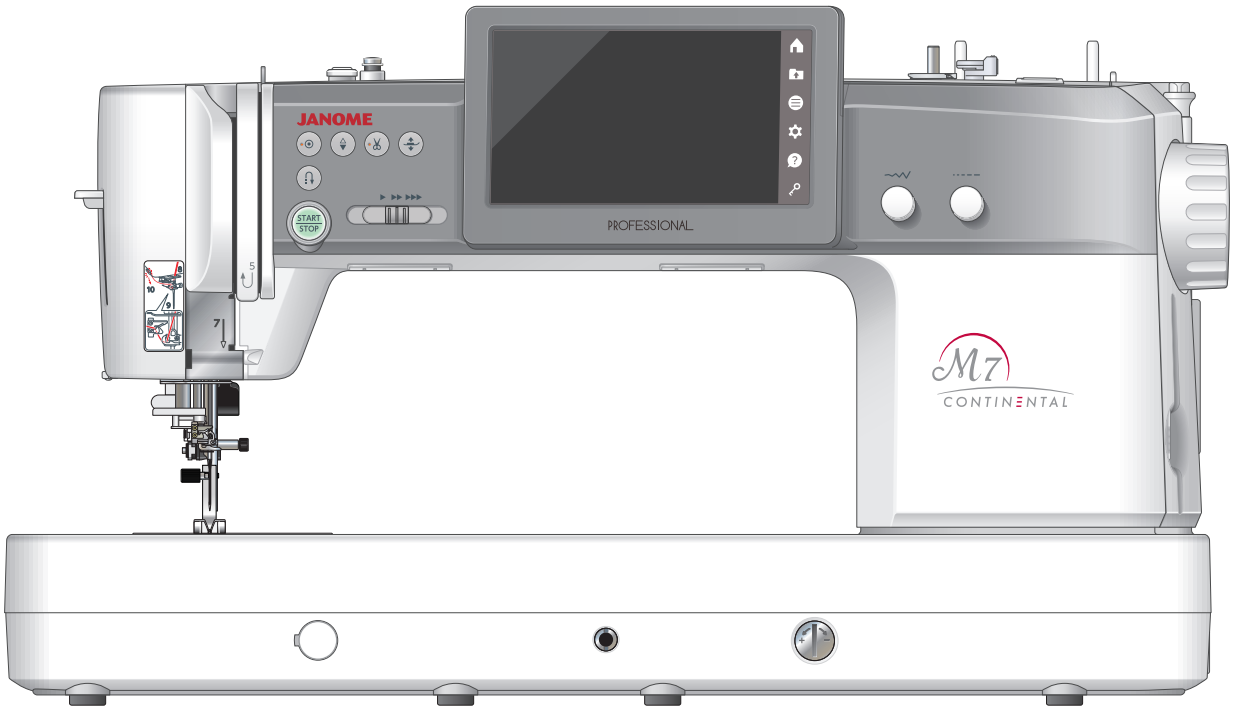
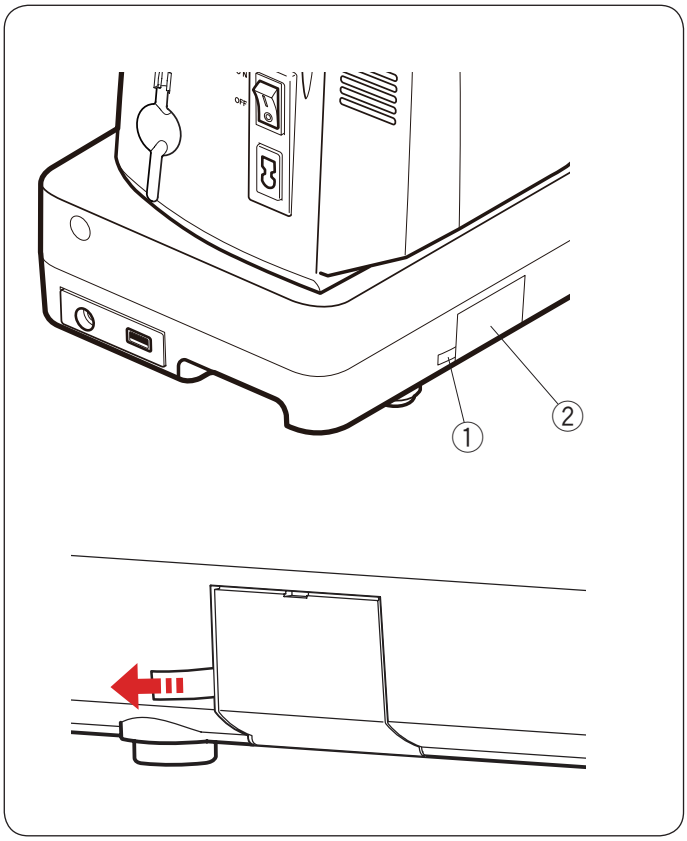
Instruction Book

Continental M7 Professional





Before You Use the Machine

⚠ WARNING:
This product contains a lithium button/coin cell battery. If a new or used lithium button/coin cell battery is swallowed or enters the body, it can cause severe internal burns and can lead to death in as little as 2 hours. Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

When you start the machine for the first time, be sure to remove the tape from the battery cover on the rear side of the machine.

① Tape
② Battery cover

Set the clock after removing the tape from the battery cover (refer to page 126).

IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic safety precautions should always be followed, including the following:
This sewing machine is designed and manufactured for household use only.
Read all instructions before using this sewing machine.

DANGER— To reduce the risk of electric shock:

1. An appliance should never be left unattended when plugged in. Always unplug this sewing machine from the electric outlet immediately after using and before cleaning.

WARNING— To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Do not allow to be used as a toy. Close attention is necessary when this sewing machine is used by or near children.
2. Use this appliance only for its intended use as described in this owner's manual.
   Use only attachments recommended by the manufacturer as contained in this owner's manual.
3. Never operate this sewing machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water.
   Return this sewing machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
4. Never operate the appliance with any air opening blocked. Keep ventilation openings of this sewing machine and foot controller free from accumulation of lint, dust and loose cloth.
5. Never drop or insert any object into any opening.
6. Do not use outdoors.
7. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
8. To disconnect, turn all controls to the off ("O") position, then remove plug from outlet.
9. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
10. Keep fingers away from all moving parts. Special care is required around the sewing machine needle and/or cutting blade.
11. Always use the proper needle plate. The wrong plate can cause the needle to break.
12. Do not use bent needles.
13. Do not pull or push fabric while stitching. It may deflect the needle causing it to break.
14. Switch this sewing machine off ("O") when making any adjustment in the needle area, such as threading the needle, changing the needle, threading the bobbin or changing the presser foot, and the like.
15. Always unplug this sewing machine from the electrical outlet when removing covers, lubricating, or when making any other adjustments mentioned in this owner's manual.

SAVE THESE INSTRUCTIONS

For Europe only:
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 outside Europe (except U.S.A and Canada):
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.



Please note that on disposal, this product must be safely recycled in accordance with relevant National legislation relating to electrical/electronic products. If in doubt please contact your retailer for guidance. (European Union only)

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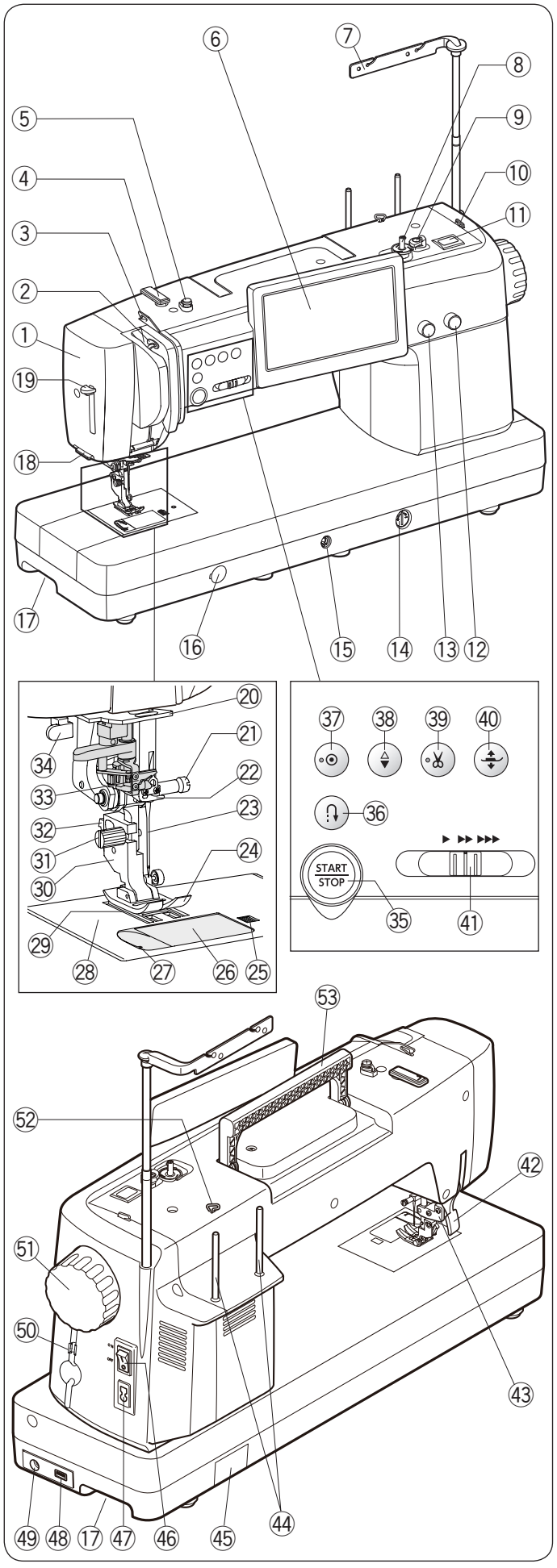
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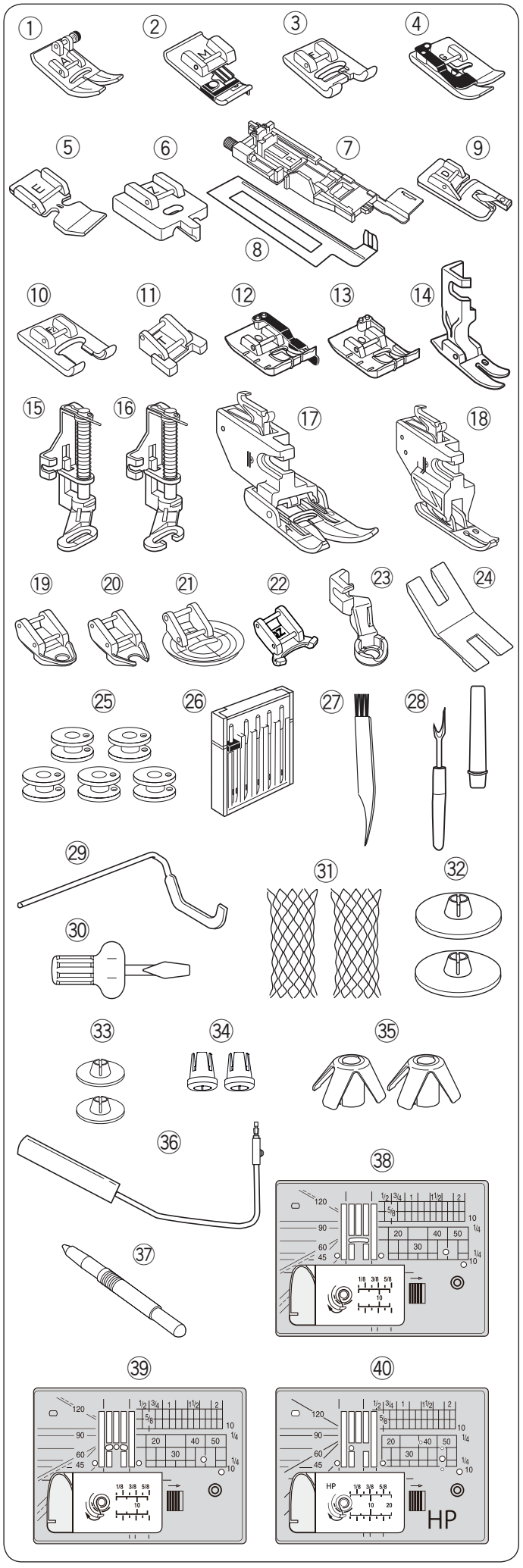
ESSENTIAL PARTS

Names of Parts

① Face plate
② Thread take-up lever
③ Left thread guide
④ Upper thread guide
⑤ Bobbin winding tension disk
⑥ Visual touch screen
⑦ Retractable thread guide
⑧ Bobbin winder spindle
⑨ Bobbin winder stopper
⑩ Bobbin thread cutter (upper)
⑪ Bobbin winding button
⑫ Stitch length adjusting dial (Jog dial)
⑬ Stitch width adjusting dial (Jog dial)
⑭ Feed balancing dial
⑮ Knee lifter socket
⑯ Needle plate release dial cap
⑰ Carrying handle (lower)
⑱ Thread cutter (on face plate)
⑲ Needle threader lever
⑳ Lower thread guide
㉑ Needle cramp screw
㉒ Needle bar thread guide
㉓ Needle
㉔ Zigzag foot A
㉕ Hook cover release button
㉖ Hook cover plate
㉗ Bobbin thread cutter
㉘ Needle plate
㉙ Feed dog
㉚ Foot holder
㉛ Setscrew
㉜ Lever
㉝ Needle threader
㉞ Buttonhole lever
㉟ Start/stop button
㊱ Reverse button
㊲ Auto-lock button
㊳ Needle up/down button
㊴ Thread cutter button
㊵ Presser foot lifter button
㊶ Speed control slider
㊷ Presser foot lifter
㊸ Dual feed mechanism
㊹ Spool pins
㊺ Battery cover
㊻ Power switch
㊼ Machine socket
㊽ USB port
㊾ Foot control jack
㊿ Touch panel stylus holder
(51) Handwheel
(52) Right thread guide
(53) Carrying handle (upper)

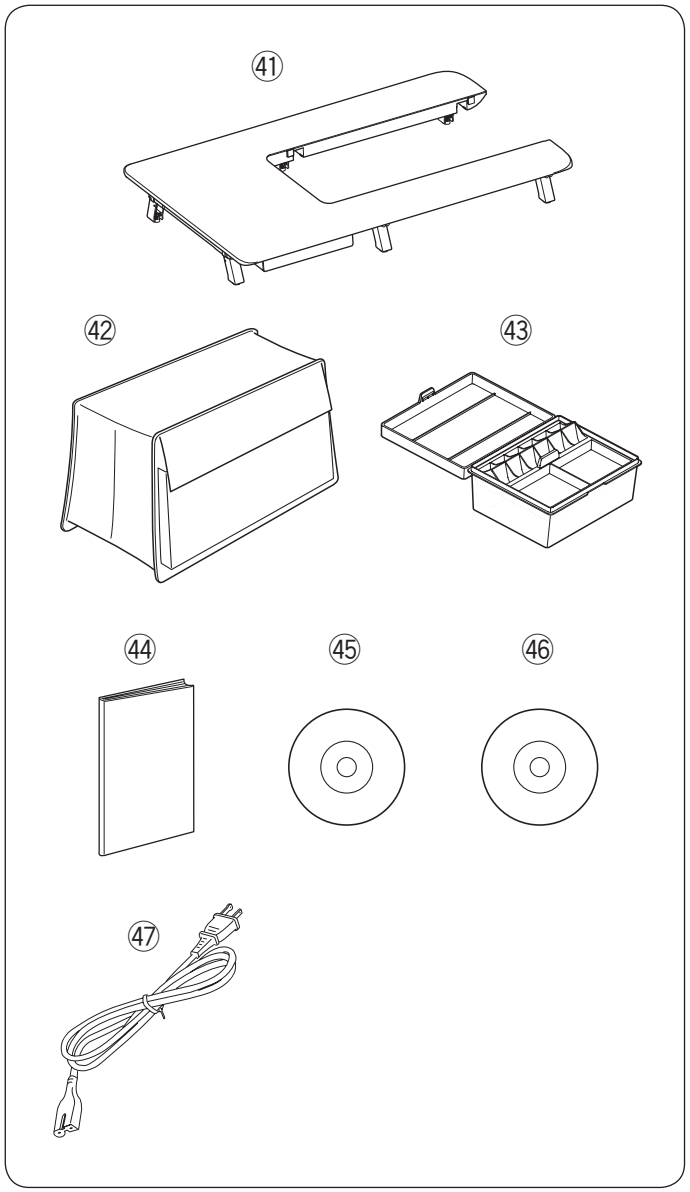
NOTE:
Sewing machine design and specifications are subject to change without prior notice.

NOTE:
To carry the sewing machine, refer to page 9.



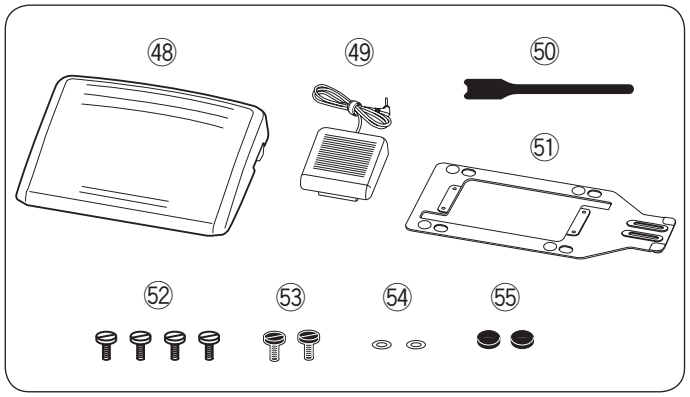
Standard Accessories

No.	Part Name	Part No.
1	Zigzag foot A (Set on the machine)	859802006
2	Overcasting foot M	859810007
3	Satin stitch foot F	859806011
4	Blind hemming foot G	859807001
5	Zipper foot E	859805009
6	Concealed zipper foot Z	859815002
7	Automatic buttonhole foot R	862822013
8	Stabilizer plate	859832016
9	Rolled hem foot D	859804008
10	Open toe satin stitch foot F2	859813000
11	Button sewing foot T	859811008
12	1/4″ seam foot O	859814012
13	1/4″ seam foot O (without guide)	202313104
14	Professional grade foot HP	865803006
15	Darning foot PD-H	859839002
16	Darning foot (open-toe) PD-H	859839013
17	Dual feed foot AD (twin)	859819017
18	AcuFeed flex professional grade foot HP2	865522008
19	Free motion quilting closed-toe foot QC	859836009
20	Free motion quilting open-toe foot QO	859837000
21	Free motion quilting zigzag foot QV	859812009
22	Variable zigzag open-toe foot QZ	862895006
23	Ruler work foot QR	862896007
24	Button shank plate	832820007
25	Bobbin X 5 (1 set on the machine)	102261103
26	Needle set	859856005
27	Lint brush	802424004
28	Seam ripper (Buttonhole opener)	647808009
29	Quilting guide bar	755802001
30	Screwdriver	820832005
31	Net X 2	624806006
32	Spool holder (large) X 2	822020503
33	Spool holder (small) X 2	822019509
34	Spool holder (special) X 2	862408008
35	Spool rest X 2	770850001
36	Knee lifter	846417011
37	Touch panel stylus	860194002
38	Needle plate (set on the machine)	867642001
39	Straight stitch needle plate	867802001
40	Professional grade needle plate HP	867803002



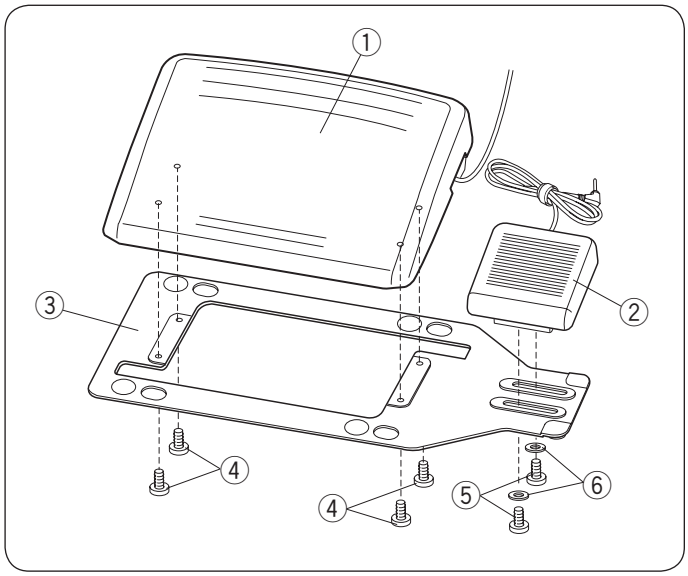
No.	Part Name		Part No.
41	Extension table		867806005
42	Semi-hard fabric cover		867801000
43	Accessory box		866801007
44	Instruction book		867800009
45	Instructional DVD		867805004
46	PC Application Pack		867804003
47	Power cable*	U.S.A. and Canada	856519004
		U.K.	830377008
		Australia	830314018
		Continental Europe	830335004

* The power supply cable included may differ from the illustration.



No.	Part Name	Part No.
48	Foot control	043770104
49	Thread cutter switch	867811003
50	Cable tie	767849306
51	Base plate	767849100
	*Rubber sole X 6	525010005
52	Setscrew X 4	000081005
53	Setscrew X 2	865045002
54	Washer X 2	000072508
55	Rubber sole X 2	525010005

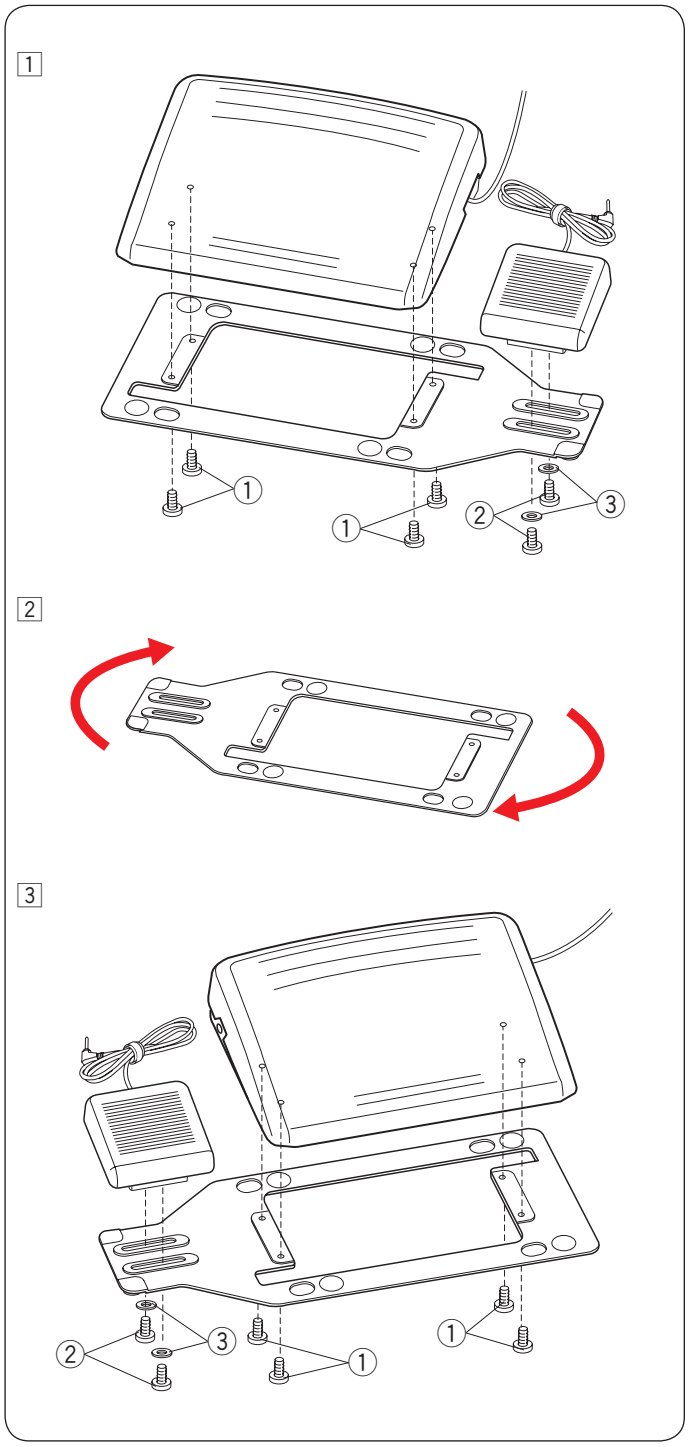
* Rubber sole X 6 are already attached on the wrong side of the base plate.



Foot Control and Thread Cutter Switch

To attach the foot control ① and the thread cutter switch ② to the base plate ③, tighten setscrews ④, and setscrews ⑤ with washers ⑥ as shown.

① Foot control
② Thread cutter switch
③ Base plate
④ Setscrew A
⑤ Setscrew B
⑥ Washer



Adjusting the Thread Cutter Switch Position

Placing the thread cutter switch to the left

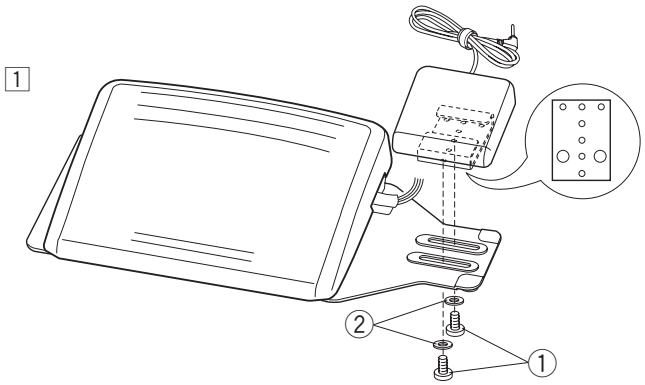
The thread cutter switch position can be adjusted for your convenience.
If you wish to attach the thread cutter switch to the left side of the foot control, follow the procedure below.

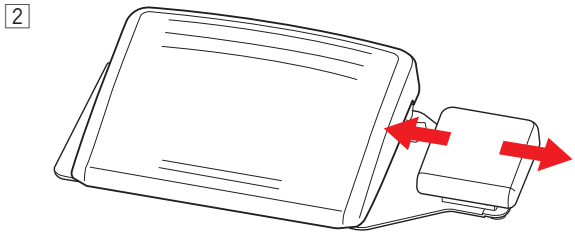
> **NOTE:**
> Phillips head screwdriver is not included with this machine.

1 Remove the setscrews A ①, B ② and washers ③ with a Phillips head screwdriver.
① Setscrew A
② Setscrew B
③ Washer

2 Turn the base plate 180 degrees.

3 Attach the foot control and thread cutter switch with the setscrews and the washers ③. Tighten the setscrews A ① and B ②. Be sure that the cable is not caught between the foot control and the base plate.

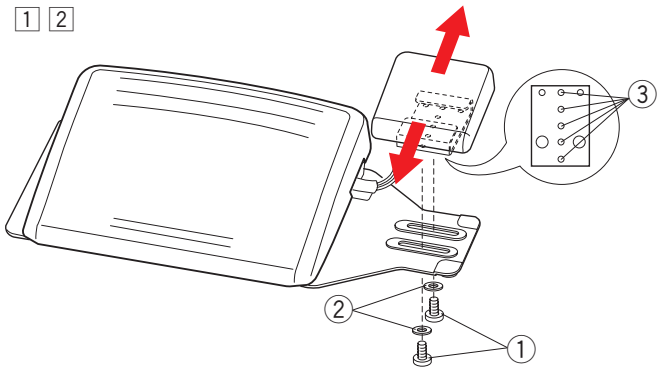




Adjusting the horizontal position of the thread cutter switch

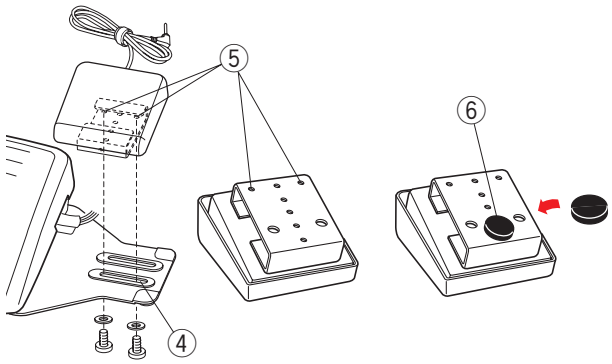
1 Loosen the setscrews ① under the switch.
- ① Setscrew
- ② Washer

2 Slide the switch to left or right, and fix it at the desired position by tightening the setscrews with a screwdriver.

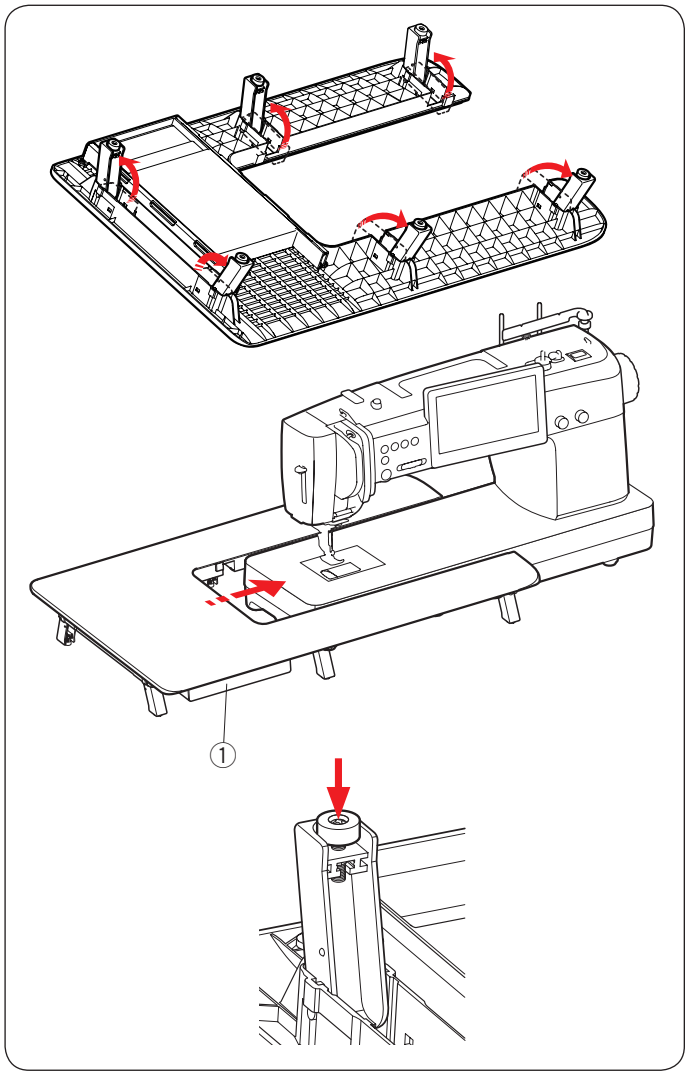


Adjusting the vertical position of the thread cutter switch

1 Remove the setscrews ① and washers ②.
2 Move the switch to forward or backward, and attach the switch to the desired position ③ and fix it with the setscrews ① and washers ②.



NOTE:
To fix the thread cutter switch to its lowest position, fix the setscrews into the hole ④, and then holes ⑤. Tighten the setscrews securely.
Peel off the backing paper from the rubber sole ⑥ and attach it to the bottom of the thread cutter switch as shown.



Extension Table

Attaching the table

Spread the legs of extension table.

Holding the table with both hands and slide it gently to the right.

⚠ CAUTION:

Make sure there should be no accessory stored in the drawer when leaning the extension table against any wall.

If the accessories are stored into the drawer, the accessories stored inside of the drawer may be messed up and accessories may be stuck between the table and the drawer, or accessories and the drawer may falls off from the extension table.

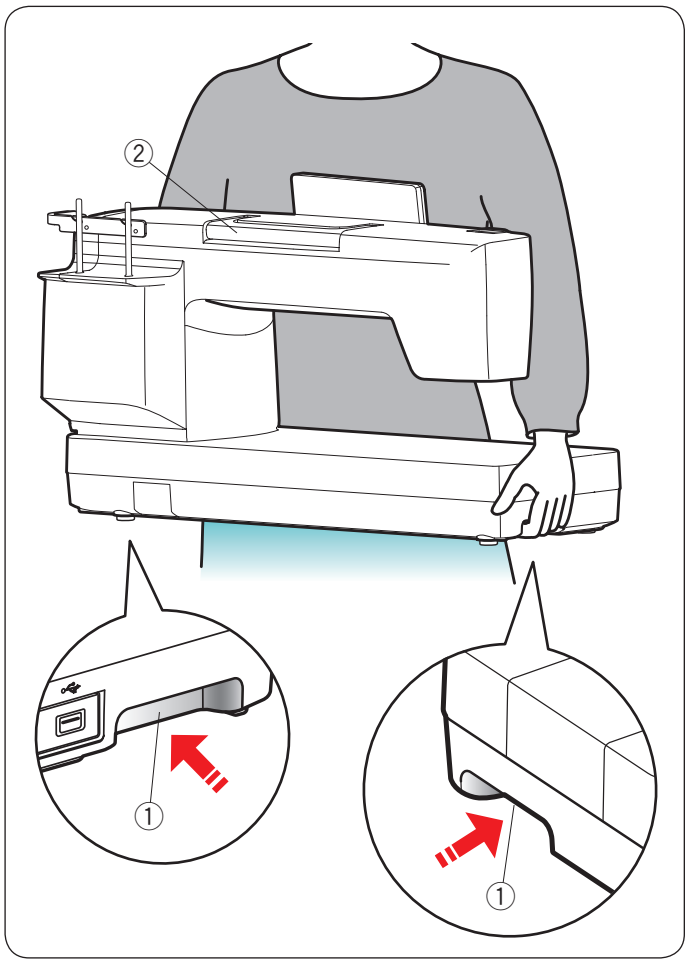
① Drawer

Adjusting the table height

Turn setscrews of the table legs with a Phillips head screwdriver.

NOTE:

A Phillips head screwdriver is required for adjusting the extension table height.



How to carry the sewing machine

When carrying the sewing machine, hold the lower carrying handle with both hands.

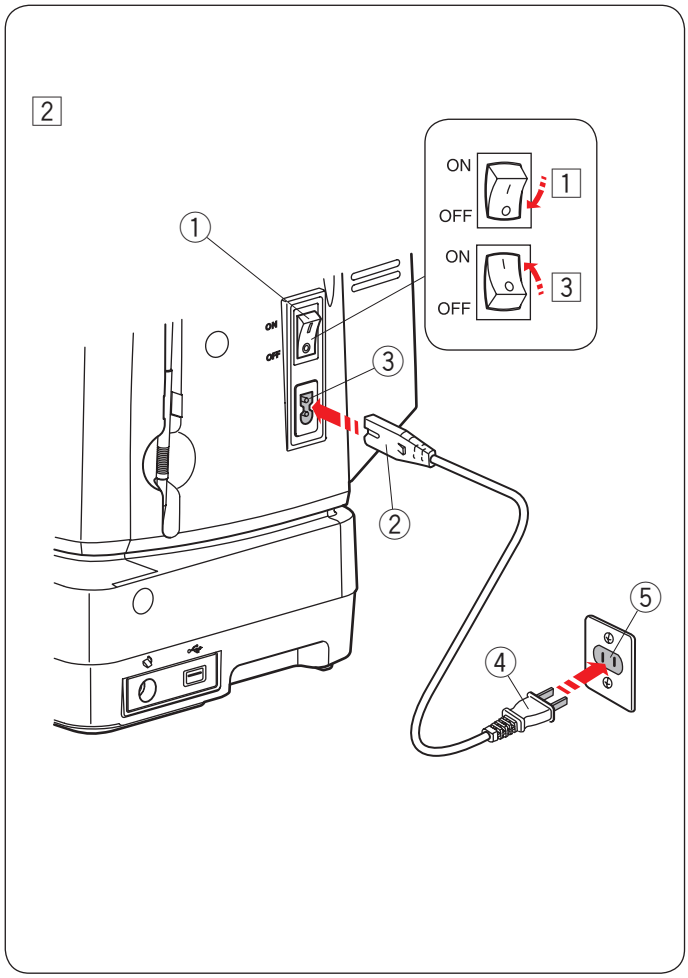
Do not push the visual touch screen with your body.

① Carrying handle (lower)

NOTE:

Use the carrying handle (upper) for a supportive purpose.

② Carrying handle (upper)



GETTING READY TO SEW

Connecting the Power Supply

1 First make sure the power switch ① is off.
2 Insert the machine plug ② of the power supply cable into the machine socket ③.
3 Insert the power supply plug ④ into the wall outlet ⑤, and turn the power switch ① on.

① Power switch
② Machine plug
③ Machine socket
④ Power supply plug
⑤ Wall outlet

NOTE:
Make sure to use the power supply cable that came with the machine.
If you turn off the power switch, wait for 5 seconds before turning it on again.

⚠ WARNING:
While in operation, always keep your eyes on the sewing area, and do not touch any moving parts such as the thread take-up lever, handwheel or needle.
Always turn off the power switch and unplug the machine from the power supply:
- when leaving the machine unattended.
- when cleaning the machine.

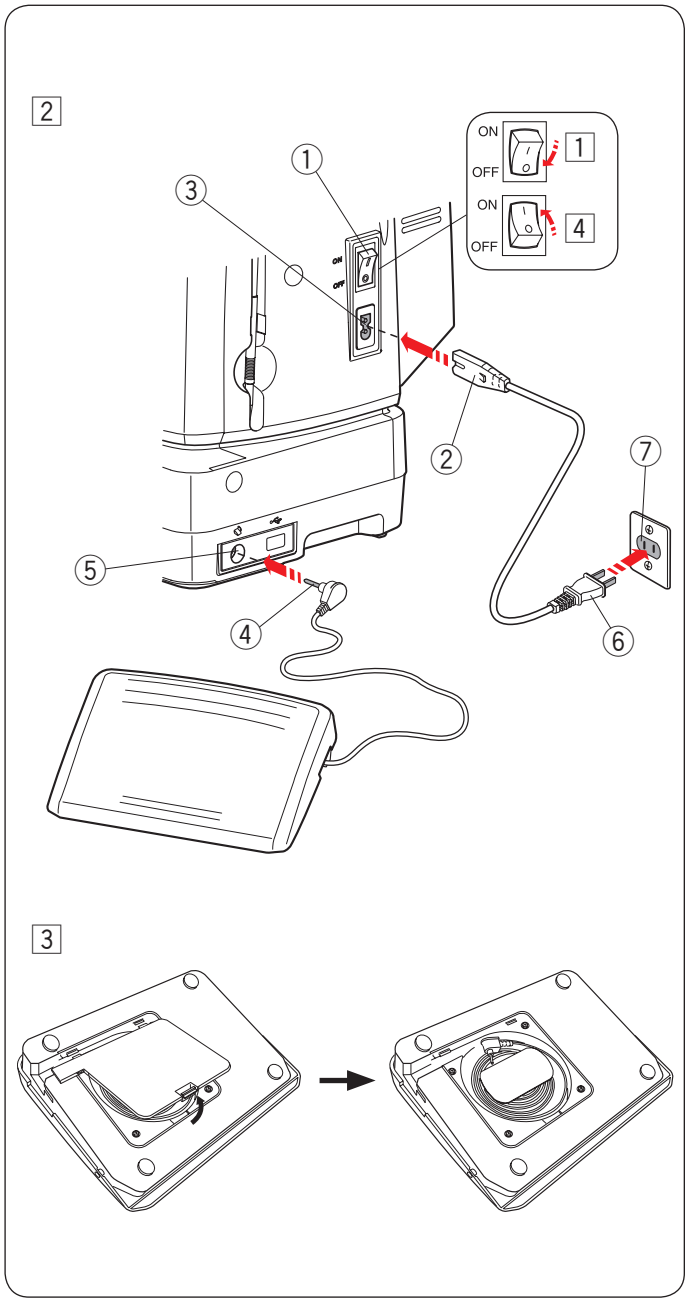
Do not place any objects on the foot control.

Operating Instructions:

The symbol “O” on a switch indicates the “off” position of the switch.
Foot controller Model 21390 is for use with sewing machine CM7P.

For the U.S.A. and Canada only

Polarized plug (one blade wider than the other):
To reduce the risk of electric shock, this plug is intended to fit in a polarized outlet only one way. If it 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.



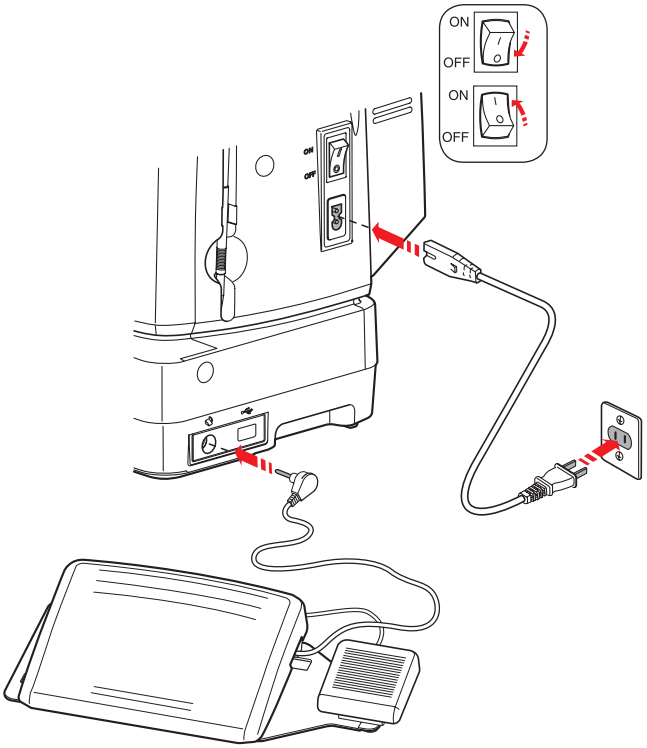
Using foot control

If you wish to use the foot control, pull out the cord from the foot control and insert the pin connector into the jack on the machine.

1 First make sure the power switch ① is off.
2 Insert the machine plug ② of the power supply cable into the machine socket ③.
3 Draw out the cord from the foot control and insert the pin connector ④ into the jack ⑤ on the machine.
4 Insert the power supply plug ⑥ into the wall outlet ⑦, and turn the power switch ① on.

① Power switch
② Machine plug
③ Machine socket
④ Pin connector
⑤ Jack
⑥ Power supply plug
⑦ Wall outlet

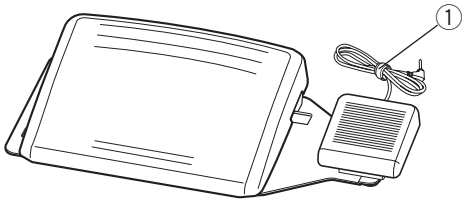
NOTE:
The start/stop button does not work when the foot control is connected.



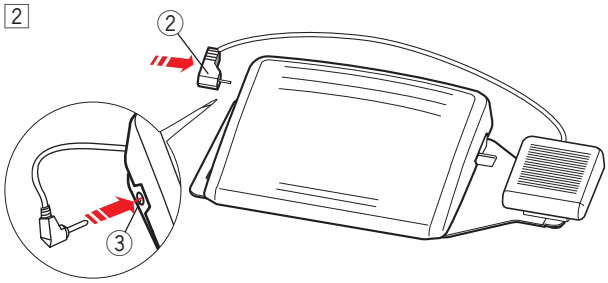
Thread Cutter Switch

If you wish to use the thread cutter switch, pull out the cord from the foot control and insert the pin connector into the jack on the machine.

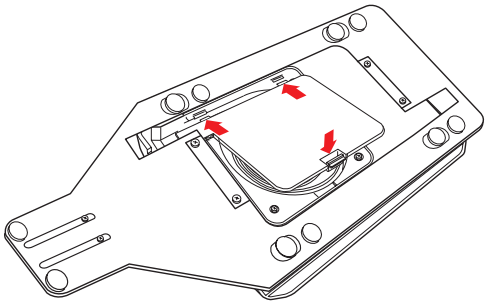
Preparation for Thread Cutter Switch

1 

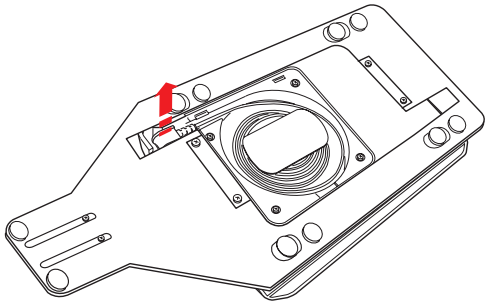
1 Remove the cable tie ① from the cable.

2 

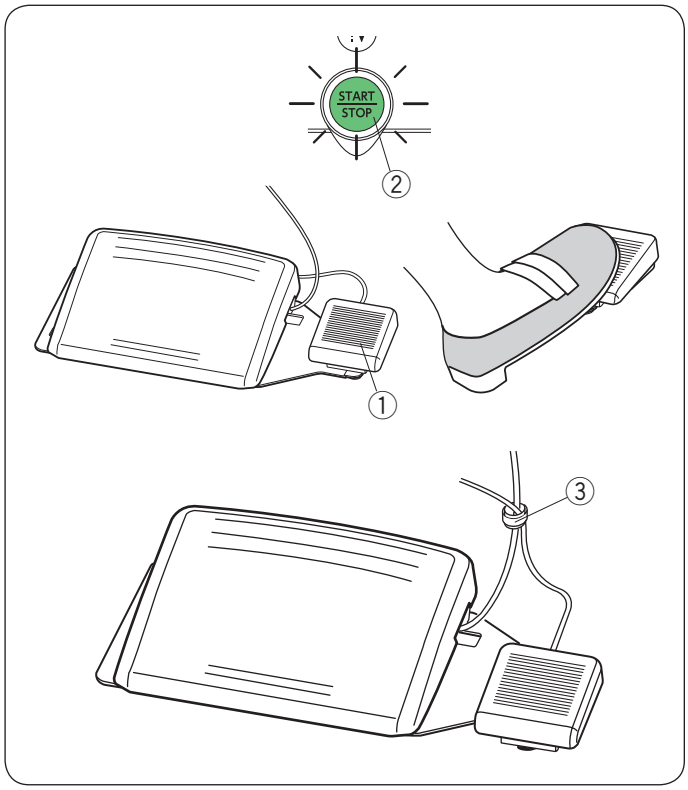
2 If you wish to use the thread cutter switch, you need to connect it with the foot control.
Insert the pin connector ② into the jack ③ on the foot control.

3 

3 Turn the foot control upside down.
Open the cover of the foot control.

4 

4 Draw out the cable from the foot control.

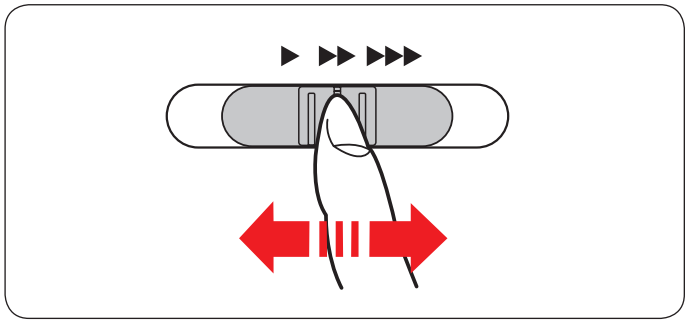


After sewing, depress the thread cutter switch ① on the right side of the foot control to trim the both needle and bobbin threads.
Do not depress the thread cutter switch until the start/stop button turns green ②.

① Thread cutter switch

NOTE:
- Threads are trimmed when the thread cutter switch is depressed for more than 0.5 seconds.
- The thread cutter switch does not work without the foot control being depressed first.
- Bundle the cables with the cable tie as necessary.

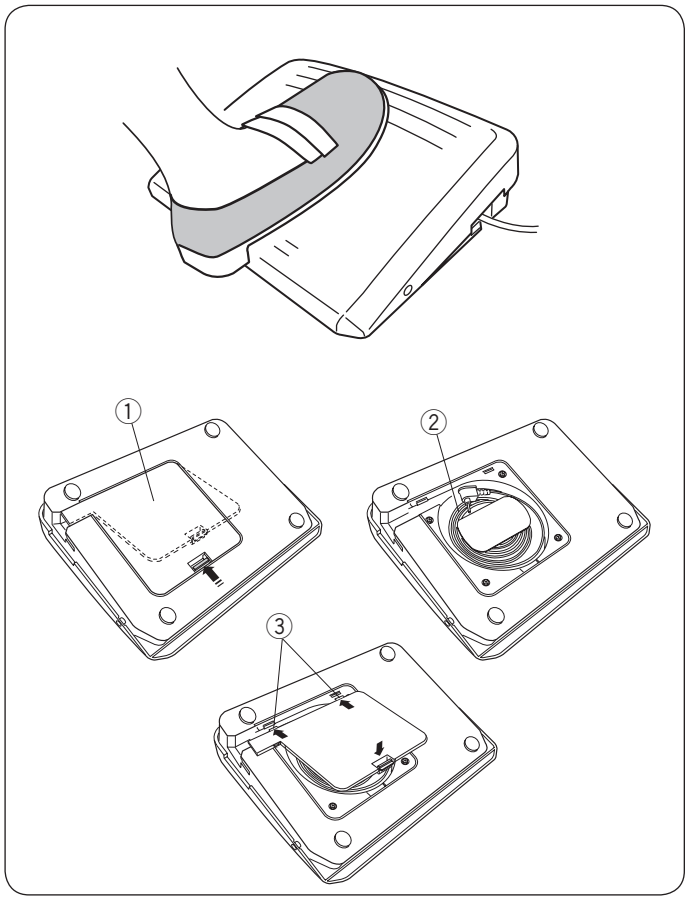
③ Cable tie



Controlling Sewing Speed

Speed control slider

You can limit the maximum sewing speed with the speed control slider according to your sewing needs.
To increase the sewing speed, move the slider to the right.
To decrease the sewing speed, move the slider to the left.
The sewing speed can be changed while stitching.



Foot Control

Pressing on the foot control can vary sewing speed.
The harder you press the foot control, the faster the machine runs.

NOTE:
- The machine runs at the maximum speed set by the speed control slider when the foot control is fully depressed.
- You can select the desired start-up speed from slow, normal or high (refer to page 129).

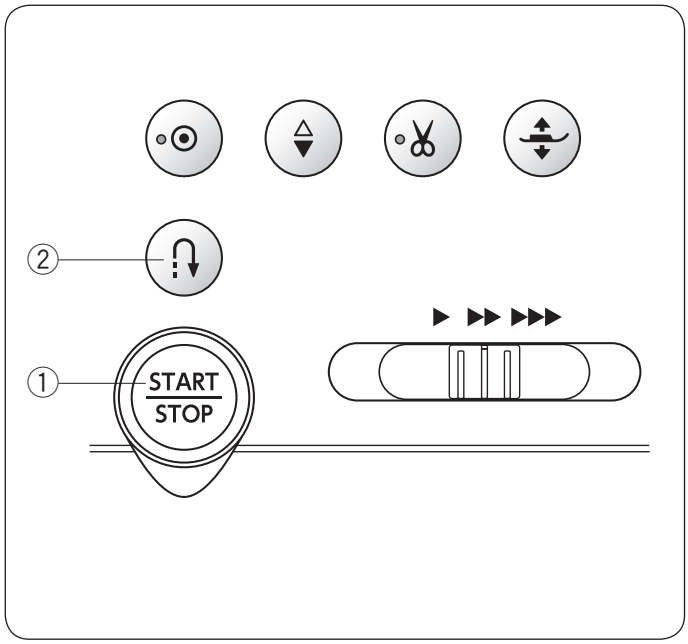
NOTE:
This machine is equipped with an automatic shutdown safety feature to prevent overheating whenever the machine is running overloaded. Follow the safety instructions that appear on the visual touch screen.

Cord storage

The cord of the foot control can be conveniently stored in the cord storage under the base cover of the foot control.

① Base cover
② Cord
③ Hooks

Operating Instructions:
Foot control model 21390 is for use with this sewing machine.



Machine Operating Buttons

① Start/stop button

Press this button to start or stop the machine.
The machine starts running slowly for the first few stitches, it then runs at the speed set by the speed control slider. The machine runs slowly as long as this button is pressed.

The button will turn red when the machine is running, and green when it has been stopped.

Pressing and holding this button while sewing will slow down the sewing speed and the machine will stop when the button is released.

NOTE:
- The start/stop button cannot be used when the foot control is connected to the machine.
- You can select the desired start-up speed from slow, normal or high (refer to page 129).

② Reverse button

- **When following stitch patterns are selected;**

Utility						Applique	Quilt			Bridge					
1	4	9	10	11	12	10	1	2	3	1	2	3	4	5	6

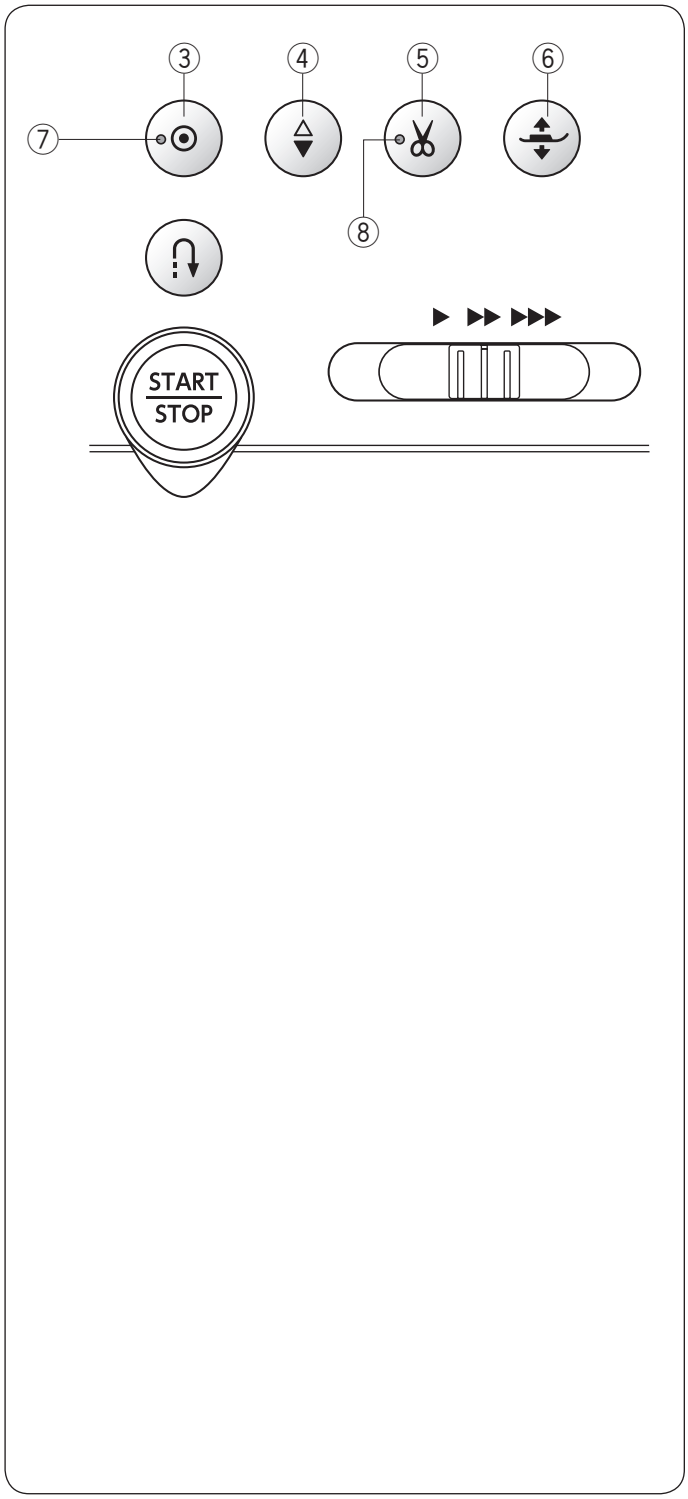
The machine will sew in reverse as long as the reverse button is pressed. Release the button to sew forward.
When the machine is stopped and foot control is disconnected, the machine will sew in reverse slowly as long as the reverse button is pressed.
Release the button to stop the machine.

- **When following stitch patterns are selected;**

Utility		Buttonhole		
2	3	2	15	16

There will be particular functions of the reverse button when the patterns shown above are selected. Refer to pages 40, 59-60, 65 and 113 for instructions.

- **When any other stitches are selected;**
If you press the reverse button when sewing any other patterns, the machine will immediately sew locking stitches and automatically stop.



③ Auto-lock button

• When following stitch patterns are selected;

Utility						Applique	Quilt			Bridge					
1	4	9	10	11	12	10	1	2	3	1	2	3	4	5	6

Press the auto-lock button to sew a locking stitch immediately. The machine will automatically stop.

When the machine is stopped, press the auto-lock button to blink the LED signal ⑦. The machine will immediately sew locking stitches and automatically stop when the machine is started.

• When any other stitches are selected;

Press the auto-lock button to sew a locking stitch at the end of current pattern. The machine will automatically stop.

When the machine is stopped, press the auto-lock button to blink the LED signal ⑦. The machine will sew a locking stitch at the end of the current pattern and automatically stop when the machine is started.

The machine will trim the threads automatically after locking the stitch when the auto thread cutting is turned on (refer to page 128).

④ Needle up/down button

Press this button to bring the needle bar up or down. The machine will stop with the needle in down position. However, you can change the needle stop position in the machine setting mode (refer to page 128).

⑤ Thread cutter button

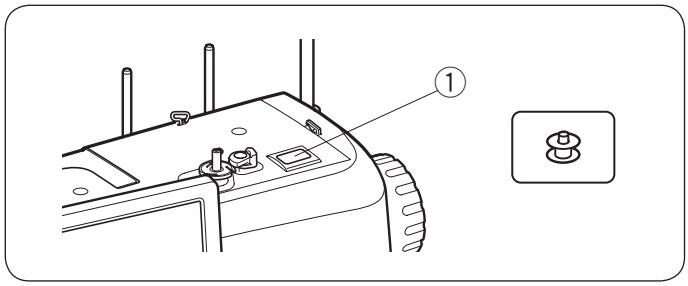
After finish sewing, press this button to trim the threads. The needle bar automatically rises after trimming the threads (refer to page 39).
The LED signal ⑧ blinks when the machine trims threads.
After using auto thread cutting or threading the bobbin holder, you can start sewing without drawing up the bobbin thread.

NOTE:
The thread cutter button does not function:
- directly after turning on the power.
- when the presser foot is raised with the foot lifter.
- after being pressed 3 times in a row.

Use the thread cutter on the face plate if the thread is #30 or thicker (refer to page 39).

⑥ Presser foot lifter button

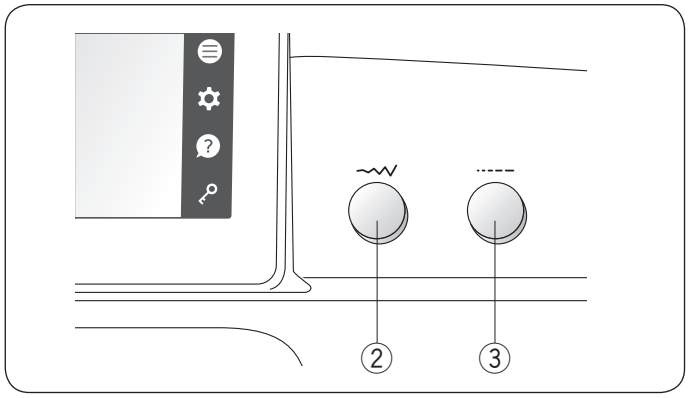
The presser foot will go up or go down by pressing this button.
You can also use the presser foot lifter and knee lifter to raise and lower the presser foot (refer to page 19).



Bobbin Winding Button and Jog Dials

① **Bobbin winding button** (refer to page 27)

Press this button to wind the bobbin.

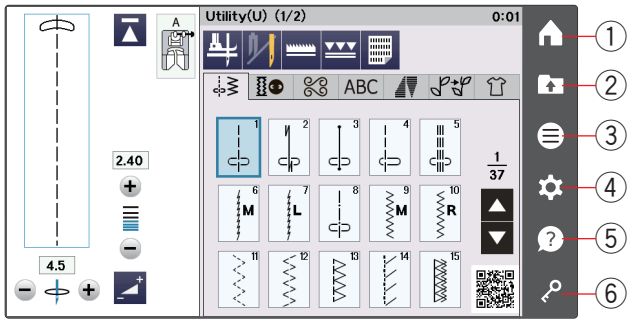


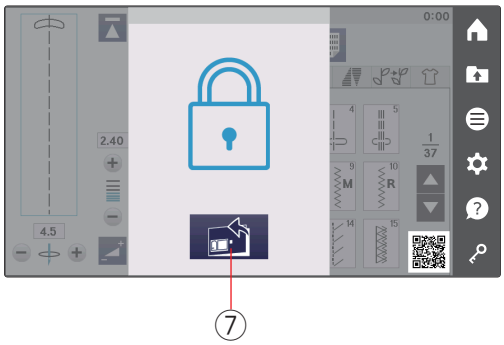
② **Stitch width adjusting dial** (refer to pages 46, 47, 57, 65-66, etc)

Turn this jog dial to alter the stitch width or needle drop position of the selected stitch pattern.

③ **Stitch length adjusting dial** (refer to pages 46, 47, 57, 65-66, etc)

Turn this jog dial to alter the stitch length of the selected pattern.





Touch Panel Keys

> **CAUTION:**
> Do not press the touch panel or visual touch screen with hard or sharp objects like pencils, screwdrivers or the like. Use the touch panel stylus included in the standard accessories.

① **Home key**

Press this key to return the top of the utility stitch pattern selections.

② **Open file key** (refer to page 96)

Press this key and the open file window will open.
You can open pattern combinations and monograms saved in the machine's internal memory or on a USB flash drive.

③ **Function menu key** (refer to page 122)

Press this key to open the function menu.
You can select the following functions from this menu.

- Quick Stitch Select
- Quilt Block Advisor
- Machine Information

④ **Set mode key** (refer to page 125)

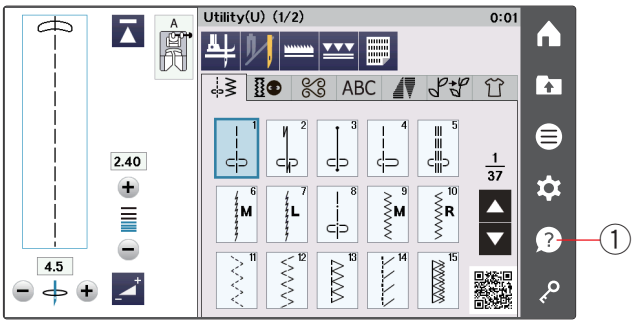
Press this key to enter the setting mode. You can customize the machine settings to your preference. The machine settings for Machine Settings, Sewing Settings and Language Settings are available in this mode.

⑤ **Help key** (refer to page 18)

Press this key to view the step-by-step visual guide about the essential operations.

⑥ **Lockout key**

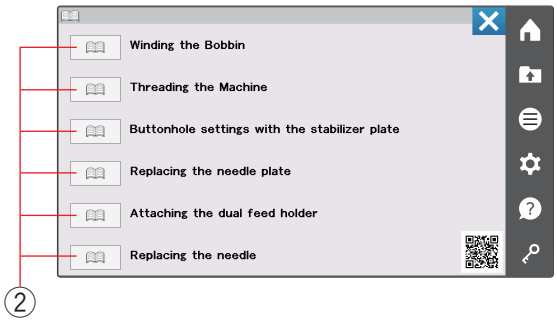
Press this key to lockout the machine when threading the machine, replacing the accessories etc.
To reduce the risk of injury, all the buttons and keys except the lockout key, needle plate release key ⑦ and presser foot lifter button are deactivated.
To unlock the machine, press this key again.

