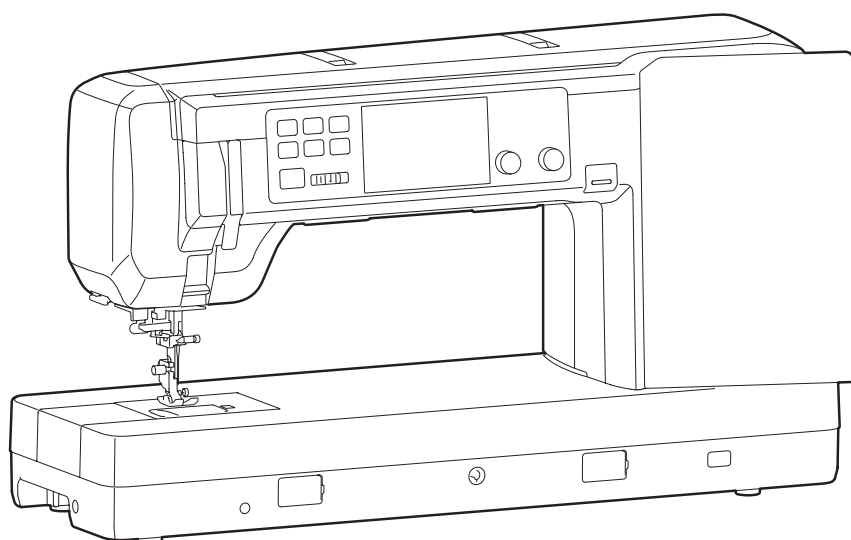


# Instruction Book

## Continental M17

(Ordinary sewing / Sewing application)



## Before You Use the Machine



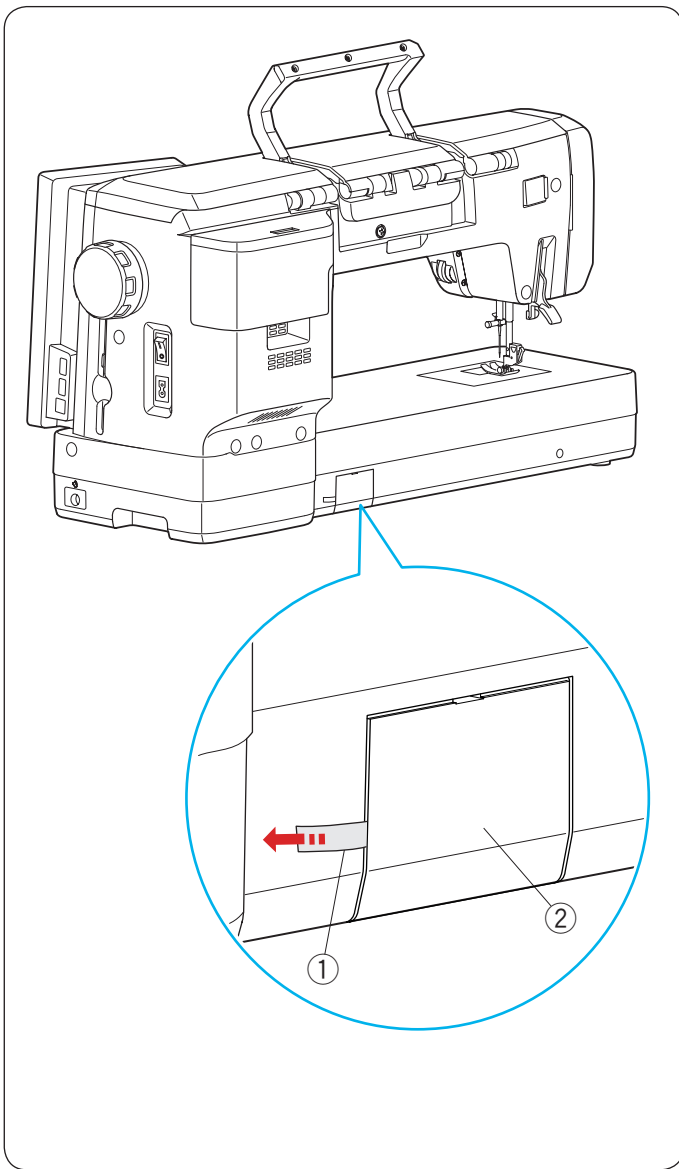
### **WARNING:**

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 166).



# 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.):**

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)

## **FCC Caution**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

## **IC (Industry Canada) Notice**

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## **Directive 1999/5/EC**

Hereby, Janome Corporation, declares that this 868 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.



## TABLE OF CONTENTS

FCC Caution.....	2	Sewing with the Dual Feed Device.....	44-45
<b>ESSENTIAL PARTS</b>		Sewing with Professional grade foot HP .....	46
Names of Parts.....	5-6	Dual Feed Professional Grade Foot HP2.....	47
Standard Accessories .....	6-9	Floating Mode.....	48
Foot Control and Thread Cutter Switch.....	10	Variety of Straight Stitches .....	49-50
Adjusting the Thread Cutter Switch Position.....	10-11	Zigzag Stitches.....	50-51
Accessory Storage .....	12	Variety of Overcasting Stitches .....	51-52
How to Carry the Sewing Machine.....	12	Manual Stitch Settings .....	53-54
<b>GETTING READY TO SEW</b>		Middle Touch Screen.....	54
Connecting the Power Supply .....	13	Adjusting Thread Tension.....	55
Using foot control.....	14	Adjusting Foot Pressure Control .....	55
Thread Cutter Switch.....	15	Number of Locking Stitches .....	55
Preparation for thread cutter switch.....	15	Foot Up for Pivoting.....	55
Controlling Sewing Speed.....	16	Favorite Stitch Adjustment.....	56-58
Foot Control.....	16	Cloth Guide .....	59
Machine Operating Buttons.....	17-18	Other Utility Stitches.....	60-61
Top Cover Release Button .....	19	<b>BUTTONHOLES AND SPECIALTY STITCHES</b>	
Pop Up Spool Pins Lever .....	19	Variety of Buttonholes .....	62
Bobbin Winding Button.....	19	B1 Sensor (Square) Buttonhole.....	63-66
Jog Dials.....	19	Using the Stabilizer Plate .....	67
Thumb Wheel .....	20	B2 Automatic (square) Buttonhole.....	68-69
Reference charts .....	20	Other Buttonholes .....	70
Accessory storage.....	20	B13 Welted Buttonhole (Bound Buttonhole).....	71-72
Common Keys .....	21	Corded Buttonhole .....	73
On-screen Help .....	22	Specialty Stitches .....	73-75
Raising and Lowering the Presser Foot .....	23	B14 Button sewing .....	73
Knee Lifter .....	23	B15 Darning .....	74
Replacing the Presser Foot.....	24	B17-B20 Fly stitch .....	75
Removing and Attaching the Foot Holder .....	25	B21-B25 Eyelets .....	75
Attaching Dual Feed Foot AD, Dual Feed Professional Grade Foot HP2 or Dual feed foot VD (single) .....	26	<b>DECORATIVE STITCHES</b>	
Attaching Ruler work foot QR.....	26	Decorative Stitches .....	76-94
Attaching Professional Grade Foot HP .....	26	Quilting (Q) .....	95
Attaching Darning Foot PD-H or Darning Foot (open- toe) PD-H.....	27	Using the quilting guide bar .....	95
Replacing Needles .....	27	Q1-Q3 Patchwork Piecing .....	95
Fabric and Needle Chart .....	28	Angle Scales on the Needle Plate.....	95
Optic Magnifier .....	28	Quilt Block Advisor .....	96-99
Winding the Bobbin .....	29-31	Q123-Q128 Hand-look Quilt Stitches .....	100
Inserting the Bobbin .....	32	S1-S31 Decorative Satin Stitches.....	100
Threading the Machine.....	33-34	Elongation ratio.....	100
Automatic Needle Threader .....	35	Mirage (M) .....	101
Drawing up the Bobbin Thread .....	36	Created Stitches (CS).....	102
Replacing the Needle Plate.....	37	Twin Needle Sewing .....	103-104
<b>ORDINARY SEWING MODE</b>		<b>PROGRAMMING A PATTERN COMBINATION</b>	
Ordinary Stitch Patterns .....	38-39	Mirror Image of Patterns.....	105
Function Keys in Ordinary Sewing Mode .....	40-41	Bridge Stitches .....	106
Utility Stitches.....	42	Editing a Pattern Combination.....	107-108
Straight stitches .....	42	Deleting a pattern .....	107
Sewing from the Edge of Thick Fabric .....	42	Inserting a pattern.....	108
Changing Sewing Direction.....	42	Startover Key.....	108-109
Turning a Square Corner.....	42	Checking Pattern Combination Length .....	109-111
Securing Seams.....	43	Tapering.....	112-120
Cutting Threads.....	43		
Needle Plate Guides .....	43		

# TABLE OF CONTENTS

## MONOGRAMMING

Function Keys.....	121
Manual Thread Tension.....	122
Individual Thread Tension Adjustment.....	122
Unified Thread Tension Adjustment.....	122
Spacing.....	122
Reducing the Size of Letters.....	122
Programming a Monogram.....	123-125
Saving a Pattern Combination.....	125-126
Opening a Pattern Combination.....	127

## HAND STITCH STYLE

Hand Stitch Style.....	128
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## SEWING APPLICATION

Variety of Sewing Application.....	129-130
Sewing Application.....	130-148
Seaming woven.....	130
Seaming stretch/knit.....	130
Curve.....	131
Topstitching.....	131
Rolled hem.....	132
Overedge woven.....	133
Overedge stretch/knit.....	133
Overedge heavy.....	133
Blind hem.....	134-135
Shell tuck.....	136
Lapped zipper sewing.....	137-139
CONCEAL® zipper.....	140-141
Pouch zipper.....	142
Gathering.....	143
Easestitching.....	143
Basting.....	144
Buttonhole.....	144
Button sewing.....	145
Tacking.....	146
Eyelet.....	147
Smocking.....	147-148
Fagoting.....	148
Quilt Application.....	149-150
Patchwork piecing.....	149
Quilting.....	150
Stitch Regulator Function / A.S.R. Foot Holder.....	151-153
Changing the foot attachment.....	153
Ruler Work.....	154
Variable Zigzag.....	155
Applique.....	156-157
Straight Stitches (with dual feed).....	157
Decorative Quilt Stitch.....	158
Clasp Stitches.....	158
Sashiko.....	159
Hand-look QU.....	159

## INFORMATION AND CUSTOMIZING

Function Menu.....	160
Quick Stitch Select.....	160-161
Quilt Block Advisor.....	161
Back left Position Key.....	161
Manual Dual Feed Setting.....	162-164
Machine Information.....	164
Customizing Machine Settings.....	165
Machine Setting Mode.....	166-168
Sewing Setting Mode.....	169-170
Wireless LAN Setting Mode.....	171-174
Connecting wireless LAN network.....	171
Network settings.....	172-174
Language Setting Mode.....	175
Direct PC / Mac-Link.....	175

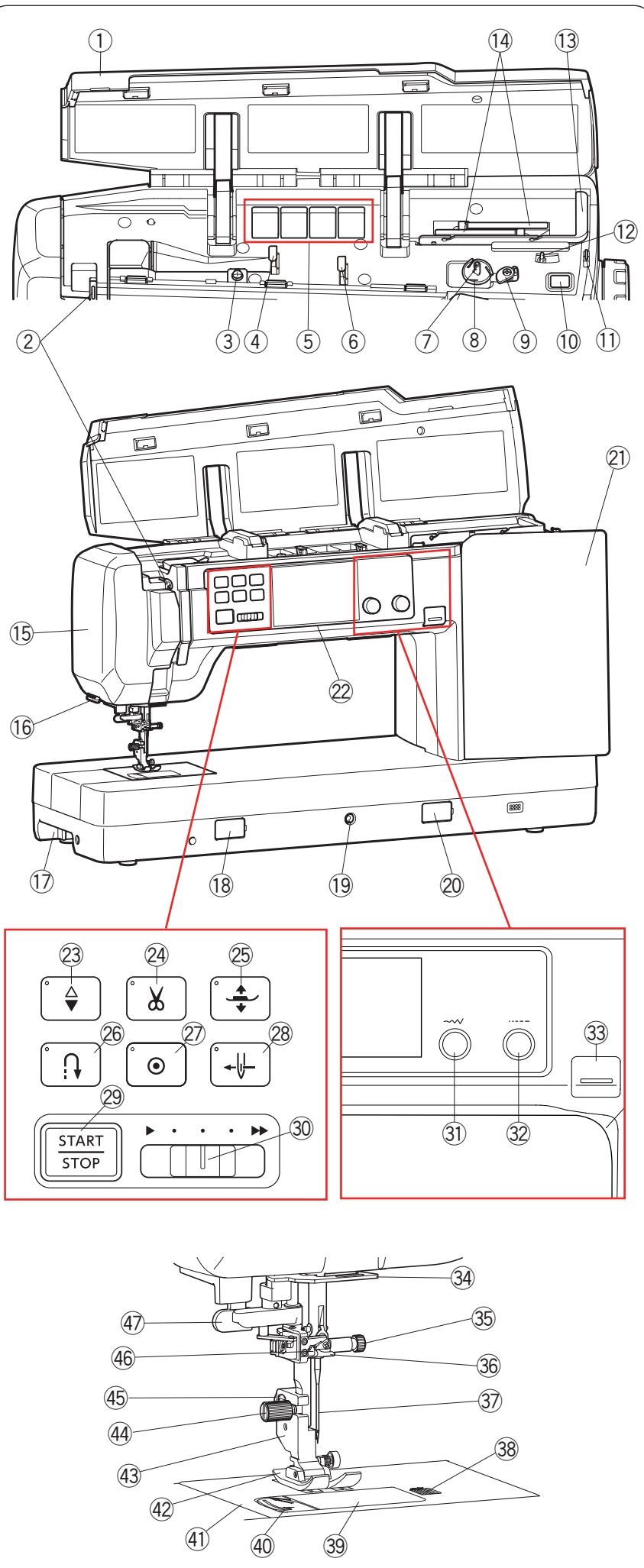
## CARE AND MAINTENANCE

Cleaning the Hook Area.....	176
Cleaning the Inside of the Thread Guide.....	177
Correcting Distorted Stitch Patterns.....	178
Replacing the Coin Cell Battery for the Internal Clock... ..	179
Replacing the Needle Plate for Emergency.....	180
Problems and Warning Signals.....	181
Troubleshooting.....	182-183
Troubleshooting (automatic needle threader).....	184
Formatting USB Flash Drives.....	185-186
Stitch Chart.....	187-191

## ESSENTIAL PARTS

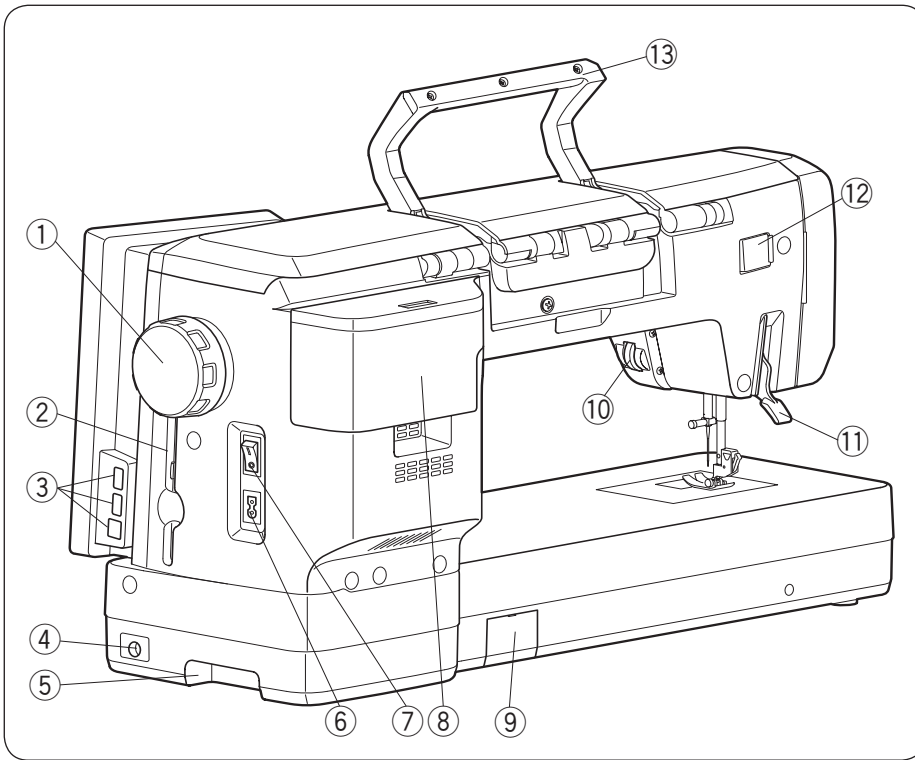
### Names of Parts

- ① Top cover
- ② Thread take-up lever
- ③ Bobbin winding tension disk
- ④ Left thread guide
- ⑤ Foot compartment
- ⑥ Right thread guide
- ⑦ Bobbin winder spindle
- ⑧ Thread cutter (Bobbin winder)
- ⑨ Bobbin winder stopper
- ⑩ Bobbin winding button
- ⑪ Thread cutter (rightmost)
- ⑫ Pop up spool pins lever
- ⑬ Retractable thread guide
- ⑭ Spool pins
- ⑮ Face plate
- ⑯ Thread cutter/holder
- ⑰ Carrying handle (lower)
- ⑱ Needle plate release dial cap
- ⑲ Knee lifter socket
- ⑳ Feed balancing dial cap
- ㉑ Right touch screen
- ㉒ Middle touch screen
- ㉓ Needle up/down button
- ㉔ Thread cutter button
- ㉕ Presser foot lifter button
- ㉖ Reverse button
- ㉗ Auto-lock button
- ㉘ Needle threader button
- ㉙ Start/stop button
- ㉚ Speed control slider
- ㉛ Stitch width adjusting dial
- ㉜ Stitch length adjusting dial
- ㉝ Top cover release button
- ㉞ Lower thread guide
- ㉟ Needle clamp screw
- ㊱ Needle bar thread guide
- ㊲ Needle
- ㊳ Hook cover release button
- ㊴ Hook cover plate
- ㊵ Bobbin thread cutter
- ㊶ Needle plate
- ㊷ Zigzag foot A
- ㊸ Foot holder
- ㊹ Thumbscrew
- ㊺ Lever
- ㊻ Automatic needle threader
- ㊼ Buttonhole lever

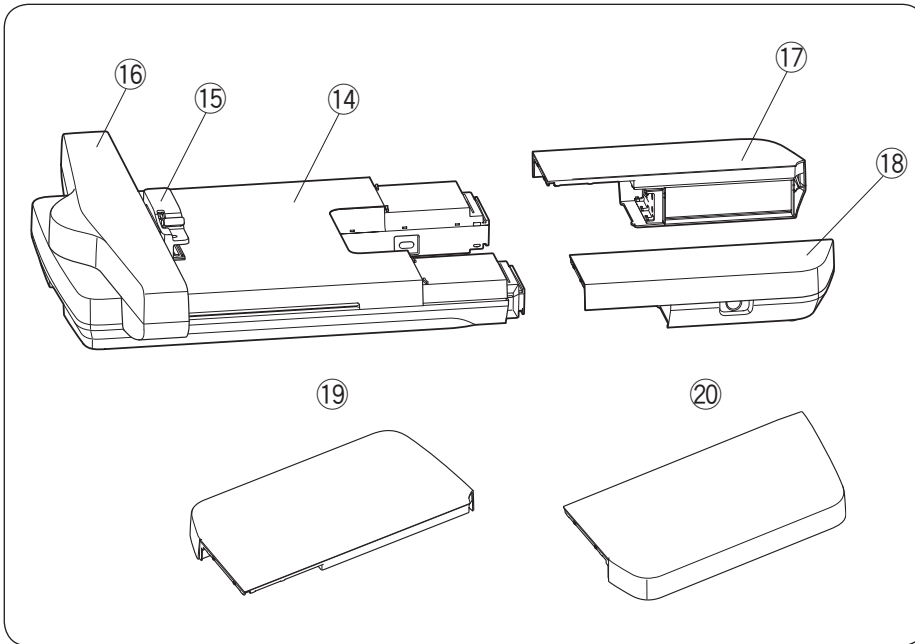


### NOTE:

- To carry the sewing machine, refer to page 12.
- Sewing machine design and specifications are subject to change without prior notice.

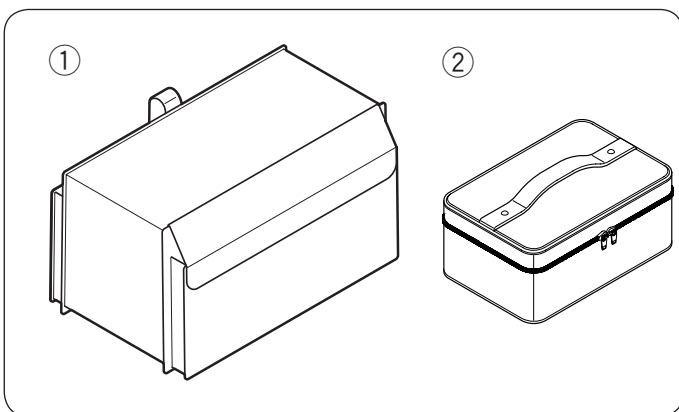


- ① Handwheel
- ② Touch panel stylus holder
- ③ USB ports (lower)
- ④ Foot control jack
- ⑤ Carrying handle (lower)
- ⑥ Power inlet
- ⑦ Power switch
- ⑧ Accessory storage
- ⑨ Battery cover
- ⑩ Thumb wheel
- ⑪ Presser foot lifter
- ⑫ Attachment connector cap
- ⑬ Carrying handle (upper)



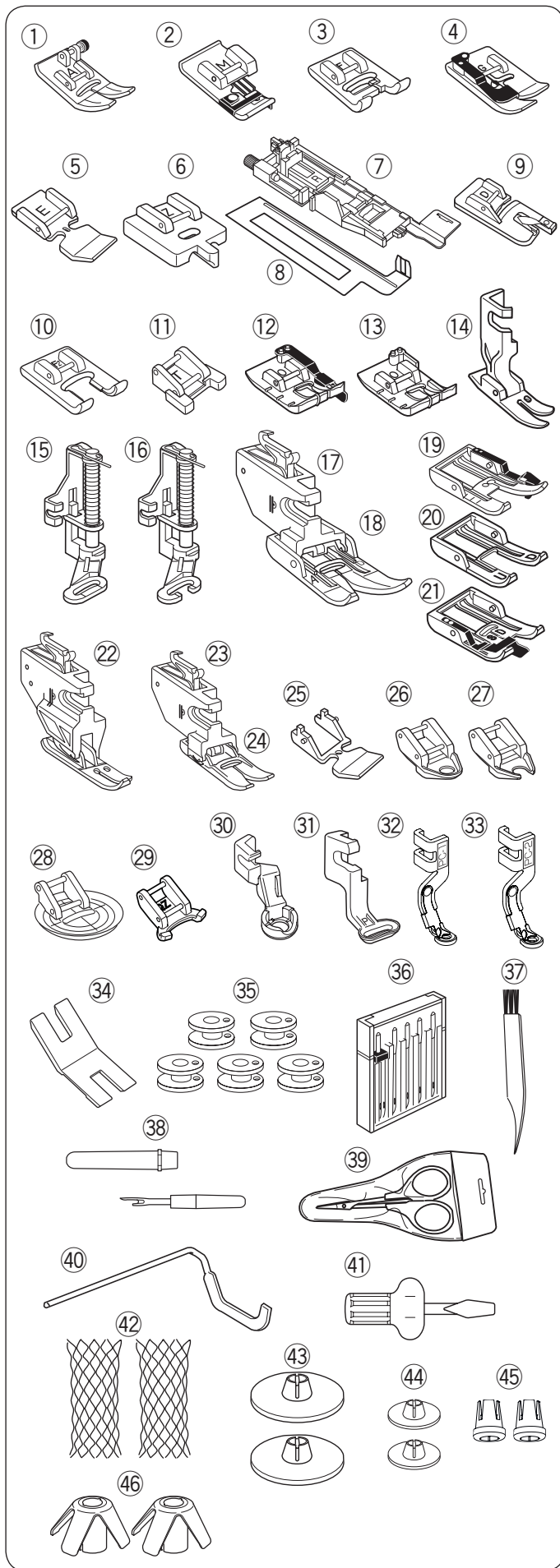
- ⑭ Embroidery unit
- ⑮ Hoop socket
- ⑯ Carriage
- ⑰ Embroidery table (rear)
- ⑱ Embroidery table (front)
- \* You can store accessories in embroidery tables.
- ⑲ Upper table large cover (rear)
- ⑳ Upper table large cover (front)

\* To attach the Embroidery unit, please refer to the instruction book for embroidery.



### Standard Accessories

No.	Part Name	Part No.
1	Semi-hard fabric cover	868822000
2	Accessory case	868820008



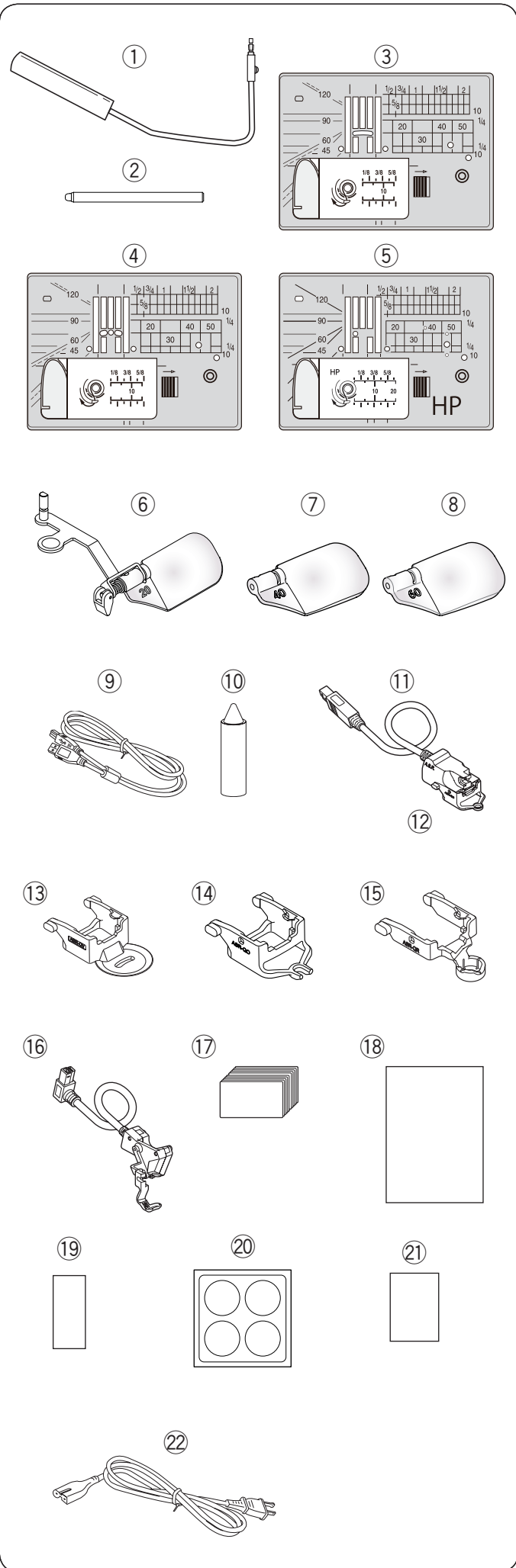
## Standard Accessories

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	CONCEAL® 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 holder (twin)	859817015
18	Dual feed foot AD (twin)	859819109
19	Dual feed quilt piecing foot OD (twin)	859829009
20	Dual feed open toe foot UD (twin)	202150019
21	Dual feed ditch quilting foot SD (twin)	859404004
22	Dual feed professional grade foot HP2	865522008
23	Dual feed holder (single)	859833017
24	Dual feed foot VD (single)	859835101
25	Dual feed zipper foot ED (single)	859838001
26	Free motion quilting closed-toe foot QC	859836009
27	Free motion quilting open-toe foot QO	859837000
28	Free motion quilting zigzag foot QV	859812009
29	Variable zigzag open-toe foot QZ	862895006
30	Ruler work foot QR	862896007
31	Embroidery foot P	859816025
32	Couching foot PC-1	862410106
33	Couching foot PC-2	862410117
34	Button shank plate	832820007
35	Bobbin x 5** (1 set on the machine)	102261103
36	Needle set	859856005
37	Lint brush	802424004
38	Seam ripper (Buttonhole opener)	647808009
39	Scissors	803813203
40	Quilting guide bar	755802001
41	Screwdriver	820832005
42	Net x 2**	624806006
43	Spool holder (large) x 2**	822020503
44	Spool holder (small) x 2**	822019509
45	Spool holder (special) x 2**	862408008
46	Spool rest x 2**	770850001

\* "CONCEAL" is a registered trademark of YKK Corporation.

\*\*This is a part number of single item (not set number).

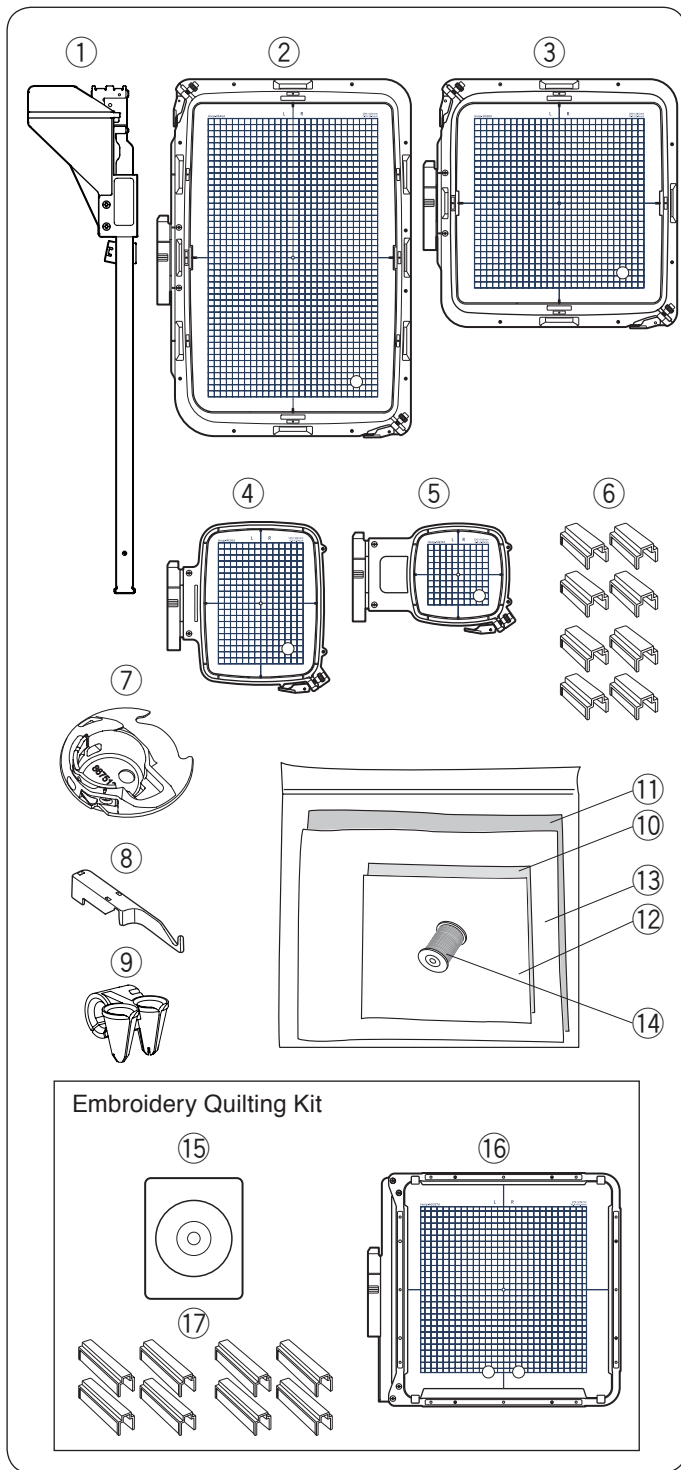




## Standard Accessories

No.	Part Name	Part No.	
1	Knee lifter	846417011	
2	Touch panel stylus	868826004	
3	Needle plate (set on the machine)	867642001	
4	Straight stitch needle plate	867802001	
5	Professional grade needle plate HP	867803002	
6	Optic magnifier 20	867401006	
7	Optic magnifier 40	858415500	
8	Optic magnifier 60	858415603	
9	USB cable	868544005	
10	Bobbin holder cleaner	859858007	
11	Accurate stitch regulator	868835006	
12	ASR closed-toe foot ASR-QC	868837008	
13	ASR clear-view foot ASR-QV	868837204	
14	ASR open-toe foot ASR-QO	868837101	
15	ASR ruler work foot ASR-QR	868837307	
16	Positioning marker embroidery foot PM	868825003	
17	At a glance charts	See page 187-191 (Instruction book) to check the part NO.	
18	Quick start guide	868838009	
19	Threading guide sticker	101627A05	
20	Protective sticker	868842006	
21	Protective sticker instruction	868843007	
22	Power cable*	U.S.A. and Canada	856519004
		U.K.	830377008
		Australia	830314018
		Continental Europe	830335004

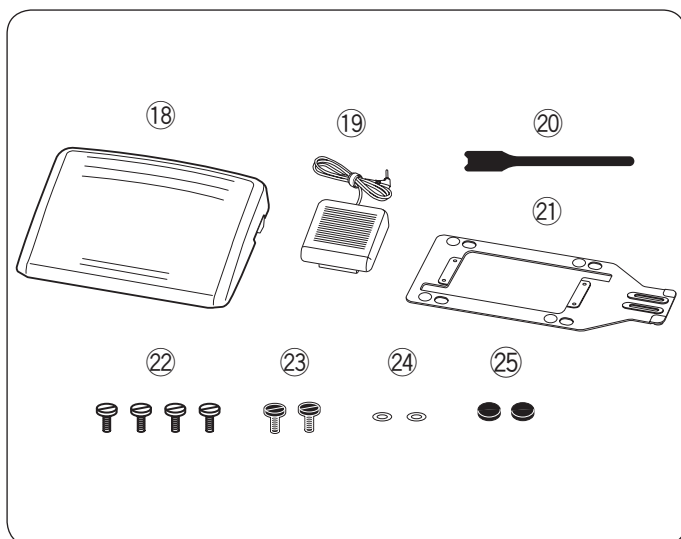
\* The power supply cable included may differ from the illustration.



### Standard Accessories

No.	Part Name	Part No.
1	Cloth guide	868827005
2	Embroidery hoop RE46d (with template)	868815000
3	Embroidery hoop SQ28d (with template)	868816001
4	Embroidery hoop RE20d (with template)	868817002
5	Embroidery hoop SQ10d (with template)	868818003
6	Magnetic clamps x 8** (for RE46d and SQ28d)	859821001
7	Special bobbin holder for embroidery	867513208
8	Sub thread guide stick	868828006
9	Yarn guide	862410508
10	Felt (320 x 320)	850826009
11	Felt (500 x 620)	868831002
12	Stabilizers (320 x 320)	850826102
13	Stabilizers (500 x 620)	868832003
14	Bobbin thread for embroidery	200921792
15	Artistic Digitizer Jr. (Bonus Item)	202422004
16	Embroidery hoop ASQ27d (with template) (Bonus Item)	868819107
17	Magnetic clamps x 8** (for ASQ27d) (Bonus Item)	868819808

\*\* This is a part number of single item (not set number).



No.	Part Name	Part No.
18	Foot control	043770104
19	Thread cutter switch	867811003
20	Cable tie	767849306
21	Base plate	767849100
	*Rubber sole x 6**	525010005
22	Setscrew A x 4**	000081005
23	Setscrew B x 2**	865045002
24	Washer x 2**	000072508
25	Rubber sole x 2**	525010005

\* Rubber sole x 6 are already attached on the under side of the base plate.

\*\* This is a part number of single item (not set number).

## 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.

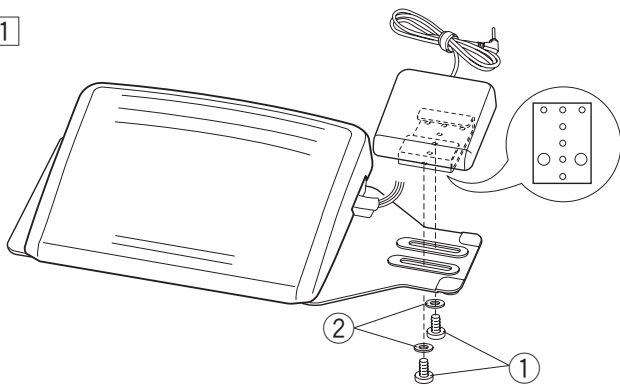
- ① Setscrew A
- ② Setscrew B
- ③ Washer

- ② Turn the base plate 180 degrees.

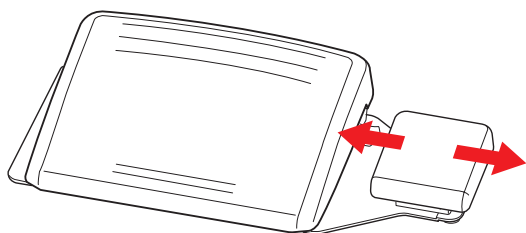
- ③ Attach the foot control and thread cutter switch with the setscrews and the washers ③. Tighten the setscrews A ① and B ②. Be sure that the cable is not caught between the foot control and the base plate.



1



2



### Adjusting the horizontal position of the thread cutter switch

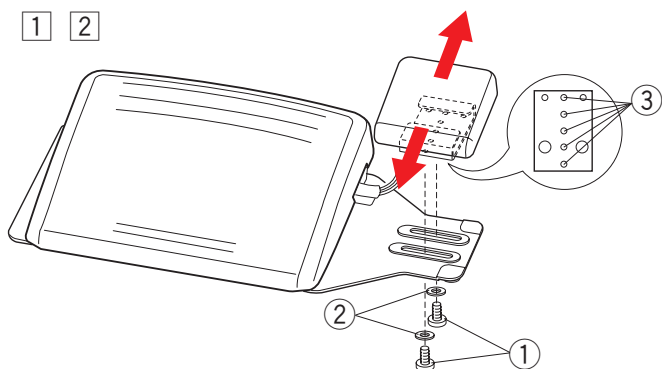
1 Loosen the setscrews ① under the switch.

① Setscrew

② Washer

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

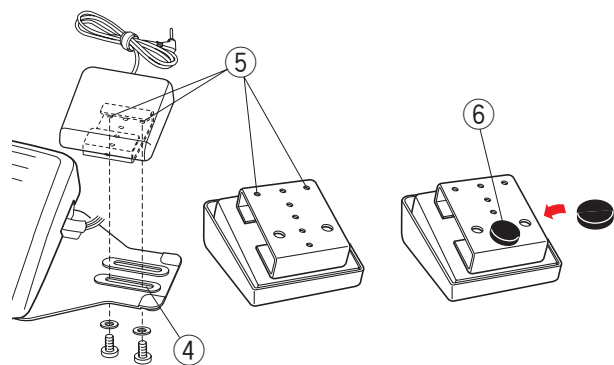
1 2



### Adjusting the vertical position of the thread cutter switch

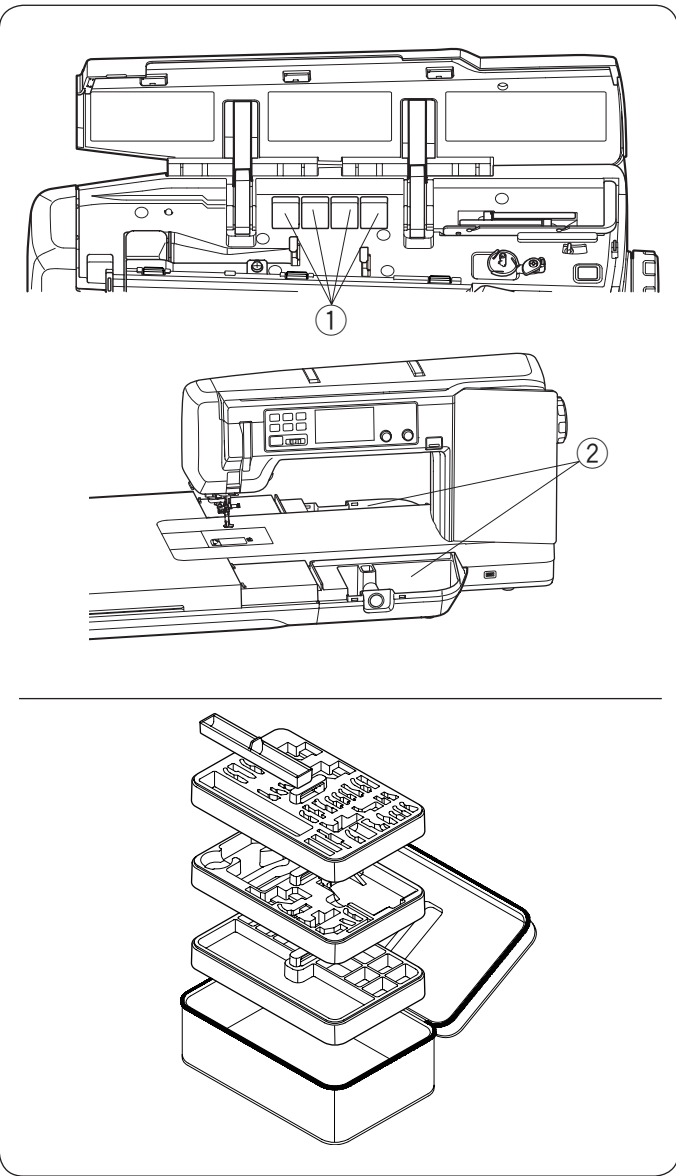
1 Remove the setscrews ① and washers ②.

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



#### NOTE:

- To fix the thread cutter switch at 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.



## Accessory Storage

The accessories can be conveniently stored in the accessory case, the compartment in the embroidery tables and the compartments under the top cover.

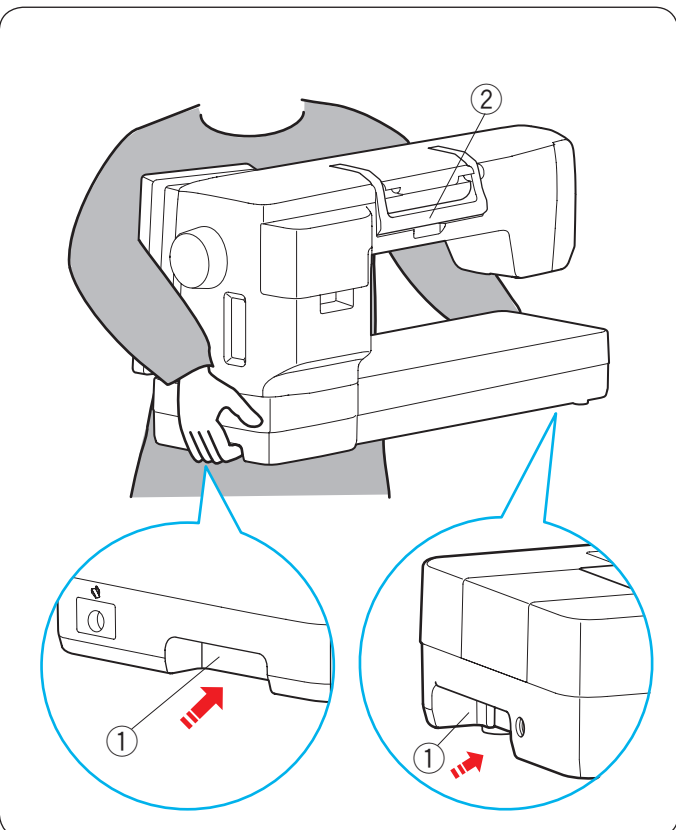
To store the accessories in the embroidery tables, remove the upper table cover (refer to the manual instruction for embroidery).

- ① Compartments for presser feed
- ② Embroidery tables (Accessory storage)\*

\* To attach the Embroidery unit and Embroidery tables, please refer to the instruction book for embroidery.

