Destiny™

Instruction and Reference Guide

Model BLDY

baby lock

FOR THE LOVE OF SEWING

To register your machine warranty and receive Baby Lock product updates and offers, go to babylock.com/profile. If you have questions with registration, visit your Authorized Baby Lock Retailer.

Baby Lock Consumer Helpline: 800-313-4110

www.babylock.com

INTRODUCTION

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

IMPORTANT SAFETY INSTRUCTIONS

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

⚠DANGER - To reduce the risk of electric shock

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

⚠WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons.

2 Always unplug the machine from the electrical outlet when removing covers, or when making any adjustments mentioned in the instruction manual.

- To unplug the machine, switch the machine to the symbol “O” position to turn it off, then grasp the plug and pull it out of the electrical outlet. Do not pull on the cord.
- Plug the machine directly into the electrical outlet. Do not use an extension cord.
- Always unplug your machine if the power is cut.

3 Electrical Hazards:

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

4 Never operate this machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or water is spilled on the unit. Return the machine to the nearest authorized Baby Lock retailer for examination, repair, electrical or mechanical adjustment.

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

5 Always keep your work area clear:

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

6 Special care is required when sewing:

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

7 This machine is not a toy:

- Your close attention is necessary when the machine is used by or near children.
- The plastic bag that this sewing machine was supplied in should be kept out of the reach of children or disposed of. Never allow children to play with the bag due to the danger of suffocation.
- Do not use outdoors.

8 For a longer service life:

- When storing this machine, avoid direct sunlight and high humidity locations. Do not use or store the machine near a space heater, iron, halogen lamp, or other hot objects.
- Use only neutral soaps or detergents to clean the case. Benzene, thinner, and scouring powders can damage the case and machine, and should never be used.
- Always consult the Instruction and Reference Guide when replacing or installing any assemblies, the presser feet, needle, or other parts to assure correct installation.

9 For repair or adjustment:

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

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

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

Use only the interface cable (USB cable) included with this machine.

Use only the mouse designed specifically for this machine.

Use only the sensor pen included with this machine.

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

For additional product information and updates, visit our website at www.babylock.com

SAVE THESE INSTRUCTIONS
This machine is intended for household use.

FOR USERS IN COUNTRIES EXCEPT EUROPEAN COUNTRIES

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

FOR USERS IN EUROPEAN COUNTRIES

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

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Federal Communications Commission (FCC) Declaration of Conformity

Responsible Party: Tacony Corporation
1760 Gilsinn Lane,
Fenton, Missouri 63026 USA

declares that the product

Product Name: Baby Lock Sewing Machine
Model Number: BLDY

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

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the retailer or an experienced radio/TV technician for help.
- The included interface cable should be used in order to ensure compliance with the limits for a Class B digital device.
- Changes or modifications not expressly approved by Tacony Corporation could void the user's authority to operate the equipment.

Laser Notices

Laser Safety

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

IEC 60825-1 Specification

This sewing machine is a Class 1 laser product as defined in IEC 60825-1:2007 specifications.

The laser beam emitted by the laser unit installed in this machine is restricted to an output at a safe level. However, the machine contains 6-milliwat, 630-640nanometer wavelength, 6-12 degree at parallel divergence angle, 24-34 degree at perpendicular divergence angle, InGaAlP laser diodes. Therefore, eye damage may result from disassembling or altering this machine.
Safety precautions have been designed to prevent any possible laser beam exposure to the operator.

FDA Regulations

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

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

This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

⚠ CAUTION

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

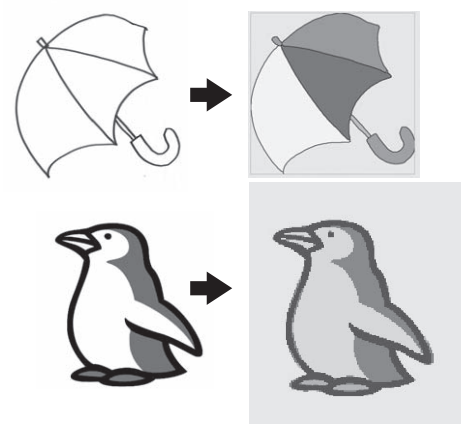
OUTSTANDING FEATURES

IQ Designer

Draw your own shape or lines to design original embroidery patterns. You can specify colors, line type and fill stitch type. Try the stipple-like embroidery pattern. It's very easy and fun!

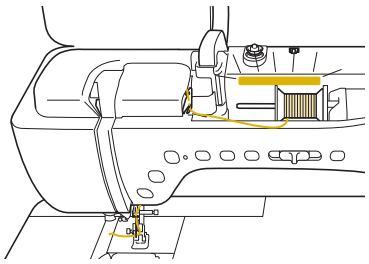
Line Scan / Fill Scan

You don't need a computer to create line art anymore. Scan your favorite drawing or illustration or import a JPEG format data to make your original embroidery pattern. Embroider your unforgettable memories!



Spool Stand LED Lighting

Now, your sewing machine shows you the thread color you are going to embroider next.

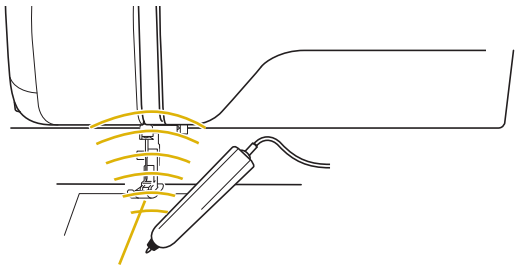


Couching Dual Feed Foot with Dual Feed

Decorative couching gains more popularity everyday. The powerful dual feed foot helps you add embellishment securely with an attractive result to your favorite materials. Enjoy creating many types of decorative couching embellishments with this dual feed foot.

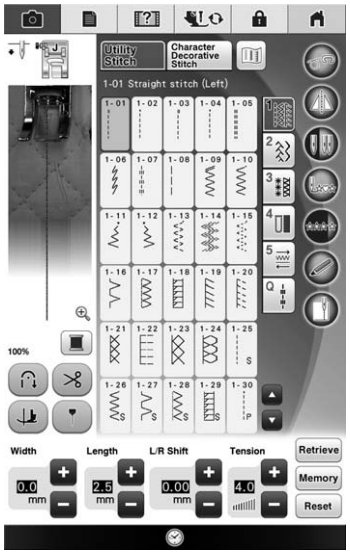
Improved Laser Guideline Marker

It's easy and accurate to specify the stitch position using the improved laser guideline marker. You can use this function easily without any preparation.



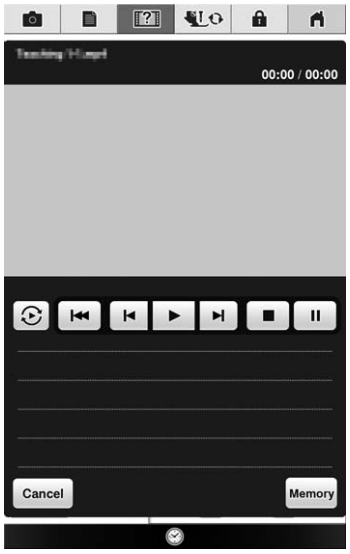
Improved Camera Function

Can you imagine a sewing machine with a built-in camera? Not only viewing the close up view of the needle position, but also you can align the embroidery position, connect the embroidery patterns and place the pattern position while checking the fabric image. The camera functions become clearer and more accurate.



Playing MPEG-4 (MP4) Videos

Your MPEG-4 (MP4) videos can be played and saved from USB media. It's going to be easier to create your project watching the tutorial video on the machine.
Original tutorial videos are installed in this machine. When you find this icon [?] on the title in this manual, you can find the tutorial video of the procedure in your machine.



WHAT YOU CAN DO WITH THIS MACHINE

Getting Ready

To learn the operation of the principal parts and the screens

Chapter 1
Page 27

Sewing Basics

To learn how to prepare for sewing and basic sewing operations

Chapter 2
Page 79

Utility Stitches

Pre-programmed with more than 100 frequently used stitches

Chapter 3
Page 107

Character/Decorative Stitches

The variety of stitches widen your creativity

Chapter 4
Page 167

Basic Embroidery

Maximum 36 cm × 24 cm (approx. 14 × 9.5 inches) for large embroidery designs

Chapter 5
Page 195

Advanced Embroidery

Maximum 36 cm × 24 cm (approx. 14 × 9.5 inches) for large embroidery designs

Chapter 6
Page 271

How to Create Bobbin Work

To learn how to create bobbin work

Chapter 7
Page 323

IQ Designer

Create original embroidery pattern

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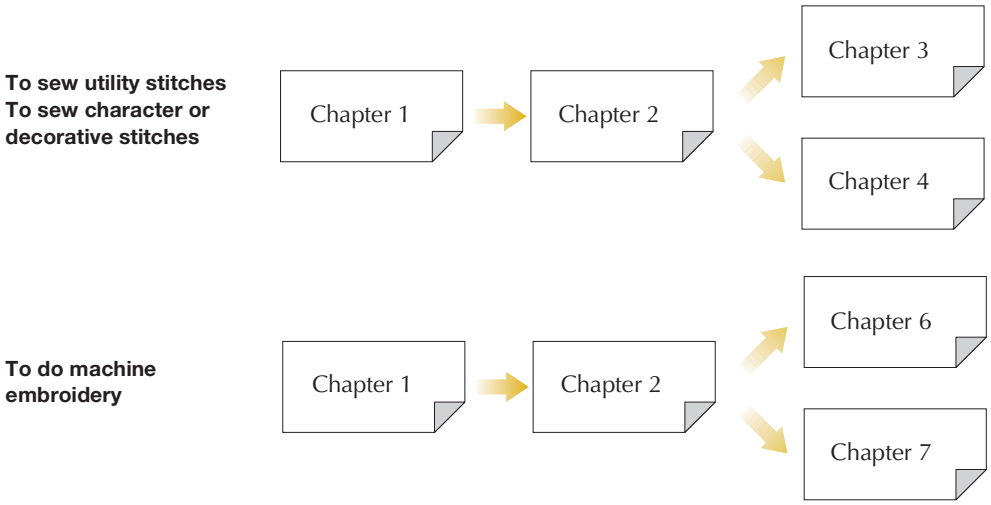
Appendix

Caring for your machine and dealing with errors and malfunctions

Chapter 9
Page 375

HOW TO USE THIS MANUAL

Chapter 1 and Chapter 2 explain your sewing machine's basic operation procedures for someone who is using the sewing machine for the first time. If you want to sew utility stitches or character/ decorative stitches, read Chapter 1 and Chapter 2, then go on to Chapter 3 (Utility Stitches) or Chapter 4 (Character/ Decorative Stitches).
When you are ready to begin using the embroidery function after reading Chapter 1 and Chapter 2, proceed to Chapter 6 (Basic Embroidery) and Chapter 7 (Advanced Embroidery).
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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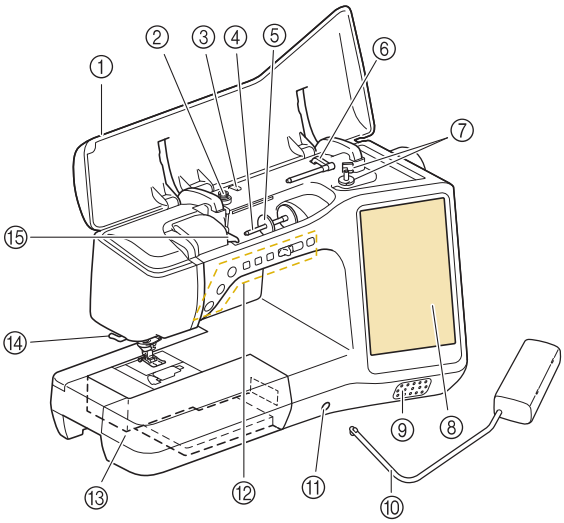
NAMES OF MACHINE PARTS AND THEIR FUNCTIONS

The names of the various parts of the sewing machine and their functions are described below. Before using the sewing machine, carefully read these descriptions to learn the names of the machine parts.

Machine

■ Front View



① **Top cover**
Open the top cover when threading the machine or winding the bobbin.

② **Pre-tension disk**
Pass the thread around the pre-tension disk when winding the bobbin thread. (page 52)

③ **Thread guide for bobbin winding**
Pass the thread through this thread guide when winding the bobbin thread. (page 52)

④ **Spool pin**
Place a spool of thread on the spool pin. (page 60)

⑤ **Spool cap**
Use the spool cap to hold the spool of thread in place. (page 60)

⑥ **Supplemental spool pin**
Use this spool pin to wind the bobbin thread, or to sew with the twin needle. (page 52, 63)

⑦ **Bobbin winder**
Use the bobbin winder when winding the bobbin. (page 52)

⑧ **LCD (liquid crystal display)**
Settings for the selected stitch and error messages appear in the LCD. (page 30)

⑨ **Speaker**

⑩ **Knee lifter**
Use the knee lifter to raise and lower the presser foot. (page 94)

⑪ **Knee lifter slot**
Insert the knee lifter into the slot. (page 94)

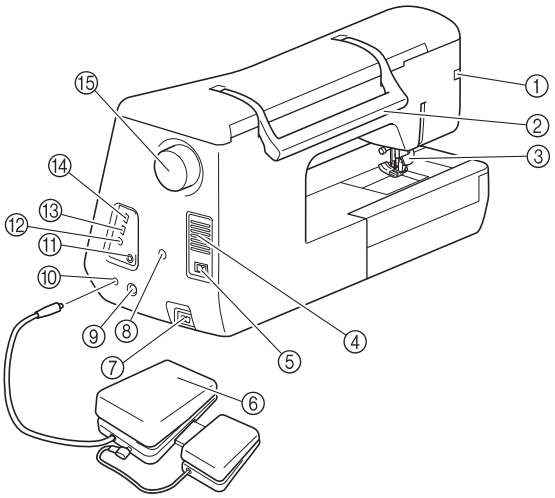
⑫ **Operation buttons (7 buttons) and sewing speed controller**
Use these buttons and the slide to operate the sewing machine. (page 17)

⑬ **Flat bed attachment with accessory compartment**
Store presser feet and bobbins in the accessory compartment of the flat bed attachment. When sewing cylindrical pieces, remove the flat bed attachment. (page 18)

⑭ **Thread cutter**
Pass the threads through the thread cutter to cut them. (page 62)

⑮ **Thread guide plate**
Pass the thread around the thread guide plate when threading upper thread. (page 60)

■ Right-side/Rear View



① **Connector for the presser foot**
Connect the dual feed foot or embroidery foot with LED pointer. (page 70, 197)

② **Handle**
Carry the sewing machine by its handle when transporting the machine.

③ **Presser foot lever**
Raise and lower the presser foot lever to raise and lower the presser foot. (page 68)

④ **Air vent**
The air vent allows the air surrounding the motor to circulate. Do not cover the air vent while the sewing machine is being used.

⑤ **Main power switch**
Use the main power switch to turn the sewing machine ON and OFF. (page 28)

⑥ **Multi-function foot controller**
Various sewing machine operations can be programmed into the multi-function foot controller. For some countries and areas, normal foot controller is included with the machine.

⑦ **Power cord receptacle**
Insert the power cord into the machine receptacle. (page 28)

⑧ **Sensor pen holder connector**
Connect the included sensor pen holder. (page 49)

⑨ **Sensor pen jack**
Connect the sensor pen. (page 48)

⑩ **Foot controller jack**
Insert the foot controller plug into its jack on the machine. (page 81)

⑪ **Headphones or external speaker jack**
Connect the headphone.

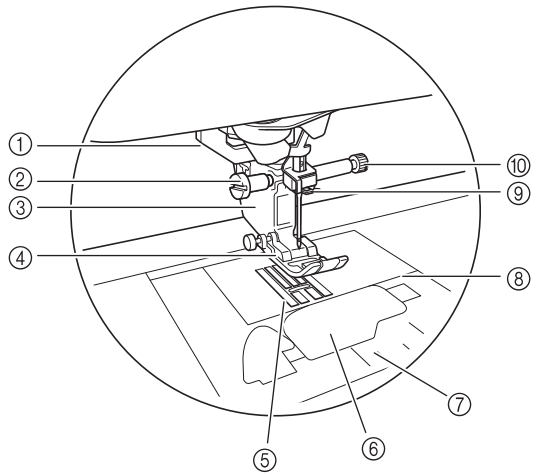
⑫ **USB port for computer**
In order to import/export patterns between a computer and the machine, plug the USB cable into the USB port. (page 46, 187, 189, 192, 208, 284, 300, 402)

⑬ **USB port for mouse (page 46)**

⑭ **USB port**
In order to send patterns from/to USB media, plug the USB media directly into the USB port. (page 34, 46,187,188, 191, 207, 225, 274, 284, 299, 401)

⑮ **Handwheel**
Rotate the handwheel toward you (counterclockwise) to raise and lower the needle. The wheel should be turned toward the front of the machine.

Needle and Presser Foot Section



① **Buttonhole lever**
The buttonhole lever is used with the one-step buttonhole foot to create buttonholes. (page 147)

② **Presser foot holder screw**
Use the presser foot holder screw to hold the presser foot in place. (page 69)

③ **Presser foot holder**
The presser foot is attached to the presser foot holder. (page 68)

④ **Presser foot**
The presser foot consistently applies pressure to the fabric as sewing takes place. Attach the appropriate presser foot for the selected stitch. (page 68)

⑤ **Feed dogs**
The feed dogs feed the fabric in the sewing direction.

⑥ **Bobbin cover**
Open the bobbin cover to set the bobbin. (page 57, 123)

⑦ **Needle plate cover**
Remove the needle plate cover to clean the race. (page 117, 260)

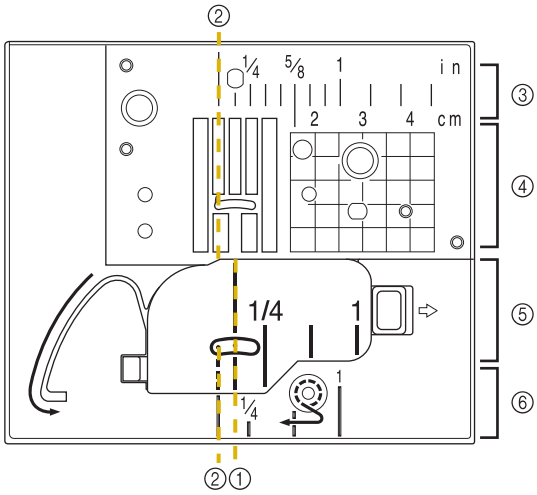
⑧ **Needle plate**
The needle plate is marked with guides to help sew straight seams. (page 116)

⑨ **Needle bar thread guide**
Pass the upper thread through the needle bar thread guide. (page 60)

⑩ **Needle clamp screw**
Use the needle clamp screw to hold the needle in place. (page 69)

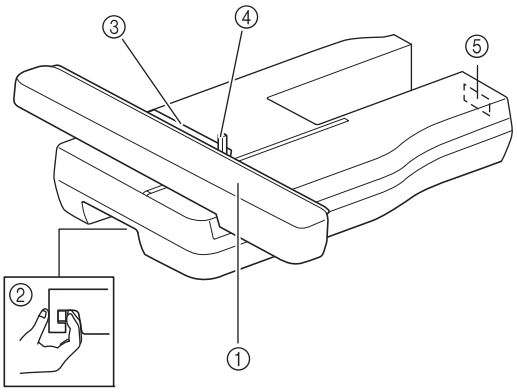
Measurements on the needle plate, bobbin cover (with mark) and needle plate cover

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



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

Embroidery Unit



① **Carriage**
The carriage moves the embroidery frame automatically when embroidering. (page 197)

② **Release lever (located under the embroidery unit)**
Press the release lever to remove the embroidery unit. (page 198)

③ **Embroidery frame holder**
Insert the embroidery frame into the embroidery frame holder to hold the frame in place. (page 247)

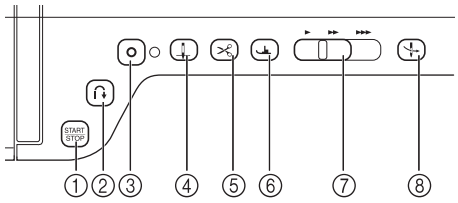
④ **Frame-securing lever**
Press the frame-securing lever down to secure the embroidery frame. (page 247)

⑤ **Embroidery unit connection**
Insert the embroidery unit connection into the connection port when attaching the embroidery unit. (page 197)

⚠ CAUTION

- **Before inserting or removing the embroidery unit, turn the main power to off.**
- **After the embroidery frame is set in the frame holder, be sure the frame-securing lever is correctly lowered.**

Operation Buttons



① **"Start/Stop" button**
Press this button and the machine will sew a few stitches at a slow speed and then begin sewing at the speed set by the sewing speed controller. Press the button again to stop the machine. Hold the button in to sew at the machine's slowest speed. The button changes color according to the machine's operation mode.

Green:	The machine is ready to sew or is sewing.
Red:	The machine cannot sew.

② **"Reverse Stitch" button**
For straight, zigzag, and elastic zigzag stitch patterns that take reverse stitches, the machine will sew reverse stitches at low speed only while holding down the "Reverse Stitch" button. The stitches are sewn in the opposite direction.
For other stitches, use this button to sew reinforcement stitches at the beginning and end of sewing. Press and hold this button, and the machine sews 3 stitches in the same spot and stops automatically. (page 83)

③ **"Reinforcement Stitch" button**
Use this button to sew a single stitch repeatedly and tie-off. For character/decorative stitches, press this button to end with a full stitch instead of at a mid-point. The LED light beside this button lights up while the machine is sewing a full motif, and automatically turns off when the sewing is stopped. (page 83)

④ **"Needle Position" button**
Use this button when changing sewing direction or for detailed sewing in small areas. Press this button to raise or lower the needle position. With this button, you can lower and raise the needle to sew a single stitch.

⑤ **"Thread Cutter" button**
Press this button after sewing to automatically trim the excess thread.

⑥ **"Presser Foot Lifter" button**
Press this button to lower the presser foot and apply pressure to the fabric. Press this button again to raise the presser foot.

⑦ **Sewing Speed controller**
Use this controller to adjust the sewing speed. Move the slide to the left to sew at slower speeds. Move the slide to the right to sew at higher speeds. Beginners should sew at a slow speed.

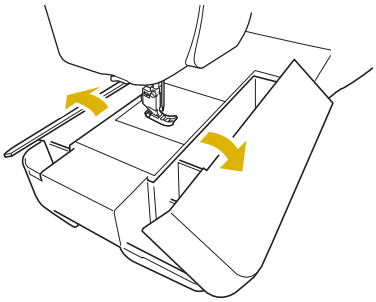
⑧ **"Automatic Threading" button**
Use this button to automatically thread the needle.

⚠ CAUTION

- **Do not press the thread cutter button after the threads have been cut. The needle may break and threads may become tangled, or damage to the machine may occur.**

Using the Flat Bed Attachment

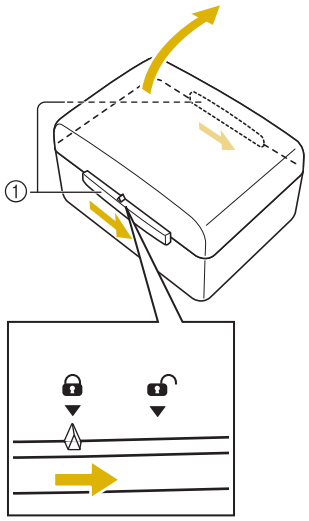
Pull the top of the flat bed attachment to open the accessory compartment.



Using the Accessory Case

■ Opening the Accessory Case

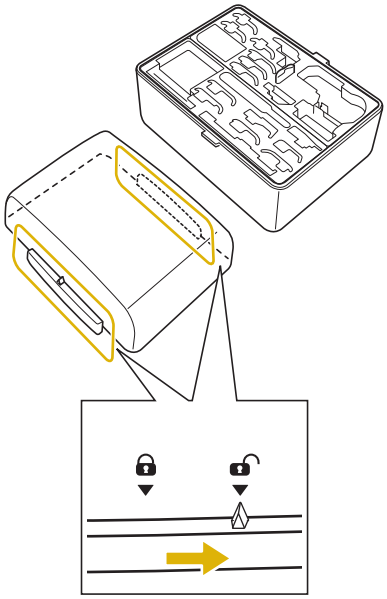
Fully slide the bar on each side of the accessory case to the unlocked position, and then lift off the lid to open the case.
The case can only be opened or locked correctly if both bars are slid in the same direction.



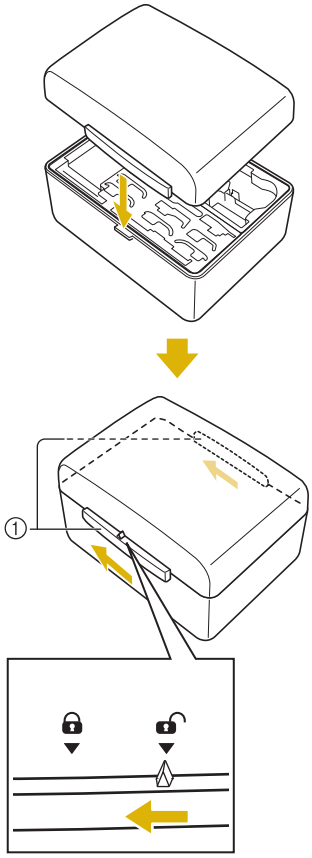
① Bars

■ Closing the Accessory Case

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



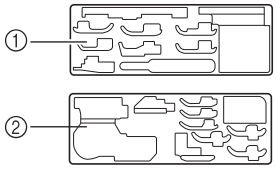
2 Place the lid on top of the case so that the notches in the lid align with the tabs on the case, and then slide the bars on each side back to the locked position.



① Bars

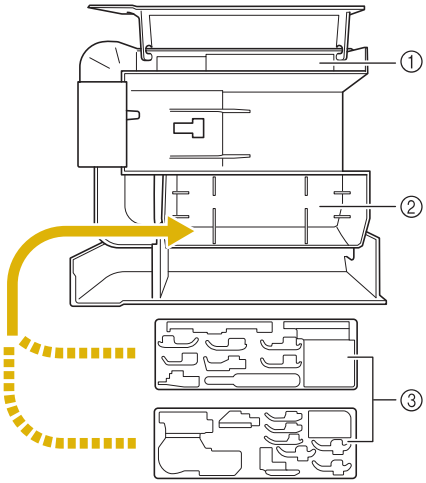
■ Using the Accessory Trays

Two presser foot storage trays are stored in the included accessory case. One is for presser feet for utility sewing, and the other is for presser feet for embroidery and machine quilting.



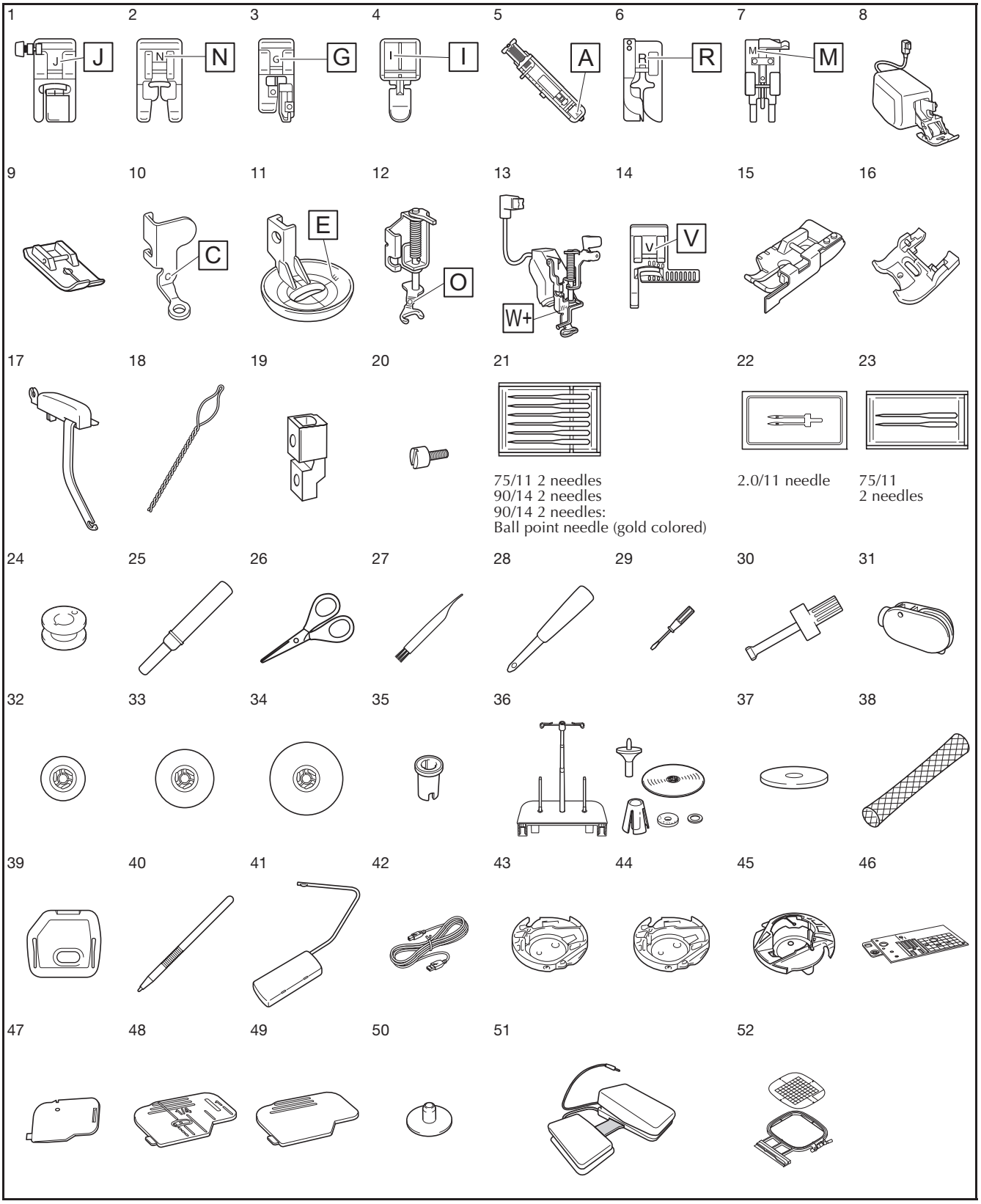
① For presser feet for utility sewing
② For presser feet for embroidery and machine quilting

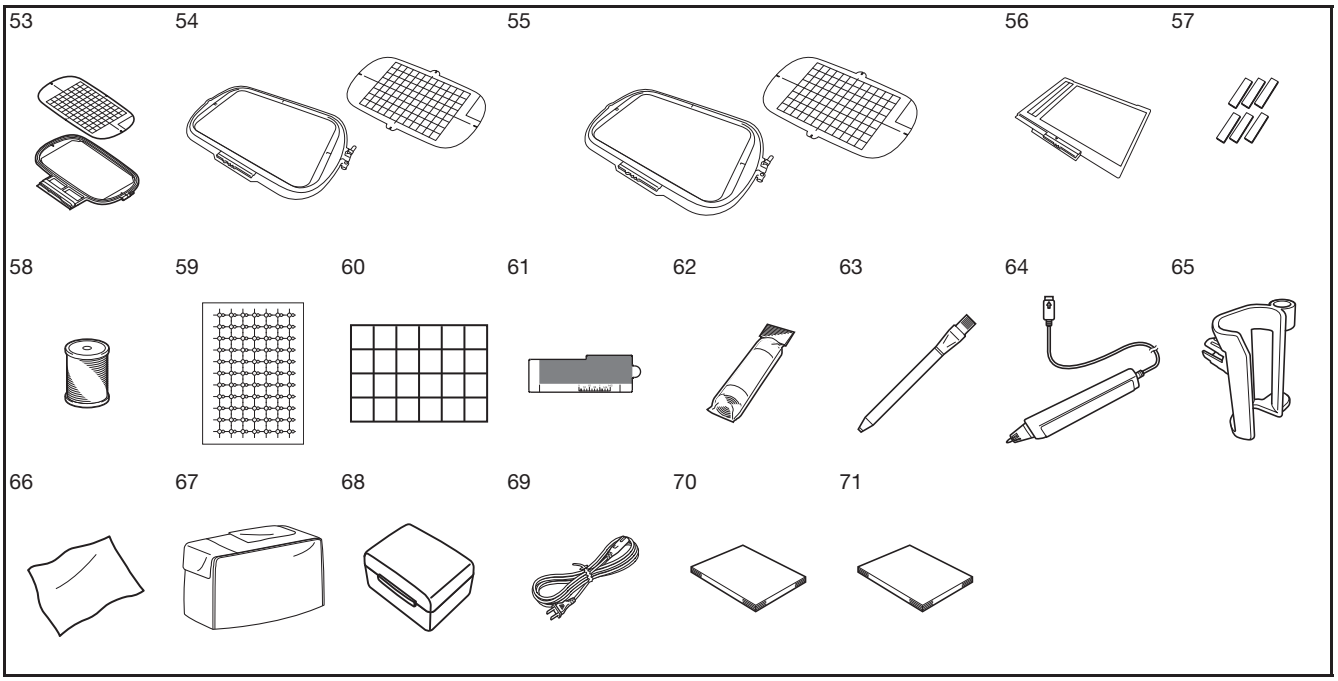
For your convenience, a presser foot storage tray can be stored in the accessory compartment of the flat bed attachment.



① Additional storage space of the flat bed attachment
② Presser foot storage space of the flat bed attachment
③ Presser foot storage trays

Included Accessories





No.	Part Name	Part Code
1	Zigzag foot “J” (on machine)	XC3022-001
2	Monogramming foot “N”	X53840-351
3	Overcasting foot “G”	XC3098-051
4	Zipper foot “I”	X59370-051
5	Buttonhole foot “A”	X57789-351
6	Blind stitch foot “R”	X56409-051
7	Button fitting foot “M”	130489-001
8	Dual feed foot	XF4068-101
9	Straight stitch foot	XD0826-051
10	Free motion quilting foot “C”	XF4737-001
11	Free motion echo quilting foot “E”	XE0766-001
12	Free motion open toe quilting foot “O”	XF4873-001
13	Embroidery foot “W+” with LED pointer	XF3124-001
14	Vertical stitch alignment foot “V”	XE0005-001
15	1/4 quilting foot with guide	XC6800-251
16	Couching dual feed foot	XF9332-001
17	Top-left yarn guide	XG0786-001
18	Yarn threader	XF7187-001
19	Adapter	XF3613-001
20	Screw (small)	XA4813-051
21	Needle set *1	XE4962-001
22	Twin needle *2	XE4963-001
23	Ball point needle set *3	XD0705-151
24	Bobbin × 10 (One is on machine.)	X52800-150
25	Seam ripper	XF4967-001
26	Scissors	XC1807-121
27	Cleaning brush	X59476-051
28	Eyelet punch	XZ5051-001
29	Screwdriver (small)	X55468-051
30	Screwdriver (large)	XC4237-021
31	Multi-purpose screwdriver	BLMPD
32	Spool cap (small)	130013-154
33	Spool cap (medium) × 2 (One is on machine.)	X55260-153
34	Spool cap (large)	130012-054
35	Thread spool insert (mini king spool insert)	XA5752-121

No.	Part Name	Part Code
36	Spool stand	BLMA-STS See page 24
37	Spool felt (on machine)	X57045-051
38	Spool net × 2	XA5523-050
39	Embroidery needle plate cover	XE5131-001
40	Touch pen (stylus)	XA9940-051
41	Knee lifter	XE4713-001
42	USB cable	XD0745-051
43	Standard bobbin case (green marking on the screw) (on machine)	XE5342-101
44	Alternate bobbin case (no color on the screw)	XC8167-551
45	Bobbin case (gray, for bobbin work)	XE8298-001
46	Straight stitch needle plate	XF3076-001
47	Cord guide bobbin cover (with single hole)	XE8991-101
48	Bobbin cover (with mark)	XF0750-101
49	Bobbin cover (on machine)	XE8992-101
50	Bobbin center pin and instruction sheet	XF5048-001
51	Multi-function foot controller	BLMA-MFC
52	Embroidery frame set (medium) H 10 cm × W 10 cm (H 4 inches × W 4 inches)	EF74: Frame EF78: Embroidery sheet
53	Embroidery frame set (large) H 18 cm × W 13 cm (H 7 inches × W 5 inches)	EF75: Frame EF79: Embroidery sheet
54	Embroidery frame set (extra large) H 30 cm × W 20 cm (H 12 inches × W 8 inches)	EF92: Frame EF94: Embroidery sheet
55	Embroidery frame set (super large) H 36 cm × W 24 cm (H 14 inches × W 9-1/2 inches)	EF95: Frame EF96: Embroidery sheet
56	Scan frame	XF9321-001
57	Magnet × 6	XF9325-001
58	Embroidery bobbin thread	BBT-W
59	Embroidery positioning sticker sheets × 4	XE4912-501
60	White calibration stickers (solid)	XE7916-001
61	Edge sewing sheet × 6	XE5500-001

No.	Part Name	Part Code
62	Stabilizer material	X81176-001
63	Chalk pencil	XE8568-001
64	Sensor pen	XF4702-101
65	Pen holder	XF2973-001
66	LCD cleaning cloth	XE5023-101
67	Dust cover	XG0717-001
68	Accessory case	XF9966-001
69	Power cord	XC6052-051
70	Instruction and Reference Guide	XF9969-001
71	Quick reference guide	XF9970-001

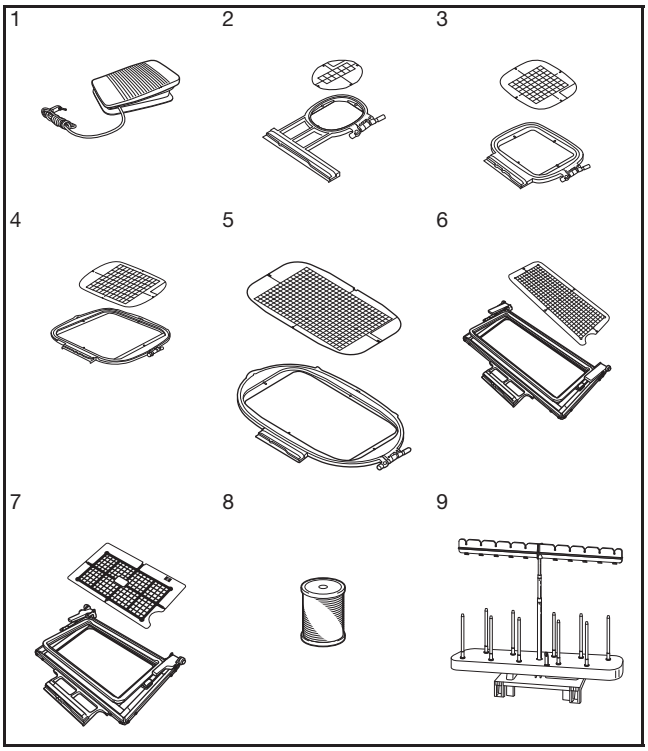
*1 75/11 2 needles
90/14 2 needles
90/14 2 needles: Ball point needle (gold colored)
*2 2.0/11 needle
*3 75/11 2 needles:
Ball point needle for embroidery
HAX130EBBR

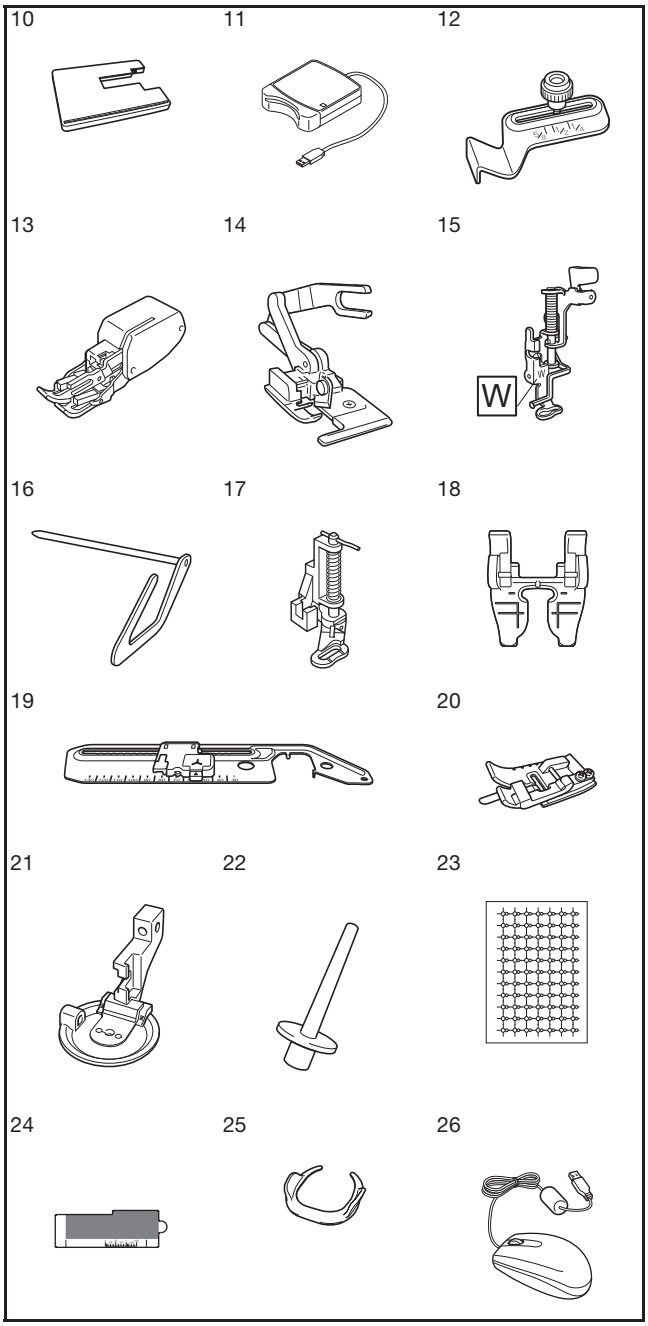
Memo

- Foot controller: Model U
  This foot controller can be used on the machine with product code 882-W21. The product code is mentioned on the machine rating plate.
- Always use accessories recommended for this machine.
- The screw for the presser foot holder is available through your authorized Baby Lock retailer (Part code XA4813-051).

Options

The following are available as optional accessories to be purchased separately from your authorized Baby Lock retailer.





No.	Part Name	Part Code
1	Foot Controller	XC8816-051
2	Embroidery frame set (small) H 2 cm × W 6 cm (H 1 inch × W 2-1/2 inches)	EF73: Frame EF77: Embroidery sheet
3	Square embroidery frame H 15 cm × W 15 cm (H 6 inches × W 6 inches)	BLMA-150
4	Embroidery frame set (quilt) H 20 cm × W 20 cm (H 8 inches × W 8 inches)	EF91: Frame EF93: Embroidery sheet
5	Embroidery frame set (extra large) H 26 cm × W 16 cm (H 10-1/4 inches × W 6-1/4 inches)	EF81: Frame EF84: Embroidery sheet
6	Border embroidery frame H 30 cm × W 10 cm (H 12 inches × W 4 inches)	BLMA-CBH
7	Border embroidery frame set H 18 cm × W 10 cm (H 7 inches × W 4 inches)	BLSO-BF
8	Embroidery bobbin thread (white)	BBT-W
	Embroidery bobbin thread (black)	BBT-B

No.	Part Name	Part Code
9	10 spool stand	BLMA-TS
10	Extension table	BLMA-ET
11	Embroidery card reader	BLECR
12	Seam guide	BLG-SG
13	Walking foot	FA12
14	Side cutter foot	BLG-SCF
15	Embroidery foot “W”	XF4012-101
16	Quilting guide	FA11
17	Free-motion quilting foot	FA2
18	Open toe for dual feed foot	BLTY-OTDF
19	Circular attachment	BL-CSA
20	Edge joining foot	ESG-EJF
21	Couching Foot	BLTY-CCF
22	Vertical spool pin	XC8619-052
23	Embroidery positioning sticker sheets × 8	BLSO-EPS
24	Edge sewing sheet × 5	BLSO-ESS
25	Free motion guide grip	XF6267-001
26	USB mouse	XE4904-101

Memo

- All specifications are correct at the time of printing. Please be aware that some specifications may change without notice.

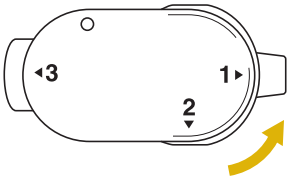
Note

- Visit your nearest authorized Baby Lock retailer for a complete listing of optional accessories for your machine.

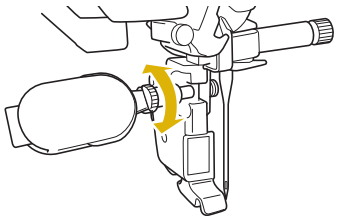
Using the Multi-purpose Screwdriver

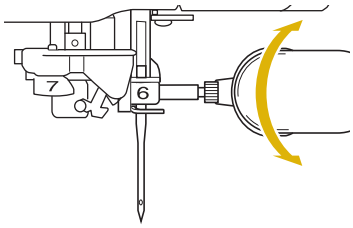
Since the screwdriver can be changed to three different positions, it can be extremely useful for the various machine preparations.

■ Position “1”

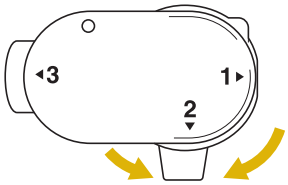


You can install/remove the presser foot holder, needle clamp screw.

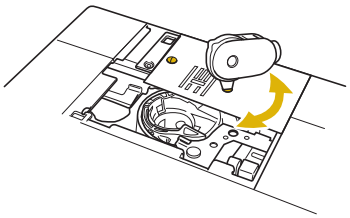




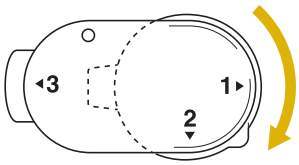
■ Position “2”



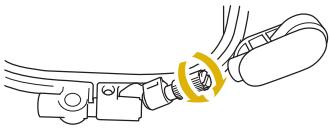
You can install/remove the needle plate.



■ Position "3"



The multi-purpose screwdriver can be positioned over the screw on the embroidery frame to tighten the screw after hooping the fabric or when removing the fabric.

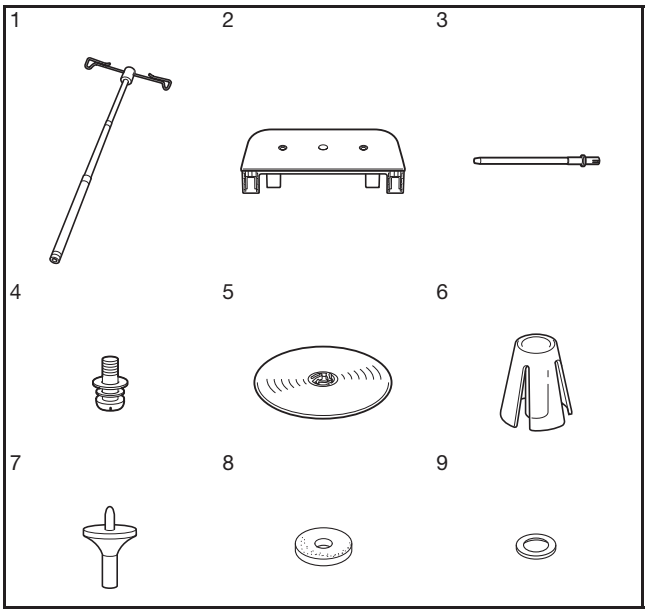


Note

- When rotating the multi-purpose screwdriver, do not forcefully rotate it in the direction that it does not rotate; otherwise, it may break.

Using the Spool Stand

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



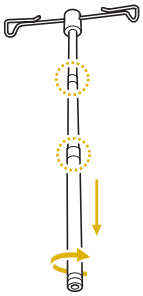
No.	Part Name	Part Code
1	Telescopic thread guide	XE0776-001
2	Spool support	XE4958-101
3	Spool pin × 2	XA6313-051
4	Screw and washer	XC7568-051
5	Spool cap (XL) × 2	XE0779-001
6	Spool holder × 2	XA0679-050
7	Spool cap base × 2	XE0780-001
8	Spool felt × 2	XC7134-051
9	Ring × 4	026030-136

⚠ CAUTION

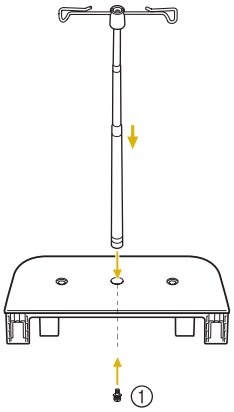
- **Do not lift the handle of the machine while the spool stand is installed.**
- **Do not push or pull the telescopic thread guide or spool pins with extreme force, otherwise damage may result.**
- **Do not place any object other than spools of thread on the spool support.**
- **Do not try to wind thread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

■ How to assemble the spool stand

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



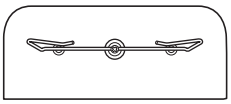
2 Insert the telescopic thread guide into the round hole at the center of the spool support, and then use a screwdriver to securely tighten the screw (①) from the reverse side.



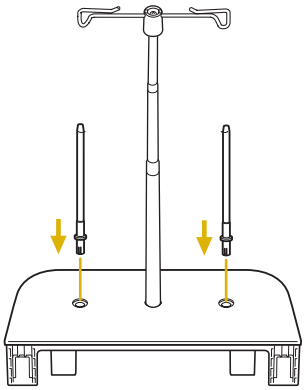
① Screw

Note

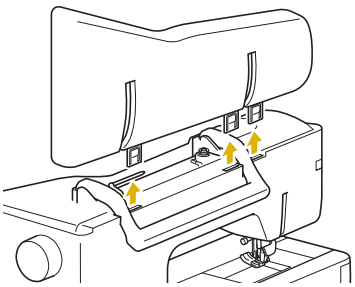
- Make sure that the stoppers on the telescopic thread guide shaft are firmly in place and that the thread guide openings are directly above the two holes for spool pins in the spool support. In addition, check that the shaft is securely tightened in the spool support.



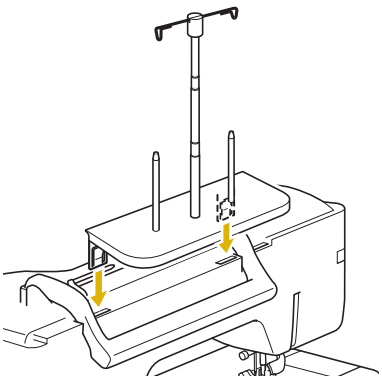
3 **Firmly insert the two spool pins into the two holes in the spool support.**



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

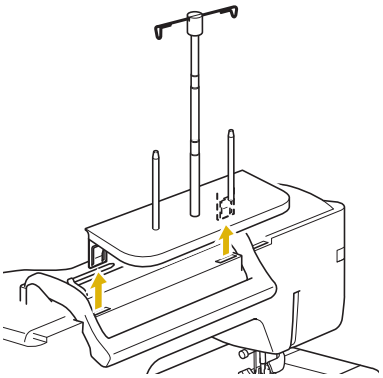


5 **Insert the spool stand onto the notches of the machine.**

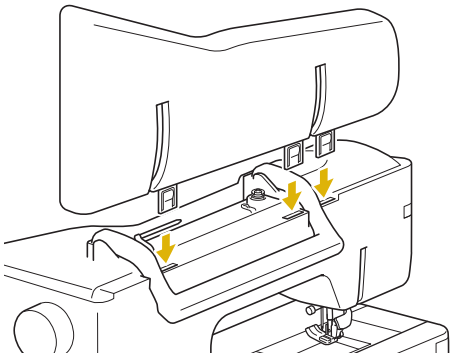


■ How to remove

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



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

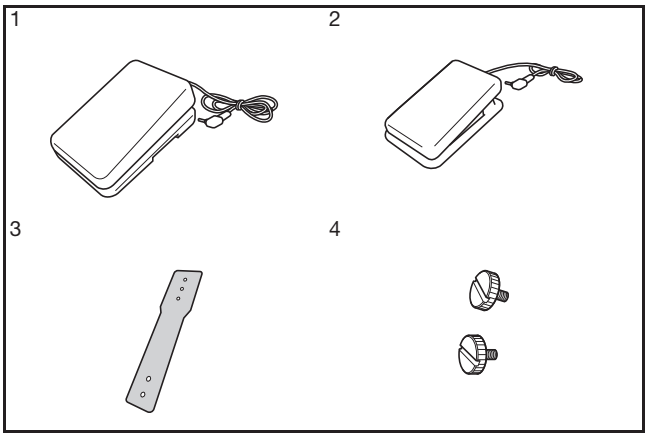


Memo

- See page 56 about the bobbin winding using the spool stand.
- See page 65 about the upper threading using the spool stand.

Using the Multi-function Foot Controller (Only for supplied models)

Refer to see "Specifying the Multi-Function Foot Controller (Only for supplied models)" on page 82, before using this foot controller.

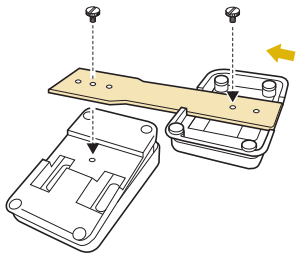


No.	Part Name	Part Code
1	Main foot controller	XF6709-201
2	Side pedal	XF3217-001
3	Mounting plate	XF3222-001
4	Mounting screw × 2	XF3223-001

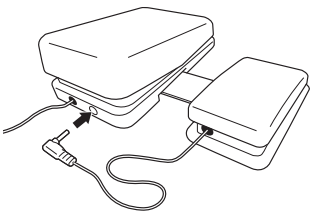
Assembling the Controller

1 Align the wide side of the mounting plate with the notch in the bottom of the main foot controller, and then secure them together with a screw.

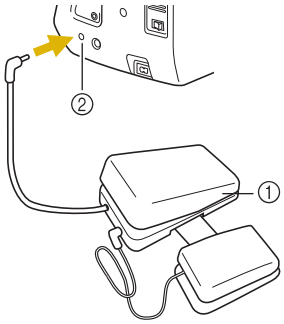
Feed the other side of the mounting plate into the notch on the bottom of the side pedal, and then secure them together with a screw.



2 Insert the plug for the side pedal into the jack at the back of the main foot controller.



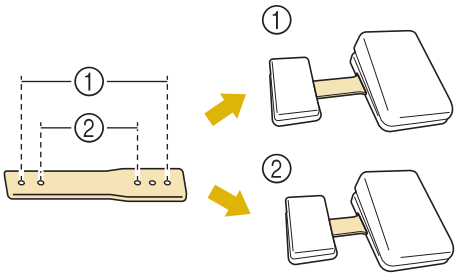
3 Insert the plug for the main foot controller into the foot controller jack on the right side of the machine.



① Multi-function foot controller
② Foot controller jack

■ Adjusting the Pedal Positions

The pedal spacing can be adjusted depending on the screw holes used in the mounting plate. The pedal spacing is the widest when the pedals are attached using the outermost screw holes ①; the pedal spacing is the narrowest when they are attached using the innermost screw holes ②.



Note

- The side pedal may be attached on the right or left side of the main foot controller.
- For greater distance you always have the option of not connecting the side pedal and main foot controller using the mounting plate, making sure that both pedals are connected using the jack from the side pedal to the main foot controller.

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TURNING THE MACHINE ON/OFF

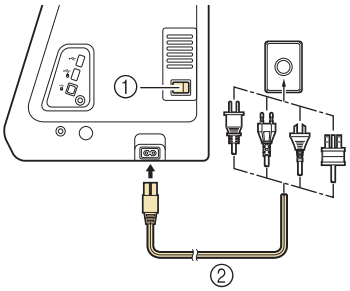
⚠ WARNING

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

⚠ CAUTION

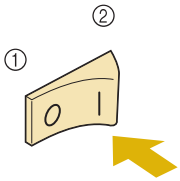
- Use only the power cord included with this machine.
- Do not use extension cords or multi-plug adapters with many other appliances plugged in to them. Fire or electric shock may result.
- Do not touch the plug with wet hands. Electric shock may result.
- When unplugging the machine, always turn the main power to OFF first. Always grasp the plug to remove it from the outlet. Pulling on the cord may damage the cord, or lead to fire or electric shock.
- Do not allow the power cord to be cut, damaged, modified, forcefully bent, pulled, twisted, or bundled. Do not place heavy objects on the cord. Do not subject the cord to heat. These things may damage the cord, or cause fire or electric shock. If the cord or plug is damaged, take the machine to your authorized Baby Lock retailer for repairs before continuing use.
- Unplug the power cord if the machine is not to be used for a long period of time. Otherwise, a fire may result.
- When leaving the machine unattended, either the main switch of the machine should be turned to OFF or the plug must be removed from the socket-outlet.
- When servicing the machine or when removing covers, the machine must be unplugged.
- This appliance has a polarized plug (one blade wider than the other). To reduce the risk of electrical shock, this plug is intended to fit in a polarized outlet only one way.
  If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

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



① Main power switch
② Power supply cord

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



① OFF
② ON

Memo
- When the machine is turned on, the needle and the feed dogs will make sound when they move; this is not a malfunction.

