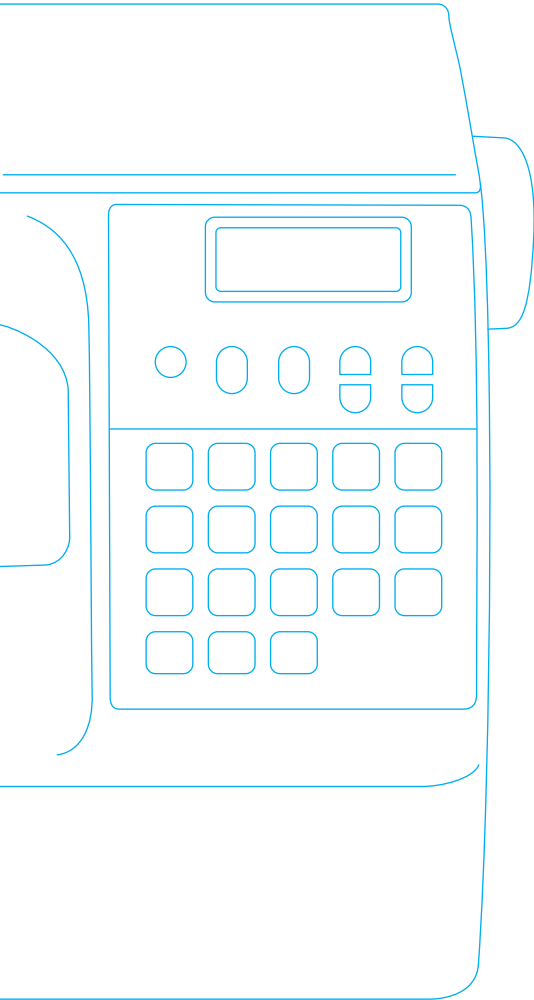


Operation Manual

Sewing Machine

Product Code: 885-U26



1 GETTING READY

2 SEWING BASICS

3 UTILITY STITCHES

4 APPENDIX

Be sure to read this document before using the machine.
We recommend that you keep this document nearby 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 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** 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 dealer or service center for examination, repair, electrical or mechanical adjustment.
 - While the machine is stored or in use if you notice anything unusual, such an odor, heat, discoloration or deformation, stop using the machine and immediately unplug the power cord.
 - When transporting the machine, be sure to carry it by its handle. Lifting the machine by any other part may damage the machine or result in the machine falling, which could cause injuries.
 - When lifting the machine, be careful not to make any sudden or careless movements, otherwise you may injure your back or knees.
- 4** 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 machine on an unstable surface, such as an unsteady or slanted table, otherwise the machine may fall, resulting in injuries.

5 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 freehand stitching so that you do not deflect the needle and cause it to break.

6 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 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.

7 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 operation manual when replacing or installing any assemblies, the presser feet, needle, or other parts to assure correct installation.

8 For repair or adjustment:

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

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

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

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

For additional product information, visit our web site at www.brother.com

SAVE THESE INSTRUCTIONS


This machine is intended for household use.

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

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

FOR USERS IN THE UK, EIRE, MALTA AND CYPRUS ONLY

IMPORTANT

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

Contents

IMPORTANT SAFETY INSTRUCTIONS	1
Introduction	7
Sewing Machine Features	7
Accessories	8
Included accessories	8
Optional accessories	9
Names of Machine Parts and Their Functions	10
Front view	10
Needle and presser foot section	11
Right-side/rear view	11
Operation buttons	12
Operation panel	13

GETTING READY 15

Turning the Machine On/Off.....	16
Power supply precautions	16
Turning on the machine	17
Turning off the machine	17
Understanding the LCD Screens.....	18
Function modes.....	19
Adjusting the brightness of the LCD	20
Changing the screen language.....	20
Winding/Installing the Bobbin.....	21
Bobbin precautions	21
Winding the bobbin	21
Installing the bobbin	25
Upper Threading	27
Threading the upper thread	27
Threading the needle	30
Threading the needle manually (without using the needle threader)	32
Pulling up the bobbin thread.....	32
Replacing the Needle	34
Needle precautions	34
Needle types and their uses.....	35
Checking the needle	36
Replacing the needle.....	36
Replacing the Presser Foot	38
Presser foot precautions	38
Replacing the presser foot	38
Adjusting the pressure of the presser foot	40
Removing the presser foot holder	40
Using optional the walking foot	41
Stitching cylindrical pieces.....	42

SEWING BASICS 43

Sewing.....	44
General sewing procedure	44
Positioning the fabric	45
Starting to sew.....	46
Securing the stitching	48
Cutting the thread	49
Adjusting the Thread Tension	51
Changing the tension of the upper thread.....	51

Adjusting the Stitch Width and Length	52
Adjusting the stitch width	52
Adjusting the stitch length	53
Useful Functions	54
Automatically sewing reverse/reinforcement stitches	54
Automatically cutting the thread	54
Changing the needle stop position	55
Saving frequently used stitch settings.....	55
Useful Sewing Tips	57
Trial sewing	57
Changing the sewing direction	57
Sewing curves	57
Sewing thick fabrics	58
Sewing thin fabrics.....	58
Sewing stretch fabrics.....	58
Sewing an even seam allowance.....	59
Sewing hook-and-loop fastener	59

UTILITY STITCHES **61**

Selecting Stitching	62
Selecting a stitch	62
Overcasting Stitches	63
Sewing overcasting stitches using overcasting foot “G”	63
Sewing overcasting stitches using zigzag foot “J”	64
Sewing overcasting stitches using the optional side cutter	65
Basic Stitching	67
Basting	67
Basic stitching.....	67
Blind Hem Stitching	69
Buttonhole Stitching	71
Buttonhole sewing	71
Button sewing	75
Zipper Insertion	78
Inserting a centered zipper	78
Inserting a side zipper	79
Sewing Stretch Fabrics and Elastic Tape	82
Stretch stitching.....	82
Elastic attaching.....	82
Appliqué, Patchwork and Quilt Stitching	84
Appliqué stitching	84
Patchwork (crazy quilt) stitching	85
Quilting	85
Free-motion quilting.....	86
Satin stitching using the sewing speed controller.....	88
Reinforcement Stitching	89
Triple stretch stitching.....	89
Bar tack stitching.....	89
Darning.....	91
Decorative Stitching	93
Fagoting	93
Scallop stitching.....	94
Smocking	94
Heirloom stitching	95

APPENDIX **97**

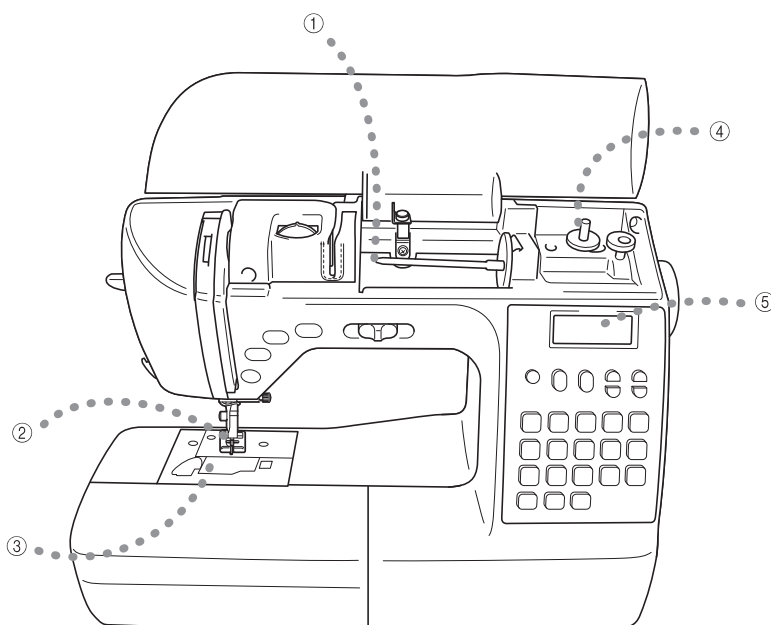
Stitch Settings	98
Utility stitches	98

Care and Maintenance	100
Restrictions on oiling.....	100
Cleaning the machine surface	100
Cleaning the race	100
Troubleshooting	102
Frequent troubleshooting topics	102
Upper thread tightened up	102
Tangled thread on wrong side of fabric	103
Incorrect thread tension	105
Fabric is caught in the machine and cannot be removed	106
When the thread became tangled under the bobbin winder seat	109
List of symptoms	111
Error messages	116
Operation beep	117
Cancelling the operation beep	117
Attaching the top cover	117
Index	118

Introduction

Thank you for purchasing this sewing machine. Before using this sewing machine, carefully read the "IMPORTANT SAFETY INSTRUCTIONS" (page 1), 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.

Sewing Machine Features



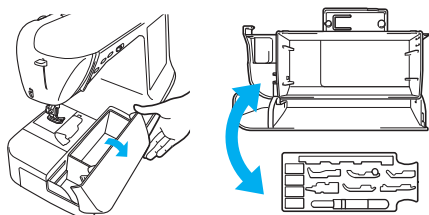
- ① **Easy upper threading**
Since the spool can be installed at the front of the sewing machine, the upper thread can easily be threaded. In addition, the needle can be threaded with a simple operation (page 27).
- ② **Automatic thread-cutting**
The sewing machine can be set to automatically cut the thread at the end of the stitching (page 54).
- ③ **One-touch lower threading**
You can start sewing without pulling up the bobbin thread (page 25).
- ④ **Simple bobbin-winding**
The bobbin can quickly and easily be wound with thread (page 21).
- ⑤ **Built-in stitches**
You can select from the built-in stitches available, including utility stitches and decorative stitches.

Accessories

After opening the box, check that the following accessories are included. If any item is missing or damaged, contact your dealer.

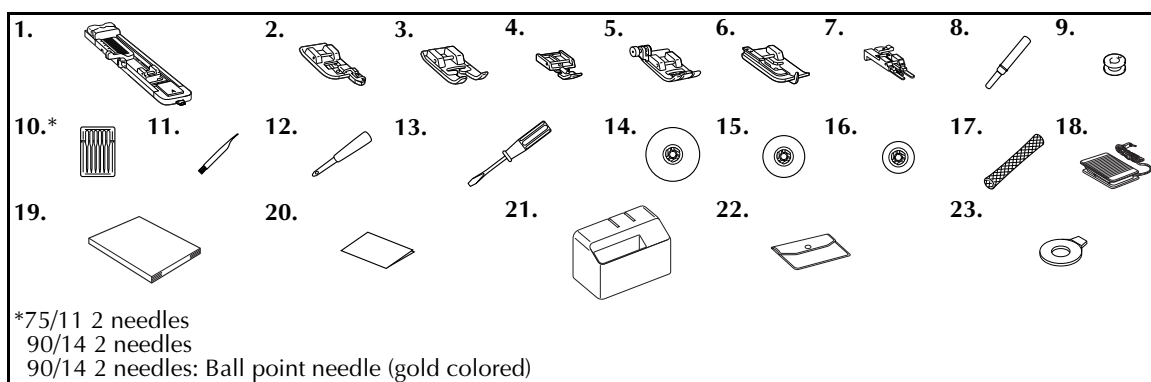
Included accessories

The following items should also be included in the box.



Note

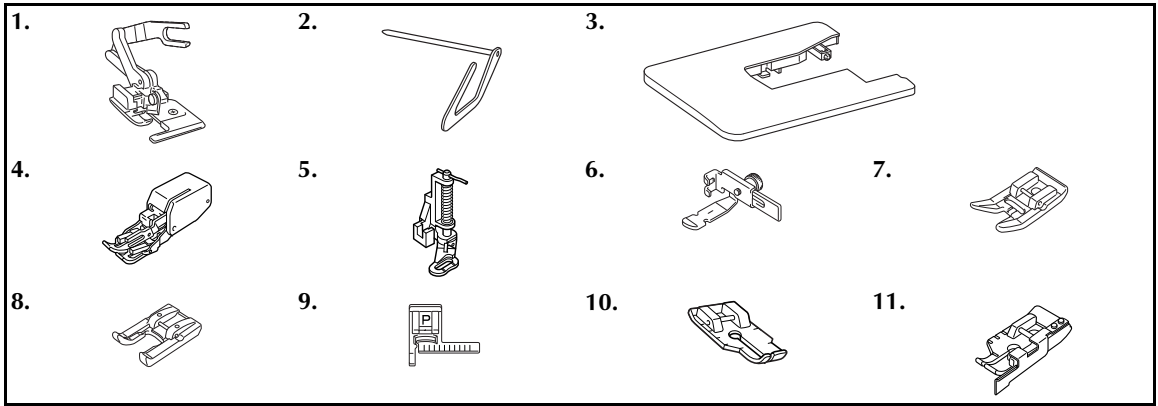
- The screw for the presser foot holder is available through your authorized dealer. (Part code: 132730-122)
- The organized accessory tray is available through your authorized dealer. (Part code: XC4489-051)



No.	Part Name	Part Code		No.	Part Name	Part Code	
		Americas	Others			Americas	Others
1	Buttonhole foot "A"		XC2691-023	14	Spool cap (large)		130012-024
2	Overcasting foot "G"		XE6305-101	15	Spool cap (medium)(on machine)		XE1372-001
3	Monogramming foot "N"		XD0810-031	16	Spool cap (small)		130013-124
4	Zipper foot "I"		X59370-021	17	Spool net		XA5523-020
5	Zigzag foot "J" (on machine)		XZ5134-001	18	Foot controller		XD0496-221 (EU area) XC6651-321 (other areas)
6	Blind stitch foot "R"		XE2650-001	19	Operation manual		XF5782-001
7	Button fitting foot "M"		XE2643-001	20	Quick reference guide		XF5788-001
8	Seam ripper		XZ5082-001	21	Hard case		XC9701-052
9	Bobbin x 4 (One is on machine.)	SA156	SFB (XA5539-151)	22	Accessory bag		XC4487-021
10	Needle set		X58358-021	23	Disc-shaped screwdriver		XC1074-051
11	Cleaning brush		X59476-021				
12	Eyelet punch		XZ5051-001				
13	Screwdriver (large)		XC8349-021				

Optional accessories

The following are available as optional accessories to be purchased separately.



No.	Part Name	Part Code		No.	Part Name	Part Code	
		Americas	Others			Americas	Others
1	Side cutter	SA177	F054 (XC3879-152)	7	Non stick foot	SA114	F007N (XC1949-052)
2	Quilting guide	SA132	F016N (XC2215-052)	8	Open toe foot	SA186	F060 (XE1094-101)
3	Wide table	SA551	WT5 (XC9567-222)			SA147	F027N (XC1964-052)
4	Walking foot	SA140	F033N (XC2214-052)	9	Stitch guide foot "P"	SA160	F035N (XC1969-052)
5	Quilting foot	SA129	F005N (XC1948-052)	10	1/4 inch quilting foot	SA125	F001N (XC1944-052)
6	Adjustable zipper/piping foot	SA161	F036N (XC1970-052)	11	1/4 inch quilting foot with guide	SA185	F057 (XC7416-252)



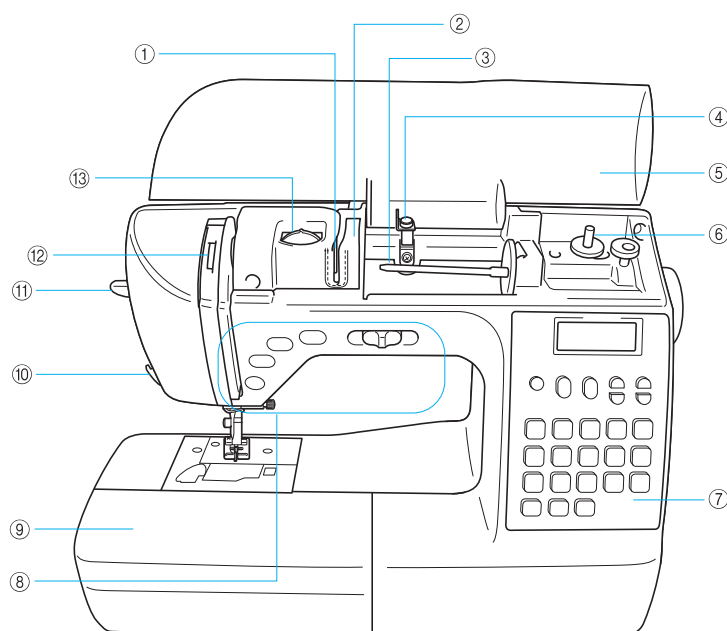
Memo

- To obtain optional accessories or parts, contact your sales representative or the nearest authorized service center.

Names of Machine Parts and Their Functions

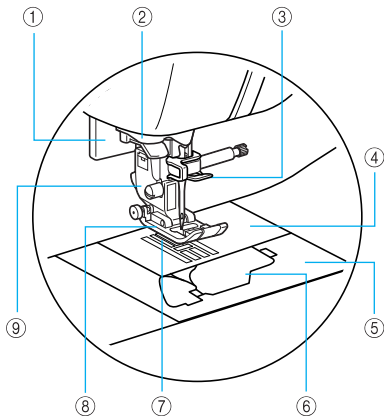
The names of the various parts of the sewing machine and their functions are described below. Before using the sewing machine, carefully read these descriptions to learn the names of the machine parts.

Front view



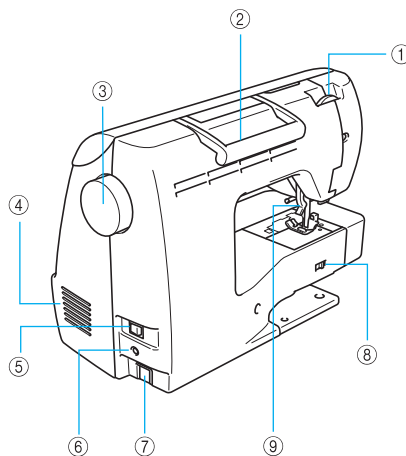
- ① **Thread guide plate**
Pass the thread under the thread guide plate.
- ② **Thread guide cover**
Pass the thread behind the thread guide cover when threading the upper thread.
- ③ **Spool pin**
Place a spool of thread on the spool pin.
- ④ **Bobbin winding thread guide and pre-tension disk**
Pass the thread under this thread guide and around the pre-tension disk when winding the bobbin thread.
- ⑤ **Top cover**
Open the top cover to place the spool of thread on the spool pin.
- ⑥ **Bobbin winder**
Use the bobbin winder when winding the bobbin.
- ⑦ **Operation panel**
Use for stitch selection and various stitch functions. (page 13)
- ⑧ **Operation buttons and sewing speed controller**
Use these buttons and the slide to operate the sewing machine. (page 12)
- ⑨ **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.
- ⑩ **Thread cutter**
Pass the threads through the thread cutter to cut them.
- ⑪ **Needle threader lever**
Use the needle threader to thread the needle.
- ⑫ **Thread take-up lever check window**
Look through the window to check the position of the take-up lever.
- ⑬ **Thread tension dial**
Use the thread tension dial to adjust the tension of the upper thread.

Needle and presser foot section



- ① **Buttonhole lever**
The buttonhole lever is used with the one-step buttonhole foot to create buttonholes.
- ② **Thread guide disk**
Pass the thread through the thread guide disk when using the needle threader to thread the needle.
- ③ **Needle bar thread guide**
Pass the upper thread through the needle bar thread guide.
- ④ **Needle plate**
The needle plate is marked with guides to help sew straight seams.
- ⑤ **Needle plate cover**
Remove the needle plate cover to clean the bobbin case and race.
- ⑥ **Bobbin cover**
Open the bobbin cover to set the bobbin.
- ⑦ **Feed dogs**
The feed dogs feed the fabric in the sewing direction.
- ⑧ **Presser foot**
The presser foot applies pressure consistently on the fabric as sewing takes place. Attach the appropriate presser foot for the selected stitch.
- ⑨ **Presser foot holder**
The presser foot is attached onto the presser foot holder.

Right-side/rear view



- ① **Presser foot dial**
Use the presser foot dial to adjust the amount of pressure that the presser foot applies to the fabric.
- ② **Handle**
Carry the sewing machine by its handle when transporting the machine.
- ③ **Handwheel**
Turn the handwheel toward you to raise and lower the needle. The handwheel should be turned towards you (counterclockwise).
- 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.
- ⑥ **Foot controller jack**
Insert the plug on the end of the foot controller cable into the foot controller jack.
- ⑦ **Power supply jack**
Insert the plug on the power cord into the power supply jack.
- ⑧ **Feed dog position switch**
Use the feed dog position switch to lower the feed dogs.
- ⑨ **Presser foot lever**
Raise and lower the presser foot lever to raise and lower the presser foot.

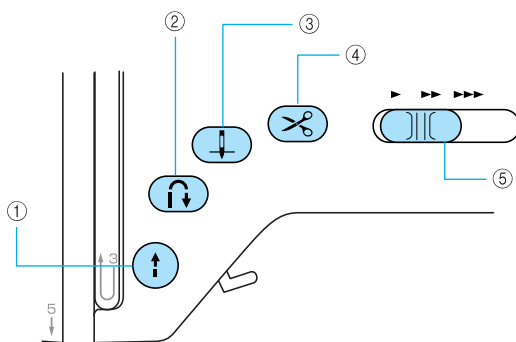


Memo

- Refer to pages 7 through 13 while you are learning to use your machine.

Operation buttons

The operation buttons help you to easily perform various basic sewing machine operations.



① “Start/Stop” button

Press the “Start/Stop” button to start or stop sewing. The machine sews at a slow speed at the beginning of sewing while the button is depressed. When sewing is stopped, the needle is lowered in the fabric. For details, refer to “Starting to sew” (page 46).

The button lights up in green, red or orange, depending on how the sewing machine is being operated.

Green: When the machine is ready to start sewing or while it is sewing

Red: When the machine is not ready to start sewing

Orange: When the bobbin winder shaft is moved to the right for winding the bobbin thread onto the bobbin

② “Reverse/Reinforcement Stitch” button

Press the “Reverse/Reinforcement Stitch” button to sew reverse stitches or reinforcement stitches. Reverse stitches are sewn by keeping the button pressed down to sew in the opposite direction. Reinforcement stitches are sewn by sewing 3 to 5 stitches on top of each other. For details, refer to “Securing the stitching” (page 48).

③ “Needle Position” button

Press the “Needle Position” button to raise or lower the needle. Pressing the button twice sews one stitch.


④ “Thread Cutter” button

Press the “Thread Cutter” button after stopping sewing to cut both the upper and the bobbin threads. For details, refer to “Cutting the thread” (page 49).


⑤ Sewing speed controller

Slide the sewing speed controller to adjust the sewing speed.

CAUTION

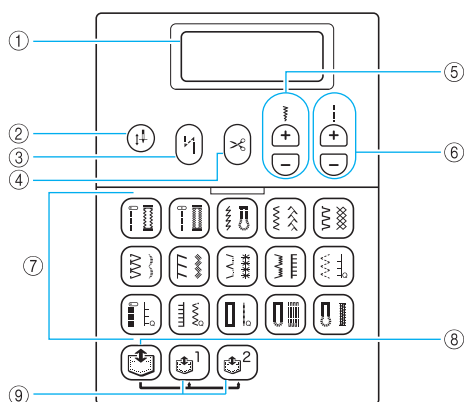
- Do not press  (“Thread Cutter” button) after the threads have already been cut, otherwise the needle may break, the threads may become tangled or damage to the machine may occur.

Note

- Do not press  (“Thread Cutter” button) if there is no fabric under the presser foot or while the machine is sewing, otherwise damage to the machine may occur.
- When cutting thread thicker than #30, nylon thread or other special threads, use the thread cutter on the side of the machine. For details, refer to “Cutting the thread” (page 49).

Operation panel

The operation panel, located on the front at the right of the sewing machine, consists of the LCD (liquid crystal display) and keys for specifying various sewing settings.



- ① **LCD (liquid crystal display)**
Settings for the selected stitch and error messages for incorrect operations appear in the LCD. For details, refer to “Understanding the LCD Screens” (page 18).
- ② **Needle stop position key**
Press this key to switch the needle stop position at the end of stitching between up or down (in the fabric).
- ③ **Automatic reverse/reinforcement stitch key**
Press this key to select whether reverse/reinforcement stitches are automatically sewn at the beginning and end of stitching.
- ④ **Automatic thread cutting key**
Press this key to select whether the thread is automatically cut at the end of stitching.
- ⑤ **Stitch width keys**
Press these keys to adjust the width of stitches, such as the zigzag stitch, in addition to the needle position for straight stitches.
- ⑥ **Stitch length keys**
Press these keys to adjust the stitch length.
In addition, these keys can be pressed to select settings for the machine’s function modes.
- ⑦ **Stitch selection keys**
Press a key to select the stitch that you wish to use. 30 stitches are available.
In addition, the five stitch selection keys in the top row can be used to switch the machine to the various function modes.
- ⑧ **Memory key**
Use this key together with the pocket keys to save stitch settings.
- ⑨ **Pocket keys 1 and 2**
Use these keys together with the memory key to save stitch settings (stitch pattern, stitch width/needle position, stitch length, needle stop position, automatic reverse/reinforcement stitching turned on or off and automatic thread cutting turned on or off). One set of stitch settings can be saved with each of the pocket keys (1 and 2). In addition, use these keys to recall the saved stitch settings.

1

GETTING READY

The various preparations required before starting to sew are described in this chapter.

Turning the Machine On/Off	16
Power supply precautions	16
Turning on the machine	17
Turning off the machine	17
Understanding the LCD Screens.....	18
Function modes	19
Adjusting the brightness of the LCD	20
Changing the screen language	20
Winding/Installing the Bobbin.....	21
Bobbin precautions	21
Winding the bobbin	21
Installing the bobbin	25
Upper Threading	27
Threading the upper thread.....	27
Threading the needle.....	30
Threading the needle manually (without using the needle threader).....	32
Pulling up the bobbin thread.....	32
Replacing the Needle	34
Needle precautions	34
Needle types and their uses.....	35
Checking the needle.....	36
Replacing the needle	36
Replacing the Presser Foot	38
Presser foot precautions	38
Replacing the presser foot.....	38
Adjusting the pressure of the presser foot	40
Removing the presser foot holder	40
Using optional the walking foot	41
Stitching cylindrical pieces.....	42

Turning the Machine On/Off

This section explains how to turn the sewing machine on and off.

Power supply precautions

Be sure to observe the following precautions concerning the power supply.

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 supply jack on the machine.
- Do not insert the plug on the power cord into an electrical outlet that is in poor condition.
- Turn off the main power 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

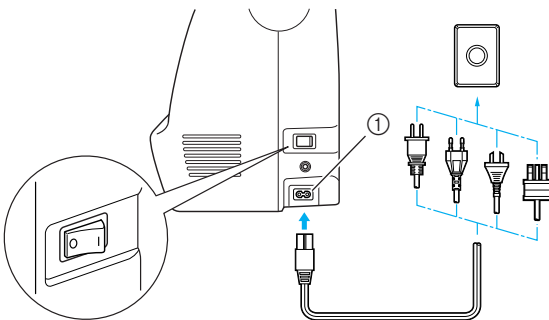
CAUTION

- 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 off the main power 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 and cause fire or electric shock. If the cord or plug is damaged, take the machine to your authorized dealer for repairs before continuing use.
- Unplug the power cord if the machine is not to be used for a long period of time. Otherwise a fire may result.

Turning on the machine

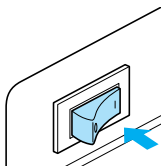
Prepare the included power cord.

- 1 Make sure that the sewing machine is turned off (the main power switch is set to “○”), and then plug the power cord into the power supply jack on the right side of the machine.
- 2 Insert the plug of the power cord into a household electrical outlet.



① Power supply jack

- 3 Press the right side of the main power switch on the right side of the machine (set it to “I”).



▶ The sewing lamp and the LCD come on when the machine is turned on.



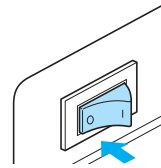
Memo

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

Turning off the machine

When you are finished using the sewing machine, turn it off. In addition, before transporting the sewing machine to another location, be sure to turn it off.

- 1 Make sure that the machine is not sewing.
- 2 Press the left side of the main power switch on the right side of the machine (set it to “○”).



▶ The sewing lamp and the LCD go off when the machine is turned off.

- 3 Unplug the power cord from the electrical outlet.
Grasp the plug when unplugging the power cord.
- 4 Unplug the power cord from the power supply jack.