## Accessory Case

To store the other accessories, open the accessory case and store in the appropriate places. Optional accessories can also be stored in this case.



## How to Carry the Sewing Machine

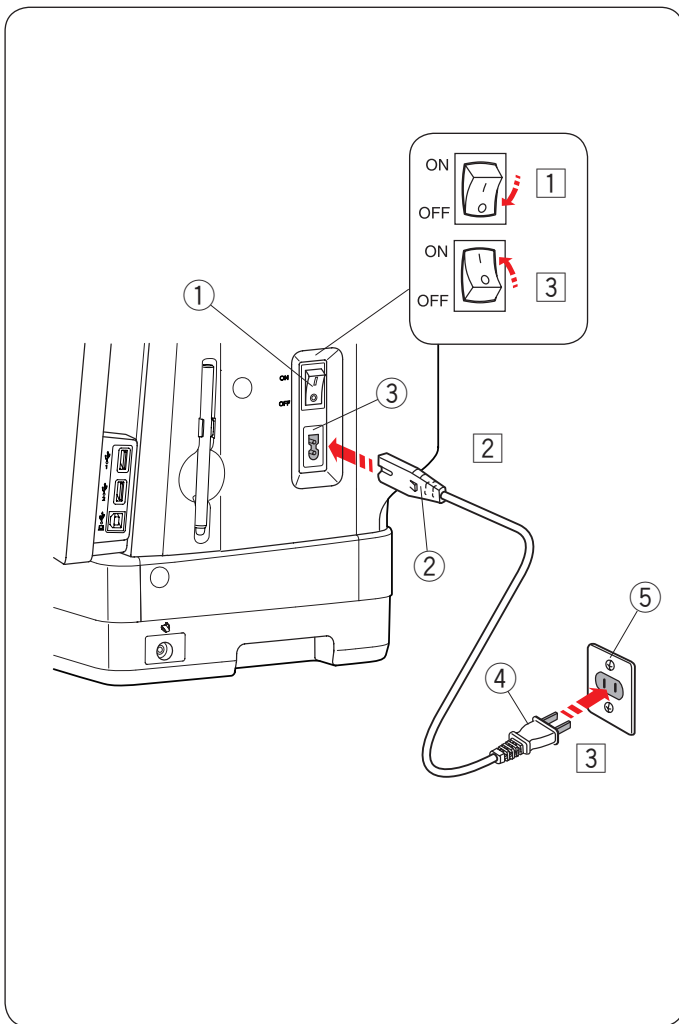
When carrying the sewing machine, hold the lower carrying handles with both hands.

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)
- There is a connector for the embroidery unit on the carrying handle (lower) on the face plate side. Do not insert your finger in the carrying handle too deeply.



## 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:

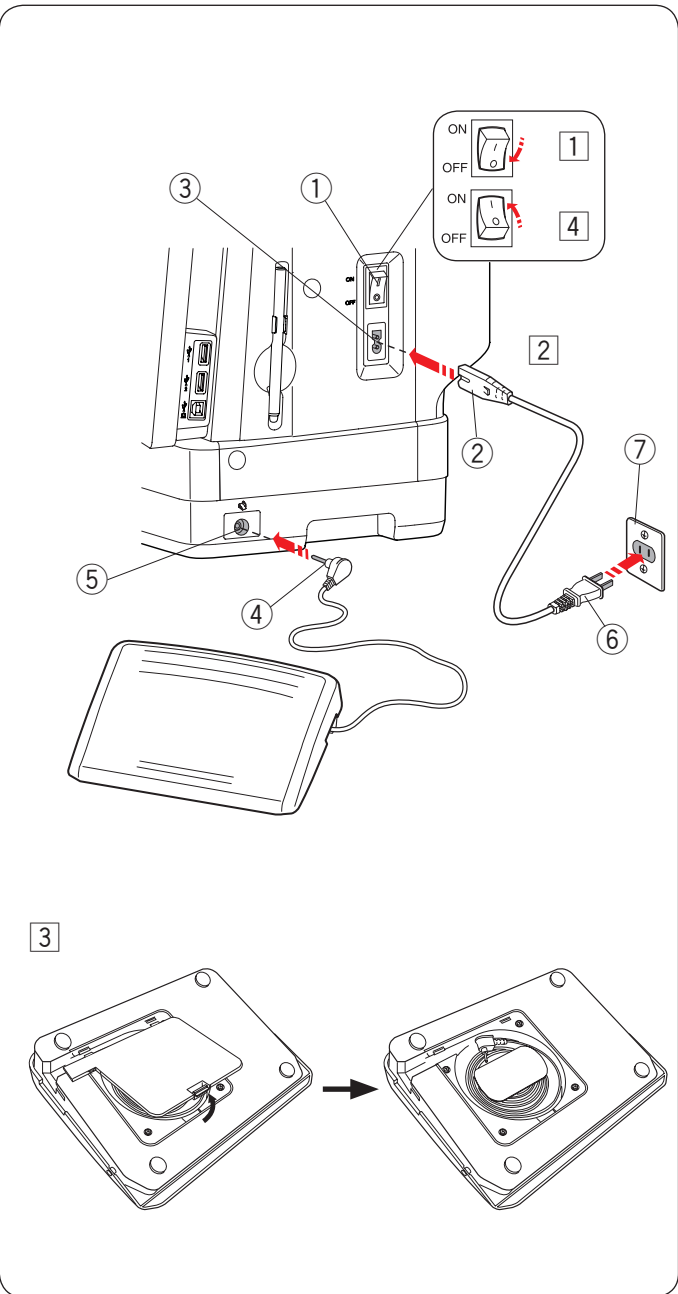
The symbol "O" on the switch indicates the "off" position of the switch.

Foot controller Model 21390 is for use with sewing machine Continental M17.

### 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

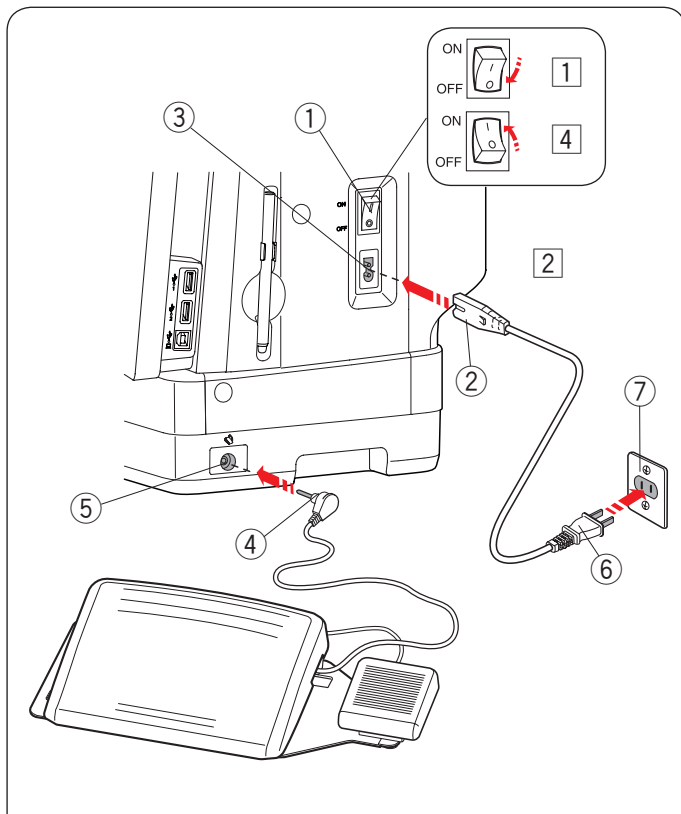
If you wish to use the foot control, pull out the cord from the foot control and insert the pin connector into the jack on the machine.

- 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.

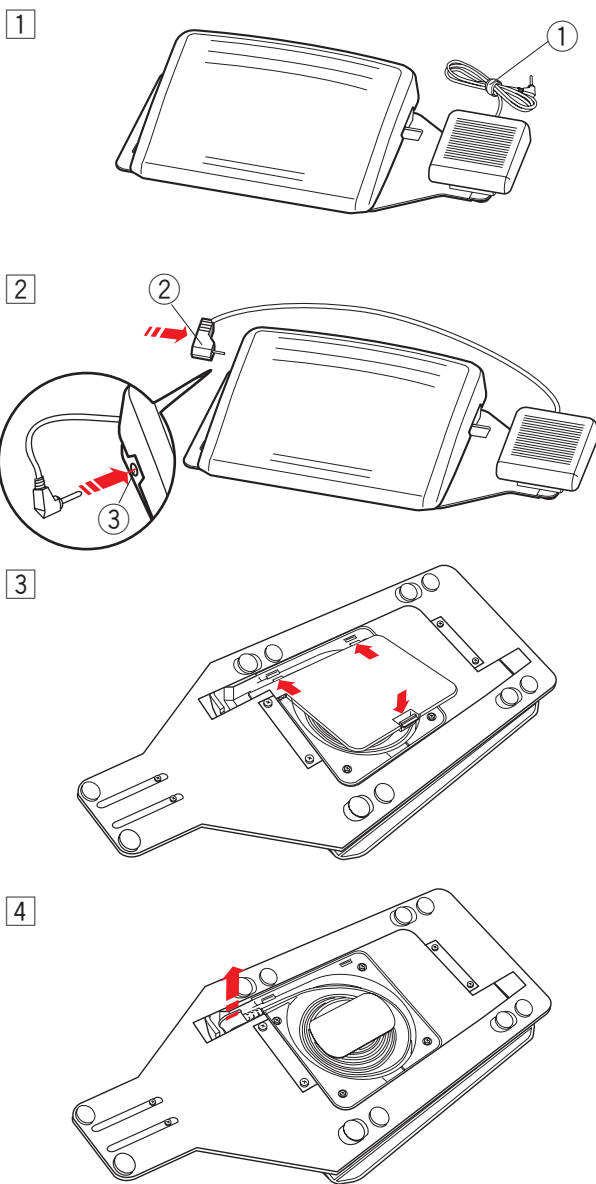


## Thread Cutter Switch

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.

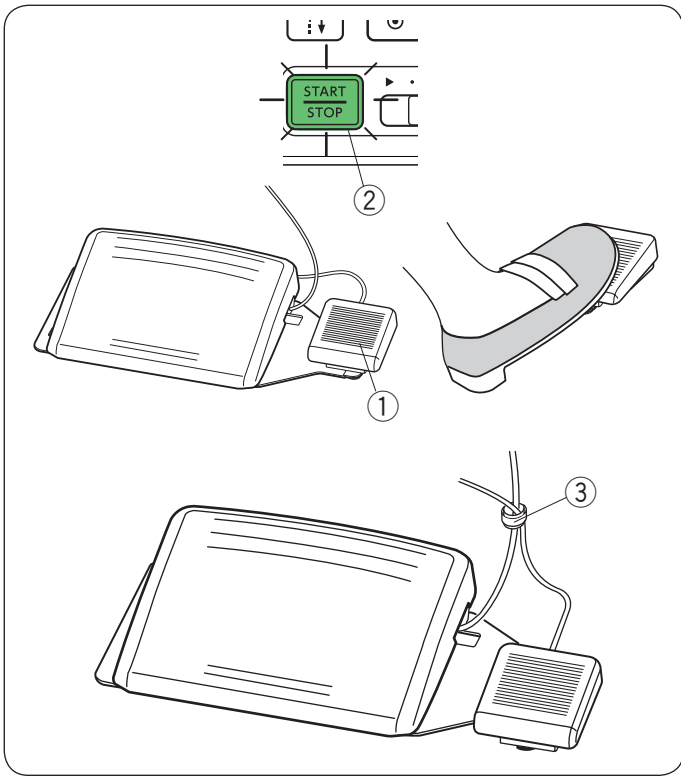
- 1 First make sure the power switch ① is off.
- 2 Insert the machine plug ② of the power supply cable into the machine socket ③.
- 3 Draw out the cord from the foot control and insert the pin connector ④ into the jack ⑤ on the machine.
- 4 Insert the power supply plug ⑥ into the wall outlet ⑦, and turn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



## Preparation for thread cutter switch

- 1 Remove the cable tie ① from the cable.
- 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 Turn the foot control upside down. Open the base cover of the foot control.
- 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 both the needle and bobbin threads.

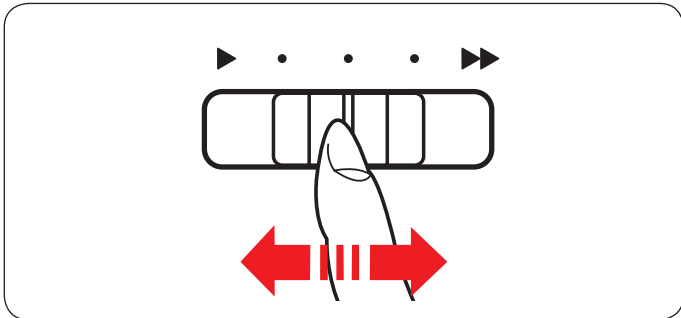
Do not depress the thread cutter switch until the start/stop button turns green ②.

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**

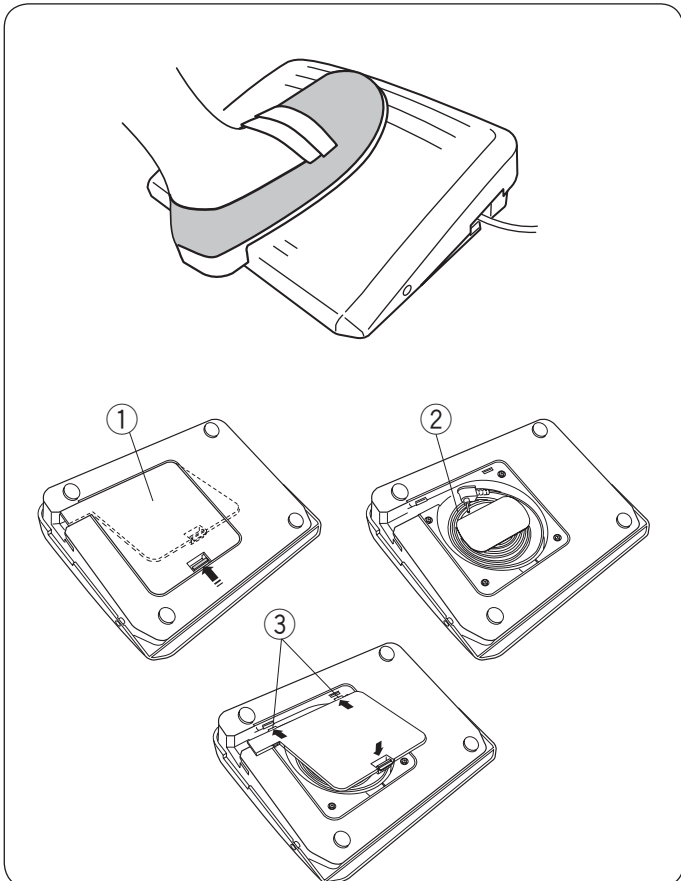
**Speed control slider**

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 169).
- 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 right 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

## Machine Operating Buttons

### ① Start/stop button

Press this button to start or stop the machine. This button can be used both in the ordinary sewing mode and embroidery mode.

In the ordinary sewing mode, the machine starts running slowly for the first few stitches, 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.

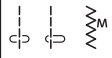

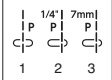
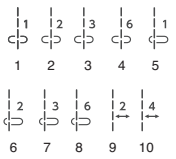

Pressing and holding this button while sewing will slow down the sewing speed and the machine will stop when the button is released.

#### 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 169).

### ② Reverse button

- When the following stitch patterns are selected:

Utility	Applique	Quilt	Bridge	Decorative
 1 4 9	 9	 1 2 3	 1 2 3 4 5 6 7 8 9 10	 2 3

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.

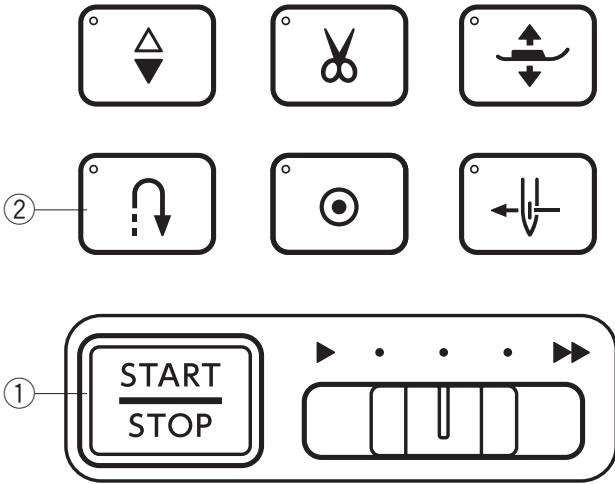
- When the following stitch patterns are selected:

Utility	Buttonhole
 2 3	 2 15 16

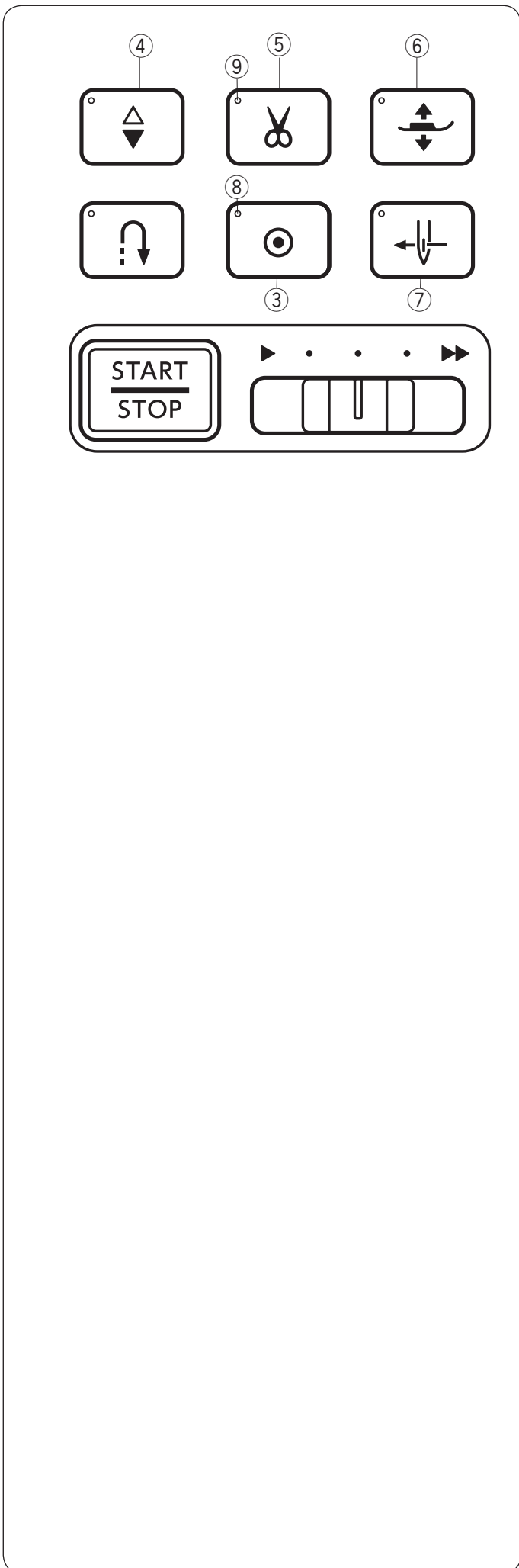
There will be particular functions of the reverse button when the patterns shown above are selected. Refer to pages 44, 68, 69, 74 and 146 for instructions.

- 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 the following stitch patterns are selected:

Utility	Applique	Quilt	Bridge	Decorative
 1 4 9	 R	 1 2 3	 1 2 3 4 5	 2 3
 10 11 12		 1 2 3	 6 7 8 9 10	

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 and the LED signal ⑧ will blink. 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 the current pattern. The machine will automatically stop.

When the machine is stopped, press the auto-lock button and the LED signal ⑧ will blink. 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 169).

### 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 169).

### ⑤ Thread cutter button

After finishing sewing, press this button to trim the threads. The needle bar automatically rises after trimming the threads (refer to page 43).

The LED signal ⑨ blinks when the machine trims threads.

#### 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 43).

After using auto thread cutting or threading the bobbin holder, you can start sewing without drawing up the bobbin thread.

### ⑥ Presser foot lifter button

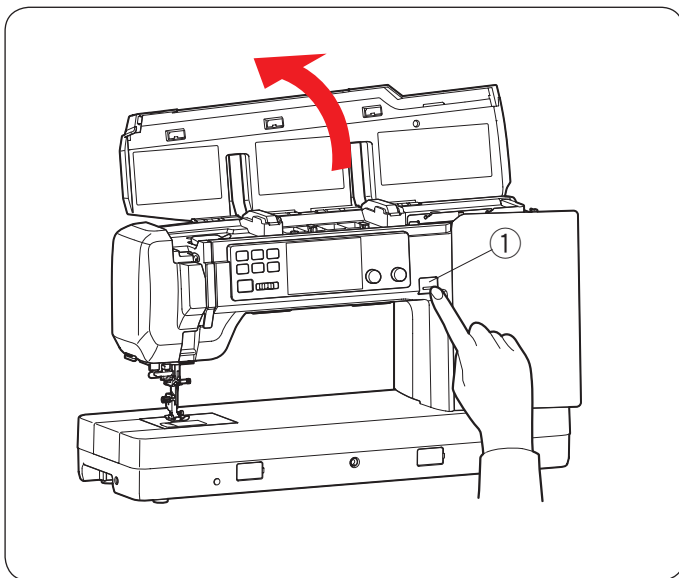
The presser foot will go up or down by pressing this button.

You can also use the presser foot lifter and knee lifter to raise and lower the presser foot (refer to page 23).

### ⑦ Needle threader button

Press this button to thread the needle thread through the needle eye (refer to page 35).



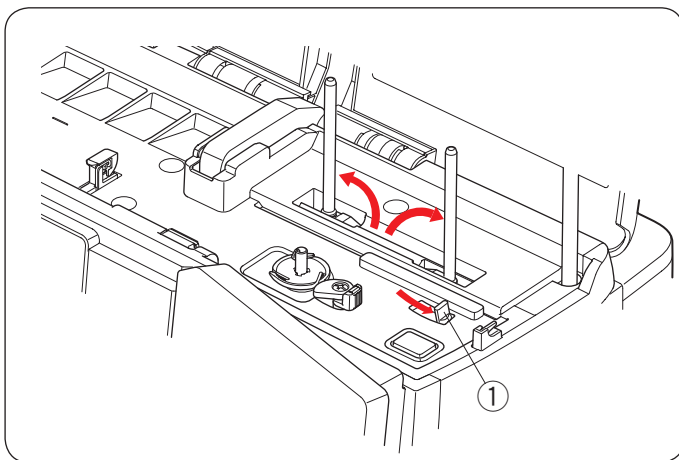


### Top Cover Release Button

#### ① Top cover release button

Press this button to open the top cover.

To close the top cover, press the cover down with your hand.

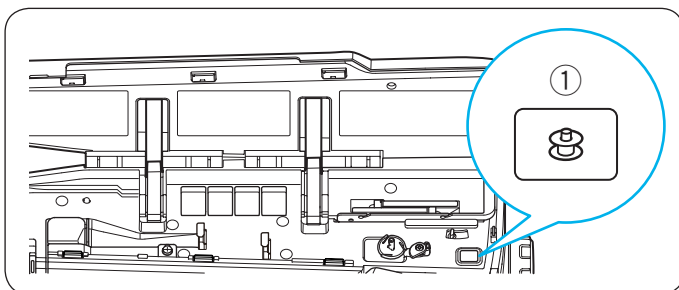


### Pop Up Spool Pins Lever

#### ① Pop up spool pins lever

Move the pop up spool pins lever to the right to raise spool pins.

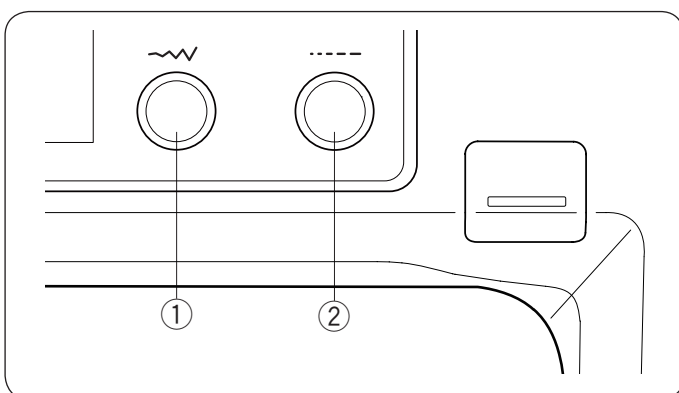
Push the spool pins down with your hand to store the spool pins.



### Bobbin Winding Button

#### ① Bobbin winding button (refer to page 31)

Press this button to wind the bobbin.



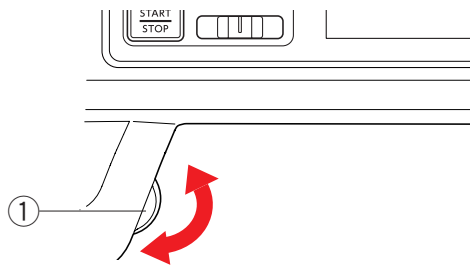
### Jog Dials

#### ① Stitch width adjusting dial (refer to pages 53, 66, 74-75, etc.)

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

#### ② Stitch length adjusting dial (refer to pages 54, 66, etc.)

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



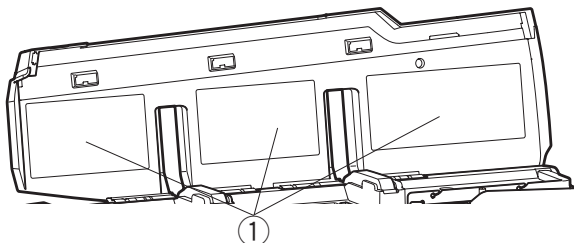
### Thumb Wheel

Turn the thumb wheel to lower or raise the needle to check the needle drop position.

- ① Thumb wheel

**NOTE:**

Do not use the thumb wheel to penetrate the fabric.



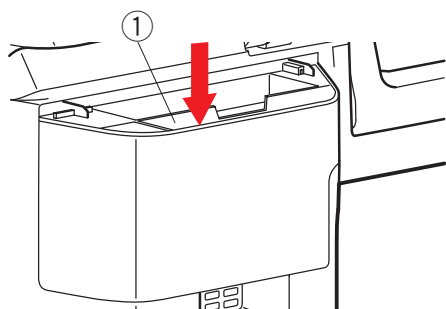
### Reference charts

There are 3 reference charts on the top cover.

You can check groups and how to thread the machine and wind the bobbin.

- ① Reference charts

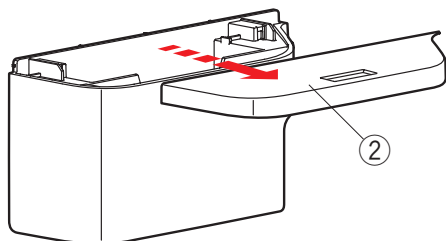
You can attach desired "At a glance charts" on the reference charts.



### Accessory storage

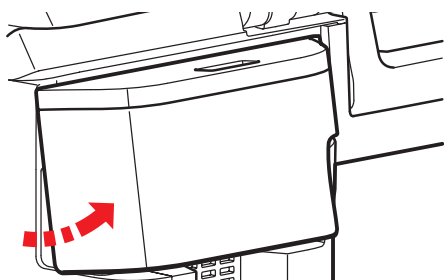
You can store "At a glance charts" in the accessory storage on the backside of the machine when it is not in use.

- ① Accessory storage

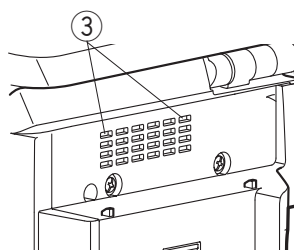


To open the cover of the accessory storage, slide the cover of the storage toward you.

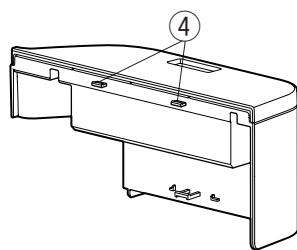
- ② Cover



You can remove the accessory storage. To remove, pull the underside of the storage as illustrated.



Correct



Wrong

To attach the accessory storage, insert the hooks on the storage into the holes (upper right and upper left) on the rear cover.

- ③ Holes
- ④ Hooks

To insert the hooks, fit the edge of the storage to under the edge of the top cover and then push the edge of the storage against the rear cover.

Push the storage as illustrated.

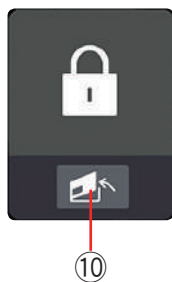
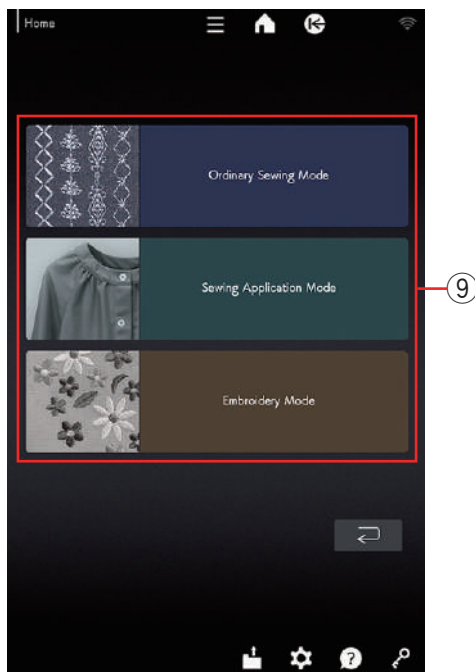
**NOTE:**

- Be sure that there is no gap between the rear cover and the storage when hooks are inserted.
- Do not slide the storage for attaching. The hooks can break.

## Common Keys

### CAUTION:

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



#### ① Function menu key (refer to page 160)

Press this key to open the function menu.

You can select the following functions from this menu.

- Quick Stitch Select
- Quilt Block Advisor
- Manual Dual Feed Setting
- Machine Information

#### ② Home key

Press this key to enter the home window.

On the home window, press the mode selection keys ⑨ to enter ordinary sewing mode, sewing application mode or embroidery mode.

#### ③ Start page key

Press this key to go to the start page of ordinary sewing mode, sewing application mode or embroidery mode.

#### ④ Stitch reference key (refer to page 112)

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

#### ⑤ Open file key (refer to page 127)

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.

#### ⑥ Set mode key (refer to page 165)

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

#### ⑦ Help key (refer to page 22)

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

#### ⑧ 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 ⑩ and presser foot lifter button are deactivated.

To unlock the machine, press this key again.

\* This product contains eT-Kernel™ Compact RTOS of eSOL Co., Ltd. eT-Kernel is trademark of eSOL Co., Ltd.

## On-screen Help

Press the help key to open the help menu.

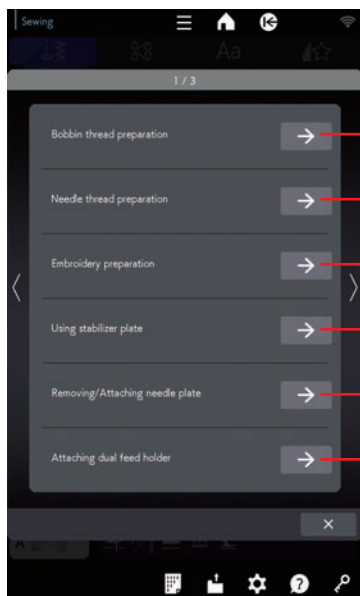
You can view instructions on 13 essential machine operation topics.

Select the help topic by pressing the arrow and the step-by-step instruction will open.

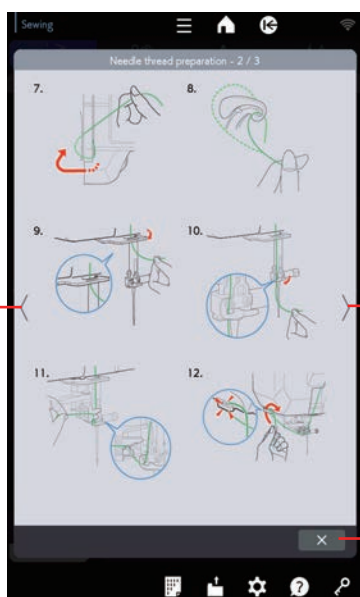
- ① Help key
- ② Arrow



①



②



④

③

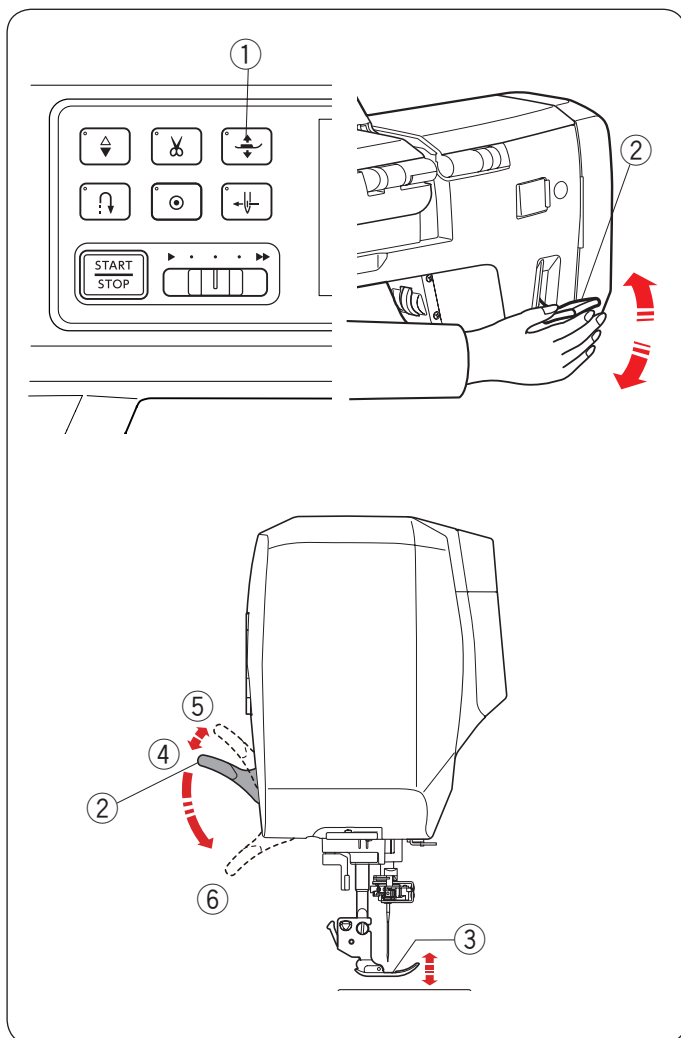
⑤

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



## Raising and Lowering the Presser Foot

### **CAUTION:**

Do not turn the handwheel, thumb wheel or press the needle up/down button when the presser foot is in extra lifted position. This may cause damage to the presser foot.

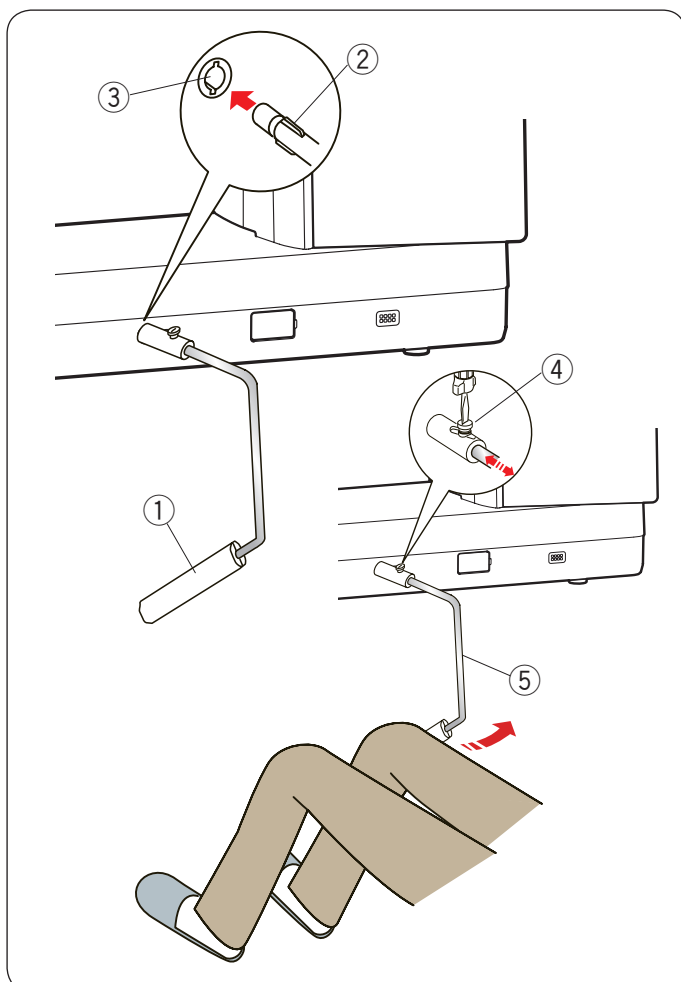
The presser foot lifter button, the presser foot lifter or the knee lifter raises and lowers the presser foot.

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 the user.

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.

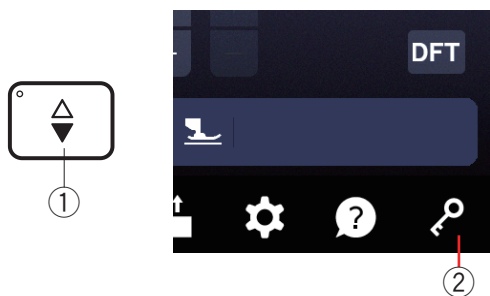
You can control how high the foot rises by the amount of knee pressure you exert.

## Replacing the Presser Foot

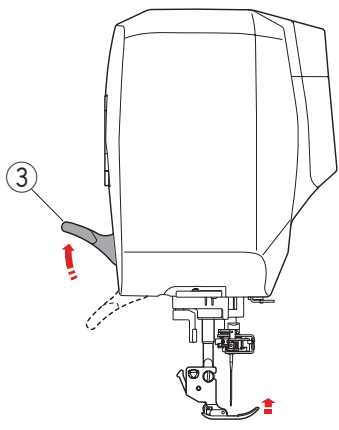
### CAUTION:

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

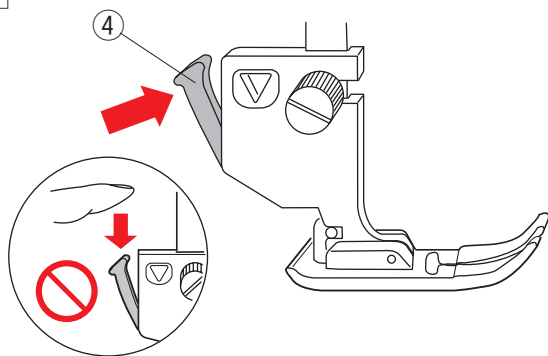
1



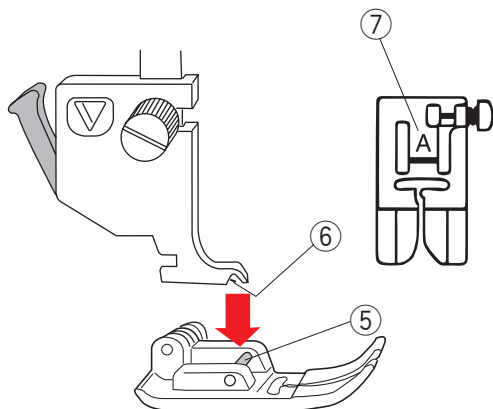
2



3



4



- 1 Raise the needle by pressing the needle up/down button.

Press the lockout key.

- ① Needle up/down button
- ② Lockout key

- 2 Raise the presser foot lifter.

- ③ Presser foot lifter

- 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 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, Dual feed foot AD, Stitch regulator or the embroidery foot.

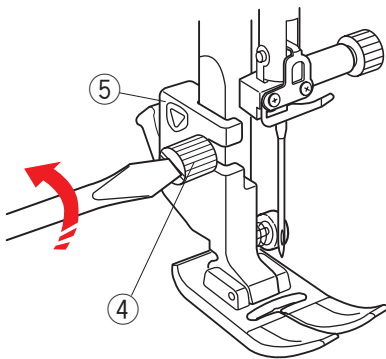
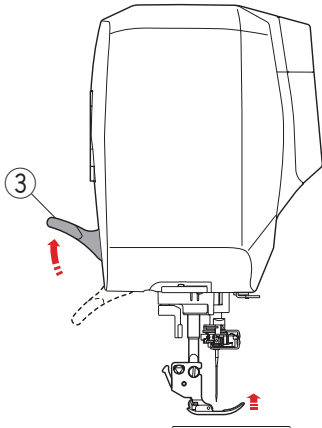
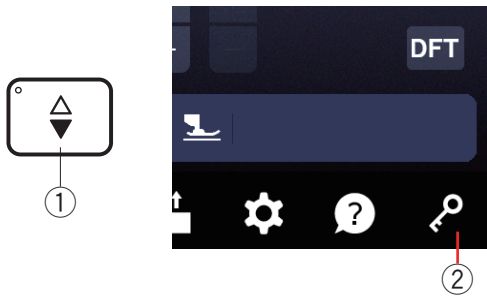
### **CAUTION:**

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



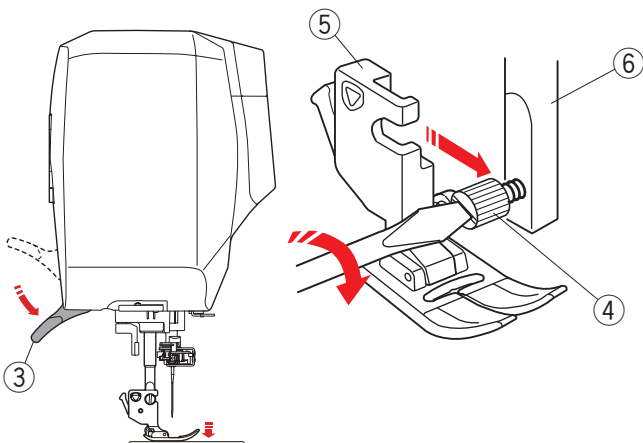
Loosen the thumbscrew and remove the foot holder.