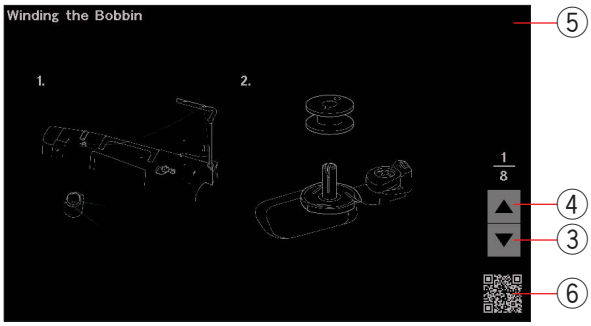


On-screen Help

Press the help key to open the help menu.
You can view instructions on 6 topics of essential operations of the machine.
Select the help topic by pressing the book icon and the step-by-step instruction will open.

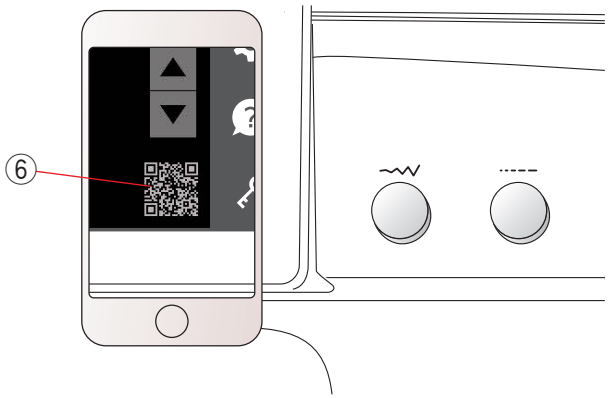
① Help key
② Book icon





To view the next page, press the next page key.
To view the previous page, press the previous page key.
Press the X key to close the current window.

③ Next page key
④ Previous page key
⑤ X key



AcuSpark (Application for Continental M7 Professional)

The machine predict your request by detecting sewing status (patterns and settings) and provide information when you scan the QR code ⑥ displayed on the visual touch screen.

⑥ QR code

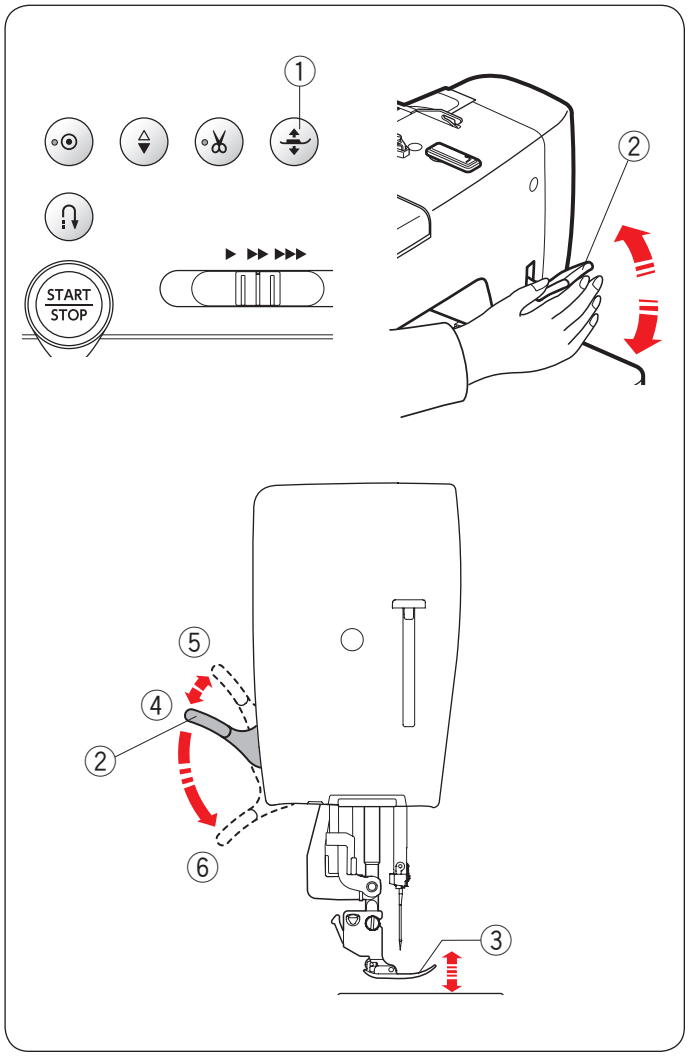
Requirement:

• Tablet (iOS, Android™) or smart phone (iOS, Android™)

You can download this useful application for Continental M7 Professional from below;

https://www.janome.co.jp/e/e_downloads/Continental_app.html

- QR code reader (scanner) application can be downloaded from App store or market.
- Scan the QR code on the right with your mobile device to download App.
- Standard data charges from your internet provider may apply.
- iOS is the name of the operating system software created by Apple Inc.
- iOS is a trademark of Cisco Systems Inc. registered in the U.S. and other countries and is used under license.
- Android and Google Play are trademarks of Google LLC.
- QR Code is a registered trademark of Denso Wave Inc.
- iTunes Store and Apple Store are trademarks of Apple Inc. registered in the U.S. and other countries.
- AcuSpark is a trademark and/or registered trademark of JANOME Sewing Machine Co., Ltd.



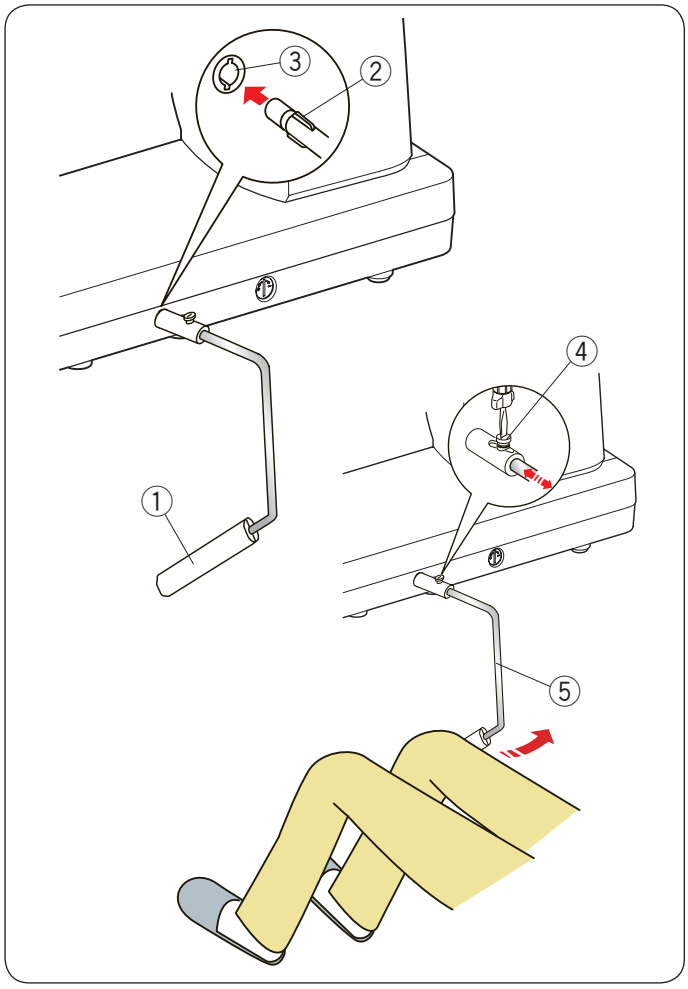
Raising and Lowering the Presser Foot

⚠ CAUTION:
Do not turn the handwheel or press the up/down needle button when the presser foot is in extra lifted position. It may cause damage to the presser foot.

The presser foot lifter button, the presser foot lifter or the knee lifter raises and lowers the presser foot.
You can raise the presser foot about 6 mm (1/4″) higher than the normal up position by exerting more pressure when lifting the presser foot lifter or knee lifter. This helps you to place layers of thick fabric.

① Presser foot lifter button
② Presser foot lifter
③ Presser foot
④ Up position
⑤ Extra lifted position
⑥ Down position

NOTE:
The presser foot cannot be lowered with the presser foot lifter if the foot was raised with the presser foot lifter button.



Knee Lifter

The knee lifter is extremely helpful when sewing patchwork, quilting etc, since it allows you to handle the fabric while your knee controls the presser foot.

Attaching the knee lifter

Match the ribs on the knee lifter with the notches in the knee lifter socket and insert the knee lifter.

① Knee lifter
② Rib
③ Knee lifter socket

Adjusting the knee lifter

The angle of the knee lifter can be adjusted to fit you.
Loosen the setscrew and slide the angle bar in or out to adjust the angle of the knee lifter.
Tighten the setscrew to secure the angle bar.

④ Setscrew
⑤ Angle bar

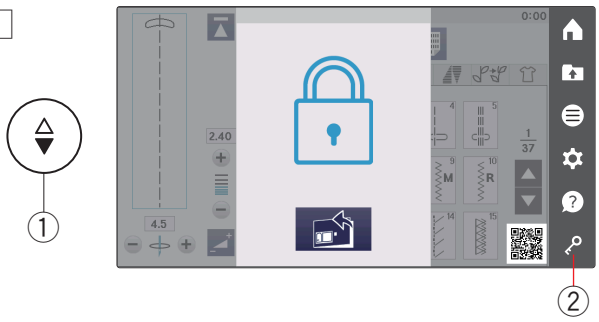
Using the knee lifter

Push the knee lifter with your knee to easily move the presser foot up and down.
You can control how high the foot rises by the amount of knee pressure you exert.

Replacing the Presser Foot

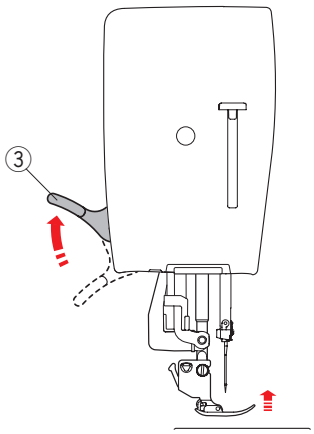
> **CAUTION:**
> Always make sure to press the lockout key to before replacing the presser foot.
> Use the proper foot for the selected pattern.
> The wrong foot can cause the needle to break.

1



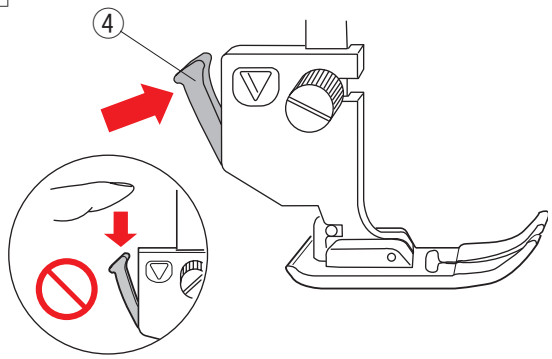
1 Raise the needle by pressing the needle up/down button.
Press the lockout key.
① Needle up/down button
② Lockout key

2



2 Raise the presser foot lifter.
③ Presser foot lifter

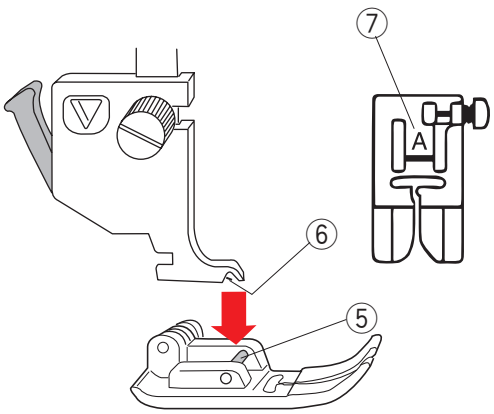
3



3 Press the black lever on the back of the foot holder.
The presser foot will drop off.
④ Lever

> **CAUTION:**
> To avoid damaging the lever, do not push it down.

4



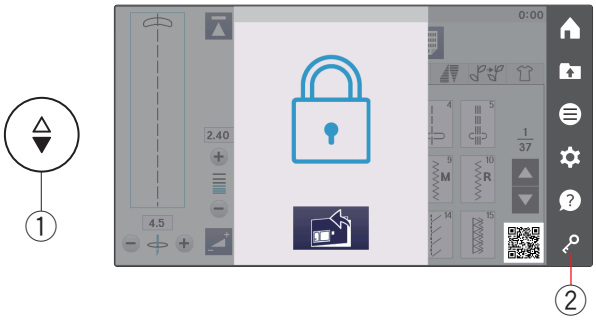
4 Place the presser foot so that the pin on the foot lies just under the groove of the foot holder.
Lower the presser bar to lock the foot in place.
⑤ Pin
⑥ Groove

Each foot is marked with an identification letter.
⑦ Identification letter

Removing and Attaching the Foot Holder

Remove the foot holder before using Professional grade foot HP, Ruler work foot QR, Darning foot PD-H, or Dual feed foot AD.

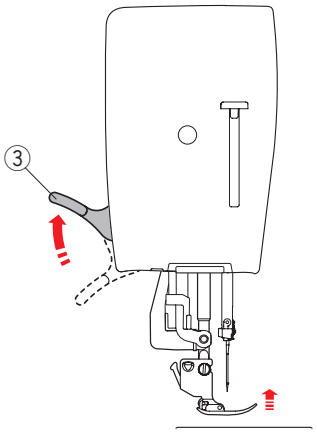
> **⚠ CAUTION:**
> Always make sure to press the lockout key to lockout the machine before replacing the foot holder.



Removing the foot holder

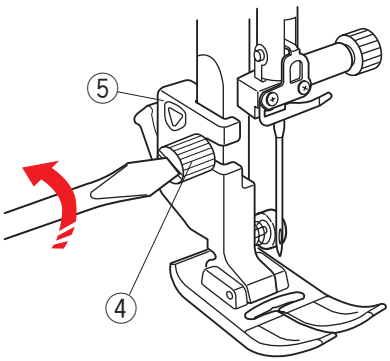
Raise the needle by pressing the needle up/down button. Press the lockout key and raise the presser foot with the presser foot lifter.

① Needle up/down button
② Lockout key
③ Presser foot lifter



Loosen the setscrew and remove the foot holder.

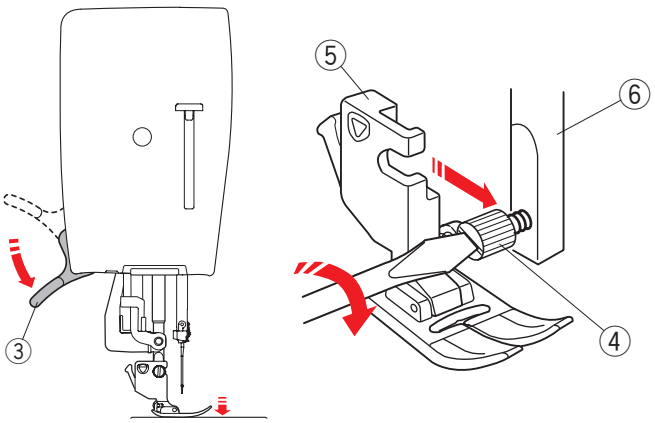
④ Setscrew
⑤ Foot holder

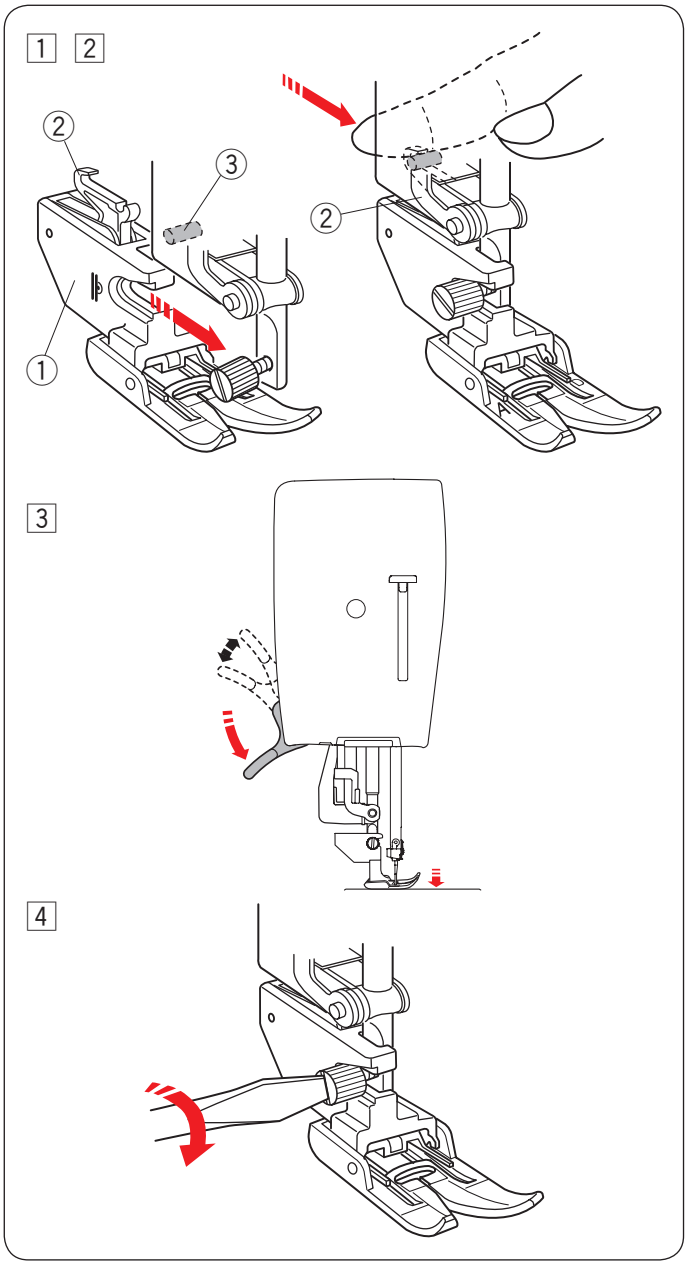


Attaching the foot holder

Attach the foot holder to the presser bar from the rear. Lower the presser foot with the presser foot lifter. Tighten the thumbscrew securely with the screwdriver.

⑥ Presser bar





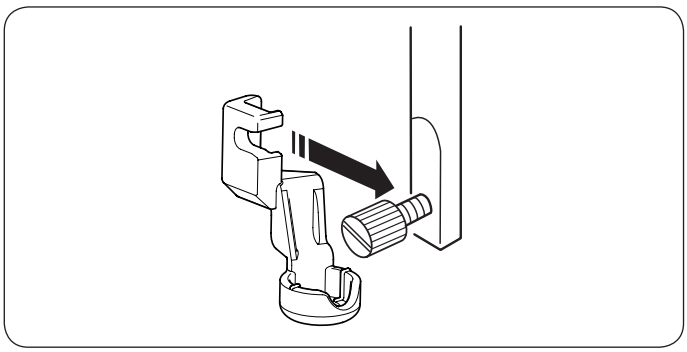
Attaching the Dual Feed Foot AD or the AcuFeed Flex Professional Grade Foot HP2

1 Attach the dual feed holder to the presser bar.
① Dual feed holder

2 Tighten the setscrew with your fingers.
Push the dual feed link to engage it with upper feed drive.
② Dual feed link
③ Upper feed drive

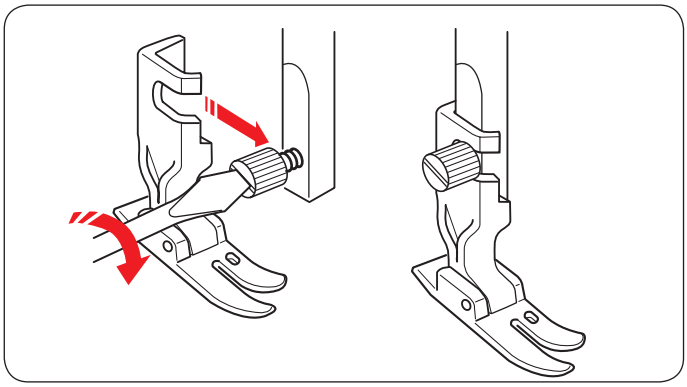
3 Lower the presser foot lifter.
Lower the needle to the lowest position by turning the handwheel.

4 Tighten the setscrew securely with the screwdriver.



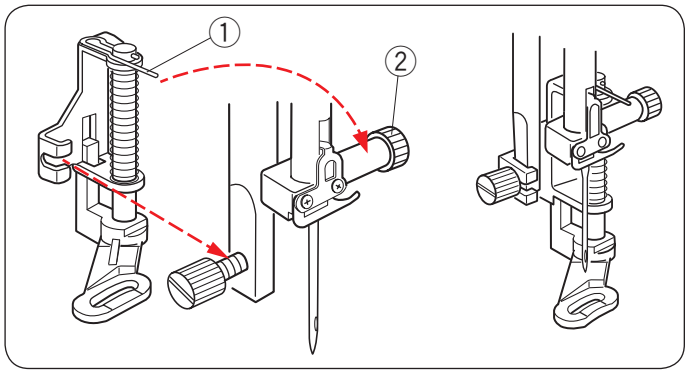
Attaching the Ruler work foot QR

Attach the Ruler work foot QR to the presser bar from behind.
Tighten the setscrew firmly with the screwdriver.



Attaching the Professional Grade Foot HP

Attach the professional grade foot HP to the presser bar.
Tighten the setscrew firmly with the screwdriver.

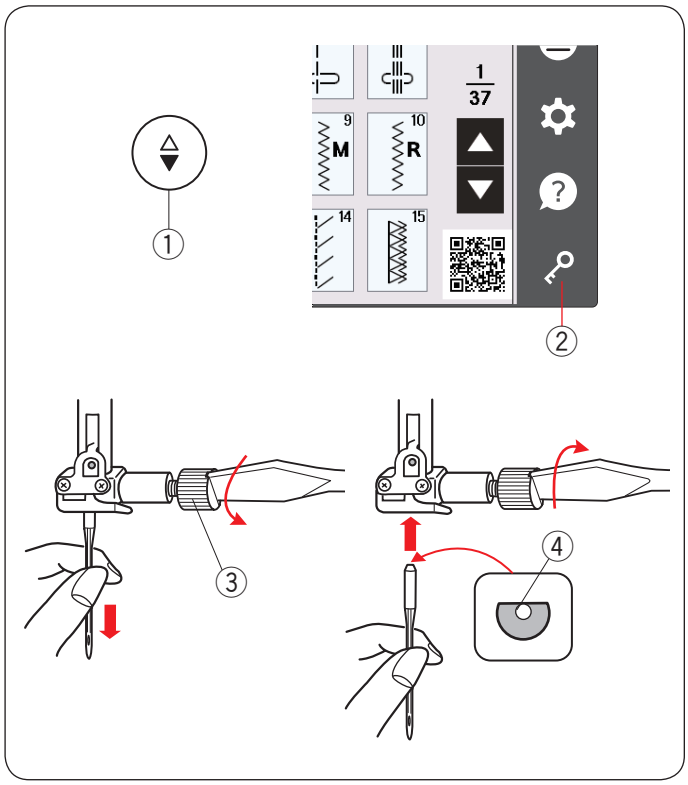


Attaching the Darning Foot PD-H or the Darning Foot (open-toe) PD-H

Attach the darning foot PD-H or the darning foot (open-toe) PD-H to the presser bar by putting the pin on the needle clamp screw.

① Pin
② Needle clamp screw

Tighten the setscrew firmly with the screwdriver.



Replacing Needles

⚠ CAUTION:
Always make sure to press the lockout key to lockout the machine before replacing the needle.

Raise the needle by pressing the needle up/down button.
Press the lockout key.

① Needle up/down button
② Lockout key

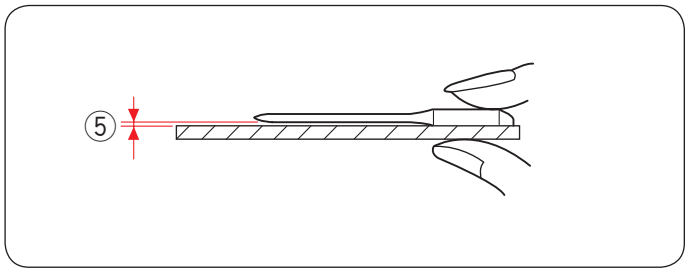
Loosen the needle clamp screw by turning it counterclockwise.
Remove the needle from the clamp.

③ Needle clamp screw

Insert a new needle into the needle clamp with the flat side of the needle to the rear.

④ Flat side

When inserting the needle into the needle clamp, push it up against the stopper pin and tighten the needle clamp screw firmly with a screwdriver.



To check needle straightness, place the flat side of the needle onto something flat (a needle plate, glass etc.). The gap between the needle and the flat surface should be consistent.

⑤ Gap

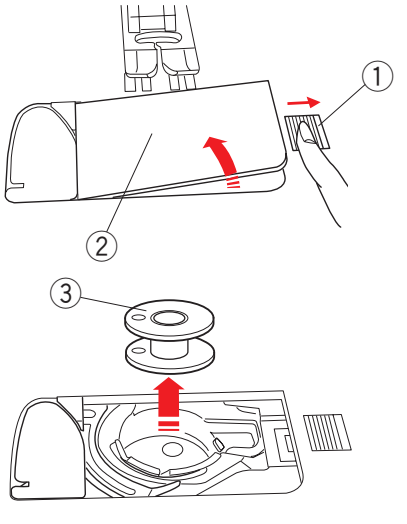
Never use a blunt needle.

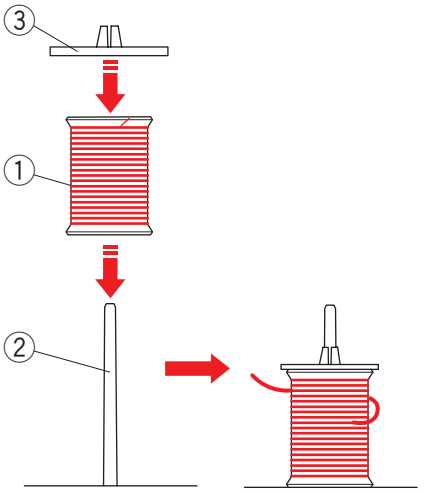
Fabric		Thread	Needle
Fine	Lawn Georgette Tricot Organza Crepe	Cotton #80-100 Synthetic #80-100	Blue tip needle Universal needle #9/65-11/75
Medium	Sheeting Jersey Broadcloth Fleece	Cotton #50-80 Synthetic #50-80	Red tip needle Purple tip needle Universal needle #11/75-14/90
Heavy weight	Denim Tweed Coating Quilting	Cotton #40-50 Synthetic #40-50	Red tip needle Purple tip needle Universal needle #14/90-16/100

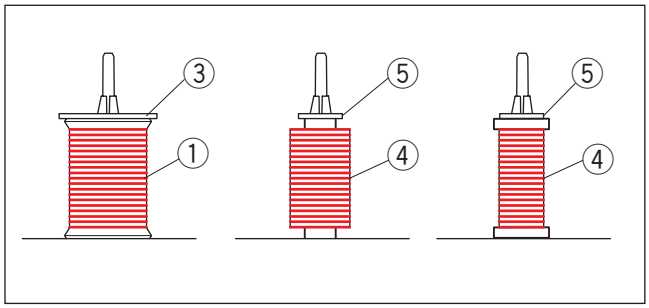
NOTE:
1 x twin needle, 2 x blue tip needle (#11/75), 1 x red tip needle (#14/90) and 1 x purple tip needle (#14/90) are included in the needle case (Part No. 859856005).

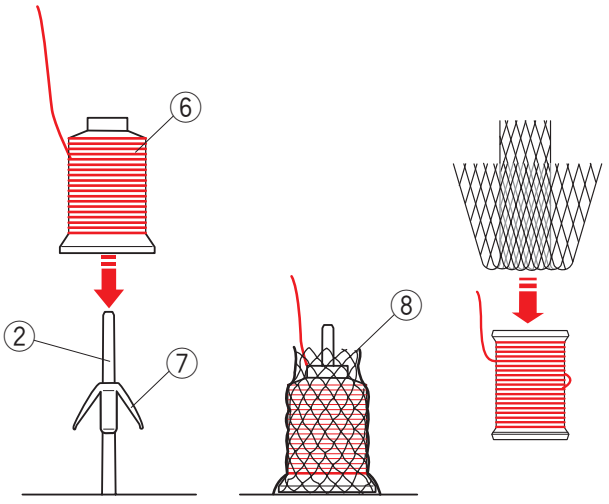
Fabric and Needle Chart

- For general sewing, use red tip needle.
- Fine threads and needles should be used for sewing fine fabrics.
- In general, use the same thread for both needle and bobbin.
- Use a blue tip needle for sewing fine fabrics, stretch fabrics, tricot and buttonholes to prevent skipped stitches.
- Use a purple tip needle for sewing knits, free quilting and across the hem to prevent skipped stitches.
- Use a stabilizer or interface to stretch or fine fabrics to prevent seam puckering.
- Always test the thread and needle size on a small piece of the same fabric you will use for actual sewing.









Winding the Bobbin

Removing the bobbin

Slide the hook cover release button to the right, and remove the hook cover plate.

① Hook cover release button
② Hook cover plate

Lift out the bobbin from the bobbin holder.

③ Bobbin

NOTE:

- Use the “J” plastic bobbins for horizontal hook (marked with “J” ④). Using other bobbins, such as pre-wound paper bobbins, may cause stitching problems and/ or damage to the bobbin holder.
- Do not use the smart bobbins or metal bobbins.

Setting the spool of thread

Place the spool of thread on the spool pin with the thread coming off the spool as shown.
Attach the spool holder, and press it firmly against the spool of thread.

① Spool of thread
② Spool pin
③ Large spool holder

Use the large spool holder for ordinary spools, while the small spool holder for small spools.

④ Small spool
⑤ Small spool holder

NOTE:

Avoid using a paper cored spool when it begins to empty since it will not unwind smoothly. It may cause the thread to bunch or slip when using the auto thread cutter.

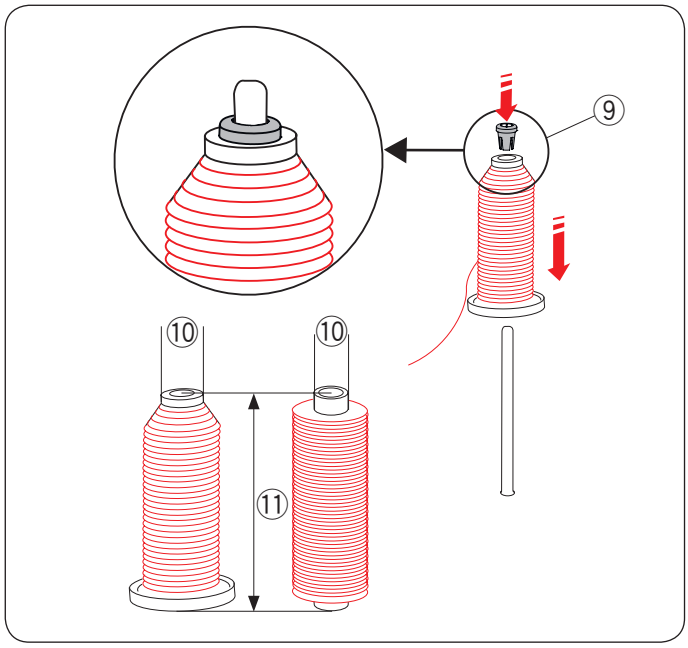
Setting the thread cone

Use the spool rest and the spool net for thread cones.

Attach the spool rests on the spool pin.
Place the spool cone on the spool pin.

Cover the thread cone with the spool net if the thread is shaky or kinky when sewing.
If the net is too long for a spool, fold the net and place it on the spool.

② Spool pin
⑥ Thread cone
⑦ Spool rest
⑧ Spool net



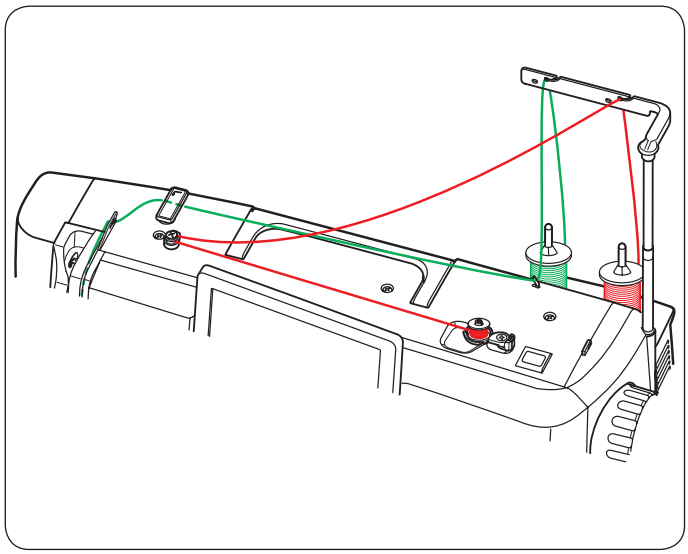
Setting the spool of thread or thread cone (special size)

Use the spool holder (special) to hold the specific size of the spool of threads as shown.

The sizes of the spools of thread are as follows;
The hole diameter of the spool has a range of 3/8″ to 7/16″ (9.5 to 10.5 mm)), and the spool length has a range of 2 3/4″ to 3″ (70 to 75 mm).

⑨ Spool holder (special)
⑩ Hole diameter (3/8″ to 7/16″)
⑪ Spool length (2 3/4″ to 3″)

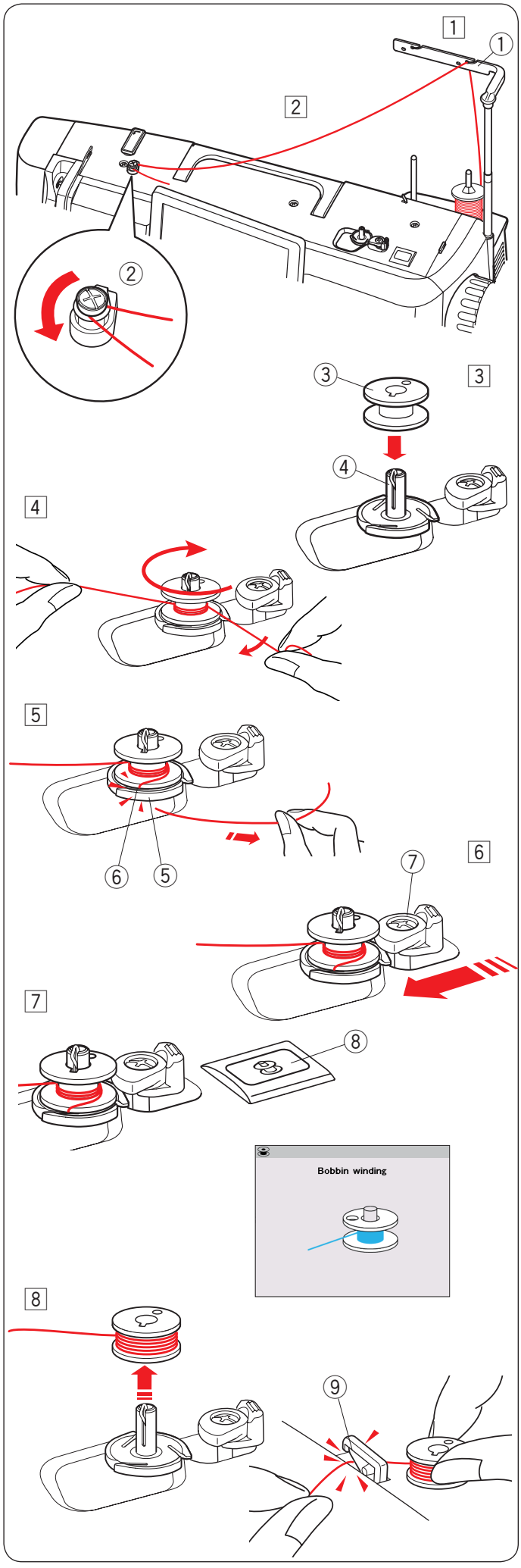
Firmly insert the spool holder (special) into the hole and hold the spool as illustrated.



Bobbin winding while working on a sewing project

There are 2 spool pins on the spool stand.
You can use both spool pins when you need to wind a bobbin without unthreading the machine while working on a sewing project.
Place a spool of thread on the spool pin and fix the spool with the spool holder as shown.

NOTE:
Those spool pins are also used for twin needle sewing (refer to page 79).



Winding the bobbin

NOTE:
You can adjust the bobbin winding speed (refer to page 126).

1 Raise the retractable thread guide bar.
Pass the thread through the guide on the thread guide bar from behind.
① Thread guide bar

2 Pass the thread under the bobbin winding tension disk.
② Bobbin winding tension disk

3 Put the bobbin on the bobbin winder spindle.
③ Bobbin
④ Bobbin winder spindle

4 Pass the thread to the bobbin.
Hold the thread with both hands and wind it around the bobbin clockwise several times.

5 Insert the thread into one of the slits ⑥ of the flange plate ⑤ and pull the thread to cut.
⑤ Flange plate
⑥ Slit

6 Push the bobbin winder stopper ⑦ to the left.
⑦ Bobbin winder stopper

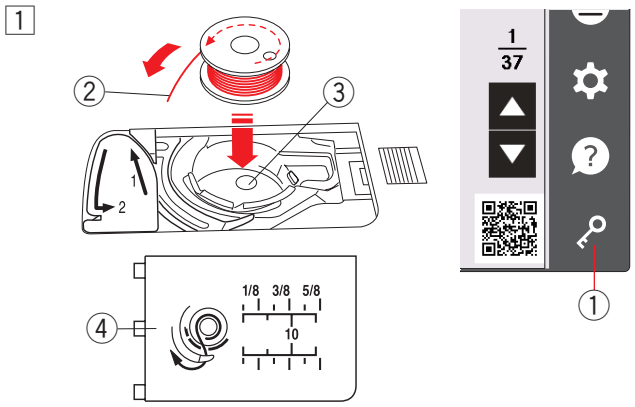
7 Press the bobbin winding button ⑧. The visual touch screen will show the bobbin winding sign.
⑧ Bobbin winding button

When the bobbin is fully wound, it will stop spinning and the bobbin stopper returns to its original position automatically.

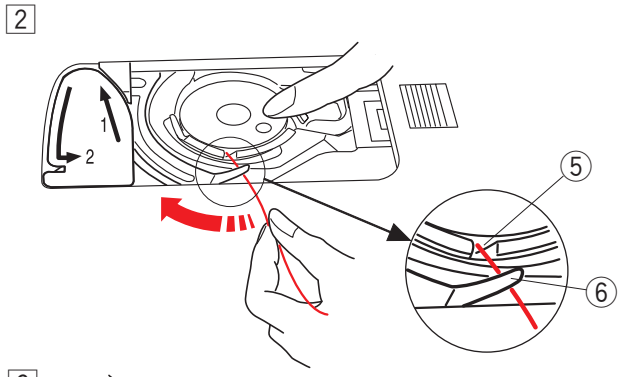
8 Remove the bobbin. Cut the thread with bobbin thread cutter ⑨.
⑨ Bobbin thread cutter

NOTE:
For safety purposes, the machine will automatically stop 1.5 minutes after starting bobbin winding.

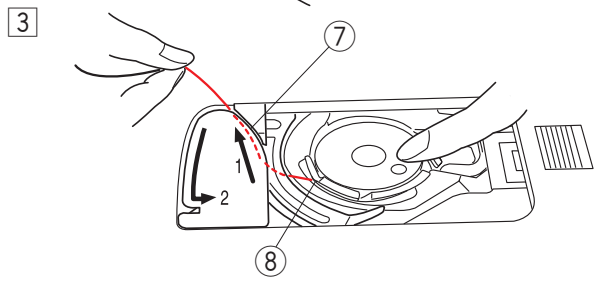
Inserting the Bobbin



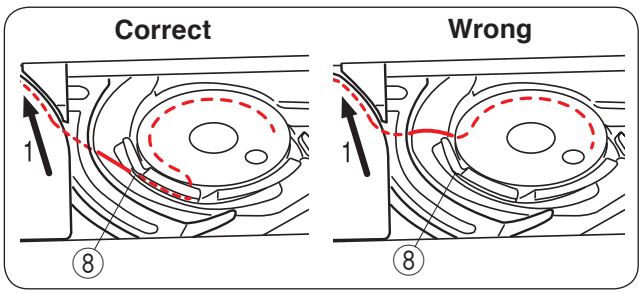
1 Press the lockout key.
Place a bobbin in the bobbin holder with the thread running off counterclockwise as shown on the hook cover plate.
① Lockout key
② End of thread
③ Bobbin holder
④ Hook cover plate



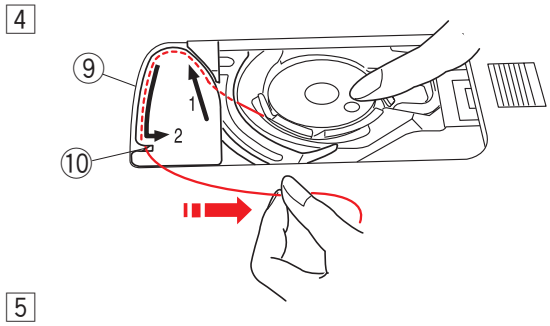
2 Hold the bobbin with your fingertip so it does not rotate.
Guide the thread into the front notch of the bobbin holder.
Pull the thread to the left to pass it under the guide.
⑤ Front notch
⑥ Guide



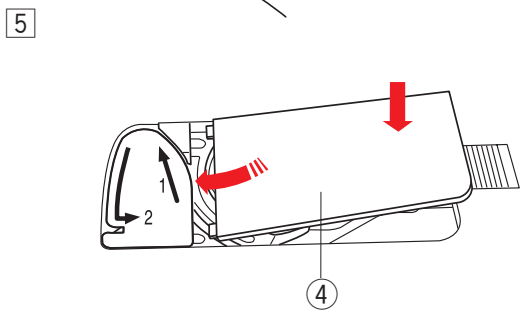
3 Draw the thread to the left to pass it into the guide path marked “1”.
Make sure that the thread comes out from the side notch of the bobbin holder.
⑦ Guide path 1
⑧ Side notch



NOTE:
If the thread does not come out from the side notch, rethread from step 1.



4 Continue to draw the thread along the guide path marked “2” and pull the thread to the right through the slit. The thread will be cut to a proper length and held in place.
⑨ Guide path 2
⑩ Slit (Thread cutter)



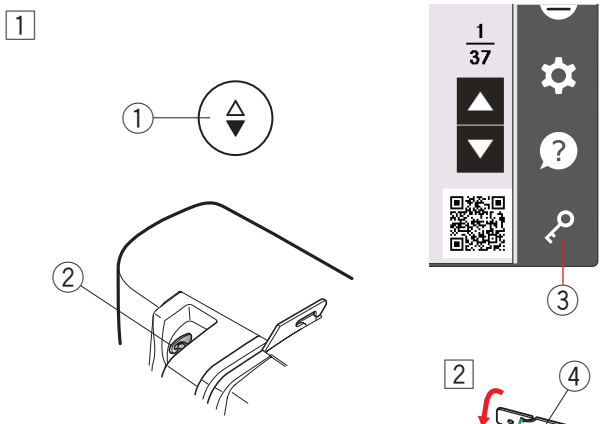
5 Set the left edge of the hook cover plate into opening. Push down the hook cover plate to fit in place.

NOTE:
Unless otherwise noted, you can start sewing without drawing up the bobbin thread.
Refer to page 32 for how to draw up the bobbin thread.

Threading the Machine

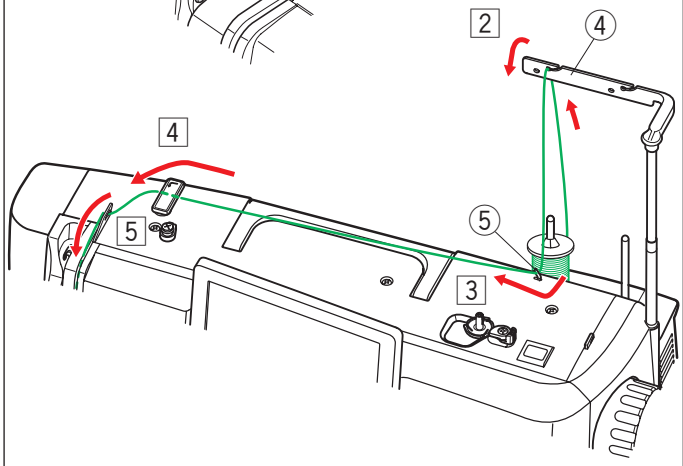
⚠CAUTION:
Always make sure to press the lockout key to lockout the machine before threading the machine.

1



1 Press the needle up/down button to raise the take-up lever to the highest position.
Press the lockout key to lockout the machine.
① Needle up/down button
② Thread take-up lever
③ Lockout key

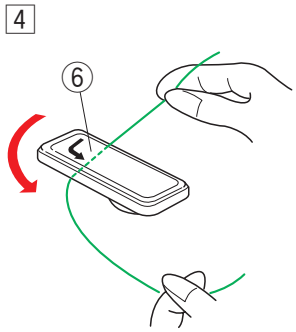
2



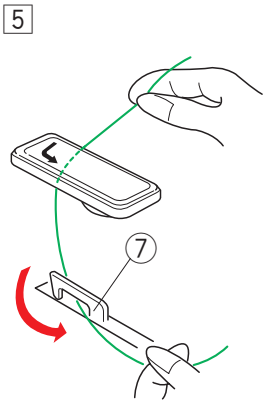
2 Pass the thread through the guide on the thread guide bar from behind.
④ Thread guide bar

3 Pass the thread through the right thread guide.
⑤ Right thread guide

4



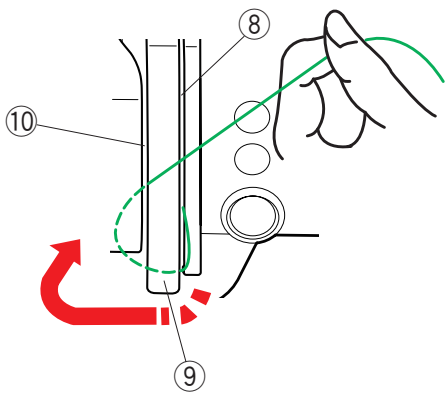
5



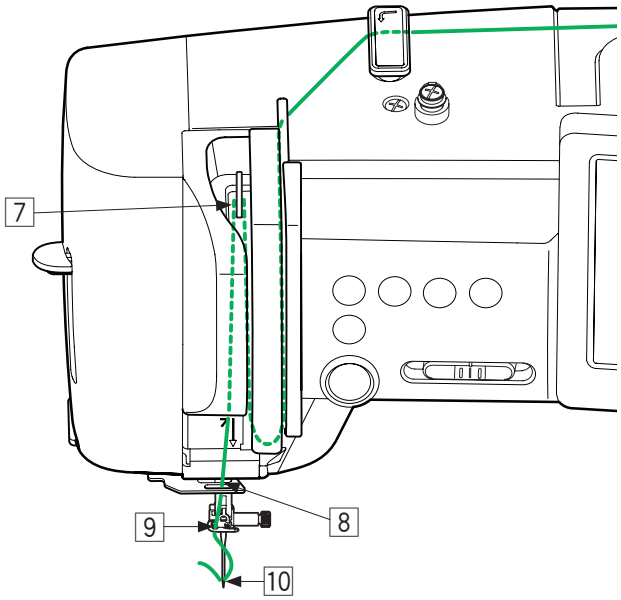
4 Hold the upper thread with both hands as shown and slip it under the thread guide plate.
⑥ Thread guide plate

5 Draw the thread toward you and pass it into the left thread guide.
⑦ Left thread guide

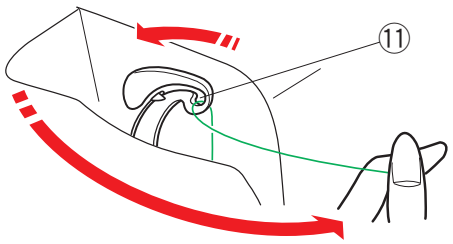
6



6 Draw the thread down along the right channel and around the bottom of the thread guide plate.
Pull the thread up along the left channel.
⑧ Right channel
⑨ Thread guide plate
⑩ Left channel

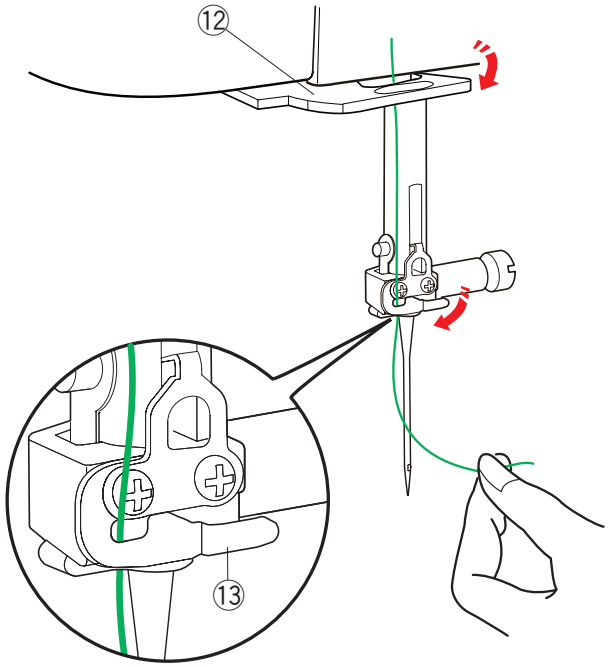


7



7 While holding the thread at the spool, firmly draw the thread up and to the back of the take-up lever. Draw the thread forward to draw it into the eye of the take-up lever.
⑪ Eye of the take-up lever

8 9



8 Then pull the thread down along the left channel and through the lower thread guide.
⑫ Lower thread guide

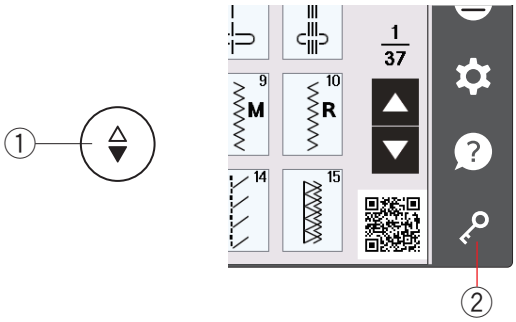
9 Slide the thread from the right of the needle bar thread guide to the left.
Be sure to slide the thread to the end of the slit as shown.
⑬ Needle bar thread guide

10 Thread the needle with the needle threader (refer to the next page).

Built-in Needle Threader

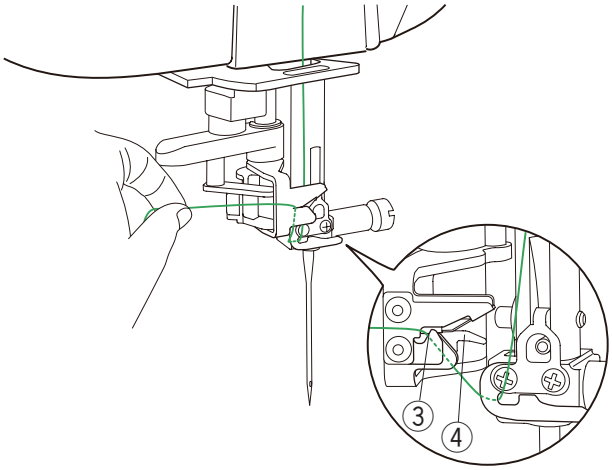
NOTE:
- The needle threader can be used with a #11 to #16 needle.
  Thread size 50 to 90 is recommended.
  Do not use thread size 30 or thicker.
- The needle threader cannot be used with the twin needle.

1



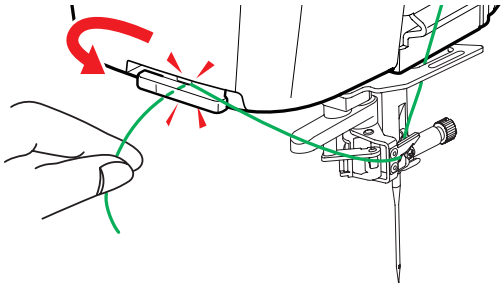
1 Press the needle up/down button to raise the needle. Press the lockout key to lock the machine.
① Needle up/down button
② Lockout key

2



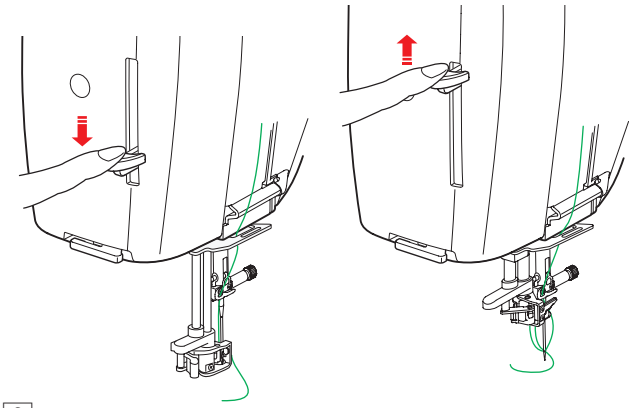
2 Draw the thread through the slit ③ of the needle threader. The thread should pass under the hook ④.
③ Slit
④ Hook

3



3 Pull the thread up and slip it between the thread cutter and face plate from behind.
Pull the thread toward you to cut.

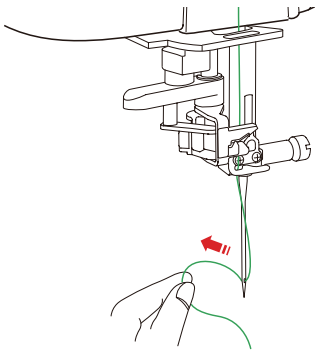
4 5



4 Pull down the needle threader lever as far as it will go.

5 Raise the threader slowly so a loop of the thread is pulled up through the needle eye.

6



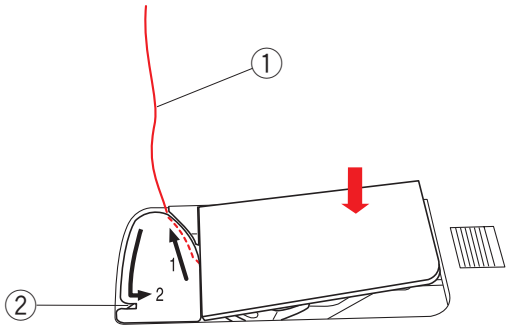
6 Pull the thread loop to take the thread end out through the needle eye to the rear.

NOTE:
If the thread is caught in the hook and the thread loop is not formed, remove the thread from the hook and pull it to take the thread end out through the needle eye.

Drawing up the Bobbin Thread

After using auto thread cutting or threading the bobbin holder, you can start sewing without drawing up the bobbin thread.
However, you need to draw up the bobbin thread when sewing gathering stitches etc.

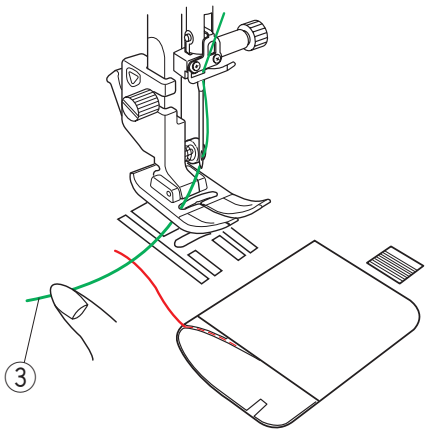
1



1 Remove the bobbin. Insert the bobbin into the bobbin holder again and rethread the bobbin holder according to the instructions on page 28, but leave a 10 cm (4″) tail of bobbin thread as shown.
① Bobbin thread

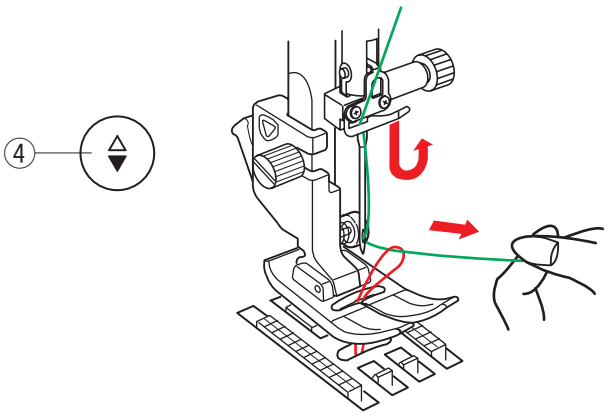
NOTE:
Do not cut the bobbin thread with the thread cutter.
② Thread cutter

2



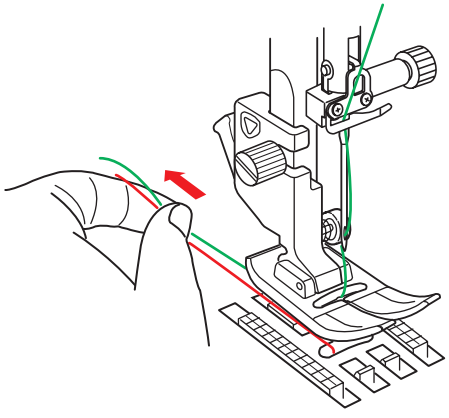
2 Raise the presser foot. Hold the needle thread lightly with your left hand.
③ Needle thread

3



3 Press the needle up/down button twice to lower and raise the needle and pick up the bobbin thread.
④ Needle up/down button

4



4 Pull both threads 10 cm (4″) under and behind the presser foot.

Replacing the Needle Plate

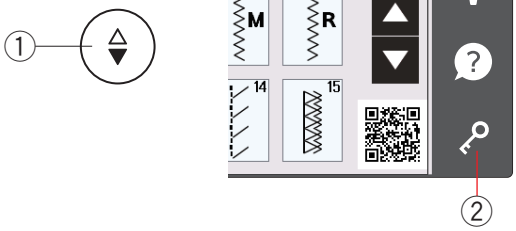
Use the straight stitch needle plate when using the dual feed foot.
The straight stitch needle plate can be used for straight stitches with the left, center or right needle drop positions.
Use the professional grade needle plate HP for the straight stitch with the left needle drop position.
Attach the professional grade foot when sewing with the professional grade needle plate HP.

⚠ CAUTION:

- Always make sure to press the lockout key to lockout the machine before replacing the needle plate.
- Never turn the needle plate release dial while running the machine.

NOTE:
When the straight stitch needle plate or the professional grade plate is attached to the machine, the patterns not suitable for the straight stitch needle plate or the professional grade plate cannot be selected.

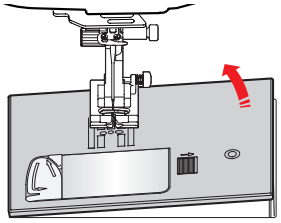
1



1 Press the needle up/down button to raise the needle.
Press the lockout key.
① Needle up/down button
② Lockout key

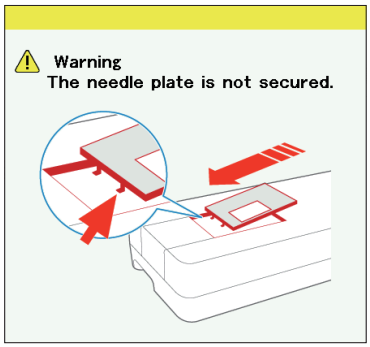
2





2 Press the needle plate release key and the needle plate will automatically snap off.
③ Needle plate release key

3

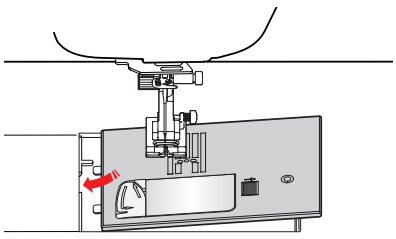


3 A warning message will appear that the needle plate is not secured.
Remove the needle plate to the right.

NOTE:

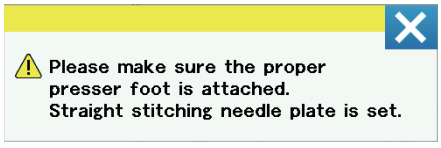
- The needle plate will be returned to the set position automatically after the certain period (needle plate lifter time).
- You can change the needle plate lifter time (refer to page 127).

4

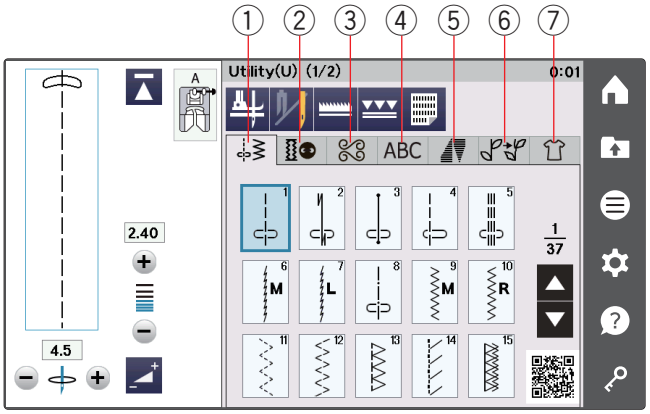


4 Place the straight stitch needle plate on the machine.
Set the left edge of the needle plate into the opening.

5



5 A message will appear when the straight stitch needle plate is attached. Be sure the proper foot is attached to the machine.
Press the X key.
Turn the handwheel slowly and make sure that the needle does not hit the needle plate.
Press the lockout key to unlock the machine.



ORDINARY SEWING MODE

Ordinary Stitch Patterns

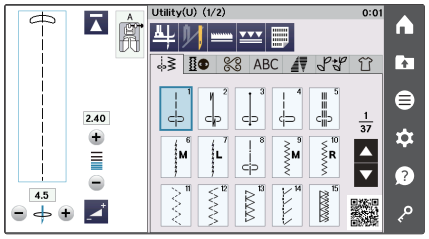
In the ordinary sewing mode, there are 7 categories available.

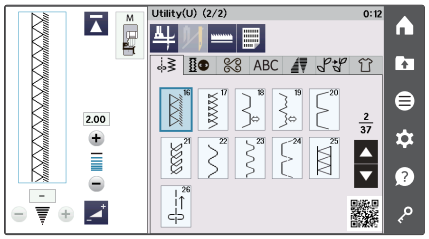
① Utility stitches (U)
② Buttonhole and specialty stitches (B)
③ Decorative and quilting stitches
④ Monogramming
⑤ Tapering
⑥ Hand stitch style
⑦ Sewing applications

Press one of the tabs to select the category.

NOTE:
In this manual, the pattern number refers to the initial for each group or category.
For example pattern #15 in the buttonholes and specialty stitches is referred to as pattern B15.

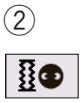
① 

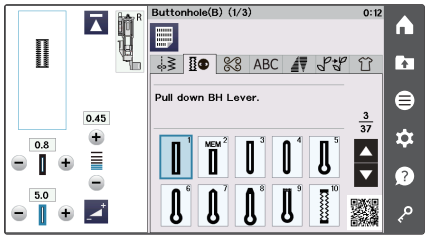


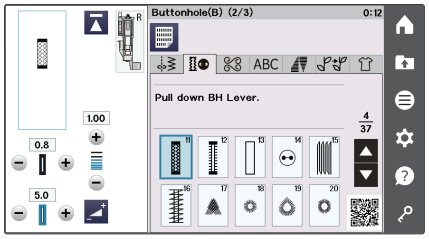


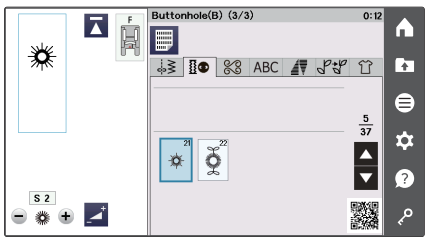
① Utility stitches (U)

You can select utility stitches for seaming, overcasting, blind hemming, basting and shell tucking.

② 

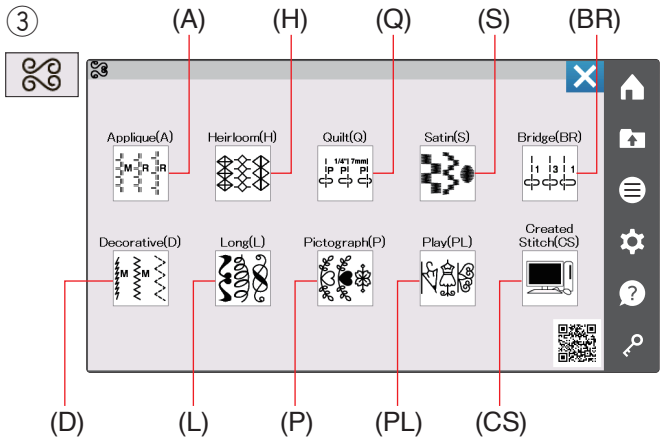






② Buttonholes and specialty stitches (B)

There are various styles of buttonholes, button sewing, darning, tacking, fly stitches and eyelets available in this category.