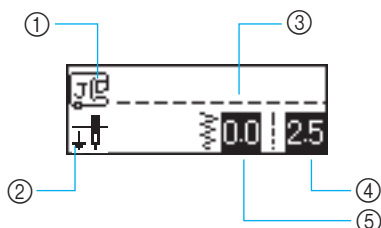


Note

- If a power outage occurs while the sewing machine is being operated, turn off the sewing machine and unplug the power cord. When restarting the sewing machine, follow the necessary procedure to correctly operate the machine.
(For U.S.A. only)
- This appliance has a polarized plug (one blade wider than the other). To reduce the risk of electrical shock, this plug is intended to fit in a polarized 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.

Understanding the LCD Screens

The LCD screen, located on the front at the right of the sewing machine, displays the settings for the selected stitch and error messages if operations are performed incorrectly. When the sewing machine is turned on, the LCD comes on and the following screen appears.



- ① Presser foot that should be used
- ② Needle stop position
- ③ Selected stitch
- ④ Stitch length (mm)
- ⑤ Stitch width (mm)








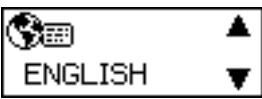




Memo

- For details on the error messages that appear when an operation is performed incorrectly, refer to “Error messages” (page 116).

Function modes

Various function modes are available on this sewing machine in order to change machine settings. While holding down the appropriate stitch selection key, turn on the sewing machine to switch the machine to the corresponding function mode.

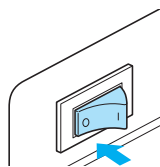
The machine setting that can be changed with the function modes and the operating procedures are described below. For details, see the reference page indicated.


Machine setting	Stitch selection key	Setting screen	Operating procedure	Reference
Changing the brightness of the LCD			<ol style="list-style-type: none"> 1. Use the stitch length keys to adjust the value so that it indicates the desired brightness. 2. Turn off the sewing machine, and then turn it on again. 	page 20
Switching on/off the operation beep when an error occurs			<ol style="list-style-type: none"> 1. Use the stitch length keys to select "ON" or "OFF". 2. Turn off the sewing machine, and then turn it on again. 	page 117
Changing the language of screens that appear in the LCD			<ol style="list-style-type: none"> 1. Use the stitch length keys to select the desired language. 2. Turn off the sewing machine, and then turn it on again. 	page 20
Switching on/off "stitch width control"			<ol style="list-style-type: none"> 1. Use the stitch length keys to select "ON" or "OFF". 2. Turn off the sewing machine, and then turn it on again. 	page 88
Erasing the stitch settings saved with both pocket keys 1 and 2			<ol style="list-style-type: none"> 1. Use the stitch length keys to select "OK". (To stop deleting the saved settings, select "Cancel".) 2. Turn off the sewing machine, and then turn it on again. 	page 56

Adjusting the brightness of the LCD

The brightness of the LCD can be adjusted.

- 1 If the sewing machine is on, turn it off.



- 2 While holding down stitch selection key , turn on the sewing machine. The following screen appears.



- 3 Press the stitch length keys to adjust the brightness. Press "+" to make it darker; press "-" to make it brighter. The selected setting appears in the LCD.

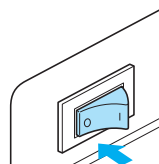


- 4 After adjusting the setting, turn off the sewing machine. The next time that the sewing machine is turned on, the LCD lights up with the selected brightness.

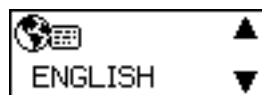
Changing the screen language

The language used in the screens that are displayed can be changed to one of the available: English, French, German, Dutch, Spanish, Italian, Danish, Norwegian, Finnish, Swedish, Portuguese, Russian, Japanese, Korean or others.

- 1 If the sewing machine is on, turn it off.



- 2 While holding down stitch selection key , turn on the sewing machine. The following screen appears.



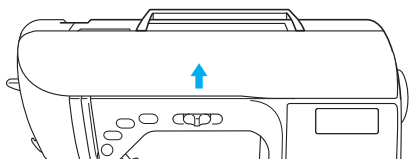
- 3 Press the stitch length keys to select a language.



- 4 After selecting a language, turn off the sewing machine. The next time that the sewing machine is turned on, screens appear in the LCD in the selected language.

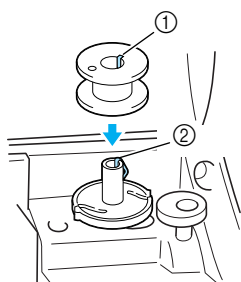
1 Turn on the sewing machine.

2 Open the top cover.



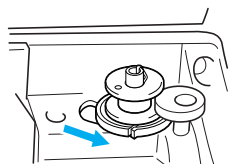
3 Place the bobbin on the bobbin winder shaft so that the spring on the shaft fits into the notch in the bobbin.


Press down on the bobbin until it snaps into place.



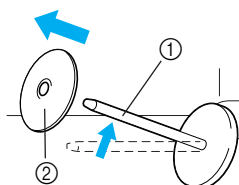
- ① Notch
- ② Bobbin winder shaft spring

4 Slide the bobbin winder in the direction of the arrow until it snaps into place.



-  ("Start/Stop" button) lights up in orange.

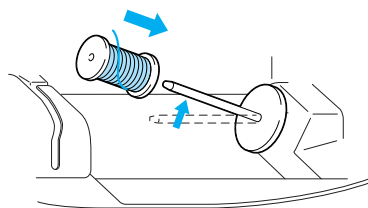
5 Remove the spool cap that is inserted onto the spool pin.



- ① Spool pin
- ② Spool cap

6 Place the spool of thread for the bobbin onto the spool pin.

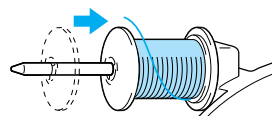
Slide the spool onto the pin so that the spool is horizontal and the thread unwinds to the front at the bottom.



- If the spool is not positioned so that the thread unwinds correctly, the thread may become tangled around the spool pin.

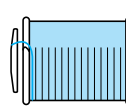
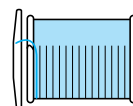
7 Slide the spool cap onto the spool pin.

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



CAUTION

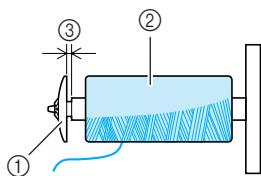
- If the spool or the spool cap is not positioned correctly, the thread may become tangled around the spool pin and the needle may break.
- Three spool cap sizes are available (large, medium and small), allowing you to choose a spool cap that best fits the size of spool being used. If the spool cap is too small for the spool being used, the thread may catch on the slit in the spool or the machine may be damaged.





Memo

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

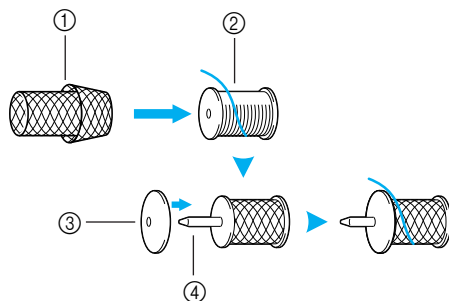


- ① Spool cap (small)
- ② Spool (cross-wound thread)
- ③ Space

- When using thread that winds off quickly, such as transparent nylon thread or metallic thread, place the spool net over the spool before placing the spool of thread onto the spool pin.

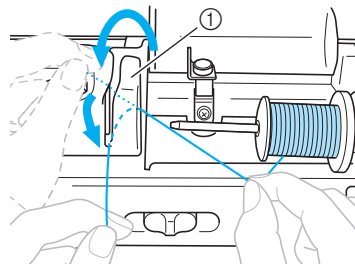
If the spool net is too long, fold it to fit the size of the spool.

When the spool net is used, the tension of the upper thread will slightly increase. Be sure to check the thread tension. For details, refer to “Adjusting the Thread Tension” (page 51).



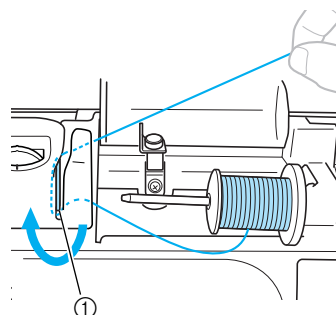
- ① Spool net
- ② Spool
- ③ Spool cap
- ④ Spool pin

- ⑧ While holding the thread near the spool with your right hand, as shown, pull the thread with your left hand, and then pass the thread behind the thread guide cover and to the front.



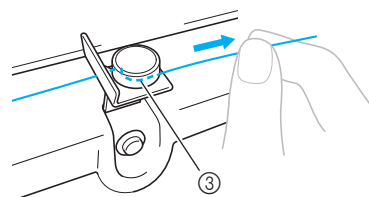
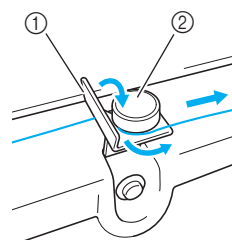
- ① Thread guide cover

- ⑨ Pass the thread under the thread guide plate, and then pull it to the right.



- ① Thread guide plate

- ⑩ Pass the thread under the hook on the thread guide, and then wind it counterclockwise under the pre-tension disk.



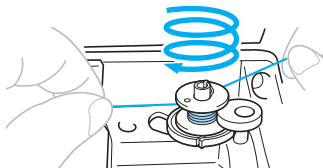
- ① Thread guide
- ② Pre-tension disk
- ③ Pull it in as far as possible



Note

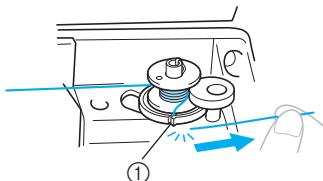
- Make sure that the thread passes under the pre-tension disk.

- 11** While holding the thread with your left hand, wind the thread that was pulled out clockwise around the bobbin five or six times with your right hand.

**Note**

- Make sure that the thread between the spool and the bobbin is pulled tight.
- Be sure to wind the thread clockwise around the bobbin, otherwise the thread will become wrapped around the bobbin winder shaft.

- 12** Pass the end of the thread through the guide slit in the bobbin winder seat, and then pull the thread to the right to cut it.



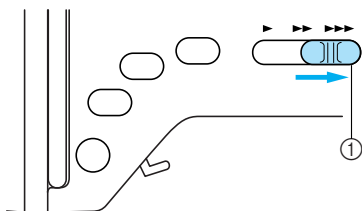
- ① Guide slit in bobbin winder seat (with built-in cutter)

▶ The thread is cut to a suitable length.

**CAUTION**

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

- 13** Slide the sewing speed controller to the right to increase the bobbin winding speed and slide to left to decrease.

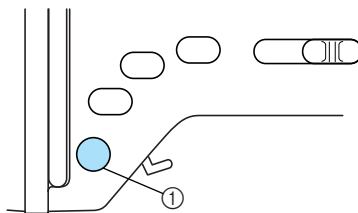


- ① Sewing speed controller

14

Press (“Start/Stop” button) once.

When the foot controller is plugged in, press down on the foot controller.



- ① “Start/Stop” button

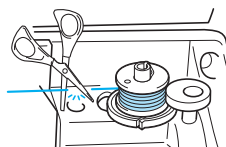
- When the bobbin winding becomes slow, press (“Start/Stop” button) once to stop the machine. When the foot controller is plugged in, remove your foot from the foot controller.

**CAUTION**

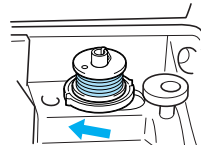
- When the bobbin winding becomes slow, stop the machine, otherwise the sewing machine may be damaged.

15

Use scissors to cut the end of the thread wound around the bobbin.

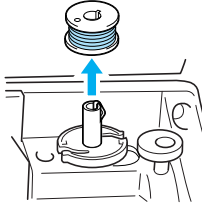
**16**

Slide the bobbin winder shaft to the left.

**Memo**

- If the bobbin winder shaft is set to the right side, the needle will not move. (Sewing is impossible.)

17 Remove the bobbin from the shaft.



Memo

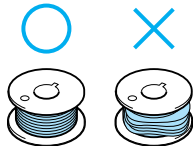
- When the sewing machine is started or the handwheel is turned after winding the bobbin, the machine will make a clicking sound; this is not a malfunction.

Installing the bobbin

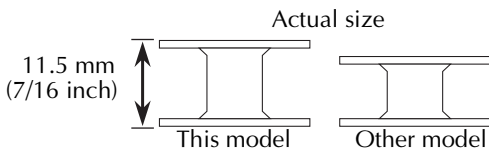
Install the bobbin wound with thread.

CAUTION

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



- The 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: SA156, SFB(XA5539-151)).



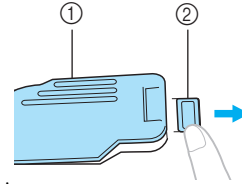
Memo

- The order that the bobbin thread should be passed through the bobbin case is indicated by marks around the bobbin case. Be sure to thread the machine as indicated.

- 1 Press (“Needle Position” button) once or twice to raise the needle, and then raise the presser foot lever.

- 2 Turn off the sewing machine.

- 3 Slide the bobbin cover latch to the right.

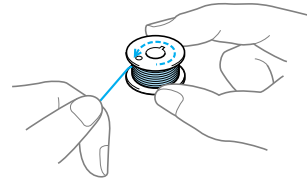


- ① Bobbin cover
- ② Latch

▶ The bobbin cover opens.

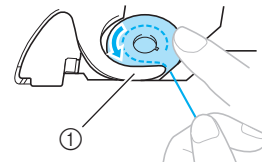
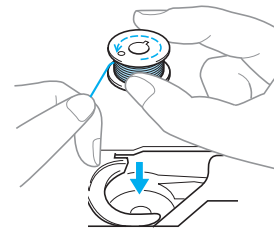
- 4 Remove the bobbin cover.

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



- Be careful not to drop the bobbin.

- 6 Insert the bobbin with your right hand so that the end of the thread is on the left, and then, after pulling the thread firmly around the tab with your left hand as shown, lightly pull the thread to guide it through the slit.



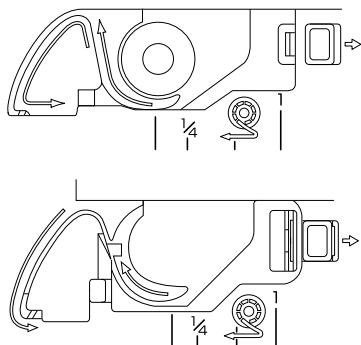
- ① Tab

CAUTION

- Be sure to install the bobbin so that the thread unwinds in the correct direction, otherwise the thread may break or the thread tension will be incorrect.

**Memo**

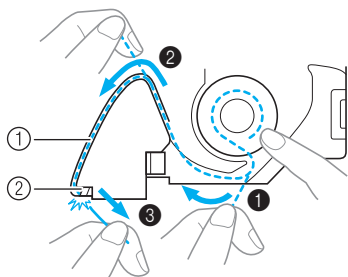
- The order that the bobbin thread should be passed through the bobbin case is indicated by marks around the bobbin case. Be sure to thread the machine as indicated. The marks around the bobbin case differ depending on the model.



- 7** While lightly holding down bobbin with your right hand as shown, guide the thread through the slit (1) and (2).

- At this time, check that the bobbin easily rotates counterclockwise.

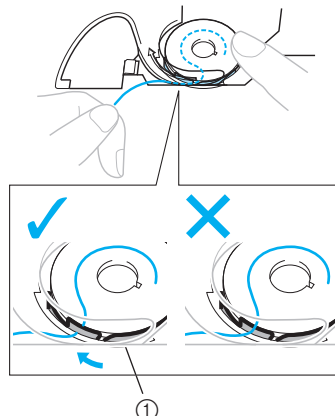
Then, pull the thread toward you to cut it with the cutter (3).



- ① Slit
② Cutter (Cut the thread with the cutter.)

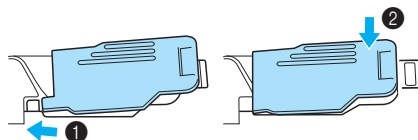
**Note**

- Make sure that the thread is correctly inserted through the tension-adjusting spring of the bobbin case. If it is not inserted correctly, reinsert the thread.



- ① Tension-adjusting spring

- 8** Reattach the bobbin cover. Insert the tab in the lower-left corner of the bobbin cover, and then lightly press down on the right side.



- ▶ The lower threading is finished.

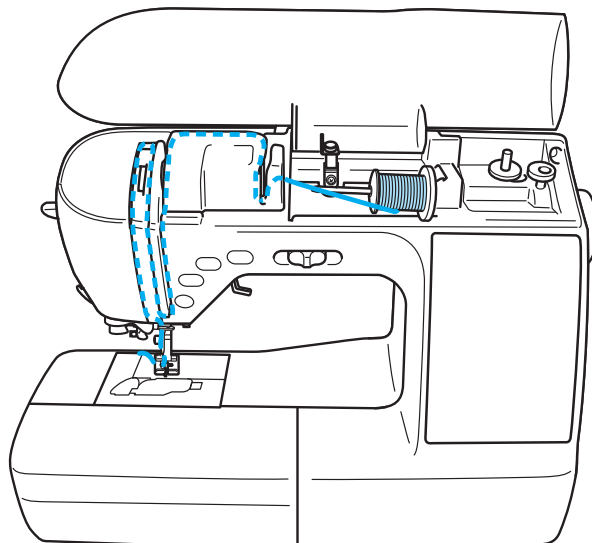
Next, thread the upper thread. Continue with the procedure in "Upper Threading" (page 27).

**Memo**

- You can begin sewing without pulling up the bobbin thread. If you wish to pull up the bobbin thread before starting to sew, pull up the thread according to the procedure in "Pulling up the bobbin thread" (page 32).

Upper Threading

In this section, the procedures for positioning the spool for the upper thread and threading the needle are described.



CAUTION

- When threading the upper thread, carefully follow the instructions. If the upper threading is not correct, the thread may become tangled and the needle may bend or break.



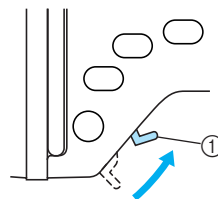
Memo

- The order that the machine should be threaded is indicated by a solid line on the sewing machine. Be sure to thread the machine as indicated.

Threading the upper thread

Set the spool of thread on the spool pin, and then thread the machine.

- 1 Turn off the sewing machine.
- 2 Raise the presser foot lever to raise the presser foot.



① Presser foot lever

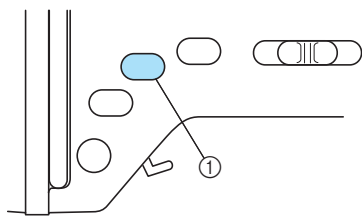


Note


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

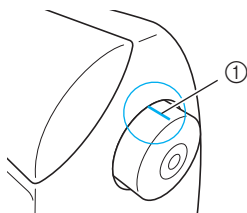
- 3 Turn on the sewing machine.

- 4 Press  (“Needle Position” button) once or twice to raise the needle.



① “Needle Position” button

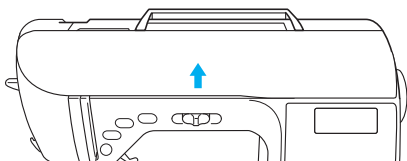
- ▶ The needle is correctly raised when the mark on the handwheel is at the top, as shown below. Check the handwheel and, if this mark is not at this position, press  (“Needle Position” button) until it is.



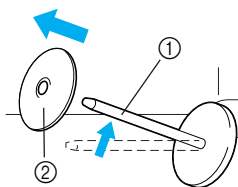
① Mark on handwheel

- 5 Turn off the sewing machine.

- 6 Open the top cover.

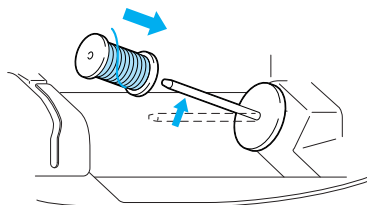


- 7 Remove the spool cap that is inserted onto the spool pin.



① Spool pin
② Spool cap

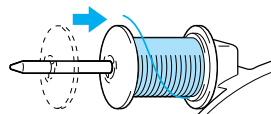
- 8 Place the spool of thread onto the spool pin. Slide the spool onto the pin so that the spool is horizontal and the thread unwinds to the front at the bottom.



! CAUTION

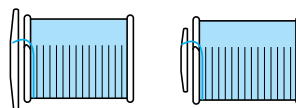
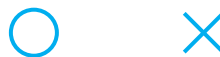
- If the spool or the spool cap is not positioned correctly, the thread may become tangled around the spool pin and the needle may break.

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

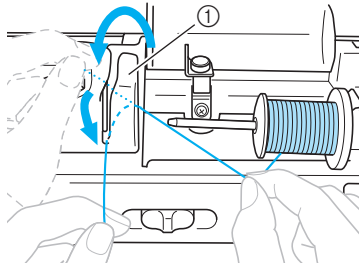


! CAUTION

- If the spool or the spool cap is not positioned correctly, the thread may become tangled around the spool pin and the needle may break.
- Three spool cap sizes are available (large, medium and small), allowing you to choose a spool cap that best fits the size of spool being used. If the spool cap is too small for the spool being used, the thread may catch on the slit in the spool and the needle may break.

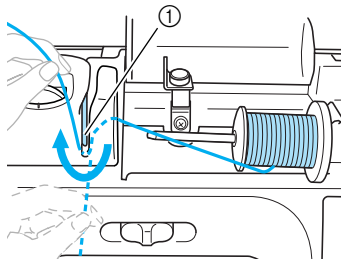


10 While holding the thread lightly with your right hand, pull the thread with your left hand, and then pass the thread behind the thread guide cover and to the front.



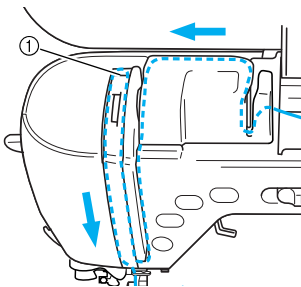
① Thread guide cover

11 Pass the thread under the thread guide plate, and then pull it up.



① Thread guide plate

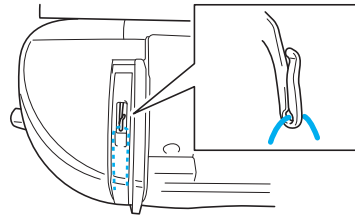
12 While using your right hand to lightly hold the thread passed under the thread guide plate, pass the thread through the thread path in the order shown below.



① Shutter

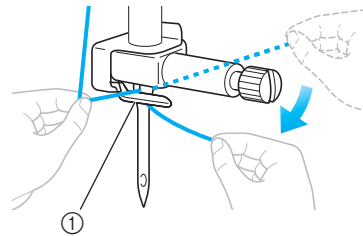
Note

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



13 Pass the thread behind the needle bar thread guide.

The thread can easily be passed behind the needle bar thread guide by holding the thread in your left hand, then feeding the thread with your right hand, as shown.



① Needle bar thread guide

Next, use the needle threader to thread the needle. Continue with the procedure in "Threading the needle" (page 30).

Threading the needle

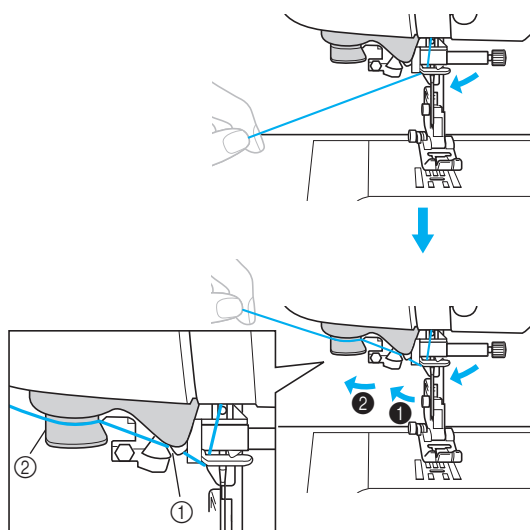
This section describes how to thread the needle.



Memo

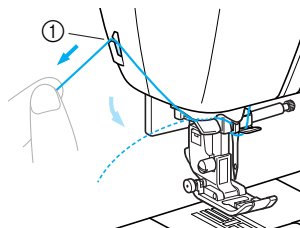
- The needle threader can be used with sewing machine needles 75/11 through 100/16.
- The needle threader cannot be used with the wing needle.
- If the needle threader cannot be used, refer to “Threading the needle manually (without using the needle threader)” (page 32).

- 1** Pull the end of the thread, which has been passed through the needle bar thread guide, to the left, then pass the thread through the notch of the thread guide ①, and then firmly pull the thread from the front and insert it into the slit of the thread guide disk marked “7” all the way ②.
Make sure that the thread passes the notch of the thread guide.



- ① Notch of the thread guide
② Thread guide disk

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

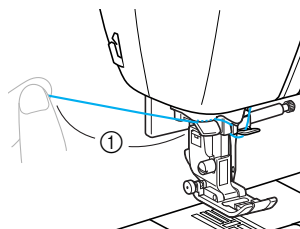


- ① Thread cutter



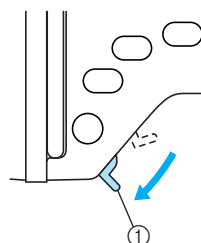
Note

- If the thread is pulled and cannot be cut correctly, lower the presser foot so that the thread is held in place before cutting the thread. If this operation is performed, skip step ③.
- 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”).



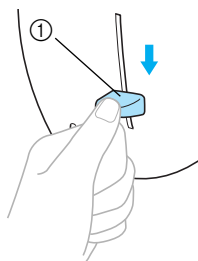
- ① 80 mm (3 inches) or more

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



- ① Presser foot lever

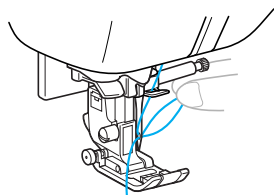
- 4 Lower the needle threader lever on the left side of the machine until it clicks, and then slowly return the lever to its original position.



- ① Needle threader lever
- ▶ The thread is passed through the eye of the needle.

Note

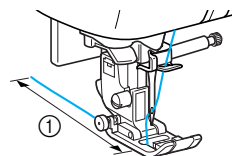
- If the needle was not completely threaded, but a loop in the thread was formed in the eye of the needle, carefully pull the loop through the eye of the needle to pull out the end of the thread.



CAUTION

- When pulling out the thread, do not pull it with extreme force, otherwise the needle may break or bend.


- 5 Raise the presser foot lever, pass the end of the thread through the presser foot, and then pull out about 5 cm (2 inches) of thread toward the rear of the machine.



- ① 5 cm (2 inches)

- ▶ The upper threading is finished. Now that the upper threading and the lower threading are finished, you are ready to begin sewing.

Note

- If the needle is not raised, the needle threader cannot thread the needle. Be sure to press  ("Needle Position" button) to raise the needle before using the needle threader.

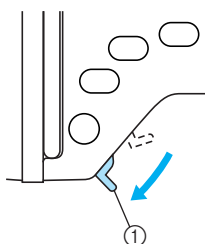
Threading the needle manually (without using the needle threader)

When using specialty thread, such as transparent nylon thread or metallic thread, a wing needle which cannot be used with the needle threader, thread the needle as described below.

1 Thread the machine to the needle bar thread guide.

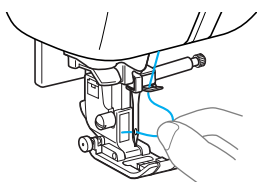
- For details, refer to “Upper Threading” (page 27).

2 Lower the presser foot lever.






① Presser foot lever

3 Pass the thread through the eye of the needle from front to back.



CAUTION

- Do not touch the  (“Start/Stop” button),  (“Needle Position” button) or  (“Reverse/Reinforcement Stitch” button). If one of the buttons is accidentally pressed, the machine will begin sewing and your finger may be pricked with the needle or the needle may break.

4 Raise the presser foot lever, pass the end of the thread through the presser foot, and then pull out about 5 cm (2 inches) of thread toward the rear of the machine.

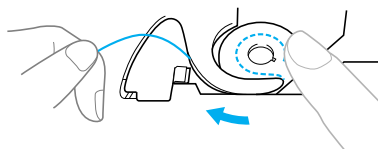
Pulling up the bobbin thread

When making gathers or before free-motion quilting, first pull up the bobbin thread as described below.

1 Insert the bobbin into the bobbin case.

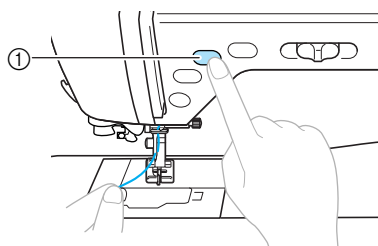
- Refer to steps ① through ⑤ of “Installing the bobbin” (page 25).