- ④ Thumbscrew
- ⑤ Foot holder

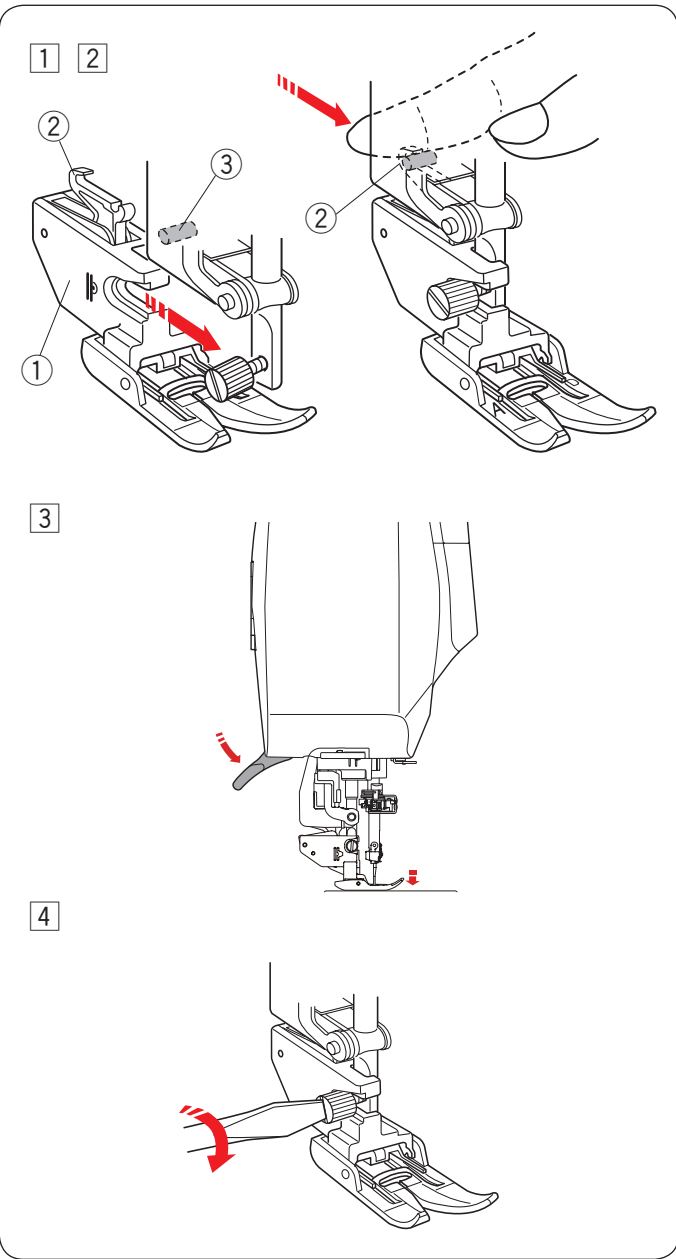
### Attaching the foot holder

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

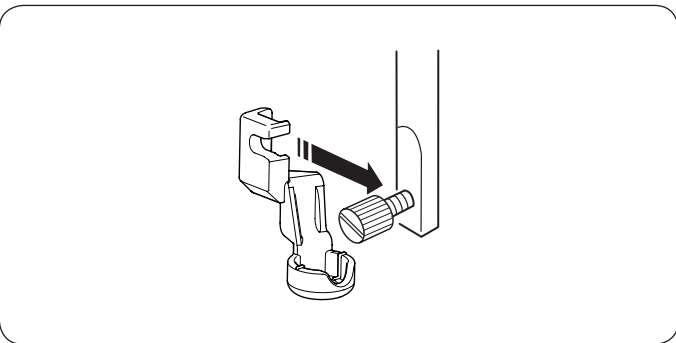






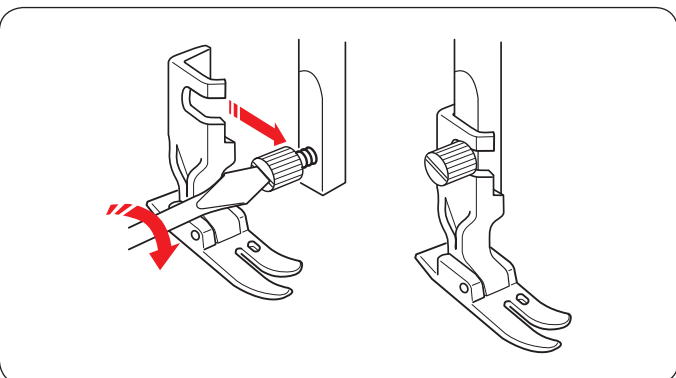
### Attaching Dual Feed Foot AD, Dual Feed Professional Grade Foot HP2 or Dual feed foot VD (single)

- 1 Attach the dual feed holder to the presser bar.
  - ① Dual feed holder
- 2 Tighten the thumbscrew 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 thumbscrew securely with the screwdriver.



### Attaching Ruler work foot QR

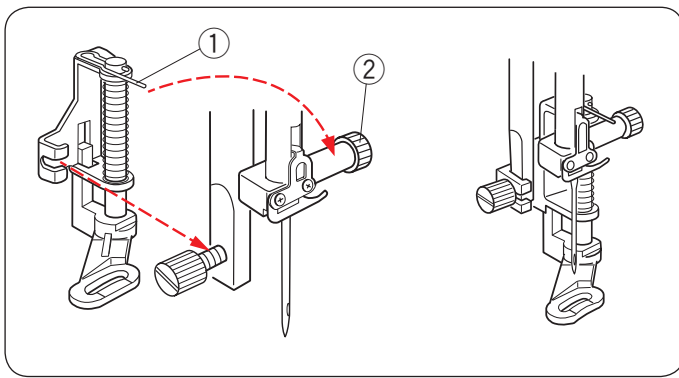
- Attach Ruler work foot QR to the presser bar from behind.
- Tighten the thumbscrew firmly with the screwdriver.



### Attaching Professional Grade Foot HP

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



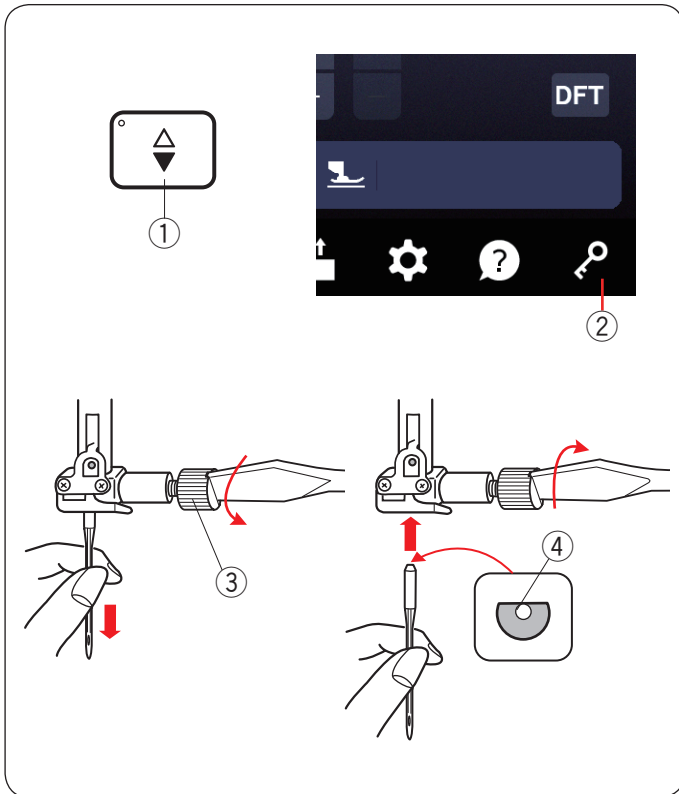


### Attaching Darning Foot PD-H or Darning Foot (open-toe) PD-H

Attach darning foot PD-H or 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 thumbscrew 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.

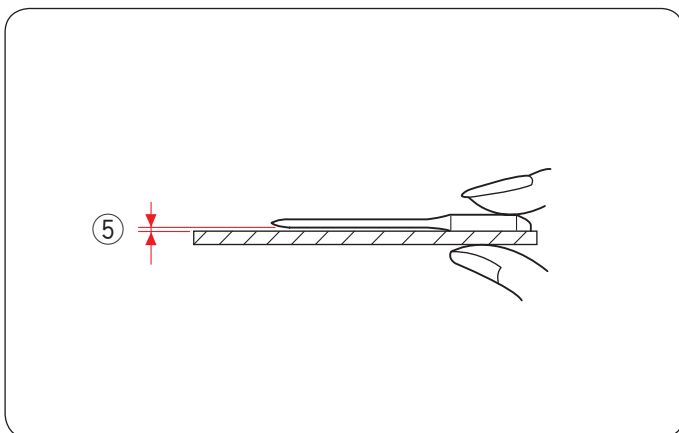
Remove the needle from the clamp.

- 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.

#### **CAUTION:**

Be sure to tighten the needle clamp screw firmly with a screwdriver when attaching a needle to the machine, otherwise the needle may break or cause malfunction.

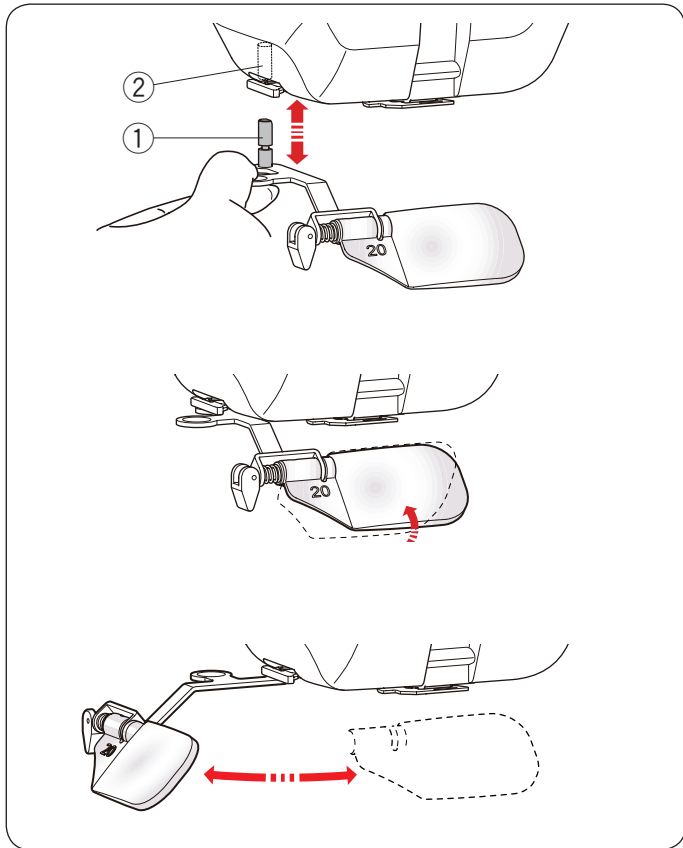
Fabric		Thread	Needle
Fine	Lawn Georgette Tricot Organza Crepe	Cotton #80-100 Synthetic #80-100	Blue tip needle Universal needle #9/65-11/75
Medium	Sheeting Jersey Broadcloth Fleece	Cotton #50-80 Synthetic #50-80	Red tip needle Purple tip needle Universal needle #11/75-14/90
Heavy weight	Denim Tweed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



**Optic Magnifier**

Use the magnifier to get a larger view of the needle area.

**Attaching the magnifier**

Hold the knob with your fingers and insert the pin into the hole in the bottom of the face plate. Push the magnifier up until it snaps to fit. Adjust the angle to get the best view.

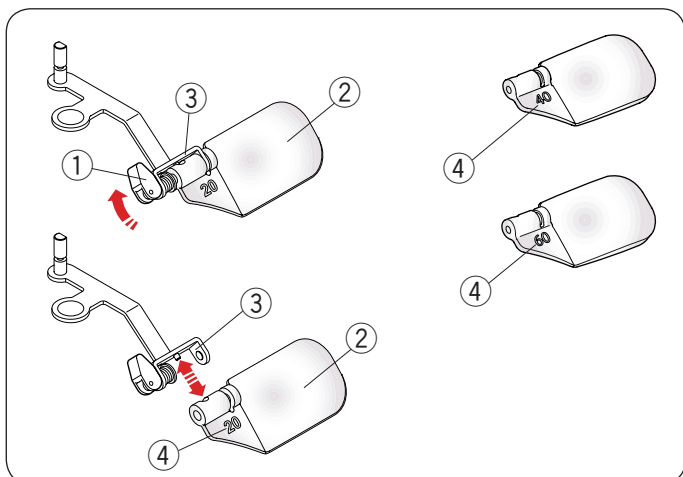
- ① Pin
- ② Hole

**Removing the magnifier**

If the magnifier is not in use, turn it to the left out of sight or pull it down to remove.

**CAUTION:**

- Do not use or leave the magnifier in direct sunlight, as it may cause a fire or burn.
- Do not look at the sun through the magnifier as it can damage your eyes.
- Do not hit or exert excessive force on the optic magnifier as this may cause damage when it is attached.
- Do not attach the optic magnifier when sewing in embroidery mode.



**Replacing the magnifier**

To remove the lens, push or pull the lever to the opposite side to draw the pin out of the lens.

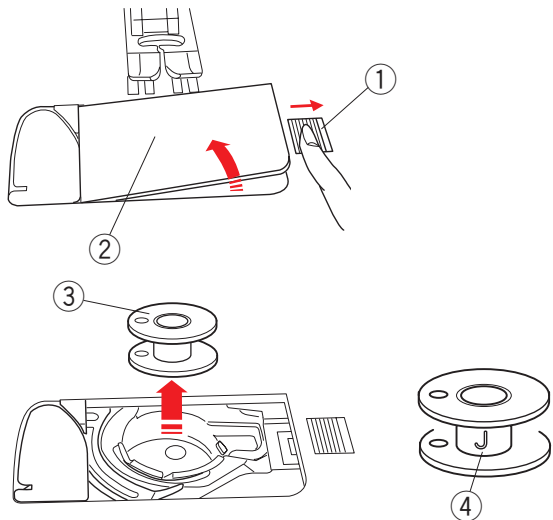
Remove the lens from the metal.

To attach the lens, insert it into the metal part as illustrated.

Push or pull the lever to the opposite side to fix the lens.

Higher numbers indicate stronger magnification.

- ① Lever
- ② Lens
- ③ Metal part
- ④ Number



## Winding the Bobbin

### Removing the bobbin

Press the lockout key.

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

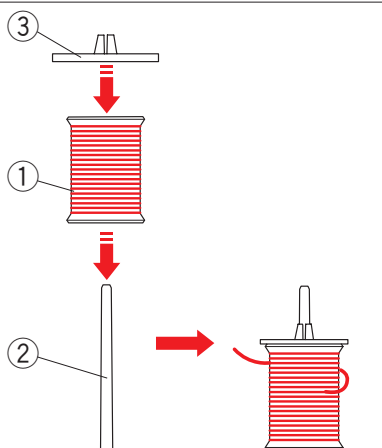
- ① Hook cover release button
- ② Hook cover plate

Lift out the bobbin from the bobbin holder.

- ③ Bobbin

#### NOTE:

- Use "J" plastic bobbins for the horizontal hook machines (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 easy bobbin or metal bobbins.



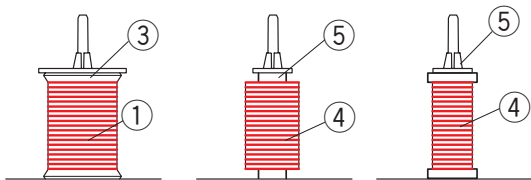
### Setting the spool of thread

Move the pop up spool pin lever to the right to raise the spool pins (refer to page 19).

Place the spool of thread on the spool pin with the thread coming off the spool as shown.

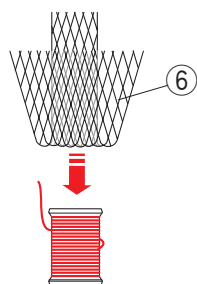
Attach the spool holder, and press it firmly against the spool of thread.

- ① Spool of thread
- ② Spool pin
- ③ Large spool holder



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

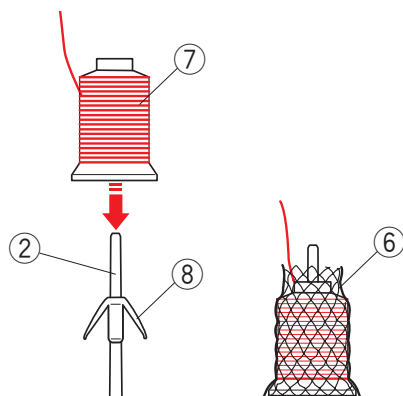
- ④ Small spool
- ⑤ Small spool holder



#### 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.
- If you use a slippery thread such as monofilament transparent thread or elastic thread, put a net on the spool of thread to prevent the thread from slipping off the spool and jamming around the spool pin. If the net is too long for the spool, fold the net and place it on the spool.

- ⑥ Spool net



### Setting the thread cone

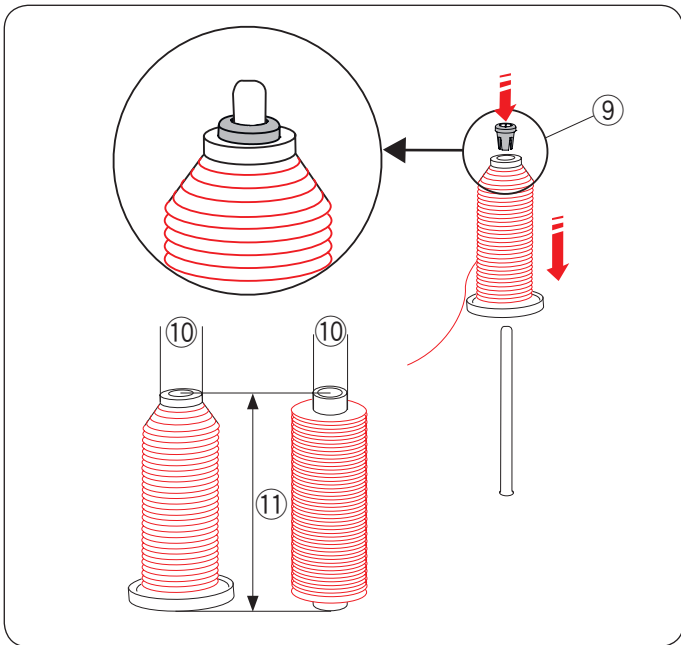
Use the spool rest and the spool net for thread cones.

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.

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



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

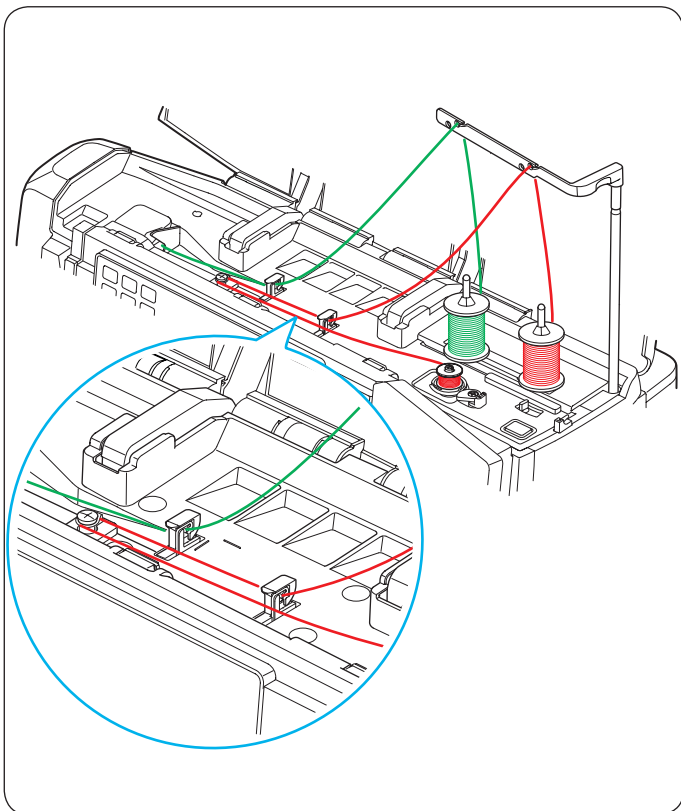
Use the spool holder (special) to hold the specific size of the spool of threads as shown.

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 78 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:

The spool pins are also used for twin needle sewing (refer to pages 103-104).

## Winding the bobbin

### NOTE:

You can adjust the bobbin winding speed (refer to page 167).

- 1 Raise the thread guide bar until it snaps.  
Pass the thread through the guide on the thread guide bar from behind.
  - ① Thread guide bar
- 2 Pass the thread under the right thread guide.
  - ② Right thread guide
- 3 Pass the thread under the bobbin winding tension disk.
  - ③ Bobbin winding tension disk
- 4 Put the bobbin on the bobbin winder spindle.
  - ④ Bobbin
  - ⑤ Bobbin winder spindle

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

- 6 Insert the thread into one of the slits ⑥ of the flange plate ⑦ and pull the thread to cut.
  - ⑥ Slit
  - ⑦ Flange plate

- 7 Push the bobbin winder stopper ⑧ to the left.
  - ⑧ Bobbin winder stopper

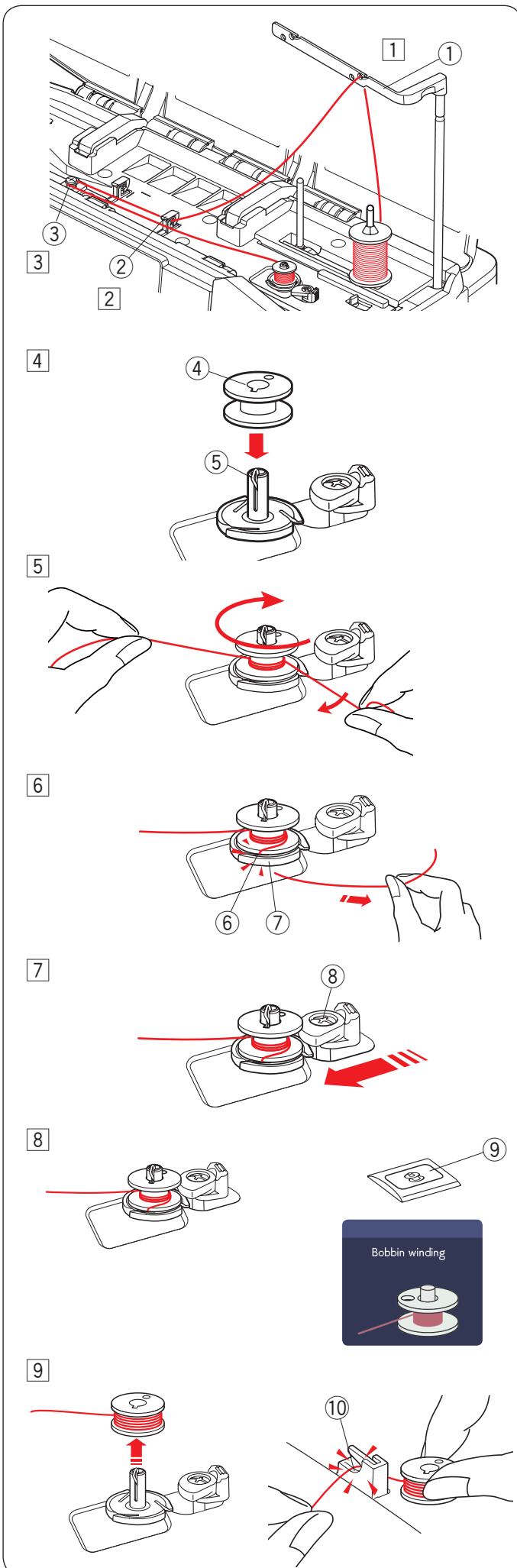
- 8 Press the bobbin winding button ⑨. The right touch screen will show the bobbin winding sign.
  - ⑨ Bobbin winding button

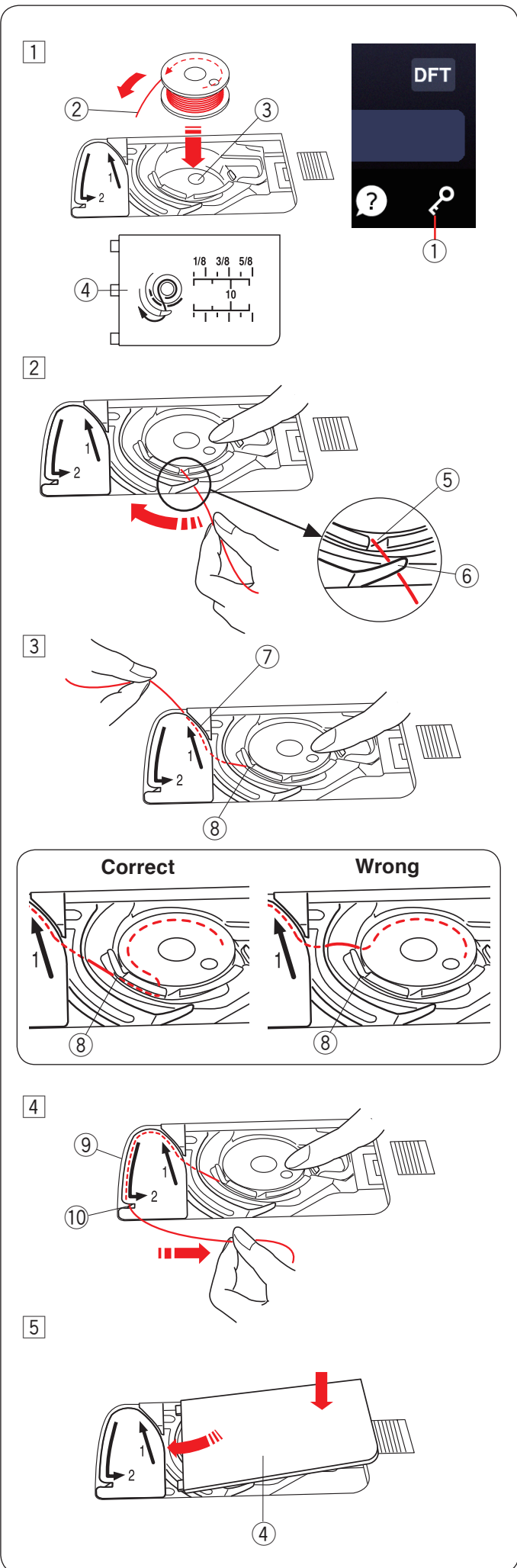
When the bobbin is fully wound, it will stop spinning and the bobbin stopper returns to its original position automatically.

- 9 Remove the bobbin. Cut the thread with the thread cutter (rightmost) ⑩.
  - ⑩ Thread cutter (rightmost)

### 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 the 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 the opening.

Push the hook cover plate down to fit in place.

### NOTE:

- Unless otherwise noted, you can start sewing without drawing up the bobbin thread.
- Refer to page 36 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 Press the needle up/down button to raise the take-up lever to the highest position.  
Press the lockout key to lockout the machine.  
Press the presser foot lifter button to raise the presser foot.

- ① Needle up/down button
- ② Thread take-up lever
- ③ Lockout key
- ④ Presser foot lifter button

- 2 Raise the thread guide bar until it snaps.  
Pass the thread through the guide on the thread guide bar from behind.

- ⑤ Thread guide bar

- 3 Pass the thread through the left thread guide.

- ⑥ Left thread guide

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

- ⑦ Thread guide plate

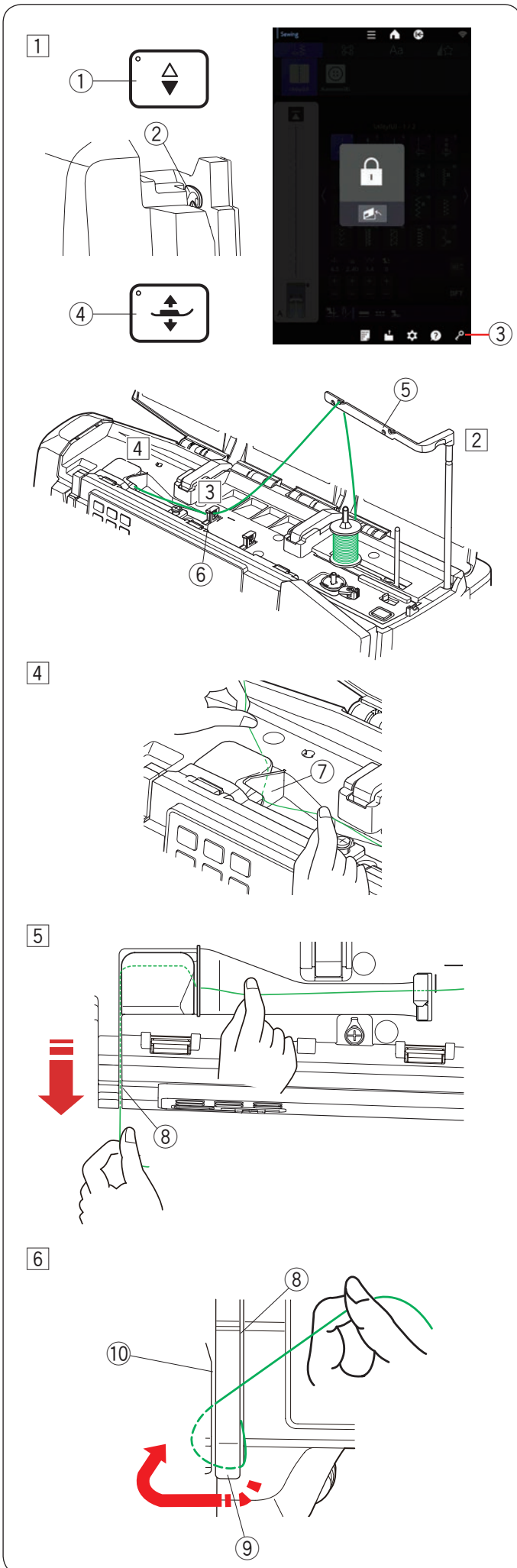
- 5 Draw the thread toward you and pass it into the right channel.

- ⑧ Right channel

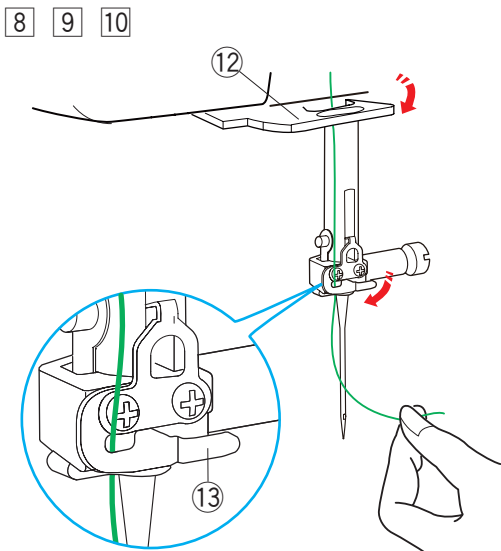
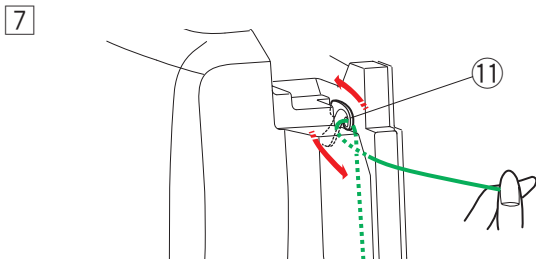
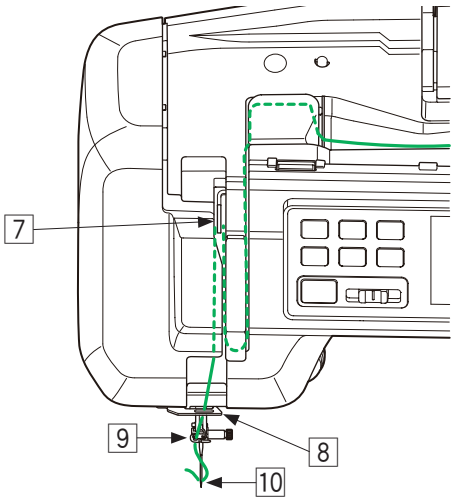
- 6 Draw the thread down along the right channel and around the bottom of the thread guide plate.

Pull the thread up along the left channel.

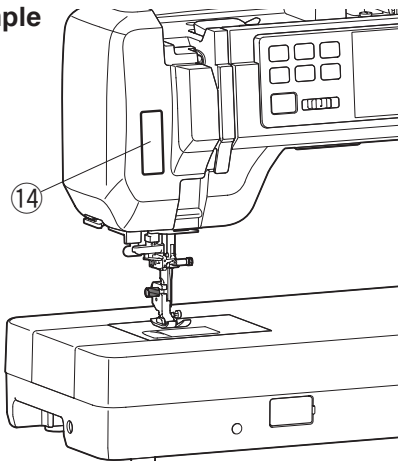
- ⑧ Right channel
- ⑨ Thread guide plate
- ⑩ Left channel



## Threading the Machine (Continued)



### Example



- 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 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).

### Guide sticker for threading

There is a threading guide sticker in the standard accessories. If you wish, you can attach the sticker on the machine to check the threading procedure.

14 Threading guide sticker

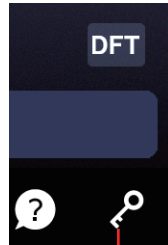
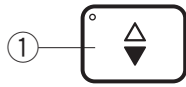


## Automatic Needle Threader

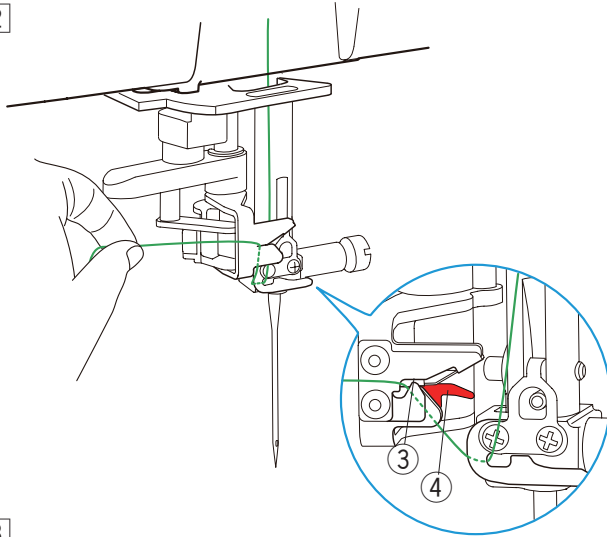
### NOTE:

- 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.

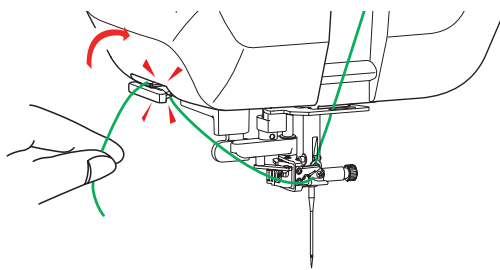
1



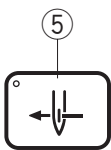
2



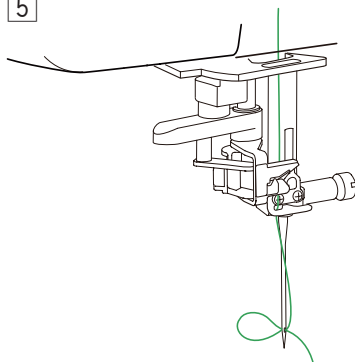
3



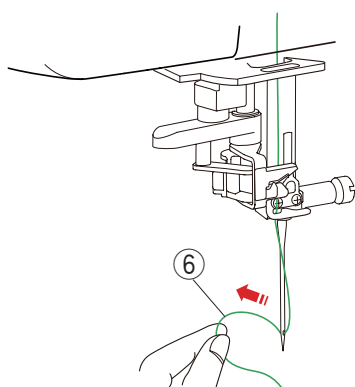
4



5



6



- 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 Draw the thread through the slit of the needle threader. The thread should pass under the hook.

- ③ Slit
- ④ Hook (red part)

- 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 Press the needle threader button.

- ⑤ Needle threader button

- 5 The needle thread will be automatically threaded through the needle eye.

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

- ⑥ Thread loop

### 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 Remove the bobbin. Insert the bobbin into the bobbin holder again and rethread the bobbin holder according to the instructions on page 32, 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 Raise the presser foot. Hold the needle thread lightly with your left hand.

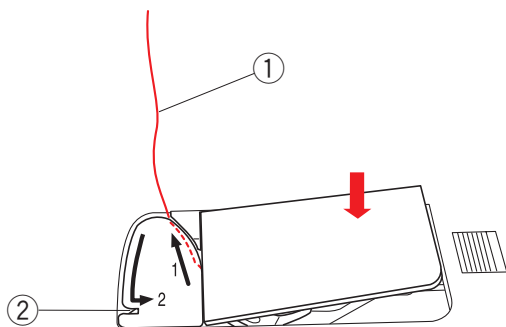
③ Needle thread

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

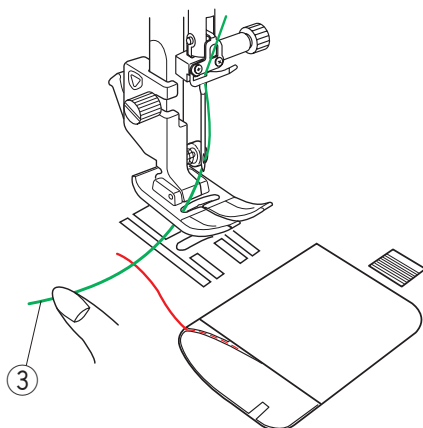
④ Needle up/down button

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

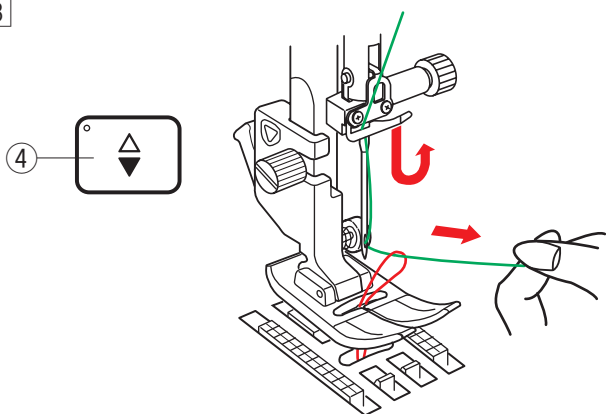
1



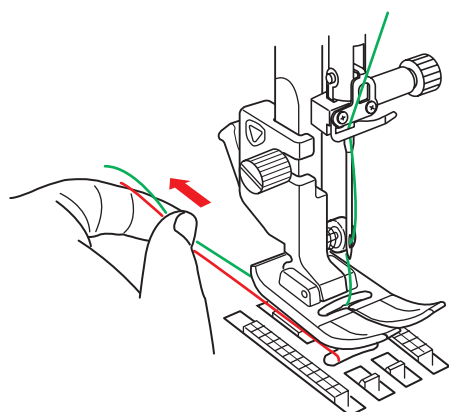
2



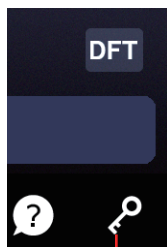
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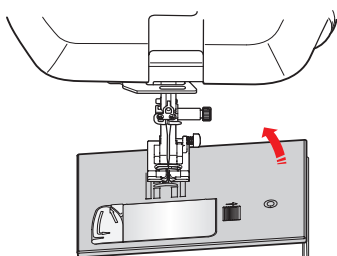
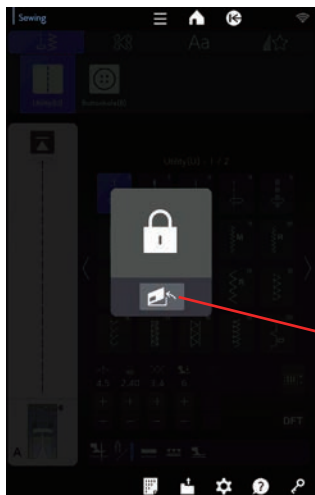
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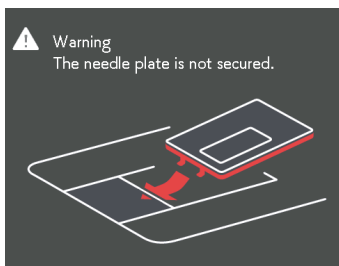
1



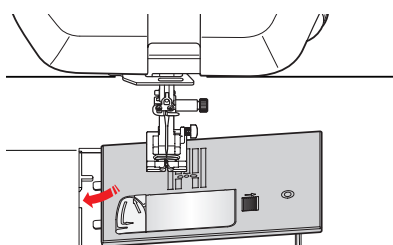
2



3



4



5

Please make sure the proper presser foot is attached.  
Straight stitching needle plate is set.

## Replacing the Needle Plate

Use the straight stitch needle plate when embroidering, using the dual feed foot, quilt piecing or free motion. The straight stitch needle plate can be used for straight stitches with the left, center or right needle drop positions. Use professional grade needle plate HP for straight stitch with the left needle drop position. Attach the professional grade foot when sewing with 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 professional grade needle plate HP is attached to the machine, the patterns not suitable for the straight stitch needle plate or professional grade needle plate HP cannot be selected.

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

① Needle up/down button

② Lockout key

2 Press the needle plate release key and the needle plate will automatically pop up.

③ Needle plate release key

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 a certain period (needle plate lifter time).
- You can change the needle plate lifter time (refer to page 167).

4 Place the straight stitch needle plate on the machine.

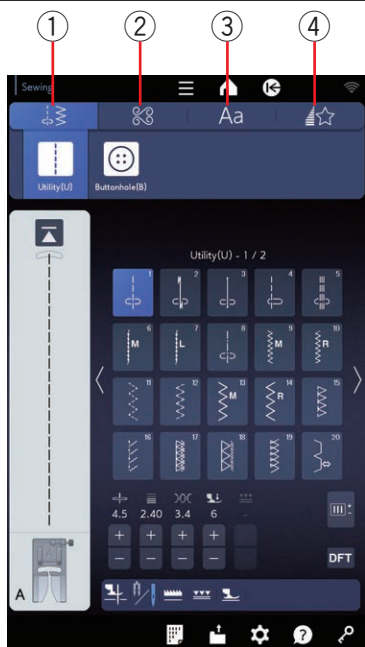
Set the left edge of the needle plate into the opening.

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 4 categories available.

- ① Utility stitches and buttonholes
- ② Decorative and quilting stitches
- ③ Monogramming
- ④ Tapering

Press one of the tabs to select the category.

#### NOTE:

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



#### ① Utility stitches and buttonholes

##### Utility stitches (U)

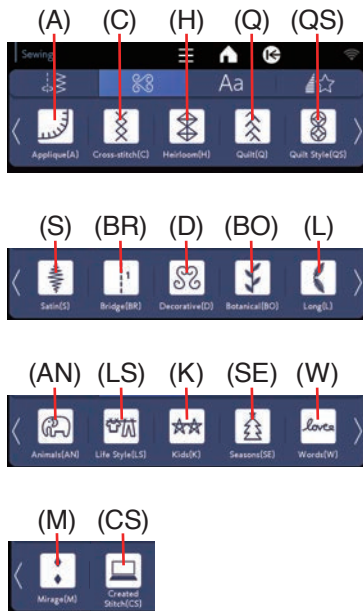
You can select utility stitches for seaming, overcasting, blind hemming, basting and shell tucking.



##### Buttonholes (B)

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

②

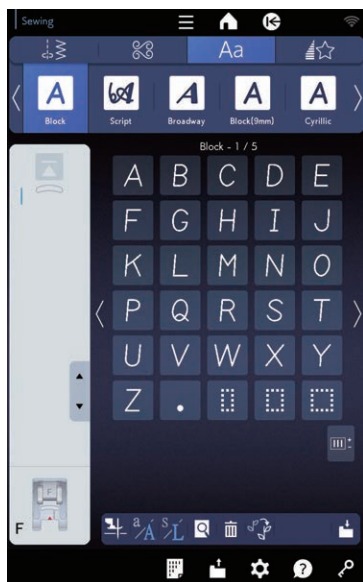


## ② Decorative and quilting stitches

This category consists of the following 17 groups.

- Applique stitches (A)
- Cross-stitch (C)
- Heirloom stitches (H)
- Quilting stitches (Q)
- Quilt Style stitches (QS)
- Satin stitches (S)
- Bridge stitches (BR)
- Decorative stitches (D)
- Botanical stitches (BO)
- Long stitches (L)
- Animals stitches (AN)
- Life Style stitches (LS)
- Kids stitches (K)
- Seasons stitches (SE)
- Words stitches (W)
- Mirage stitches (M)
- Created stitch (CS)

③



## ③ Monogramming

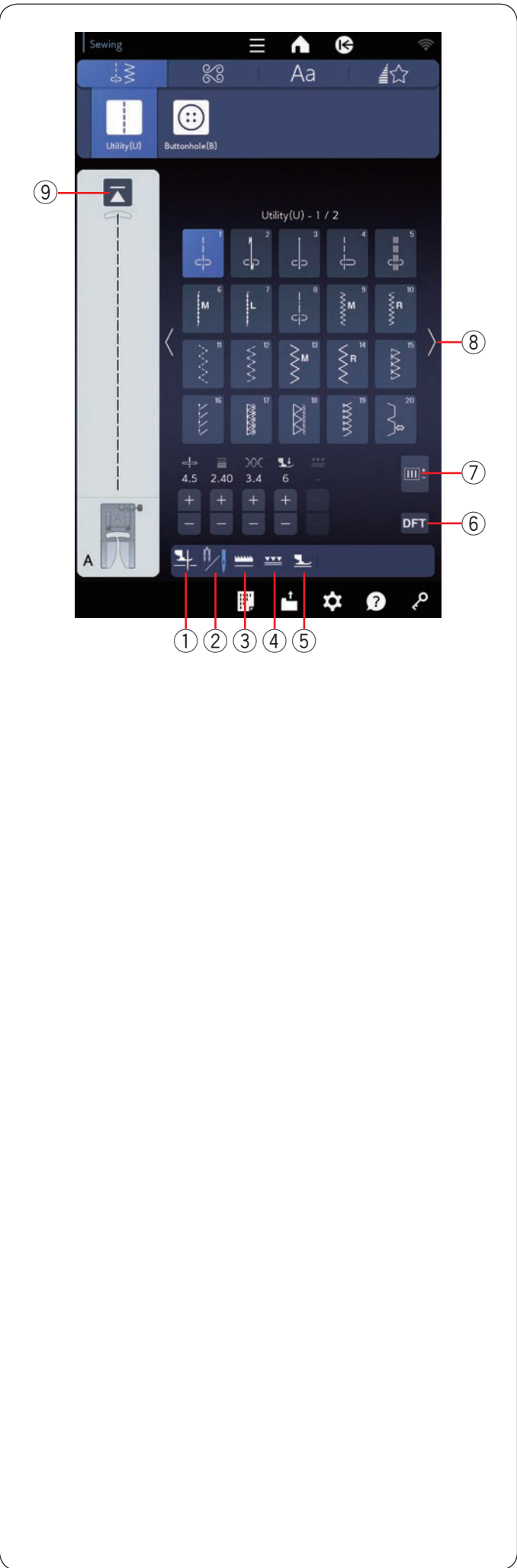
You can program lettering as well as a combination of characters and symbol patterns.