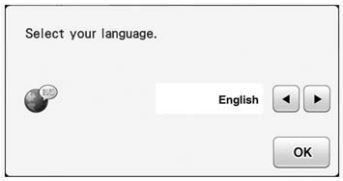
3 **Turn the main power switch to "O" to turn off the machine.**

Memo
- If the machine is turned off in the middle of sewing in the "Sewing" function, the operation will not be continued after turning the power on again.

Setting Your Machine for the First Time

When you first turn on the machine, set the language and time/date to your language and local time/date. Follow the procedure below when the settings screen appears automatically.

1 **Press ◄ and ► to set your local language.**

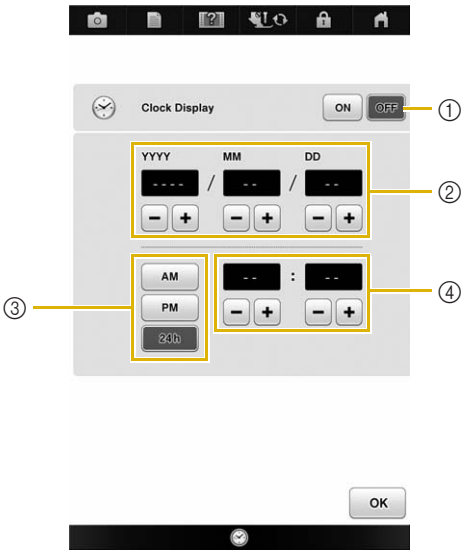


2 **Press OK.**

3 **The message screen, confirming if you want to set time/date, appears. To set the time/date, press OK; to cancel the setting, press Cancel.**

→ The screen to set time/date appears.

4 **Press − or + to set time date.**



① Press to display the time on the screen.
② Set the year (YYYY), month (MM) and date (DD).
③ Select whether 24h or 12h setting to display.
④ Set the current time.

5 **Press OK to start using your machine.**

→ The clock starts from 0 second of the time you set.

Note
- The time/date you set may be cleared, if you don't turn on the machine for an extended period of time.
- Time setting is also available by pressing clock button/time on the bottom of the LCD screen.

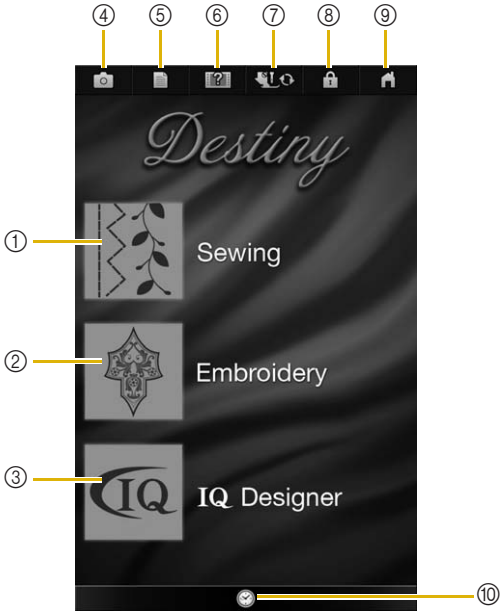
LCD SCREEN

When the machine is turned on, the opening movie is played. Touch anywhere on the screen for the home page screen to be displayed. Touch the LCD screen or a key with your finger or the included touch pen to select a machine function.

Memo

- Only touch the screen with your finger or the included touch pen. Do not use a sharp pencil, screwdriver, or other hard or sharp object. It is not necessary to press hard on the screen. Pressing too hard or using a sharp object may damage the screen.

■ Home Page Screen



No.	Display	Key Name	Explanation	Page
①		Sewing key	Press this key to sew utility stitches or character/ decorative stitch patterns.	108, 168
②		Embroidery key	Attach the embroidery unit and press this key to embroider patterns.	196
③		IQ Designer	Press this key to start creating your custom design embroidery patterns.	324
④		Camera view key	Press this key to check the needle location as it is shown on the screen through the built-in camera.	96, 160
⑤		Machine setting screen key	Press this key to change the needle stop position, adjust the pattern or screen, and change other machine settings.	31
⑥		Sewing machine help key	Press this key to see explanations on how to use the machine. You can see the tutorial videos and also the MP4 movie files that you have.	40
⑦		Presser foot/ Needle exchange key	Press this key before changing the needle, the presser foot, etc. This key locks all key and button functions to prevent operation of the machine.	57, 68
⑧		Screen lock key	Press this key to lock the screen. When the screen is locked, you can still sew, but cannot change any of the screen functions. Press this key again to unlock the settings.	168
⑨		Home page screen key	Press this key anytime it is displayed to return to the home page screen and select a different category - “Sewing”, “Embroidery” or “IQ Designer”.	–
⑩		Time/Date key	Press this key to set the clock to your local time.	29

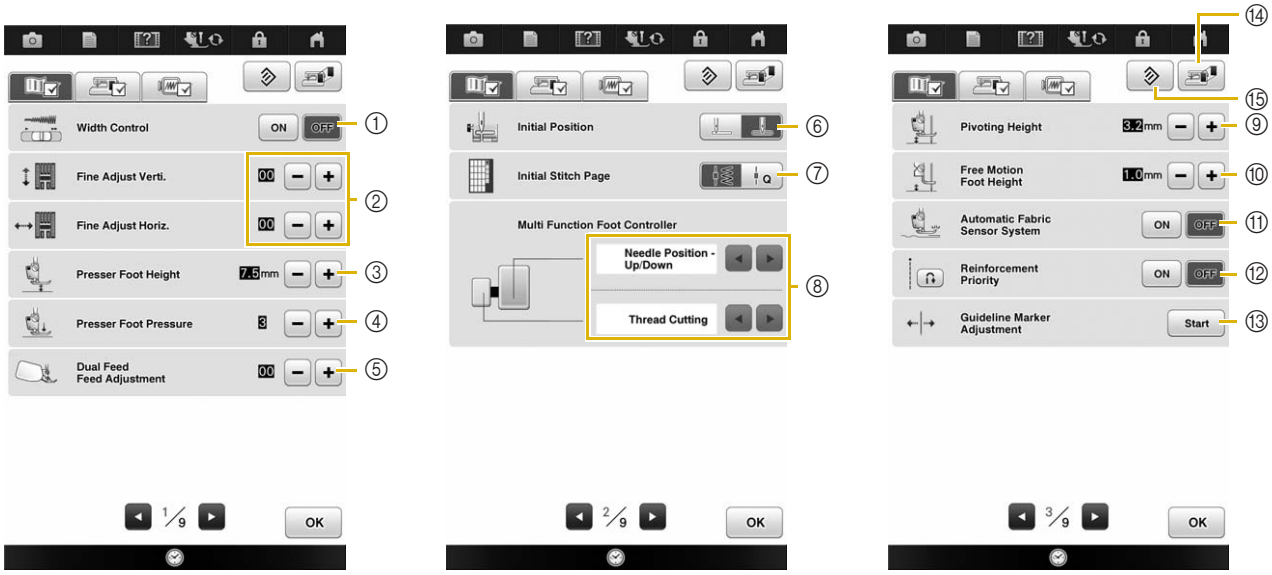
Using the Machine Setting Mode Key

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" or for "Embroidery settings".

Memo

- Press or to display a different settings screen.

Sewing settings

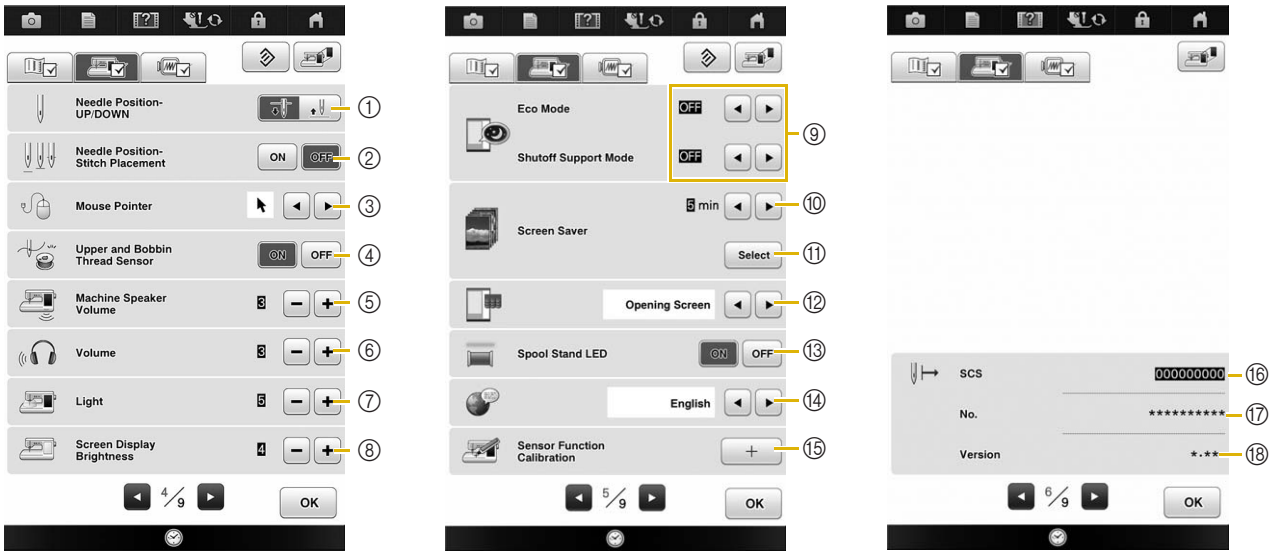


① Select whether to use the sewing speed controller to determine the zigzag width (see page 131).
② Make adjustments to character or decorative stitch patterns (see page 174).
③ Adjust the presser foot height. Select the height of the presser foot when the presser foot is raised.
④ Adjust the presser foot pressure. The higher the number, the greater the pressure will be. Set the pressure at "3" for normal sewing.
⑤ Adjust the amount of fabric feeding of the dual feed foot (see page 72).
⑥ Select whether "1-01 Straight stitch (Left)" or "1-03 Straight stitch (Middle)" is the utility stitch that is automatically selected when the machine is turned on.
⑦ Select whether "Utility Stitch" or "Quilt Stitch" displayed first on the stitch selection screen when the "Sewing" is selected.
⑧ You can activate this setting after connecting the multi-function foot controller. (These settings are not operable unless the multi-function foot controller is attached to the machine.) (see page 82)
⑨ Change the height of the presser foot when sewing is stopped when the pivot setting is selected (see page 93). Adjust the presser foot to one of the three heights (3.2 mm, 5.0 mm and 7.5 mm).
⑩ Change the height of the presser foot when the machine is set to free motion sewing mode (see page 131).
⑪ When set to "ON", the thickness of the fabric is automatically detected by an internal sensor while sewing. This enables the fabric to be fed smoothly (see pages 86 and 95).
⑫ When set to "ON", reinforcement stitches are sewn at the beginning and/or end of sewing for a reinforcement stitch pattern, even when the "Reverse Stitch" button is pressed (see page 83).
⑬ Adjust the guideline marker position and brightness (see page 98).
⑭ Press to save a settings screen image to USB media (see page 34).
⑮ Press to reset settings. Some settings do not reset.

Note

- When the straight stitch needle plate is on the machine, the needle will automatically move to the middle position.

General settings



⚠ CAUTION

- **If "Upper and Bobbin Thread Sensor" is set to "OFF", remove the upper thread. If the machine is used with the upper thread threaded, the machine will not be able to detect if the thread has become tangled. Continuing to use the machine with tangled thread may cause damage.**

① Select the needle stop position (the needle position when the machine is not operating) to be up or down. Select the down position when using the pivot key.

② Select the operation of the "Needle Position - Stitch Placement" button from the following two sequences (see page 96).
Each press of the "Needle Position - Stitch Placement" button:
"ON" – raises the needle, stops it at a nearly lowered position, then lowers it
"OFF" – raises the needle, then lowers it

③ Change the shape of the pointer when a USB mouse is used (see page 35).

④ Turn both the upper and bobbin thread sensor "ON" or "OFF". If it is turned "OFF", the machine can be used without thread.

⑤ Change the speaker volume. Increase the number for louder volume, decrease for softer volume.

⑥ Change the headphone (external speakers) volume.

⑦ Change the brightness of the needle area and work area lights.

⑧ Change the screen display brightness (see page 380).

⑨ Select to save the machine power by setting the "Eco Mode" or the "Shutoff Support Mode" (see page 34).

⑩ Select the length of time until the screen saver appears. A setting between "OFF" (0) and "60" minutes can be set in 1-minute increments.

⑪ Change the image of the screen saver (see page 35).

⑫ Select the initial screen that is displayed when the machine is turned on (see page 36).

⑬ Turn on or off the spool stand LED indicator (see page 262).

⑭ Change the display language (see page 37).

⑮ Calibrate the sensor function (see page 50).

⑯ Display the total number of stitches sewn on this machine, which is a reminder to take your machine in for regular servicing. (Contact your authorized Baby Lock retailer for details.)

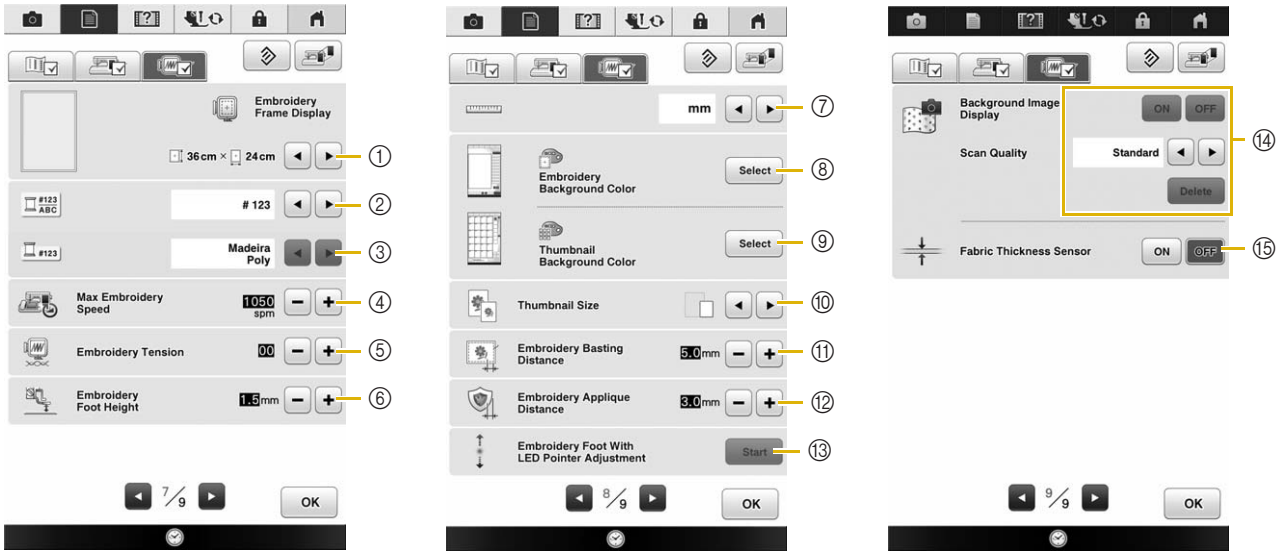
⑰ The "No." is the internal machine number for the embroidery and sewing machine.

⑱ Display the program version.

Memo

- The latest version of software is installed in your machine. Check with your local authorized Baby Lock retailer or at " www.babylock.com " for available updates (see page 401).

Embroidery settings

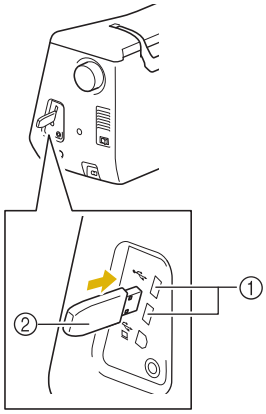


① Select from among 23 embroidery frame displays (see page 292).
② Change the thread color display on the “Embroidery” screen; thread number, color name (see page 291).
③ When the thread number “#123” is selected, select from six thread brands (see page 291).
④ Adjust the maximum embroidery speed setting (see page 291).
⑤ Adjust the upper thread tension for embroidering (see page 288).
⑥ Select the height of the embroidery foot during embroidering (see page 242).
⑦ Change the display units (mm/inch).
⑧ Change the color of the background for the embroidery display area (see page 37).
⑨ Change the color of the background for the thumbnail area (see page 37).
⑩ Press to specify the size of pattern thumbnails (see page 38).
⑪ Adjust the distance between the pattern and the basting stitching (see page 276).
⑫ Adjust the distance between the appliqué pattern and the outline (see page 277).
⑬ Adjust the position and brightness of the embroidery foot with LED pointer (see page 249).
⑭ Specify to display the fabric image on the screen. You can select the scan quality (see page 272).
⑮ Set to “ON” when positioning the pattern on the thick fabric using the built-in camera (see page 275).

■ Saving a Settings Screen Image to USB Media

An image of the settings screen can be saved as a BMP file.
A maximum of 100 images can be saved on a single USB media at one time.

1 Insert the USB media into the USB port on the right side of the machine.



① USB port
② USB media

2 Press .

→ The settings screen appears. Select the settings screen page that you want to save the screen image of.

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 Settings screen images are saved with the name "S**.BMP" in a folder labeled "bPocket".

* "**" in the name "S**.BMP" will automatically be replaced with a number between 00 and 99.

Note

- If 100 image files have already been saved on the USB media, the following message appears. In this case, delete a file from the USB media or use different USB media.

■ Selecting the "Eco Mode" or "Shutoff Support Mode"

You can save the machine power by setting the eco mode or the shutoff support mode.
If you leave the machine without using for a specified period of time, the machine enters in one of these modes.

"Eco Mode";
Machine will enter a sleep mode. Touch the screen or press the "Start/Stop" button to continue sewing.

"Shutoff Support Mode";
Machine will enter the lower power mode after set period of time. Turn machine off and then back on to restart sewing.

Condition	Eco Mode	Shutoff Support Mode
Available time	OFF, 0 - 120 (minute)	OFF, 1 - 12 (hour)
"Start/Stop" button	Green flashing	Green slow flashing
Suspended function	Machine light, Screen display, LED pointer, Guideline marker, Spool Stand LED	All functions
After recovering	The machine starts from the previous operation.	You need to turn off the machine.

Press the "Start/Stop" button or touch the screen display to recover from these modes.

1 Press .

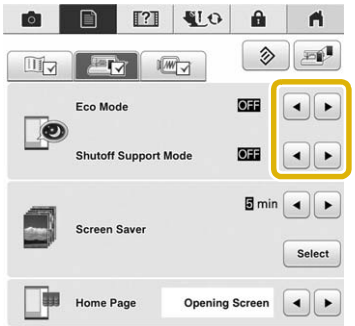
→ The settings screen appears.

2 Press .

→ The General settings screen appears.

3 Display page 5 of the General settings screen.

4 Use ◀ or ▶ to select the time until entering the mode.



Note

- If you turn off the machine while the machine is in the “Eco Mode” or the “Shutoff Support Mode”, wait for about 5 seconds before turning on the machine again.

Changing the Pointer Shape When a USB Mouse Is Used

In the settings screen, the shape can be selected for the pointer that appears when a USB mouse is connected. Depending upon the background color, select the desired shape from the three that are available.

Memo

- For details on changing the background color, refer to “Changing the Background Colors of the Embroidery Patterns” on page 37.

1. **Press .**

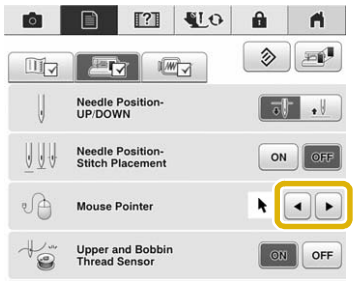
   → The settings screen appears.

2. **Press .**

   → The General settings screen appears.

3. **Display page 4 of the General settings screen.**

4. **Use ◀ and ▶ to choose the pointer shape from the three available setting (, and).**



5. **Press OK to return to the original screen.**

Memo

- The setting remains selected even if the machine is turned off.

Changing the Screen Saver Image

Instead of the default image, you can select your own personal images for the screen saver of your machine.
Before changing the screen saver image, prepare the image on your computer or USB media.

Compatible image files

Format	JPEG format (.jpg)
File size	Max. 2 MB for each image
File dimension	800 × 1280 pixels or less, (If the width is more than 800 pixels, the image imported will be reduced to a width of 800 pixels.)
Number allowed	5 or less

Note

- When using USB media, make sure that it contains only your own personal images to be selected for the screen saver.
- Folders are recognized. Open the folder that holds your personal images.

1. **Press .**

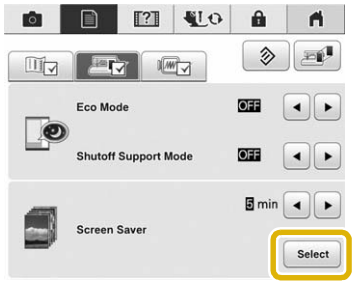
   → The settings screen appears.

2. **Press .**

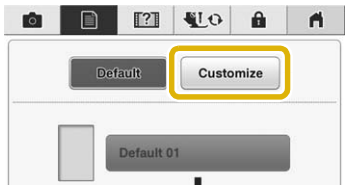
   → The General settings screen appears.

3. **Display page 5 of the General settings screen.**

4. **Press Select .**



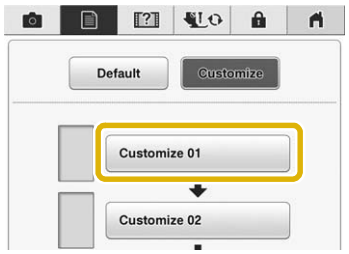
5. **Press Customize .**



6 Connect the USB media or the computer (using a USB cable) that contains your personal image to the USB port of the machine.

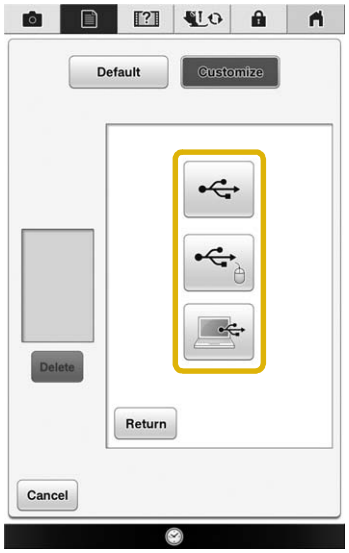
* See page 46 about USB connectivity.

7 Press Customize 01 to select the first image.



* The images will appear in a list in this screen. Select the desired number to specify the image.

8 Select the device that is connected.



* Press when connecting USB media to the USB port.

* Press when connecting USB media to the center USB port.

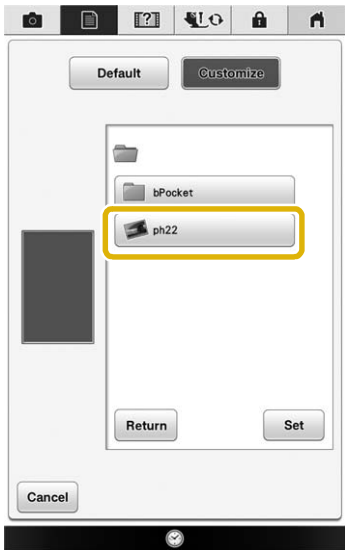
* Press when connecting a computer using a USB cable, and then copy your personal images into "Removable Disk", which appears on the desktop of the computer.

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

* Press Delete to delete the selected image.

* Press Return to view the previous page.

9 Press a file name to select image and then press Set.



→ The selected image is stored on your machine.

* Press Return to view the previous page.

10 Repeat the procedure from step 7 to select the remaining images.

11 Press Cancel to return to the original screen.

■ Selecting the Initial Screen Display

The Initial screen that appears on the machine can be changed.

1 Press .

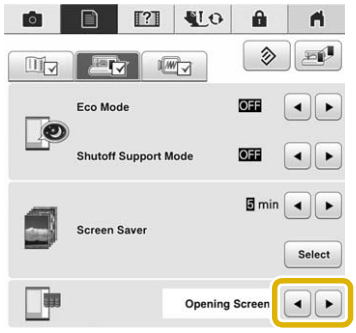
→ The settings screen appears.

2 Press .

→ The General settings screen appears.

3 Display page 5 of the General settings screen.

4 Use ◄ and ► to select the setting for the initial screen display.



* **Opening Screen**: When the machine is turned on, the home page screen appears after the opening movie screen is touched.
* **Home Page**: When the machine is turned on, the home page screen appears.
* **Sewing/Embroidery Screen**: When the machine is turned on, the Embroidery screen appears if the embroidery unit is attached to the machine, or the sewing screen appears if the embroidery unit is not attached to the machine.

5 **Press OK to return to the original screen.**

■ Choosing the Display Language

1 **Press .**

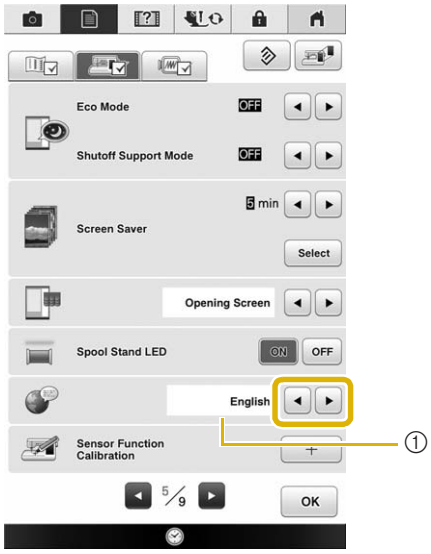
→ The settings screen appears.

2 **Press .**

→ The General settings screen appears.

3 **Display page 5 of the General settings screen.**

4 **Use ◀ and ▶ to choose the display language.**



① Display language

5 **Press OK to return to the original screen.**

■ Changing the Background Colors of the Embroidery Patterns

In the settings screen, the background colors can be changed for the embroidery pattern and pattern thumbnails. Depending on the pattern color, select the desired background color from the 66 color thumbnails shown. Different background colors can be selected for the embroidery pattern and pattern thumbnails.

1 **Press .**

→ The settings screen appears.

2 **Press .**

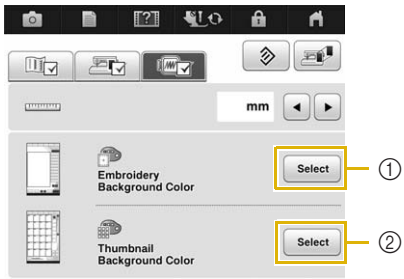
→ The Embroidery settings screen appears.

Memo

- When using the Embroidery or IQ Designer, touch to directly access the Embroidery settings screen.

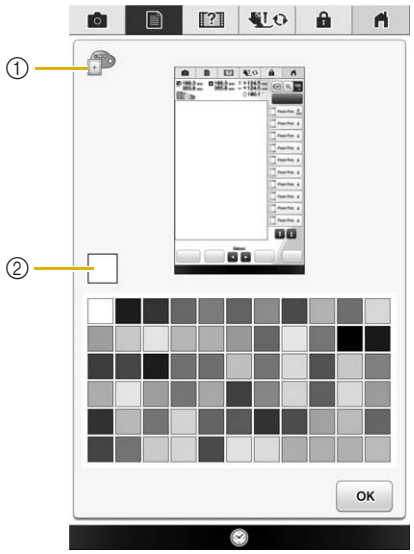
3 **Display shown on page 8 of the Embroidery settings screen.**

4 **Press Select .**

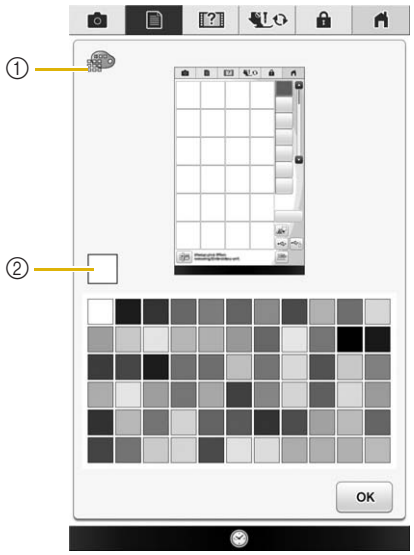


① Embroidery pattern background
② Pattern thumbnails background

5 **Select the background color from the 66 color thumbnails shown.**



① Embroidery pattern background
② Selected color



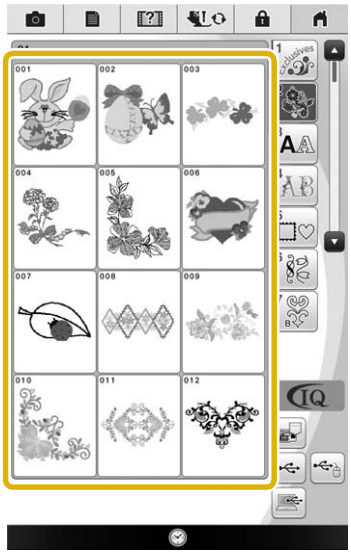
① Pattern thumbnails background
② Selected color

6 **Press OK to return to the original screen.**

Memo
- The setting remains selected even if the machine is turned off.

Specifying the Size of Pattern Thumbnails

The thumbnails for selecting an embroidery pattern can be set to be displayed at the normal size or a larger size. The larger size is 1.5 times the normal size.



1 **Press .**

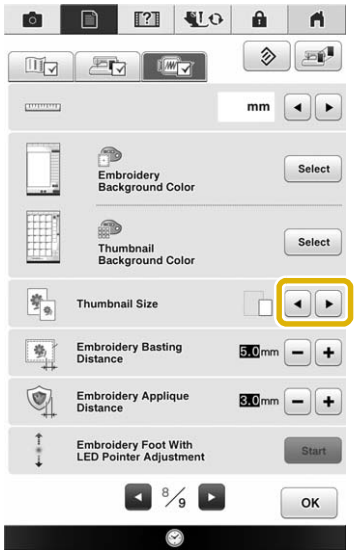
→ The settings screen appears.

2 **Press .**

→ The Embroidery settings screen appears.

3 **Display page 8 of the Embroidery settings screen.**

4 **Press ◄ or ► to select the desired thumbnail size.**

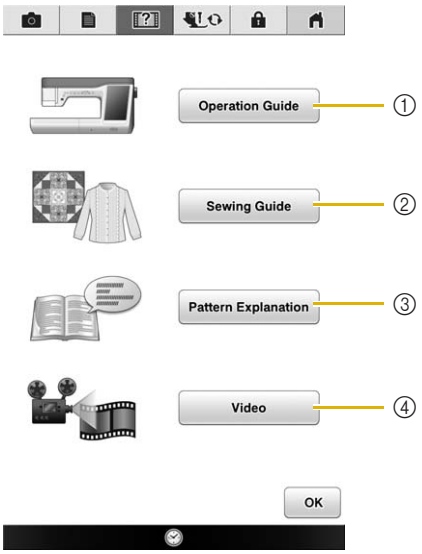


Note

- When thumbnail size setting has been changed the pattern selection screen will not immediately reflect the chosen size. To view the patterns with the new thumbnail size, return to the category selection screen, and then select the pattern category again.

Using the Sewing Machine Help Key

Press to open the sewing machine help screen. Four functions are available from the screen shown below.



① Press this key to see explanation for upper threading, winding the bobbin, changing the presser foot, preparing to embroider a pattern, and how to use the machine (see page 45).

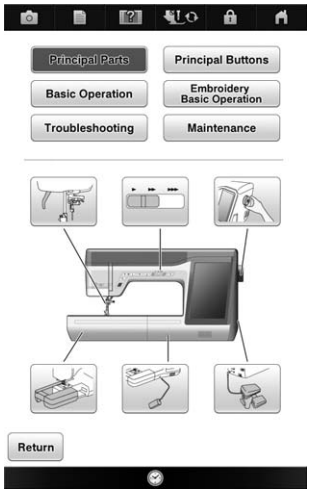
② Press this key to select utility stitches when you are not sure which stitch to use or how to sew the stitch (see page 41).

③ Press this key to see an explanation of the stitch selected (see page 42).

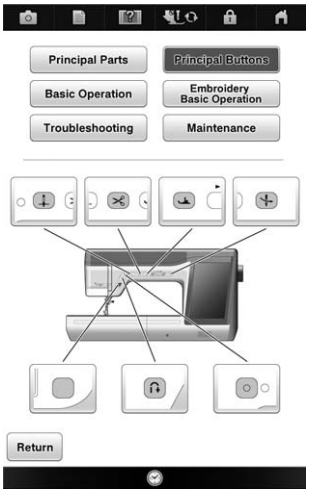
④ Press this key to watch tutorial videos or MPEG-4 (MP4) files from USB media (see page 43).

Using the Operation Guide Function

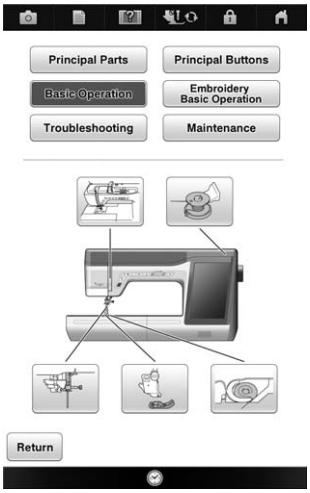
Press [Operation Guide] to open the screen shown below. Six categories are displayed at the top of the screen. Press a key to see more information about that category.



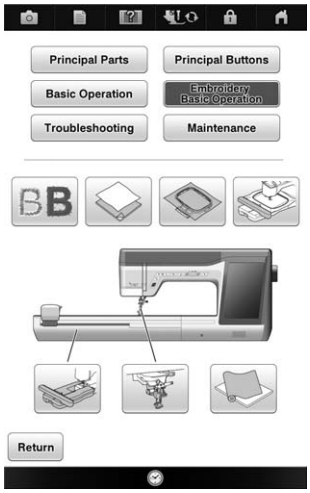
[Principal Parts] displays information about the main parts of the machine and their functions. This is the first screen displayed when you press [Operation Guide].



[Principal Buttons] displays information about the operation buttons.

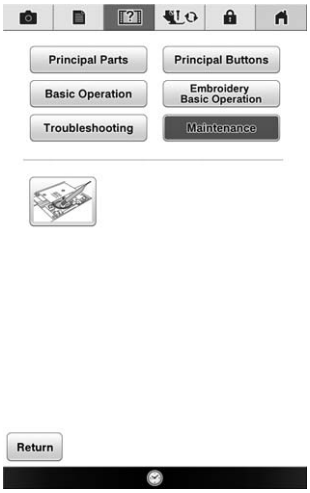


[Basic Operation] displays information about threading the machine, changing presser feet, etc. Some of the functions are described in the movies. Watch these movies for a better understanding of the functions.



[Embroidery Basic Operation] displays information about attaching the embroidery unit, preparing fabric for embroidering, etc.
Some of the functions are described in the movies. Watch these movies for a better understanding of the functions.

[Troubleshooting] displays troubleshooting information.



[Maintenance] displays information about cleaning the machine, etc.
Some of the functions are described in the movies. Watch these movies for a better understanding of the functions.

Example: Displaying information about upper threading

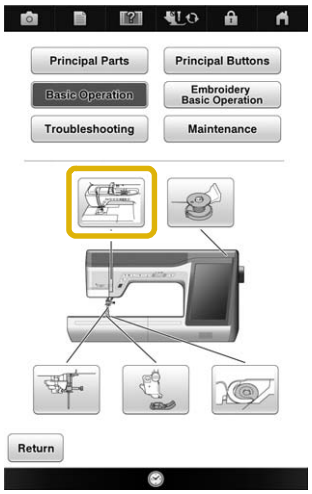
1 **Press** [?].

2 **Press** [Operation Guide].

3 **Press** [Basic Operation].

→ The lower half of the screen will change.

4 **Press** [ ] **(upper threading).**



→ The screen shows instructions for threading the machine.

5 **Read the instructions.**

* Press [▶] to view the next page.

* Press [◀] to view the previous page.

6 **Press** [Return] **to return to the original screen.**

Using the Sewing Guide Function

The sewing guide function can be used to select patterns from the Utility Stitch screen.
Use this function when you are not sure which stitch to use for your application, or to get advice about sewing particular stitches. For example, if you want to sew overcasting, but you do not know which stitch to use or how to sew the stitch, you can use this screen to get advice. We recommend that beginners use this method to select stitches.

1 **Enter Utility Stitch category from the home page.**

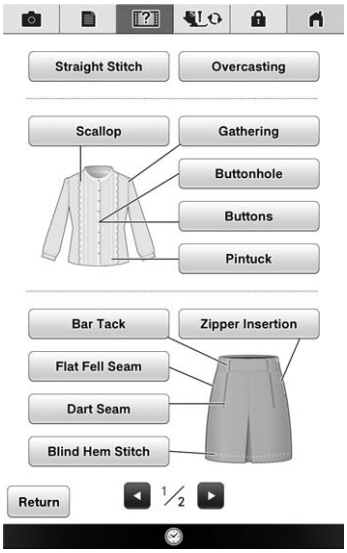
2 **Press** [?].

3 **Press** [Sewing Guide].

→ The advice screen is displayed.

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

* Press [Return] to return to the original screen.



5 **Read the explanations and select the appropriate stitch.**

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

Playing a Tutorial Video

Memo

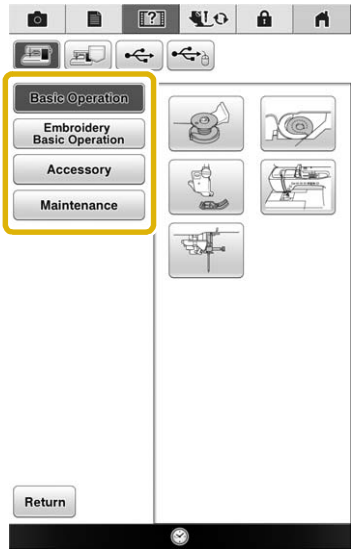
- When you find this icon [?] on the title in this manual, you can find the tutorial video of the procedure in your machine.

This machine provides tutorial videos on how to use the machine. Together with the help guides, which offer descriptions through text and illustrations, the tutorial videos assist with machine operation.

1 **Press [?].**

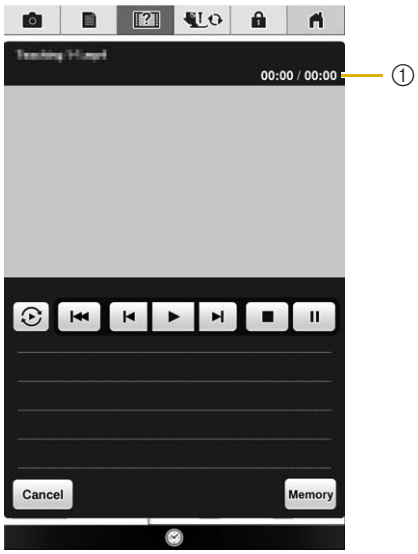
2 **Press [Video].**

3 **Press the title of the desired tutorial video.**



→ The selected tutorial video begins playing.

4 **Play the tutorial video.**



① Number of seconds elapsed/Total number of seconds

Operation keys

▶	Play
■	Stop
⏸	Pause
⏮	Skip back 10 seconds
⏭	Skip forward 10 seconds
⏮	Return to beginning
	Repeat
Delete	Delete video (when playing from the machine's memory)
Memory	Save to machine (when playing from USB media)

Memo

- A frequently viewed tutorial video can be saved to [ ] (favorites) of the machine, from where it can be played.

5 **After you are finished playing the video, press [Close].**

Playing MPEG-4 (MP4) Videos

Your MP4 videos can be played from USB media. In addition, the MP4 video can be saved to the machine so that a tutorial video on creating a project, for example, can be viewed at any time.

Videos that can be played

MP4 file format: Video - H.264/MPEG-4 AVC, Audio – AAC
Size: 450 (H) × 800 (W)

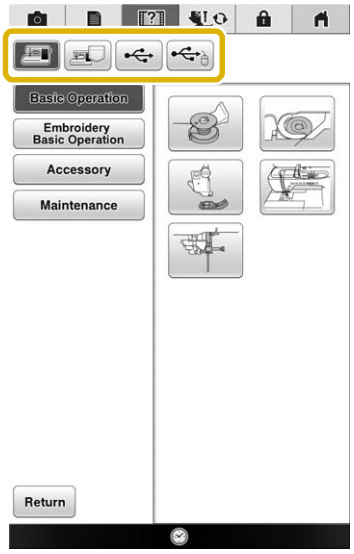
Memo

- MP4 file size will be changed to fit the screen. If you view the large MP4 file, the file will be reduced to fit the screen. If you view the smaller MP4 file, the file will be expanded to fit the screen.
- Some type of MP4 file cannot viewed with the machine.

1 **Press [?].**

2 **Press [Video].**

3 **Select the device where the video is saved.**



: play a tutorial video

: Play a video saved on the machine (favorites)

: Play a video from USB media plugged into the USB port

: Play a video from USB media plugged into the USB port for mouse

* To return to the previous screen, press [Return].

4 **Select the video that you want to play.**

* To return to the previous screen, press [Return].

Note

- Video file names more than 20 characters long may be omitted and not displayed.

5 **Play the video.**

* Use the operation keys as described in "Playing a Tutorial Video".

Note

- Up to about 1 GB of MP4 videos can be saved on the machine. When the maximum capacity has been reached, delete unnecessary videos.

6 **After you are finished playing the video, press [Close].**

Using the Pattern Explanation Function

If you want to know more about the uses of a stitch pattern, select the pattern and press [?] and then [Pattern Explanation] to see an explanation of the stitch selection.

Note

- With the pattern explanation function, descriptions can be displayed for the patterns available on the Utility Stitch and Character/Decorative Stitch screens.
- Descriptions are displayed for each pattern in the Utility Stitch screen. Description for the Character/Decorative Stitch category is also displayed.
- If the [Pattern Explanation] key appears in gray, the pattern explanation function cannot be used.

Example: Displaying information about [4-01]

1. **Press [4-01].**

2. **Press [?].**

3. **Press [Pattern Explanation].**

→ The screen shows information.

4. **Press [Return] to return to the original screen.**

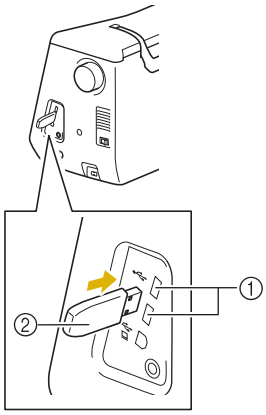
Memo

- The settings remain displayed to allow you to fine tune the stitch.

CONNECTING THE ACCESSORY TO THE MACHINE

Using USB Media

When sending or reading patterns using the USB media, connect the device to the USB port.



① USB port
② USB media

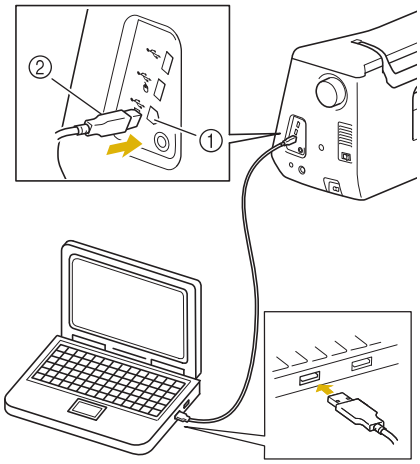
Memo

- USB media is widely used, however some USB media may not be usable with this machine. Please visit our website for a detailed listing of approved USB media devices.
- 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.

Connecting the Machine to the Computer

Using the included USB cable, the sewing machine can be connected to your computer.

Refer to "Connecting Your Machine to the PC" on page 187 for the available computer operating systems.



① USB port for computer
② USB cable connector

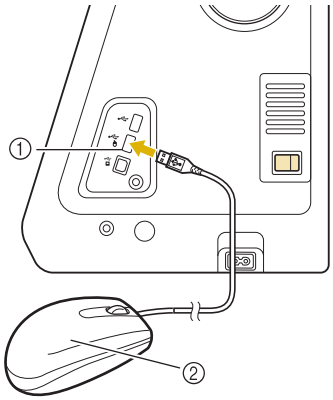
Note

- The connectors on the USB cable can only be inserted into a port in one direction. If it is difficult to insert the connector, do not insert it with force. Check the orientation of the connector.
- For details on the position of the USB port on the computer (or USB hub), refer to the instruction manual for the corresponding equipment.

Using a USB Mouse (Sold Separately)

The USB mouse, connected to the sewing machine, can be used to perform a variety of operations in the screens.
Connect a USB mouse to the USB port marked with . You can also connect a USB mouse to the other USB port.

Memo
- If a mouse other than the optional USB mouse is used, it may not perform as described in this Instruction and Reference Guide.



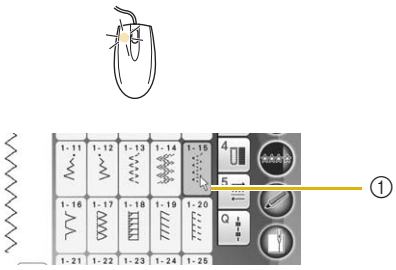
① USB port marked with
② USB mouse

Note
- Do not perform operations with the mouse at the same time that you are touching the screen with your finger or the included touch pen.
- A USB mouse can be connected or disconnected at any time.
- Only the left mouse button and its wheel can be used to perform operations. No other buttons can be used.
- The mouse pointer does not appear in the camera view window, the screen saver, opening screen or the home page screen.

■ Clicking a Key

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

Memo
- Double-clicking has no effect.

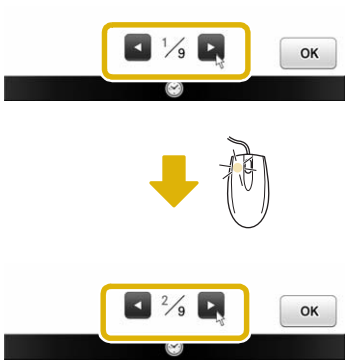


① Pointer

■ Changing Pages

Rotate the mouse wheel to switch through the tabs of the pattern selection screens.

Memo
- If page numbers and a vertical scroll bar for additional pages are displayed, rotate the mouse wheel or click the left mouse button with the pointer on ◀/▶ or ▲/▼ to display the previous or next page.



USING THE SENSOR PEN

Convenient Sewing Features by Using the Sensor Pen

By using the sensor pen, you have the option of four separate functions

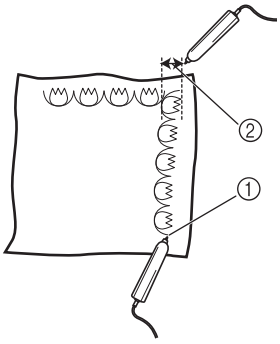
- Setting the guideline as a reference for your sewing position.
- Set the needle position of straight stitch.
- Adjust the width and "L/R Shift" position of a zigzag stitch.
- Set the ending point of a stitch pattern sequence.

⚠ CAUTION

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

Note

- When the guideline or LED pointer does not appear clearly, set the brightness of the machine light dimmer to see them clearly. Refer to "Using the Machine Setting Mode Key" on page 31.

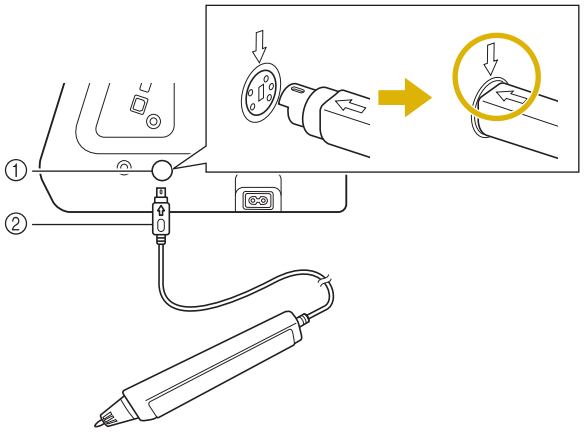


① When specifying the end point of your sewing, this function adjusts your pattern or stitch so that you end up with a complete design.

② It is easy to set the pattern width and position.

Connecting the Sensor Pen

When connecting the sensor pen to the machine, make sure that the arrow on the sensor pen connector faces up and that the connector is firmly inserted into the jack.



① Sensor pen jack

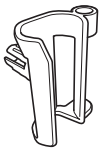
② Sensor pen connector

⚠ CAUTION

- **When connecting the sensor pen, make sure that the arrow on the sensor pen connector faces up, otherwise the connector pins will not align correctly and the connector will be damaged.**
- **When connecting or disconnecting the sensor pen, grab the connector, and then slowly push it straight in or pull it straight out.**
- **When disconnecting the sensor pen from the machine, do not pull on the cord, otherwise the sensor pen may be damaged.**

Using the Sensor Pen Holder

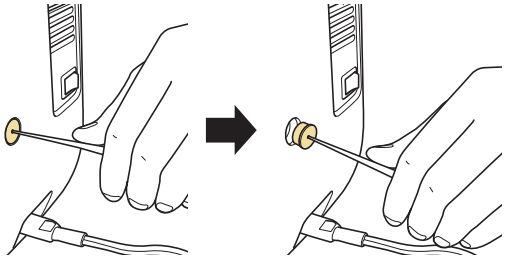
When connecting the sensor pen to the machine, attach the sensor pen holder to keep the sensor pen with the machine.
The right side of the holder can be used to hold the touch pen.



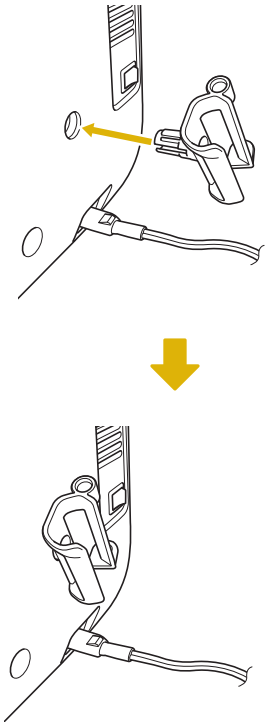
Sensor pen holder

1 Using the point end of the cleaning brush or the seam ripper point, remove the protective cap covering the hole on the right side of the machine.

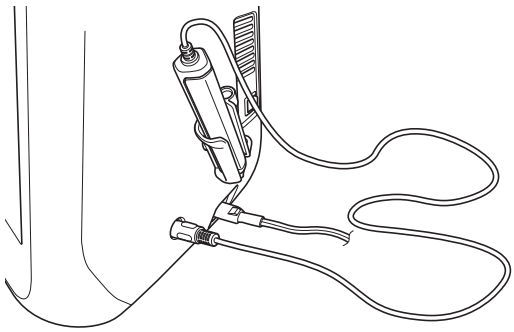
→ Insert the point of the seam ripper or cleaning brush into the hole in the protective cap, and then lightly pull out the protective cap to remove it.



2 Firmly insert the sensor pen holder into the hole where the protective cap was removed.

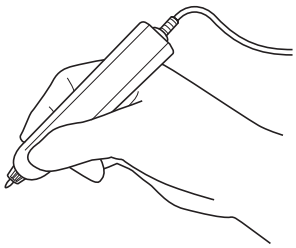


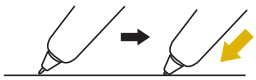
3 Set the sensor pen in the sensor pen holder with the pen tip pointing downward, and then connect the sensor pen to the machine.



Using the Sensor Pen

Hold the sensor pen, and then touch the point to be specified. When the tip of the sensor pen is pushed in, the position information is sent to the machine.
When using the sensor pen, touch slowly and gently for the definite operation.





1) Touch: Touch a point with the sensor pen, then immediately lift up the pen.
2) Long touch: Touching a point with the sensor pen and holding it down for at least one second allows you to activate the functions that you just selected.

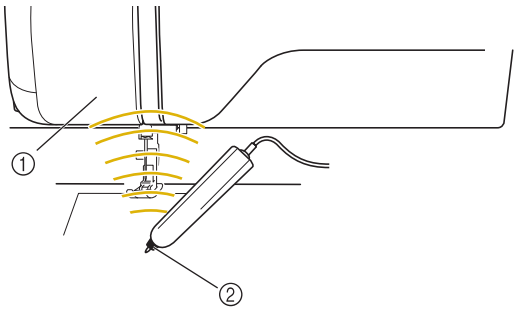
Note

- Once a point is touched with the sensor pen and the entered information is applied in the screen, perform the next operation. Repeatedly touching a point with the sensor pen may prevent the information from being correctly read.
- Do not drag the sensor pen tip on the machine, otherwise the sensor pen tip may be chipped off.
- If there is any problem with the guideline marker, the sensor function may not operate correctly.

Memo
- The sensor pen can be used to touch on the screen as a touch pen.

Important Information about Sensor Pen

The sensor pen emits the signal to the machine, and then the sensor pen receiver receives the signal to specify the position.



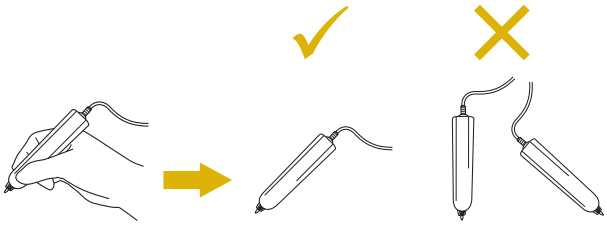
① Sensor pen receiver
② Signal is waved out from the sensor pen

⚠ CAUTION
- **Do not insert any object into the sensor pen and the receiver, otherwise the machine may be damaged.**

⚠ IMPORTANT
- **Do not put your hand, the fabric or any object between the machine and the sensor pen, otherwise the sensor pen receiver may not receive the ultrasonic wave.**
- **Do not use the machine close to any other unit which produces ultrasonic wave or a vibration sound, otherwise interference may occur.**

Calibrating the Sensor Pen

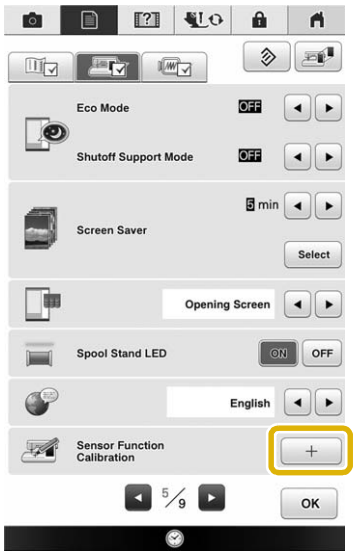
Before using the sensor pen for the first time, be sure to personalize it using "Sensor Function Calibration" in the settings screen. Doing so allows the machine to learn the position in which you usually hold the pen.
Hold the sensor pen at a comfortable angle and then calibrate the machine according to the procedure below.
Be sure to keep the sensor pen at the same angle while calibrating the first and second points.



1 Press [ ].
→ The settings screen appears.

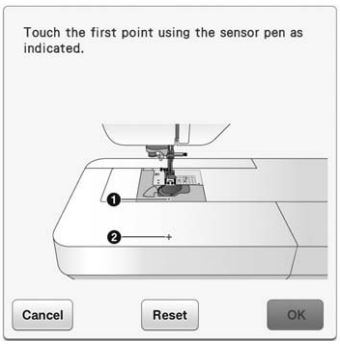
2 Press [ ].
→ The General settings screen appears.