2 Pass the bobbin thread through the slot. Do not cut the thread with the cutter.



3 Turn on the sewing machine.

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

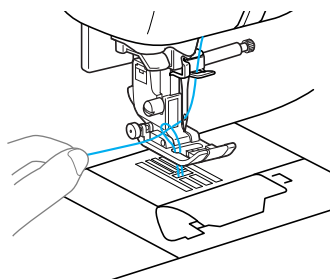


① “Needle Position” button

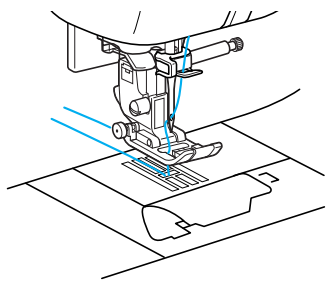
- ▶ The bobbin thread is looped around the upper thread and can be pulled up.

5 Turn off the sewing machine.

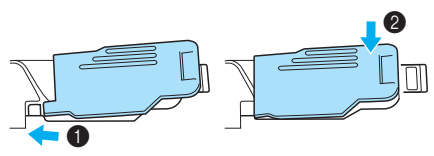
6 Carefully pull the upper thread upward to pull out the end of the bobbin thread.



7 Pull out about 10 cm (4 inches) of the bobbin thread under the presser foot toward the rear of the machine.



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



Replacing the Needle

This section provides information on sewing machine needles.

Needle precautions

Be sure to observe the following precautions concerning the handling of the needle. Failure to observe these precautions is extremely dangerous, for example, if the needle breaks and fragments are dispersed. Be sure to read and carefully follow the instructions below.

CAUTION

- **Only use home sewing machine needles. Use of any other needle may bend the needle or damage the machine.**
- **Never use bent needles. Bent needles can easily break, possibly resulting in injuries.**

Needle types and their uses

The sewing machine needle that should be used depends on the fabric and thread thickness. Refer to the following table when choosing the thread and needle appropriate for the fabric that you wish to sew.

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	100/16
			50	90/14–100/16
	Corduroy	Synthetic thread	50–60	
Tweed	Silk thread			
Stretch fabrics	Jersey	Thread for knits	50–60	Ball point needle 75/11–90/14 (golden colored)
	Tricot			
Easily frayed fabrics		Cotton thread	50–90	65/9–90/14
		Synthetic thread		
		Silk thread	50	
For top-stitching		Synthetic thread	30	100/16
		Silk thread	50–60	90/11–90/14



Note

- Never use a thread of weight 20 or lower. It may cause malfunctions.



Memo

- The smaller the thread number, the thicker the thread, and the larger the needle number, the thicker the needle.
- Use the ball point needle when sewing on stretch fabrics or fabrics where skipped stitches easily occur.
- Use a 90/14 to 100/16 needle with transparent nylon threads, regardless of the fabric being sewn.



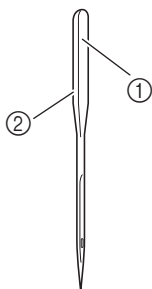
CAUTION

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

Checking the needle

Sewing with a bent needle is extremely dangerous since the needle may break while the machine is being operated.

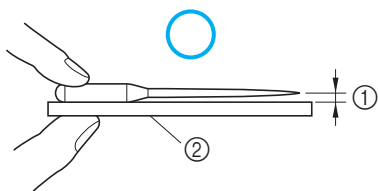
Before using the needle, place the flat side of the needle on a flat surface and check that the distance between the needle and the flat surface is even.



- ① Flat side
- ② Needle type marking

■ Correct needle

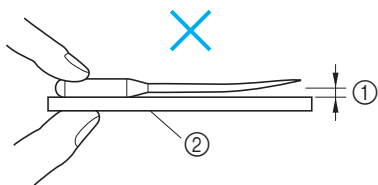
To check the needle correctly, place the flat side of the needle on a flat surface. Check the needle from the top and the sides.



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

■ Incorrect needle

If the distance between the needle and the flat surface is not even, the needle is bent. Do not use a bent needle.

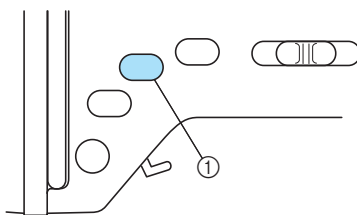


- ① Parallel space
- ② Level surface (bobbin cover, glass, etc.)

Replacing the needle

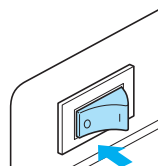
Replace the needle as described below. Use the screwdriver and a needle that has been determined to be straight according to the instructions in "Checking the needle".

- 1 Press ("Needle Position" button) once or twice to raise the needle.



- ① "Needle Position" button

- 2 Turn off the sewing machine.



! CAUTION

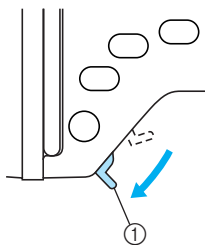
- Before replacing the needle, be sure to turn off the sewing machine, otherwise injuries may occur if ("Start/Stop" button) is accidentally pressed and the machine starts sewing.

- 3 Place fabric or paper under the presser foot to cover the hole in the needle plate.

Note

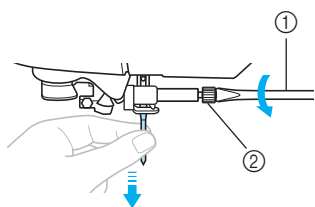
- Before replacing the needle, cover the hole in the needle plate with fabric or paper to prevent the needle from falling into the machine.

- 4 Lower the presser foot lever.



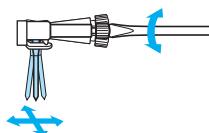
① Presser foot lever

- 5 Hold the needle with your left hand, and then use a screwdriver to turn the needle clamp screw toward you (counterclockwise) to remove the needle.

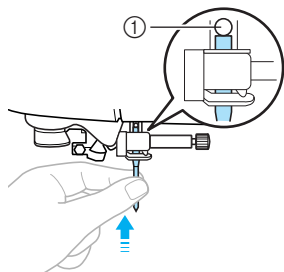


① Screwdriver
② Needle clamp screw

- Do not apply a strong force when loosening or tightening the needle clamp screw, otherwise certain parts of the sewing machine may be damaged.

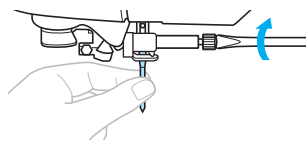


- 6 With the flat side of the needle toward the rear of the machine, insert the needle until it touches the needle stopper.



① Needle stopper

- 7 While holding the needle with your left hand, use the screwdriver to tighten the needle clamp screw.



! CAUTION

- Be sure to insert the needle until it touches the needle stopper and securely tighten the needle clamp screw with the screwdriver, otherwise the needle may break or damage may result.

1

Replacing the Presser Foot

The presser foot presses down on the fabric.

Presser foot precautions


Be sure to observe the following precautions concerning the presser feet.

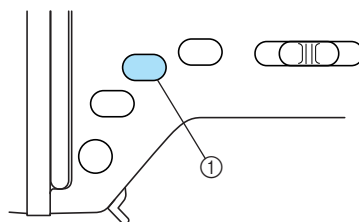
! CAUTION

- Use the presser foot appropriate for the type of stitch that you wish to sew, otherwise the needle may hit the presser foot, causing the needle to bend or break.
- Only use presser feet designed specifically for this sewing machine. Use of any other presser foot may result in injuries or damage to the machine.

Replacing the presser foot

Replace the presser foot as described below. "Sewing overcasting stitches using the optional side cutter" (page 65).

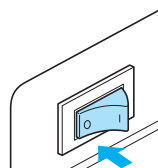
- 1 Press  ("Needle Position" button) once or twice to raise the needle.




① "Needle Position" button

▶ The needle is raised.

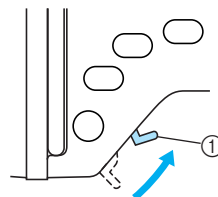
- 2 Turn off the sewing machine.



! CAUTION

- Before replacing the presser foot, be sure to turn off the sewing machine, otherwise injuries may occur if  ("Start/Stop" button) is accidentally pressed and the machine starts sewing.

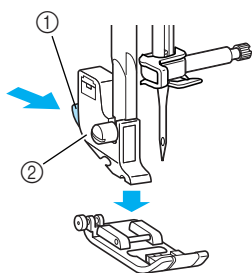
- 3 Raise the presser foot lever.



① Presser foot lever

▶ The presser foot is raised.

- 4** Press the black button at the back of the presser foot holder.

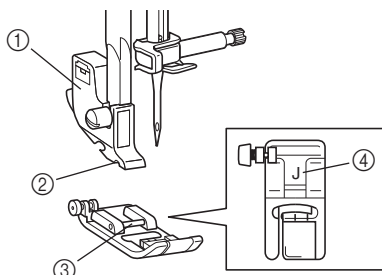


- ① Black button
- ② Presser foot holder

▶ The presser foot holder releases the presser foot.

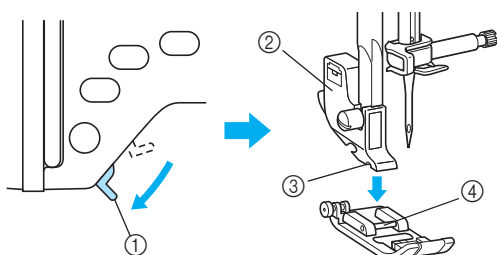
- 5** Place a different presser foot below the holder so that the presser foot pin is aligned with the notch in the holder.

Position the presser foot so the letter indicating the presser foot type (A, G, I, J, M, N or R) is positioned to be read.



- ① Presser foot holder
- ② Notch
- ③ Pin
- ④ Presser foot type

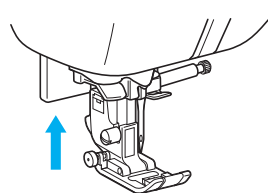
- 6** Slowly lower the presser foot lever so that the presser foot pin snaps into the notch in the presser foot holder.



- ① Presser foot lever
- ② Presser foot holder
- ③ Notch
- ④ Pin

▶ The presser foot is attached.

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



Note

- When a stitch is selected, the icon for the presser foot that should be used appears in the screen. Check that the correct presser foot is attached before starting to sew. If the wrong presser foot is installed, turn off the sewing machine, attach the correct presser foot, and then select the desired stitch again.



Buttonhole foot "A"



Overcasting foot "G"



Zigzag foot "J"



Monogramming foot "N"



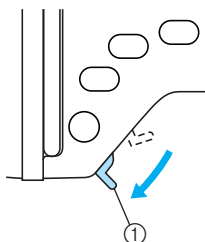
Blind stitch foot "R"

- For details on the presser foot that should be used with the selected stitch, refer to "Stitch Settings" (page 98).

Adjusting the pressure of the presser foot

The presser foot pressure (the amount of pressure applied to the fabric by the presser foot) can be adjusted.

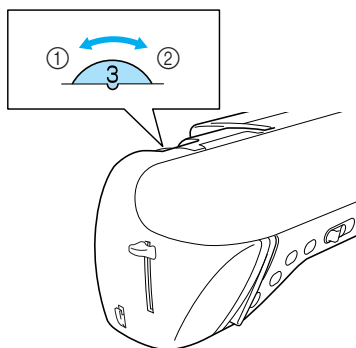
1 Lower the presser foot lever.



① Presser foot lever

2 Turn the presser foot pressure dial at the back of the machine to adjust the pressure of the presser foot.

The scale on the dial indicates the range from 1 (weak) to 4 (strong). Turn the dial to the right (smaller number) to decrease the pressure. Turn the dial to the left (larger number) to increase the pressure.



- ① Strong
- ② Weak

3 When you are finished sewing, reset the dial to 3 (standard).

Removing the presser foot holder

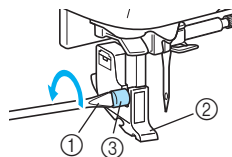
Remove the presser foot holder when cleaning the sewing machine or when installing a presser foot that does not use the presser foot holder, such as the quilting foot. Use the screwdriver to remove the presser foot holder.

■ Removing the presser foot holder

① Remove the presser foot.

- For details, refer to “Replacing the presser foot” (page 38).

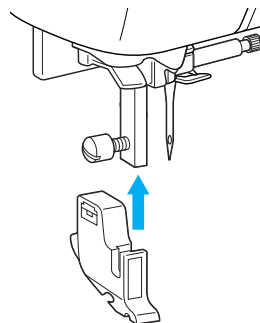
② Use the screwdriver to loosen the presser foot holder screw.



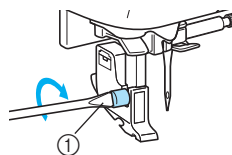
- ① Screwdriver
- ② Presser foot holder
- ③ Presser foot holder screw

■ Attaching the presser foot holder

① Align the presser foot holder with the lower-left side of the presser bar.



② Hold the presser foot holder in place with your right hand, and then tighten the screw using the screwdriver in your left hand.



- ① Screwdriver

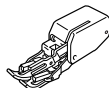
Note

- If the presser foot holder is not correctly installed, the thread tension will be incorrect.

Using optional the walking foot

With the walking foot, both pieces of fabric are fed evenly by the feed dogs and the teeth on the presser foot. This is useful when sewing fabrics that are hard to feed such as vinyl and leather and when sewing fabrics that easily slip such as velvets or when quilting.

Use the screwdriver to attach the walking foot.



■ Attaching the walking foot



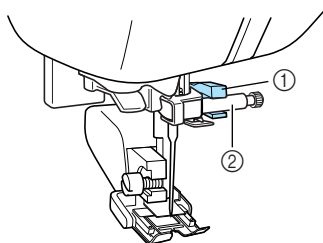
Note

- Thread the needle manually when using the walking foot, or only attach the walking foot after threading the needle using the needle threader.

① Remove the presser foot holder.

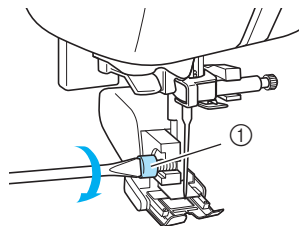
- For details, refer to “Removing the presser foot holder” (page 40).

② Hook the connecting fork of the walking foot onto the needle clamp screw.



- ① Connecting fork
- ② Needle clamp screw

③ Lower the presser foot lever, insert the presser foot holder screw, and then tighten the screw with the screwdriver.



- ① Presser foot holder screw



CAUTION

- Be sure to securely tighten the screw with the screwdriver, otherwise the needle may touch the presser foot, causing it to bend or break.
- Before starting to sew, slowly turn 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.

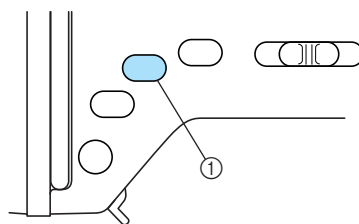


Note

- When sewing with the walking foot, sew at a speed between slow and medium.

■ Removing the walking foot

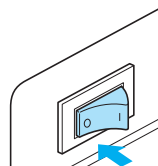
① Press (“Needle Position” button) once or twice to raise the needle.



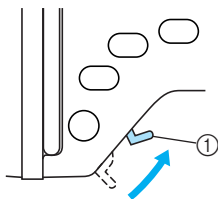
- ① “Needle Position” button

▶ The needle is raised.

② Turn off the sewing machine.



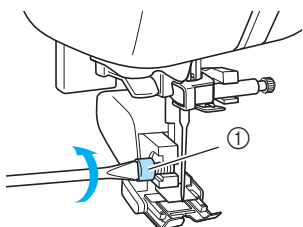
③ Raise the presser foot lever.



① Presser foot lever

▶ The presser foot is raised.

④ With a screwdriver, loosen the presser foot holder screw, and then remove the walking foot.



① Presser foot holder screw

⑤ Attach the presser foot holder.

- For details, refer to “Removing the presser foot holder” (page 40).



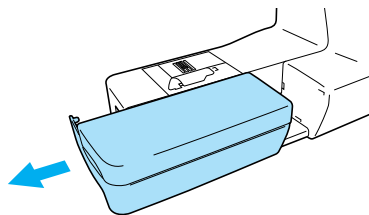
Memo

- Only the straight stitch (with reinforcement stitching) and the zigzag stitch can be used with the walking foot. For details on the stitches, refer to “Stitch Settings” (page 98).

Stitching cylindrical pieces

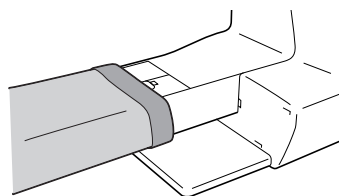
Removing the flat bed attachment makes it easier to sew cylindrical pieces such as cuffs and pant legs.

① Pull the flat bed attachment off to the left.

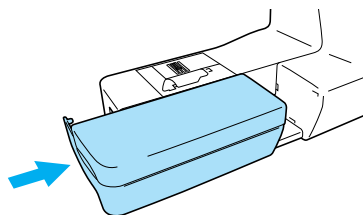


▶ With the flat bed attachment removed, free-arm sewing is possible.

② Slide the part that you wish to sew onto the arm, and then sew from the top.



③ When you are finished with free-arm sewing, install the flat bed attachment back in its original position.



2

SEWING BASICS

The necessary preparations for sewing are described in this chapter.

Sewing.....	44
General sewing procedure	44
Positioning the fabric	45
Starting to sew	46
Securing the stitching.....	48
Cutting the thread	49
Adjusting the Thread Tension	51
Changing the tension of the upper thread	51
Adjusting the Stitch Width and Length	52
Adjusting the stitch width	52
Adjusting the stitch length.....	53
Useful Functions.....	54
Automatically sewing reverse/reinforcement stitches	54
Automatically cutting the thread.....	54
Changing the needle stop position	55
Saving frequently used stitch settings.....	55
Useful Sewing Tips	57
Trial sewing.....	57
Changing the sewing direction	57
Sewing curves	57
Sewing thick fabrics	58
Sewing thin fabrics.....	58
Sewing stretch fabrics	58
Sewing an even seam allowance	59
Sewing hook-and-loop fastener	59

Sewing

Basic sewing operations are described below.

Before operating the sewing machine, read the following precautions.

CAUTION

- While the machine is in operation, pay special attention to the needle location. In addition, keep your hands away from all moving parts such as the needle and handwheel, otherwise injuries may occur.
- Do not pull or push the fabric too hard while sewing, otherwise injuries may occur or the needle may break.
- Never use bent needles. Bent needles can easily break, possibly resulting in injuries.
- Make sure that the needle does not strike basting pins, otherwise the needle may break or bend.

General sewing procedure

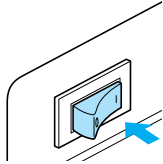
Follow the basic procedures below to sew.

1	Turn on the machine.	Turn on the sewing machine. For details on turning on the machine, refer to "Turning on the machine" (page 17).
↓		
2	Select the stitch.	Select the stitch appropriate for the area to be sewn. For details on selecting a stitch, refer to "Selecting Stitching" (page 62).
↓		
3	Attach the presser foot.	Attach the presser foot appropriate for the stitch. For details on replacing the presser foot, refer to "Replacing the presser foot" (page 38).
↓		
4	Position the fabric.	Place the area to be sewn under the presser foot. Be sure that the fabric pieces are sewn in the correct order and that the right and wrong sides of the fabric are aligned correctly. For details on positioning the fabric, refer to "Positioning the fabric" (page 45).
↓		
5	Start sewing.	Start sewing. For details on starting to sew, refer to "Starting to sew" (page 46).
↓		
6	Cut the thread.	Cut the thread at the end of sewing. The thread may also be cut automatically. For details on cutting the thread, refer to "Cutting the thread" (page 49).

Positioning the fabric

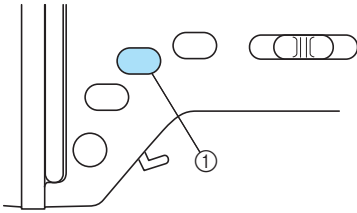
Be sure that the fabric pieces are sewn in the correct order and that the right and wrong sides of the fabric are aligned correctly.

1 Turn on the sewing machine.



The straight stitch (left needle position) is automatically selected.

2 Press ("Needle Position" button) once or twice to raise the needle.

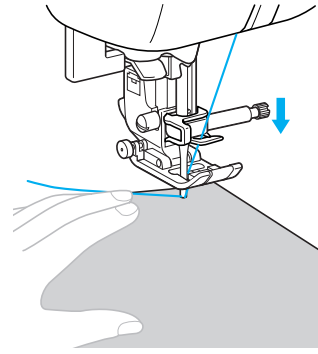
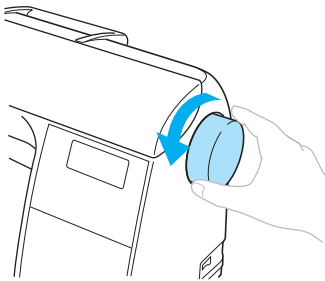


① "Needle Position" button

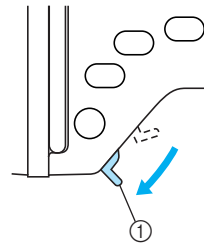
3 Place the fabric under the presser foot.

- If the seam allowance is positioned on the right side, sewing in a straight line is easier and the extra fabric does not get in the way.

4 While holding the end of the thread and the fabric with your left hand, turn the handwheel toward you (counterclockwise) with your right hand to lower the needle to the starting point of the stitching.

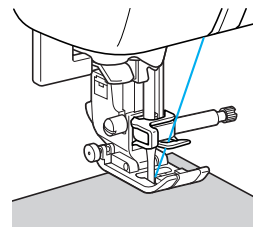


5 Lower the presser foot lever.



① Presser foot lever

▶ The fabric is now positioned to be sewn.



Memo

- To adjust the pressure that the presser foot applies to the fabric, refer to "Adjusting the pressure of the presser foot" (page 40).

Starting to sew

Once you are ready to start sewing, you can start the sewing machine. The sewing speed can be adjusted using either the sewing speed controller or the foot controller.



Note

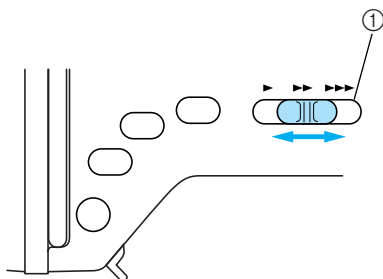
Important:

- When the foot controller is plugged in, (i) (“Start/Stop” button) cannot be used to start sewing.

■ Using the operation buttons

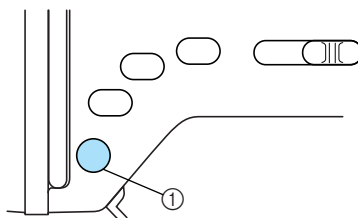
Sewing can be started and stopped using the operation button (i) (“Start/Stop” button).

- 1 **Slide the sewing speed controller to the left or right to select the desired sewing speed.**
Slide the sewing speed controller to the left to sew at a slower speed, or slide the speed controller to the right to sew at a faster speed.



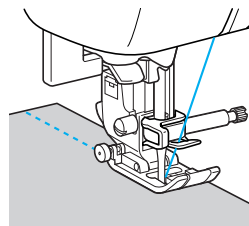
(i) Sewing speed controller

- 2 **Press (i) (“Start/Stop” button) once.**



(i) “Start/Stop” button

- ▶ The machine starts sewing.



- If you continue to hold (i) (“Start/Stop” button) pressed immediately after the sewing starts, the machine will sew at a slow speed.

- 3 **When the end of the stitching is reached, press (i) (“Start/Stop” button) once.**

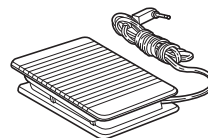
- ▶ The machine stops sewing with the needle down (in the fabric).

- 4 **When you are finished sewing, raise the needle, and then cut the threads.**

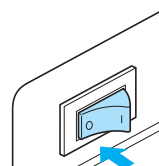
- ▶ For details, refer to “Cutting the thread” (page 49).

■ Using the foot controller

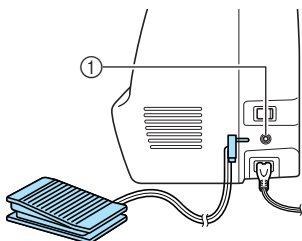
Sewing can be started and stopped using the foot controller.



- 1 **Turn off the sewing machine.**
When connecting the foot controller, be sure to turn off the sewing machine in order to prevent the machine from accidentally being started.

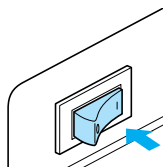


- 2** Insert the foot controller plug into its jack on the side of the sewing machine.



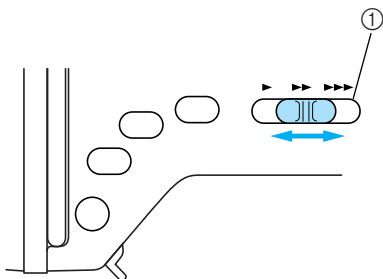
① Foot controller jack

- 3** Turn on the sewing machine.



- 4** Slide the sewing speed controller to the left or right to select the desired sewing speed.

Slide the sewing speed controller to the left to sew at a slower speed, or slide the speed controller to the right to sew at a faster speed.

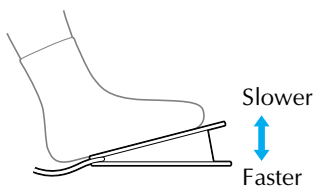


① Sewing speed controller

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

- 5** Once you are ready to start sewing, slowly press down on the foot controller.

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



- Slowly press down on the foot controller. Pressing it down hard starts sewing too quickly.

▶ The machine starts sewing.

- 6** When the end of the stitching is reached, completely release the foot controller.

▶ The machine stops sewing with the needle lowered (in the fabric).

- 7** When you are finished sewing, raise the needle, and then cut the threads.

- For details, refer to "Cutting the thread" (page 49).



Memo

- When the foot controller is plugged in, (ⓘ) ("Start/Stop" button) cannot be used to start sewing.
- When sewing is stopped, the needle remains lowered (in the fabric). The machine can be set so that the needle will stay up when sewing is stopped. For details on setting the machine so that the needle stays up when sewing is stopped, refer to "Changing the needle stop position" (page 55).



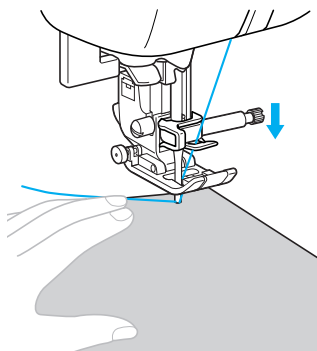
CAUTION


- Do not allow thread or dust to accumulate in the foot controller, otherwise a fire or an electric shock may occur.
- Do not place objects on the foot controller, otherwise damage to the machine or injuries may occur.
- If the machine is not to be used for a long period of time, unplug the foot controller, otherwise a fire or an electric shock may occur.


Securing the stitching

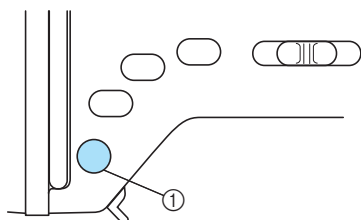
When sewing with the straight stitch, for example, at the end of an opening or where seams do not overlap, use reverse stitching or reinforcement stitching to secure the end of the thread.

- 1 Lower the needle into the fabric at the beginning of the stitching, and then lower the presser foot lever.





- 2 Press  ("Start/Stop" button) or press down on the foot controller.

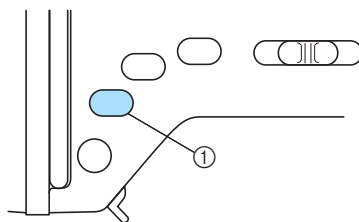
At this time, if  ("Start/Stop" button) is held down, the machine sews at a low speed.




① "Start/Stop" button


- For details, refer to "Starting to sew" (page 46).
- ▶ The machine starts sewing.

- 3 After sewing 3 to 5 stitches, press  ("Reverse/Reinforcement Stitch" button). Keep  ("Reverse/Reinforcement Stitch" button) held down until you reach the beginning of the stitching.




① "Reverse/Reinforcement Stitch" button

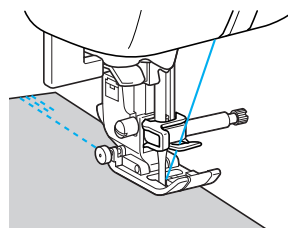
- ▶ While  ("Reverse/Reinforcement Stitch" button) is held down, reverse stitches are sewn.



- 4 After sewing back to the beginning of the stitching, release  ("Reverse/Reinforcement Stitch" button).


- ▶ The machine stops sewing.

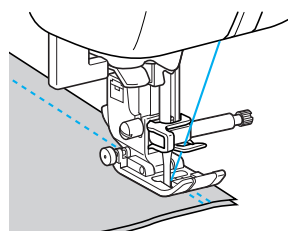
- 5 Press  ("Start/Stop" button), or press down on the foot controller.