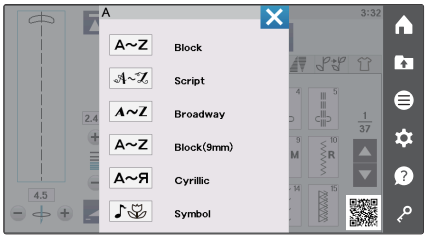


③ Decorative and quilting stitches

This category consists of the following 10 groups.

- Applique stitches (A)
- Heirloom stitches (H)
- Quilting stitches (Q)
- Satin stitches (S)
- Bridge stitches (BR)
- Decorative stitches (D)
- Long stitches (L)
- Pictograph stitches (P)
- Play stitches (PL)
- Created Stitches (CS)

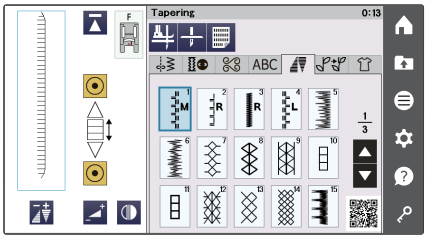
④



④ Monogramming

You can program lettering as well as a combination of characters and symbol patterns.

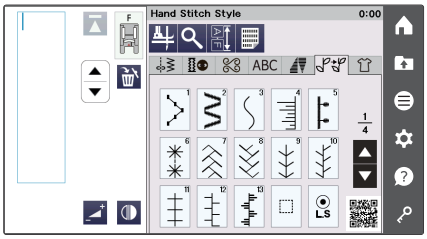
⑤



⑤ Tapering

You can taper the beginning and end of the decorative stitch patterns to create tapered corners and points.

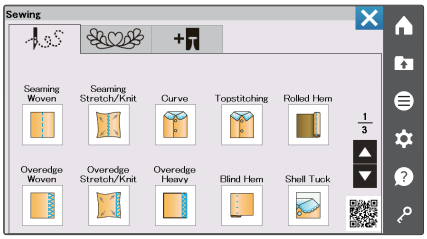
⑥



⑥ Hand stitch style

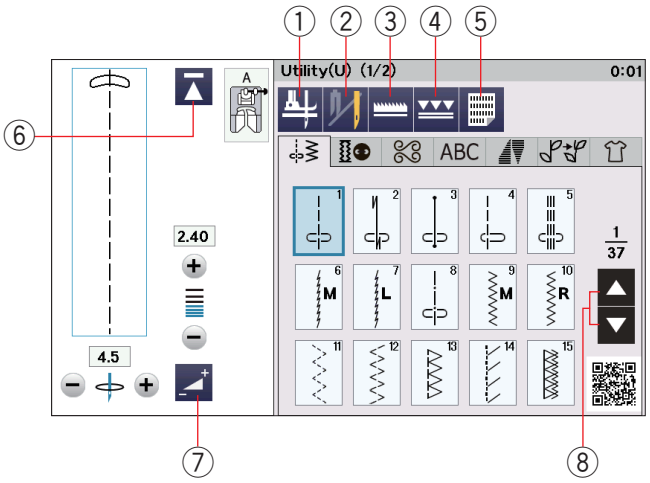
You can add a rough hand-sewn effect to decorative and quilt stitch patterns in this section. The shape of the stitch pattern will change very slightly and randomly to add hand-sewn taste.

⑦



⑦ Sewing applications

You can select the appropriate stitch for a specific sewing project and fabric type from the designated applications in this category.



Function Keys in Ordinary Sewing Mode

① Foot-up key

If this option is turned on, the needle stops at the down position and the presser foot will automatically go up when the machine stops.
Press this key to turn this option on or off (refer to page 48).

② Twin needle key

Press this key to set the stitch width for twin needle sewing (refer to page 79-80).

③ Drop feed key

This key is available only with the utility stitch group.
Press this key to drop or raise the feed dog.

④ Dual feed key

Press this key for dual feed sewing (refer to pages 41-42).

⑤ Stitch reference key

Press the stitch reference key to show the stitch reference chart.

⑥ Startover key

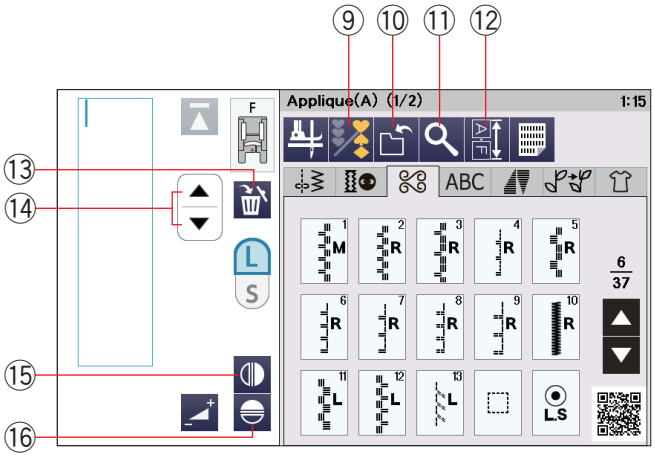
If you stop sewing in the middle of a stitch pattern and wish to sew the pattern again from the beginning, press this key before you start sewing.
Press this key once to startover from the beginning of the current pattern, or press this key twice to startover from the beginning of the first pattern of the combination (refer to page 83).

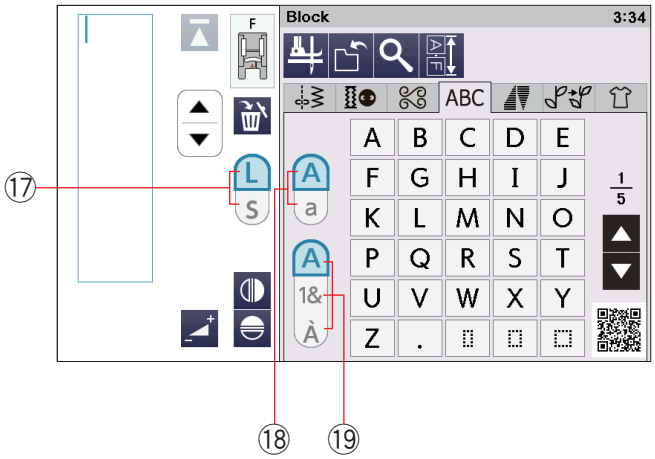
⑦ Adjust key

Press this key to expand the manual setting window (refer to pages 46).

⑧ Page keys

Press the page key to display the next page or previous page. Press and hold the page key to turn the pages continuously.





⑨ **Program key**

Press this key to program a pattern combination. When this key is pressed, the save file key, preview key, pattern combination length key, delete key, letter size key and cursor keys will appear.

⑩ **Save file key**

Press this key to save the pattern combination as a file.

⑪ **Preview key**

Press this key to view the stitch image of the entire pattern combination.

⑫ **Pattern combination length key**

Press this key to check the total length of the pattern combination.

⑬ **Delete key**

Press this key to delete the pattern from the pattern combination.

⑭ **Cursor keys**

Press one of the cursor keys to move the cursor up or down.

⑮ **Vertical mirror image key**

Press this key to sew a vertical mirror image of the selected pattern (refer to page 81).

⑯ **Horizontal mirror image key**

Press this key to sew a horizontal mirror image of the selected pattern. The key is grayed out if the selected pattern cannot be turned over (refer to page 81).

⑰ **Letter size key**

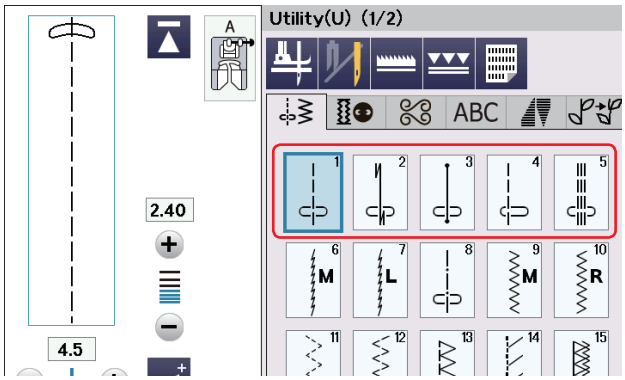
Press this key to select the full size (L) or small size (S).

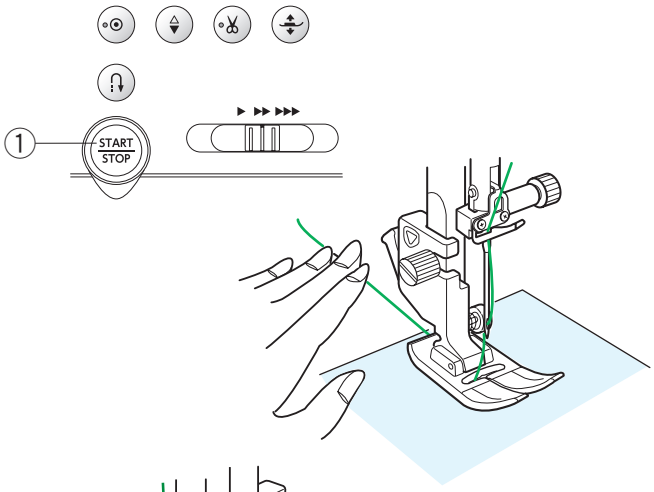
⑱ **Letter case key**

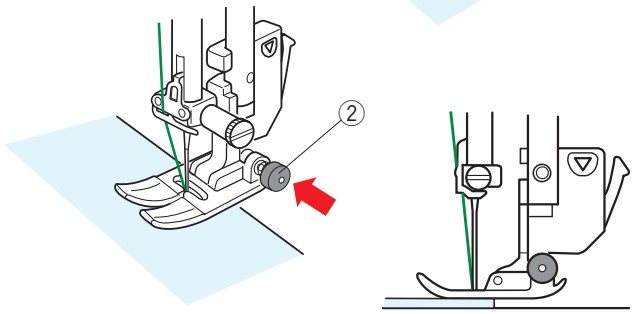
Press this key to select upper case or lower case for monograms.

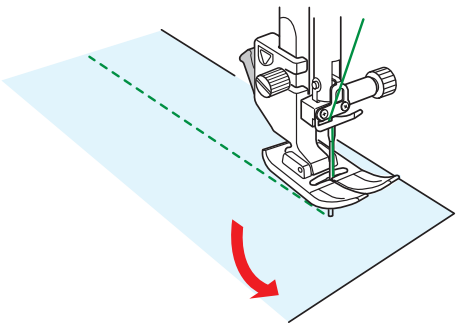
⑲ **Character type key**

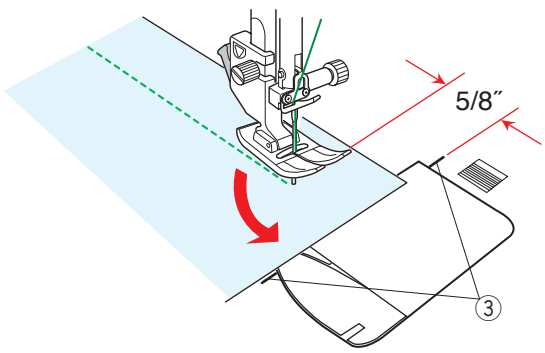
Press this key to select the character type among alphabets, numerals, symbols and European characters.











Utility Stitches

Straight Stitches

Patterns U1 to U5 are straight stitches for seaming. Press the pattern selection key for the desired stitch.

Starting to sew

Place the fabric next to the seam guide line on the needle plate. Lower the needle to the point where you want to start.

Pull the needle thread towards the rear and lower the foot.

> **NOTE:**
> Pull the needle thread to the left when using satin stitch foot F, open-toe satin stitch foot F2, dual feed foot or automatic buttonhole foot R.

Press the start/stop button or foot control to start sewing. Gently guide the fabric along the seam guide line letting the fabric go naturally.

① Start/stop button

Sewing from the Edge of Thick Fabric

The black button on the zigzag foot locks the foot in the horizontal position.
This is helpful when you start sewing at the extreme edge of thick fabrics or for sewing across a hem.

Lower the needle into the fabric at the point where you wish to start sewing.
Lower the foot while pushing in the black button. The foot is locked in the horizontal position to avoid slipping.
After a few stitches, the black button is released automatically.

② Black button

Changing Sewing Direction

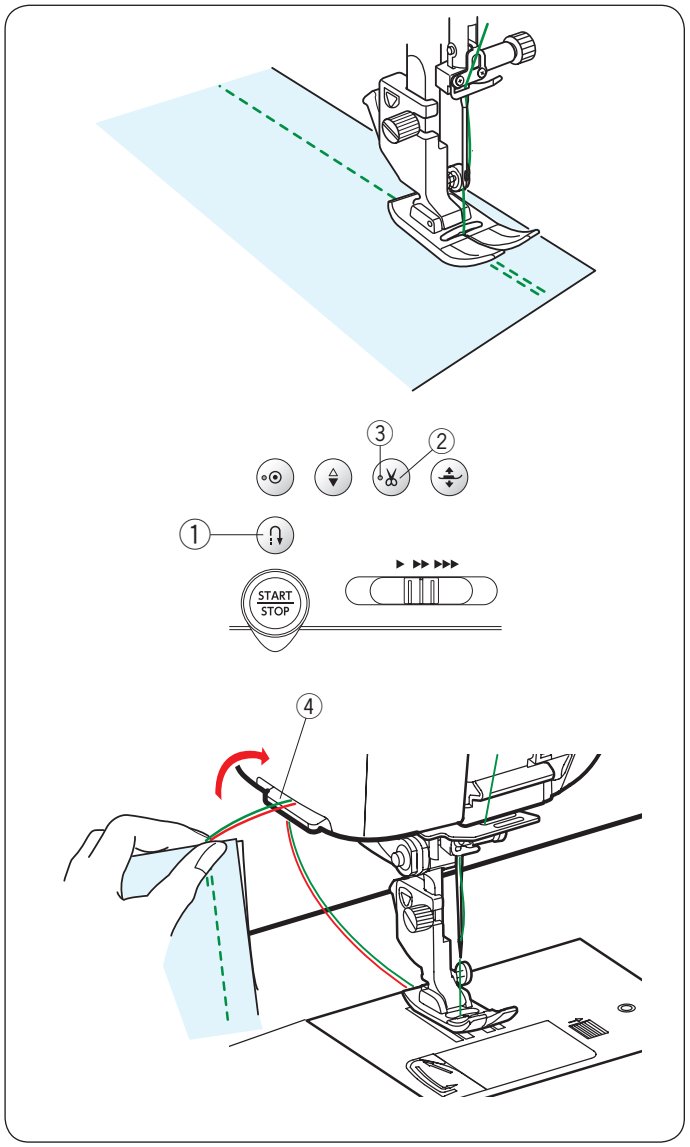
Stop the machine and press the presser foot lifter button to raise the presser foot.
Pivot the fabric around the needle to change the sewing direction as desired.
Start sewing in a new direction.

> **NOTE:**
> If you turn on the foot up option, the presser foot will automatically go up when the machine stops (refer to page 48).

Turning a Square Corner

To maintain a 5/8″ seam allowance after turning a square corner, use the cornering guide on the needle plate.
Stop sewing when the front edge of fabric reaches the cornering guide lines.
Press the foot lifter button and turn the fabric 90 degrees.
Start sewing in the new direction.

③ Cornering guide



Securing Seams

For fastening the ends of seams, press the reverse button and sew several reverse stitches.
The machine sews in reverse as long as you press and hold the reverse button.

① Reverse button

Press the reverse button once when sewing the lock-a-matic stitch (pattern U2) or locking stitch (pattern U3) and the machine will lock the stitches off and stop automatically.

Cutting Threads

To cut the threads after finishing sewing, press the thread cutter button. The needle bar and presser foot will automatically go up after trimming the threads.

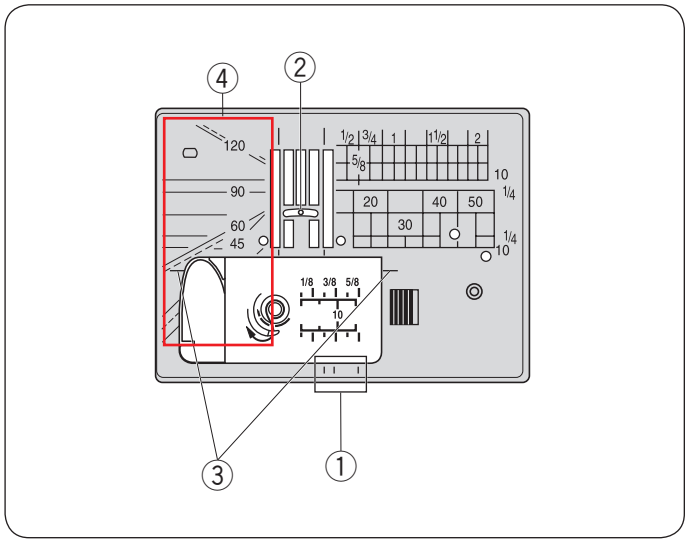
② Thread cutter button

NOTE:
The thread cutter button does not function when the LED signal ③ is turned off or the presser foot is raised with the presser foot lifter.
Use the thread cutter on the face plate to cut specialized, #30 or thicker threads if the auto thread cutter does not work well.

③ LED signal

To use the thread cutter on the face plate, remove the fabric and draw it to the back.
Pull the threads up and slip them between the thread cutter and face plate from behind.
Pull the threads toward you to cut.

④ Thread cutter



Needle Plate Guides

The seam guides are marked on the needle plate and hook cover.
The seam guides for 1/4″, 3/8″ and 5/8″ are also marked on the front of the needle plate.

① Seam guides on the front of the needle plate

The numbers on the needle plate indicate the distance from the center needle position in millimeters and inches.

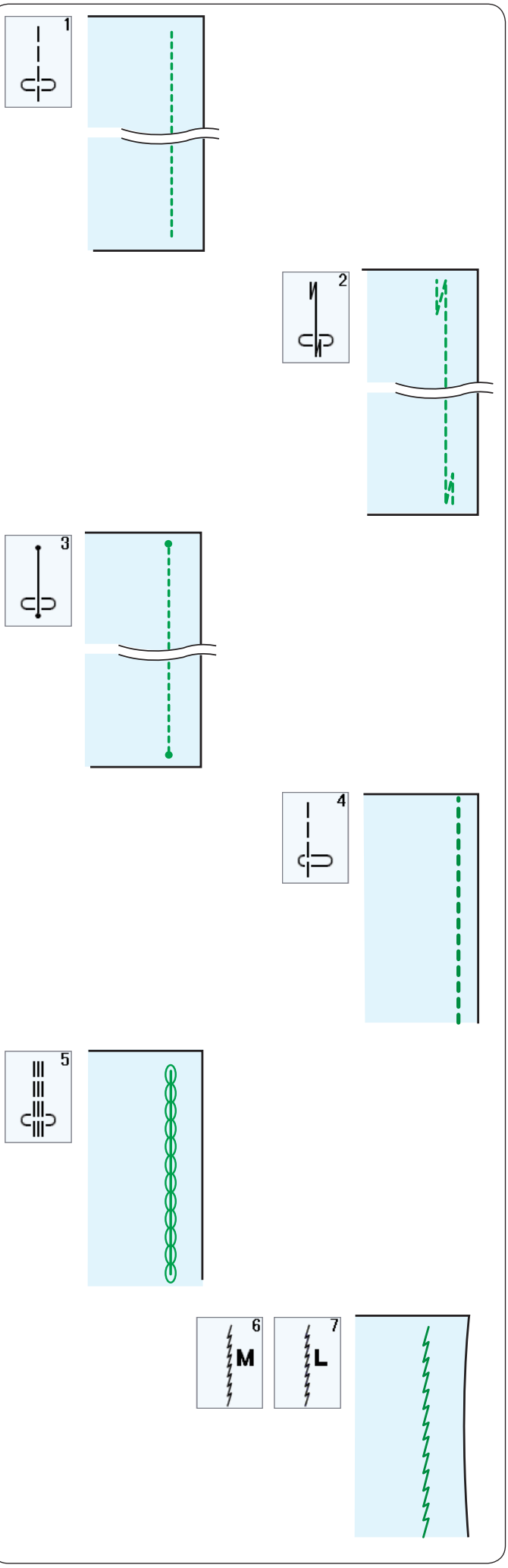
② Center needle position

The cornering guides are very useful when turning a square corner.

③ Cornering guide

The angle scales on the needle plate are useful for patchwork piecing (refer to page 74).

④ Angle scales



Variety of Straight Stitches

U1 Straight stitch in center needle position

Use this stitch for seaming, rolled hemming etc.

U2 Lock-a-matic stitch

Use this stitch to secure the beginning and the end of a seam with backstitching.
When you reach the end of the seam, press the reverse button once.
The machine will sew four reverse stitches, four forward stitches, and then stop sewing automatically.

U3 Locking stitch

This unique stitch is used where an invisible locking stitch is needed.
The machine will sew several locking stitches at the beginning and continue sewing forward.
When you press the reverse button at the end of the seam, the machine will sew several locking stitches in place, then stop sewing automatically.

U4 Straight stitch in left needle position

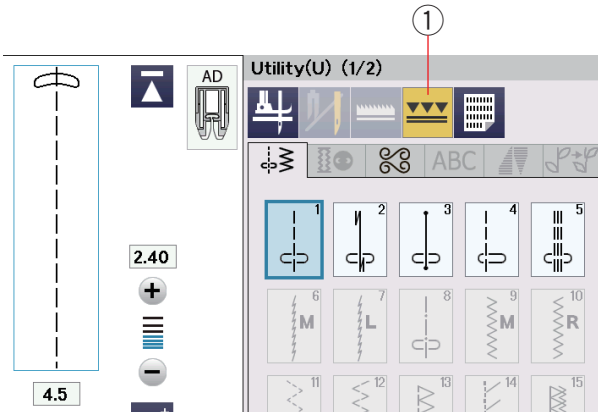
Use this stitch to seam fabrics close to the edge.

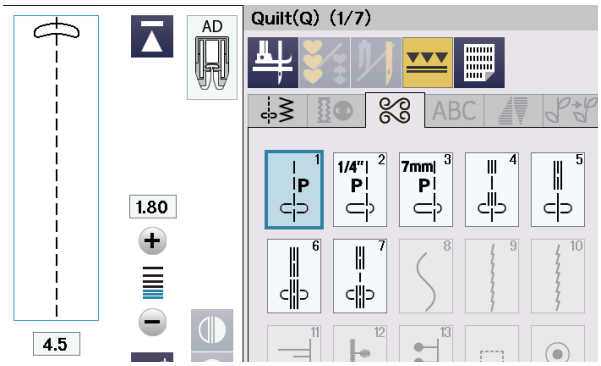
U5 Triple stretch stitch

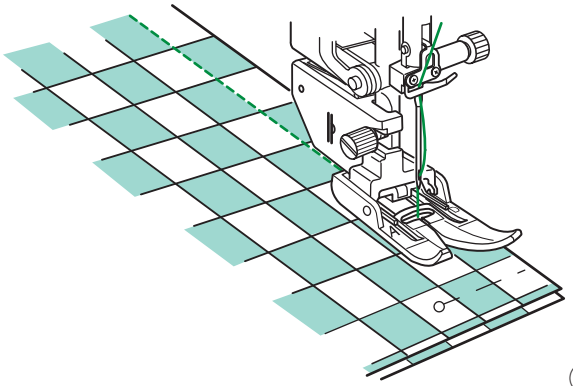
This strong, durable stitch is recommended for areas where both elasticity and strength are needed to ensure comfort and durability.
Use it to reinforce areas such as crotch and armhole seams.
Also use it when constructing items such as backpacks for extra strength.

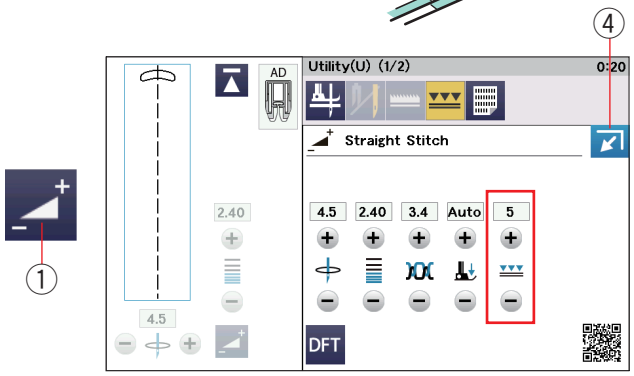
U6, U7 Stretch stitches

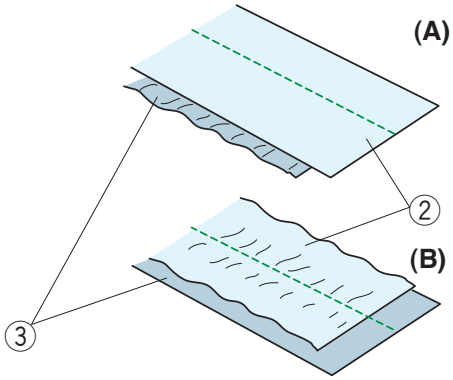
These are narrow stretch stitches designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely open flat.
Use U7 for seaming fine fabrics or stretch fabrics.











Sewing with the Dual Feed Device

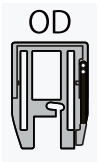
Patterns U1 to U5 and Q1 to Q7 can be sewn with the dual feed device.

The dual feed device is extremely effective when sewing hard to feed materials such as PVC coated fabric or leather.
It also eliminates layer slippage.

See page 22 for how to attach the dual feed foot and to engage the dual feed device.
Press the dual feed key ① and select the desired pattern.

NOTE:
The patterns not suitable for dual feed sewing are grayed out.
The dual feed key will gray out or not be indicated if you selected a pattern not suitable for dual feed sewing.

NOTE:



Dual feed quilt piecing foot OD appears on the visual touch screen when patterns Q2 or Q3 is selected.
Dual feed quilt piecing foot OD (twin) is an optional item.

Place the fabric under the foot and lower the needle at the point where you wish to start.
Start sewing at medium speed.

When seaming plaid fabrics, match the plaids of the upper and lower layers and pin them together.
Remove the pins as you sew.

Adjusting dual feed balance

The dual feed balance value should be set at “5”, however you may need to adjust the dual feed balance depending on the type of fabric.

Check the feed balance by test sewing on a scrap piece of the fabric you intend to use.

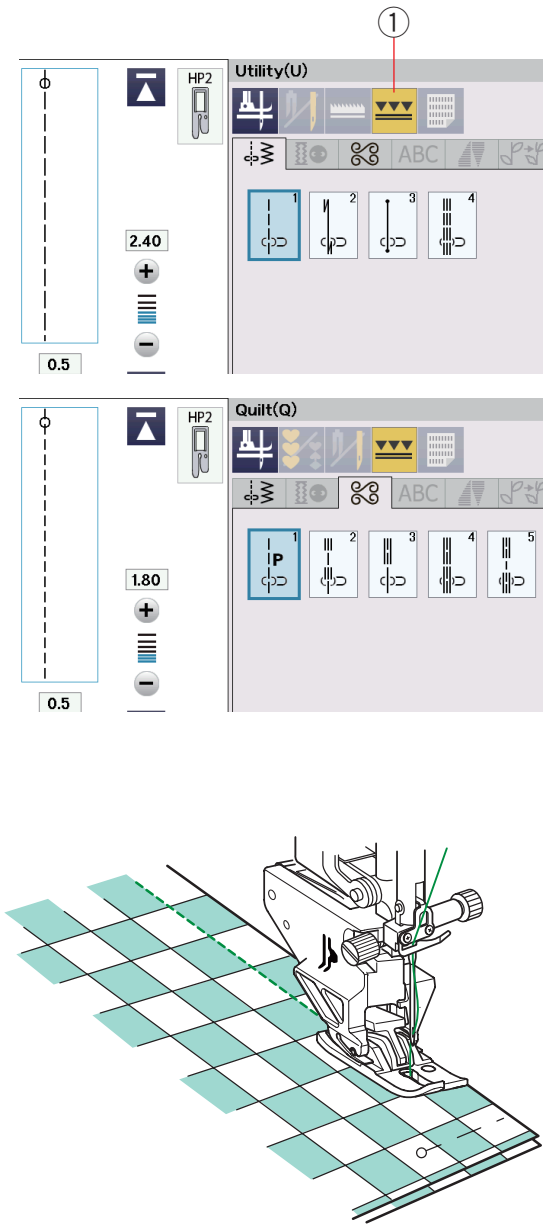
Press the adjust key ① to expand the manual setting window.

(A): If the lower layer puckers, press the “+” key to adjust it (6-10).

(B): If the upper layer puckers, press the “–”. key to adjust it (1-4).

② Upper layer
③ Lower layer

Press the close key ④ to shrink the manual setting window.



AcuFeed Flex Professional Grade Foot HP2

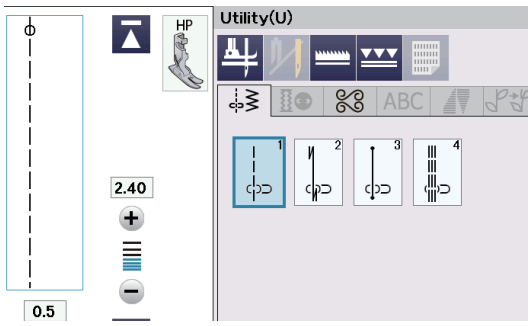
This foot provides superior visibility and is great for curves and precise topstitching. Holds fabrics firmly in sync with the feed dogs to achieve professional results.

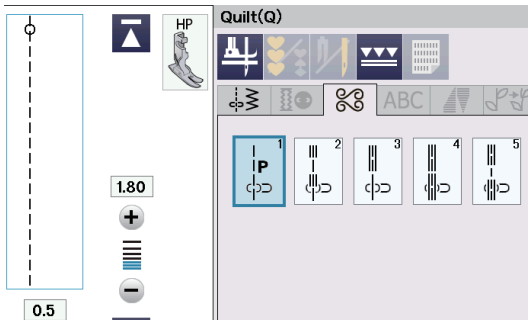
See page 22 for how to attach the AcuFeed flex professional grade foot HP2 and to engage the dual feed device.

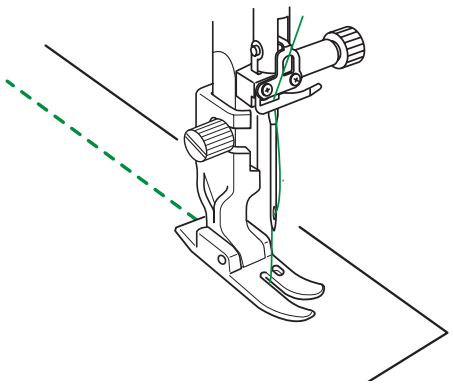
Replace the needle plate with the professional grade needle plate when using AcuFeed flex professional grade foot HP2. See page 33 for how to attach the professional grade needle plate.

Press the dual feed key ① and select the desired pattern. Refer to page 41 for how to sew.

NOTE:
The patterns not suitable for AcuFeed flex professional grade foot are not displayed.
The dual feed key will gray out or not be indicated if you selected a pattern not suitable for dual feed sewing.







Sewing with the Professional grade foot HP

Patterns U1 to U4 and Q1 to Q5 can be sewn with the professional grade foot.

Use the professional grade foot for the straight stitch with a professional result.

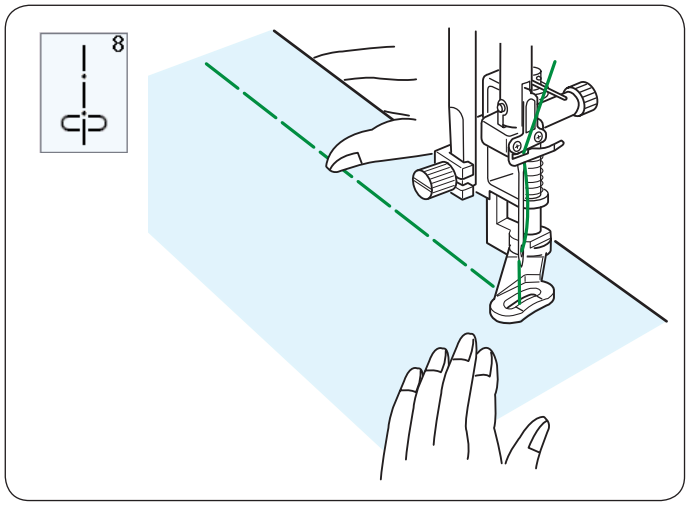
See page 22 for how to attach the professional grade foot.

Replace the needle plate with the professional grade needle plate when using professional grade foot. See page 33 for how to attach the professional grade needle plate.

Attach the professional grade needle plate and professional grade foot HP and select the desired pattern.

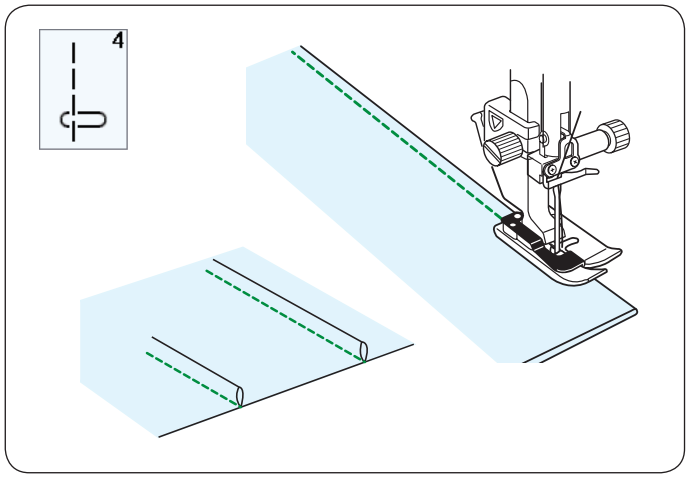
NOTE:
The patterns not suitable for the professional grade needle plate are not displayed.

Place the fabric under the foot and lower the needle at the point where you wish to start and sew.



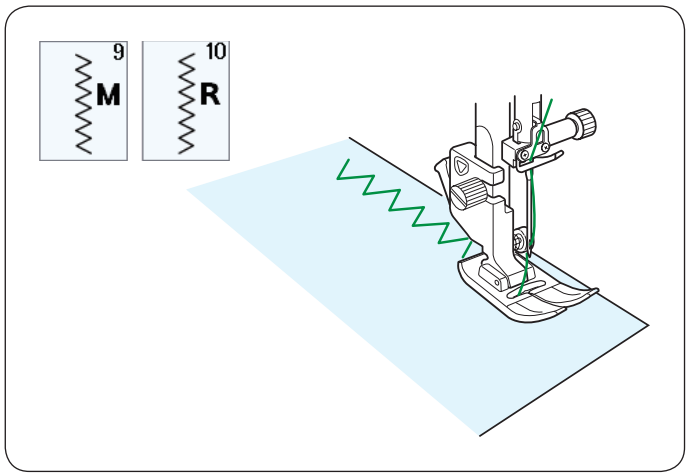
U8 Basting

See page 111 for sewing instructions.



U4 Pintucking

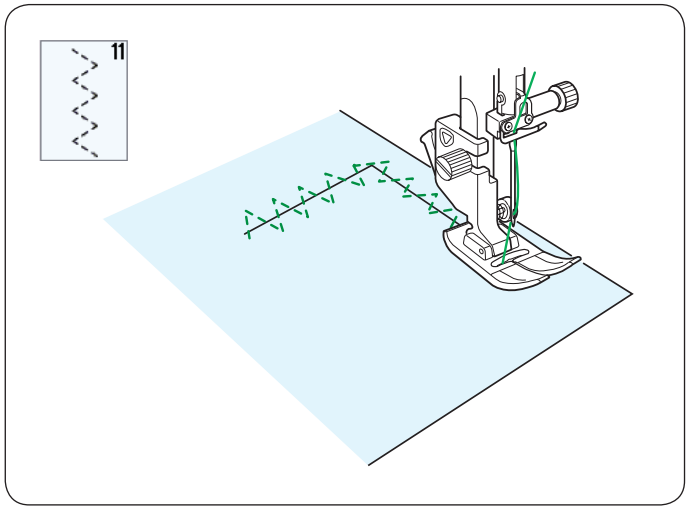
Attach the blind hemming foot G.
Fold the fabric with the wrong sides together.
Place the folded fabric under the blind hem foot.
Align the edge of the fold with the guide on the foot, and lower the foot.
You may adjust the needle drop position to 0.5-1.5 if necessary.
Sew while guiding the edge of the fold along the guide.
Open the fabric and press the tuck to one side.



Zigzag Stitches

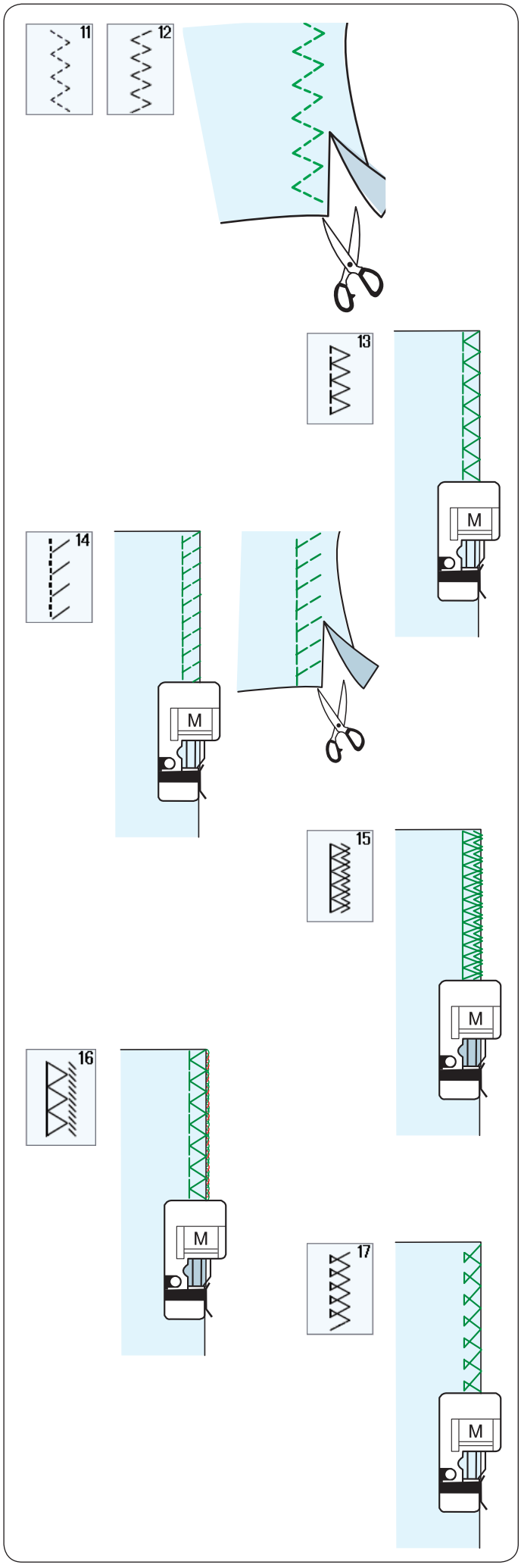
U9, U10 Zigzag stitches

Zigzag stitches are used for various sewing needs including overcasting. These stitches can be used on most woven fabrics.
A dense zigzag stitch can also be used for applique.



U11 Multiple zigzag stitches

These stitches are used for mending tears.



Variety of Overcasting Stitches

U11, U12 Multiple zigzag stitch: Zigzag foot A

This stitch is used to finish a raw edge of synthetics and other stretch fabrics that tend to pucker.
Sew along the fabric edge leaving an adequate seam allowance. After sewing, trim off the seam allowance closer to the stitches.

U13 Overcasting stitch: Overcasting foot M

This stitch can be used to simultaneously seam and overcast edges of fabrics.
Use this stitch when you do not need to open seams flat.
Place the fabric edge next to the guide of the foot and sew.

U14 Knit stitch: Overcasting foot M

This stitch is recommended for sewing such fabrics as synthetic knits and stretch velour as it provides the greatest amount of elasticity and strength.
Place the fabric edge next to the guide of the foot and sew.
For better results, use the zigzag foot A and sew leaving an adequate seam allowance.
After sewing, trim the seam allowance close to the stitches.

U15 Double overcasting stitch: Overcasting foot M

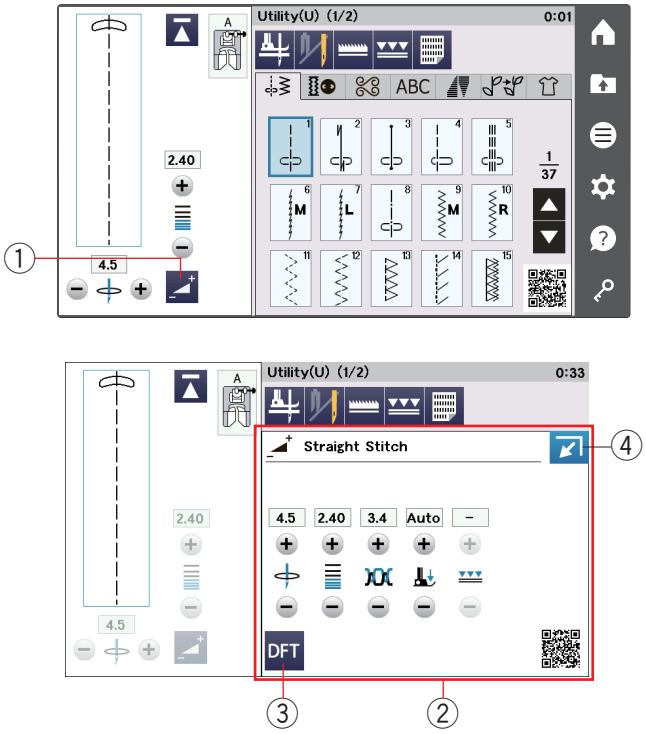
This stitch is excellent for fabrics that tend to fray extensively such as linens and gabardines.
Place the fabric edge next to the guide of the foot and sew.
Two rows of zigzag stitches are simultaneously sewn over the edge to insure that the fabric will not ravel.

U16 Overlock stitch: Overcasting foot M

This stitch finishes the edges of fabric in a way similar to a commercial overlocking machine for a professional look.
Place the fabric edge next to the guide of the foot and sew.

U17 Overlock stitch: Overcasting foot M

This stitch is used for overcasting knits and stretch fabrics. Place the fabric edge next to the guide of the foot and sew.

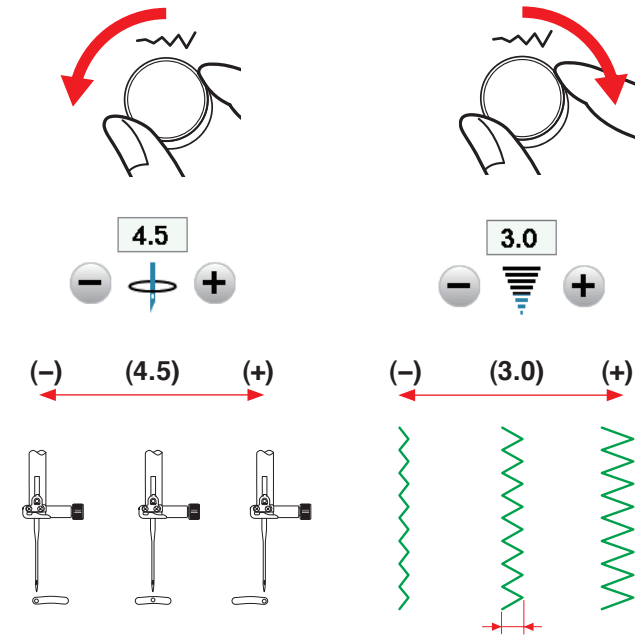


Manual Stitch Settings

You can alter the stitch width (or needle drop position of the straight stitches) and stitch length.
Turn the stitch width or length adjusting dial, or press the "+" or "–" key beside the setting you wish to change to change the setting. Press default key ③ to recover the original stitch setting.

When you press the adjust key ①, the manual setting window ② expands to show more options.
You can alter other settings such as needle thread tension and presser foot pressure value, depending on the selected stitch pattern.
Press the close key ④ on the right upper corner of the window to shrink the manual setting window.

① Adjust key
② Manual setting window
③ Default key
④ Close key



Altering needle drop position (straight stitches)

Turn the stitch width adjusting dial clockwise to move the needle drop position to the right.
Turn the stitch width adjusting dial counterclockwise to move the needle drop position to the left.

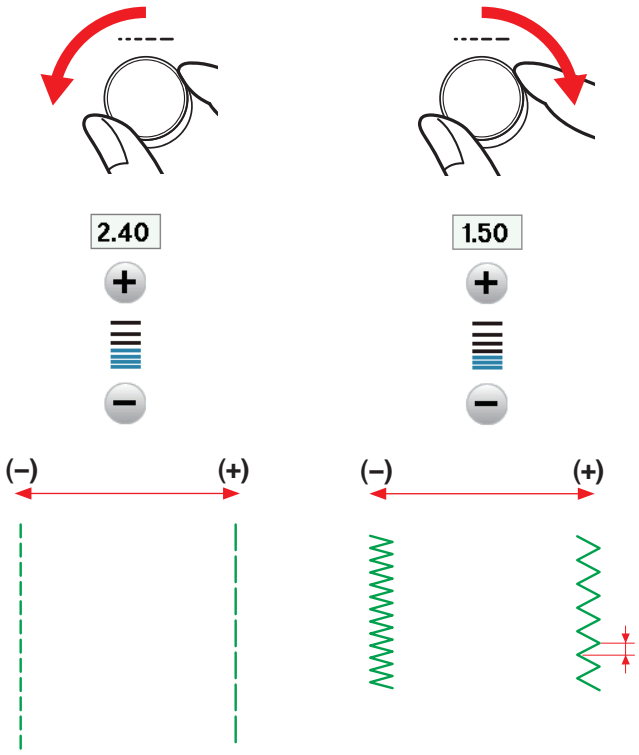
You can also change the setting with "+" or "–" key.
Press the "+" key to move the needle drop position to the right.
Press the "–" key to move the needle drop position to the left.

Altering stitch width

Turn the stitch width adjusting dial clockwise to increase the stitch width.
Turn the stitch width adjusting dial counterclockwise to decrease the stitch width.

You can also change the setting with "+" or "–" key.
Press the "+" key to increase the stitch width.
Press the "–" key to decrease the stitch width.

NOTE:
The adjustable range of patterns U6, U7, U9-U12 is 0.0 to 7.0.



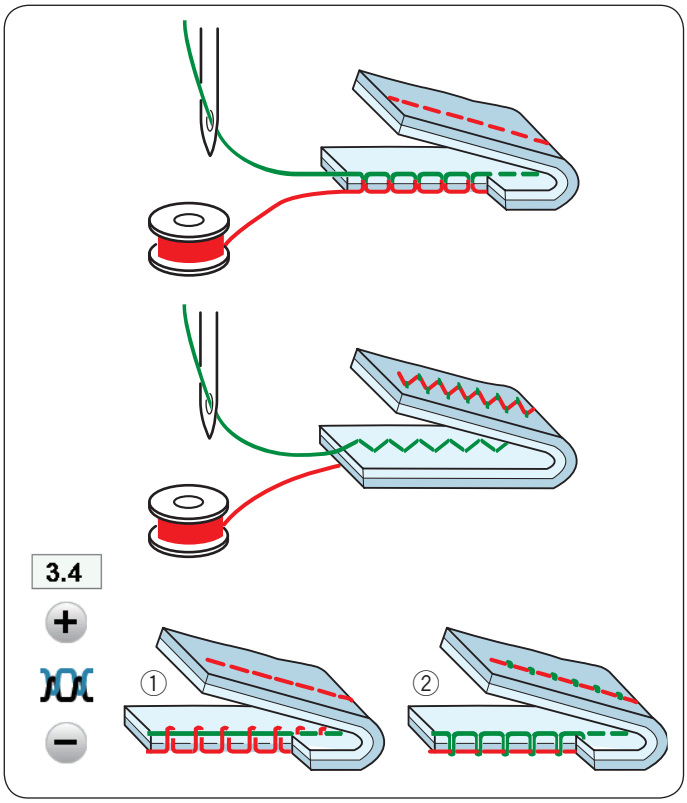
Altering stitch length

Turn the stitch length adjusting dial clockwise to increase the stitch length.

Turn the stitch length adjusting dial counterclockwise to decrease the stitch length.

You can also change the setting with “+” or “–” key.
Press the “+” key to increase the stitch length.
Press the “–” key to decrease the stitch length.

NOTE:
The adjustable range of pattern U7 is 1.0 to 5.0.



Adjusting Thread Tension

This machine is equipped with automatic thread tension control, which optimizes the tension balance for the selected stitch pattern.

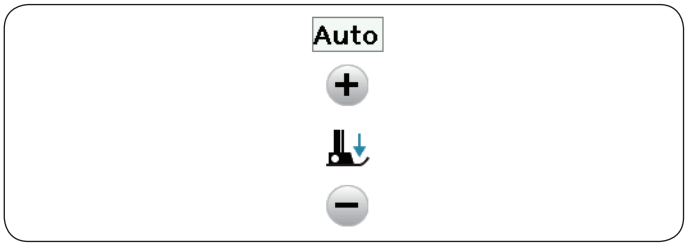
Balanced thread tension

Straight stitch: Both needle and bobbin threads interlock between the layers.

Zigzag stitch: The needle thread appears slightly on the wrong side of the fabric.

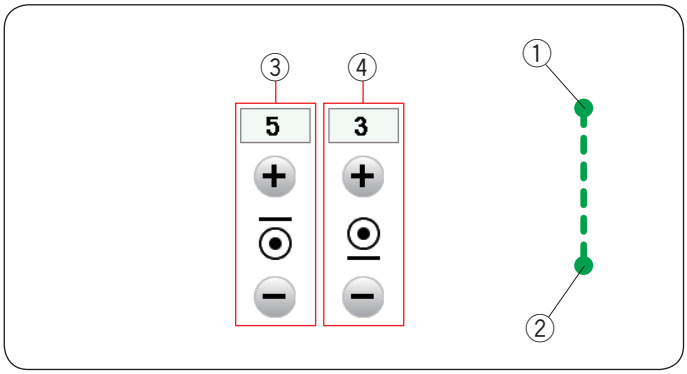
However you may need to manually adjust the tension balance depending on the sewing conditions, or you can fine-tune the thread tension to suit your preference.

① Press the “+” key if the tension is too loose.
② Press the “–” key if the tension is too tight.



Adjusting Foot Pressure Control

The presser foot pressure is automatically optimized for each stitch pattern.
However, you can adjust the foot pressure manually by pressing the “+” key or “–” key to suit your specific sewing needs.

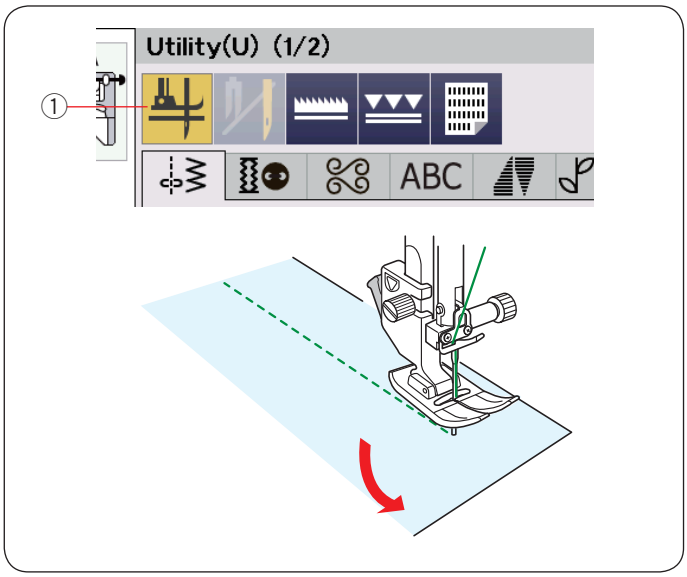


Number of locking stitches

The machine sews 5 times at the beginning and 3 times at the end of locking stitches.

However, you can change the number of lock stitches at the beginning ① and the end ② with this option.
To change the number of lock stitches at the beginning, press the “+” or “–” key in section ③.
To change the number of lock stitches at the end, press the “+” or “–” key in section ④.

This option is available only for the locking stitch (U3).



Foot up for Pivoting

If this option is turned on, the presser foot will automatically go up when the machine stops.
This feature is very useful when turning corners.

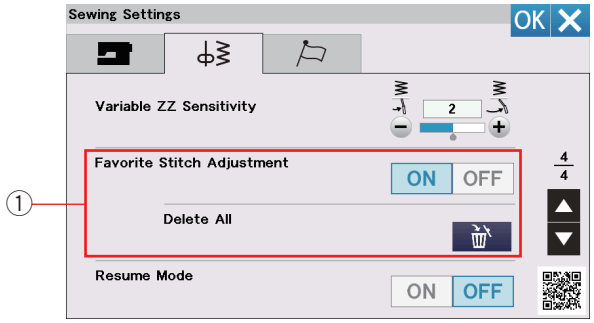
Press the foot-up key to turn this option on or off.

① Foot-up key

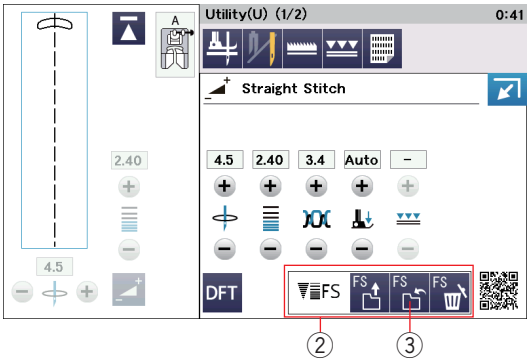
NOTE:
Height of the foot can be altered in the ordinary sewing setting mode (refer to page 129).

Favorite Stitch Adjustment

You can save customized stitch settings (stitch length, stitch width, thread tension and presser foot pressure, depending on the selected stitch patterns) as Favorite Stitch Adjustment. When the favorite stitch adjustment option is turned ON ① (refer to page 129), the last-used customized stitch settings are automatically assigned when the stitch pattern is selected.

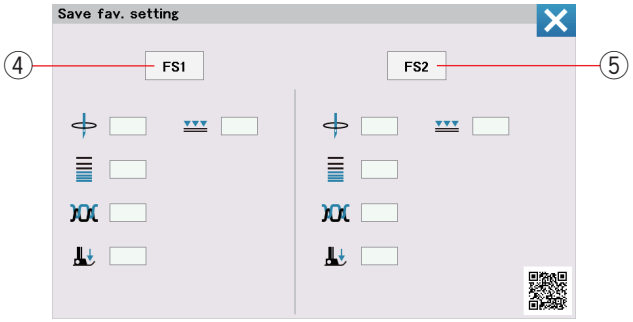


NOTE:
Favorite stitch option cannot be assigned for created stitch (CS).
Favorite stitch option cannot be used in monogram mode.

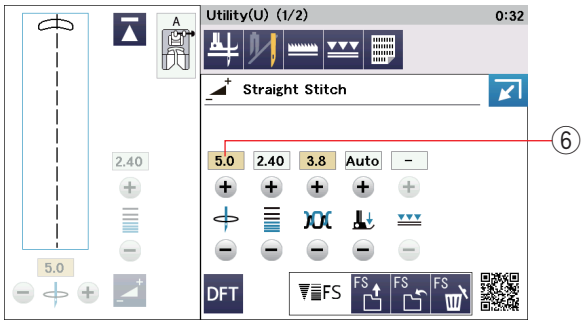


Example: To change the preset value of the needle drop position from “4.5” to “5.0”.

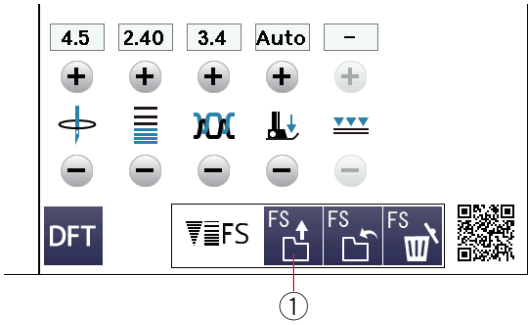
Turn the Favorite Stitch Adjustment option ON (refer to page 129).
Select stitch pattern U1.
Press the adjust key. The manual setting window expands to show more options.
The favorite stitch setting option ② appears on the manual setting window.
Change the needle drop position from “4.5” to “5.0” by turning the stitch width adjusting dial or pressing “+” key.
Press the save favorite key ③.



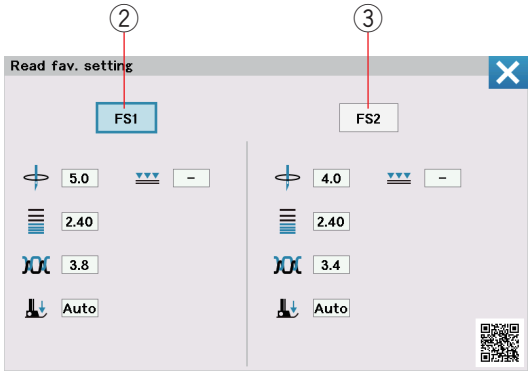
Save fav. setting dialog box will open.
You can store 2 sets of favorite stitch settings (FS1 and FS2). Press FS1 ④ or FS2 ⑤ to register the favorite stitch settings.



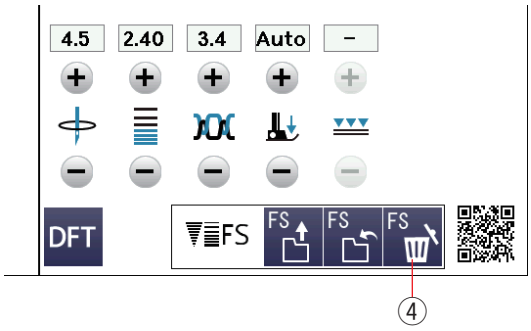
The cream colored box ⑥ indicates that the customized preset stitch value is applied to the setting.



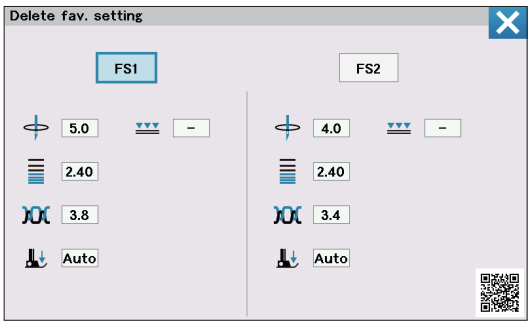
To select the favorite stitch settings, press the open favorite key ①.

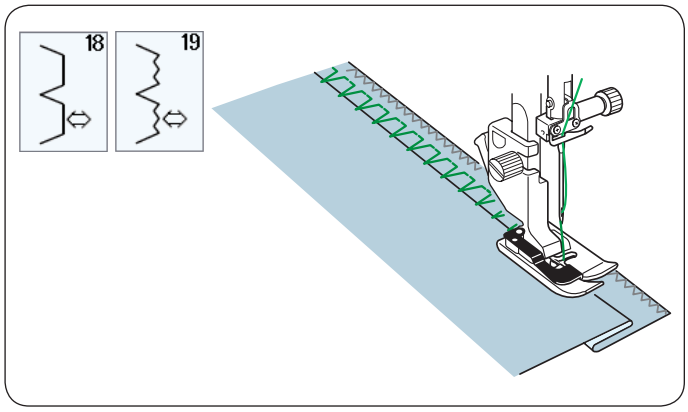


The selected set of favorite stitch settings is indicated in blue ②.
Select the desired set of customized stitch settings by pressing FS1 ② or FS2 ③.



To delete favorite stitch settings, press the delete key ④.
Select the desired set of favorite stitch settings by pressing FS1 ② or FS2 ③.

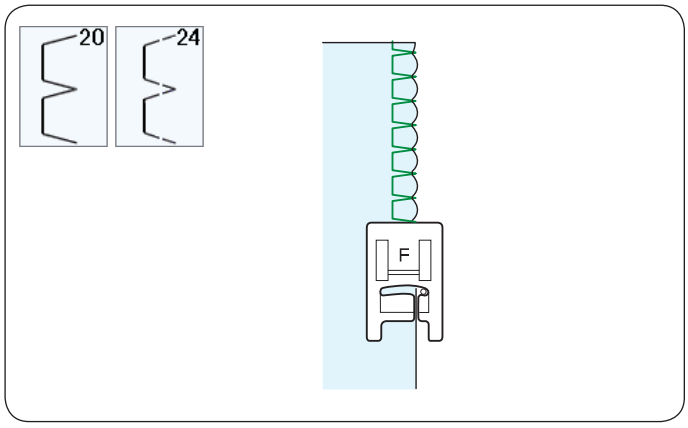




Other Utility Stitches

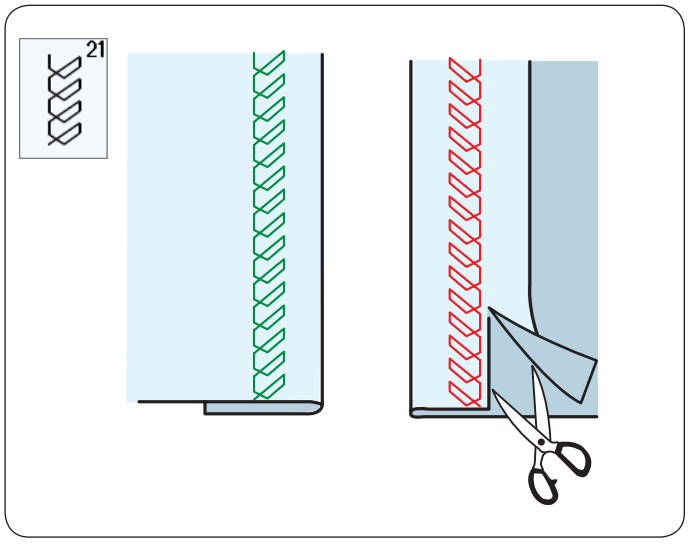
U18, U19 Blind hemming

Refer to pages 102-103 for sewing instructions.



U20, U24 Shell tuck

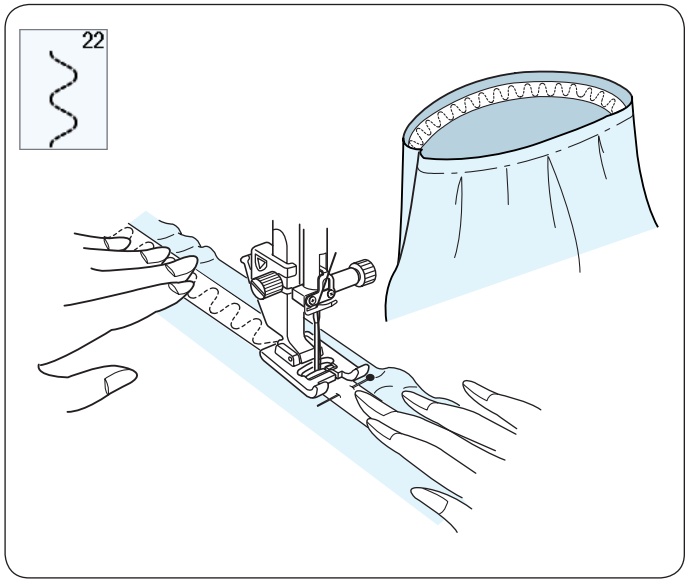
Refer to page 104 for sewing instructions.



U21 Visible hemming

Select pattern U21.