3 Display page 5 of the General settings screen.

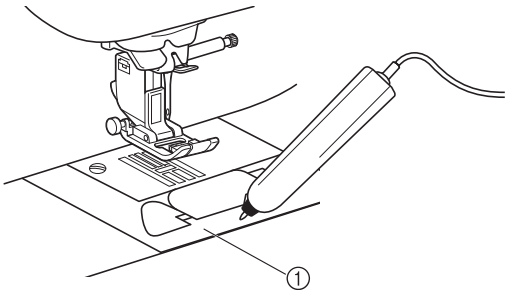


4 Press [+] after connecting the sensor pen to the machine.
→ The Sensor Function Calibration screen appears.
* If the message "OK to automatically lower the presser foot?" appears on the LCD screen, press [OK] to continue.

5 Touch the first point of green dot marking using the sensor pen.

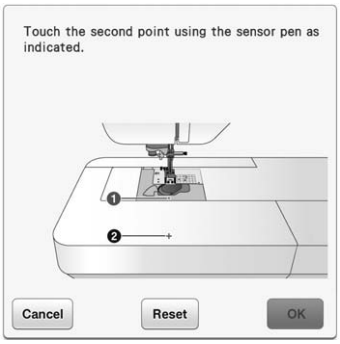


* Touch on the needle plate cover.

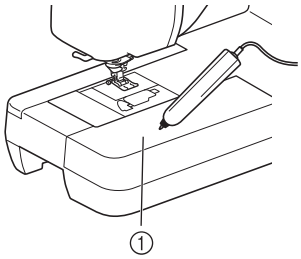


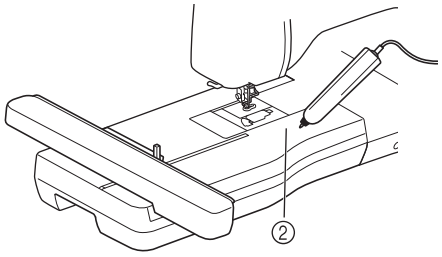
① Needle plate cover

6 Touch the second point of center of cross-hair using the sensor pen.



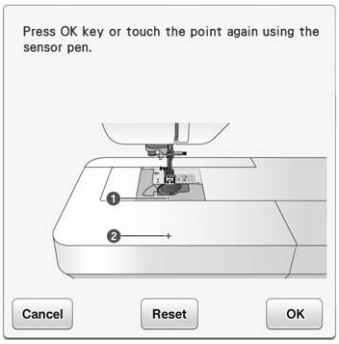
* Touch on the point in the illustrations.





① Flat bed attachment
② Embroidery unit

7 Press OK to finish the calibration. To repeat the calibration touch the first point again using the sensor pen, and continue with step 6.



* Press Cancel to return to the original screen without finishing the calibration.

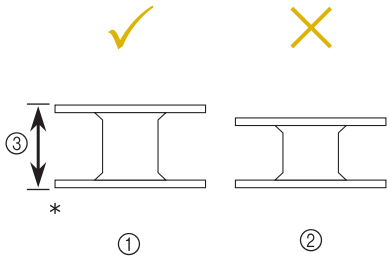
* Press Reset to reset the calibration.

LOWER THREADING

Winding the Bobbin

⚠ CAUTION

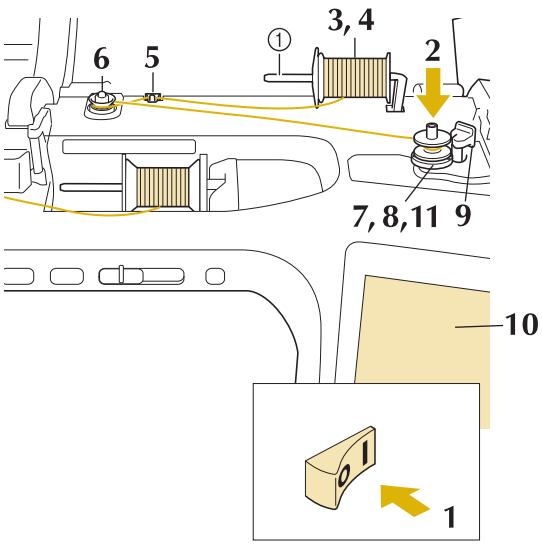
- **The included bobbin was designed specifically for this sewing machine. If bobbins from other models are used, the machine will not operate correctly. Use only the included bobbin or bobbins of the same type (part code: X52800-120). X52800-120 is Class 15 type bobbin.**



* Actual size
① This model
② Other models
③ 11.5 mm (approx. 7/16 inch)

■ Using the Supplemental Spool Pin

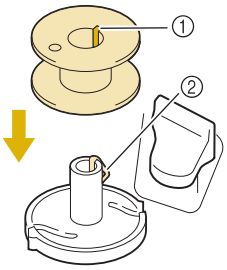
With this machine, you can wind the bobbin during sewing. While using the main spool pin to sew embroidery, you can conveniently wind the bobbin using the supplemental spool pin.



① Supplemental spool pin

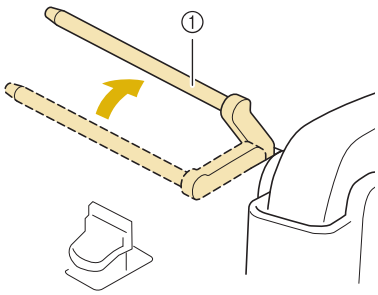
1 **Turn the main power to ON and open the top cover.**

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



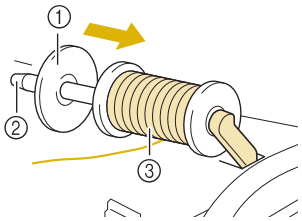
① Groove in the bobbin
② Spring on the shaft

3 **Set the supplemental spool pin in the "up" position.**



① Supplemental spool pin

4 **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.**



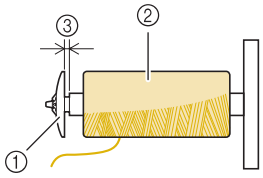
① Spool cap
② Spool pin
③ Thread spool

⚠ 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, or small) 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.**

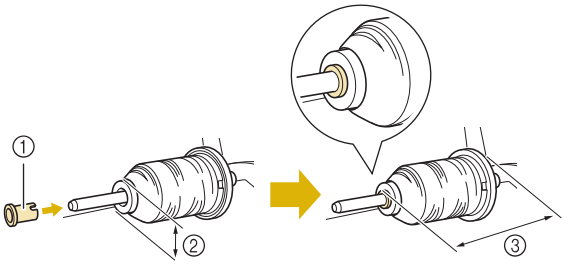
Memo

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



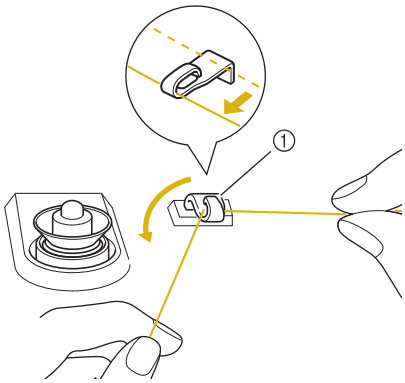
① Spool cap (small)
② Thread spool (cross-wound thread)
③ Space

- 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.



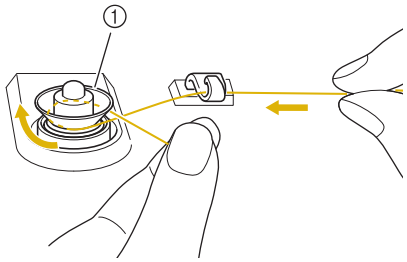
① Spool cap (mini king spool insert)
② 12 mm (1/2 inch)
③ 75 mm (3 inches)

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.**

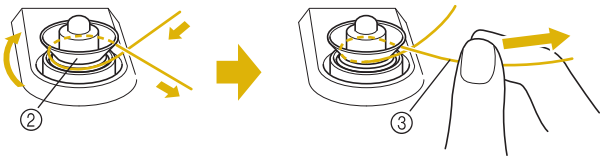


① Thread guide

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

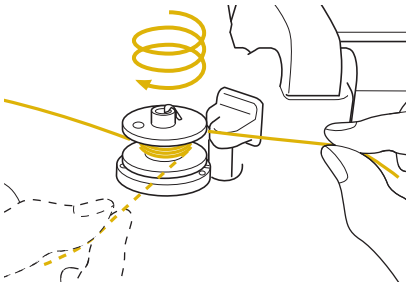


① Pre-tension disk
→ Make sure that the thread passes under the pre-tension disk.

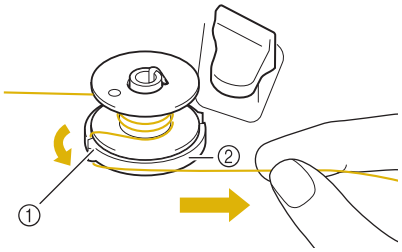


② Pre-tension disk
③ Pull it in as far as possible.
→ Check to make sure thread is securely set between pre-tension disks.

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.**

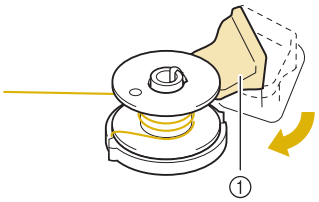


① Guide slit (with built-in cutter)
② Bobbin winder seat

⚠ 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

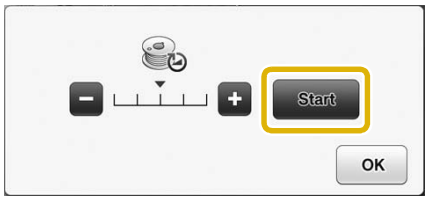
Memo

- Sliding the bobbin winding switch to the left switches the machine into bobbin winding mode.

→ The bobbin winding window appears.

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.

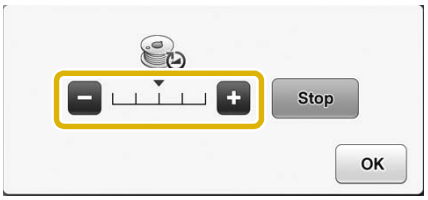


Note

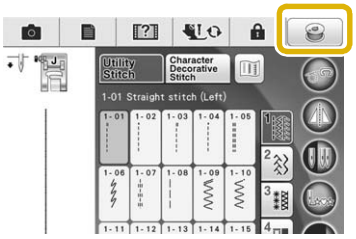
- Start changes to Stop while the bobbin is winding.
- Stay near the machine while winding the bobbin to make sure the bobbin thread is being wound correctly. If the bobbin thread is wound incorrectly, press Stop immediately to stop the bobbin winding.
- The sound of winding the bobbin with stiff thread, such as nylon thread for quilting, may be different from the one produced when winding normal thread; however, this is not a sign of a malfunction.

Memo

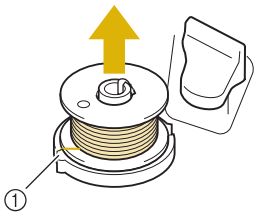
- You can change the winding speed by pressing − (to decrease) or + (to increase) in the bobbin winding window.



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



11 **Cut the thread with cutter and remove the bobbin.**



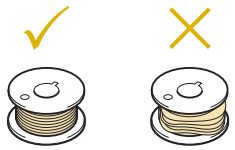
① Cutter

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.

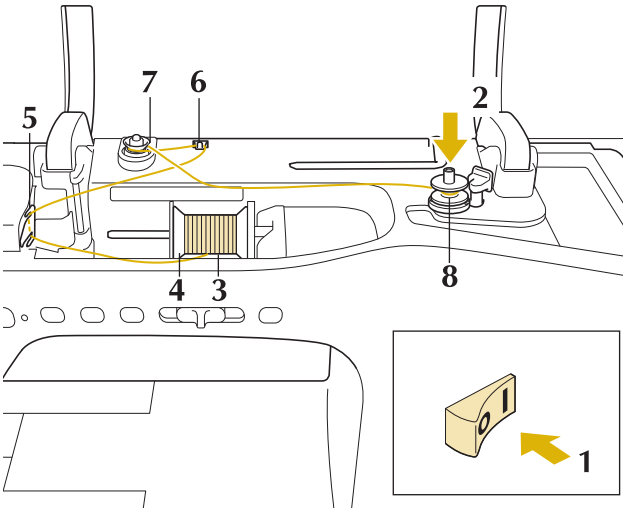
⚠ CAUTION

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



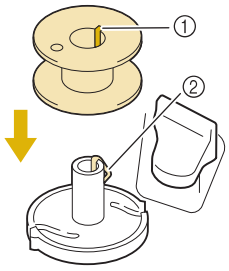
■ Using the Spool Pin

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



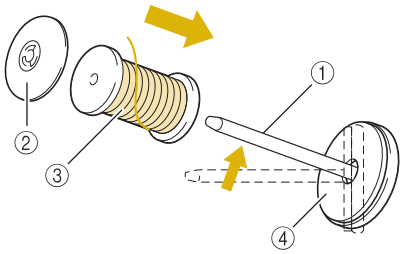
1 **Turn the main power to ON and open the top cover.**

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



① Groove in the bobbin
② Spring on the shaft

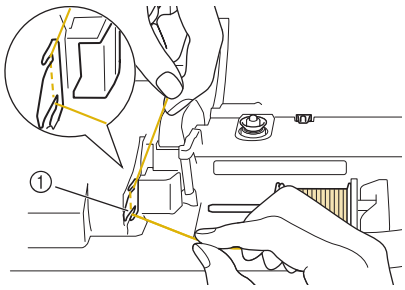
3 **Pivot the spool pin so that it angles upward. Set the thread spool on the spool pin so that the thread unwinds from the front of the spool.**



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

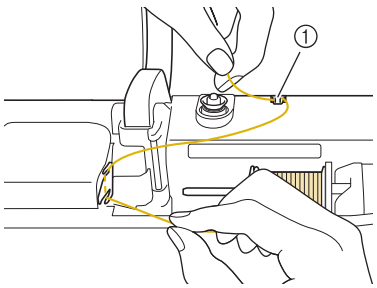
4 **Push the spool cap onto the spool pin as far as possible, then return the spool pin to its original position.**

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



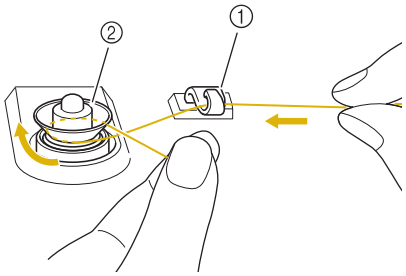
① Thread guide plate

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



① Thread guide

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

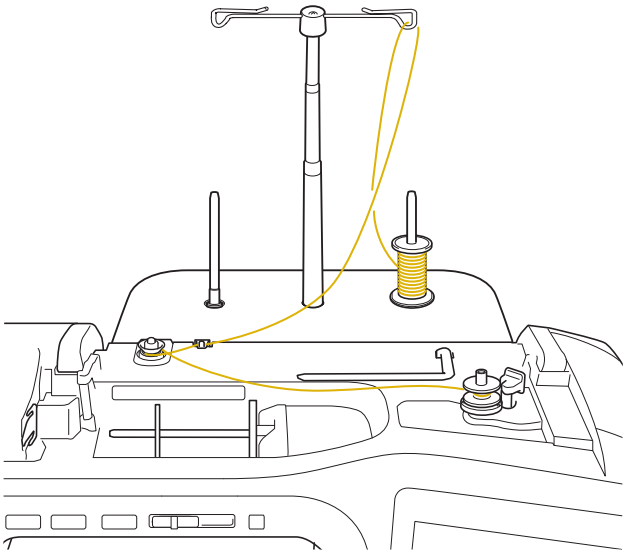


① Thread guide
② Pre-tension disk

8 **Follow steps 7 through 11 on page 53 through 54.**

■ 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 53 to page 54.



Memo

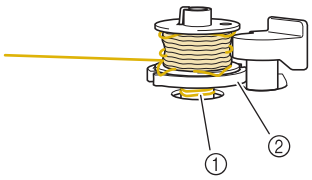
- See page 24 to assemble the spool stand.
- See page 65 to thread the machine using the spool stand.

⚠ 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 pre-tension disk correctly, the thread may become tangled beneath the bobbin winder seat.
Wind off the thread according to the following procedure.

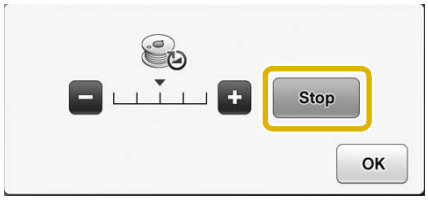


① Thread
② Bobbin winder seat

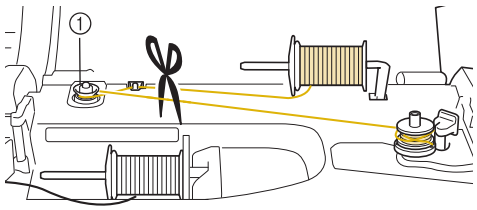
⚠ CAUTION

- **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.**

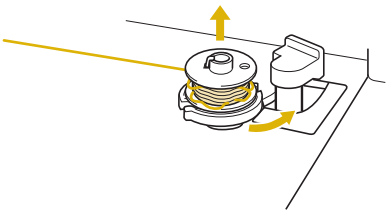


2 **Cut the thread with scissors near the pre-tension disk.**

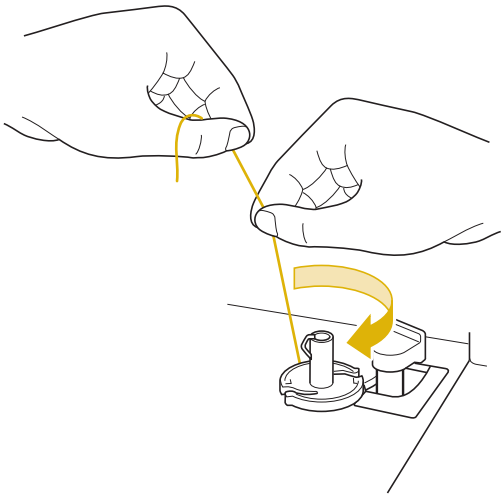


① Pre-tension disk

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



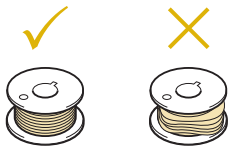
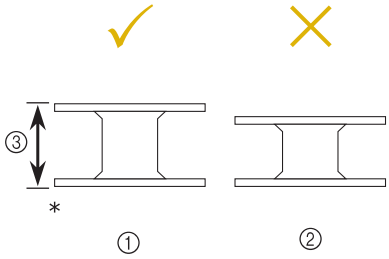
4 **Cut the thread near the bobbin and hold the thread end of the spool with your left hand. Unwind the thread clockwise near the bobbin winder seat with your right hand as shown below.**



5 **Wind the bobbin again.**

> **Note**
> - Make sure that the thread passes through the pre-tension disk correctly (page 53).

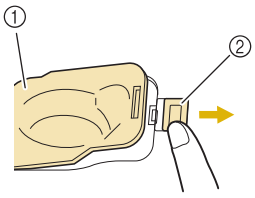
Setting the Bobbin

> **⚠ 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 sewing machine. If bobbins from other models are used, the machine will not operate correctly. Use only the included bobbin or bobbins of the same type (part code: X52800-120). X52800-120 is Class 15 type bobbin.**
>
> 
>
> * Actual size
> ① This model
> ② Other models
> ③ 11.5 mm (approx. 7/16 inch)
>
> - **Before inserting or changing the bobbin, be sure to press in the LCD to lock all keys and buttons, otherwise injuries may occur if the "Start/Stop" button or any other button is pressed and the machine starts sewing.**

1 **Press to lock all keys and buttons and raise the presser foot.**

* If the message "OK to automatically lower the presser foot?" appears on the LCD screen, press OK to continue.

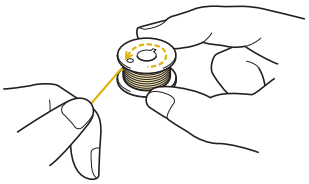
2 **Slide the bobbin cover latch to the right.**



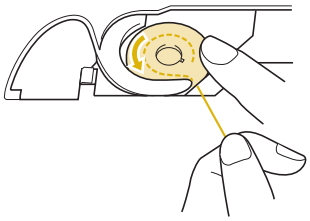
① Bobbin cover
② Latch
→ The bobbin cover opens.

3 **Remove the bobbin cover.**

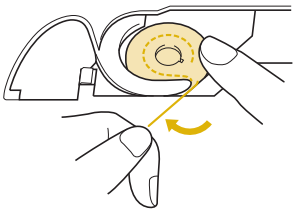
4 **Hold the bobbin with your right hand and hold the end of the thread with your left hand.**



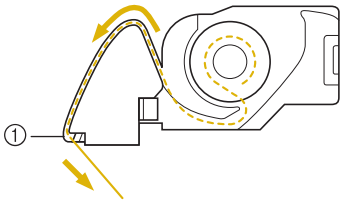
5 **Set the bobbin in the bobbin case so that the thread unwinds to the left.**



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.**

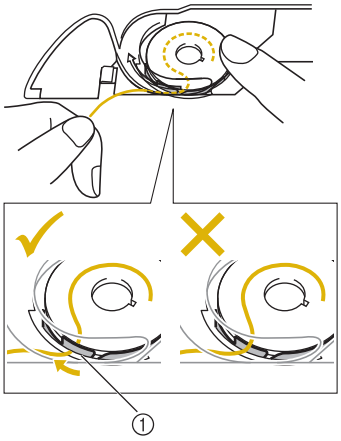


① Cutter

→ 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. (see page 90)

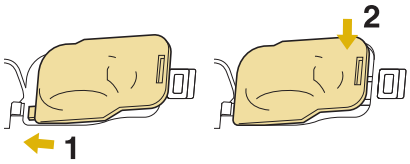


① Tension spring

⚠ 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.**

Pulling Up the Bobbin Thread

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

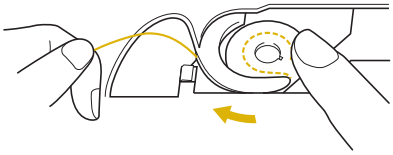
Memo

- You can pull up the bobbin thread after threading the upper thread (“UPPER THREADING” on page 60).

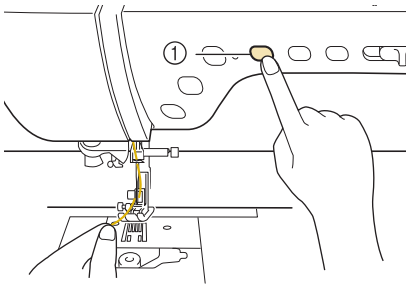
1 **Follow steps 1 to 4 in “Setting the Bobbin” on page 57 for installing the bobbin into the bobbin case.**

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

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



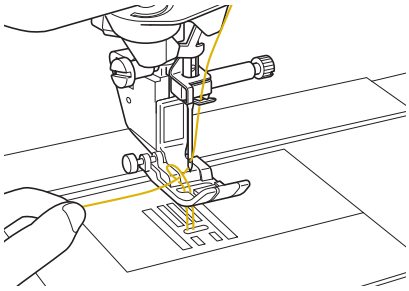
3 **While holding the upper thread, press the “Needle Position” button to lower the needle.**



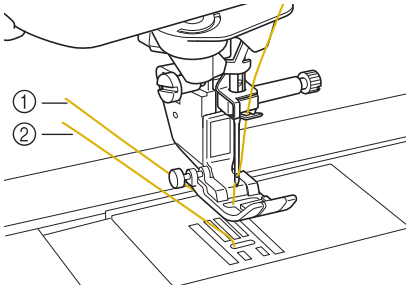
① “Needle Position” button

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

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

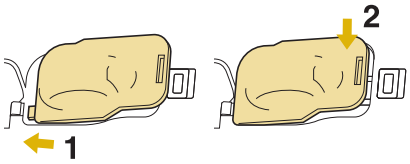


6 **Pull up the bobbin thread, pass it under the presser foot and pull it about 100 mm (approx. 3-4 inches) toward the back of the machine, making it even with the upper thread.**



① Upper thread
② Bobbin thread

7 **Replace the bobbin cover.**



UPPER THREADING

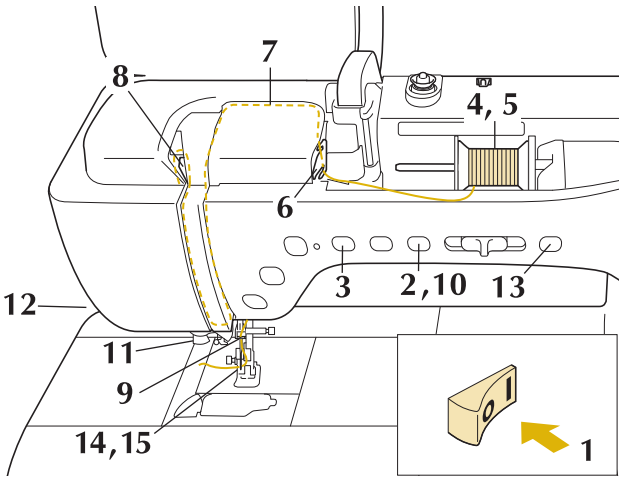
Upper Threading

⚠ CAUTION

- **Be sure to thread the machine properly. Improper threading can cause the thread to tangle and break the needle, leading to injury.**
- **When using the walking foot, the side cutter or accessories not included with this machine, attach the accessory to the machine after threading the machine.**

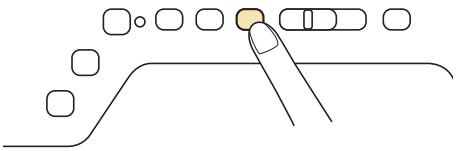
Memo

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

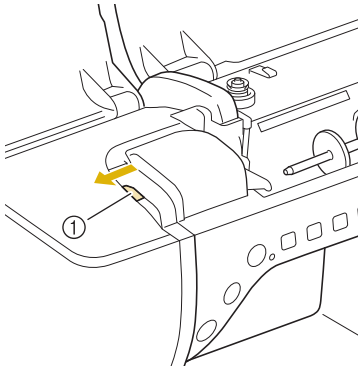


1 **Turn the main power to ON.**

2 **Press the "Presser Foot Lifter" button to raise the presser foot.**



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

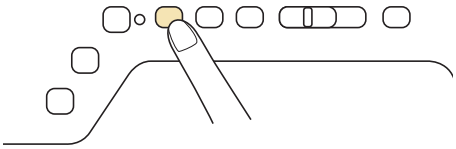


① Upper thread shutter

Memo

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

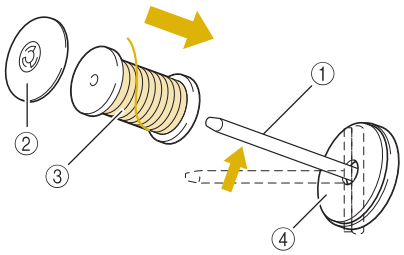
3 **Press the "Needle Position" button to raise the needle.**



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

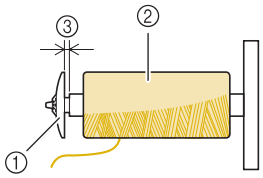
5 **Push the spool cap onto the spool pin as far as possible, then return the spool pin to its original position.**

⚠ 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 thread spool) 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.**

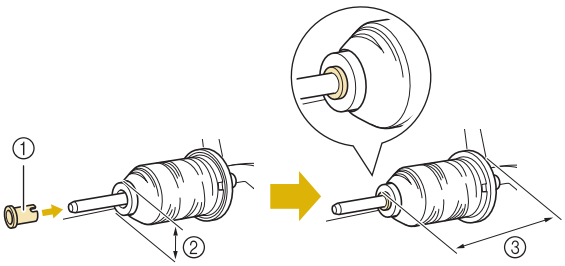
Memo

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



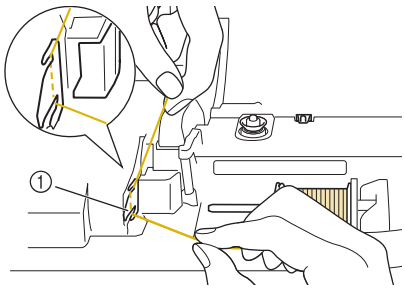
① Spool cap (small)
② Thread spool (cross-wound thread)
③ Space

- 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 thread spool).



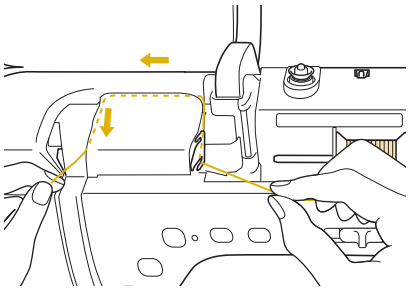
① Thread spool insert (mini king spool insert)
② 12 mm (1/2 inch)
③ 75 mm (3 inches)

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

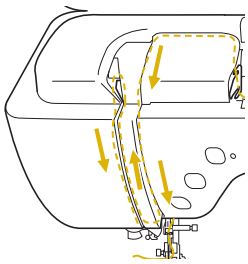


① Thread guide plate

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

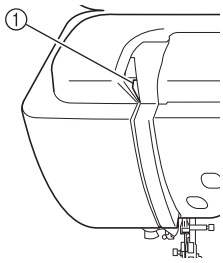


8 **Guide the thread down, up, then down through the groove, as shown in the illustration.**



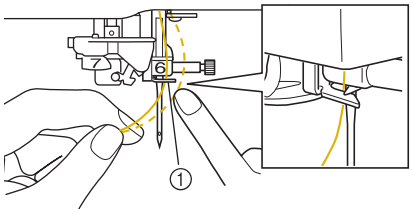
Memo

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



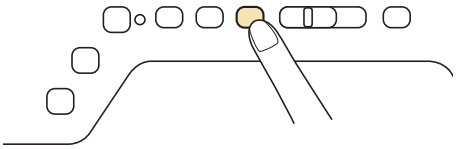
① Look in the upper groove area

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.**

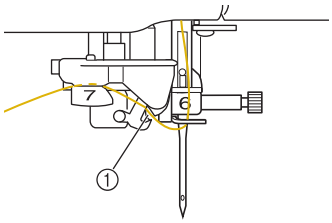


① Needle bar thread guide

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

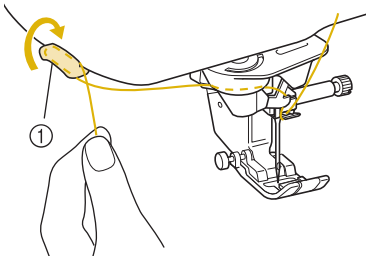


11 **Pass the thread through the thread guide disks (marked "7"). Make sure that the thread passes through the groove in the thread guide.**



① Groove in thread guide

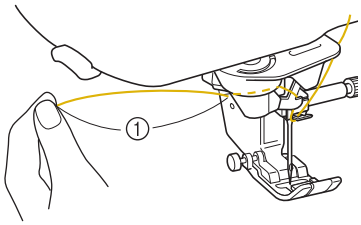
12 **Pull the thread up through the thread cutter to cut the thread, as shown in the illustration.**



① Thread cutter

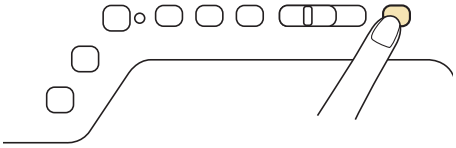
Note

- 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.**



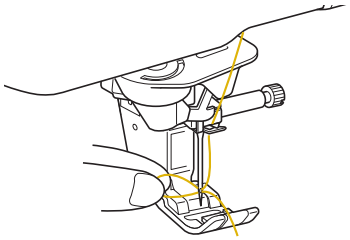
→ The thread passes through the eye of the needle.

Memo

- When the "Automatic Threading" button is pressed, the presser foot will be automatically lowered. After threading is finished, the presser 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 in the thread passed through the eye of the needle, carefully pull on the loop of thread through to the back of the needle.

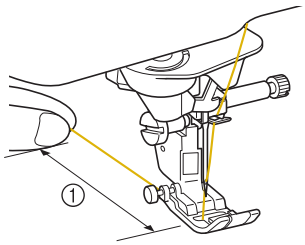


Note

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

15 Pull out about 100-150 mm (approx. 4-6 inches) of the thread, and then pass it under the presser foot toward the rear of the machine.

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



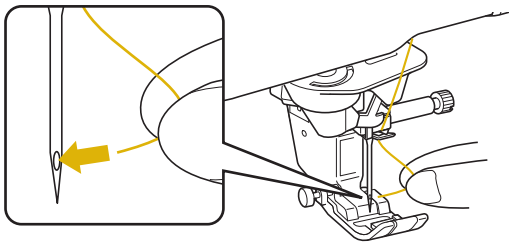
① About 100-150 mm (approx. 4-6 inches)

Memo

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

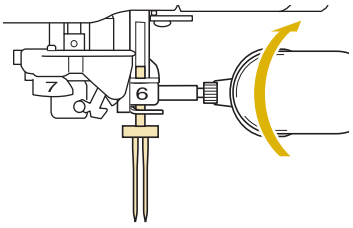
The twin needle can only be used for patterns that show after being selected. Before you select a stitch pattern, make sure the stitch can be sewn in the twin needle mode (refer to the "STITCH SETTING CHART" at the end of this manual).

⚠ CAUTION

- **Twin needle (part code XE4963-001) is recommended for this machine. Contact your authorized Baby Lock retailer for replacement needles (size 2.0/11 is recommended).**
- **Be sure to set the twin needle mode when using the twin needle. Using the twin needle while the machine is in single needle mode could cause the needle to break, resulting in damage.**
- **Do not sew with bent needles. The needle could break and cause injury.**
- **When using the twin needle, it is recommended to use presser foot "J".**
- **When the twin needle is used, bunched stitches may occur depending on the types of fabric and thread that are used.**
  Use monogramming foot "N" for decorative stitches.
- **Before changing the needle or threading the machine, be sure to press on the LCD Screen to lock all keys and buttons, otherwise injuries may occur if the "Start/Stop" button or any other button is pressed and the machine starts sewing.**

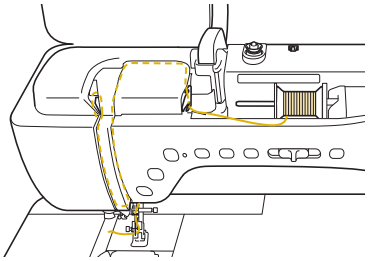
1 Press to lock all keys and buttons and then install the twin needle ("CHANGING THE NEEDLE" on page 73).

* If the message "OK to automatically lower the presser foot?" appears on the LCD screen, press OK to continue.



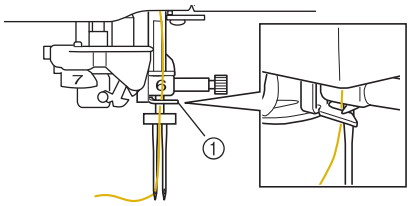
2 Press to unlock all keys and buttons.

3 **Thread the machine for the first needle according to the procedure for threading a single needle (“Upper Threading” on page 60).**



4 **Press to lock the machine.**

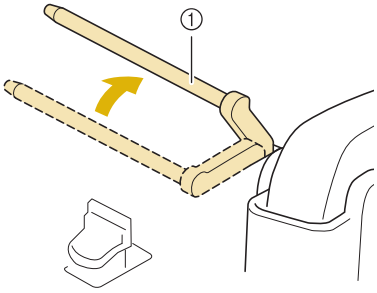
5 **Pass the thread through the needle bar thread guides on the needle bar, then thread the needle on the left side manually.**



① Needle bar thread guide

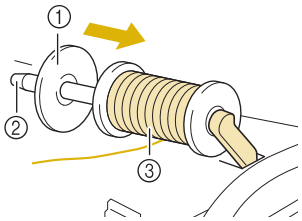
> **Note**
> • The “Automatic Threading” button cannot be used. Manually thread the twin needle from front to back. Using the “Automatic Threading” button may result in damage to the machine.

6 **Pull up the supplemental spool pin and set it in the up position.**



① Supplemental spool pin

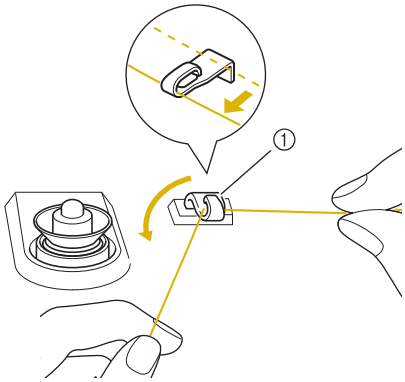
7 **Place the additional spool of thread on the supplemental spool pin, so that the thread unwinds from the front. Push the spool cap onto the spool pin as far as possible to secure the thread spool.**



① Spool cap
② Spool pin
③ Thread spool

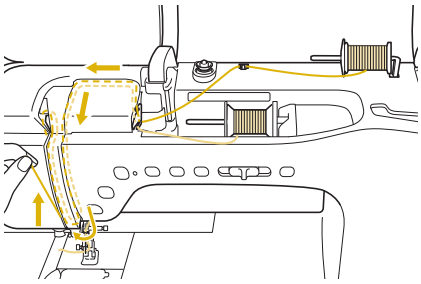
8 **Hold the thread from the spool with both hands, and place the thread in the thread guide.**

* Do not place the thread in the pre-tension disks.



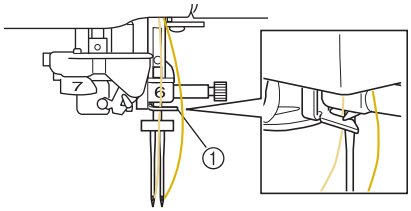
① Thread guide

9 **Press to unlock the machine, and while holding the thread from the spool, pull the thread through the lower notch in the thread guide plate, then through the upper notch. Hold the end of the thread with your left hand, and then guide the thread through the groove, following the arrows in the illustration.**



10 **Press to lock the machine.**

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



① Needle bar thread guide

12 **Select a stitch pattern. (Example:)**

* Refer to "Sewing a Stitch" on page 80 for selecting the stitch.

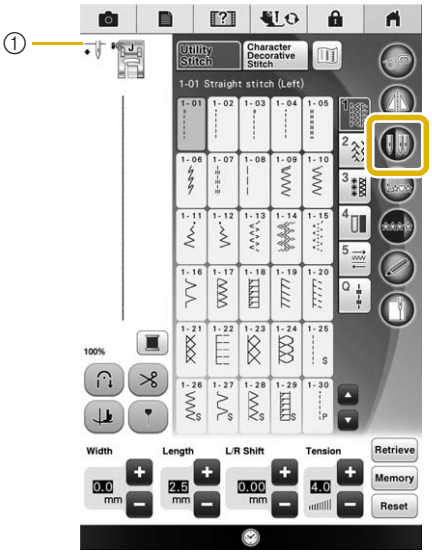
* Refer to the "STITCH SETTING CHART" at the end of this manual for the proper stitch to use with presser foot "J".

→ The selected stitch is displayed.

Note

- If the key is light gray after selecting the stitch, the selected stitch cannot be sewn in the twin needle mode.

13 **Press to select the twin needle mode.**



① Single needle/twin needle setting

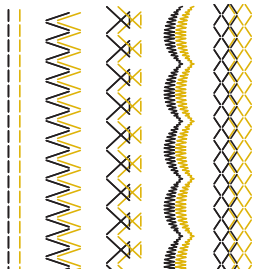
→ appears.

⚠ CAUTION

- **Be sure to set the twin needle mode when using the twin needle. Using the twin needle while the machine is in single needle mode could cause the needle to break, resulting in damage.**

14 **Start sewing.**

Sample of Twin Needle Sewing



Memo

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

Using the Spool Stand

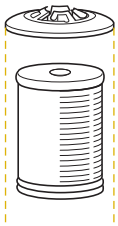
The included spool stand is useful when using thread on spools with a large diameter (cross-wound thread). This spool stand can hold two spools of thread.

Memo

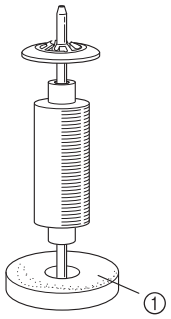
- See page 24 to assemble the spool stand.
- See page 56 to wind the bobbin when using the spool stand.

■ Using the Spool Stand

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

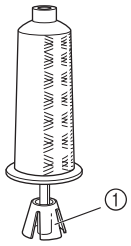


- When using thread on a thin spool, place the included spool felt on the spool pin, place the thread spool on the spool pin so that the center of the spool is aligned with the hole at the center of the spool felt, and then insert the spool cap onto the spool pin.



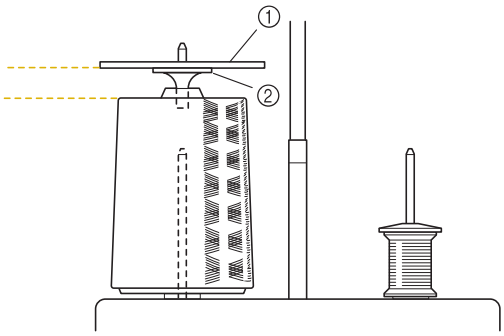
① Spool felt

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



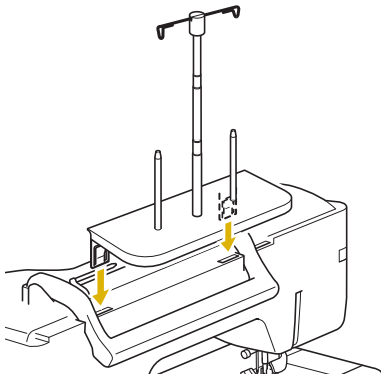
① Spool holder

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

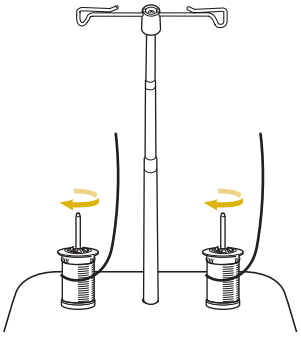


① Spool cap
② Spool cap base

1 Attach the spool stand to the machine. (see page 24.)



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.

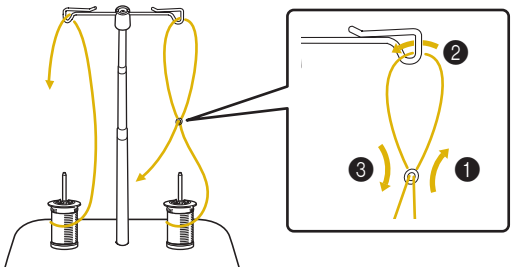


Note

- 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.

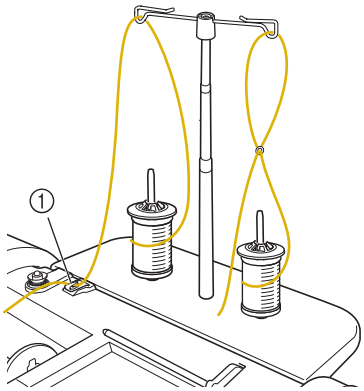
3 **Pull the thread off the spool. Pass the thread from the back to the front through the thread guides at the top.**

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 (❶), into the thread guide (❷) and through the ring from the top down (❸). 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.**



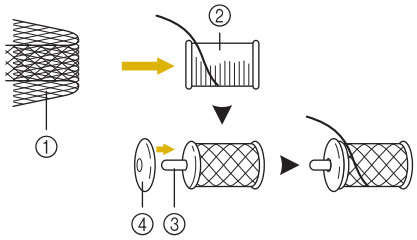
① Thread guide

5 **Thread the machine according to the steps ⑥ to ⑮ of "Upper Threading" on page 60.**

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.



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

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.

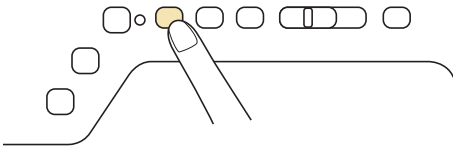
CHANGING THE PRESSER FOOT

⚠ 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.
- Always use the correct presser foot for the selected stitch pattern. If the wrong presser foot is used, the needle may strike the presser foot and bend or break, and may cause injury.
- Only use presser feet made for this machine. Using other presser feet may lead to accident or injury.

Removing the Presser Foot

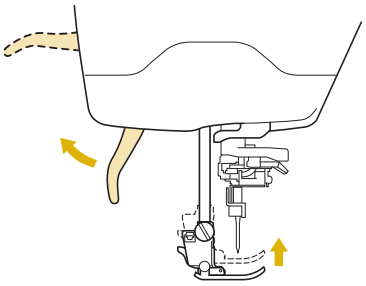
1 **Press the "Needle Position" button to raise the needle.**



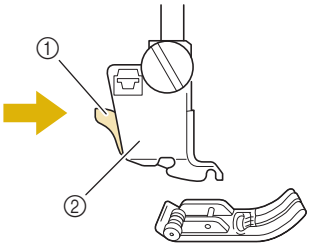
2 **Press to lock all keys and buttons.**

* If the message "OK to automatically lower the presser foot?" appears on the LCD screen, press OK to continue.

3 **Raise the presser foot lever.**



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



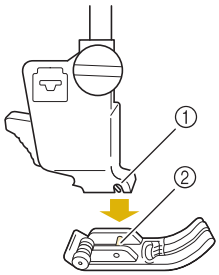
① Black button
② Presser foot holder

Attaching the Presser Foot

⚠ CAUTION

- Make sure that the presser foot is installed in the correct direction, otherwise the needle may strike the presser foot, breaking the needle and causing injuries.

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



① Notch
② Pin

2 **Press to unlock all keys and buttons.**

3 **Raise the presser foot lever.**

Attaching the Presser Foot with the Included Adapter

You can attach the presser feet using the included adapter and small screw.
For example, the walking foot, the free motion echo quilting foot "E", the free motion quilting foot "C" and so on.
Following procedure shows how to attach the walking foot as an example.

■ Attaching the Walking Foot (Optional)

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

Note

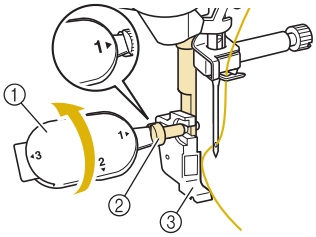
- Thread the needle manually when using the walking foot, or only attach the walking foot after threading the needle using the "Automatic Threading" button.
- When sewing with the walking foot, sew at medium to low speeds.

Memo

- The walking foot can only be used with straight or zigzag stitch patterns. Reverse stitches cannot be sewn with the walking foot. Only select straight or zigzag stitch patterns with reinforcement stitches. (see page 83.)

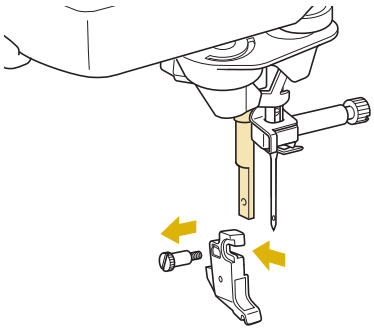
1 **Follow the steps in "Removing the Presser Foot" on the previous page.**

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

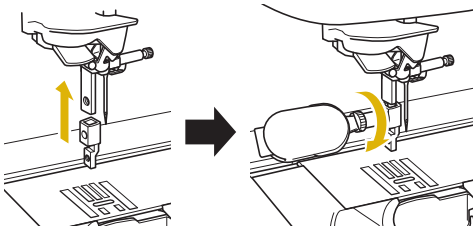


① Multi- purpose screwdriver
② Presser foot holder screw
③ Presser foot holder

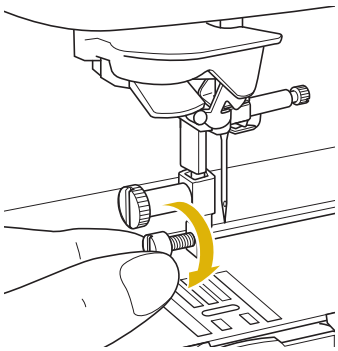
3 **Remove the screw of the presser foot completely from the presser foot shaft.**



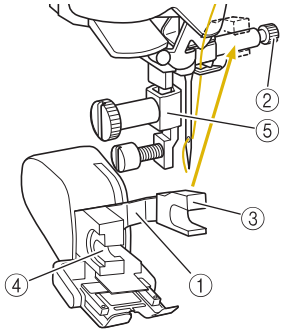
4 **Set the adapter on the presser foot bar, aligning the flat side of the adapter opening with the flat side of the presser bar. Push it up as far as possible, and then tighten the screw securely with the screwdriver.**



5 **Turn a supplied small screw 2 or 3 times with your hand.**

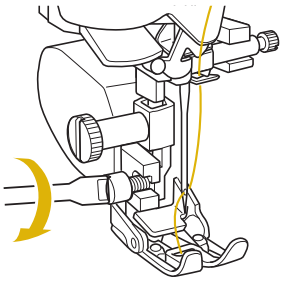


6 **Set the operation lever of the walking foot so that the needle clamp screw is set in the fork. Position the shank of the walking foot on the presser foot bar.**



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

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



⚠ CAUTION

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

Using the Dual Feed Foot

Dual feed foot enables you to have best fabric control when sewing difficult fabrics that slip easily, such as quilted fabrics or fabrics that tend to stick to the bottom of a presser foot, such as vinyl, leather or synthetic leather.

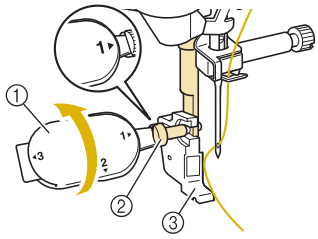
Note
- When sewing with the dual feed foot, sew at medium to low speeds.

Memo
- When selecting stitches to be used with the dual feed foot, only the stitches that can be used will be activated on the display.
- When sewing fabric that easily sticks together, a more attractive finish can be achieved by basting the beginning of sewing.

■ Attaching the Dual Feed Foot

1 **Follow the steps in "Removing the Presser Foot" on page 68.**

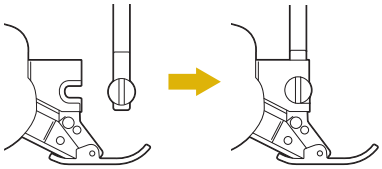
2 **Loosen the screw of the presser foot holder to remove the presser foot holder.**



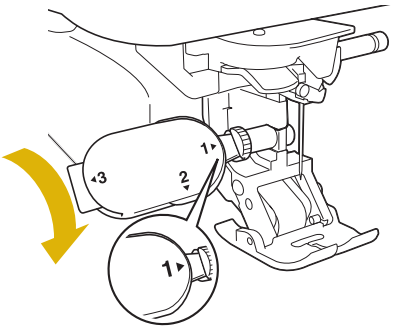
① Multi- purpose screwdriver
② Presser foot holder screw
③ Presser foot holder

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

Side view



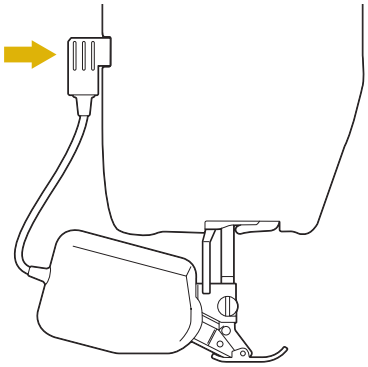
4 **Hold the dual feed foot in place with your right hand, then using the included screwdriver securely tighten the large screw.**



⚠ CAUTION

- **Use the included screwdriver to firmly tighten the screw. If the screw is loose, the needle may strike the presser foot and possibly cause injury.**

5 **Plug the connector of the dual feed foot into the jack on the back of your machine.**

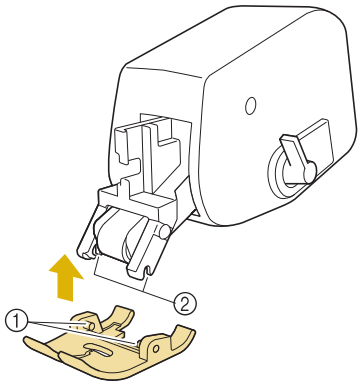


6 **Press** **to unlock all keys and buttons.**

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

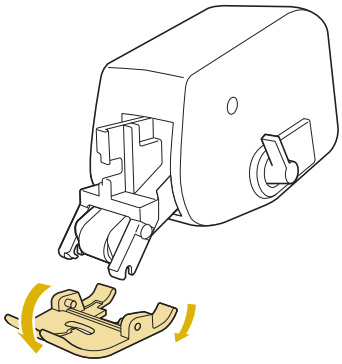
■ Attaching/Detaching toe

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



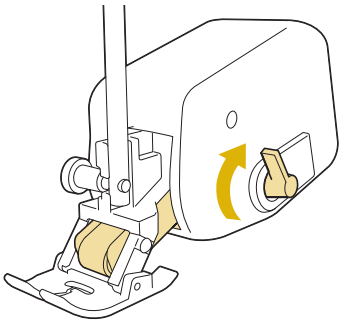
① Pins
② Notches

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

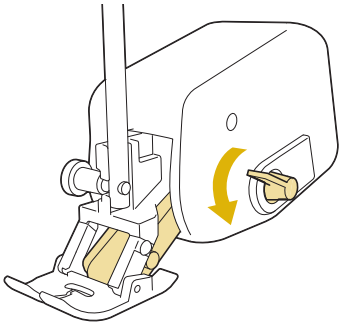


■ Using the Dual Feed Position Lever

When the feed position lever is up, the black roller belt on the dual feed is not engaged.



When the feed position lever is down, the black roller belt on the dual feed is engaged.



Note
- Do not operate the lever while sewing.

■ Adjusting the Amount of Fabric Feeding of the Dual Feed Foot

The dual feed mechanism pulls the top fabric according to the set stitch length. With troublesome fabrics, fine tune the set length, by changing the dual feed feed adjustment in the settings screen.

Note
- As a default, some keys mentioned in the following procedures appear in light gray and are not available. To enable the keys for specifying the settings, attach the dual feed foot to the machine. The keys are enabled after the dual feed foot is detected.

1 **Press [ ].**

→ The settings screen appears.

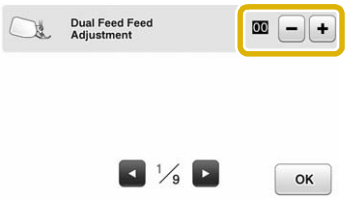
2 **Press [ ].**

→ The Sewing settings screen appears.

3 **Display page 1 of the Sewing settings screen.**

4 **Use [−] or [+] to increase or decrease the feeding of the top fabric.**

* Select “00” for sewing in most cases.
* If the feed amount for the top fabric is too little, causing the fabric to be longer than the bottom fabric, press [+] to increase the feed amount for the top fabric.
* If the feed amount for the top fabric is too much, causing the fabric to be shorter than the bottom fabric, press [−] to decrease the feed amount for the top fabric.



5 **Press [OK] to return to the original screen.**

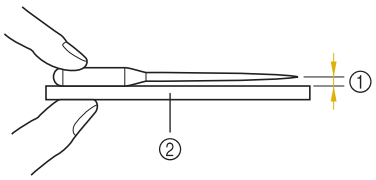
CHANGING THE NEEDLE

⚠ 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 sewing machine needles made for home use. Other needles may bend or break and may cause injury.**
- **Never sew with a bent needle. A bent needle will easily break and may cause injury.**

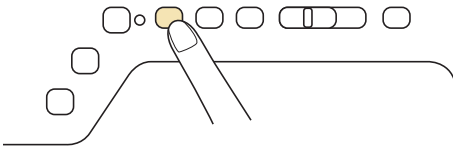
Memo

- 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.



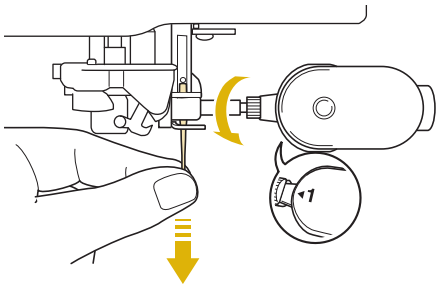
2 Press to lock all keys and buttons.

* If the message "OK to automatically lower the presser foot?" appears on the LCD screen, press OK to continue.

Note

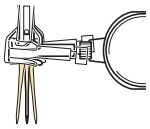
- Before replacing the needle, cover the hole in the needle plate with fabric or paper to prevent the needle from falling into the machine.

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

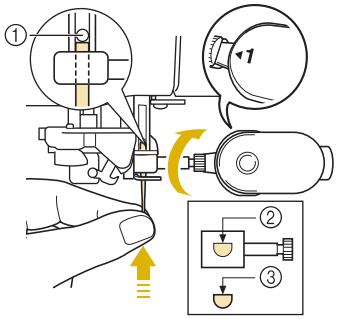


Note

- 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 a 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.**

About the Needle

The sewing machine needle is probably the most important part of the sewing machine. Choosing the proper needle for your sewing project will result in a beautiful finish and fewer problems. Below are some things to keep in mind about needles.