- ▶ The machine starts sewing in the normal sewing direction



- 6 When the end of the stitching is reached, press  ("Reverse/Reinforcement Stitch" button). Keep  ("Reverse/Reinforcement Stitch" button) held down until 3 to 5 reverse stitches are sewn.

- ▶ While  ("Reverse/Reinforcement Stitch" button) is held down, reverse stitches are sewn.



7 After 3 to 5 reverse stitches have been sewn, release (↶) (“Reverse/Reinforcement Stitch” button).

▶ The machine stops sewing.

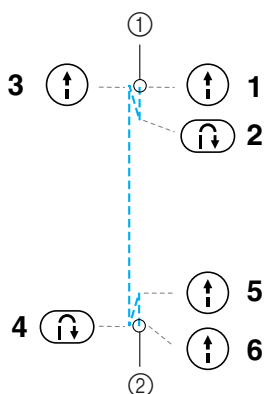
8 Press (⏻) (“Start/Stop” button), or press down on the foot controller.

At this time, if (⏻) (“Start/Stop” button) is held down, the machine sews at a slow speed.

▶ The machine starts sewing in the normal sewing direction.

9 After sewing to the end of the stitching, the sewing machine stops.

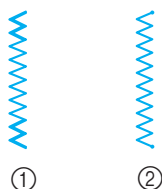
Press (⏻) (“Start/Stop” button) or release foot controller.



① Beginning of stitching
② End of stitching

■ Sewing reinforcement stitches

When sewing stitches other than straight or zigzag stitches that are secured with reverse stitching, pressing (↶) (“Reverse/Reinforcement Stitch” button) sews reinforcement stitches, 3 to 5 stitches on top of each other.



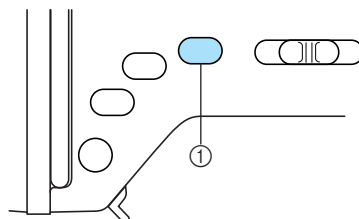
① Reverse stitching
② Reinforcement stitching

Cutting the thread

When you have finished sewing, cut the threads. The threads can be cut in either of two ways.

■ Using (✂) (“Thread Cutter” button)

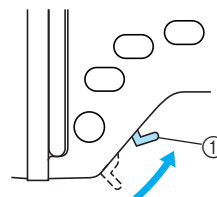
1 When you wish to finish the stitching, press (✂) (“Thread Cutter” button) once.



① “Thread Cutter” button

▶ The threads are cut and the needle is raised.

2 Raise the presser foot lever.



① Presser foot lever

⚠ CAUTION

● Do not press (✂) (“Thread Cutter” button) after the threads have already been cut, otherwise the needle may break, the threads may become tangled or damage to the machine may occur.

⚡ Note


● Do not press (✂) (“Thread Cutter” button) if there is no fabric under the presser foot or while the machine is sewing, otherwise damage to the machine may occur.

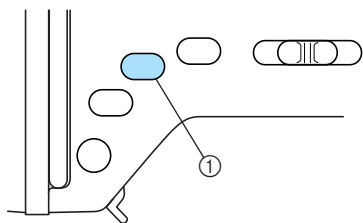
💡 Memo

● The machine can be set so that the threads will be cut when sewing is finished. For details on setting the machine so that the threads are cut automatically, refer to “Automatically cutting the thread” (page 54).

■ Using the manual thread cutter

When sewing with nylon or metallic threads, or other special threads, use the thread cutter on the side of the machine to cut the threads.

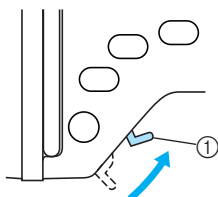
- ① When you wish to finish the stitching and the sewing machine is stopped, press  (“Needle Position” button) once to raise the needle.



① “Needle Position” button

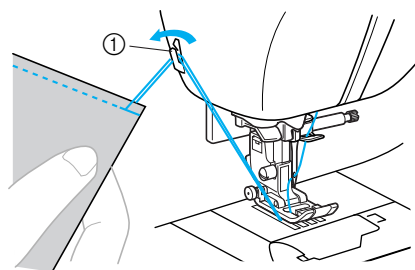
▶ The needle is raised.

- ② Raise the presser foot lever.



① Presser foot lever

- ③ Pull the fabric to the left side of the machine, and then pass the threads through the thread cutter to cut them.



① Thread cutter

Adjusting the Thread Tension

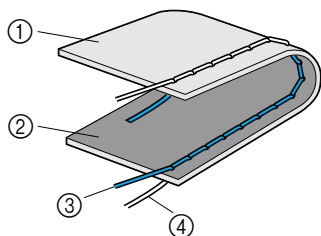
The tensions of the upper thread and of the bobbin thread (thread tension) should be adjusted so that they are equal.

Changing the tension of the upper thread

You may need to change the thread tension, depending on the fabric and thread being used.

■ Correct 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 of fabric
- ② Right side of fabric
- ③ Upper thread
- ④ Bobbin thread

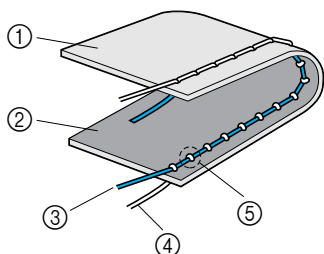
■ Upper thread is too tight

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



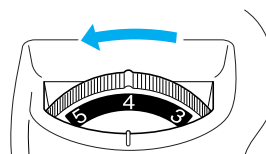
Note

- If the bobbin thread was incorrectly threaded, the upper thread may be too tight. In this case, refer to “Installing the bobbin” (page 25) and rethread the bobbin thread.



- ① Wrong side of fabric
- ② Right side of fabric
- ③ Upper thread
- ④ Bobbin thread
- ⑤ The bobbin thread is visible from the right side of the fabric.

Turn the thread tension dial to the left to loosen the upper thread.



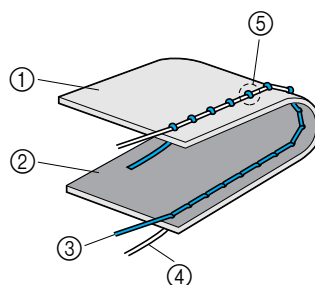
■ Upper thread is too loose

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



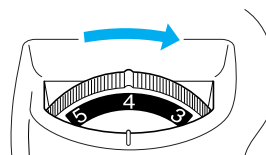
Note

- If the upper thread was incorrectly threaded, the upper thread may be too loose. In this case, refer to “Upper Threading” (page 27) and rethread the upper thread.



- ① Wrong side of fabric
- ② Right side of fabric
- ③ Upper thread
- ④ Bobbin thread
- ⑤ The upper thread is visible from the wrong side of the fabric.

Turn the thread tension dial to the right to tighten the upper thread.



Note

- If the upper thread is not threaded correctly or the bobbin is not installed correctly, it may not be possible to set the correct thread tension. If the correct thread tension cannot be achieved, rethread the upper thread and insert the bobbin correctly.

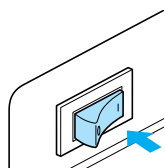
Adjusting the Stitch Width and Length

The zigzag width (pattern width) and stitch length of utility stitches can be adjusted. Normally, when a stitch is selected, the appropriate width and length are automatically selected. For details on the range of values within which the width and length can be set, refer to “Stitch Settings” (page 98).

Adjusting the stitch width

The stitch width (zigzag width) can be adjusted to make the stitch wider or narrower.

1 Turn on the sewing machine.



- ▶ The LCD comes on.

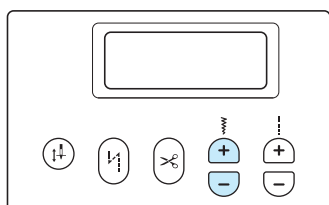
2 Select a stitch.

- ▶ A screen containing settings for the selected stitch appears.

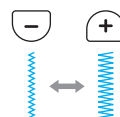
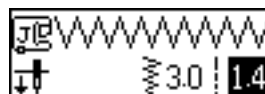


- For details on selecting a stitch, refer to “Selecting Stitching” (page 62).
- Immediately after the stitch is selected, the standard settings (highlighted) appear.

3 To make the stitch width narrower, press (Stitch width key). To make the stitch width wider, press (Stitch width key).



- ▶ The stitch width is changed.



- If the setting is changed, the highlighted value is erased.



Memo

- To reset the stitch width to its standard setting, select the same stitch again or change the setting to the highlighted value.
- If the straight stitch (left needle position or triple stretch stitch) was selected, changing the stitch width changes the needle position. Increasing the width moves the needle to the right; reducing the width moves the needle to the left.
- Adjusted stitch settings can be saved so that they can easily be recalled later. For details, refer to “Saving frequently used stitch settings” (page 55).
- The sewing machine can be set so that the stitch width can easily be changed with the sewing speed controller. For details, refer to “Satin stitching using the sewing speed controller” (page 88).

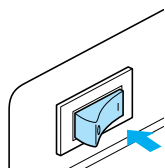
CAUTION

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

Adjusting the stitch length

The stitch length can be adjusted to make the stitch longer or shorter.

1 Turn on the sewing machine.



▶ The LCD comes on.

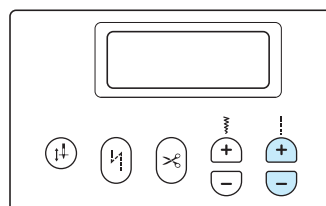
2 Select a stitch.

▶ A screen containing settings for the selected stitch appears.

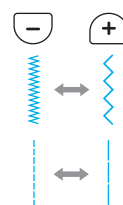


- For details on selecting a stitch, refer to “Selecting Stitching” (page 62).
- Immediately after the stitch is selected, the standard settings (highlighted) appear.

3 To make the stitch length shorter, press (Stitch length key). To make the stitch length longer, press (Stitch length key).



▶ The stitch length is changed.



- If the setting is changed, the highlighted value is erased.



Memo

- To reset the stitch length to its standard setting, select the same stitch again or change the setting to the highlighted value.
- Adjusted stitch settings can be saved so that they can easily be recalled later. For details, refer to “Saving frequently used stitch settings” (page 55).

CAUTION

- If the stitches are bunched together, increase the stitch length. Continuing to sew with the stitches bunched together may result in the needle bending or breaking.


Useful Functions

Functions useful in improving sewing efficiency are described below.


Automatically sewing reverse/reinforcement stitches

The sewing machine can be set to automatically sew reinforcement stitches at the beginning and end of the stitching. With straight stitches and zigzag stitches, reverse stitches (instead of reinforcement stitches) are automatically sewn.

1 Select a stitch.
Refer to "Selecting Stitching" (page 62).

2 Press  (automatic reverse/reinforcement stitch key).

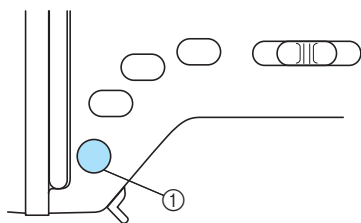
This step is not necessary after selecting a stitch, such as for sewing buttonholes or bar tacks, where reinforcement stitches are automatically sewn.

 appears in the LCD.

* To cancel automatic reverse/reinforcement stitching, press the automatic reverse/reinforcement stitch key again.


3 Place the fabric under the presser foot, and then turn the handwheel toward you (counterclockwise) to lower the needle into the fabric at the starting point of the stitching.

4 Press  ("Start/Stop" button) once.

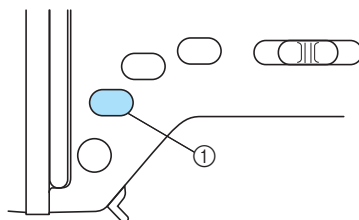


① "Start/Stop" button

After reverse/reinforcement stitches are sewn automatically, the machine starts sewing.

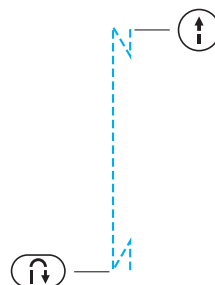
5 After reaching the end of the stitching, press  ("Reverse/Reinforcement Stitch" button) once.

This step is not necessary after selecting a stitch, such as for sewing buttonholes or bar tacks, where reinforcement stitches are automatically sewn.



① "Reverse/Reinforcement Stitch" button

After reverse/reinforcement stitches are sewn automatically, the sewing machine stops sewing.




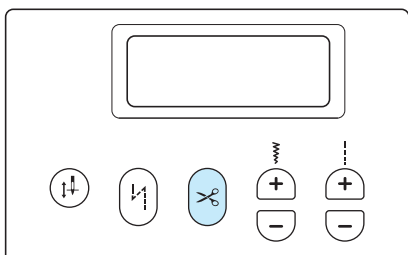
Automatically cutting the thread

The sewing machine can be set to automatically cut the threads at the end of the stitching. This is called "automatic thread cutting".

If automatic thread cutting is selected, automatic reverse/reinforcement stitching is also selected. Automatic thread cutting is convenient when a stitch for sewing buttonholes or bar tacks is selected.


1 Select a stitch.
Refer to "Selecting Stitching" (page 62).

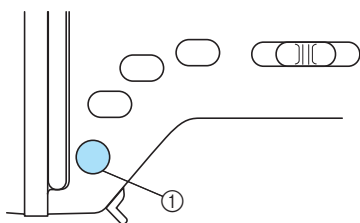
2 Press  (automatic thread cutting key) once.



 and  appear in the LCD.

* To cancel automatic thread cutting, press the automatic thread cutting key again.

3 Place the fabric under the presser foot, and then press  ("Start/Stop" button) once.



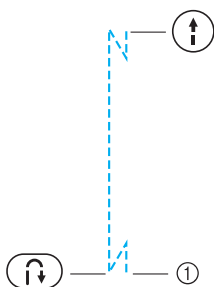
① "Start/Stop" button

After reverse/reinforcement stitches are sewn automatically, the machine starts sewing.

4 After reaching the end of the stitching, press the "Reverse/Reinforcement Stitch" button once.


This step is not necessary after selecting a stitch, such as for sewing buttonholes or bar tacks, where reinforcement stitches are automatically sewn.


After reverse/reinforcement stitches are sewn automatically, the sewing machine stops sewing and cuts the threads.




① The thread is cut here.

Changing the needle stop position



By pressing  (needle stop position key), the needle stop position when the sewing machine stops sewing can be selected. The selected needle stop position is indicated in the LCD.

 : The sewing machine stops sewing with the needle raised.

 : The sewing machine stops sewing with the needle lowered.

* As a factory default, the sewing machine is set to leave the needle lowered (in the fabric) when sewing is stopped.

Saving frequently used stitch settings

Adjusted stitch settings can be saved so that they can easily be recalled later. This is convenient for saving setting adjustments for frequently used stitches. One set of stitch settings can be saved with each of the pocket keys ( .

Settings for the following will be saved.

- Stitch
- Stitch width/needle position
- Stitch length
- Needle stop position
- Automatic reverse/reinforcement stitching turned on or off
- Automatic thread cutting turned on or off

1 Adjust the settings for the stitch to be saved. Refer to "Adjusting the Stitch Width and Length" (page 52), "Changing the needle position" (page 68).



2 Press  memory key. The memory key lights up.

3 Press pocket key 1 or 2 to save the stitch settings.

The message "Saving..." appears in the LCD. After the stitch settings have been saved, the message "Saving..." disappears, and the pocket key lights up. The saved stitch settings can be recalled the next time simply by pressing the pocket key.

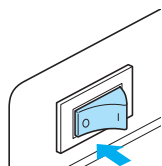
* Changing the saved settings:
Perform steps 1 to 3 to replace the old settings with the new stitch settings.

■ Erasing saved settings

The stitch settings saved with both pocket keys 1 and 2 ( ) can be erased. Follow the instructions below.

* This procedure is not necessary in order to change the saved settings.

1 If the sewing machine is on, turn it off.



2 While holding down stitch selection key , turn on the sewing machine.

The following screen appears.



3 Press a stitch length key to select "OK".



* Once "OK" has been selected, "CANCEL" cannot be selected again.

4 Turn off the sewing machine.

The next time that the sewing machine is turned on, no stitch settings will be saved with pocket keys 1 and 2.

Useful Sewing Tips

Various ways to achieve better results for your sewing projects are described below. Refer to these tips when sewing your project.


Trial sewing

After you have set up the machine with the thread and needle appropriate for the type of fabric being sewn, the machine automatically sets the thread tension and stitch length and width for the stitch that is selected. However, a trial piece of fabric should be sewn since, depending on the type of fabric and stitching being sewn, the desired results may not be achieved.

For the trial sewing, use a piece of fabric and thread that are the same as those used for your project, and check the thread tension and stitch length and width. Since the results differ depending on the type of stitching and the number of layers of fabric sewn, perform the trial sewing under the same conditions that will be used with your project.

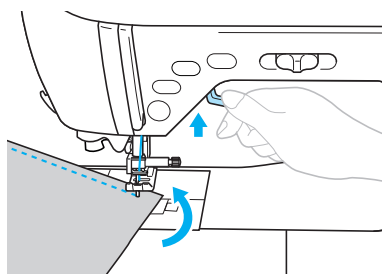
Changing the sewing direction

1 When the stitching reaches a corner, stop the sewing machine.

Leave the needle lowered (in the fabric). If the needle remained up when the machine stopped sewing, press  ("Needle Position" button) to lower the needle.

2 Raise the presser foot lever, and then turn the fabric.

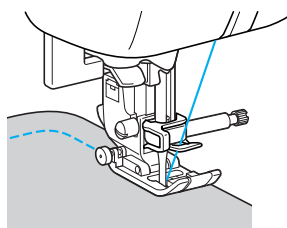
Turn the fabric using the needle as a pivot.



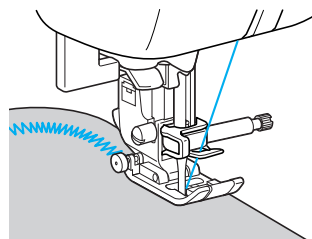
3 Lower the presser foot lever and continue sewing.

Sewing curves

Stop sewing, and then slightly change the sewing direction to sew around the curve. For details on sewing with an even seam allowance, refer to "Sewing an even seam allowance" (page 59).



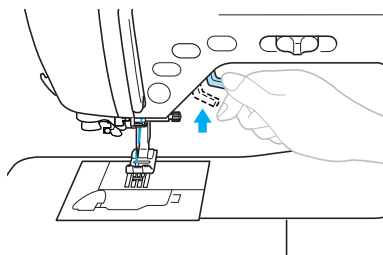
When sewing along a curve while using a zigzag stitch, select a shorter stitch length in order to obtain a finer stitch.



Sewing thick fabrics

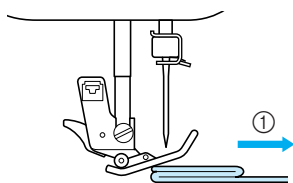
■ If the fabric does not fit under the presser foot

If the fabric does not fit easily under the presser foot, raise the presser foot lever even higher to bring the presser foot to its highest position.



■ If thick seams are being sewn and the fabric does not feed at the beginning of stitching

The fabric may not feed when thick seams are being sewn and the presser foot is not level, as shown below. In this case, use the presser foot locking pin (black button on the left side of zigzag foot "J") so that the presser foot remains level while sewing, allowing the fabric to be fed smoothly.

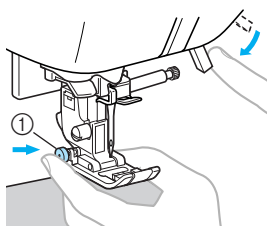


① Sewing direction

① Raise the presser foot lever.

② Align the beginning of stitching, and then position the fabric.

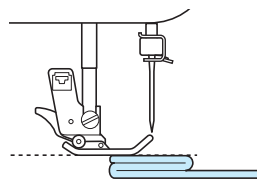
③ While holding zigzag foot "J" level, hold the presser foot locking pin (black button on the left side) pressed in, and lower the presser foot lever.



① Presser foot holding pin (black button)

④ Release the presser foot locking pin (black button).

▶ The presser foot remains level, allowing the fabric to be fed.



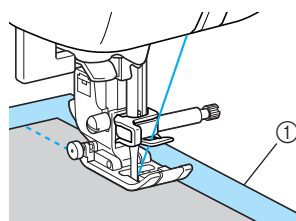
▶ After the seam is sewn, the presser foot will return to its original angle.

! CAUTION

● If fabric more than 6 mm (15/64 inch) thick is sewn or if the fabric is pushed with too much force, the needle may bend or break.

Sewing thin fabrics

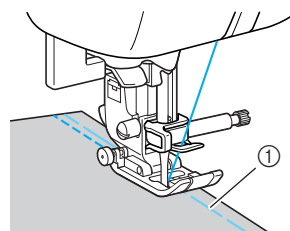
When sewing thin fabrics, the stitching may become misaligned or the fabric may not feed correctly. If this occurs, place thin paper or stabilizer material under the fabric and sew it together with the fabric. When you have finished sewing, tear off any excess paper.



① Stabilizer material or paper

Sewing stretch fabrics

First, baste the pieces of fabric together, and then sew without stretching the fabric.



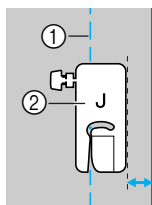
① Basting

Sewing an even seam allowance

To sew an even seam allowance, start sewing so that the seam allowance is to the right of the presser foot, and the edge of the fabric is aligned with either the right edge of the presser foot or a marking on the needle plate.

■ Aligning the fabric with the presser foot

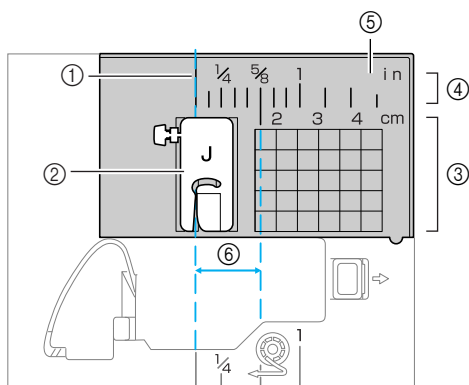
Sew while keeping the right edge of the presser foot a fixed distance from the edge of the fabric.



- ① Seam
- ② Presser foot

■ Aligning the fabric with a needle plate marking

The markings on the needle plate show the distance from the needle position of a seam sewn with the straight stitch (left needle position). Sew while keeping the edge of the fabric aligned with a marking in the needle plate. The distance between the markings in the upper scale is 1/8 inch (3 mm) and the distance between the markings in the grid is 5 mm (3/16 inch).



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

Sewing hook-and-loop fastener

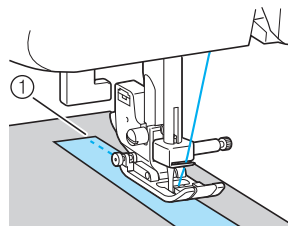
! CAUTION

- Use only the unglued hook-and-loop fastener which is for sewing. If the glue is attached to the needle or the bobbin hook race, it may cause malfunction.
- If the hook-and-loop fastener is sewn with the thin needle (65/9-75/11), the needle may bend or break.

⚡ Note

- Before start sewing, baste together the fabric and the hook-and-loop fastener.

Make sure that the needle passes through the hook-and-loop fastener by turning the handwheel and lower the needle into the hook-and-loop fastener before sewing. And then, sew the edge of the hook-and-loop fastener at a slow speed. If the needle does not pass through the hook-and-loop fastener, replace the needle with the needle for thick fabrics (page 35).



- ① Edge of the hook-and-loop fastener

3

UTILITY STITCHES

The various stitches and their applications are described in this chapter.

Selecting Stitching	62	Reinforcement Stitching	89
Selecting a stitch	62	Triple stretch stitching.....	89
Overcasting Stitches.....	63	Bar tack stitching.....	89
Sewing overcasting stitches		Darning	91
using overcasting foot "G"	63	Decorative Stitching.....	93
Sewing overcasting stitches		Fagoting.....	93
using zigzag foot "J"	64	Scallop stitching	94
Sewing overcasting stitches		Smocking.....	94
using the optional side cutter	65	Heirloom stitching.....	95
Basic Stitching	67		
Basting	67		
Basic stitching	67		
Blind Hem Stitching	69		
Buttonhole Stitching.....	71		
Buttonhole sewing.....	71		
Button sewing	75		
Zipper Insertion.....	78		
Inserting a centered zipper	78		
Inserting a side zipper	79		
Sewing Stretch Fabrics			
and Elastic Tape.....	82		
Stretch stitching	82		
Elastic attaching	82		
Appliqué, Patchwork			
and Quilt Stitching	84		
Appliqué stitching	84		
Patchwork (crazy quilt) stitching.....	85		
Quilting.....	85		
Free-motion quilting.....	86		
Satin stitching using the sewing			
speed controller	88		

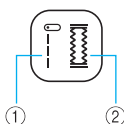
Selecting Stitching

You can select any of the various types of stitching available.

Selecting a stitch

Use the stitch selection keys to select the stitch for the desired purpose. Two stitches are assigned to each stitch selection key.

Example:



- ① Straight stitch (left needle position)
- ② Buttonhole stitch

- * When the sewing machine is turned on, the settings for the straight stitch (left needle position) appear in the LCD.
- * When a stitch is selected, its settings automatically appear in the LCD.
- * When a stitch is selected, the needle may move; however, this is simply to adjust the needle position according to the selected stitch.



- **To select the stitch shown on the left side of the key**
Press the corresponding stitch selection key once.
- **To select the stitch shown on the right side of the key**
Press the corresponding stitch selection key twice.

Overcasting Stitches

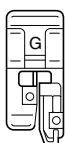
Sew overcasting stitches along the edges of cut fabric to prevent fabric from fraying. Six stitches are available for overcasting. The procedure for sewing overcasting stitch is explained according to the presser foot that is used.

Sewing overcasting stitches using overcasting foot “G”

Two stitches can be used to sew overcasting with overcasting foot “G”.

Stitch Name	Stitch	Application	Presser Foot
Overcasting stitch		Preventing fraying in medium weight and thin fabrics	G
		Preventing fraying in thick fabrics and fabrics that fray easily	

1 Attach overcasting foot “G”.

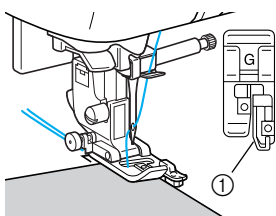


- For details, refer to “Replacing the presser foot” (page 38).

2 Select a stitch.

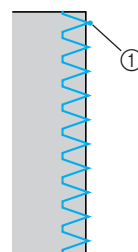
- For details, refer to “Selecting Stitching” (page 62).

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



① Guide

4 Sew with the edge of the fabric against the presser foot guide.






① Needle drop point

CAUTION

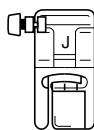
- After adjusting the stitch width, slowly turn the handwheel toward you (counterclockwise) and check that the needle does not touch the presser foot. If the needle hits the presser foot, the needle may bend or break.

Sewing overcasting stitches using zigzag foot “J”

Three stitches can be used to sew overcasting stitches with zigzag foot “J”.

Stitch Name	Stitch	Application	Presser Foot
Zigzag stitch		Preventing fraying	J
3-point zigzag stitch		Preventing fraying in thick fabrics and stretch fabrics	
Overcasting stitch		Preventing fraying in stretch fabrics	

1 Attach zigzag foot “J”.

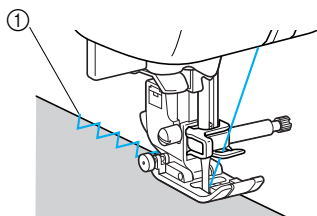


- For details, refer to “Replacing the presser foot” (page 38).

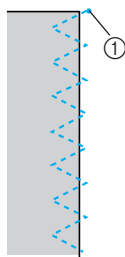
2 Select a stitch.

- For details, refer to “Selecting Stitching” (page 62).

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



① Needle drop point



① Needle drop point






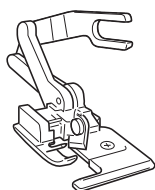
Memo

- For best results when sewing stretch fabrics, decrease the pressure of the presser foot. For details, refer to “Adjusting the pressure of the presser foot” (page 40).

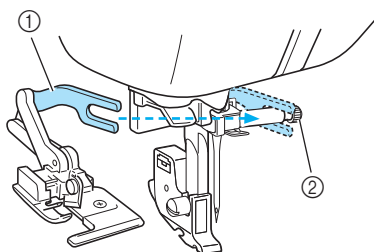
Sewing overcasting stitches using the optional side cutter

Using the side cutter, seam allowances can be finished while the edge of the fabric is cut off. Three stitches can be used to sew overcasting stitches with the side cutter.

