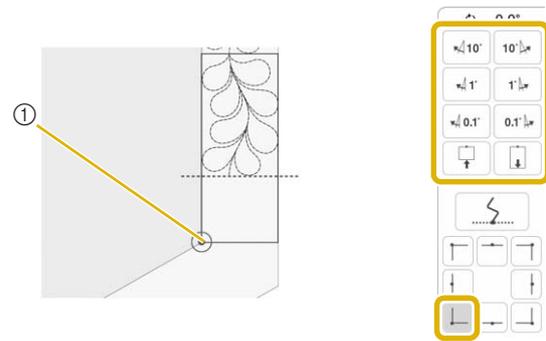


2 When embroidering the edge part immediately before a corner

Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press **OK**.

Then, align the lower-left point (inner corner of the next pattern to be embroidered) with the lower-left corner of the reference lines. If the pattern is not angled correctly, rotate it. If the length of the pattern does not match, enlarge or reduce the pattern so that the lower-left point of the segment is at the lower-left corner of the reference lines on the quilt.

After making adjustments, press **OK**.



1 Inner corner of next pattern to be embroidered

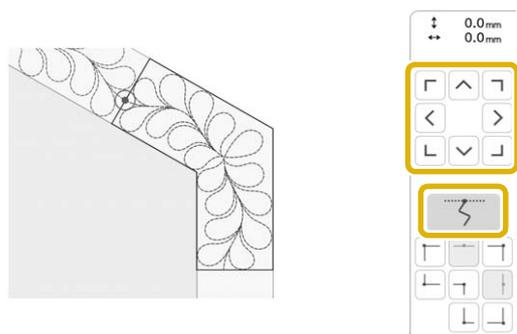
Memo

- To maintain the overall shape of the hexagon, it is important to carefully check and adjust the length of the pattern that is stitched immediately before the corner.

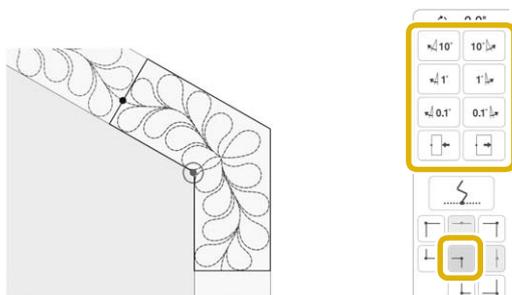
3 When embroidering the corner part

Rotate the quilt counterclockwise, rehoop it, and then attach the embroidery frame to the machine.

Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and then press **OK**.



Then, align the inner corner of the pattern with the corner of the reference lines.



Note

- The width of the corner segment can be adjusted to best fit the inner corner. However, make adjustments so that the shape is not deformed.

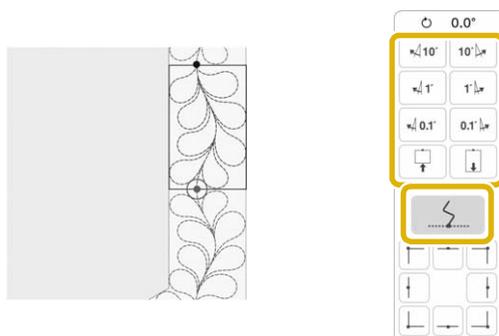
④ When embroidering the last edge part

Use the move pattern keys to align the start point projected by the projector with the end point of the previous pattern, and

then press .

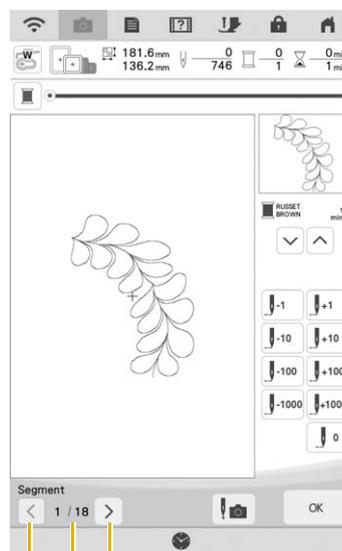
Then, align the end point of the part with the start point of the first part. If the pattern is not angled correctly, rotate it. If the length of the pattern does not match, enlarge or reduce the pattern.

After making adjustments, press .



Memo

- If you need to restitch a segment or skip a segment, you can press in the embroidering screen to continue to the next pattern or return to the previous pattern. Select the desired pattern in the embroidering order, and then press .



- ① Return to the previous pattern.
- ② Embroidering order of current pattern/Total number of segments
- ③ Continue to the next pattern.

Embroidering Split Embroidery Patterns

Split embroidery patterns created with Palette Ver.7 or later can be embroidered. With split embroidery patterns, embroidery designs larger than the embroidery hoop 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 embroidering instructions, refer to the Instruction Manual included with Palette Ver.7 or later.

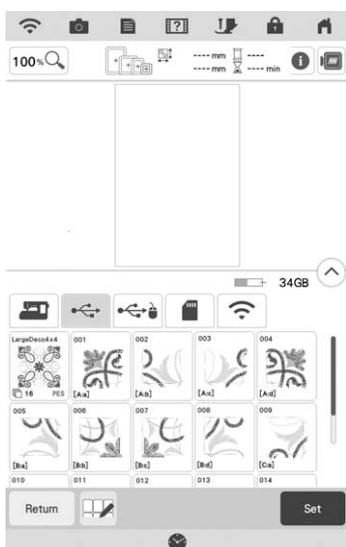
The following procedure describes how to read the split embroidery pattern shown below from USB media/SD card and embroider it.



Connecting the Pattern Sections Manually

- 1 Connect to the machine the media containing the created split embroidery pattern, and then select the split embroidery pattern to be embroidered.

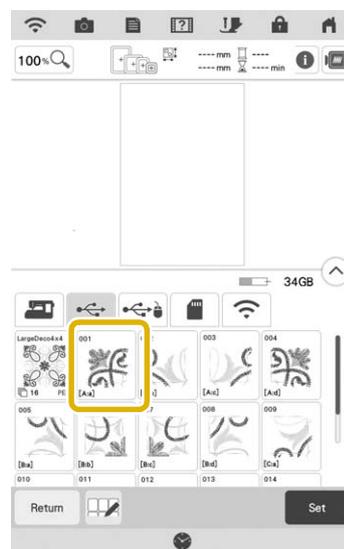
* For details on recalling patterns, refer to "Recalling from USB Media/SD Card" on page 112.



→ A screen appears so that a section of the split embroidery pattern can be selected.

- 2 Select section  to be embroidered.

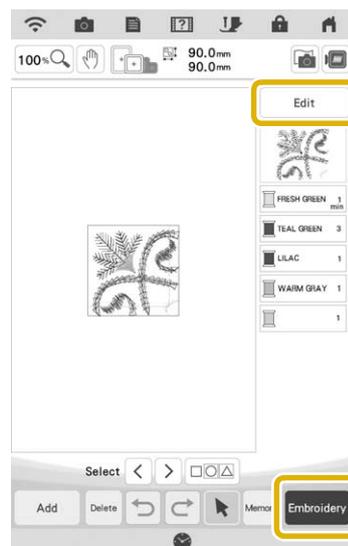
- * Select the sections in alphabetical order.
- * A maximum of 12 sections can be displayed in one page. If there are 13 or more sections in the pattern, scroll the bar.



Note

- To embroider large-size split embroidery patterns by using the camera to connect the pattern sections, press the whole pattern icon. Refer to "Connecting the Pattern Sections with the Camera" on page 140.

- 3 If necessary, press and edit the pattern. Press to display the embroidery screen.



Memo

- The pattern can be rotated 90° to either the left or right when is pressed.

4 Press the “Start/Stop” button to embroider the pattern section.

5 When embroidering is finished, the following screen appears. Press  .



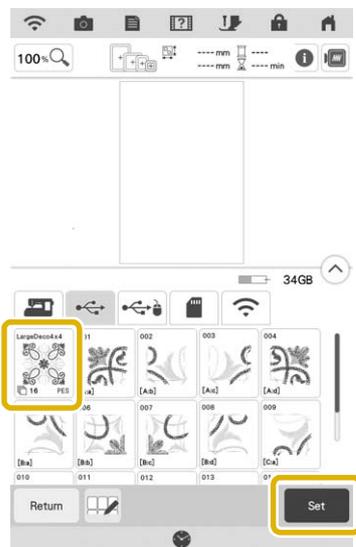
→ A screen appears so that a section of the split embroidery pattern can be selected.

6 Repeat steps **2** through **5** to embroider the remaining sections of the pattern.

■ Connecting the Pattern Sections with the Camera

1 Recall the large-size split embroidery pattern.

2 Press the whole pattern icon and then press  .



→ Use the camera to connect large-size split embroidery patterns.

3 Embroider the first pattern.

4 Refer to steps **13** to **17** of “Connecting Three Patterns” on page 144 to embroider the remaining patterns.

Embroidering Couching Patterns

Couching patterns can be embroidered using yarn.

⚠ CAUTION

- When using yarn, we recommend selecting yarn of weight 4 (MEDIUM ). Medium yarn is often referred to as worsted weight, 20 knitted stitches per 10cm, or 9-11 wraps per inch. The diameter of the yarn is approximately 2-3 mm (1/12-1/8 inch). If the yarn is extremely thin or thick, has an unusual shape (flat or furry), or more than 2 yarns, the best finishing results may not be achieved, or injuries or damage may result.

💡 Note

- Before embroidering your project, do trial embroidery on a scrap piece of fabric that is the same as that used in your project.

■ Preparing for Embroidery Couching

1 Turn off the machine. Attach the embroidery unit.

2 Install a bobbin wound with embroidery bobbin thread.

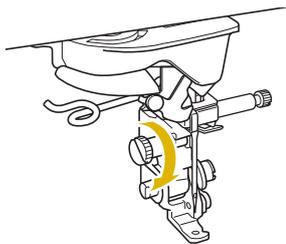
3 Turn on the machine.

4 Press  .

5 Select  , and then select the desired pattern from the category. And then press  .

6 Press  to lock all keys and buttons, and then raise the presser foot lever.

7 Attach embroidery couching foot "Y".

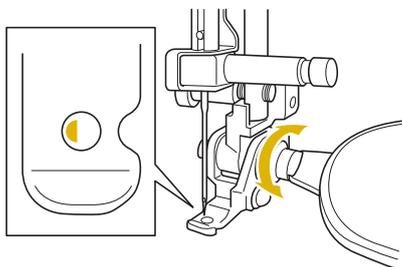


⚠ CAUTION

- When using 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.

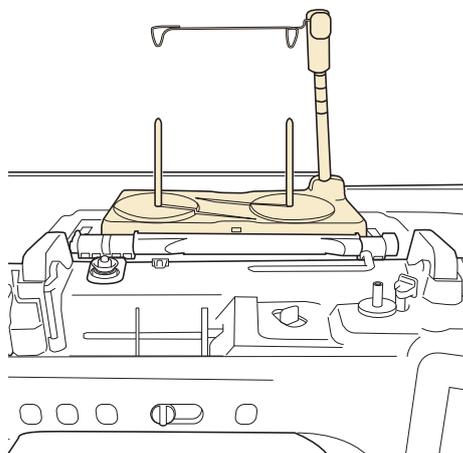
8 Rotate the handwheel and check that the needle is in the left half of the hole in embroidery couching foot "Y".

If the needle is not in the left half, use the multi-purpose screwdriver to 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.



9 Attach the spool stand to the machine.

At this time, do not raise the telescopic thread guide shaft.



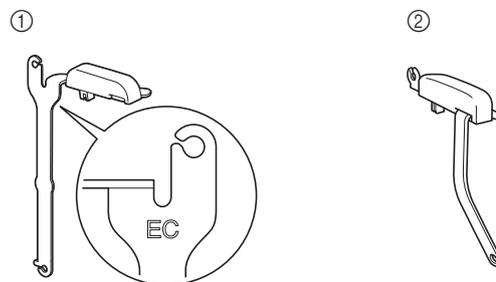
* Refer to "Using the Spool Stand" on page 25.

10 Insert the yarn guide for embroidery couching into the slot on the top left of the machine.



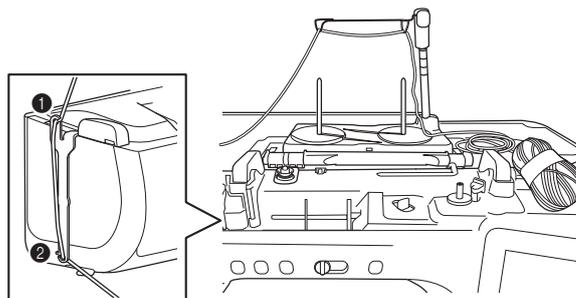
💡 Note

- There are two yarn guides: one for sewing couching and one for embroidery couching. Check the shape of the part, and then install the appropriate guide.



- ① Yarn guide for embroidery couching
- ② Yarn guide for sewing couching

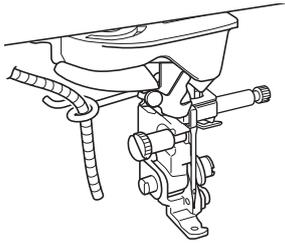
11 Pass the yarn through the telescopic thread guide and the yarn guide (1) to (2).



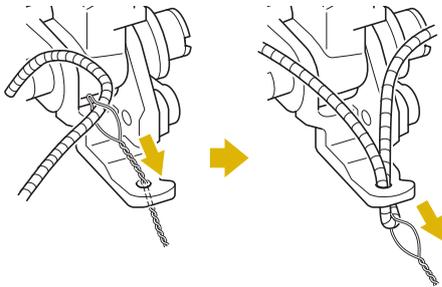
💡 Note

- 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.

- 12** Pass the yarn through the guide on embroidery couching foot "Y".



- 13** 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.



Memo

- Place a sheet of paper under the presser foot to smoothly pass the yarn threader through the hole in embroidery couching foot "Y".

- 14** Press  to unlock all keys and buttons.

- 15** Thread the machine with the upper thread.

Note

- Do not use the spool stand for upper thread. Otherwise thread may tangle with yarn.

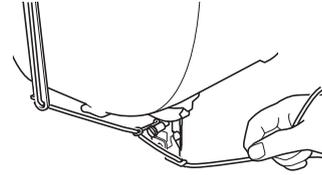
Memo

- For best results, use an upper thread that is the same color as the yarn.

- 16** Press the "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** Press .
- 2** Make sure that about 20 cm (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.

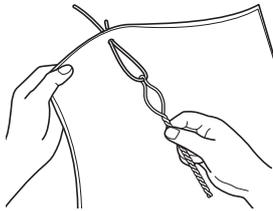
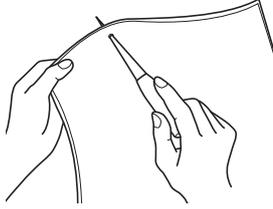
- 4** After embroidering several stitches, release the yarn.

→ 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 on the settings screen.

- 5** Cut the yarn, leaving about 20 cm (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.



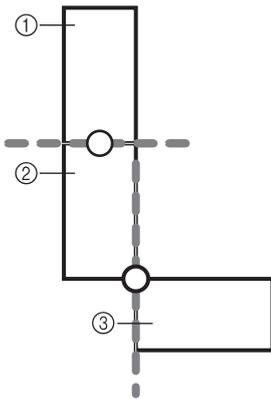
- 7** Tie the end of the yarn so it cannot be pulled out, and then use scissors to cut off any excess yarn.

USING THE CAMERA TO CONNECT PATTERNS

Instead of using thread marks, the camera can be used to connect patterns in the Embroidery Edit screen. Select the appropriate frame depending on the size of the embroidery. The distance between the pattern and the embroidery area of the frame must be at least 3cm (1-3/16 inches). The small embroidery frame (2 cm × 6 cm (1 inch × 2-1/2 inches)) cannot be used with the camera function.

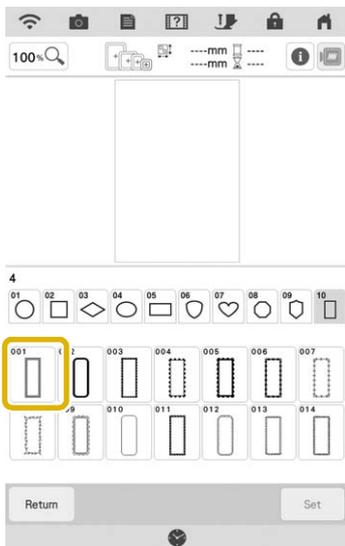
Connecting Three Patterns

Example:



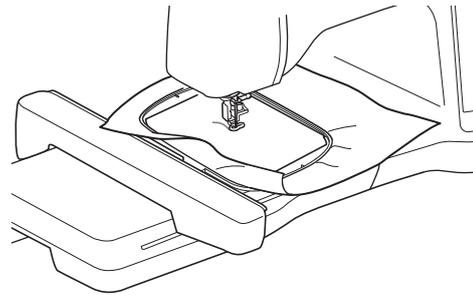
- ① Pattern A
- ② Pattern B
- ③ Pattern C

1 Select the first pattern A, and then press



2 Thread the machine with the upper thread and the bobbin thread.

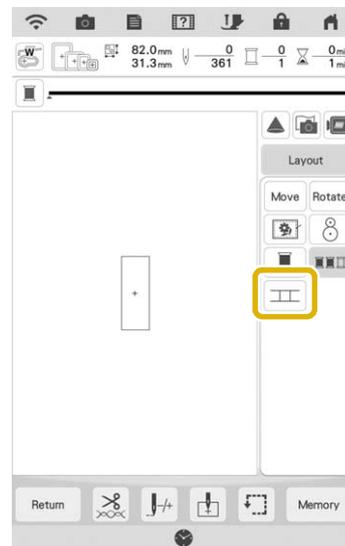
3 Hoop fabric in the 18 cm × 13 cm (7-1/8 inches × 5-1/8 inches) embroidery frame, and then attach the frame to the machine.



4 Press **Embroidery** to display the embroidering screen.

5 Press **Layout**.

6 Press .



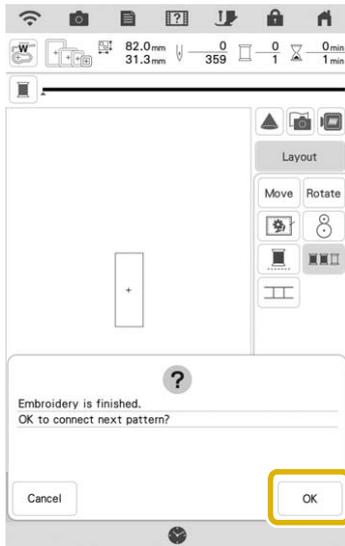
→  appears in the screen, and then  changes to .

Memo

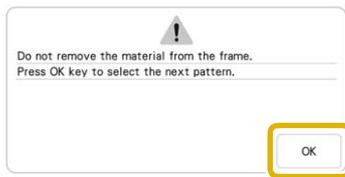
-  can be pressed while embroidering.
- A pattern cannot be saved in the machine's memory while patterns are being connected.

7 Lower the embroidery foot, and then embroider the first pattern.

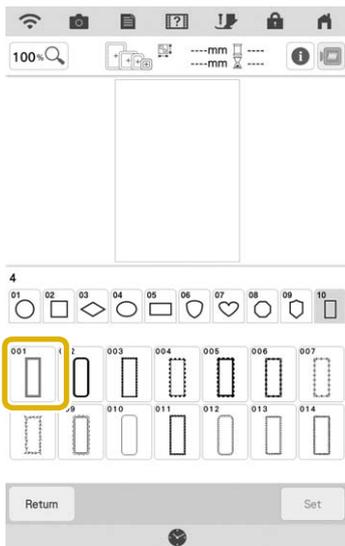
8 After embroidering of the first pattern is finished, the following message appears. Press **OK**.