- The smaller the needle number, the finer the needle. As the numbers increase, the needles get thicker.
- Use fine needles with lightweight fabrics, and thicker needles with heavyweight fabrics.
- To avoid skipped stitches, use ball point needle (golden colored) 90/14 with stretch fabrics.
- To avoid skipped stitches, use ball point needle (golden colored) 90/14 when sewing character or decorative stitches.
- Use needle 75/11 for embroidery. Use ball point needle 75/11 for embroidering patterns with short jump stitches such as alphabet characters when the thread trimming function is turned on.
- 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.). A 75/11 needle may bend or break, which could result in injury.
- Size 75/11 machine needle is installed into your sewing machine.

Fabric/Thread/Needle Combinations

The following table provides information concerning the appropriate thread and needle for various fabrics. Please refer to this table when selecting a thread and needle for the fabric you wish to use.

Fabric type/Application		Thread		Size of needle
		Type	Size	
Medium weight fabrics	Broadcloth	Cotton thread	60 - 90	75/11 - 90/14
	Taffeta	Synthetic thread		
	Flannel, Gabardine	Silk thread	50	
Thin fabrics	Lawn	Cotton thread	60 - 90	65/9 - 75/11
	Georgette	Synthetic thread		
	Challis, Satin	Silk thread	50	
Thick fabrics	Denim	Cotton thread	30	90/14 - 100/16
			50	
	Corduroy	Synthetic thread	50 - 60	
	Tweed	Silk thread		
Stretch fabrics	Jersey	Thread for knits	50 - 60	Ball point needle (gold colored) 75/11 - 90/14
	Tricot			
Easily frayed fabrics		Cotton thread	50 - 90	65/9 - 90/14
		Synthetic thread		
		Silk thread	50	
For top-stitching		Synthetic thread	50	90/14 - 100/16
		Silk thread		

Memo

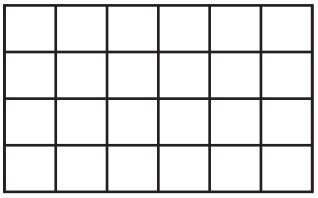
- For transparent monofilament nylon thread, always use needle sizes 90/14 or 100/16. The same thread is usually used for the bobbin thread and upper thread.

⚠ CAUTION

- **Be sure to follow the needle, thread, and fabric combinations listed in the table. Using an improper combination, especially a heavyweight fabric (i.e., denim) with a small needle (i.e., 65/9 - 75/11), may cause the needle to bend or break, and lead to injury. Also, the seam may be uneven, the fabric may pucker, or the machine may skip stitches.**

NEEDLE CALIBRATION USING THE BUILT IN CAMERA

Setting the camera needle position is essential when you use camera function. It is not necessary to perform this operation each time, but we recommend performing it when the needle is changed. Use the white stickers (solid) included with the machine.

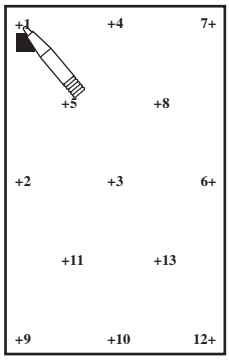


1 Hold your finger firmly on the LCD screen, and then turn on the machine.

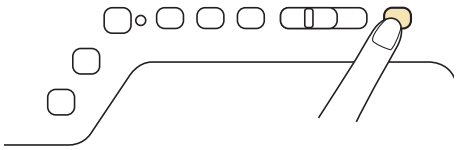
Note

- Be careful not to touch the LCD screen prior to Step 2 below.
- This function can be performed with or without embroidery unit attached to machine. If attached, message screens will appear regarding movement of embroidery unit.

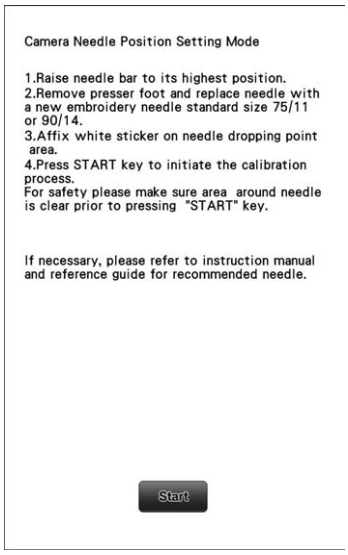
→ The following screen appears.



2 Press the "Automatic Threading" button.



→ Camera needle position setting screen appears.



3 Follow the on-screen instructions to complete the procedure.

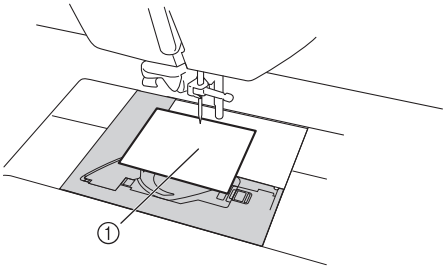
1. Raise needle bar to its highest position.

Note

- The "Needle Position" button cannot be used while setting the camera needle position. Turn the handwheel counterclockwise to move the needle bar.

2. Remove presser foot and replace needle with a new embroidery needle standard size 75/11 or 90/14.

3. Affix white sticker on needle dropping point area.



① White sticker

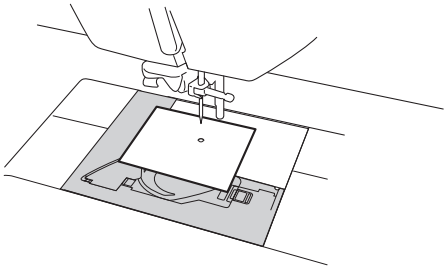
Note

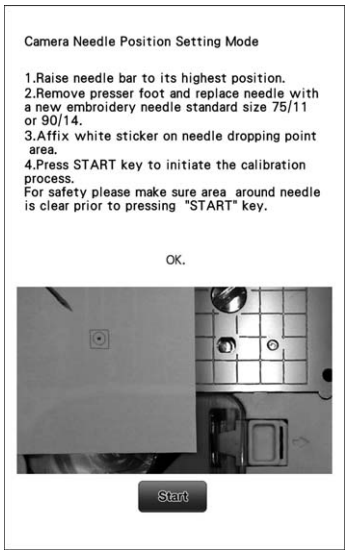
- Use a new sticker. The camera needle position cannot be set correctly if there is a hole in sticker or if it is dirty. If you have no new stickers, contact your nearest Baby Lock retailer.

4. Press Start to initiate the calibration process. For safety please make sure area around needle is clear prior to pressing Start.

→ Setting the needle drop point begins.

4 The operation is finished when "OK" appears. If "NG" appears, remove the sticker, and then follow the on-screen instructions to repeat steps 3 and 4 of step 3. If multiple attempts to set the position are not successful, contact your nearest Baby Lock retailer.





5 Remove the sticker, and then turn off the machine.

Chapter 2
Sewing Basics

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SEWING

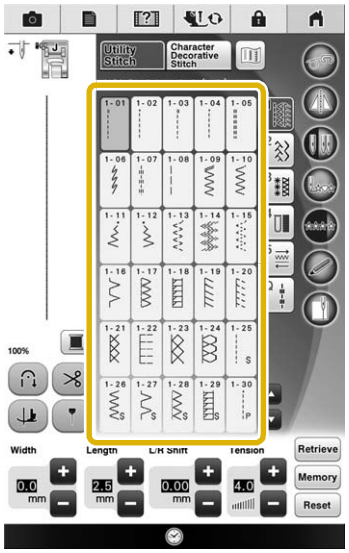
⚠ CAUTION

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

Sewing a Stitch

1 **Turn the main power to ON and press to display the utility stitches, and push the "Needle Position" button to raise the needle.**

2 **Press the key of the stitch you want to sew.**



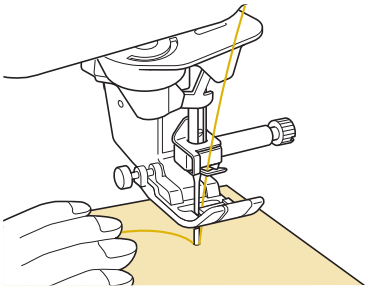
→ The symbol of the correct presser foot will be displayed in the upper left corner of the LCD screen.

3 **Install the presser foot ("CHANGING THE PRESSER FOOT" on page 68).**

⚠ CAUTION

- Always use the correct presser foot. If the wrong presser foot is used, the needle may strike the presser foot and bend or break, possibly resulting in injury.
  Refer to page 403 for presser foot recommendations.

4 **Set the fabric under the presser foot. Hold the fabric and thread in your left hand, and rotate the handwheel to set the needle in the sewing start position.**



Memo

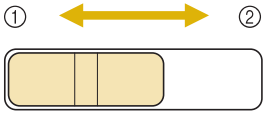
- The black button on the left side of presser foot "J" should be pressed only if the fabric does not feed or when sewing thick seams (see page 86). Normally, you can sew without pressing the black button.

5 **Lower the presser foot.**

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

6 **Adjust the sewing speed with the speed control slide.**

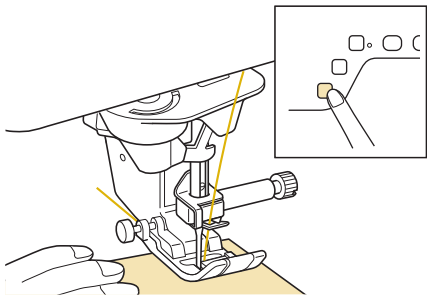
* You can use this slide to adjust sewing speed during sewing.



① Slow
② Fast

7 **Press the "Start/Stop" button to start sewing.**

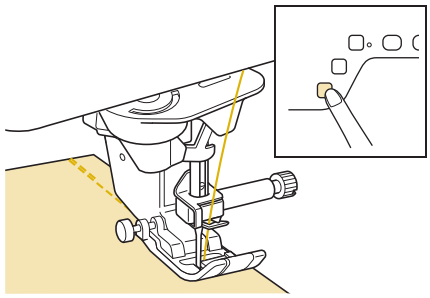
* Guide the fabric lightly by hand.



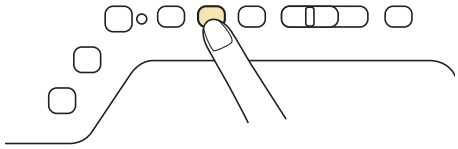
Memo

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

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



9 **Press the "Thread Cutter" button to trim the upper and lower threads.**



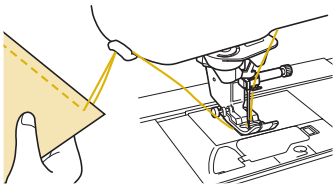
→ The needle will return to the up position automatically.

CAUTION

- **Do not press the "Thread Cutter" button after the threads have been cut. Doing so could tangle the thread or break the needle and damage the machine.**
- **Do not press the "Thread Cutter" button when there is no fabric set in the machine or during machine operation. The thread may tangle, possibly resulting in damage.**

Note

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



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

Memo

- This machine is equipped with a bobbin thread sensor that warns you when the bobbin thread is almost empty. When the bobbin thread is nearly empty, the machine automatically stops. However, if the "Start/Stop" button is pressed, a few stitches can be sewn. When the warning displays, re-thread the machine immediately.

■ Using the Multi-Function Foot Controller

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

CAUTION

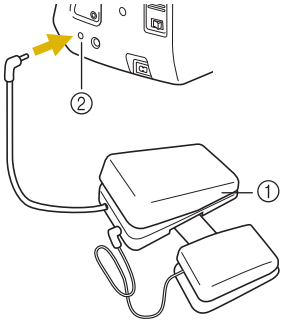
- **Do not allow fabric pieces and dust to collect in the foot controller. Doing so could cause a fire or an electric shock.**

Memo

- When the multi-function foot controller is being used, you cannot start sewing by pressing the "Start/Stop" button.
- The multi-function foot controller cannot be used when embroidering.
- The multi-function foot controller can be used for sewing utility and decorative stitches when the embroidery unit is attached.

1 Insert the multi-function foot controller plug into its jack on the machine.

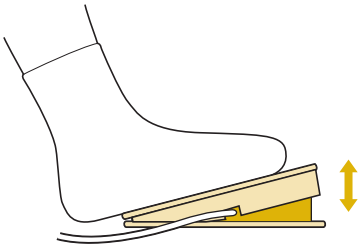
* Before connecting the multi-function foot controller, be sure to assemble the controller. Refer to "Assembling the Controller" on page 26.



① Multi-function foot controller
② Foot controller jack

2 Slowly depress the multi-function foot controller to start sewing.

Pressing down on the multi-function foot controller increases the sewing speed; releasing the pressure on the multi-function foot controller decreases the sewing speed.



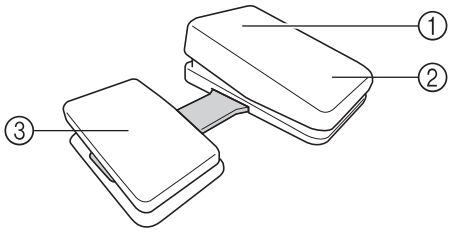
Memo
- The speed that is set using the sewing speed controller is the multi-function foot controller's maximum sewing speed.

3 Release the multi-function foot controller to stop the machine.

Specifying the Multi-Function Foot Controller (Only for supplied models)

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

■ Functions That Can Be Specified



	Controller	Functions that can be specified
①	Main foot controller	Start/Stop
②	Heel switch	Select any of the following: • Thread Cutting • Needle Position UP/DOWN • Single Stitch • Reverse Stitch (Reinforcement Stitch) *
③	Side pedal	

* If you set the "Reverse Stitch" function on the heel switch, machine operates the same as pressing the "Reverse Button" on the machine.

* Reinforcement stitching may be applied depending on the selected stitch pattern. For the details, refer to "Automatic Reinforcement Stitching" on page 83.

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

■ Specifying the Functions

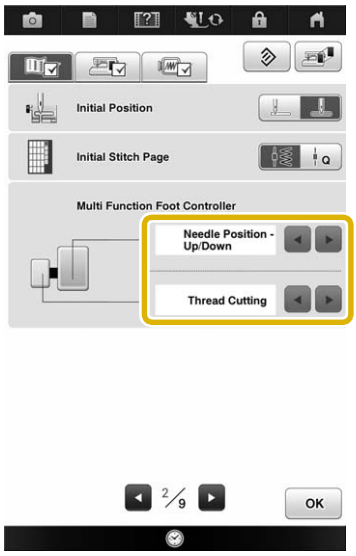
The functions performed by the multi-function foot controller can be specified in the settings screen.

Note
- Before specifying the functions, connect the multi-function foot controller to the sewing machine. The settings screen is activated the first time that the sewing machine detects the multi-function foot controller.
- After the multi-function foot controller is connected to the sewing machine and the functions are specified, the "Start/Stop" button cannot be used. All buttons other than the "Start/Stop" button can continue to be used.

1 **Press .**

2 **Display page 2 of the Sewing Settings screen.**

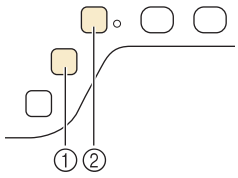
3 **Select the functions to be performed by the multi-function foot controller.**



4 **Press OK.**

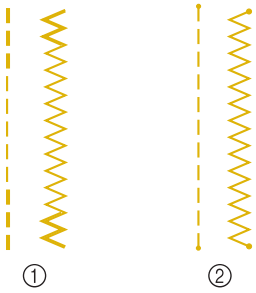
Sewing Reinforcement Stitches

Reverse/reinforcement stitches are generally necessary at the beginning and end of sewing. You can use the "Reverse Stitch" button to sew reverse/reinforcement stitches. When you keep pressing "Reinforcement Stitch" button, the machine will sew reinforcement stitch at that point 3 to 5 stitches, and then stop. (see page 17)



① "Reverse Stitch" button
② "Reinforcement Stitch" button

If the automatic reinforcement stitch is selected on the screen, reverse stitches (or reinforcement stitches) will be sewn automatically at the beginning of sewing when the "Start/Stop" button is pressed. Press "Reverse Stitch" button or "Reinforcement Stitch" button to sew reverse stitches (or reinforcement stitches) automatically at the end of sewing (Refer to the next procedure "Automatic Reinforcement Stitching".).



① Reverse stitch
② Reinforcement stitch

The operation performed when the button is pressed differs depending on the selected pattern. (Refer to "STITCH SETTING CHART" on page 403.)

Memo

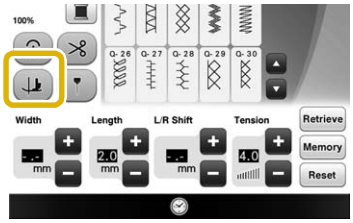
- When you press the "Reinforcement Stitch" button while sewing character/decorative stitch pattern, you can end sewing with a full stitch instead of at a mid-point.
- The green light on the right of the "Reinforcement Stitch" button lights up while the machine is sewing a full motif, and it automatically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

Automatic Reinforcement Stitching

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

1 **Select a stitch pattern.**

2 **Press to set the automatic reinforcement stitching function.**

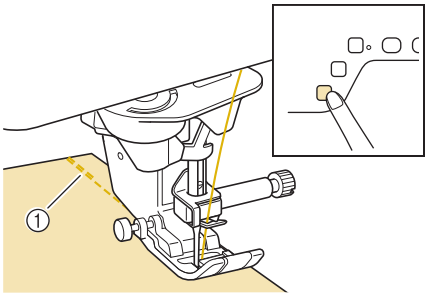


→ The key will display as .

Memo

- Some stitches, such as buttonholes and bar tacks, require reinforcement stitches at the beginning of sewing. If you select one of these stitches, the machine will automatically turn on this function (the key appears as when the stitch is selected).

3 Set the fabric in the start position and begin sewing.

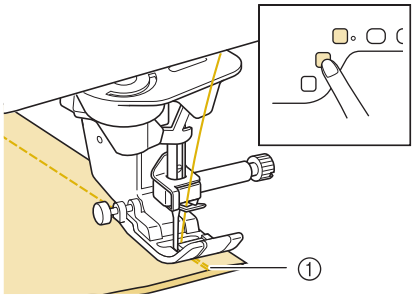


① Reverse stitches (or reinforcement stitches)

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

If you press the Start/Stop button to pause sewing, press it again to continue. The machine will not sew reverse/reinforcement stitches again.

4 Press "Reverse Stitch" button or "Reinforcement Stitch" button).



① Reverse stitches (or reinforcement stitches)

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

Memo

- To turn off the automatic reinforcement stitching function, press again, so it appears as .

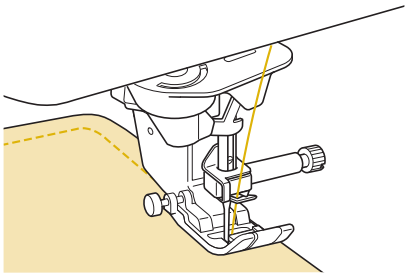
The operation performed when the button is pressed differs depending on the selected pattern. Refer to the following table for details on the operation that is performed when the button is pressed.

	"Reverse Stitch" button	"Reinforcement Stitch" button
Utility Stitch + 1-01 1-03 1-09	Machine starts sewing the stitches and only sews reverse stitches while holding the "Reverse Stitch" button.	Machine starts sewing the stitches and sews 3 – 5 reinforcement stitches while holding the "Reinforcement Stitch" button.
Utility Stitch + 1-02 1-04 1-10	Machine starts sewing the stitches and only sews reverse stitches while holding the "Reverse Stitch" button.*	Machine starts sewing the stitches and sews 3 – 5 reinforcement stitches while holding the "Reinforcement Stitch" button.
Utility Stitch + 1-01 1-03 1-09	Machine sews reverse stitches at the beginning and end of sewing.	Machine sews reverse stitches at the beginning and reinforcement stitches at the end of sewing.
Utility Stitch + 1-02 1-04 1-10	Machine sews reinforcement stitches at the beginning and reverse stitches at the end of sewing.*	Machine sews reinforcement stitches at the beginning and end of sewing.
Character Decorative Stitch +	Machine starts sewing and then sews reinforcement stitches while holding the "Reverse Stitch" button.	Machine starts sewing at the beginning, then completes the pattern and sews reinforcement stitches at the end of sewing.
Character Decorative Stitch +	Machine sews reinforcement stitches at the beginning and sews reinforcement stitches when the "Reverse Stitch" button is pressed.	Machine sews reinforcement stitches at the beginning, then completes the pattern and sews reinforcement stitches at the end of sewing.

* If "Reinforcement Priority" of the settings screen is set to "ON" (see page 31), reinforcement stitches are sewn instead of reverse stitches.

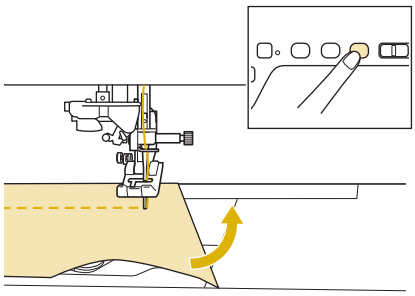
Sewing Curves

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



Changing Sewing Direction

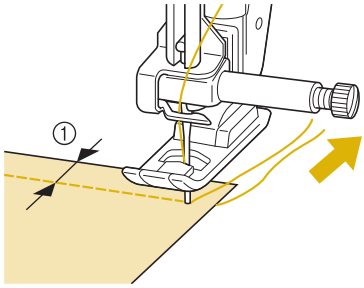
Stop the machine. Leave the needle in the fabric, and press the "Presser Foot Lifter" button to raise the presser foot. Using the needle as a pivot, turn the fabric so that you can sew in the new direction. Press the "Presser Foot Lifter" button to lower the presser foot and start sewing.



The pivot setting is useful when changing the sewing direction. When the machine is stopped at the corner of the fabric, the machine stops with the needle in the fabric and the presser foot is automatically raised so the fabric can easily be rotated ("Pivoting" on page 93).

■ Sewing a Seam Allowance of 0.5 cm or Less

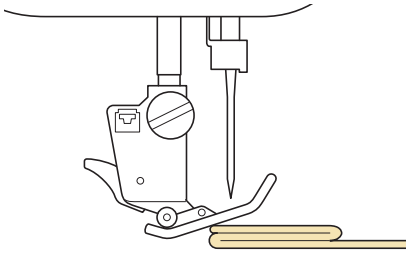
Baste the corner before sewing, and then, after changing the sewing direction at the corner, pull the basting thread toward the back while sewing.



① 5 mm (approx. 3/16 inch)

Sewing Heavyweight Fabrics

The sewing machine can sew fabrics up to 6 mm (approx. 1/4 inch) thick. If the thickness of a seam causes sewing to occur at an angle, help guide the fabric by hand and sew on the downward slope.

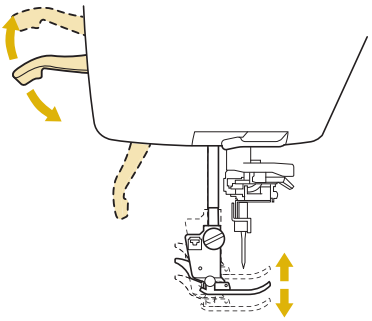


⚠ CAUTION

- **Do not forcefully push fabrics more than 6 mm (approx. 1/4 inch) thick through the sewing machine. This may cause the needle to break and cause injury.**
- **Thicker fabrics require a larger needle (See page 75).**

■ If the Fabric does not Fit under the Presser Foot

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



Memo

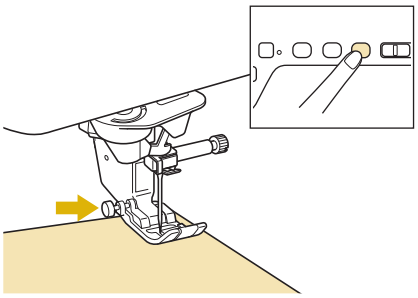
- You cannot use the presser foot lever after the presser foot has been raised using the "Presser Foot Lifter" button.

■ If the Fabric does not Feed

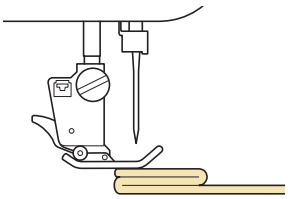
If the fabric does not feed when starting to sew or when sewing thick seams, press the black button on the left side of presser foot "J".

1. **Raise the presser foot.**

2. **While keeping the black button on the left side of presser foot "J" pressed in, press the "Presser Foot Lifter" button to lower the presser foot.**



3. **Release the black button.**



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

Memo

- Once the trouble spot has been passed, the foot will return to its normal position.
- When "Automatic Fabric Sensor System" (Automatic Presser Foot Pressure) in the machine settings screen is set to "ON", the thickness of the fabric is automatically detected by the internal sensor so the fabric can be fed smoothly for best sewing results. (see page 95 for details.)

Sewing Hook-and-Loop Fastener Tape

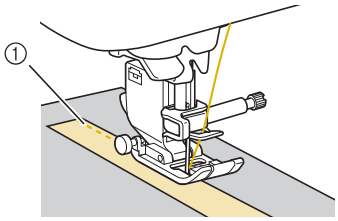
⚠ CAUTION

- **Do not use adhesive backed hook-and-loop fastener tape designed for sewing. When glue adheres to the needle or the bobbin hook race, it may cause malfunction.**
- **If the hook-and-loop fastener tape is sewn with a fine needle (65/9-75/11), the needle may bend or break.**

Note

- Before starting to sew, baste the fabric and hook-and-loop fastener tape together.

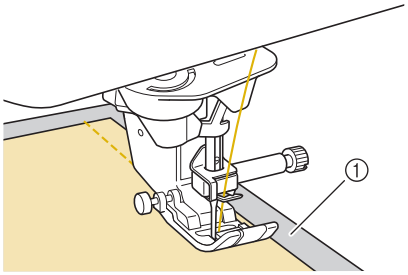
Make sure that the needle passes through the hook-and-loop fastener tape by rotating the handwheel and lower the needle into the hook-and-loop fastener tape before sewing. Sew the edge of the hook-and-loop fastener tape at a slow speed.
If the needle does not pass through the hook-and-loop fastener tape, replace the needle size with the needle for thick fabrics (page 75).



① Edge of the hook-and-loop fastener tape

Sewing Lightweight Fabrics

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



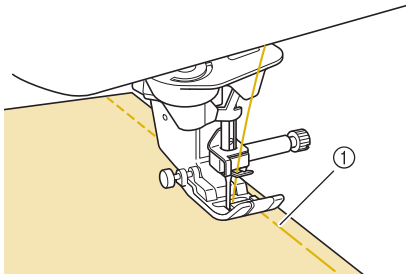
① Thin paper

Sewing Stretch Fabrics

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

Memo

- For best results when sewing stretch fabrics, decrease the pressure of the presser foot (“Using the Machine Setting Mode Key” on page 31).



① Basting stitching

STITCH SETTINGS

When you select a stitch, your machine automatically selects the appropriate stitch width, stitch length, and upper thread tension. However, if needed, you can change any of the individual settings.

Note
- Settings for some stitches cannot be changed (refer to the “STITCH SETTING CHART” at the end of this manual).
- If you turn off the machine or select another stitch without saving stitch setting changes (“Saving Your Stitch Settings” on page 113), the stitch settings will return to their default settings.

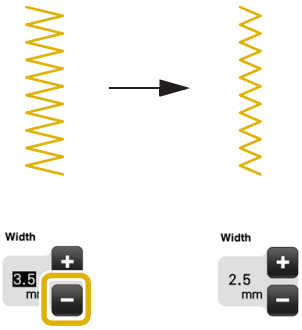
Setting the Stitch Width

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

Memo
- For an alternate method of changing the stitch width using the speed controller, see page 131.

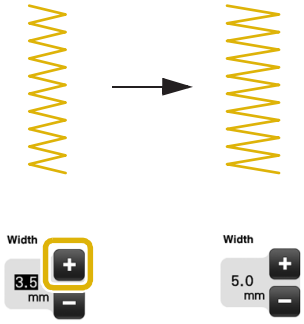
Example:

Press [−] to narrow the zigzag stitch pattern width.



→ The value in the display gets smaller.

Press [+] to widen the zigzag stitch pattern width.



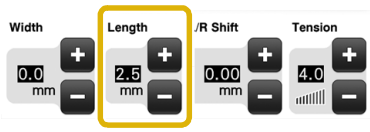
→ The value in the display gets bigger.

Memo
- Press [Memory] to save the stitch settings.
- Press [ ] to check changes made to the stitch.
- Press [Reset] to return the stitch width to the original setting.

Note
- After adjusting the stitch width, slowly rotate the handwheel toward you (counterclockwise) and check that the needle does not touch the presser foot. If the needle hits the presser foot, the needle may bend or break.

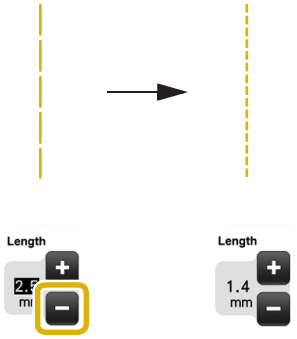
Setting the Stitch Length

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



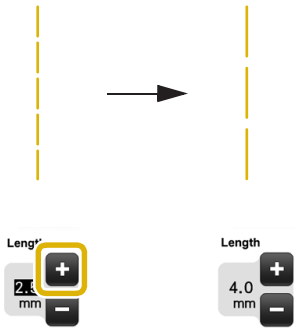
Example:

Press [−] to shorten the stitch length.



→ The value in the display gets smaller.

Press [+] to lengthen the stitch length.



→ The value in the display gets bigger.

Memo

- Press [Memory] to save the stitch settings.
- Press [ ] to check changes made to the stitch.
- Press [Reset] to return the stitch length to the original setting.

⚠ CAUTION

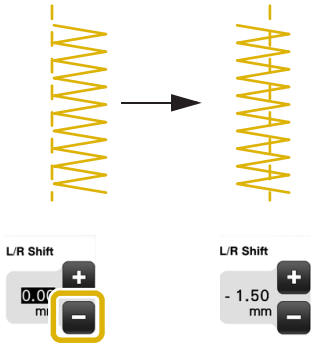
- **If the stitches get bunched together, lengthen the stitch length and continue sewing. Do not continue sewing without lengthening the stitch length. Otherwise, the needle may break and cause injury.**

Setting the "L/R Shift"

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

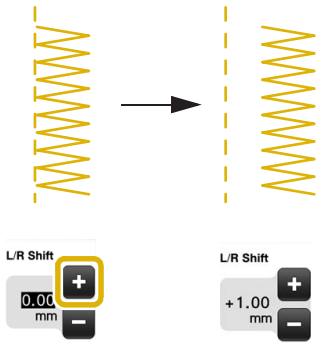
Example:

Press [−] to shift the pattern to the left.



→ The value in the display appears with a minus sign.

Press [+] to shift the pattern to the right side of the left needle position.



→ The value in the display appears with a plus sign.

Memo

- Press [Memory] to save the stitch settings.
- Press [ ] to check changes made to the stitch.
- Press [Reset] to return to the original setting.

Note

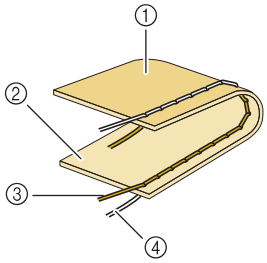
- After adjusting the "L/R Shift", slowly rotate the handwheel toward you (counterclockwise) and check that the needle does not touch the presser foot. If the needle hits the presser foot, the needle may bend or break.

Setting the Thread Tension

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

■ Proper Thread Tension

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



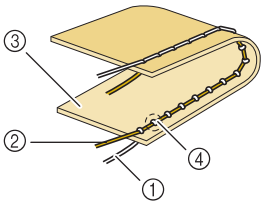
① Wrong side
② Surface
③ Upper thread
④ Bobbin thread

■ Upper Thread is Too Tight

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

Note

- If the bobbin thread was incorrectly threaded, the upper thread may be too tight. In this case, refer to “Setting the Bobbin” (page 57) and rethread the bobbin thread.

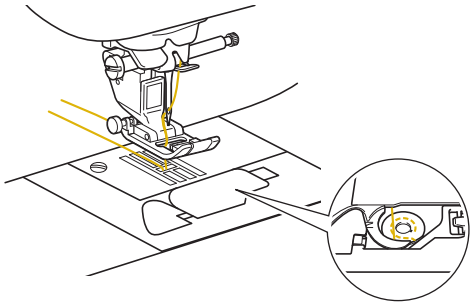


① Bobbin thread
② Upper thread
③ Surface
④ Locks appear on surface of fabric

Press [−], to loosen the upper thread.

Memo

- When you finish sewing, remove the bobbin cover and then make sure that the thread is shown as below. If the thread is not shown as below, the thread is not inserted through the tension-adjusting spring of the bobbin case correctly. Reinsert the thread correctly. For details, refer to page 57.

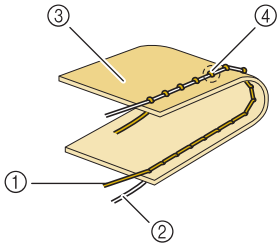


■ Upper Thread is Too Loose

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

Note

- If the upper thread was incorrectly threaded, the upper thread may be too loose. In this case, refer to “Upper Threading” (page 60) and rethread the upper thread.



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

Press [+], to tighten the upper thread.

Memo

- Press [Reset] to return the thread tension to the original setting.

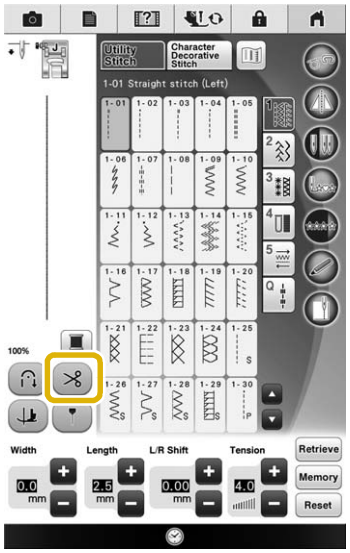
USEFUL FUNCTIONS

Automatic Thread Cutting

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

1 Select a stitch pattern.

2 Press to set the automatic thread cutting function.

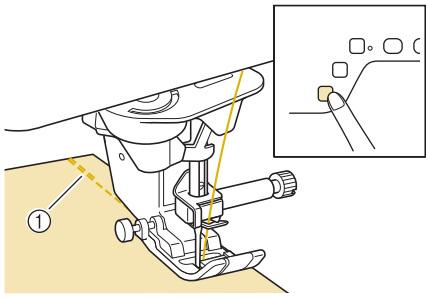


→ You get , and the machine is set for automatic thread cutting function and automatic reverse/reinforcement stitching.

Memo

- To turn off the automatic thread cutting function, press again, so it appears as .
- This function is set automatically when sewing embroidery.

3 Set the fabric in the start position and start sewing.



① Reverse stitches (or reinforcement stitches)

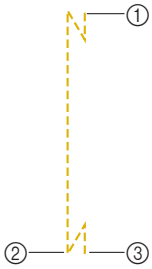
→ The machine will automatically sew reverse stitches (or reinforcement stitches) and then continue sewing.

Memo

- If you press the "Start/Stop" button to pause sewing, press the same button again to continue. The beginning reverse/reinforcement stitches will not be sewn again.

4 Once you have reached the end of the stitching, press "Reverse Stitch" button or "Reinforcement Stitch" button once.

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



① The point where the "Start/Stop" button was pressed.

② The point where the "Reverse Stitch" button or the "Reinforcement Stitch" button was pressed.

③ The thread is cut here.

Memo

- The automatic thread cutting function will not be performed if the "Start/Stop" button is pressed while sewing. Press the "Reverse Stitch" button or the "Reinforcement Stitch" button at the end of the stitching.

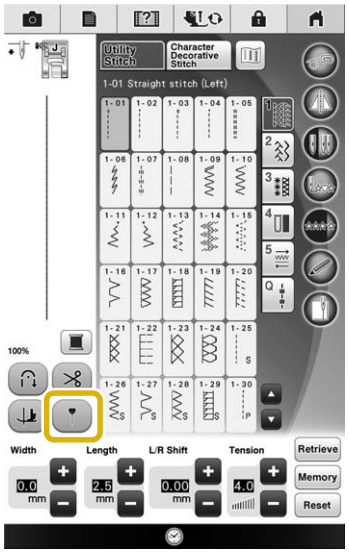
Adjusting the Needle Drop Position with the Guideline Marker

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

⚠ CAUTION

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

1 Press to display the guideline marker.



→ The guideline marker scale appears.

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

2 Use − or + to move the needle drop position.

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

3 Press again to stop using the guideline marker.

■ Adjusting the Guideline Marker Position

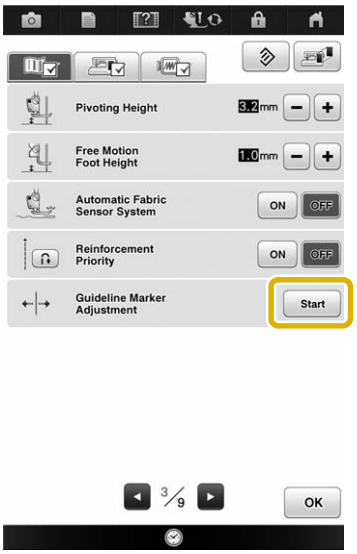
If the guideline marker indicates the position incorrectly in the center needle position, adjust the initial position in the settings screen.

1 Press to display "Guideline Marker Adjustment" in the settings screen.

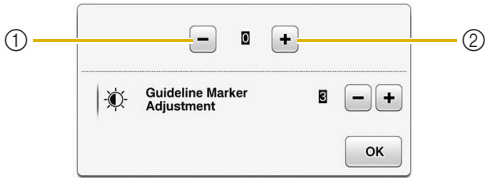
2 Display settings screen.

3 Press Start.

→ The "Guideline Marker Adjustment" screen appears.



4 Use − or + to adjust the guideline marker position.



① Press to move the guideline marker to the left

② Press to move the guideline marker to the right

5 Press OK twice to return to the original screen.

■ Adjusting the Brightness of the Guideline Marker

1 Follow steps from 1 to 3 to display the "Guideline Marker Adjustment" screen.

2 Use − or + to adjust the brightness of the guideline marker.

→ Set the brightness of the guideline marker from "1" for a dim marker, to "5" for the brightest marker, on the fabric.

3 Press OK twice to return to the original screen.

Pivoting

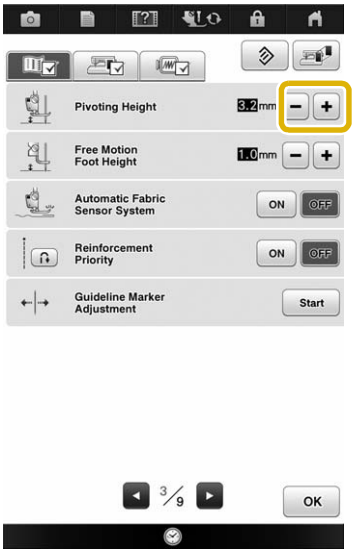
If the pivot function is selected, the machine stops with the needle lowered (in the fabric) and the presser foot is automatically raised to an appropriate height when the "Start/Stop" button is pressed. When the "Start/Stop" button is pressed again, the presser foot is automatically lowered and sewing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

⚠ CAUTION

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

Memo

- When the pivot setting is selected, the height of the presser foot when sewing is stopped can be changed according to the type of fabric being sewn. Press to display "Pivoting Height" of the settings screen. Press − or + to select one of the three heights (3.2 mm, 5.0 mm or 7.5 mm). To raise the presser foot further, increase the setting. (Normally, 3.2 mm is set.)

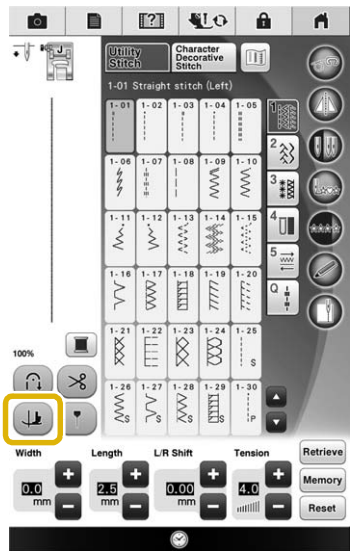


Note

- The "Needle Position – Up/Down" of the settings screen, must be set in the down position for the pivot function to be used. When "Needle Position – Up/Down" is set in the raised position , appears as light gray and cannot be used.
- The pivot function can only be used with stitches where presser foot "J" or "N" is indicated in the upper-left corner of the screen. If any other stitch is selected, appears as light gray and is not available.
- If the pivot function is selected, − and + beside "Presser Foot Height" in the settings screen are not available and the setting cannot be changed.

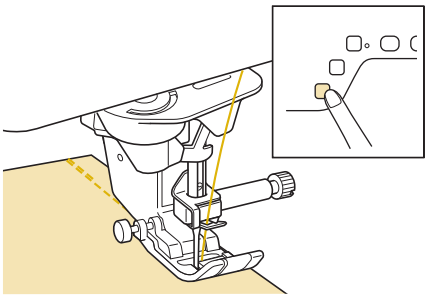
1 Select a stitch.

2 **Press to select the pivot setting.**



→ The key appears as .

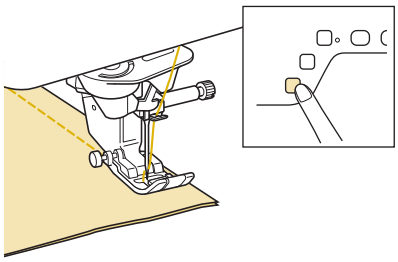
3 **Place the fabric under the presser foot with the needle at the starting point of the stitching, and then press the "Start/Stop" button. The machine will begin sewing.**



Memo

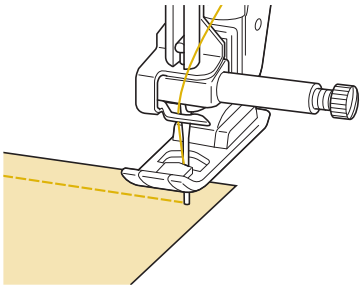
- If you press the "Start/Stop" button to pause sewing, press it again to continue, reverse stitches (or reinforcement stitches) will not be sewn.

4 **Press the "Start/Stop" button to stop the machine at the point where the sewing direction changes.**



→ The machine stops with the needle in the fabric, and the presser foot is raised.

5 **Rotate the fabric, and then press the "Start/Stop" button.**



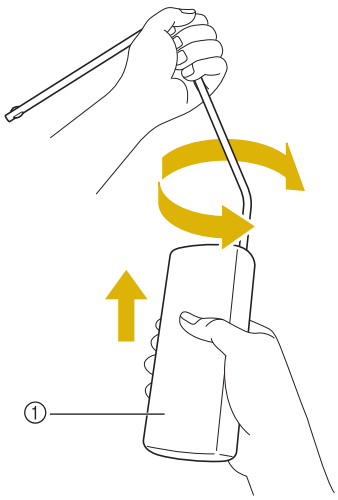
→ The presser foot is automatically lowered, and sewing continues.

Using the Knee Lifter

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

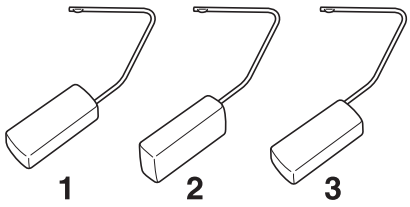
1 **Change the operating position of the knee lifter handle before inserting into the machine.**
Slide up the knee lifter handle slightly and rotate it while releasing pressure so handle will click into position.

* The knee lifter can be adjusted to three different angles.

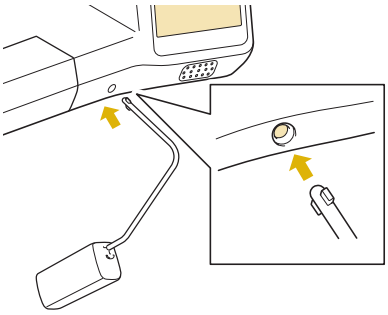


① Knee lifter handle

→ Rotate knee lifter handle till it clicks into the selected position that is most comfortable for you.



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



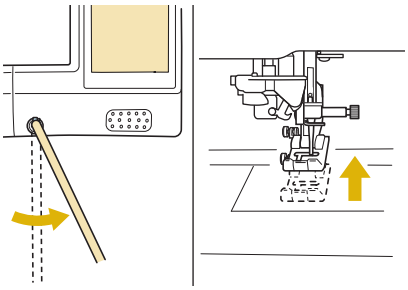
⚠ CAUTION

- **Only change position of the knee lifter handle when knee lifter is not on the machine, otherwise the knee lifter may damage the mounting slot on front of the machine.**

Note

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

3 **Use your knee to move the knee lifter bar to the right in order to raise the presser foot. Release the knee lifter to lower the presser foot.**



⚠ CAUTION

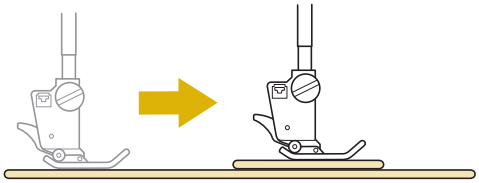
- **Be sure to keep your knee away from the knee lifter during sewing. If the knee lifter is pushed during machine operation, the needle may break or the thread tension may loosen.**

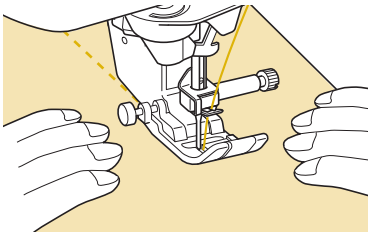
Memo

- When the presser foot is in the up position, move the knee lifter to the far right and then release to return the presser foot to the down position.

Automatic Fabric Sensor System (Automatic Presser Foot Pressure)

The thickness of the fabric is automatically detected and the presser foot pressure is automatically adjusted with an internal sensor while sewing, to insure that your fabric is fed smoothly. The fabric sensor system works continuously while sewing. This function is useful for sewing over thick seams (see page 85), or quilting (see page 129).

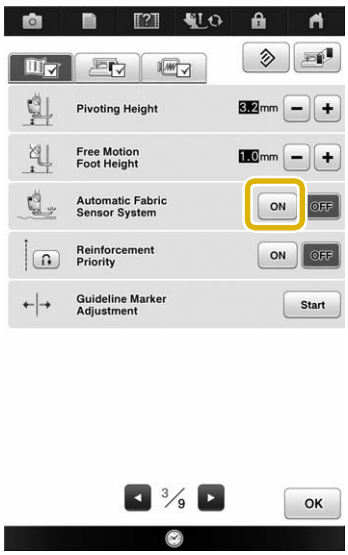




1 **Press [ ].**

→ The settings screen appears.

2 **Set "Automatic Fabric Sensor System" to "ON".**

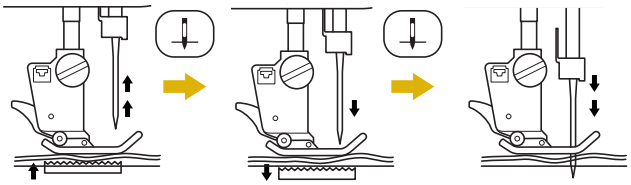


3 **Press [OK] to return to the original screen.**

Needle Position - Stitch Placement

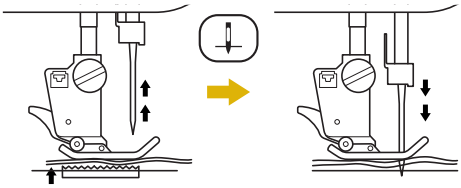
When the “Needle Position - Stitch Placement” is “ON”, the needle will be partially lowered for precise stitch placement and then press the “Needle Position” button to lower the needle completely. Each press of the “Needle Position” button changes the needle to the next position. When the “Needle Position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

“Needle Position - Stitch Placement” is “ON”



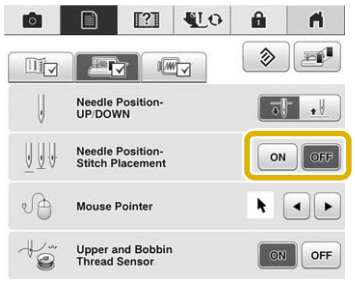
* When the needle is nearly lowered by pressing the “Needle Position” button, the feed dogs are lowered. At this time, the fabric can be shifted to finely adjust the needle drop position.

“Needle Position - Stitch Placement” is “OFF”



1 Press .

2 Set “Needle Position - Stitch Placement” to “ON” or “OFF”.



3 Press OK to return to the original screen.

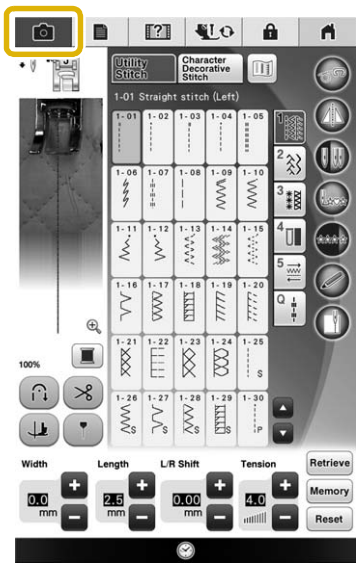
Checking the Needle Location in the Screen

You can check the stitch image with actual fabric image on the screen.

1 Select a stitch.

2 Press .

→ An image of the selected stitch and the actual fabric image are displayed.



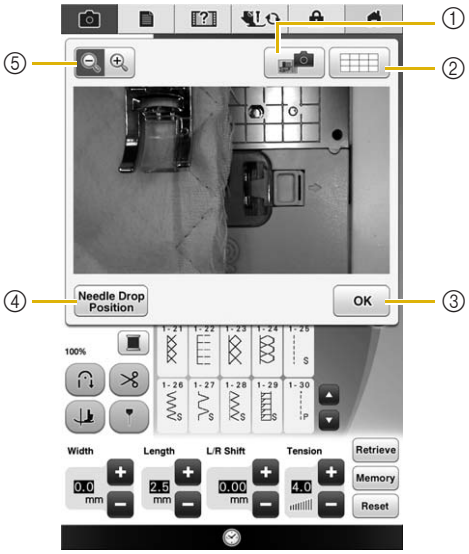
* Press to change the thread color displayed on the screen. You can select from four different colors.

3 Press on the fabric image or on the screen.

→ The camera view window appears.

→ Press again to turn off the camera view.

■ Using the Camera View Window



→ The camera view window appears.

① CAMERA IMAGE
② GRID VIEW
③ OK
④ NEEDLE DROP POSITION
⑤ ZOOM

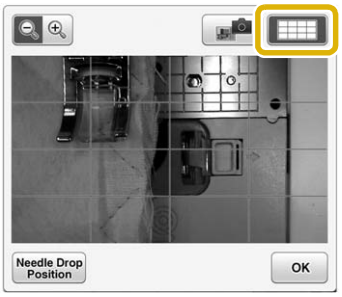
CAMERA IMAGE

Press this key to save a camera image to the USB media.
Insert the USB media to the machine to save a camera image (Refer to "Saving a Settings Screen Image to USB Media" on page 34). The files for camera images are saved with the name "C**.BMP". A maximum of 100 camera images can be saved in one USB media.

* "**" in the name "C**.BMP" will automatically be replaced with a number between 00 and 99.

GRID VIEW

Press this key to display a grid.



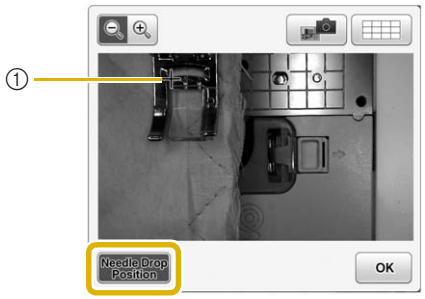
OK

Press this key to close the screen.

NEEDLE DROP POSITION

Press [Needle Drop Position] to show the needle drop position in the screen as " ✚ ".

Lower the presser foot before pressing [Needle Drop Position]. Once the needle drop position appears on the screen, you can raise the presser foot and change the needle drop position by moving the fabric.



① Needle drop position

ZOOM

Press [⊖ ⊕] to enlarge the image in the screen.
Press [⊖ ⊕] again to return the image to its original display size.

Note

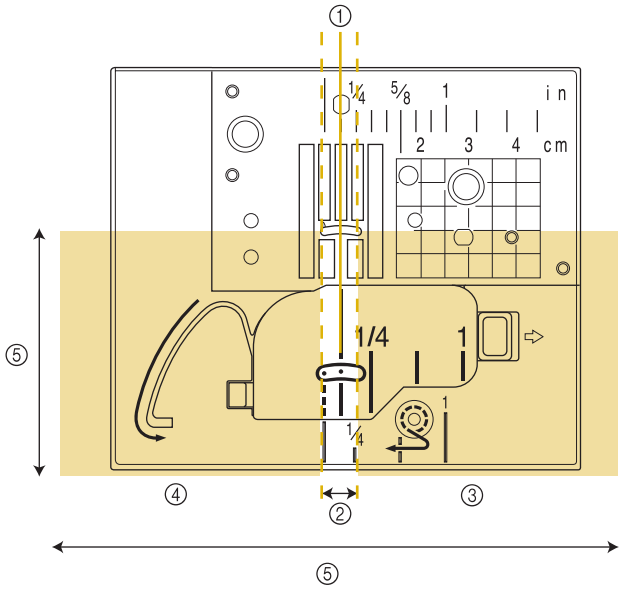
- The camera view window disappears when you start sewing.
- When sewing thick fabrics, the needle drop position indicated in the screen may differ from the actual position.

USING SENSOR FUNCTIONS WITH SEWING STITCH

Before using the sensor functions, carefully read “Utility Stitches” chapter to familiarize yourself with the machine operations.
The sensor functions are performed using the sensor pen.

Sensor Function Area

When using the sensor pen with utility stitches, the operations may differ depending on the area to be touched.



①	Center needle position	Sewing position for stitch patterns sewn with the center needle position
②	Setting area	Area 3.5 mm to the left and right of ①. Touch this area with the sensor pen to specify a position. Area 7 mm, when positioning the guideline marker.
③	Adjustment area (right)	Touch: With each touch, the setting increases by 0.5 mm. This allows fine adjustments to be made after touching within ② to specify a position. Long touch: After touching ② to specify a position or adjusting the position by touching within ③ or ④, long touch to apply the setting.
④	Adjustment area (left)	Touch: With each touch, the setting decreases by 0.5 mm. This allows fine adjustments to be made after touching within ② to specify a position. Long touch: Apply the setting in the same way as a long touch within ③.
⑤	The sensor pen touch range extends approximately 200 mm (7-7/8 inches) toward you from the needle drop point and 130 mm (approx. 5 inches) to either side of the middle (center) needle position.	

Memo

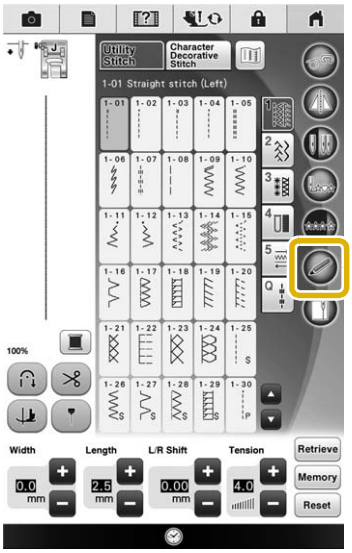
- There are borderline areas between setting area and adjustment areas, which allow you to set quickly to the most decreased/increased value.
- The borderline areas are respectively 6.5 mm (approx. 1/4 inch) wide when positioning the guideline marker, and 10 mm (approx. 3/8 inch) wide in other cases.

Specifying the Guideline Marker Position With the Sensor Pen

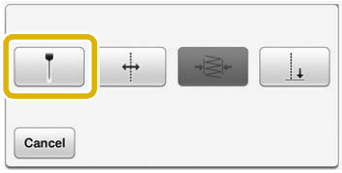
The sewing position will be indicated by a red guideline marker.
The position of the guideline marker can be adjusted to your desired location.