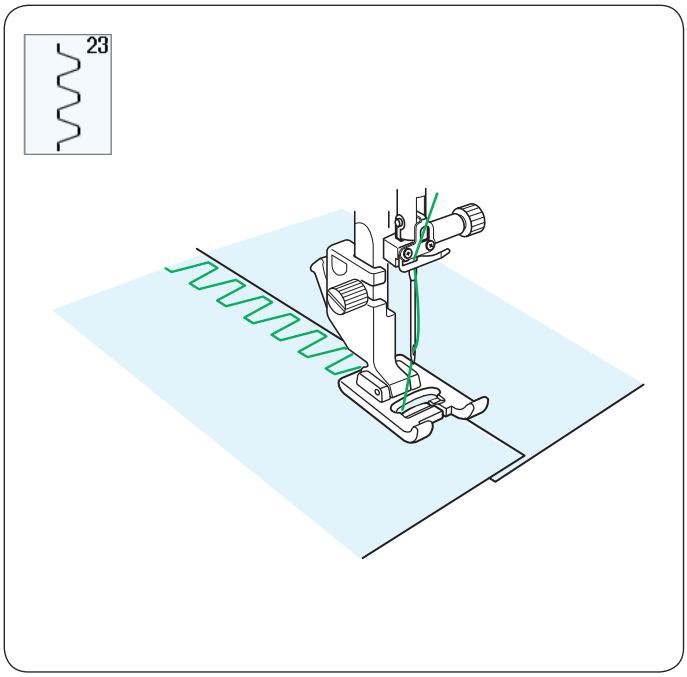
Fold and press a single hem. Place the fabric with the right side up.
Sew along the fold at the desired depth.
Trim the excess on the wrong side.



U22 Attaching elastic

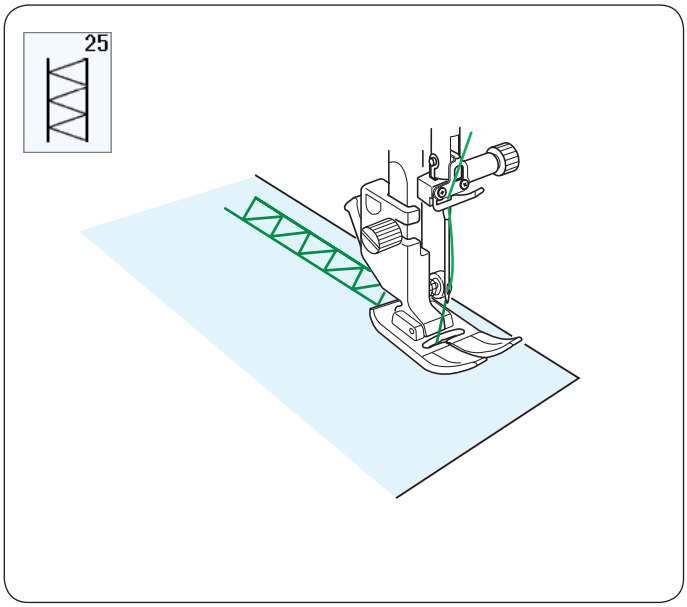
Select pattern U22.

Mark the elastic into quarters. Match those to the center front, center back and side seams, and pin the elastic to the fabric.
Place the elastic under the foot and stitch into place while stretching the elastic evenly.



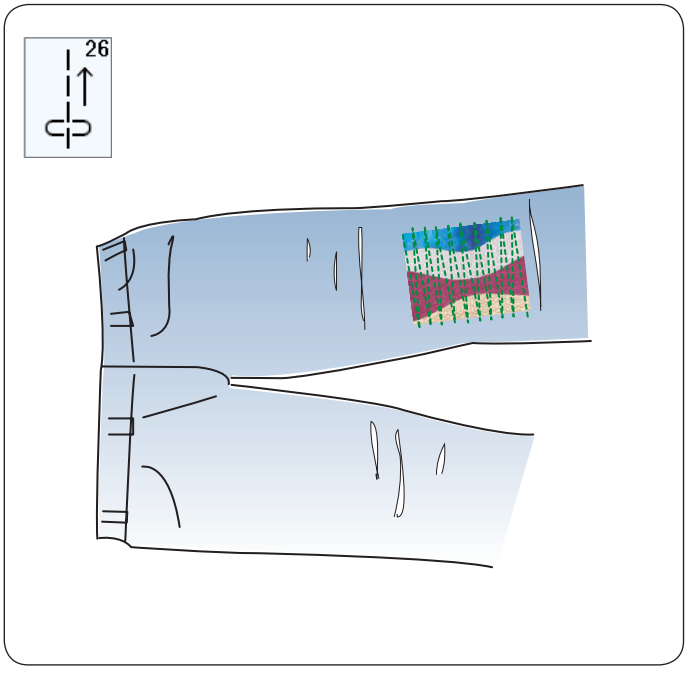
U23 Box Stitching

Use this stitch to join heavy weight fabrics.
Overlap two raw edges together and use this stitch to join them.



U25 Hemstitch

Use this stitch for fagoting or decorative stitch.



U26 Backward stitch

U26 is backward stitches.
Use these stitches if it is hard to guide the fabric while pressing the reverse button.
The machine sews in reverse without pressing the reverse button so that you can guide the fabric with both hands.



BUTTONHOLES AND SPECIALTY STITCHES

Variety of Buttonholes

B1 Sensor (Square) buttonhole
This square buttonhole is widely used on medium to heavy weight fabrics. The buttonhole size is automatically determined by placing a button in the foot.

B2 Auto (Square) buttonhole
This is also a square buttonhole similar to the sensor square buttonhole, but you can manually set the buttonhole size and the machine memorizes it to sew buttonholes of the same size.

B3 Round end buttonhole
This buttonhole is used on fine to medium weight fabrics especially for blouses and children's clothes.

B4 Fine fabric buttonhole
This buttonhole is rounded at both ends and is used on fine, delicate fabrics such as fine silk.

B5 Keyhole buttonhole
The keyhole buttonhole is widely used on medium to heavy weight fabrics. It is also suitable for larger and thicker buttons.

B6 Rounded keyhole buttonhole
This buttonhole is used for thicker buttons on medium weight fabrics.

B7 Tailored buttonhole
This durable buttonhole is used with thick buttons and heavy fabrics.

B8 Keyhole buttonhole (tapered reinforced end)
This buttonhole is used for tailored clothing, woven cloth etc.

B9 Keyhole buttonhole (heavy reinforced end)
This buttonhole is used for tailored clothing, jackets, particularly men’s wear, woven cloth etc.

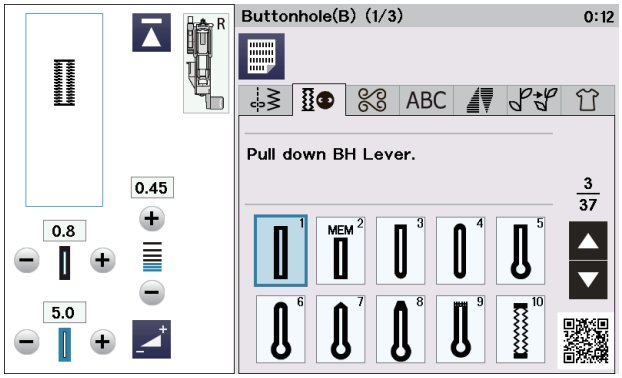
B10 Stretch buttonhole
This buttonhole is suitable for stretch fabrics. It can also be used as a decorative buttonhole.

B11 Knit buttonhole
This buttonhole is suitable for knit fabrics. It can also be used as a decorative buttonhole.

B12 Antique buttonhole
This buttonhole looks like the heirloom stitch. It has an attractive handmade appearance and makes a nice decorative buttonhole.

B13 Welted buttonhole
This is a template pattern for the hand sewn welted (bound) buttonhole.

NOTE:
B3-B13 are sensor buttonholes and the sewing procedure is the same as for B1.

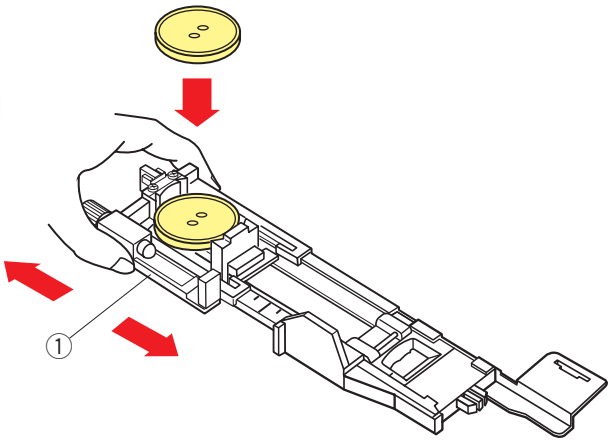


B1 Sensor (Square) Buttonhole

The size of a buttonhole is automatically set by placing a button in the rear of automatic buttonhole foot R.
The button holder of the foot takes a button size of 1 cm (3/8″) to 2.5 cm (1″) in diameter.
When selecting the buttonholes, the visual touch screen advise you to lower the buttonhole lever.

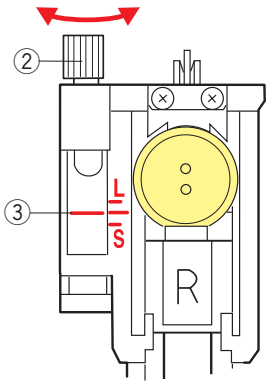
NOTE:
It is sometimes necessary to change buttonhole size to match certain heavy or specific fabrics and threads. Make a test buttonhole on an extra piece of the fabric to check your settings.
The preset width of the buttonhole is suited for ordinary buttons.
Apply an interfacing to stretch or fine fabrics.

1



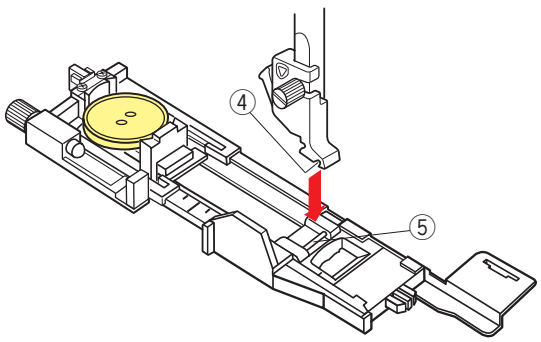
Sewing

1 Pull the button holder to the back, and place the button in it. Push it together tightly on the button.
① Button holder



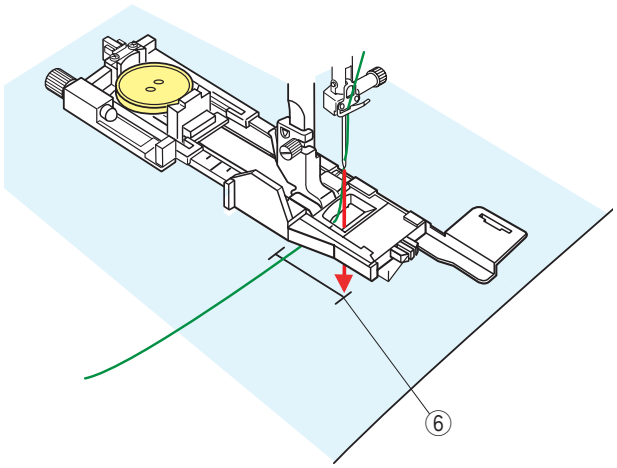
NOTE:
Check the length of the test buttonhole, and adjust the buttonhole length if necessary by turning the adjusting screw on the buttonhole foot.
To increase the buttonhole length, turn the adjusting screw to move the marker toward “L”.
To decrease the buttonhole length, turn the adjusting screw to move the marker toward “S”.
② Adjusting screw
③ Marker

2



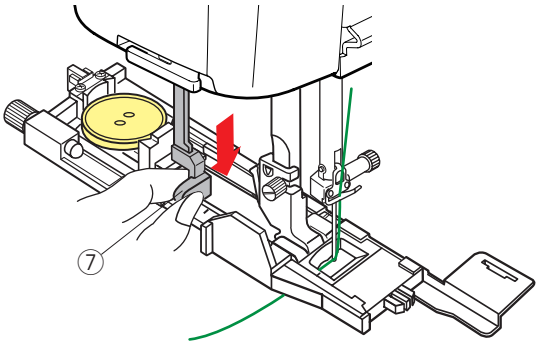
2 Press the needle up/down button to raise the needle.
Press the lockout key.
Raise the presser foot and attach the automatic buttonhole foot R snapping the pin into the groove of the foot holder.
You may lift the presser foot lifter to the extra lifted position when placing the automatic buttonhole foot under the foot holder.
Press the lockout key to unlock the machine.
④ Groove
⑤ Pin

3

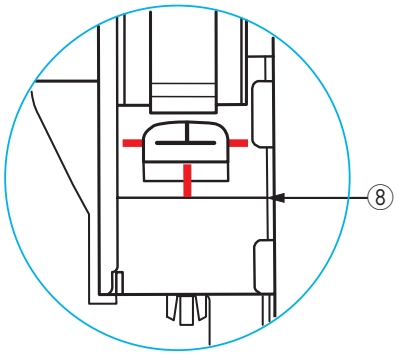


3 Draw the needle thread to the left through the hole of the foot.
Mark the buttonhole position on the fabric and place it under the buttonhole foot. Lower the needle at the starting point by turning the hand wheel.
⑥ Starting point

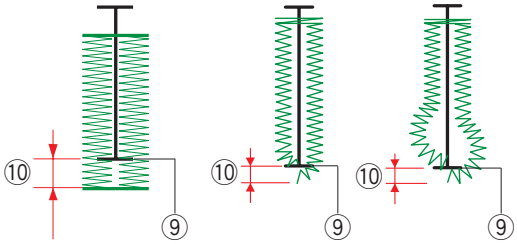
4



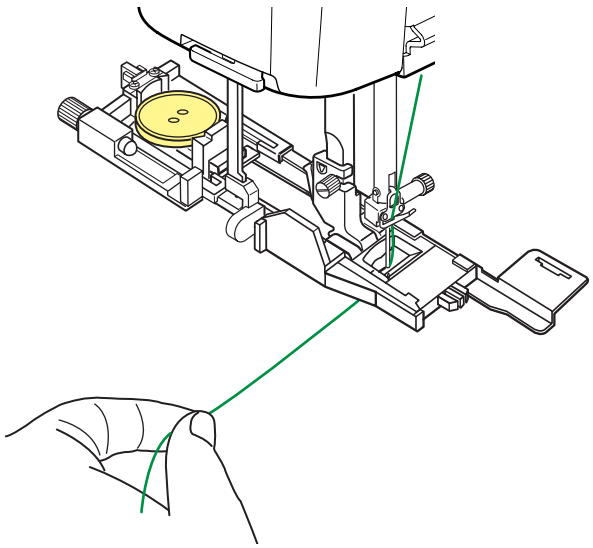
4 Lower the presser foot and pull the buttonhole lever down as far as it will go.
⑦ Buttonhole lever



NOTE:
Make sure there is no gap between the slider and front stopper, otherwise the buttonhole will be out of position or there will be a sewing gap.
⑧ No gap
⑨ Starting point
⑩ Sewing gap



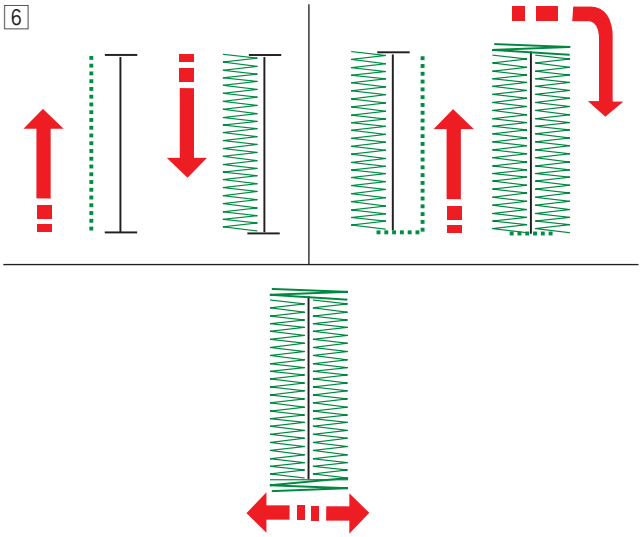
5



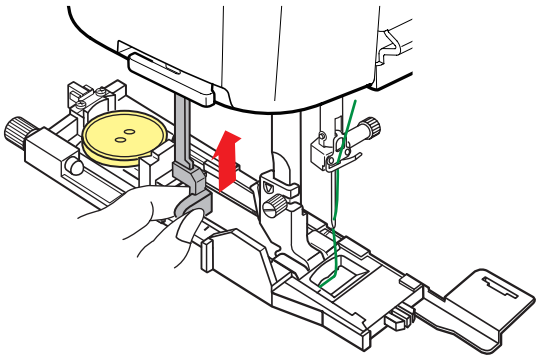
5 Start sewing while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue sewing.

NOTE:
If you start sewing without pulling down the buttonhole lever, the visual touch screen will show a warning and the machine will stop after a few stitches. Pull the buttonhole lever down and start sewing.

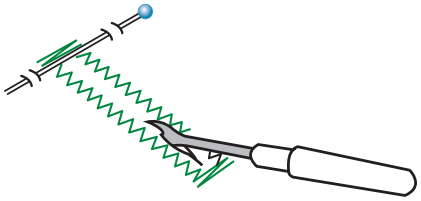
6



7



8



6 The buttonhole is sewn automatically in the sequence shown. When the buttonhole is finished, the machine will stop automatically with the needle in the up position. Press the thread cutter button and remove the fabric.

7 After you finish buttonhole sewing, push the buttonhole lever up as far as it will go.

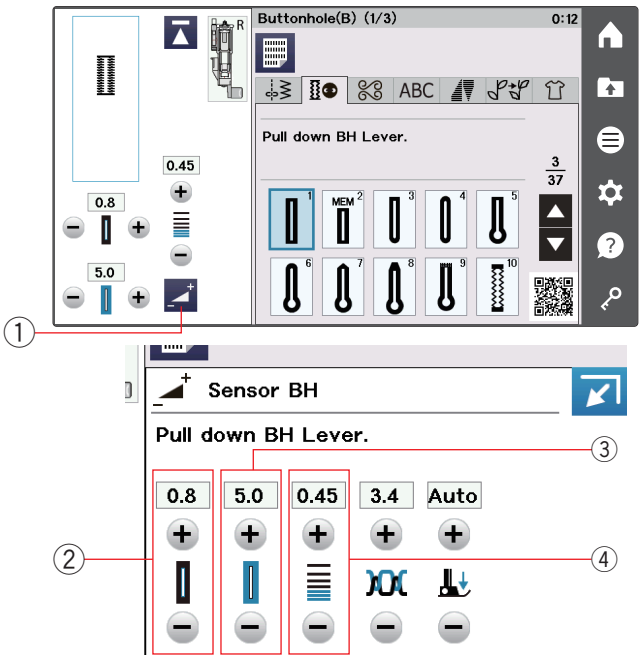
8 Place a pin just below the bartack at each end to prevent accidentally cutting the threads. Cut the opening with the seam ripper. Use an eyelet puncher to open a keyhole buttonhole.

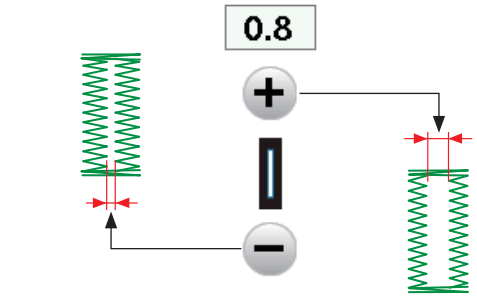


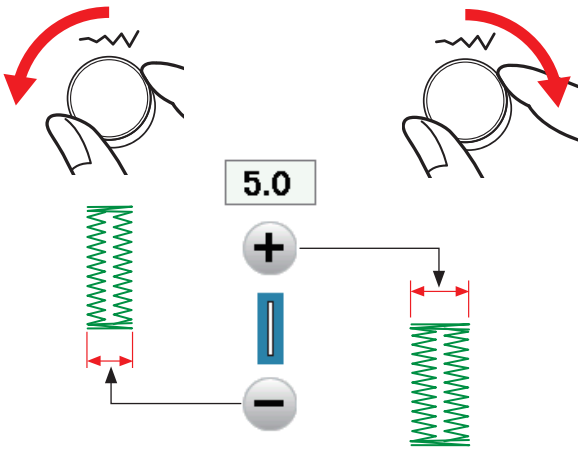
Double layer buttonhole

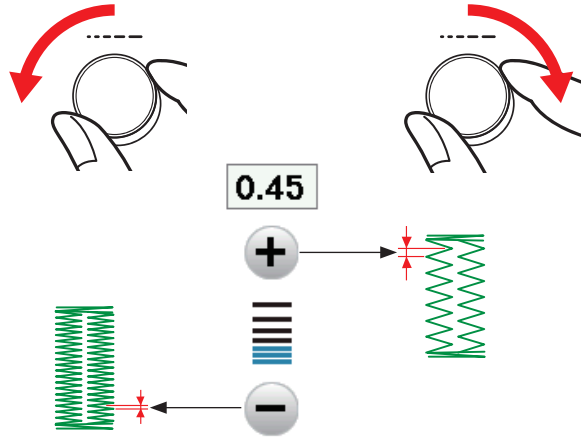
To make a sturdy buttonhole, sew another layer of buttonhole stitches over the previous stitches.
After the buttonhole is finished, simply start the machine again.
Do not raise the foot or buttonhole lever.
Do not reselect the pattern.

NOTE:
This function is disabled if Thread Cut after Auto-Lock option is turned on in the ordinary sewing setting mode (refer to page 128).









Manual settings
When you press the adjust key, the manual setting window expands to show more options.
① Adjust key

② **Altering buttonhole opening width**
Press the “+” key to make the buttonhole opening wider.
Press the “–’’ key to make the buttonhole opening narrower.

③ **Altering buttonhole width**
Turn the stitch width adjusting dial clockwise to increase the buttonhole width.
Turn the stitch width adjusting dial counterclockwise to decrease the buttonhole width.

Or press the “+” key to increase the buttonhole width.
Press the “–” key to decrease the buttonhole width.

④ **Altering buttonhole stitch density**
Turn the stitch length adjusting dial clockwise to make the buttonhole stitches less dense.

Turn the stitch length adjusting dial counterclockwise to make the buttonhole stitches denser.

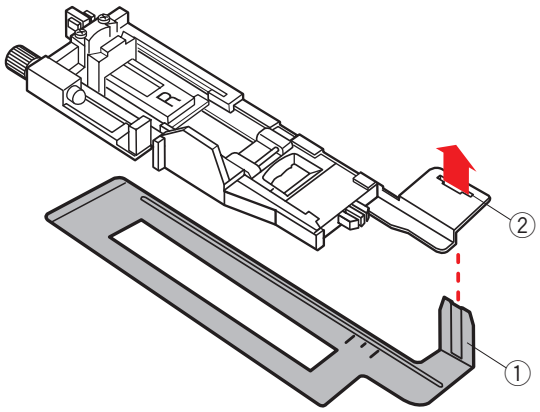
Or press the “+” key to make the buttonhole stitches less dense.
Press the “–” key to make the buttonhole stitches denser.

NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.20 to 1.00.

Using the Stabilizer Plate

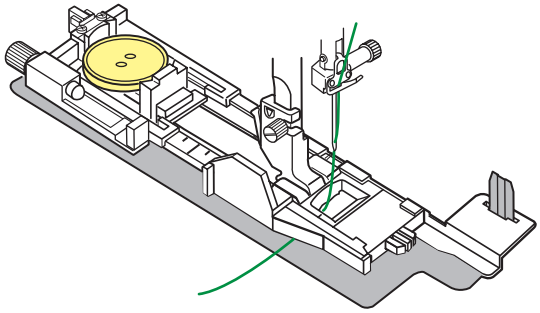
The stabilizer plate holds and supports the fabric so it is helpful when sewing buttonholes over the hem of thick fabrics.

1



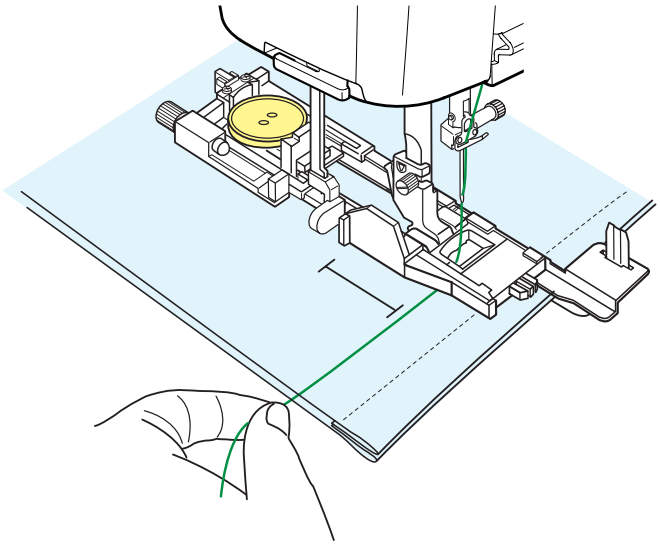
1 Insert the tab of the stabilizer plate ① into the slot ② of the buttonhole foot.
- ① Stabilizer plate
- ② Slot

2



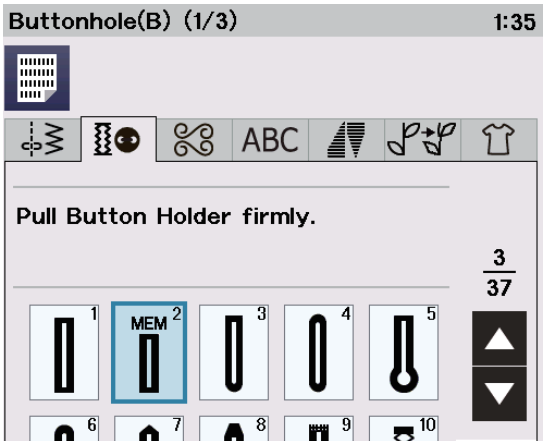
2 Place the button on the button holder of the foot. Attach the buttonhole foot to the machine. Draw the needle thread to the left between the foot and stabilizer plate.

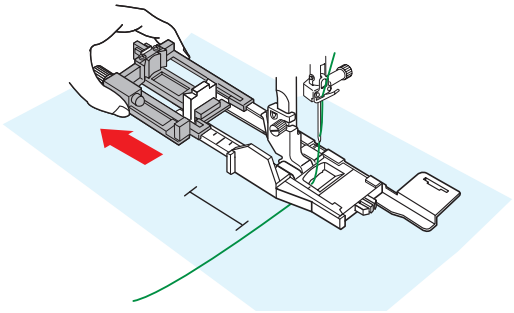
3



3 Place the fabric between the buttonhole foot and stabilizer plate. Lower the needle into the starting point by turning the hand wheel. Lower the foot and buttonhole lever. Start the machine while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue sewing.

NOTE:
The sewing procedure is exactly the same as that for B1 sensor (square) buttonholes.





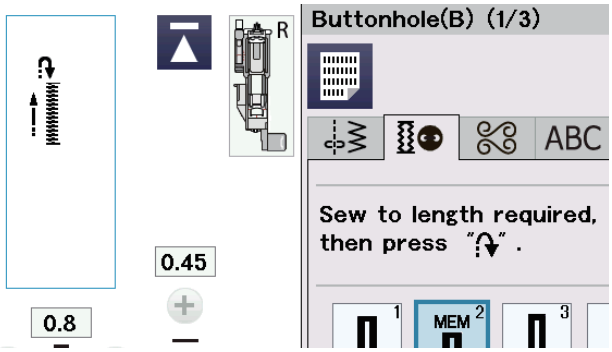
B2 Automatic (square) Buttonhole

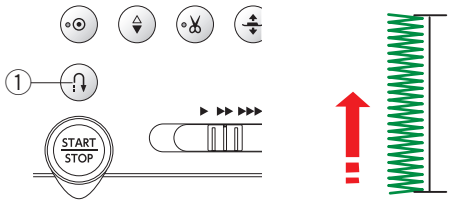
Pull the button holder all the way out.
Mark the buttonhole position on the fabric.
Place the fabric under the foot, and lower the needle at the starting point.
Lower the foot and start sewing while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue sewing.

NOTE:
You do not need to pull down the buttonhole lever.
If you wish to sew a buttonhole longer than the size permitted by the automatic buttonhole foot R, use satin stitch foot F.

NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.20 to 1.00.

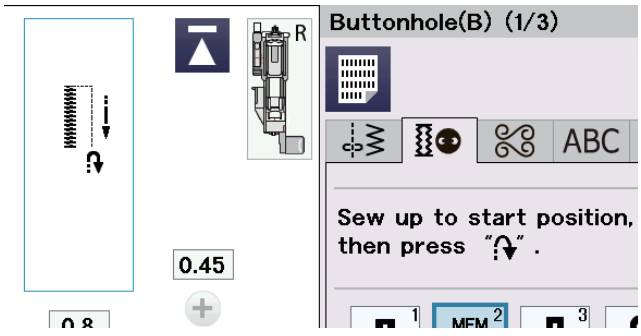
1

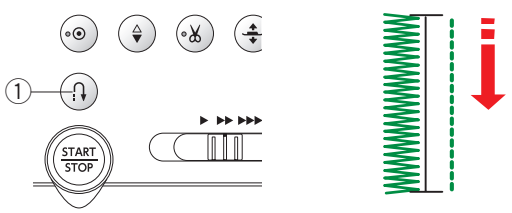




1 Sew the left side up to the required buttonhole length and stop the machine. Then press the reverse button ①.

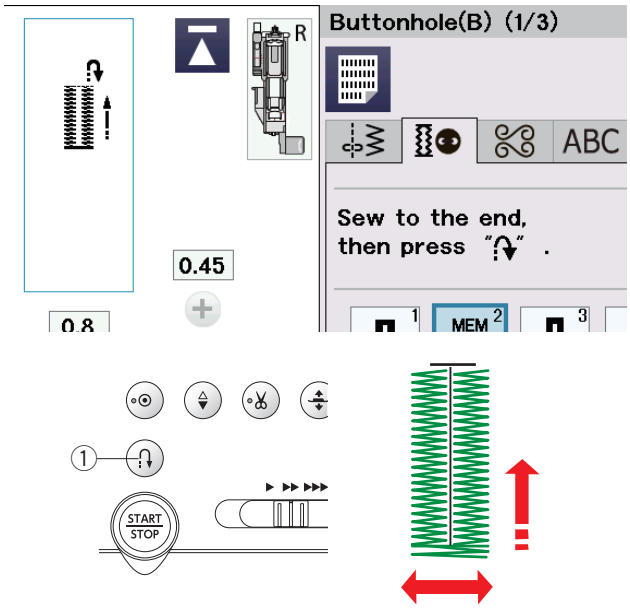
2





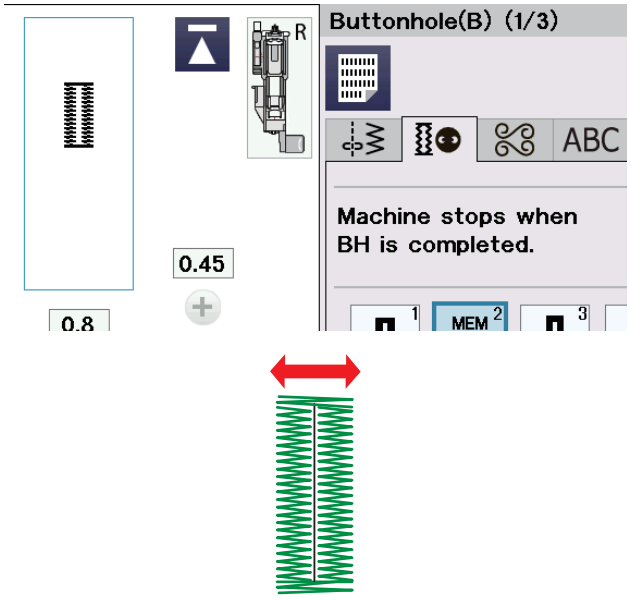
2 Start sewing again, and the machine sews back with a straight stitch.
Stop the machine when you reach the starting point.
Then press the reverse button ①.

3



3 Start sewing again, and the machine sews the front bartack and right side of the buttonhole.
Stop the machine when you reach the ending point.
Then press the reverse button ①.

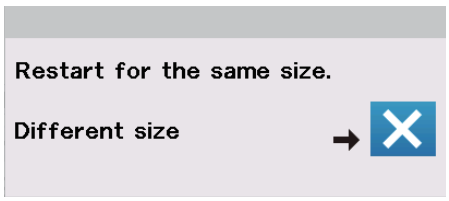
4



4 Start sewing again, and machine sews the back bartack and locking stitches then stops automatically with the needle in the up position.

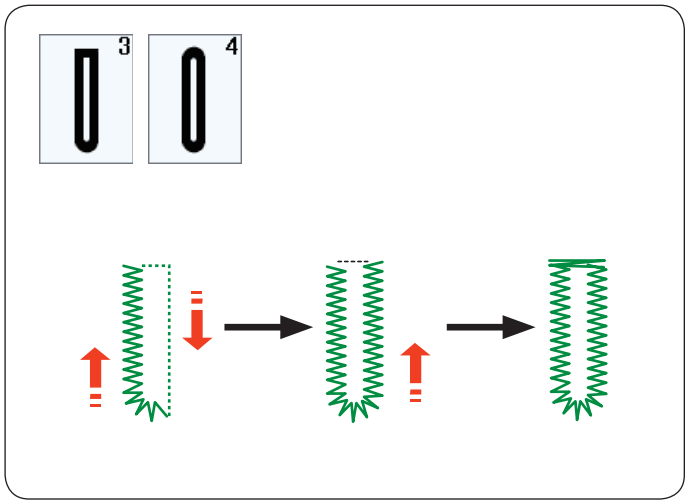
When the buttonhole is finished, a message will appear.

To make the next buttonhole, position the fabric and start sewing again. The message disappears and the machine sews another buttonhole identical to the first one then stops automatically.



To sew another buttonhole in a different size press the X key on the dialog box.

NOTE:
To cut the buttonhole opening, refer to the instructions on page 56.
The memorized length will be cancelled if the presser foot is raised or the startover key is pressed before buttonhole is completed.

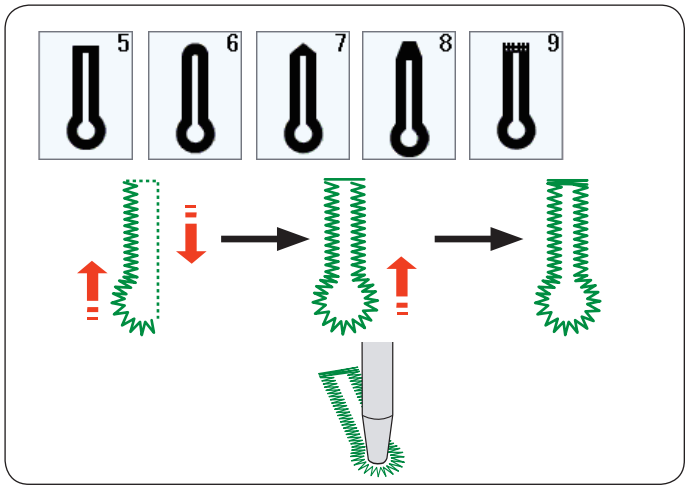


Other Buttonholes

B3, B4 Round end and fine fabric buttonholes

The sewing procedure is the same as that of B1 square (sensor) buttonhole (refer to pages 54-56).

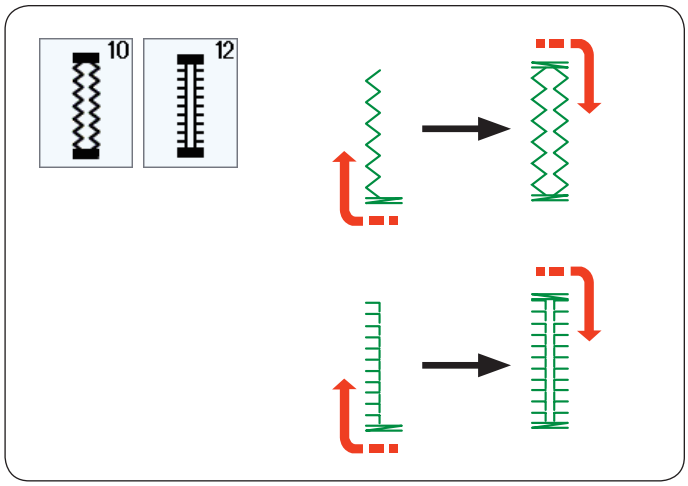
NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.20 to 1.00.



B5-B9 Keyhole buttonholes

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to pages 54-56).
Use an eyelet punch to open the keyhole buttonhole.

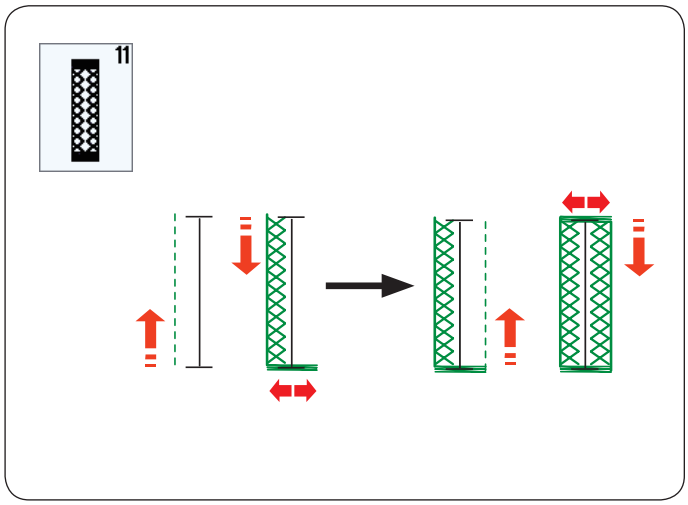
NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 5.6 to 9.0.
The stitch density can be adjusted from 0.20 to 1.00.



B10, B12 Stretch and Antique buttonholes

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to pages 54-56).
The sewing steps are as shown.

NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.50 to 1.00 (B10), from 0.50 to 2.50 (B12).



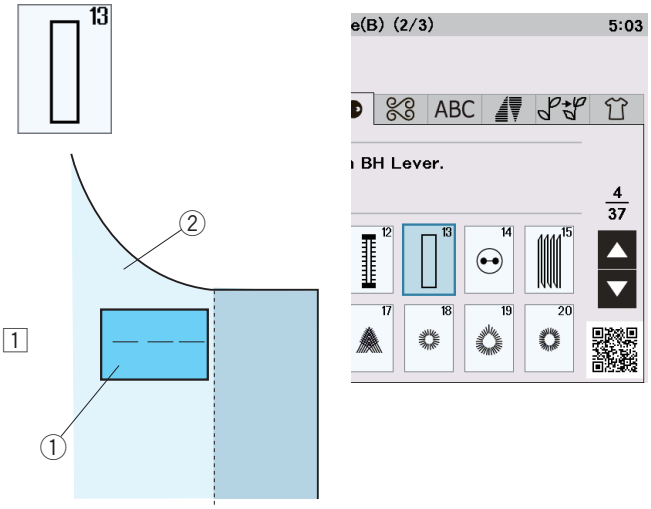
B11 Knit buttonhole

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to pages 54-56).

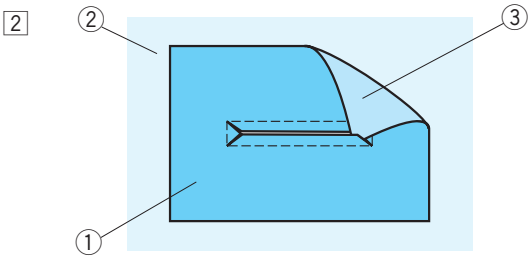
NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.70 to 1.20.

B13 Welted Buttonhole (Bound Buttonhole)

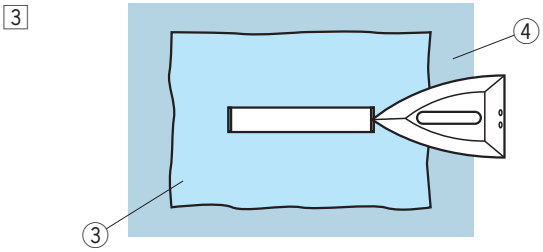
A welted buttonhole is made by stitching a strip or patch of fabric to the buttonhole.
Welted buttonholes are particularly suitable for tailored garments, but are not recommended for sheer or delicate fabrics where the patch might show through or add bulk.



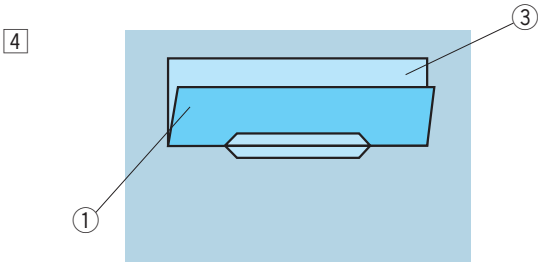
1 Baste a patch to the garment fabric with the right sides together.
① Wrong side of patch
② Right side of garment fabric



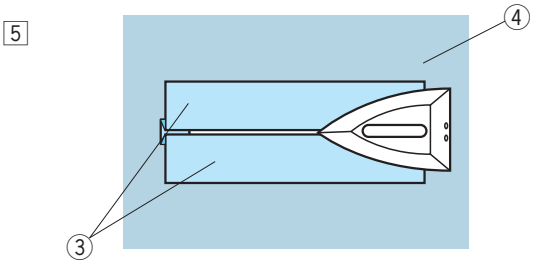
2 Select pattern B13.
Sew the welted buttonhole on both fabrics together. Cut the buttonhole opening as illustrated then pull the patch out through the slit to the other side.
① Wrong side of patch
② Right side of garment fabric
③ Right side of patch



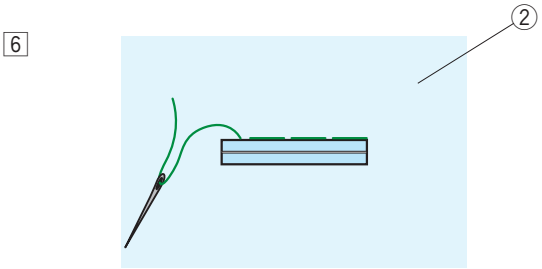
3 Pull out the patch until the right side of the patch is showing. Use an iron to press both corner ends until they are squared off.
③ Right side of patch
④ Wrong side of garment fabric



4 Fold back each side of the patch to form buttonhole lips.
① Wrong side of patch
③ Right side of patch

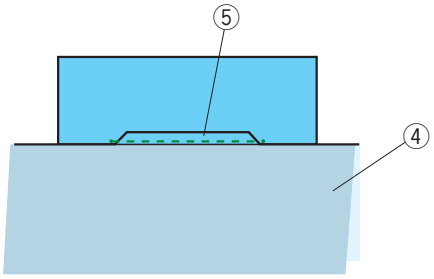


5 Press both folds with an iron.
③ Right side of patch
④ Wrong side of garment fabric



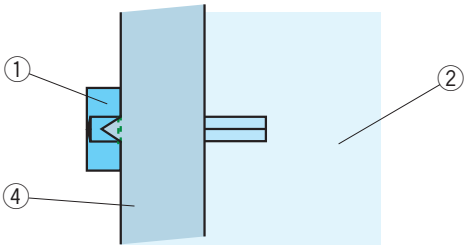
6 Baste both edges of the seam with a needle and thread by hand.
② Right side of garment fabric

7



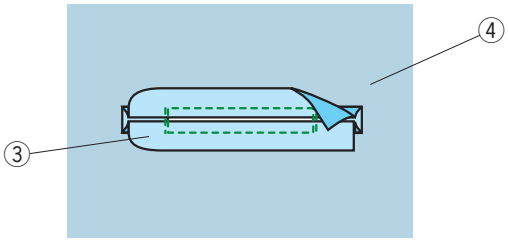
7 Fold over the length of the garment fabric, sew back and forth beside the original seam to secure flaps of the patch.
④ Wrong side of garment fabric
⑤ Sew back and forth

8



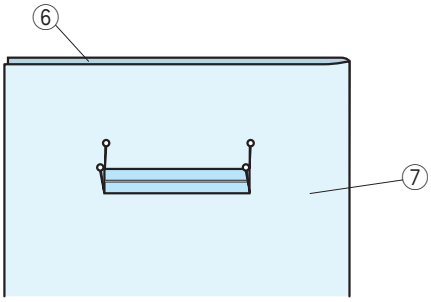
8 Fold over the end of fabric and sew back and forth three times over the triangular end.
① Wrong side of patch
② Right side of garment fabric
④ Wrong side of garment fabric

9



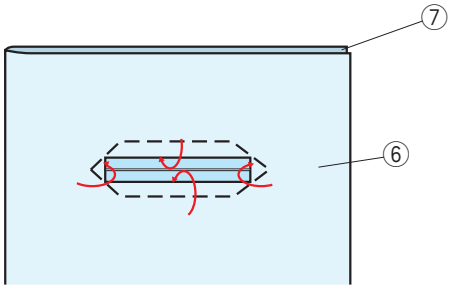
9 The patch should be cut 1 to 1.5 cm (7/16″ – 5/8″) away from the hole. The corners should be cut rounded off as shown.
③ Right side of patch
④ Wrong side of garment fabric

10



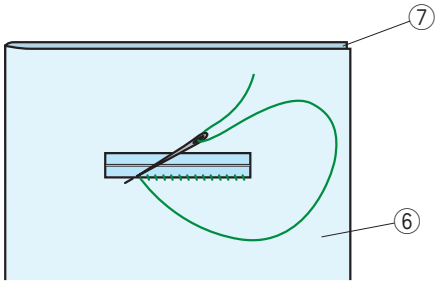
10 Place the facing on the wrong side of the garment fabric. Mark the 4 corners with pins as shown.
⑥ Facing
⑦ Garment fabric

11



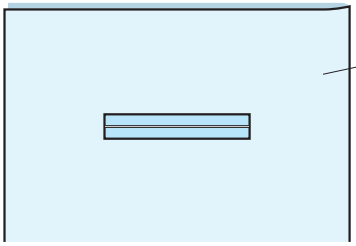
11 Turn all the layers over and cut the buttonhole opening on the facing in the same way as step 2.
Four marker pins show you the corner points on the facing. Fold back each flap between the facing and patch.
⑥ Facing
⑦ Garment fabric

12

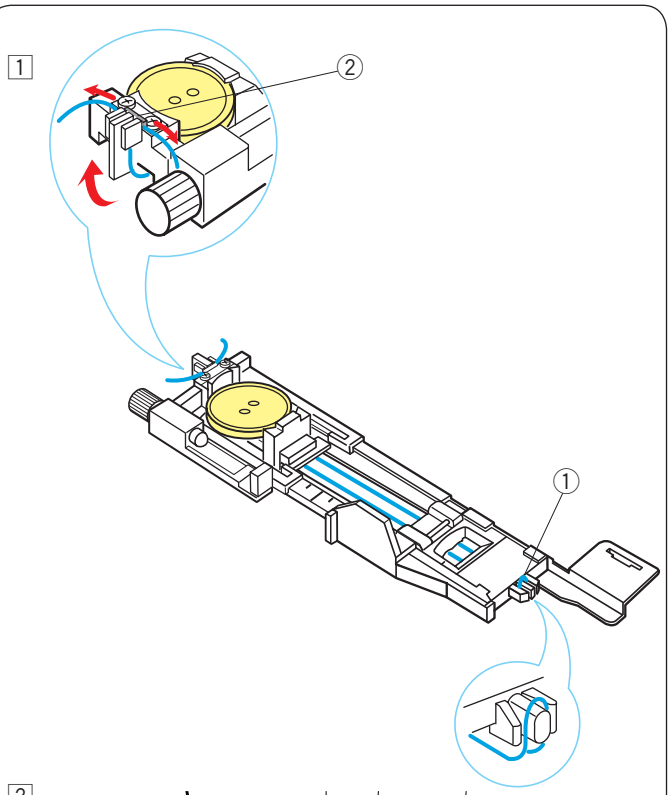


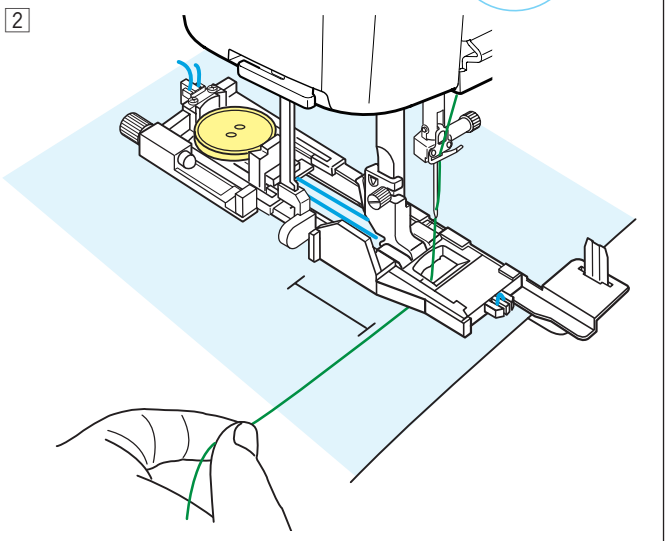
12 Stitch around the opening with a needle and thread as shown.
⑥ Facing
⑦ Garment fabric

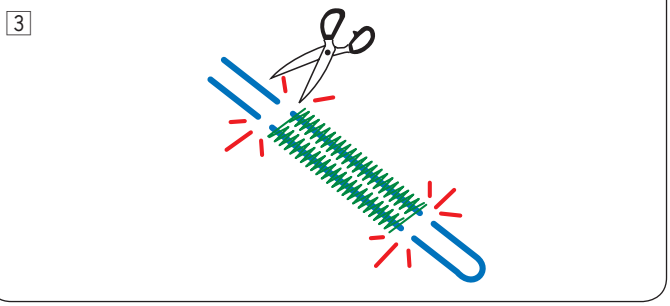
13



13 The welted buttonhole is complete.
⑦ Garment fabric







Corded Buttonhole

To sew a corded buttonhole, follow the same procedure as for B1 square (sensor) buttonhole.

Select pattern B1.

1 Place the button on the button holder on the buttonhole foot.
Hook a filler cord on the spur on the front of the foot.
Bring the ends of cord toward the back and under the foot.
Bring up the ends of the cord and insert both ends between the ribs and metal plate.
① Spur
② Metal plate

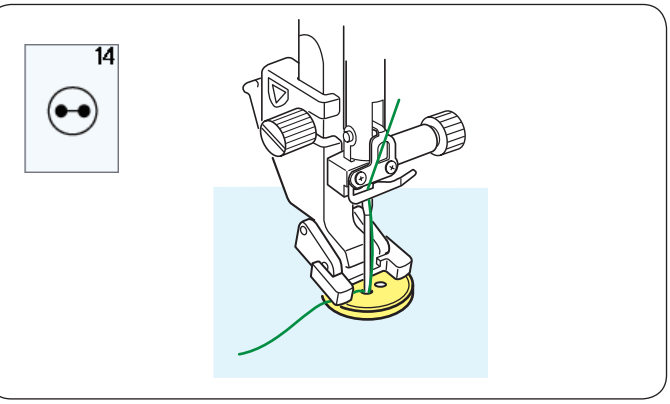
Set the stabilizer plate as necessary and attach the buttonhole foot.

2 Lower the needle into the fabric where the buttonhole will start.
Lower the foot and buttonhole lever.
Pull the needle thread lightly to the left.
Start the machine to sew the buttonhole over the cord.
The machine stops automatically when finished.

Remove the fabric from the machine and cut the sewing threads only.

3 Cut the filler cord at both ends as close to the buttonhole as possible.

NOTE:
Do not adjust the opening width wider than 0.8.
Set the stitch width in accordance with the thickness of the cord used.
To cut the buttonhole opening, refer to the instructions on page 56.



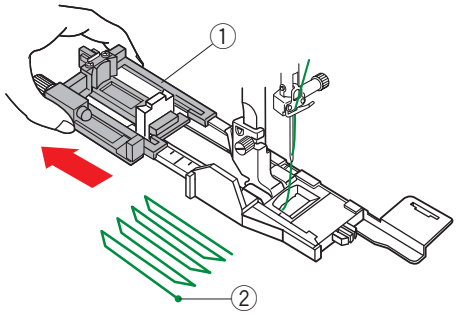
Speciality Stitches

B14 Button Sewing

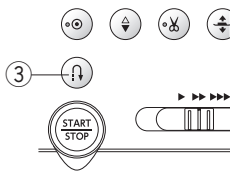
See page 112 for sewing instructions.

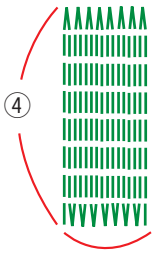


1



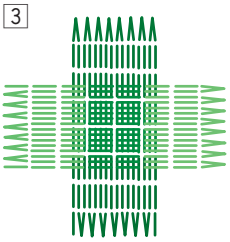
2

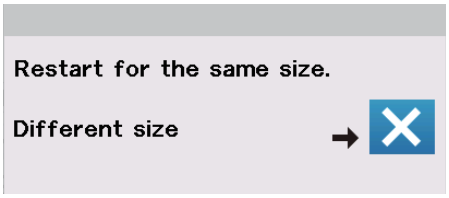


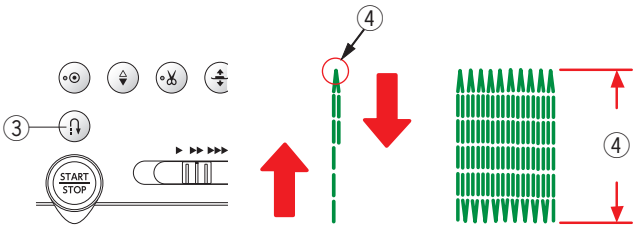


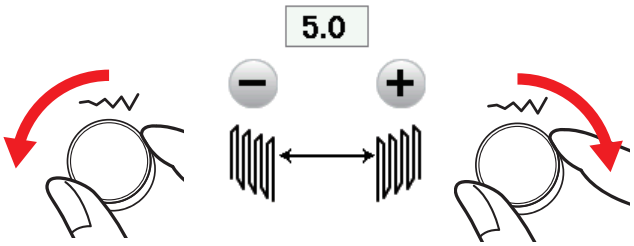
0.9 cm

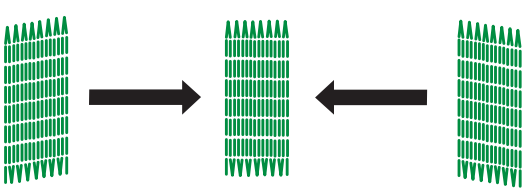
3











B15 Darning

1 Attach the automatic buttonhole foot R and pull the button holder all the way out.
Place the fabric under the foot, and lower the needle at the starting point. Then lower the foot.
① Button holder
② Starting point

2 Start the machine and sew to the required length, then press the reverse button. This sets the darning length. Continue sewing until the machine stops automatically.
③ Reverse button
④ Required length

3 Sew another layer of darning over the first layer, at a right angle to it.

NOTE:
The maximum darning length is 2 cm (3/4″) and the maximum width is 0.9 cm (3/8″).

To sew the same size darning

When finished sewing, a confirmation message will appear.
Simply start the machine to sew another layer of darning stitches in the same size.
To sew the next layer of darning stitches in a different size, press the X key.

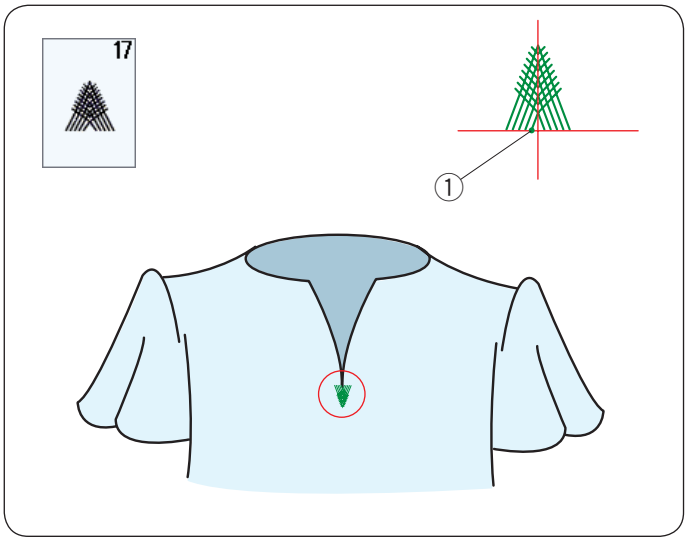
To sew a shorter darning

Sew the first line to the desired length and stop the machine.
Press the reverse button and start the machine again.
The machine will sew the rest of the darning and stop automatically.

To adjust the evenness of darning stitches

You can correct unevenness of darning stitches by turning the stitch width adjusting dial or pressing the “–” or “+” key.

If the left corner is lower than the right side, turn the stitch width adjusting dial counterclockwise or press the “–” key to correct it.
If the right corner is lower than the left side, turn the stitch width adjusting dial clockwise or press the“+” key to correct it.

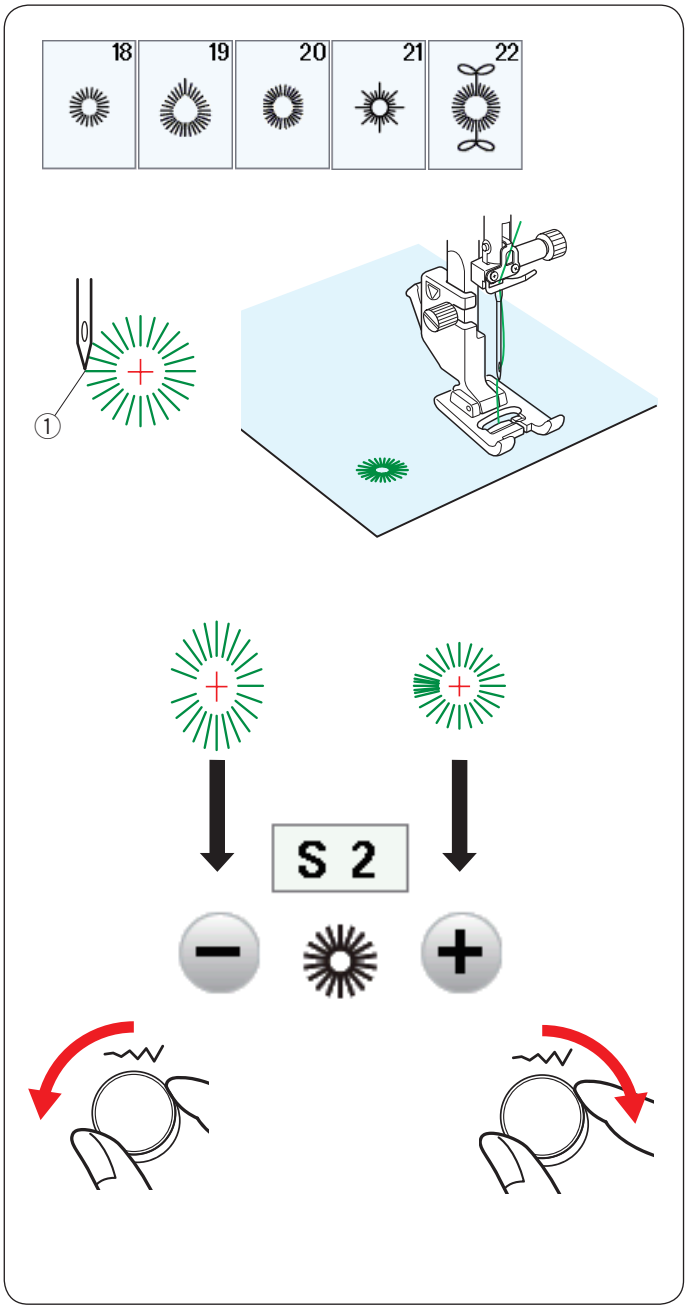


B17 Fly Stitch

The fly stitch is a triangle tacking stitch for use on a zipper fly bottom and on the side pockets of men's pants.

Attach the satin stitch foot F.

To sew:
Place the garment under the foot and lower the needle at the starting point.
Sew the stitch until the machine stops automatically.
① Starting point



B18-B22 Eyelets

Eyelets are used for belt holes, etc.

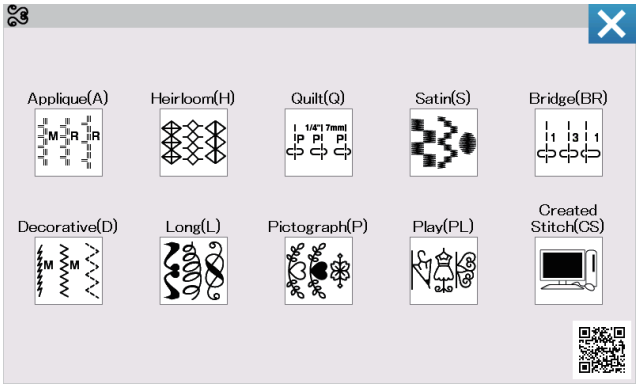
Attach the satin stitch foot F.

To sew:
Place the garment under the foot and lower the needle to the starting point.
Sew until the machine stops automatically.
① Starting point

Open the eyelet with an awl, puncher or pointed scissors.

To correct the shape of an eyelet:
If the eyelet is open, turn the stitch width adjusting dial counterclockwise or press the "–" key.
If the eyelet overlaps, turn the stitch width adjusting dial clockwise or press the "+" key.

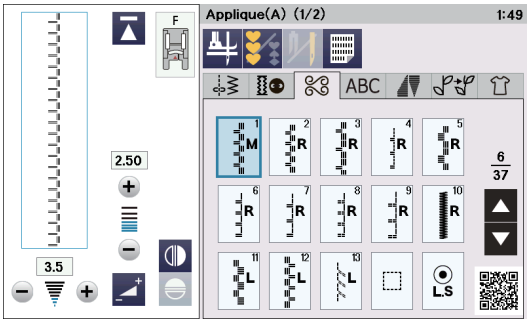
NOTE:
The shape can be adjusted within S1 to S3 (default setting is S2).

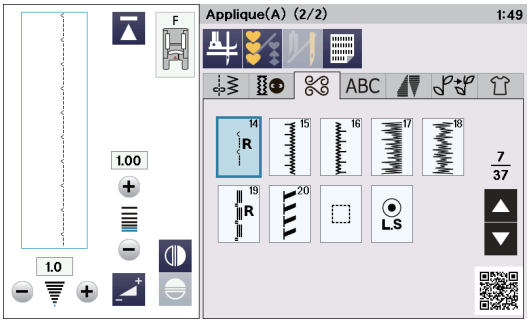


DECORATIVE STITCHES

Decorative Stitches

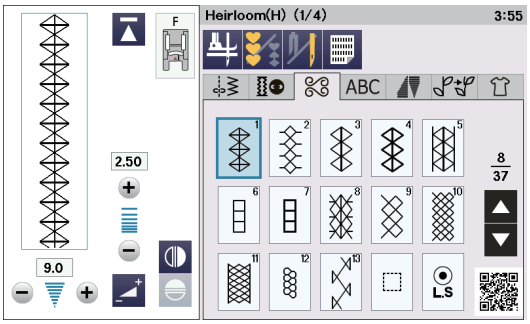
The patterns in this section are classified into 10 groups. These patterns are programmable and you can make a pattern combination.

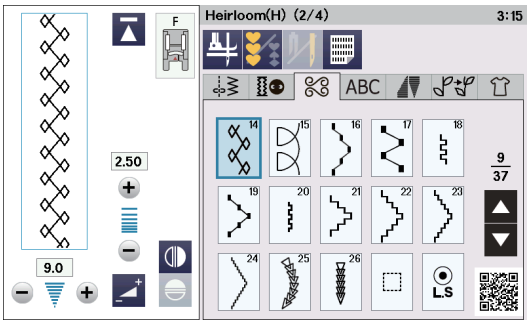


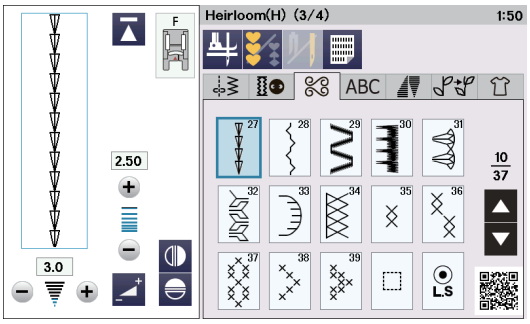


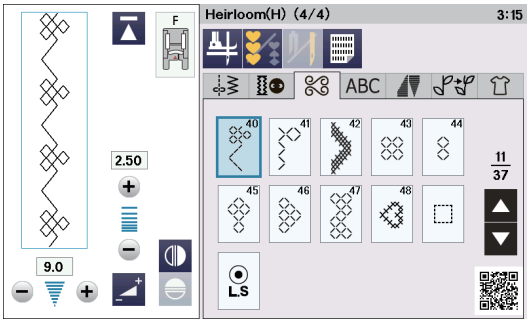
Applique stitches (A): 2 pages

Stitches in this group are for applique.
(Refer to page 119.)