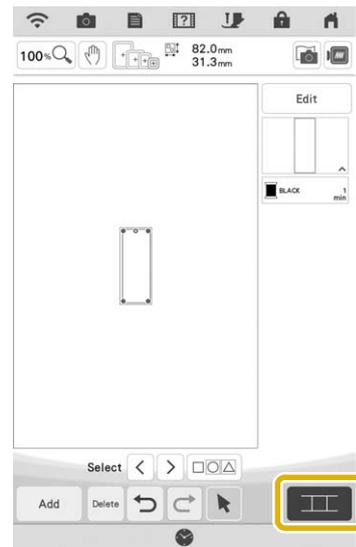
9 When the following message appears, press **OK**.



10 Select the second pattern B, and then press **Set**.



11 Press **[Pattern Connection Icon]**, and then select how the patterns will be connected.

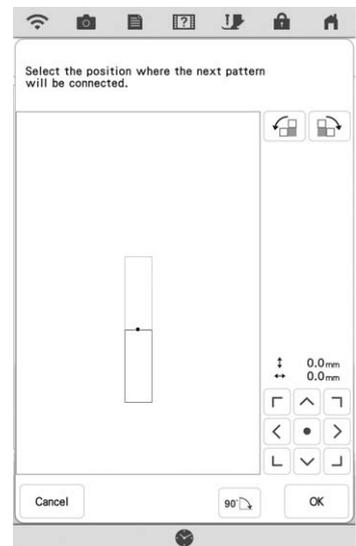


→ The pattern connection setting screen appears.

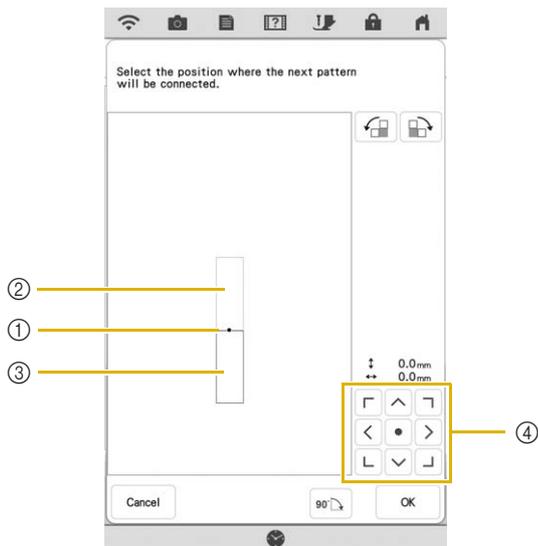
Memo

- You can edit the second pattern in this screen.

12 Select the position of the second pattern by pressing on the screen. Press **OK** after specifying the position.



* You can adjust the position of the second pattern using the keys described below.



- ① Connecting point
- ② First pattern A
- ③ Second pattern B
- ④ Press to move the second pattern.

	Press to rotate the second pattern in a clockwise arc referring the first pattern as a center.
	Press to rotate the second pattern in a counterclockwise arc referring the first pattern as a center.
	Rotate the second pattern 90 degrees in a clockwise arc.

→ Message appears on screen and carriage will move after pressing .

Note

- The second pattern will be automatically connected to the first pattern without adjustment. Change the position of the second pattern manually using .
- The position of the second pattern can be moved using your finger or the included dual purpose stylus.
- Use , or if you want to align the pattern to the corner of the center of the first pattern, when changing the pattern's connecting position.

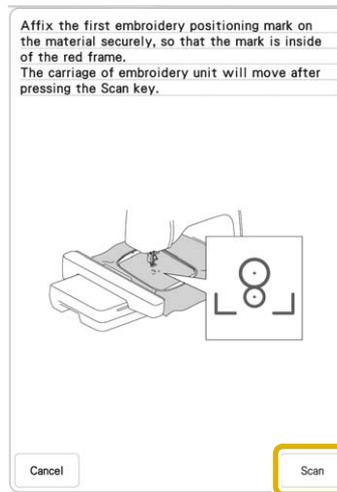
13 Prepare two embroidery positioning stickers. Follow the on-screen instructions to affix the two stickers to the fabric so that the positioning marks can be detected by the camera.



Note

- Use the embroidery positioning stickers included with this product or purchase replacement stickers (BLSO-EPS) from your authorized Baby Lock retailer. If any other sticker is used, the camera may not recognize it.
- The 182 mm × 257 mm (7 inches × 10 inches) embroidery positioning sticker sheet with strong adhesive is most appropriate for connecting patterns (BLSO-EPS). If any other positioning sticker is used, it may peel off. If the sticker peels off, the patterns cannot be connected.

14 Affix the first embroidery positioning sticker onto the fabric within the red lines that now appear on the screen of the machine by using both hands to press down on each corner of the sticker. Affix the sticker with the large circle to the top as shown on machine. Then, press .

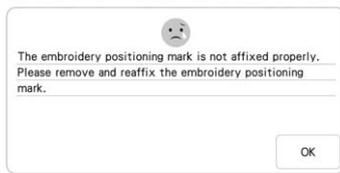
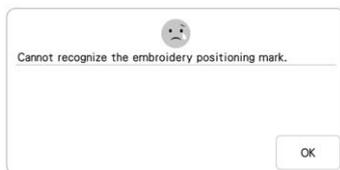


→ The camera detects the first embroidery positioning sticker.

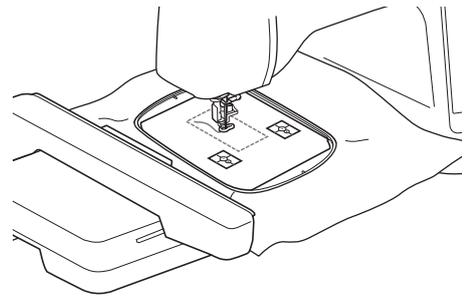
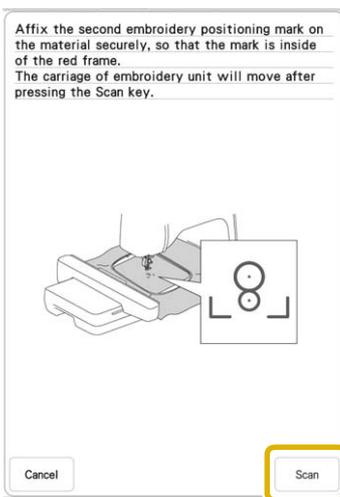


Note

- Do not peel off the first embroidery positioning sticker to use it for the second embroidery positioning mark.
- Use new embroidery positioning stickers. If a sticker is reused, it may easily peel off. If the sticker peels off during this procedure, the patterns cannot be connected.
- Use your fingers to apply pressure to the corners of the embroidery positioning sticker to firmly affix it to the fabric. If the sticker is not firmly attached, the camera may incorrectly detect the sticker.
- If any of the following messages appear, reattach the embroidery positioning sticker in the correct position. Make sure that the sticker is affixed with the large circle at the top.

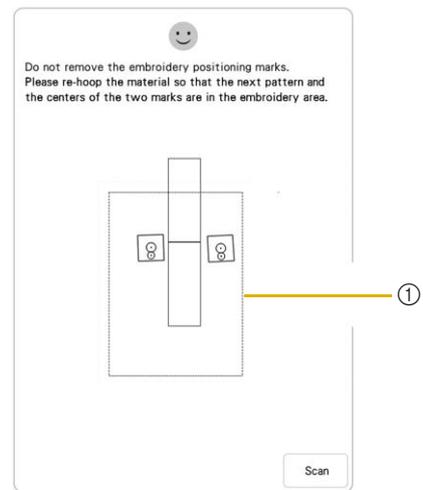


- 15** Use both hands to affix the second embroidery positioning mark within the red lines that now appear on the machine by pressing down on each corner of the positioning mark onto the material and then touch .



→ The camera detects the second embroidery positioning sticker.

- 16** After the two embroidery positioning stickers have been detected, the following message appears.



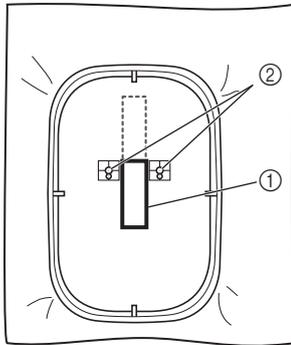
① Embroidering area



Note

- The positioning markers are shown with a tilted appearance to make sure that as long as the markers were placed with the red outlined square, they will be read properly and correct connection can be assured.

While making sure that the two embroidery positioning stickers do not peel off, remove the embroidery frame from the machine, and then rehoop the fabric. Be sure to hoop the fabric so the next pattern and both the embroidery positioning stickers are within the embroidery area. Reattach the frame and press .



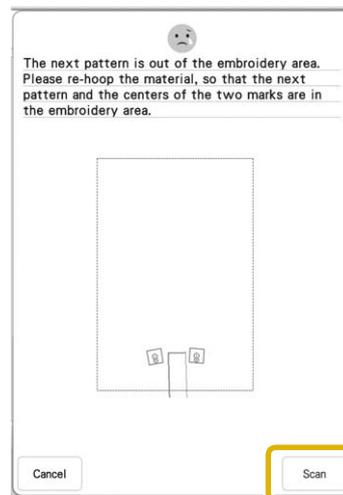
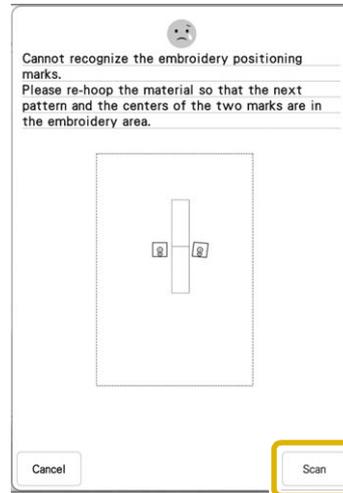
- ① Pattern to be embroidered next
 - ② Centers of large circles for stickers
- The camera detects the two embroidery positioning stickers.



Note

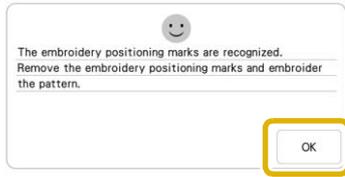
- If either of the following messages appear, rehoop the fabric so that the next pattern and both the embroidery positioning stickers are within the embroidery area as indicated in the screen.

Press to detect the embroidery positioning stickers.



- If the machine detects that the next pattern and the centers of the large circles of the two embroidery positioning stickers do not fit within the embroidering area, the operation will be paused. Follow the on-screen instructions to reposition the embroidery positioning stickers. Refer to “Changing the Position of a Sticker” on page 150 to reposition the stickers.
- If the sticker peels off during this procedure, the patterns cannot be connected. If this occurs, restart the procedure from the beginning.
- To quit positioning, press .

17 After the embroidery positioning stickers have been detected, press **OK**, and then remove the stickers.



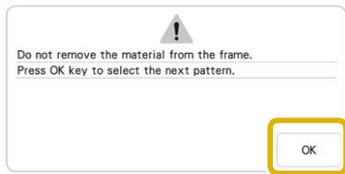
18 Lower the embroidery foot, and then embroider the second pattern.

→ When embroidering is finished, the following message appears.

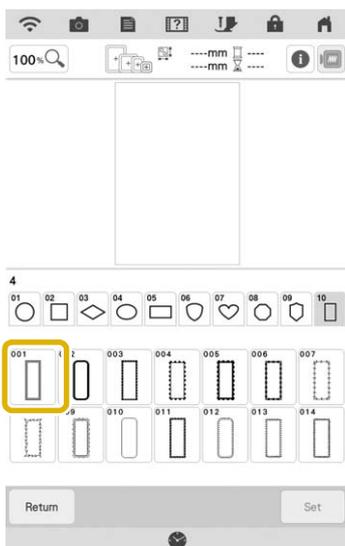
To connect a third pattern, press **OK**.



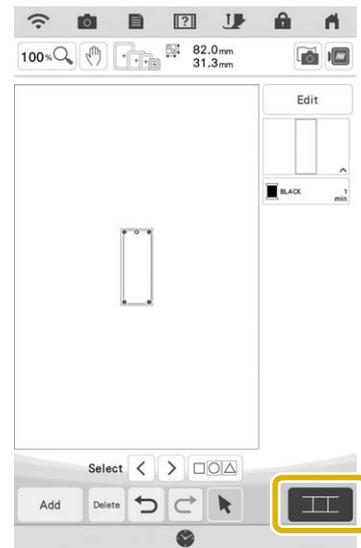
19 When the following message appears, press **OK**.



20 Select the third pattern C, and press **Set**.



21 Press **III**, and then select how the patterns will be connected.



→ The pattern connection setting screen appears.

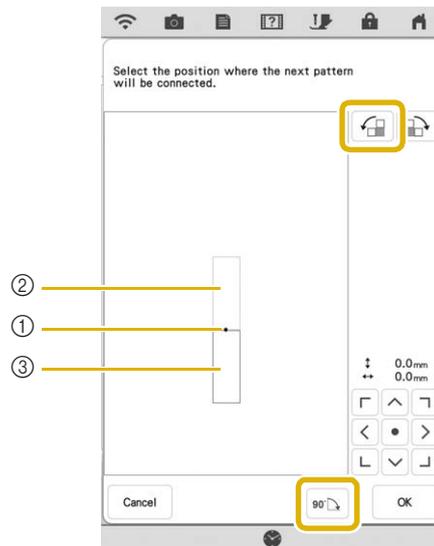


Memo

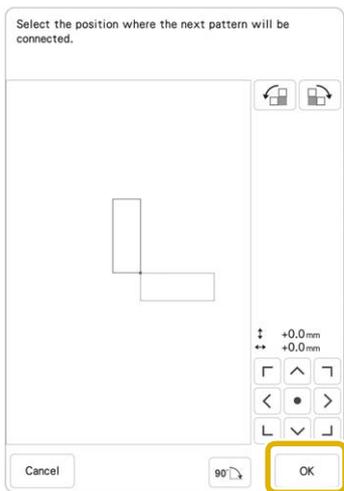
- You can edit the third pattern in this screen.

22 Specify the position of the third pattern referring to the screen display.

In this example, press **90°** 2 times, and then press **90°**. Press **OK** after specifying the position.



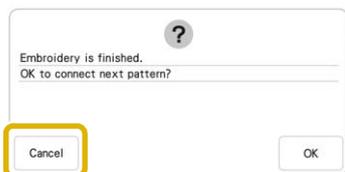
- ① Connecting point
- ② Second pattern B
- ③ Third pattern C



→ Message appears on screen and carriage will move after pressing **OK** .
 Follow steps **14-17** on pages 146-149 to position the next pattern.

23 Lower the embroidery foot, and then embroider the third pattern.

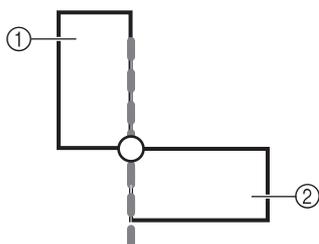
→ When embroidering is finished, the following message appears. When finished connecting patterns, press **Cancel** .



→ After embroidering is finished,  is no longer located at the top left of LCD screen. The three patterns have been connected.

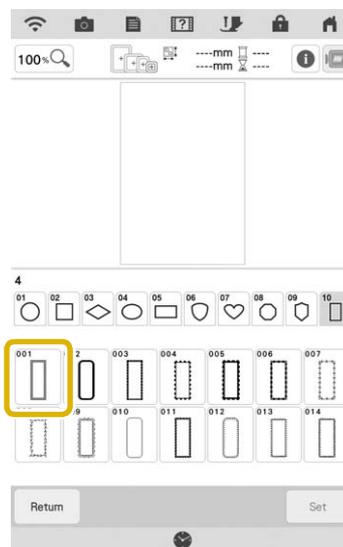
Changing the Position of a Sticker

If the selected pattern or embroidery positioning stickers for connecting the next pattern do not easily fit in the embroidering area, follow the on-screen instructions that appear after step **15** on page 147 in order to move the embroidery positioning stickers. For an example, the on-screen instruction appears when you use the embroidery frame with a size of 10 cm x 10 cm (4 inches x 4 inches) to connect patterns as shown below.

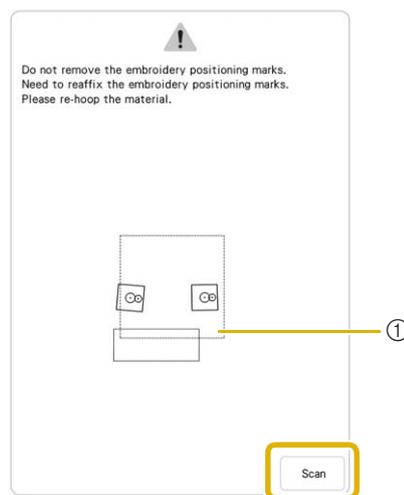


- ① Pattern A
- ② Pattern B

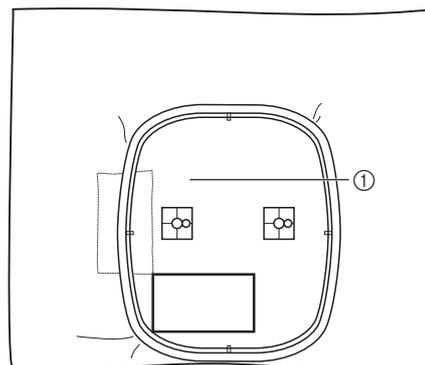
1 Refer to steps **1** through **15** of “Connecting Three Patterns” using the embroidery frame with a size of 10 cm x 10 cm (4 inches x 4 inches) to embroider the first pattern and to connect the second pattern.



2 Following message appears in step **16** if the next pattern or affixed embroidery positioning stickers are close to being out of the embroidering area. Follow the instructions and then press **Scan** .



① Embroidering area

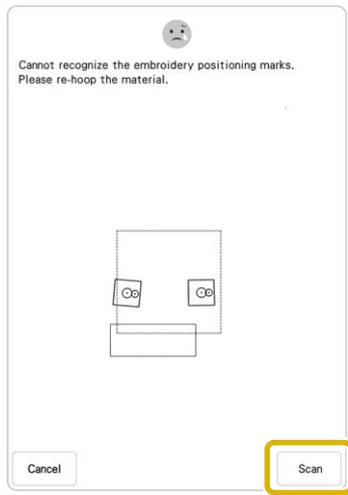


① Pattern to be embroidered next



Note

- If the following message appears, rehoop the fabric as indicated in the screen, and then press **Scan**.



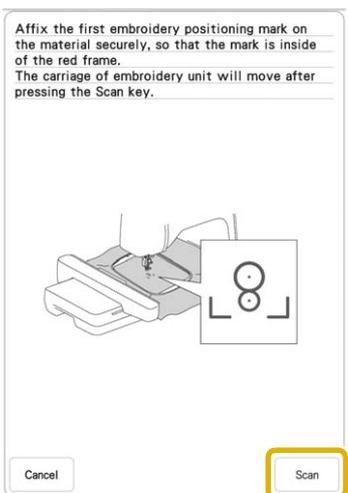
3

After the sticker position is detected, press **OK**, and then remove the stickers.



4

Affix the two embroidery positioning stickers again according to the on-screen instructions so that the next pattern or positioning marks can fit in the embroidery area.



→ Press **Scan** so that the camera detects the first embroidery positioning sticker.