④



## ④ Tapering

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



### 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 55).

**② Twin needle key**

Press this key to set the stitch width for twin needle sewing (refer to pages 103-104).

**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 44-45).

**⑤ Floating mode key**

Press this key for floating mode (refer to page 48).

**⑥ Default key**

Press this key to recover the original stitch setting.

**⑦ Adjust key**

Press this key to expand the manual setting window to show more options (refer to page 53).

**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 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 108-109).





**⑩ Program key**

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

**⑪ Cursor keys**

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

**⑫ Vertical mirror image key**

Press this key to sew a vertical mirror image of the selected pattern (refer to page 105).

**⑬ 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 105).

**⑭ Preview key**

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

**⑮ Delete key**

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

**⑯ Hand stitch style key**

Press this key to open the hand stitch style window (refer to page 128).

**⑰ Save file key**

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

**⑱ Letter case key**

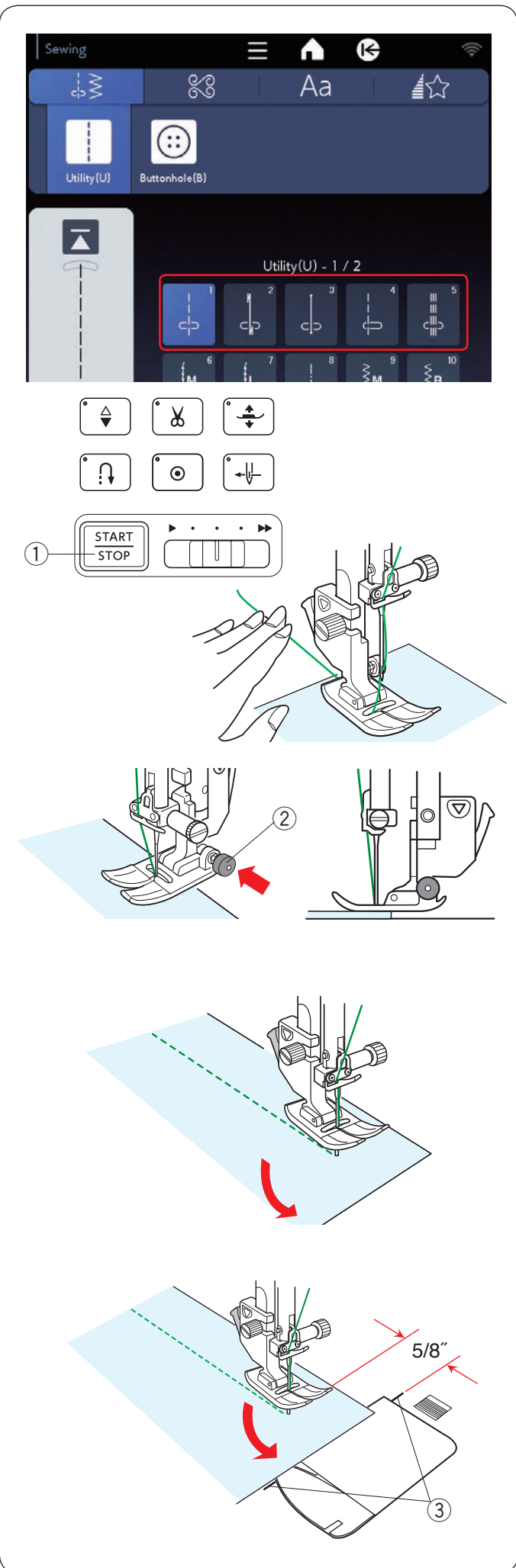
Press this key to select upper case or lower case for monograms.

**⑲ Letter size key**

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







## 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 the 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 55).

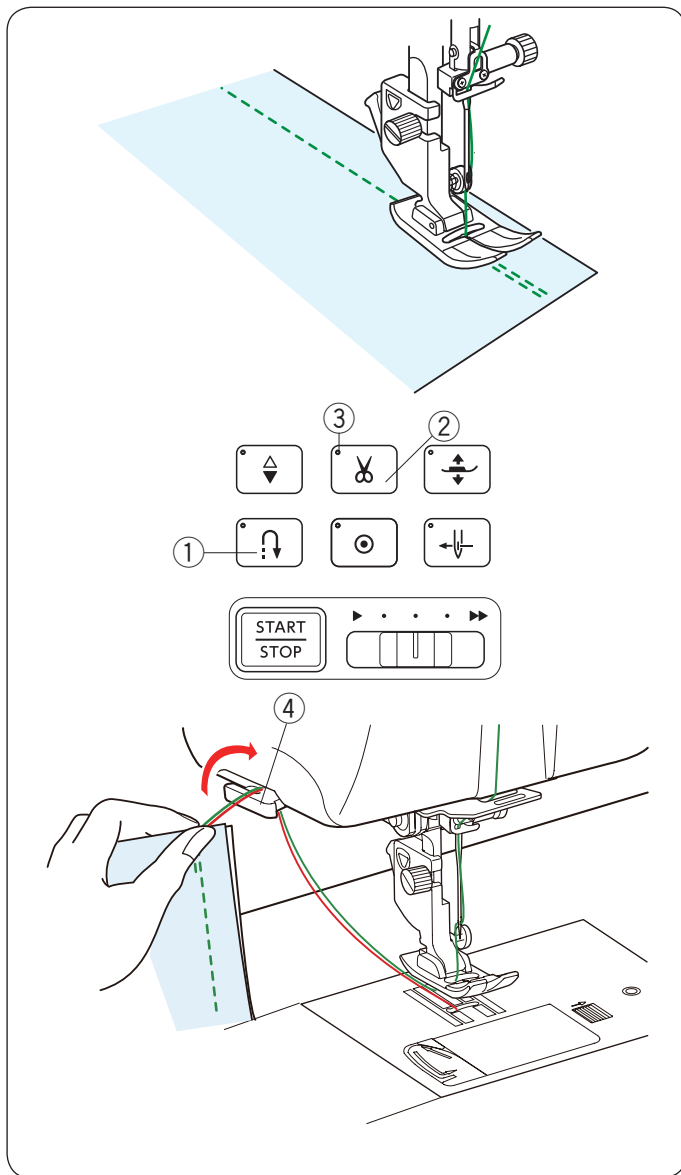
### Turning a Square Corner

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.

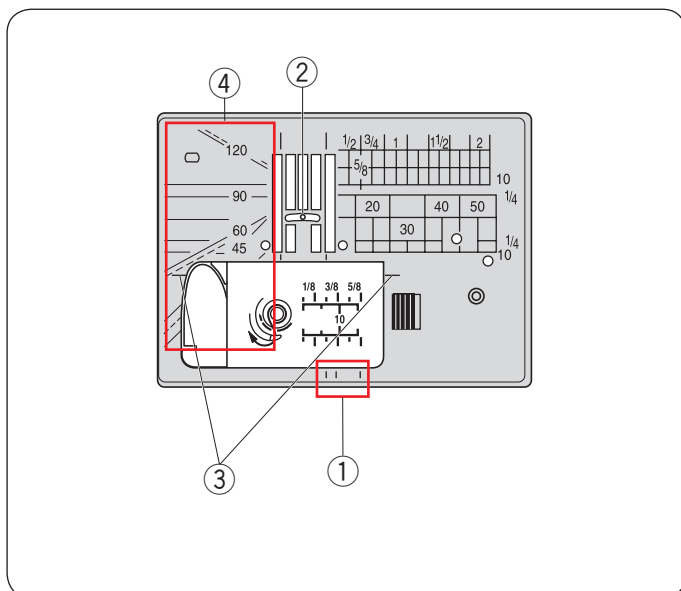
- ③ LED signal

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 95).

- ④ Angle scales

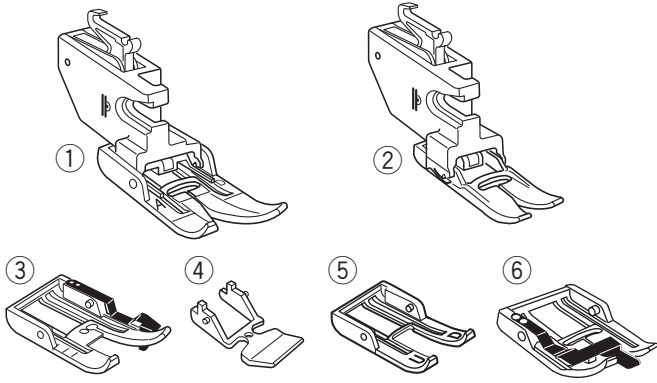
## Sewing with the Dual Feed Device

Patterns U1 to U5 and Q1 to Q8 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.

The following 6 types of dual feed feet are available in the standard accessories.



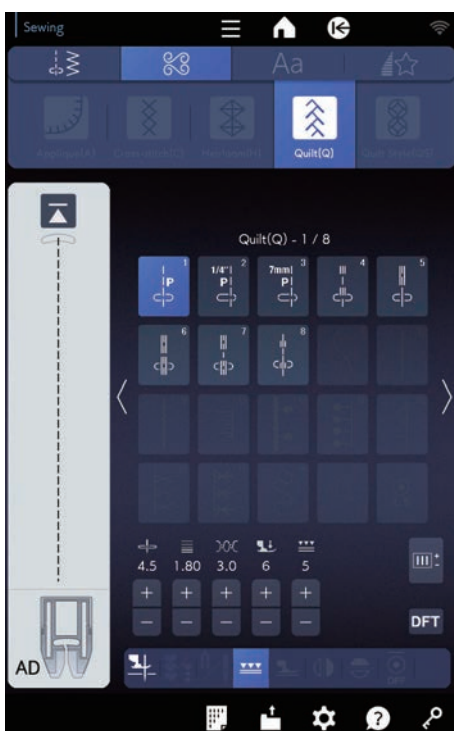
- ① Dual feed foot AD (twin):  
For regular sewing with dual feed
- ② Dual feed foot VD (single):  
For sewing narrow areas with dual feed
- ③ Dual feed quilt piecing foot OD (twin):  
For 1/4" seam piecing with dual feed
- ④ Dual feed zipper foot ED (single):  
For zipper application with dual feed
- ⑤ Dual feed open toe foot UD (twin):  
For increased visibility open toe sewing with dual feed
- ⑥ Dual feed ditch quilting foot SD (twin):  
For ditch quilting with dual feed

Attach the desired dual feed foot to the respective dual feed holder and attach to the machine (refer to page 26).

Press the dual feed key ⑦ and select the desired pattern.



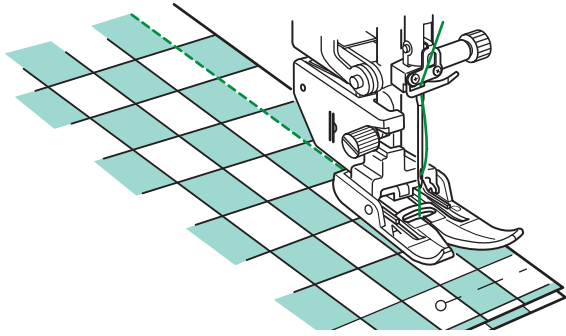
⑦



### NOTE:

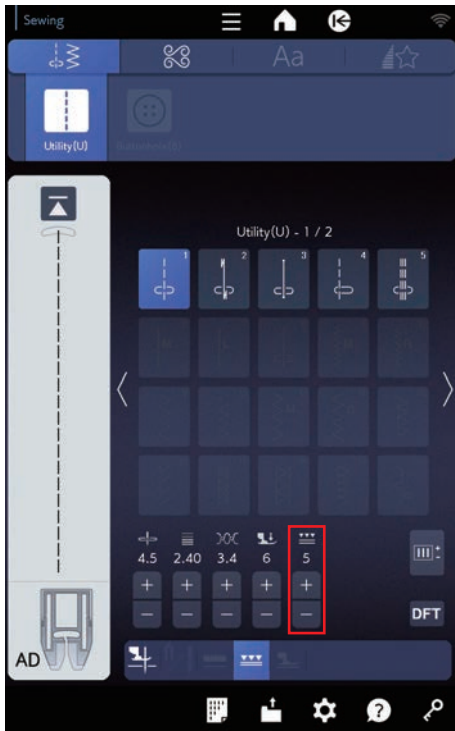
The patterns not suitable for dual feed sewing are grayed out.

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



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.

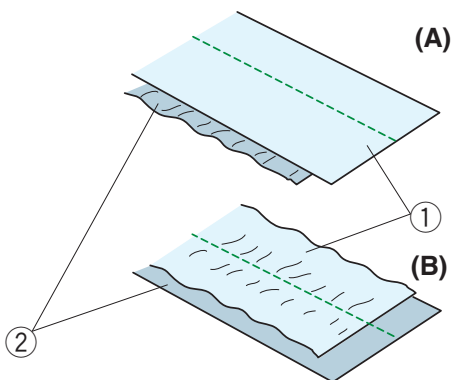


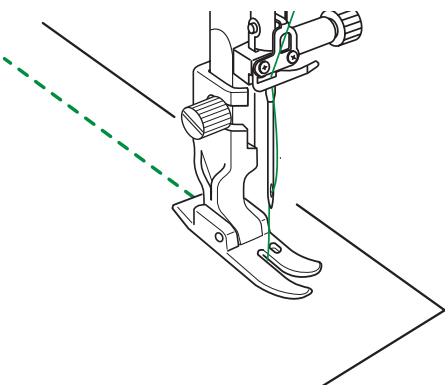
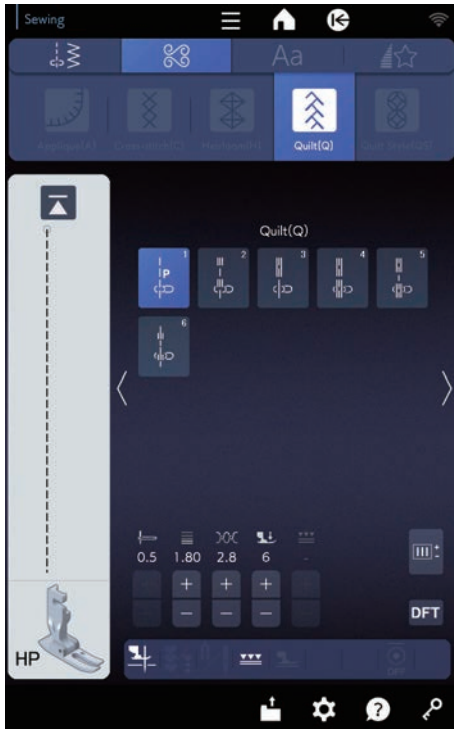
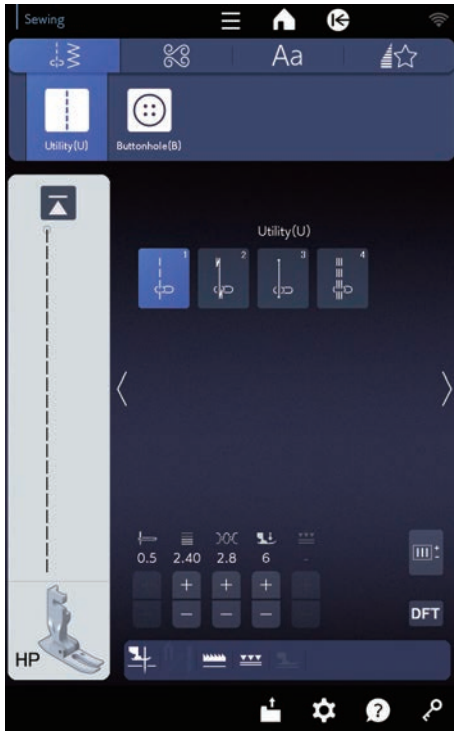
### Adjusting dual feed balance

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.

- (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).
  - ① Upper layer
  - ② Lower layer





## Sewing with Professional grade foot HP

Patterns U1 to U4 and Q1 to Q6 can be sewn with the professional grade foot HP.

Use the professional grade foot HP for straight stitch to provide professional results.

See page 26 for how to attach the professional grade foot HP.

Replace the needle plate with the professional grade needle plate HP when using the professional grade foot HP. See page 37 for how to attach the professional grade needle plate HP.

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

### NOTE:

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

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



## Dual Feed Professional Grade Foot HP2

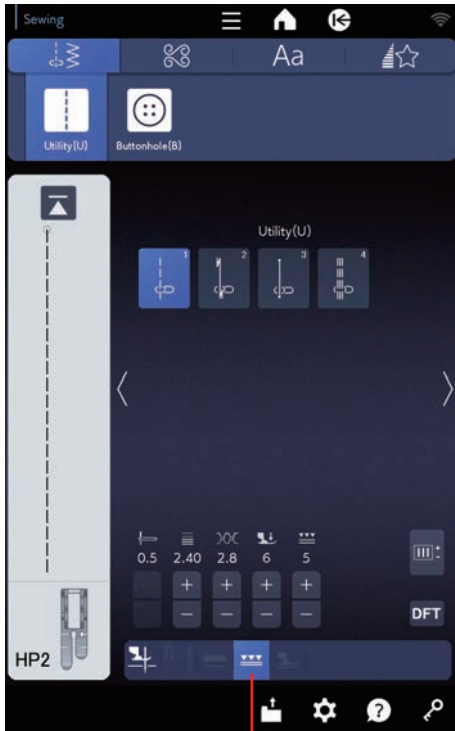
This foot provides superior visibility and is great for curves and precise topstitching. Holds fabrics firmly in sync with the feed dogs to achieve professional results.

See page 26 for how to attach dual feed professional grade foot HP2 and to engage the dual feed device. Replace the needle plate with the professional grade needle plate HP when using dual feed professional grade foot HP2. See page 37 for how to attach the professional grade needle plate HP.

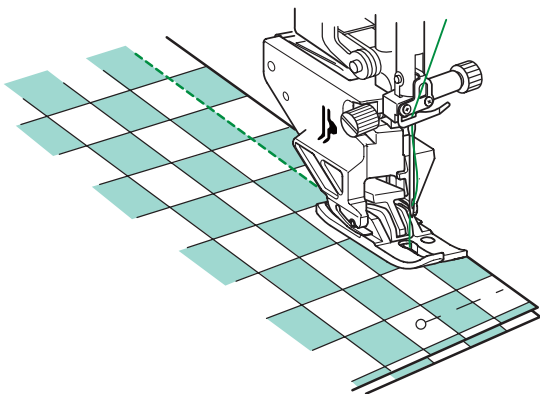
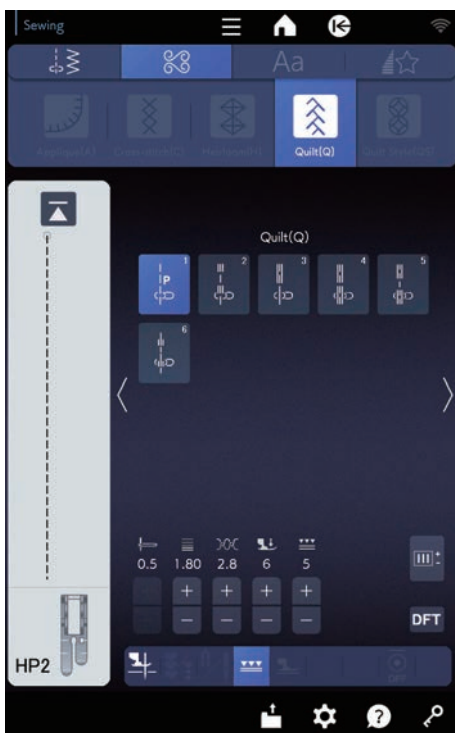
Press the dual feed key ① and select the desired pattern. Refer to page 44 for how to sew.

### NOTE:

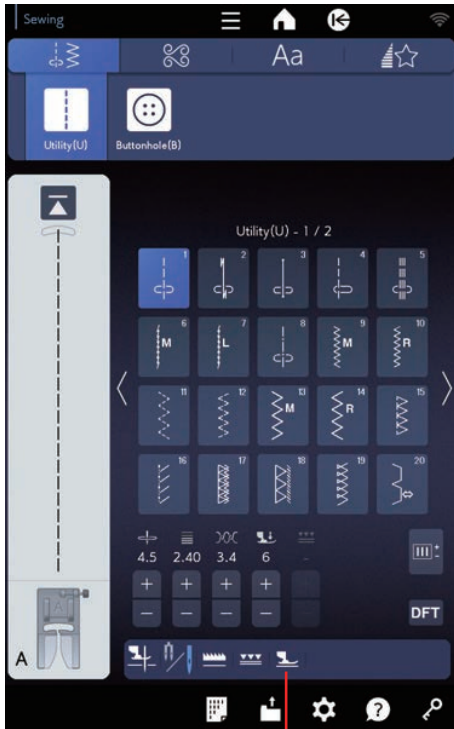
The patterns not suitable for dual feed professional grade foot HP2 are not displayed. The dual feed key will gray out or not be indicated if you selected a pattern not suitable for dual feed sewing.



①

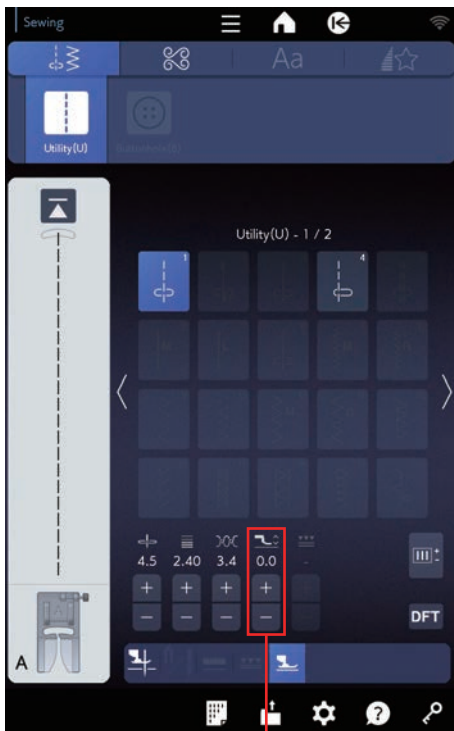


1



1

2



2

## Floating Mode

You can decrease layer slippage and wrinkles by lifting the presser foot slightly in the floating mode.

1 Press the floating mode key.

① Floating mode key

Patterns not suitable for floating mode cannot be selected (pattern selection keys are grayed out).

2 Press “+” or “-” to adjust the presser foot height.

② Presser foot height adjustment

Press “+” to increase the presser foot height.

Press “-” to decrease the presser foot height.

### NOTE:

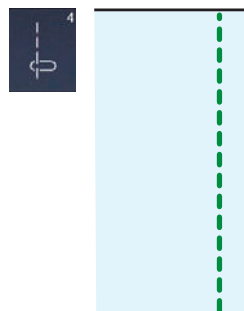
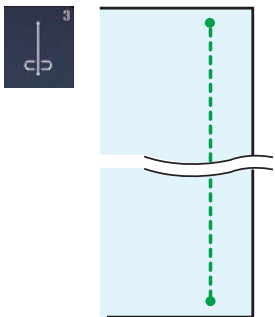
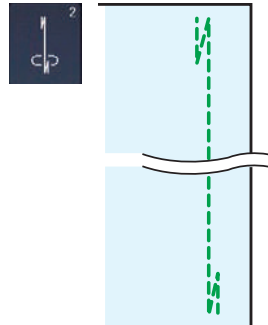
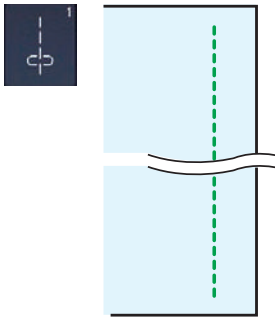
- When using the floating mode, always adjust the presser foot height and conduct a test sew on an extra piece of the fabric before the actual sewing.
- Using the dual feed foot is recommended to decrease layer slippage when the floating mode does not work.



## 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

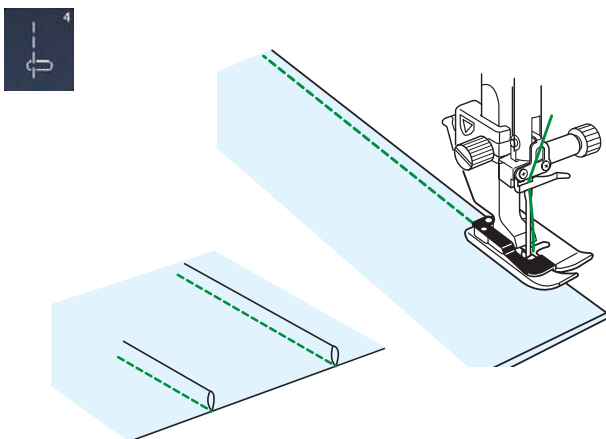
This unique stitch is used where an invisible locking stitch is needed.

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.



### U4 Pintucking

Attach blind hemming foot G.

Fold the fabric with the wrong sides together.

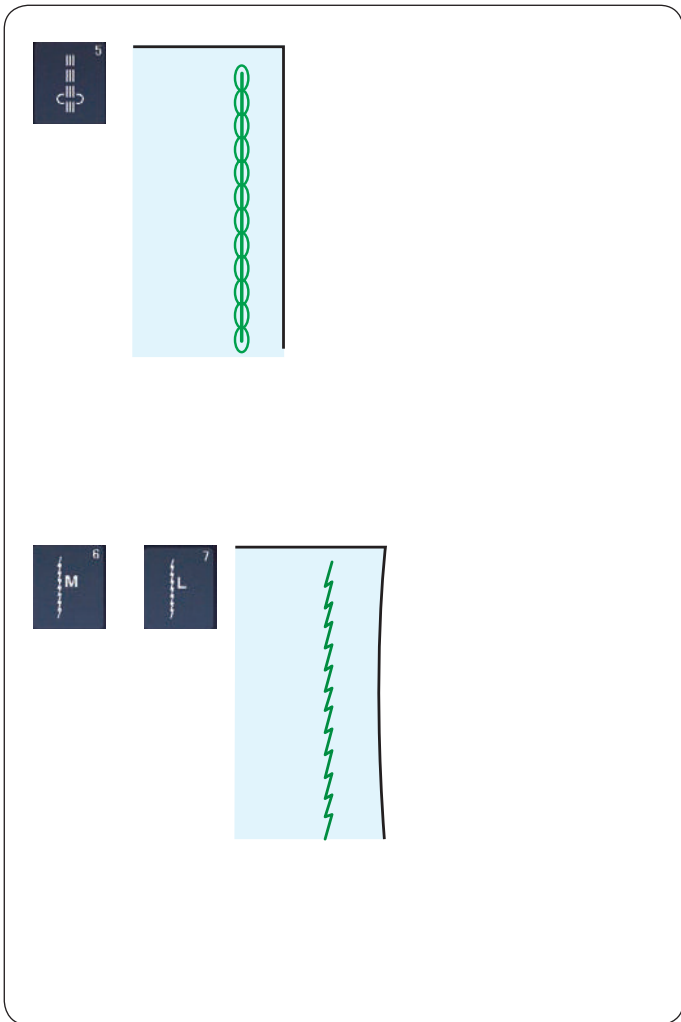
Place the folded fabric under the blind hem foot.

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.

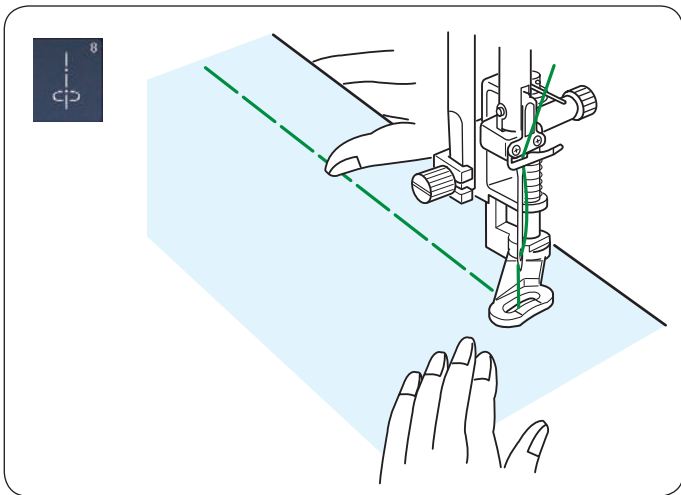


### U5 Triple stretch stitch

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.

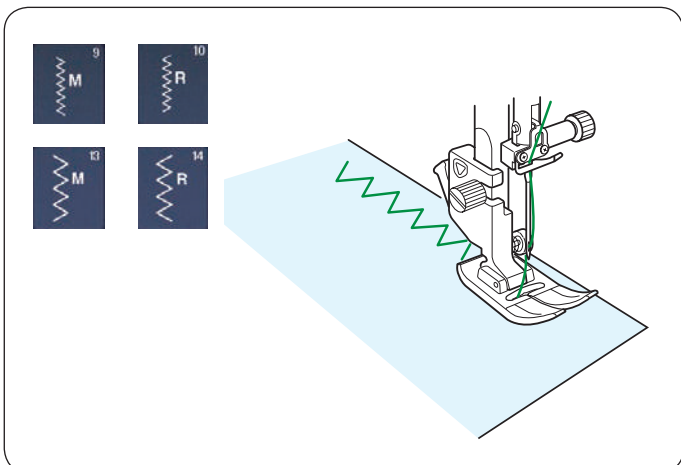
### U6, U7 Stretch stitches

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.



### U8 Basting

See page 144 for sewing instructions.



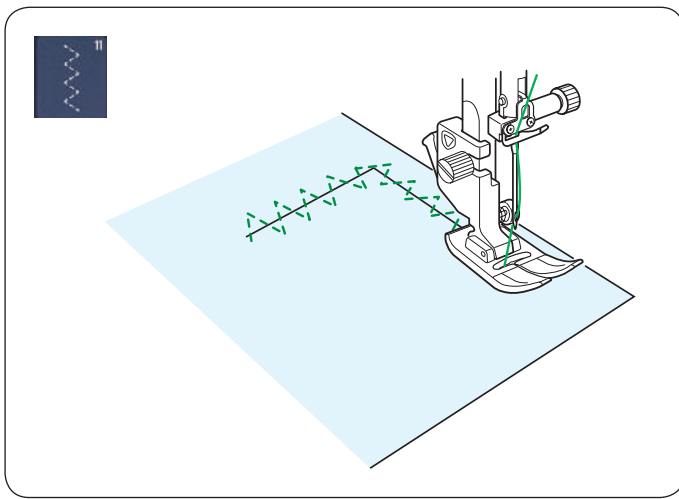
### Zigzag Stitches

#### 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.

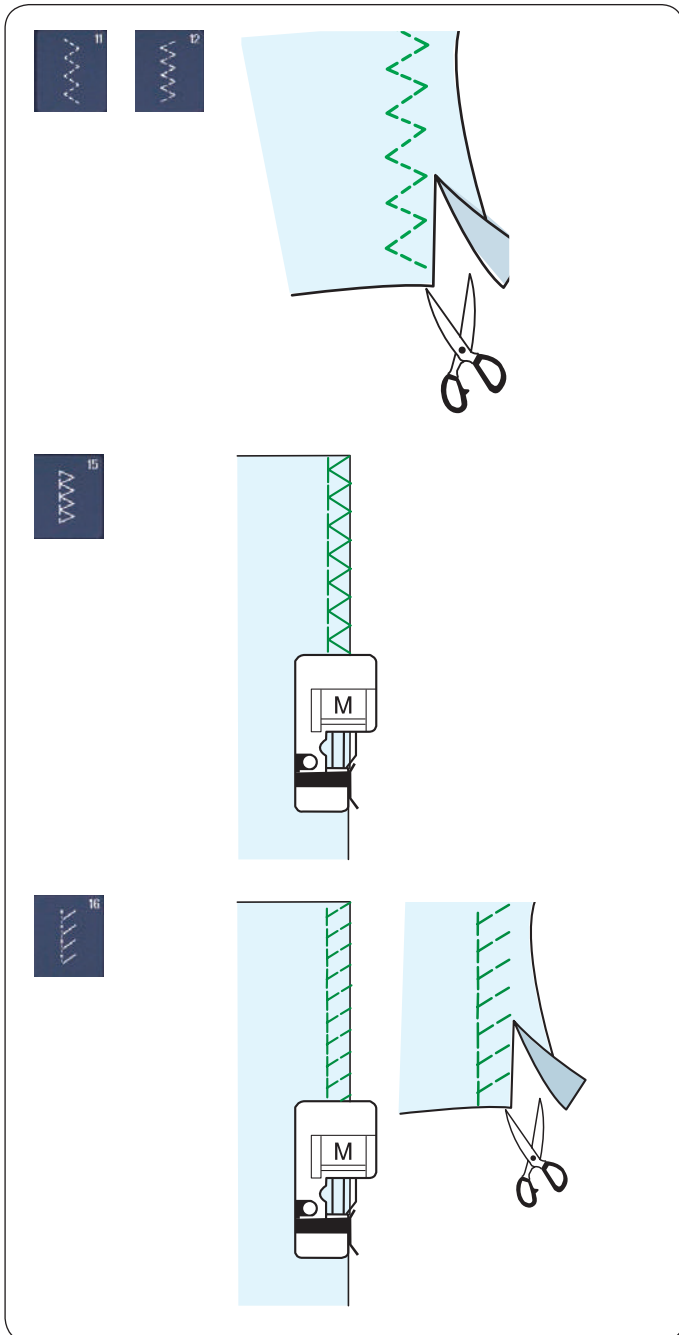
#### U13, U14 Triple Zigzag stitches

These durable zigzag stitches are used for over casting or decorative edges.



### 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.

#### U15 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.

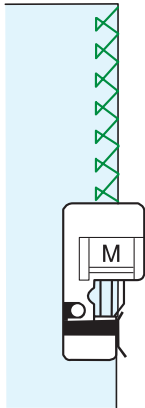
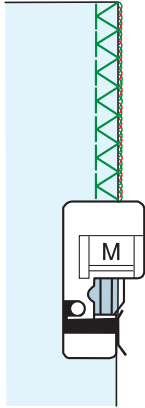
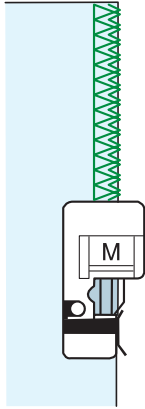
#### U16 Knit stitch: Overcasting foot M

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 zigzag foot A and sew leaving an adequate seam allowance.

After sewing, trim the seam allowance close to the stitches.



**U17 Double overcasting stitch: Overcasting foot M**

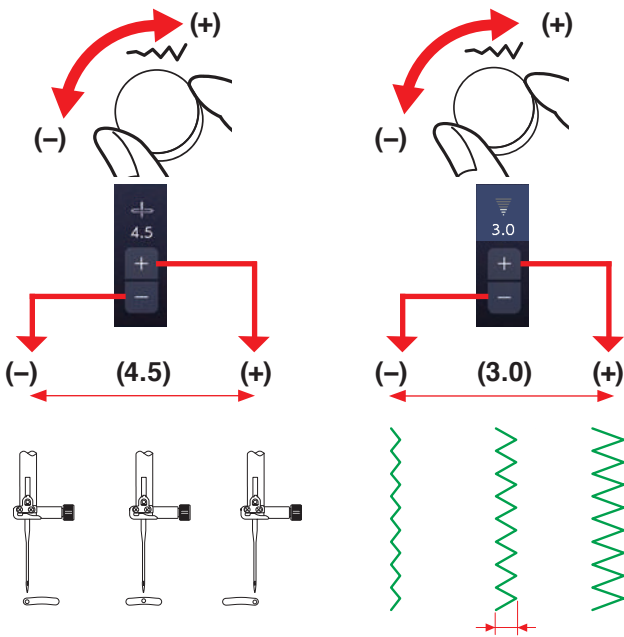
This stitch is excellent for fabrics that tend to fray extensively such as linens and gabardines. Place the fabric edge next to the guide of the foot and sew. Two rows of zigzag stitches are simultaneously sewn over the edge to insure that the fabric will not ravel.

**U18 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.

**U19 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, needle drop position of the straight stitches, needle thread tension, presser foot pressure value 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 the default key ① to recover the original stitch setting.

When you press the adjust key ②, the manual setting window ③ expands to show more options.

You can slide the setting values.

Press the close key ④ on the right upper corner of the window to shrink the manual setting window.

- ① Default key
- ② Adjust key
- ③ Manual setting window
- 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 the “+” 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.

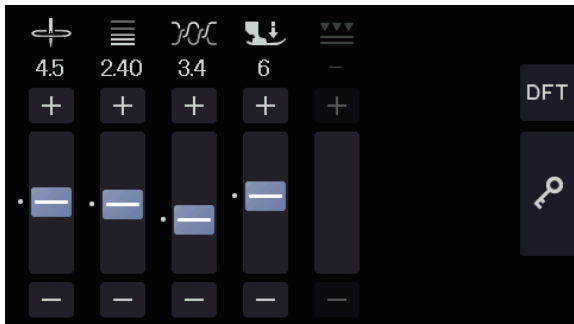
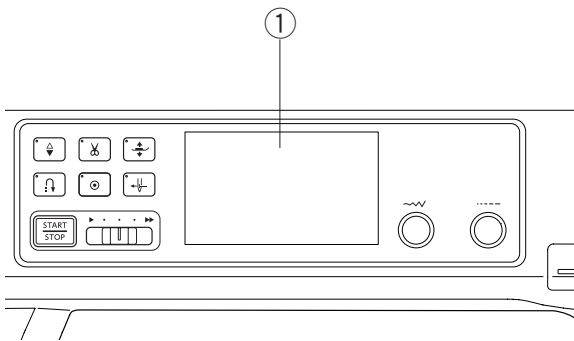
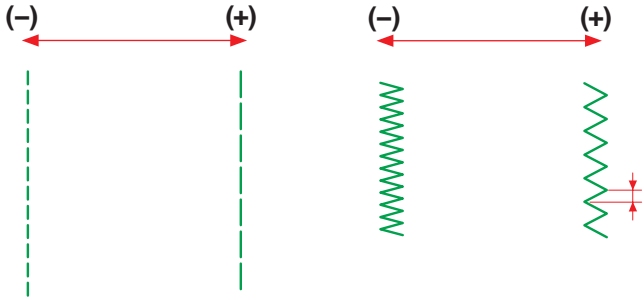
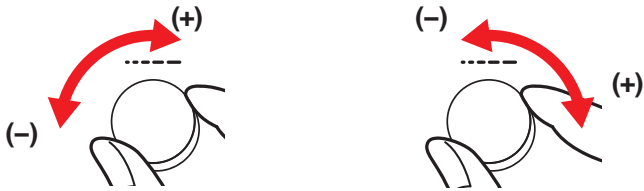
You can also change the setting with the “+” or “-” key.

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 the “+” or “-” key.

Press the “+” key to increase the stitch length.

Press the “-” key to decrease the stitch length.

#### NOTE:

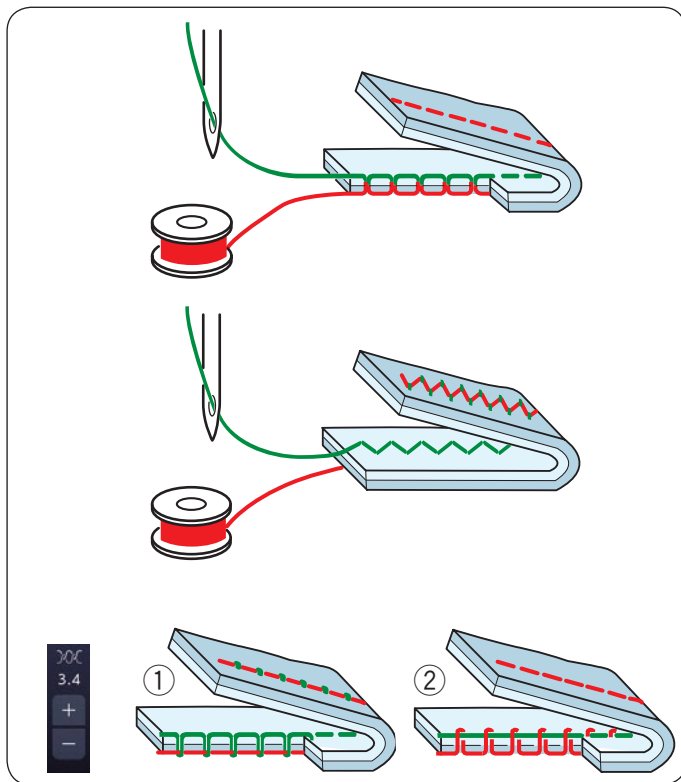
The adjustable range of pattern U7 is 1.0 to 5.0.

### Middle Touch Screen

You can also change the setting with the “+” or “-” key and slider on the middle touch screen.

You can also press the default key and the lockout key at the middle touch screen.

- ① Middle touch screen



### 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.

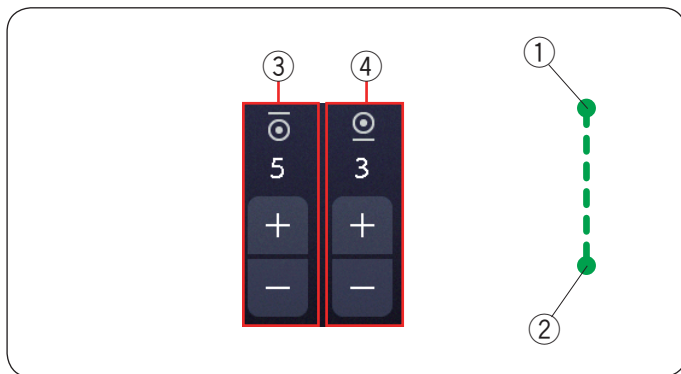
- ① Press the “+” key if the tension is too loose.
- ② Press the “-” key if the tension is too tight.



### 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

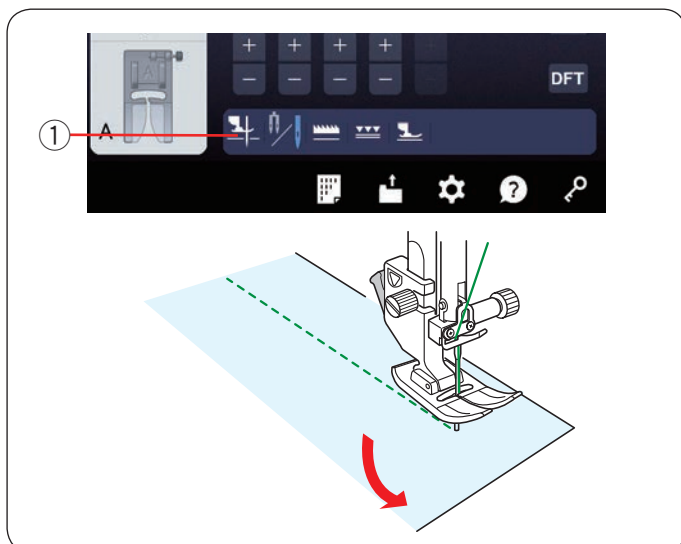
The machine sews 5 lock stitches at the beginning and 3 lock stitches at the end.

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.