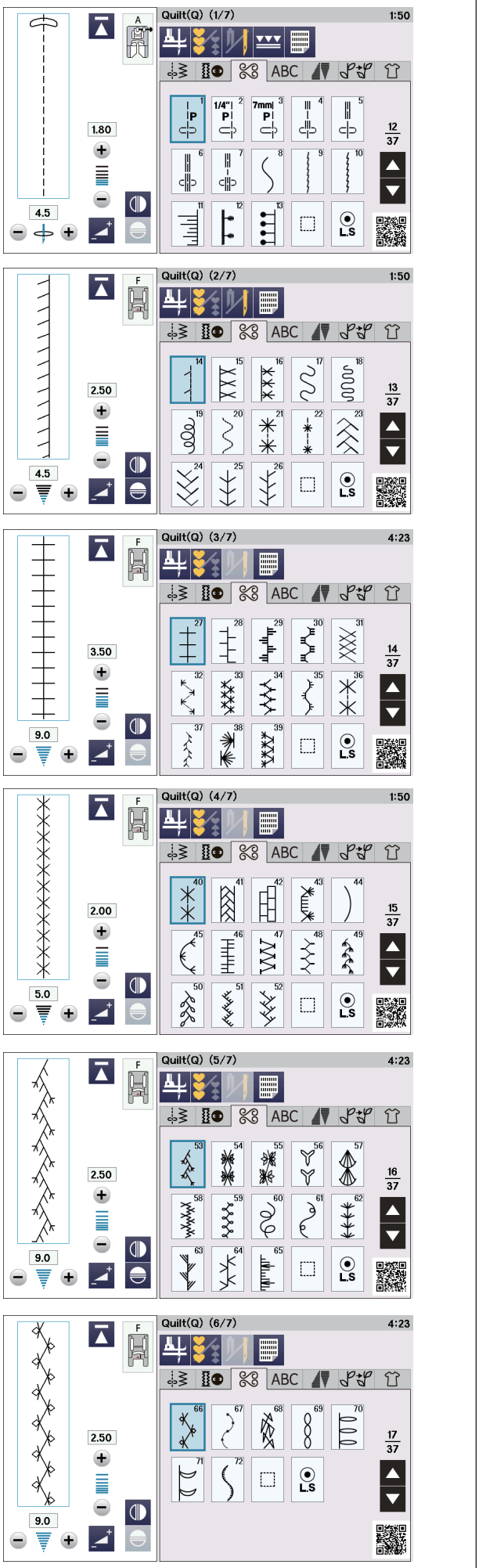






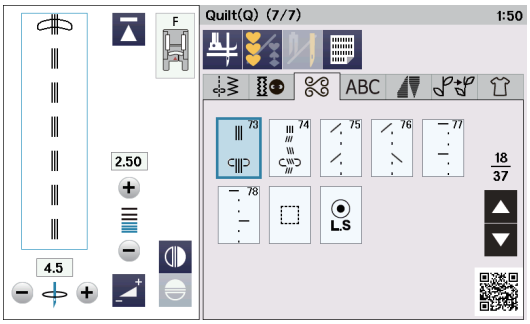
Heirloom stitches (H): 4 pages

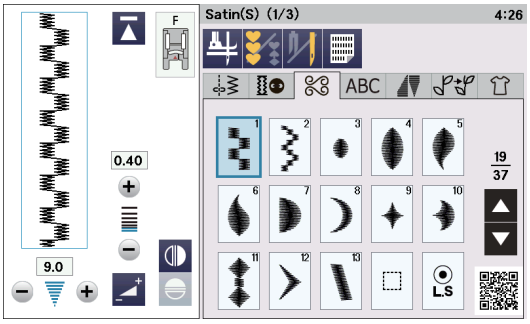
This group provides heirloom stitches and cross stitches for craft sewing and home décor.

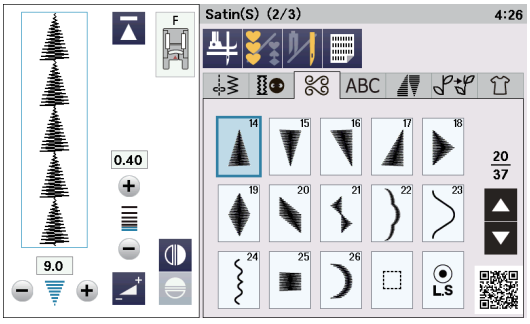


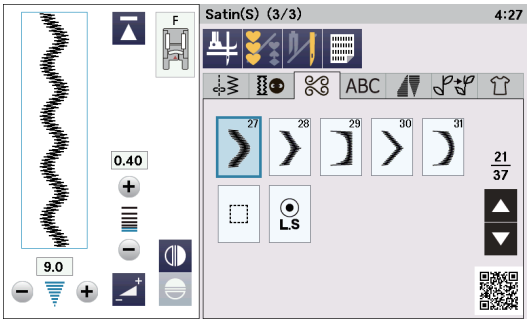
Quilting stitches (Q): 7 pages

Stitches in this group are for patchwork and quilting.
(Refer to pages 74-77, 115-121.)



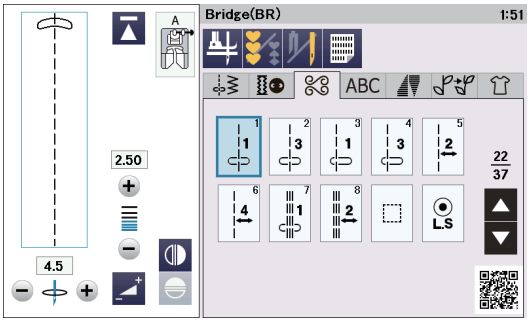






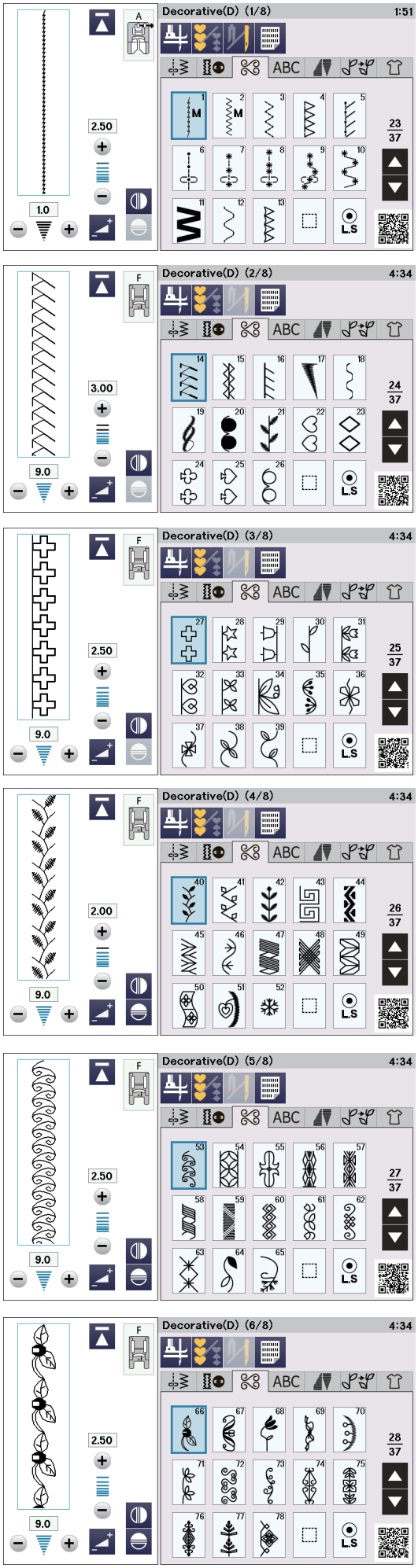
Satin stitches (S): 3 pages

The stitches in this group can be elongated up to 5 times their original length while the stitch density remains the same.
(Refer to page 77.)



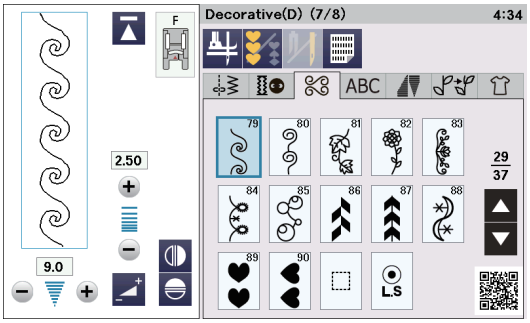
Bridge stitches (BR): 1 page

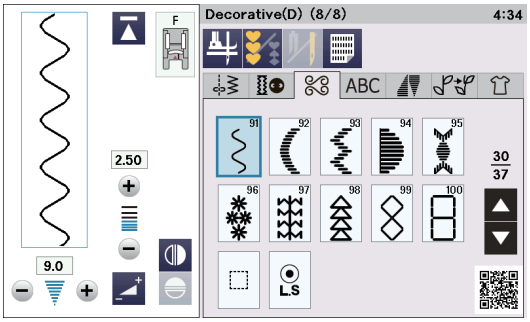
Bridge stitches are used for inserting straight stitches after a stitch pattern.
The number beside the stitch image on the straight stitch key indicates the stitch count of a programmable unit.
Patterns BR5, BR6 and BR8 will inherit the needle drop position and stitch length of the previous pattern in the programmed pattern combination.
(Refer to page 81.)

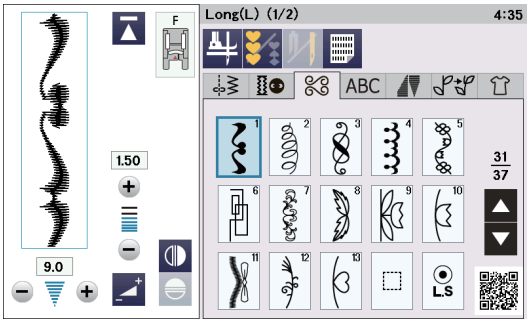


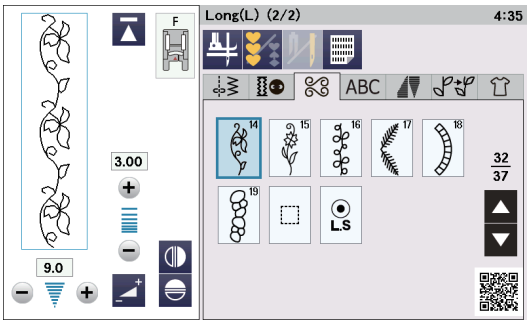
Decorative stitches (D): 8 pages

100 attractive patterns are available in this group.



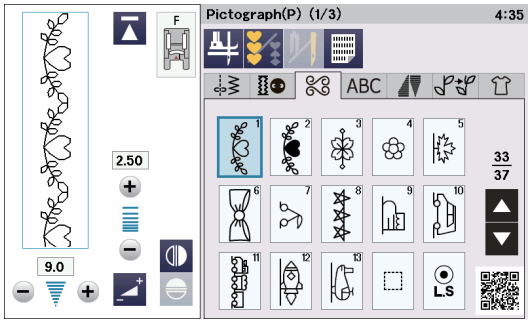


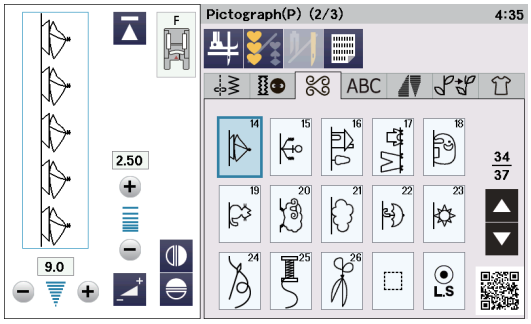


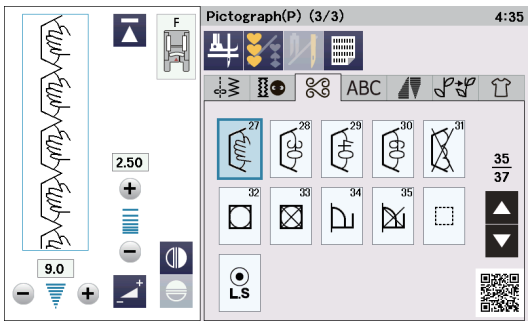


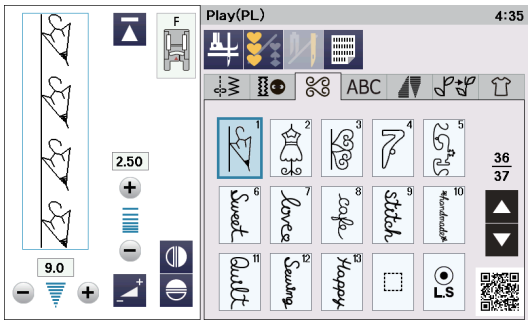
Long stitches (L): 2 pages

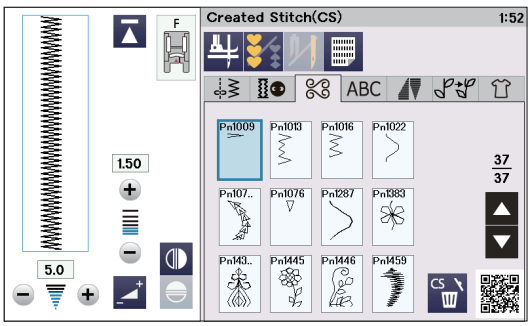
Patterns in this group are ideal for decorating garments and for adding border trims.











Pictograph stitches (P): 3 pages

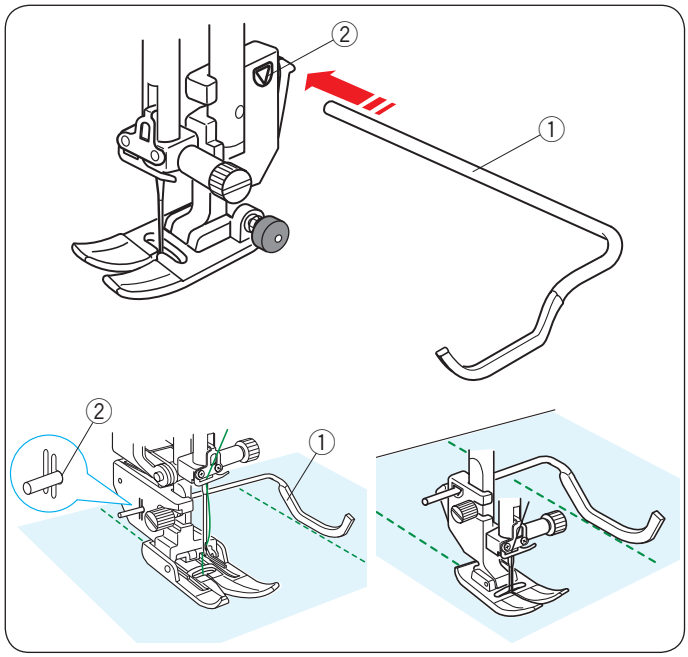
Play stitches (PL): 1 page

There are many cute designs, fancy motifs and calligraphy available in these groups.

Created stitches (CS)

In this section, you can select original stitch patterns created with Stitch Composer.

Refer to page 78 for how to transfer created stitch patterns from the PC to the machine.



Quilting (Q)

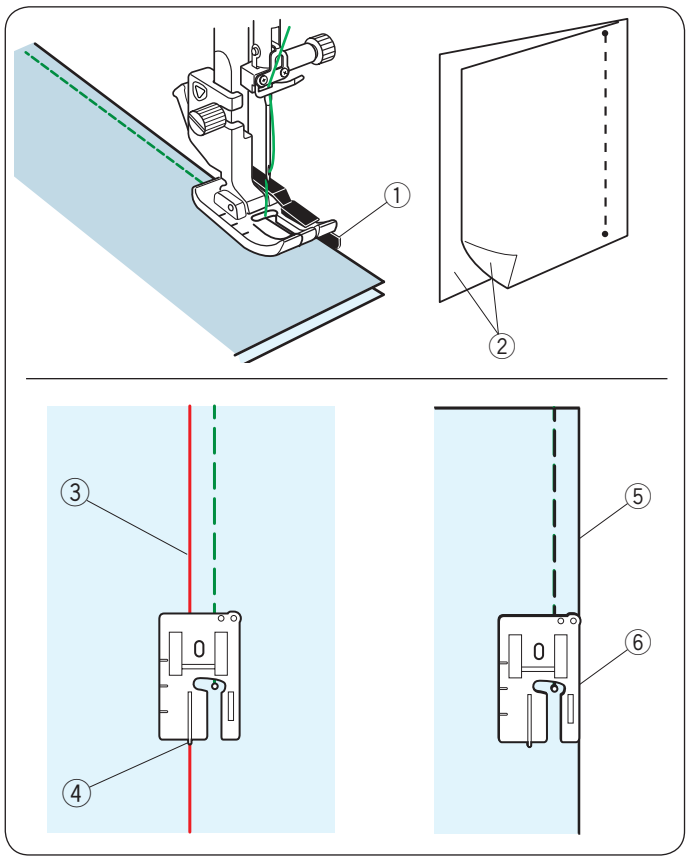
Using the Quilting Guide Bar

The quilting guide bar is helpful when sewing parallel, evenly spaced rows of stitches.

Insert the quilting guide bar into the hole in the back of the foot holder. Slide the quilting guide bar and set it to the desired spacing.

① Quilting guide bar
② Hole

Sew rows of stitches while tracing the previous row of stitches with the quilting guide bar.



Q1-Q3 Patchwork Piecing

Patterns Q1 to Q3 are special stitches for seaming patchwork pieces.

Patterns Q2 and Q3 are for patchwork piecing with 1/4″ and 7 mm respectively.
Use the 1/4″ seam foot O.
Place the patchwork pieces right sides together. Sew while guiding the edge of fabric along the guide.

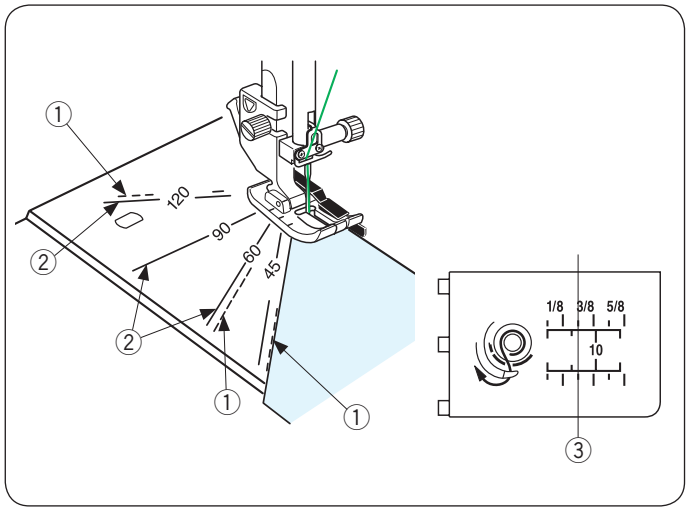
① Guide
② Right side of the fabric

You can sew 1/4″ allowance from the guide line with the 1/4″ seam foot O (without guide) as shown.
Align the guide line with the 1/4″ guide of the foot and sew.

③ Guide line
④ 1/4″ guide

To sew 1/4″ seam allowance from the right fabric edge, align the right edge of the foot and the edge of the fabric and sew.

⑤ Right fabric edge
⑥ Right edge of the foot



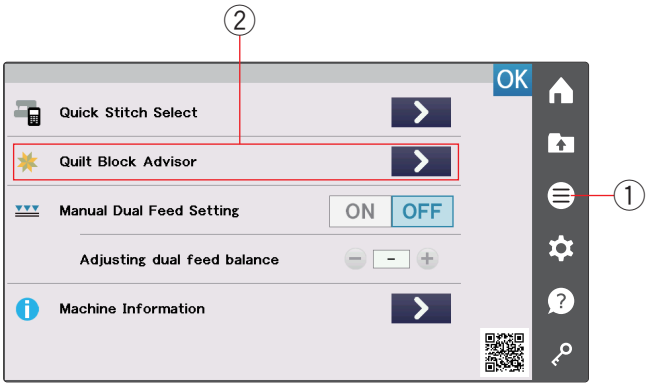
Angle Scales on the Needle Plate

You can easily seam patchwork pieces at the desired angle without marking, by using the angle scales on the needle plate.
The angle scales are marked at 45, 60, 90 and 120 degrees.
Use the broken lines when piecing the patchwork pieces with the 1/4″ seam foot O as illustrated.

① Broken line

NOTE:
Use the solid lines when piecing the patchwork pieces with the zigzag foot A. Align the edge of the fabric to the 1/4″ seam guide line.

② Solid line
③ 1/4″ seam guide line

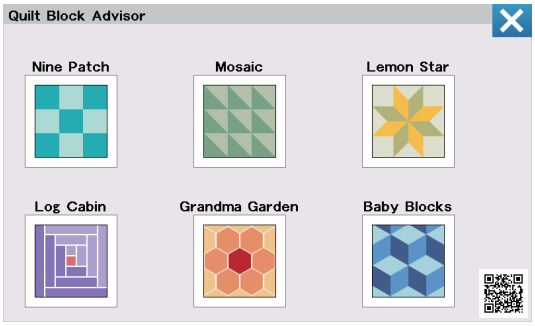


Quilt Block Advisor

The size and number of each piece of fabric can be calculated automatically. There are 6 different quit patterns available.

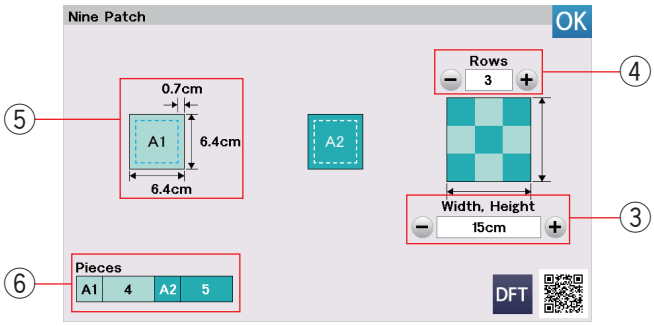
Press the Function menu key to open the function menu.
Press the key ❯ of the Quilt Block Advisor.

① Function menu key
② Quilt Block Advisor



You can select the following quilt patterns.
Select the design by pressing the quilt icon you wish to sew.

- Nine Patch
- Mosaic
- Lemon Star
- Log Cabin
- Grandma Garden
- Baby Blocks



Example: Nine patch size calculation

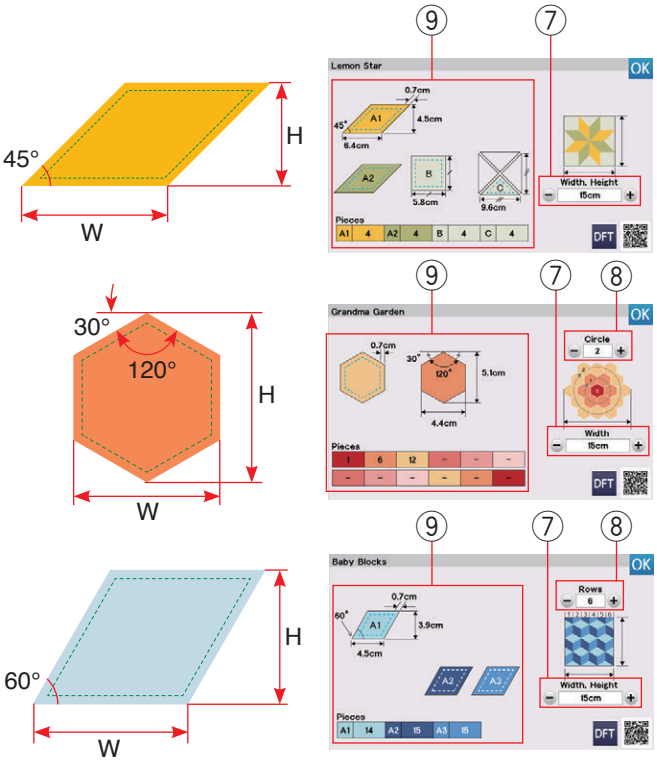
Press the nine patch icon to select the nine patch.
Set the size of work (the size of width or the height) ③ in centimeter by pressing the "–" or "+" key.
Set the number of rows ④ by pressing the "–" or "+" key.

③ Size of work (Width and Height of the work)
④ Number of rows

The size of a piece (seam allowance 0.7 cm is included) ⑤ and required number of pieces ⑥ are shown at the left side of the window.

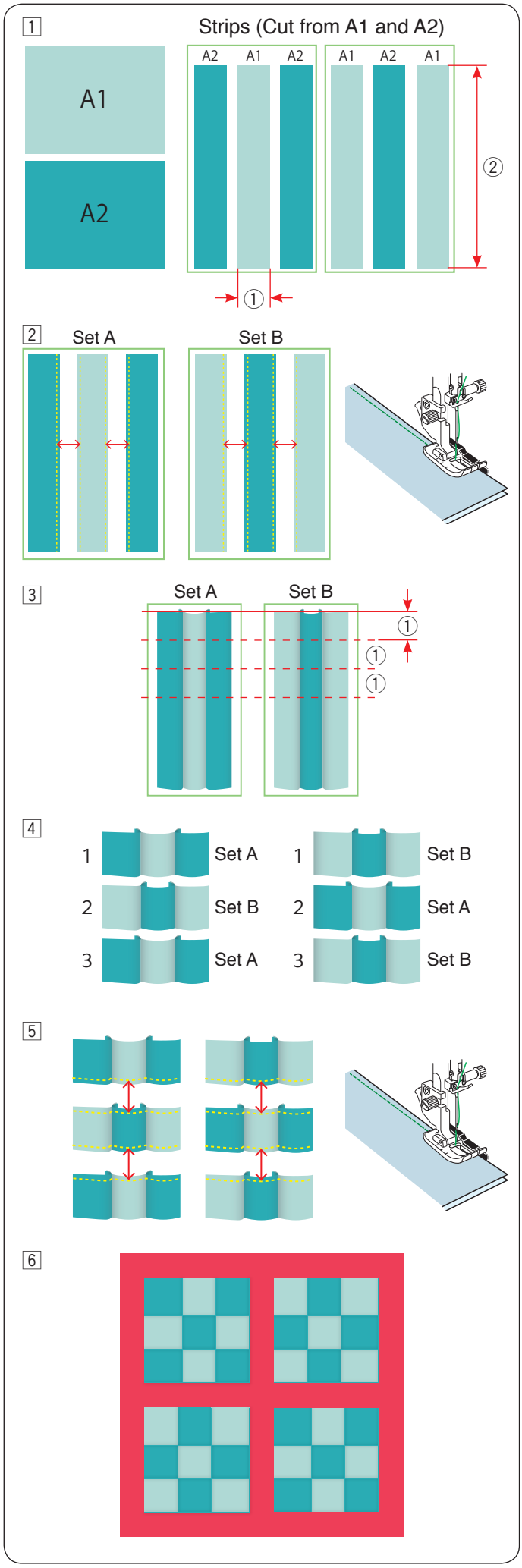
The quilt block advisor indicates that you need 4 pieces of A1 (6.4 cm x 6.4 cm) and 5 pieces of A2 (6.4 cm x 6.4 cm) to make the nine patch quilt (3 rows, 15 cm x 15 cm).

⑤ Size of a piece (including the seam allowance 0.7 cm)
⑥ Number of required pieces



Other quilt designs

Select the design by pressing quilt icons you wish to sew.
Set the size of work ⑦ (Width/Height) by pressing the "–" or "+" key.
Set the number of rows or circle ⑧ by pressing the "–" or "+" key if required.
The quilt block advisor indicates that the size of piece and number of required pieces at the left side of the window ⑨.

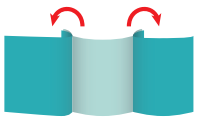


Example: Nine patch quilting

1 Prepare 2 pieces of fabric (A1 and A2) in different colors.
Cut 3 strips of fabric from fabric A1 and 3 strips of fabric from fabric A2. All strips should be the same size. Arrange the A1 and A2 strips alternately.
① Width of a part of the nine patch piece, including its seam allowance
② The length of the strip varies depending on the size of the quilting

2 Attach the 1/4″ seam foot O.
Stitch the strips right sides together to make strip sets A and B as shown in step 3.

NOTE:
Iron the strip sets for better results.
Fold the seam allowance toward the darker fabric.



3 Cut strip sets A and B into width size ①.

4 Arrange set A piece and set B piece alternately to form nine patch quilt block patterns.

5 Stitch set A pieces and set B pieces together.

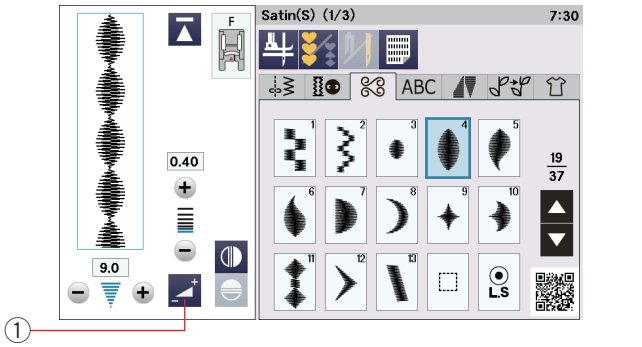
6 Arrange nine patch pieces as you wish and sew onto a quilt base.



Q73-Q78 Hand-look Quilt Stitches

Patterns Q73 to Q78 are special stitches for quilting which look like hand sewn stitches.

Use a transparent nylon thread for the needle and ordinary sewing thread for the bobbin.
The bobbin thread is pulled up on the right side of the fabric and the stitches look as if they were sewn by hand.

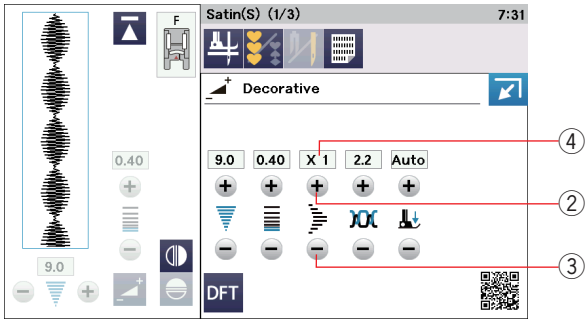


S1-S31 Decorative Satin Stitches

Elongation Ratio

Patterns S1 to S31 are decorative satin stitches for which the pattern length can be elongated without changing the stitch density.

Press the adjust key ① to expand the manual setting window.
① Adjust key

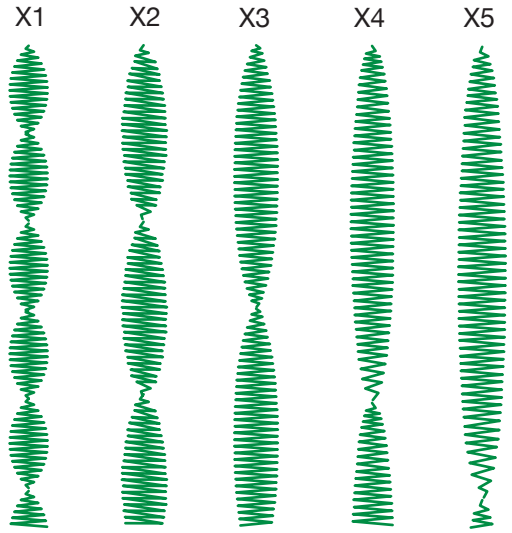


Press the “+” key to elongate the stitch pattern.
② “+” key (elongation)

To reduce the elongation ratio, press the “–” key.
③ “–” key (elongation)

The pattern can be elongated up to 5 times the original length.
The elongation ratio is indicated in the box.
④ Elongation ratio

You can also alter stitch density and stitch width.



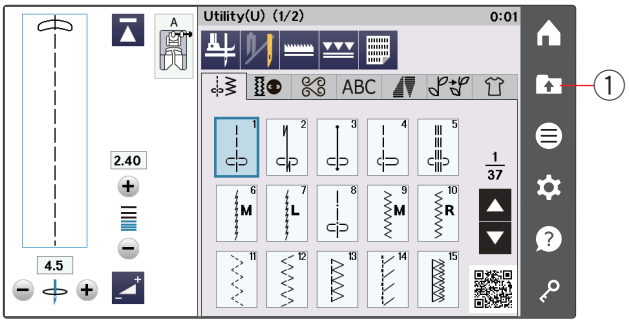
Created Stitches (CS)

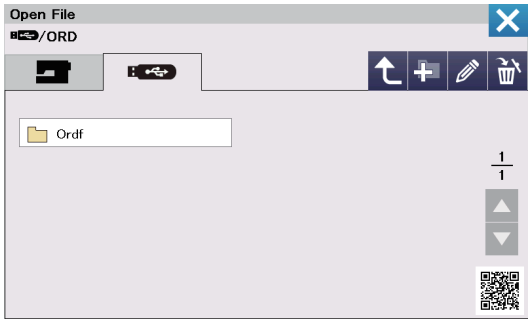
Original stitch patterns created with *Stitch Composer are saved in this group.

Insert the USB flash drive containing the original stitch patterns and press the open file key.

① Open file key

* Stitch Composer is included in PC Application Pack CD-ROM.





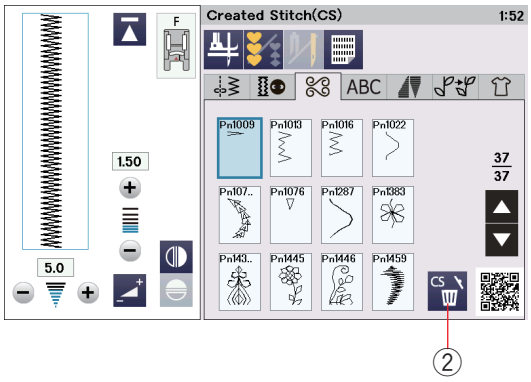
Select the USB icon and the folder list will appear. Select the desired folder to open and the file list will appear.

Select the desired file and the original stitch pattern is saved and the pattern selection key is created.

You can select, program and sew these patterns the same way as with the built-in stitch patterns.

NOTE:

- This model supports FAT16 and FAT32 formats only. If the USB flash drive is not read, check the format of it.
- Do not use a USB card reader and USB hub.

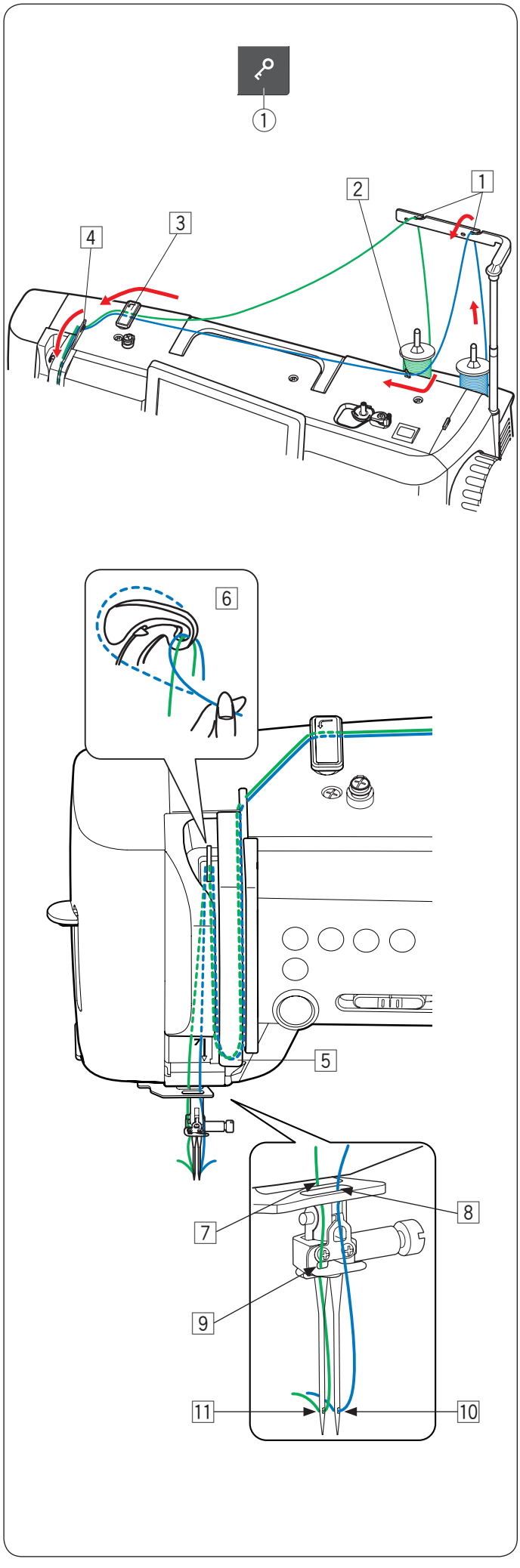


To delete the pattern, press the delete key and select the pattern to delete.
A confirmation message will appear. Press the OK key to delete the pattern.

② Delete key

NOTE:

- Up to 60 patterns can be saved in this group.
- Twin needle sewing is not available for the created stitches.



Twin Needle Sewing

Some of the utility stitches and decorative stitches can be sewn with a twin needle.

Replace the needle with the twin needle supplied with the standard accessories.

⚠ CAUTION:

Turn the power switch off or press the lockout key before changing the needle.
Do not use twin needles other than the one included in the standard accessories, otherwise the needle may hit the needle plate, foot or hook and break.

① Lockout key

Place two spools of thread on the spool stand.

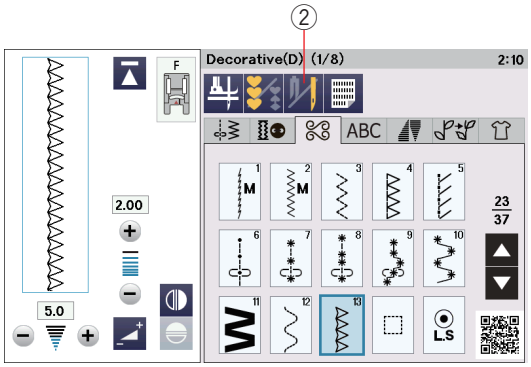
To thread the left spool thread, draw the thread from the left spool and pass them through the threading points from 1 and 3 to 6.
Slip the thread through the slit of the lower thread guide 7, (behind the lower needle guide hole) then pass through points 9 and 11 as illustrated.

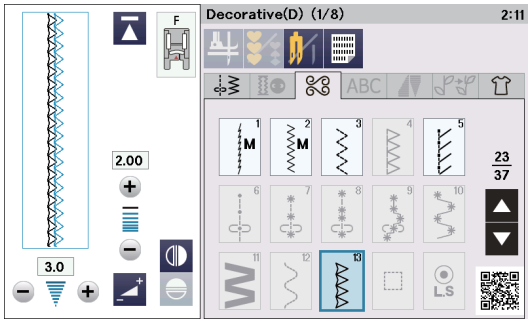
To thread the right spool thread, draw the thread from the right spool and pass them through the threading points from 1 to 6.
Draw the thread through the hole of the lower thread guide 8, then pass the thread to the point 10 as illustrated.

Make sure that the two strands of thread from the spools do not get tangled.

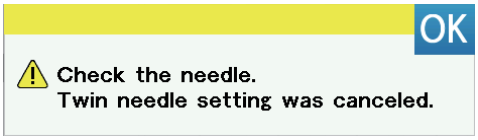
NOTE:

- Threading from points 3 to 6 is the same as for a single needle (refer to page 29-30).
- The needle threader cannot be used with the twin needle.









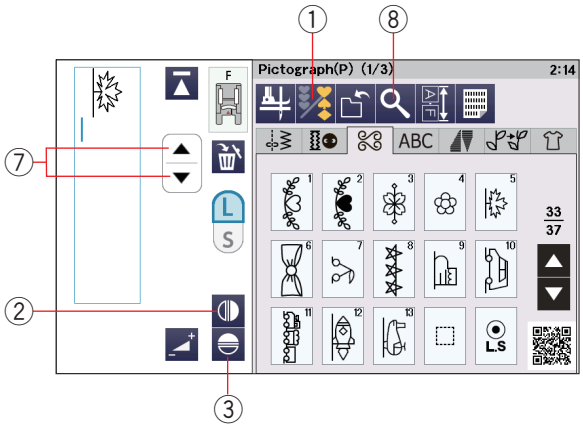
Press the twin needle key and select the desired pattern. Patterns not suitable for twin needle sewing cannot be selected (pattern selection keys are grayed out). Buttonholes, specialty stitches and monogram cannot be selected.

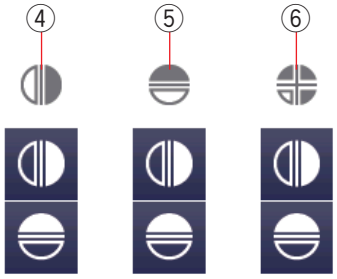
② Twin needle key

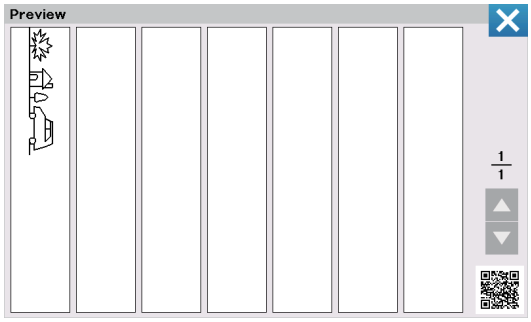
NOTE:

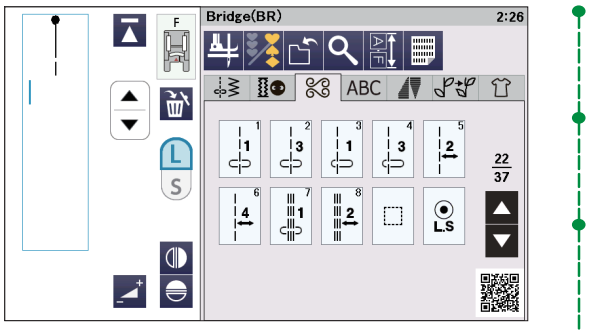
- When you sew patterns with the twin needle, test the stitches first before you sew on the garment.
- Use the zigzag foot A or satin stitch foot F for twin needle sewing.
- Use the threads #60 or finer.
- When changing the sewing direction, raise the needle and presser foot then turn the fabric (foot up for pivoting option is not available when the twin needle is selected).
- Use the thread cutter on the face plate when cutting threads.

After twin needle sewing is finished, press the twin needle key and the warning message will appear. Press the OK key and replace the twin needle with a single needle.









PROGRAMMING A PATTERN COMBINATION

The patterns in the decorative stitch category and monograms can be programmed to make a pattern combination.

Press the program key and select as many patterns as you wish to program.
You can program up to 100 patterns in each combination.
The images of programmed patterns are shown on the left side of the visual touch screen.

① Program key

Mirror Image of Patterns

To sew or program the pattern as a mirror image, press the vertical mirror key or horizontal mirror key.
Mirror image icon appears on the screen and mirror image function is enabled.
Select the desired patterns to create the mirror image.
Press the vertical or horizontal mirror key again to cancel the mirror image function.

② Vertical mirror key
③ Horizontal mirror key
④ Vertical mirror icon
⑤ Horizontal mirror icon
⑥ Vertical and horizontal mirror icon

NOTE:
Horizontal mirror image is available only for the specific patterns. For pattern identification, these patterns are shaded in light grey on the stitch chart (Refer to pages 138-139).
Mirror image function will be canceled and mirror image icon will be greyed out if the selected pattern is not suitable for the mirror image.

To view the entire pattern combination, press the cursor key to scroll over the pattern combination or press the preview key to show the entire pattern combination at a glance.

⑦ Cursor keys
⑧ Preview key

NOTE:
Presser foot pressure cannot be adjusted to the stitch patterns of a pattern combination individually.
If you attempt to do so, only the last pattern's presser foot pressure settings are applied to all the programmed patterns.

Bridge Stitches

Bridge stitches are used for inserting straight stitches after a stitch pattern.
If you want more space between French knots (D6), for example, insert pattern BR5 after pattern D6.
Two counts of straight stitches are added to pattern D6.

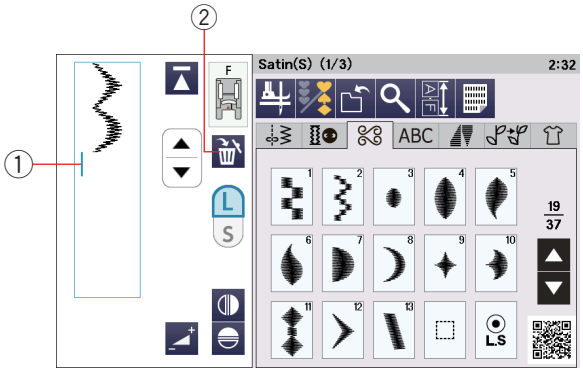
NOTE:
Patterns BR5, BR6 and BR8 will inherit the stitch length and needle drop position of the previous pattern in the pattern combination.

Editing a Pattern Combination

Deleting a Pattern

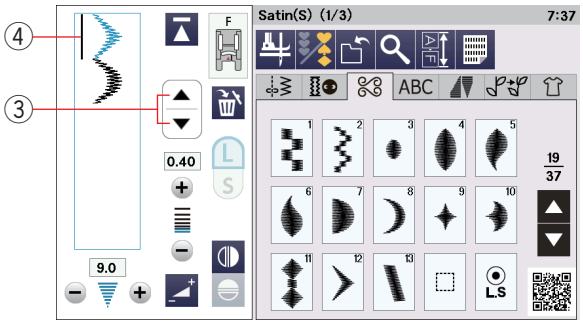
The pattern before the cursor or shown in blue is deleted by pressing the delete key.

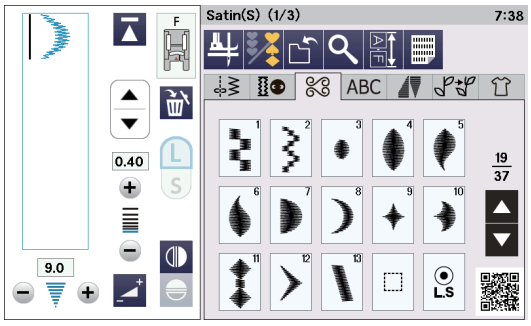
① Cursor
② Delete key



To delete a pattern in the middle of a combination, press the cursor key to select the pattern you wish to delete. The stitch image of the selected pattern turns blue. Press the delete key to delete the selected pattern.

③ Cursor key
④ Selected pattern

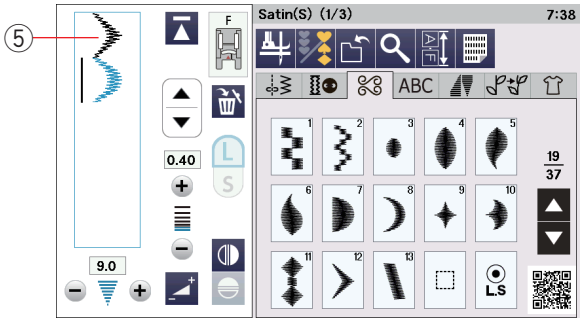


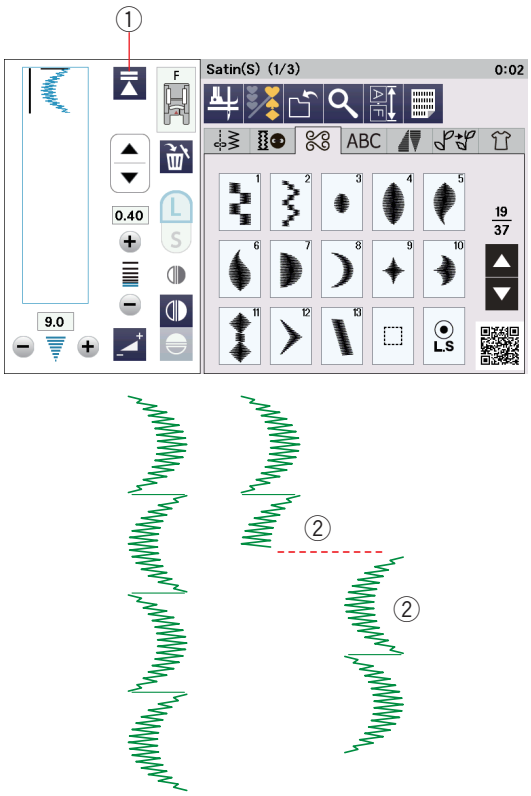


Inserting a Pattern

Press the cursor key to select the pattern next to where you wish to insert a pattern. Enter the desired pattern to insert it before the selected pattern.

⑤ Inserted pattern





Startover Key

This is a 2-way function key to start sewing a pattern combination over from the beginning.

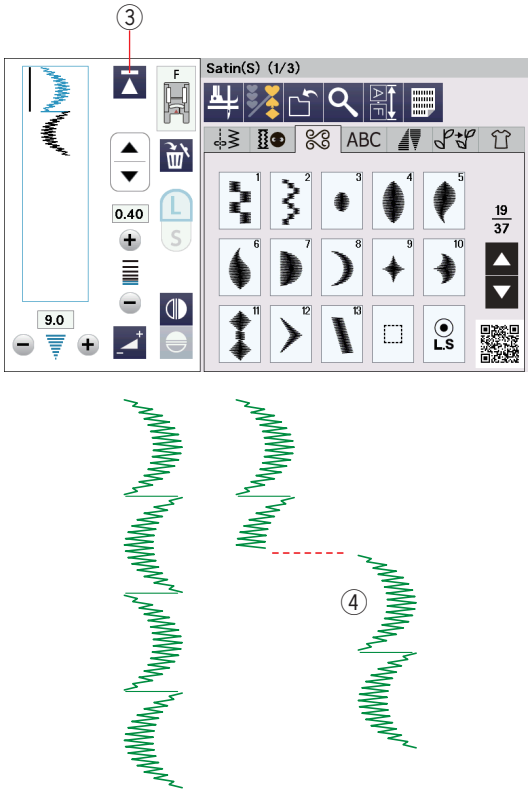
When you stop sewing a pattern combination, the startover key is activated.

Current pattern startover

If you wish to start sewing from the beginning of the current pattern, press the startover key once and start the machine. The key will change and show a triangle and double bar that means the machine will start over from the current pattern of the combination.

① Startover key (current pattern of the combination)
② Current pattern

NOTE:
When you stop sewing a pattern combination during the first pattern and press the startover key, the number of the bar above the triangle will not change because the pattern will be sewn from the first pattern.



First pattern startover

The key shows a triangle and single bar that means the machine will start over from the first pattern.
If you wish to start sewing from the beginning of the first pattern of the combination, press the startover key twice and start the machine.

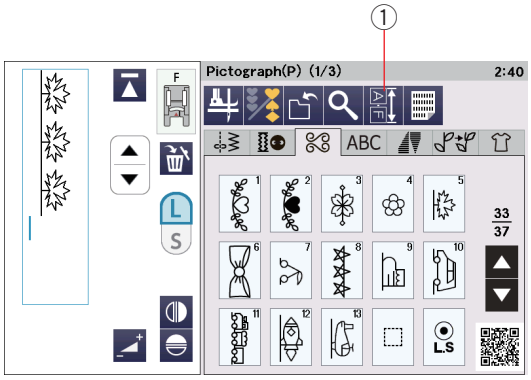
③ Startover key (first pattern of the combination)
④ First pattern

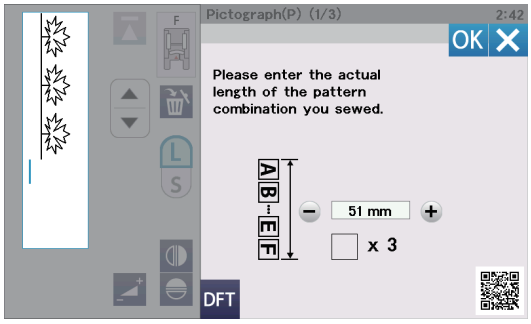
NOTE:
If auto thread cutting is done, the machine will startover from the first pattern.

Checking Pattern Combination Length

You can check the total length of the pattern combination by pressing on the pattern combination length key.

① Pattern combination length key

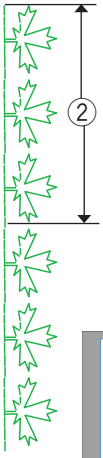


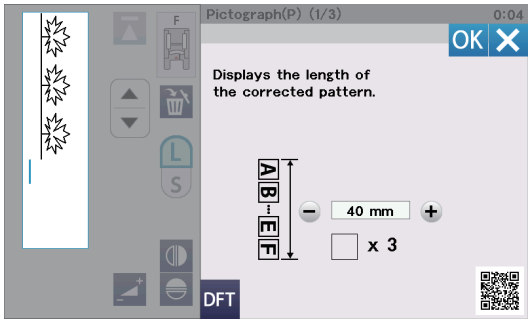


The readout of the total length is a theoretical value and the actual length may vary depending on sewing conditions.

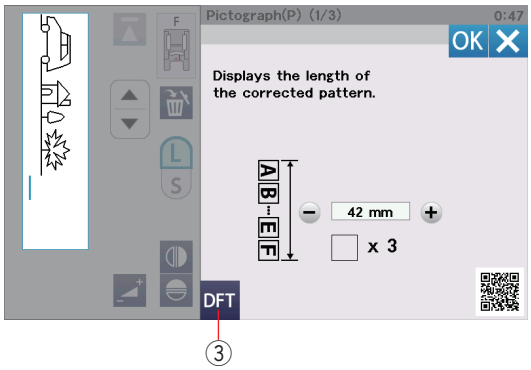
For example, select the pattern P5 three times, and sew a pattern combination.
If the actual length differs considerably from the readout, measure the actual length and enter the nearest value by pressing the “+” or “–” key.
In this case, the theoretical value is 51 mm. However, if the actual length ② is 40 mm, enter 40 mm by pressing “–” key. Press the OK to register it.

② Actual length



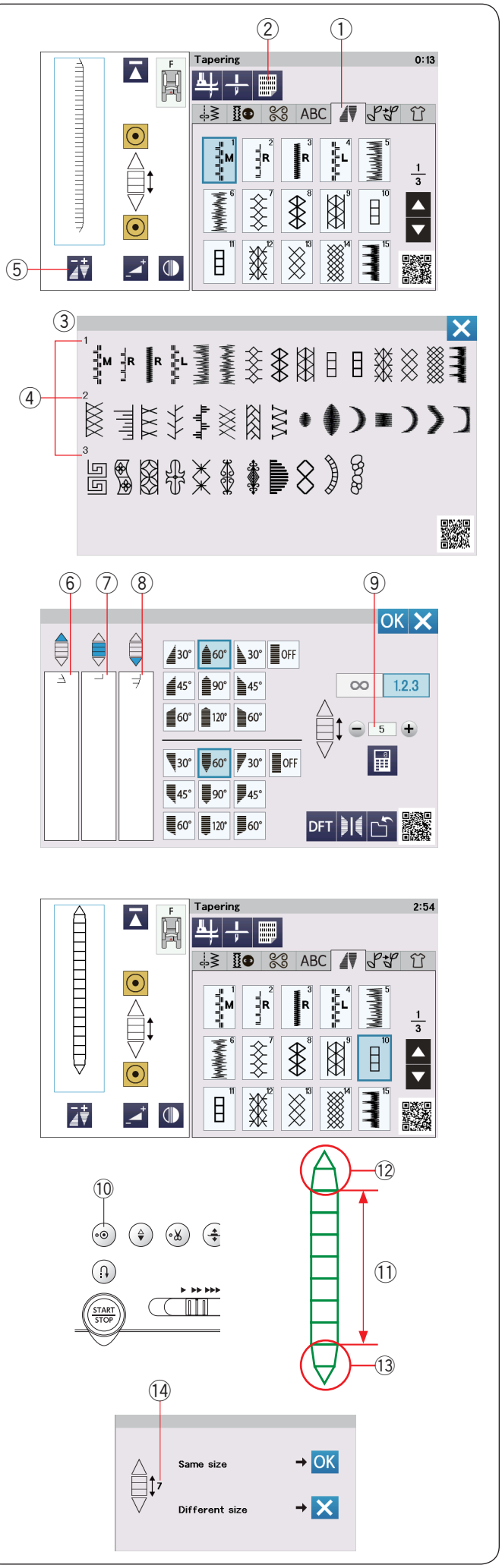


The readout is adjusted automatically when calculating the length of other pattern combinations.
The message “Displays the length of the corrected pattern.” appears to indicate that the displayed value is adjusted already.



For example select patterns P10, P16 and P5.
The theoretical value is 53 mm. However, the read out is calculated according to the measured actual length. In this case, the adjusted value is 42 mm.
Press the default key to clear the entered actual length.

③ Default key



Tapering

You can taper the beginning and end of the decorative stitch patterns to create tapered corners and points. Press the tapering tab to enter the tapering mode (refer to page 35).

① Tapering tab

NOTE:

- The tapering length varies depending on the stitch pattern and its tapering shape. Make a test stitch on an extra piece of the fabric to check the tapering length.
- If you stop the machine while sewing, and change the stitch width, center needle position or stitch length, the machine will start tapered sewing from the beginning.

Stitch reference chart for tapering

Press the stitch reference key to show the stitch reference chart for the tapering.

② Stitch reference key
③ Stitch reference chart for tapering
④ Page number

Preview

Press the tapering adjustment key to preview the selected tapering stitch.
The left column shows the start tapering pattern ⑥.
The center column shows the pattern body ⑦.
The right column shows the end tapering pattern ⑧.

⑤ Tapering adjustment key
⑥ Start tapering pattern
⑦ Pattern body
⑧ End tapering pattern

When the size of the tapering stitch is set, the number of the pattern body to be sewn appears above the center column (refer to page 87).

⑨ Number of body patterns

Tapered stitch sample 1

Example: To sew the tapered stitch pattern #10
Select the stitch pattern #10.
Start the machine. The machine sews the start tapering pattern and pattern body.
Sew to the required length, then press the auto-lock button. The machine sews the end tapering pattern and stops.

⑩ Auto-lock button
⑪ Required length
⑫ Start tapering pattern
⑬ End tapering pattern

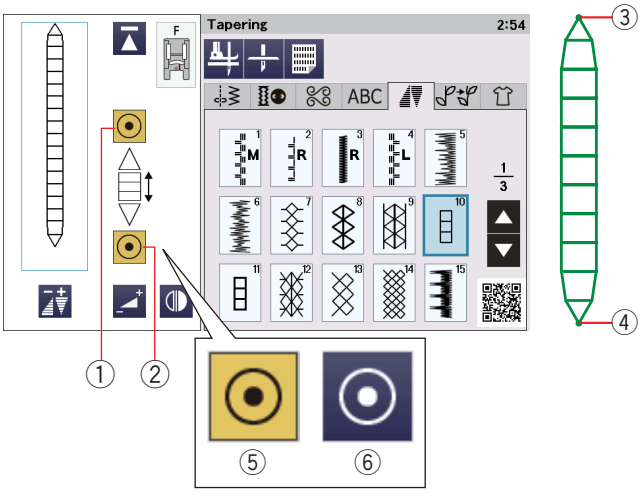
To sew the same sized tapered pattern

When finished sewing, a confirmation message will appear. The number shown indicates the number of the body patterns.

⑭ Number of the body pattern

Press OK and simply start the machine to sew another tapered pattern of the same size.

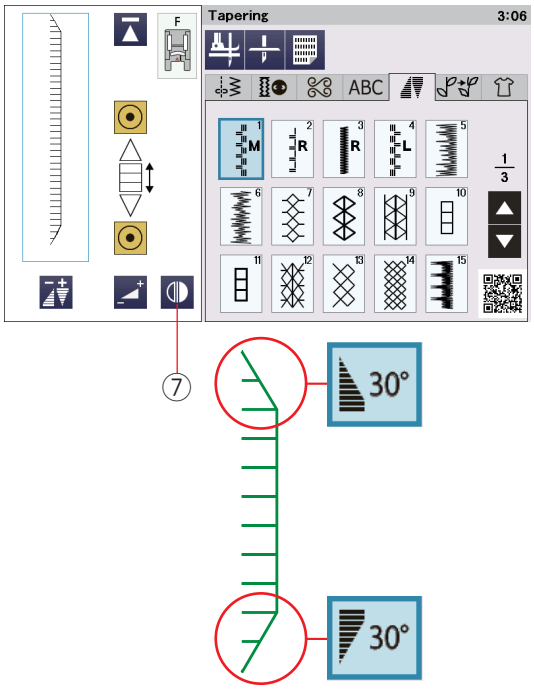
To sew the same tapered pattern in a different size, press the X key.



Auto-lock stitch function

The machine sews auto-lock stitch at the beginning and end of the sewing with the default settings.
However, you can turn on or off the auto-lock stitches by pressing the corresponding auto-lock keys on the visual touch screen.

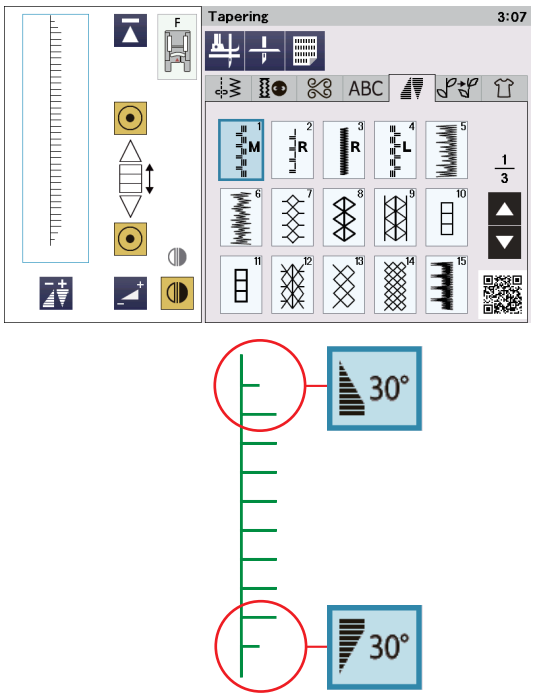
① Initial lock stitch key
② End lock stitch key
③ Initial lock stitch
④ End lock stitch
⑤ Lock stitch key (ON)
⑥ Lock stitch key (OFF)

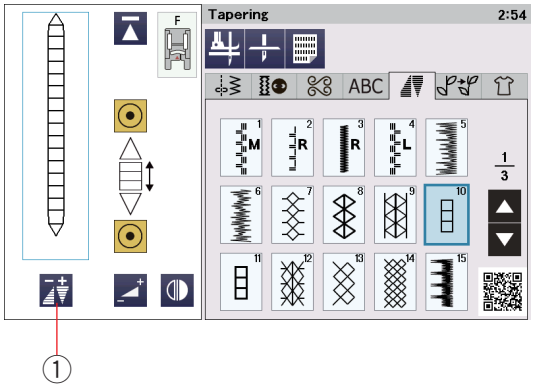


Flipping the tapered pattern 1

Press the static flip key to flip the tapered pattern vertically without flipping its start and end tapering degree angle.

⑦ Static flip key

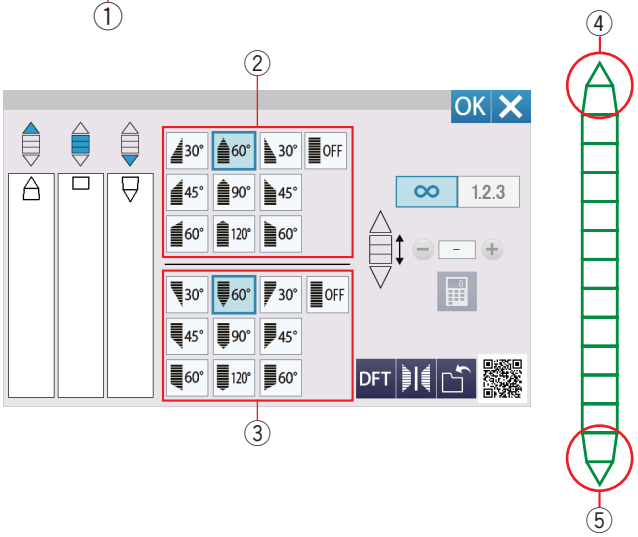




Adjustment of tapered stitches

You can adjust the shape of the tapered stitch pattern.
Press the tapering adjustment key.
The dialog box will open.