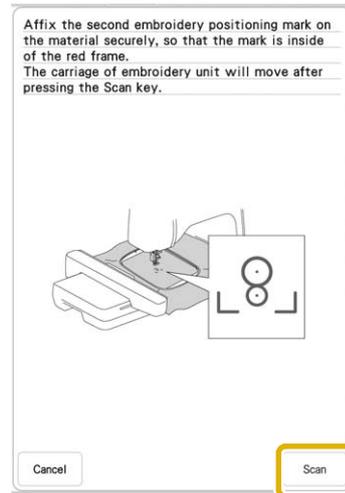


Note

- The positioning markers are shown with a tilted appearance to make sure that as long as the markers were placed with the red outlined square, they will be read properly and correct connection can be assured.

5

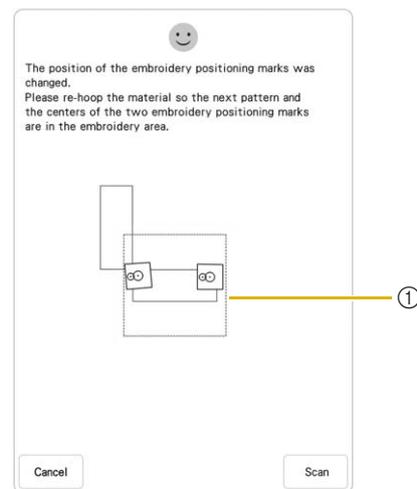
Affix the second sticker and then press



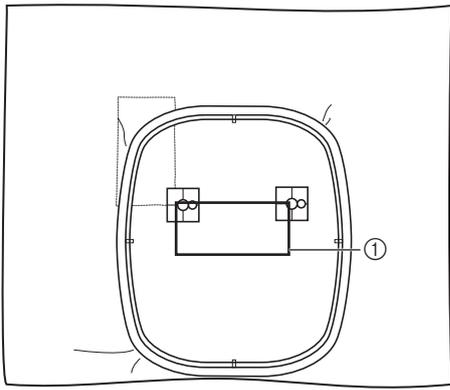
→ The camera detects the second embroidery positioning sticker.

6

After the two embroidery positioning stickers have been detected, the following message appears. While making sure that the embroidery positioning stickers do not peel off, rehoop the fabric according to the example displayed on the on-screen instruction.



① Embroidering area



① Pattern to be embroidered next

7 Continue the operation from step 17 on page 149 after pressing .

Resume Feature

If the machine is turned off while the pattern connecting function is being used, the machine will return to the operation indicated below when it is turned on again. The machine operation will differ depending on when it is turned off.

Example: When connecting two patterns

Select the first pattern. Press the pattern connection key . Begin embroidering the first pattern.

Finish embroidering the first pattern. (A)

If the machine is turned off during any operation in this box, the machine will return to (A) when it is turned on again.



Select the second pattern.

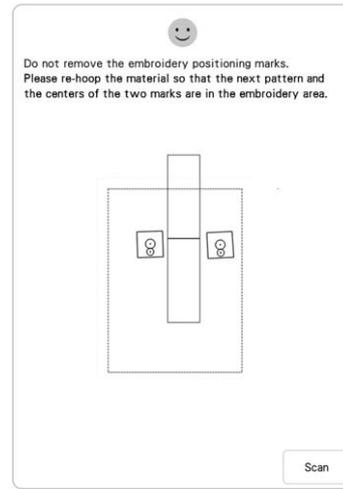
Press .

Specify the reference point for connecting the pattern.

Start detecting embroidery positioning stickers (2 locations).

Finish detecting embroidery positioning stickers. (B)

If the machine is turned off during any operation in this box, the machine will return to (B) when it is turned on again.



Rehoop the fabric.

Finish detecting embroidery positioning stickers (2 locations).

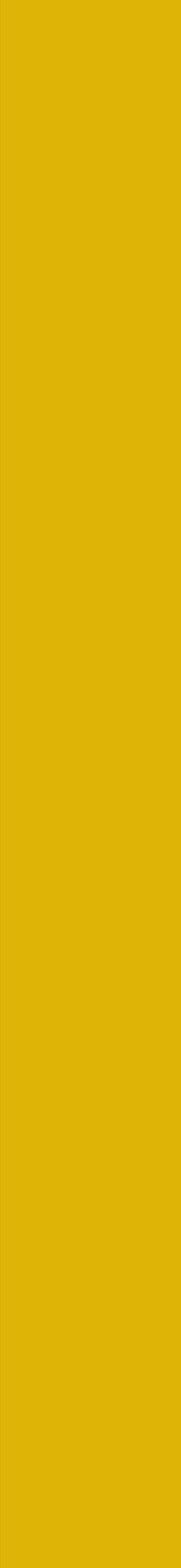


Begin embroidering the second pattern.

Finish embroidering the second pattern.



Chapter **4**
IQ Designer



ABOUT IQ DESIGNER

With IQ Designer, you can use the functions listed below:

- Hand-drawn functions - create embroidery patterns by drawing on the LCD screen
- Scanning functions - create embroidery patterns by not only scanning drawings /illustrations with built-in camera, but also importing data from USB media, etc.
- IQ Intuition Positioning App - create embroidery patterns by sending images from your smart device to your machine

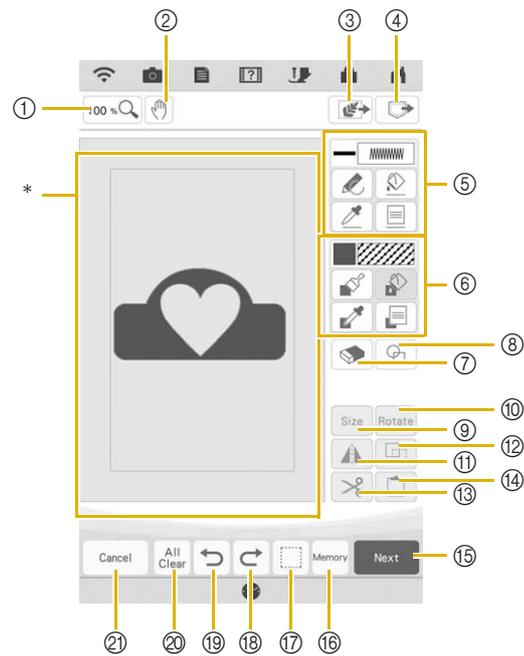
You can also combine patterns that you have created with the machine's built-in patterns.

Start IQ Designer by pressing  in the home page screen or pressing  in the embroidery pattern selection screen.

CAUTION

- **Only touch the screen with your finger or the dual purpose 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.**
- **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.**

PATTERN DRAWING SCREEN



* Pattern drawing area



Memo

- The actual dimension of the pattern area is the size of the embroidery frame, which is 408 mm × 272 mm (approx. 16 inches × 10-5/8 inches). The pattern you drew may be bigger than you expected. Please resize the pattern after converting the design to the embroidery pattern.

■ Key Functions

No.	Display	Key Name	Explanation	Page
①		Magnify key	Press this key to magnify the pattern.	159
②		Hand key	Press this key to move the canvas when it is magnified.	—
③		Scan key	Press this key to select background image scanning, line scanning or illustration scanning.	167, 171, 174
④		Recall key	Press this key to recall image data created with IQ Designer from the machine's memory, USB media, SD card or the computer.	—
⑤		Line tool key	Draw lines and set the color. You can select the line type, stitch type and color as you need. Press to pick up the color and stitch type from a line in the pattern within the pattern drawing area. The picked-up color is shown as the currently selected line color beside the button and as the selected color in the Line Property screen.	157
⑥		Brush tool key	Paint with brush and set the color. You can select the brush type, fill type and color as you need. Painted lines and areas will be converted to the pattern embroidered with fill stitch. Press to pick up the color and fill type from a region in the pattern within the pattern drawing area. The picked-up color is shown as the currently selected region color beside the button and as the selected color in the Region Property screen.	159
⑦		Erase key	Press this key to erase lines and shapes that have been drawn. You can select the size/shape of the eraser.	161
⑧		Stamp key	Press this key to select the stamp shape for pattern drawing.	160
⑨		Size key	Press this key to change the size of the selected section.	161, 178
⑩		Rotate key	Press this key to rotate the selected section.	161
⑪		Mirror image key	Press this key to create a mirror image of the selected pattern.	162
⑫		Duplicate key	Press this key to duplicate the selected section. The temporarily positioned section can immediately be rotated, enlarged, reduced or moved.	162
⑬		Cut key	Press this key to cut out the selected section.	162
⑭		Paste key	Press this key to paste in the selected section duplicated with the duplicate key or a selected section using the cut key.	162
⑮		Next key	Press this key to continue to the stitch settings screen.	—
⑯		Memory key	Press this key to store the pattern being created.	—
⑰		Select key	Press this key to select a section by by finger or dual purpose stylus for moving, copying, deleting, changing size and rotating lines and shapes that have been drawn.	162
⑱		Redo key	Press this key to redo the operation that was undone with the undo key. Each touch of this key will redo one operation.	—
⑲		Undo key	Press this key to undo the last operation that was performed and return to the previous state. Each press of this key will undo one operation.	—
⑳		All Clear key	Press this key to clear all the lines and shapes and start from the beginning. The background image is also cleared.	—
㉑		Cancel key	Press this key to exit from IQ Designer. All lines and shapes are erased when you press this key.	—

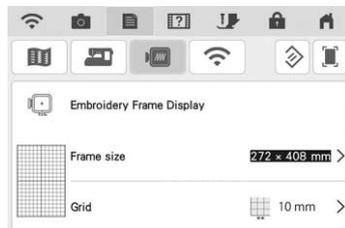
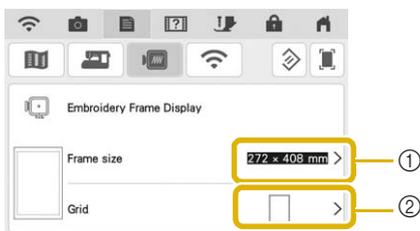
Before Creating Designs

The pattern preview displays the design smaller than the actual size. You can view the actual pattern size by setting the “Embroidery Frame Display”.

With “Embroidery Frame Display” in the settings screen, the embroidery frame and grid can be specified separately. For details on the types of embroidery frames and grids available, refer to “Changing the Embroidery Frame Display” on page 103.

1 Press .

2 Select the grid line and embroidery frame in the Embroidery Frame Display menu.



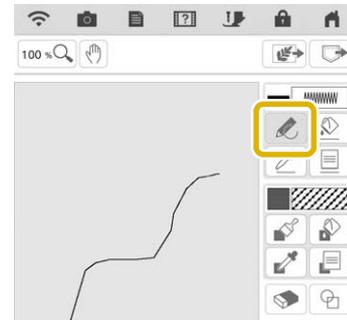
① Embroidery frame types

② Grid types

* Select the grid size 10 mm (3/8 inch) or 25 mm (1 inch).

Drawing Lines

1 Press  and draw lines.



Memo

- When  is pressed, all regions will be displayed in the background to clarify the drawing lines on the screen.

4

■ Setting the Line Types, Stitch Types and Colors

You can set or change the line types, stitch types and colors anytime. You can also specify the line types, stitch types and colors before drawing lines.

- 1 Press  to set the line types, stitch types and colors.



→ The settings screen appears.



- 1 Line types
- 2 Stitch types
- 3 Line color selection: touch the color palette to activate the drawing pen color.

Line types

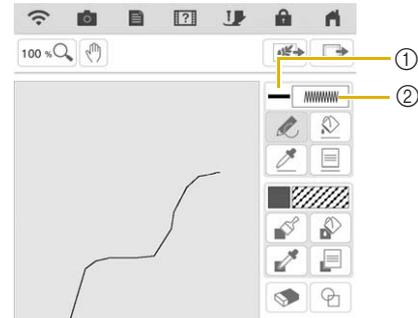
	Freehand line with the end open.
	Freehand line closing the end automatically.
	Straight line with one stroke
	Straight line changing directions to the point you select. If the end point is created near the start point, a closed object will be created.

Stitch types

	Zigzag stitch
	Running stitch
	Triple stitch
	Candlewicking stitch
	Chain stitch
	E stitch
	V stitch
	Select motif stitches Displays motif stitch selection screen, where Select can be pressed to select a pattern.
	Line without stitch for creating a region. Created region will be defined by the gray line.

- 2 Press  to return to the pattern drawing screen.

→ You can check the selected stitch type and color.



- 1 Color bar
- 2 Stitch type

3 Press  then press on the line to change its color.

→ The connected line will be changed to the selected color.

 **Memo**

- Press  to magnify the image when you cannot press on the line correctly. For details on magnify the image, refer to “Displaying Patterns in the Screen Magnified” on page 73.
- Press , and then select a color within the pattern drawing area to apply the same color to other lines or parts of the pattern.



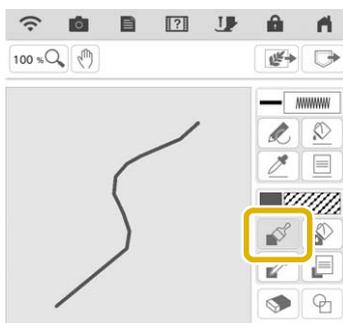
① Use  to select the line color.



② Press  for changing the line color, and then select the pattern to be changed.

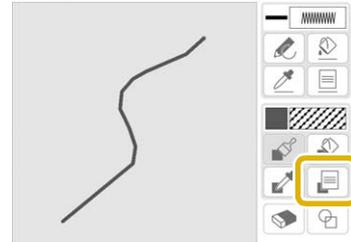
Drawing Regions

1 Press  and draw with brush.

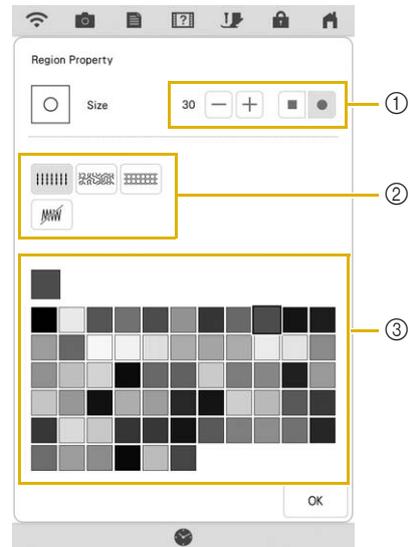


Setting the Brush Types, Fill Patterns and Fill Colors

1 Press  to set the brush types, fill patterns and fill colors.



→ The setting screen appears.



- ① Brush types
- ② Fill stitch types
- ③ Fill color selection: touch the color palette to activate the paint brush color.

Brush shapes

	Square brush	
	Round brush	

To select the brush size, press  or .

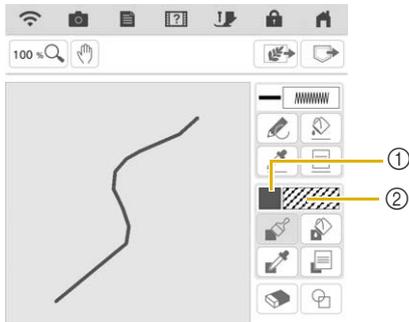
Fill stitch types

	Fill stitch pattern
	Stippling pattern
	Select decorative fill patterns Displays a fill pattern selection screen, where  can be pressed to select a pattern.

Select  when you don't want fill stitches.

2 Press to return to the pattern drawing screen.

→ You can check the selected stitch type and color.



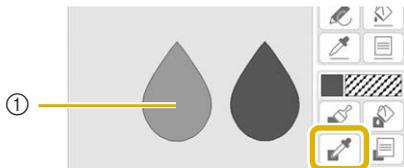
- ① Color bar
- ② Stitch type

* If a stippling pattern or decorative fill pattern has been specified, the stitch pattern is displayed.

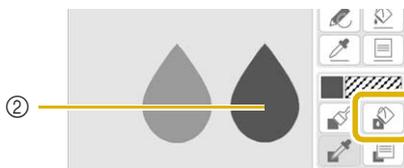
3 Press and press on the brush line to change color and fill stitch types. You can also set the fill color, stitch type and fill pattern of a closed area made of the lines and brush lines.

Memo

- Press to magnify the image when you cannot press on the fill correctly.
- Press , and then select a pattern color in the pattern drawing area to apply that fill color to other patterns.



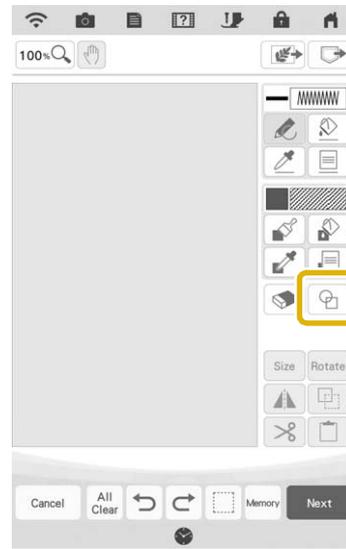
① Use to select the fill color.



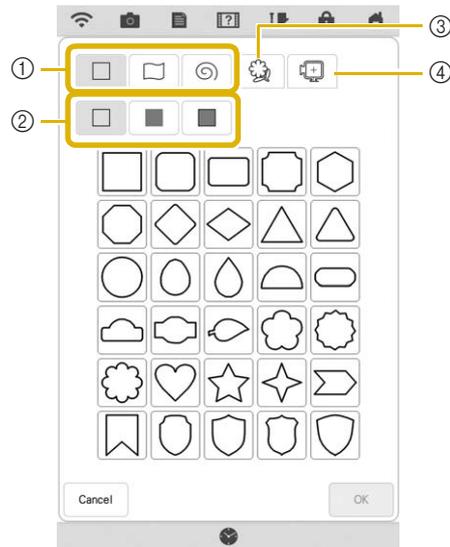
② Press for changing the fill color, and then select the pattern to be changed.

Using the Stamp Key

1 Press .



2 Select a stamp type and stamp shape.



- ① Stamp shapes
- ② Stamp types
- ③ Saved outlines
- ④ Frame embroidering areas

Stamp shapes

	Basic shapes
	Closed shapes
	Open shapes

Stamp types (Only for Basic shapes)

	Outline
	Fill stitch
	Outline and fill stitch

* Select the outline () , fill stitch () , or outline and fill stitch () of a basic shape.

Saved outlines

	Embroidery pattern outlines can be registered as stamp shapes. When registering stamp shapes, select from the last 20 embroidery patterns used. If more than 20 shapes are registered, the oldest one is automatically erased. For details on registering a stamp shape, refer to “Decorative Stitching Around a Pattern in Embroidery (a Quilting Function)” on page 187.
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Frame embroidering areas

	Select an embroidering area in order to arrange the pattern to fit an embroidery frame. If an offset value is specified, a shape offset to the inside is displayed. When making a frame pattern using a motif stitch, etc., specify an offset value according to the pattern size so the pattern can fit within the embroidering area for the selected embroidery frame.
---	--



* Press  to return to the pattern drawing screen.

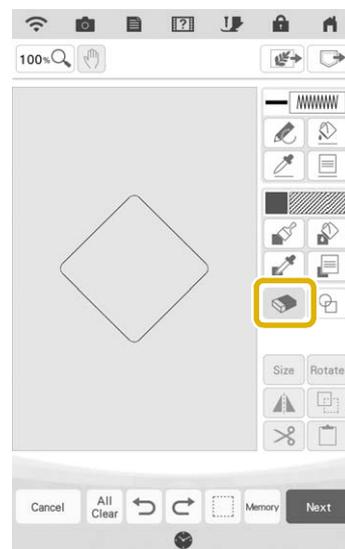
3 Press to set the selected stamp.

→ The pattern drawing screen is displayed.