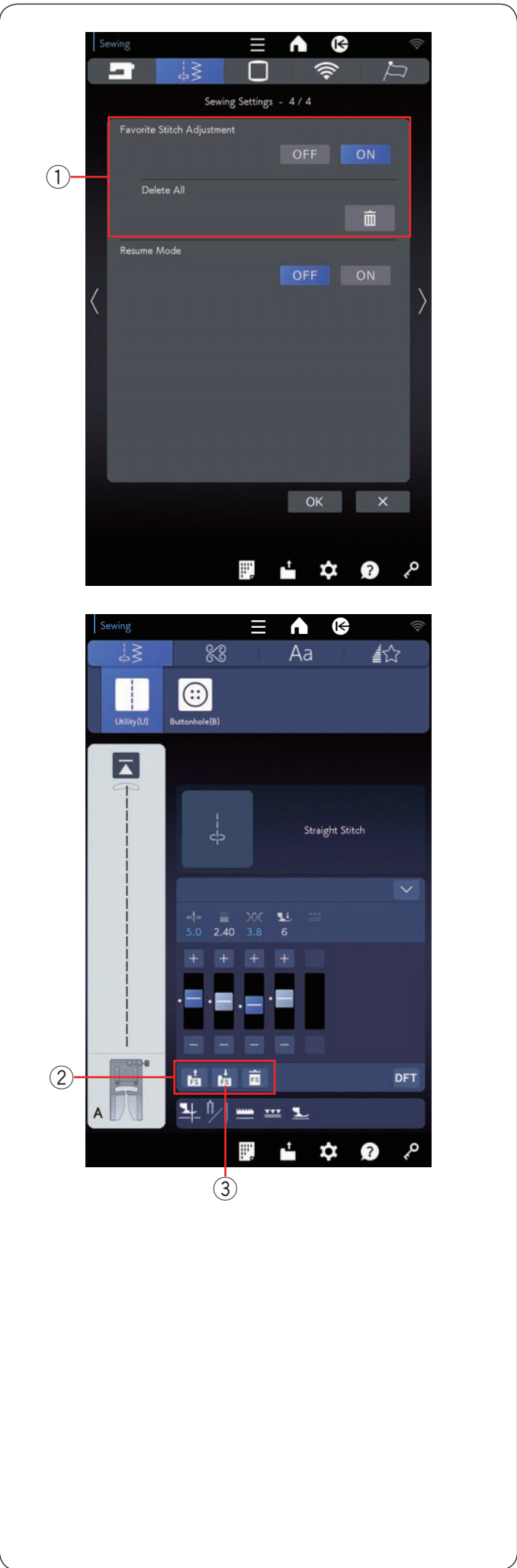
Press the foot-up key to turn this option on or off.

- ① Foot-up key

#### NOTE:

Height of the foot can be altered in the ordinary sewing setting mode (refer to page 169).





### Favorite Stitch Adjustment

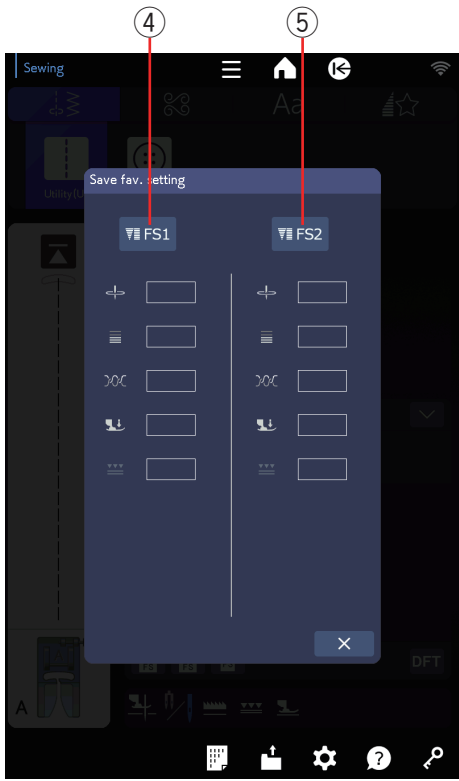
You can save customized stitch settings (stitch length, stitch width, thread tension and presser foot pressure, depending on the selected stitch patterns) as “Favorite Stitch Adjustment”. When the favorite stitch adjustment option is turned ON ① (refer to page 170), the last-used customized stitch settings 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”.

- 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.



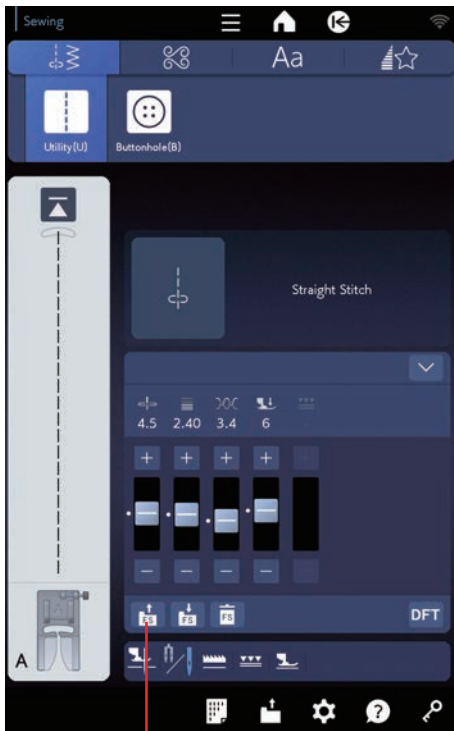
“Save fav. setting” dialog box will open.

You can store 2 sets of favorite stitch settings (FS1 and FS2). Press FS1 ④ or FS2 ⑤ to register the favorite stitch settings.

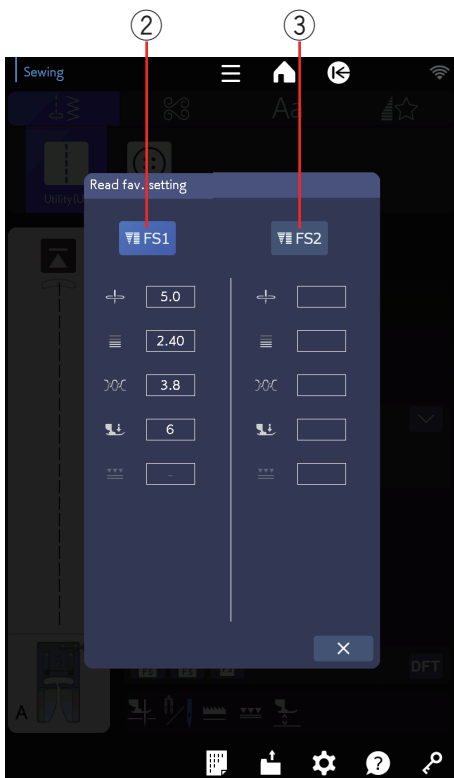


The square bracket ⑥ indicates that the customized preset stitch value is applied to the setting.

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



①

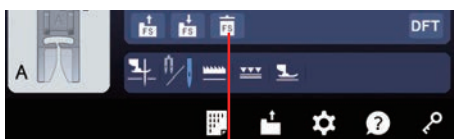


②

③

The selected set of favorite stitch settings is indicated in light blue ②.

Select the desired set of customized stitch settings by pressing FS1 ② or FS2 ③.



④

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.

## Cloth Guide

- 1 Press the lockout key.

① Lockout key

Remove the hook cover plate (refer to page 29).

- 2 Set the left edge of the cloth guide hook cover into opening. Push down the mark on the cloth guide hook cover to fit in place.

② Cloth guide hook cover

③ Left edge

④ Mark

- 3 Push the lever away from you to release the guide plate.

⑤ Guide plate

⑥ Lever

- 4 Slide the guide plate to your desired position on the scale.

The figure under the red mark indicates distance between the cloth guide to the center needle position in millimeters and inches.

⑦ Red mark

⑧ Inches

⑨ Millimeters

- 5 Push the lever toward you to secure the cloth guide.

⑤ Guide plate

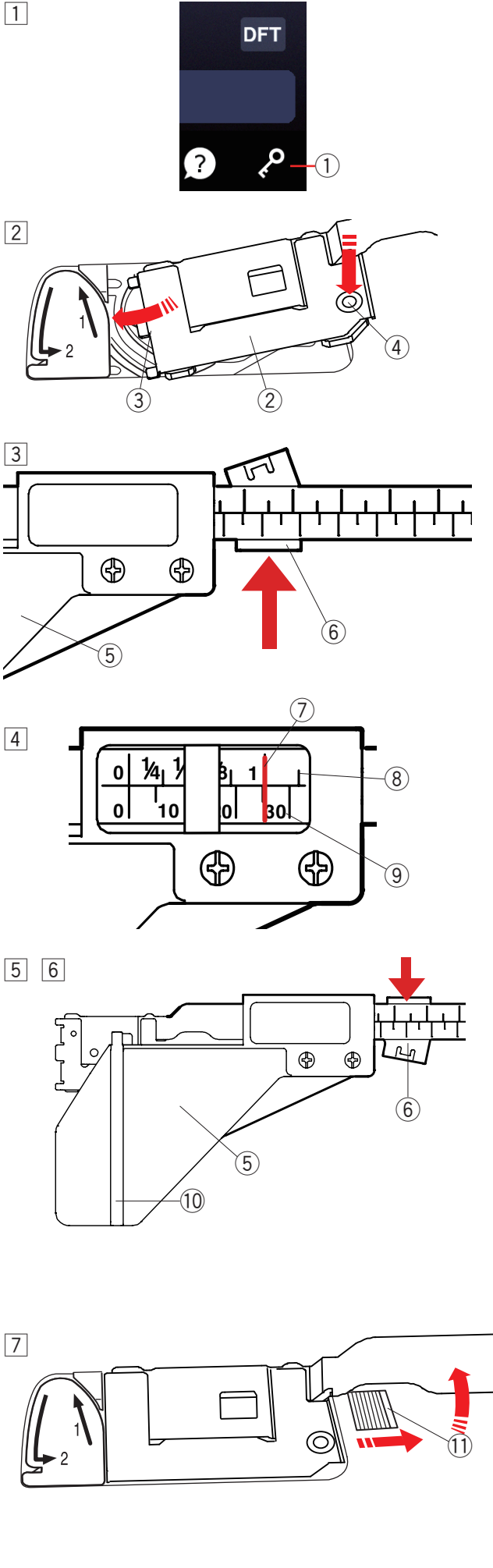
⑥ Lever

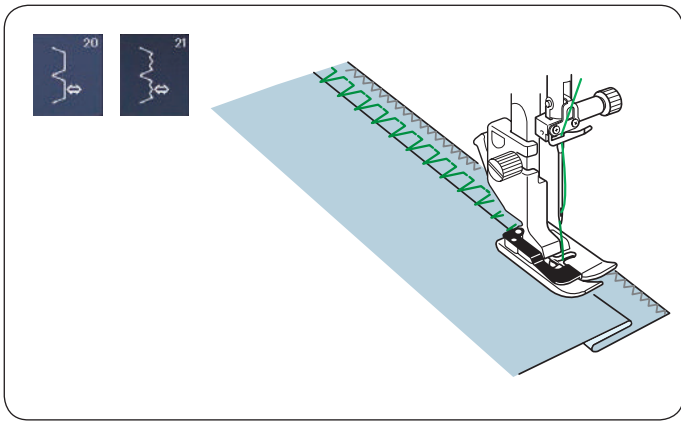
- 6 Sew the fabric across the guide.

⑩ Guide

- 7 To remove the cloth guide hook cover, raise the cloth guide while sliding the hook cover release button to the right. When you cannot see the hook cover release button, slide the guide plate to the right.

⑪ Hook cover release button

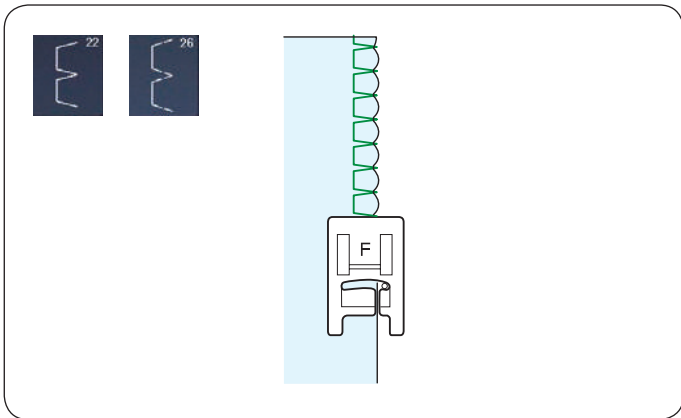




## Other Utility Stitches

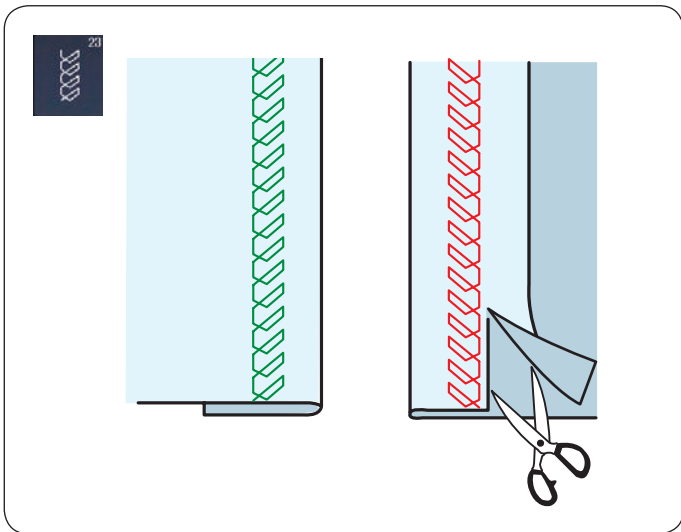
### U20, U21 Blind hemming

Refer to pages 134-135 for sewing instructions.



### U22, U26 Shell tuck

Refer to page 136 for sewing instructions.



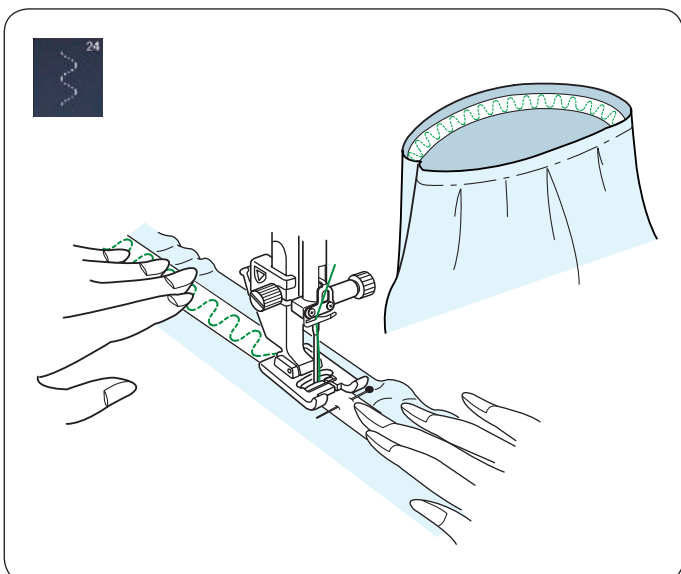
### U23 Visible hemming

Select pattern U23.

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.

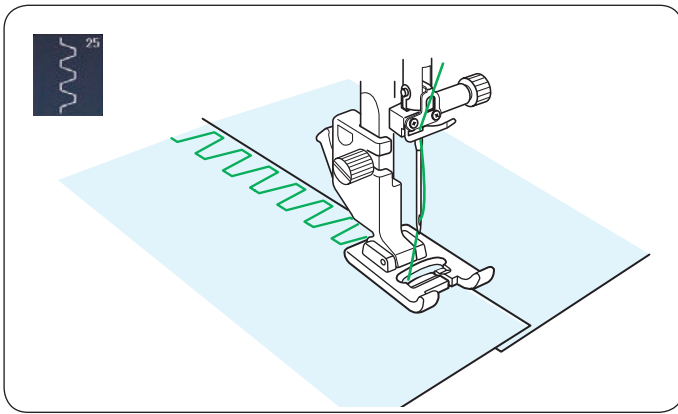


### U24 Attaching elastic

Select pattern U24.

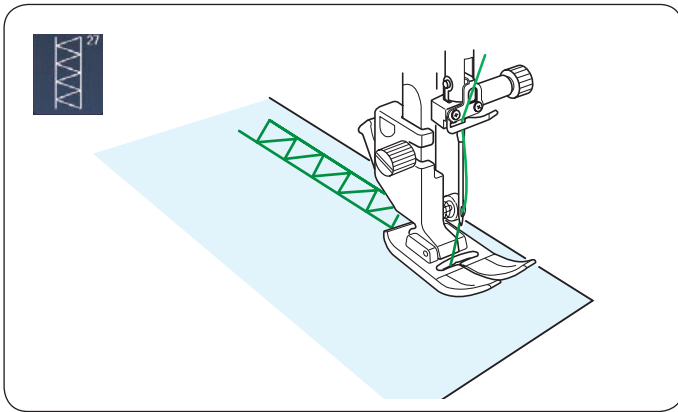
Mark the elastic into quarters. Match those to the center front, center back and side seams, and pin the elastic to the fabric.

Place the elastic under the foot and stitch into place while stretching the elastic evenly.



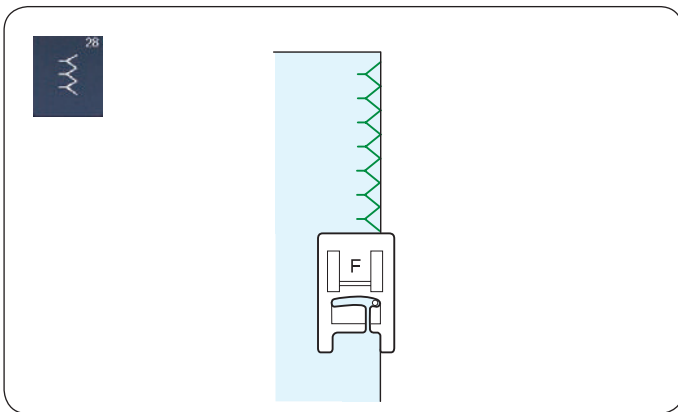
### U25 Box Stitching

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



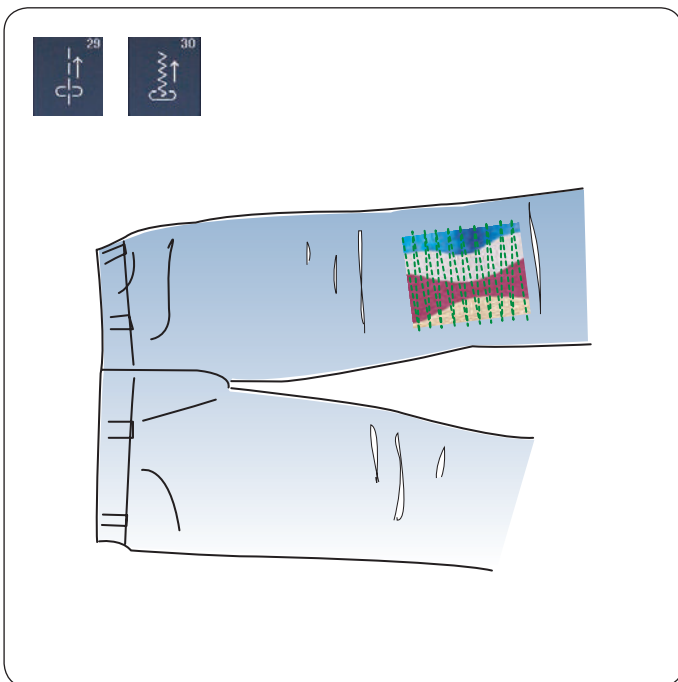
### U27 Hemstitch

Use this stitch for fagoting or decorative stitch.



### U28 Decorative Hemstitch

Use for overcasting the edge of thick fabrics, visible hem and seams, decorative stitching. Place a stabilizer or paper under the foot (right side of the fabric) to protect the foot from the feed dog.



### U29, U30 Backward stitch

U29 and U30 are 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:

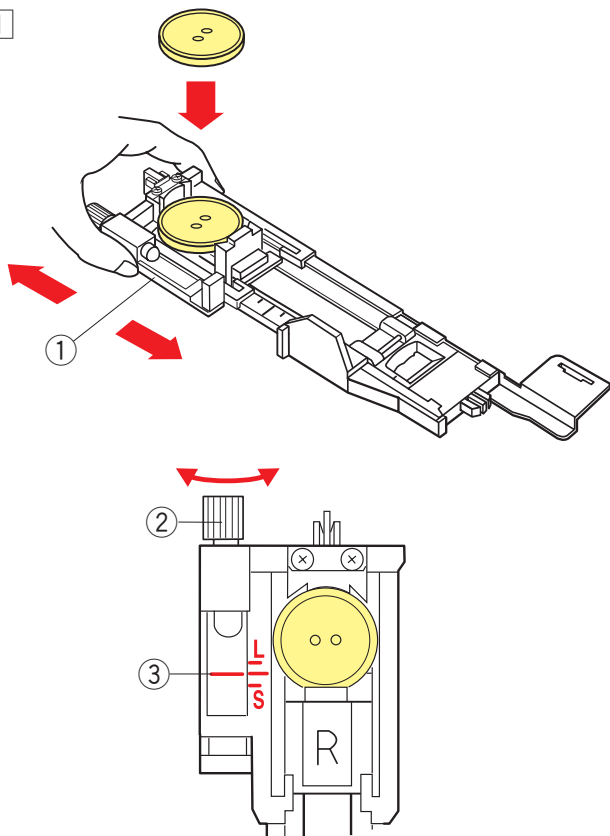
B3-B13 are sensor buttonholes and the sewing procedure is the same as for B1.



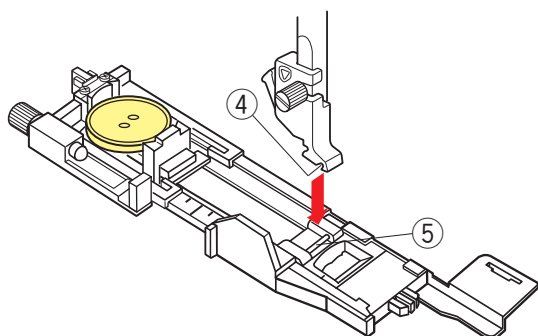




1



2



## 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 right touch screen advises 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.

### Sewing

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

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 Press the needle up/down button to raise the needle. Press the lockout key.

Raise the presser foot and attach automatic buttonhole foot R snapping the pin into the groove of the foot holder.

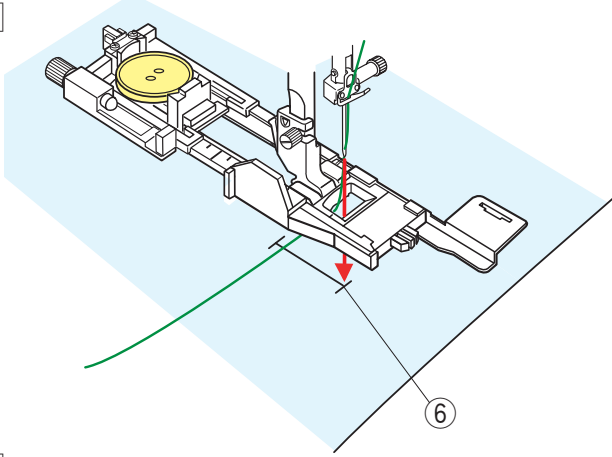
You may lift the presser foot lifter to the extra lifted position when placing the automatic buttonhole foot under the foot holder.

Press the lockout key to unlock the machine.

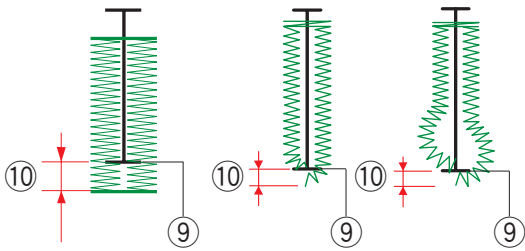
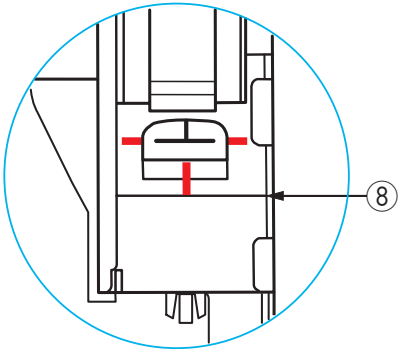
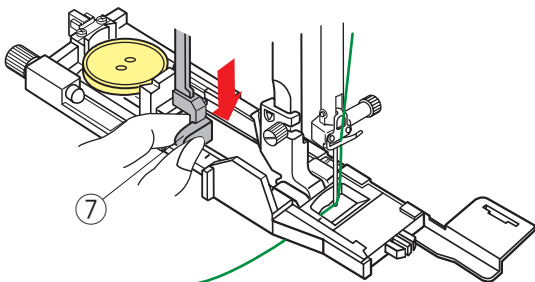
④ Groove

⑤ Pin

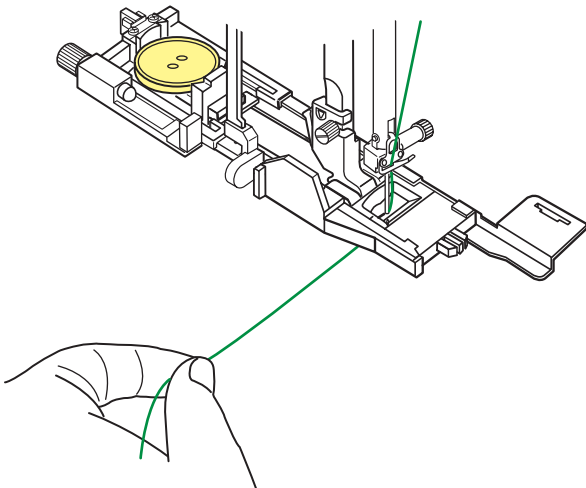
3



4



5



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 handwheel.

6 Starting point

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

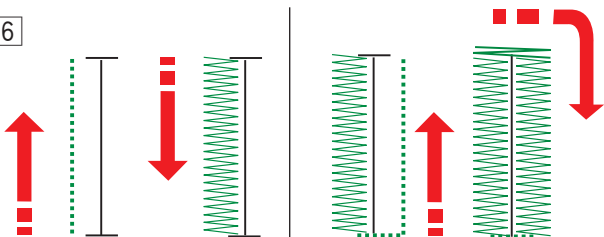
10 Sewing gap

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

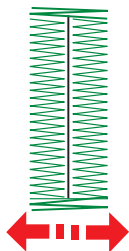
**NOTE:**

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

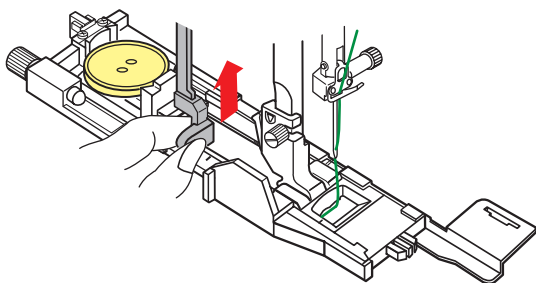
6



- 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.

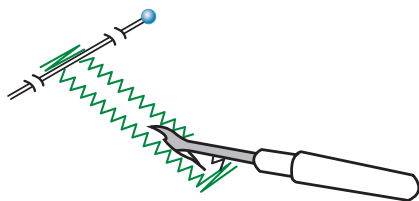


7



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

8



- 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

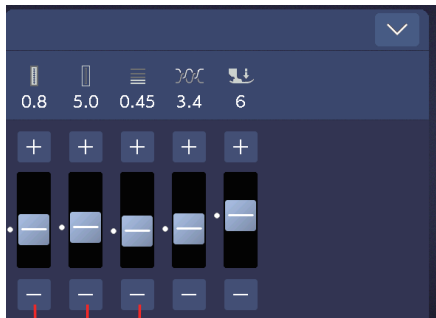
To make a sturdy buttonhole, sew another layer of buttonhole stitches over the previous stitches. After the buttonhole is finished, simply start the machine again. Do not raise the foot or buttonhole lever. Do not reselect the pattern.

#### NOTE:

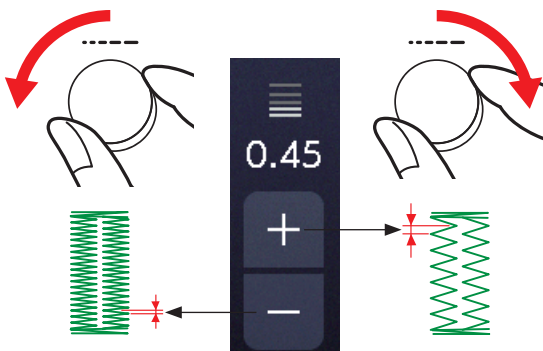
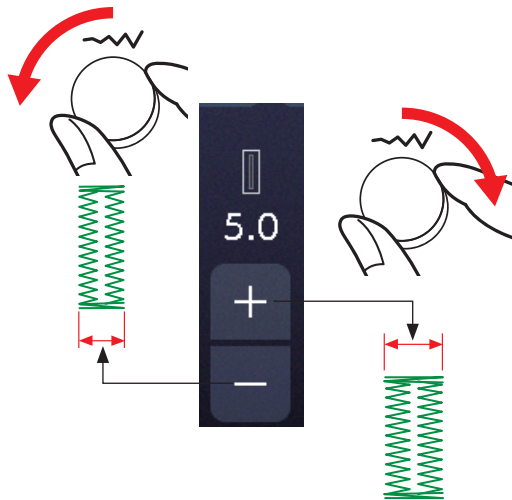
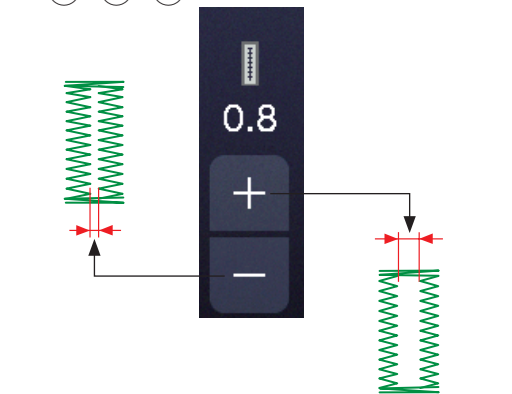
Turn off "Thread Cut after Auto-Lock" option when you make a double layer buttonhole (refer to page 169).



② ③ ④



② ③ ④



## Manual settings

You can alter the buttonhole opening width, button hole width and buttonhole stitch density on the manual setting window.

When you press the adjust key, the manual setting window expands to show a slider for value setting.

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.

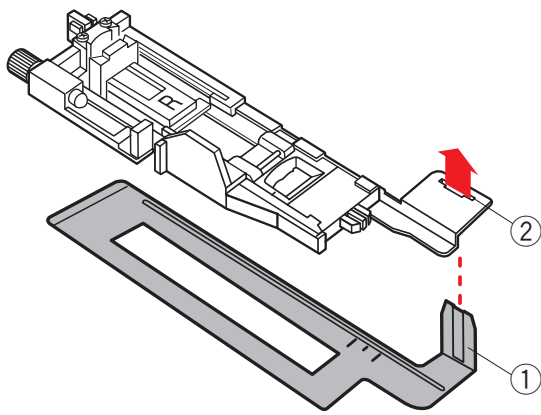
Or press the “+” key to make the buttonhole stitches less dense.

Press the “-” key to make the buttonhole stitches denser.

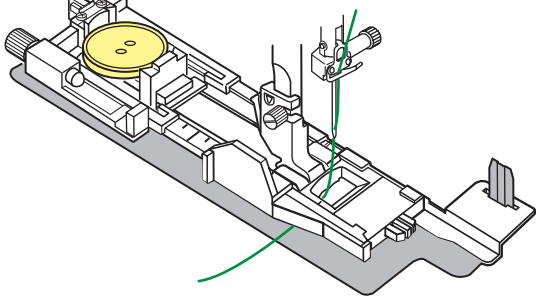
#### NOTE:

- 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.

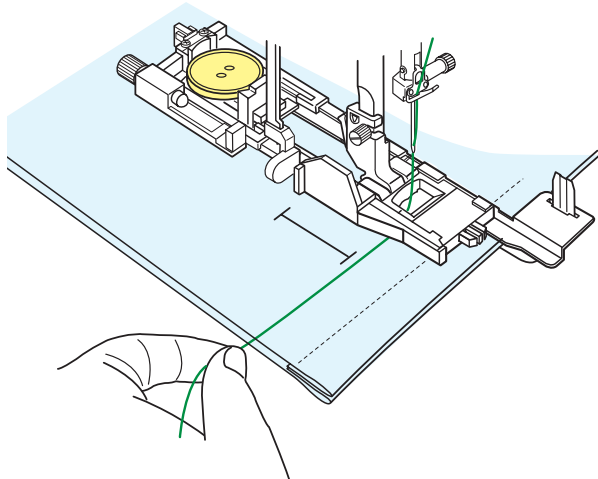
1



2



3



## 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 Insert the tab of the stabilizer plate ① into the slot ② of the buttonhole foot.

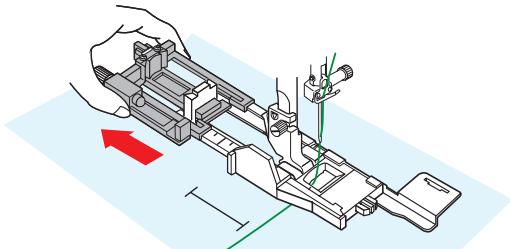
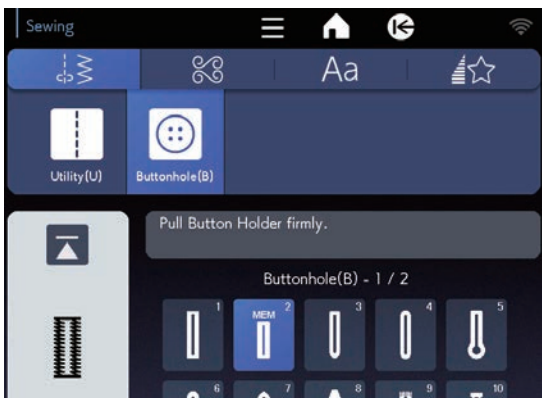
- ① Stabilizer plate
- ② Slot

- 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.

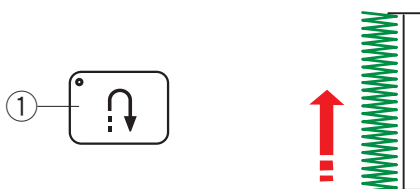
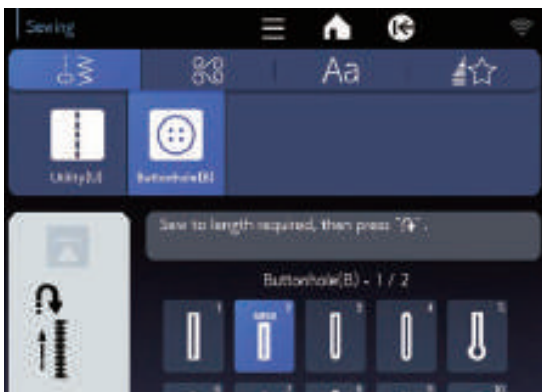
- 3 Place the fabric between the buttonhole foot and stabilizer plate. Lower the needle into the starting point by turning the handwheel. Lower the foot and buttonhole lever. Start the machine while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue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

### NOTE:

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



1



2



## 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 automatic buttonhole foot R, use satin stitch foot F.

### NOTE:

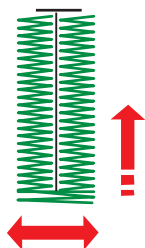
- The opening width can be adjusted from 0.2 to 2.0.
- The buttonhole width can be adjusted from 2.6 to 9.0.
- The stitch density can be adjusted from 0.20 to 1.00.

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

- 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.

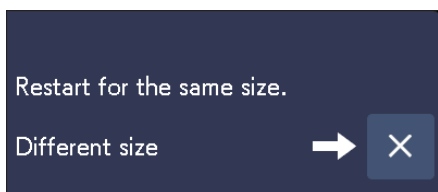
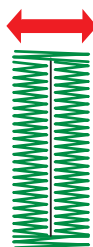


3



- 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



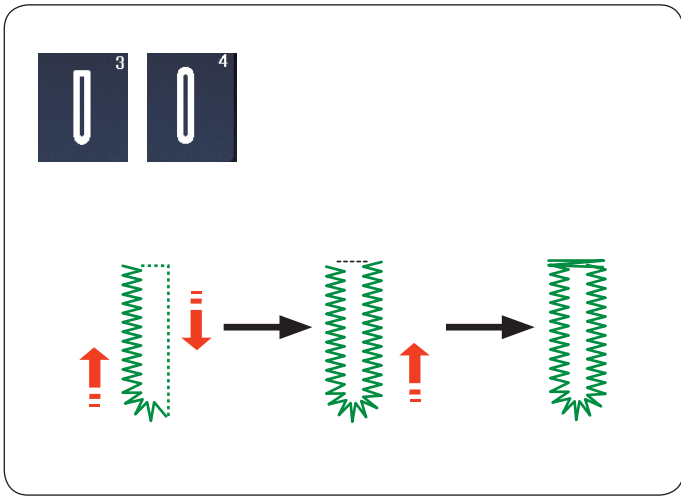
- 4 Start sewing again, and machine sews the back bartack and locking stitches then stops automatically with the needle in the up position. When the buttonhole is finished, a message will appear. To make the next buttonhole, position the fabric and start sewing again. The message disappears and the machine 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 65.
- The memorized length will be cancelled if the presser foot is raised or the startover key is pressed before buttonhole is completed.





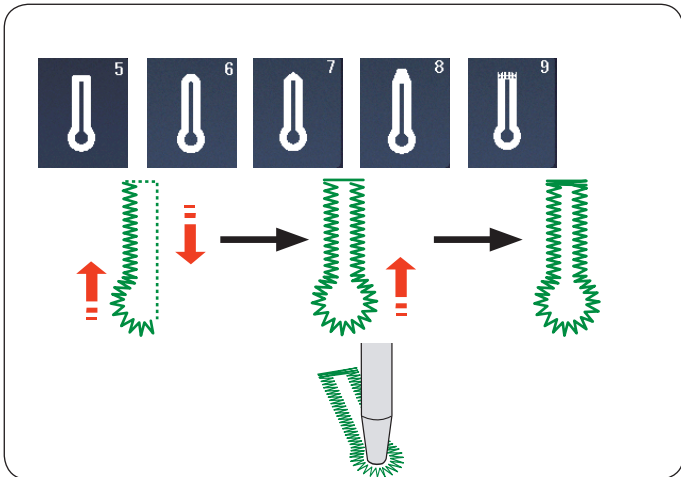
## Other Buttonholes

### B3, B4 Round end and fine fabric buttonholes

The sewing procedure is the same as that of B1 square (sensor) buttonhole (refer to pages 63-65).

#### 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.



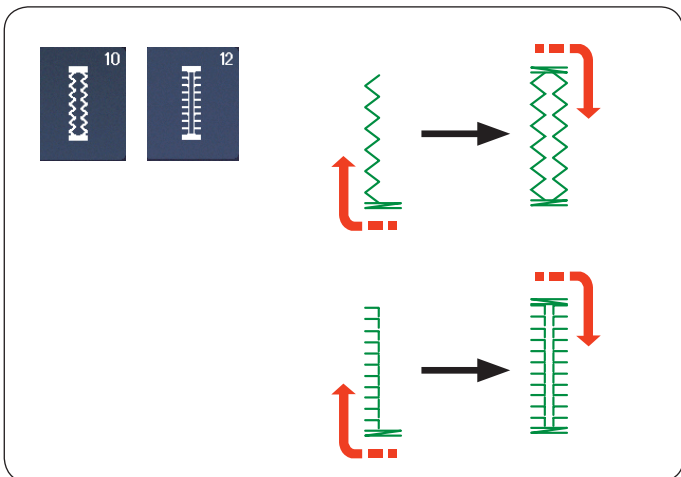
### B5-B9 Keyhole buttonholes

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to pages 63-65).

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.



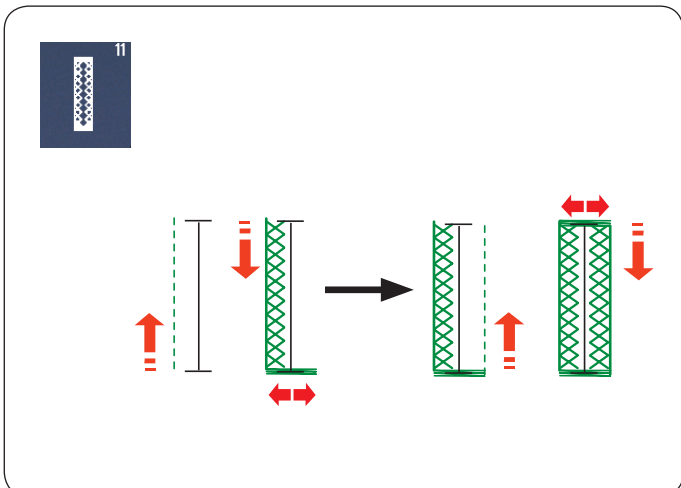
### B10, B12 Stretch and Antique buttonholes

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to pages 63-65).

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), and from 0.50 to 2.50 (B12).



### B11 Knit buttonhole

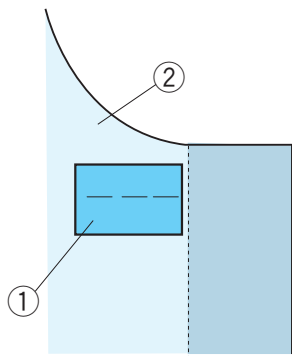
The sewing procedure is the same as B1 square (sensor) buttonhole (refer to pages 63-65).

#### NOTE:

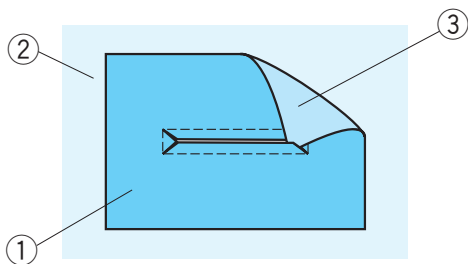
- The opening width can be adjusted from 0.2 to 2.0.
- The buttonhole width can be adjusted from 2.6 to 9.0.
- The stitch density can be adjusted from 0.70 to 1.20.



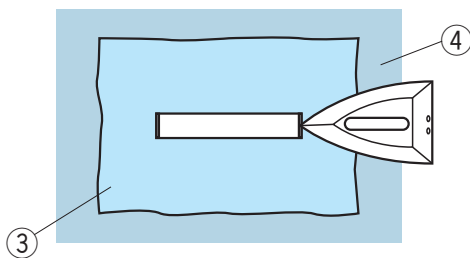
1



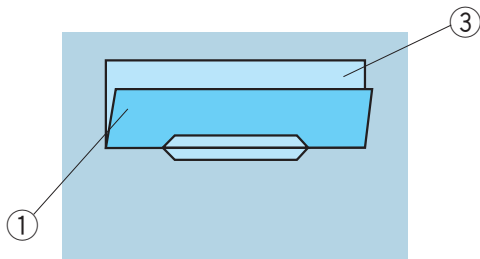
2



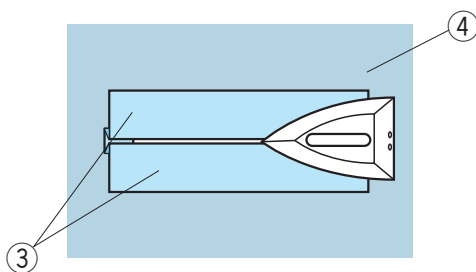
3



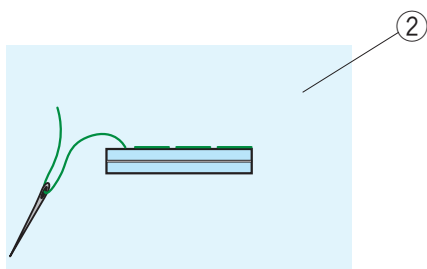
4



5



6



### B13 Welting Buttonhole (Bound Buttonhole)

A welting buttonhole is made by stitching a strip or patch of fabric to the buttonhole.