1 **Select a stitch pattern.**

2 **Press .**



3 **Press .**



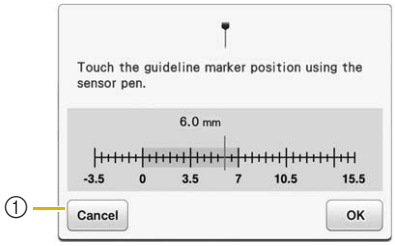
→ The guideline marker position setting screen appears and the guideline marker flashes.

4 **With the sensor pen, touch the location to be specified as the guideline marker position.**

→ The machine's guideline marker moves to the touched position and flashes.

→ The distance from the left reference line to the touched position appears in the guideline marker position setting screen.

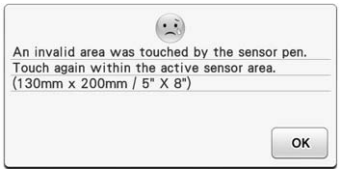
→ The stitch preview on the upper left side of the screen is updated according to the specified setting.



① Press OK to stop specifying a setting with the sensor pen.

Note

- The following error message appears if the area outside of the sensor pen touch range is touched. Press OK, and then touch within the sensor pen touch range.

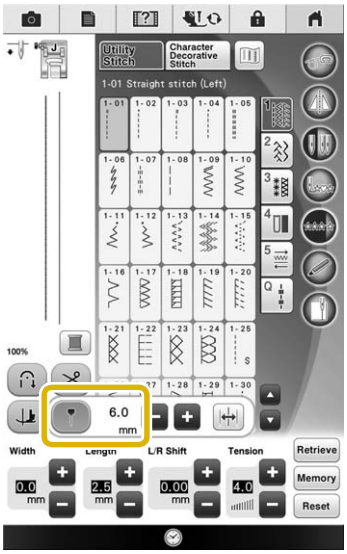


Memo

- The position can be precisely adjusted by touching the adjustment areas with the sensor pen.
- When using the sensor pen to specify the guideline marker position, it may not be possible to exactly specify the desired location. In this case, use either of the following operations to make fine adjustments.
  - Touch an adjustment area with the sensor pen to adjust the position in 0.5 mm increments.
  - Adjust the position with the guideline marker scale shown in step 5.

5 **Press OK to apply the guideline marker position setting.**

* The setting can also be applied by a long touch of the sensor pen within the adjustment area.



→ The stitch selection screen appears again, and the setting in the guideline marker scale changes to the setting specified with the sensor pen.

→ The guideline marker stops flashing.

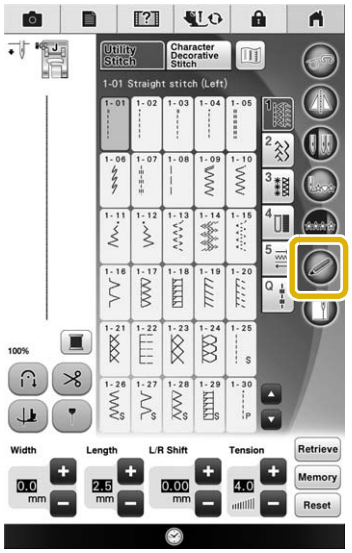
Note

- If you set the needle drop position, the stitch width or stitch position after specifying the guideline marker position, the guideline marker may move while setting. The guideline marker moves back to the specified position after the needle drop position, stitch width or stitch position is set and the original screen appears.

Specifying the Needle Drop Position With the Sensor Pen

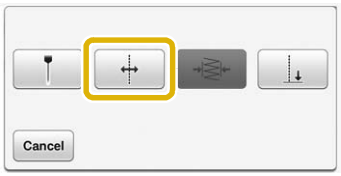
1 **Select a stitch pattern.**

2 **Press .**



→ The sensor functions screen appears.

3 **Press .**



→ The reference position setting screen appears, and the red guideline marker flashes at the machine's sewing position.

Note

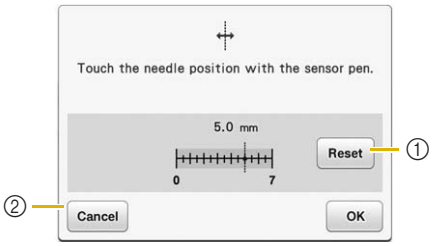
- If is not available, the sewing reference position cannot be specified with the selected stitch pattern. Select a different stitch pattern.

4 **With the sensor pen, touch the location to be specified as the needle drop position.**

→ The guideline marker moves to the touched position and flashes.

→ The distance from the left reference line to the touched position appears in the reference position setting screen.

→ The stitch preview on the upper left side of the screen is updated according to the specified setting.

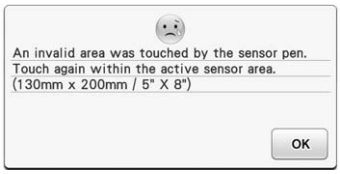


① Press to return the needle drop position to its default setting.

② Press to stop specifying a setting with the sensor pen.

Note

- The following error message appears if the area outside of the sensor pen touch range is touched. Press OK, and then touch within the sensor pen touch range.



Memo

- The position can be precisely adjusted by touching the adjustment areas with the sensor pen.
- To change the setting, use the sensor pen to touch the desired location for the reference position.

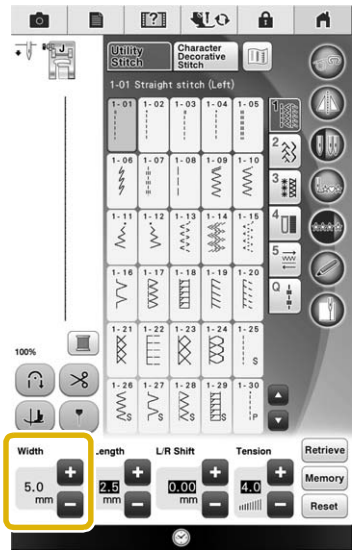
5 **Press OK to apply the reference position setting.**

* The setting can also be applied by extended touch in the adjustment area with the sensor pen.

→ The needle moves to the specified position to start sewing.

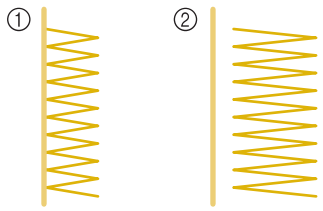
→ The stitch selection screen appears again, and the stitch width changes to the setting specified with the sensor pen.

→ The guideline marker stops flashing.



Using the Sensor Pen to Specify the Stitching Width and Stitch Position

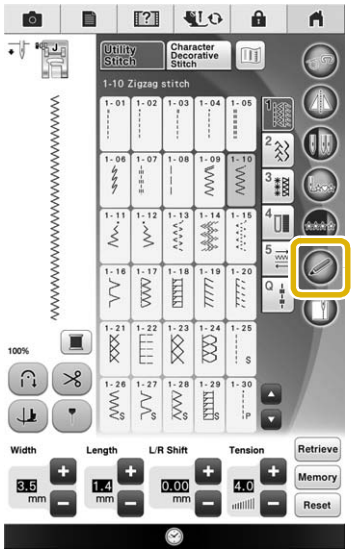
The zigzag width and "L/R Shift" value can be specified.



① Original stitching width/position
② Adjusted stitching width/position

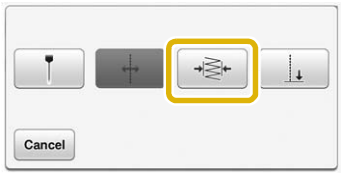
1 **Select a stitch pattern.**

2 **Press .**



→ The sensor functions screen appears.

3 **Press .**



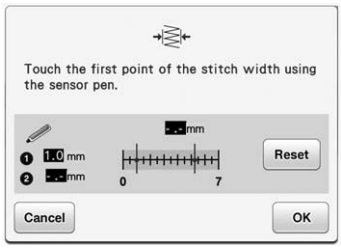
→ The stitching width setting screen appears, and the guideline marker flashes at the present left side of the stitch width.

Note

- If is not available, the stitching width cannot be specified with the selected stitch pattern. Select a different stitch pattern.

4 **With the sensor pen, touch the first point for the stitching width.**

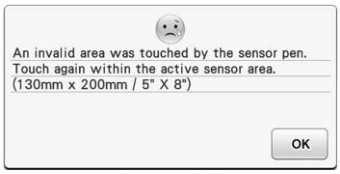
→ The distance from the left reference line to the touched position appears in the stitching width setting screen.



→ The guideline marker moves to the touched position and flashes.

Note

- The following error message appears if the area outside of the sensor pen touch range is touched. Press OK, and then touch within the sensor pen touch range.



Memo

- The position can be precisely adjusted by touching the adjustment areas with the sensor pen.

5 **Press OK to apply the first point of the stitching width.**

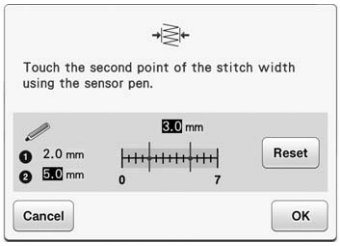
* The setting can also be applied by applying an extended touch in the adjustment area with the sensor pen.

6 **With the sensor pen, touch the second point for the stitching width.**

→ The distance from the left reference line to the touched position appears in the stitching width setting screen.

→ The stitch preview on the upper left side of the screen is updated according to the specified setting.

→ The guideline marker moves to the touched position and flashes.



Note

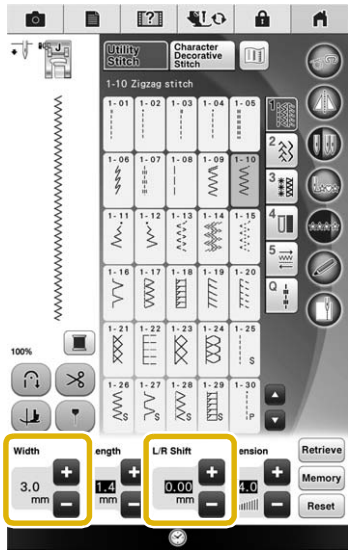
- If the distance between the specified first and second points is wider than the maximum stitch width for the selected stitch pattern, the second point cannot be specified. Specify a location closer to the first point.
- If the distance between the specified first and second points is narrower than the minimum stitch width for the selected stitch pattern, the second point cannot be specified. Specify a location further away from the first point.

7 **Press OK to apply the second point of the stitching width.**

* The setting can also be applied by long touching an adjustment area with the sensor pen.

→ The needle moves to the specified position to start sewing.

→ The stitch selection screen appears again, and the stitch width and "L/R Shift" change according to the settings specified with the sensor pen.



Note

- With multiple patterns that have been combined, the specified stitching width is applied to the pattern with the largest stitch width. With patterns other than combined patterns, the stitch width is adjusted to the stitching width specified for the pattern with the largest stitch width.
- With multiple patterns that have been combined, the settings specified for the stitch width and "L/R Shift" in the stitch selection screen are for the first pattern to be sewn. The value may differ from the stitch width setting.
- With twin needle sewing, the stitching width is specified with the left needle as the reference.

Using the Sensor Pen to Specify the Sewing End Point

Note
- In order to specify the end point of a longer piece of fabric more accurately, use the sensor pen to touch the end point twice. Be sure to touch the same point.
- Before starting to sew, mark the end point of this longer piece of fabric.

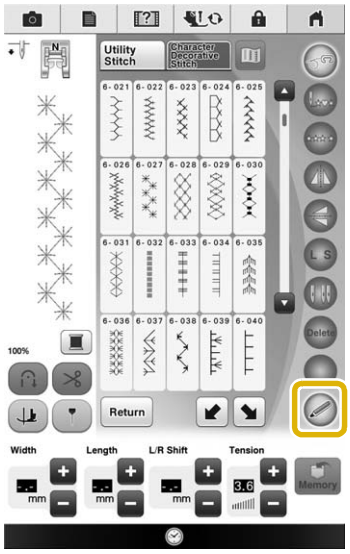
Before start sewing, test the pattern first from steps 1 to 3 to see if the stitch can be used with this function. Before starting to sew, mark the end point.

1 Start sewing after a stitch has been selected, and then stop the machine when the desired sewing end point enters the sensor pen touch range.

Note
- If the needle drop point is being specified with the sensor pen within 70 mm (approx. 2-3/4 inches) from the sewing end point, the machine will not require the second touch. After completing step 4, continue with step 8. However, the actual sewing end point may be slightly different than the specified location.
  In order to specify the location accurately, stop the machine at a location more than 70 mm (approx. 2-3/4 inches) away from the sewing end point before specifying it for the first time.

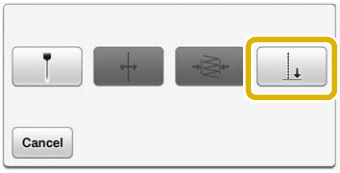
Memo
- If the needle drop point is greater than 100 mm (approx. 4 inches) from the selected ending point using the sensor pen, a more accurate position can be specified the second time that the point is touched.

2 Press .



→ The sensor functions screen appears.

3 Press .

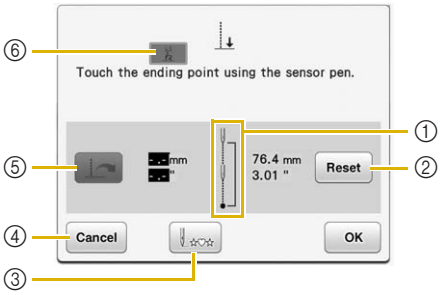


→ The sewing end point setting screen appears.

Note
- If is not available, the sewing end point cannot be specified with the selected stitch pattern. Select a different stitch pattern.

4 With the sensor pen, touch the location to be specified as the sewing end point.

→ The distance from the current needle position to the touched location appears.



① It shows how many times you need to touch the sewing end point, once or twice.

Touch once

Touch twice

② Press to erase the specified sewing end point.

③ Press to begin sewing at the beginning of the pattern.

④ Press to stop specifying a setting with the sensor pen.

⑤ Press when sewing the same distance as the previous time to recall the previous setting.

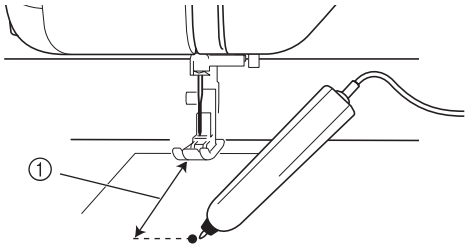
→ See "Reusing the Previous Setting" on page 106.

⑥ Press to select whether or not sewing is ended with a complete pattern.

→ See "Stitch End Mode Key" on page 104.

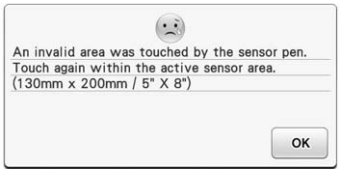
Note

- The displayed distance is not the length of a straight line connecting the current needle position and the location touched with the sensor pen. It is the length of a perpendicular intersection for the location touched with the sensor pen and the sewing line.



① Displayed distance

- The following error message appears if the area outside of the sensor pen touch range is touched. Press OK, and then touch within the sensor pen touch range.



- When sewing with this setting, be sure to gently hold the fabric and feed it straight.
- When using the sensor pen to specify the sewing end point, be sure to hold the pen in the same way as when it was calibrated, otherwise the actual end point may be different from the point that you specified.
- For best results, sew test stitching using the same material and stitch pattern as those in the actual project.

Stitch End Mode Key

	The end of stitching is not adjusted. When the end point is reached, sewing stops immediately, even if the stitch pattern is not complete.	
	The length of the stitch pattern is adjusted so that sewing will stop at the specified end point with a complete pattern.	

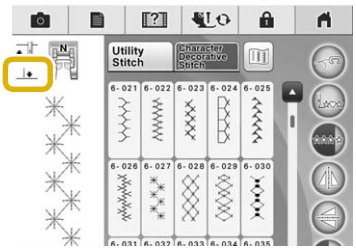
Note

- The stitch end mode key is not available with the following situations.
  - When only is shown. The adjustment of the stitch end is not available with the selected stitch, and only one icon will be shown.
  - When the stitch end mode key is grayed out.
  - When specifying the sewing end point at the point that needs adjustment more than 20% of the length of a pattern, to finish a pattern completely.
- In order to end sewing with a complete pattern, we recommend reducing the size of the pattern. Sewing with a long pattern may not end with a complete pattern.

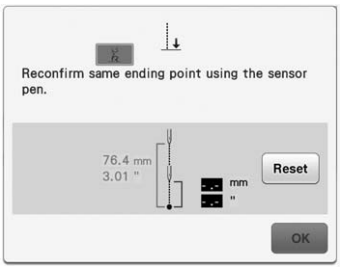
5 **Press OK, and then continue sewing.**

* The setting can also be applied by extending the touching with the sensor pen in the adjustment area with the sensor pen.

→ When a sewing end point setting is specified, appears in the upper-left corner of the screen.

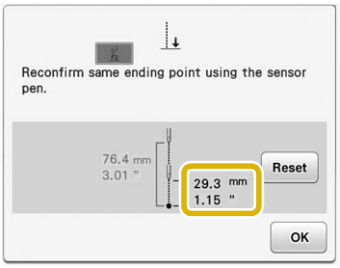


→ The machine automatically stops with the needle in the fabric, at about half the distance to the specified sewing end point, and the sewing end point setting screen appears.



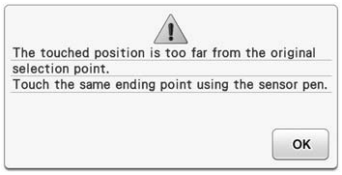
6 **With the sensor pen, touch again the location to be specified as the sewing end point.**

→ The distance from the current needle position to the touched location appears.



Note

- By using the sensor pen to touch the sewing end point twice, the distance will be accurately specified. Be sure to touch the same point.
- The following error message appears if the location touched the second time is different than the location touched the first time. Touch the correct location.



- The stitch end mode key cannot be used when specifying the sewing end point for the second time.

7 **Press OK to apply the sewing end point setting.**

* The setting can also be applied by extending the touching with the sensor pen in the adjustment area with the sensor pen.

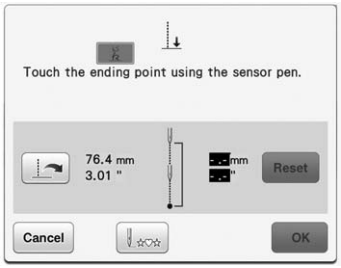
8 **Start sewing again.**

* The machine stops at the specified end point automatically.

■ Reusing the Previous Setting

When using the same fabric and pattern to sew the same length, the previous setting can be used again, instead of using the sensor pen to specify the sewing end point each time.
To use the previous setting, repeat steps 1 through 3 then press in step 4, instead of using the sensor pen.

* If was pressed, it is unnecessary to specify the sewing end point for the second time. Continue with step 8 to continue sewing until the machine automatically stops at the sewing end point.
* Be sure to press to begin sewing at the beginning of the stitch pattern.



Note

- This resume function will only repeat the sewing distance that has been assigned within the 200 mm (approx. 8 inches) distance from the needle point to the sewing end point.
  If you are already sewing and you stop the machine to specify the ending point, when pressing to duplicate the previous setting the machine will only repeat the distance from where you stop the machine to the ending point.
  You can change the sewing end point after pressing by touching the new end point with the sensor pen. For a more accurate result, however, it is recommended to specify the end point again from the beginning.
- The sewing end point cannot be recalled in the following situations. (The key is not available.)
  - When the machine has been turned off.
  - When a pattern is changed, added or deleted.
  - When the stitch length is changed.
  - When a pattern is flipped vertically.
  - When the dual feed foot is attached/ detached.
  - When the feed position lever of the dual feed foot is raised/lowered.
- To cancel the previous setting, press . Continue the procedure from step 4.
- The sewing end point can be recalled; however, if the sewing conditions have changed, for example, a different fabric is used, the sewing end point must be specified again from the beginning.

Chapter 3
Utility Stitches

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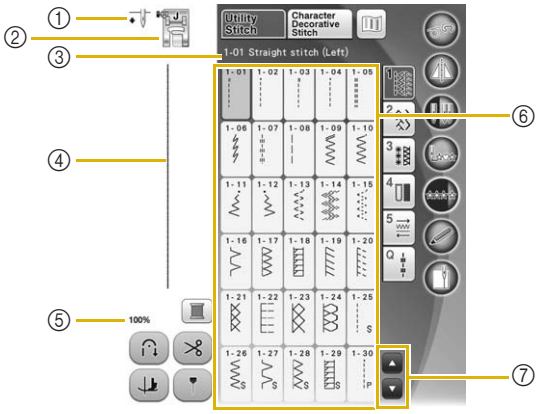
SELECTING UTILITY STITCHES

■ Utility Stitch LCD Screen

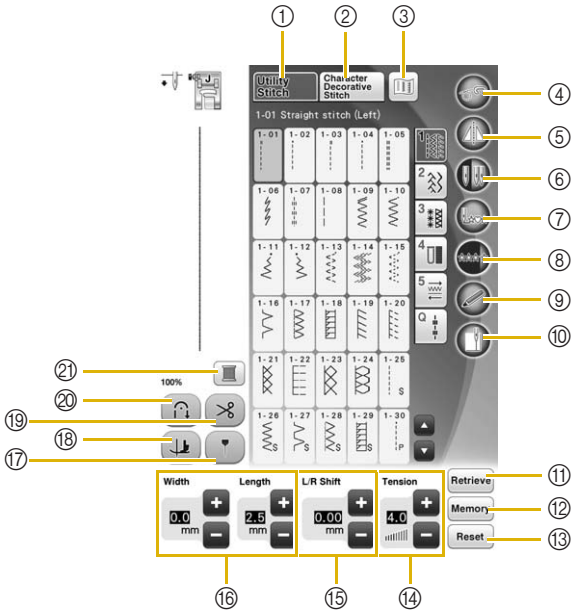
Press a key with your finger to select the stitch pattern, to select a machine function, or to select an operation indicated on the key.



No.	Display	Key Name	Explanation	Page
①		Needle position setting display	Shows single or twin needle mode setting, and the needle stop position. Single needle/down position Single needle/up position Twin needle/down position Twin needle/up position	63, 93
②		Presser foot display	Shows the presser foot code. Attach the presser foot indicated in this display before sewing.	68
③	1-01 Straight stitch (Left)	Selected stitch display	Shows the name and code number of the selected stitch.	111
④	100%	Stitch preview	Shows a preview of the selected stitch. When shown at 100%, the stitch appears in the screen at nearly its actual size. Press to display the stitch preview and the camera view together to check how the stitch will be sewn on the actual fabric.	96, 111
⑤	100%	Pattern display size	Shows the approximate size of the pattern selected. 100%: Nearly the same size as the sewn pattern 50%: 1/2 the size of the sewn pattern 25%: 1/4 the size of the sewn pattern * The actual size of the sewn pattern may differ depending on the type of fabric and thread that is used.	111
⑥		Stitch selection screen	Press the key for the pattern you want to sew. Use to change to different stitch groups.	111
⑦		Page key	Press or , to move the pages of stitch selection screen, one page at a time. You can scroll up and down the pages faster by touching the screen.	110

* All key functions of the LCD are explained in the “Key Functions” table on the following page.

■ Key Functions



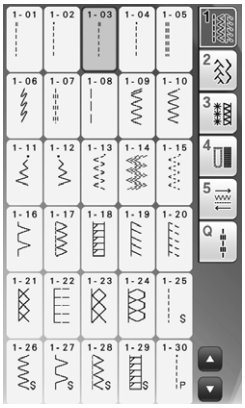
No.	Display	Key Name	Explanation	Page
①	Utility Stitch	Utility stitch key	Press this key to select a straight stitch, zigzag stitch, buttonhole, blind hem stitch, or other stitches commonly used in garment construction.	111
②	Character Decorative Stitch	Character/Decorative stitch key	Press this key to select character or decorative stitch patterns.	168
③		Image key	Press this key to display an enlarged image of the selected stitch pattern.	112
④		Free motion mode key	Press this key to enter free motion sewing mode. The presser foot is raised to an appropriate height and the feed dog is lowered for free motion quilting.	131
⑤		Mirror image key	Press this key to create a mirror image of the selected stitch pattern. If the key display is light gray, a mirror image of the selected stitch pattern cannot be sewn.	111
⑥		Needle mode selection key (single/ double)	Press this key to select twin needle sewing mode. The sewing mode changes between single needle mode and twin needle mode each time you press the key. If the key display is light gray, the selected stitch pattern cannot be sewn in the twin needle mode.	63
⑦		Back to beginning key	When sewing is stopped, press this key to return to the beginning of the stitch.	112
⑧		Single/Repeat sewing key	Press this key to choose single stitches or continuous stitches.	112
⑨		Sensor function key	Press this key to use the sensor function.	98
⑩		Edge sewing key	Using the built-in camera, press this key to measure the width of the area from the edge of the fabric to the stitch and set the camera for edge sewing.	160
⑪	Retrieve	Retrieve key	Press this key to retrieve a saved pattern.	113
⑫	Memory	Manual memory key	Change the stitch pattern settings (zigzag width and stitch length, thread tension, automatic thread cutting or automatic reinforcement stitching, etc.), then save them by pressing this key. Five sets of settings can be saved for a single stitch pattern.	113
⑬	Reset	Reset key	Press this key to return the selected stitch pattern saved settings to the default settings.	88-90
⑭	Tension 4.0	Thread tension key	Shows the automatic thread tension setting of the currently selected stitch pattern. You can use the plus and minus keys to change the thread tension settings.	90
⑮	L/R Shift 0.00 mm	"L/R Shift" key	Press + to shift the stitch pattern to the right or press − to shift the pattern to the left. This feature is not available for all patterns. Only those applicable will be shifted. The machine default setting is highlighted.	89

No.	Display	Key Name	Explanation	Page
⑯	Width 0.0 mm / Length 2.5 mm	Stitch width and stitch length key	Shows the zigzag width and stitch length settings of the currently selected stitch pattern. You can use the plus and minus keys to adjust the zigzag width and stitch length settings.	88
⑰		Guideline marker key	Press this key to display the guideline marker along the sewing line. The guideline marker makes it easier to align stitches with the fabric edge or other marker on the fabric.	92
⑱		Pivot key	Press this key to select the pivot function. When the pivot function is selected, stopping the machine lowers the needle and slightly raises the presser foot automatically. In addition, when sewing is restarted, the presser foot is automatically lowered. • If this key appears as , the pivot function cannot be used.	93
⑲		Automatic thread cutting key	Press this key to set the automatic thread cutting function. Set the automatic thread cutting function before sewing to have the machine automatically sew reinforcement stitches at the beginning and end of sewing (depending on the pattern, the machine may sew reverse stitches) and trim the threads after sewing.	91
⑳		Automatic reinforcement stitch key	Press this key to use the automatic reinforcement stitching (reverse stitching) setting. If you select this setting before sewing, the machine will automatically sew reinforcement stitches at the beginning and end of sewing (depending on the pattern, the machine may sew reverse stitches).	83
㉑		Thread color change key	Press this key to change the thread color displayed on the screen.	112

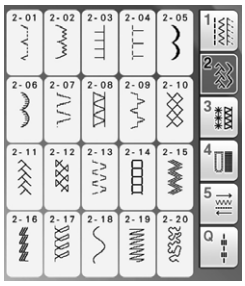
■ Stitch Selection Screens

There are 6 categories of Utility Stitches.

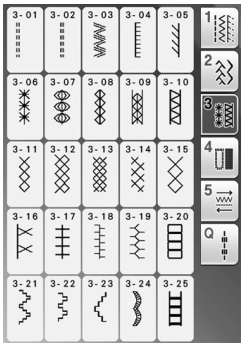
Straight/Overcasting



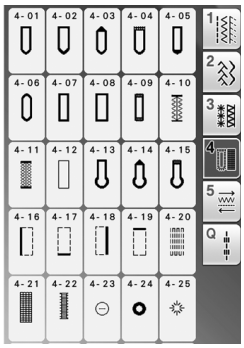
Decorative Stitches



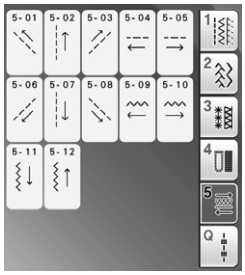
Heirloom Stitches



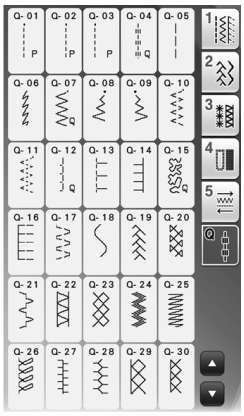
Buttonholes/Bar tacks



Multi-directional Sewing



Quilting Stitches



Selecting a Stitch

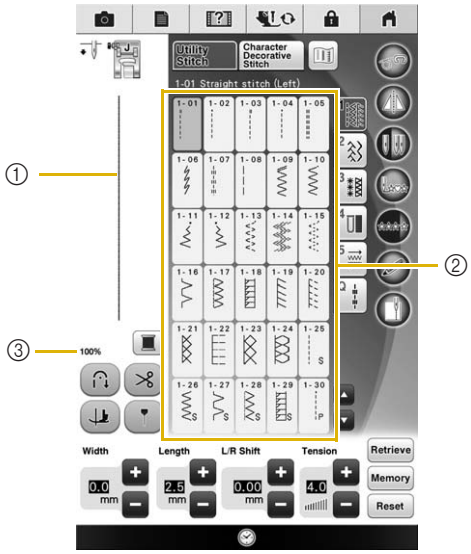
1 Turn the main power to ON and press to display the utility stitches.

→ Either "1-01 Straight stitch (Left)" or "1-03 Straight stitch (Middle)" is selected, depending on the setting selected in the settings screen.

2 Use to select the category you want.

* Press to view the next page.

* Press to view previous page.



① Preview of the selected stitch
② Stitch selection screen
③ Percentage size of view

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

Memo

- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

■ Using the Mirror Image Key

Depending on the type of utility stitch you select, you may be able to sew a horizontal mirror image of the stitch.

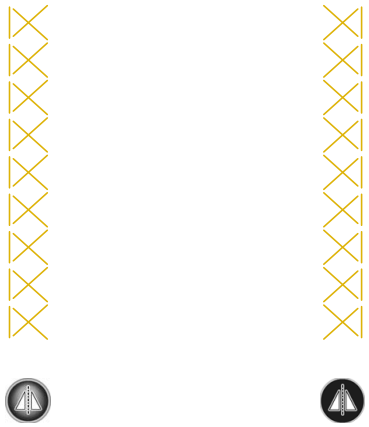
If is lit when you select a stitch, it will be possible to make a mirror image of the stitch.

Note

- If is light gray after you select a stitch, you cannot create a horizontal mirror image of the selected stitch due to the type of stitch or type of presser foot recommended (this is true of buttonholes, multi-directional sewing, and others).

Press to create a horizontal mirror image of the selected stitch.

The key will display as .



3

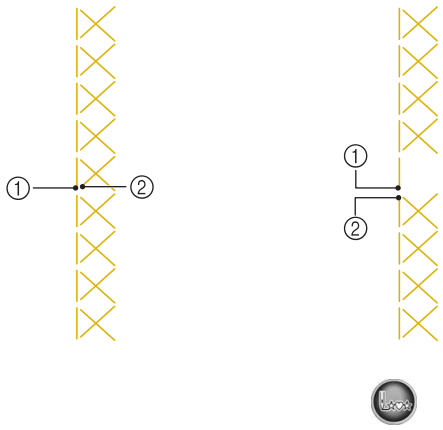
Utility Stitches

■ Returning to the Beginning of the Stitch

Even if you stopped stitching while sewing, you can return to the beginning of the stitch pattern. This function is useful after trial sewing or when the stitching is sewn incorrectly.

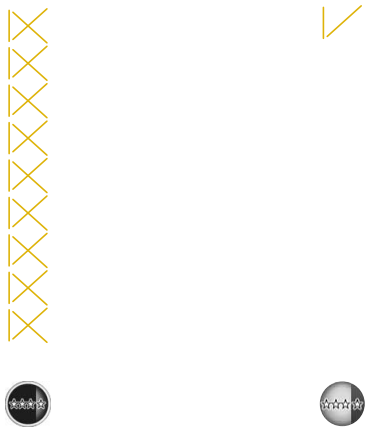
Press before start sewing, to return to the beginning of the stitch.

① Stop stitching
② Re-start stitching



■ Sewing Continuous/Single Stitch Sewing

Press to select continuous sewing or single stitch sewing.



■ Using the Image Key

You can display an image of the selected stitch. You can check and change the colors of the image of the screen.

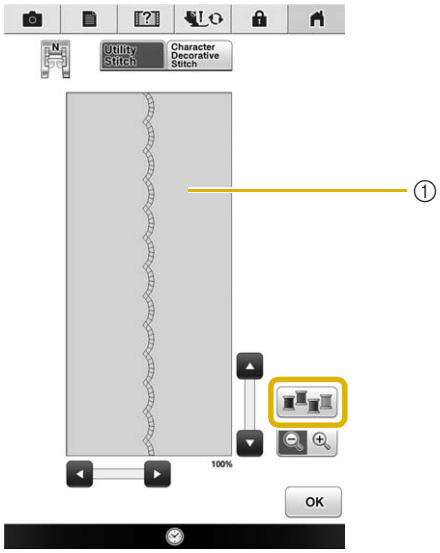
1 Press .

→ An image of the selected stitch is displayed.

2 Press to change the thread color of the stitch on the screen.

You can select from 4 colors: blue, red, black or yellow.

* Press to display an enlarged image of the stitch.



① Stitch screen

Memo

- The color changes every time you press .

Note

- If stitches are wider or larger than display, press darkened arrows to move the stitch pattern for better visibility.

3 Press OK to go back to the original screen.

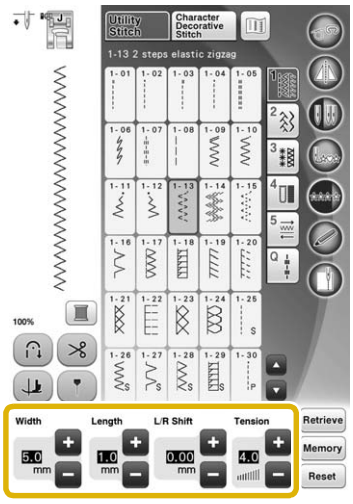
Saving Your Stitch Settings

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

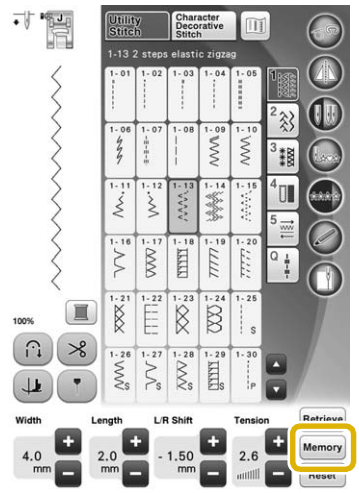
■ Saving Settings

1 **Select a stitch. (Example:)**

2 **Specify your preferred settings.**



3 **Press Memory.**



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

Memo

- If you try to save settings when there are already 5 sets of settings saved for a stitch, the message "The pockets are full. Delete a pattern" will appear. Close the message and delete a setting referring to page 113.

■ Retrieving Saved Settings

1 **Select a stitch.**

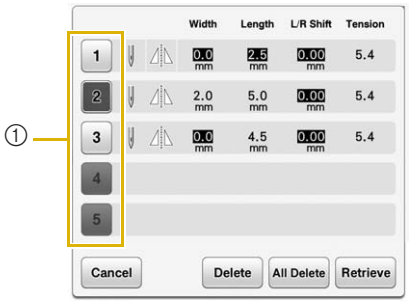
Memo

- When a stitch is selected, the last settings retrieved are displayed. The last settings retrieved are retained even if the machine was turned off or a different stitch was selected.

2 **Press Retrieve.**

3 **Press the numbered key of the settings to be retrieved.**

* Press Cancel to return to the original screen without retrieving settings.



① Numbered keys

4 **Press Retrieve.**

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

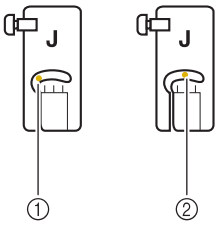
Memo

- To save new settings when there are already 5 sets of settings saved for a stitch, press Retrieve. Press the numbered key of the setting to be deleted. Press Delete, press OK and then Memory. The new setting will be saved in place of the recently deleted setting.
- You can delete all the saved settings by pressing All Delete.

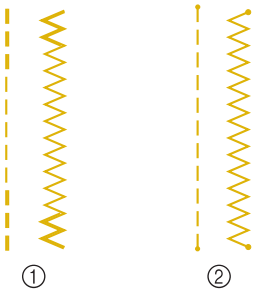
SEWING THE STITCHES

Straight Stitches

Stitch	Stitch name	Presser foot
1-01	Straight stitch (Left)	J
1-02	Straight stitch (Left)	J
1-03	Straight stitch (Middle)	J
1-04	Straight stitch (Middle)	J
1-05	Triple stretch stitch	J
1-06	Stem stitch	J
1-07	Decorative stitch	N
1-08	Basting stitch	J



① Left needle position
② Middle needle position

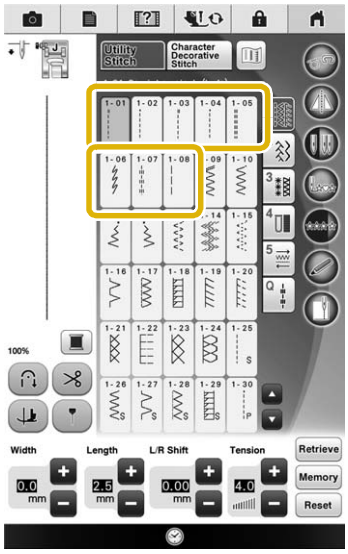


① Reverse stitch
② Reinforcement stitch

Memo

- If the selected stitch has a double mark " ⅱ " at the top of the key display, you can sew reverse stitches holding the "Reverse Stitch" button (see page 83).
- If the selected stitch has a dot mark " · " at the top of the key display, you can sew reinforcement stitches holding the "Reinforcement Stitch" button.

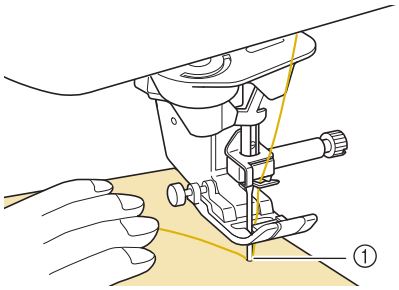
1 Select a stitch.



2 Attach presser foot "J".

* Attach presser foot "N" when you select 1-07.

3 **Hold the thread tail and fabric with your left hand, and rotate the handwheel with your right hand to insert the needle into the fabric.**

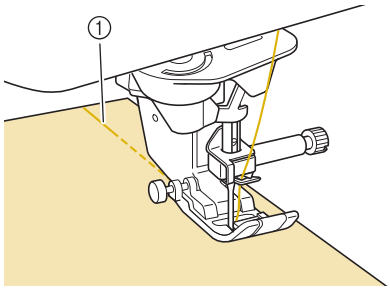


① Sewing start position

4 **Lower the presser foot, and hold the "Reverse Stitch" button or the "Reinforcement Stitch" button to sew 3-4 stitches.**

→ The machine sews reverse stitches or reinforcement stitches.

5 **Press the "Start/Stop" button to sew forward.**



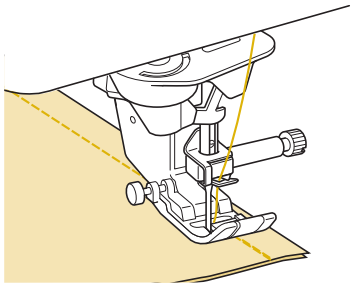
① Reverse stitches or reinforcement stitches

→ The machine will begin sewing slowly.

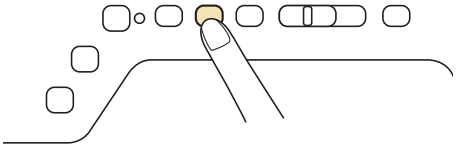
⚠ CAUTION

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

6 **When sewing is completed, hold the "Reverse Stitch" button or the "Reinforcement Stitch" button to sew 3-4 reverse stitches or reinforcement stitches at the end of the seam.**



7 **After sewing, press the "Thread Cutter" button to trim the threads.**

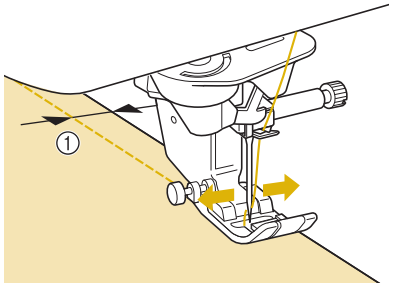


Memo

- When the automatic thread cutting and automatic reinforcement stitch keys on the screen are selected, reverse stitches or reinforcement stitches will be sewn automatically at the beginning of sewing when the "Start/Stop" button is pressed. Press the "Reverse Stitch" button or the "Reinforcement Stitch" button to sew reverse stitches or reinforcement stitches and trim the thread automatically at the end of sewing.

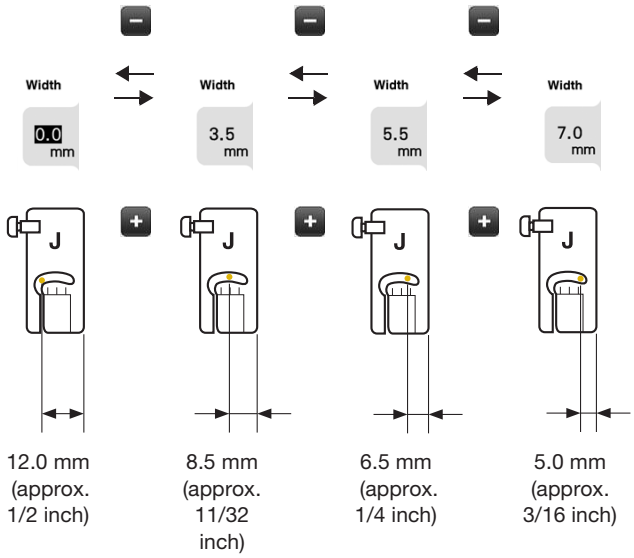
■ Changing the Needle Position (Left or Middle Needle Position Stitches Only)

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



① Stitch width

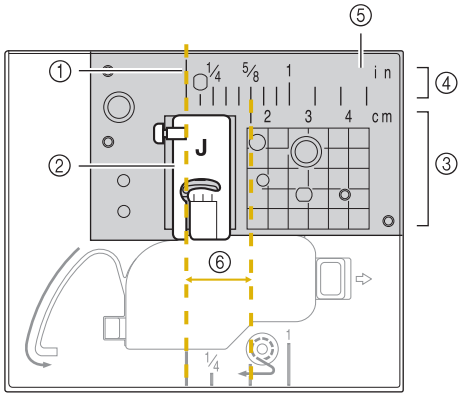
Example: Left/Middle needle position stitches



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

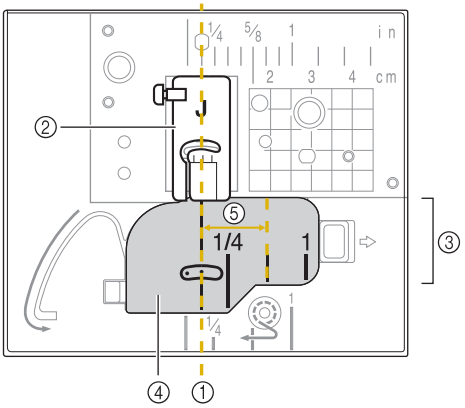
While sewing, align the edge of the fabric with the 16 mm (approx. 5/8 inch) mark on the needle plate or bobbin cover (with mark) depending on the needle position (left or middle (center) needle position stitches only).

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



① Seam
② Presser foot
③ Centimeters
④ Inches
⑤ Needle plate
⑥ 16 mm (5/8 inch)

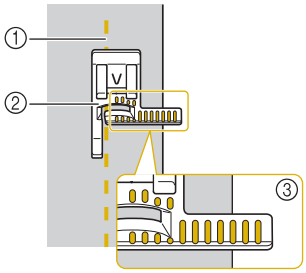
For stitches with a middle (center) needle position (Stitch width: 3.5 mm)



① Seam
② Presser foot
③ Inches
④ Bobbin cover (with mark)
⑤ 16 mm (5/8 inch)

■ Aligning the Fabric with the Vertical Stitch Alignment "V" Foot

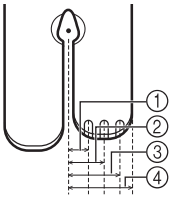
Sew while keeping the right edge of the fabric aligned with a desired position of markings on the vertical stitch alignment "V" foot.
You can also use the vertical stitch alignment "V" foot for setting a stitch width using the built-in camera (see page 160).

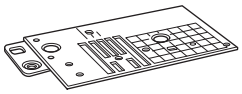


① Seam
② Vertical stitch alignment "V" foot
③ Markings

■ Using the Straight Stitch Needle Plate and the Straight Stitch Foot

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





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

⚠ CAUTION

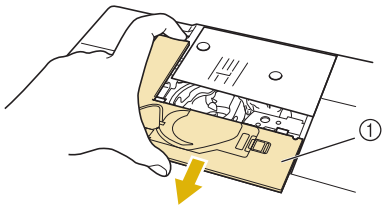
- **Always use the straight stitch foot in combination with the straight stitch needle plate.**

1 **Press the "Needle Position" button to raise the needle and turn the main power to OFF or press to lock all keys and buttons.**

2 **Remove the needle and the presser foot holder (see page 69 through 73).**

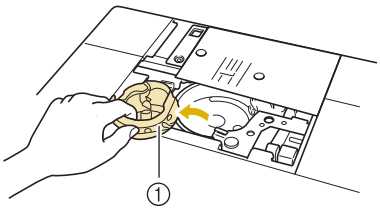
3 **Remove the flat bed attachment or the embroidery unit if either are attached.**

4 **Grasp both sides of the needle plate cover, and then slide it toward you.**



① Needle plate cover

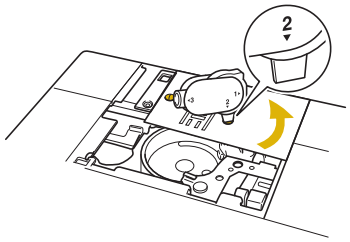
5 **Grasp the bobbin case, and then pull it out.**



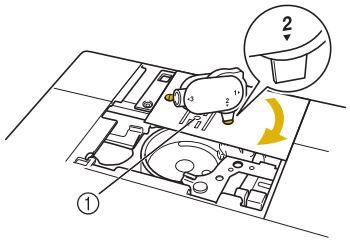
① Bobbin case

6 **Use the multi-purpose screwdriver included with the machine to unscrew and remove the regular needle plate.**

* Use the multi-purpose screw driver setting the position to "2". (see page 23)



7 **Set the straight stitch needle plate in place and use the multi-purpose screwdriver to tighten the plate.**



① Round hole

Note
- Align the two screw holes on the needle plate with the two holes on the machine. Use the multi-purpose screw driver included with the machine to secure the screws in the needle plate.

8 **Insert the bobbin case in its original position, and then attach the needle plate cover.**

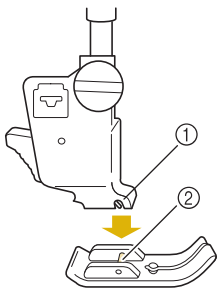
9 **After reinstalling the needle plate cover, select any of the straight stitches.**

Note
- Selecting other stitches will cause an error message to be displayed.

Memo
- When using the straight stitch needle plate, many straight stitches become middle needle position stitches. If a straight stitch is selected that is not applicable for use when the straight stitch needle plate is attached, an error message will be displayed to prevent the use of this stitch. You cannot change the needle position using the width display.
- Always secure the needle plate before inserting the bobbin case into its original position.

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

10 **Insert needle and attach the straight stitch foot.**



① Notch
② Pin

11 **Press to unlock all keys and buttons, and then start sewing.**

* After sewing, make sure to remove the straight stitch needle plate and the straight stitch foot, and reinstall the regular needle plate, the needle plate cover and the presser foot "J".

Memo
- To prevent puckering on fine fabrics, use a fine needle, size 75/11, and a short stitch length. For heavier fabrics, use a heavier needle, size 90/14, and longer stitches.

■ Basting

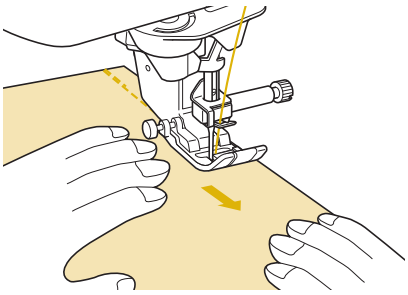
1 **Select and attach presser foot "J".**

2 **Keep pressing the "Reverse Stitch" button or the "Reinforcement Stitch" button to sew 4 stitches of reinforcement stitches, then press "Start/Stop" button to continue sewing.**

Memo
- When you use the basting stitch for gathering, do not use a reinforcement stitch at the beginning; you should lift the presser foot, rotate the handwheel toward you (counterclockwise), pull up the bobbin thread and pull a length of top and bobbin thread out from the rear of the machine.
- You can set the stitch length between 5 mm (approx. 3/16 inch) and 30 mm (approx. 1-3/16 inches)

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

3 **Sew while keeping the fabric straight.**

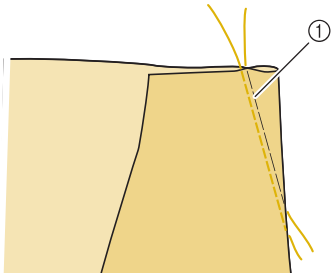


4 **End the basting with reinforcement stitches.**

Dart Seam

1 **Select** **and attach presser foot "J".**

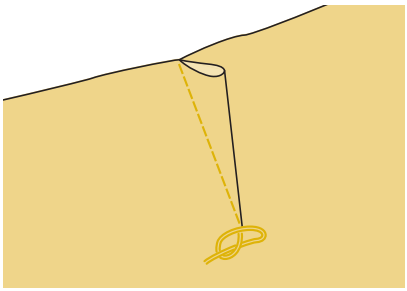
2 **Sew a reverse stitch at the beginning of the dart and then sew from the wide end to the other end without stretching the fabric.**



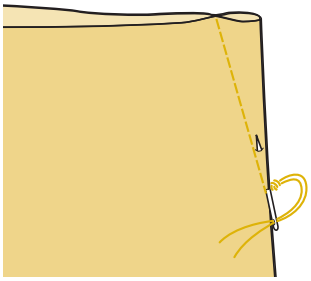
① Basting

3 **Cut the thread at the end leaving 50 mm (approx. 1-15/16 inches), and then tie both ends together.**

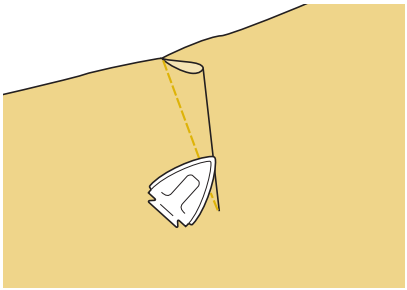
* Do not sew a reverse stitch at the end.



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



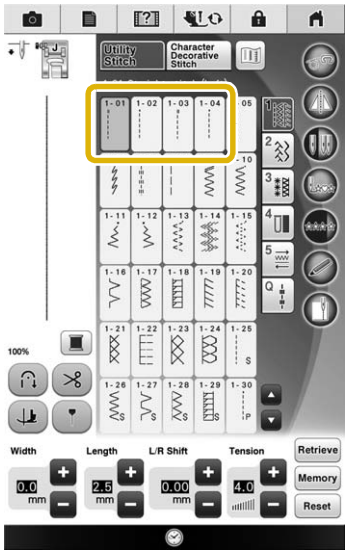
5 **Iron the dart to one side so that it is flat.**



Gathering

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

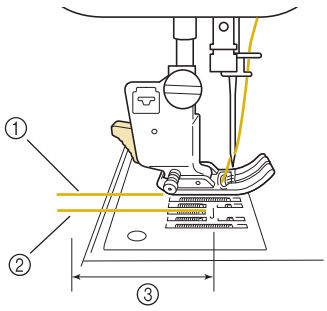
1 **Select a straight stitch and attach presser foot "J".**



2 **Set the stitch length to 4.0 mm (approx. 3/16 inch) and the thread tension to approximately 2.0 (weaker tension).**

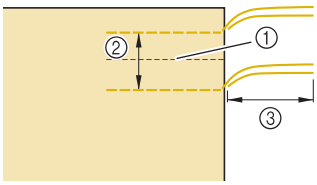
* If you press GATHERING after pressing [?] and then Sewing Guide, the stitch length will be set automatically to 4.0 mm (approx. 3/16 inch) and the thread tension will be automatically set to 2.0.

3 **Pull the bobbin and upper threads out by 50 mm (approx. 1-15/16 inches) (see page 59).**



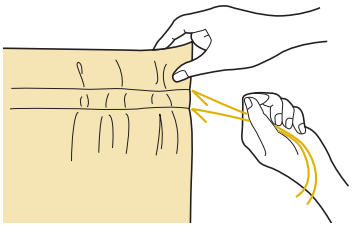
① Upper thread
② Bobbin thread
③ About 50 mm (approx. 1-15/16 inches)

4 **Sew two rows of straight stitches parallel to the seam line, then trim excess thread leaving 50 mm (approx. 1-15/16 inches).**

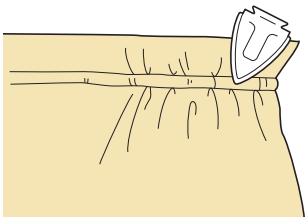


① Seam line
② 10 to 15 mm (approx. 3/8 inch to 9/16 inch)
③ About 50 mm (approx. 1-15/16 inches)

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



6 **Smooth the gathers by ironing them.**



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

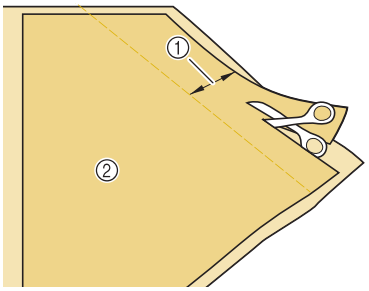
Flat Fell Seam

Use for reinforcing seams and finishing edges neatly.

1 **Select** **and attach presser foot "J".**

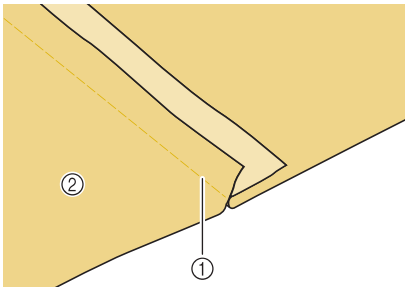
2 **Sew the finish line, then cut half of the seam allowance from the side on which the flat fell seam will lie.**

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



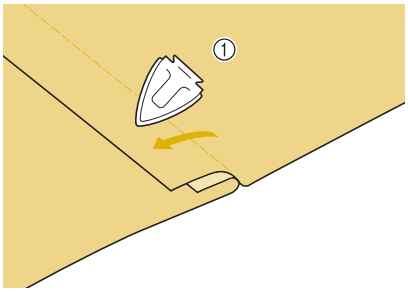
① About 12 mm (approx. 1/2 inch)
② Wrong side

3 **Spread the fabric out along the finish line.**



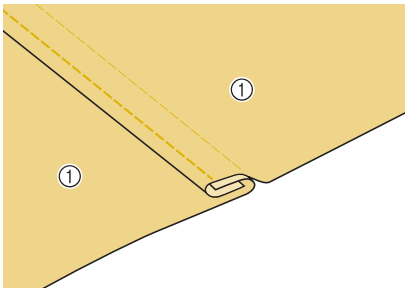
① Finish line
② Wrong side

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



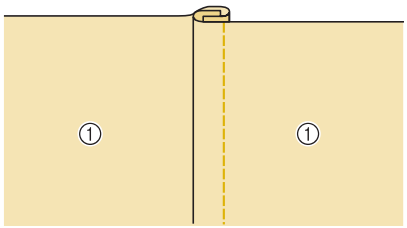
① Wrong side

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



① Wrong side

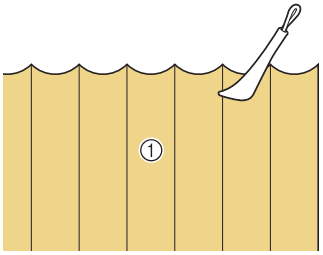
Finished flat fell seam



① Surface

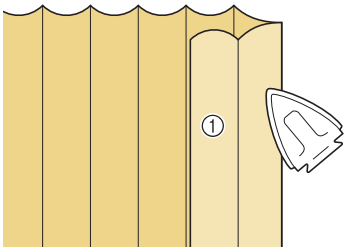
Pintuck

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



① Wrong side

2 Turn the fabric and iron the folded parts only.

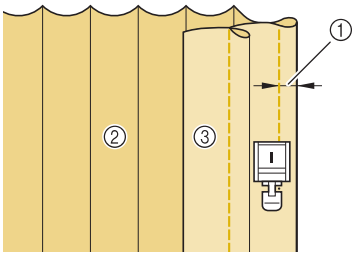


① Surface

3 Select and attach presser foot "I".

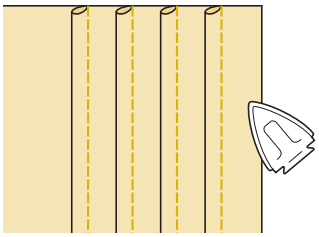
4 Sew a straight stitch along the fold.