Stitch Name	Stitch	Application	Presser Foot
Straight stitch (left needle position)		Sewing straight stitches while cutting the fabric	S
Overcasting stitch		Preventing fraying in thin and medium weight fabrics while cutting the fabric	
		Preventing fraying in thick fabrics while cutting the fabric	

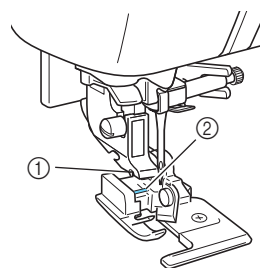


- 1 Remove the presser foot.**
 - For details, refer to “Replacing the Presser Foot” (page 38).
- 2 Lower the presser foot lever, and then manually thread the needle.**
 - The needle threader cannot be used. If the needle threader is used with the side cutter, the sewing machine may be damaged.
- 3 Raise the presser foot lever.**
- 4 Hook the connecting fork of the side cutter onto the needle clamp screw.**



- ① Connecting fork
- ② Needle clamp screw

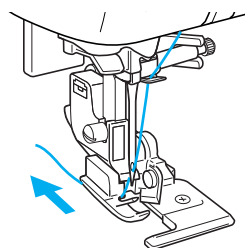
- 5 Position the side cutter so that side cutter pin is aligned with the notch in the presser foot holder, and then slowly lower the presser foot lever.**



- ① Notch in presser foot holder
- ② Pin

▶ The side cutter is attached.

- 6 Raise the presser foot lever to check that the side cutter is securely attached.**
- 7 Pass the upper thread under the side cutter, and then pull it out toward the rear of the sewing machine.**

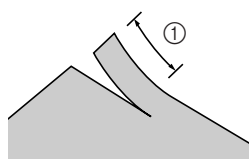


8 Select a stitch.

- For details, refer to “Selecting Stitching” (page 62).

! CAUTION

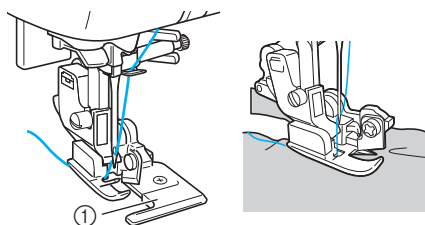
- After adjusting the stitch width, slowly turn the handwheel toward you (counterclockwise) and check that the needle does not touch the presser foot. If the needle hits the presser foot, the needle may bend or break.

9 Make a cut of about 2 cm (3/4 inch) long in the fabric at the beginning of the stitching.

① 2 cm (3/4 inch)

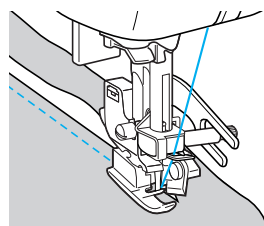
10 Position the fabric in the side cutter.

The cut in the fabric should be positioned over the guide plate of the side cutter.

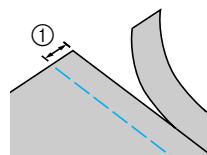


① Guide plate

- If the fabric is not positioned correctly, the fabric will not be cut.

11 Lower the presser foot lever, and then start sewing.

- ▶ A seam allowance is cut while the stitching is sewn.
- If the stitching is sewn in a straight line, the seam allowance will be about 5 mm (3/16 inch).



① 5 mm (3/16 inch)

**Memo**

- The side cutter can cut as much as one layer of 13-oz. denim.
- After using the side cutter, clean it by removing any lint or dust.
- If the side cutter can no longer cut fabric, use a rag to apply a small amount of oil to the cutting edge of the cutter.
- The optional side cutter is available through your brother dealer.

Basic Stitching

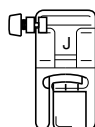
Straight stitches are used for sewing plain seams. Three stitches are available for basic stitching.

Stitch Name	Stitch	Application	Presser Foot
Straight stitch (left needle position)		Basic stitching and sewing gathers or pintucks	J
Straight stitch (center needle position)			
Triple stretch stitch		Reinforcing seams and sewing stretch fabrics	

Basting

Sew basting with a stitch length between 5 mm (3/16 inch).

1 Attach zigzag foot “J”.



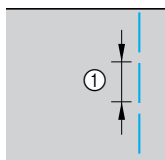
- For details, refer to “Replacing the presser foot” (page 38).

2 Select stitch

- For details, refer to “Selecting Stitching” (page 62).

3 Start sewing.

- For details, refer to “Starting to sew” (page 46).

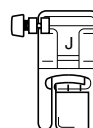


① 5 mm (3/16 inch)

Basic stitching

1 Baste or pin together the fabric pieces.

2 Attach zigzag foot “J”.



- For details, refer to “Replacing the presser foot” (page 38).

3 Select a stitch.

- For details, refer to “Selecting Stitching” (page 62).

4 Lower the needle into the fabric at the beginning of the stitching.

5 Start sewing.

- For details, refer to “Starting to sew” (page 46).
- For details on sewing reverse/reinforcement stitches, refer to “Securing the stitching” (page 48).

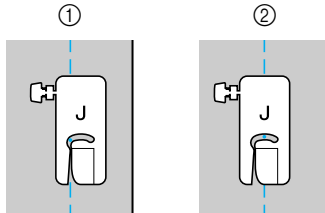
6 When sewing is finished, cut the thread.

- For details, refer to “Cutting the thread” (page 49).



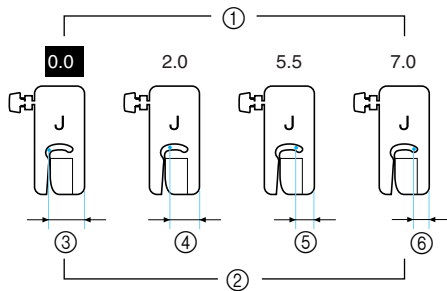
■ **Changing the needle position**

The needle position used as the baseline is different for the straight stitch (left needle position) and the straight stitch (center needle position).

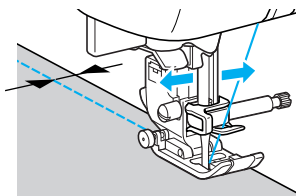


- ① Straight stitch (left needle position)
- ② Straight stitch (center needle position)

When the stitch width of the straight stitch (left needle position) is set to its standard setting (0.0 mm), the distance from the needle position to the right side of the presser foot is 12 mm (1/2 inch). If the stitch width is changed (between 0 and 7.0 mm (1/4 inch)), the needle position will also change. By changing the stitch width and sewing with the right side of the presser foot aligned with the edge of the fabric, a seam allowance can be sewn with a fixed width.





- ① Stitch width setting
- ② Distance from the needle position to the right side of the presser foot
- ③ 12.0 mm (1/2 inch)
- ④ 10.0 mm (3/8 inch)
- ⑤ 6.5 mm (1/4 inch)
- ⑥ 5.0 mm (3/16 inch)



- For details, refer to “Adjusting the stitch width” (page 52).

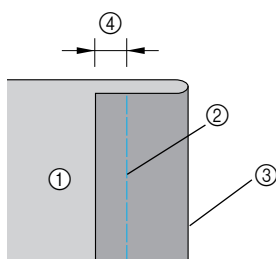
Blind Hem Stitching

Secure the bottoms of skirts and pants with a blind hem. Two stitches are available for blind hem stitching.

Stitch Name	Stitch	Application	Presser Foot
Blind hem stitch		Blind hem stitching on medium weight fabrics	R
		Blind hem stitching on stretch fabrics	

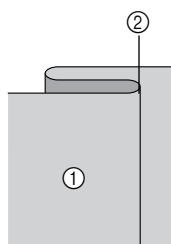
Sew a blind hem according to the following procedure.

- 1** Fold the fabric along the desired edge of the hem, and then baste it about 5 mm (3/16 inch) from the edge of the fabric.



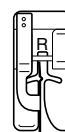
- ① Wrong side of fabric
- ② Basting stitching
- ③ Desired edge of hem
- ④ 5 mm (3/16 inch)

- 2** Fold back the fabric along the basting, and then position the fabric with the wrong side facing up.



- ① Wrong side of fabric
- ② Basting

- 3** Attach blind hem foot “R”.

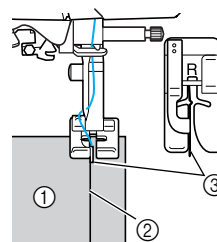


- For details, refer to “Replacing the presser foot” (page 38).

- 4** Select a stitch.

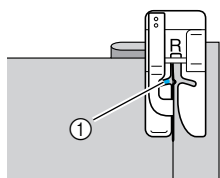
- For details, refer to “Selecting Stitching” (page 62).

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

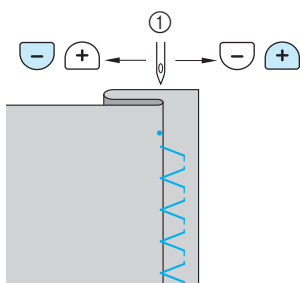


- ① Wrong side of fabric
- ② Fold of hem
- ③ Guide

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



① Needle drop point

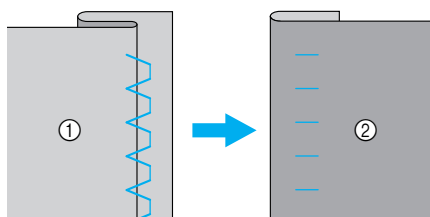


① Stitch width

■ If the needle catches too much of the hem fold

The needle is too far to the left.

Press **(-)** (of the Stitch width keys) to decrease the stitch width so that the needle slightly catches the fold of the hem.

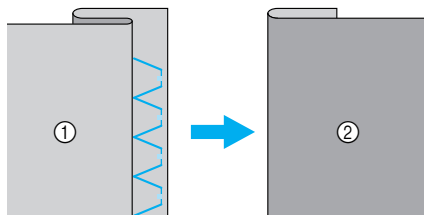


① Wrong side of fabric
② Right side of fabric

■ If the needle does not catch the hem fold

The needle is too far to the right.

Press **(+)** (of the Stitch width keys) to increase the stitch width so that the needle slightly catches the fold of the hem.

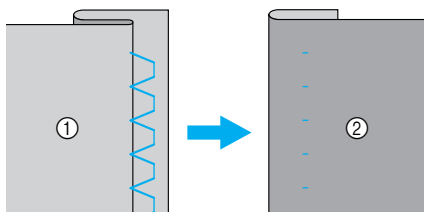


① Wrong side of fabric
② Right side of fabric

- For details on changing the stitch width, refer to “Adjusting the Stitch Width and Length” (page 52).

7 Sew with the fold of the hem against the presser foot guide.

8 Remove the basting stitching.



① Wrong side of fabric
② Right side of fabric









Memo

- For best results when sewing stretch fabrics, decrease the pressure of the presser foot. For details, refer to “Adjusting the pressure of the presser foot” (page 40).

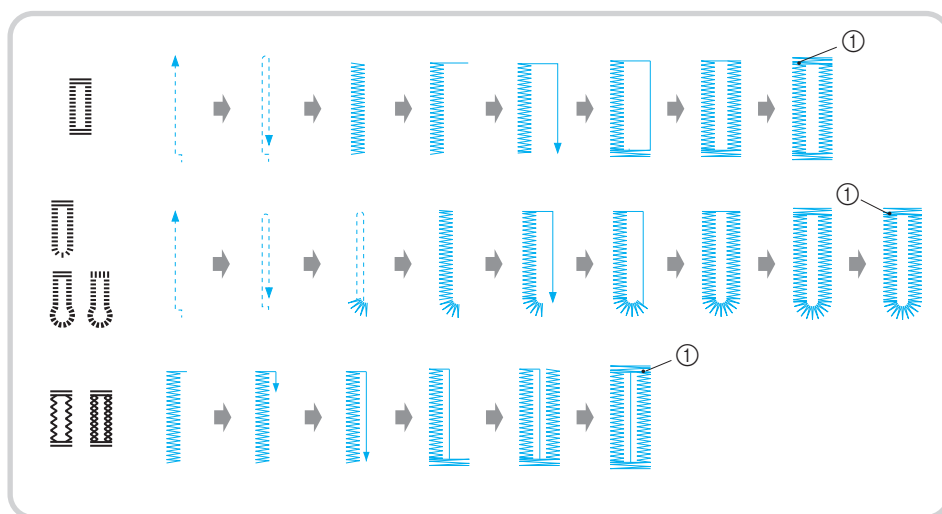
Buttonhole Stitching

Buttonholes can be sewn and buttons can be sewn on. Six stitches are available for sewing one-step buttonholes.

Stitch Name	Stitch	Application	Presser Foot
Buttonhole stitch		Secured buttonholes for fabrics that have backings	A
		Horizontal buttonholes on thin and medium weight fabrics	
		Keyhole buttonholes for thick or furry fabrics	
		Buttonholes for stretch or knit fabrics	
		Buttonholes for stretch fabrics	
		Horizontal buttonholes for thick or furry fabrics	

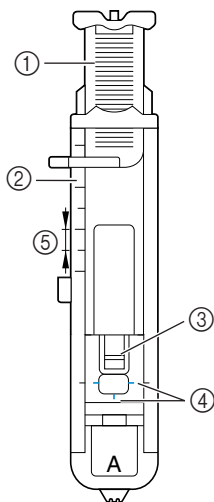
Buttonhole sewing

The maximum buttonhole length is about 28 mm (1-1/8 inches) (diameter + thickness of the button). Buttonholes are sewn from the front of the presser foot to the back, as shown below.



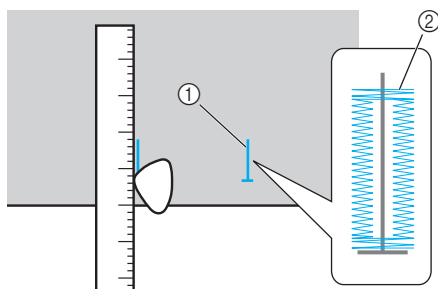
① Reinforcement stitching

The names of parts of buttonhole foot “A”, which is used for sewing buttonholes, are indicated below.



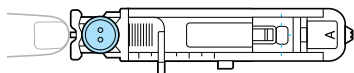
- ① Button guide plate
- ② Presser foot scale
- ③ Pin
- ④ Marks on buttonhole foot
- ⑤ 5 mm (3/16 inch)

1 Use chalk to mark on the fabric the position and length of the buttonhole.



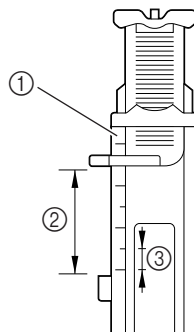
- ① Marks on fabric
- ② Button hole sewing

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



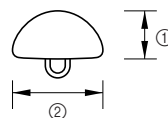
■ If the button does not fit in the button guide plate

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



- ① Presser foot scale
- ② Length of buttonhole (Diameter + thickness of button)
- ③ 5 mm (3/16 inch)

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



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

► The size of the buttonhole is set.

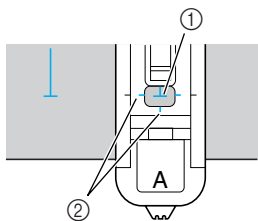
3 Attach buttonhole foot “A”.

- For details, refer to “Replacing the presser foot” (page 38).

4 Select a stitch.

- For details, refer to “Selecting Stitching” (page 62).

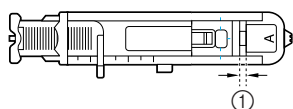
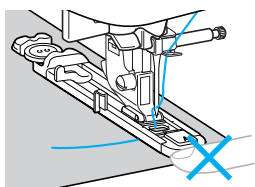
- 5** Position the fabric with the front end of the buttonhole mark aligned with the red marks on the sides of the buttonhole foot, and then lower the presser foot lever.



- ① Mark on fabric
② Red marks on buttonhole foot

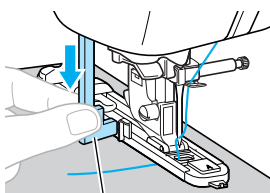
Pass the upper thread down through the hole in the presser foot.

- When lowering the presser foot, do not push in the front of the presser foot, otherwise the buttonhole will not be sewn with the correct size.



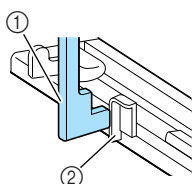
- ① Do not reduce the gap.

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



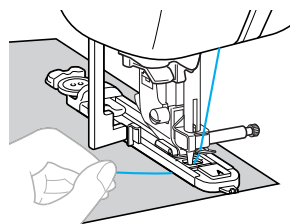
- ① Buttonhole lever

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



- ① Buttonhole lever
② Bracket

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




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

- 8** Press  (“Thread Cutter” button) once.

- ▶ The threads are cut, and the needle is raised. Raise the presser foot, and then remove the fabric.

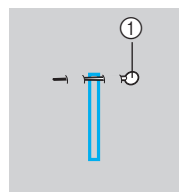


Memo

- If the automatic thread cutting setting was selected before sewing, the machine will automatically cut the threads at the end of the stitching. For details, refer to “Automatically cutting the thread” (page 54).
- When using the thread cutter on the left side of the machine or scissors to cut the threads, press  (“Needle Position” button) to raise the needle, raise the presser foot, and then pull out the fabric before cutting the threads. For details, refer to “Using the manual thread cutter” (page 50).

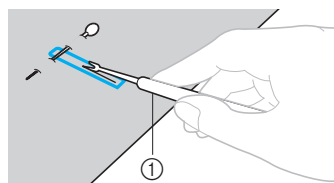
- 9** Raise the buttonhole lever to its original position.

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



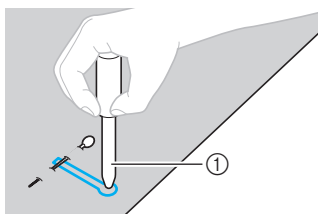
- ① Pin

- 11** Use the seam ripper to cut towards the pin and open the buttonhole.



- ① Seam ripper

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



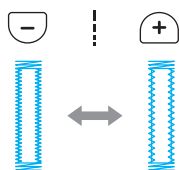
① Eyelet punch

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

! CAUTION

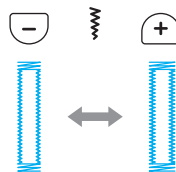
- When opening the buttonhole with the seam ripper, do not place your hands in the cutting direction, otherwise injuries may result if the seam ripper slips.

■ **Changing the density of the stitching**
Adjust the stitch length.



- For details, refer to “Adjusting the stitch length” (page 53).
- If the fabric does not feed (for example, if it is too thick), decrease the density of the stitching.

■ **Changing the stitch width**
Adjust the stitch width.



- For details, refer to “Adjusting the stitch width” (page 52).



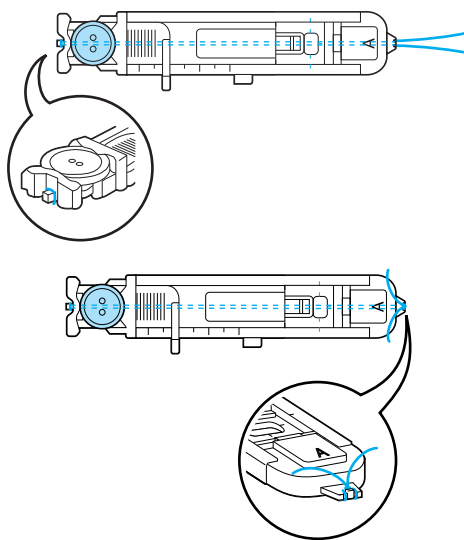
Memo

- Before sewing buttonholes, check the stitch length and width by sewing a trial buttonhole on a scrap piece of fabric.

■ **Sewing buttonholes on stretch fabrics**



When sewing buttonholes on stretch fabrics, use a gimp thread.

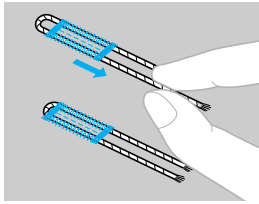
- ① Hook the gimp thread onto the part of buttonhole foot “A” shown in the illustration so that it fits into the grooves, and then loosely tie it.



- ② **Attach buttonhole foot “A”.**

- For details, refer to “Replacing the presser foot” (page 38).

- ③ Select stitch  or .
- ④ Adjust the stitch width to the thickness of the gimp thread.
- ⑤ Lower the presser foot lever and the buttonhole lever, and then start sewing.
- ⑥ When sewing is finished, gently pull the gimp thread to remove any slack.

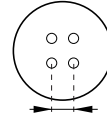



- ⑦ Use a handsewing needle to pull the gimp thread to the wrong side of the fabric, and then tie it.
- ⑧ With a seam ripper, cut the middle part of the gimp thread remaining at the top end of the buttonhole.
Trim off any excess of the gimp thread.

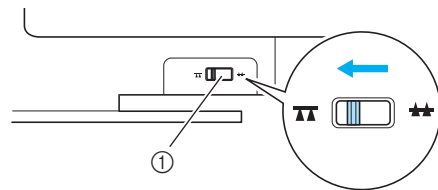
Button sewing

Buttons can be sewn on with the sewing machine. Buttons with 2 or with 4 holes can be attached.

- ① Measure the distance between the holes in the button to be attached.




- ② Raise the presser foot lever, and then slide the drop feed lever, located at the rear of the machine on the base, to  (to the left as seen from the rear of the machine).



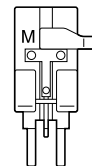
- ① Drop feed lever (as seen from the rear of the machine)

▶ The feed dogs are lowered.

- ③ Turn on the sewing machine.

- ④ Select stitch .

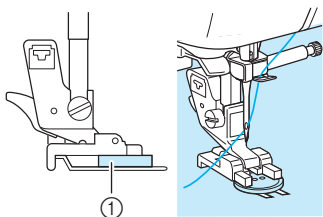
- ⑤ Attach button fitting foot “M”.



- For details, refer to “Replacing the presser foot” (page 38).

6 Adjust the stitch width so that it is the same as the distance between the holes in the button.

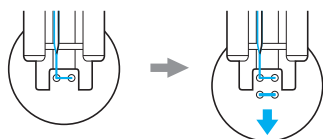
7 Place the button into button fitting foot “M”.



① Button

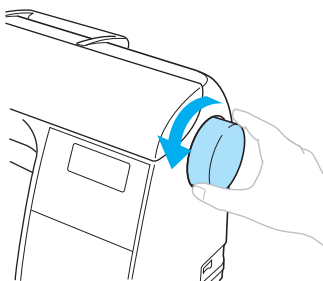
▶ The button is held in place.

- When attaching four-hole buttons, first sew the two holes closest to you. Then, slide the button so that the needle goes into the two holes toward the rear of the sewing machine, and then sew them in the same way.



8 Turn the handwheel toward you (counterclockwise) to check that the needle correctly goes into the two holes of the button.

If it seems as if the needle will hit the button, remeasure the distance between the holes in the button. Adjust the stitch width to the distance between the button holes.

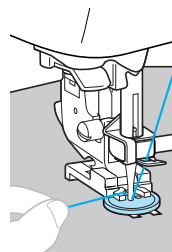


CAUTION

- When sewing, be sure that the needle does not touch the button, otherwise the needle may bend or break.

9 Start sewing.

Set the sewing speed controller to the left (so that the speed will be slow).

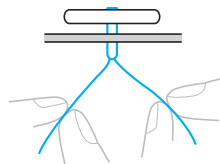


▶ The sewing machine automatically stops after sewing reinforcement stitches.

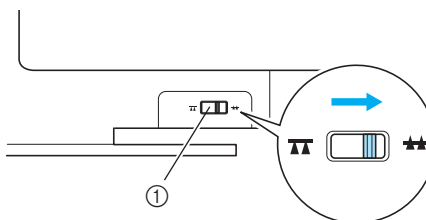
- If additional strength is needed to secure the button, perform the button-sewing operation twice.

10 Use scissors to cut the upper thread and the bobbin thread at the beginning of the stitching.

Pull the upper thread at the end of the stitching to the wrong side of the fabric, and then tie it with the bobbin thread.



11 When you are finished attaching the button, slide the drop feed lever to **▲▲** (to the right as seen from the rear of the machine) and turn the handwheel to raise the feed dogs.



① Drop feed lever (as seen from the rear of the machine)



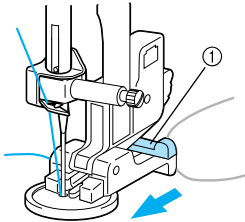
Memo

- The feed dog position switch is normally set to the right side (as seen from the rear of machine).
- The feed dogs come up when you start sewing again.

■ Attaching a shank to a button

To sew the button with a shank, attach the button with space between it and the fabric, and then wind the thread by hand. This attaches the button securely.

- 1 Place the button into button-sewing foot “M”, and then pull the shank lever toward you.



① Shank lever

- 2 After sewing is finished, cut the upper thread with plenty of excess, wind it around the thread between the button and the fabric, and then tie it to the upper thread at the beginning of the stitching.

Tie together the ends of the bobbin thread at the end and at the beginning of the stitching on the wrong side of the fabric.



- 3 Cut off any excess thread.

Zipper Insertion

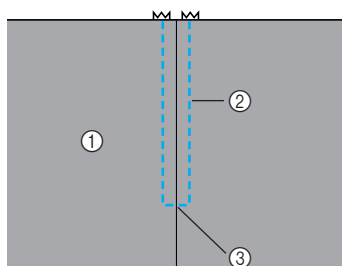
A zipper can be sewn in place.

Stitch Name	Stitch	Application	Presser Foot
Straight stitch (center needle position)		Attaching zippers Sewing concealed seams and pintucks	I

There are many methods for inserting zippers. The procedures for inserting a centered zipper and a side zipper are described below.

Inserting a centered zipper

Stitching is sewn on both pieces of fabric butted against each other.



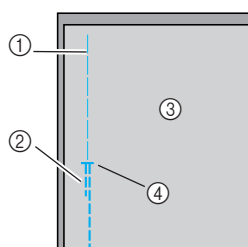
- ① Right side of fabric
- ② Stitching
- ③ End of zipper opening

1 Attach zigzag foot “J” and sew straight stitches up to the zipper opening.

With the right sides of the fabric facing each other, sew reverse stitches after reaching the zipper opening.

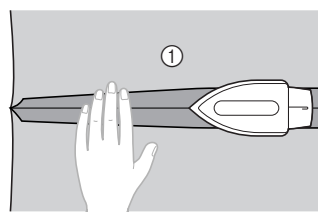
- For details, refer to “Basic stitching” (page 67).

2 Using a basting stitch, continue sewing to the edge of the fabric.



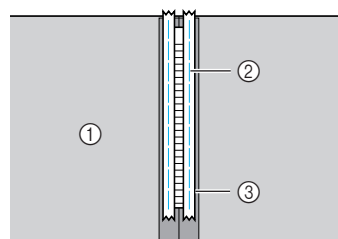
- ① Basting stitching
- ② Reverse stitches
- ③ Wrong side of fabric
- ④ End of zipper opening

3 Press open the seam allowance from the wrong side of the fabric.



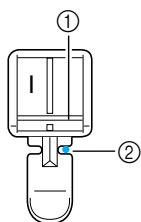
- ① Wrong side of fabric

4 Align the seam with the center of the zipper, and then baste the zipper in place.



- ① Wrong side of fabric
- ② Basting stitching
- ③ Zipper

- 5** Attach the presser foot holder to the right pin of zipper foot “I”.



- ① Pin on the right side
- ② Needle drop point

- For details, refer to “Replacing the presser foot” (page 38).

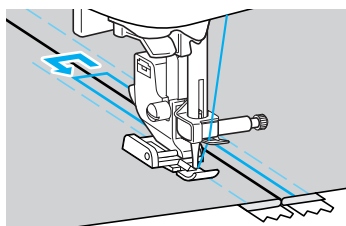
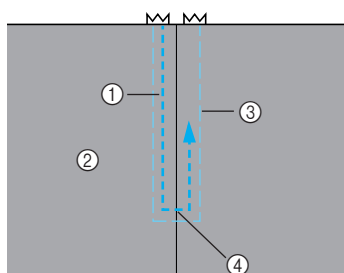
- 6** Select stitch .

- For details, refer to “Selecting Stitching” (page 62).

CAUTION

- When using zipper foot “I”, be sure to select the straight stitch (center needle position), and slowly turn the handwheel toward you (counterclockwise) to check that the needle does not touch the presser foot. If a different stitch is selected or the needle hits the presser foot, the needle may bend or break.

- 7** Topstitch around the zipper.