Welting 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 welting 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.

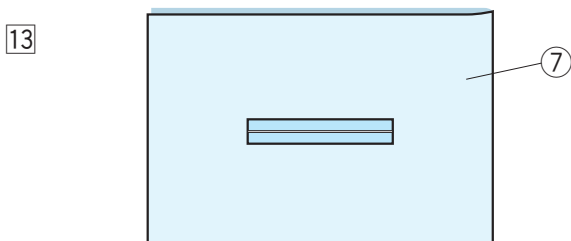
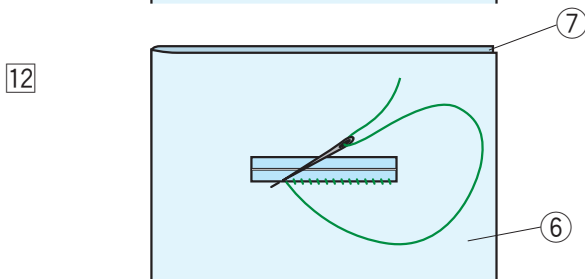
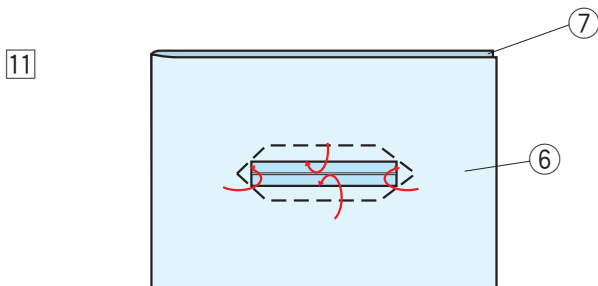
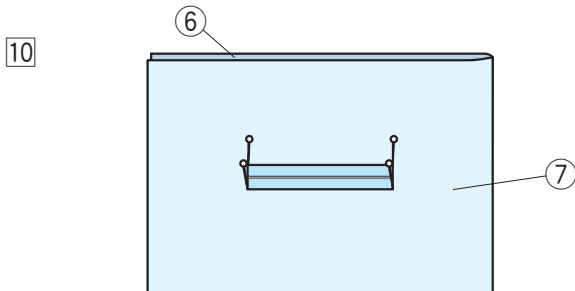
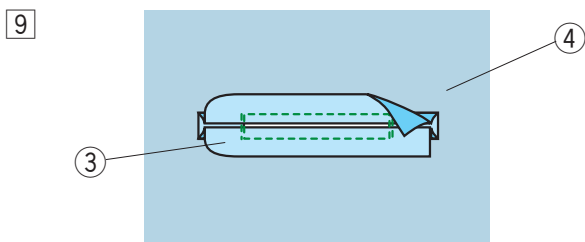
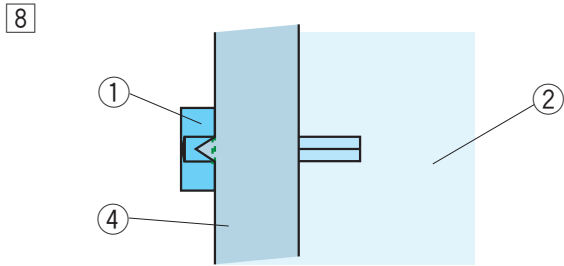
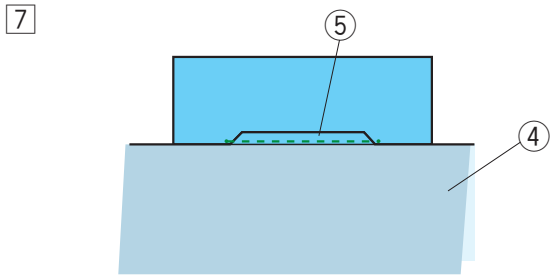
- ① Wrong side of patch
- ③ Right side of patch

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 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 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 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 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 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.

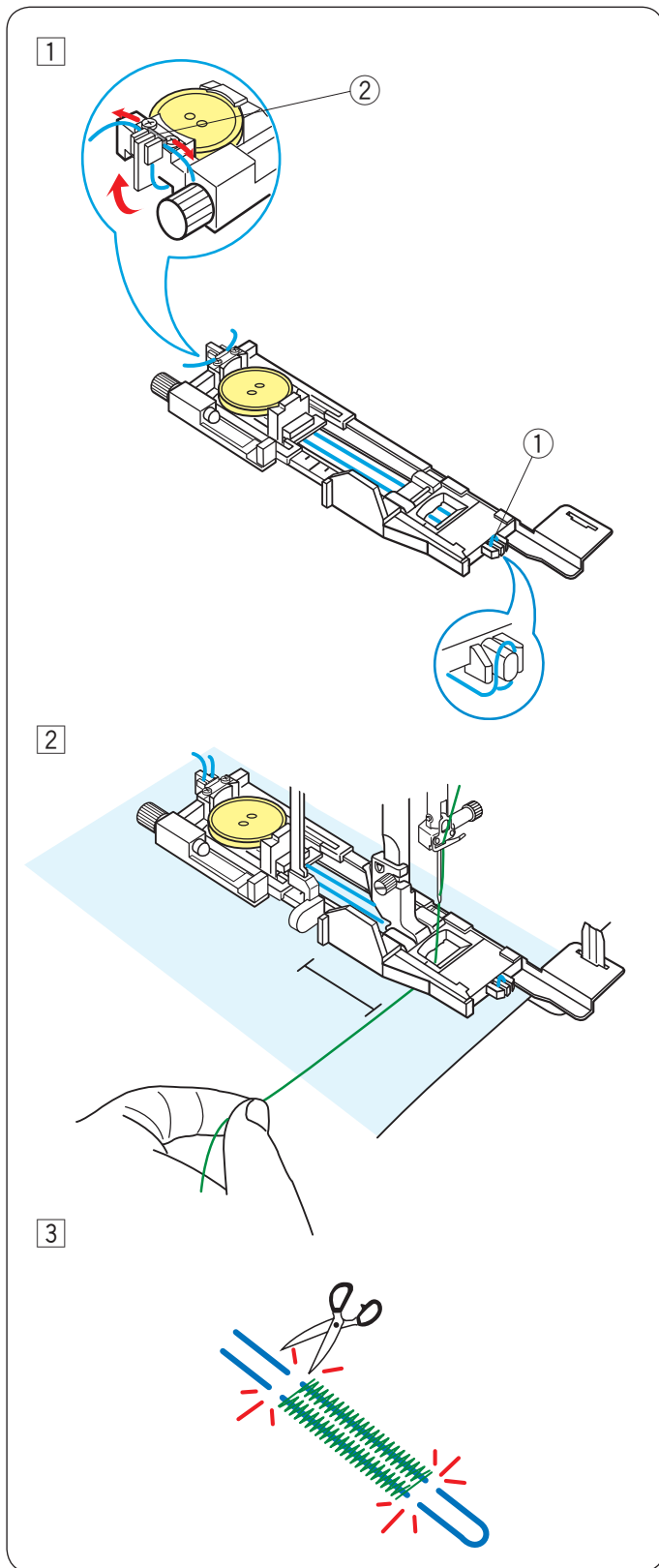
- ⑥ Facing
- ⑦ Garment fabric

12 Stitch around the opening with a needle and thread as shown.

- ⑥ Facing
- ⑦ Garment fabric

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.

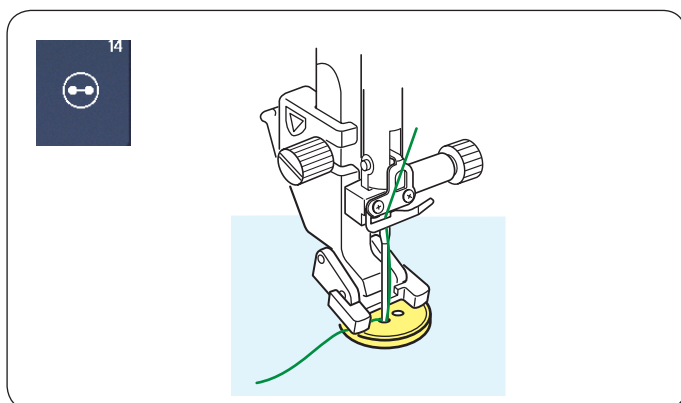
- 2 Lower the needle into the fabric where the buttonhole will start.  
Lower the foot and buttonhole lever.  
Pull the needle thread lightly to the left.  
Start the machine to sew the buttonhole over the cord.  
The machine stops automatically when finished.

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:

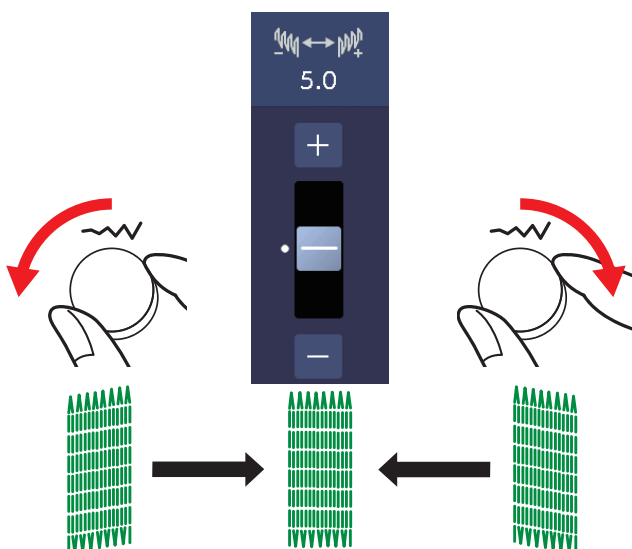
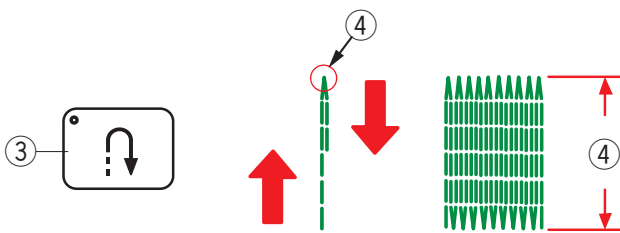
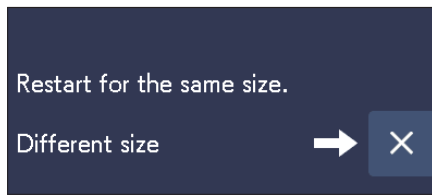
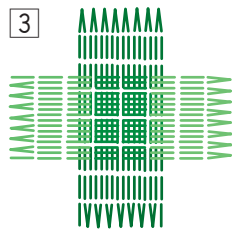
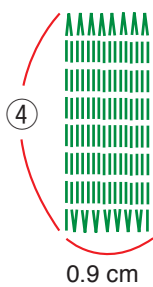
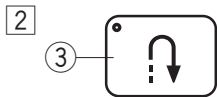
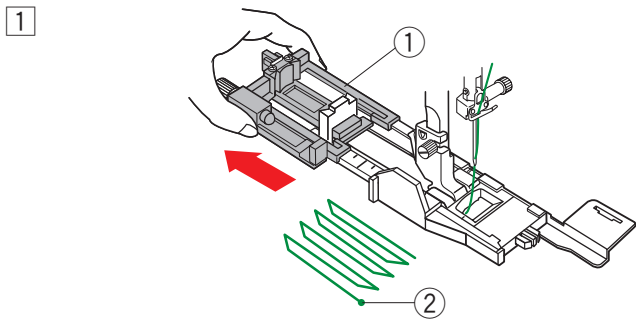
- Do not adjust the opening width wider than 0.8.
- Set the stitch width in accordance with the thickness of the cord used.
- To cut the buttonhole opening, refer to the instructions on page 65.



## Speciality Stitches

### B14 Button sewing

See page 145 for sewing instructions.



## B15 Darning

- 1 Attach 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 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.

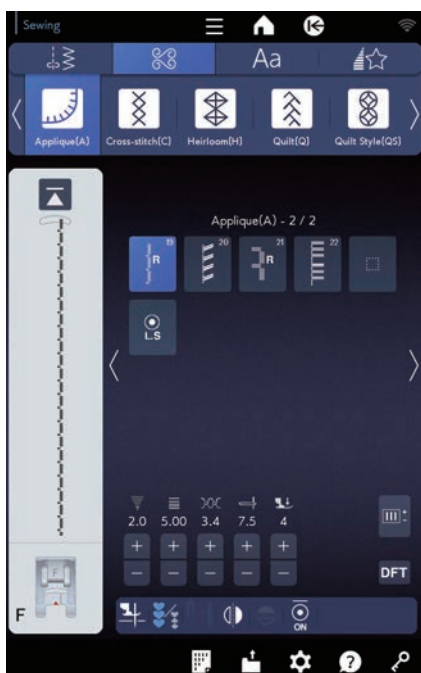
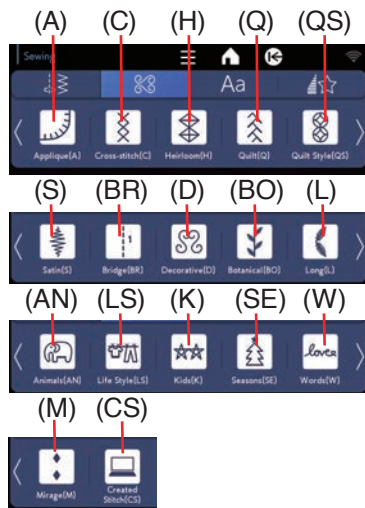
If the right corner is lower than the left side, turn the stitch width adjusting dial clockwise or press the “+” key to correct it.



## DECORATIVE STITCHES

### Decorative Stitches

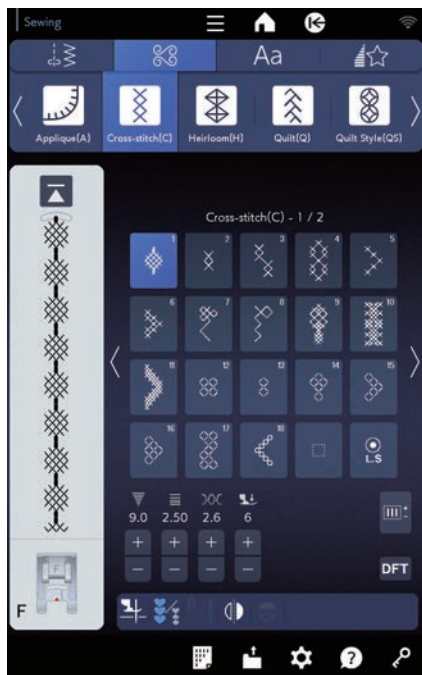
The patterns in this section are classified into 17 groups. These patterns are programmable and you can make a pattern combination.



### Applique stitches (A): 2 pages

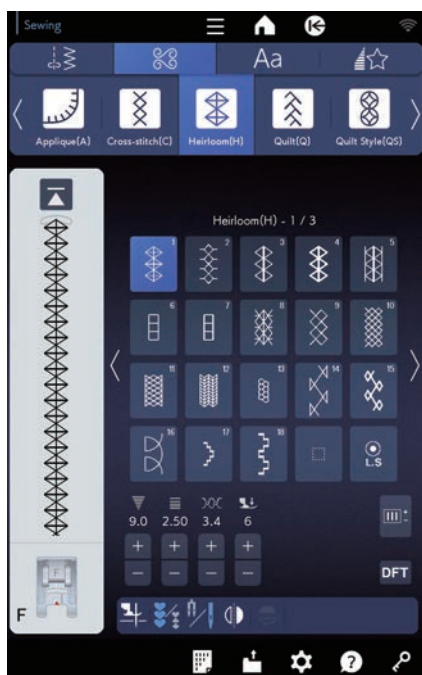
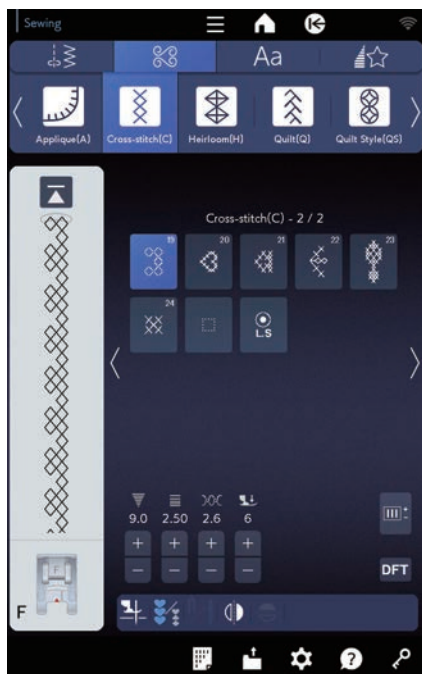
Stitches in this group are for applique (refer to page 156).





### Cross-stitches (C): 2 pages

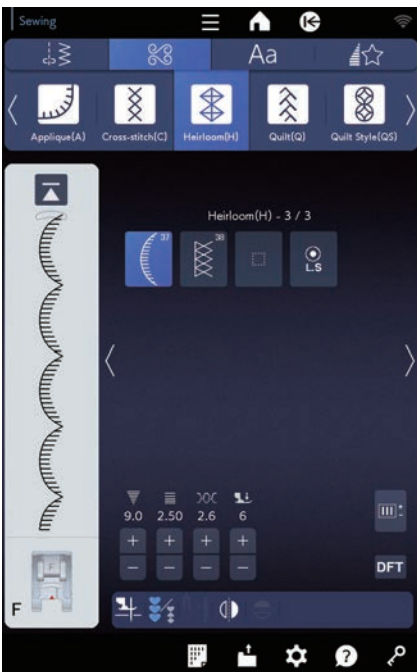
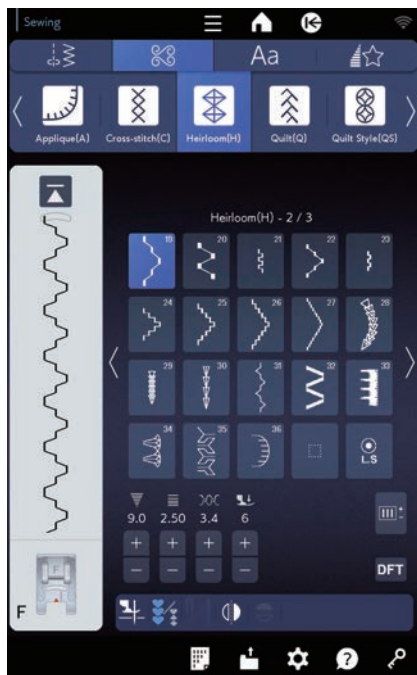
This group provides cross-stitches for craft sewing and home décor.



### Heirloom stitches (H): 3 pages

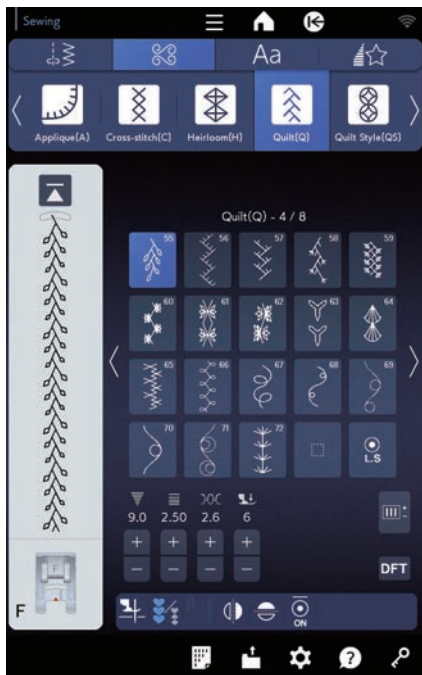
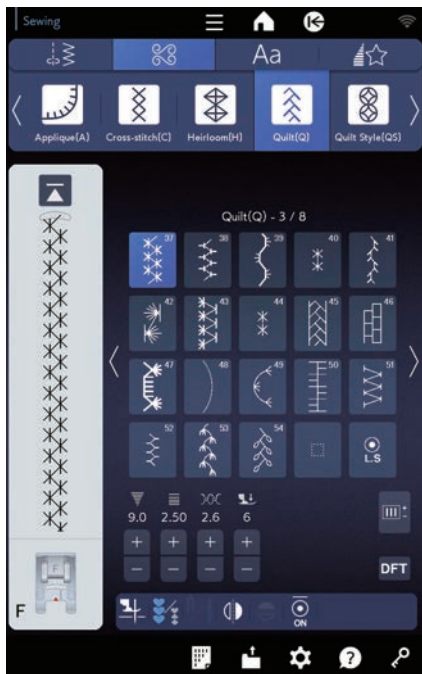
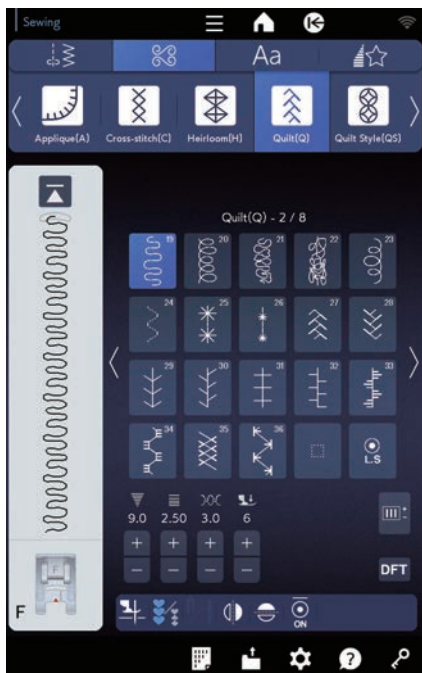
This group provides heirloom stitches for craft sewing and home décor.

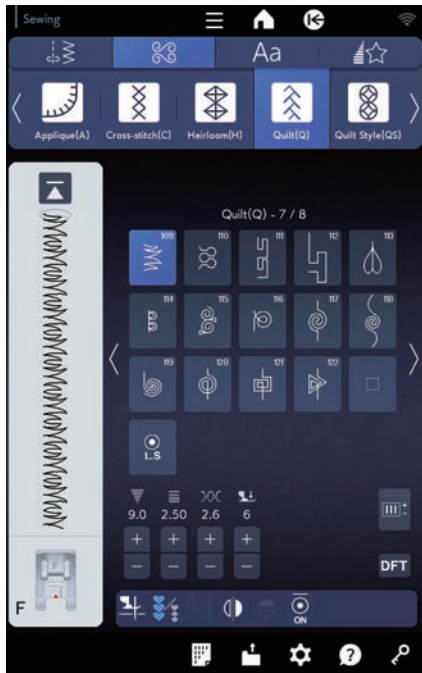
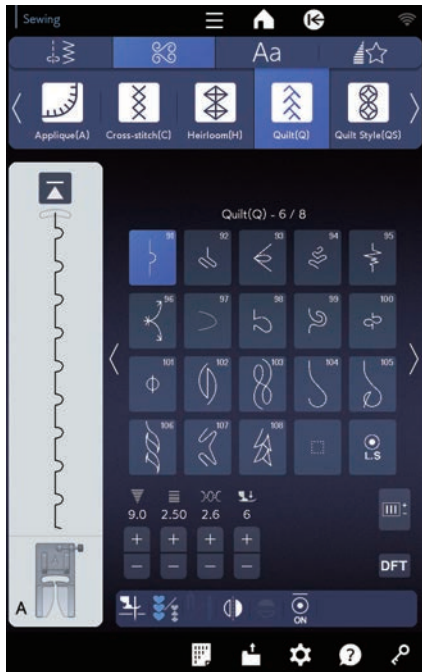
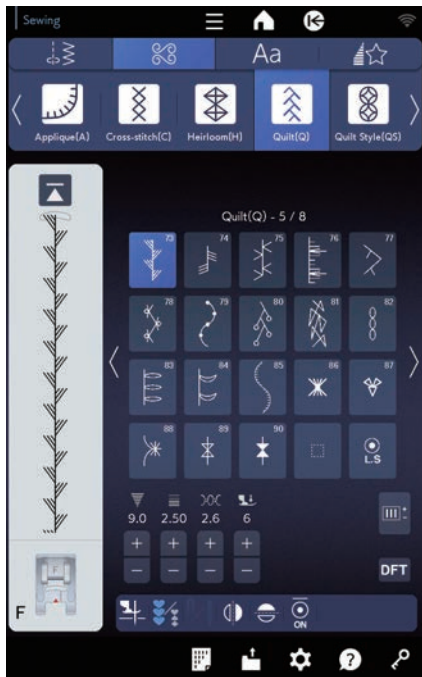
## Heirloom stitches (continued from previous page)



## Quilt stitches (Q): 8 pages

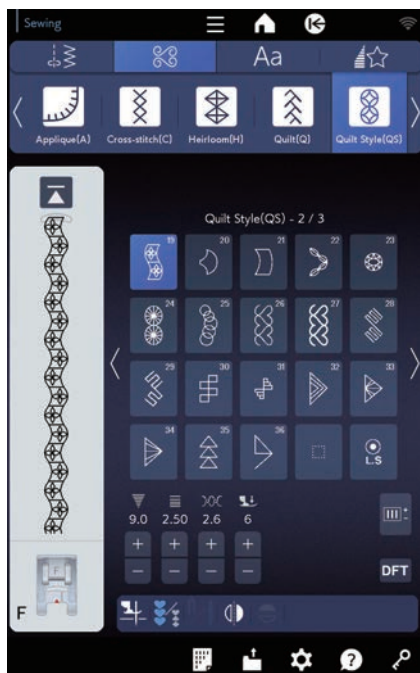
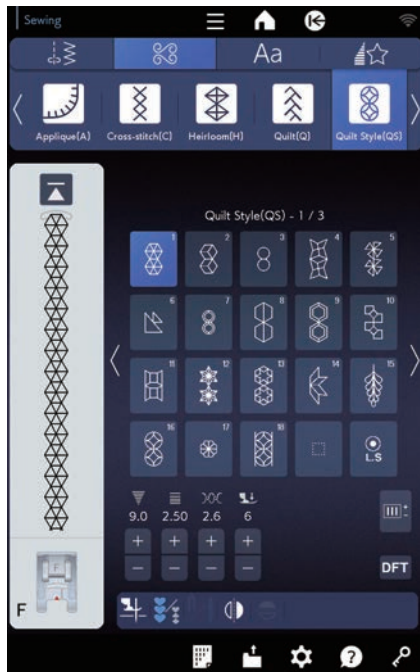
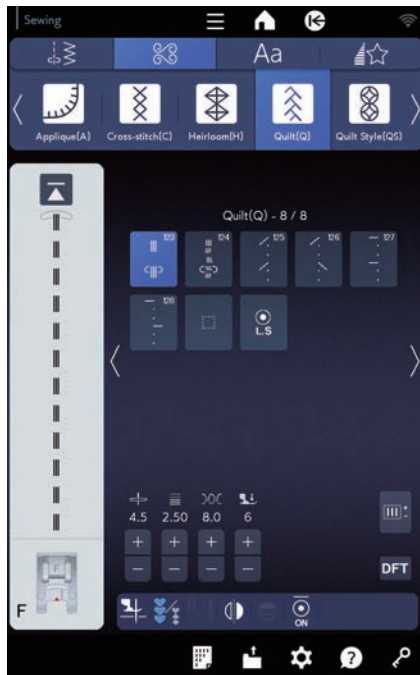
Stitches in this group are for patchwork and quilting (refer to pages 95-100, 149-159).







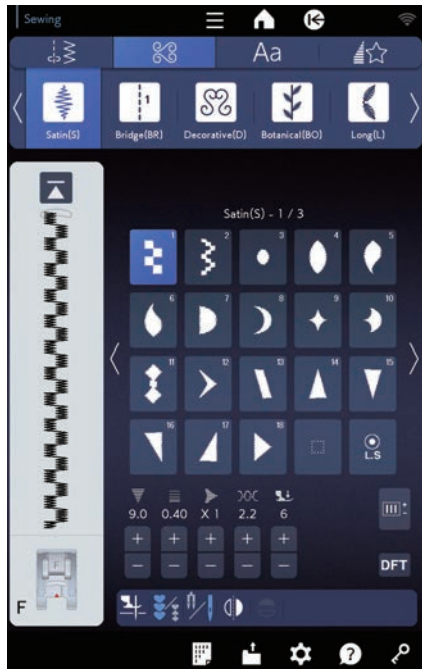
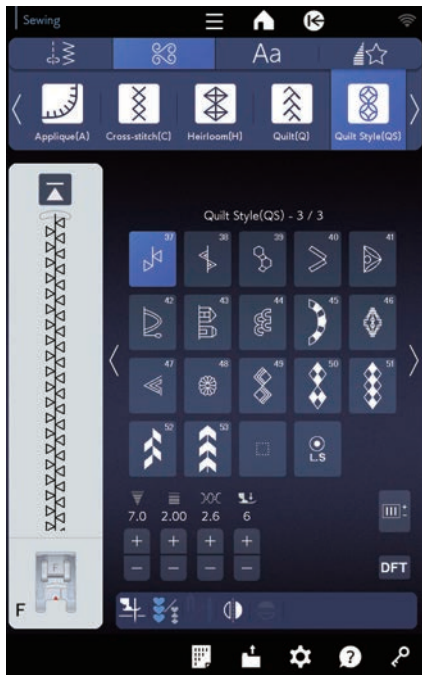
## Quilt stitches (continued from previous page)



### Quilt Style (QS): 3 pages

There are stitch patterns created from quilt blocks in this group.

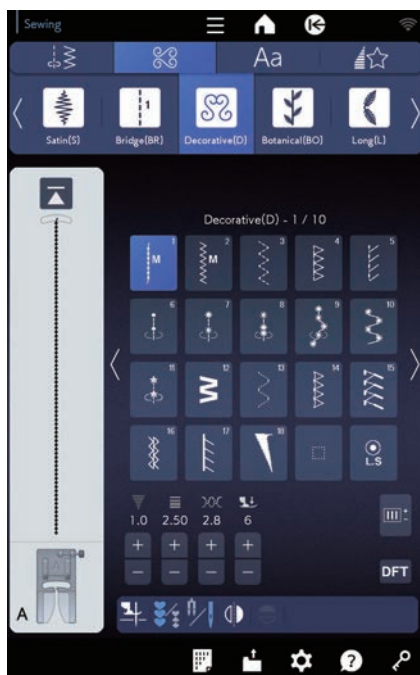
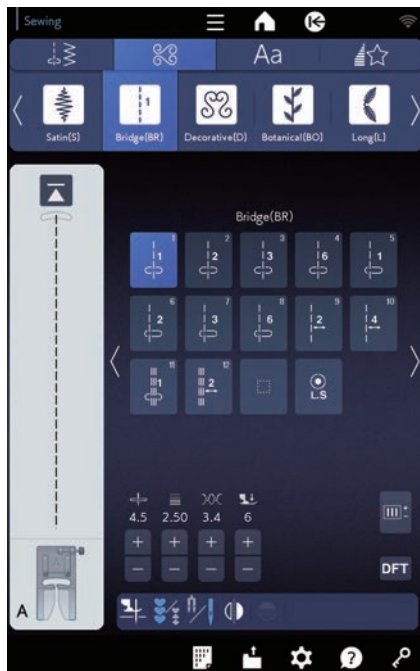
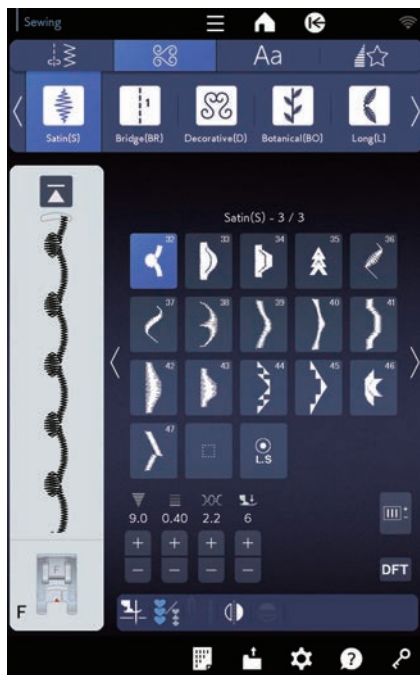
## Quilt Style (continued from previous page)



## Satin stitches (S): 3 pages

The stitches on page 1 and 2 can be elongated up to 5 times their original length while the stitch density remains the same (refer to page 100).

## Satin stitches (continued from previous page)



### Bridge stitches (BR): 1 page

Bridge stitches are used for inserting straight stitches after a stitch pattern.

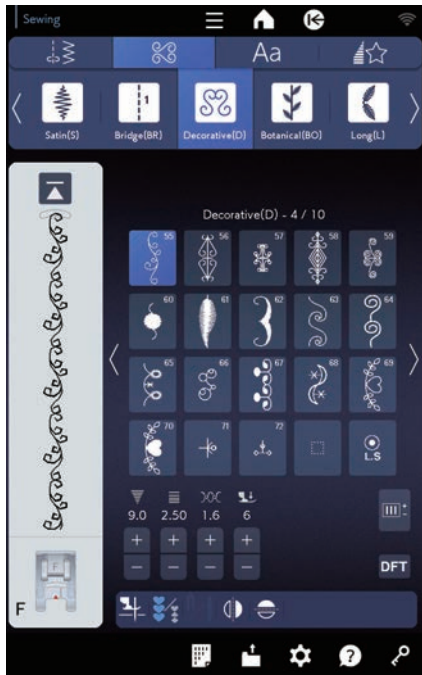
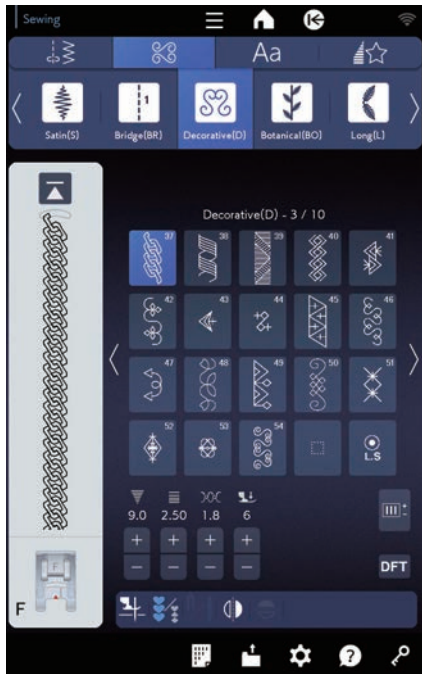
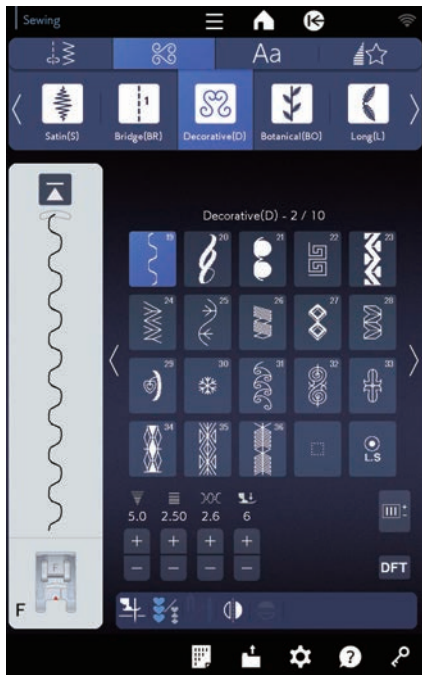
The number beside the stitch image on the straight stitch key indicates the stitch count of a programmable unit.

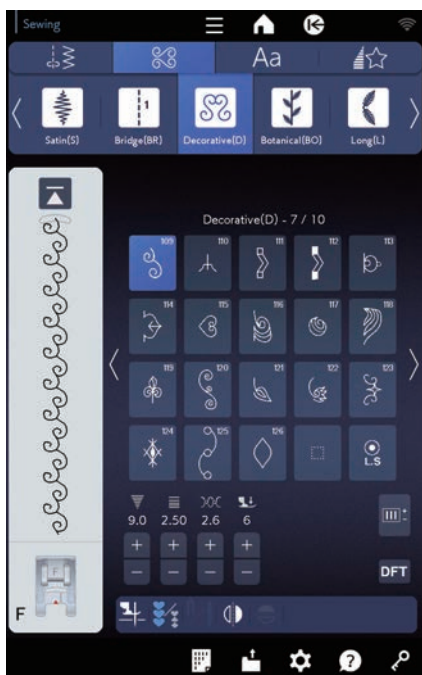
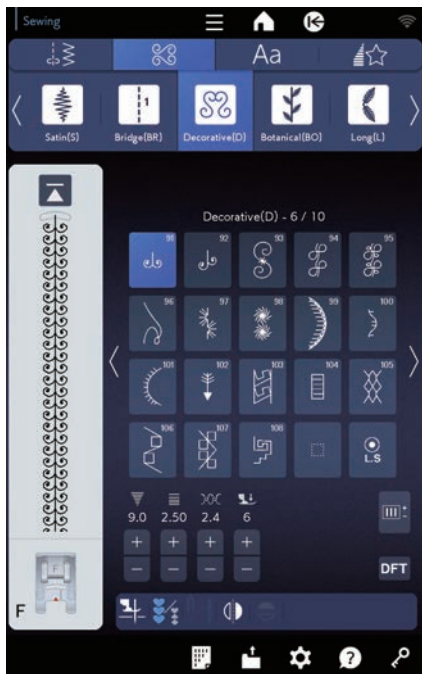
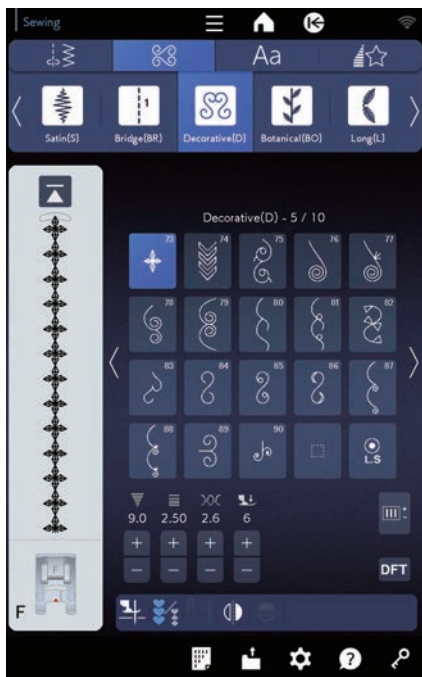
Patterns BR9, BR10 and BR12 will inherit the needle drop position and stitch length of the previous pattern in the programmed pattern combination (refer to page 106).

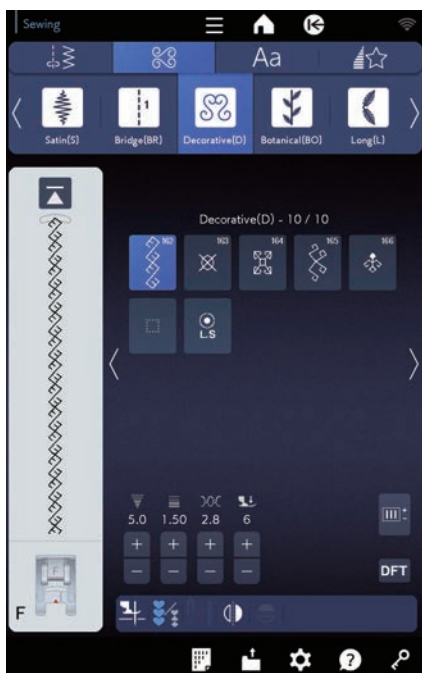
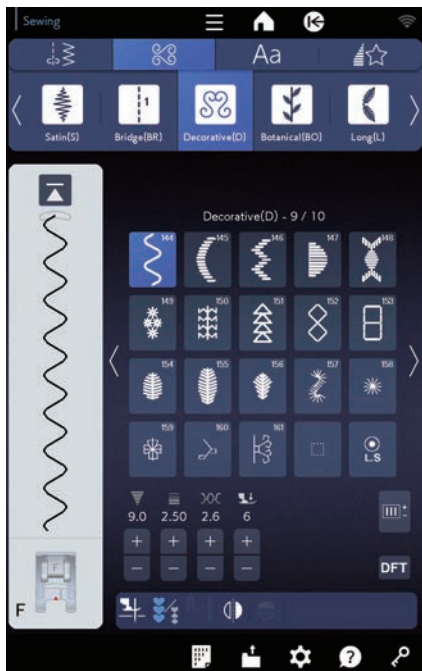
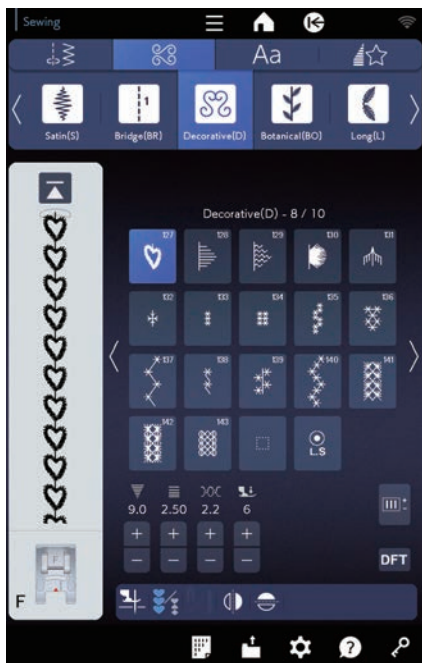
### Decorative stitches (D): 10 pages

166 attractive patterns are available in this group. Patterns in this group are ideal for decorating.



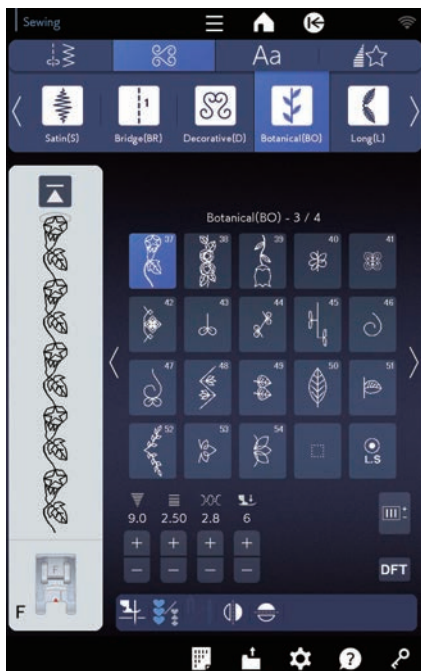
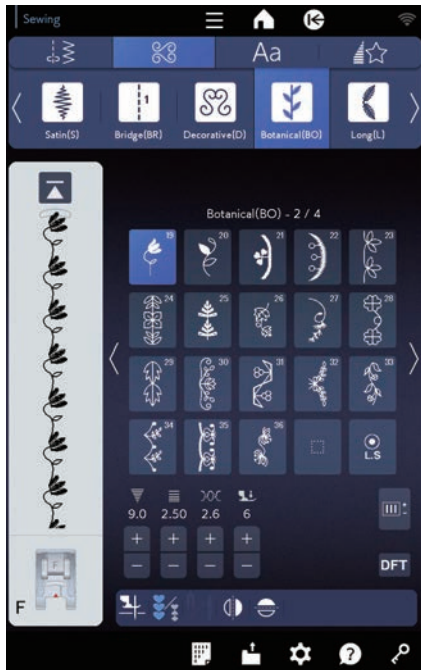
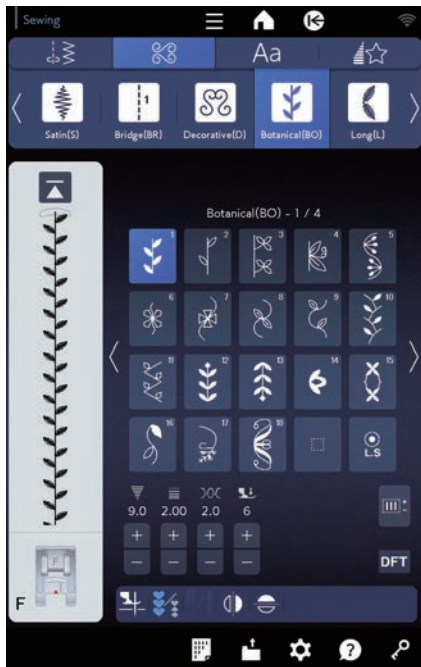






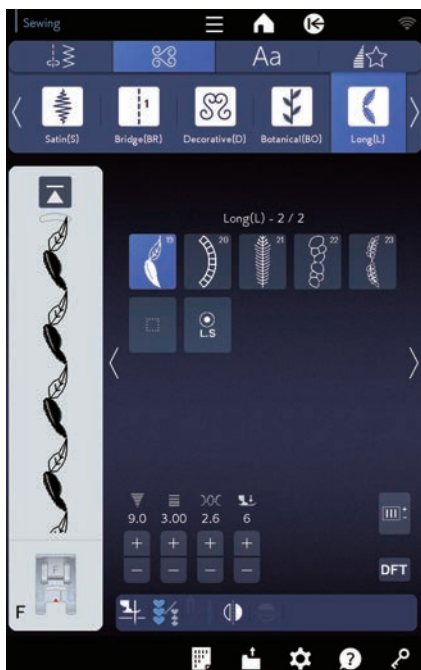
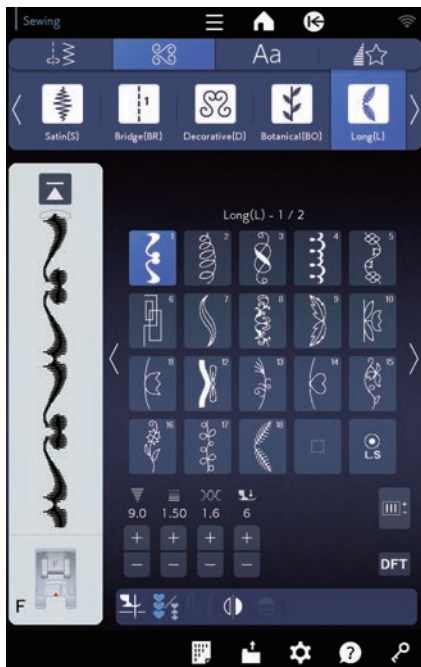
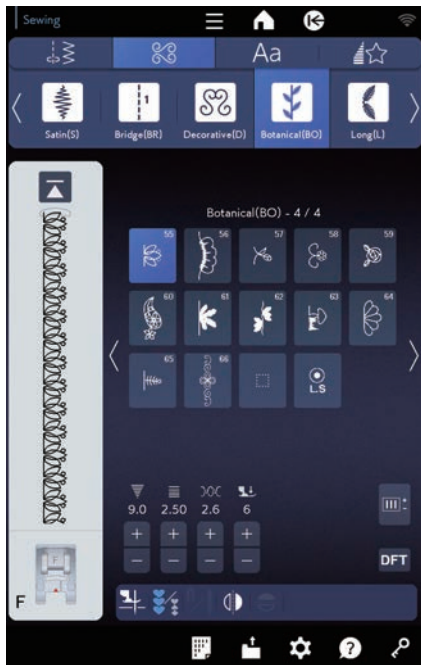
### Botanical (BO): 4 pages

There are patterns of trees, grass and flowers in this group.