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



① Width for pintuck
② Wrong side
③ Surface

5 Iron the folds in the same direction.



Zigzag Stitches

Zigzag stitches are useful for overcasting, appliqué, patchwork, and many other applications.
Select a stitch, and attach presser foot "J".
If the stitch which you select has a double mark " ⅡⅡ " at the top of the key display, you can sew reverse stitches by holding the "Reverse Stitch" button. (see page 83)
If the stitch which you select has a dot mark " • " at the top of the key display, you can sew reinforcement stitches by holding the "Reinforcement Stitch" button (see page 83).

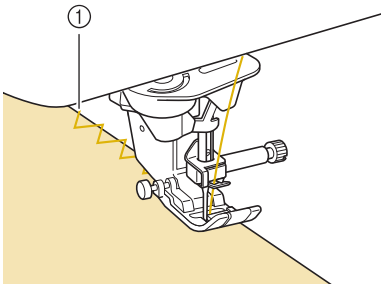
Stitch	Stitch name	Presser foot
1-09	Zigzag stitch	J
1-10	Zigzag stitch	J
1-11	Zigzag stitch (Right)	J
1-12	Zigzag stitch (Left)	J

1 **Select a stitch.**

2 **Attach presser foot "J".**

■ Overcasting (Using a Zigzag Stitch)

Sew the overcasting along the edge of the fabric while positioning the right-hand side needle drop point just outside the edge of the fabric.

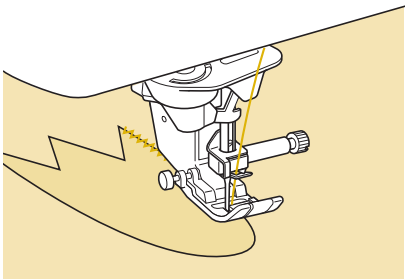


① Needle drop position

■ Appliqué (Using a Zigzag Stitch)

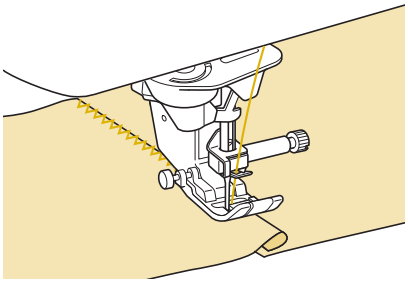
Attach the appliqué material using a temporary spray adhesive or basting, and then sew it.

* Sew a zigzag stitch while positioning the right-hand side needle drop point just outside the edge of the fabric.



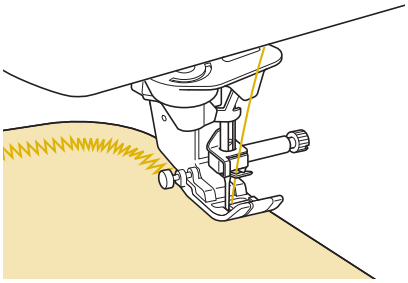
■ Patchwork (for Crazy Quilt)

Turn back the desired width of fabric and position it over the lower fabric, then sew so that the stitch bridges both pieces of fabric.



■ Sewing Curves (Using a Zigzag Stitch)

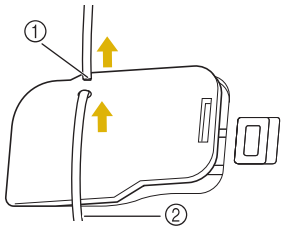
Shorten the stitch length setting to obtain a fine stitch. Sew slowly, keeping the seams parallel with the fabric edge as you guide the fabric around the curve.



■ Cord Guide Bobbin Cover (Using a Zigzag Stitch)

1. **Remove the bobbin cover from the machine (see page 57).**

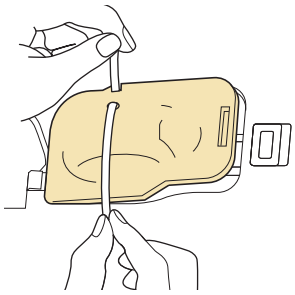
2. **Thread the gimp thread through the hole in the cord guide bobbin cover from top to bottom. Position the thread in the notch at the back of the cord guide bobbin cover.**



① Notch
② Gimp thread

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

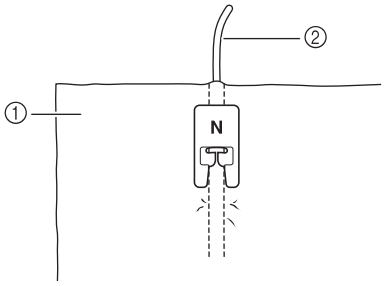
* Make sure there are no restrictions when feeding the thread.



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

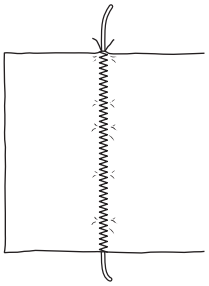
5. **Attach presser foot "N".**

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



① Fabric (right side)
② Gimp thread

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



Elastic Zigzag Stitches

Use elastic zigzag stitches for tape attaching, overcasting, darning, or a wide variety of other uses.

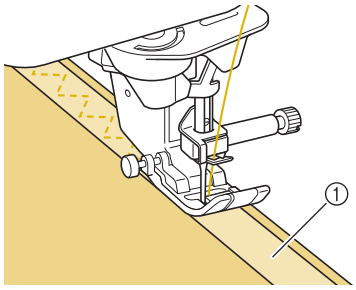
Stitch	Stitch name	Presser foot
1-13	2 steps elastic zigzag	J
1-14	2 steps elastic zigzag	J
1-15	3 steps elastic zigzag	J

1. **Select a stitch.**

2. **Attach presser foot "J".**

■ Tape Attaching

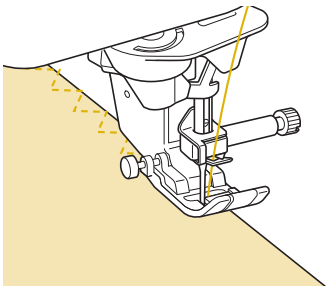
While stretching the tape flat, sew it to the fabric.



① Tape

■ Overcasting

Use this stitch to sew overcasting on the edge of stretch fabrics. Sew the overcasting along the edge of the fabric while positioning the right-hand side needle drop point just outside the edge of the fabric.



Overcasting

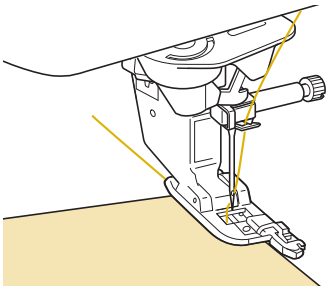
Use for the edge of seams in skirts or trousers, and the edge of all cuttings. Use presser foot "G", presser foot "J", or the side cutter attachment depending on the kind of overcasting stitch you select.

■ Overcasting Using Presser Foot "G"

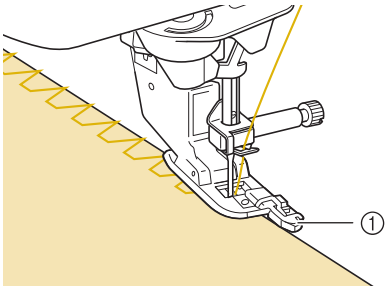
Stitch	Stitch name	Presser foot
1-16	Overcasting stitch	G
1-17	Overcasting stitch	G
1-18	Overcasting stitch	G

1 **Select a stitch and attach presser foot "G".**

2 **Lower the presser foot so that the presser foot guide is set flush against the edge of the fabric.**



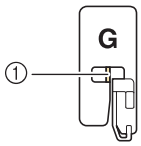
3 **Sew along the presser foot guide.**



① Guide

⚠ CAUTION

- **After the stitch width is adjusted, rotate the handwheel toward you (counterclockwise). Check that the needle does not touch the presser foot. If the needle hits the presser foot, the needle may break and cause injury.**



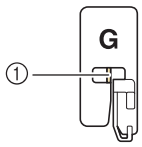
① The needle should not touch the center bar

- **If the presser foot is raised to its highest level, the needle may strike the presser foot.**

4 **Press the "Start/Stop" button to stop sewing when you are finished, and raise the presser foot and needle to remove the fabric by pulling it back.**

⚠ CAUTION

- **Pull the fabric to the back of the machine after finished sewing. By pulling the fabric to the front or side, the center bar of the presser foot "G" may break.**



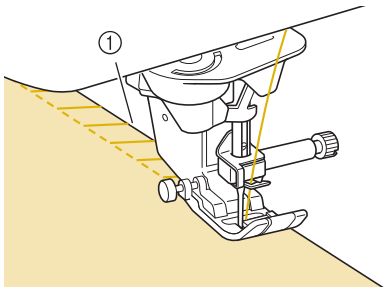
① Center bar

■ Overcasting Using Presser Foot "J"

Stitch	Stitch name	Presser foot
1-19	Overcasting stitch	J
1-20	Overcasting stitch	J
1-21	Overcasting stitch	J
1-22	Overcasting stitch	J
1-23	Single diamond overcast	J
1-24	Single diamond overcast	J

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

2. **Sew with the needle dropping slightly off the edge of the fabric.**



① Needle drop position

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

Memo
- For best results when sewing stretch fabrics, decrease the pressure of the presser foot.

■ Overcasting Using the Side Cutter (Sold Separately)

By using the side cutter, you can do overcasting while cutting the fabric.

⚠ CAUTION
- **Recommended stitches are noted "S" in the lower right corner, therefore sure to only select one of these stitches listed below. Using another stitch may cause the needle to hit the presser foot and break, possibly causing injury.**

Note
- Thread the needle manually when using the side cutter, or only attach the side cutter after threading the needle using the "Automatic Threading" button.

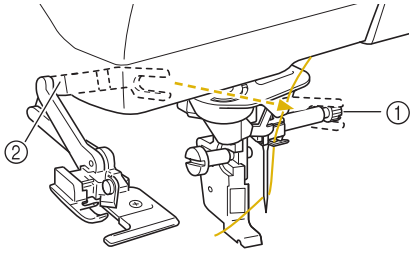
Stitch	Stitch name	Presser foot
1-25 S	With side cutter	S
1-26 S	With side cutter	S
1-27 S	With side cutter	S
1-28 S	With side cutter	S
1-29 S	With side cutter	S

1. **Select a stitch.**

2. **Follow the steps on page 68 to remove the presser foot.**

3. **Thread the needle (see page 60).**

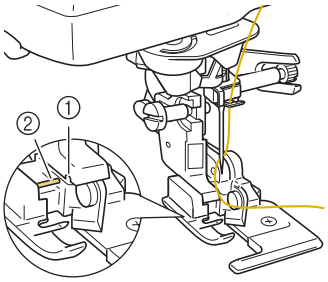
4 **Position the fork on the side cutter's operating lever onto the needle clamp screw.**



① Needle clamp screw
② Operating lever

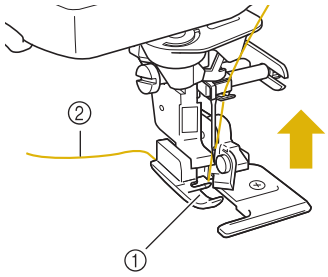
Memo
- Make sure that the fork of the operating lever is set onto the needle screw firmly.

5 **Position the side cutter so that the side cutter pin is aligned with the notch in the presser foot holder, and then lower the presser foot.**



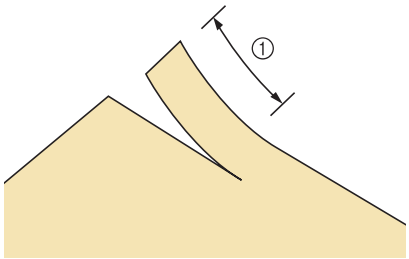
① Notch in presser foot holder
② Pin
→ The side cutter is attached.

6 **Raise the presser foot and pull out a long section of the upper thread. Pass it below the presser foot and pull it out in the fabric feed direction.**



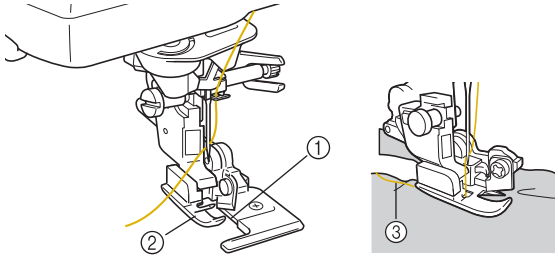
① Presser foot
② Upper thread

7 **Make a cut of approximately 20 mm (approx. 3/4 inch) in the fabric.**



① 20 mm (approx. 3/4 inch)

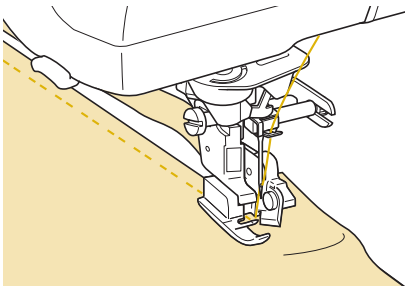
8 **Position the fabric so that the right side of the cut is on top of the guide plate and the left side of the cut is underneath the presser foot.**



① Guide plate (lower knife)
② Presser foot
③ Upper thread

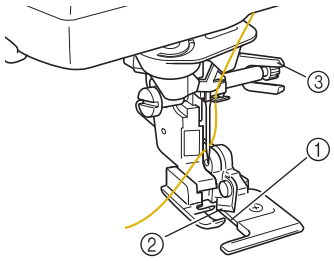
Memo
- If the fabric is not positioned correctly, the fabric will not be cut.

9 **Lower the presser foot and start.**



→ A seam allowance is cut while the stitching is sewn.

- **When using the side cutter, sew between low and mid-speed and do not touch the knives or operation lever of the side cutter while sewing to avoid equipment damage or injury.**



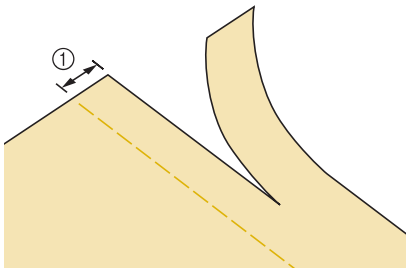
① Guide plate (lower knife)
② Upper knife
③ Operation lever

Note

- If the width has been adjusted, rotate the handwheel toward you (counterclockwise). Check that the needle does not touch the side cutter. If the needle touches the side cutter, it might cause the needle to break.

■ When Sewing Straight Stitches While Using the Side Cutter (Sold Separately)

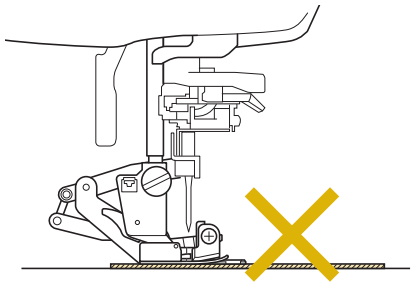
The seam margin should be approximately 5 mm (approx. 3/16 inch).



① Seam margin

Memo

- The fabric will not be cut if the whole fabric is simply spread out underneath the presser foot guide plate. Set the fabric as explained in step 8 from the previous section, and then start sewing.



- One layer of 13 oz. denim can be cut.
- Clean the side cutter after use to avoid having dust and scraps of thread build up in the cutter area.
- Add a small amount of oil as required to the cutting edge of the cutter.

Quilting

You can make beautiful quilts quickly and easily with this machine. When making a quilt, you will find it convenient to use the knee lifter and foot controller to free your hands for other tasks (“Using the Multi-Function Foot Controller” on page 81 and /or “Using the Knee Lifter” on page 94).
The 30 quilting stitches Q-01 through Q-30 and the utility stitches with “P” or “Q” indicated on their key are useful for quilting.
The “P” or “Q” at the bottom of the key display indicates that these stitches are intended for (“Q”) quilting and (“P”) piecing.

Stitch	Stitch name	Presser foot	
Q-01 P	**Piecing stitch (Middle)**	J	C
Q-02 P	**Piecing stitch (Right)**	J	O
Q-03 P	**Piecing stitch (Left)**	J	O
Q-04 Q	**Hand-look quilting (Middle)**	J	O
Q-05	**Basting stitch**	J	O

Stitch	Stitch name	Presser foot	
Q-06	Stem stitch	J	
Q-07	Quilting appliqué zigzag stitch	J	
Q-08	Zigzag stitch (Right)	J	
Q-09	Zigzag stitch (Left)	J	
Q-10	2 steps elastic zigzag	J	
Q-11	3 steps elastic zigzag	J	
Q-12	Quilting appliqué stitch	J	
Q-13	Shell tuck edge	J	
Q-14	Blanket stitch	J	
Q-15	Quilting stippling	J	
Q-16	Overcasting stitch	J	
Q-17	Tape attaching	J	
Q-18	Serpentine stitch	N	
Q-19	Feather stitch	J	
Q-20	Fagoting cross stitch	J	
Q-21	Couching stitch	J	
Q-22	Patchwork double overlock stitch	J	
Q-23	Smocking stitch	J	
Q-24	Rick-rack stitch	J	

Stitch	Stitch name	Presser foot	
Q-25	Decorative stitch	N	
Q-26	Decorative stitch	J	
Q-27	Hemstitching	N	
Q-28	Hemstitching	N	
Q-29	Single diamond overcast	J	
Q-30	Overcasting stitch	J	
1-30	Piecing stitch (Right)	J	
1-31	Piecing stitch (Middle)	J	C
1-32	Piecing stitch (Left)	J	
1-33	Hand-look quilting	J	
1-34	Quilting appliqué zigzag stitch	J	
1-35	Quilting appliqué stitch	J	
1-36	Quilting stippling	J	

Memo

- When a stitch pattern in the Quilting Stitches category (Q-02 through Q-30) is selected, a finer stitch width can be set than is available with stitch patterns in other categories.
  For example: Stitch Q-03 has 57 needle positions and stitch Q-19 has 29 width selections.

Note

- The width range of stitch setting is only available in the Quilting stitch “Q” quilting category.

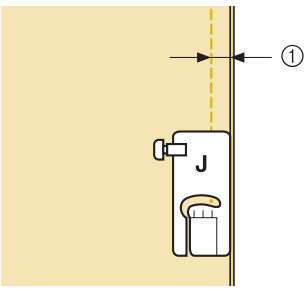
■ Piecing

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

1 Select Q-02 or Q-03 and attach presser foot "J".

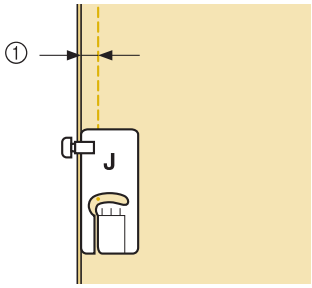
2 Align the edge of the fabric with the edge of the presser foot, and start sewing.

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



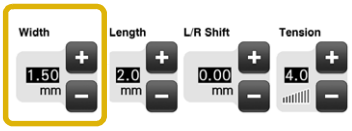
① 6.5 mm (approx. 1/4 inch)

* To sew a 6.5 mm (approx. 1/4 inch) seam allowance along the left edge of the presser foot with Q-03 selected, the width should be set to 1.50 mm (approx. 1/32 inch).



① 6.5 mm (approx. 1/4 inch)

* To change the needle position, use + or − in the width display.



Memo

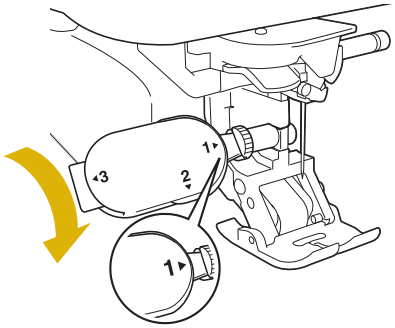
- Using a straight stitch (middle needle position) makes it easier to sew smoothly (see page 114).
- In the case Q-01(center, at width 3.5 mm) is selected, if the guideline marker is set at 10.0 mm (3.5 mm plus 6.5 mm, close to 1/4 inch), you can sew piecing by referring to the guideline marker.

■ Quilting

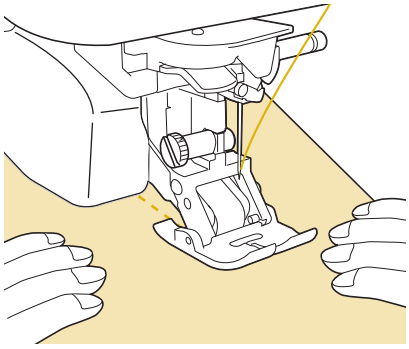
Sewing the quilt top, batting, and backing together is called quilting. You can sew the quilt with the dual feed foot to keep the quilt top, batting, and backing from sliding. The dual feed foot has a motorized belt that moves together with the feed dogs in the needle plate during sewing.
For straight line quilting, use the dual feed foot and the straight stitch needle plate. Always select a straight stitch (middle needle position) when using the straight stitch needle plate.

1 Select Q-01, Q-03 or Q-07.

2 Attach the dual feed foot (see page 70).



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

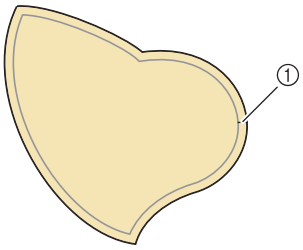


Memo

- Sew at slow to medium speed.
- Always check to be sure that your quilting surface is securely basted before beginning to sew. Specialized machine quilt needles and threads are also available for machine quilting.

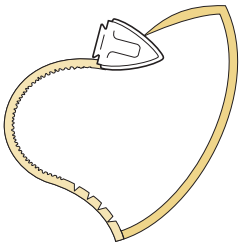
■ Appliqué

1 **Trace the pattern onto the appliqué fabric and then cut around it, leaving a 3 to 5 mm (approx. 1/8 to 3/16 inch) seam allowance.**

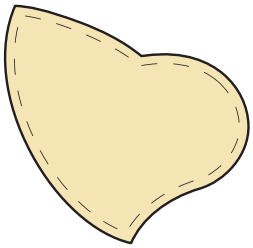


① Seam allowance: 3 to 5 mm (approx. 1/8 to 3/16 inch)

2 **Place a piece of stabilizer cut to the finished size of the appliqué design onto the fabric, and then fold over the seam margin using an iron. Clip curves when necessary.**

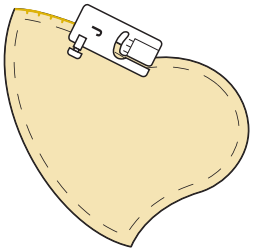


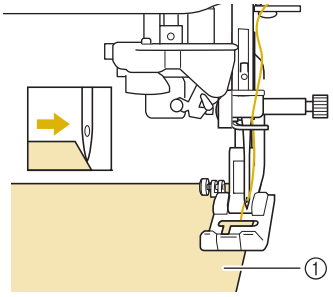
3 **Turn the appliqué over, and attach the stabilizer with basting pins or a basting stitch.**

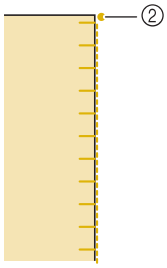


4 **Select** **and attach presser foot "J".**

5 **Use the quilting appliqué stitch to attach the appliqué. Sew around the edge while dropping the needle as close to the edge as possible.**







① Appliqué
② Needle drop position

⚠ CAUTION

- **Be careful that the needle does not strike a basting pin during sewing. Striking a pin can cause the needle to break, resulting in injury.**

You can use the appliqué technique to attach appliqué designs like the three pictured below.

① Dresden plate
② Stained glass
③ Sunbonnet sue

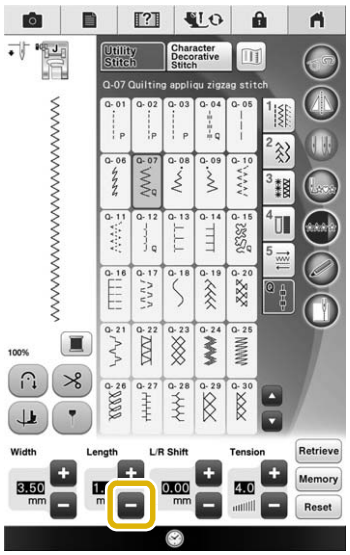
■ Quilting with Satin Stitches

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

1 **Attach the foot controller (see page 81).**

2 **Select** **and attach presser foot "J".**

3 **Press** **in the length display to shorten the stitch length.**

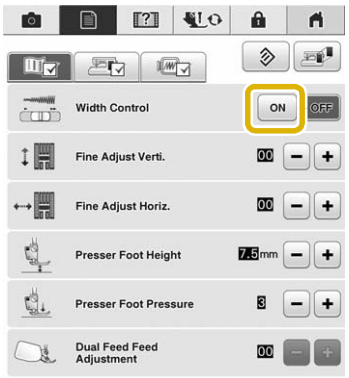


Memo

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

4 **Press** **to use the speed control slide to control the stitch width.**

5 **Set the "Width Control" to "ON".**



Memo

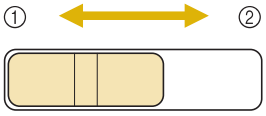
- You can use the speed control slide to adjust the stitch width. Use the foot controller to adjust the sewing speed.

6 **Press** OK **.**

→ The display will return to the original screen.

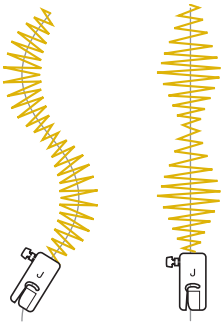
7 **Start sewing.**

* You can adjust the stitch width during sewing by moving the sewing speed controller. Slide the lever to the left, and the stitch width becomes narrower. Slide it to the right, the stitch width becomes wider. The size of the width changes equally on both sides of the middle needle position.



① narrower
② wider

Example: Changing the width



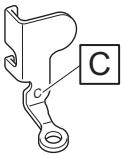
8 **When you are finished sewing, set the "Width Control" back to "OFF".**

■ Free Motion Quilting

With free motion quilting, the feed dogs can be lowered by pressing , so that the fabric can be moved freely in any direction.
For free motion quilting, use free motion quilting foot "C" or free motion open toe quilting foot "O" depending on the stitch that is selected, and set the machine to free motion sewing mode. In this mode, the presser foot is raised to the necessary height for free motion sewing.
We recommend attaching the foot controller and sewing at a consistent speed. You can adjust the sewing speed with the speed control slide on the machine.

Using Free motion Quilting Foot "C"

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



Free motion quilting foot "C"

⚠ CAUTION

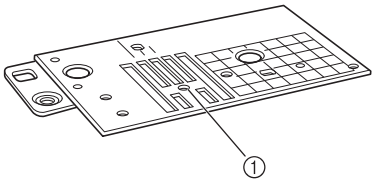
- **With free motion quilting, control the feeding speed of the fabric to match the sewing speed. If the fabric is moved faster than the sewing speed, the needle may break or other damage may result.**
- **When using free motion quilting foot "C", be sure to use the straight stitch needle plate and sew with the needle in middle (center) needle position. If the needle is moved to any position other than the middle (center) needle position, the needle may break, which may result in injuries.**

Memo

- When starting to sew, the internal sensor detects the thickness of the fabric, and the quilting foot is raised to the height specified in the machine settings screen. Press to display "Free Motion Foot Height" of the settings screen. Press − or + to select the height that the quilting foot is raised above the fabric. Increase the setting by pressing +, for example, when sewing very stretchy fabric, so that it is easier to sew.

- In order to sew with a balanced tension, it may be necessary to adjust the upper thread tension. Test with a sample piece of fabric that is similar to your chosen fabric.

1 **Attach the straight stitch needle plate (see page 117).**



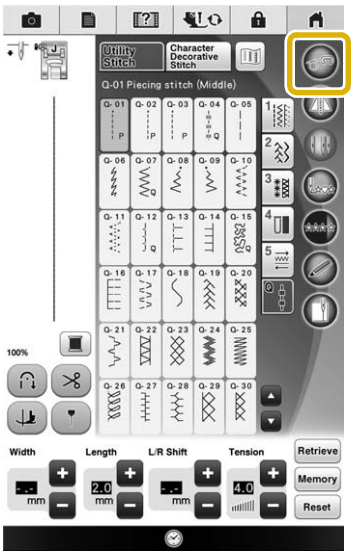
① Round hole

Memo

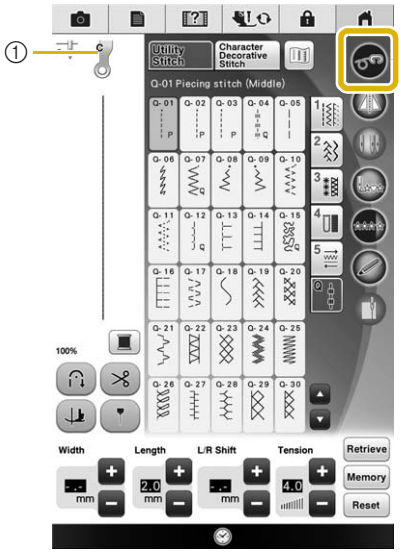
- Notice this needle plate has a round hole for the needle.

2 **Select Q-01 or 1-31.**

3 **Press to set the machine to free motion sewing mode.**



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

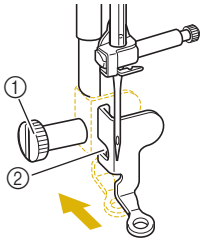


① Free motion quilting foot "C"

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

4 **Remove the presser foot holder (see page 69).**

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



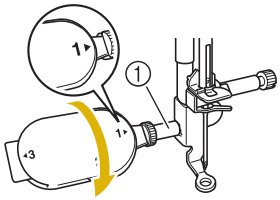
① Presser foot holder screw

② Notch

Note

- Make sure that the quilting foot is attached properly and not slanted.

6 **Hold the quilting foot in place with your right hand, and tighten the presser foot holder screw using the multi-purpose screwdriver with your left hand.**

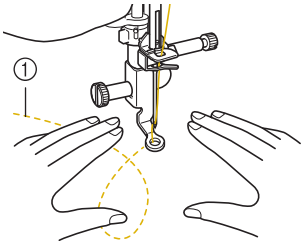


① Presser foot holder screw

CAUTION

- **Be sure to securely tighten the screws with the included multi-purpose screwdriver. Otherwise, the needle may touch the quilting foot, causing it to bend or break.**

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



① Stitch

8 **Press to cancel the free motion sewing mode.**

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

9 **After sewing, make sure to remove the straight stitch needle plate and presser foot "C", and reinstall the regular needle plate and the needle plate cover.**

Note

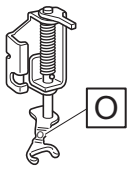
- Free motion open toe quilting foot "O" can also be used with the straight stitch needle plate. We recommend using free motion open toe quilting foot "O" with free motion sewing of fabrics of uneven thicknesses.
- When using the straight stitch needle plate, all straight stitches become middle needle position stitches. You cannot change the needle position using the width display.

Memo

- Normally, the feed dogs are raised for regular sewing.
- Do not be discouraged with your initial results. The technique requires practice.

Using free motion Open Toe Quilting Foot "O"

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



Free motion open toe quilting foot "O"

Memo

- In order to sew with a balanced tension, it may be necessary to adjust the upper thread tension (see page 90). Test with a sample piece of quilting fabric.

1 **Press to set the machine to free motion sewing mode.**

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

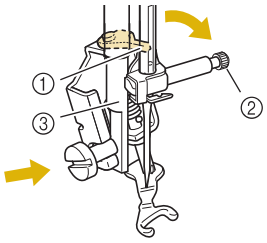
2 **Select a stitch.**

Memo

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

3 **Remove the presser foot holder (see page 69).**

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



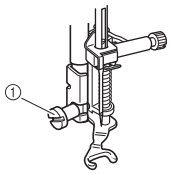
① Pin
② Needle clamp screw
③ Presser bar

Note

- Make sure that the quilting foot is not slanted.

5 **Hold the quilting foot in place with your right hand, and tighten the presser foot holder screw using the multi-purpose screwdriver with your left hand.**

* Use the multi-purpose screw driver setting the position to "1". (see page 23)

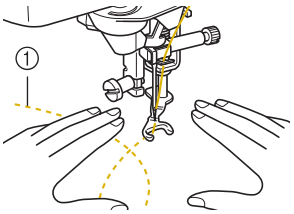


① Presser foot holder screw

⚠ CAUTION

- **Be sure to securely tighten the screws with the included multi-purpose screwdriver. Otherwise, the needle may touch the quilting foot, causing it to bend or break.**

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



① Stitch

7 Press to cancel the free motion sewing mode.

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

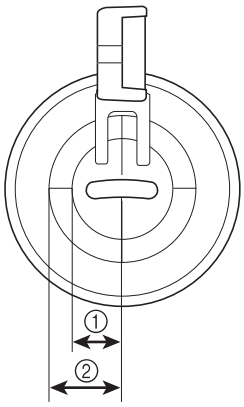
Memo

- Do not be discouraged with your initial results. The technique requires practice.

■ Echo Quilting Using the Free Motion Echo Quilting Foot "E"

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

Free motion echo quilting foot "E" measurement



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

⚠ CAUTION

- **With free motion quilting, control the feeding speed of the fabric to match the sewing speed. If the fabric is moved faster than the sewing speed, the needle may break or other damage may result.**

Memo

- When starting to sew, the internal sensor detects the thickness of the fabric, and the quilting foot is raised to the height specified in the machine settings screen. Press to display "Free Motion Foot Height" of the settings screen (see page 31). Press − or + to select the height that the quilting foot is raised above the fabric. Increase the setting by pressing +, for example, when sewing very soft fabric, so that it is easier to sew.

- In order to sew with a balanced tension, it may be necessary to adjust the upper thread tension (see page 90). Test with a sample piece of quilting fabric.

1 Select .

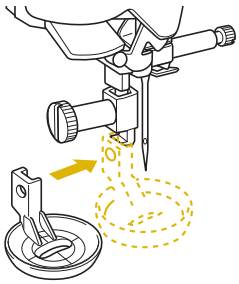
2 Press to set the machine to free motion sewing mode.

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

3 Follow the steps on page 68 "Removing the Presser Foot" to remove the presser foot.

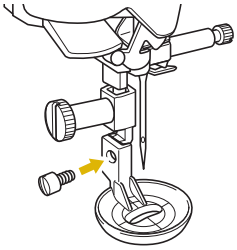
4 Remove the presser foot holder (see page 69) and the screw.

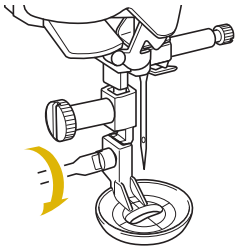
5 Position the free motion echo quilting foot "E" on the left side of the presser bar with the holes in the quilting foot and presser bar aligned.



6 Tighten the screw with the included multi-purpose screwdriver.

* Use the multi-purpose screw driver setting the position to "1". (see page 23)

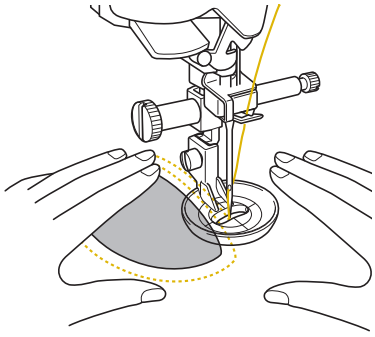


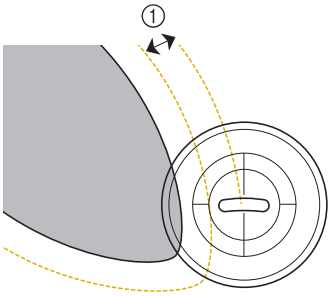


⚠ CAUTION

- **Be sure to securely tighten the screws with the included multi-purpose screwdriver. Otherwise, the needle may touch the quilting foot, causing it to bend or break.**

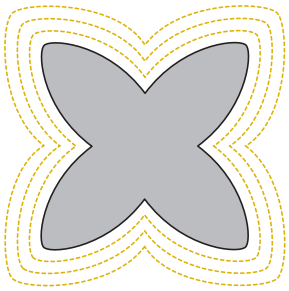
7 Using the measurement on the quilting foot as a guide, sew around the motif.





① 6.4 mm (approx. 1/4 inch)

Finished project



8 Press to cancel the free motion sewing mode.

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

Blind Hem Stitches

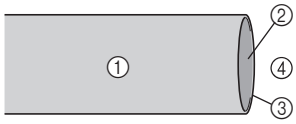
Secure the bottoms of skirts and pants with a blind hem. Two stitches are available for blind hem stitching.

Stitch	Stitch name	Presser foot
2-01	Blind hem stitch	R
2-02	Blind hem stitch stretch	R

Memo

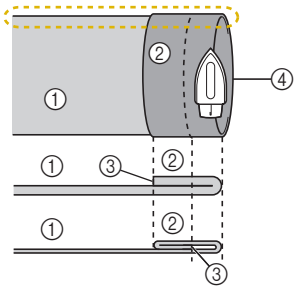
- When the size of cylindrical pieces is too small to slide onto the arm or the length is too short, the fabric will not feed and desired results may not be achieved.

1 Turn the skirt or pants wrong side out.



① Wrong side of fabric
② Right side of fabric
③ Edge of fabric
④ Bottom side

2 **Fold the fabric along the desired edge of the hem, and press.**



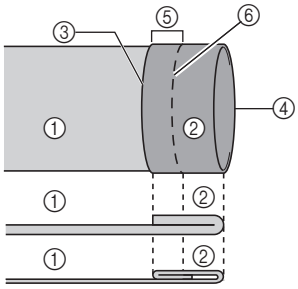
① Wrong side of fabric
② Right side of Fabric
③ Edge of fabric
④ Desired edge of hem

<Thick fabric>

<Normal fabric>

<Seen from the side>

3 **Use a chalk to mark on the fabric about 5 mm (3/16 inch) from the edge of the fabric, and then baste it.**



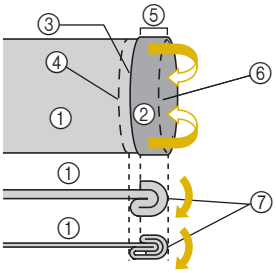
① Wrong side of fabric
② Right side of fabric
③ Edge of fabric
④ Desired edge of hem
⑤ 5 mm (3/16 inch)
⑥ Basting

<Thick fabric>

<Normal fabric>

<Seen from the side>

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



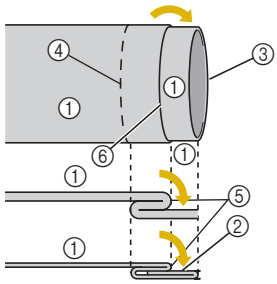
① Wrong side of fabric
② Right side of fabric
③ Edge of fabric
④ Desired edge of hem
⑤ 5 mm (3/16 inch)
⑥ Basting
⑦ Basting point

<Thick fabric>

<Normal fabric>

<Seen from the side>

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



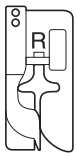
① Wrong side of fabric
② Right side of fabric
③ Edge of fabric
④ Desired edge of hem
⑤ Basting point
⑥ Basting

<Thick fabric>

<Normal fabric>

<Seen from the side>

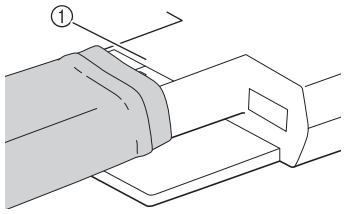
6 **Attach blind hem foot "R".**



7 **Select** **or** **.**

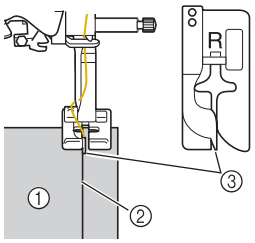
8 **Remove the flat bed attachment to use the free-arm.**

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



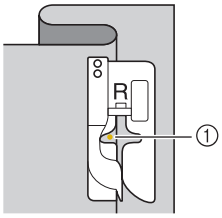
① Free arm

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



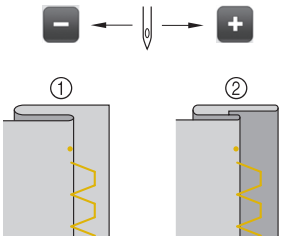
① Wrong side of fabric
② Fold of hem
③ Guide

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



① Needle drop point
When you change the needle drop point, raise the needle, and then change the stitch width.

<Stitch Width>



① Thick fabric
② Normal fabric

Memo

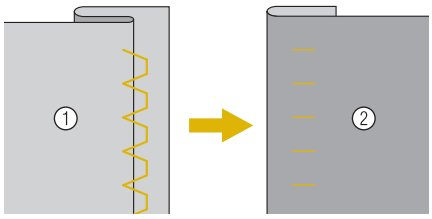
- Blind hem stitches cannot be sewn if the left needle drop point does not catch the fold. If the needle catches too much of the fold, the fabric cannot be unfolded and the seam appearing on the right side of the fabric will be very large, leaving an unattractive finish. If you experience either of these cases, follow the instructions below to solve the problem.

■ If the Needle Catches Too Much of the Hem Fold

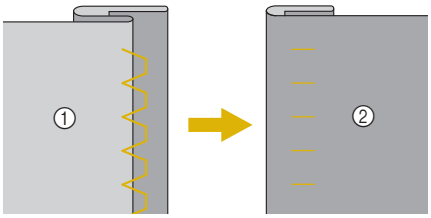
The needle is too far to the left.

Press + to decrease the stitch width so that the needle slightly catches the fold of the hem.

<Thick fabric>



<Normal fabric>



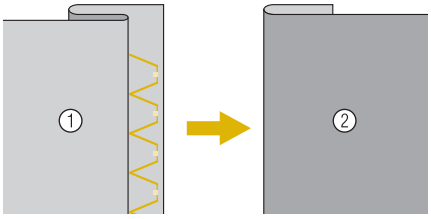
① Wrong side of fabric
② Right side of fabric

■ If the Needle does not Catch the Hem Fold

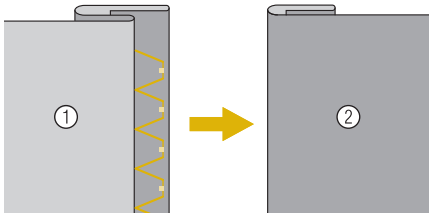
The needle is too far to the right.

Press − to increase the stitch width so that the needle slightly catches the fold of the hem.

<Thick fabric>



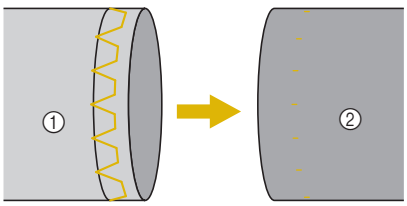
<Normal fabric>



① Wrong side of fabric
② Right side of fabric

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

13 Remove the basting stitching and reverse the fabric.

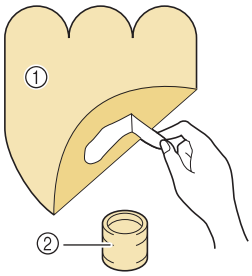


① Wrong side of fabric
② Right side of fabric

Appliqué

1 Use a temporary spray adhesive, fabric glue or a basting stitch to attach the appliqué to the fabric.

* This will keep the fabric from moving during sewing.



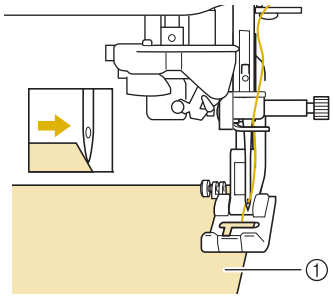
① Appliqué
② Fabric glue

2 Select [2-03] or [1-10].

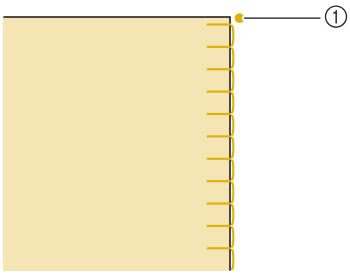
* Adjust the stitch length and width to correspond to the appliqué shape, size, and quality of material (see page 88).

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

3 Attach presser foot "J". Check that the needle drops slightly off the edge of the appliqué, then start sewing.



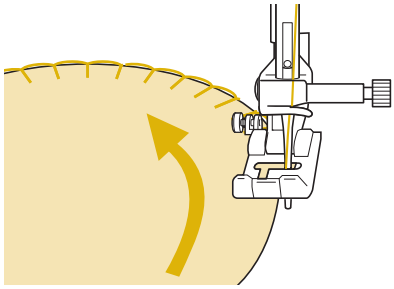
① Appliqué material



① Needle drop position

■ Appliqué Sharp Curves

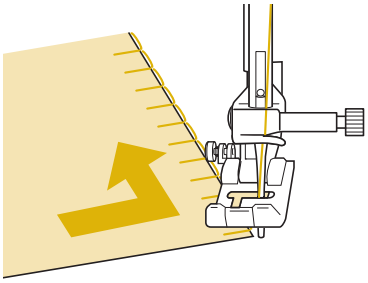
Stop the machine with the needle in the fabric outside the appliqué. Raise the presser foot and turn the fabric a little bit at a time while sewing for an attractive finish to the seam.



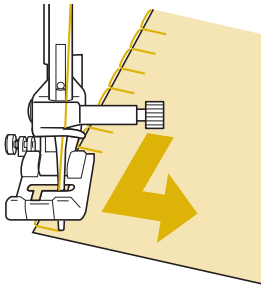
■ Appliqué Corners

Stop the machine with the needle in the right position of the outside (or inside) corner of the appliqué. Raise the presser foot and pivot the fabric to align the fabric edge. Lower the presser foot and continue stitching.

①



②



① Outside corner
② Inside corner

Memo
- Placing a lightweight tear away stabilizer beneath the stitching area will improve the stitch placement along the edge of the appliqué fabric.

Shelltuck Stitches

Shelltuck stitches give an attractive appearance of shells along the curve of a collar. This stitch pattern can be used for edging the neckline or sleeves of dresses and blouses.

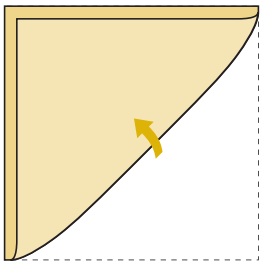
1 **Select** 2-04 **.**

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

2 **Increase the upper thread tension for an attractive scallop finish to the shelltuck stitches (see page 90).**

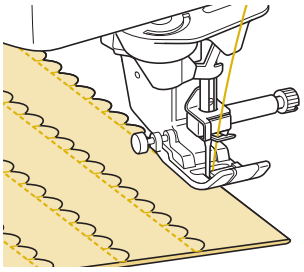
Memo
- If the upper thread tension is too weak, the shelltuck stitches will not scallop.

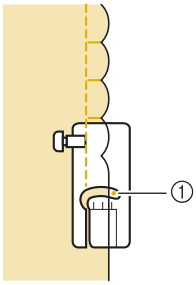
3 **To make rows of shell tuck stitches, fold the fabric in half along the bias.**



Memo
- Use a thin fabric.

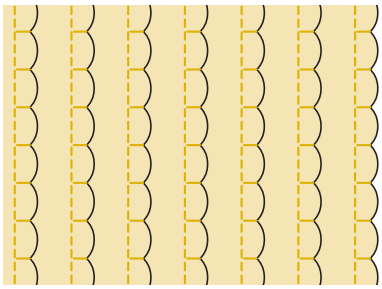
4 **Attach presser foot "J". Set the needle drop point slightly off the edge of the fabric, and start sewing.**





① Needle drop position

5 **Unfold the fabric, and iron the tucks to one side.**



Memo
- To make shell tucks at the edge of a collar or neckline, follow the pattern's instructions and then use this stitch to make a decorative finish on the collar or neckline.

Scallop Stitches

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

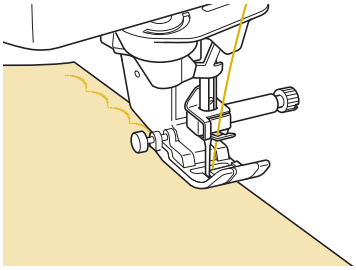
Memo
- A temporary spray adhesive may be necessary for lightweight fabrics. Test sew the fabric before sewing a project.

1 **Select** 2-05 **.**

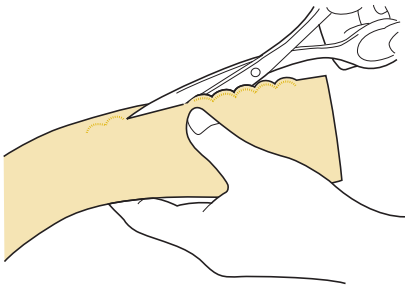
Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

2 Attach presser foot "N". Sew scallop stitches along the edge of the fabric.

* Do not sew directly on the edge of the fabric.



3 Trim along the seam, making sure not to cut the stitches.



Memo

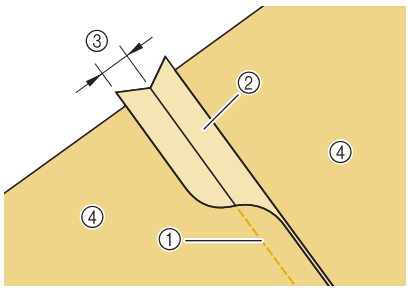
- Use a seam sealant to secure the edges of the scallop stitches.

Crazy Quilting

For a decorative look called "Crazy Quilting", the following stitches can be sewn on top of a pressed seam allowance.

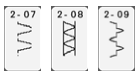
1 Select a straight stitch and attach presser foot "J".

2 With the right sides facing each other, sew two pieces of fabric together, and then press open the seam allowance.

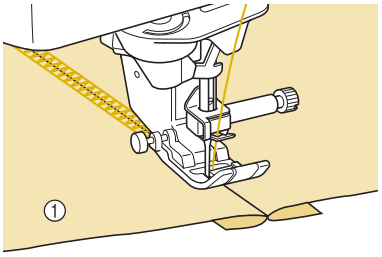


① Straight stitch
② Seam margins
③ 6.5 mm (approx. 1/4 inch)
④ Wrong side

3 Select a stitch for top stitching.



4 Place the fabric right side up in the machine, and center the presser foot over the seam when sewing.



① Right side of fabric

Smocking Stitches

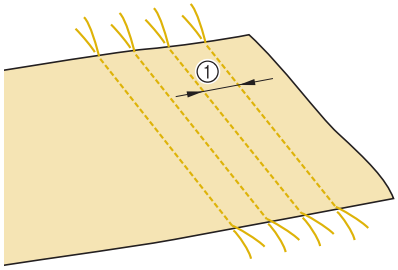
Use smocking stitches for decorative sewing on clothes, etc.

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

2 Set the stitch length to 4.0 mm (approx. 3/16 inch) and loosen the upper thread tension to approximately 2.0 (see "Setting the Stitch Length" on page 89 and "Setting the Thread Tension" on page 90).

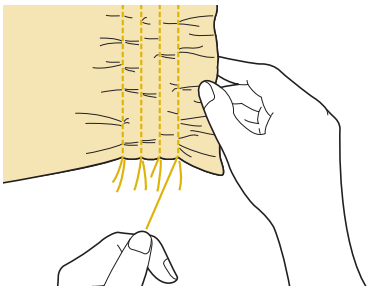
3 Pull the bobbin and upper threads out by 50 mm (approx. 2 inches).

4 Sew the seams, leaving approximately 10 mm (approx. 3/8 inch) between the seams, then trim excess thread, leaving 50 mm (approx. 2 inches).



① Approximately 10 mm (approx. 3/8 inch)

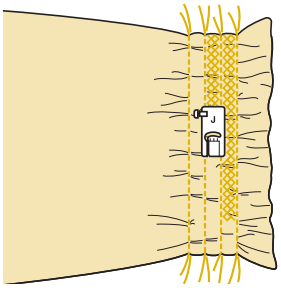
5 **Pull the bobbin threads to obtain the desired amount of gather, and then smooth the gathers by ironing them.**



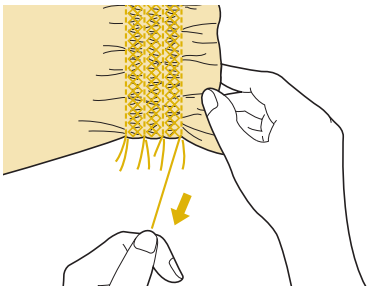
6 **Select 2-10 or 2-12.**

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

7 **Sew the spaces between the straight seams.**



8 **Pull out the straight stitch threads.**

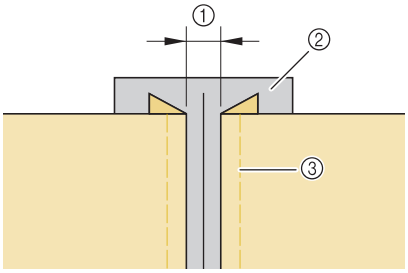


Fagoting

When there is a space between two fabrics with thread sewn over the space to join the fabrics together, it is called fagoting. Use this stitch when sewing blouses or children's clothes.

1 **Baste two pieces of fabric onto thin paper, leaving a space of 4 mm (approx. 3/16 inch) between the fabrics.**

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

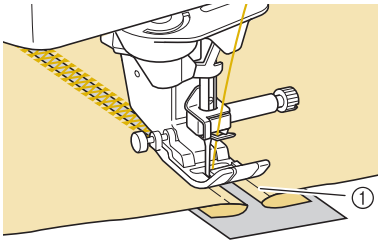


① 4.0 mm (approx. 3/16 inch)
② Paper
③ Basting stitches

2 **Select 2-11 or 2-12.**

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

3 **Attach presser foot "J". Align the center of the presser foot with the middle of the space between the fabrics and begin sewing.**



① Basting stitches

Memo
- Use a thick thread.

4 **When sewing is finished, gently tear the paper away.**

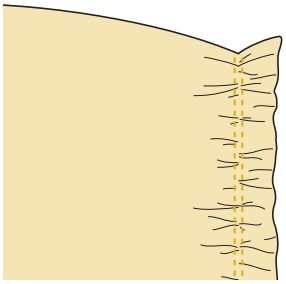
Tape or Elastic Attaching

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

2. **Set the stitch length to 4.0 mm (approx. 3/16 inch), and loosen the upper thread tension to 2.0 (see "Setting the Stitch Length" on page 89 and "Setting the Thread Tension" on page 90).**

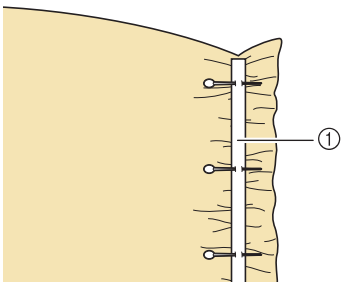
Memo
- Be sure that neither automatic reinforcement nor automatic thread cutting is selected.