① Tapering adjustment key



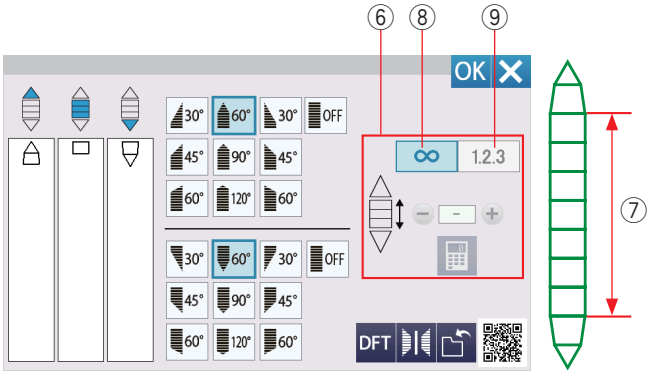
Tapering shape

Select the shape of the tapering for the beginning and the end of the stitch patterns by pressing the tapering shape keys.

The keys on the top ② are for start tapering pattern ④.
The keys on the bottom ③ are for end tapering pattern ⑤.

② Tapering shape keys (for start tapering pattern)
③ Tapering shape keys (for end tapering pattern)

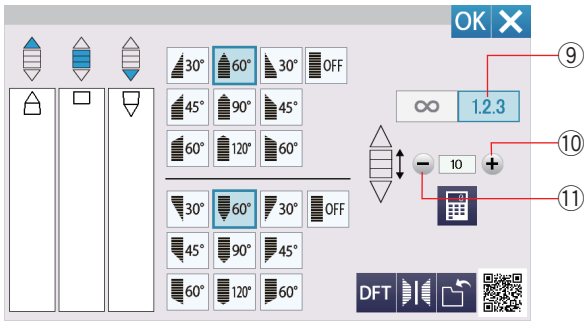
The numbers in the tapering shape keys indicate the degree of tapering. You can apply the tapering alignment from left, center, right or off. The start and end of the stitch patterns can be aligned separately.



Pattern body length

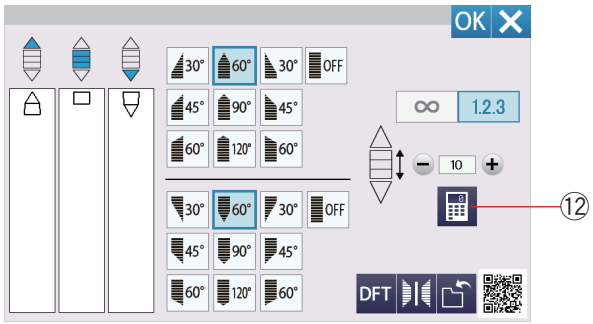
The keys on the right ⑥ are for pattern body length ⑦.
The machine sews the pattern body as long as the auto-lock key is pressed when the free length key ⑧ is turned on. However, you can set the number of the pattern body to be sewn by pressing the pattern length key ⑨.

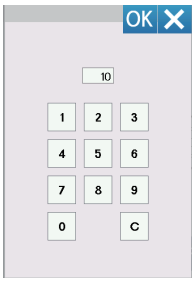
⑦ Pattern body
⑧ Free length key
⑨ Pattern length key



Press the pattern length key.
Press the “+” ⑩ or “–” ⑪ key to set the number to repeat the pattern body.

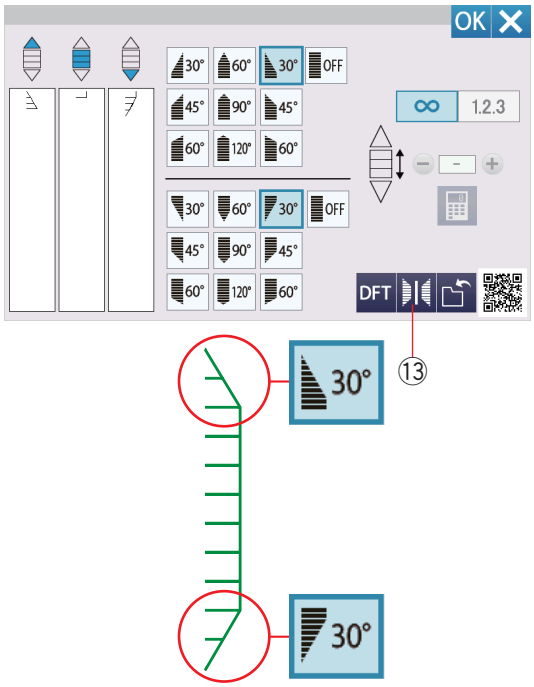
⑨ Pattern length key





You can also set the number to repeat the pattern body by pressing the numeric pad key.
Press the numeric pad key and the numeric keypad window will open.
Enter the desired pattern length and press the OK key.

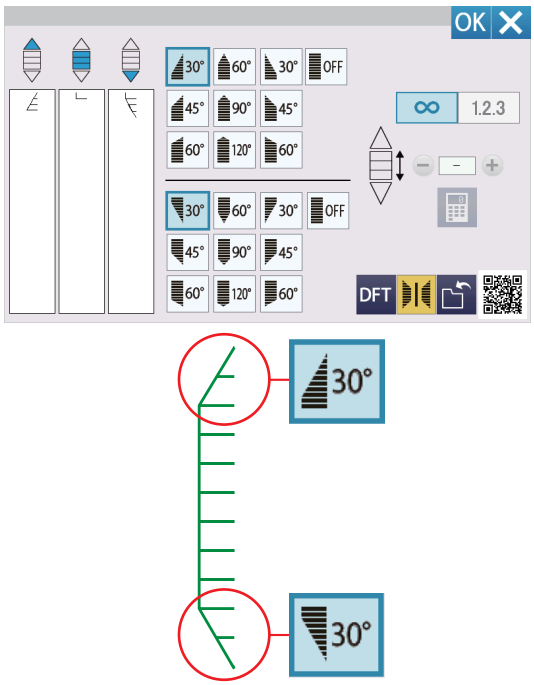
⑫ Numeric pad key

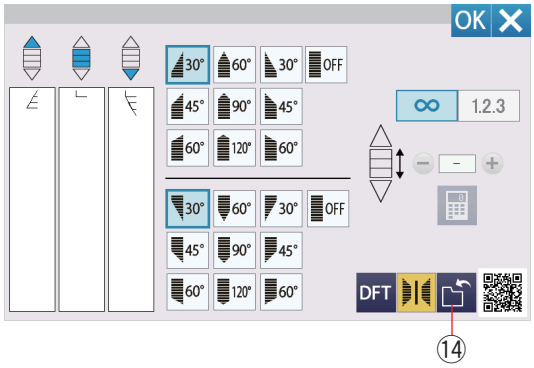


Flipping the tapered pattern 2

Press the mirror image key to flip the tapered pattern vertically.

⑬ Mirror image key



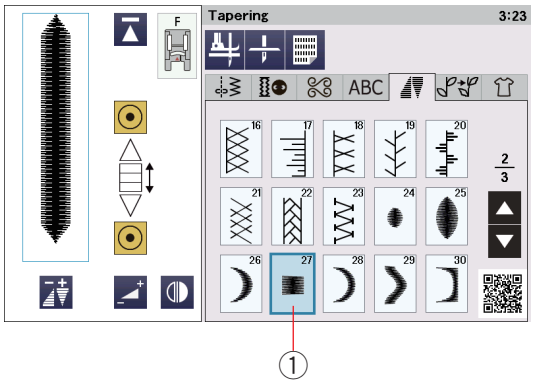


Saving a tapered stitches
The customized tapered pattens can be saved as a file in the machine's internal memory or a USB flash drive.

Press the save file key after customizing a tapered stitch. The tapered stitch file is saved as *.JCS file. To save or open the file refer to page 95-96.
⑭ Save file key

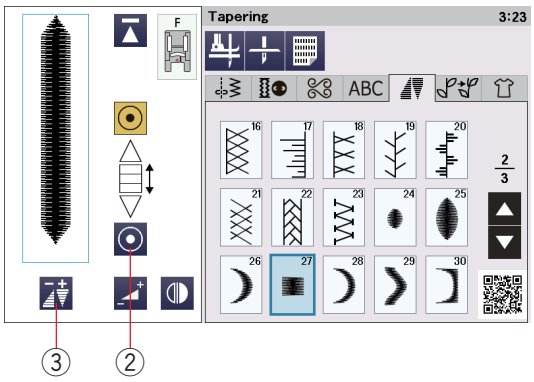
Tapered stitch sample 2
Example: To create a corner frame with the tapered stitch pattern #27

1



1 Select the stitch pattern #27 ①.

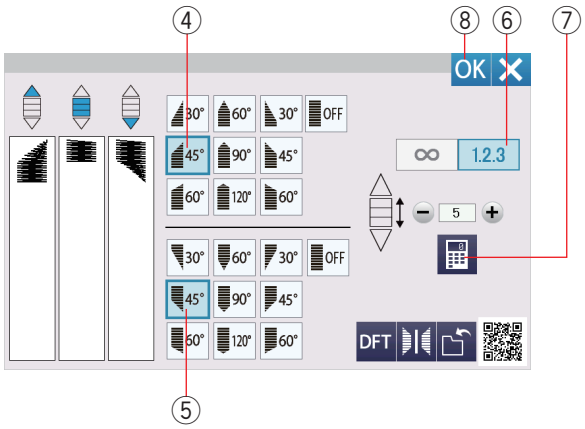
2
3



2 Press the end lock stitch key ② to turn off the end lock stitch.

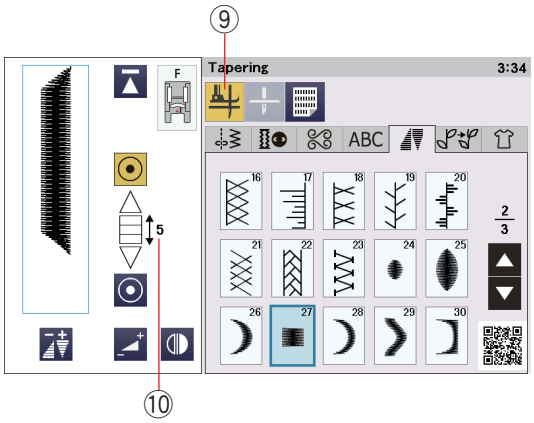
3 Press the tapering adjustment key ③.

4



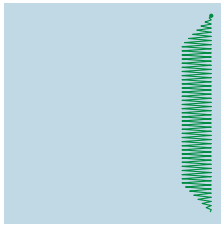
4 Press the tapering shape key ④.
Press the tapering shape key ⑤.
Press the pattern length key ⑥.
Press the "+" key 4 times, or press the numeric pad key ⑦ and enter "5".
Press the OK key ⑧.

5



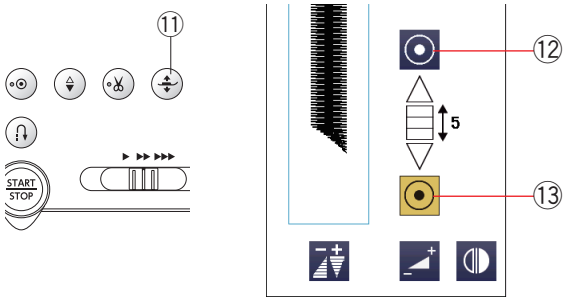
5 Press the foot-up key ⑨.
⑩ Number of body patterns

6



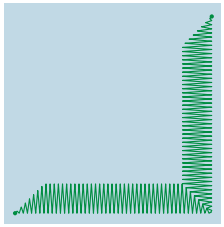
6 Lower the needle into the fabric at the point where you want to start sewing.
Start sewing. Sew until the machine stops.
The machine stops and the presser foot rises automatically.

7

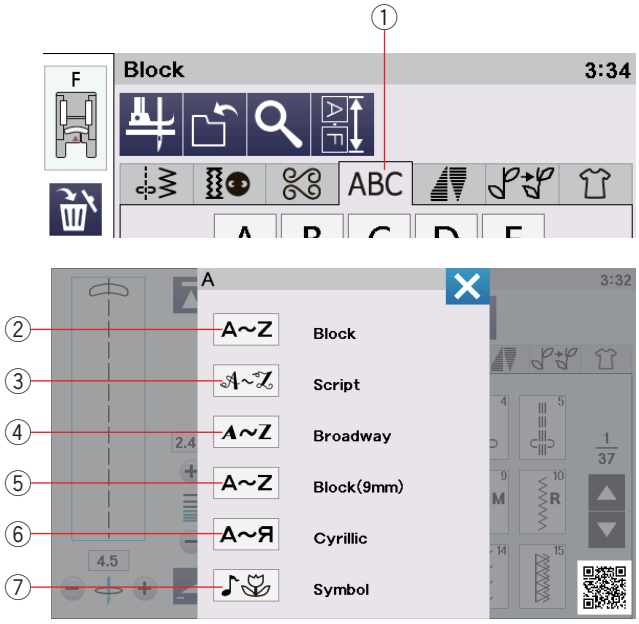


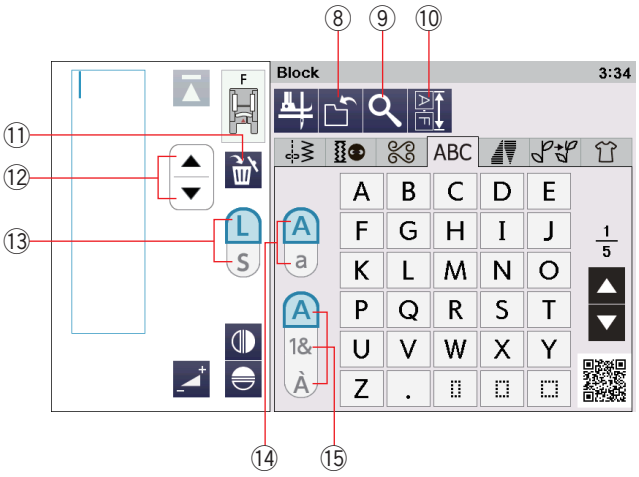
7 Pivot the fabric 90 degrees.
Press the foot lifter button ⑪ to lower the presser foot.
Press the initial and end lock keys.
Be sure that the initial lock key is turned off ⑫, and the end lock key is turned on ⑬.
Start sewing in the new direction.

8



8 The machine automatically stops at the end of the corner with the lock stitch.





MONOGRAMMING

You can program letters and symbol designs for monogramming.
Press the monogramming tab and the font selection window will open.
You can select one of 6 fonts.
Select the desired font by pressing the corresponding key.

① Monograming tab
② Block font key
③ Script font key
④ Broadway font key
⑤ Block font (9 mm) key
⑥ Cyrillic key
⑦ Symbol key

The monogram mode window will open.

NOTE:
The height of Block font (9 mm) is approximately 9 mm.

Function Keys

⑧ **File save key**

Press this key to save the monogram as a data file.

⑨ **Preview key**

Press this key to view the entire monogram.

⑩ **Pattern combination length key**

Press this key to check the total length of the entire monogram.

⑪ **Delete key**

Press this key to delete the selected character or symbol.

⑫ **Cursor key**

Press the cursor key to move the cursor up or down.

⑬ **Letter size key**

Press this key to select the full size (L) or small size (S).

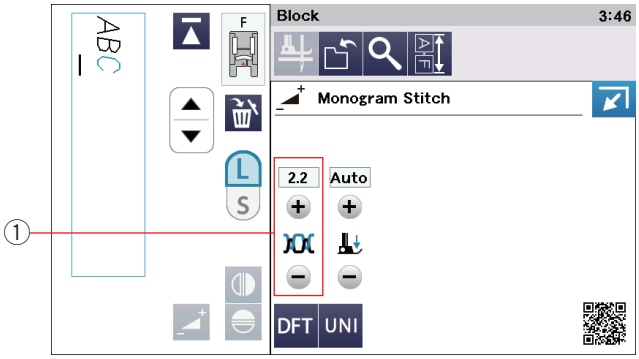
⑭ **Letter case key**

Press this key to select the upper case or lower case.

⑮ **Character type key**

Press this key to select the character type among alphabets, numerals, symbols and European characters.

NOTE:
Numbers, symbols and Europian letters are available on pages 2/5 through 5/5.



Manual Thread Tension

This machine is equipped with automatic thread tension control. However, you may need to manually adjust the tension balance depending on the sewing conditions.

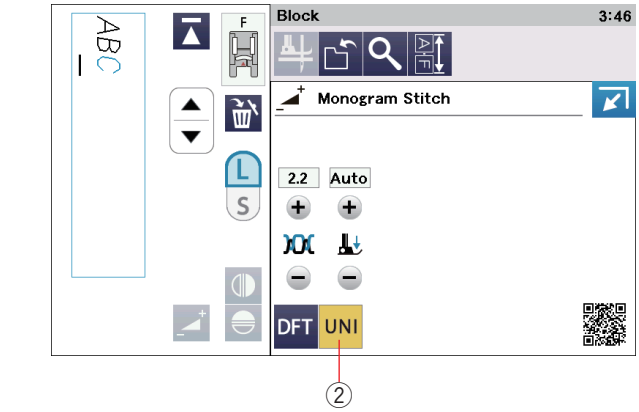
To adjust the thread tension, press the adjust key to show the option.

Individual Thread Tension Adjustment

To apply the thread tension adjustment to each letter individually, select the letter by moving the cursor.

Press "+" or "–" to adjust the thread tension of the selected letter. The adjusted thread tension is applied to the selected letter.

① Thread tension adjustment



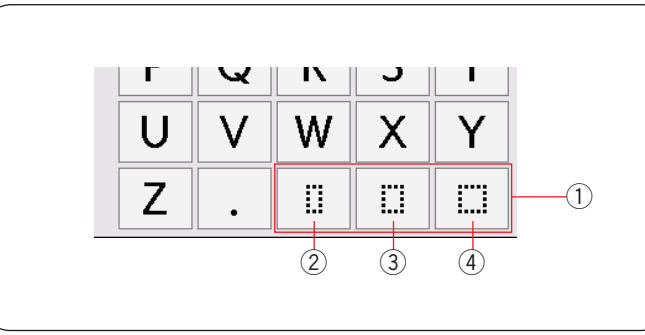
Unified Thread Tension Adjustment

To apply the thread tension adjustment to all letters together, you do not need to select the letters.

Press the unified thread tension key ②.
Press "+" or "–" to adjust the thread tension.
The adjusted thread tension is applied to all entered letters.

When unified thread tension control is applied, the unified thread tension key turns to yellow.
Press the unified thread tension key again to deactivate the unified thread tension adjustment.

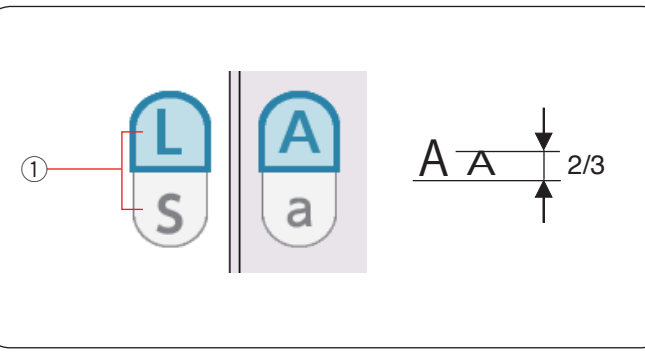
NOTE:
Unified thread tension adjustment cannot be applied to Symbol character.



Spacing

To enter a space in monogramming, press one of the three space keys on the lower right corner of the monogram selection.

① Space keys
② Small-size space
③ Medium-size space
④ Large-size space



Reducing the Size of Letters

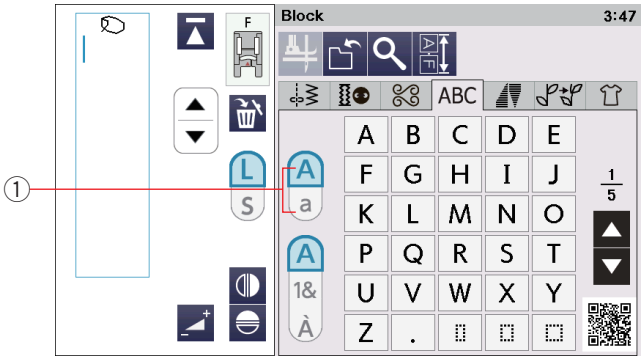
To reduce the height of a character to approximately 2/3 of its original size, select the character and press the letter size key ①.

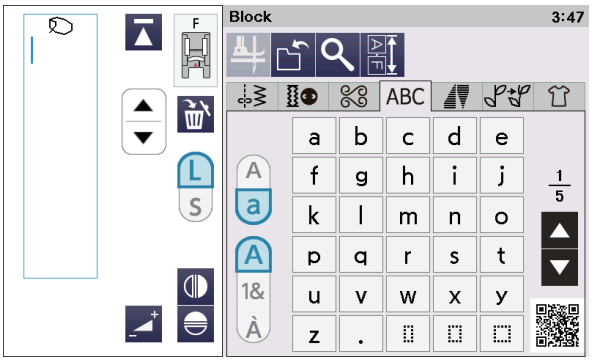
Programming a Monogram

Simply enter the characters by pressing the corresponding keys to program a monogram.
Example 1: “Quilt” in Block font

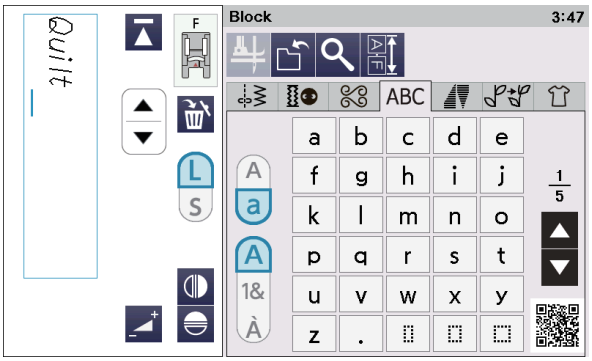
Select Block font. Enter “Q”.

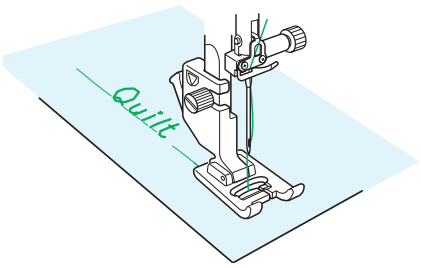
Press the letter case key ① to select lower case.
① Letter case key

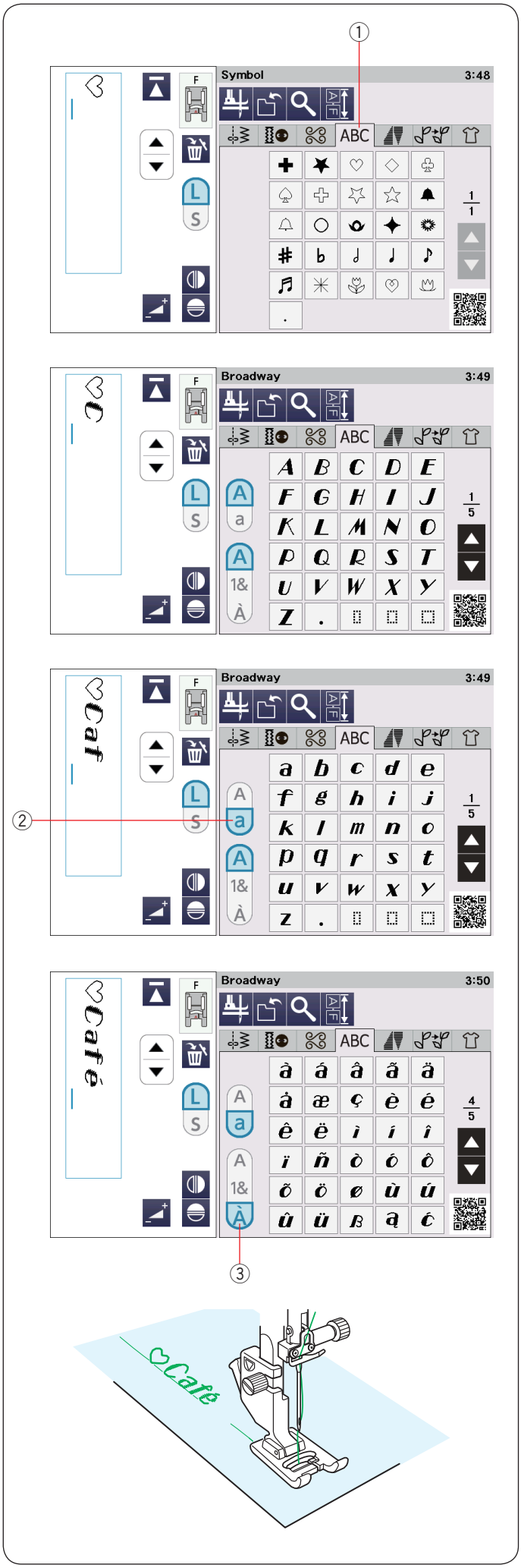




Enter “u”, “i”, “l” and “t”.







Example 2: “ ♡Café” in Broadway font

Press the monogramming tab ① and select Symbol.
Enter a hollow heart.

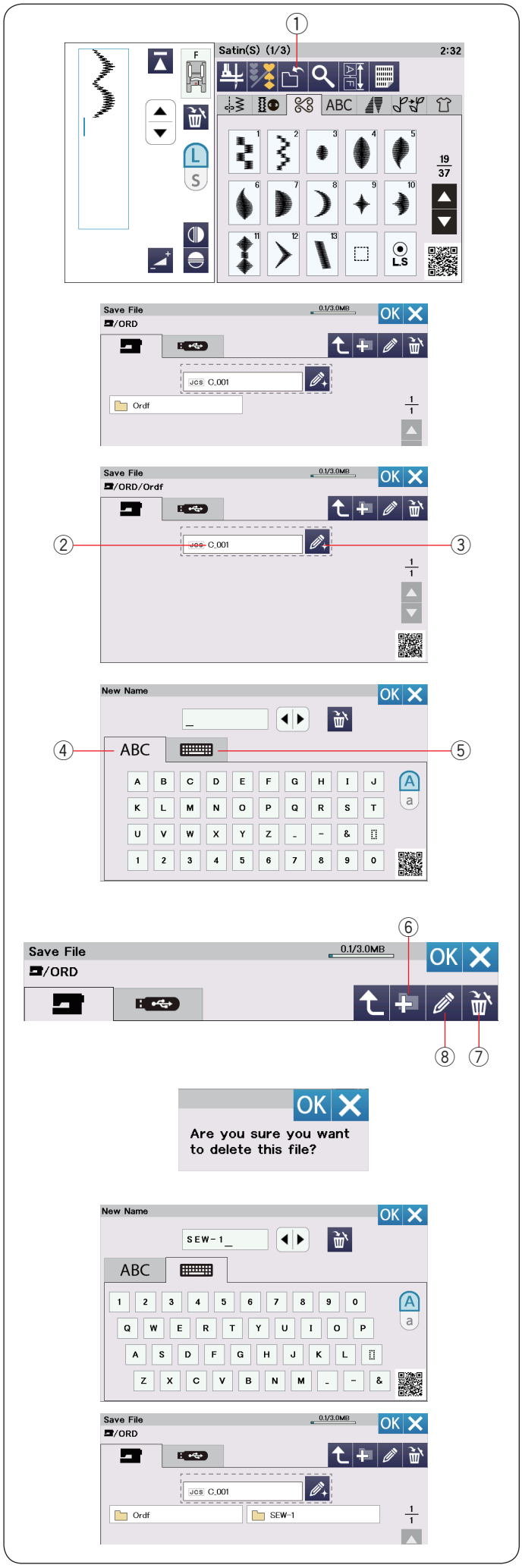
Press the monogramming tab and select Broadway font.
Enter “C”.

① Monogramming tab

Press the letter case key ② and select lower case letters.
Enter “a” and “f”.

Press the character type key ③ to go to the page 4 of 5.
Enter “é”.

NOTE:
Use a blue tip needle for sewing a monogram.
Apply a sheet of stabilizer to fine fabrics or stretch fabrics.
Test sew to check the sewing results.



Saving a Pattern Combination

The pattern combination and monogram can be saved as a file in the machine's internal memory or a USB flash drive.
The machine has a USB port for USB flash drive.

Press the save file key after programming a pattern combination, and the save file window will open.
① Save file key

Select the location to where you wish to save the pattern combination.
The "Ordf" folder is shown.

Select the "Ordf" folder and the file name is assigned automatically starting from C_001.....in order.
Press the OK key to save the file under the assigned name.
② File name

If you wish to assign a unique name to the file, press the rename key and the keyboard window will open.
③ Rename key

If you wish to use QWERTY layout keyboard, press the keyboard tab.
④ ABC tab
⑤ Keyboard tab

Enter a new name and press the OK key to change the file name.
Press the OK key and the file is saved under the new name.

NOTE:
- The files and folders are displayed on different pages.
- This model supports FAT16 and FAT32 formats only. If the USB flash drive is not read, check the format of it.
- Do not use a USB card reader and USB hub.

Creating a new folder

Select a location for a new folder and press the new folder key. The keyboard window will open.
Enter a folder name and press the OK key.
The new folder is created under the assigned name.
⑥ New folder key

Deleting a file or folder

Press the delete key and select the file or folder to delete. A confirmation message appears.
Press the OK key to delete the file or folder.
⑦ Delete key

Changing the folder name or file name

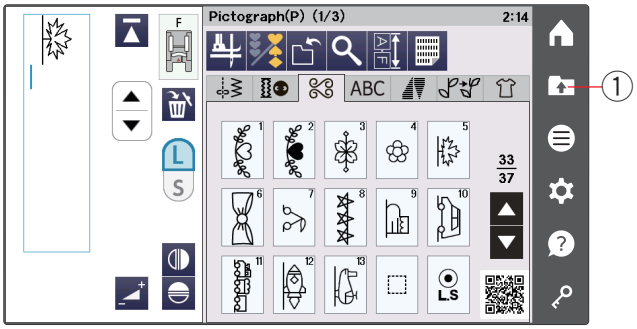
Press the rename key and select the folder or file of which you wish to change its name. The keyboard window will open.
Enter the new name and press the OK key.
The name of the folder or file will change.
⑧ Rename key

Opening a Pattern Combination

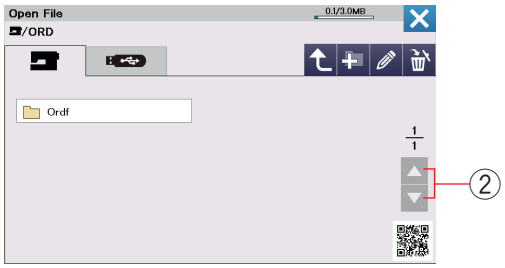
You can open the pattern combination and monogram saved in the machine's internal memory or a USB flash drive.

Press the open file key and the open file window will open.

① Open file key



Select the memory location; either the machine's internal memory or a USB flash drive.
The "Ordf" folder will appear.



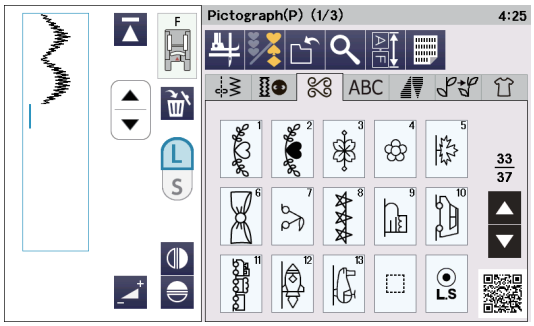
NOTE:

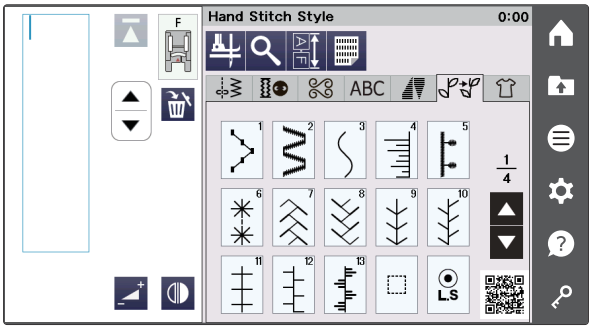
- If you created any folders before, those folders will also appear.
- If you cannot find the desired folder or the file in the page, press the next or previous page key ② to display the other pages.

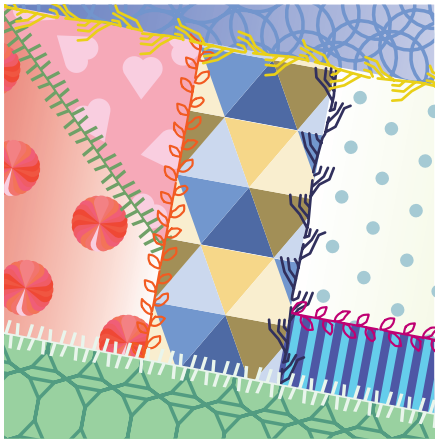
Select the desired folder and the file list will appear.
Select the desired file.

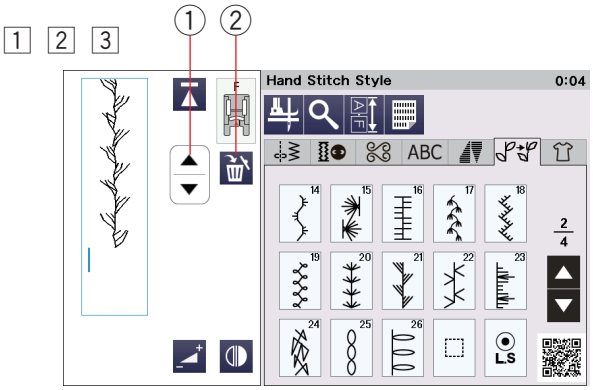


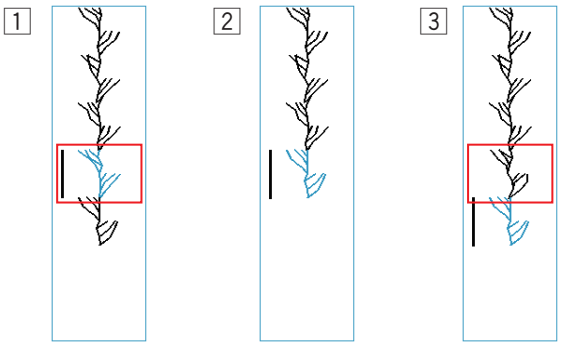
The screen will return to the ordinary sewing window showing the saved pattern combination or monogram.

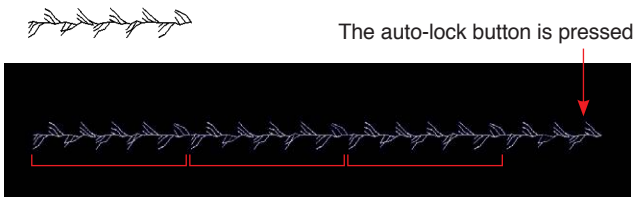












HAND STITCH STYLE

Hand Stitch Style

You can create your own heartful seams as if sewn by hands by giving subtle differences in sewing patterns. This category is for creating the shapes of patterns (stitches) called Hand Stitch Style.

It can be used for decorative patterns of children's clothing or small articles other than crazy quilts.

Use thick thread (#30) for more effective sewing results.

When you select categories for Hand Stitch Style, it would be automatically switched to the Program Mode.

You can enjoy the sewing results every time you change the patterns you desire.
By combining those patterns with subtle differences, you can get unique feelings of pattern unlike regular ones.

Shapes of patterns may be distorted depending on types, thickness and the speed of sewing of the fabric.
Always test sew on a scrap piece of the fabric that you wish to use.

Example:

1 Select pattern #21 for 5 times.
5 patterns with subtle differences are entered.

2 Check the sewing image. Test sew on a scrap piece of the fabric that you wish to use.

3 You can delete or replace selected patterns individually.

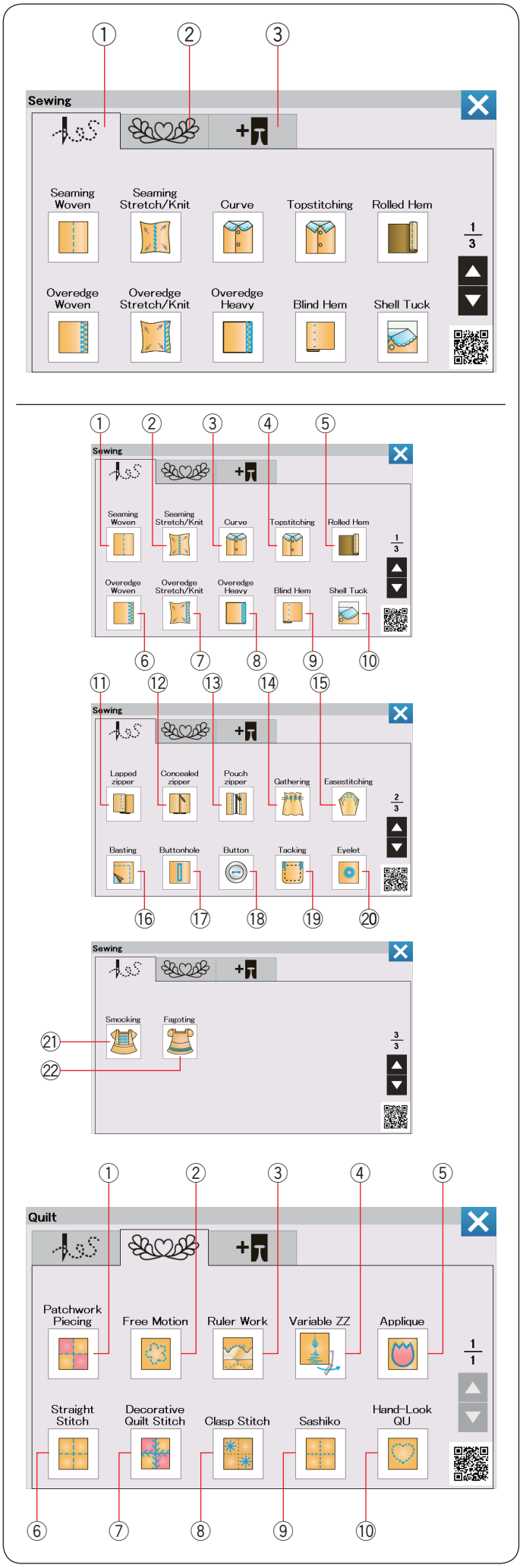
Replacing stitch pattern:
When you want to replace the 4th pattern;

1 Press the cursor key ① for 2 times to move the cursor to the 4th stitch pattern.
The pattern with cursor on the left will be turned to blue.

2 Press the delete key ②.

3 Select pattern #21 for 1 time, then a pattern with subtle differences will be applied to the 4th pattern.

Start sewing. The selected pattern will be sewn repeatedly.
If the auto-lock button is pressed while sewing in the middle of the pattern combination, the machine stops automatically after completing the pattern.



SEWING APPLICATION

Variety of Sewing Application

Sewing application is a unique feature that provides you with useful sewing applications.

Press the sewing application tab and the sewing application menu will open (refer to page 34).
Press one of the tabs to select the category.

① Sewing
② Quilt

The sewing applications using optional presser feet can be selected by pressing optional foot tab ③.
Please refer to optional feet instructions for usage details.

③ Optional foot tab

Sewing

In the Sewing category of the sewing application provides you with 22 useful sewing applications.

The 22 sewing applications are as follows:

① Seaming Woven
② Seaming Stretch/Knit
③ Curve
④ Topstitching
⑤ Rolled Hem
⑥ Overedge Woven
⑦ Overedge Stretch/Knit
⑧ Overedge Heavy
⑨ Blind Hem
⑩ Shell Tuck
⑪ Lapped zipper
⑫ Concealed zipper
⑬ Pouch zipper
⑭ Gathering
⑮ Easestitching
⑯ Basting
⑰ Buttonhole
⑱ Button
⑲ Tacking
⑳ Eyelet
㉑ Smocking
㉒ Fagoting

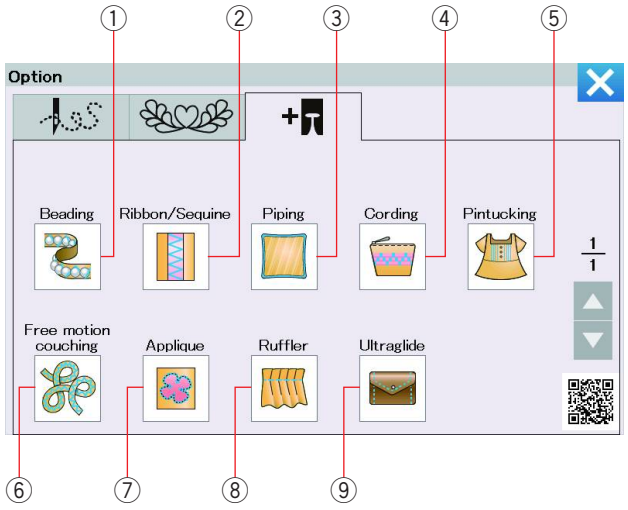
Quilt

In this category, 10 types of useful stitches for quilting are available.

Press the quilt icon tab and the quilt sewing application menu will open.

The 10 quilt sewing applications are as follows:

① Patchwork Piecing
② Free Motion
③ Ruler Work
④ Variable Zigzag
⑤ Applique
⑥ Straight Stitch
⑦ Decorative Quilt Stitch
⑧ Clasp Stitch
⑨ Sashiko
⑩ Hand-Look QU



Optional Sewing Application

Option category of the sewing application provides you with 9 useful sewing applications.

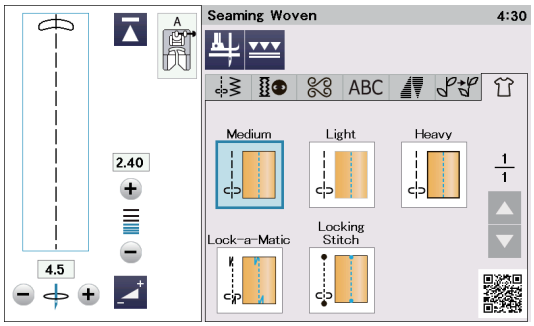
Press the optional foot tab and the optional sewing application menu will open.

The 9 optional sewing applications are as follows:

① Beading
② Ribbon/Sequine
③ Piping
④ Cording
⑤ Pintucking
⑥ Free motion couching
⑦ Applique
⑧ Ruffler
⑨ Ultraglide

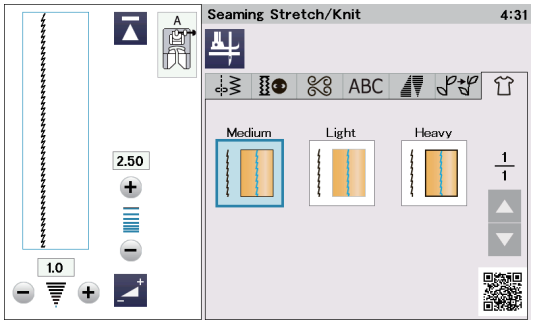
Refer to the instruction on optional foot for sewing.

Sewing Application



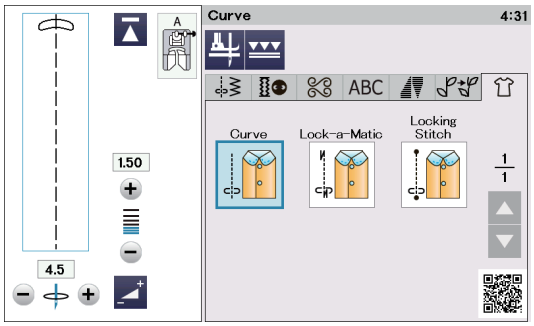
Seaming Woven

Straight stitches for seaming regular woven fabrics.



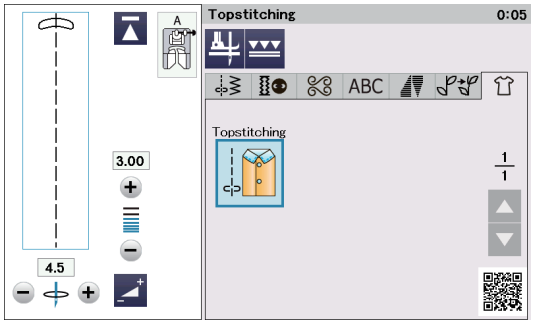
Seaming Stretch/Knit

Narrow stretch stitches for seaming stretch or knit fabrics.



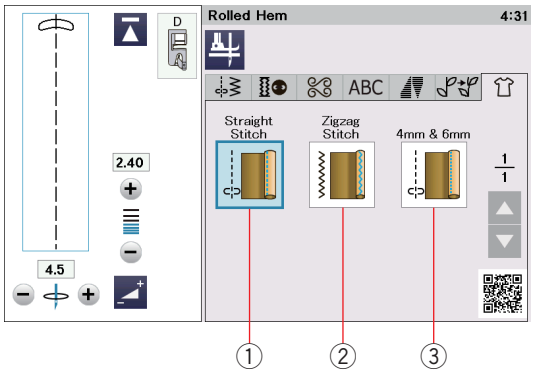
Curve

Short straight stitches for seaming curved line.



Topstitching

Long straight stitch for topstitching with thick threads.

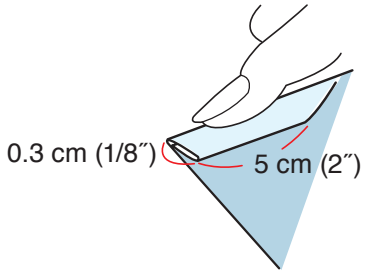


Rolled Hem

① Straight Stitch
Rolled hemming with straight stitch

② Zigzag Stitch
Rolled hemming with narrow zigzag stitch

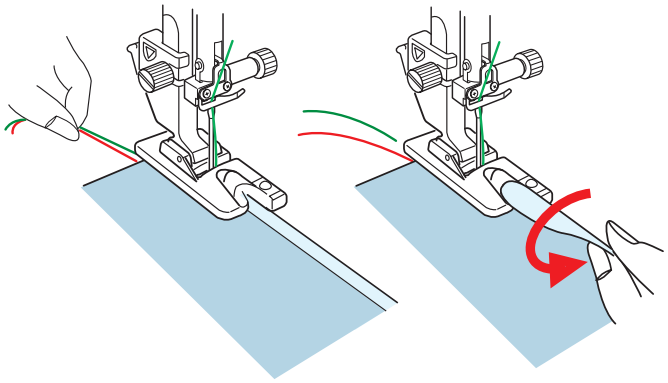
③ 4 mm & 6 mm
Rolled hemming using optional rolled hemming feet D1 and D2



To sew:

Attach the rolled hem foot D.

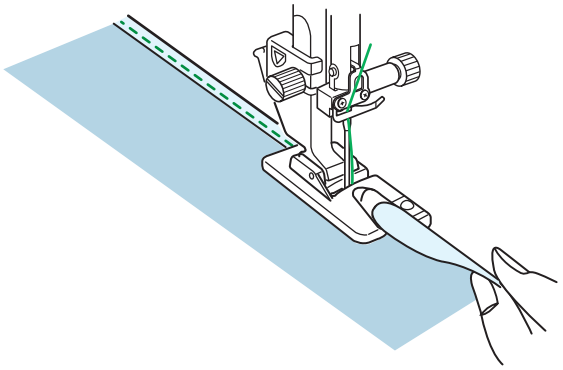
Fold the fabric edge twice to form a hem, 0.3 cm (1/8″) wide and 5 cm (2″) long then press.



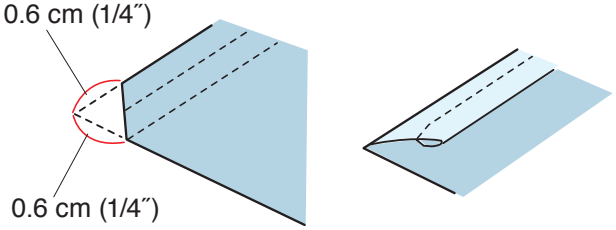
Place the fabric aligning the hem edge with the guide of the foot. Turn the hand wheel to lower the needle to the starting point.

Lower the foot and sew several stitches slowly while pulling on the threads to assist feeding the fabric.

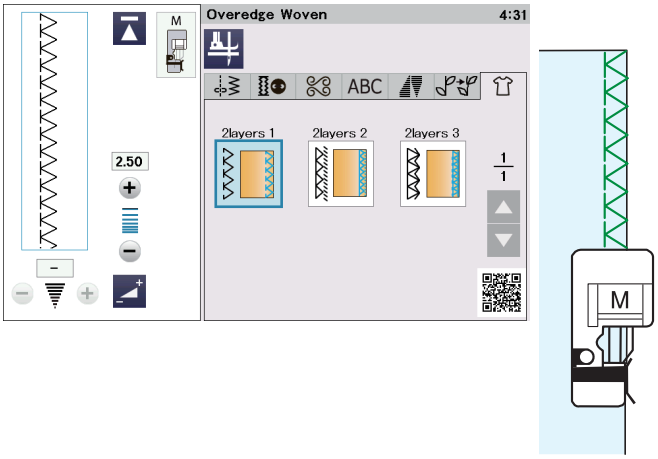
Stop the machine and lower the needle into the fabric. Raise the foot and insert the folded portion of the fabric into the curl of the foot.



Lower the foot and sew while lifting the edge of the fabric to keep it feeding into the curl smoothly and evenly.

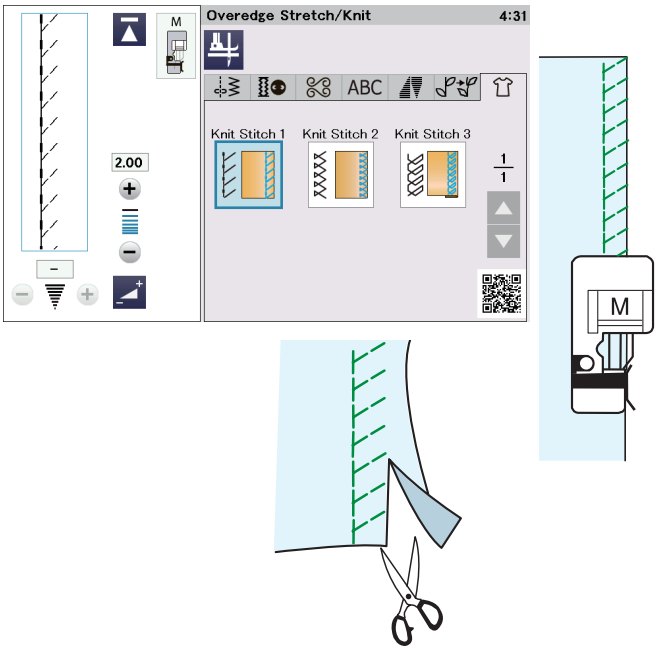


NOTE:
Trim the corners 0.6 cm (1/4″) to reduce bulk.



Overedge Woven

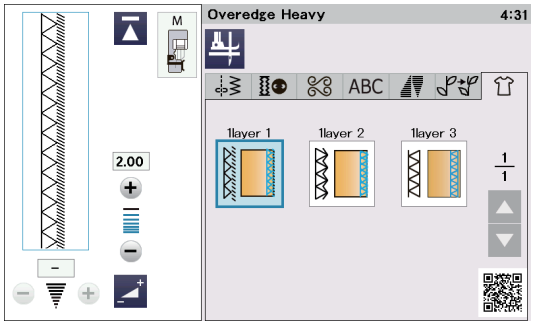
Overcasting stitch for 2 layers of regular woven fabrics.



Overedge Stretch/Knit

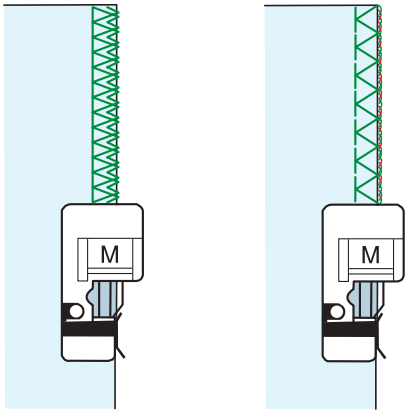
Knit stitch for finishing raw edges of stretch or knit fabrics.

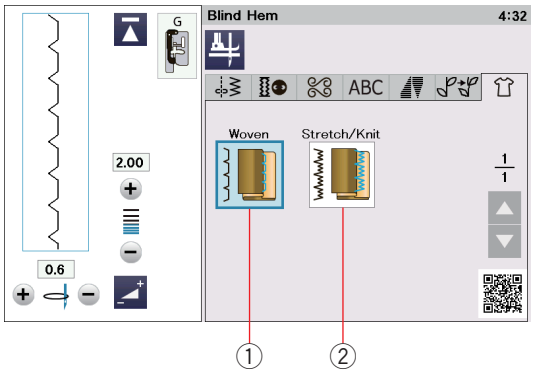
For better results, use the zigzag foot A and sew leaving an adequate seam allowance.
After sewing, trim the seam allowance close to the stitches.



Overedge Heavy

Double overedge stitch for preventing raw edges of linens and gabardines from ravelling.



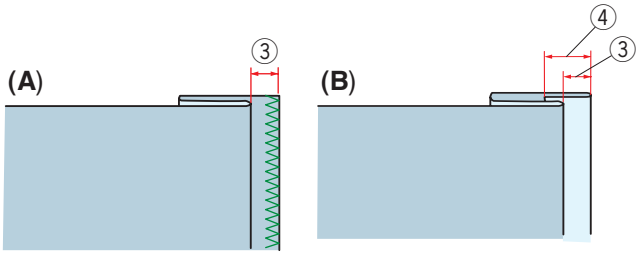


Blind Hem

The following 2 options are available.

① Woven
For blind hemming regular woven fabric

② Stretch/Knit
For blind hemming stretch or knit fabric.

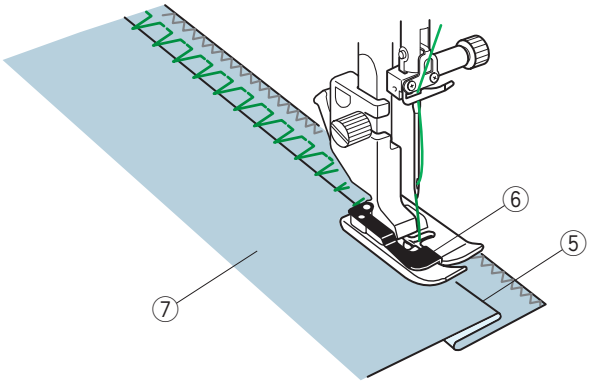


To sew:

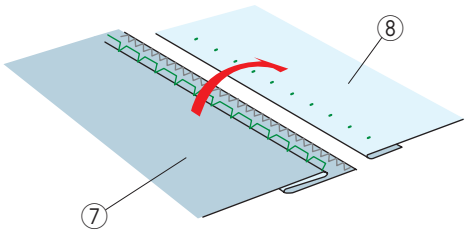
Attach the blind hem foot G.

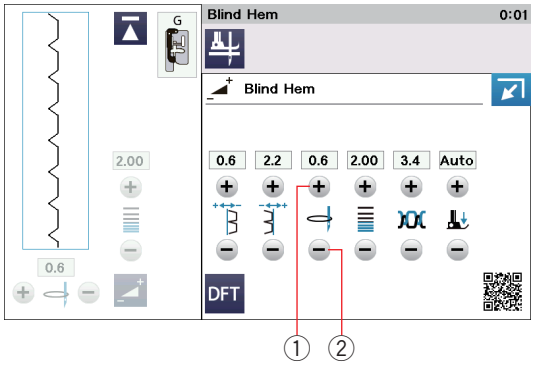
Fold the fabric to form a hem leaving a 0.5 cm (1/4″) allowance as shown.
③ 0.5 cm (1/4″)

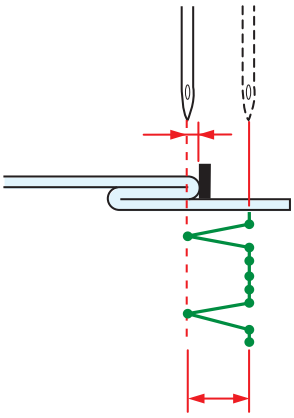
(A) Medium to heavy fabrics: The raw edge should be overcasted.
(B) Fine fabrics: Fold the raw edge 1 cm (1/2″).
④ 1 cm (1/2″)



Position the fabric so that the fold comes to the left side of the guide on the foot. Lower the presser foot.
The needle should just pierce the folded edge when it comes over to the left side.
Adjust the position of the needle drop if necessary.
Sew guiding the fold along the guide.
⑤ Fold
⑥ Guide
⑦ Wrong side of the fabric
After sewing is finished, open the fabric flat.
The seam on the right side of the fabric is almost invisible.
⑦ Wrong side of the fabric
⑧ Right side of the fabric







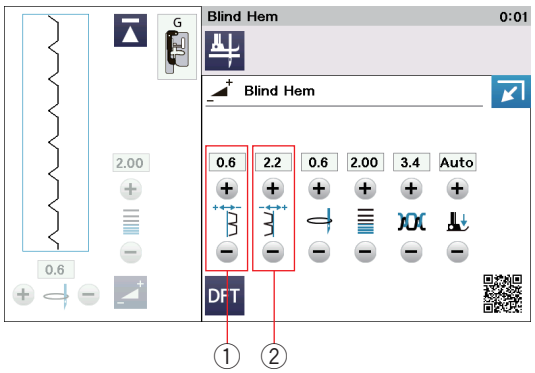
Adjusting the needle drop position

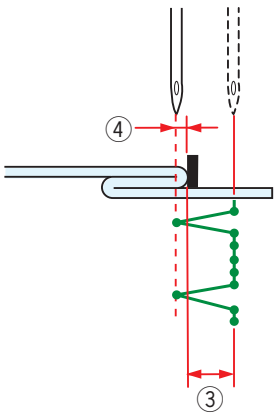
Press the adjust key to expand the manual setting window.

Press the “+” key ① in the upper row to move the needle drop positions to the left.
Press the “–” key ② in the upper row to move the needle drop positions to the right.

The needle drop position will change, while the stitch width (2.8 mm) remains consistent.
The distance between the left needle drop position and guide of the foot is indicated in millimeters.

NOTE:
You can alter the stitch width by changing the right needle drop position.

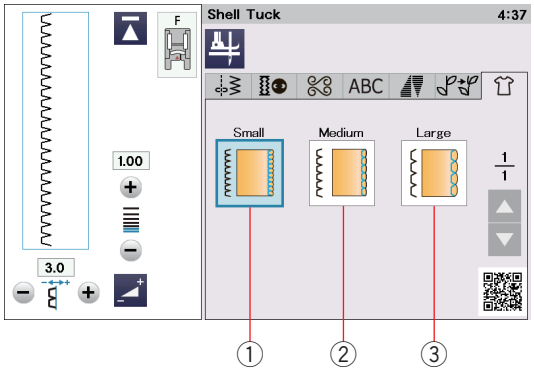


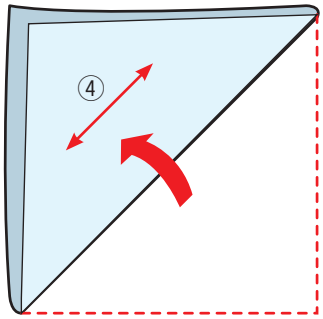


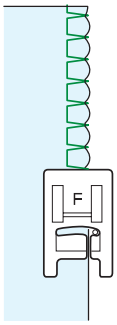
Altering blind hem stitch width

Press the “+” key in the row ② to increase the stitch width ③.
Press the “–” key in the row ② to decrease the stitch width ③.

NOTE:
You can move the left needle drop position ④ with the “+” or “–” key in the row ①.







Shell Tuck

The following 3 options are available.

① Small
Narrow shell tuck stitch

② Medium
Medium width shell tuck stitch

③ Large
Regular shell tuck stitch

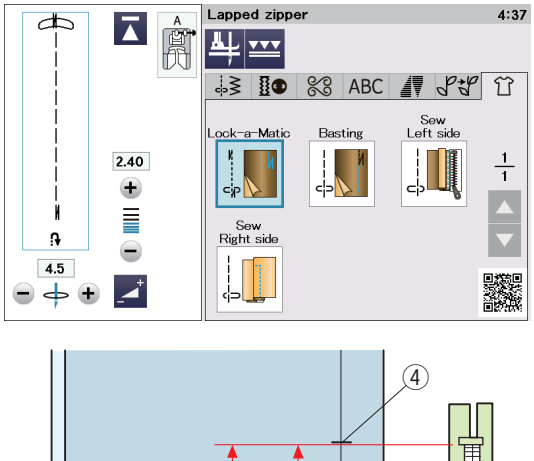
To sew:

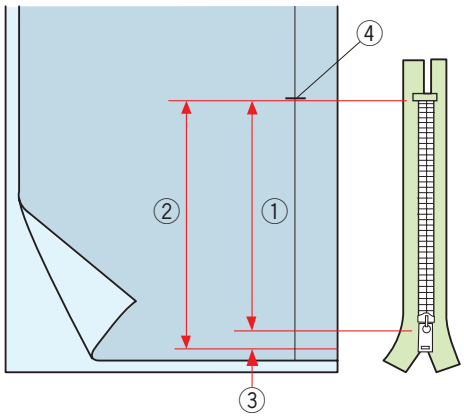
Use a light weight fabric (Tricot, for example).
Fold the fabric in bias ④ as shown and stitch on the fold.

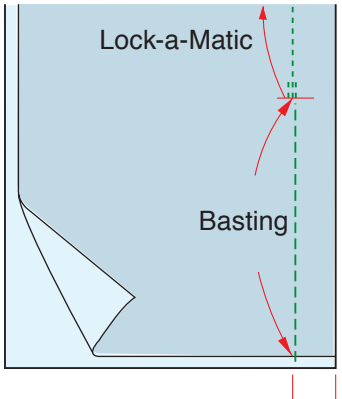
Allow the needle to barely clear the folded edge to create a shelled edge.

If you sew shell tucks, space the rows at least 1.5 cm (5/8″) apart.

④ Bias direction





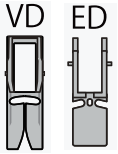




Lapped Zipper Sewing

Press the lapped zipper icon and the zipper sewing window will open.
Press the sewing step icon and the machine setting will automatically adjust to suit each sewing step.

NOTE: Dual feed foot VD (single) and dual feed zipper foot ED (single) appear on the visual touch screen when the dual feed key is pressed. They are optional items. Dual feed zipper foot ED (single) is used with dual feed foot VD (single) together.

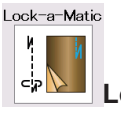


Fabric preparation

Add 1 cm (3/8″) to the zipper size. This is the overall opening size.
Mark the end of opening.

① Zipper size
② Opening size
③ 1 cm (3/8″)
④ End of opening

Attach the zigzag foot A.



Lock-a-Matic

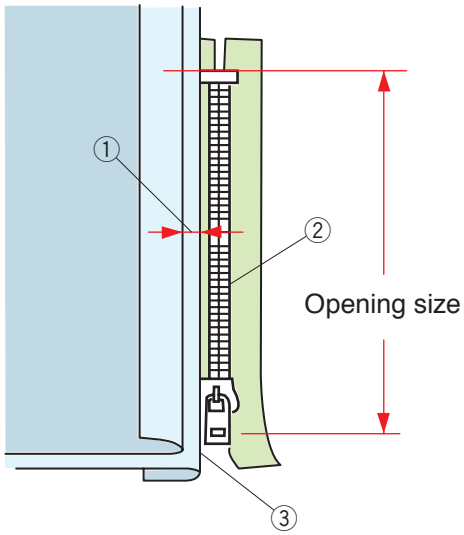
Place the right sides of the fabric together and sew to the end of the opening leaving a 2 cm (3/4″) allowance.