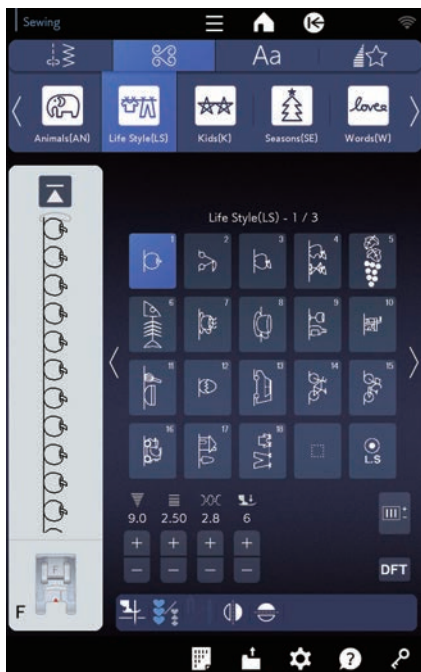
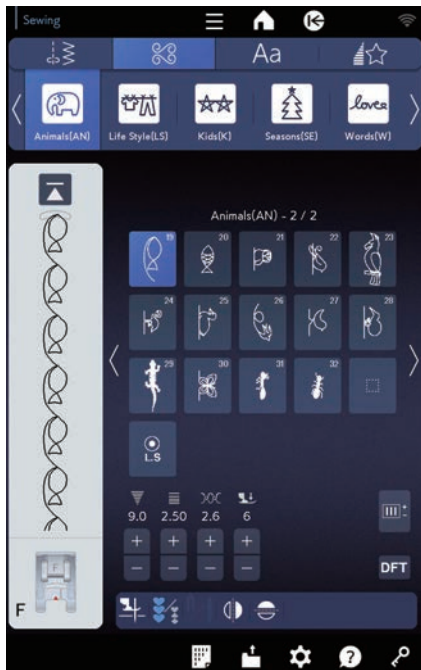
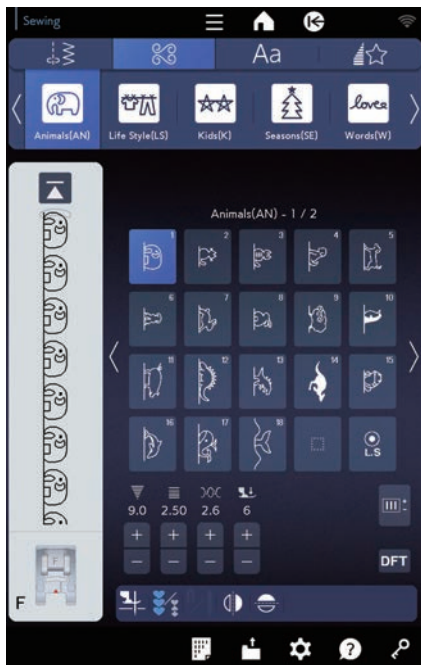


## Botanical (continued from previous page)



### Long stitches (L): 2 pages

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

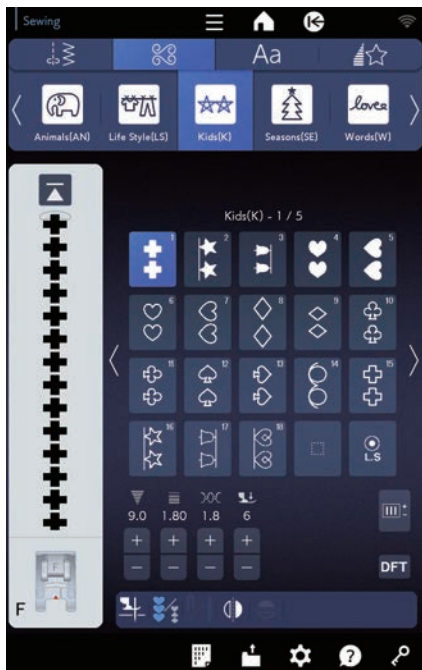
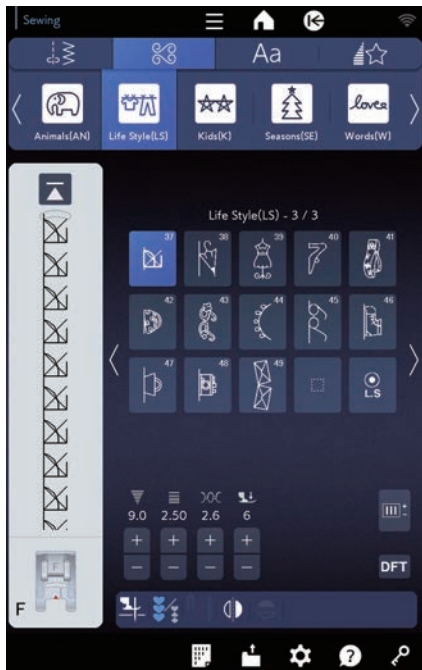
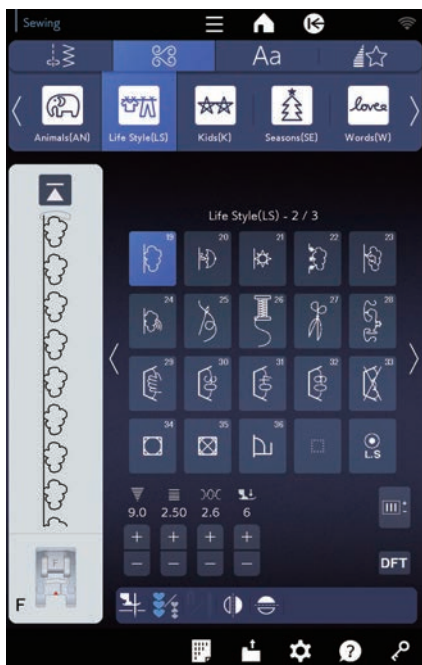


### Animals (AN): 2 pages

There are patterns of animals in this group.

### Life Style (LS): 3 pages

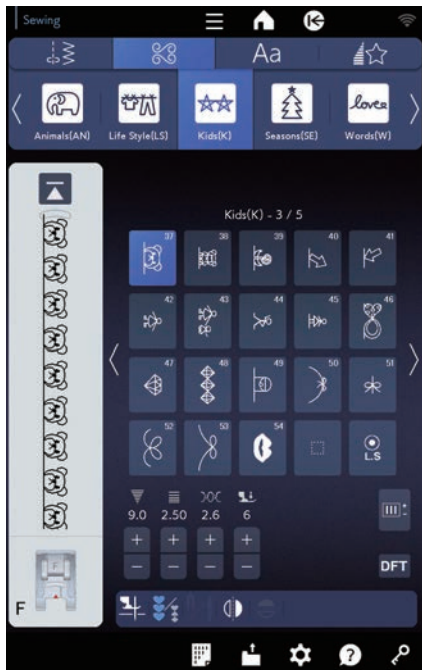
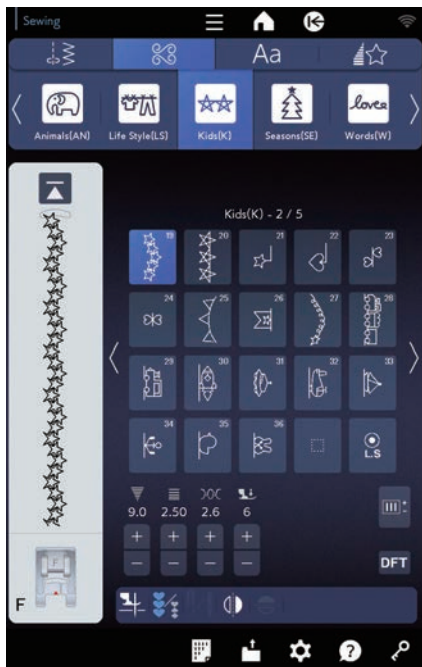
There are patterns related to lifestyle in this group.



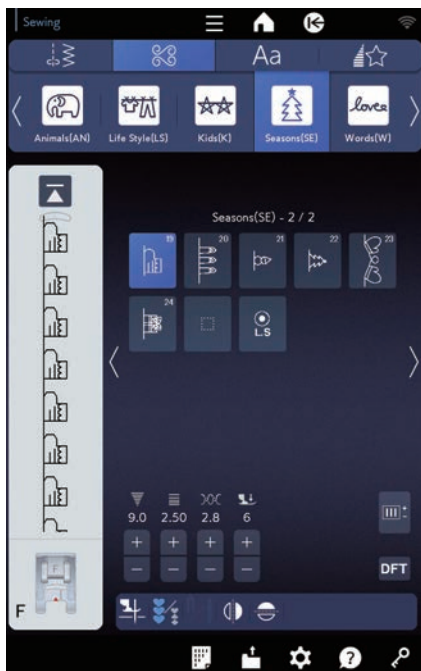
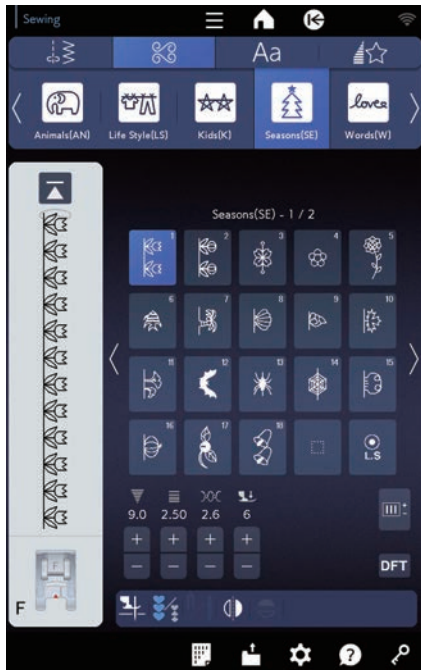
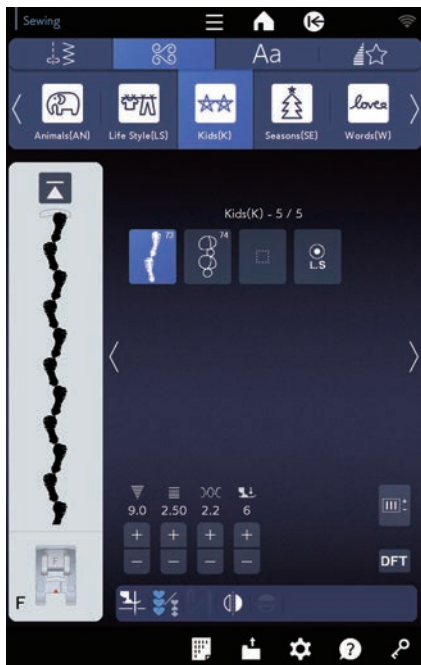
**Kids (K): 5 pages**

There are patterns for kids in this group.



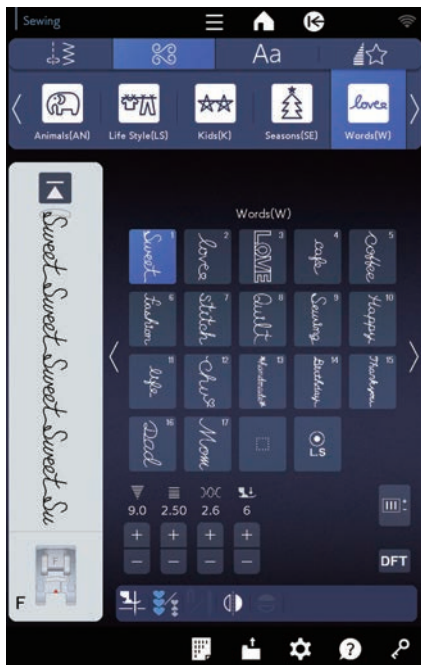


## Kids (continued from previous page)



### Seasons (SE): 2 pages

There are patterns related to seasons in this group.



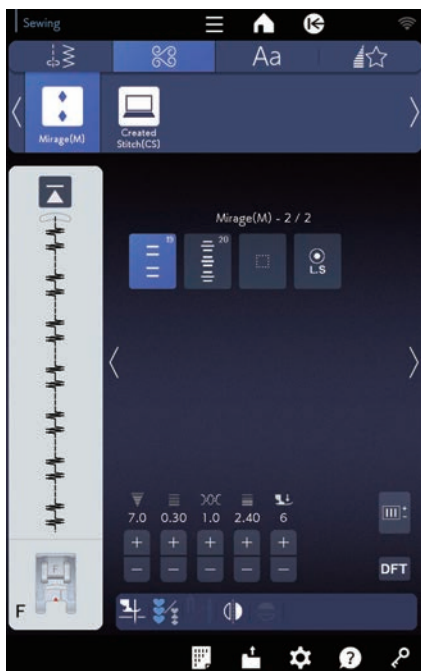
**Words (W): 1 page**

There are word patterns in this group.



**Mirage (M): 2 pages**

This group provides satin patterns without connecting straight stitches (refer to page 101).

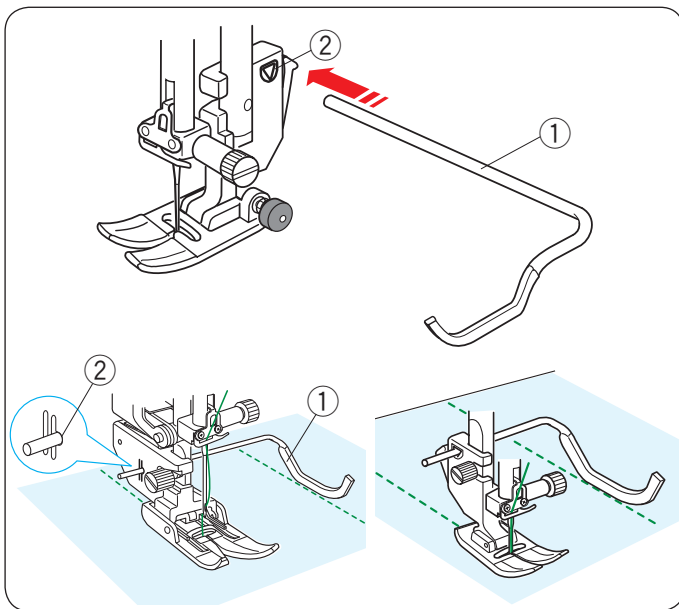




### Created Stitch (CS): 1 to 3 pages

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

Refer to Stitch Composer for how to transfer created stitch patterns from a PC to the machine.



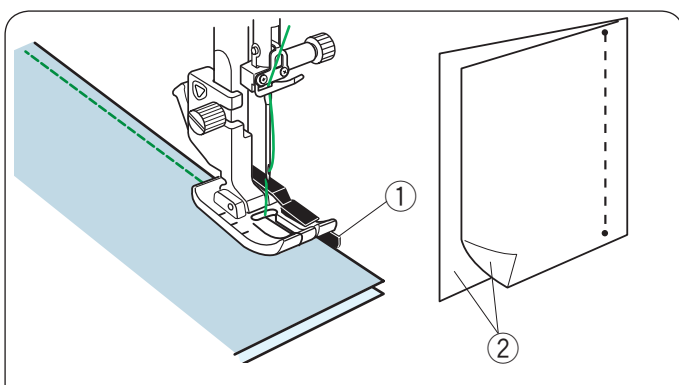
## Quilting (Q)

### 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.

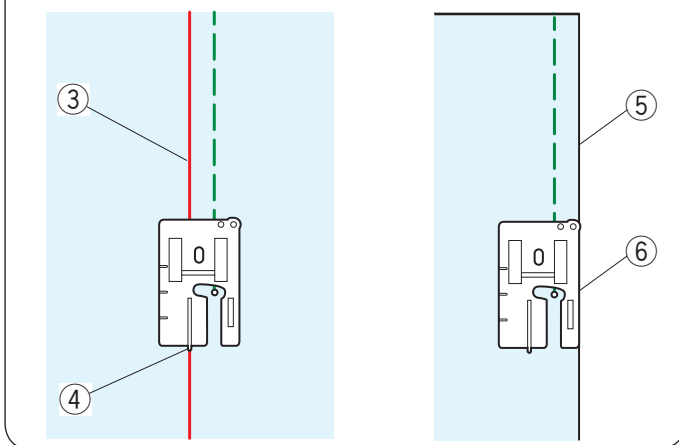


### Q1-Q3 Patchwork Piecing

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 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

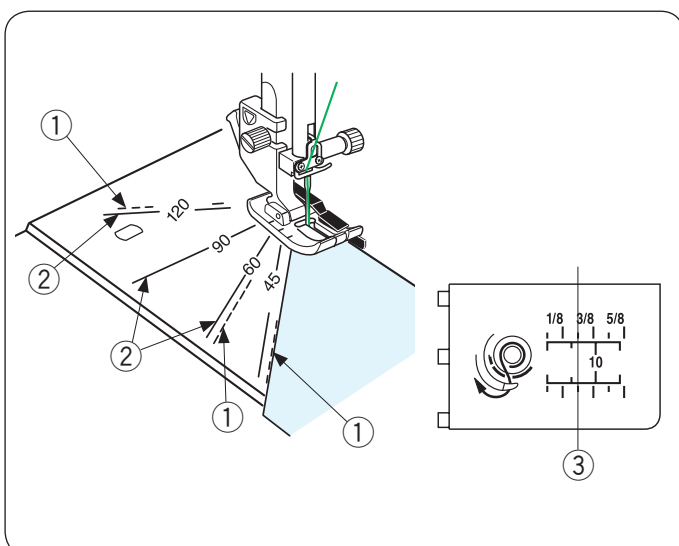


You can sew a 1/4" allowance from the guide line with 1/4" seam foot O (without guide) as shown. Align the guide line with the 1/4" guide of the foot and sew.

- 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 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 quilt patterns available.

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

- 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
- Lemoyne star
- Log Cabin
- Grandma Garden
- Baby Blocks

### Example: Nine patch size calculation

Press the nine patch icon to select nine patch.

Set the size of work (the size of width and the height) ③ in centimeters by pressing the “-” or “+” key.

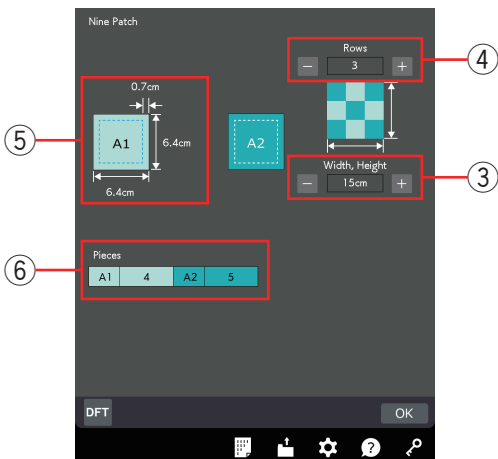
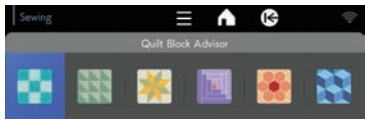
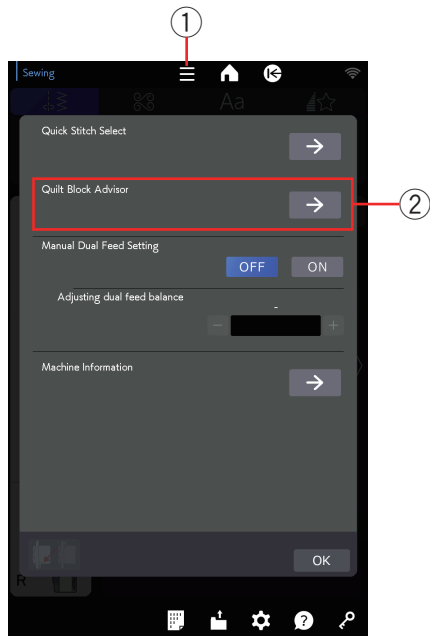
Set the number of rows ④ by pressing the “-” or “+” key.

- ③ Size of work (Width and Height of 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 on 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





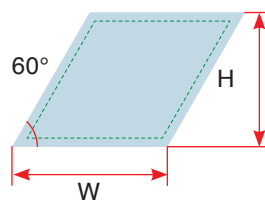
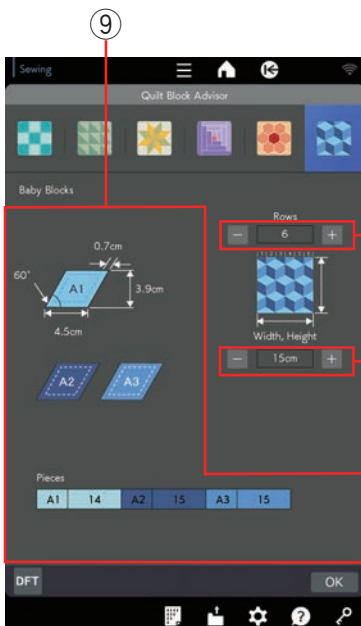
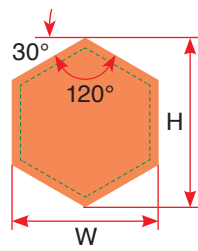
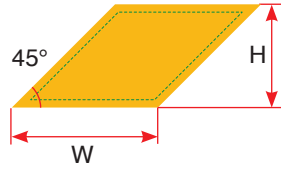
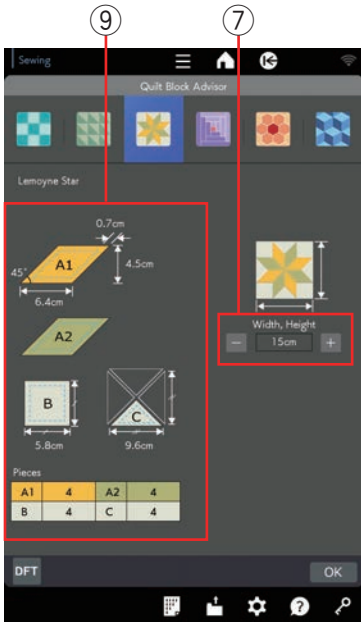
### Other quilt designs

Select the design by pressing the quilt icons you wish to sew.

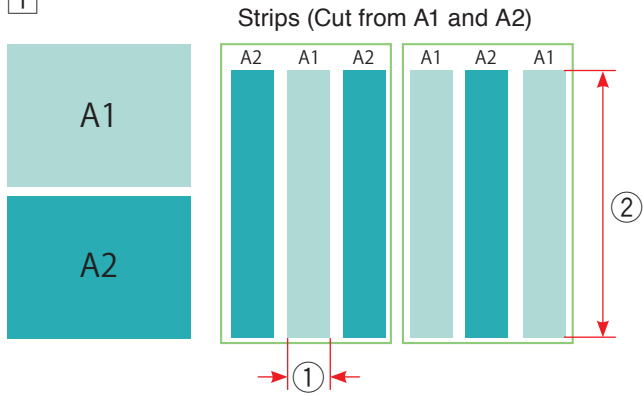
Set the size of work ⑦ (Width/Height) by pressing the “-” or “+” key.

Set the number of rows or circle ⑧ by pressing the “-” or “+” key if required.

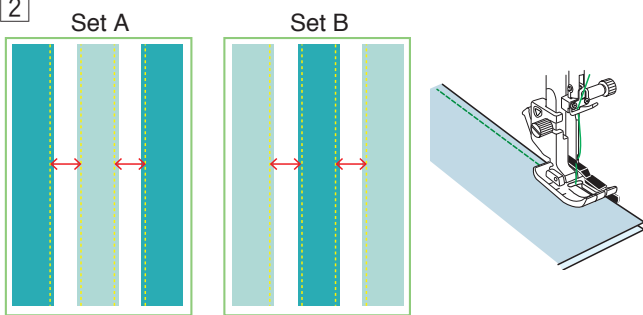
The quilt block advisor indicates the size of piece and number of required pieces on the left side of the window ⑨.



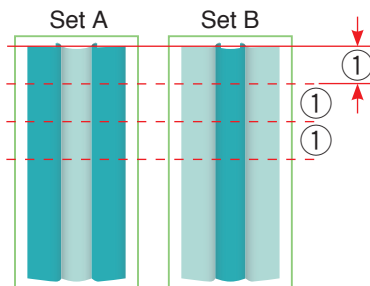
1



2



3



### 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.

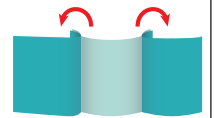
- ① Width of a part of the nine patch piece, including its seam allowance
- ② The length of the strip varies depending on the size of the quilting

2 Attach 1/4" seam foot O.

Stitch the strips right sides together to make strip sets A and B as shown in step 3.

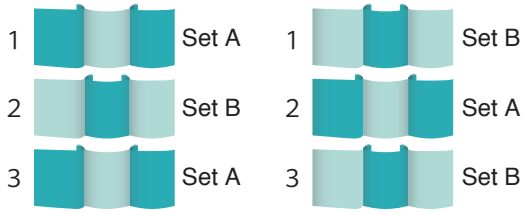
#### NOTE:

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



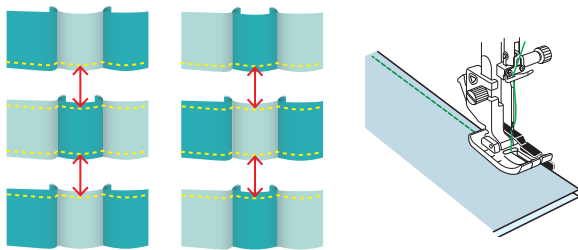
3 Cut strip sets A and B into width size ①.

4



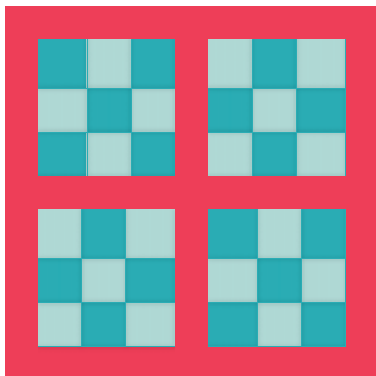
4 Arrange set A piece and set B piece alternately to form nine patch quilt block patterns.

5

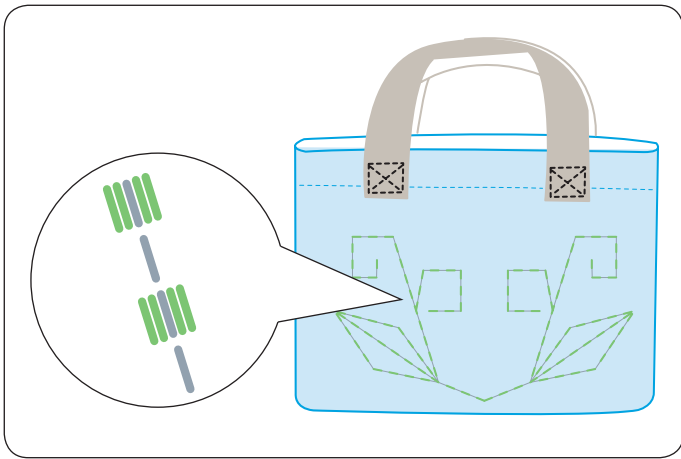


5 Stitch set A pieces and set B pieces together.

6



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

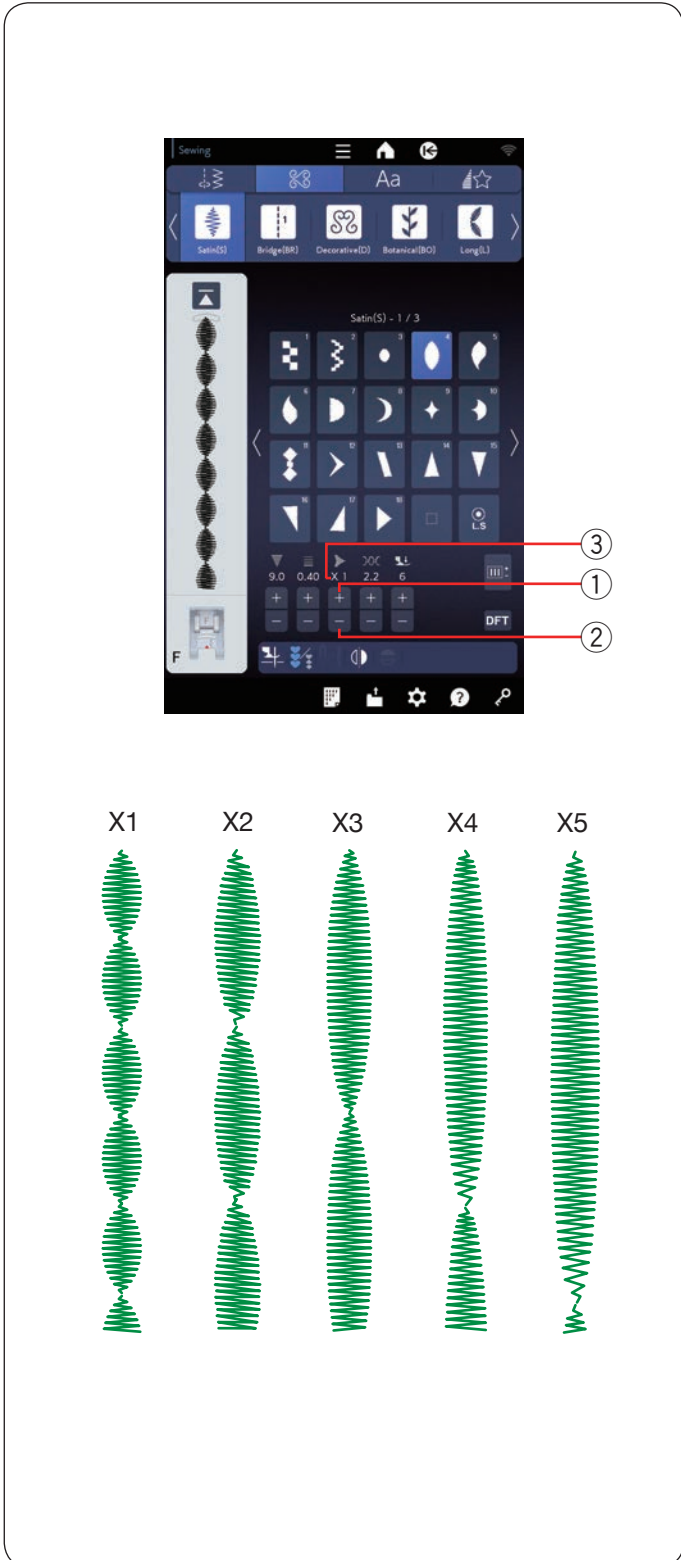


### Q123-Q128 Hand-look Quilt Stitches

Patterns Q123 to Q128 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 “+” key to elongate the stitch pattern.

① “+” key (elongation)

To reduce the elongation ratio, press the “-” key.

② “-” key (elongation)

The pattern can be elongated up to 5 times the original length.

The elongation ratio is indicated in the box.

③ Elongation ratio

You can also alter stitch density and stitch width.

X1



X2



X3

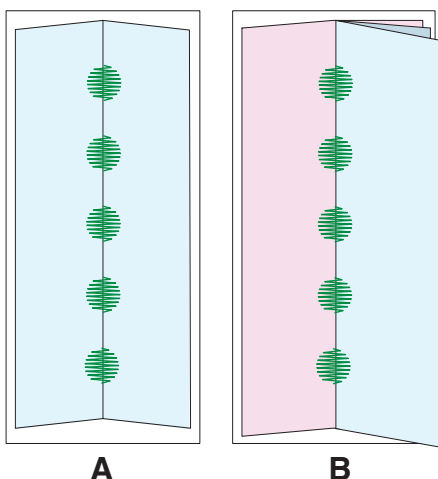
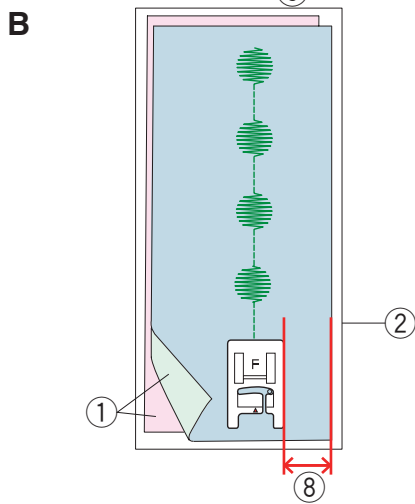
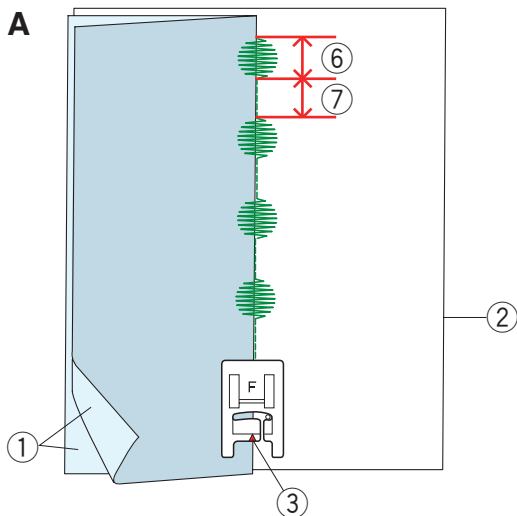
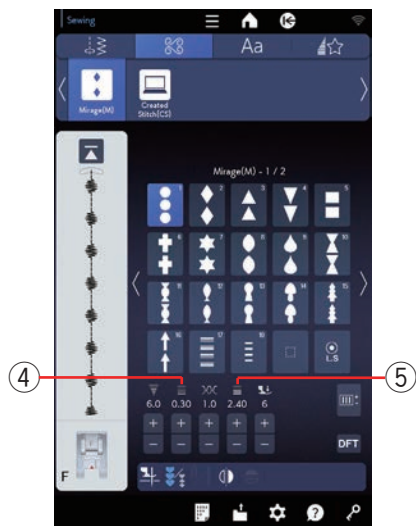


X4



X5





## Mirage (M)

Sew Mirage stitch and open the fabric to make patterns without connecting straight stitches.

### NOTE:

Use a medium fabric (such as sheeting, broadcloth) for Mirage stitch patterns. Using fine fabrics may cause wrinkles when opened.

There are two ways to sew the Mirage stitch patterns (sewing on one or two pieces of fabric).

### A: Sewing on one piece of fabric

Fold the fabric with the right sides together. Place a sheet of stabilizer under the fabric.

- ① Right side of fabric
- ② Sheet of stabilizer

Attach the satin stitch foot to the machine.

Sew the Mirage patterns with the marker on the presser foot along the fabric edge as shown.

Sew the connecting straight stitches on the right side of the fabric edge (on the sheet of stabilizer) as shown.

- ③ Marker

In the Mirage stitch, you can adjust the stitch length of the decorative stitch part and connecting straight stitch part separately. Adjust decorative stitch length adjusting key or connecting straight stitch adjusting key.

- ④ Decorative stitch length adjusting key
- ⑤ Connecting straight stitch adjusting key
- ⑥ Decorative stitch
- ⑦ Connecting straight stitch

### B: Sewing on two pieces of fabrics

Sew the fabric this way when you want to use two different fabrics on the right and left.

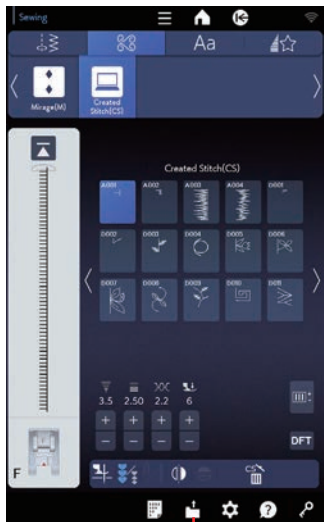
Place two pieces of fabric right sides together. Place the sheet of stabilizer under the fabric.

- ① Right side of fabric
- ② Sheet of stabilizer

Sew the fabric while keeping a constant seam allowance.

- ⑧ Seam allowance

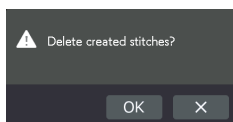
Open the fabric flat to hide the connecting straight stitches.



①



②



## 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

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 (refer to pages 185-186).
- Do not use a USB card reader and USB hub.

To delete a 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

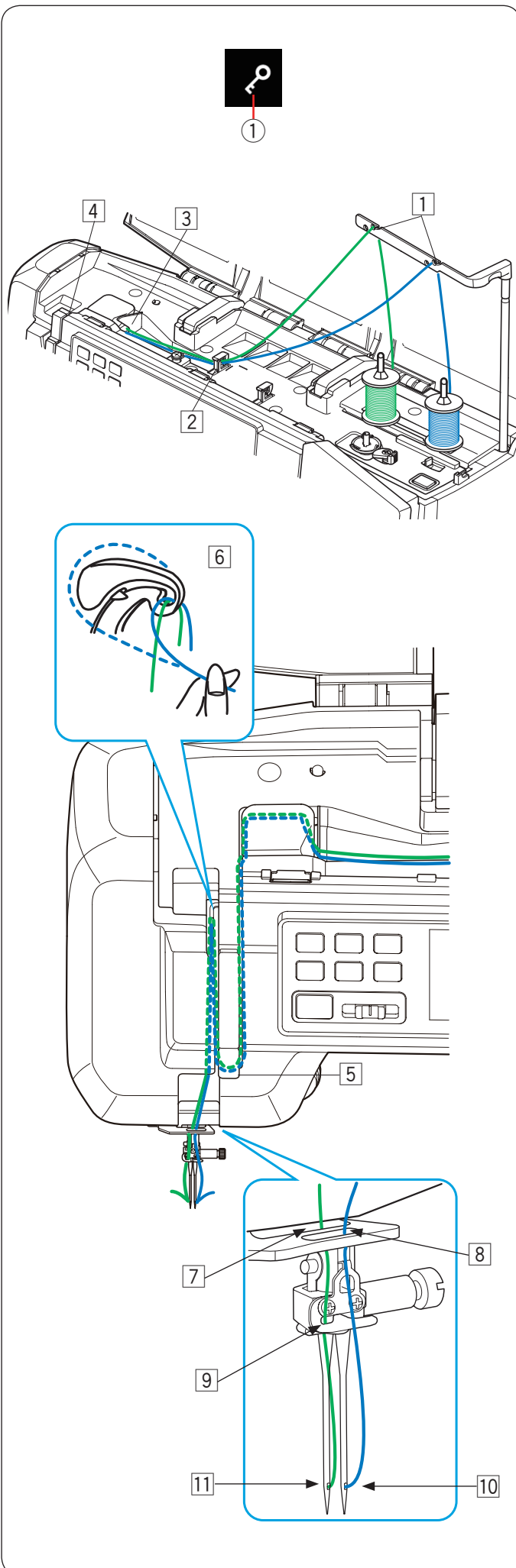
Some of the utility stitches and decorative stitches can be sewn with a twin needle.

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 ones 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 it through the threading points from ① and ② 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 it through the threading points from ① and ② to ⑥.

Draw the thread through the hole of the lower thread guide ⑧, then pass the thread to point ⑩ as illustrated.

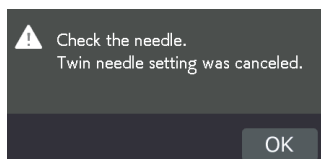
Make sure that the two strands of thread from the spools do not get tangled.

### NOTE:

- Threading from points ② to ⑥ is the same as for a single needle (refer to page 33-34).
- The needle threader cannot be used with the twin needle.



②



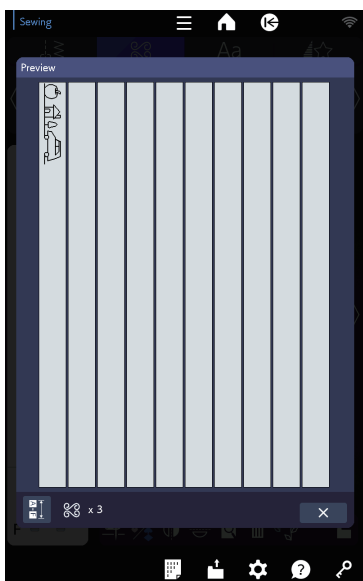
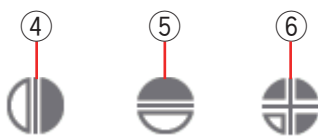
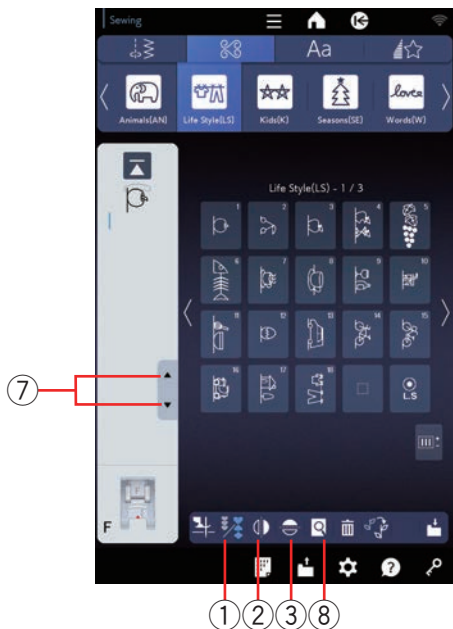
Press the twin needle key and select the desired pattern. Patterns not suitable for twin needle sewing cannot be selected (pattern selection keys are grayed out). Buttonholes, specialty stitches and monogram cannot be selected.

② Twin needle key

**NOTE:**

- When you sew patterns with the twin needle, test the stitches first before you sew on the garment.
- Use 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 right 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 the 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 specific patterns. For pattern identification, these patterns are shaded in blue on the stitch chart (refer to pages 187-191).
- 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.