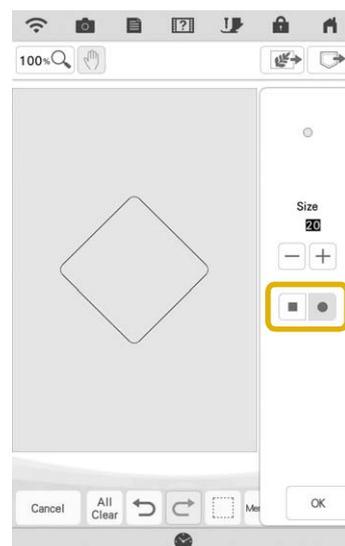
* You can change size of, rotate or move the shape right after you create it by pressing  or .

Using the Erase Key

1 Press .



2 Select the shape of the eraser.



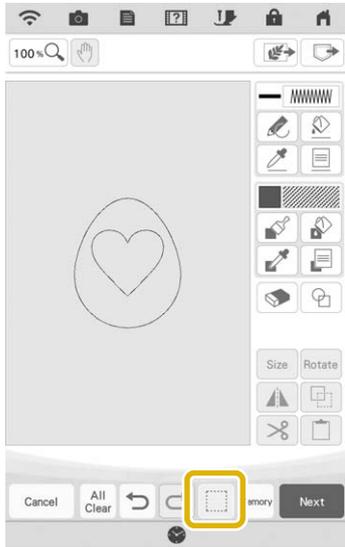
* To select the eraser size, press  or .

3 Drag along the area or line that you want to erase while the key appears as .

Using the Select Key

You can select the part of the design to move and/or edit. Some keys are available only after you select the part.

1 Press .



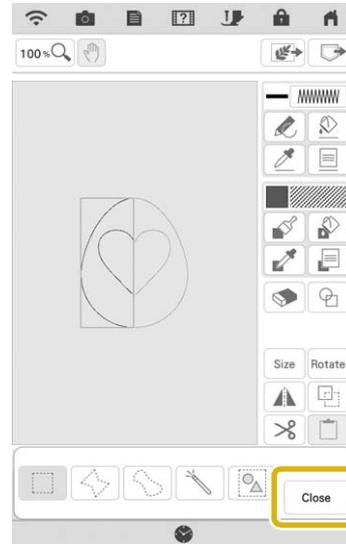
2 Select the method for selecting an area.



	Box selection	Selects all objects within the box that is drawn.
	Polygonal shape selection	Selects all objects within the polygonal shape that is drawn.
	Freestyle curve selection	Selects all objects within the curved line that is drawn.
	Automatic selection	Selects the pattern that is touched. This allows you to select only a single line or only the outer pattern of a donut shape.
	Select all	Selects all patterns.

3 Select the area you want to edit, and then press .

* To select an area you want to edit, hold the dual purpose stylus at a point on the screen and drag the dual purpose stylus to create the red box around your selected area to be edited.



4 Edit the design with available keys. (Refer to “Key Functions” on page 156 for the details of each key function.)

5 Press , and then specify the stitch setting.

STITCH SETTINGS SCREEN

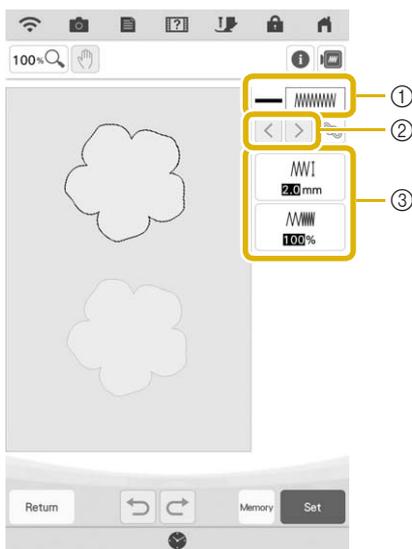
Before creating the embroidery pattern, specify the stitch settings. Lines of the design are sewn with various stitches, and areas are sewn with fill stitches or stippling stitches. Stitching of the areas was already selected in "Drawing Regions" on page 159, so specify values of detailed settings. After specifying the settings, press **OK** to create the embroidery pattern.

Specifying Individual Stitch Settings

Select a pattern in the stitch settings screen to specify its line and region stitch settings. If multiple patterns are selected, the settings are applied to those patterns.

After creating designs, press **Next** to display the stitch settings screen (page 155).

Line Settings



- ① Shows/Changes the stitch type and color for the selected line.
- ② Select the line to be changed.
- ③ Shows/Changes the stitch settings for the selected line.

Line sew stitch settings

Select the type of stitching you want applied to your line art, from zigzag stitch (), running stitch (), triple stitch (), candlewicking stitch (), chain stitch (), E stitch (), V stitch (), or motif stitch ().

Zigzag stitch

Zigzag width	Specifies the width of the zigzag stitches used to sew the lines of the design.
Density	Specifies the density of the zigzag stitches used to sew the lines of the design.

Running stitch /Triple stitch

* Both includes an under sewing.

Run pitch	Specifies the length of the stitch.
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Candlewicking Stitch

Size	Increases/reduces the size of the pattern.
Spacing	Specifies the spacing of the candlewicking stitch.

Chain stitch

Size	Increases/reduces the size of the pattern.
Thickness	Sets repeated sewing at the same part.

E stitch

Stitch width	Increases/reduces the size of the pattern.
Spacing	Specifies the spacing of the E stitch.
Thickness	Sets repeated sewing at the same part.
Flip	Specifies if the decorative line shows up inside or outside.

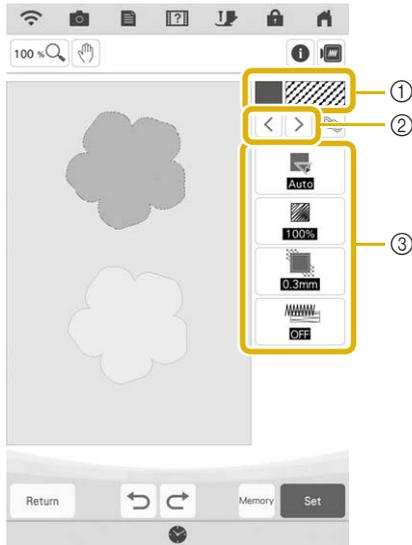
V stitch

Stitch width	Increases/reduces the size of the pattern.
Spacing	Specifies the spacing of the V stitch.
Thickness	Sets repeated sewing at the same part.
Flip	Specifies if the decorative line shows up inside or outside.

Motif stitch

Size	Increases/reduces the size of the pattern.
Spacing	Specifies the spacing of the motif stitch.
Flip	Specifies if the decorative line shows up inside or outside.

Region Settings



- ① Shows/Changes the stitch type and color for the selected region.
- ② Select the region to be changed.
- ③ Shows/Changes the stitch settings for the selected region.

Fill stitch settings

 Direction	Specifies the sewing direction. Select "Manual" to change to the desired direction of fill stitch.
 Density	Specifies the stitch density of fill stitch.
 Pull compensation	Specifies to correct the shrinkage of the pattern by slightly shortening or lengthening the stitching. Change the setting after you test embroider the pattern and can check the shrinkage.
 Under sewing	Select if you need or do not need the under sewing for the stabilized fabric.

Stippling stitch settings

 Run pitch	Specifies the length of a stitch of the stippling stitch.
 Spacing	Specifies the spacing between the stitches when embroidering the stippling stitch.
 Distance	Specifies the offset from the pattern outline.
 Single/ Triple stitch	Specifies the stitch type.

Decorative fill stitch settings

 Size	Increases/reduces the size of the pattern.
 Direction	Specifies the rotation angle of the pattern.
 Outline	Select whether [ON] or [OFF]. The outline is also converted to embroidery data. If "ON" is selected, the number of thread jumps can be reduced.
 Random shift	Randomly varies the line. If a setting of 1 or more is specified for "Random shift", a "Type" setting for the "Random shift" can be selected.
 Position offset	Specifies the reference point for the pattern.
 Thickness	Sets repeated or single stitching of the pattern.

1 Use   to select the line or region to be changed.

→ Each press of   moves the highlighting of the selected pattern in order.

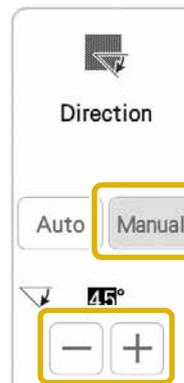
2 Select the setting to be changed, and then change the setting in the screen that appears. (In this example of a standard Fill stitch, the angle of the stitches will be changed.)



→ The setting screen appears.



3 Press , and then use   to change the direction.



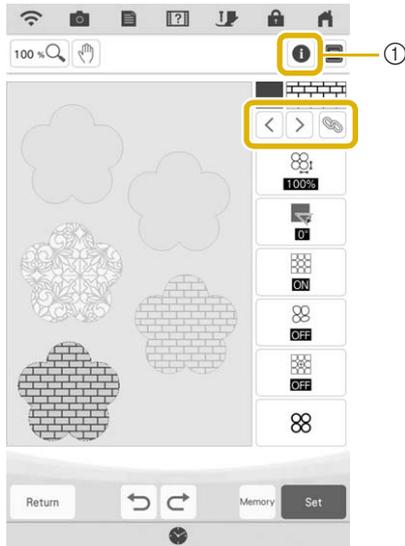
4 Press  to apply the setting.

* Change other settings in the same way.

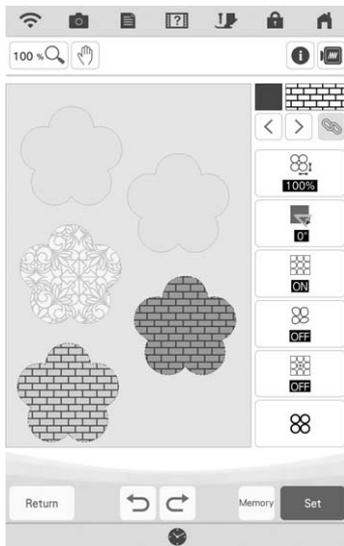
Specifying Global Stitch Settings

The same stitch settings can be changed at the same time for multiple patterns of the same type.

- 1 Use to select the stitch whose settings are to be changed, and then press .

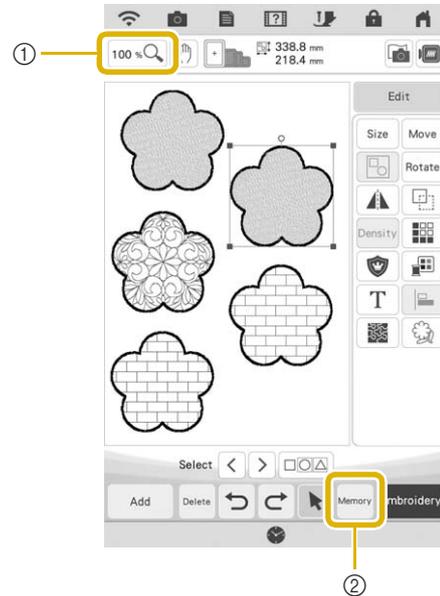


- 1 Press to check various information such as the thread colors.
→ The same stitch type areas will be selected at the same time.



- 2 Follow steps 2 through 4 in “Specifying Individual Stitch Settings” on page 163 to change the settings.

- 3 Press to convert work into an embroidery pattern and to display the pattern editing screen.



- 1 Press to check an enlarged view of the pattern.
- 2 Press to save the embroidery data.

IQ DESIGNER WITH SCAN

If you have a favorite picture, drawing, or data file, it can easily be traced as a background image and you can create your own embroidery pattern.

Using the Scanning Frame

1 Prepare the desired drawing/illustration.

⚠ CAUTION

- To avoid having the embroidery foot strike the frame during the scanning process and possibly causing injury, check the following: the thickness of the fabric or paper, creases or folds in the fabric or paper that may be rolled up too close to the frame.

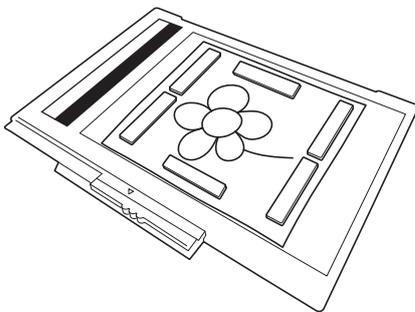


Memo

- Only one sheet of paper can be placed in the scanning frame per scan.

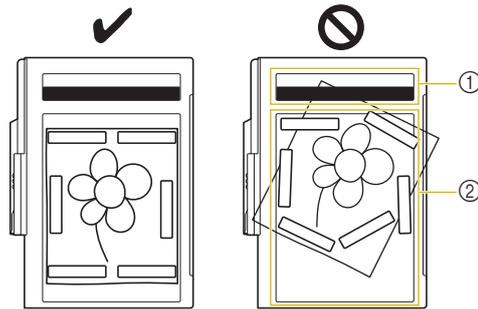
2 Place the paper to be scanned in the scanning frame, and then secure the paper in place with the magnets.

- * Place the magnets at six locations around the paper to secure it, making sure that the line drawing is not covered.



Note

- When placing the paper in the scanning frame, make sure that the white balance area is not hidden; otherwise, the drawing cannot be scanned correctly. At the same time, be sure to place the scan image within the scan area. The image out of the scan area will not be scanned.



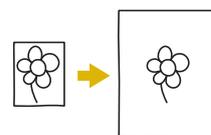
- ① White balance area
- ② Scan area

- Make sure that the white balance area or the scan area is not dirty or scratched; otherwise, the image cannot be scanned correctly.
- Be sure to use the magnets which are included with the scanning frame. If any other magnets are used, they may become attached to the machine during scanning, or other problems, such as a misaligned scan image, may occur.
- Be sure to place the magnets so that they secure the paper firmly. If the paper is placed unevenly, the image cannot be scanned correctly.
- If the scanning frame is dirty, wipe it with a cloth dampened with a diluted neutral detergent solution.



Memo

- If you want to scan an image from a small piece of paper that can't be held with the magnets, copy that image onto a larger piece of paper, to then be placed on the scanning frame.



3 Attach the embroidery unit to the machine, and then turn on the machine.

* Refer to "ATTACHING THE EMBROIDERY UNIT" on page 13.



Note

- Unthread the machine to avoid having the thread slipping out of the needle or getting caught on the embroidery frame.

4 Press the "Presser Foot Lifter" button to raise the embroidery foot, and then press the "Needle Position" button to raise the needle.

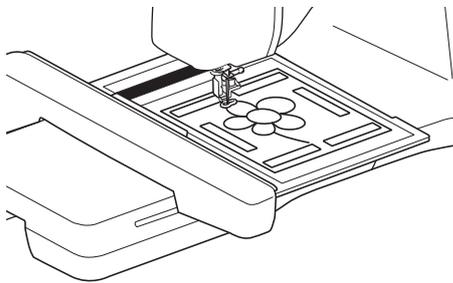
* The embroidery foot is not raised high enough when raised with the presser foot lever.

⚠ CAUTION

- Make sure that embroidery foot and needle are fully raised. If scanning is started with the embroidery foot and needle lowered, the scanning frame may hit the machine, causing damage.

5 After attaching the scanning frame to the embroidery unit, swing the frame-securing lever toward you to secure the frame.

* Refer to "ATTACHING THE EMBROIDERY FRAME" on page 34.



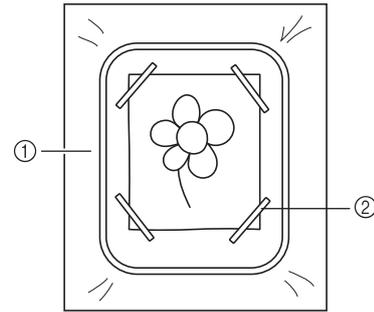
Note

- Be sure not to attach any embroidery foot other than the embroidery foot "W", otherwise the embroidery foot will be scanned.

■ Scanning with an Embroidery Frame

Drawings and illustrations can also be scanned using an embroidery frame. Hoop the embroidery frame with fabric larger than the frame. Place the

paper to be scanned on the fabric, and then secure it with tape.

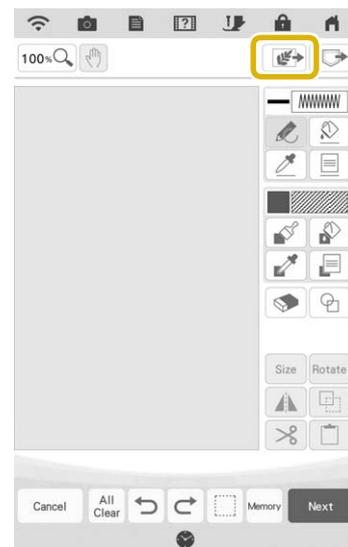


- ① Fabric
- ② Tape

Scanning to Trace Background Image

If you have a favorite picture or drawing, it can easily be traced as a scanned background image and you can create your own pattern.

1 Press .



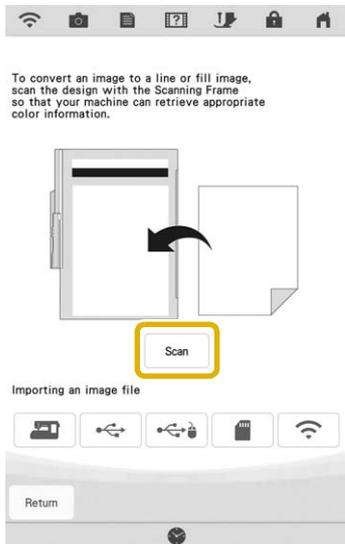
2 Press .



→ The image display screen appears.

3 Using the magnets, affix a picture to the scanning frame and attach the frame to the machine. Refer to “Using the Scanning Frame” on page 166.

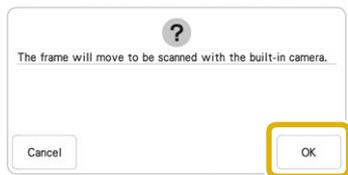
4 Press  .



Note

- When scanning starts, some of the machine lights will turn off in certain circumstances, in order to increase the scan quality. The machine lights will return to their original brightness when scanning ends.

→ When the following message appears, press  .



→ Scanning begins.
 * To stop scanning and return to the screen in step **4**, press  .

Memo

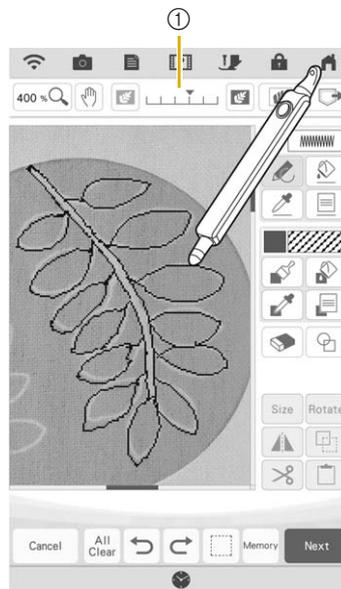
- The most recently scanned image is automatically stored in the machine’s memory. To import this saved image, press  (page 169).

5 When scanning is finished, scanned image is displayed transparently in the pattern drawing area.



6 Using the included dual purpose stylus, press , and then draw lines to trace the image.

* For details on drawing lines, refer to “Drawing Lines” on page 157.



① Transparency adjustment

* Press  or  to adjust the transparency of the background.
 Each press of  lightens the background, making the line pattern darker. Each press of  darkens the background, making the line pattern lighter.

7 After editing the pattern, press  to specify the settings for pattern.

8 Press **Set** to display the pattern editing screen.

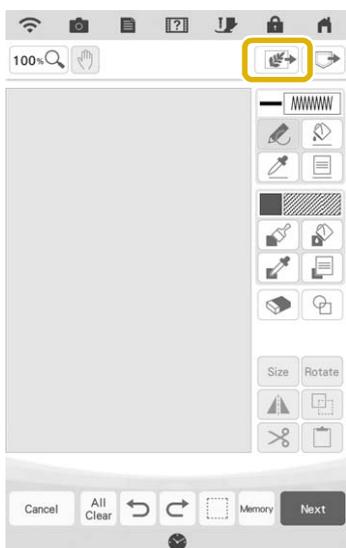
Importing the Background Image

Prepare the data file of your favorite picture so that you can create an embroidery pattern. Save data as a .jpg, .bmp, or .png file type on a USB media stick or SD card.