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



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

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

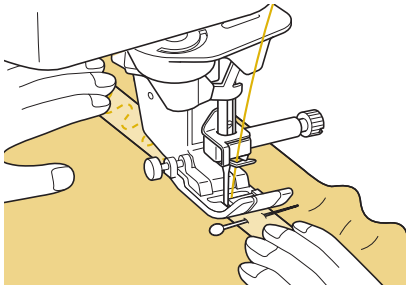


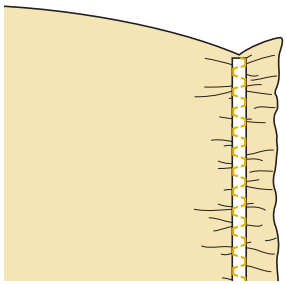
① Tape

5. **Select 2-13 or 1-13.**

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

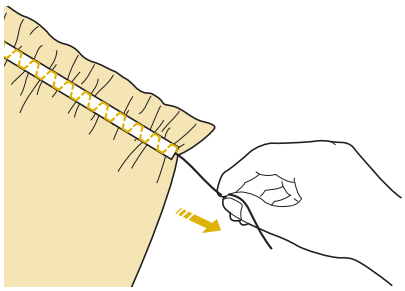
6. **Sew over the tape (or elastic).**





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

7. **Pull out the straight stitch threads.**



Heirloom

■ Hemstitching (1) (Daisy Stitch)

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

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

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

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

⚠ CAUTION
- **The "Automatic Threading" button cannot be used. Thread the wing needle by hand, from front to back. Using the "Automatic Threading" button may result in damage to the machine.**
- **A more attractive finish can be obtained if you use a "130/705H Wing" needle when sewing these patterns. If using a wing needle and the stitch width has been set manually, check that the needle will not touch the presser foot by carefully rotating the handwheel toward you (counterclockwise) before starting to sew.**

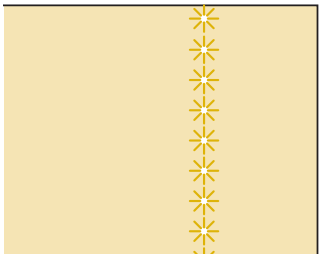
2 **Select a stitch and attach presser foot "N".**

* Select any stitch between 3-01 and 3-25.

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

3 **Start sewing.**

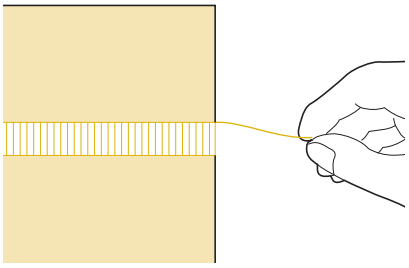
Example: Illustration of finished product



■ Hemstitching (2) (Drawn Work (1))

1 **Pull out several threads from one area on a piece of fabric to open the area.**

* Pull out 5 or 6 threads to leave a 3 mm (approx. 1/8 inch) area open.

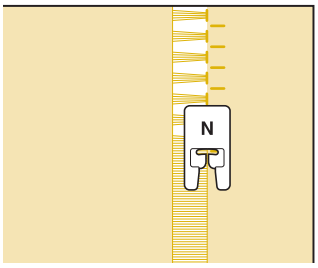


Memo
- Loosely woven fabrics work best for this.

2 **Select** .

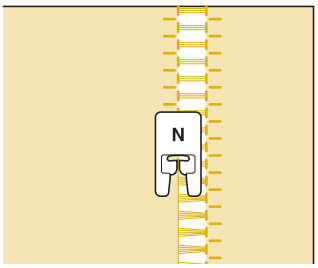
Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

3 **Attach presser foot "N". With the right side of the fabric facing up, sew one edge of the open area.**



4 **Press** **to create a mirror image of the stitch.**

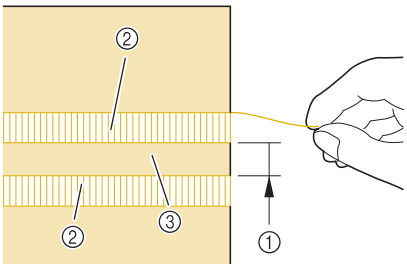
5 **Match beginning needle drop points on the opposite edge of the open area to keep the stitching symmetrical.**



■ Hemstitching (3) (Drawn Work (2))

1 **Pull out several threads from both sides of the 4 mm (approx. 3/16 inch) area which are not yet open.**

* Pull out four threads, leave five threads, and then pull out four threads. The width of five threads is approximately 4 mm (approx. 3/16 inch) or less.

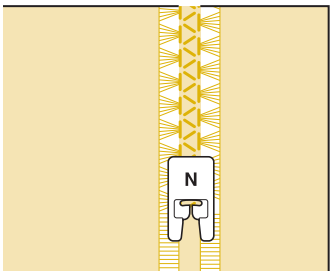


① Approx. 4 mm (approx. 3/16 inch) or less
② Four threads (pull out)
③ Five threads (leave)

2 **Select** .

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

3 **Sew the decorative stitch in the center of the five threads created above.**



Memo
- A wing needle can be used for Hemstitching (3).

Decorative Couching

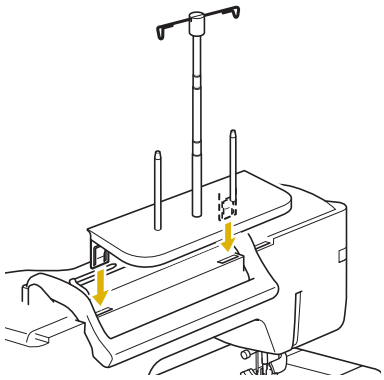
You can easily sew decorative stitching using yarn, etc.

⚠ CAUTION
- **When using yarn, we recommend selecting yarn of weight 4 (MEDIUM 4). If the yarn is extremely thin or thick, has an unusual shape (flat or furry), or more than 2 yarn, the best finishing results may not be achieved, or injuries or damage may result.**

Note
- Sew test stitches on the fabric before sewing on your project.
- We recommend using a stabilizer material when sewing stretch fabrics, lightweight fabrics, fabrics with a coarse weave, or fabrics which cause fabric shrinkage.

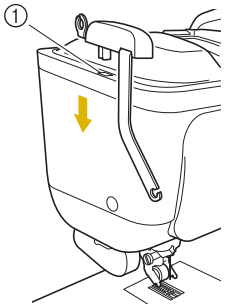
■ Prepare for the Decorative Couching

1 **Attach the spool stand to the machine.**



* Refer to "Using the Spool Stand" on page 56.

2 **Insert the top left yarn guide into the slot on the top left of the machine.**



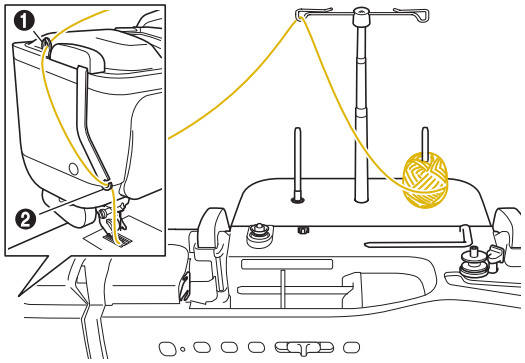
① Slot

3 **Press to lock all keys and buttons.**

4 **Attach the dual feed foot to the machine without attaching the toe of the couching dual feed foot.**

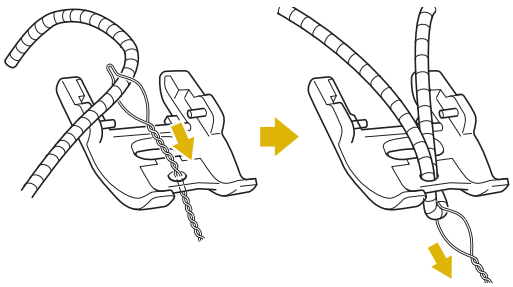
* Refer to "Attaching the Dual Feed Foot" on page 70.

5 **Pass the yarn, etc. through the telescopic thread guide and the yarn guide (❶) to (❷).**

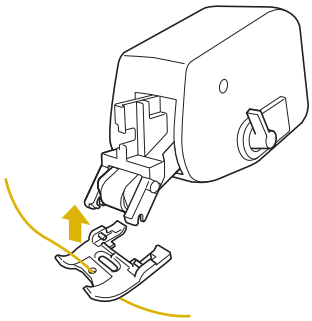


Note
- Make sure that the yarn, etc. does not become entangled as you work.

6 **Thread the yarn, etc. to the couching toe. Pass the yarn through the loop in the yarn threader wire needle and then pass the threader from top to bottom through the hole on the couching toe.**



7 **Attach the toe of the couching dual feed foot shown below to the dual feed foot.**



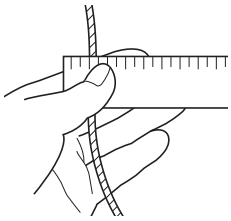
8 **Pull out the yarn for about 100 mm (4 inches) to the back of the machine.**

9 **Press to unlock all keys and buttons.**

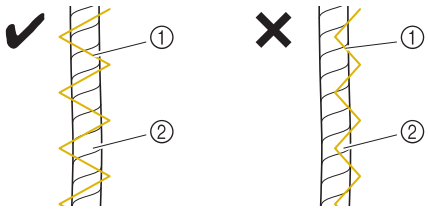
■ Sewing Decorative Couching

1 **Select .**

2 **Measure the width of the yarn, etc. and set the stitch width according to the width of the yarn, etc.**



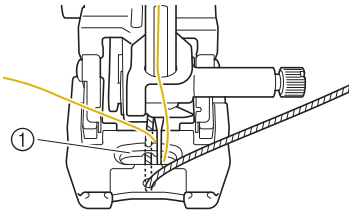
Note
- Make sure that there are enough width to wrap over the yarn, etc.
- You can adjust the stitch width while checking the camera view. Refer to "Checking the Needle Location in the Screen" on page 96.



① Zigzag stitch
② Yarn

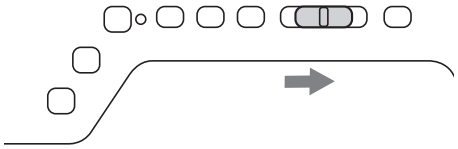
3 **Rotate the handwheel to set the needle in the sewing start position. Start sewing on the right side of the yarn.**

4 **Make sure that the yarn, etc. passes straight through the slit in the back of the toe of the couching dual feed foot, and then lower the presser foot.**



① Slit

5 **Set the sewing speed to the medium speed.**



6 **Press "Start/Stop" button to start sewing.**

* While lightly holding down the fabric with both hands, adjust the sewing direction.

Memo

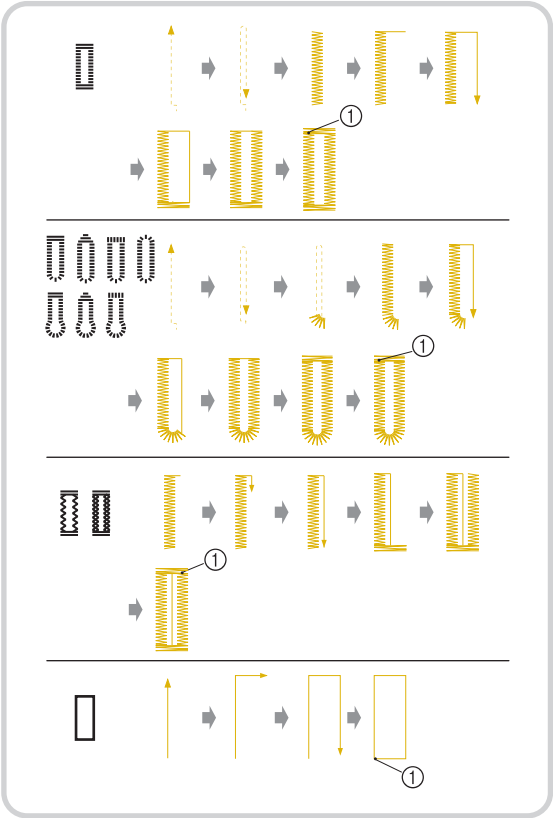
- The multi-function foot controller can also be very useful for sharp angle sewing when set to single stitch sewing. For details on the multi-function foot controller, refer to page 82.
- Pivoting is also useful when rotating fabric with both hands.
- When guideline marker is set to on, it is easy to sew zigzag couching straight.

One-step Buttonholes

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

Stitch	Stitch name	Presser foot
4-01	Narrow rounded buttonhole	A
4-02	Wide round ended buttonhole	A
4-03	Tapered round ended buttonhole	A
4-04	Round ended buttonhole	A
4-05	Round ended buttonhole	A
4-06	Round double ended buttonhole	A
4-07	Narrow squared buttonhole	A
4-08	Wide squared buttonhole	A
4-09	Squared buttonhole	A
4-10	Stretch buttonhole	A
4-11	Heirloom buttonhole	A
4-12	Bound buttonhole	A
4-13	Keyhole buttonhole	A
4-14	Tapered keyhole buttonhole	A
4-15	Keyhole buttonhole	A

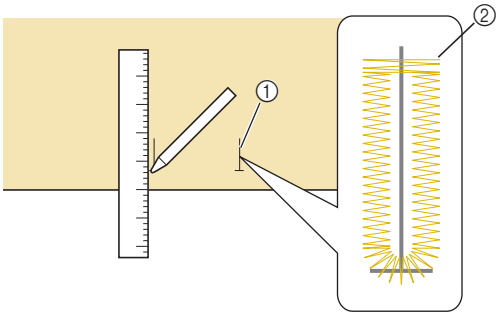
One-step buttonholes are sewn from the front of the presser foot to the back, as shown below.



① Reinforcement stitching

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

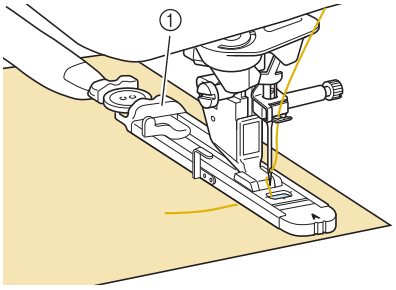
2 Mark the position and length of the buttonhole on the fabric.



① Marks on fabric
② Buttonhole sewing

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

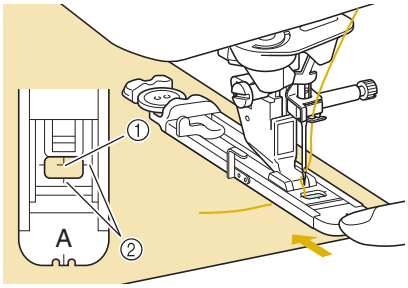
3 Pull out the button holder plate on the presser foot, and insert the button that will be put through the buttonhole. Then tighten the button holder plate around the button.



① Button holder plate

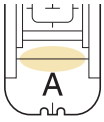
Memo
- The size of the buttonhole is determined by the size of the button in the button holder plate.

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

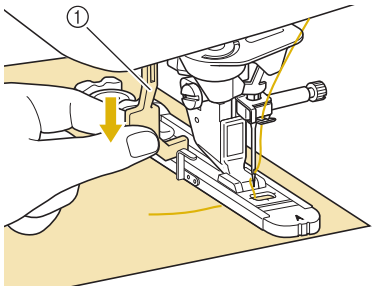


① Mark on the fabric
② Marks on the presser foot

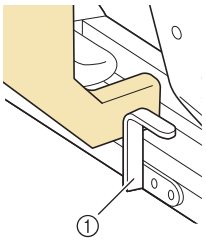
Note
- Pass the thread underneath the presser foot.
- Slide the outside frame of the buttonhole foot backward as far as possible as shown in the illustration, making sure that there is no gap behind the part of the foot marked "A". If the buttonhole foot is not slid back as far as possible, the buttonhole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



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



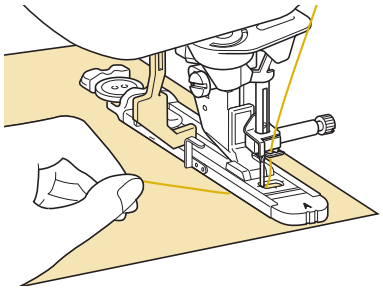
① Buttonhole lever



① Metal bracket

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

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

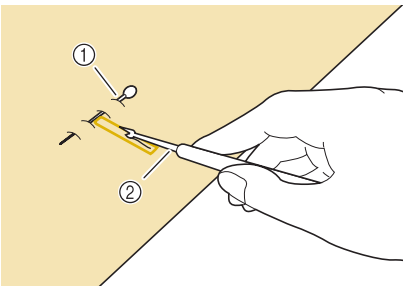


→ Once sewing is completed, the machine automatically sews reinforcement stitches, and then stops.

Memo

- If automatic thread cutting is turned on before you start sewing, both threads are automatically cut after the reinforcement stitches are sewn. If the fabric does not feed (for example, because it is too thick), increase the stitch length setting.

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



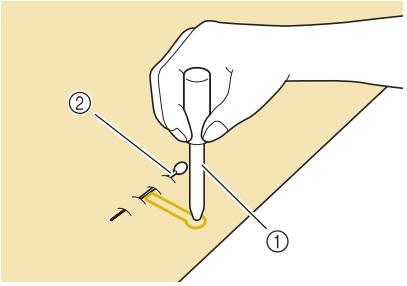
① Basting pin
② Seam ripper

⚠ CAUTION

- **When using the seam ripper to open the buttonhole, do not put your hand or finger in the path of the ripper. The ripper may slip and cause injury. Do not use the seam ripper in any other way than how it is intended.**

Memo

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

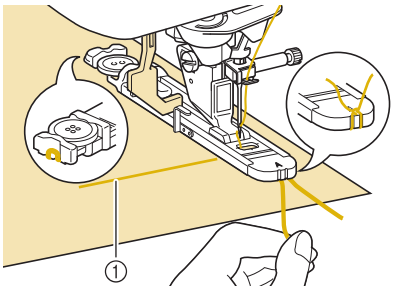


① Eyelet punch
② Basting pin

■ Sewing Stretch Fabrics

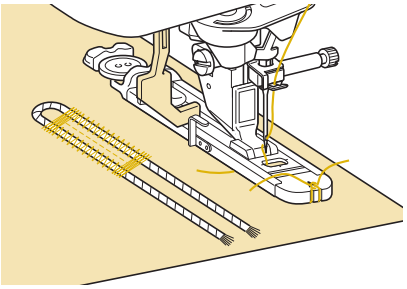
When sewing on stretch fabric with 4-10 or 4-11, sew the buttonhole stitches over a gimp thread.

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



① Upper thread

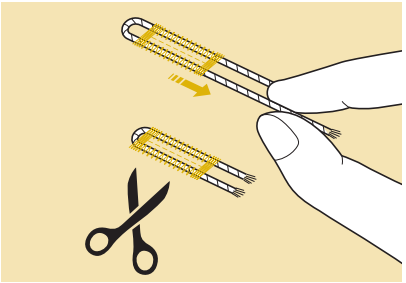
2 Lower the presser foot and start sewing.



Memo

- Set the width of the satin stitches to the width of the gimp thread, and set the buttonhole width to be 2-3 times the width of the gimp thread.

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

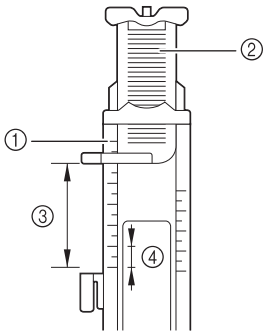


Memo

- After using the seam ripper to cut open the threads over the buttonhole, trim off the threads.

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

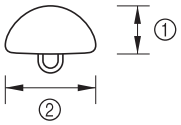
Use the markings on the presser foot scale to set the size of the buttonhole. One mark on the presser foot scale equals 5 mm (approx. 3/16 inch).
Add the button diameter and thickness together, and then set the plate at the calculated value.



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

Memo

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



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

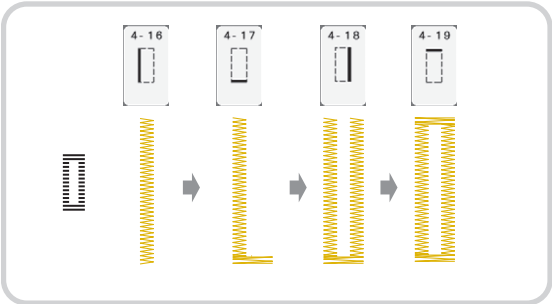
Four-step Buttonholes

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

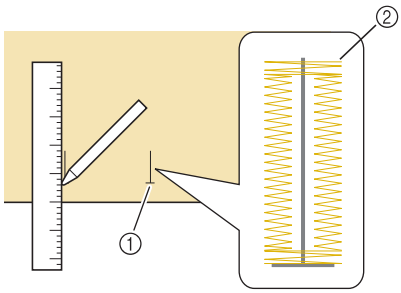
Note
- When changing the stitch settings, make sure that all stitch settings are changed to match.

Stitch	Stitch name	Presser foot
4-16	4 steps buttonhole 1	N
4-17	4 steps buttonhole 2	N
4-18	4 steps buttonhole 3	N
4-19	4 steps buttonhole 4	N

Four-step buttonholes are sewn as shown below.



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

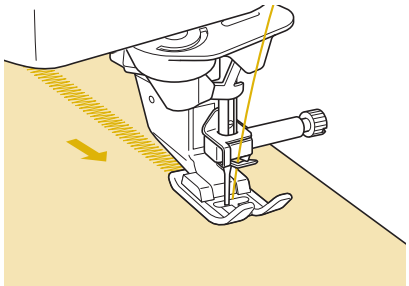


① Marks on fabric
② Buttonhole sewing

2 **Attach monogramming foot "N", and select stitch [4-16] to sew the left side of the buttonhole.**

3 **Press the "Start/Stop" button to start sewing.**

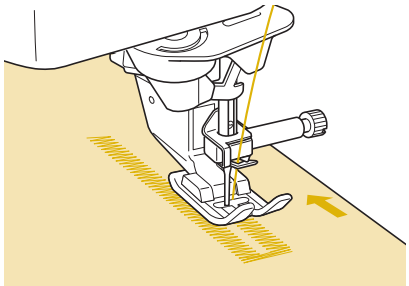
4 **Sew the desired length for the buttonhole and press the "Start/Stop" button again.**



5 **Select stitch [4-17] to sew the bar tack and press the "Start/Stop" button.**

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

6 **Select stitch [4-18] to sew the right side of the buttonhole, and press the "Start/Stop" button to begin sewing.**



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

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

8 **Select stitch [4-19] to sew the bar tack and then press the "Start/Stop" button.**

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

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

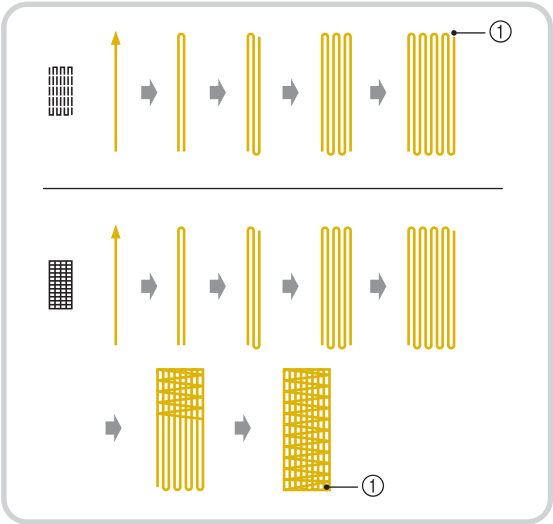
10 **Refer to page 149 to open the buttonhole.**

■ Darning

Use darning stitches for mending and other applications.

Stitch	Stitch name	Presser foot
4-20	Darning	A
4-21	Darning	A

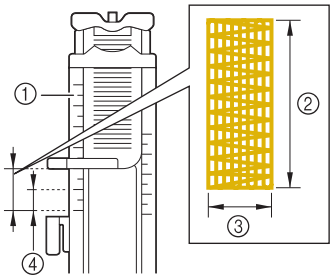
Darning is performed by sewing from the front of the presser foot to the back as shown below.



① Reinforcement stitches

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

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

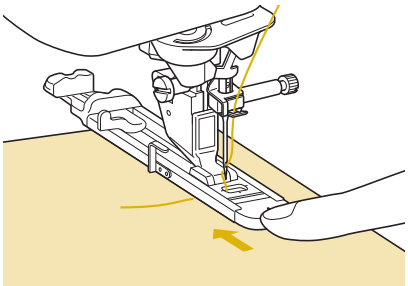


① Presser foot scale
② Completed length measurement
③ Width 7 mm (approx. 1/4 inch)
④ 5 mm (approx. 3/16 inch)

Memo

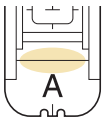
- The maximum length for darning is 28 mm (approx. 1-1/16 inches).

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

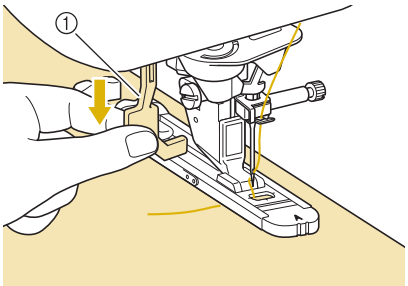


Note

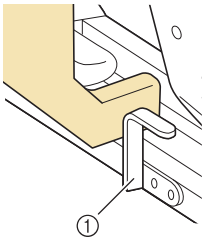
- Pass the thread underneath the presser foot.
- Set the presser foot so that there is no gap behind the section marked with an "A" (the shaded area in the illustration below). If there is a gap, the size of the darning will not be correct.



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

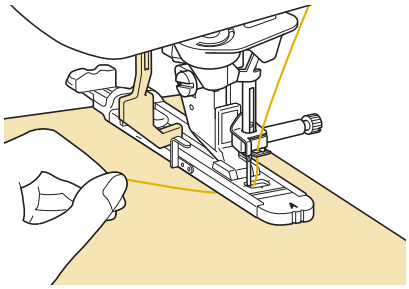


① Buttonhole lever



① Metal bracket

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



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

Memo

- If automatic thread cutting is turned on before you start sewing, both threads are automatically cut after the reinforcement stitches are sewn. If the fabric does not feed (for example, because it is too thick), increase the stitch length setting.

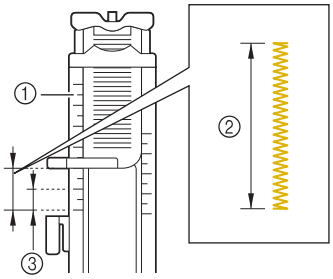
Bar Tacks

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

Stitch	Stitch name	Presser foot
4-22	Bar tack	A

1 **Select 4-22.**

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

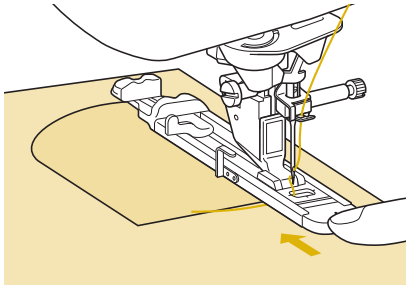


① Presser foot scale
② Completed length measurement
③ 5 mm (approx. 3/16 inch)

Memo

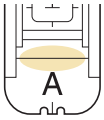
- Bar tacks can be between 5 mm (approx. 3/16 inch) and 28 mm (approx. 1-1/16 inches). Bar tacks are usually between 5 mm (approx. 3/16 inch) and 10 mm (approx. 3/8 inch).

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

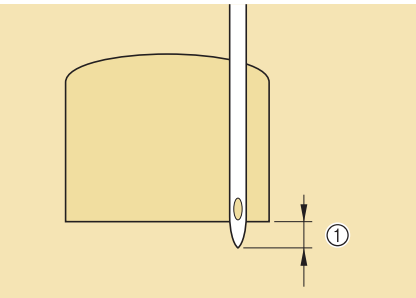


Note

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

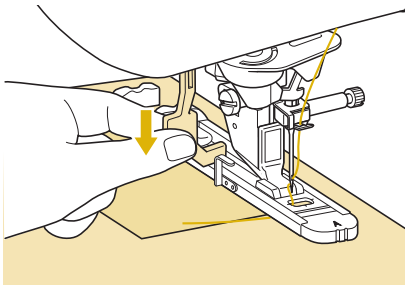


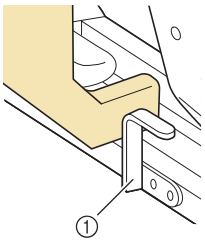
4 **Check the first needle drop point and lower the presser foot.**



① 2 mm (approx. 1/16 inch)

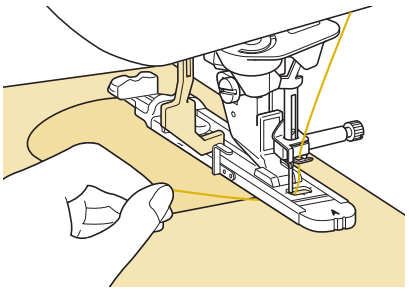
5 **Lower the buttonhole lever so that it is positioned behind the metal bracket on the buttonhole foot.**





① Metal bracket

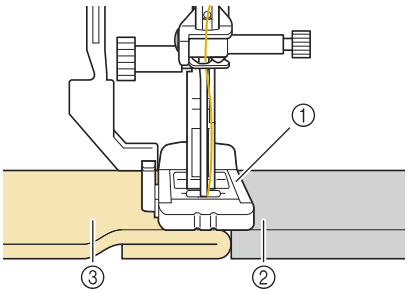
6 **Gently hold the end of the upper thread and begin sewing.**



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

■ Bar Tacks on Thick Fabrics

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



① Presser foot
② Thick paper
③ Fabric

Memo

- If automatic thread cutting is turned on before you start sewing, both threads are automatically cut after the reinforcement stitches are sewn. If the fabric does not feed (for example, because it is too thick), increase the stitch length setting.

Button Sewing

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

Stitch	Stitch name	Presser foot
4-23	Button sewing	M

Note

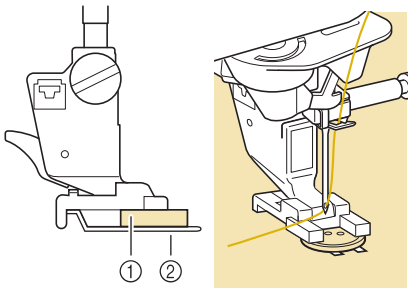
- Do not use the automatic thread cutting function when sewing buttons. Otherwise, you will lose the thread ends.

1 **Select 4-23 .**

→ The feed dogs are lowered automatically.

2 **Raise the presser foot.**

3 **Attach button sewing foot "M", slide the button along the metal plate and into the presser foot, and lower the presser foot.**



① Button
② Metal plate

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

* If the needle does not reach the holes on the left side, adjust the stitch width.
* To attach the button more securely, repeat the process.

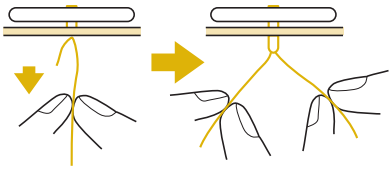
5 **Gently hold the end of the upper thread and start sewing.**

→ The machine stops automatically when sewing is finished.

⚠ CAUTION

- **Make sure the needle does not strike the button during sewing. The needle may break and cause injury.**

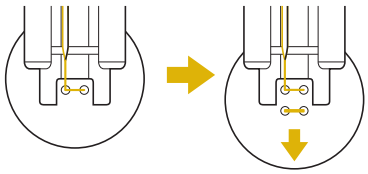
6 **From the wrong side of the fabric, pull the end of the bobbin thread to pull the upper thread through to the wrong side of the fabric. Tie the two thread ends together and cut the threads.**



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

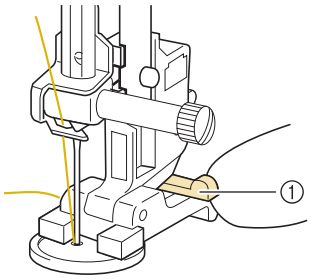
■ Attaching 4 Hole Buttons

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



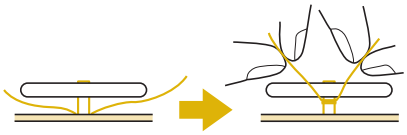
■ Attaching a Shank to the Button

1 **Pull the shank lever toward you before sewing.**



① Shank lever

2 **Pull the two ends of the upper thread between the button and the fabric, wind them around the shank, and then tie them firmly together.**



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

Note

- When sewing is completed, be sure to select the other stitch and rotate the handwheel toward you (counterclockwise) to raise the feed dogs.

4 **Cut off any excess thread.**

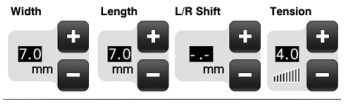
Eyelet

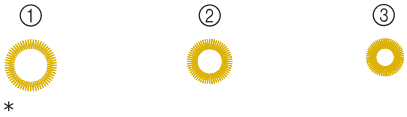
Use this stitch for making belt holes and other similar applications.

Stitch	Stitch name	Presser foot
4-24	Eyelet	N
4-25	Star eyelet	N

1 **Select 4-24 or 4-25.**

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

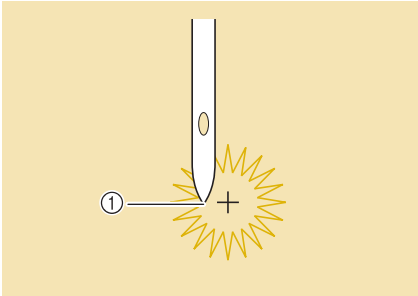




* Actual size
① Large 7 mm (approx. 1/4 inch)
② Medium 6 mm (approx. 15/64 inch)
③ Small 5 mm (approx. 3/16 inch)

> **Note**
> • Only one size is available for 4-25.

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



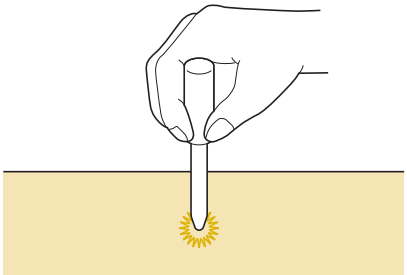
① Needle drop position

4 **Lower the presser foot and start sewing.**

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

> **Note**
> • If the stitch pattern comes out poorly, make adjustments to "SEWING STITCH PATTERNS" on page 173.

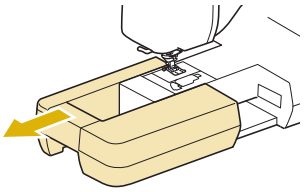
5 **Use the eyelet punch to make a hole in the center of the stitching.**



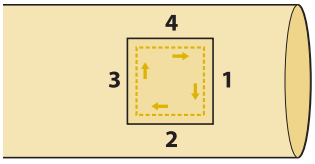
Multi-directional Sewing (Straight Stitch and Zigzag Stitch)

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

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



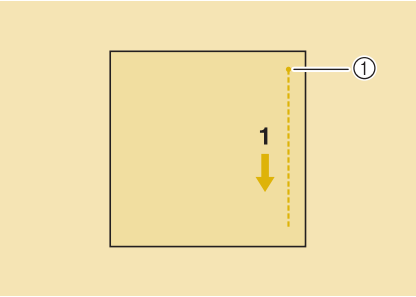
> **Memo**
> • Insert the tubular piece of fabric onto the free-arm, and then sew in the order shown in the illustration.



2 **Select 5-07 and attach monogramming foot "N".**

> **Memo**
> • For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

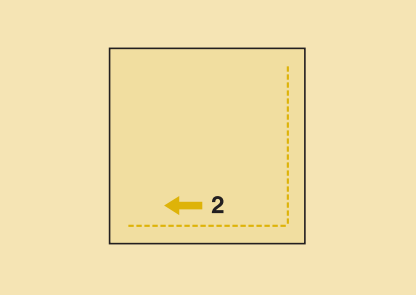
3 **Set the needle in the fabric at the sewing start point, and sew seam "1" as shown.**



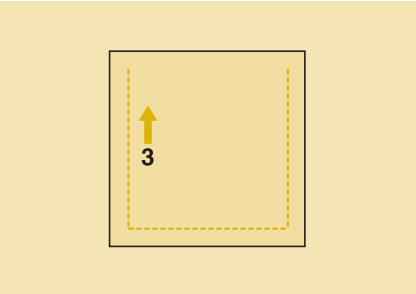
① Start Point

4 **Select** **and sew seam "2" as shown.**

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

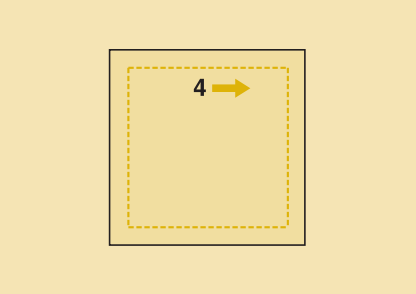


5 **Select** **and sew seam "3" as shown.**



→ The fabric feeds forward while stitching backward.

6 **Select** **and sew seam "4" as shown.**



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

Zipper Insertion

■ Centered Zipper

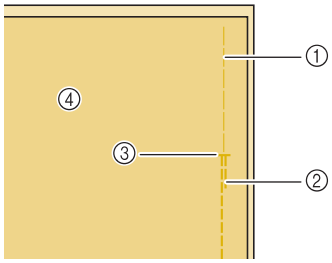
Use for bags and other such applications.

1 **Select** .

Memo
- For details on each stitch, refer to the "STITCH SETTING CHART" at the end of this manual.

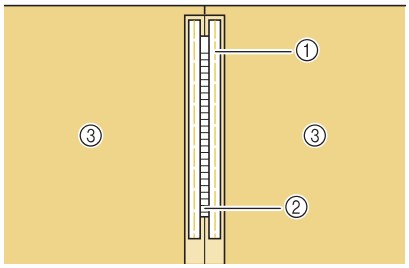
Note
- Make sure you sew using the middle needle position.

2 **Attach presser foot "J" and sew straight stitches up to the zipper opening. Change to a basting stitch (see page 118) and sew to the top of the fabric.**



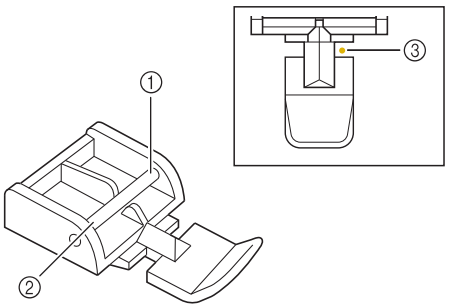
① Basting stitches
② Reverse stitches
③ End of zipper opening
④ Wrong side

3 **Press the seam allowance open and attach the zipper with a basting stitch in the middle of each side of the zipper tape.**



① Basting stitches
② Zipper
③ Wrong side

4 **Remove presser foot "J". Align the right side of the pin in zipper foot "I" with the presser foot holder, and attach the zipper foot.**

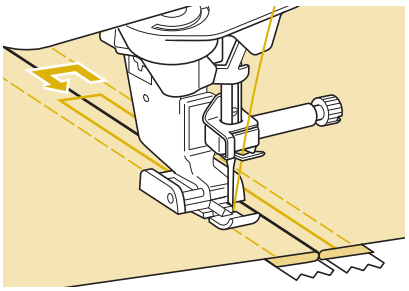


① Right
② Left
③ Needle drop position

⚠ CAUTION

- **When using zipper foot "I", make sure the straight stitch, middle needle position is selected. Rotate the handwheel toward you (counterclockwise) to make sure the needle does not strike the presser foot. If another stitch is selected, the needle will strike the presser foot, causing the needle to break and possibly causing injury.**

5 **Topstitch 7 to 10 mm (approx. 1/4 to 3/8 inch) from the seamed edge of the fabric, then remove the basting.**



⚠ CAUTION

- **Make sure the needle does not strike the zipper during sewing. If the needle strikes the zipper, the needle may break, leading to injury.**

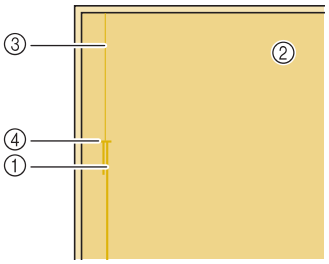
■ Inserting a Side Zipper

Use for side zippers in skirts or dresses.

1 **Select** .

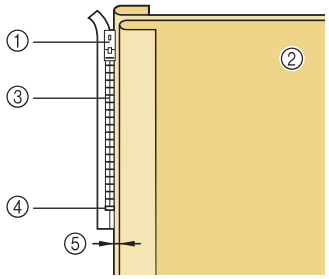
Note
- Make sure you sew using the middle needle position.

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



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

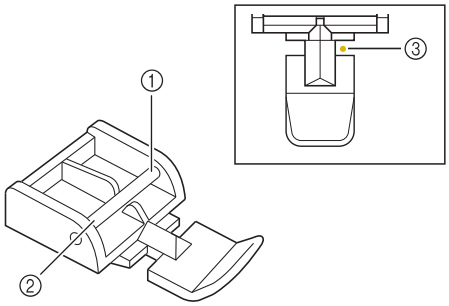
3 **Press the seam allowance open and align the folded hem along the teeth of the zipper, while maintaining 3 mm (approx. 1/8 inch) of sewing space.**



① Zipper pull tab
② Wrong side of fabric
③ Zipper teeth
④ End of zipper opening
⑤ 3 mm (approx. 1/8 inch)

4 **Remove presser foot "J".**

5 **Align the right side of the pin in zipper foot "I" with the presser foot holder, and attach the presser foot.**



① Right
② Left
③ Needle drop position

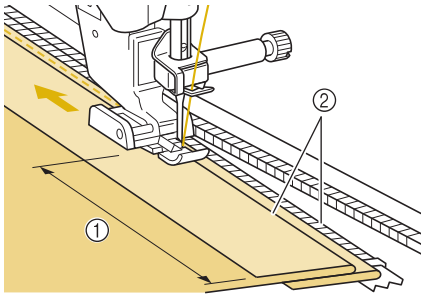
⚠ CAUTION

- **When using zipper foot "I", make sure the straight stitch, middle needle position is selected. Rotate the handwheel toward you (counterclockwise) to make sure the needle does not strike the presser foot. If another stitch is selected, the needle will strike the presser foot, causing the needle to break and possibly causing injury.**

6 **Set the presser foot in the 3 mm (approx. 1/8 inch) margin.**

7 **Starting from the end of the zipper opening, sew to a point about 50 mm (approx. 2 inches) from the edge of the fabric, then stop the machine.**

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

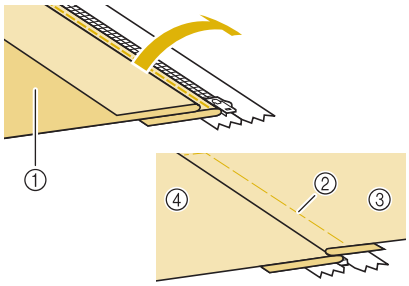


① 50 mm (approx. 2 inches)
② 3 mm (approx. 1/8 inch)

⚠ CAUTION

- **Make sure the needle does not strike the zipper during sewing. If the needle strikes the zipper, the needle may break, leading to injury.**

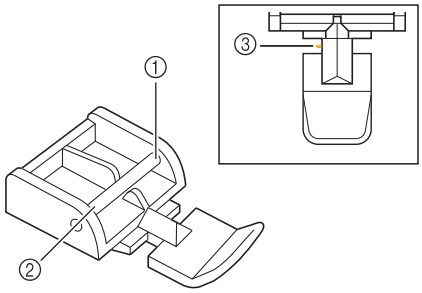
9 **Close the zipper, turn the fabric over, and sew a basting stitch.**



① Front of the skirt (wrong side of fabric)
② Basting stitches
③ Front of the skirt (right side of fabric)
④ Back of the skirt (right side of fabric)

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

* When sewing the left side of the zipper, the needle should drop on the right side of the presser foot. When sewing the right side of the zipper, the needle should drop on the left side of the presser foot.



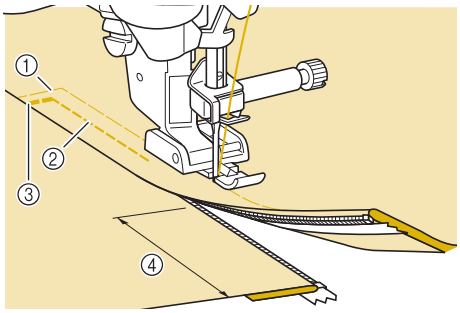
① Right
② Left
③ Needle drop position

11 **Set the fabric so that the left edge of the presser foot touches the edge of the zipper teeth.**

12 **Sew reverse stitches at the top of the zipper, then continue sewing.**

13 **Stop sewing about 50 mm (approx. 2 inches) from the edge of the fabric, leave the needle in the fabric, and remove the basting stitches.**

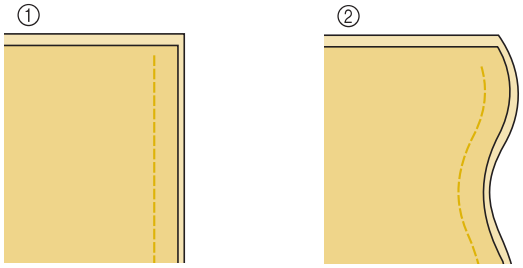
14 Open the zipper and sew the rest of the seam.



① Basting stitches
② 7 to 10 mm (approx. 1/4 inch to 3/8 inch)
③ Reverse stitches
④ 50 mm (approx. 2 inches)

Edge Sewing

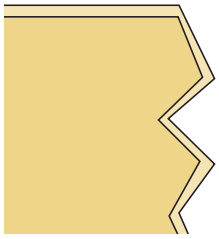
Using the built-in camera, the width of the area from the edge of the fabric to the stitching line can be measured and set for edge sewing.
This function can be used when the edge of the fabric is straight or a gentle curve.



① Straight
② Curved

Note

- Clean stitching cannot be sewn if this function is used when the edge of the fabric has corners as shown below.

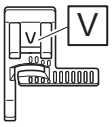


- When edge sewing using the built-in camera, make sure that the room is evenly lit. If the brightness in the room changes while edge sewing, the built-in camera may not be able to detect the edge of the fabric.
- The built-in camera detects the contrast between the fabric and the background. Therefore, observe the following precautions.
  – If the edge of the fabric is fraying, cut off any excess fabric threads.
  – If the fabric has a complicated pattern, is sheer or is glossy, such as a vinyl material, the built-in camera may not be able to detect it correctly.
- For best results, iron the fold when folding the edge of the fabric for edge sewing.
- When “Width Control” on page 1/8 of the settings screen is set to “ON” or when “Needle Position - Stitch Placement” on page 3/8 is set to “ON”, the built-in camera cannot be used with edge sewing. If either of these parameters are set to “ON”, appears gray and cannot be selected. Before using the built-in camera for edge sewing, set “Width Control” and “Needle Position - Stitch Placement” in the settings screen to “OFF”.

1 Select a stitch.

* Edge sewing using the built-in camera cannot be used with patterns where appears in gray when the pattern is selected.

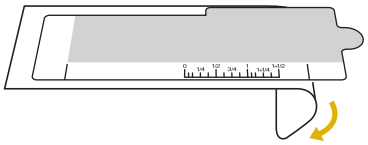
2 Attach the vertical stitch alignment foot "V".



⚠ CAUTION

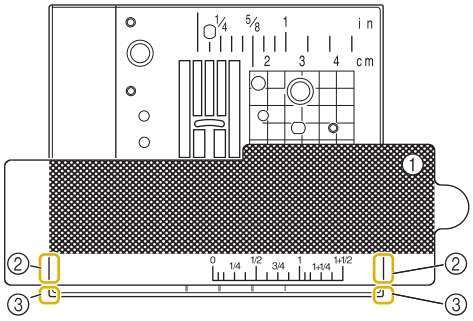
- **When edge sewing with the built-in camera, be sure to use the vertical stitch alignment foot "V". In order to maintain a fixed distance from the edge of the fabric, the needle will slightly move to either side, even when sewing with a straight stitch. If a different presser foot is used, it may be hit by the needle, causing the needle to break or resulting in injuries.**

3 Peel off the transparent sheet of the edge sewing sheet.

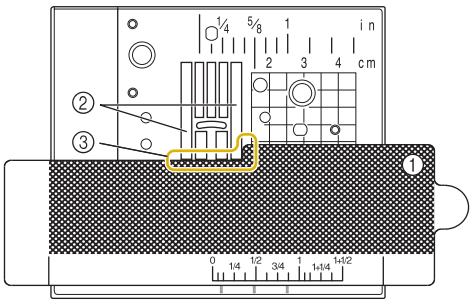


4 Place the edge sewing sheet on top of the needle plate cover.

Align the guides on the edge sewing sheet with the sides of the needle plate cover, and then adjust the position of the edge sewing sheet so that its cutout aligns with the edges of the opening for the feed dogs. Position the edge sewing sheet so that there is no gap between it and the edges of the opening for the feed dogs.



① Edge sewing sheet
② Guides on edge sewing sheet
③ Sides of needle plate cover



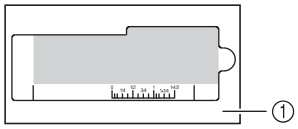
① Edge sewing sheet
② Feed dogs
③ Between the feed dogs and the edge sewing sheet

Note

- If the metal needle plate is visible between the feed dogs and the edge sewing sheet, the fabric may be incorrectly detected by the built-in camera.

Memo

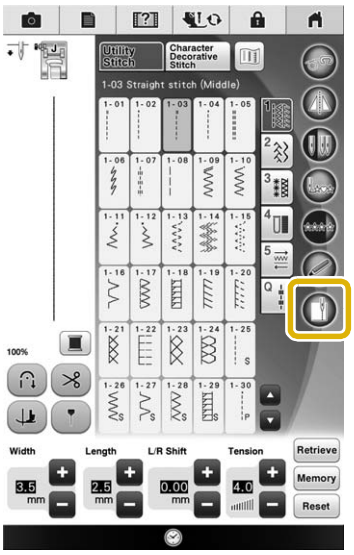
- Before using the edge sewing sheet, peel off the transparent sheet. After use, affix the edge sewing sheet to the transparent sheet to prevent it from collecting dust.



① Transparent sheet

- Be sure to install a fully wound bobbin before starting to use the edge sewing feature and built-in camera. If you need to change the bobbin while edge sewing, remove the edge sewing sheet carefully and place it again after changing the bobbin.

5 Press .



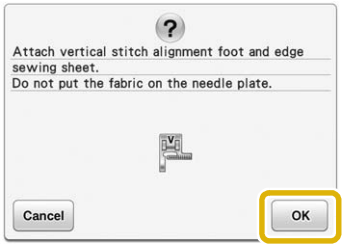
→ Depending on the stitch, the straight stitch with the middle (center) needle position is selected, regardless of the preset stitch width.

* Regardless of the setting selected in the machine settings screen, the brightness of the light changes to "5".

Note

- After is pressed, the stitch width and stitch length cannot be changed. Change the stitch width and stitch length before pressing .
- Some decorative stitches will function with the edge sewing. When selecting a stitch, if it is not applicable to this function, an error message will appear.

6 When the message shown below appears, check that the vertical stitch alignment foot "V" is attached and that the edge sewing sheet is positioned, and then press OK.



→ Then the edge sewing window appears.

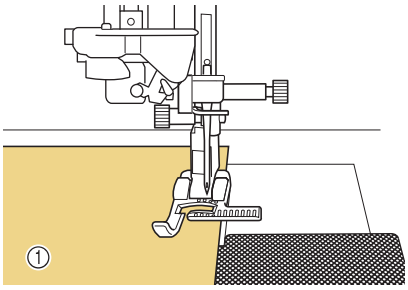
Note

- Before pressing OK, install the vertical stitch alignment foot "V" and position the edge sewing sheet; otherwise, the built-in camera cannot detect the fabric.

  If OK is pressed before the edge sewing sheet is positioned, the message shown in step 6 appears again.
- After pressing OK, do not place your hands or any other object near the needle plate until the message "Recognizing…" disappears.

7 Place the fabric under the presser foot.

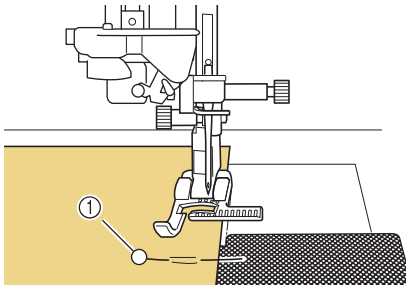
8 Move the fabric to the desired position for edge sewing. Position the fabric so that its edge is as straight as possible.



① Fabric

Note

- When pinning the fabric, insert the pins as shown below. If the head of the pin extends off the edge of the fabric, the fabric may not be correctly detected.

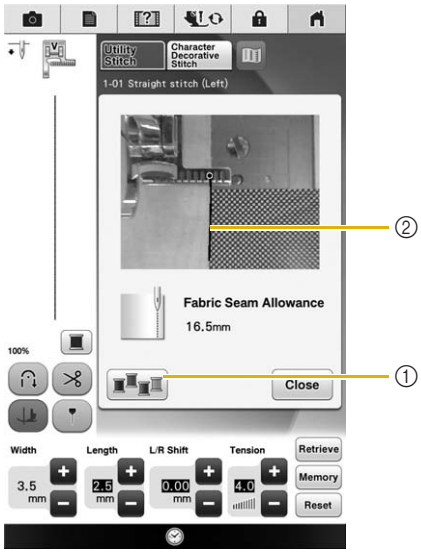


① Basting pin

9 Check that the built-in camera is correctly detecting the fabric.

* Press to change the colors of the fabric edge indicator line and starting point according to the color of the fabric. Each press of this key changes the color of the fabric edge indicator line to red

(with a blue starting point), blue (with a black starting point) or black (with a red starting point).

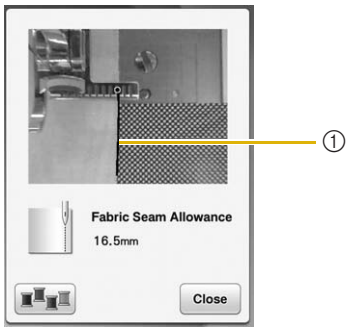


① Key for changing the color of the fabric edge indicator line

② Fabric edge indicator line

When the Built-In Camera Can Detect the Edge of the Fabric

The fabric edge indicator line appears correctly following the edge of the fabric.



① Fabric edge indicator line

When the Fabric Edge Indicator Line Does Not Appear

The built-in camera cannot detect the edge of the fabric.

Press Close, and then perform the procedure again starting with step 1.

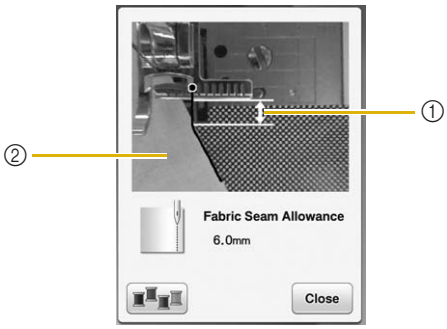
When the Fabric Edge Indicator Line Is Not Aligned With the Edge of the Fabric

The fabric edge indicator line that appears is not aligned with the edge of the fabric. The fabric at the beginning of sewing is not straight.

Try to straighten the edge of the fabric at the beginning of sewing (so it is parallel with the edge of the presser foot).

Note

- If a straight part of fabric edge indicator line (shown below) does not follow the edge of the fabric, edge sewing cannot be sewn correctly.

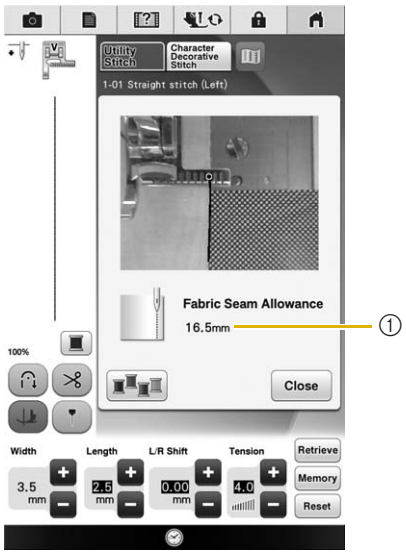


① Straight part

② Fabric

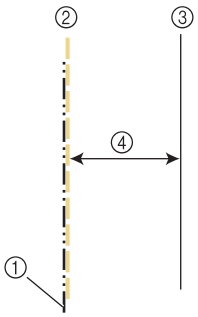
10 While checking the screen for the distance from the fabric edge to the edge sewing position, move the fabric to the desired position.

* The starting point of the fabric edge indicator line shows the position for the start of sewing. The actual position for the start of sewing is directly below the needle and parallel to the starting point.



① Distance from edge of fabric

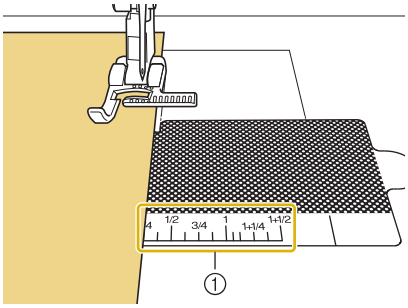
Example: When a straight stitch is selected (example:)



① Middle needle position
② Stitching
③ Edge of fabric
④ Width of edge sewing

Note

- Distances between 1.5 mm (about 1/16 inch) and 38.5 mm (about 1-1/2 inches) can be measured. The distance is displayed in the screen in 0.5 mm (about 1/64 inch) increments.
- The distance is displayed in millimeters. However, depending on the measurement setting, it can also be displayed in inches.
- If "-_- mm" appears as the distance and no inch measurement is displayed, the built-in camera is not able to detect the edge of the fabric.
- When a straight stitch is selected, use the scale on the edge sewing sheet as a guide for positioning the fabric for edge sewing.