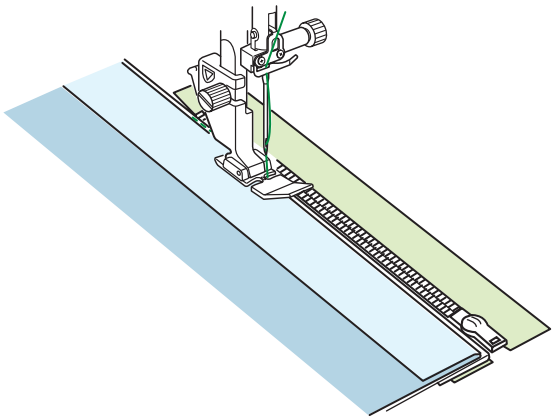
⑤ 2 cm (3/4″)

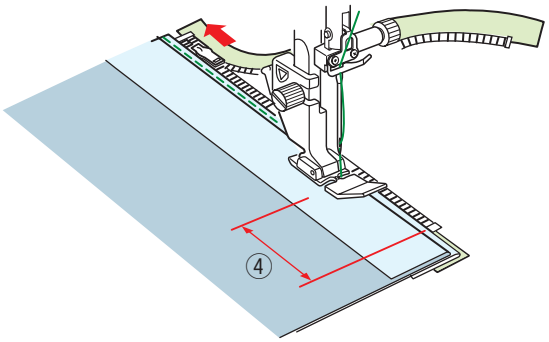


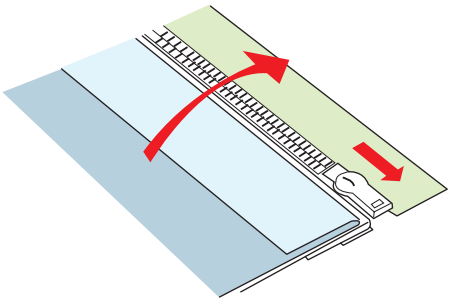
Basting

Baste the zipper opening.











Sew left side

Attach the zipper foot E.
Fold back the left seam allowance. Turn the right seam allowance under to form a 0.2 to 0.3 cm (1/8″) fold.
Place the zipper teeth next to the fold and pin in place.

① 0.2-0.3 cm (1/8″)
② Zipper teeth
③ Fold

Lower the foot onto the topside at the bottom of the zipper so that the needle pierces the fabric next to the fold and the zipper tape.
Sew along the zipper guiding the zipper teeth along the bottom edge of the foot.

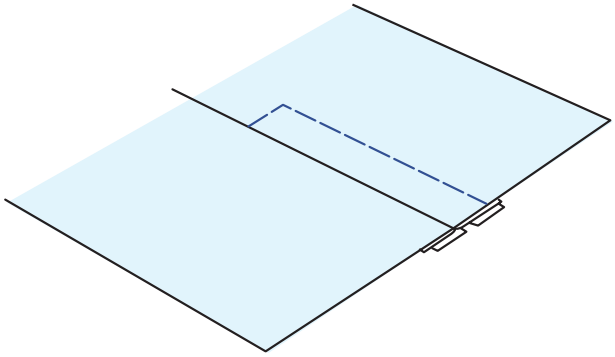
Sew through all layers next to the fold.

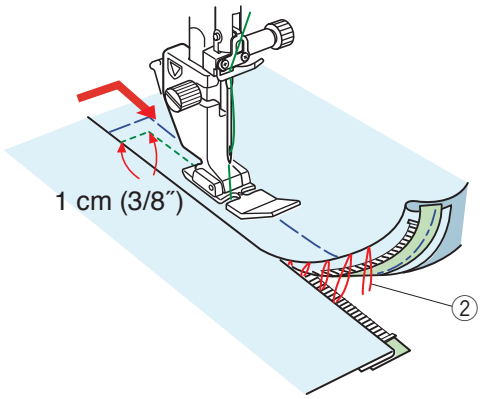
Stop 5 cm (2″) before zipper foot E reaches the slider on the zipper tape.

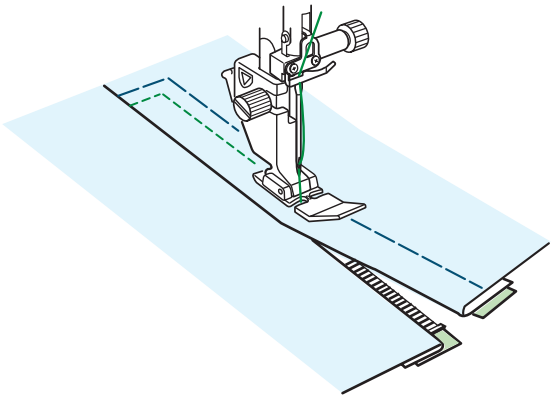
④ 5 cm (2″)

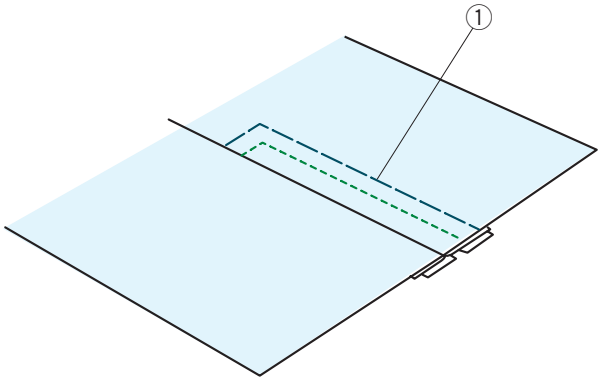
Raise the foot and open the zipper. Lower the foot and stitch the remainder of the seam.

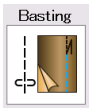
Close the zipper and spread the fabric open flat with the right side of the fabric facing up.





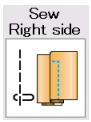






Basting

Replace the foot with the zigzag foot A.
Baste the opened fabric and zipper tape together.
① Basting



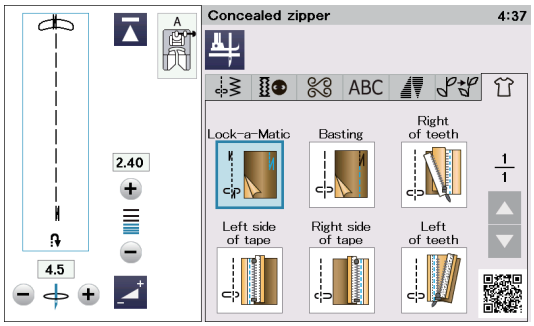
Sew right side

Replace the foot with the zipper foot E.
Backstitch across the end of opening to 1 cm (3/8″).
Stitch through the garment and zipper tape, guiding the zipper teeth along the bottom edge on the foot.
Stop about 5 cm (2″) from the top of the zipper.
Lower the needle into the fabric, raise the foot and remove the basting stitches.
② Basting stitches

Open the zipper and move the slider to the rear of the foot.

Lower the foot and stitch the remainder of the seam making sure the fold is even.

Remove the basting stitches.

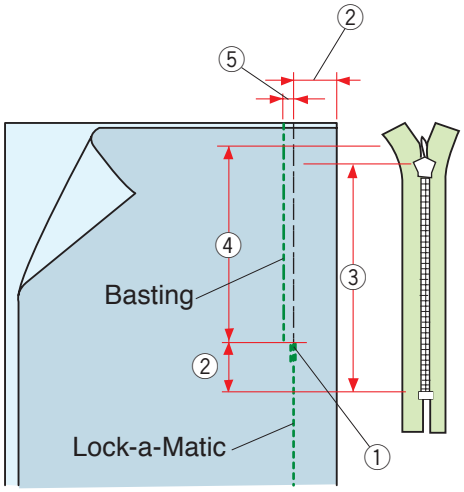


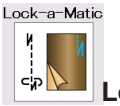
Concealed zipper

Press the concealed zipper icon and the window will show the step-by-step icon keys.

Prepare a concealed zipper 2 cm (3/4″) longer than the opening size.

Press the sewing step icon and machine settings will automatically adjust to suit each sewing step.

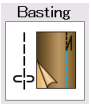




Lock-a-Matic

Attach the zigzag foot A. Place the right sides of the fabric together and sew to the end of the opening with a 2 cm (3/4″) seam allowance. Press the reverse button to lock the seams.

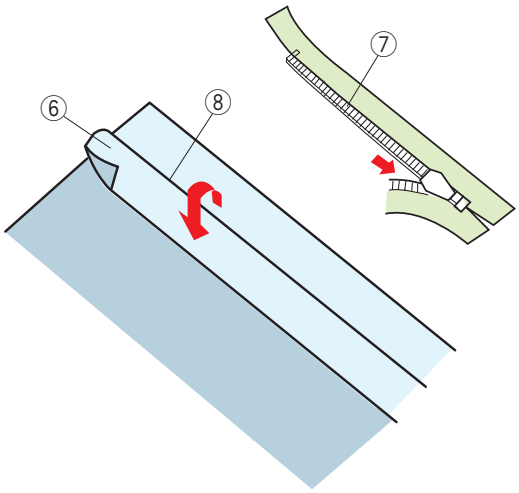
① End of opening
② 2 cm (3/4″)
③ Zipper size
④ Opening size



Basting

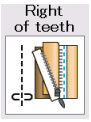
Baste the opening 0.3 cm (1/8″) inside of the seam line.

⑤ 0.3 cm (1/8″)



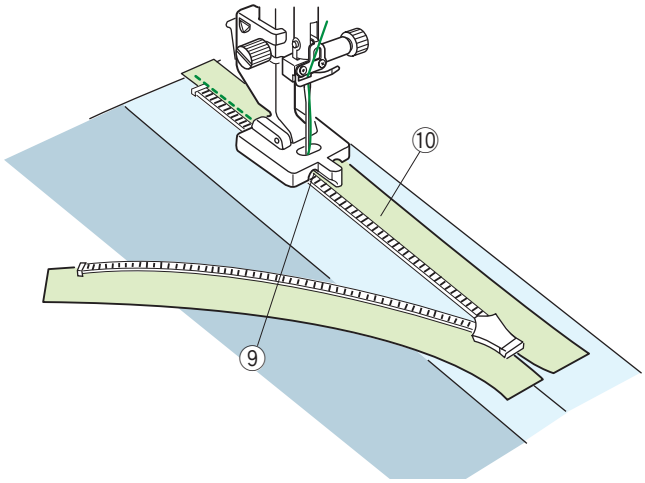
Fold up the left seam allowance to the bodice. Open the zipper and put it on the right seam allowance with the back side up.
Place the right zipper teeth next to the fold and pin it in place.

⑥ Left seam allowance
⑦ Zipper teeth
⑧ Fold

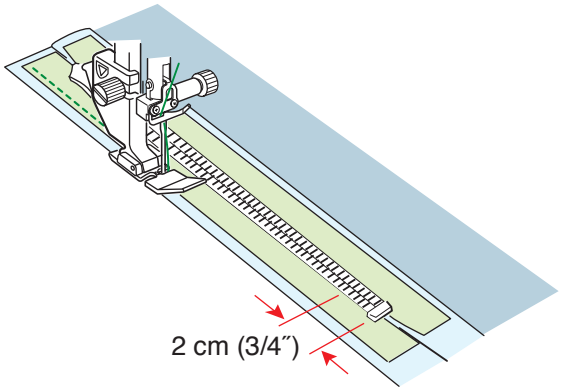


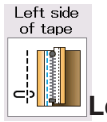
Right of teeth

Attach the concealed zipper foot Z.
Raise the zipper teeth on the right and lower the foot so the left groove of the foot catches the zipper teeth.
Stitch through the zipper tape and fabric up to the end of the opening.
Reverse the stitches to secure the seam.



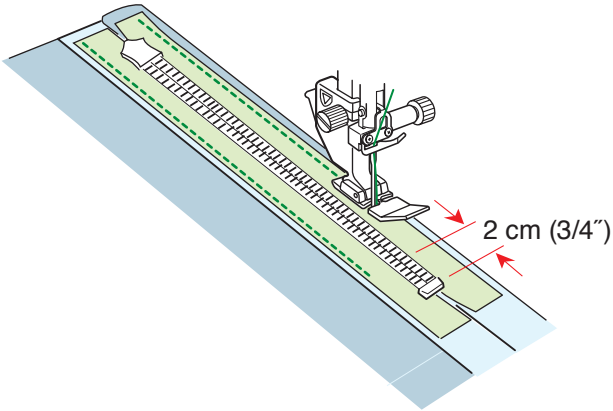
⑨ Left groove
⑩ Zipper tape

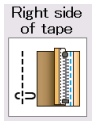




Left side of tape

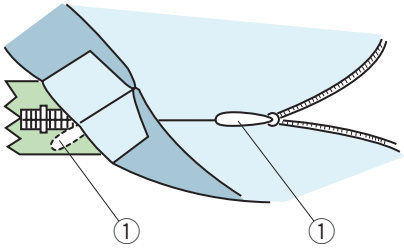
Raise the foot and close the zipper.
Replace the foot with the zipper foot E.
Turn and fold the bodice to the right. Seam along the edge of the left zipper tape and reverse the stitches 2 cm (3/4″) before the zipper bottom.

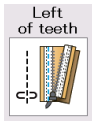




Right side of tape

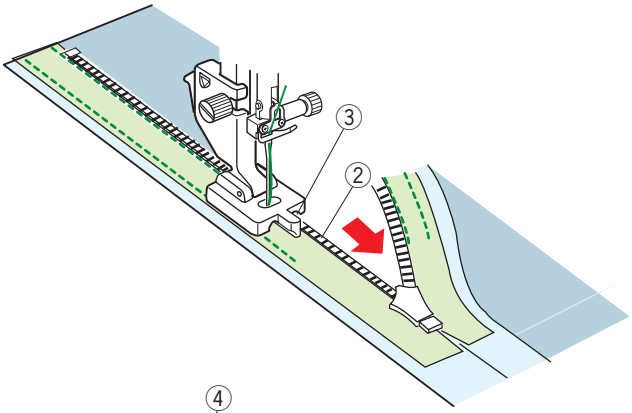
Turn and fold the bodice to the left.
Seam along the edge of the right zipper tape and reverse the stitches 2 cm (3/4″) before the zipper bottom.



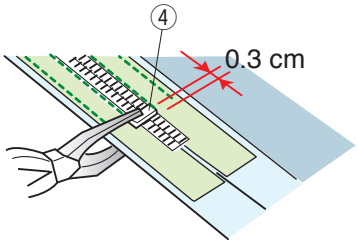


Left of teeth

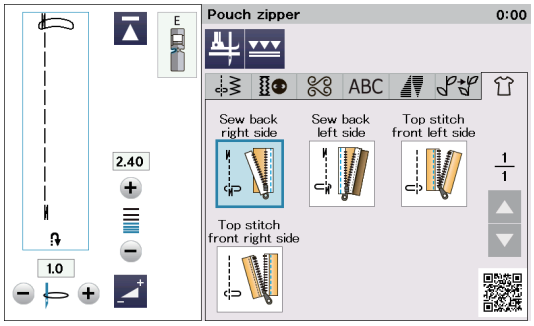
Raise the foot and replace it with the concealed zipper foot Z.
Remove the basting stitches.
Open zipper and insert the pull tab between fabric and zipper tape to allow the slider to reach the stopper.
① Pull tab

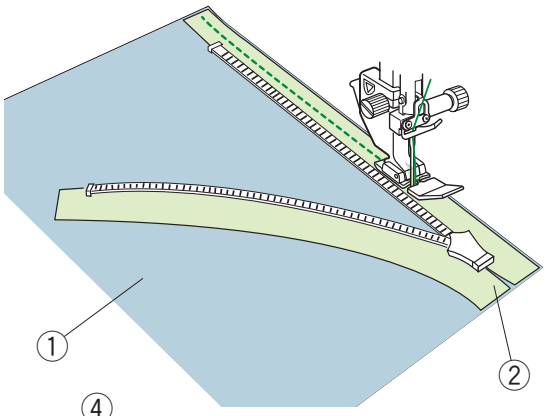


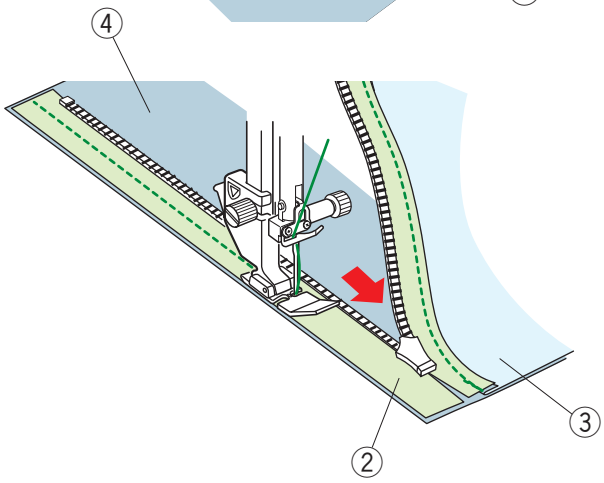
Raise the zipper teeth on the left and lower the foot so the right groove of the foot catches the zipper teeth. Stitch through the zipper tape and fabric up to the end of the opening. Reverse the stitches to secure the seam.
② Zipper teeth
③ Groove

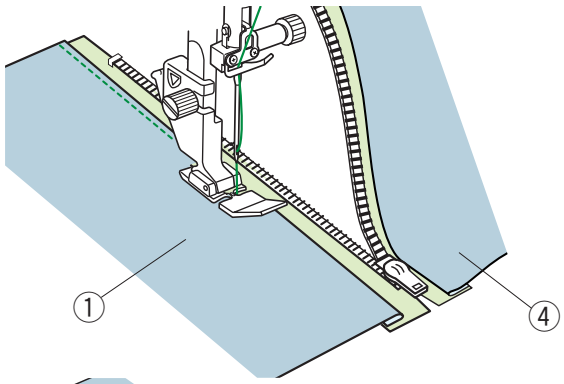


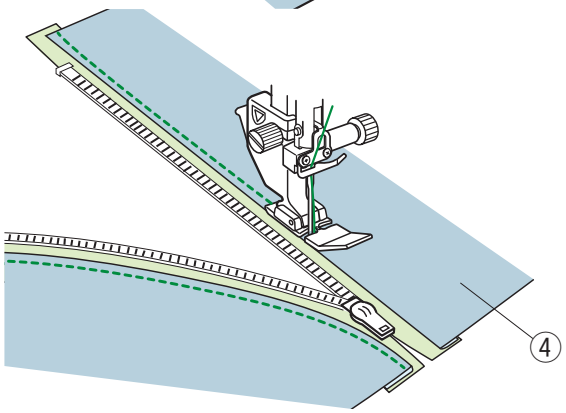
Slide up the stopper to 0.3 cm (1/8″) below the end of the opening and fasten the stopper with pliers.
④ Stopper







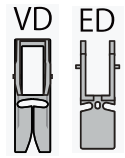


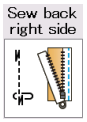


Pouch zipper

Press the pouch zipper icon and the window will show the step-by-step icon keys.
Repare 2 pieces of fabric and a zipper tape.

NOTE: Dual feed foot VD (single) and dual feed zipper foot ED (single) appear on the visual touch screen when the dual feed key is pressed. They are optional items. Zipper foot ED (single) is used with dual feed foot VD (single) together.

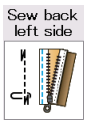




Sew back right side

Attach the zipper foot E.
Open the zipper.
Place the right sides of the fabric and zipper tape together aligning both right edges.
Seam along the zipper aligning the right edge of the foot and zipper tape.
Stop 5 cm (2″) before zipper foot E reaches the slider on the zipper tape. Close the zipper and stitch the remainder of the seam.

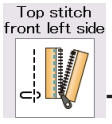
① Right side of the fabric A
② Wrong side of the zipper tape



Sew back left side

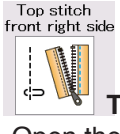
Fold back the right seam allowance.
Place the right sides of the other fabric and zipper tape together aligning both left edges.
Open the zipper and seam along the zipper aligning the left edge of the foot and zipper tape.
Stop 5 cm (2″) before zipper foot E reaches the slider on the zipper tape. Close the zipper and stitch the remainder of the seam.

③ Wrong side of the fabric A
④ Right side of the fabric B



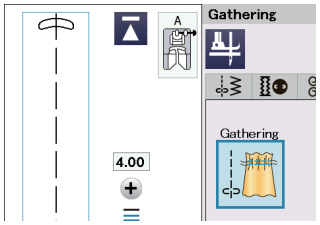
Topstitch front left side

Fold back the seam allowance.
Spread the fabric open flat with the right side of the fabric facing up. Open the zipper.
Stitch along the fold of fabric, aligning the right side of the zipper foot with the folded edge.
Stop 5 cm (2″) before zipper foot E reaches the slider on the zipper tape. Close the zipper and stitch the remainder of the seam.

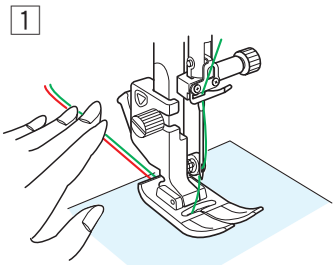


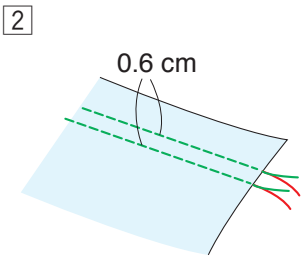
Topstitch front right side

Open the zipper. Stitch along the fold of fabric, aligning the left side of the zipper foot with the folded edge.
Stop 5 cm (2″) before zipper foot E reaches the slider on the zipper tape. Close the zipper and stitch the remainder of the seam.



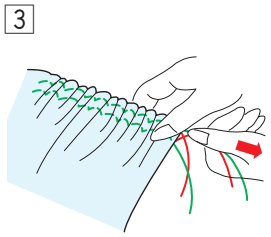
Gathering

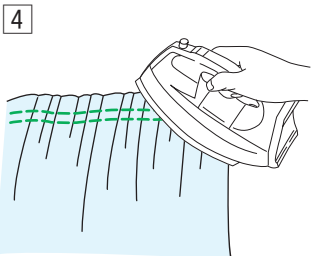




1 Pull both threads 10 cm (4″) under and behind the presser foot (refer to page 32).

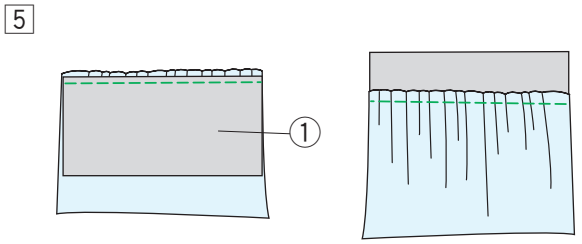
2 Sew two rows of straight stitches 0.6 cm (1/4″) apart. Knot the threads at the beginning.





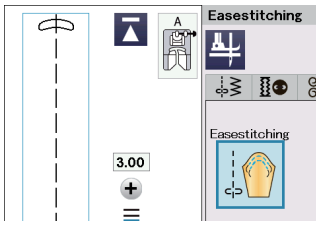
3 Pull the bobbin threads at the end to gather the fabric.

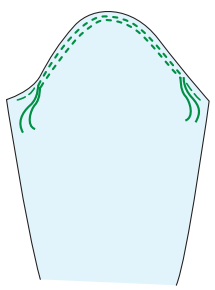
4 Knot the threads at the end and distribute the gathers evenly.

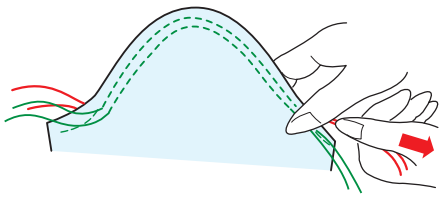


5 Prepare the fabric to attach the gathering.
Exit the sewing application.
Select the Straight Stitch U1.
Set the thread tension to “3.8” and the stitch length to “2.40” (default settings).
Place the wrong side of the fabric ① under the gathering.
Sew the straight stitch between the two gathering rows.
Remove the two rows of straight stitches.

NOTE:
You may sew the straight stitch under the two gathering rows to cover the remains of gathering rows.





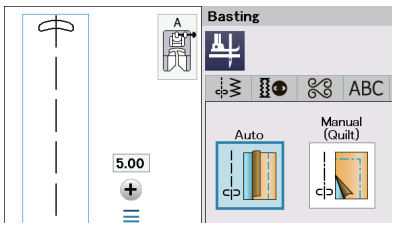


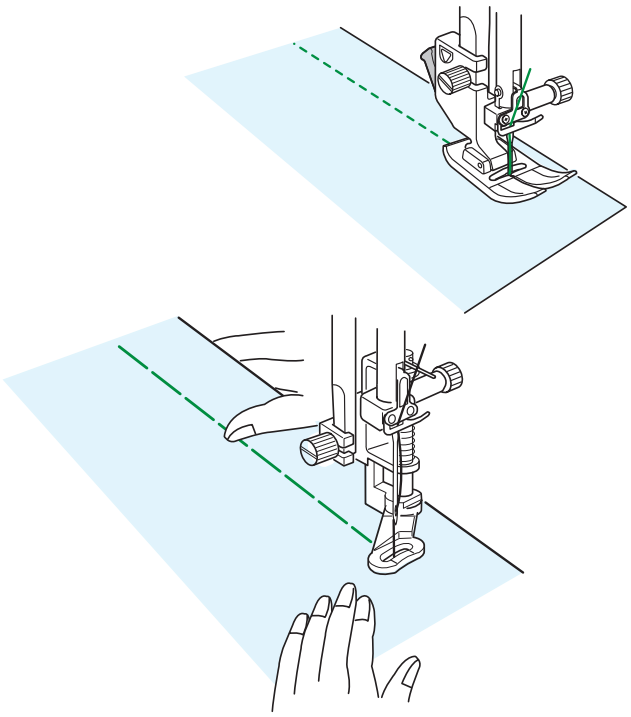
Easestitching

In addition to the regular gathering stitch, this section offers you a special stitch for easing sleeve tops.

Pull both of the threads about 10 cm (4″).
Sew a pair of lines, 3 mm (1/8″) apart, along the edge of the sleeve top.

Pull the bobbin threads to contract the sleeve top carefully, matching it with the armhole size.
Make sure not to make gathers in the sleeve top.





Basting

There are 2 basting stitches available in this section.

Basting (Auto)

This stitch is used for basting zipper tape or fitting of garments.
Sew in the same way as that for straight stitch sewing.

Basting (Manual/Quilting)

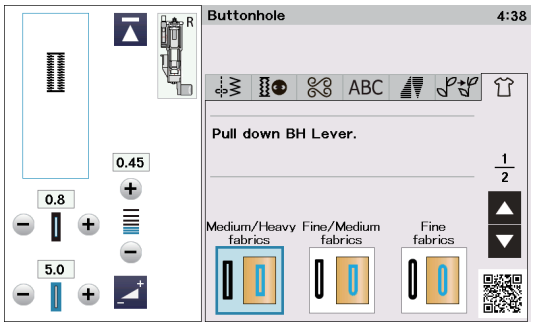
Attach the darning foot PD-H.

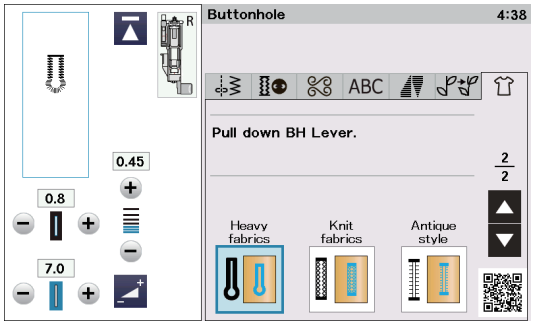
> **NOTE:**
> Refer to page 23 for how to attach the darning foot PD-H.

To sew

Hold the fabric taut and depress the foot control.
The machine will make one stitch and stop automatically.

Slide the fabric to the rear for the next stitch.





Buttonhole

Please refer to pages 54-61 for “BUTTONHOLES AND SPECIALTY STITCHES.

Medium/Heavy fabrics

Please refer to pages 54-57 for “B1 Sensor (Square) buttonhole”.

Fine/Medium fabrics

Please refer to page 61 for “B3 Round end buttonhole”.

Fine fabrics

Please refer to page 61 for “B4 Fine fabric buttonhole”.

Heavy fabrics

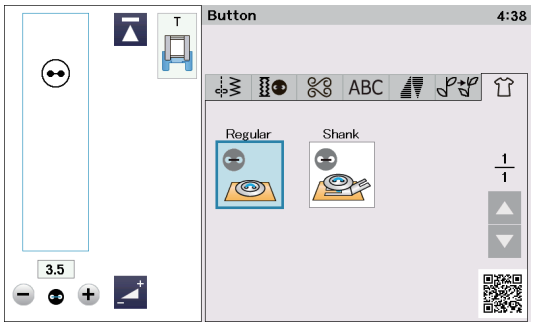
Please refer to page 61 for “B5 Keyhole buttonhole”.

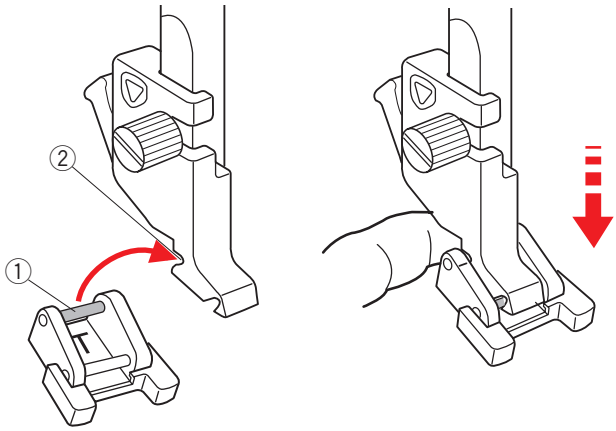
Knit fabrics

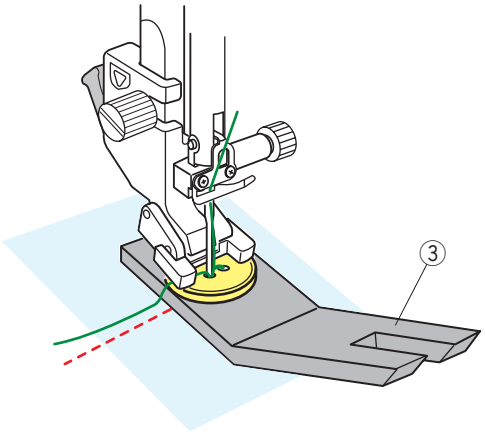
Please refer to page 61 for “B11 Knit buttonhole”.

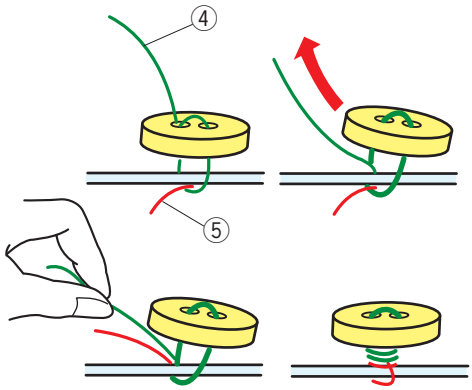
Antique style

Please refer to page 61 for “B12 Antique buttonhole”.









Button Sewing

When attaching a button to thick fabric, you need to make a shank by using the button shank plate.

The feed dog lowers automatically when selecting the button sewing section.

Attaching the button sewing foot T

Make sure to press the lockout key to lock the machine.
Raise the presser foot with the presser foot lifter.
Insert the rear pin of the foot into the rear groove of the foot holder.

① Rear pin
② Rear groove

Gently lower the presser foot lifter while holding the foot with your finger to fit the foot. Press the lockout key to unlock the machine.

Select the  icon to make a shank by using the button shank plate.
Place a button on the fabric and lower the needle into the left hole of the button by turning the handwheel with your hand.
Insert the button shank plate under the button.
Lower the foot to hold the button in place, aligning the direction of the button.

③ Button shank plate

NOTE:
The shank plate is double-sided.
The shank plate has two types of thickness; 4.5 mm and 3 mm.
Those thicknesses provide a space between the button and the garment for the tying.
Choose the desired type at your convenience.

Raise the needle by turning the handwheel until the needle bar swings to the right.
Press the “+” or “–” key so the needle enters into the right hole of the button. The maximum stitch width is 0.7 cm (1/4″).

Start sewing and continue until the machine stops automatically.

Remove the fabric from the machine.

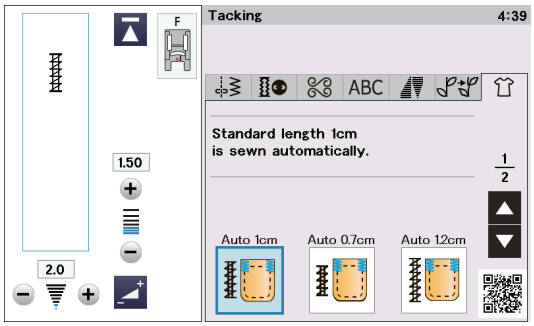
Cut the all threads leaving at least 10 cm (4″) tails.
Trim the thread at the beginning close to the fabric.

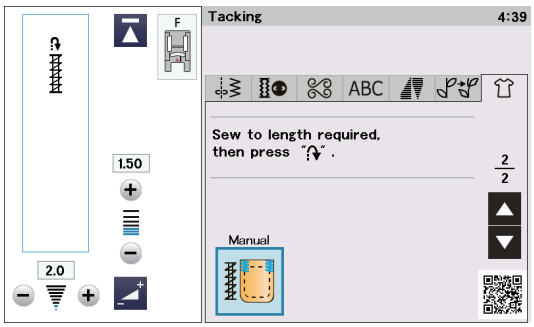
Pass the needle thread at the end of stitching through the left hole in the button, between the button and fabric.
Pull the needle thread to bring the bobbin thread up to the right side of the fabric.

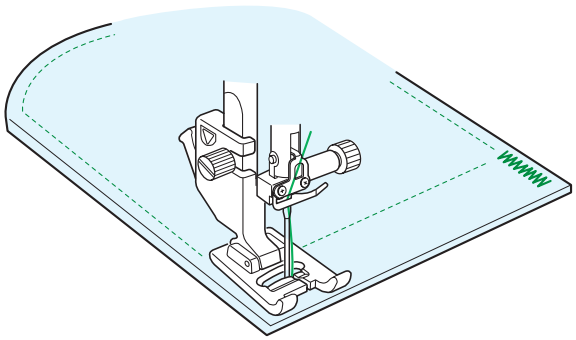
④ Needle thread at the end
⑤ Bobbin thread

Wind the threads to form a shank and knot them together.

NOTE:
The button shank plate cannot be used if the button is too thick.





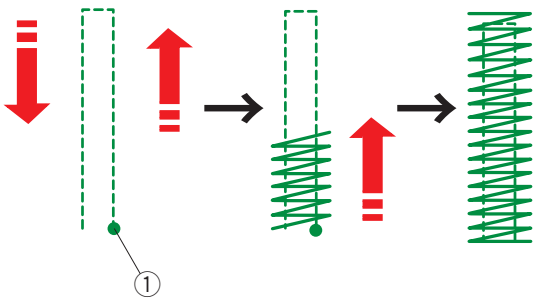


Tacking

Tacking is used to reinforce pockets, crotches and belt carriers where extra strength is needed.

There are 3 auto tacking sizes and manual tacking available.

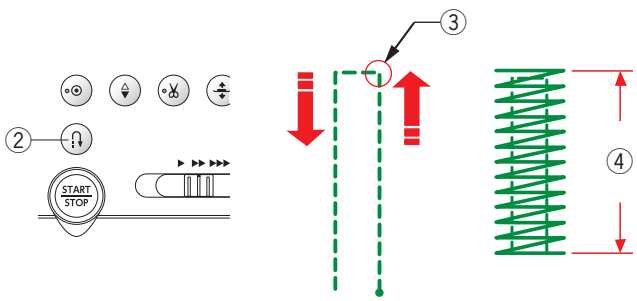
Attach the satin stitch foot F.



Auto tacking

Lower the needle at the starting point and start sewing. The machine will sew the tack of the selected size and stop automatically when it is finished.

① Starting point

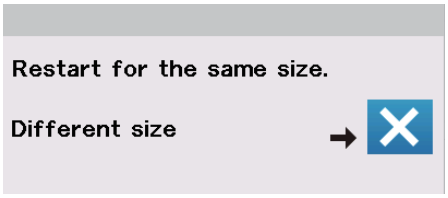


Manual tacking

Start the machine and sew to the required length ③, then press the reverse button ②. This sets the tack length ④. Continue sewing until the machine stops automatically.

③ Required length

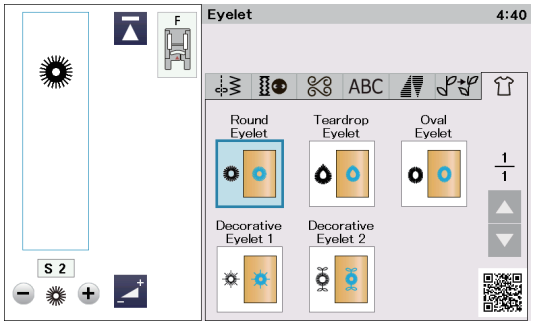
NOTE:
The maximum length of tacking is 1.5 cm (5/8″).



To sew the same size tack

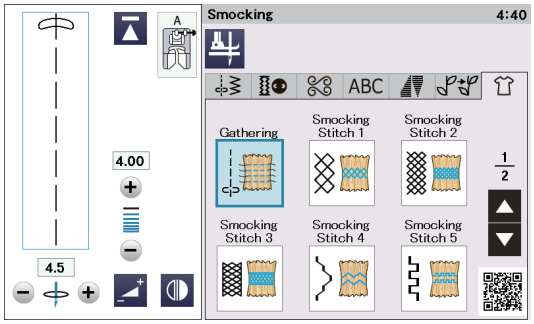
To sew another tack in the same size, simply start the machine and sew until the machine stops automatically.

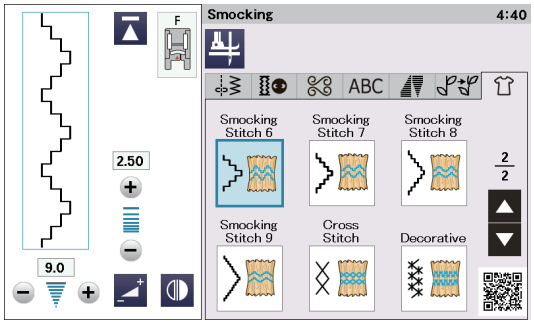
To sew the next tack in a different size, press the X key.



Eyelet

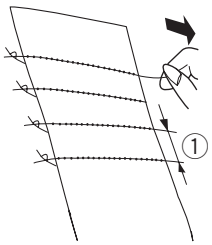
Please refer to page 66 for “B18-B22 Eyelets”.

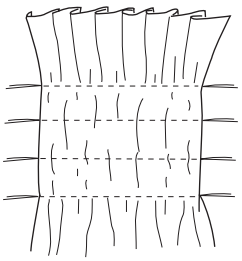




Smocking

Choose a soft, lightweight fabric such as batiste, gingham or challis. Cut the fabric three times wider than the projected width.





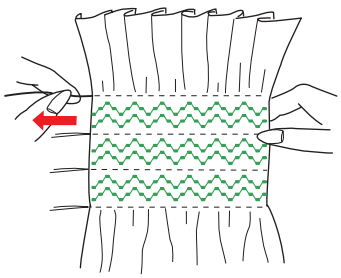
Gathering

Sew rows of straight stitches, 5/8″(1.5 cm) apart to across the area to be smocked.

① 5/8″ (1.5 cm)

Tie the threads along one edge.
Pull the bobbin threads at the end to gather the fabric.
Knot the threads at the end and distribute the gathers evenly.

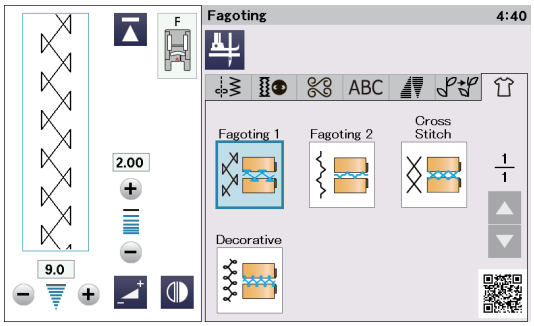
NOTE:
Pull up the bobbin thread and draw a 4″ (10 cm) thread tail to the back before starting to sew.
Use the thread cutter on the face plate.

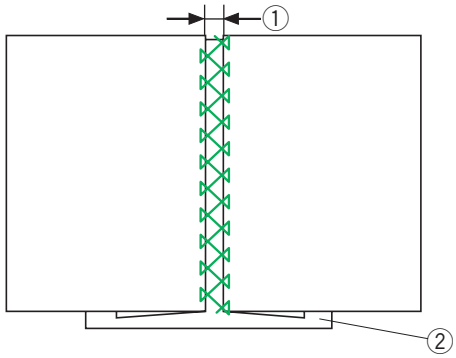


Smocking stitch

Select a smocking stitch.
Sew the smocking stitches between the gathered rows.

Remove the straight stitches between the gathered rows.





Fagoting

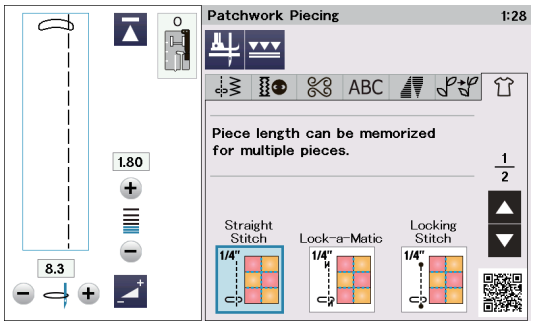
Use this stitch to join two pieces of fabric to create an open work appearance and add design interest.

Fold under each fabric edge 5/8″ (1.5 cm) and press. Pin the two edges to paper or tear away backing 1/8″ (0.3 cm) apart.

① 1/8″ (0.3 cm)
② Paper

Sew slowly, guiding the fabric so the needle catches the folded edge on each side.

After finishing sewing, tear away the paper.

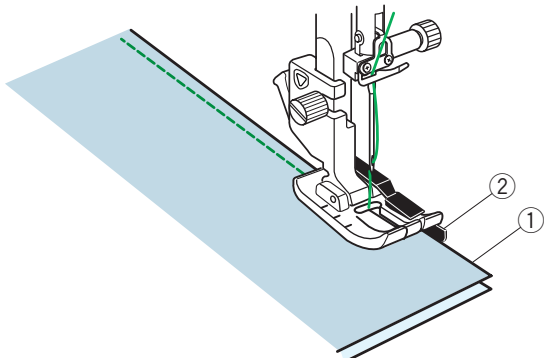


Quilt Application

Patchwork piecing

There are 6 stitches for seaming patchwork pieces in this section.

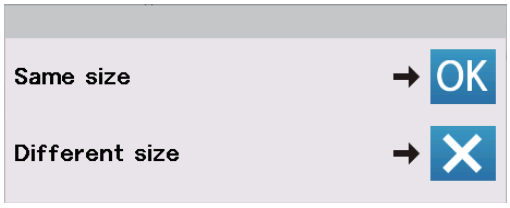
The default stitch length is set at 1.8 mm, ideal for patchwork piecing, but you can fine tune the stitch length by pressing the “+” or “–” key.



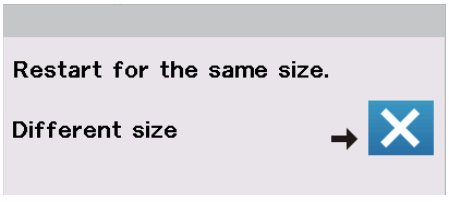
Attach 1/4″ seam foot O, which helps you to keep a constant 1/4″ (6 mm)* seam allowance.
Put 2 pieces of fabric with right sides together.
Place the patchwork pieces under the foot so that the edge of the fabric matches the guide on the presser foot.

① Edges of fabric
② Guide on the 1/4″ seam foot O

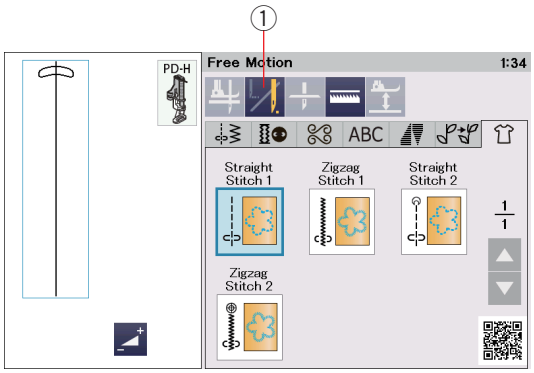
* You can choose 1/4″ (6 mm) or 7 mm seam allowance. Icons for 7 mm seam allowance are displayed on the next page (2/2).

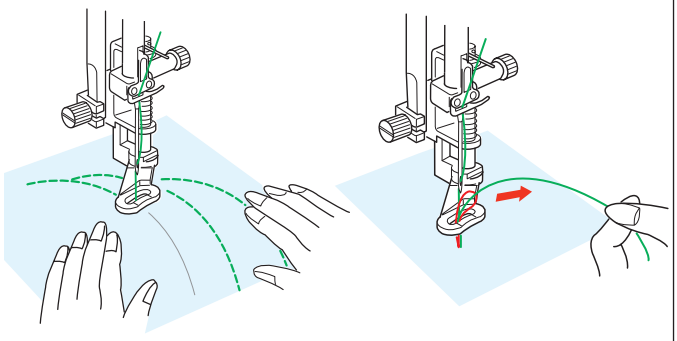


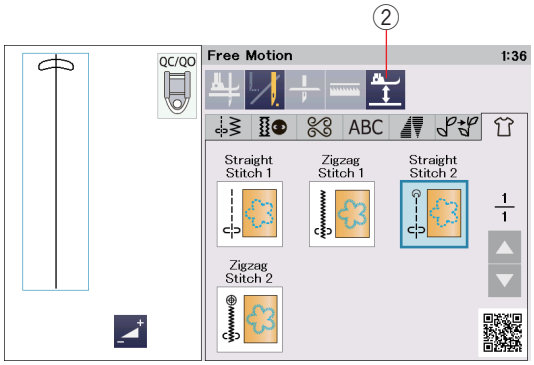
When you stop the machine, a message will appear.
Press the OK key and the machine memorizes the seam length to sew another piece of the same length.
Press the X key to sew in a different size.

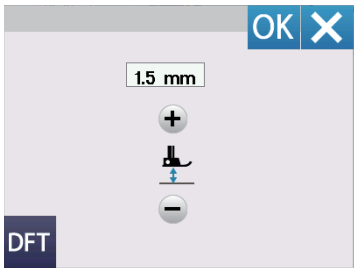


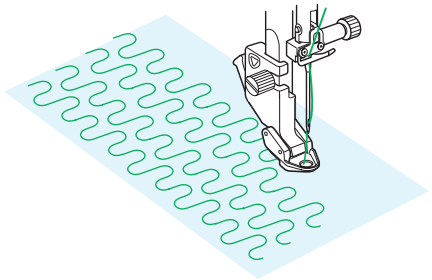
After sewing the memorized length, a message will appear.
To sew the same length, start the machine and it will stop automatically after sewing the memorized length.
Press the X key to sew in a different size.











Free Motion Quilting

The straight stitch needle plate is recommended for straight stitch 1 and straight stitch 2 (refer to page 33 for how to replace the needle plate).

For ordinary and bulky quilts, select “Straight Stitch 1” or “Zigzag Stitch 1”, and use the darning foot PD-H (refer to page 23 for how to attach the darning foot).
Select the “Straight Stitch 2” or “Zigzag Stitch 2” for flatter quilts and use the free quilting foot QC, QO or QV.
Refer to page 112 (button sewing foot) for how to attach the free quilt feet.

One Stitch Off

The machine stops automatically after sewing one stitch so that you can bring the bobbin thread up to prevent it from bunching up on the wrong side of the fabric.

Hold the needle thread and sew one stitch and the machine stops automatically.
Pull the needle thread up to bring the bobbin thread up.

Hold both the needle and bobbin threads and sew several stitches to secure the threads.
You can trim the thread tails with scissors.
The machine will stitch continuously when you resume sewing.

If you wish to start sewing without “one stitch off”, press the one stitch off key to cancel this function.
The key icon changes to .
When “one stitch off” is active, the key icon shows .
① One stitch off key

To sew

Sew at medium speed while guiding the fabric with your hands.
Move the quilt 3 mm or less per stitch.

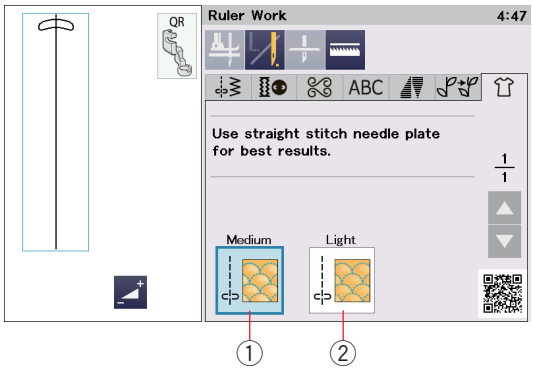
Foot Height for Free Motion Quilting

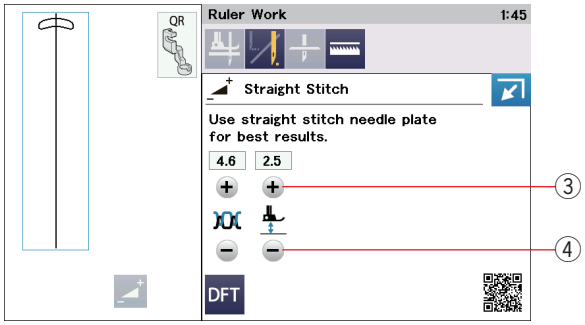
When “Straight stitch 2” or “Zigzag stitch 2” is selected, the height of down position of the free motion quilting feet (QC, QO, QV) is optimized automatically.

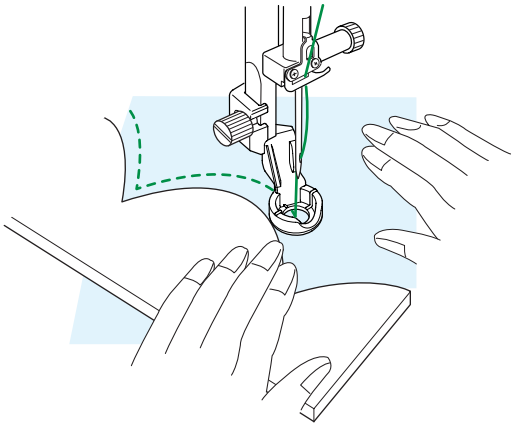
However, you can fine tune the foot height according to the quilt thickness.
Place the fabric under the foot and lower the foot.
Press the foot height key and the adjusting window opens. Adjust the foot height by pressing the “+” key or “–” key and press the OK key to register the setting.
② Foot height key

Reduce the height if the fabrics bounce when sewing.
Increase the height if the foot gets trapped in the fabrics when sewing.

NOTE:
- Purple tip needle is recommended for free motion quilting to prevent skipped stitch.
- Do not move the quilt layers toward you when the open-toe foot is attached.







Ruler Work

Guide the foot along the quilting template (optional) to create straight, curved or repetitious patterns depending on the shape of the ruler.

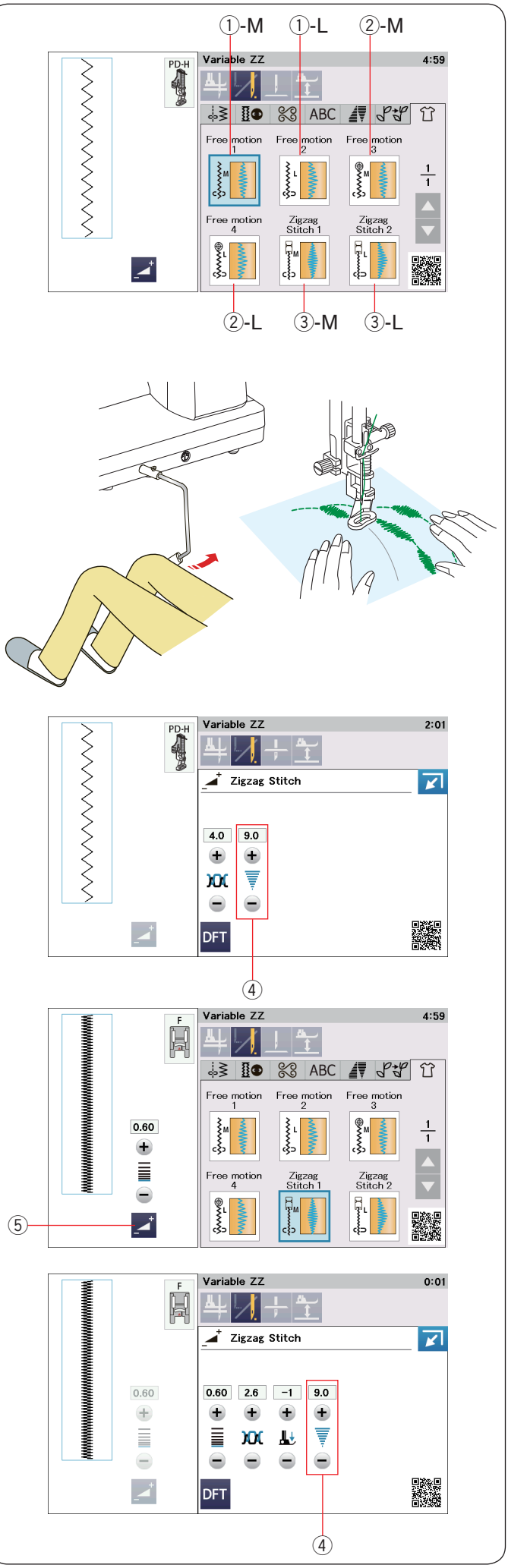
Attach the ruler work foot (QR) when the “Ruler Work” is displayed as shown.
Refer to page 22 for how to attach the ruler work foot.

Place the fabric under the ruler foot.

Adjust the presser foot height to suite the quilt thickness.
For ordinary and bulky quilts, select “Medium” ①.
For flatter quilts, select “Light” ②.
You can fine adjust the presser foot height by pressing the “+” ③ or “–” ④ key on the manual setting window.

Place the quilting template on the edge of the ruler work foot.
Sew while guiding the fabric and ruler together along the edge of the ruler foot.

NOTE:
A ruler (quilting template) for ruler work sewing is required.
Use the ruler (quilting template) for high shank or Long arm quilting machines (4.5 mm - 6.35 mm thickness).



Variable Zigzag

This unique feature allows you to control zigzag width with the knee lifter.

Select ①-M or ①-L, using the darning foot PD-H for sewing quilt layers. Guide the fabric with your hands while sewing.

Select ②-M or ②-L, using the clear view free quilt foot QV or variable zigzag foot QZ (refer to page 112 for how to attach the foot) for sewing flat and firm fabrics. Guide the fabric with your hands while sewing.

Select ③-M or ③-L, using the satin stitch foot for sewing variable zigzag stitches.
The fabric is fed by the feed dog and the stitch width can be varied with the knee lifter.

Attach a stabilizer to the wrong side of the fabric if needed.
Sew at slow to medium speed while guiding the fabric with your hands and controlling the stitch width with your knee.

NOTE:
When the machine stops, you can raise and lower the presser foot with the knee lifter.
Purple tip needle is recommended for free motion quilting to prevent skipped stitch.

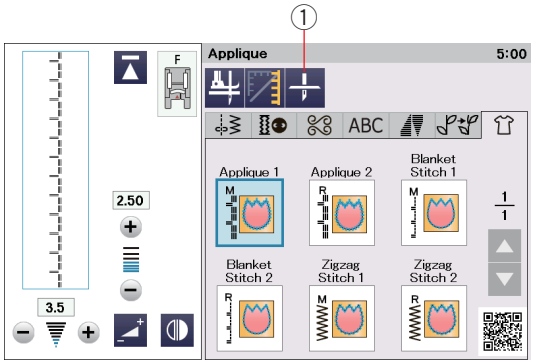
Maximum Zigzag Width Adjustment

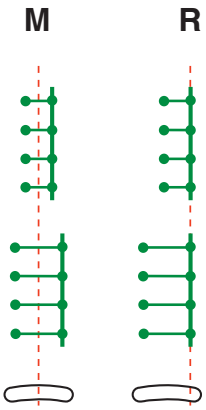
The maximum zigzag width can be limited to suit your sewing needs.

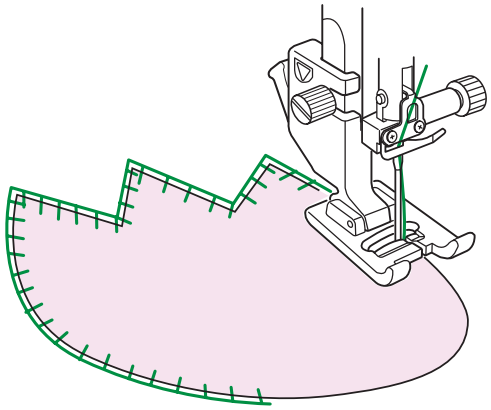
Press the “+” or “–” key beside the maximum zigzag width setting ④ to limit the maximum zigzag width to your preference.

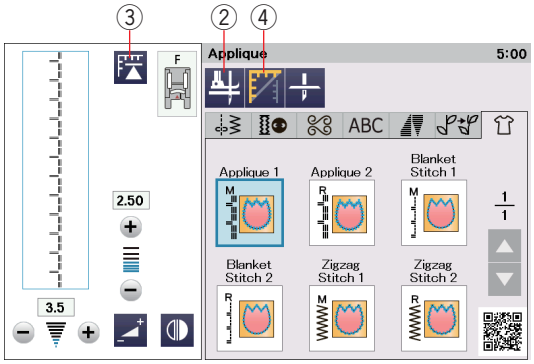
For the variable zigzag stitches with the satin stitch foot F or darning foot PD-H, press the adjust key ⑤ to open the maximum zigzag width setting.

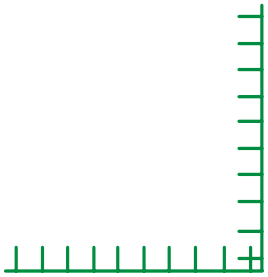
④ Maximum zigzag width setting
⑤ Adjust key











Applique

There are 6 types of applique stitches available in this section.

You can select the needle stop position either up or down by pressing the needle stop position key.

① Needle stop position key

The letter above the stitch image denotes the baseline of the needle drop position.
M: Middle (center)
R: Right

The baseline can be adjusted without changing the stitch width by pressing the “+” or “–” key on the bottom row.

Pivoting at applique corners

When sewing an applique with sharp corners, you may turn on the “Foot up for pivoting” option so that the presser foot automatically goes up when the machine stops.
Press the foot-up key to turn on this option

② Foot-up key

> **NOTE:**
> Make sure to stop the machine with the needle dropped at the outer edge of the applique.

Starting over from the corner

Press the startover key before sewing in the new direction to sew from the beginning of the pattern.

③ Startover key

Two options of startover are available for applique stitches. Press the cornering key to select normal startover or cornering startover.
The key icon will change to show which option is being selected when pressing the key.

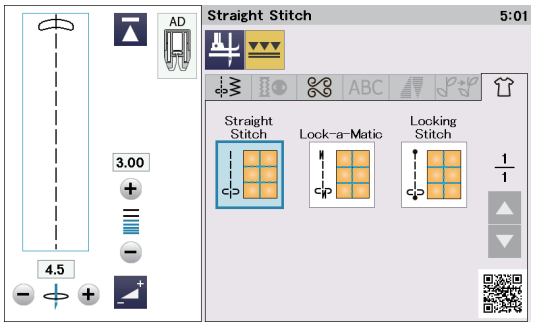
④ Cornering key

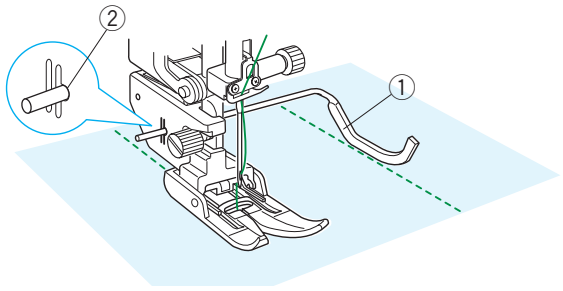
Normal startover:

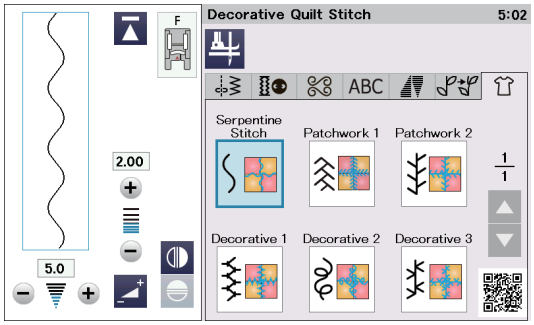
Sew a locking stitch then start sewing from the beginning of the pattern.

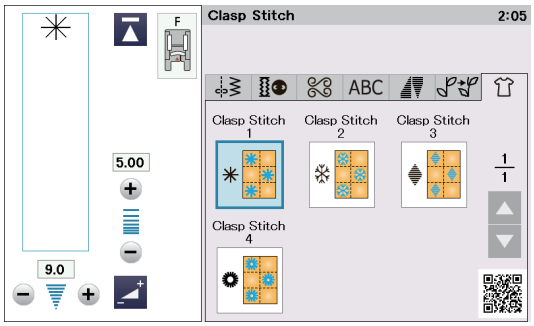
Cornering startover:

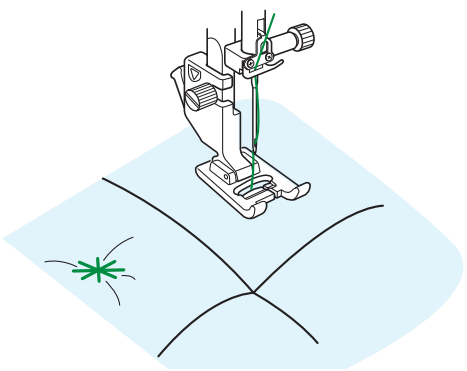
Start sewing from the beginning of the pattern without a locking stitch.











Straight Stitches (with dual feed)

Straight stitches in this section are suitable for seaming quilt layers using the dual feed foot (refer to page 22 for how to attach it). Please refer to page 74 if you wish to use zigzag foot A.

Quilting guide bar for dual feed foot

The quilting guide bar is helpful when sewing parallel, evenly spaced rows of stitching.

Insert the quilting guide bar into the hole in the rear of the foot holder.
Shift the quilting guide bar to the desired spacing.

① Quilting guide bar
② Hole

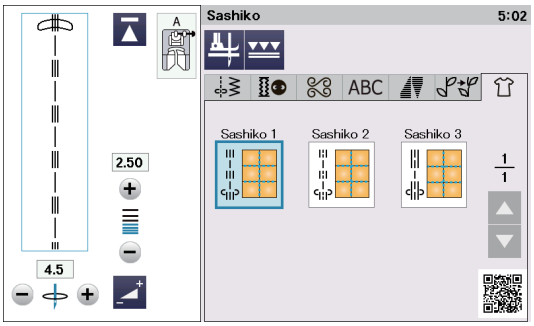
Sew rows of stitching while tracing the previous row of stitches with the quilting guide bar.

Decorative Quilt Stitch

You can decorate the seam on the quilt or patchwork fabric with the decorative quilt stitches.
Use the satin stitch foot F.

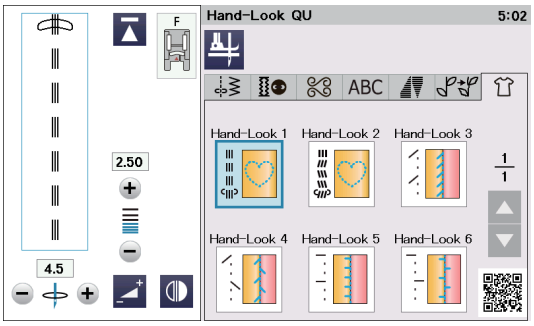
Clasp Stitches

You can close quilt layers and batting using the clasp stitch.
Use the satin stitch foot F.
The machine sews one unit of the pattern and automatically stops with the needle in up position when completed.