The most recently scanned image can also be recalled from the machine's memory.

In addition, images can be transferred from a smart device to the machine using the IQ Intuition Positioning App (page 190).

1 Press .

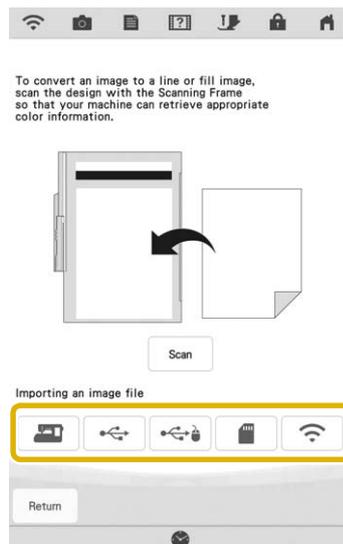


2 Press  Image scan.



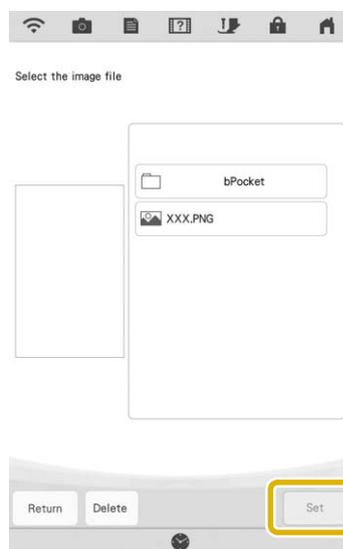
→ The image display screen appears.

3 Select the device you saved the data to.



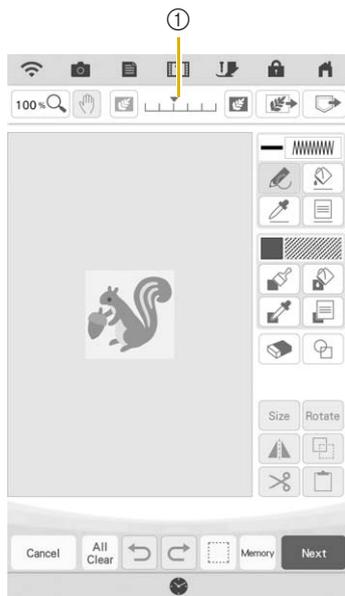
- Note**
- You can import an image of 2 MB or smaller from USB media or SD card.
 - Press  to transfer an image that was saved on the smart device then sent to the machine. For details, refer to “Transferring an Image from a Smart Device to the Machine” on page 190.

4 Select the data, and then press **Set**.



- Memo**
- Press  to delete the selected data.

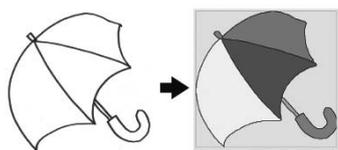
- 5** The selected image is displayed transparently in the pattern drawing area.



- * After tracing elements of the imported image and assigning stitch patterns to the lines and regions, the image appears as a background in the pattern drawing screen. Use gauge ① to adjust the transparency of the background. Each press of  lightens the background, making the line pattern darker. Each press of  darkens the background, making the line pattern lighter.

LINE SCAN

Custom patterns can be created from drawings. You can create patterns by scanning your drawings using the included scanning frame or importing an image from USB media or SD card. In addition, images can be transferred from a smart device to the machine using the IQ Intuition Positioning App (page 190).



Recommended line drawings for Line Scan

- Line drawings must be drawn clearly using lines with approximately 1 mm thickness.
- Line drawings should be drawn in a strong contrast.
- If the lines are too short or gathered too densely, they will not be scanned correctly.

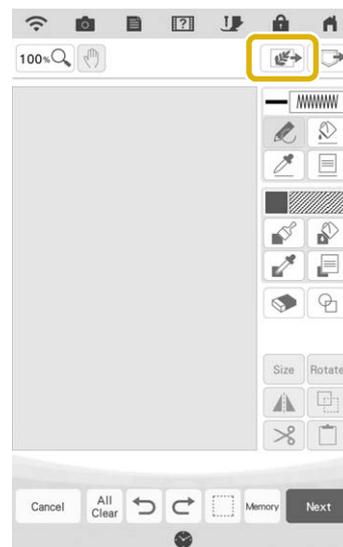


Note

- For details on creating patterns using color illustrations, refer to “ILLUSTRATION SCAN” on page 174.
- If you cannot scan the drawings as expected, you can edit the design in IQ Designer. Refer to “PATTERN DRAWING SCREEN” on page 155.
- Line drawings are scanned without recognizing the thickness of lines. If you want to change the thickness of lines, specify in the settings screen. Refer to “STITCH SETTINGS SCREEN” on page 163.

Using the Scanning Frame to Create a Pattern with Line Scan

1 Press .



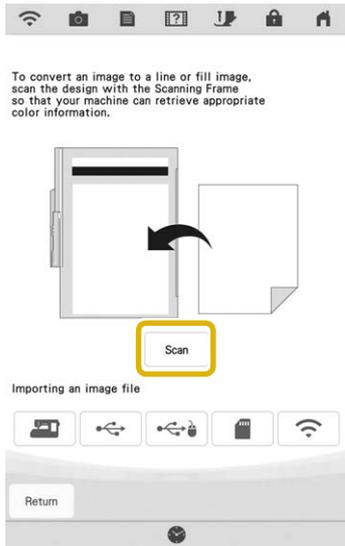
2 Press Line design .



- * When the image has already been imported, continue with step 4.
- * When the image has not been imported, continue with step 3.

3 Press .

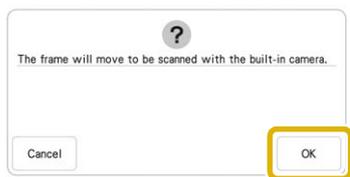
- * To import an image from USB media or SD card, press ,  or . For details, see “Importing the Background Image” on page 169.
- * Press  to transfer an image that was saved on the smart device and sent to the machine. For details, refer to “Transferring an Image from a Smart Device to the Machine” on page 190.
- * If you scan the image, make sure that the scanning frame is attached to the machine. Refer to “Using the Scanning Frame” on page 166.



Note

- The scanned background image can be converted to line scan data. At this time, it is unnecessary to scan the line drawing again.
- When scanning starts, some of the machine lights will turn off in certain circumstances, in order to increase the scan quality. The machine lights will return to their original brightness when scanning ends.
- You can import an image of 2 MB or smaller from USB media or SD card.

→ When the following message appears, press .



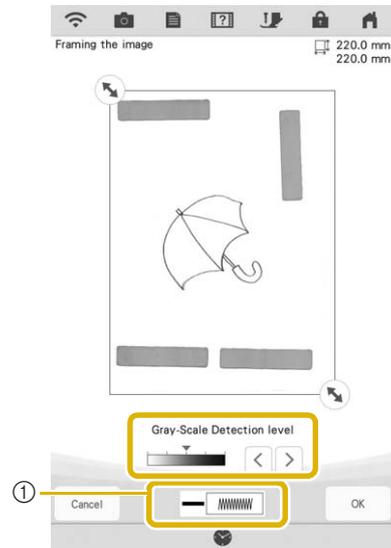
- Scanning begins.
- * To stop scanning and return to the screen in step **3**, press .

Memo

- The most recently scanned image is automatically stored in the machine’s memory. To import this saved image, press  (page 169).

4 When scanning is finished, specify the “Gray-Scale Detection level” on the screen if necessary.

The “Gray-Scale Detection level” can change the black and white threshold for the image.



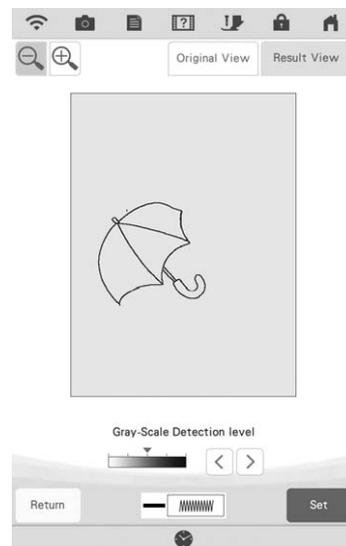
- 1** Changes the line color and stitch type (page 158).
- * If you do not know how the settings should be changed, first continue the operation without specifying settings and check the results.
 - * To stop scanning and return to the screen in step **3**, press .

5 Move  to frame the image for the pattern.

6 Press .

→ The screen for confirming the converted image appears.

7 In the screen for confirming the converted image, you can adjust the “Gray-Scale Detection level”, the line color and stitch type again, if necessary.

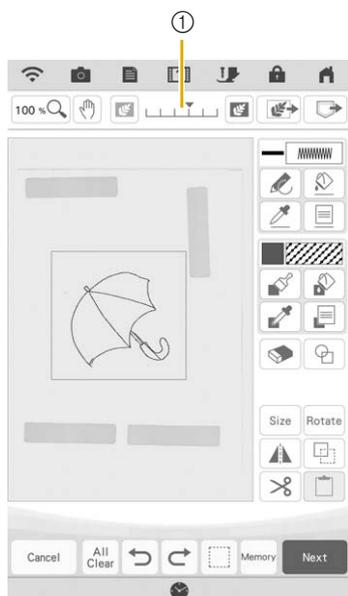


- * If you do not know how the settings should be changed, first continue the operation without specifying settings and check the results.
 - * To enlarge the image, press .
 - * To display the image before being converted, press . Compare the images before and after being converted, and then change the settings if necessary.
 - * To return to the previous screen, press .
- After changes to the settings described above have been applied,  changes to . Press  to check that the image is as desired.

8 Press .

→ The pattern drawing screen is displayed.

9 If necessary, edit the scanned image.



- * After the scanned image is converted to stitching, it appears as a background in the pattern drawing screen. Use gauge ① to adjust the transparency of the background. Each press of  lightens the background, making the line pattern darker. Each press of  darkens the background, making the line pattern lighter.



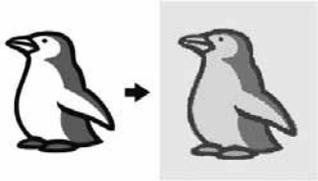
Note

- During scanning, the small dots and unnecessary lines that appear can be erased.

ILLUSTRATION SCAN

Custom patterns can be created from color illustrations. You can create patterns by scanning an illustration using the included scanning frame or importing an image from USB media or SD card.

In addition, images can be transferred from a smart device to the machine using the IQ Intuition Positioning App (page 190).

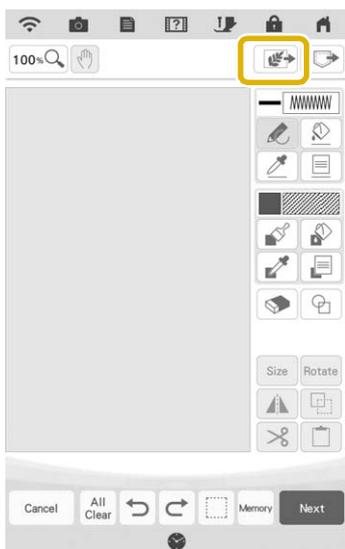


Recommended illustrations for Illustration Scan

- Patterns that are clearly drawn, with no gradation, fading or blurriness.
- Patterns that are at least a 5 mm square
- Patterns that are extremely simple images

Using the Scanning Frame to Create a Pattern with Illustration Scan

1 Press .



2 Press  Illustration design .



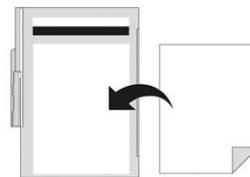
- * When the image has already been imported, continue with step 4.
- * When the image has not been imported, continue with step 3.

3 Press .

- * To import an image from USB media or SD card, press ,  or .
- * Press  to transfer an image that was saved on the smart device and sent to the machine. For details, refer to “Transferring an Image from a Smart Device to the Machine” on page 190.



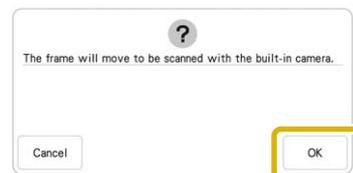
To convert an image to a line or fill image, scan the design with the Scanning Frame so that your machine can retrieve appropriate color information.



Note

- When scanning starts, some of the machine lights will turn off in order to increase the scan quality. The machine lights will return to their original brightness when scanning ends.

→ When the following message appears, press .



→ Scanning begins.

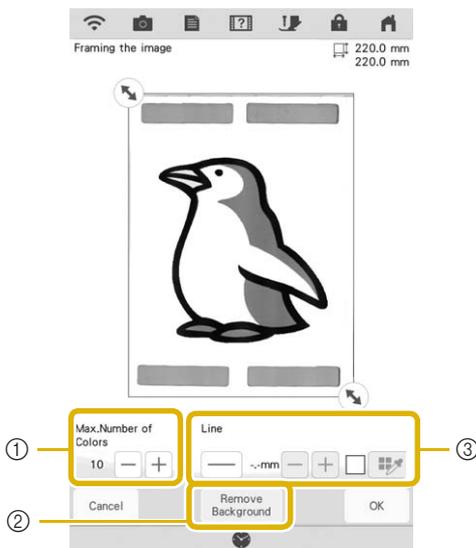
* To stop scanning and return to the screen in step ③, press .

Memo

- The most recently scanned image is automatically stored in the machine's memory. To import this saved image, press (page 169).

4 When scanning is finished, specify the necessary settings in the scan image confirmation screen.

Change the settings to adjust the image so it can easily be converted to the desired pattern.



①	Max. Number of Colors	The number of colors in an image will be reduced less than the number specified here, and then the outline will be extracted.
②	Remove Background	Select whether or not the background color will be included as one of the colors.
③	Line	Select whether or not the outline will be detected as a line. A thick outline can also be detected as a region. When detected as a line, the line thickness and color can be specified.

* To stop scanning and return to the screen in step ③, press .

Memo

- Press to detect the outline. Line thickness can be specified from 1.0 mm (1/16 inch) to 5.0 mm (3/16 inch).



- Press to select the outline color. Select by touching the color, or moving



5 Move to frame the image for the pattern.

6 Press .

→ The screen for confirming the converted image appears.

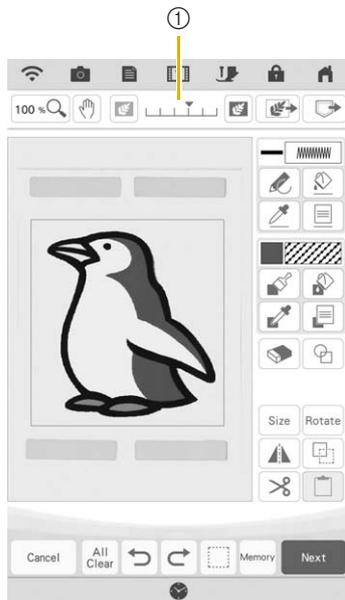
7 In the screen for confirming the converted image, adjust the image as necessary as in step ④.



- * To enlarge the image, press .
 - * To display the image before being converted, press . Compare the images before and after being converted, and then change the settings if necessary.
 - * To return to the previous screen, press .
- After changes to the settings described above have been applied, changes to . Press to check that the image is as desired.

8 Press **Set**.

→ The pattern drawing screen is displayed.

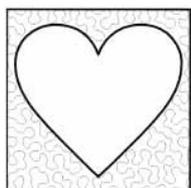
9 If necessary, edit the scanned image.

- * After the scanned image is converted to stitching, it appears as a background in the pattern drawing screen. Use gauge ① to adjust the transparency of the background. Each press of  lightens the background, making the illustration pattern darker. Each press of  darkens the background, making the illustration pattern lighter.

STIPLING

Basic Stippling with IQ Designer

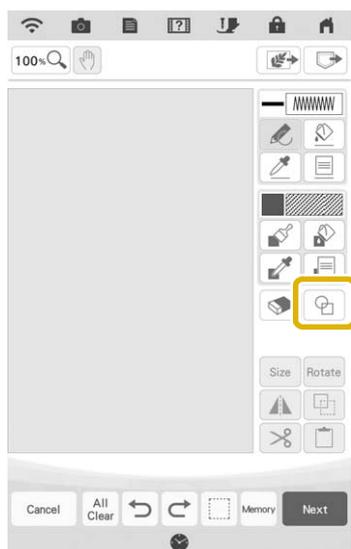
Create a stippling design with the basic procedure.
Example:



1 Press **IQ**.

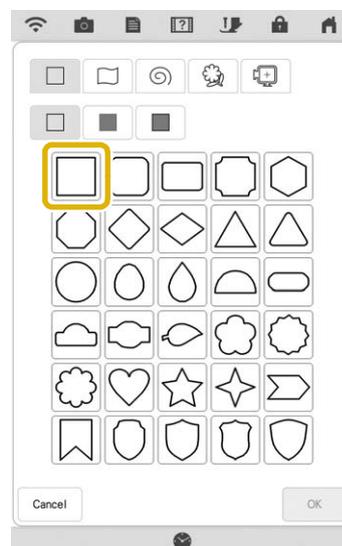
* You can also start the function by pressing **IQ Designer** in "Embroidery" mode.

2 Press .

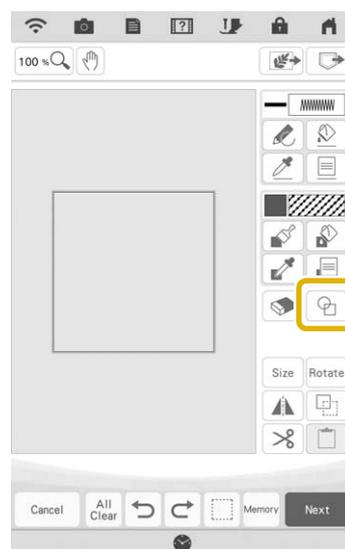


3 Select the square shape, and then press

OK.



4 Press .

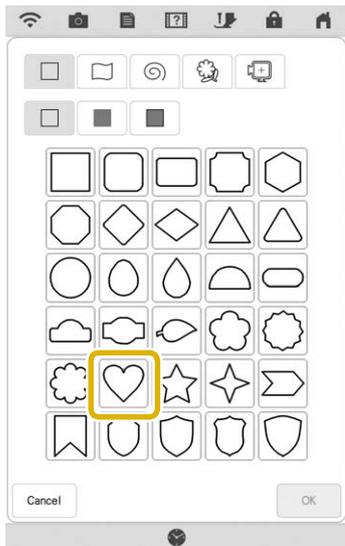


4

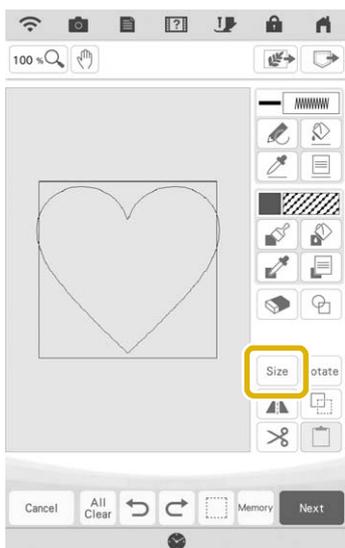
IQ Designer

5 Select the heart shape, and then press .

.