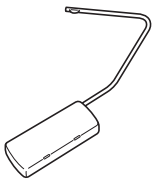
① Scale on the edge sewing sheet

11 Lower the presser foot.

→ The distance from the edge of the fabric to the seam is set.

Memo

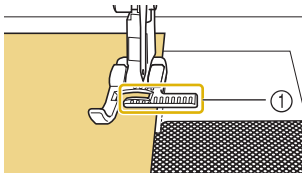
- If the knee lifter is used to lower the presser foot, the fabric can be held in place with both hands so the fabric does not move when the presser foot is lowered.



12 Press the "Start/Stop" button to start edge sewing.

→ Sewing starts with the set distance to the edge of the fabric maintained.

* While sewing, use the red scale marks on the vertical stitch alignment foot "V" as a guide to keep a fixed distance from the edge of the fabric.

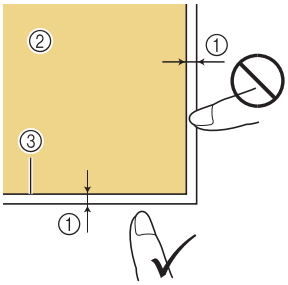


① Red scale marks

* When sewing starts, a still image from the built-in camera is displayed.

Note

- While sewing, do not place anything, including your hands, within 2 mm (about 1/16 inch) from the edge of the fabric, otherwise the edge of the fabric cannot be detected correctly. When guiding the fabric with your hands, place them outside of the object-free area and more than 2 mm (about 1/16 inch) from the edge of the fabric.



① Approximately 2 mm (about 1/16 inch)
② Fabric
③ Edge of fabric

13 When sewing is between 10 and 20 mm (about 3/8 and 3/4 inch) from the edge of the fabric, sewing stops automatically and the following message appears. To stop sewing, press Close.

* When this message appears, edge sewing (with the seam wizard function) is canceled.

Note

- To continue sewing to the edge of the fabric, do not press Close when the message shown above appears. With the above message displayed, press the "Start/Stop" button to sew.

Memo

- When edge sewing is finished, store the edge sewing sheet affixed to the transparent sheet in order to prevent it from collecting dust.

Chapter 4

Character/Decorative Stitches

SELECTING STITCH PATTERNS 168

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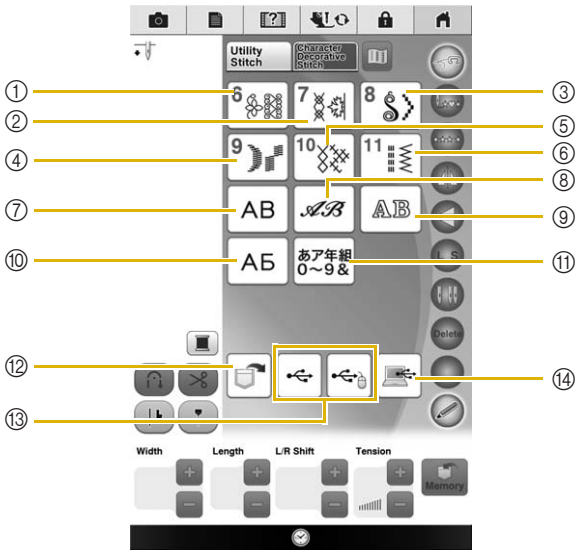
SELECTING STITCH PATTERNS

Press , then Character Decorative Stitch to display the screen below.



① Decorative stitch patterns
② 7mm decorative stitch patterns. You can set stitch length and width.
③ Satin stitch patterns
④ 7mm satin stitch patterns. You can set stitch length and width.
⑤ Cross stitch
⑥ Utility decorative stitch patterns
⑦ Alphabet characters (gothic font)
⑧ Alphabet characters (handwriting font)
⑨ Alphabet characters (outline)
⑩ Cyrillic font
⑪ Japanese character
⑫ Patterns saved in the machine's memory (see page 190)
⑬ Patterns saved in USB media (see page 191)
⑭ Patterns saved on the computer (see page 192)

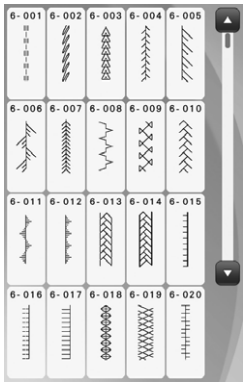
Note

- If the screen is locked ( ), unlock the screen by pressing . While the screen is locked, no other key can be operated.

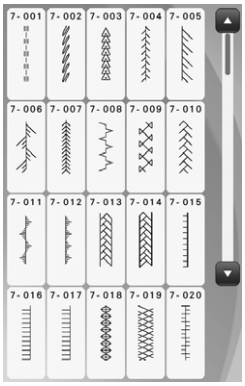
■ Stitch Selection Screens

There are 11 categories of Character/Decorative stitch patterns. If ▲ ▼ appears, there is more than one stitch selection screen for that category.

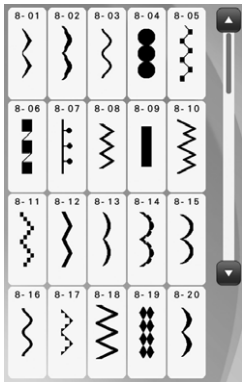
Decorative Stitch Patterns



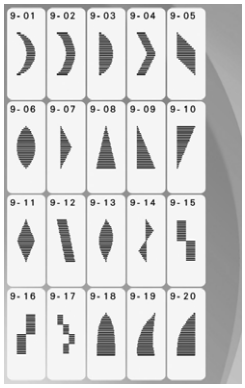
7mm Decorative Stitch Patterns



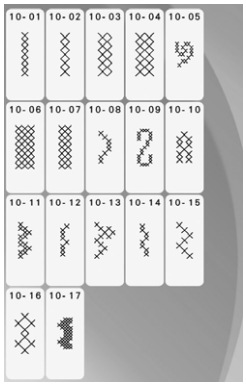
Satin Stitch Patterns



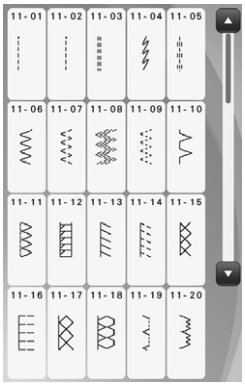
7mm Satin Stitch Patterns



Cross Stitch

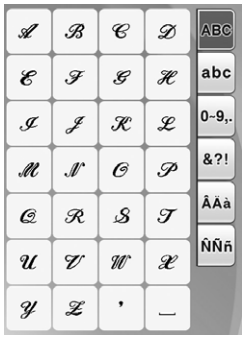


Utility Decorative Stitch Patterns



Alphabet Characters (Gothic Font)

Alphabet Characters (Handwriting Font)



Alphabet Characters (Outline)

Cyrillic font

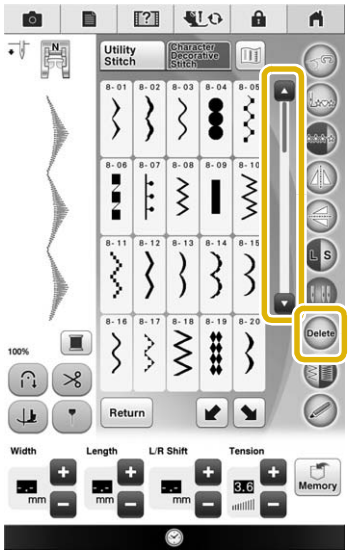
Japanese character

Selecting Decorative Stitch Patterns/7mm Decorative Stitch Patterns/Satin Stitch Patterns/ 7mm Satin Stitch Patterns/ Cross Stitch/Utility Decorative Stitch Patterns

1 Select the category of the pattern you want to sew.

2 Press the key of the stitch pattern you want to sew.

* Press ▼ to view the next page.
* Press ▲ to view the previous page.
* Touch the bar that appears between ▼ and ▲ to leap multiple pages at one time.
* To select a different stitch pattern, press Delete. When the current stitch pattern is erased, select the new stitch pattern.

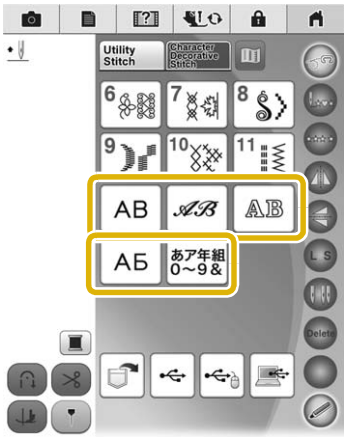


→ The selected pattern is displayed.

Alphabet Characters/Japanese characters

Entering characters from the groups shown below, for example "Blue Sky".

1 Press AB, AB, AB, AБ or あア年組 0~9& to select a font.



Memo

- There are four fonts for alphabet character stitching and one font for Japanese character stitching.

2 Press to change the selection screens.

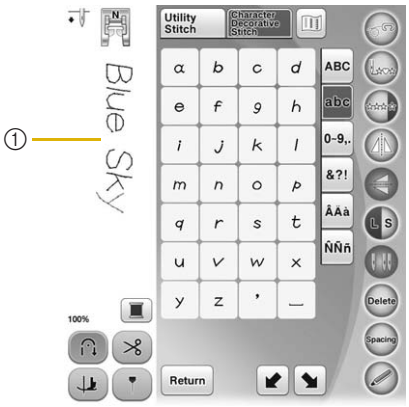
3 Press ABC and then enter "B".

4 Press abc and then enter "lue".

5 Press _ to enter a space.

6 Press ABC again and enter "S".

7 Press abc and then enter "ky".



① Jumping stitch

* Remove the jumping stitches after sewing.

* If you want to continue entering characters in a different font, press Return, and then repeat from step 1.

■ Deleting Characters

1 Press Delete to delete the last character.

Memo

- Characters are deleted individually starting with the last character entered.

2 Select the correct character.

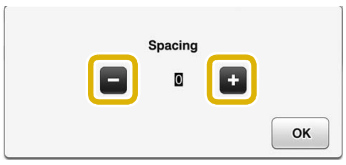
■ Adjusting the Character Spacing

The space between the characters can be adjusted.

1 Press Spacing.

→ The character spacing window appears.

2 Press ⊖ ⊕ to adjust character spacing.



* Press ⊕ to increase the character spacing and press ⊖ to decrease the character spacing.

Example:

* Each setting equals a specific distance between characters.

Value: 0

Blue Sky

Value: 10

Blue Sky

Value	mm
0	0
1	0.18
2	0.36
3	0.54
4	0.72
5	0.9
6	1.08
7	1.26
8	1.44
9	1.62
10	1.8

Memo

- The default setting is “0”. No number less than “0” can be set.
- Changing character spacing by this method, pertains to all characters. Spacing changes are valid not only while entering characters but also before and after the entering of characters.

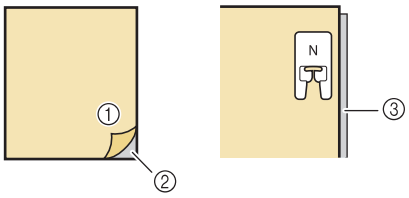
SEWING STITCH PATTERNS

Sewing Attractive Finishes

To achieve attractive results when sewing character/decorative stitches, check the table below for the proper fabric/needle/thread combinations.

Note

- Other factors, such as fabric thickness, stabilizer material, etc., also have an effect on the stitch, so you should always sew a few trial stitches before beginning your project.
- When sewing satin stitch patterns, there may be shrinking or bunching of stitches, so be sure to attach a stabilizer material.
- Guide the fabric with your hand to keep the fabric feeding straight and even during sewing.

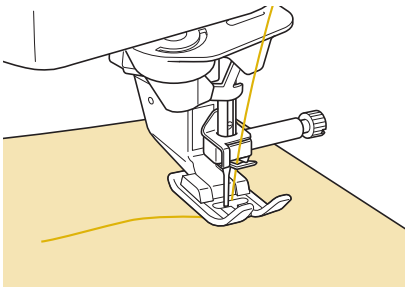
Fabric	When sewing on stretch fabrics, lightweight fabrics, or fabrics with coarse weaves, attach stabilizer on the wrong side of the fabric. If you do not wish to do so, place the fabric on a thin paper such as tracing paper.  ① Fabric ② Stabilizer ③ Thin paper
Thread	#50 - #60
Needle	With lightweight, regular, or stretch fabrics: the Ball point needle (golden colored) With heavyweight fabrics: home sewing machine needle 90/14
Presser foot	Monogramming foot “N”. Using another presser foot may give inferior results.

Basic Sewing

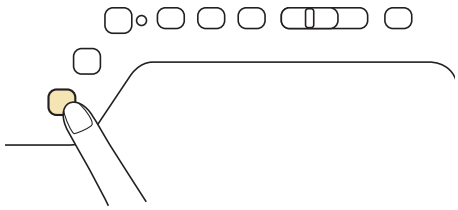
1 **Select a stitch pattern.**

2 **Attach monogramming foot “N”.**

3 **Place the fabric under the presser foot, pull the upper thread out to the side, and then lower the presser foot.**



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



⚠ CAUTION

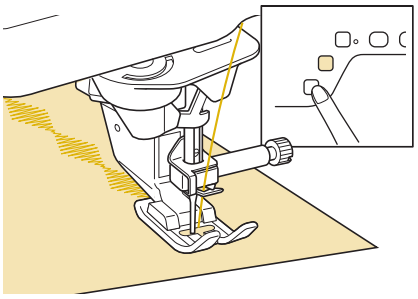
- **When sewing 7 mm satin stitch patterns and the stitches are bunched, lengthen the stitch length. If you continue sewing when the stitches are bunched, the needle may bend or break (“Setting the Stitch Length” on page 89).**

Memo

- If the fabric is pulled or pushed during sewing, the pattern may not turn out correctly. Also, depending on the pattern, there may be movement to the left and right as well as front and back. Guide the fabric with your hand to keep the fabric feeding straight and even during sewing.

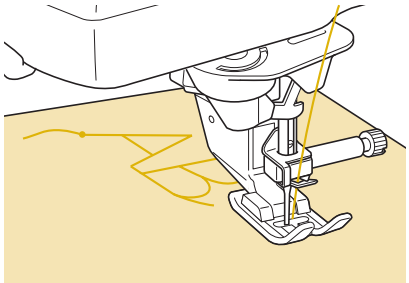
5 **Press the "Start/Stop" button to stop sewing.**

6 **Keep pressing the "Reverse Stitch" button or the "Reinforcement Stitch" button to sew 4 stitches of reinforcement stitches.**



Memo

- When sewing character stitches, the machine automatically sews reinforcement stitches at the beginning and end of each character.



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

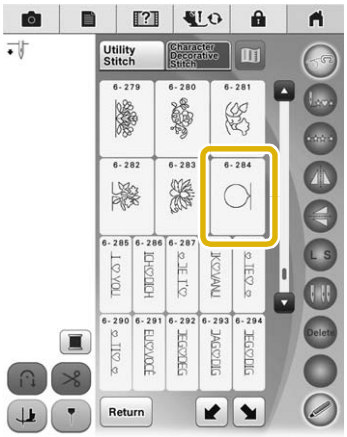
Note

- When sewing some patterns, the needle will temporarily pause in the raised position while the fabric is fed due to the operation of the needle bar separation mechanism which is used in this machine. At such times, a clicking sound different from the sound generated during sewing will be heard. This sound is normal and is not the sign of a machine malfunction.

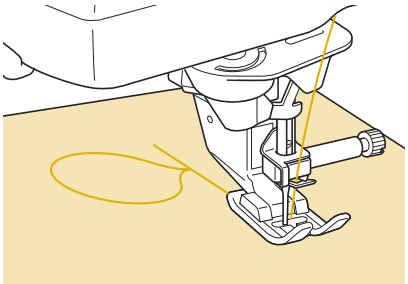
Making Adjustments

Your stitch pattern may sometimes turn out poorly, depending on the type or thickness of fabric, the stabilizer material used, sewing speed, etc. If your sewing does not turn out well, sew trial stitches using the same conditions as the real sewing, and adjust the stitch pattern as explained below. If the pattern does not turn out well even after making adjustments based on the 6-284 pattern, make adjustments for each pattern individually.

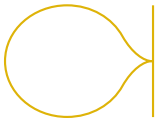
1 **Press 6 and select 6-284.**



2 **Attach monogramming foot "N" and sew the pattern.**



3 **Compare the finished pattern to the illustration of the correct pattern below.**



4 **Press [ ], and then adjust the pattern with the "Fine Adjust Verti." or "Fine Adjust Horiz." displays.**

* If the pattern is bunched:

Press [+] in the "Fine Adjust Verti." display.

→ The displayed value increases each time the button is pressed and the pattern will lengthen.

* If the pattern has gaps:

Press [−] in the "Fine Adjust Verti." display.

→ The displayed value decreases each time the button is pressed and the pattern will shorten.

* If the pattern is skewed to the left:

Press [+] in the "Fine Adjust Horiz." display.

→ The displayed value increases each time the button is pressed and the pattern will slide to the right.

* If the pattern is skewed to the right:

Press [−] in the "Fine Adjust Horiz." display.

→ The displayed value decreases each time the button is pressed and the pattern will slide to the left.

5 **Sew the stitch pattern again.**

* If the stitch pattern still comes out poorly, make adjustments again. Adjust until the stitch pattern comes out correctly.

Memo

- You can sew with the setting screen on the display.

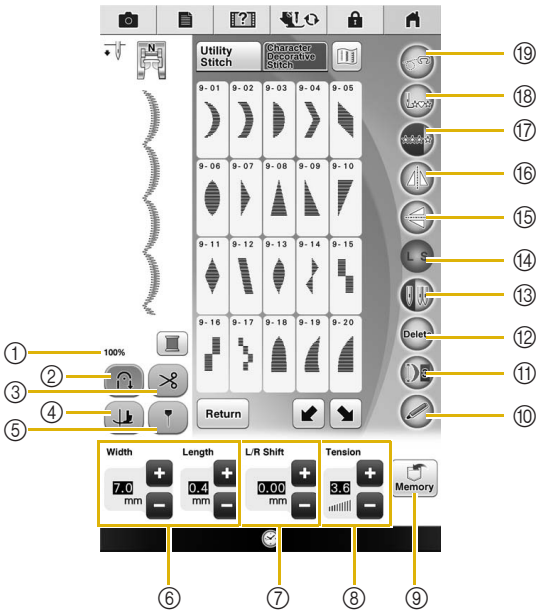
6 **Press [OK] to return to the original screen.**

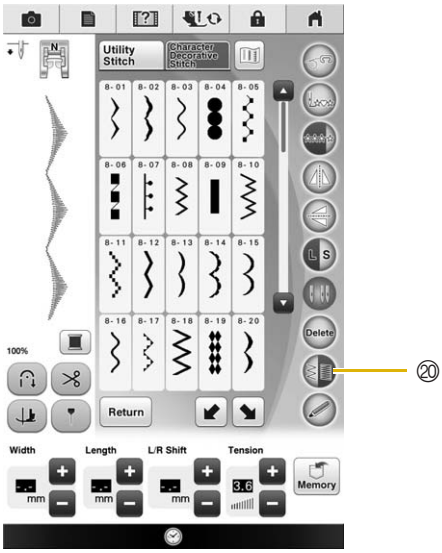
EDITING STITCH PATTERNS

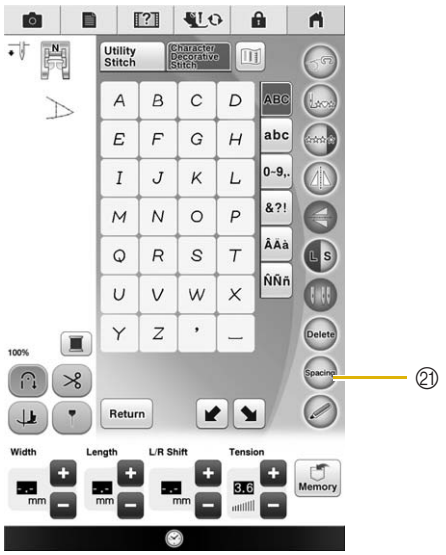
■ Key Functions

You can create just the finish you want using the editing functions. Make patterns larger or smaller, make mirror images, etc.

> **Note**
> • Some editing functions cannot be used with certain stitch patterns. Only the functions for the displayed keys are available when a pattern is selected.







No.	Display	Key Name	Explanation	Page
①	100%	Pattern display size	Show the approximate size of the pattern selected. 100% : Nearly the same size as the sewn pattern 50% : 1/2 the size of the sewn pattern 25% : 1/4 the size of the sewn pattern * The actual size of the sewn pattern may differ depending on the type of fabric and thread that is used.	111
②		Automatic reinforcement stitch key	Press this key to turn on the automatic reinforcement stitching mode.	83
③		Automatic thread cutting key	Press this key to turn on the automatic thread cutting mode.	91
④		Pivot key	Press this key to select the pivot function. When the pivot function is selected, stopping the machine lowers the needle and slightly raises the presser foot automatically. In addition, when sewing is restarted, the presser foot is automatically lowered. • If this key appears as , the pivot function cannot be used. • Be sure the needle position on page 4 of Machine Settings is set to the down position.	93
⑤		Guideline marker key	Press this key to display the guideline marker along the sewing line. The guideline marker makes it easier to align stitches with the fabric edge or other marker on the fabric.	92
⑥	Width 7.0 mm Length 0.4 mm	Stitch width and stitch length key	Shows the stitch width and stitch length of the selected stitch pattern. The machine default settings are highlighted.	88-90
⑦	L/R Shift 0.00 mm	"L/R Shift" key	Press + to shift the stitch pattern to the right or press − to shift the pattern to the left. This feature is not available on all patterns. Only those applicable will be shifted. The machine default setting is highlighted.	89
⑧	Tension 3.6	Thread tension key	Shows the thread tension setting for the selected stitch pattern. The machine default settings are highlighted	90
⑨	Memory	Memory key	Use this key to save stitch pattern combinations.	188
⑩		Sensor function key	Press this key to use the sensor function.	98
⑪		Elongation key	When 7mm satin stitch patterns are selected, press this key to choose from 5 automatic length settings, without changing the stitch zigzag width or stitch length settings.	178
⑫	Delete	Delete key	When you make a mistake selecting a stitch pattern, use this key to delete the mistake. When you make a mistake in combining stitch patterns, use this key to delete stitch patterns.	170, 171
⑬		Needle mode selection key (Single/Double)	Press this key to choose single needle sewing or twin needle sewing.	63
⑭	L S	Size selection key	Use this key to select the size of the stitch pattern (large, small).	178
⑮		Vertical mirror image key	After selecting the stitch pattern, use this key to create a vertical mirror image of the stitch pattern.	178
⑯		Horizontal mirror image key	After selecting the stitch pattern, use this key to create a horizontal mirror image of the stitch pattern.	178
⑰		Single/Repeat sewing key	Press this key to choose single stitches or continuous stitches.	178
⑱		Back to beginning key	When sewing is stopped, press this key to return to the beginning of the pattern.	179
⑲		Free motion mode key	Press this key to enter free motion sewing mode. The feed dog is lowered and presser foot is raised to a height appropriate for free motion quilting.	131
⑳		Thread density key	After selecting the stitch pattern, use this key to change the thread density of the pattern.	179
㉑	Spacing	Character spacing key	Press this key to change the spacing of character patterns.	171

Changing the Size

Select a stitch pattern, then press to change the size of the stitch pattern. The stitch pattern will be sewn in the size highlighted on the key.

Memo

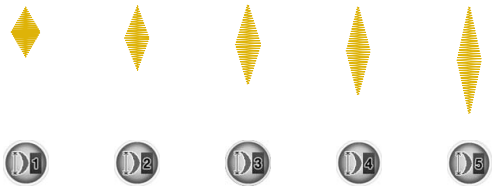
- If you continue entering stitch patterns after changing the size, those patterns will also be sewn in that size.
- You cannot change the size of combined stitch patterns once the stitch pattern is entered.

Actual Stitch Pattern Size

* The size differs depending on the fabric and threads.

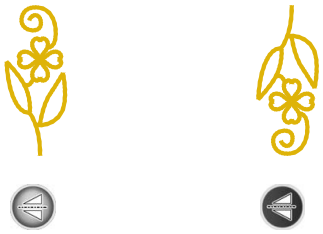
Changing the Length (for 7mm Satin Stitch Patterns Only)

When 7mm satin stitch patterns are selected, press to choose from 5 automatic length settings, without changing the stitch zigzag width or stitch length settings.



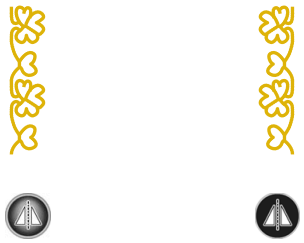
Creating a Vertical Mirror Image

To create a vertical mirror image, select a stitch pattern then press .



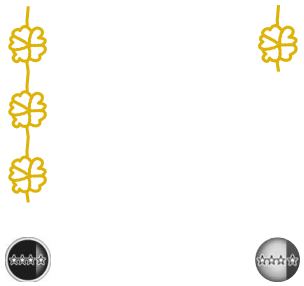
Creating a Horizontal Mirror Image

To create a horizontal mirror image, select a stitch pattern then press .



Sewing a Pattern Continuously

Press to select continuous sewing or single stitch sewing.

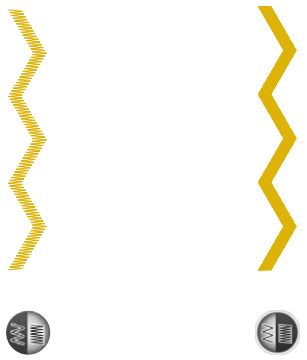


Memo

- To finish a complete motif while sewing the pattern continuously, you can press the key while sewing. The machine will automatically stop when the motif is finished.

Changing Thread Density (for Satin Stitch Patterns Only)

After selecting a satin stitch pattern, press to select your preferred thread density.



⚠ CAUTION

- **If the stitches bunch when thread density is changed to , return the thread density to . If you continue sewing when the stitches are bunched, the needle may bend or break.**

Memo

- Even if you select a new pattern after changing the thread density, the thread density remains the same until you change it.
- You cannot change thread density for a combined pattern after additional patterns are added.

Returning to the Beginning of the Pattern

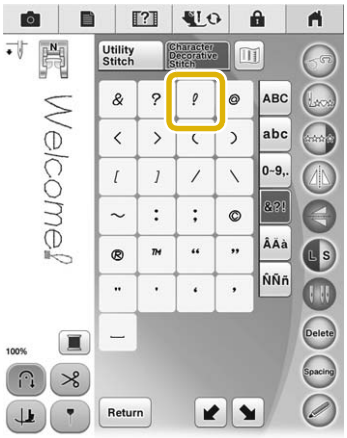
When sewing character/decorative stitches, you can return to the beginning of the pattern after trial sewing or when the stitching is sewn incorrectly.

1 Press the "Start/Stop" button to stop the machine, and then press .

→ Sewing returns to the beginning of the selected pattern ("W") from the point where sewing was stopped.

Memo

- If this key is pressed while sewing is stopped, patterns can be added at the end of a combined stitch pattern. (In this example, "!" is added.)



2 Press the "Start/Stop" button to continue sewing.

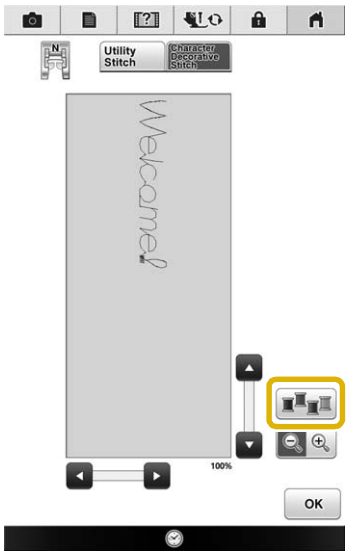
Checking the Image

You can display an approximate size image of the selected stitch pattern. You can also check and change the colors of the image on the screen.

1 **Press .**

→ An image of the selected pattern is displayed.

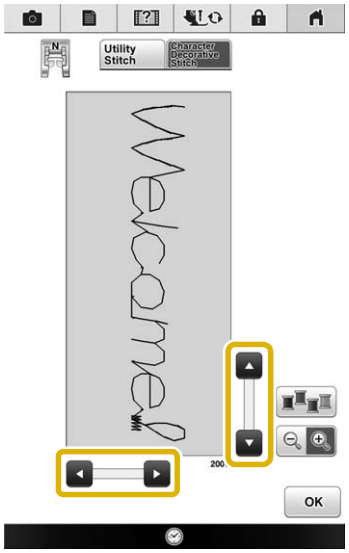
2 **Press to change the thread color in the image to red, blue, black or yellow.**



→ The color changes every time you press the button.

3 **Press to display the enlarged image.**

4 **Use / / / to view any part of the image that extends out of the viewable display area.**



5 **Press OK to return to the original screen.**

Memo

- You can also sew from this screen when the presser foot symbol is displayed.
- Image of some patterns will display in default size only.

COMBINING STITCH PATTERNS

You can combine many varieties of stitch patterns, such as character stitches, cross stitches or satin stitches. You can also combine stitch patterns of different sizes, mirror image stitch patterns, and others.

Before Combining

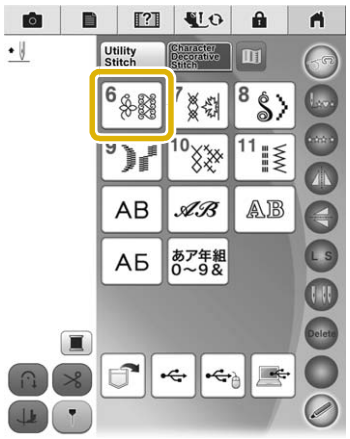
Single stitch sewing is automatically selected for sewing combined patterns. If you want to sew the pattern continuously, press after finishing the stitch pattern combination.

When changing sizes, creating mirror images, or making other adjustments to a combined stitch pattern, be sure to edit the selected stitch pattern before selecting the next one. You cannot edit a stitch pattern once the next stitch pattern is selected.

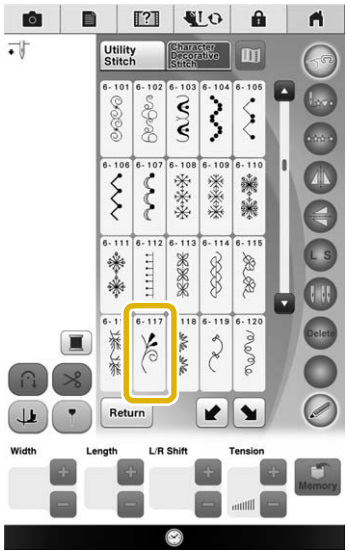
Combining Various Stitch Patterns

Example:

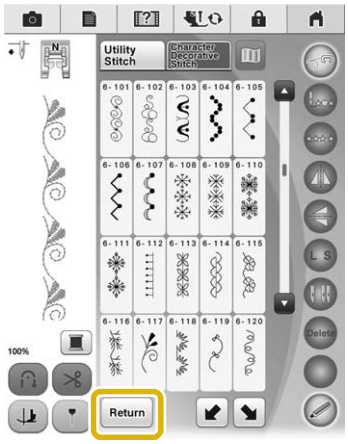
1 **Press** .



2 **Select** .

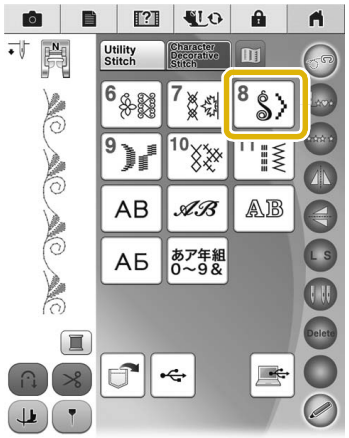


3 **Press** Return.

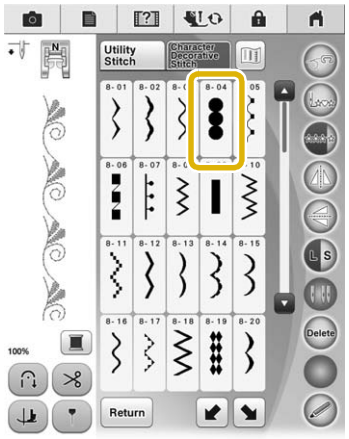


→ The display returns to the stitch selection screen.

4 **Press** .



5 **Select** .



6 **Press** **to sew the pattern continuously.**

Memo

- Patterns are deleted individually starting with the last pattern entered by pressing Delete.

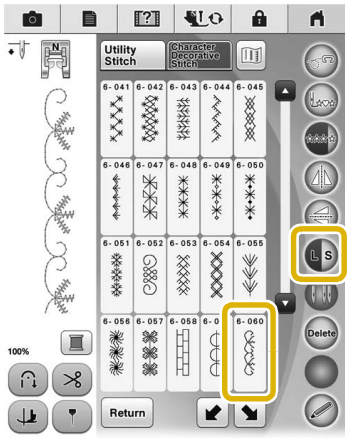
Combining Large and Small Stitch Patterns

Example:

1 **Press** .

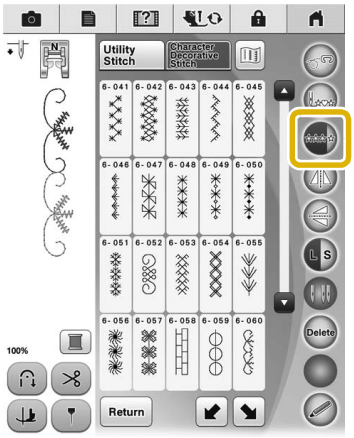
→ The large size stitch will be selected.

2 **Press** **again, then press** **to select the small size.**



→ The pattern is displayed in a smaller size.

3 Press to sew continuously.



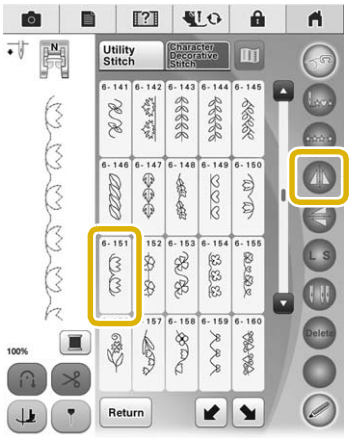
→ The entered pattern is repeated.

Combining Horizontal Mirror Image Stitch Patterns

Example:

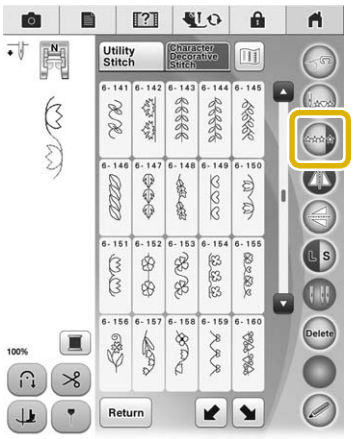
1 Press .

2 Press again, then press .



→ The pattern is flipped along a vertical axis.

3 Press .



→ The entered pattern is repeated.

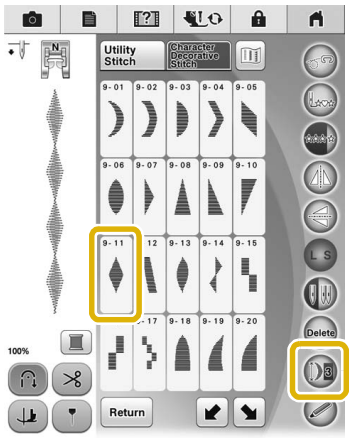
Combining Stitch Patterns of Different Length

Example:

1 **Press** **, then press** **once.**

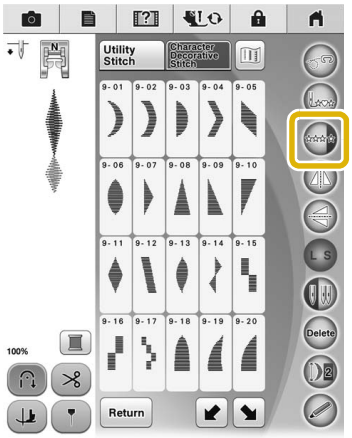
→ The length of the image is set to .

2 **Select** **again, then press** **3 times.**



→ The length of the image is set to .

3 **Press** .

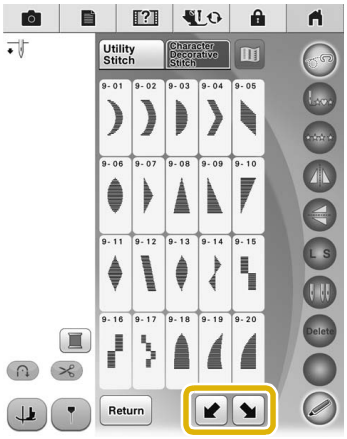


→ The entered pattern is repeated.

Making Step Stitch Patterns (for 7mm Satin Stitch Patterns Only)

You can use the keys with 7mm satin stitch patterns to create a step effect, also called step stitch patterns.

* Press to move the stitch pattern a distance equal to half of the stitch pattern's size to the left.
* Press to move the stitch pattern a distance equal to half of the stitch pattern's size to the right.



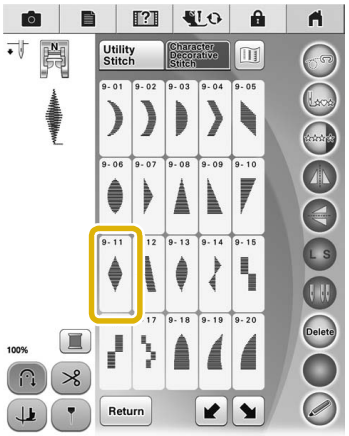
Example:

1 **Press** .

2 **Press** .

→ The next stitch pattern will move to the right.

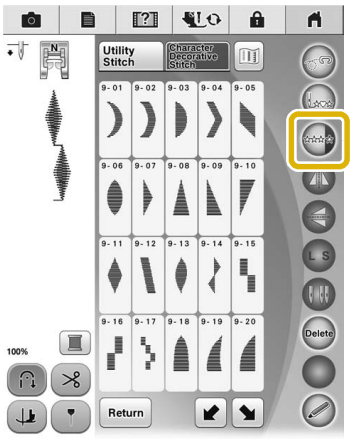
3 **Press** **again.**



4 **Press** .

→ The next stitch pattern will move to the left.

5 **Press** .



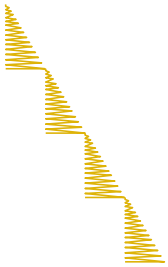
→ The entered pattern is repeated.

■ More Examples

Press → → → → .

Press → → → → → → → .

Press 9-09 → ↘ → ↘ → .



Press 9-06 → 9-06 → ↘ → ↘ → 9-11 → 9-11 → ↙ → ↙ → .

USING THE MEMORY FUNCTION

Stitch Data Precautions

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

■ Types of Stitch Data that can be Used

- In the Character/Decorative Stitch memory, ".pmv", ".pmx" and ".pmu" stitch data files can be used with this machine. ".pmu" stitch data files can be retrieved; however, when the machine is used to save the file, it is saved as a ".pmv" stitch data file.
- Using data other than that created using this machine or the machine which create ".pmu" data file, may cause the machine to malfunction.

■ Types of USB Devices/Media that can be Used

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

- USB Flash drive (USB Flash memory)
- USB Floppy disk drive

Stitch data can be recalled only from;

- USB CD-ROM, CD-R, CD-RW 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

- 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).

- To create file folders, use a computer.

■ Connecting Your Machine to the PC

- Compatible models:
  IBM PC with a USB port as standard equipment
  IBM PC-compatible computer equipped with a USB port as standard equipment
- Compatible operating systems:
  Microsoft Windows XP, Windows Vista, Windows 7, Windows 8

■ Precautions on Using the Computer to Create and Save Data

- If the name of the stitch 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 "_".
- Stitch data in a folder created in USB media can be retrieved.
- Do not create folders in "Removable Disk" on a computer. If stitch data is stored in a folder in "Removable Disk", that stitch data cannot be retrieved by the machine.

Saving Stitch Patterns in the Machine's Memory

You can save often used stitch patterns in the machine's memory. A total of about 1 MB of stitch patterns can be saved in the machine's memory.

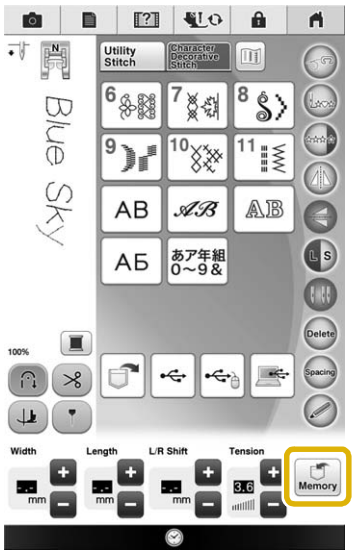
Note

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

Memo

- It takes a few seconds to save a stitch pattern.
- See page 190 for information on retrieving a saved stitch pattern.

1 Press [Memory].



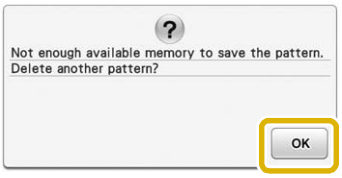
2 Press [ ].

* Press [OK] 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 following screen appears while you are trying to save a pattern on the machine's memory, the memory is too full to hold the currently selected stitch pattern. To save the stitch pattern in the machine's memory, you have to delete a previously saved stitch pattern. Press [OK], and then see the description in step 3 of "Retrieving Stitch Patterns from the Machine's Memory" on page 191.



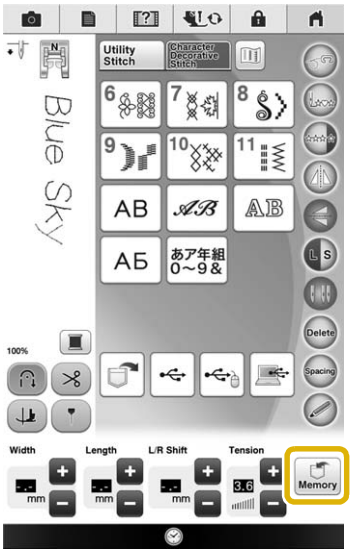
Saving Stitch Patterns to USB Media

When sending stitch patterns from the machine to USB media, plug the USB media into the machine's top USB port.

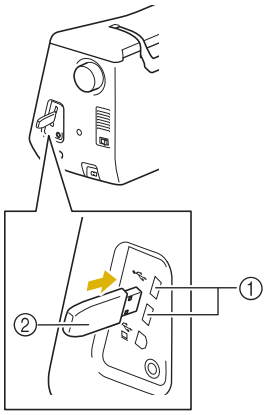
Memo

- 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 can be inserted or removed at any time.

1 Press [Memory].



2 Insert the USB media into either of the USB ports on the machine.



① USB port
② USB media

3 Press [USB].

* Press [USB mouse] when connecting the USB media to the USB port for mouse.

* Press [OK] 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 while "Saving" screen is displayed. You will lose some or all of the pattern you are saving.

Saving Stitch Patterns in the Computer

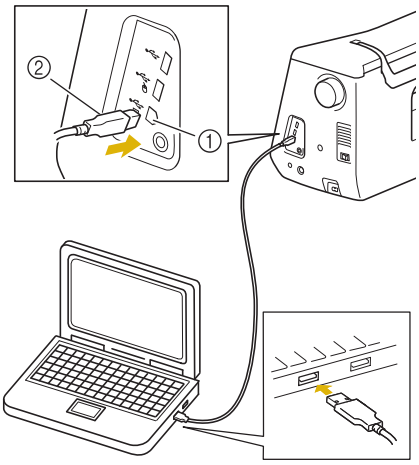
Using the included USB cable, the machine can be connected to your computer, and the stitch patterns can be temporarily retrieved from and saved in the "Removable Disk" folder in your computer. A total of about 3 MB of stitch patterns can be saved in the "Removable Disk", but the saved stitch patterns are deleted when the machine is turned OFF.

> **Note**
> • Do not turn the main power to OFF while the "Saving" screen is displayed. You will lose the stitch pattern you are saving.

1 Plug the USB cable connector into the corresponding USB ports for the computer and for the machine.

2 Turn on your computer and select "Computer (My Computer)".

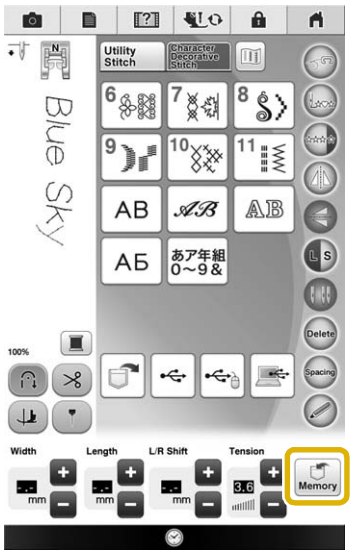
* The USB cable can be plugged into the USB ports on the computer and machine whether or not they are turned on.



① USB port for computer
② USB cable connector
→ The "Removable Disk" icon will appear in "Computer (My Computer)" on the computer.

> **Note**
> • The connectors on the USB cable can only be inserted into a port in one direction. If it is difficult to insert the connector, do not insert it with force and check the orientation of the connector.
> • For details on the position of the USB port on the computer (or USB hub), refer to the instruction manual for the corresponding equipment.

3 **Press** Memory.

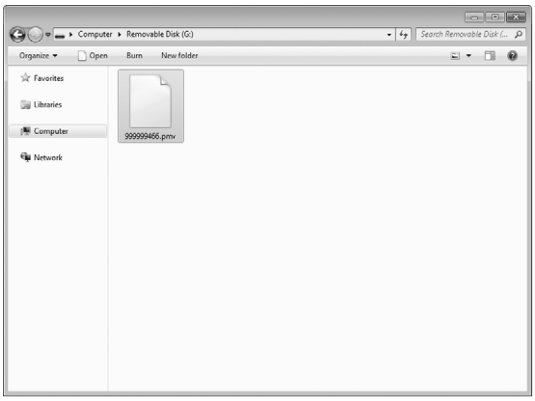


4 **Press** .

* Press OK to return to the original screen without saving.

→ The stitch pattern will be temporarily saved to "Removable Disk" under "Computer (My Computer)".

5 **Select the stitch pattern's .pmv file and copy the file to the computer.**

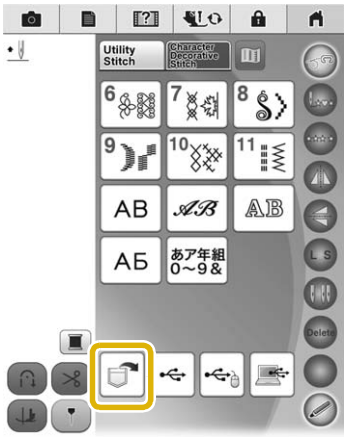


Note

- Do not turn off the machine while the "Saving" screen is showing. You may lose the data.

Retrieving Stitch Patterns from the Machine's Memory

1 **Press** .

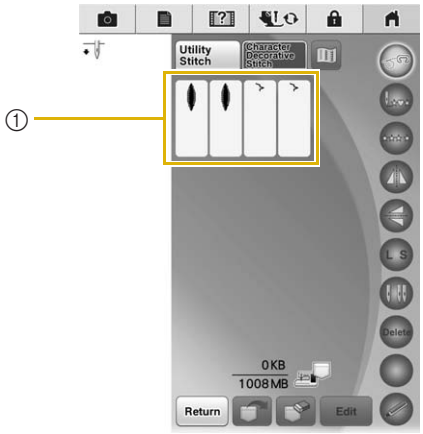


→ The pocket selection screen appears.

2 **Choose a stitch pattern to retrieve.**

* If the entire saved stitch pattern is not displayed, press the thumbnail.

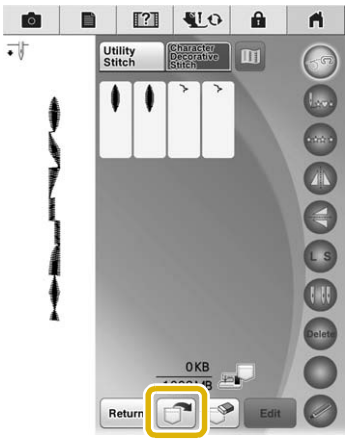
* Press Return to return to the original screen without saving.



① Saved stitch patterns

3 **Press .**

* Press to delete the stitch pattern.

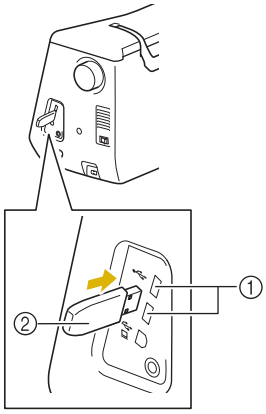


→ The selected stitch pattern is retrieved and the sewing screen will be displayed.

Recalling from USB Media

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

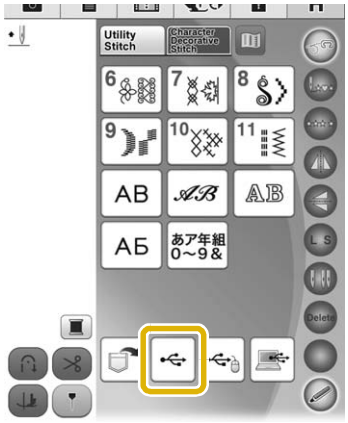
1 **Insert the USB media into either of the USB ports on the machine (see page 188).**



① USB port
② USB media

2 **Press .**

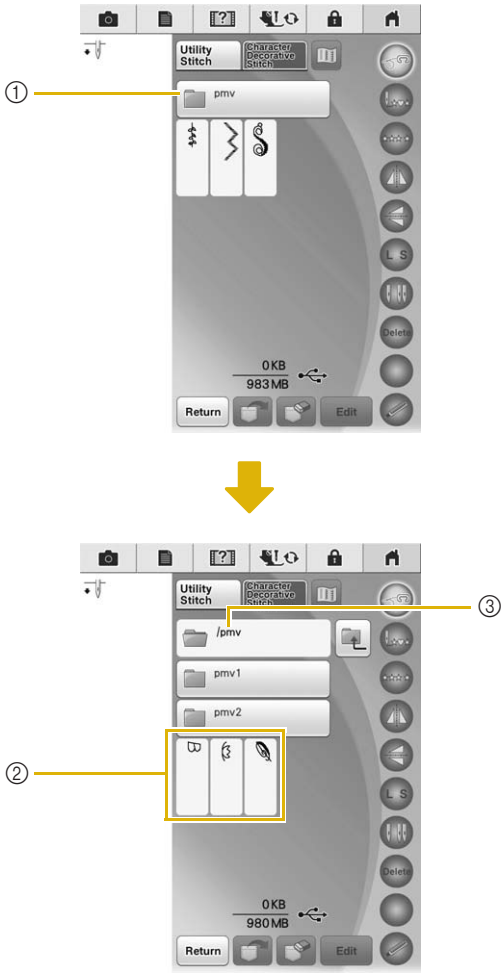
* Press when connecting the USB media to the USB port for mouse.



→ Stitch patterns and a folder in a top folder are displayed.

3 **Press [ ] when there is a subfolder to sort two or more stitch patterns to USB media, the stitch pattern in the subfolder is displayed.**

* Press [Return] to return to the original screen without recalling.



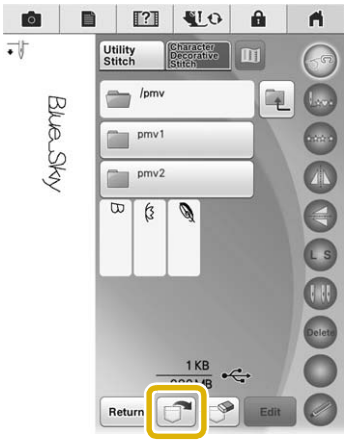
① Folder name
② Stitch patterns in a folder show only the first pattern of any combined patterns.
③ Path
→ The path shows the current folder at the top of the list.
Stitch patterns and a subfolder within a folder are displayed.

* Press [ ] to return to the previous folder.
* Use the computer to create folders. Folders cannot be created with the machine.

4 **Press the key of the stitch pattern you want to recall.**

5 **Press [ ].**

* Press [ ] to delete the stitch pattern. The pattern will be deleted from the USB media.

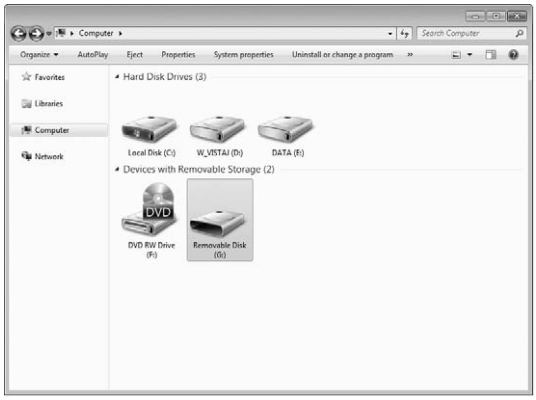


→ The selected stitch pattern is recalled and the sewing screen will be displayed.

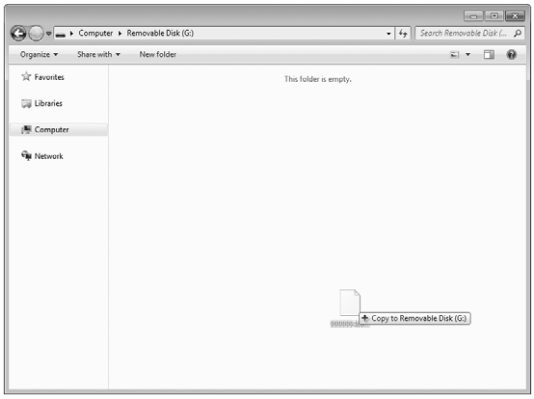
Recalling from the Computer

1 **Plug the USB cable connector into the corresponding USB ports for the computer and for the machine (see page 189).**

2 **On the computer, open "Computer (My Computer)" then go to "Removable Disk".**



3 Move/copy the pattern data to "Removable Disk".

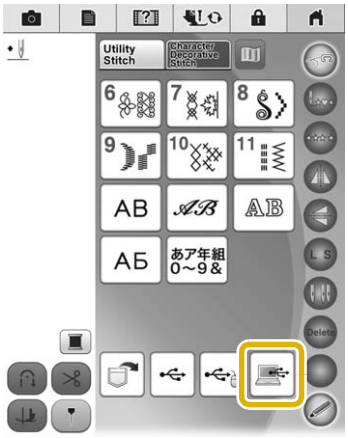


→ Stitch pattern data in "Removable Disk" is written to the machine.

Note

- While data is being written, do not disconnect the USB cable.
- Do not create folders within "Removable Disk". Since folders are not displayed, stitch pattern data within folders cannot be recalled.

4 Press .



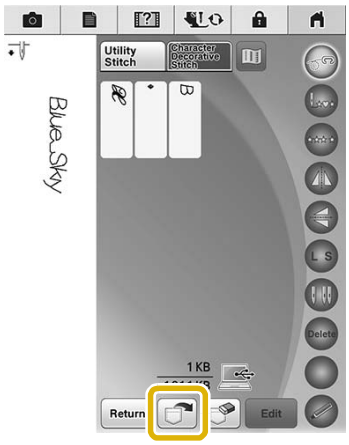
→ The stitch patterns in the computer are displayed on the selection screen.

5 Press the key of the stitch pattern you want to recall.

* Press Return to return to the original screen without recalling.

6 Press .

* Press to delete the stitch pattern.
The pattern will be deleted from the "Removable Disk" folder in your computer.



→ The selected stitch pattern is recalled and the sewing screen will be displayed.

Note

- The pattern recalled from the computer is only temporarily written to the machine. It is erased from the machine when the machine is turned off. If you wish to keep the stitch pattern, store it in the machine ("Saving Stitch Patterns in the Machine's Memory" on page 188).