- ① Stitching
- ② Right side of fabric
- ③ Basting stitching
- ④ End of zipper opening

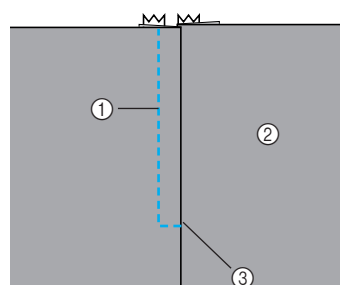
CAUTION

- When sewing, be sure that the needle does not touch the zipper, otherwise the needle may bend or break.

- 8** Remove the basting stitching.

Inserting a side zipper

Stitching is sewn on only one piece of fabric. Use this type of zipper application for side openings and back openings.



- ① Stitching
- ② Right side of fabric
- ③ End of zipper opening

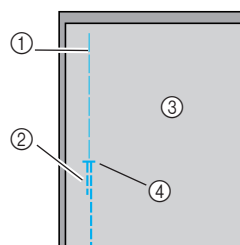
The following procedure will describe how to stitch on the left side, as shown in the illustration.

- 1** Attach zigzag foot “J” and sew straight stitches up to the zipper opening.

With the right sides of the fabric facing each other, sew reverse stitches after reaching the zipper opening.

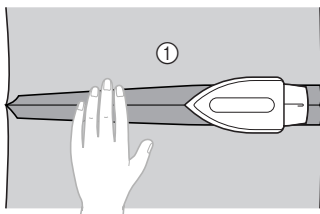
- For details, refer to “Basic stitching” (page 67).

- 2** Using a basting stitch, continue sewing to the edge of the fabric.



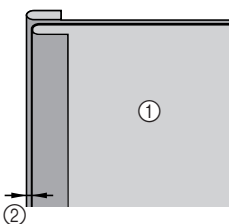
- ① Basting stitching
- ② Reverse stitches
- ③ Wrong side of fabric
- ④ End of zipper opening

- 3** Press open the seam allowance from the wrong side of the fabric.



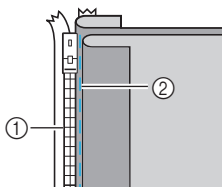
① Wrong side of fabric

- 4** Press the seam allowance so that the right side (the side that will not be stitched) has an extra 3 mm (1/8 inch).



① Wrong side of fabric
② 3 mm (1/8 inch)

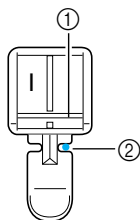
- 5** Align the zipper teeth with the pressed edge of the fabric having the extra 3 mm (1/8 inch), and then baste or pin the zipper in place.



① Zipper teeth
② Basting stitching


- 6** Attach the presser foot holder to the right pin of zipper foot "1".

If the stitching will be sewn on the right side, attach the presser foot holder to the left pin of the zipper foot.



① Pin on the right side
② Needle drop point

- For details, refer to "Replacing the presser foot" (page 38).

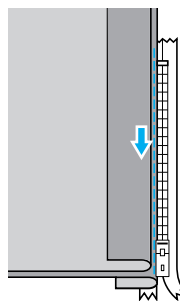
- 7** Select stitch .

- For details, refer to "Selecting Stitching" (page 62).

CAUTION

- When using zipper foot "1", be sure to select the straight stitch (center needle position), and slowly turn the handwheel toward you (counterclockwise) to check that the needle does not touch the presser foot. If a different stitch is selected or the needle hits the presser foot, the needle may bend or break.

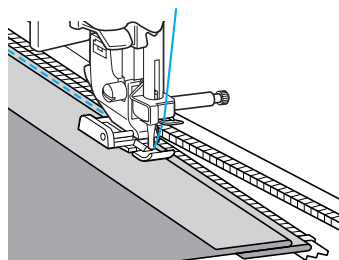
- 8** Sew the zipper to the piece of fabric with the extra 3 mm (1/8 inch), starting from the base of the zipper.



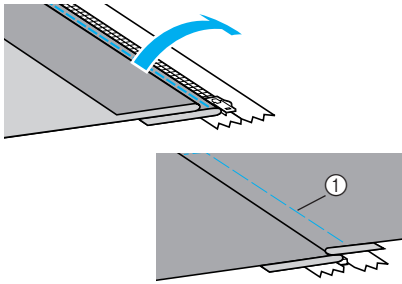
CAUTION

- When sewing, be sure that the needle does not touch the zipper, otherwise the needle may bend or break.

- 9** When you are about 5 cm (2 inches) from the end of the zipper, stop the sewing machine with the needle lowered (in the fabric), raise the presser foot lever, and then open the zipper and continue sewing.



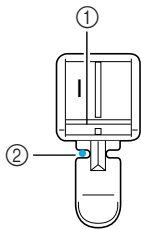
- 10 Close the zipper, turn over the fabric, and then baste the other side of the zipper to the fabric.



① Basting stitching

- 11 Attach the presser foot holder to the other pin of zipper foot “1”.

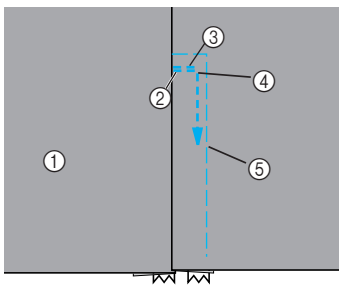
If the presser foot holder was attached to the right pin in step 6, change it to the left pin.



① Pin on the left side
② Needle drop point

- 12 Topstitch around the zipper.

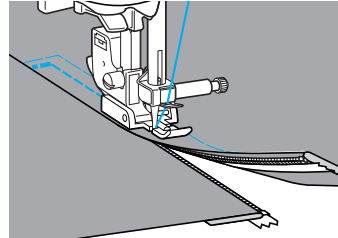
Sew reverse stitches at the end of the zipper opening and align the zipper teeth with the side of the presser foot.



① Right side of fabric
② End of zipper opening
③ Reverse stitches
④ Beginning of stitching
⑤ Basting stitching

- 13 When you are about 5 cm (2 inches) from the end of the zipper, stop the sewing machine with the needle lowered (in the fabric), raise the presser foot lever, and then open the zipper and continue sewing.

- 14 Remove the basting stitching.





CAUTION

● When sewing, be sure that the needle does not touch the zipper, otherwise the needle may bend or break.

Sewing Stretch Fabrics and Elastic Tape

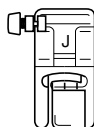
Stretch fabrics can be sewn and elastic tape can be attached.

Stitch Name	Stitch	Application	Presser Foot
Stretch stitch		Sewing stretch fabrics	J
3-point zigzag stitch		Attaching elastic	

Observe the corresponding precautions when performing each of the following stitching operations.

Stretch stitching

1 Attach zigzag foot “J”.

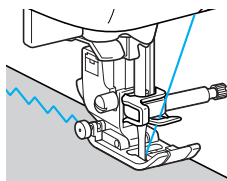


- For details, refer to “Replacing the presser foot” (page 38).

2 Select stitch .

- For details, refer to “Selecting Stitching” (page 62).

3 Sew the fabric without stretching it.

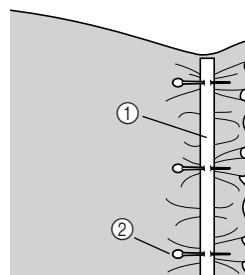


Elastic attaching

When elastic tape is attached to the cuff or waist of a piece of clothing, the finished dimensions will be that of the stretched elastic tape. Therefore, it is necessary that a suitable length of the elastic tape be used.

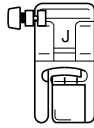
1 Pin the elastic tape to the wrong side of the fabric.

Pin the elastic tape to the fabric at a few points to make sure that the tape is uniformly positioned on the fabric.



- ① Elastic tape
- ② Pin

2 Attach zigzag foot “J”.



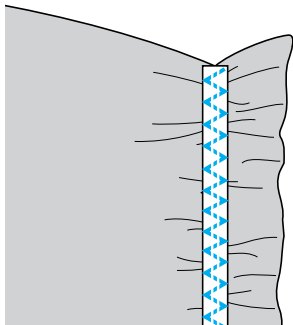
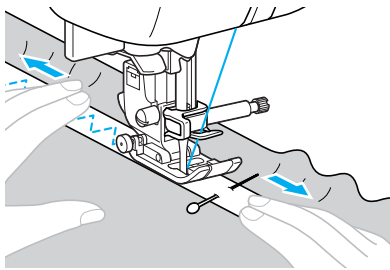
- For details, refer to “Replacing the presser foot” (page 38).

3 Select a stitch.

- For details, refer to “Selecting Stitching” (page 62).

4 Sew the elastic tape to the fabric while stretching the tape so that it is the same length as the fabric.

While pulling the fabric behind the presser foot with your left hand, pull the fabric at the pin nearest the front of the presser foot with your right hand.










⚠ CAUTION

- When sewing, be sure that the needle does not touch any pins, otherwise the needle may bend or break.

Appliqué, Patchwork and Quilt Stitching

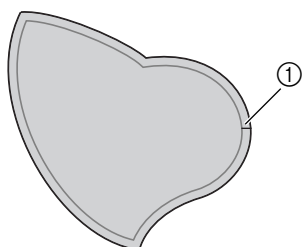
The stitches that can be used for sewing appliqués, patchwork and quilts are described below.

Stitch Name	Stitch	Application	Presser Foot
Zigzag stitch		Attaching appliqués	J
Appliqué stitch			
Fagoting stitch		Fagoting and decorative stitching	
Appliqué stitch (for quilting)	Left 	Attaching appliqués and binding	
	Right 		
Zigzag stitch (for quilting)		Appliqué quilting, free-motion quilting, satin stitching	
Mock hand-quilting stitch		Straight stitch quilting that looks like hand quilting	

Appliqué stitching

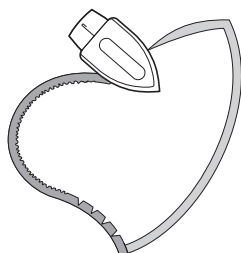
For best results, use the included open toe foot.

- 1 Cut out the appliqué, leaving a seam allowance of between 3 and 5 mm (1/8 and 3/16 inch).



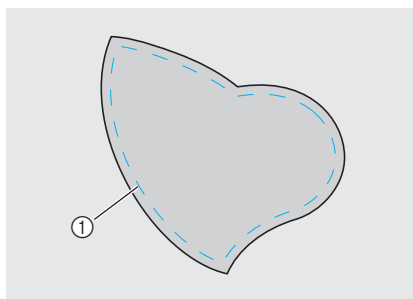
① Seam allowance

- 2 Place a pattern made of thick paper or stabilizer on the back of the appliqué, and then fold over the seam allowance using an iron.



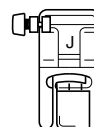
- Remove the thick paper after pressing the seam allowance.

- 3 Turn the fabric over, and then baste or pin it onto the fabric that it will be attached to.



① Basting stitching

- 4 Attach zigzag foot “J”.

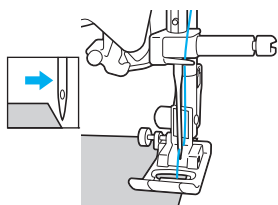


- For details, refer to “Replacing the presser foot” (page 38).

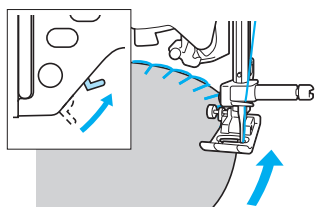
- 5 Select a stitch.

- For details, refer to “Selecting Stitching” (page 62).

- 6** Turn the handwheel toward you (counterclockwise), and then begin sewing around the edge of the appliqué, making sure that the needle drops just outside of the appliqué.

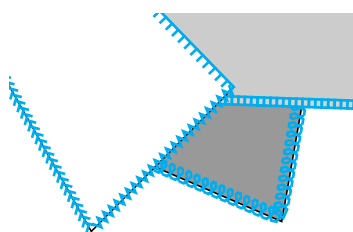
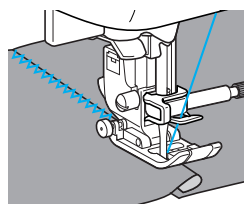


When sewing around corners, stop the machine with the needle in the fabric just outside of the appliqué, raise the presser foot lever, and then turn the fabric as needed to change the sewing direction.



Patchwork (crazy quilt) stitching

- 1** Fold the edge of the top piece of fabric and place it over the lower piece.
- 2** Sew the two pieces of fabric together so the pattern spans over both pieces.



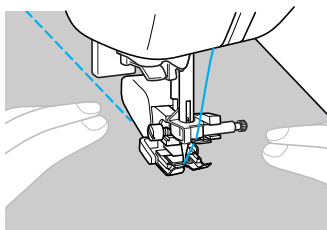
Quilting

Sandwiching batting between the top and bottom layers of fabric is called “quilting”. Quilts can easily be sewn using the optional walking foot and the optional quilting guide.

Note

- Thread the needle manually when using the walking foot, or only attach the walking foot after threading the needle using the needle threader.
- When sewing with the walking foot, sew at a speed between slow and medium.
- When quilting, use a 90/14 home sewing machine needle.
- 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. For details, refer to “Stitch Settings” (page 98).

- 1 **Baste the fabric to be quilted.**
- 2 **Attach the walking foot.**
 - For details, refer to “Using optional the walking foot” (page 41).
- 3 **Select a stitch.**
 - For details, refer to “Selecting Stitching” (page 62).
- 4 **Place one hand on each side of the presser foot, and hold fabric taut while sewing.**



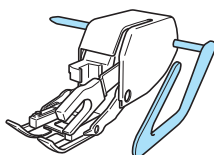
■ **Using the optional quilting guide**

Use the quilting guide to sew parallel stitches that are equally spaced.

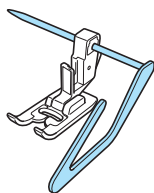


- 1 **Insert the stem of the quilting guide into the hole at the rear of the walking foot or presser foot holder.**

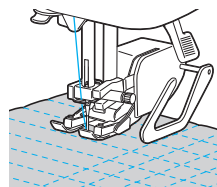
- Walking foot



- Presser foot holder



- 2 **Adjust the stem of the quilting guide so that the guide aligns with the seam that has already been sewn.**



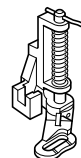
Note

- The optional quilting guide is available through your dealer.

Free-motion quilting

With free-motion quilting, lower the feed dogs (using the drop feed lever) so that the fabric can be moved freely in any direction.

The optional quilting foot is needed for free-motion quilting.



Note

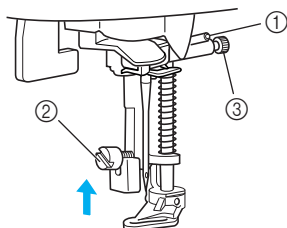
- Thread the needle manually when using the quilting foot, or only attach the quilting foot after threading the needle using the needle threader.

- 1 **Remove the presser foot and the presser foot holder.**

- Refer to “Removing the presser foot holder” (page 40).

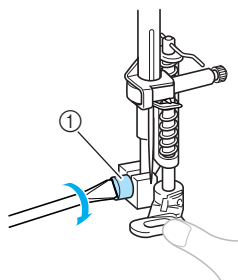
2 Secure the quilting foot with the presser foot holder screw.

The pin on the quilting foot should be positioned over the needle clamp screw.




- ① Pin on quilting foot
- ② Presser foot holder screw
- ③ Needle clamp screw

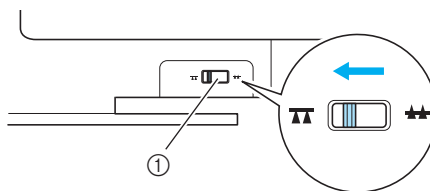
3 Hold the quilting foot in place with your right hand, and then tighten the presser foot holder screw using the screwdriver in your left hand.



- ① Presser foot holder screw

! CAUTION
● Be sure to securely tighten the screws with the screwdriver, otherwise the needle may touch the presser foot, causing it to bend or break.

4 Slide the drop feed lever, located at the rear of the machine on the base, to  (to the left as seen from the rear of the machine).



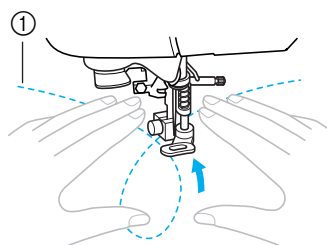
- ① Feed dog position switch (as seen from the rear of the machine)
- ▶ The feed dogs are lowered.

5 Turn on the sewing machine, and then select a stitch.


- For details, refer to “Selecting Stitching” (page 62).

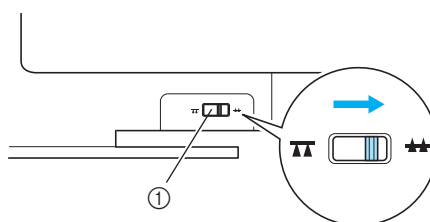
6 Use both hands to hold the fabric taut, and then move the fabric to follow the pattern.

Reinforcement stitches are sewn at the beginning and end of sewing.



- ① Pattern

7 After sewing is finished, slide the drop feed lever to  (to the right as seen from the rear of the machine) and turn the handwheel to raise the feed dogs.



- ① Drop feed lever (as seen from the rear of the machine)
- Normally, the drop feed lever is positioned at the right.

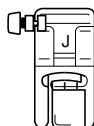
Satin stitching using the sewing speed controller

A decorative stitch can be sewn by changing the stitch width of a satin stitch. If the sewing machine is set so that the stitch width can be adjusted using the sewing speed controller, the stitch width can quickly and easily be adjusted. In this case, the sewing speed is adjusted with the foot controller.

1 Connect the foot controller.

- For details, refer to “Starting to sew” (page 46).

2 Attach zigzag foot “J”.



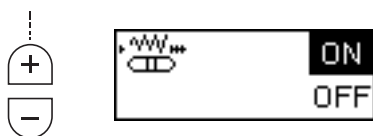
- For details, refer to “Replacing the presser foot” (page 38).

3 While holding down stitch selection key , turn on the sewing machine.

- ▶ The following screen appears.




4 Press a stitch length key to select “ON”.



- * To turn off stitch width control, press a stitch length key again to select “OFF”.

5 Turn off the sewing machine, and then turn it on again.

Stitch width control is turned on. Sliding the sewing speed controller to the right increases the stitch width; sliding it to the left decreases the width.

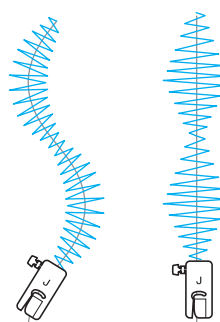
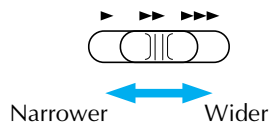
- *  appears in the LCD to indicate that stitch width control has been turned on.

6 Select stitch .

- For details, refer to “Selecting Stitching” (page 62).

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


Slide the controller to the left to make the width narrower. Slide the controller to the right to make the width wider.



- Adjust the sewing speed with the foot controller.






Memo

- When the foot controller is plugged in,  (“Start/Stop” button) cannot be used to start sewing.
- Although the stitching result differs depending on the type of fabric being sewn and the thickness of the thread being used, for best results, adjust the stitch length to between 0.3 and 0.5 mm (1/64 and 1/32 inch).

Reinforcement Stitching

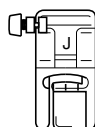
Reinforce points that will be subject to strain, such as sleeve holes, inseams and pocket corners.

Stitch Name	Stitch	Application	Presser Foot
Triple stretch stitch		Reinforcing the seams of sleeves and inseams	J
Bar tack stitch		Reinforcing the ends of openings, such as the corners of pockets	A
Darning stitch		Darning thick fabrics	

Triple stretch stitching

Use triple stretch stitching to reinforce sleeve holes and inseams.

1 Attach zigzag foot “J”.



- For details, refer to “Replacing the presser foot” (page 38).

2 Select stitch .

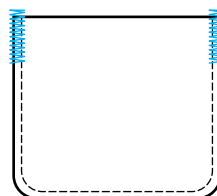
- For details, refer to “Selecting Stitching” (page 62).

3 Start sewing.

- For details, refer to “Starting to sew” (page 46).

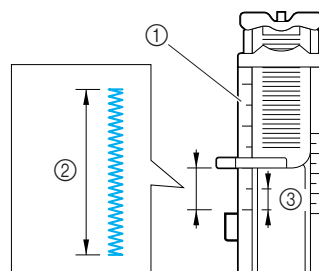
Bar tack stitching

Bar tacks are used to reinforce points subject to strain, such as pocket corners and openings. As an example, the procedure for sewing bar tacks at pocket corners is described below.



1 Determine the desired length of the bar tack.

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




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

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

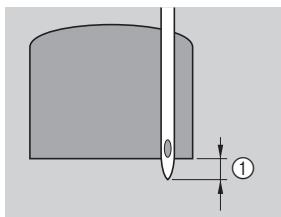
2 Attach buttonhole foot “A”.

- For details, refer to “Replacing the presser foot” (page 38).

3 Select stitch .

- For details, refer to “Selecting Stitching” (page 62).

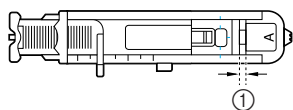
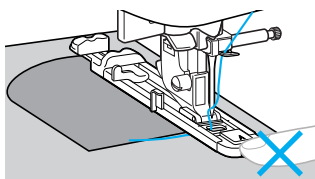
4 Position the fabric so that the opening of the pocket faces toward you, and then lower the presser foot lever so that the needle drops 2 mm (1/16 inch) in front of the pocket opening.



① 2 mm (1/16 inch)

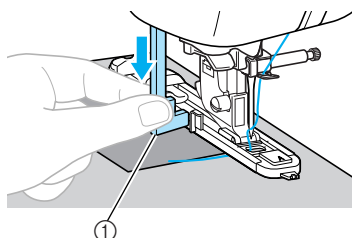
Pass the upper thread down through the hole in the presser foot.

- When lowering the presser foot, do not push in the front of the presser foot, otherwise the bar tack will not be sewn with the correct size.



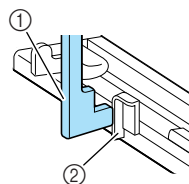
① Do not reduce the gap.

5 Pull down the buttonhole lever as far as possible.



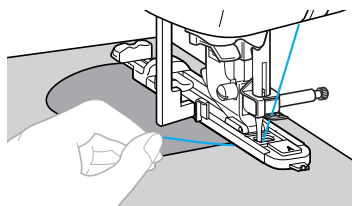
① Buttonhole lever

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



① Buttonhole lever
② Bracket

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



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

7 Cut the threads, raise the presser foot lever, and then remove the fabric.

8 Raise the buttonhole lever to its original position.

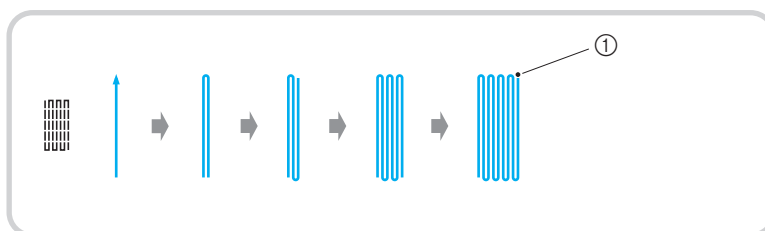


Memo

- If the fabric does not feed, for example, because it is too thick, increase the stitch length. For details, refer to “Adjusting the stitch length” (page 53).

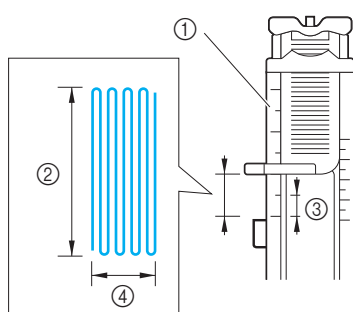
Darning

Fabric that has been torn can be darned.
Darning is sewn as shown below.



① Reinforcement stitching

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



- ① Presser foot scale
- ② Length of darning
- ③ 5 mm (3/16 inch)
- ④ 7 mm (1/4 inch)

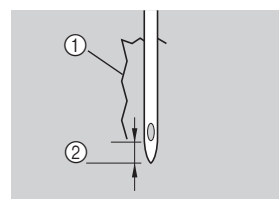
- 2 Attach buttonhole foot "A".**

- For details, refer to "Replacing the presser foot" (page 38).

- 3 Select stitch**

- For details, refer to "Selecting Stitching" (page 62).

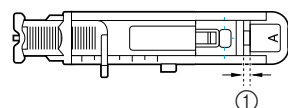
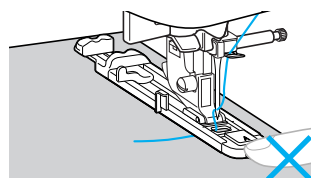
- 4 Position the fabric so that the needle is 2 mm (1/16 inch) in front of the area to be darned, and then lower the presser foot lever.**



- ① Tear
- ② 2 mm (1/16 inch)

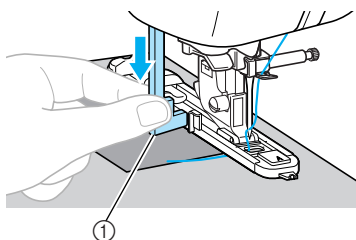
Pass the upper thread down through the hole in the presser foot.

- When lowering the presser foot, do not push in the front of the presser foot, otherwise the darning will not be sewn with the correct size.



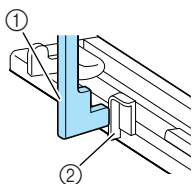
- ① Do not reduce the gap.

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



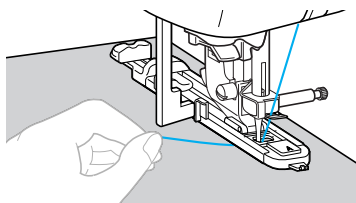
- ① Buttonhole lever

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



- ① Buttonhole lever
② Bracket

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



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

- 7 Cut the threads, raise the presser foot lever, and then remove the fabric.**

- 8 Raise the buttonhole lever to its original position.**



Memo

- If the fabric does not feed, for example, because it is too thick, increase the stitch length. For details, refer to "Adjusting the stitch length" (page 53).

Decorative Stitching

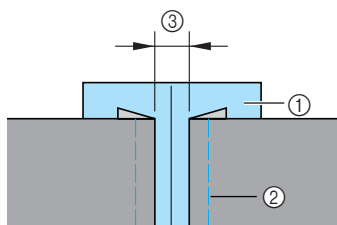
Various decorative stitches can be sewn with this sewing machine.

Stitch Name	Stitch	Application	Presser Foot
Fagoting stitch		Fagoting and decorative stitching	J
Smocking stitch		Smocking stitching, heirloom stitching, etc.	J
Scallop stitch		Satin scallop stitching	N
Decorative stitch		Decorative stitching	J
		Lace sewing, decorative hemming, heirloom stitching, etc.	N

Fagoting

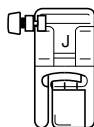
Stitching across an open seam is called “fagoting”. It is used on blouses and children's clothing. This stitch is more decorative when thicker thread is used.

- 1 Use an iron to fold the two pieces of fabric along their seams.
- 2 Baste the two pieces of fabric, separated by about 4 mm (3/16 inch), onto thin paper or a sheet of water-soluble stabilizer.
If you draw a line down the middle of the thin paper or water-soluble stabilizer, sewing is easier.



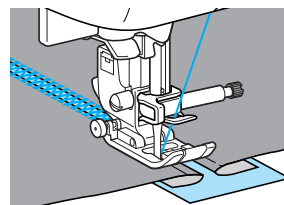
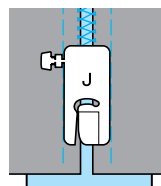
- ① Thin paper or water soluble stabilizer
- ② Basting stitching
- ③ 4 mm (3/16 inch)

- 3 Attach zigzag foot “J”.



- For details, refer to “Replacing the presser foot” (page 38).

- 4 Select stitch
- 5 Set the stitch width to 7.0 mm (1/4 inch).
• For details, refer to “Selecting Stitching” (page 62).
- 6 Sew with the center of the presser foot aligned along the center of the two pieces of fabric.

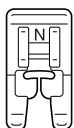


- 7 After sewing is finished, remove the paper.

Scallop stitching

The wave-shaped repeating pattern that looks like shells is called “scalloping”. It is used on the collars of blouses and to decorate the edges of handkerchiefs.

1 Attach monogramming foot “N”.

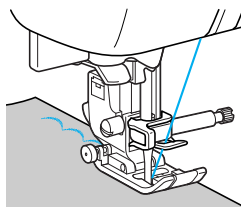


- For details, refer to “Replacing the presser foot” (page 38).

2 Select stitch .

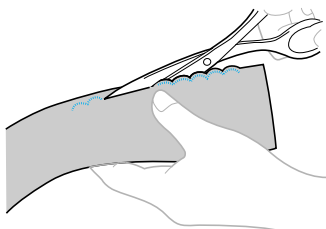
- For details, refer to “Selecting Stitching” (page 62).