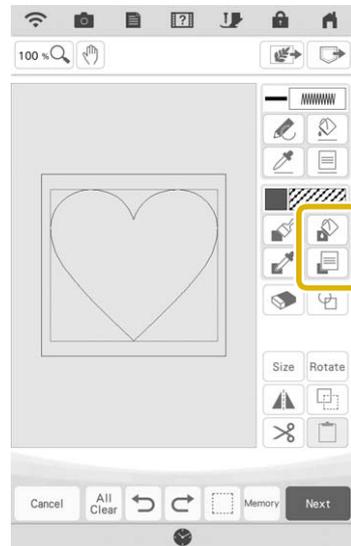
6 Press .



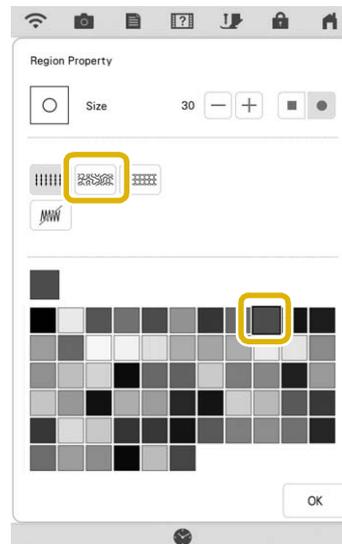
7 Press until the heart shape fits in the square shape, and then press .

.

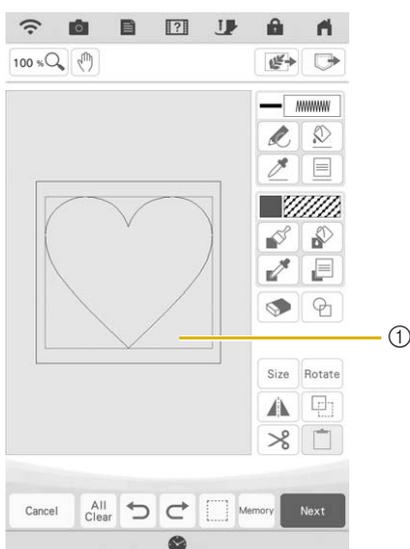
8 Press , and then press .



9 Press , and then select the stitch color. Press after setting the color.

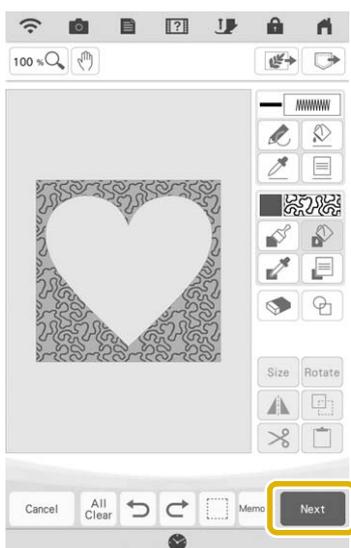


10 Select the area you want to set stippling effect.



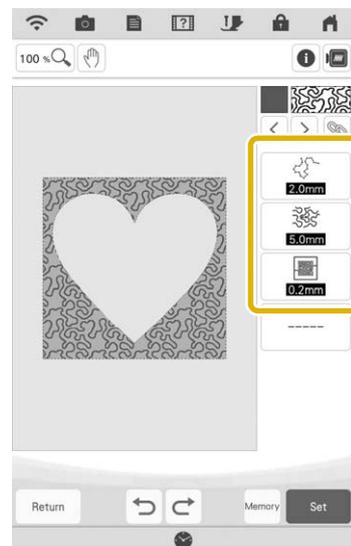
① Select this area.

11 Press **Next**.



12 Adjust the stippling settings to create the desired effect, and then press **Set**.

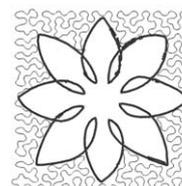
* For details, refer to “Specifying Individual Stitch Settings” on page 163.



13 Follow the procedure described on “Editing Patterns” on page 38 to edit the pattern as desired.

Scanning Drawing to Create Stippling Pattern

Create a custom pattern with stippling design.
Example:



1 Place a drawing of your design on the scanning frame.

2 Press **IQ**.

* You can also start the function by pressing **IQ Designer** in “Embroidery” mode.

3 Press .

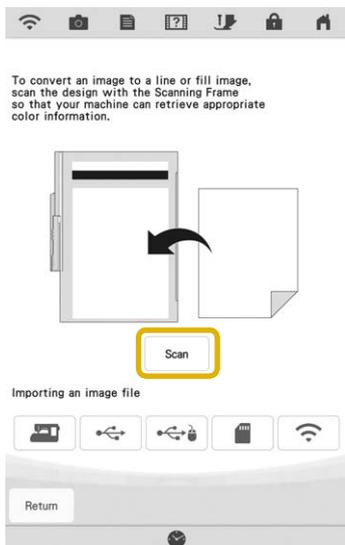


4 Press  Line design .



- * When the image has already been imported, continue with step **6** .
- * When the image has not been imported, continue with step **5** .

5 Position the scanning frame on the machine, and then press .



Note

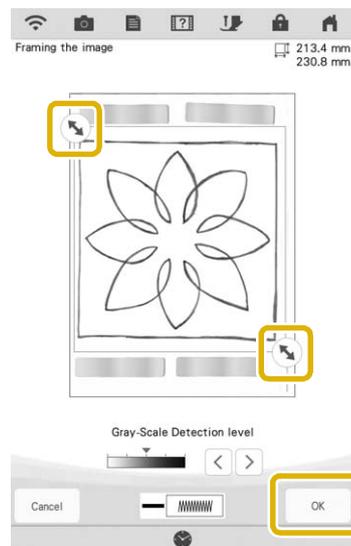
- When scanning starts, some of the machine lights will turn off in certain circumstances, in order to increase the scan quality. The machine lights will return to their original brightness when scanning ends.
- You can import an image of 2 MB or smaller from USB media or SD card.

→ When the following message appears, press .

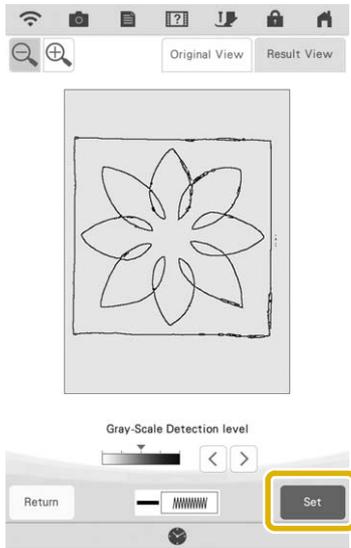


→ Scanning begins.
 * To stop scanning and return to the screen in step **5**, press .

6 When scanning is finished, move  to frame the image for the pattern, and then press .

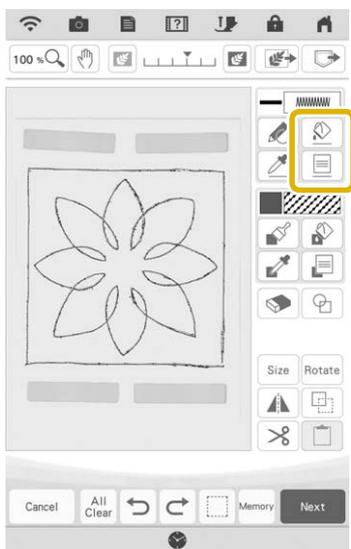


- 7** The screen for confirming the converted image appears, adjust the image if necessary and then press **Set**.

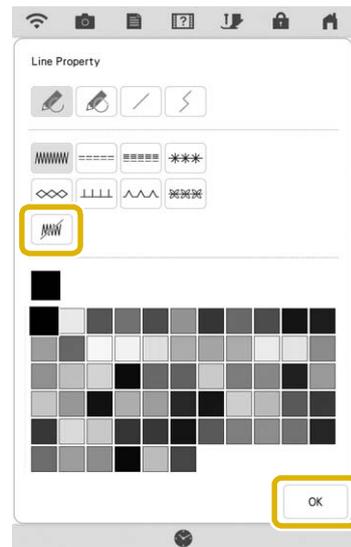


→ The pattern drawing screen is displayed.

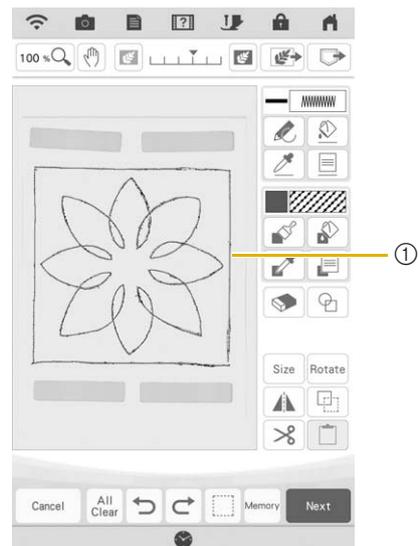
- 8** To set the outline of the pattern, press , and then .



- 9** Press  and then **OK**. This will set the outline without a stitch.

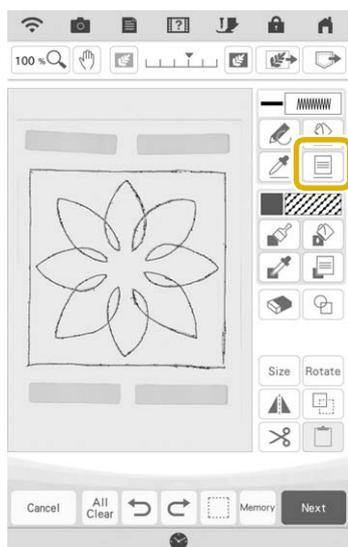


- 10** Select the outline of the pattern.

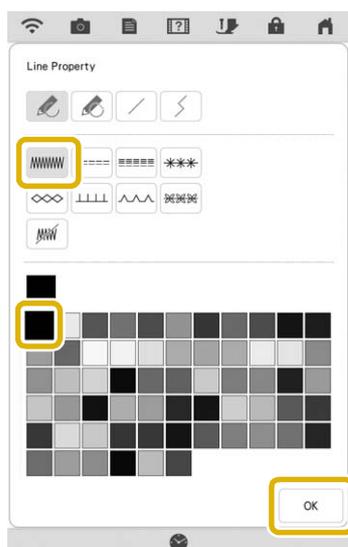


① Outline of the pattern

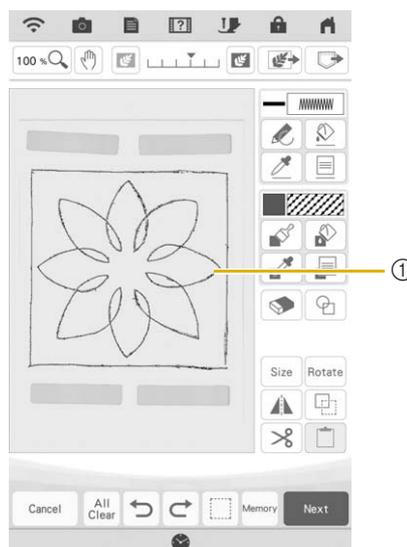
- 11 Press  to select the color of the stitch around the stippling effect.



- 12 Press  and select the stitch color, and then press .

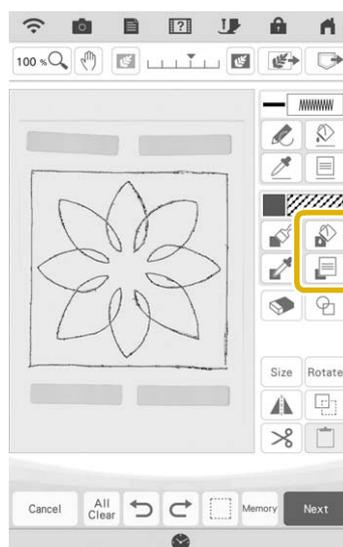


- 13 Select the stitch line around the stippling effect.

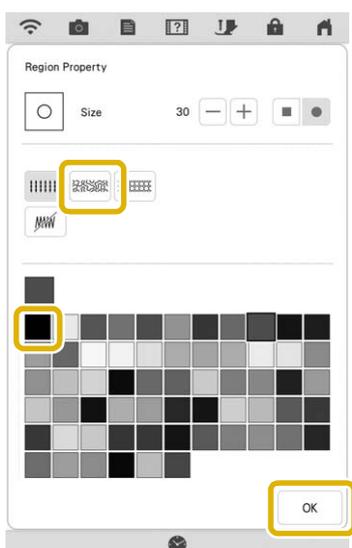


① Stitch line

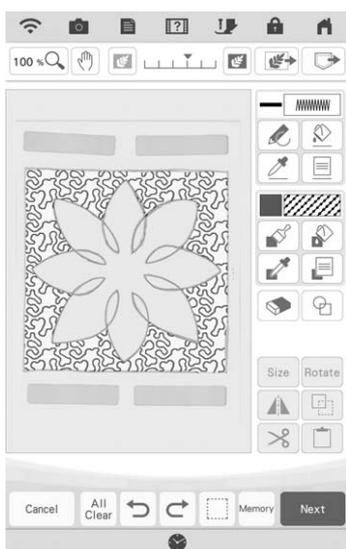
- 14 To set the stitch color and fill stitch type, press , and then .



- 15** Press , and then select the stitch color.
Press  after setting the color.



- 16** Select the area you want to set stippling effect.

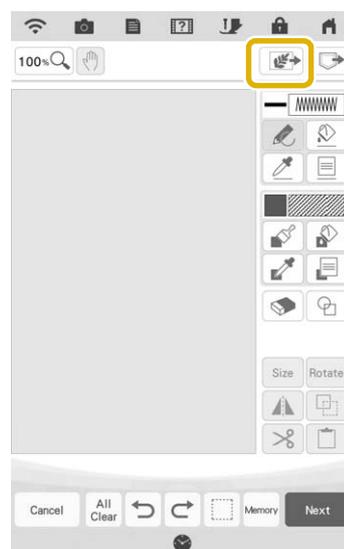


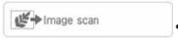
- 17** Follow the procedure from step **11** of “Basic Stippling with IQ Designer” on page 177.

Scanning Fabric and Stippling

Use the fabric pattern to coordinate with the stippling pattern.

- 1** Hoop the fabric in the embroidery frame.
- 2** Press .
 - * You can also start the function by pressing  in “Embroidery” mode.
- 3** Press .

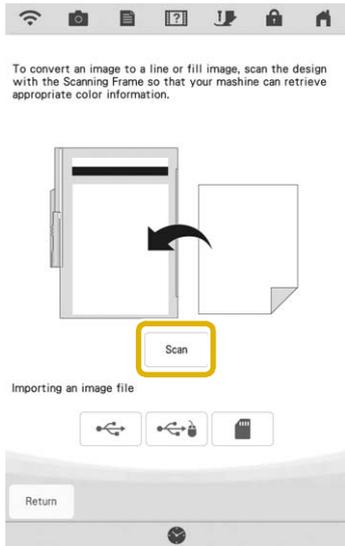


- 4** Press .



→ The image display screen appears.

5 Position the embroidery frame on the machine, and then press **Scan**.



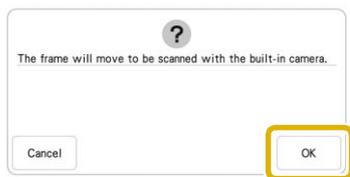
Memo

- Although the instructions in the LCD screen refer to the scanning frame, this example uses an embroidery frame for scanning.

Note

- When scanning starts, some of the machine lights will turn off in certain circumstances, in order to increase the scan quality. The machine lights will return to their original brightness when scanning ends.
- You can import an image of 2 MB or smaller from USB media or SD card.

→ When the following message appears, press **OK**.



→ Scanning begins.

* To stop scanning and return to the screen in step **5**, press **Cancel**.

6 Press **OK**.

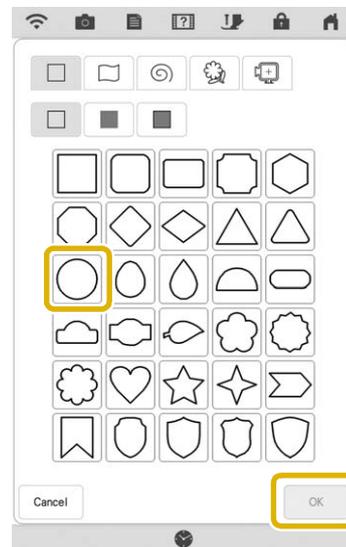


Note

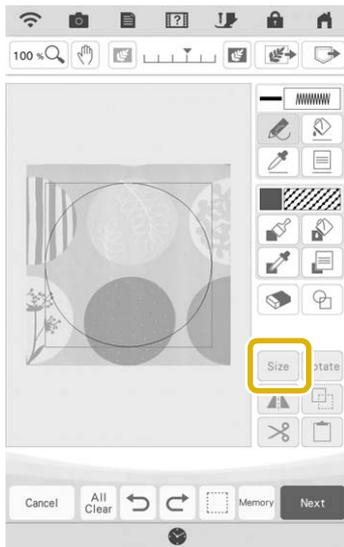
- This fabric sample has circular shapes that can be easily matched with a built-in stamp. For more complex or irregular designs, you can use the line drawing tools to match the designs in the fabric.

7 Select the circle shape, and then press **OK**.

OK.

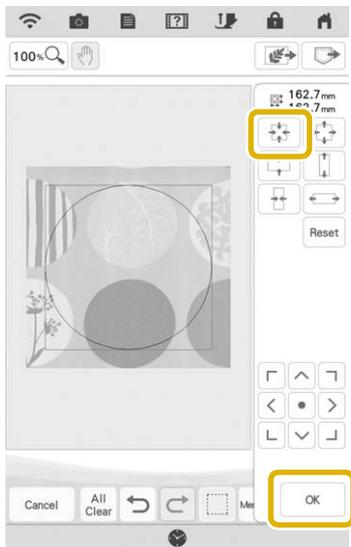


8 Press **Size** to increase or decrease the size of the circle.



9 Press **Align** until the size of circle fits the pattern on the fabric, and then press **OK**.

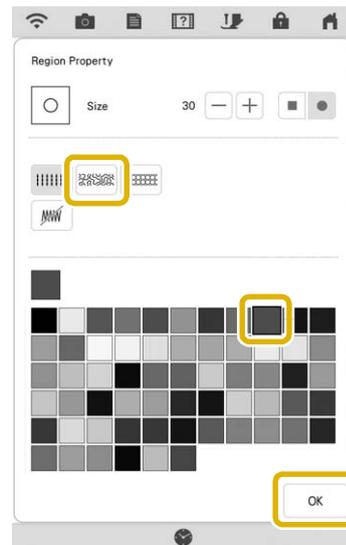
* Use **Align** to align the position of the circle to the pattern on the fabric.



10 To set the stitch color and fill stitch type, press **Color**, and then **Color**.



11 Press **Color**, and then select the stitch color. Press **OK** after setting the color.



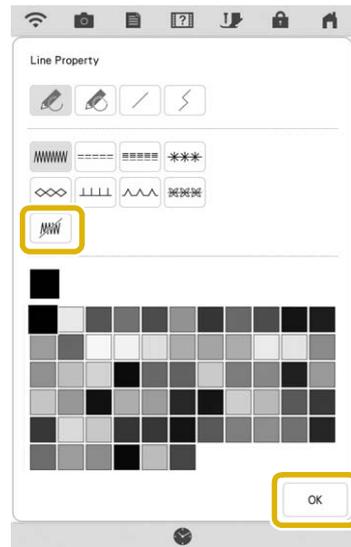
12 Select the area you want to set stippling effect.