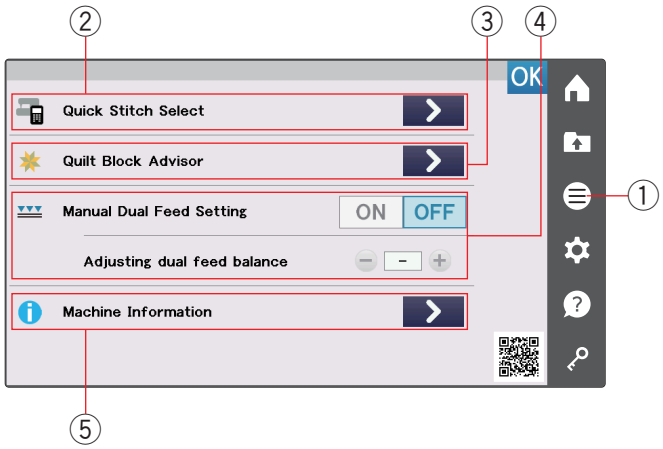
Sashiko

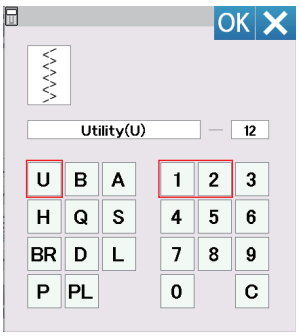
These stitches are used to create a mock Sashiko stitching.

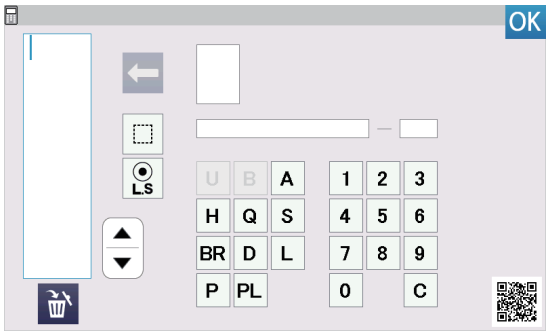


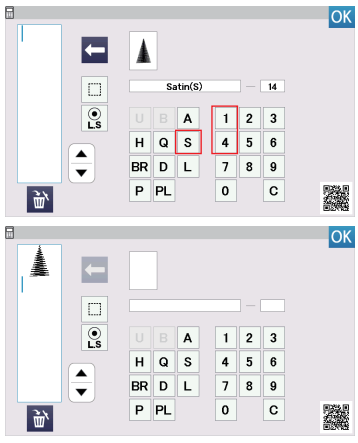
Hand-look QU

Use a transparent nylon thread for the needle and ordinary sewing thread for the bobbin.
The bobbin thread is pulled up on the right side of the fabric and the stitches will look as if sewn by hand.









INFORMATION AND CUSTOMIZING

Function Menu

Press the Function menu key ① to open the function menu.
You can select the following functions from this menu.

② Quick Stitch Select
③ Quilt Block Advisor
④ Manual Dual Feed Setting
⑤ Machine Information

Quick Stitch Select

You can select the stitch pattern directly with the abbreviation of categories and numbers (refer to pages 34-35 for the abbreviation of categories).

Press the › key of the Quick Stitch Select ② to open the quick stitch selection window.

Example: To select utility stitch pattern 12;
Press “U” to select utility stitch pattern group.
Press “1” and then “2” to select the desired stitch pattern.
Press the OK key to select utility stitch pattern 12.

When programming a pattern combination, press the › key of the Quick Stitch Select ② to open the quick stitch selection window for programming mode.

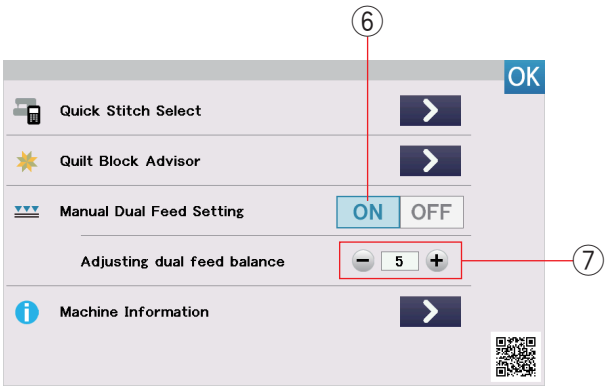
NOTE:
You can not select utility and buttonhole stitch pattern groups (“U” and “B” are grayed out), when opening the quick stitch selection window for programming mode.

Example: To select satin stitch pattern 14;
Press “S” to select satin stitch pattern group.
Press “1” and then “4” to select the desired stitch pattern.
Press the ← key to select satin stitch pattern 14.

Press the OK key to close the quick stitch selection window.

Quilt Block Advisor

Refer to pages 75-76.



Manual Dual Feed Setting

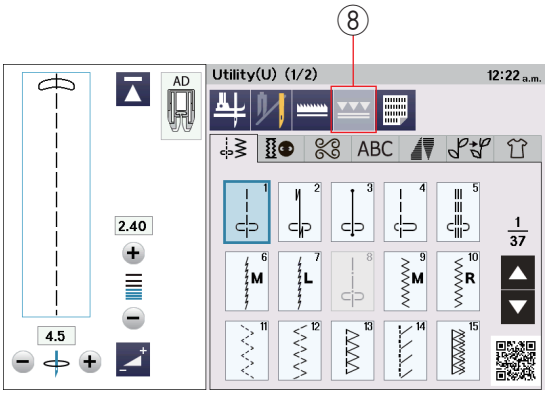
If you wish to sew patterns other than U1 to U5 and Q1 to Q7 with the dual feed device, turn on the manual dual feed setting.

Press the ON key ⑥ of the manual dual feed setting.

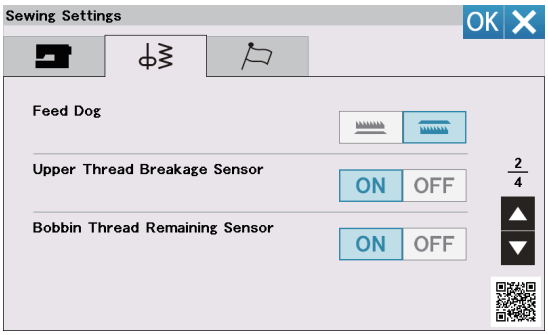
NOTE:
The sewing results of the manual dual feed sewing may vary depending upon sewing conditions. Always make a test stitch on an extra piece of the fabric to check the sewing results.

You may need to adjust the dual feed balance ⑦ depending on the type of fabric. Refer to page 41 for how to adjust the dual feed balance.

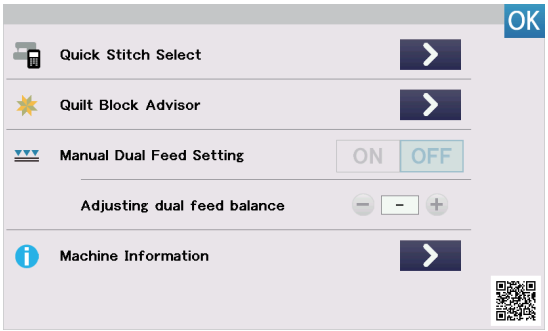
Turn off the manual dual feed setting when the manual dual feed sewing is finished.



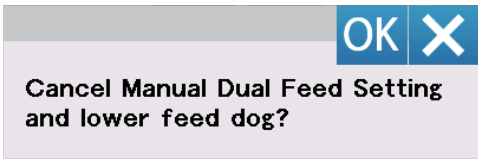
NOTE:
- The dual feed key ⑧ will gray out if the manual dual feed setting is turned on.
- The patterns U8 and B14, and the sewing applications that are not suitable for the manual dual feed setting are grayed out and cannot be selected.

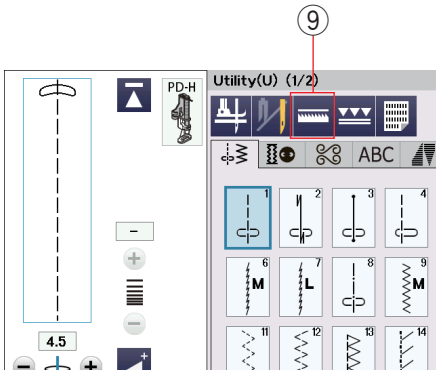


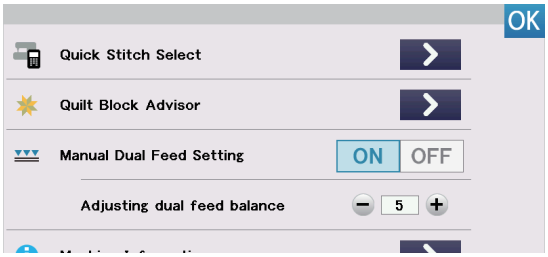
NOTE:
If the drop feed key in the sewing setting mode is turned on, the manual dual feed setting will gray out.
If the pattern or sewing application with the feed dog down is selected, the manual dual feed setting will gray out.

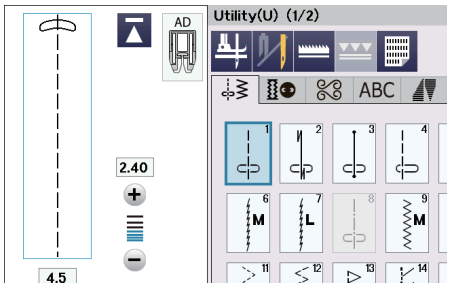


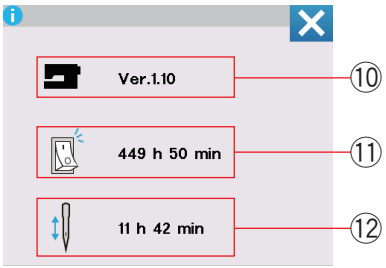












NOTE:
If the manual dual feed setting is turned on when dual feed sewing is turned on in ordinary sewing mode, dual feed sewing will be switched to the manual dual feed setting.

NOTE:
If the drop feed key ⑨ is turned on in ordinary sewing mode when the manual dual feed setting is turned on, a message will appear as shown.

Press the OK key to turn off the manual dual feed setting, and the feed dog is dropped.

To cancel dropping the feed dog, press the X key.

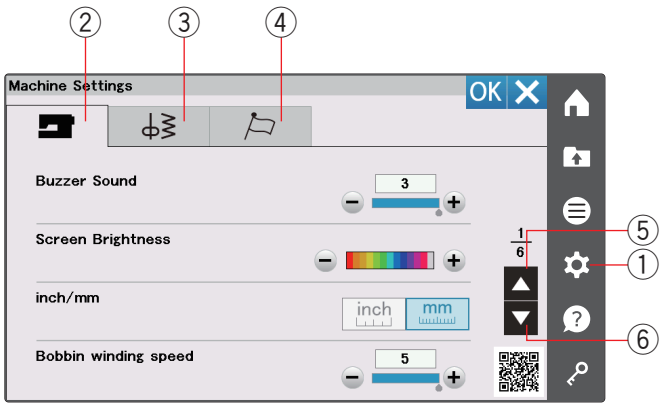
NOTE:
If the manual dual feed setting is turned on when the drop feed key ⑨ is turned on in ordinary sewing mode, the feed dog is raised for dual feed sewing.

Machine Information

You can see software version of the machine, total power-on time of the machine and total operating time of the machine.

Press the ❯ key of the Machine Information ⑤ to open the machine information window.

⑩ Software version
⑪ Total power-on time
⑫ Total operating time



Customizing Machine Settings

Press the set mode key to enter the machine setting mode.
You can select various options and customize the machine settings to suit your personal preference.

① Set mode key

Press one of the 3 keys to select the mode to customize.

② Machine setting mode key

Press the machine setting mode key to enter the common setting mode.
In this mode, you can customize the general machine settings and options (refer to pages 126-128).

③ Sewing setting mode key

Press the sewing setting mode key to enter the ordinary sewing setting mode.
In this mode, you can customize the machine settings and options for ordinary sewing (refer to pages 128-130).

④ Language selection mode key

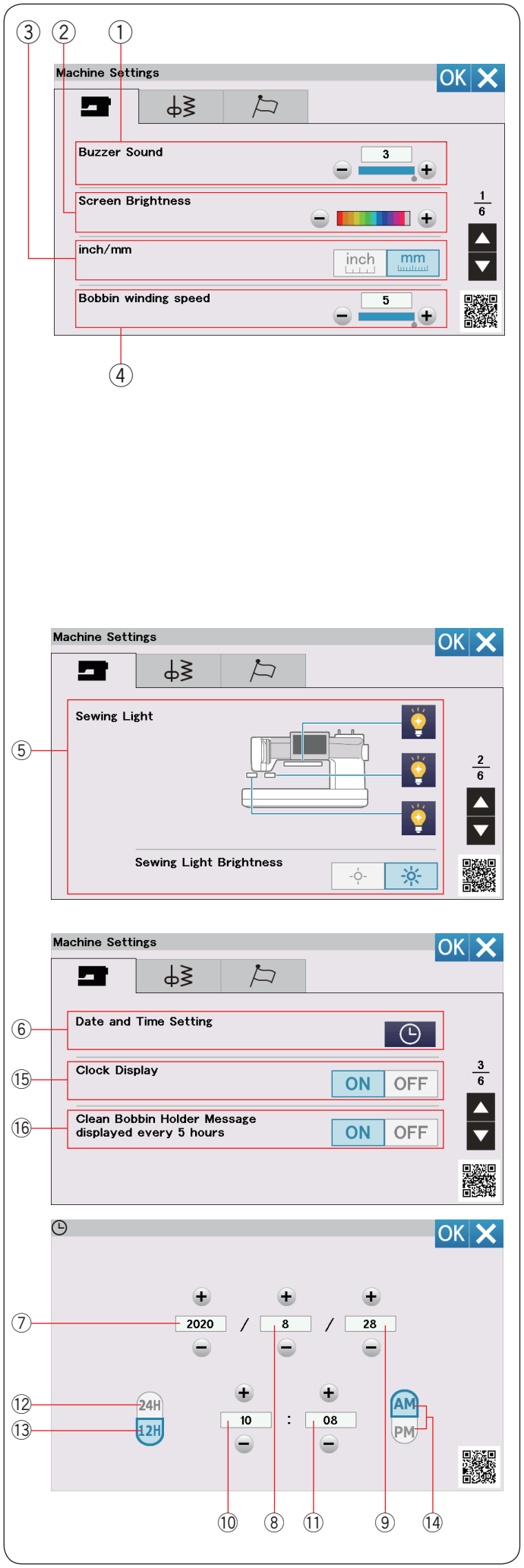
Press the language selection mode key to enter the language selection mode. In this mode, you can select the desired language for the screen messages (refer to page 130).

To browse pages in each mode, press the next page key or previous page ley

⑤ Previous page key
⑥ Next page key

Registering the custom settings

After customizing the settings, press the OK key to enable the new settings.
To cancel the changes to the settings, press the X key and the setting mode window will close.



Machine Setting Mode

① Buzzer Sound

The signal sound can be adjusted by pressing the “+” or “–” key.
Set the value to “OFF” by pressing the “–” key several times to mute the signal sounds.

② Screen Brightness

You can adjust the brightness of the visual touch screen by pressing the “+” or “–” key.

③ Inch/mm Option

You can set your machine’s dimensional unit to either inches or millimeters by pressing the “inch” or “mm” icon key.
The default unit is millimeters.

④ Bobbin winding speed

If you wish to wind the bobbin thread more quickly or slowly, you can adjust the maximum bobbin winding speed by pressing the corresponding key.

Press the next page key to show the next menu.

⑤ Sewing Light

The sewing lights can be turned on or off individually.
Press the corresponding light keys to turn on or off the sewing lights.
You can choose the brightness of sewing light to either bright light or low light.

Press the next page key to show the next menu.

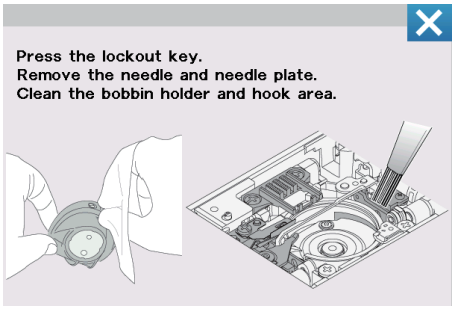
⑥ Date and Time Setting

Press the clock key to set date and time.
Set the Year, Month, Day, Hour and Minute by pressing the “+” or “–” key. You can select the display for the time 24-hour clock or 12-hour clock. If you select the display for the time 12-hour clock, you can also select the display for the time AM or PM.

⑦ Year
⑧ Month
⑨ Day
⑩ Hour
⑪ Minute
⑫ 24-hour clock
⑬ 12-hour clock
⑭ AM / PM

⑮ Clock Display

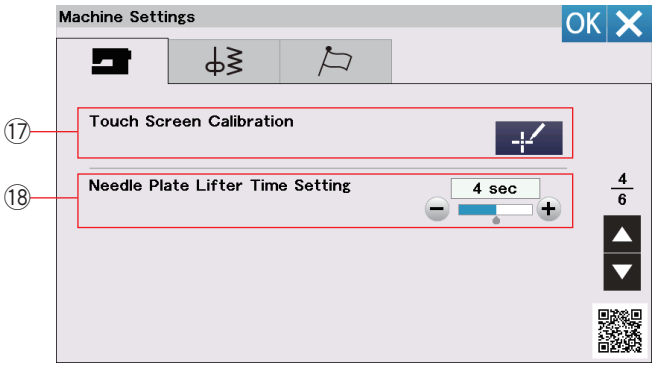
The clock display can be turned on or off.



⑯ Clean Bobbin Holder Message displayed every 5 hours

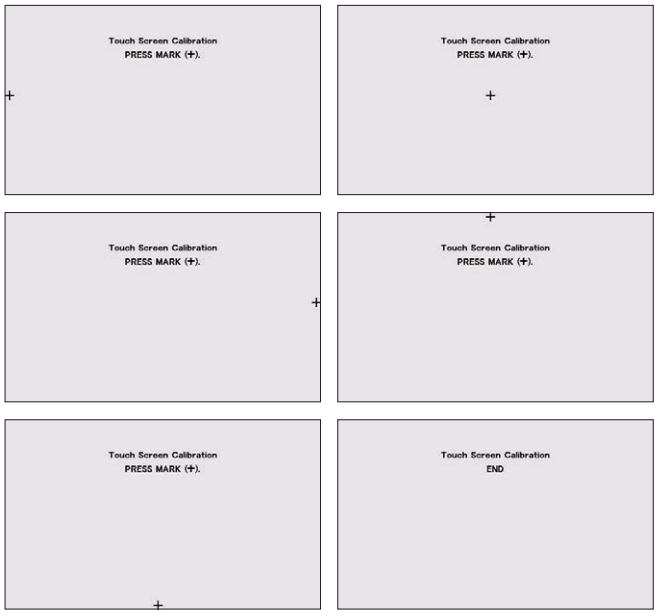
The caution message for cleaning the bobbin holder and the hook race will be displayed when the certain time (5 hours) passes if this option is turned on.
The caution message will not be displayed when this option is turned off.

Press the next page key to show the next menu.



⑰ Touch Screen Calibration

You can calibrate the key positions of the touch screen if you feel the touch screen key is not responding properly.
Press the calibration key to open the calibration window.
Press the “+” sign with the touch panel stylus as the sign appears.
When you press the last sign, the screen shows “END” and the calibration window will close.



⑱ Needle Plate Lifter Time Setting

You can set the needle plate lifting time between 2-6 seconds.

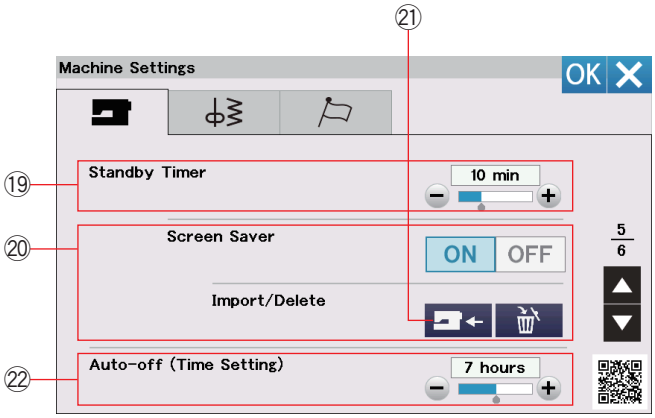
Press the next page key to show the next menu.

⑲ Standby Timer

The sewing lights will turn off and the machine will enter standby mode if you do not use the machine within the time period set by this timer. Doing any operation will turn the lights and screen on again.
The standby timer can be set from 1 to 30 minutes.
If you wish to turn off the timer, press and hold the “+” key until “OFF” shows in the timer window.

⑳ Screen Saver

Press the ON/OFF key to turn on the screen saver, and the visual touch screen will show the screen saver when the machine is in standby status.



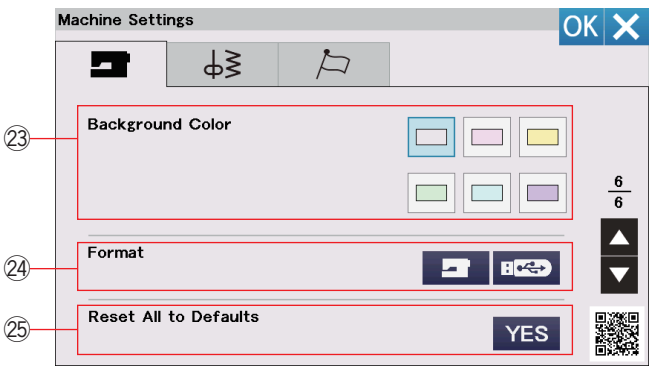
Press the import key to import a screen saver from a USB flash drive.
You can create an original screen saver with Screen Saver Tool included in the PC Application Pack CD-ROM.
The imported screen saver data will be deleted if the delete key is pressed, or the internal memory is formatted (refer to page 128).

㉑ Import key

㉒ Auto-off Timer

The machine will be automatically turned off if you do not use the machine within the time period set by this timer.
The auto-off timer can be set from 1 to 12 hours.
If you wish to turn off the timer, press and hold the “+” key until “OFF” shows in the timer window.
To turn on the machine again, turn the power switch on.

Press the next page key to show the next menu.



㉓ Background Color

You can select from the colorful wallpapers for the background of the visual touch screen by pressing the relevant icon.

㉔ Formatting the memory

If the internal memory of the machine or USB flash drive does not function due to damage to the memory bank, you need to re-enable it by formatting the memory.

To format the machine's internal memory, press the machine icon key and a confirmation message will appear. Press the OK key to format.

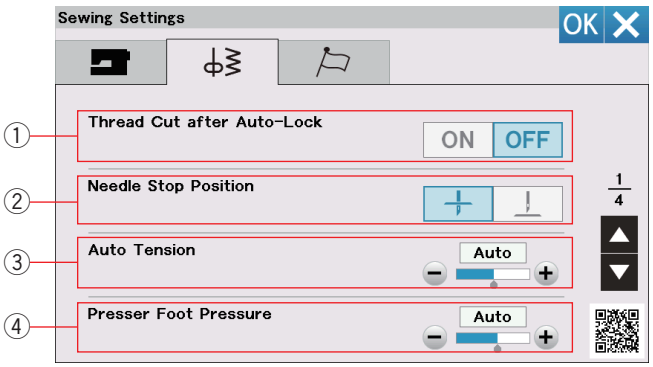
To format a USB flash drive, press the USB icon and the confirmation window will open. Press the OK key to format.

> **CAUTION:**
> Do not turn off the power or disconnect the USB flash drive while a warning message is displayed otherwise it may damage the memory bank.

㉕ Reset All to Defaults

Press the Yes key to reset all the parameters to the original values (factory settings).

Press the OK key to register the new menu.



Sewing Setting Mode

① Thread Cut after Auto-Lock

The machine automatically trims the threads after sewing locking stitches when this option is turned on.

② Needle Stop Position

The machine always stops with the needle in the down position except when sewing buttonholes, specialty stitches, monograms, etc. However you can change the needle stop position to up by pressing the needle up key.

> **NOTE:**
> The machine stops with the needle in the down position if Foot-up key option is turned on, even if the needle stop position is set to up position.

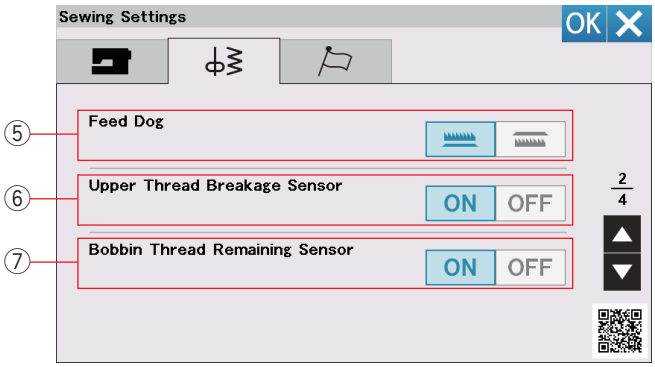
③ Auto Tension

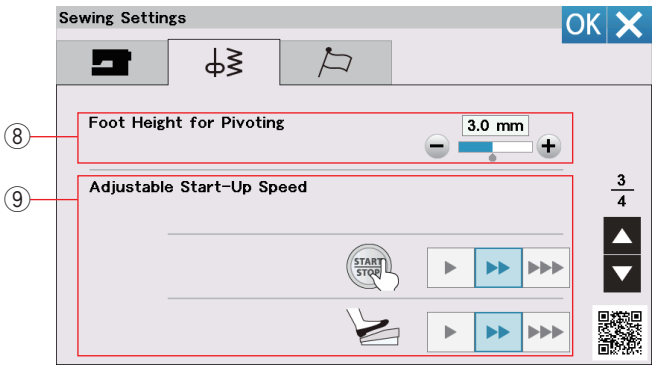
You can adjust the auto thread tension level by pressing the "+" or "–" key.

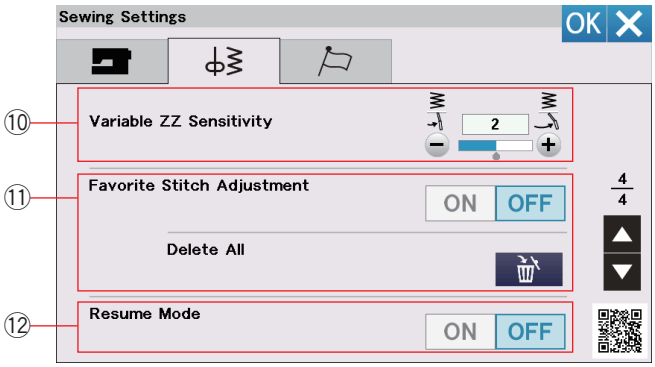
④ Presser Foot Pressure

The foot pressure is automatically optimized but you can adjust the foot pressure manually by pressing the "+" key or "–" key.

Press the next page key to show the next menu.







⑤ Feed Dog

Turn this option on if you wish to sew decorative stitches and sewing applications with the feed dog down.
Press the drop feed key to turn on this option.

⑥ Upper Thread Breakage Sensor

If you want to turn off the auto-stop function when the upper thread (needle thread) breaks, turn off the upper thread breakage sensor.

⑦ Bobbin Thread Remaining Sensor

If you want to turn off the auto-stop function when the bobbin thread runs off, turn off the bobbin thread remaining sensor.

Press the next page key to show the next menu.

⑧ Foot Height for Pivoting

When the foot up option is turned on, the presser foot will automatically go up when the machine stops.
The height of the foot in the up position can be adjusted by pressing the “+” key or “–” key in accordance with thickness of the fabrics.

⑨ Adjustable Start-Up Speed

The machine will start running slowly and the sewing speed will gradually increase to maximum. You can select the desired start-up speed from slow, normal or high by pressing the corresponding key, and set the speed for the start/stop button or foot control individually.

Press the next page key to show the next menu.

⑩ Variable zigzag sensitivity

You can adjust the amount of needle swing against the knee lifter movement for variable zigzag in sewing applications.
Press the “–” key so the needle swings a small amount when moving the knee lifter.
Press the “+” key so the needle swings a large amount when moving the knee lifter.

⑪ Favorite Stitch Adjustment

If you wish to save the changes to manual stitch settings, turn on this option by pressing the ON key.
If this option if turned off, the manual stitch setting will be cleared when turn the power switch off.
Press the delete icon  to clear the manual stitch setting.

> **NOTE:**
> This option is available for all stitches except monogram.

⑫ Resume Mode

Turn on this option when you wish to resume the last pattern sewn before turning the power switch off.

When the power is turned on again, the confirmation message will appear. Press the OK key to resume the last pattern.



NOTE:
Resume data will be cleared under the following conditions:

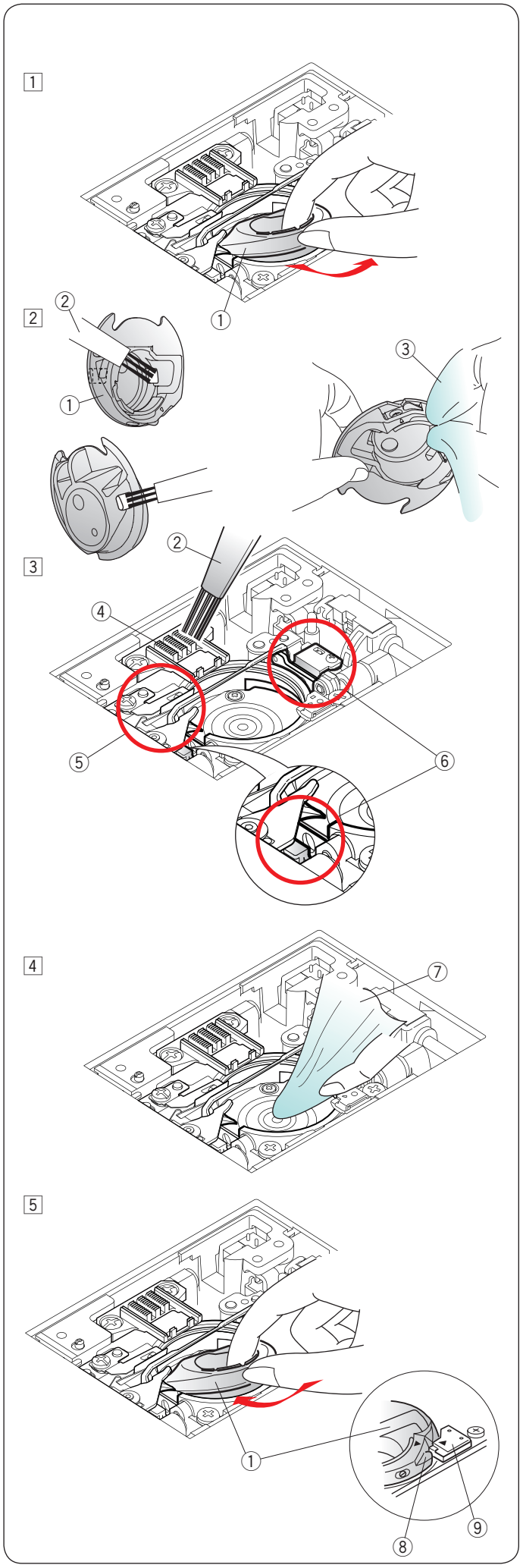
- Created stitch is imported with the import key.
- Created stitch is deleted with the delete key.
- The internal memory is formatted.

After customizing the settings, press the OK key to enable the new settings.



Language Selection Mode

Select the desired language and press the OK key.
The visual touch screen shows messages in the selected language.



CARE AND MAINTENANCE

⚠ WARNING:
Turn the power switch off and unplug the machine before cleaning.
Do not dismantle the machine in any way other than as explained in this section.

⚠ CAUTION:
Do not store the machine in a high-humidity area, near a heat radiator, or in direct sunlight. Store the machine in cool dry place.
Clean the outside of the machine with a soft cloth.
Do not use chemical solvents.

Cleaning the Hook Area

Clean the hook area frequently.

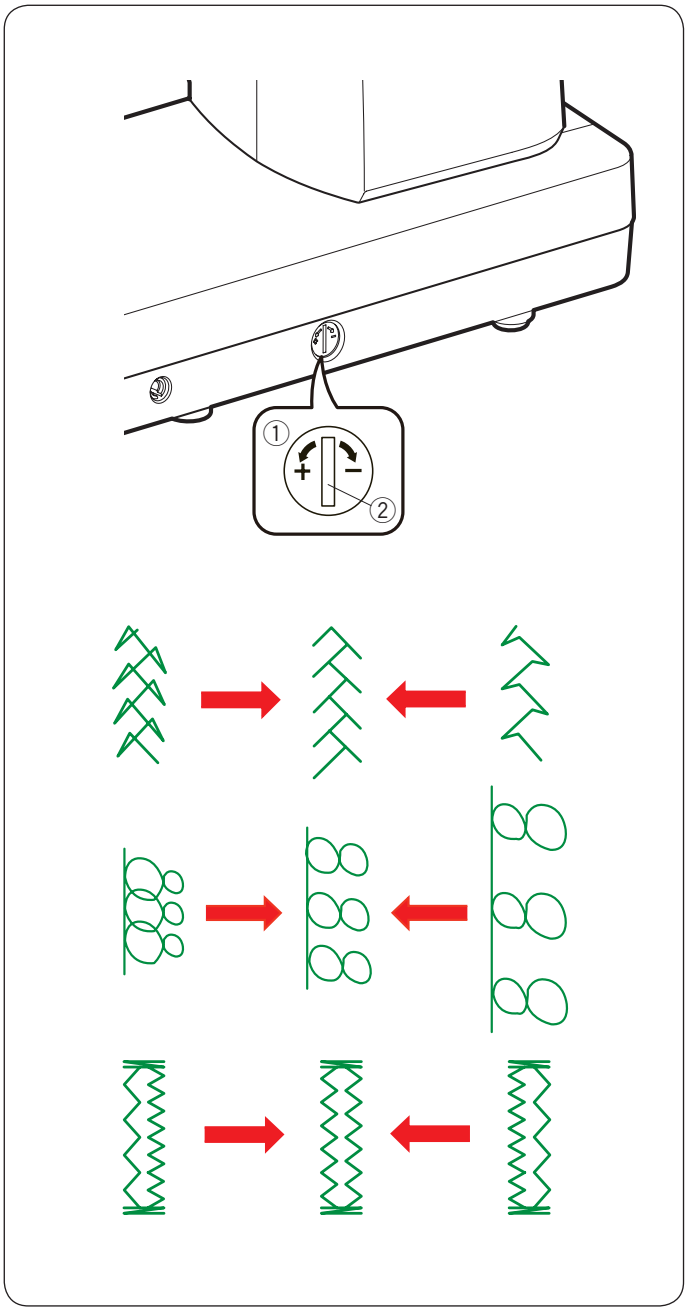
1 Remove the needle plate (refer to page 33).
Turn the power switch off and unplug the machine.
Remove the needle and presser foot.
Take out the bobbin and bobbin holder.
① Bobbin holder

2 Clean the bobbin holder with a lint brush.
Wipe the bobbin holder both inside and outside with a soft cloth.
② Lint brush
③ Soft cloth

3 Clean the feed dog, auto thread cutter device and around the bobbin thread detecting sensor with the lint brush.
④ Feed dog
⑤ Auto thread cutter device
⑥ Bobbin thread detecting sensor

4 Clean the hook race with a soft cloth.
⑦ Soft cloth

5 Insert the bobbin holder so that the knob fits next to the stopper in the hook race.
Insert the bobbin.
Attach the needle plate, presser foot and needle.
⑧ Knob
⑨ Stopper



Correcting Distorted Stitch Patterns

The sewing results of the stitch patterns may vary depending upon sewing conditions, such as sewing speed, type of the fabric, number of layers etc.
Always test sew on a scrap piece of the fabric that you wish to use.

If decorative stitch patterns, monogram or the stretch buttonhole is distorted, correct it with the feed balancing dial.
Set the feed balancing dial at the neutral position for normal sewing.

① Feed balancing dial
② Neutral position

NOTE:
Return the feed balancing dial to its neutral position when the sewing is finished.

Stretch stitch pattern (Q23)
If the pattern is compressed, turn the feed balancing dial in the direction of “+”.
If the pattern is drawn out, turn the feed balancing dial in the direction of “–”.

Letters and numbers
If the pattern is compressed, turn the feed balancing dial in the direction of “+”.
If the pattern is drawn out, turn the feed balancing dial in the direction of “–”.

Stitch balance of the stretch buttonholes (B10)
If the right row is denser, turn the dial in the direction of “+”.
If the left row is denser, turn the dial in the direction of “–”.

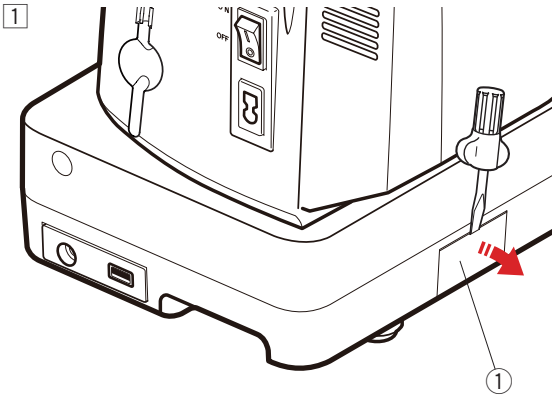
Replacing the Coin Cell Battery for the Internal Clock

If the clock on the visual touch screen always indicates “0:00” when turning the power switch on, replace the coin cell battery in the sewing machine.

⚠ WARNING:

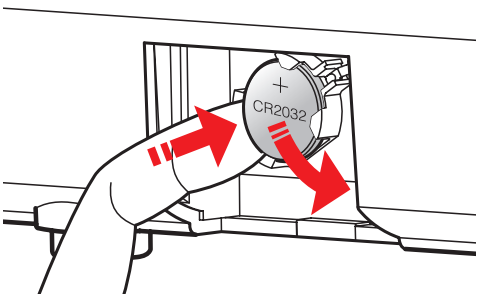
- Battery may explode if mistreated.
  Do not recharge, disassemble or dispose of in fire.
- Turn off the power switch before replacing the battery.
- Replace the battery with “CR2032” only.
  Use of another may present a risk of fire or explosion.
- Chemical Burn Hazard. Keep the battery away from children.
- The batteries shall be disposed of properly.

1



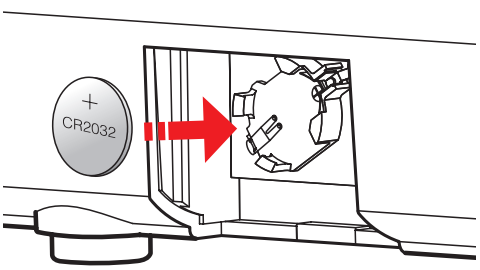
1 Remove the battery cover ① with a screwdriver.
① Battery cover

2



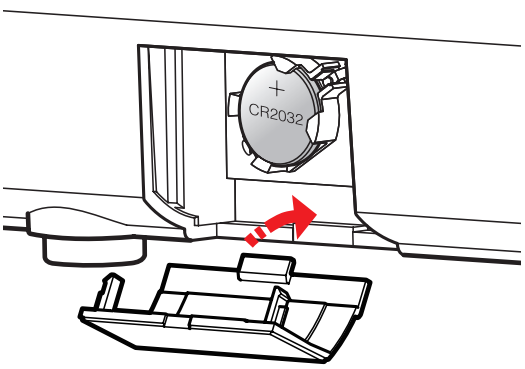
2 Remove the coin cell battery.

3



3 Install the battery ”CR2032” with the “+” mark facing up.

4

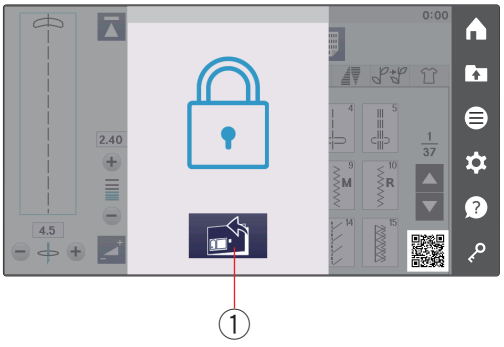


4 Attach the battery cover.
Set the clock again after replacing the battery (refer to page 126).

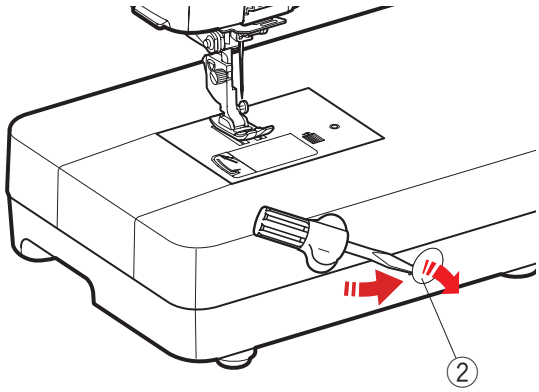
Replacing the Needle Plate for Emergency

⚠ CAUTION:
Never turn the needle plate release dial while running the machine.

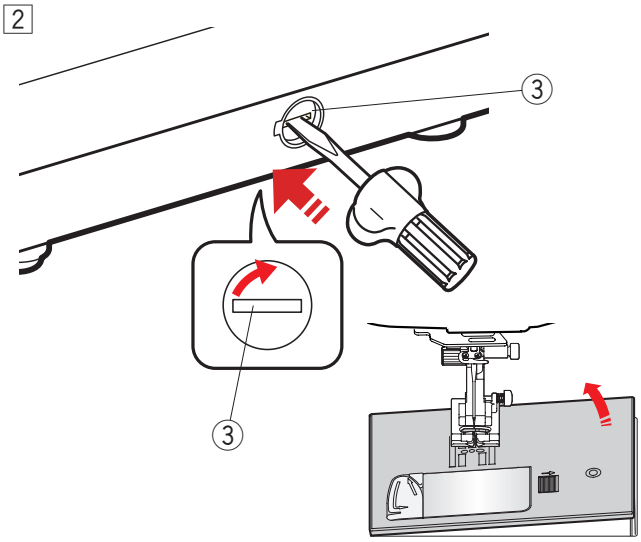
If the needle plate will not automatically snap off when pressing the needle plate release key ① on the lockout screen, you can replace the needle plate using the needle plate release dial.



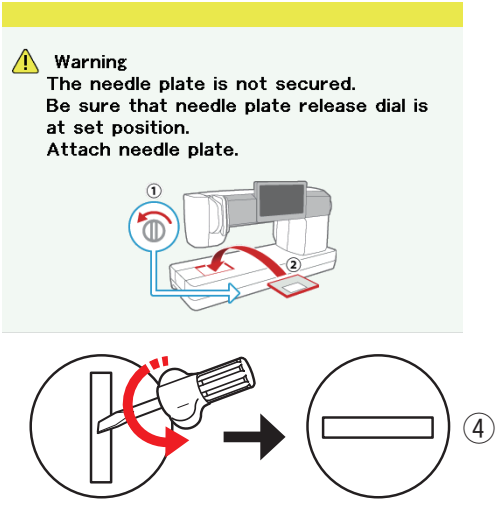
1 Remove the needle plate release dial cap ② with a screwdriver.
② Needle plate release dial cap



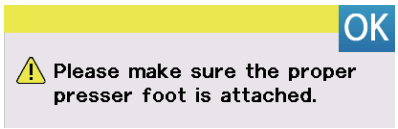
2 Push and turn the needle plate release dial clockwise with the screwdriver to remove the needle plate.
③ Needle plate release dial



3 A warning message will appear that the needle plate is not secured.
Turn the needle plate release dial counterclockwise with the screwdriver to be at set position.
Attach the needle plate.
④ Set position

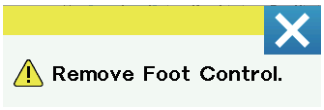
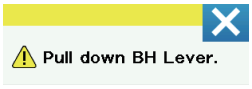
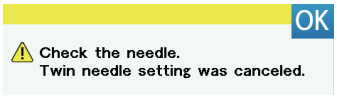
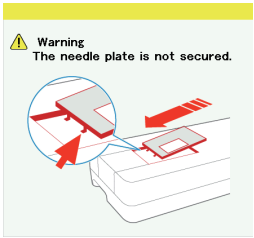
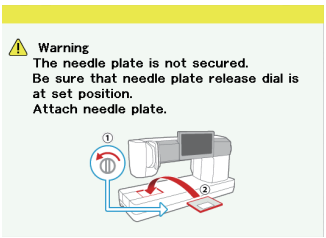
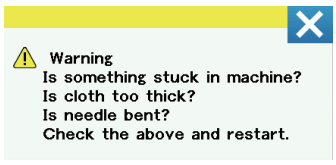


4 A message will appear, so that press the OK key after attaching the proper presser.



Problems and Warning Signals

If a buzzer sounds and the visual touch screen shows a warning sign, follow the guidance below.

Warning Sign	Cause	Try this
	The start/stop button is pressed with the foot control connected.	Disconnect the foot control.
	The foot control is out of order.	Contact the service center or the store from whom the machine was purchased.
	The machine will stop if the buttonhole is sewn without lowering the buttonhole lever.	Lower the buttonhole lever and start the machine again.
	The twin needle key is pressed when the twin needle sign is indicated on the visual touch screen.	Replace the twin needle with a single needle and press the OK key.
	The machine is started with the feed dog lowered.	Raise the feed dog unless you want to sew with the feed dog lowered.
	The needle plate is removed. The needle plate is not properly attached to the set position.	Attach the needle plate. Check if the needle plated is attached properly. Press down the needle plate with your finger to snap it into the set position.
	The needle plate is removed with the needle plate release dial.	Turn the needle plate release dial at set position. Attach the needle plate.
	The machine is halting due to overload.	Wait for at least 15 seconds to restart. Remove tangled threads around take-up lever, hook race and automatic thread cutting mechanism.

Troubleshooting

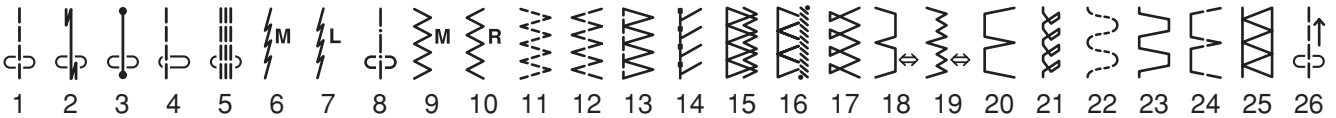
Condition	Cause	Reference
The needle thread breaks	1. The needle thread is not threaded properly. 2. The needle thread tension is too tight. 3. The needle is bent or blunt. 4. The needle is incorrectly inserted. 5. The needle thread is not set under the presser foot when start sewing. 6. The fabric is moved too fast when stitching free motion quilting. 7. The thread is tangled around the spool.	Page 29-30 Page 48 Change the needle. Page 23 Page 38 Page 116 Use the spool holder.
The bobbin thread breaks	1. The bobbin thread is not threaded properly in the bobbin holder. 2. Lint has collected in the bobbin holder. 3. The bobbin is damaged and does not turn smoothly.	Page 28 Page 131 Change the bobbin.
The needle breaks	1. The needle is incorrectly inserted. 2. The needle is bent. 3. The needle clamp screw is loose. 4. The needle is too fine for the fabric being used. 5. An inappropriate presser foot is used. 6. The fabric was pulled toward you when sewing free motion quilting with the free motion quilting open-toe foot QO.	Page 23 Change the needle. Page 23 Page 24 Use the correct foot. Page 116
Skipped stitches	1. The needle is incorrectly inserted, bent or blunt. 2. The needle and/or threads are not suitable for the work being sewn. 3. A blue tip needle is not being used for sewing stretch, very fine fabrics and synthetics. 4. The needle thread is not threaded properly. 5. A poor quality needle is used. 6. A purple tip needle is not being used for sewing thick fabrics, denims and across the hem.	Page 23 Page 24 Use the stretch stitch needle. Page 29-30 Change the needle. Page 24
Seam puckering	1. The needle thread tension is too tight. 2. The needle thread is not threaded properly. 3. The needle is too heavy for the fabric being sewn. 4. The stitch length is too long for the fabric. 5. The foot pressure is not adjusted properly. 6. A stabilizer is not used when sewing very fine fabrics.	Page 48 Page 29-30 Page 24 Make stitch shorter. Page 48 Apply a stabilizer.
The fabric is not feeding smoothly	1. The feed dog is packed with lint. 2. The stitches are too fine. 3. The feed dog is not raised after ”drop feed” sewing.	Page 131 Make stitch longer. Page 36
Loops on the seams	1. The needle thread tension is too loose. 2. The needle is too thick or too fine for the fabric.	Page 48 Page 24
The machine does not run	1. The machine is not plugged in. 2. Thread has been caught in the hook race. 3. The start/stop button is used with the foot control plugged in.	Page 10-11 Page 131 Page 11
Buttonhole sewing is not sewn properly	1. The stitch density is not suitable for the fabric being sewn. 2. The interfacing has not been used for the stretch or synthetic fabric. 3. The buttonhole lever is not lowered.	Page 57 Apply an interfacing. Page 55
The machine is noisy	1. Thread has been caught in the hook race. 2. Lint has built up in the hook race or bobbin holder.	Page 131 Page 131
Auto thread cutting failed	1. Thread is too thick for the auto thread cutting. 2. Threads have been caught in the thread cutter mechanism.	Page 15 Page 131
Pattern selection keys are grayed out.	1. The needle plate for straight stitch is attached to the machine. 2. Dual feed key is on. 3. Twin needle key is on.	Page 33 Page 41 Page 79
Pattern selection keys do not work	1. The key position is out of alignment.	Page 127
Visual Touch Screen is not clear.	1. The screen brightness is not adjusted properly.	Page 126

Condition	Cause	Reference
The needle thread appears on the wrong side of the fabric when the stitch width value is larger than “7.0”.	1. Thread tension is not balanced.	Page 48
The bobbin thread detecting sensor does not work; There is no signal sound when the bobbin thread is run out and the machine does not stop sewing.	1. The bobbin thread sensor is turned off. 2. Lint has collected around the bobbin thread detecting sensor. 3. A bobbin other than the “J” plastic bobbin is used.	Page 129 Page 131 Page 25

It is not abnormal for a faint humming sound to be heard from the internal motors.
The visual touch screen and function key area may become warm after several hours of continuous use.

Stitch Chart

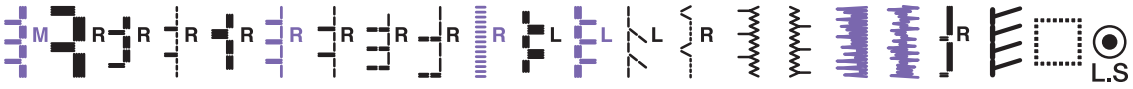
Utility (U)



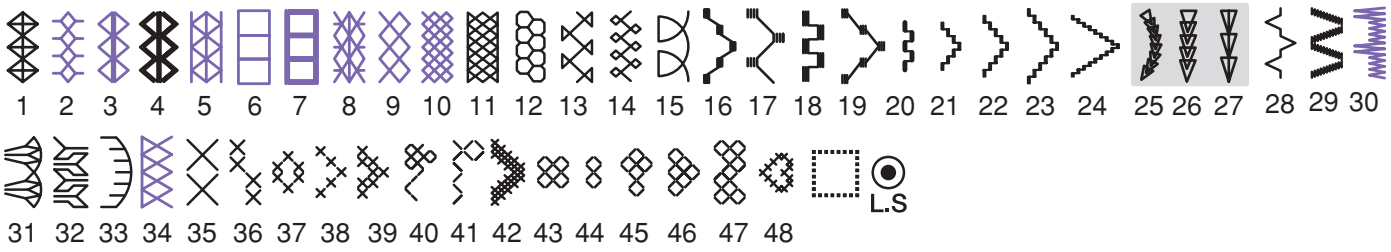
Buttonhole (B)



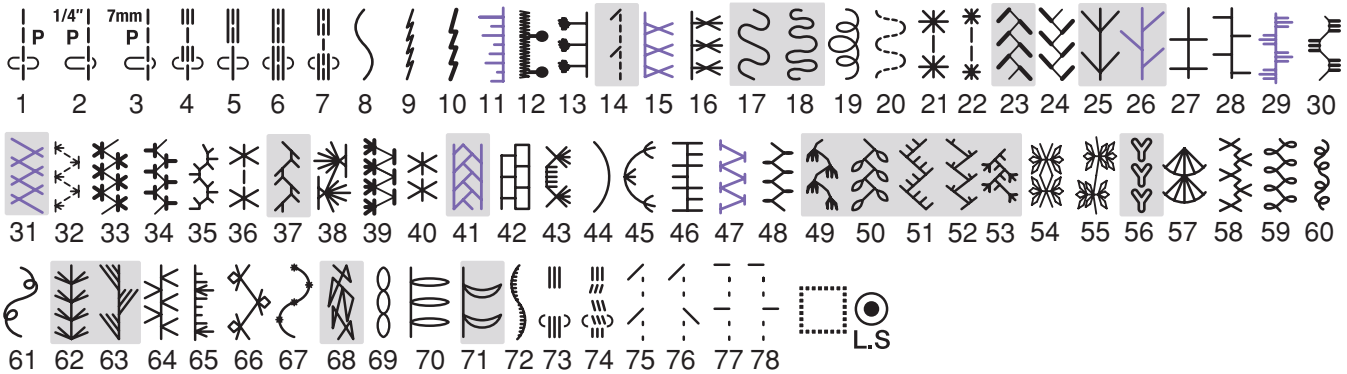
Applique (A)



Heirloom (H)



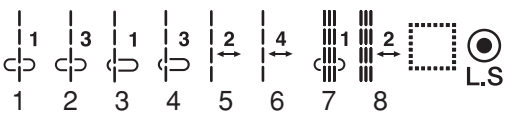
Quilt (Q)



Satin (S)



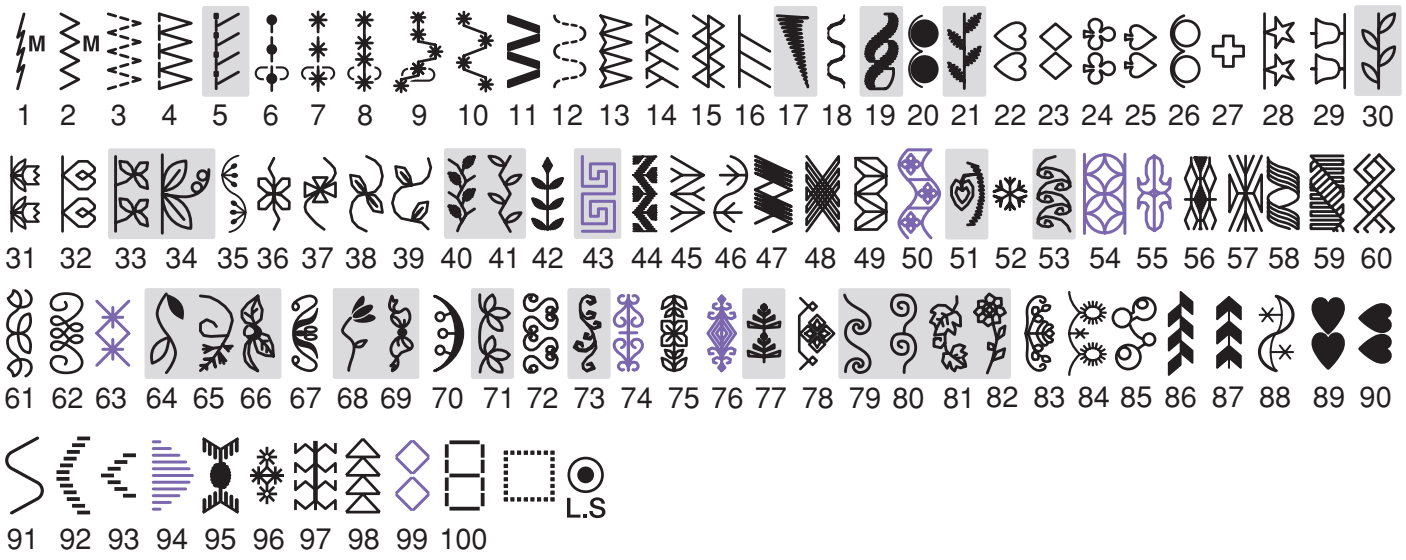
Bridge (BR)



* Stitch patterns in purple can be tapered.
* Stitch patterns shaded in light grey can be flipped vertically (Horizontal mirror image).

Stitch Chart

Decorative (D)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90

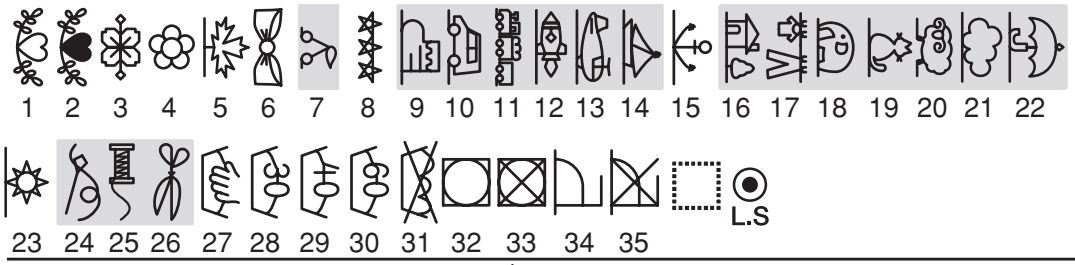
91 92 93 94 95 96 97 98 99 100

Long (L)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

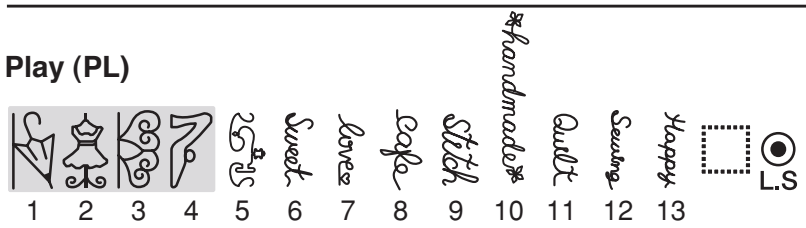
Pictograph (P)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

23 24 25 26 27 28 29 30 31 32 33 34 35

Play (PL)



1 2 3 4 5 6 7 8 9 10 11 12 13

Straight stitch needle plate

Utility (U)



1 2 3 4 5

Quilt (Q)



1 2 3 4 5 6 7

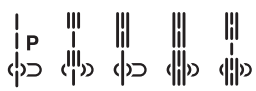
Professional grade needle plate

Utility (U)



1 2 3 4

Quilt (Q)

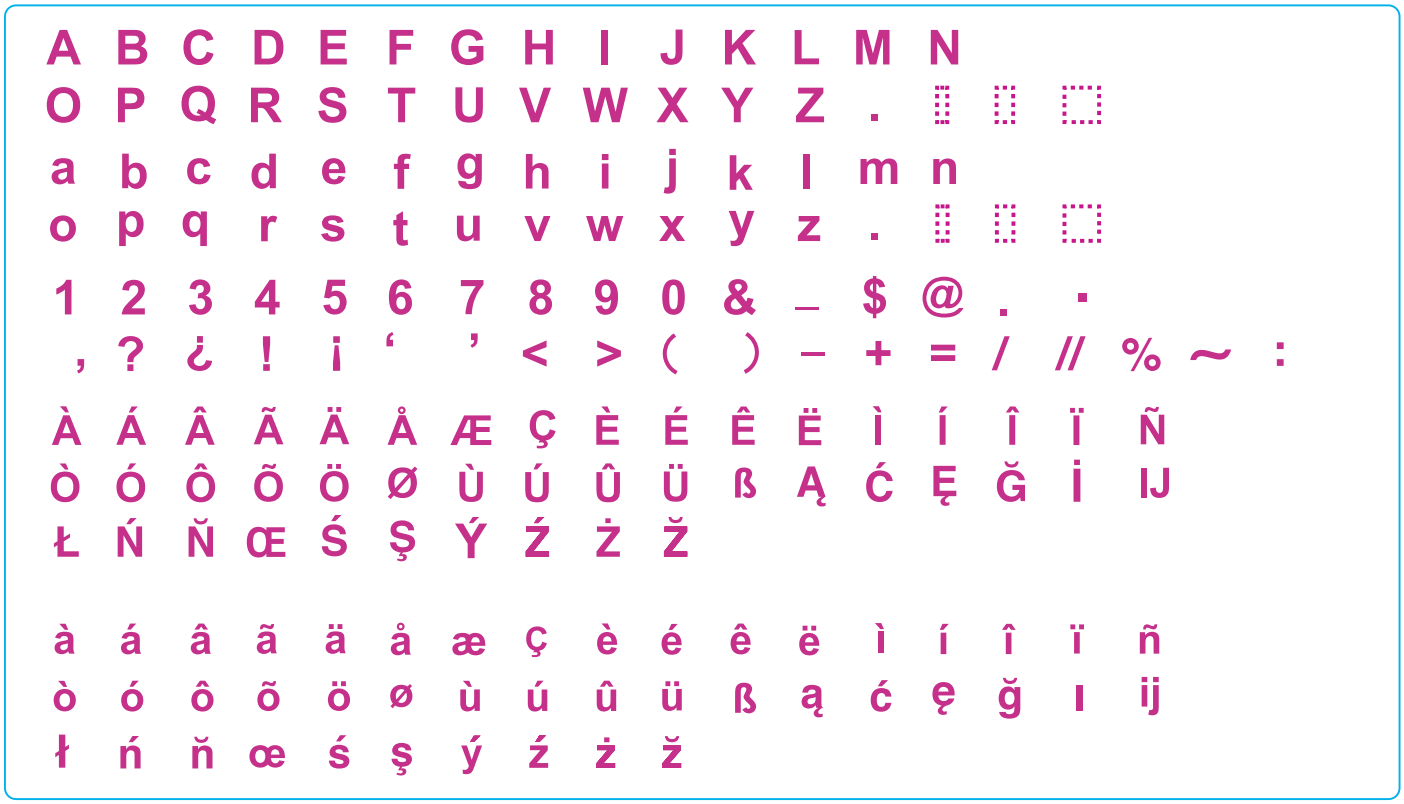


1 2 3 4 5

* Stitch patterns in purple can be tapered.
* Stitch patterns shaded in light grey can be flipped vertically (Horizontal mirror image).

Stitch Chart (Monogram)

Block



Script

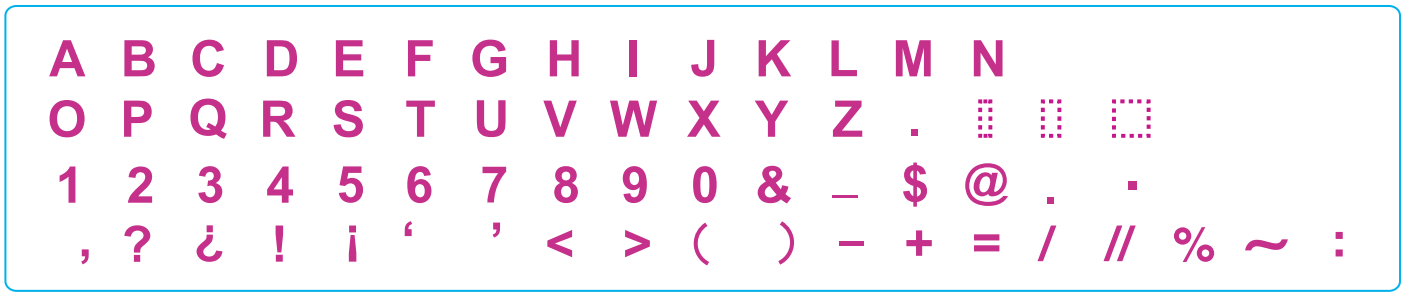


Stitch Chart (Monogram)

Broadway



Block (9mm)



Cyrillic

А Б В Г Ґ Д Ѓ Ђ Е Є Ё Ж З S И І Ї Й Ѝ J К Л Љ
М Н Њ О Ө П Р С Т Ћ У Ў Ф Х Ц Ч Џ Ш Щ Ъ Ы
Ь Э Ю Я . ⁞ ⁞⁞

а б в г ґ д ѓ ђ е є ё ж з s и і ї й ѝ j к л љ
м н њ о ө п р с т ћ у ў ф х ц ч џ ш щ ъ ы
ь э ю я . ⁞ ⁞⁞

1 2 3 4 5 6 7 8 9 0 & _ $ @ . • , ? ¿ ! ¡ ‘ ’
< > ( ) – + = / // % ~ :

Symbol