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



- For better results, apply spray starch to the fabric and press with a hot iron before it is sewn.

4 Trim along the stitches.

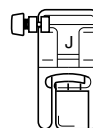


- Be careful not to cut the stitches.

Smocking

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

1 Attach zigzag foot “J”.

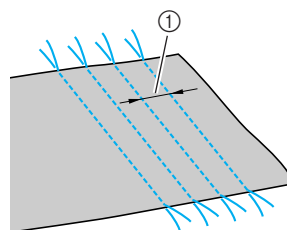


- For details, refer to “Replacing the presser foot” (page 38).

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

- For details, refer to “Adjusting the stitch length” (page 53) and “Changing the tension of the upper thread” (page 51).

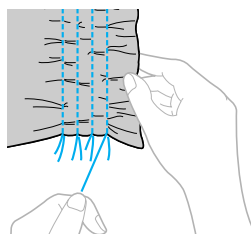
3 Sew parallel stitching at intervals of 1 cm (3/8 inch).




① 1 cm (3/8 inch)

- It is not necessary to sew reverse/reinforcement stitches or cut the thread.
- At the end of the stitching, the thread is pulled out about 5 cm (2 inches).

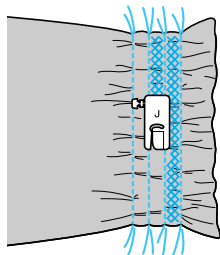
4 Pull the bobbin threads to create gathers. Smooth the gathers by ironing them.



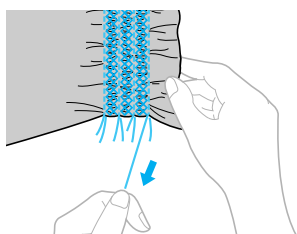
5 Select stitch .

- For details, refer to “Selecting Stitching” (page 62).

6 Stitch between the straight stitches.



7 Pull out the threads for the straight stitches.



Heirloom stitching

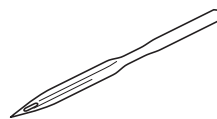
When sewing with the wing needle, the needle holes are enlarged, creating a lace-like decorative stitch. This is used to decorate hems and tablecloths on thin or medium weight fabrics in addition to plain weave fabrics.






Note

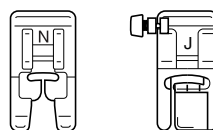
- If the thread becomes tangled, use stabilizer material.

1 Install the wing needle.





- Use a 130/705H 100/16 wing needle.
- For details on installing a needle, refer to “Replacing the needle” (page 36).
- The needle threader cannot be used with the wing needle, otherwise the sewing machine may be damaged. Manually pass the thread through the eye of the needle from the front to the back.

2 When sewing with stitch  or , attach monogramming foot “N”. When sewing with stitch , attach zigzag foot “J”.



- For details, refer to “Replacing the presser foot” (page 38).
- Select a stitch width of 6.0 mm (15/64 inch) or less.

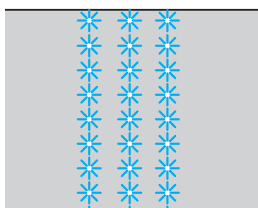
3 Select a stitch.

The stitches that can be used are , , or



- For details, refer to “Selecting Stitching” (page 62).
- Select a stitch width of 6.0 mm (15/64 inch) or less.

4 Start sewing.



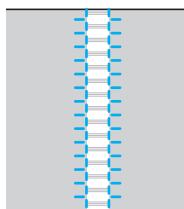
! CAUTION

- Select a stitch width of 6.0 mm (15/64 inch) or less, otherwise the needle may bend or break.
- After adjusting the stitch width, slowly turn 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.

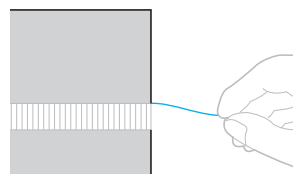
Partially removing threads is called “drawnwork”. This gives a beautiful result with fabrics that have a loose weave.

■ **Drawnwork**

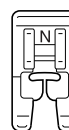
The fabric is turned and sewn twice.




1 Pull out several threads from the fabric.



2 Attach monogramming foot “N”.

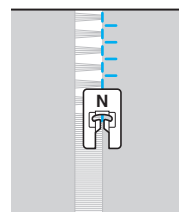


- For details, refer to “Replacing the presser foot” (page 38).

3 Select stitch .

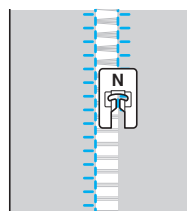
- For details, refer to “Selecting Stitching” (page 62).

4 With the right side of the fabric facing up, sew along the right edge of the frayed section.



5 Turn the fabric around to sew the opposite side.

6 Sew along the other edge of the frayed section so that it looks like the previous stitching.





4

APPENDIX



















The various maintenance and troubleshooting procedures are described in this chapter.

- Stitch Settings..... 98**
 - Utility stitches 98
- Care and Maintenance 100**
 - Restrictions on oiling 100
 - Cleaning the machine surface..... 100
 - Cleaning the race 100
- Troubleshooting 102**
 - Frequent troubleshooting topics..... 102
 - Upper thread tightened up..... 102
 - Tangled thread on wrong side of fabric..... 103
 - Incorrect thread tension..... 105
 - Fabric is caught in the machine and cannot be removed 106
 - When the thread became tangled under the bobbin winder seat 109
 - List of symptoms 111
 - Error messages 116
 - Operation beep 117
 - Cancelling the operation beep..... 117
 - Attaching the top cover..... 117
- Index 118**

Stitch Settings

Applications, stitch lengths and widths are listed for utility stitches in the following table.

Utility stitches

Stitch Name		Pattern	Application	Stitch Length [mm (inch)]	Stitch Width [mm (inch)]	Reverse/ Reinforcement Stitching	Presser Foot
Straight stitch	Left		Basic stitching, sewing gathers or pintucks, etc.	0.2-5.0 (Auto: 2.5)	0.0-7.0 (Auto: 0.0)	Reverse	J
	Center						
Stretch stitch			Sewing stretch fabrics	1.0-4.0 (Auto: 2.5)	1.0-3.0 (Auto: 1.0)	Reinforcement Stitching	J
Zigzag stitch			Overcasting and attaching appliqués	0.0-4.0 (Auto: 1.4)	0.0-7.0 (Auto: 3.5)	Reverse * Reinforcement stitches when sewing automatic reinforcement stitching	J
Overcasting stitch			Overcasting on thin or medium weight fabrics	1.0-4.0 (Auto: 2.0)	2.5-5.0 (Auto: 3.5)	Reinforcement Stitching	G
			Preventing fraying in thick fabrics and fabrics that fray easily	1.0-4.0 (Auto: 2.5)	2.5-5.0 (Auto: 5.0)	Reinforcement Stitching	G
			Overcasting on stretch fabrics	0.5-4.0 (Auto: 2.5)	0.0-7.0 (Auto: 5.0)	Reinforcement Stitching	J
Blind hem stitch			Blind hem stitching on medium weight fabrics	1.0-3.5 (Auto: 2.0)	3← →3 (Auto: 0.0)	Reinforcement Stitching	R
			Blind hem stitching on stretch fabrics	1.0-3.5 (Auto: 2.0)	3← →3 (Auto: 0.0)	Reinforcement Stitching	R
3-point zigzag stitch			Overcasting on medium weight or stretch fabrics, attaching elastic, darning, etc.	0.2-4.0 (Auto: 1.0)	1.5-7.0 (Auto: 5.0)	Reinforcement Stitching	J
Triple stretch stitch			Attaching sleeves, sewing inseams, sewing stretch fabrics and decorative stitching	1.5-4.0 (Auto: 2.5)	0.0-7.0 (Auto: 0.0)	Reinforcement Stitching	J
Appliqué stitch			Appliqué stitching	1.6-4.0 (Auto: 2.5)	2.5-7.0 (Auto: 3.5)	Reinforcement Stitching	J
Buttonhole stitch			Secured buttonholes for fabrics that have backings	0.2-1.0 (Auto: 0.4)	3.0-5.0 (Auto: 5.0)	Automatic reinforcement	A
			Horizontal buttonholes on thin and medium weight fabrics	0.2-1.0 (Auto: 0.4)	3.0-5.0 (Auto: 5.0)	Automatic reinforcement	A
			Keyhole buttonholes for thick or furry fabrics	0.3-1.0 (Auto: 0.5)	3.0-7.0 (Auto: 7.0)	Automatic reinforcement	A
			Buttonholes for stretch or knit fabrics	0.5-2.0 (Auto: 1.0)	3.0-6.0 (Auto: 6.0)	Automatic reinforcement	A
			Buttonholes for stretch fabrics	1.0-3.0 (Auto: 1.5)	3.0-6.0 (Auto: 6.0)	Automatic reinforcement	A
			Horizontal buttonholes for thick or furry fabrics	0.3-1.0 (Auto: 0.5)	3.0-7.0 (Auto: 7.0)	Automatic reinforcement	A

Stitch Name	Pattern	Application	Stitch Length [mm (inch)]	Stitch Width [mm (inch)]	Reverse/ Reinforcement Stitching	Presser Foot	
Fagoting stitch		Fagoting and decorative stitching	1.0-4.0 (Auto: 2.5)	0.0-7.0 (Auto: 5.0)	Reinforcement Stitching	J	
Smocking stitch		Smocking stitching	1.0-4.0 (Auto: 1.6)	0.0-7.0 (Auto: 5.0)	Reinforcement Stitching	J	
Satin scallop stitch		Scallop stitching	0.1-1.0 (Auto: 0.5)	2.5-7.0 (Auto: 5.0)	Reinforcement Stitching	N	
Decorative stitch		Decorative stitching	1.0-4.0 (Auto: 2.5)	0.0-7.0 (Auto: 4.0)	Reinforcement Stitching	J	
		Lace sewing, decorative hemming, heirloom stitching, etc.	1.5-4.0 (Auto: 3.0)	1.5-7.0 (Auto: 6.0)	Reinforcement Stitching	N	
		Lace sewing, decorative hemming, heirloom stitching, etc.	1.6-4.0 (Auto: 2.5)	1.5-7.0 (Auto: 3.5)	Reinforcement Stitching	N	
Appliqué stitch (for quilting)	Left		Attaching appliqués and binding	1.0-4.0 (Auto: 1.2)	0.5-5.0 (Auto: 1.5)	Reinforcement Stitching	J
	Right		Attaching appliqués and binding	1.0-4.0 (Auto: 1.2)	0.5-5.0 (Auto: 1.5)	Reinforcement Stitching	J
Zigzag stitch (for quilting)		Appliqué quilting, freemotion quilting, satin stitching	0.0-4.0 (Auto: 1.4)	0.0-7.0 (Auto: 3.5)	Reinforcement Stitching	J	
Straight stitch that looks hand-sewn (for quilting)		Straight stitch quilting that looks hand-sewn	1.0-4.0 (Auto: 2.5)	0.0-7.0 (Auto: 0.0)	Reinforcement Stitching	J	
Darning stitch		Darning thick fabrics	0.4-2.5 (Auto: 2.0)	2.5-7.0 (Auto: 7.0)	Automatic reinforcement	A	
Bar tack stitch		Reinforcing openings and areas where the seam easily comes loose	0.3-1.0 (Auto: 0.4)	1.0-3.0 (Auto: 2.0)	Automatic reinforcement	A	

Care and Maintenance

Simple sewing machine maintenance operations are described below.

Restrictions on oiling

In order to prevent damaging this machine, it must not be oiled by the user.

This machine was manufactured with the necessary amount of oil applied to ensure correct operation, making periodic oiling unnecessary.

If problems occur, such as difficulty turning the handwheel or an unusual noise, immediately stop using the machine, and contact your authorized dealer or the nearest authorized service center.

Cleaning the machine surface

If the surface of the machine is dirty, lightly soak a cloth in neutral detergent, squeeze it out firmly, and then wipe the surface of the machine. After cleaning it once with a wet cloth, wipe it again with a dry cloth.

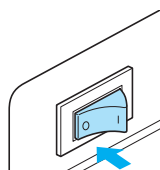
! CAUTION

- Unplug the power cord before cleaning the machine, otherwise injuries or an electric shock may occur.

Cleaning the race

Sewing performance will suffer if dust collects in the bobbin case; therefore, it should be cleaned periodically.

- 1 Turn off the sewing machine.



- 2 Unplug the power cord from the power supply jack on the right side of the sewing machine.

! CAUTION

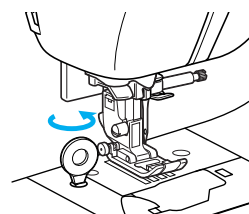
- Unplug the power cord before cleaning the machine, otherwise injuries or an electric shock may occur.

- 3 Remove the flat bed attachment.

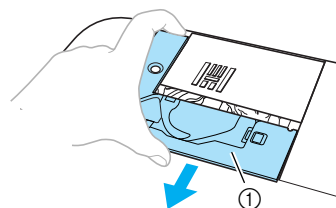
- 4 Remove the needle plate cover. The needle plate cover is removed differently depending on the model.

- If there is a screw in the needle plate cover

- 1 Use the disc-shaped screwdriver to remove the screw in the needle plate cover.



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

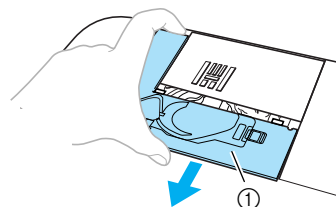


- ① Needle plate cover

- ▶ The needle plate cover is removed.

- If there is no screw in the needle plate cover

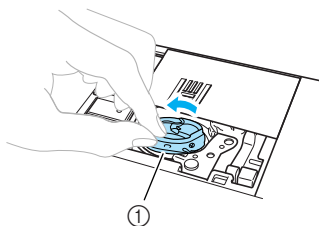
- 1 Grasp both sides of the needle plate cover, and then slide it toward you.



- ① Needle plate cover

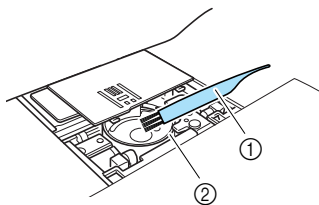
- ▶ The needle plate cover is removed.

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



① Bobbin case

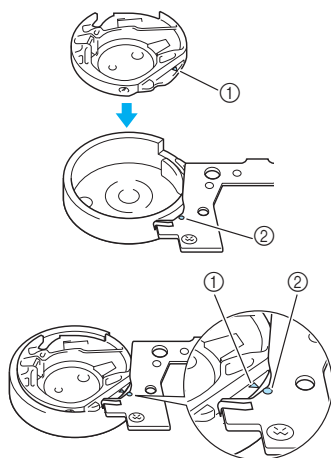
- 6 Use the cleaning brush or a vacuum cleaner to remove any lint and dust from the race and its surrounding area.**



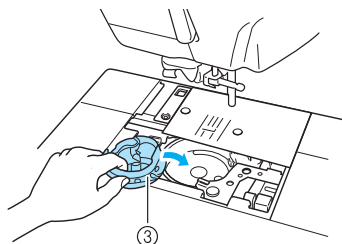
① Cleaning brush
② Race

• Do not apply oil to the bobbin case.

- 7 Insert the bobbin case so that the ▲ mark on the bobbin case aligns with the ● mark on the machine.**



* Align the ▲ and ● marks.



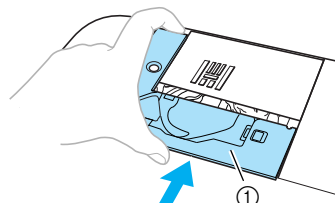
① ▲ mark
② ● mark
③ Bobbin case

* Make sure that the indicated points are aligned before installing the bobbin case.

- 8 Install the needle plate cover.**
The needle plate cover is installed differently depending on the model.

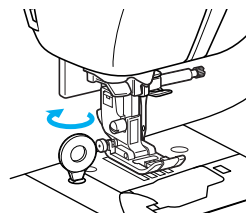
■ If there is a screw in the needle plate cover

- 1** Insert the tabs on the needle plate cover into the needle plate, and then slide the cover back on.



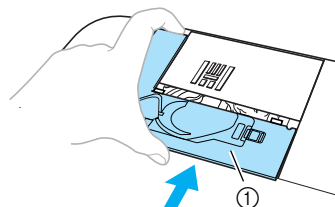
① Needle plate cover

- 2** Use the disc-shaped screwdriver to tighten the screw in the needle plate cover.



■ If there is no screw in the needle plate cover

- 1** Insert the tabs on the needle plate cover into the needle plate, and then slide the cover back on.



① Needle plate cover

- 9 Install the flat bed attachment in its original position.**

CAUTION

● Never use a bobbin case that is scratched, otherwise the upper thread may become tangled, the needle may break or sewing performance may suffer. For a new bobbin case (part code: XC3153-321), contact your nearest authorized service center.

● Be sure that the bobbin case is correctly installed, otherwise the needle may break.

Troubleshooting

If the machine stops operating correctly, check the following possible problems before requesting service. You can solve most problems by yourself. If you need additional help, the Brother Solutions Center offers the latest FAQs and troubleshooting tips. Visit us at “ <http://solutions.brother.com> ”. If the problem persists, contact your dealer or the nearest authorized service center.

Frequent troubleshooting topics

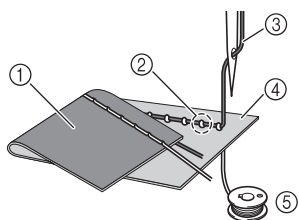
Detailed causes and remedies for common troubleshooting topics are described below. Be sure to refer to this before contacting us.

■ Upper thread tightened up	page 102
■ Tangled thread on wrong side of fabric	page 103
■ Incorrect thread tension	page 105
■ Fabric is caught in the machine and cannot be removed	page 106
■ When the thread became tangled under the bobbin winder seat	page 109

Upper thread tightened up

■ Symptom

- The upper thread appears as a single continuous line.
- The lower thread is visible from the upper side of the fabric. (Refer to the illustration below.)
- The upper thread has tightened up, and comes out when pulled.
- The upper thread has tightened up, and wrinkles appear in the fabric.
- The upper thread tension is tight, and the results do not change even after the thread tension is adjusted.



- ① Lower side of fabric
- ② Lower thread visible from upper side of fabric
- ③ Upper thread
- ④ Upper side of fabric
- ⑤ Lower thread

■ Cause

Incorrect lower threading

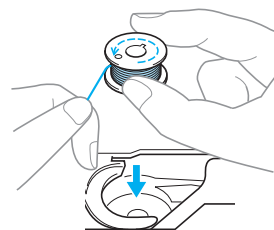
If the lower thread is incorrectly threaded, instead of the appropriate tension being applied to the lower thread, it is pulled through the fabric when the upper thread is pulled up. For this reason, the thread is visible from the upper side of the fabric.

■ Remedy/check details

Correctly install the lower thread.

- 1 Turn off the sewing machine.
- 2 Remove the bobbin from the bobbin case.
- 3 Place the bobbin in the bobbin case so that the thread unwinds in the correct direction.

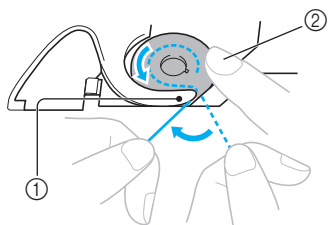
- Hold the bobbin with your right hand with the thread unwinding to the left, and hold the end of the thread with your left hand. Then, with your right hand, place the bobbin in the bobbin case.



If the bobbin is inserted with the thread unwinding in the wrong direction, sewing will be done with an incorrect thread tension.

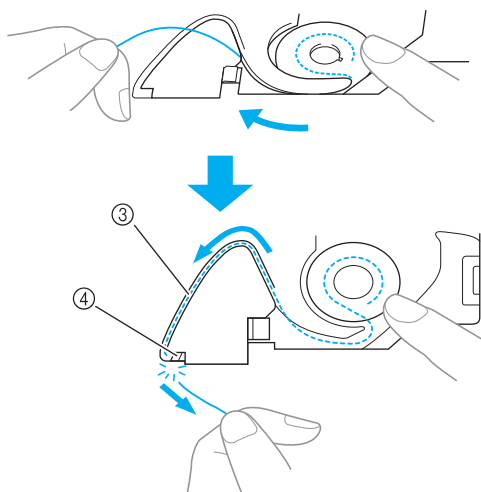
4 While holding the bobbin in place with your finger, pass the thread through the slit in the needle plate.

- Hold down the bobbin with your right hand, and then pull the end of the thread around the tab with your left hand.



- ① Tab
- ② Hold down the bobbin with your right hand.

Pull the thread to pass it through the slit in the needle plate, then cut it with the cutter.



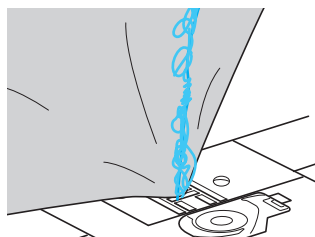
- ③ Slit
- ④ Cutter

Sewing with the correct thread tension is possible after the bobbin has been correctly installed in the bobbin case.

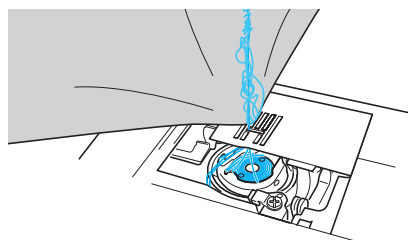
Tangled thread on wrong side of fabric

■ Symptom

- The thread becomes tangled on the lower side of the fabric.



- After starting sewing, a rattling noise is made and sewing cannot continue.
- Looking under the fabric, there is tangled thread in the bobbin case.



■ Cause

Incorrect upper threading

If the upper thread is incorrectly threaded, the upper thread passed through the fabric cannot be firmly pulled up and the upper thread becomes tangled in the bobbin case, causing a rattling noise.

■ Remedy/check details

Remove the tangled thread, and then correct the upper threading.

1 Remove the tangled thread. If it cannot be removed, cut the thread with scissors.

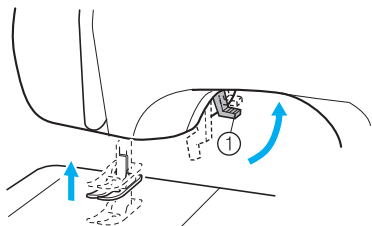
- For details, refer to “Cleaning the race” on page 100.

2 Remove the upper thread from the machine.

3 Refer to the following steps to correct the upper threading.

- If the bobbin was removed from the bobbin case, refer to “Installing the bobbin” (page 25) and “Remedy/check details” in the section “Upper thread tightened up” (page 102) to correctly install the bobbin.

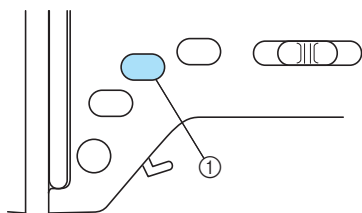
- 4** Raise the presser foot using the presser foot lever.




① Presser foot lever

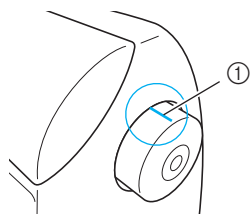
- If the presser foot is not raised, the sewing machine cannot be threaded correctly.

- 5** Press  (“Needle Position” button) once or twice to raise the needle.



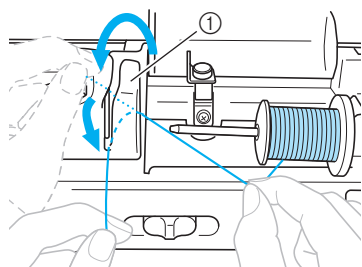
① “Needle Position” button

- ▶ The needle is correctly raised when the mark on the handwheel is at the top, as shown below. Check the handwheel and, if this mark is not at this position, press  (“Needle Position” button) until it is.



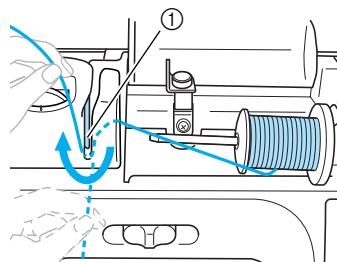
① Mark on handwheel

- 6** While holding the thread lightly with your right hand, pull the thread with your left hand, and then pass the thread behind the thread guide cover and to the front.



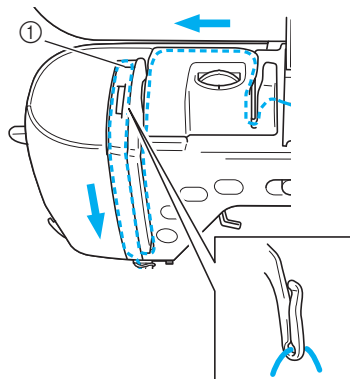
① Thread guide cover

- 7** Pass the thread under the thread guide plate, and then pull it up.



① Thread guide plate

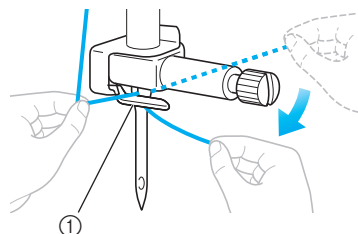
- 8** While using your right hand to lightly hold the thread passed under the thread guide plate, pass the thread through the thread path in the order shown below.



① Shutter

- 9** Pass the thread behind the needle bar thread guide.

The thread can easily be passed behind the needle bar thread guide by holding the thread in your left hand, then feeding the thread with your right hand, as shown.



① Needle bar thread guide

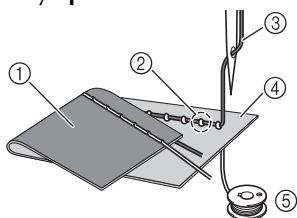
- 10** Next, use the needle threader to thread the needle. Continue with the procedure in “Threading the needle” (page 30).

Incorrect thread tension

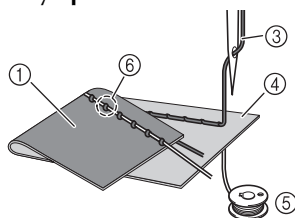
■ Symptoms

- Symptom 1: The lower thread is visible from the upper side of the fabric.
- Symptom 2: The upper thread appears as a straight line on the upper side of the fabric.
- Symptom 3: The upper thread is visible from the lower side of the fabric.
- Symptom 4: The lower thread appears as a straight line on the lower side of the fabric.
- Symptom 5: The stitching on the lower side of the fabric is loose or has slack.

□ Symptom 1



□ Symptom 3



- ① Lower side of fabric
- ② Lower thread visible from upper side of fabric
- ③ Upper thread
- ④ Upper side of fabric
- ⑤ Lower thread
- ⑥ Upper thread visible from lower side of fabric

■ Cause/remedy/check details

□ Cause 1

The machine is not correctly threaded.

<With symptoms 1 and 2 described above>
The lower threading is incorrect.

Return the thread tension dial to "4", and then refer to "Upper thread tightened up" (page 102) to correct the threading.

<With symptoms 3 through 5 described above>

The upper threading is incorrect.

Return the thread tension dial to "4", and then refer to "Tangled thread on wrong side of fabric" (page 103) to correct the upper threading.

□ Cause 2

A needle and thread appropriate for the fabric are not being used.

The sewing machine needle that should be used depends on the type of fabric sewn and the thread thickness.

If a needle and thread appropriate for the fabric are not being used, the thread tension will not be adjusted correctly, causing wrinkles in the fabric or skipped stitches.

- Refer to "Needle types and their uses" (page 35) to check that a needle and thread appropriate for the fabric are being used.

□ Cause 3

An appropriate setting on the thread tension dial is not selected.

Turn the thread tension dial to select an appropriate thread tension.

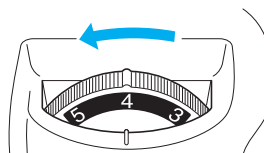
The appropriate thread tension differs according to the type of fabric and thread being used.

- * Adjust the thread tension while test sewing on a piece of scrap fabric that is the same as that used in your project.

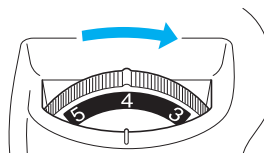
Note

- If the upper threading and lower threading are incorrect, the thread tension cannot be adjusted correctly, even by turning the thread tension dial. Check the upper threading and lower threading first, and then adjust the thread tension.

- When the lower thread is visible from the upper side of the fabric. Turn the thread tension dial to a lower number (toward the left). (Loosen the thread tension.)



- When the upper thread is visible from the lower side of the fabric. Turn the thread tension dial to a higher number (toward the right). (Tighten the thread tension.)