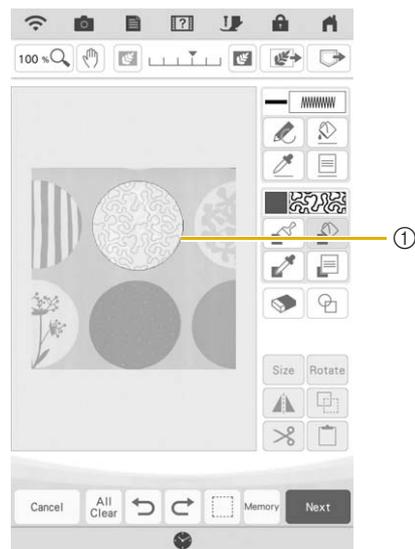
13 To set the outline of the pattern, press , and then .



14 Press  and then . This will set the outline without a stitch.



15 Select the outline of the pattern.



① Outline of the pattern

16 Follow the procedure from step **11** of “Basic Stippling with IQ Designer” on page 177.

→ Start embroidering on the fabric that you scanned at first.

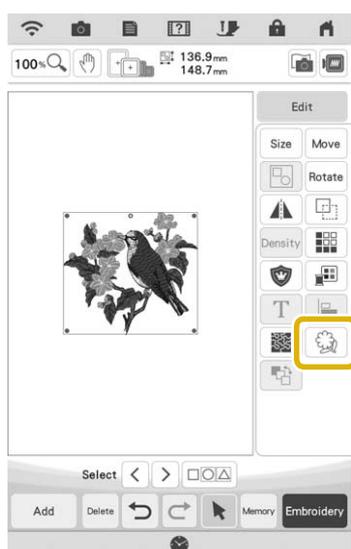
Decorative Stitching Around a Pattern in Embroidery (a Quilting Function)

Memo

- For best results, reduce the sewing speed.
- For best results, hoop the stabilizer and fabric and embroider the design prior to adding the batting and backing under the hoop for quilting.

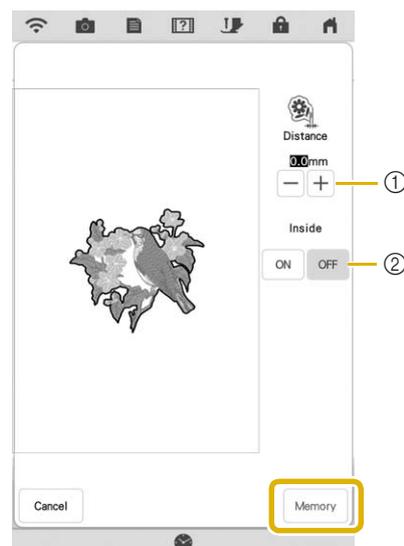
Stippling can be added around an Embroidery pattern.

- 1 Press  and select the pattern that decorative stitching will be added around, and then press  in the embroidery edit screen.



→ The outline of the pattern is displayed.

- 2 Press .



- ① Specify the distance from the outline of the pattern to the pattern.
 - ② When set to "ON", lines inside the pattern are also extracted.
- A message appears, and the pattern outline is registered as a stamp shape in IQ Designer. Press

.



- 3 Press  to continue to the embroidery screen, and then embroider the pattern.

- 4 Keeping the fabric in the hoop, place batting and backing under the fabric in the hoop, being careful to avoid placing any pins or tape in the embroidery area.

Memo

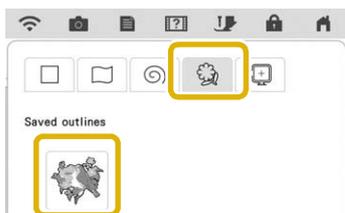
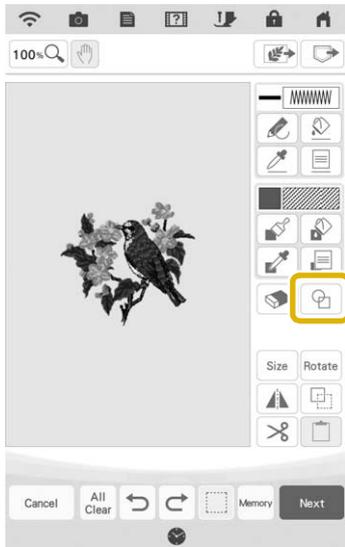
- If desired, remove the embroidered fabric from the frame, layer with batting and backing, then secure the three layers together in the frame.

- 5 Press  in the home page screen to start IQ Designer.

- 6 Press to scan the embroidered fabric. Refer to "Importing the Background Image" on page 169 for details.



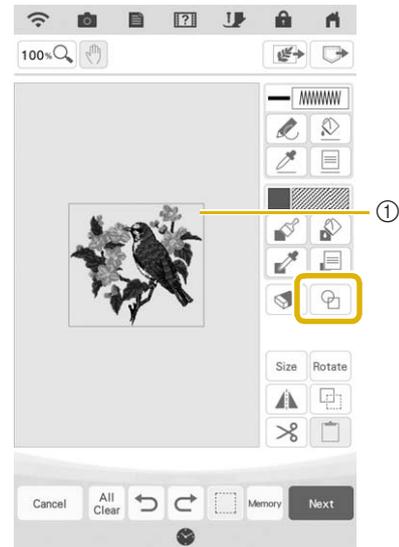
- 7 Press , press to recall the stamp shape registered in step 2, and then arrange it over the scanned pattern.



- 8 Press to use a stamp or rectangular frame to determine the area to be stitched.

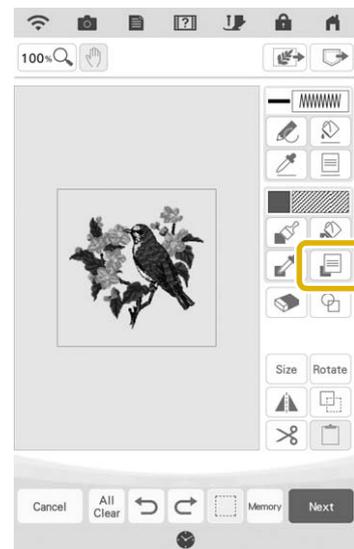
Note

- If the area is to be drawn by hand, be sure to draw a completely closed shape. If the area is not closed, it cannot be correctly filled with the decorative stitching.

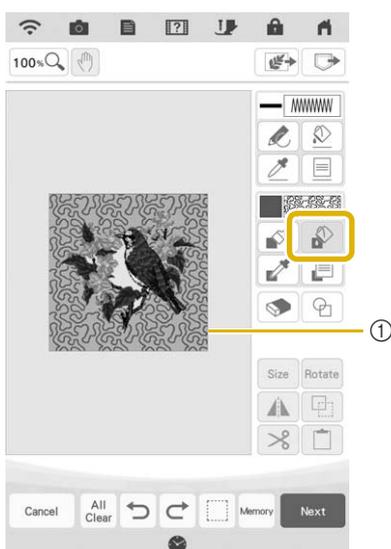


① Stamp or rectangular frame

- 9 Use the brush tool keys to select the pattern and color of the decorative stitching.

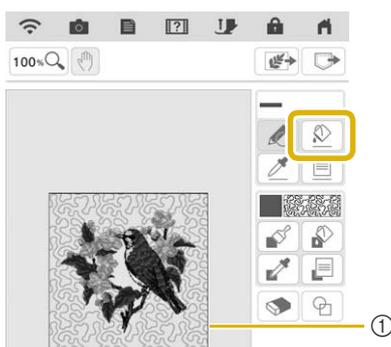
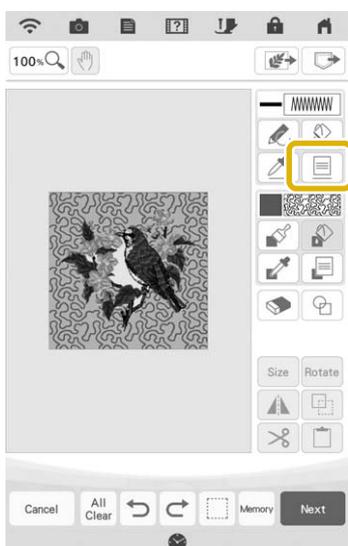


10 Press , and then fill the area to be stitched outside of the stamp shape outline.



① Fill the area.

11 If you select the stamp shapes to determine the area on step **8**, press  for the line tool keys to select . Press , then select the frame outline.

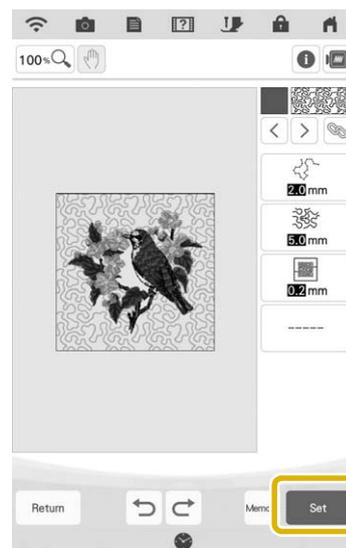


① Stamp outline

12 Press **Next**.



13 Specify the stitch settings in the stitch settings screen, and then press **Set**.



14 Embroider the decorative stitching around the embroidery pattern.

IQ INTUITION POSITIONING APP

Images saved on a smart device can be transferred to the machine so that an embroidery pattern can be created in IQ Designer.

■ Installing the IQ Intuition Positioning App

- 1 Use your smart device to scan the appropriate QR code below to visit Google Play™ for Android devices or the App Store for Apple devices.



Android™:
https://www.babylock.com/IQIntuition_PositioningAndroid



iOS:
https://www.babylock.com/IQIntuition_PositioningiOS

- 2 Install “IQ Intuition Positioning”.



IQ Intuition Positioning



Memo

- To download and install the app, you can also search for “IQ Intuition Positioning” in Google Play or the App Store.
- Visit the following web site for support information on the app.
<https://www.babylock.com/support>

■ Transferring an Image from a Smart Device to the Machine

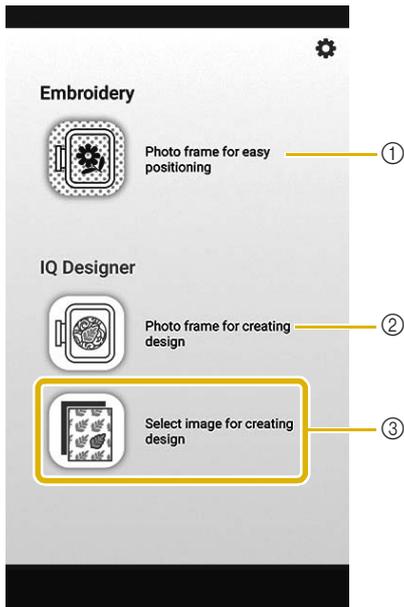


Memo

- 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.
 - * Refer to "Specifying Wireless Network Connection Settings" in the machine's Instruction and Reference Guide (Sewing).
- 2 Confirm that your smart device and your machine are connected to the same network.
- 3 Tap the icon on the smart device for “IQ Intuition Positioning” 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.

5 Tap 



- ① This icon is not available for your machine. It is for machines that are not equipped with a camera. Your machine will use the built-in camera to align embroidery patterns. For details, refer to "Display the Fabric while Aligning the Embroidering Position" on page 92.
- ② This icon is not available for your machine. It is for machines that are not equipped with a camera. Your machine will use the built-in camera to create embroidery patterns in IQ Designer. For details, refer to "IQ DESIGNER WITH SCAN" on page 166.
- ③ This icon allows you to transfer an image from the smart device to the machine to create a design in IQ Designer.

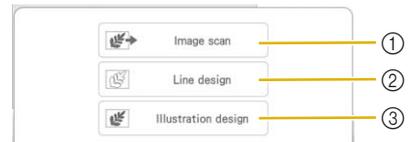
6 Select the image, then select "Send to the Machine" to transfer it from the smart device to the machine.

→ You will receive confirmation in the app that the image was successfully sent to IQ Designer.

7 Start IQ Designer on the machine, and then press 

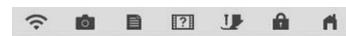


8 Press the appropriate key for the image to be used.

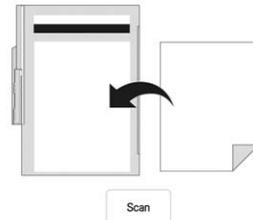


- ① Press this key to use the image as a background image. For details, refer to "Scanning to Trace Background Image" on page 167.
- ② Press this key to convert a line drawing to embroidery data. For details, refer to "LINE SCAN" on page 171.
- ③ Press this key to convert an illustration to embroidery data. For details, refer to "ILLUSTRATION SCAN" on page 174.

9 Press 



To convert an image to a line or fill image, scan the design with the Scanning Frame so that your machine can retrieve appropriate color information.

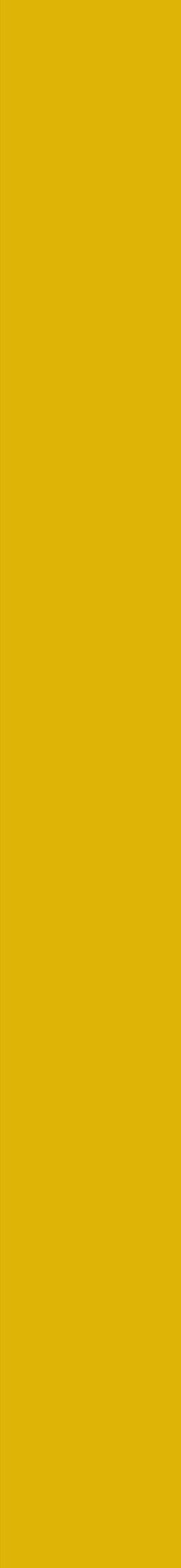


10 Select the data, and then press 

11 Proceed through the appropriate steps in IQ Designer to finish creating the embroidery pattern.



Chapter **5**
Appendix



TROUBLESHOOTING

If the machine stops operating correctly, check the following possible problems before requesting service. You can solve most problems by yourself. Visit us at “ www.babylock.com ”. If the problem persists, contact your authorized Baby Lock retailer.

List of Symptoms

If you have a minor problem with your machine, check the following solutions. If the solutions suggested do not correct the problem, contact your authorized Baby Lock retailer. Press  →  →  for advice about minor embroidering problems during embroidering. Press  at any time to return to the original screen.

■ Getting Ready

Problem	Cause	Solution	Page
Cannot thread the needle.	Needle is not in the correct position.	Press the “Needle Position” button to raise the needle.	—
	Needle is installed incorrectly.	Reinstall the needle correctly.	11
	Needle is turned, bent or the point is dull.	Replace the needle.	11
	Upper threading is incorrect.	Check the steps for threading the machine and rethread the machine.	22
	The needle threader hook is bent and does not pass through the eye of the needle.	Contact your authorized Baby Lock retailer.	—
	The needle threader lever cannot be moved or returned to its original position.	Contact your authorized Baby Lock retailer.	—
Cannot lower the embroidery foot with the presser foot lever.	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.	25
	Embroidery foot was raised using the “Presser Foot Lifter” button.	Press the “Presser Foot Lifter” button to lower the embroidery foot.	—
Bobbin thread does not wind neatly on the bobbin.	The thread is not passed through the bobbin winding thread guide correctly.	Correctly pass the thread through the bobbin winding thread guide.	16
	Bobbin spins slowly.	Press  in the bobbin winding window to increase the bobbin winding speed.	17
	The thread that was pulled out was not wound onto the bobbin correctly.	Wind the thread that was pulled off around the bobbin 5 or 6 times clockwise.	16
	The empty bobbin was not set on the pin properly.	Set the empty bobbin on the pin and slowly turn the bobbin until you hear it click in place.	15
While winding the bobbin, the bobbin thread was wound below the bobbin winder seat.	You did not wind the bobbin thread properly when you initially wound the bobbin, or the bobbin thread was not properly set in the guides.	After removing the thread wound below the bobbin winder seat, wind the bobbin correctly. Follow the drawn images on the top of the machine for guidance when threading the machine for bobbin winding.	15
The bobbin thread cannot be pulled up.	Needle is turned, bent or the point is dull.	Replace the needle.	11
	Bobbin is set incorrectly.	Reset the bobbin thread correctly.	20
Machine does not operate	All keys and buttons have been locked by  .	Press to unlock all keys and  buttons.	9, 11
Nothing appears in the LCD.	Main power switch is not turned on.	Turn the main power to ON.	—
	The plug of the power cord is not inserted into an electrical outlet.	Insert the plug of the power cord into an electrical outlet.	—
The LCD screen does not look very clear.	The brightness of the screen is not adjusted.	Adjust the “Screen Display Brightness” in the settings screen.	—
Nothing happens, even if the LCD display is pressed	The screen has been locked.	Press either of the following keys to unlock the screen.  	—

Problem	Cause	Solution	Page
The LCD screen is fogged up.	Condensation has formed on the LCD screen.	After a while, the cloudiness will disappear.	—
Embroidery unit does not operate.	Embroidery unit is not attached correctly.	Reattach the embroidery unit correctly.	13
	Embroidery frame was attached before the unit was initialized.	Remove the embroidery frame, and then perform the initialization process correctly.	13
Pointer of the projector does not indicate the position correctly	With thick elastic fabric, the position will be misaligned only at raised parts in the fabric.	Manually adjust the position according to the thickness of the fabric.	47
	With fabric having a very uneven surface, the position is not correctly aligned.	The pointer indication should be used only as a reference.	—

■ While Embroidering

Problem	Cause	Solution	Page
Machine does not operate.	“Start/Stop” button was not pressed.	Press the “Start/Stop” button.	—
	There is no pattern selected.	Select a pattern.	36
	Embroidery foot is not lowered.	Lower the embroidery foot.	—
Needle breaks.	Needle is installed incorrectly.	Reinstall the needle correctly.	11
	Needle clamp screw is not tightened.	Tighten the needle clamp screw.	12
	Needle is turned or bent.	Replace the needle.	11
	Using improper needle or thread for the selected fabric.	Refer to the “Fabric/Thread/Needle Combinations” chart in the Instruction and Reference Guide (Sewing).	—
	Wrong embroidery foot was used.	Use the recommended embroidery foot.	10
	Upper thread tension is too tight.	Adjust the thread tension.	98
	Fabric is pulled during embroidering.	Do not pull the fabric during embroidering.	—
	Spool cap is set incorrectly.	Check the method for attaching the spool cap, then reattach the spool cap.	22
	There are scratches around the opening in the needle plate.	Replace the needle plate, or consult your authorized Baby Lock retailer.	—
	There are scratches around the opening in the embroidery foot.	Replace the embroidery foot, or consult your authorized Baby Lock retailer.	9
	There are scratches on the bobbin case.	Replace the bobbin case, or consult your authorized Baby Lock retailer.	—
	Needle is defective.	Replace the needle.	11
	A bobbin designed specifically for this machine is not used.	Use a bobbin designed specifically for this machine.	20
	Upper threading is incorrect.	Check the steps for threading the machine and rethread the machine.	22
	Bobbin is set incorrectly.	Reset the bobbin thread correctly.	20
	Embroidery foot is attached incorrectly.	Attach the embroidery foot correctly.	9
	Screw of the presser foot holder is loose.	Securely tighten the screw of the presser foot.	10
	Fabric is too thick.	Use fabric that the needle can pierce when the handwheel is turned.	—
	Stabilizer is not attached to fabric being embroidered.	Attach stabilizer.	28
	Bobbin thread is incorrectly wound.	Use a correctly wound bobbin.	15