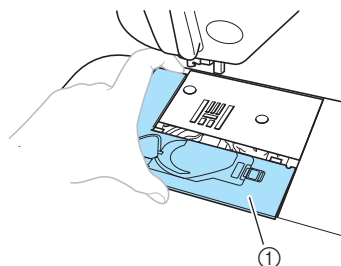


Fabric is caught in the machine and cannot be removed

If the fabric is caught in the sewing machine and cannot be removed, the thread may have become tangled under the needle plate. Follow the procedure described below to remove the fabric from the machine. If the operation could not be completed according to the procedure, instead of attempting to complete it forcefully, contact your nearest authorized service center.

■ Removing the fabric from the machine

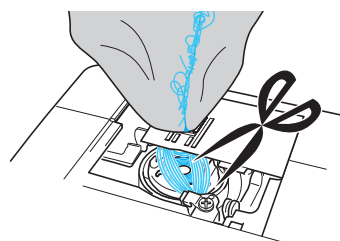
- 1 **Immediately stop the sewing machine.**
- 2 **Turn off the sewing machine.**
- 3 **Remove the needle.**
If the needle is lowered into the fabric, turn the handwheel away from you (clockwise) to raise the needle out of the fabric, and then remove the needle.
 - Refer to “Replacing the needle” (page 36).
- 4 **Remove the presser foot and presser foot holder.**
 - Refer to “Replacing the presser foot” (page 38)” and “Removing the presser foot holder” (page 40).
- 5 **Lift up the fabric and cut the threads below it.**
If the fabric can be removed, remove it. Continue with the following steps to clean the race.
- 6 **Remove the needle plate cover.**



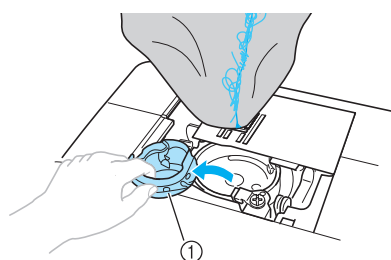
① Needle plate cover

- Refer to “Cleaning the race” (page 100).

- 7 **Cut out the tangled threads, and then remove the bobbin.**

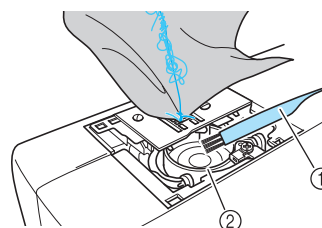


- 8 **Remove the bobbin case.**
If threads remain in the bobbin case, remove them.



① Bobbin case

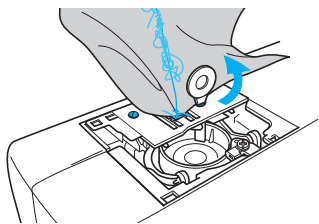
- 9 **Use the cleaning brush or a vacuum cleaner to remove any dust from the race and its surrounding area.**



① Cleaning brush
② Race

If the fabric could be removed.	Continue with step 15.
If the fabric could not be removed.	Continue with step 10.

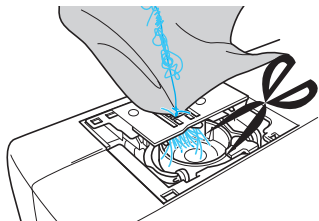
- 10** Use the enclosed disc-shaped screwdriver to loosen the two screws on the needle plate.



Note

- Be careful not to drop the removed screws in the machine.

- 11** Slightly lift up the needle plate, cut any tangled threads, and then remove the needle plate. Remove the fabric and threads from the needle plate.



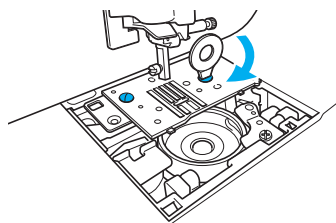
If the fabric cannot be removed, even after completing these steps, contact your nearest authorized service center.

- 12** Remove any threads in the race and around the feed dogs.

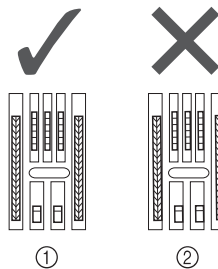
- 13** Turn the handwheel to raise the feed dogs.

- 14** Align the two screw holes in the needle plate with the two holes at the needle plate mounting base, and then fit the needle plate onto the machine.

- 15** Lightly finger-tighten the screw on the right side of the needle plate. Then, use the disc-shaped screwdriver to firmly tighten the screw on the left side. Finally, firmly tighten the screw on the right side.



Turn the handwheel to check that the feed dogs move smoothly and do not contact the edges of the slots in the needle plate.



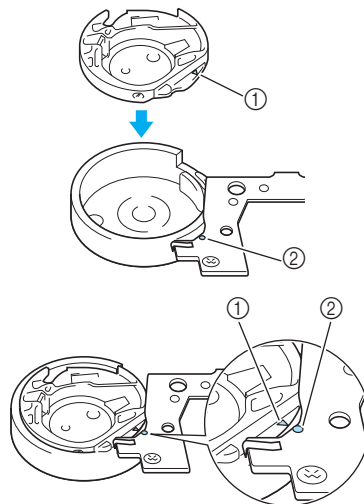
- ① Correct position of feed dogs
② Incorrect position of feed dogs



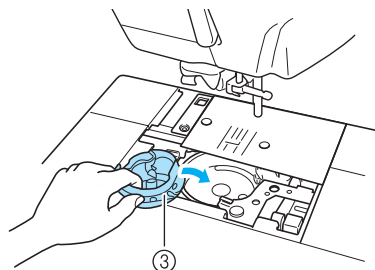
Note

- Be careful not to drop the removed screws in the machine.

- 16** Insert the bobbin case so that the ▲ mark on the bobbin case aligns with the ● mark on the machine.



- Align the ▲ and ● marks.



- ① ▲ mark
② ● mark
③ Bobbin case

- Make sure that the indicated points are aligned before installing the bobbin case.

! CAUTION

- Never use a bobbin case that is scratched, otherwise the upper thread may become tangled, the needle may break or sewing performance may suffer. For a new bobbin case (part code: XC3153-321), contact your nearest authorized service center.
- Make sure that you fit the bobbin case properly, otherwise the needle may break.

17 Attach the needle plate cover according to steps **B** in “Cleaning the race” (page 101).

18 Check the condition of the needle, and then install it.

If the needle is in a poor condition, for example, if it is bent, be sure to install a new needle.

- Refer to “Checking the needle” (page 36) and “Replacing the needle” (page 36).

! CAUTION

- Never use bent needles. Bent needles can easily break, possibly resulting in injuries.



Note

- After completing this procedure, continue with the following procedure in “Checking machine operations” to check that the machine is operating correctly.




Memo

- Since the needle may have been damaged when the fabric was caught in the machine, we recommend replacing it with a new one.

■ Checking machine operations

If the needle plate has been removed, check machine operations to confirm that installation has been completed correctly.

1 Turn on the machine.

2 Select stitch .

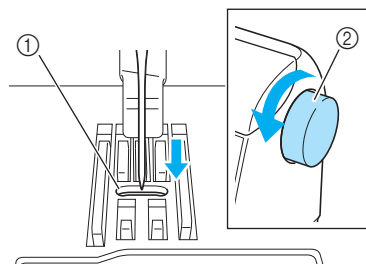


Note


- Do not yet install the presser foot and thread.

3 Slowly turn the handwheel toward you (counterclockwise), and look from all sides to check that the needle falls at the center of the hole in the needle plate.

If the needle contacts the needle plate, remove the needle plate, and then install it again, starting with step **13** in “Removing the fabric from the machine” (page 107).



- ① Hole in the needle plate
- ② Handwheel

4 Select stitch . At this time, increase the stitch length and width to their maximum settings.

- For details on changing the settings, refer to “Adjusting the Stitch Width and Length” (page 52).

5 Slowly turn the handwheel toward you (counterclockwise) and check that the needle bar and feed dogs operate correctly.

If the needle or feed dogs contact the needle plate, the machine may be malfunctioning; therefore, contact your nearest authorized service center.

6 Turn off the machine, and then install the bobbin and presser foot.

- Refer to “Installing the bobbin” (page 25) and “Replacing the presser foot” (page 38).

7 Correctly thread the machine.

- For details on threading the machine, refer to “Upper Threading” (page 27).



Note

- The thread may have become tangled as a result of incorrect upper threading. Make sure that the machine is correctly threaded.

8 Perform trial sewing with normal fabric.

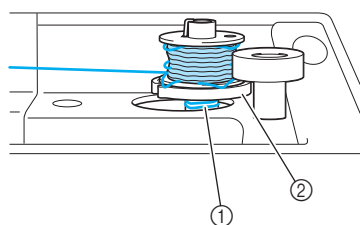


Note

- Incorrect sewing may be the result of incorrect upper threading or sewing thin fabrics. If there are poor results from the trial sewing, check the upper threading or the type of fabric being used.

When the thread became tangled under the bobbin winder seat

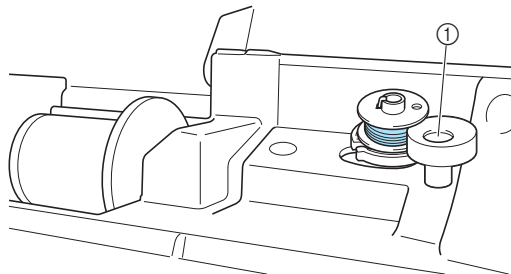
If the bobbin winding starts when the thread is not passed under the pre-tension disk of the bobbin-winding thread guide correctly, the thread may become tangled under the bobbin winder seat. In such a case, wind off the thread according to the following procedure.



- ① Thread
- ② Bobbin winder seat

CAUTION

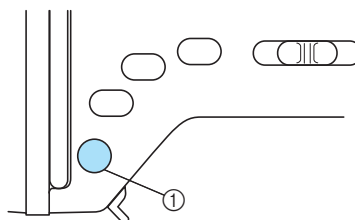
- Do not remove the bobbin winder seat even if the thread become tangled under the bobbin winder seat. It may result in injuries.
- Do not remove the screw of the bobbin winder presser, otherwise the machine may be damaged; you cannot wind off the thread by removing the screw.



- ① Screw of the bobbin winder presser

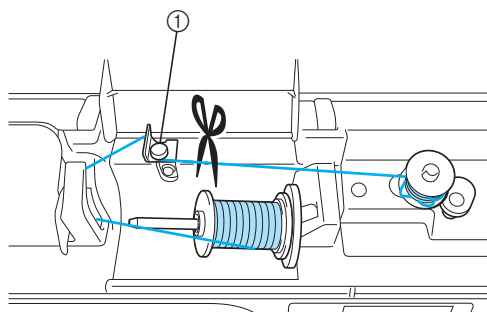
1 If the thread become tangled under the bobbin winder seat, press (Start/Stop) button once to stop the bobbin winding.

When the foot controller is plugged in, remove your foot from the foot controller.



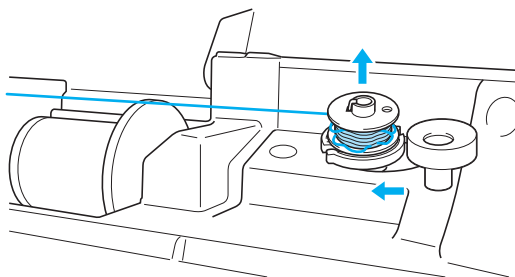
- ① “Start/Stop” button

2 Cut the thread with scissors beside the bobbin-winding thread guide.

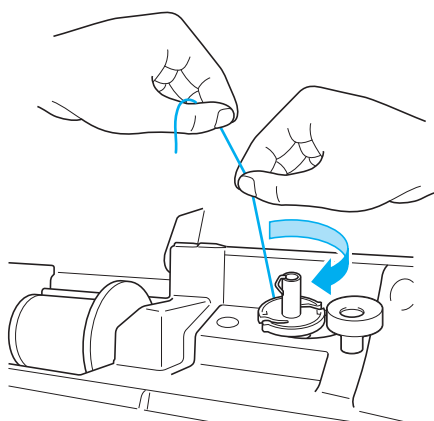


- ① Bobbin-winding thread guide

- 3** Slide the bobbin winder shaft to the left, and then remove the bobbin from the shaft.



- 4** Hold the thread end with your left hand, and wind off the thread clockwise near the bobbin with your right hand as shown below.



- 5** Wind the bobbin again.

**Note**

- Make sure that the thread passes under the pre-tension disk of the bobbin-winding thread guide correctly (page 23).

List of symptoms

Symptom	Probable Cause	Remedy	Reference
The sewing machine does not operate.	The machine is not turned on.	Turn on the machine.	page 17
	The "Start/Stop" button was not pressed.	Press the "Start/Stop" button.	page 46
	The presser foot lever is raised.	Lower the presser foot lever.	–
	The "Start/Stop" button was pressed, even though the foot controller is connected.	Do not use the "Start/Stop" button when the foot controller is connected. To use the "Start/Stop" button, disconnect the foot controller.	page 46
	The bobbin winder shaft is pushed to the right.	Move the bobbin winder shaft to the left.	page 24
The needle breaks.	The needle is incorrectly installed.	Correctly install the needle.	page 36
	The needle clamp screw is loose.	Use the screwdriver to firmly tighten the screw.	
	The needle is bent or blunt.	Replace the needle.	
	The combination of fabric, thread and needle is not correct.	Select a thread and needle that are appropriate for the type of fabric being sewn.	page 35
	The presser foot that is used is not appropriate for the type of stitch that you wish to sew.	Attach the presser foot that is appropriate for the type of stitch that you wish to sew.	page 98
	The upper thread tension is too tight.	Loosen the upper thread tension.	page 51
	The fabric is pulled too much.	Lightly guide the fabric.	–
	The spool is incorrectly installed.	Correctly install the spool.	page 27
	The area around the hole in the needle plate is scratched, or has a burr on it.	Replace the needle plate. Contact your dealer or the nearest authorized service center.	–
	The area around the hole in the presser foot is scratched, or has a burr on it.	Replace the presser foot. Contact your dealer or the nearest authorized service center.	–
	The bobbin case is scratched, or has a burr on it.	Replace the bobbin case. Contact your dealer or the nearest authorized service center.	–
	A bobbin designed specifically for this machine is not used.	Incorrect bobbins will not work properly. Only use a bobbin designed specifically for this machine.	page 21

Symptom	Probable Cause	Remedy	Reference
The upper thread breaks.	The upper thread was not threaded correctly (for example, the spool is not installed correctly, the spool cap is too big for the spool being used, or the thread has come out of the needle bar thread guide).	Correct the upper threading.	page 27
	There are knots or tangles in the thread.	Remove any knots or tangles.	–
	The selected needle is not appropriate for the thread being used.	Select a needle that is appropriate for the type of thread being used.	page 35
	The upper thread tension is too tight.	Loosen the upper thread tension.	page 51
	The thread is tangled, for example, in the bobbin case.	Remove the tangle thread. If the thread is tangled in the bobbin case, clean the race.	page 100
	The needle is bent or blunt.	Replace the needle.	page 36
	The needle is incorrectly installed.	Correctly install the needle.	
	The area around the hole in the needle plate is scratched, or has a burr on it.	Replace the needle plate. Contact your dealer or the nearest authorized service center.	–
	The area around the hole in the presser foot is scratched, or has a burr on it.	Replace the presser foot. Contact your dealer or the nearest authorized service center.	–
	The bobbin case is scratched, or has a burr on it.	Replace the bobbin case. Contact your dealer or the nearest authorized service center.	–
A bobbin designed specifically for this machine is not used.	Incorrect bobbins will not work properly. Only use a bobbin designed specifically for this machine.	page 21	
The lower thread is tangled or breaks.	The bobbin thread is incorrectly installed.	Correctly install the bobbin thread.	page 25
	The bobbin is scratched or does not rotate smoothly, or has a burr on it.	Replace the bobbin.	–
	The thread is tangled.	Remove the tangled thread and clean the race.	page 100
	A bobbin designed specifically for this machine is not used.	Incorrect bobbins will not work properly. Only use a bobbin designed specifically for this machine.	page 21

Symptom	Probable Cause	Remedy	Reference
The thread tension is incorrect.	The upper thread was not threaded correctly.	Correct the upper threading.	page 27
	The bobbin thread is incorrectly installed.	Correctly install the bobbin thread.	page 25
	The combination of fabric, thread and needle is not correct.	Select a thread and needle that are appropriate for the type of fabric being sewn.	page 35
	The presser foot holder is incorrectly installed.	Correctly install the presser foot holder.	page 40
	The thread tension is incorrect.	Adjust the tension of the upper thread.	page 51
	A bobbin designed specifically for this machine is not used.	Incorrect bobbins will not work properly. Only use a bobbin designed specifically for this machine.	page 21
The fabric is wrinkled.	The upper thread was not threaded correctly, or the bobbin is incorrectly installed.	Correctly thread the upper thread and correctly install the bobbin thread.	page 25, 27
	The spool is incorrectly installed.	Correctly install the spool.	page 27
	The combination of fabric, thread and needle is not correct.	Select a thread and needle that are appropriate for the type of fabric being sewn.	page 35
	The needle is bent or blunt.	Replace the needle.	page 36
	If thin fabrics are being sewn, the stitch is too long.	Shorten the stitch length or sew with stabilizer material under the fabric.	page 53
	The thread tension is incorrect.	Adjust the tension of the upper thread.	page 51
Stitches are skipped.	The upper thread was not threaded correctly.	Correct the upper threading.	page 27
	The combination of fabric, thread and needle is not correct.	Select a thread and needle that are appropriate for the type of fabric being sewn.	page 35
	The needle is bent or blunt.	Replace the needle.	page 36
	The needle is incorrectly installed.	Correctly install the needle.	page 36
	Dust has accumulated under the needle plate or in the bobbin case.	Remove the needle plate cover and clean the race.	page 100

Symptom	Probable Cause	Remedy	Reference
A high-pitched noise is made while sewing.	Dust has accumulated in the feed dogs or in the bobbin case.	Clean the race.	page 100
	The upper thread was not threaded correctly.	Correct the upper threading.	page 27
	The bobbin case is scratched, or has a burr on it.	Replace the bobbin case. Contact your dealer or the nearest authorized service center.	–
	A bobbin designed specifically for this machine is not used.	Incorrect bobbins will not work properly. Only use a bobbin designed specifically for this machine.	page 21
The needle threader cannot be used.	The needle has not been raised to the correct position.	Press the “Needle Position” button.	page 30
	The needle is incorrectly installed.	Correctly install the needle.	page 36
The stitch is not sewn correctly.	The presser foot that is used is not appropriate for the type of stitch that you wish to sew.	Attach the presser foot that is appropriate for the type of stitch that you wish to sew.	page 98
	The thread tension is incorrect.	Adjust the tension of the upper thread.	page 51
	The thread is tangled, for example, in the bobbin case.	Remove the tangle thread. If the thread is tangled in the bobbin case, clean the race.	page 100
The fabric does not feed.	The feed dogs are lowered.	Slide the drop feed lever to the right. (as seen from the rear of the machine)	page 86
	The stitch is too short.	Lengthen the stitch length.	page 53
	The presser foot that is used is not appropriate for the type of stitch that you wish to sew.	Attach the presser foot that is appropriate for the type of stitch that you wish to sew.	page 98
	The pressure of the presser foot is weak.	Turn the presser foot pressure dial to the left to increase the pressure of the presser foot.	page 40
	The thread is tangled, for example, in the bobbin case.	Remove the tangle thread. If the thread is tangled in the bobbin case, clean the race.	page 100
	Zigzag foot “J” is slanted on a thick seam at the beginning of stitching.	Use the presser foot locking pin (black button on the left side) on zigzag foot “J” to keep the presser foot level while sewing.	page 58
The sewing lamp does not come on.	The sewing lamp is damaged.	Contact your dealer or the nearest authorized service center.	–
Nothing appears in the LCD.	The brightness of the LCD is either too light or too dark.	Adjust the brightness of the LCD.	page 20

Symptom	Probable Cause	Remedy	Reference
While winding the bobbin, the bobbin thread was wound below the bobbin winder seat.	You have not wound the bobbin thread properly.	After removing the thread wound below the bobbin winder seat, wind the bobbin correctly.	page 109
Bobbin thread does not wind neatly on the bobbin.	The thread is not passed through the bobbin-winding thread guide correctly.	Correctly pass the thread through the bobbin-winding thread guide.	page 23
	Bobbin spins slowly.	Move the sewing speed controller to the right (so that the speed will be fast).	page 24
	The thread that was pulled out was not wound onto the bobbin correctly.	Wind the thread that was pulled off round the bobbin five or six times clockwise.	page 24
Fabric being sewn with the machine cannot be removed.	Thread is tangled below the needle plate.	Lift up the fabric and cut the threads below it, and clean the race.	page 106
The fabric feeds in the opposite direction.	The feed mechanism is damaged.	Contact your dealer or the nearest authorized service center.	–
The upper thread has tightened up.	The bobbin thread is incorrectly installed.	Correctly install the bobbin thread.	page 25, 102
The thread is tangled on the wrong side of the fabric.	You have not threaded the upper thread properly.	Correct the upper threading.	page 27, 103

Error messages

If ⓘ (“Start/Stop” button) is pressed before the sewing machine is correctly set up or if an operation is performed incorrectly, an error message appears in the LCD. Follow the instructions that appear.

Error Message	Probable Cause
⌚ Change speed controller mode to “OFF”.	The “Start/Stop” button was pressed without connecting the foot controller while the setting for adjusting the stitch width using the sewing speed controller is set to [ON].
⌚ Disconnect foot control.	The “Start/Stop” button was pressed while the foot controller was connected.
⌚ Lift buttonhole lever.	A stitch other than the buttonhole, bar tack or darning stitch was selected and the “Start/Stop” button was pressed while the buttonhole lever is lowered.
⌚ Lower buttonhole lever.	The buttonhole, bar tack or darning stitch was selected and the “Start/Stop” button was pressed while the buttonhole lever is raised.
⌚ Lower presser foot lever.	The “Start/Stop” button, “Reverse/Reinforcement Stitch” button or “Thread Cutter” button was pressed while the presser foot was raised.
⌚ Return bobbin winding shaft to left.	The “Reverse/Reinforcement Stitch” button, “Needle Position” button or “Thread Cutter” button was pressed while the bobbin winder shaft is moved to the right.
⚠ The safety device has been activated.	The motor locked up because the thread is tangled.
F01~F07	If error message “F01” through “F07” appears in the LCD while the sewing machine is being used, the machine may be malfunctioning. Contact your nearest authorized service center.

Operation beep

Each time a key is pressed or an incorrect operation is performed, a beep is sounded.

■ For a correct operation

One beep is sounded.

■ If an incorrect operation is performed

Two or four beeps are sounded.

■ If the machine locks up, for example, because the thread is tangled

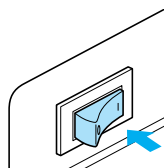
The sewing machine continues to beep for four seconds. The machine automatically stops.

Be sure to check for the cause of the error, and correct it before continuing to sew.

Cancelling the operation beep

When the sewing machine is purchased, it is set to beep each time an operation panel key is pressed. This setting can be changed so that the machine does not beep.

1 Turn on the sewing machine.



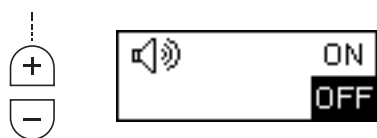
▶ The LCD comes on.

2 While holding down stitch selection key , turn on the sewing machine.

The following screen appears.



3 Press a stitch length key to select "OFF".



* To turn on the operation beep, press a stitch length key again to select "ON".

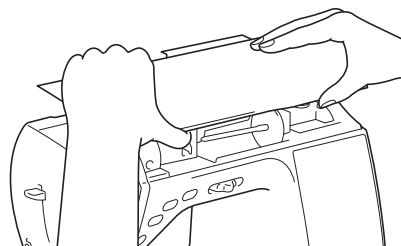
4 Turn off the sewing machine.

The next time that the sewing machine is turned on, the machine is set so that it will not beep.

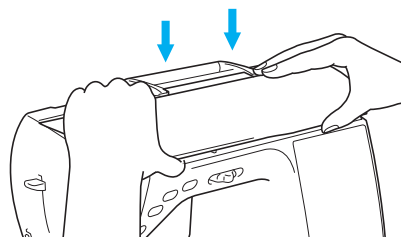
Attaching the top cover

If the top cover of the sewing machine was removed, re-attach it as described in the following procedure.

1 Hold the top cover level.



2 Push the top cover down to attach it to the machine.



Index

Numerics

1/4 inch quilting foot	9
1/4 inch quilting foot with guide	9
3-point zigzag stitch	64

A

accessories	8
accessory bag	8
adjustable zipper/piping foot	9
air vent	11
appliqué	84
automatic reinforcement stitching	54
automatic reverse stitching	54
automatic reverse/reinforcement stitch key	13
automatic thread cutting key	13
automatic thread-cutting	7, 54

B

bar tack	89
baseline	68
basic stitching	67
basting	67
blind hem stitch	69
blind stitch foot	8
bobbin	8, 25
bobbin case	100
bobbin cover	11, 26
bobbin thread	25
pulling up	32
bobbin winder	10
bobbin winder shaft spring	22
bobbin winding thread guide and pre-tension disk	10, 23
bobbin-winding	7, 21
brightness	20
built-in stitches	7
button fitting foot	8
button sewing	71, 75
buttonhole foot	8, 74
buttonhole lever	11, 73, 90, 92
buttonhole stitching	71

C

care	100
changing machine settings	19
changing sewing direction	57
cleaning	100
cleaning brush	8, 101
crazy quilt stitching	85
curves	57
cylindrical pieces	42

D

darning	91
decorative stitching	93
disk-shaped screwdriver	8

E

elastic tape	82
electrical outlet	17
error messages	116
even seam allowance	59
eyelet punch	8, 74

F

fagoting	93
features	7
feed dog position switch	11, 87
feed dogs	11, 86
flat bed attachment	10
foot controller	8, 46
foot controller jack	11
free-arm sewing	42
free-motion quilting	86
function modes	19

H

handle	11
handwheel	11, 45
hard case	8
heirloom stitching	95

I

included accessories	8
----------------------------	---

L

language	20
LCD	13, 18, 20
brightness	20
lower threading	7, 25

M

machine settings	19
main power switch	11, 17
maintenance	100
memory key	13
monogramming foot	8

N

needle	34
needle bar thread guide	11
needle clamp screw	37

needle plate 11, 59
 needle plate cover 11
 needle position 52, 68
 needle position button 12
 needle set 8
 needle stop position 18, 55
 needle stop position key 13
 needle threader lever 10
 needle threading 30
 non stick foot 9

O

open toe foot 9
 openings 89
 operation beep 117
 operation buttons 10, 12
 operation panel 10, 13
 optional accessories 9
 overcasting foot 8
 overcasting stitches 63

P

patchwork stitching 85
 pocket corners 89
 pocket keys 1 and 2 13
 positioning fabric 45
 power supply 16
 power supply jack 11, 17
 presser foot 11, 38
 presser foot dial 11, 40
 presser foot holder 11, 40
 presser foot lever 11
 presser foot pressure 40

Q

quilting 85
 quilting foot 9, 86
 quilting guide 9, 85

R

race 100
 reinforcement stitching 48, 54, 89
 replacing the needle 34, 36
 reverse/reinforcement stitch button 12

S

satin stitching 88
 saving stitch settings 55
 scallop stitching 94
 screwdriver 8, 37
 seam ripper 8, 73
 selecting stitching 62
 sewing hook-and-loop fastener 59
 sewing machine needles 34
 sewing speed 46
 sewing speed controller 12, 88
 side cutter 9
 sleeves 89

smocking 94
 spool cap 8, 22, 28
 spool net 8
 spool pin 10, 22, 28
 start/stop button 12, 46
 starting to sew 46
 stitch guide foot 9
 stitch length 53
 stitch length keys 13
 stitch selection keys 13
 stitch settings 98
 stitch width 52
 controlling 88
 stitch width keys 13
 straight stitch 67
 stretch fabrics 58, 82

T

thick fabrics 58
 thin fabrics 58
 thread cutter 10, 50
 thread cutter button 12, 49
 thread guide cover 10
 thread guide disk 11
 thread guide plate 10
 thread tension 51
 thread tension adjustment 51
 thread tension dial 10, 51
 top cover 10, 117
 trial sewing 57
 triple stretch stitch 89
 troubleshooting 102

U

upper thread 27
 upper thread tension 51
 upper threading 7, 27
 utility stitches 98

W

walking foot 9, 41, 86
 wide table 9
 wing needle 95

Z

zigzag foot 8
 zipper foot 8
 zipper stitching 78

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