Problem	Cause	Solution	Page
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.)	Rethread the machine correctly.	22
	Knotted or tangled thread is being used.	Remove any knots or tangles.	—
	The selected needle is not appropriate for the thread being used.	Refer to the “Fabric/Thread/Needle Combinations” chart in the Instruction and Reference Guide (Sewing).	—
	Upper thread tension is too tight.	Adjust the thread tension.	98
	Thread is twisted.	Use scissors, etc., to cut the twisted thread and remove it from the race, etc.	—
	Needle is turned, bent or the point is dull.	Replace the needle.	11
	Needle is installed incorrectly.	Reinstall the needle correctly.	11
	There are scratches around the opening of the needle plate.	Replace the needle plate, or consult your authorized Baby Lock retailer.	—
	There are scratches around the opening in the embroidery foot.	Replace the embroidery foot, or consult your authorized Baby Lock retailer.	9
	There are scratches on the bobbin case.	Replace the bobbin case, or consult your authorized Baby Lock retailer.	—
	Using improper needle or thread for the selected fabric.	Refer to the “Fabric/Thread/Needle Combinations” chart in the Instruction and Reference Guide (Sewing).	—
	While embroidering, the thread became knotted or tangled.	Rethread upper and lower thread.	20, 22
A bobbin designed specifically for this machine is not used.	Use a bobbin designed specifically for this machine.	20	
The thread is tangled on the wrong side of the fabric.	Upper threading is incorrect.	Check the steps for threading the machine and rethread the machine. Be sure that the embroidery foot is in the raised position when threading the machine so that the upper thread sets properly in the upper tension.	22
	Using improper needle or thread for the selected fabric.	Refer to the “Fabric/Thread/Needle Combinations” chart in the Instruction and Reference Guide (Sewing).	—
The upper thread is too tight.	The bobbin thread is incorrectly installed.	Correctly install the bobbin thread.	20
Bobbin thread breaks.	Bobbin is set incorrectly.	Reset the bobbin thread correctly.	20
	Bobbin thread is incorrectly wound.	Use a correctly wound bobbin.	15
	There are scratches on the bobbin or it doesn't rotate properly.	Replace the bobbin.	20
	Thread is twisted.	Use scissors, etc. to cut the twisted thread and remove it from the race, etc.	—
	A bobbin designed specifically for this machine is not used.	Use a bobbin designed specifically for this machine.	20
Fabric puckers.	There is a mistake in the upper or bobbin threading.	Check the steps for threading the machine and rethread it correctly.	20, 22
	Spool cap is set incorrectly.	Check the method for attaching the spool cap, then reattach the spool cap.	22
	Using improper needle or thread for the selected fabric.	Refer to the “Fabric/Thread/Needle Combinations” chart in the Instruction and Reference Guide (Sewing).	—
	Needle is turned, bent or the point is dull.	Replace the needle.	11
	Thread tension is set incorrectly.	Adjust the thread tension.	98
Skipped stitches	Machine is threaded incorrectly.	Check the steps for threading the machine and rethread it correctly.	22
	Using improper needle or thread for the selected fabric.	Refer to the “Fabric/Thread/Needle Combinations” chart in the Instruction and Reference Guide (Sewing).	—
	Needle is turned, bent or the point is dull.	Replace the needle.	11
	Needle is installed incorrectly.	Reinstall the needle correctly.	11
	Needle is defective.	Replace the needle.	11
	Dust or lint has collected under the needle plate.	Remove the dust or lint with the brush.	—

Problem	Cause	Solution	Page
High-pitched sound while embroidering	Pieces of thread are caught in the race.	Clean the race.	—
	Upper threading is incorrect.	Check the steps for threading the machine and rethread the machine.	22
	A bobbin designed specifically for this machine is not used.	Use a bobbin designed specifically for this machine.	20
	There are needle holes or friction scratches in the bobbin case.	Replace the bobbin case, or consult your authorized Baby Lock retailer.	—
The needle contacts the needle plate.	The needle clamp screw is loose.	Firmly tighten the needle clamp screw. If the needle is bent or blunt, replace it with a new one.	11
	Needle is turned, bent or the point is dull.	Replace the needle.	11
Fabric being embroidered with the machine cannot be removed.	Thread is tangled below the needle plate.	Lift up the fabric and cut the threads below it, and clean the race.	—
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.	Remove the tangled thread from the bobbin case. Re-install the bobbin case so it is correctly positioned.	—
The machine does not detect the embroidery positioning sticker.	Sunlight or light from the outside interferes with the machine.	Block light from the outside.	—
The scanned image is too bright or too pale.			

■ After Embroidering

Problem	Cause	Solution	Page
Thread tension is incorrect.	Upper threading is incorrect.	Check the steps for threading the machine and rethread the machine.	22
	Bobbin is set incorrectly.	Reset the bobbin. (If needle plate was removed, reinstall needle plate.)	20
	Using improper needle or thread for the selected fabric.	Refer to the "Fabric/Thread/Needle Combinations" chart in the Instruction and Reference Guide (Sewing).	—
	Thread tension is set incorrectly.	Adjust the thread tension.	98
	Bobbin thread is incorrectly wound.	Use a correctly wound bobbin.	15
	Needle is turned, bent or the point is dull.	Replace the needle.	11
	A bobbin designed specifically for this machine is not used.	Use a bobbin designed specifically for this machine.	20
Embroidery pattern does not embroider out correctly.	Thread is twisted.	Use scissors, etc., to cut the twisted thread and remove it from the bobbin case, etc.	—
	Thread tension is set incorrectly.	Adjust the thread tension.	98
	Fabric was not inserted into the frame correctly (fabric was loose, etc.).	If the fabric is not stretched tight in the frame, the pattern may turn out poorly or there may be shrinkage of the pattern. Set the fabric into the frame correctly.	30
	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.	28
	There was an object placed near the machine, and the carriage or embroidery frame hit the object during embroidering.	If the frame bumps something during embroidering, the pattern will turn out poorly. Do not place anything in the area where the frame may bump it during embroidering.	53
	Fabric outside the frame edges interferes with the free arm, so the embroidery unit cannot move.	Reinsert the fabric in the embroidery frame so that the excess fabric is away from the free arm, and rotate the pattern 180 degrees.	30
	Fabric is too heavy, so the embroidery unit cannot move freely.	Place a large thick book or similar object near the embroidery unit to lightly lift the heavy side and keep it level. Ensure that this object will not interfere with the movement of the embroidery arm or frame.	—
	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.	53
	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 embroidery foot was bumped or moved while removing or attaching the embroidery frame, or the embroidery unit was moved.	If the embroidery foot is bumped or the embroidery unit is moved during embroidering, the pattern will not turn out. Be careful when removing or reattaching the embroidery frame during embroidering.	56
Stabilizer is incorrectly attached, for example, it is smaller than the embroidery frame.	Attach the stabilizer correctly.	28	
Loops appear on the surface of the fabric when embroidering	The thread tension is incorrectly set.	Adjust the thread tension.	98
	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.	32
	The combination of the bobbin case and bobbin thread is incorrect.	Change the bobbin case or bobbin thread so that the correct combination is used.	53

CAUTION

- This machine is equipped with a thread detection device. If the “Start/Stop” button is pushed before the upper threading is done, the machine will not operate properly.
- If the power is disconnected during embroidering:
Turn the main power to OFF and unplug the machine.
If you restart the machine, follow the Instruction and Reference Guide for operating the machine correctly.

ERROR MESSAGES

If the machine is not properly set and the “Start/Stop” button or the “Reverse/Reinforcement Stitch” button is pressed, or if the operation procedure is incorrect, the machine does not start. An alarm sounds and an error message is displayed on the LCD. If an error message displays, follow the instructions in the message.

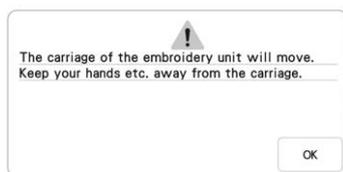
Below is an explanation of error messages. Refer to these when necessary (if you press or do the operation correctly while the error message is displayed, the message disappears).

⚠ CAUTION

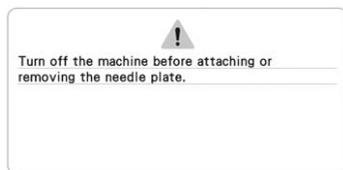
- **Be sure to rethread the machine. If you press the “Start/Stop” button without rethreading the machine, the thread tension may be wrong or the needle may break and cause injury.**



This message is displayed when the motor locks due to tangled thread or for other reasons related to thread delivery.



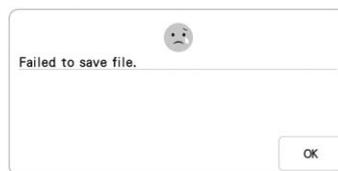
This message is displayed when the embroidery unit is initializing.



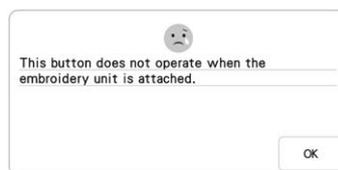
This message is displayed when the needle plate is removed with the machine on or when the machine is turned on and embroidery or embroidery edit mode is selected.



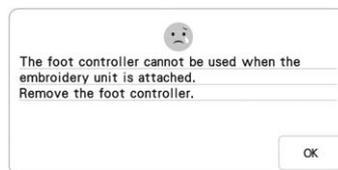
This message is displayed when the machine needs to be maintained.



This message appears when you try to save more than 100 camera image or settings screen image files in the USB media. In this case, delete a file from the USB media or use different USB media.



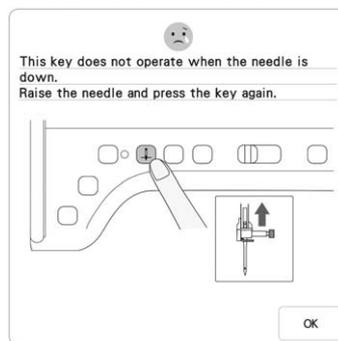
This message is displayed when the “Reverse/Reinforcement Stitch” button is pushed while the embroidery unit is attached.



This message is displayed when the foot controller is pressed while the embroidery unit is attached and machine is set up for embroidering.



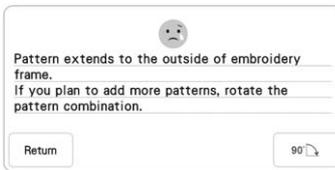
This message is displayed when the patterns you are editing take up too much memory, or if you are editing too many patterns for the memory.



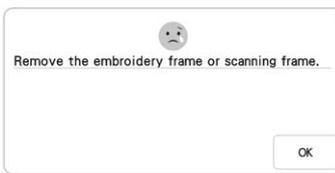
This message is displayed when a key on the LCD display is touched while the needle is in the down position.



This message is displayed when the machine is in embroidery mode, and the character combination is too large to fit in the embroidery frame.



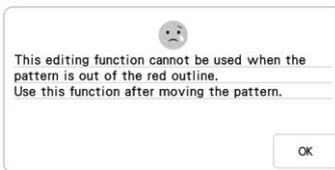
This message is displayed when the machine is in embroidery mode and the combined character pattern is too large for the embroidery frame. You can rotate the pattern 90 degrees and continue combining characters.



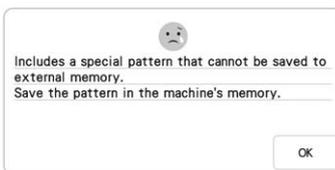
This message is displayed when the machine is in embroidery mode and the embroidery unit tries to initialize while the embroidery frame is attached.



This message is displayed when the machine is ready to embroider a pattern, and the "Start/Stop" button is pushed while the embroidery frame is not attached.



This message is displayed when the machine is in embroidery edit mode, and you try to use an editing function when the pattern is not completely within the red outline.



This message is displayed when you try to save a copyright protected pattern to USB media or computer. According to copyright laws, patterns that are illegal to reproduce or edit cannot be saved to USB media or computer. If this message displays, save the pattern in the machine's memory.

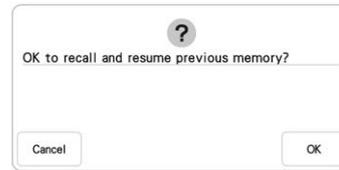


This message is displayed when the machine is in embroidery mode and the selected pattern is too large to fit in the attached frame.

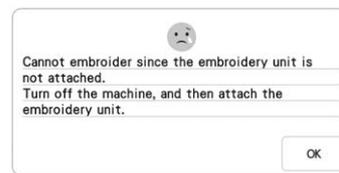
This message may also appear while aligning an embroidery pattern using the built-in camera and the repositioned pattern does not fit in the attached frame.



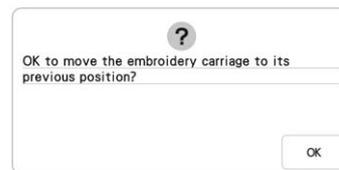
This message is displayed when the **Reset** is pressed when changing thread colors.



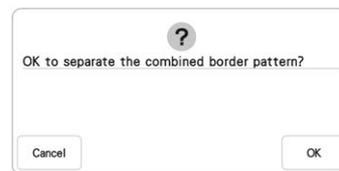
This message appears if the machine is turned off while embroidering, then turned on again. Press **OK** to return the machine to the condition (pattern position and number of stitches) when it was turned off. Follow the procedure described in "If the Thread Breaks during Embroidering" on page 57 to align the needle position and embroider the remainder of the pattern.



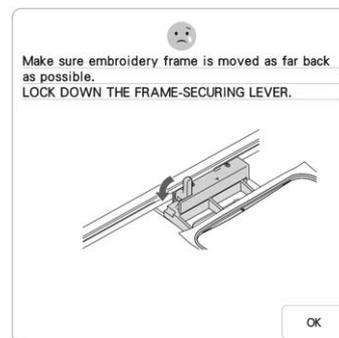
This message is displayed when the "Start/Stop" button is pushed and the machine is in embroidery mode, but the embroidery unit is not attached.



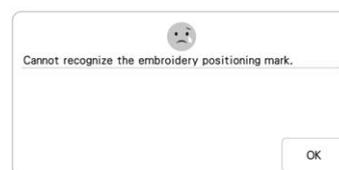
This message is displayed when replacing the embroidering bobbin thread.



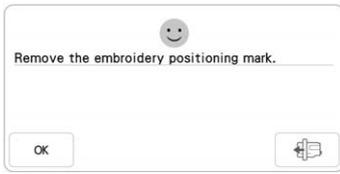
This message is displayed when rotating a saved combined pattern in the Embroidery screen.



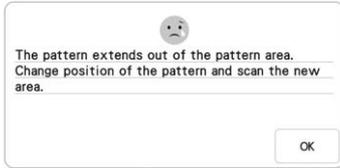
This message is displayed when the embroidery frame is attached.



This message is displayed when the machine failed to recognize the embroidery positioning mark.
- Confirm that the embroidery positioning mark is in the selected area. If problem persists, refer to page 51 to reposition mark.



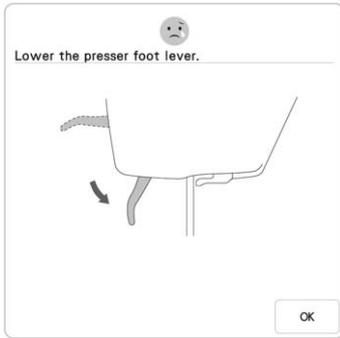
This message is displayed when the machine has recognized the embroidery position mark. Remove the embroidery positioning sticker and press **OK** to continue. To remove the embroidery positioning sticker more easily, press . (page 51)



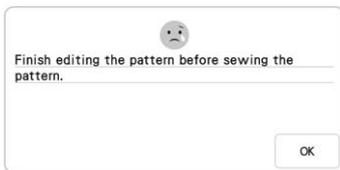
This message appears when the built-in camera is being used to align the embroidery position, but the embroidery positioning sticker is too near an edge or the pattern extends from the embroidery frame. Change the positioning of the embroidery position sticker, and then try aligning the position again. Refer to page 46.



This message is displayed when the upper thread is broken or not threaded correctly, and the "Start/ Stop" button or the "Reverse/ Reinforcement Stitch" button is pressed.



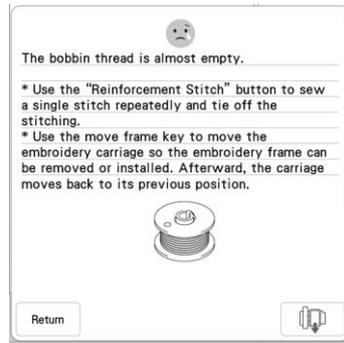
This message is displayed when the "Presser Foot Lifter" button is pushed while the presser foot lever is raised/the needle is lowered.



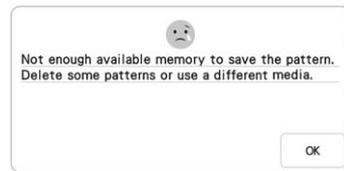
This message is displayed when the "Start/ Stop" button is pushed while the machine is in embroidery edit mode and a pattern is being edited.



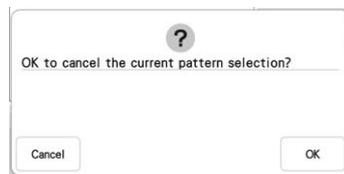
This message is displayed when there is no stitch or embroidery pattern selected and the "Start/ Stop" button or the "Reverse/Reinforcement Stitch" button is pressed.



This message is displayed when the bobbin thread is running out.



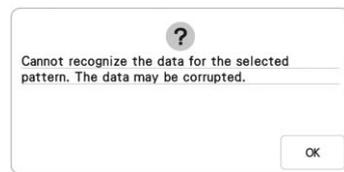
This message is displayed when the memory is full and the stitch or pattern cannot be saved.



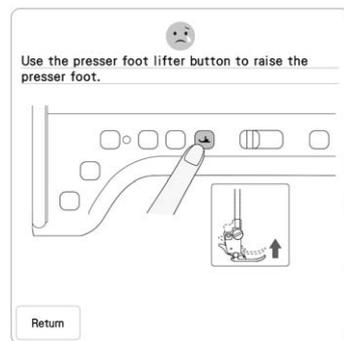
This message is displayed when, after selecting a pattern,  is pressed and the pattern is about to be deleted.



This message is displayed when the bobbin is being wound, and the motor locks because the thread is tangled, etc.



This message is displayed when there is a possibility that the data for the selected pattern is corrupted.



This message is displayed when the embroidery unit is attached and the power is turned on with the needle in the down position.



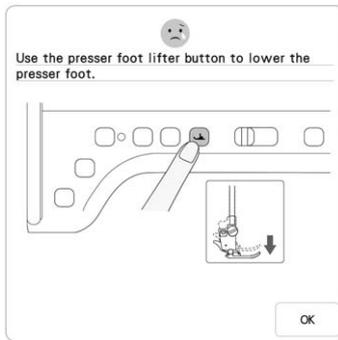
This message is displayed when you try to use incompatible media.



This message is displayed when you attempt to select a pattern after the USB media in which the pattern is saved has been changed.



This message is displayed when an error occurs with the USB media.



This message is displayed when a button, such as the “Start/Stop” button, is pushed while the presser foot is raised.



This message is displayed when it seems that the upper thread has not been threaded correctly.



This message is displayed when the file size exceeds the data capacity of the machine. Confirm the file size and format.



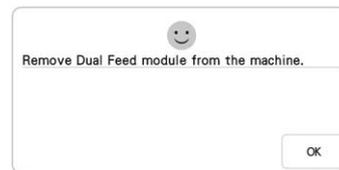
This message appears if the file format is incompatible with this machine. Check the list of compatible file formats.



This message is displayed when the image is deleted.



This message is displayed when you press  Sewing Guide in the screen other than the utility stitch, or press  Pattern Explanation in the screen other than the utility stitch or character/ decorative stitch.



This message appears when you try to start embroidering with the dual feed foot attached to the machine. Remove the dual feed foot before entering the embroidery mode.

Alarm Sounds

If the operation was performed incorrectly, an alarm sounds to indicate that an error occurred. If the operation was performed correctly, the machine beeps to confirm the operation.

Memo

- To cancel the operation beep or to change the volume, press , display page 4 of the settings screen, and then change the setting for “Machine Speaker Volume”. For details, refer to the Instruction and Reference Guide (Sewing).

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