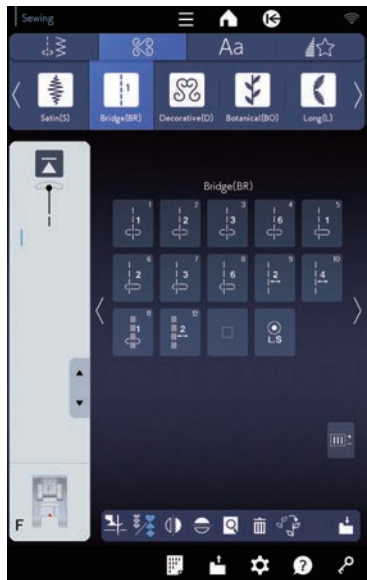
To view the entire pattern combination, press the cursor key to scroll over the pattern combination or press the preview key to show the entire pattern combination at a glance.

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 BR9 after pattern D6.

Two counts of straight stitches are added to pattern D6.

### **NOTE:**

Patterns BR9, BR10 and BR12 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.

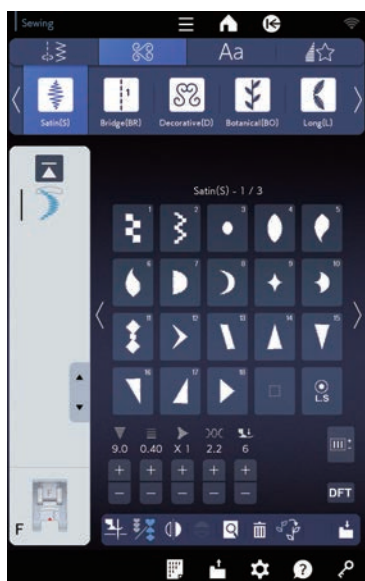
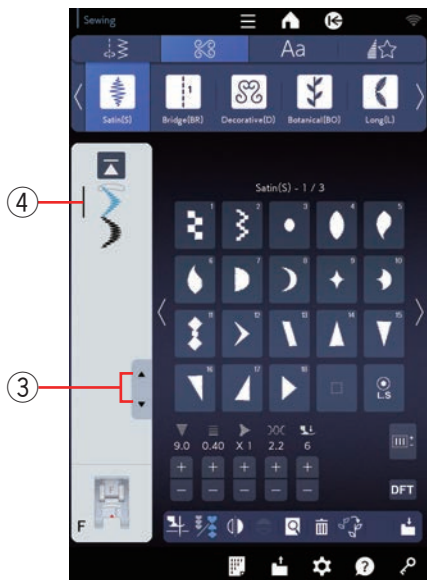
- ① Cursor
- ② Delete key



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

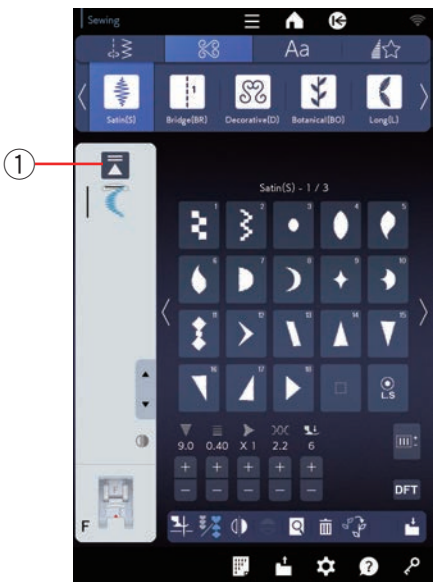




### Inserting a pattern

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

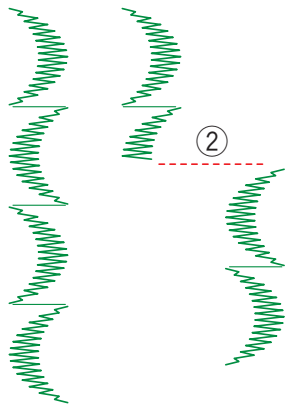
This is a 2-way function key to start sewing a pattern combination over from the beginning.

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.

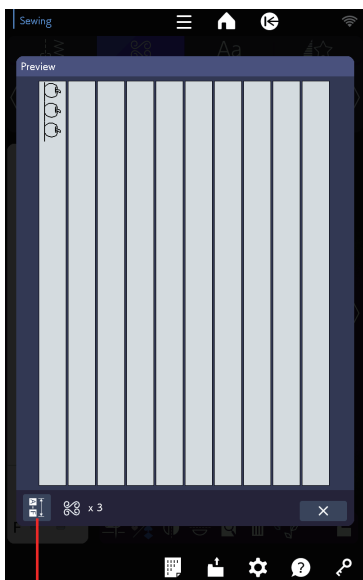
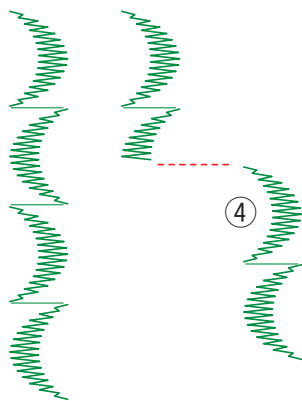
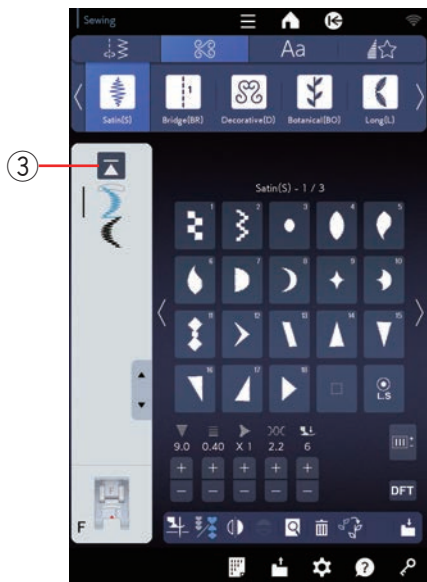
- ① Startover key (current pattern of the combination)
- ② Current pattern



### 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 on the preview window.

- 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.

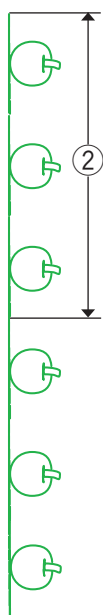
For example, select pattern LS1 three times, and sew a pattern combination.

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 39 mm. However, if the actual length *w* is 35 mm, enter 35 mm by pressing the “-” 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.



③

For example select patterns LS1, LS17 and LS13.  
The theoretical value is 51 mm. However, the read out is calculated according to the measured actual length. In this case, the adjusted value is 46 mm.  
Press the default key to clear the entered length.

③ Default key

## Tapering

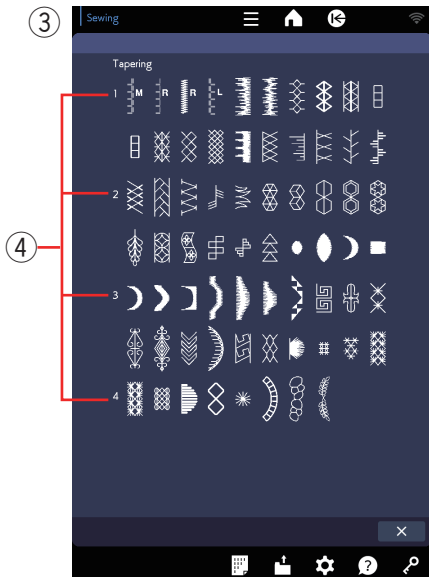
You can taper the beginning and end of the decorative stitch patterns to create tapered corners and points.

Press the tapering tab to enter the tapering mode (refer to page 39).

- ① Tapering tab

### NOTE:

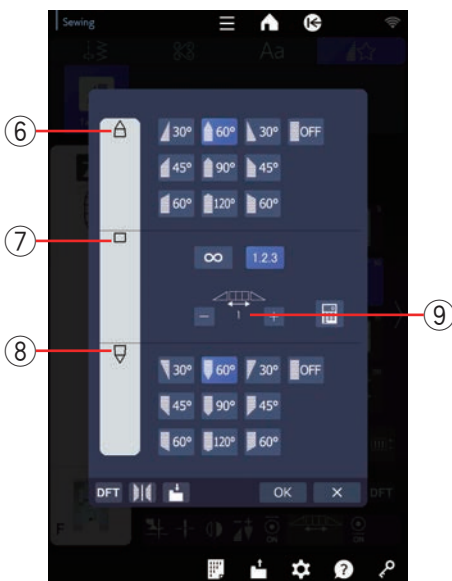
- The tapering length varies depending on the stitch pattern and its tapering shape. Make a test stitch on an extra piece of the fabric to check the tapering length.
- If you stop the machine while sewing, and change the stitch width, center needle position or stitch length, the machine will start tapered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



### Stitch reference chart for tapering

Press the stitch reference key to show the stitch reference chart for 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 upper column shows the start tapering pattern ⑥.

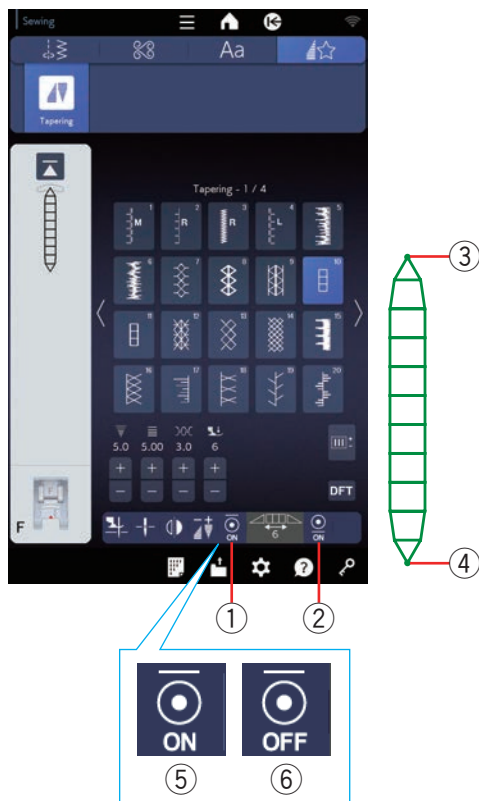
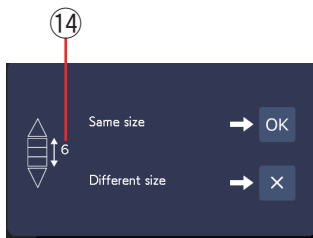
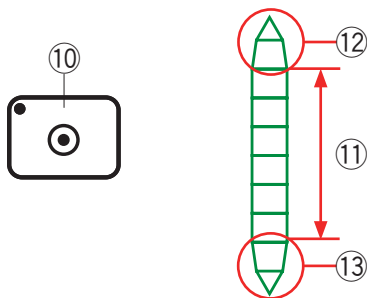
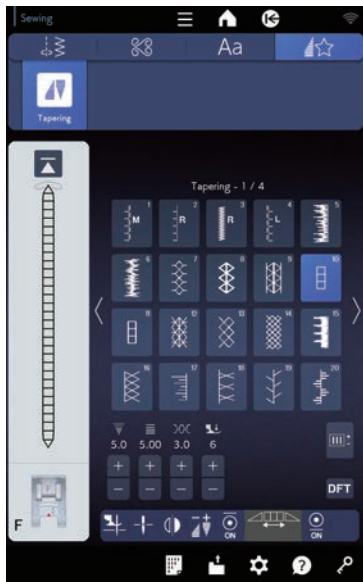
The middle column shows the pattern body ⑦.

The lower 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 middle column (refer to pages 115-116).

- ⑨ Number of body patterns



## Tapered stitch sample 1

**Example:** To sew tapered stitch pattern #10

Select 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 body patterns

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.

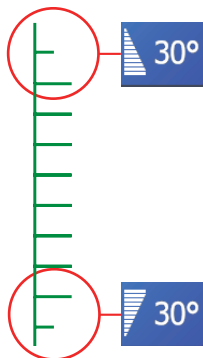
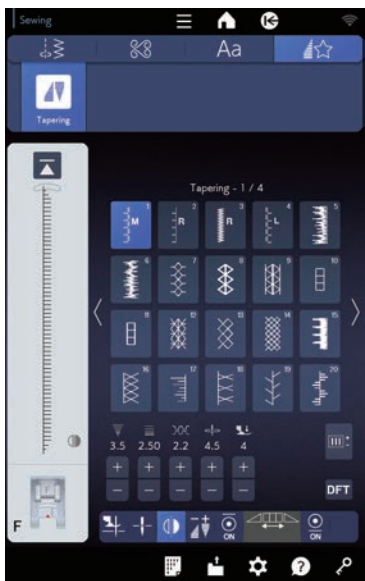
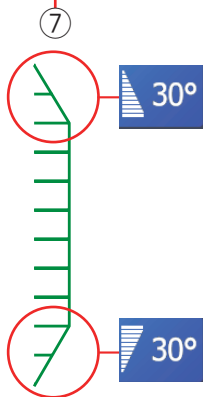
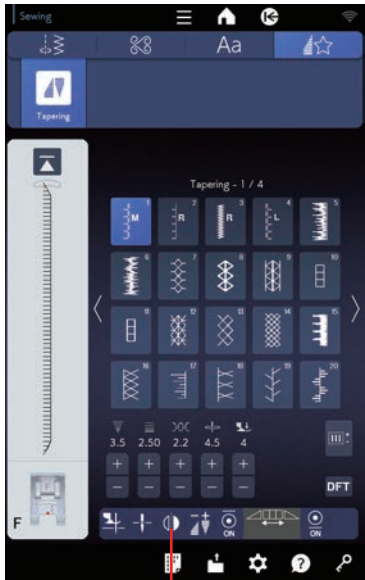
However, you can turn on or off the auto-lock stitches by pressing the corresponding auto-lock keys on the right touch screen.

- 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 a tapered pattern 1

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

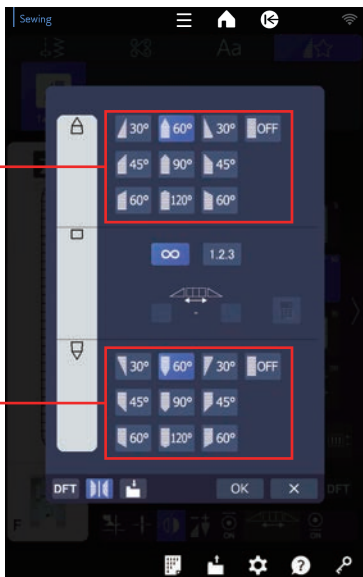
- ⑦ Static flip key





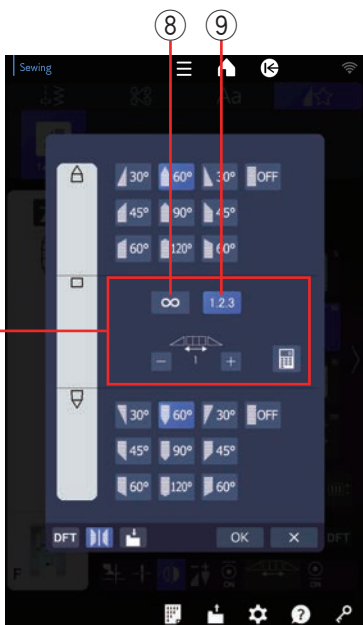


①



②

③



⑥

⑧

⑨



## 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 middle 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

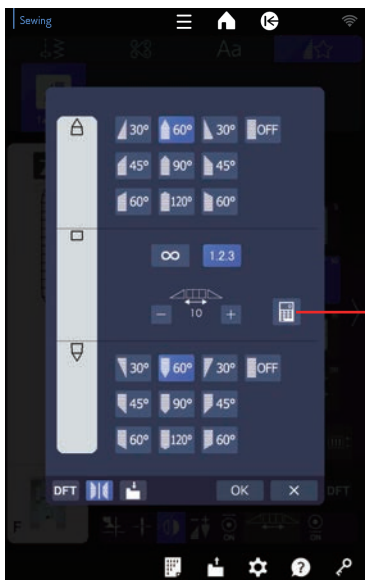


⑪ ⑩

Press the pattern length key.

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

⑨ Pattern length key



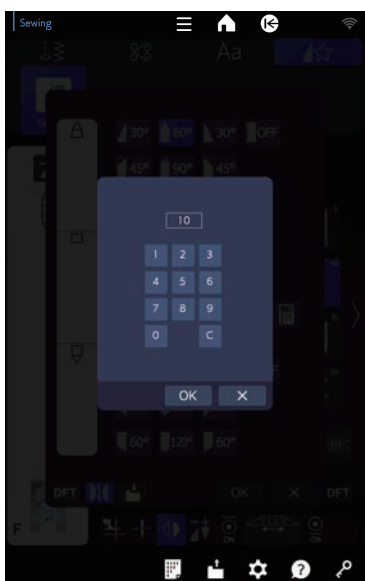
⑫

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.

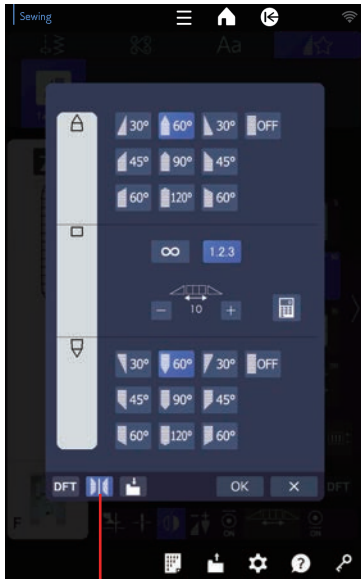
⑫ Numeric pad key



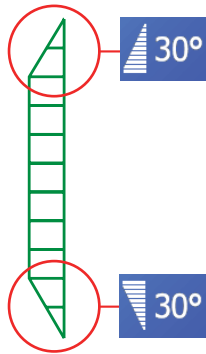
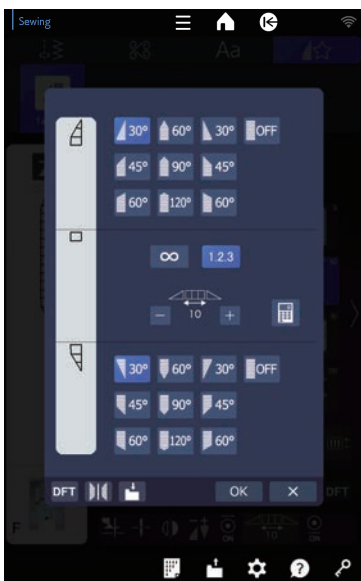
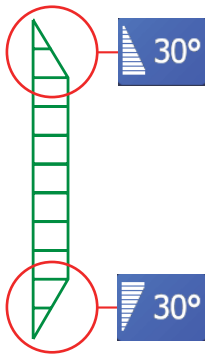
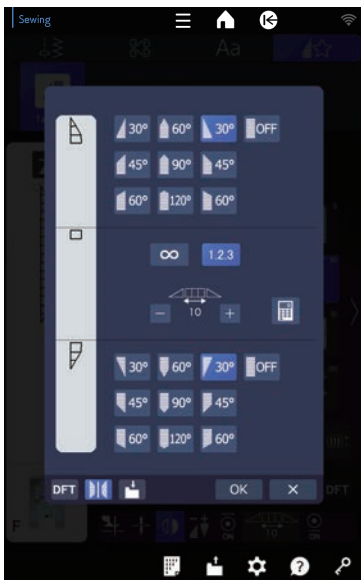
## Flipping a tapered pattern 2

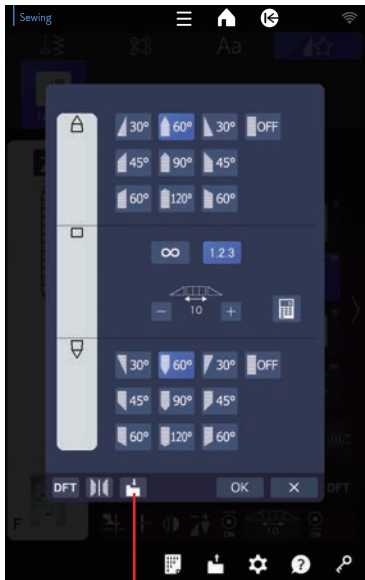
Press the mirror image key to flip a tapered pattern vertically.

⑬ Mirror image key



⑬





14

### Saving tapered stitches

The customized tapered patterns 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 a \*.JCS file. To save or open the file refer to pages 125-127.

- ⑭ Save file key

1



1

### Tapered stitch sample 2

**Example:** To create a corner frame with tapered stitch pattern #40

- 1 Select stitch pattern #40 ①.

2

3



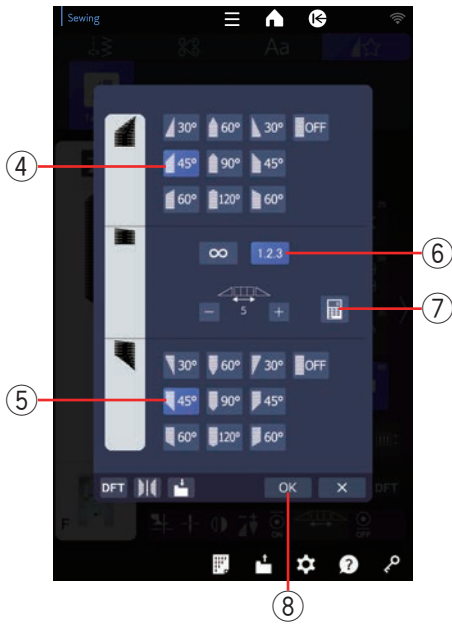
3

2

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

- 3 Press the tapering adjustment key ③.

4



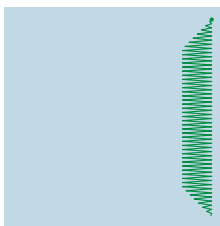
- 4 Press the tapering shape key (for start tapering pattern) ④.  
Press the tapering shape key (for end tapering pattern) ⑤.  
Press the pattern length key ⑥.  
Press the “+” key 4 times, or press the numeric pad key ⑦ and enter “5”.  
Press the OK key ⑧.

5



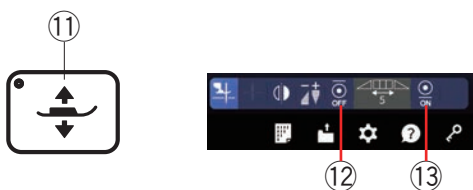
- 5 Press the foot-up key ⑨.  
You can check the number of body patterns ⑩ on the icon.  
⑩ Number of body patterns

6



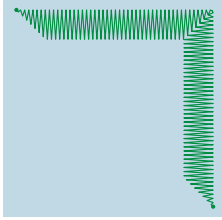
- 6 Lower the needle into the fabric at the point where you want to start sewing.  
Start sewing. Sew until the machine stops.  
The machine stops and the presser foot rises automatically.

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.



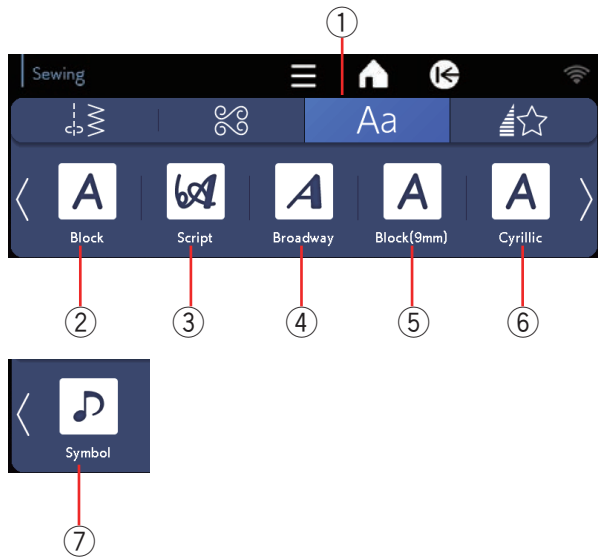
## MONOGRAMMING

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 Monogramming 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.

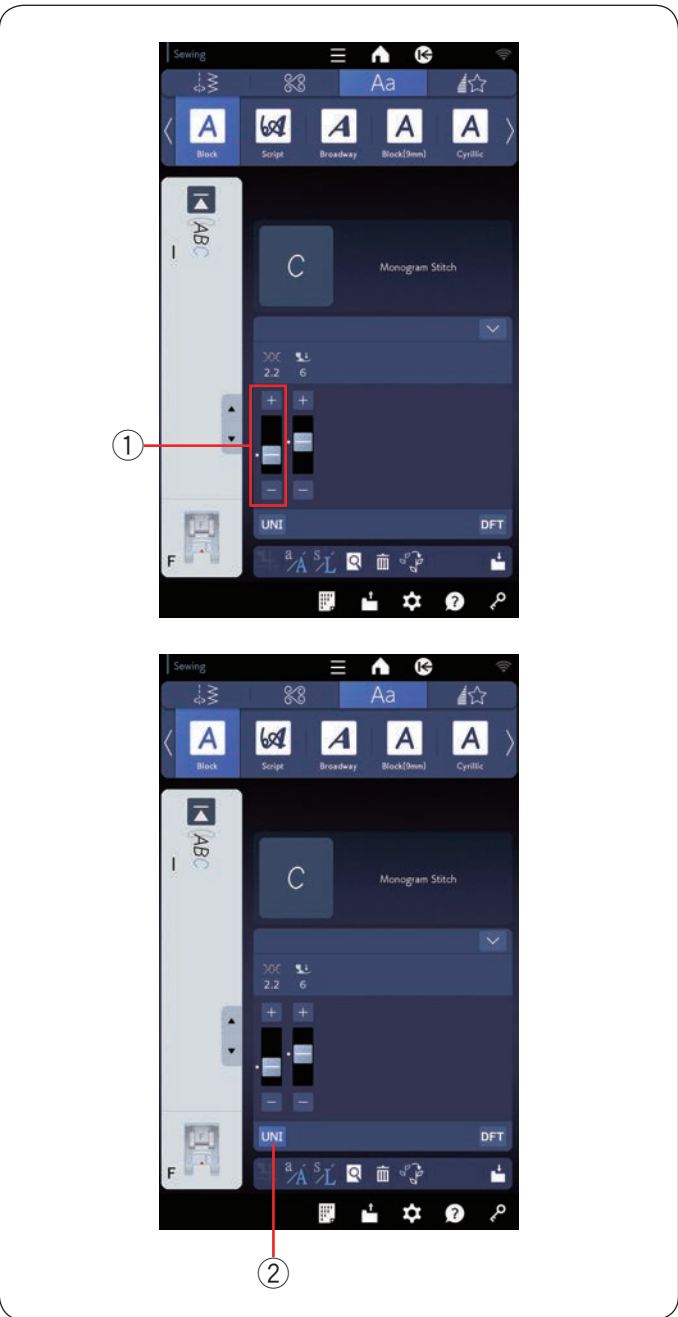
### NOTE:

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



### Function Keys

- ⑧ **Cursor key**  
Press the cursor key to move the cursor up or down.
- ⑨ **Letter case key**  
Press this key to select upper case or lower case
- ⑩ **Letter size key**  
Press this key to select full size (L) or small size (S).
- ⑪ **Preview key**  
Press this key to view the entire monogram.
- ⑫ **Delete key**  
Press this key to delete the selected character or symbol.
- ⑬ **Save file key**  
Press this key to save the monogram as a data file.



### 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.

### 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.

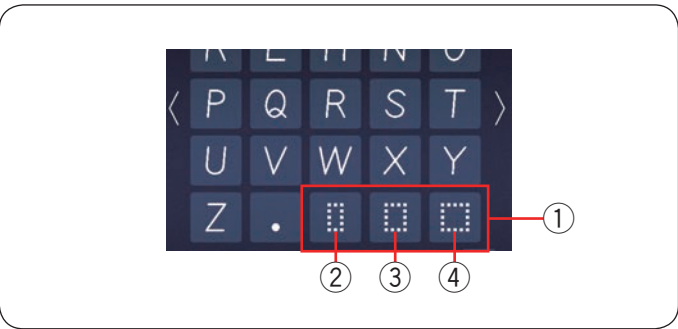
Press the unified thread tension key ②. Press “+” or “-” to adjust the thread tension. The adjusted thread tension is applied to all entered letters.

When unified thread tension control is applied, the unified thread tension key turns to light blue.

Press the unified thread tension key again to deactivate the unified thread tension adjustment.

**NOTE:**

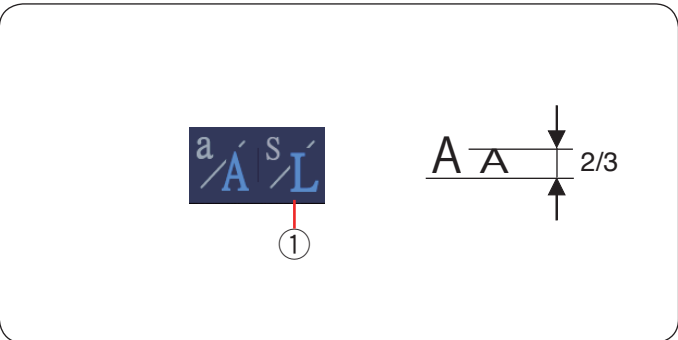
Unified thread tension adjustment cannot be applied to Symbol characters.



### 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.

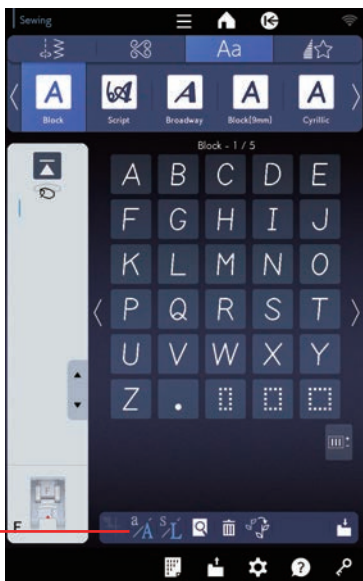
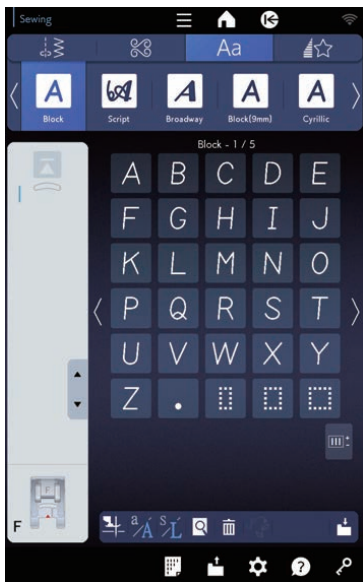
- ① Letter size key

## 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”.

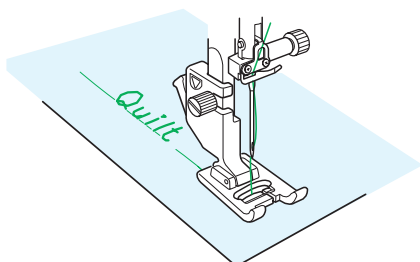
Press the letter case key to select lower case.

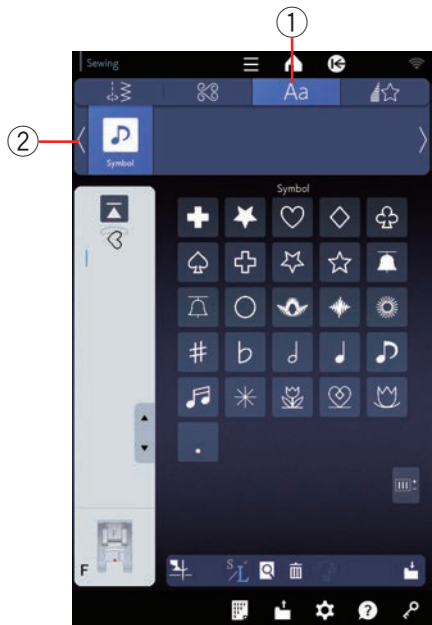
① Letter case key



Enter “u”, “i”, “l” and “t”.

Start sewing. Sew until the machine stops.





**Example 2:** “♥Café” in Broadway font

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

Press the cursor key and select Broadway font.  
Enter “C”.

- ① Monogramming tab
- ② Cursor key



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

- ③ Letter case key





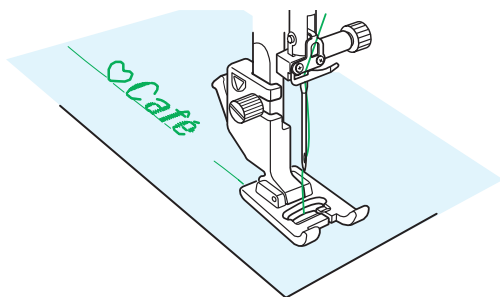
Press the next page key to go to page 4 of 5.

Enter “é”.

④ Next page key

**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.



Start sewing. Sew until the machine stops.



**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 drives.

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.

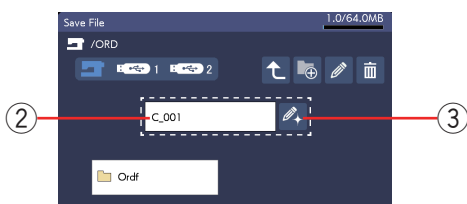
Select the “Ordf” folder and the file name is assigned automatically starting from C\_001.....in order.

Press the OK key to save the file under the assigned name.

② File name

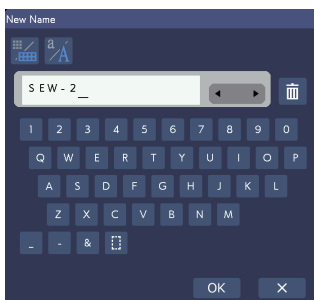
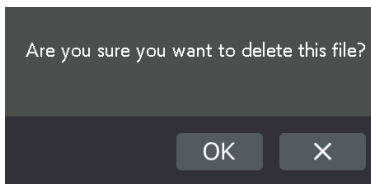
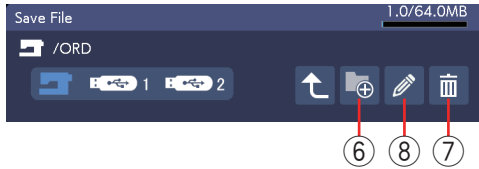
If you wish to assign a unique name to the file, press the rename key and the keyboard window will open.

③ Rename key



**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 its format (refer to pages 185-186).
- Do not use a USB card reader and USB hub.



If you wish to use a QWERTY layout keyboard, press the keyboard key.

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

- ④ Keyboard key
- ⑤ Letter case key

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.

### 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 a folder name or file name

Press the rename key and select the file or folder 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 file or folder 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.

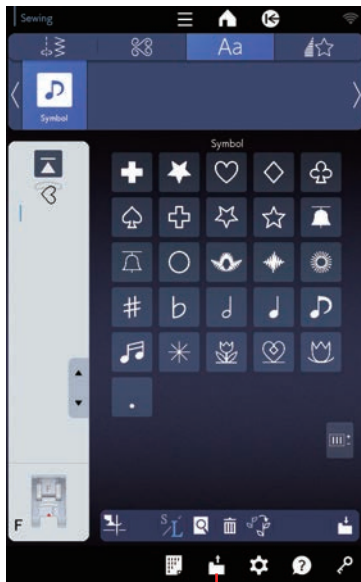
- ① Open file key

Select the memory location; either the machine's internal memory or a USB flash drive.

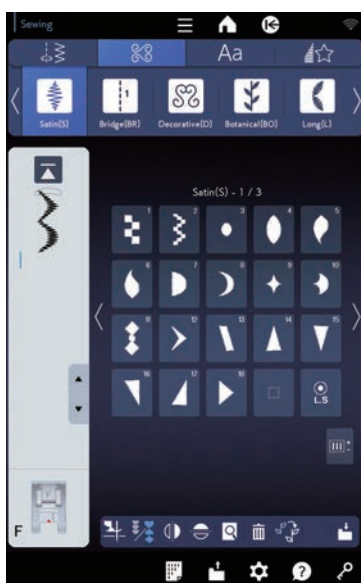
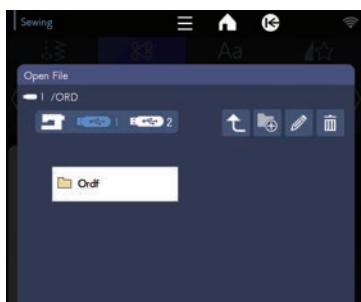
The "Ordf" folder will appear.

### 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 to display the other pages.

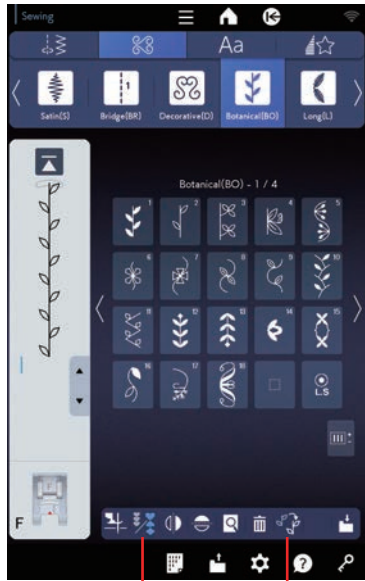
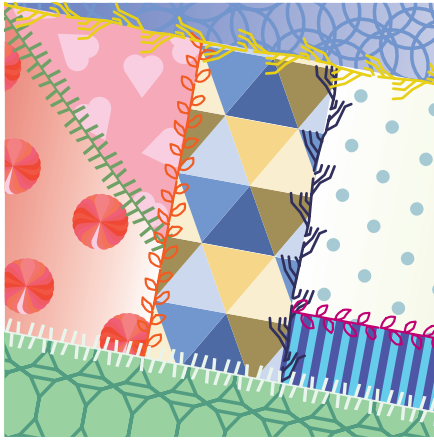


①

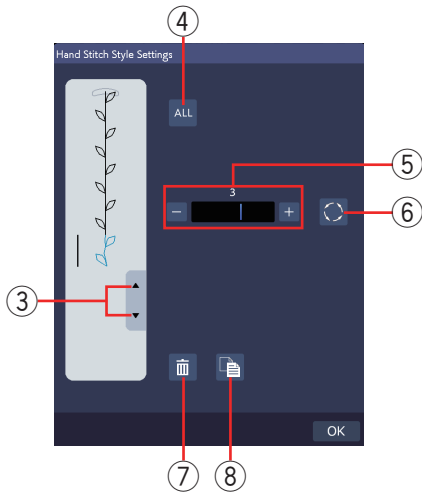


Select the desired folder and the file list will appear.  
Select the desired file.

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



① ②



③ ④ ⑤ ⑥ ⑦ ⑧

**NOTE:**

The variation style will be changed when you change the elongation ratio of satin stitches or use the horizontal mirror image key.

## HAND STITCH STYLE

### Hand Stitch Style

You can create your own heartfelt seams as if sewn by hands by giving subtle differences to sewing patterns.

This 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.

The hand stitch style can be used in the programming mode (refer to page 105).

**NOTE:**

- The hand stitch style cannot be applied to the Bridge stitches (BR1 - 12), Mirage stitches (M1 - 20) and the monogram fonts except the followings.
- The hand stitch style can be applied to the stitch patterns, the monogram fonts of full sized block letters, and symbols/numbers of cyrillic letters.

You can enjoy delightful sewing results every time you change the patterns.

By combining those patterns with subtle differences, you can create unique feeling patterns 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.

**To sew:**

- 1 Press the program key.  
Select the desired stitch patterns.  
① Program key
- 2 Press the hand stitch style key.  
Hand stitch style settings window will open.  
② Hand stitch style key
- 3 To select the pattern, press the cursor key to move the cursor up or down.  
③ Cursor key  
To select all the patterns, press the ALL key.  
④ ALL key
- 4 To adjust variation strength of the selected pattern, press "+" or "-".  
⑤ Variation strength adjustment

**NOTE:**

The adjustable range of variation strength are OFF (0) to 5.

- 5 You can change variation style. To change the variation style, press the variation style key.  
⑥ Variation style key

You cannot chose the previous variation style after a change. Save your favorite variation style with the save file key (refer to page 125).

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

- 6 You can delete or copy selected pattern individually. To delete the selected pattern, press the delete key. To copy the selected pattern, press the copy key.  
⑦ Delete key  
⑧ Copy key

## SEWING APPLICATION

### Variety of Sewing Application

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

Press the home key to go to the home window.

① Home key

Press the sewing application key on the home window and the sewing application menu will open.

Press one of the tabs to select the category.

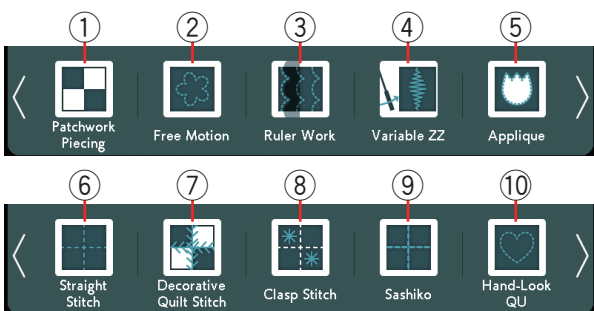
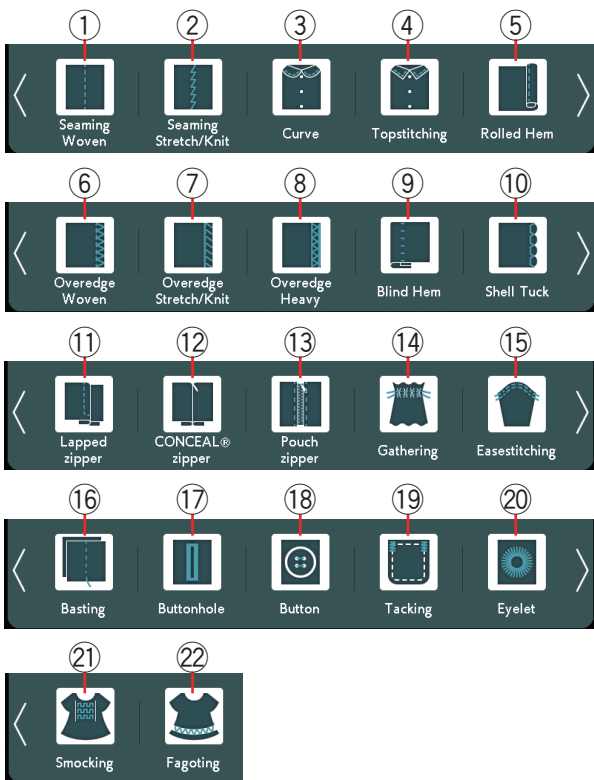
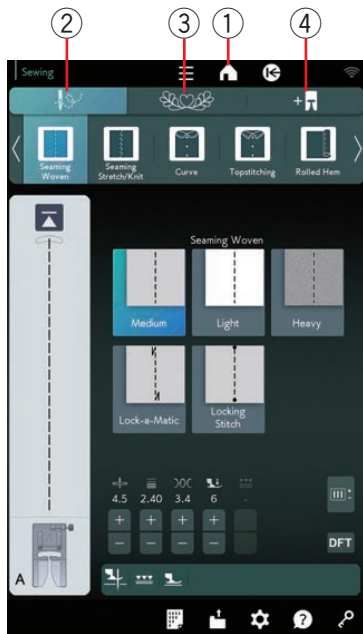
② Sewing

③ Quilt

The sewing applications using optional presser feet can be selected by pressing the optional foot tab ④.

Please refer to optional feet instructions for usage details.

④ Optional foot tab



### Sewing

In the Sewing category within 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 CONCEAL® zipper
- ⑬ Pouch zipper
- ⑭ Gathering
- ⑮ Easestitching
- ⑯ Basting
- ⑰ Buttonhole
- ⑱ Button
- ⑲ Tacking
- ⑳ Eyelet
- ㉑ Smocking
- ㉒ Fagoting

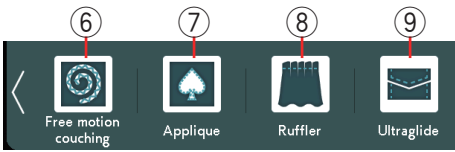
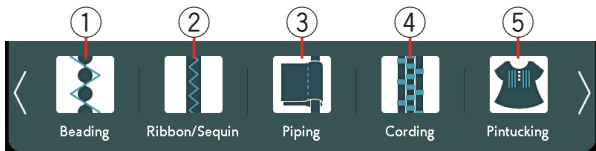
### Quilt

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

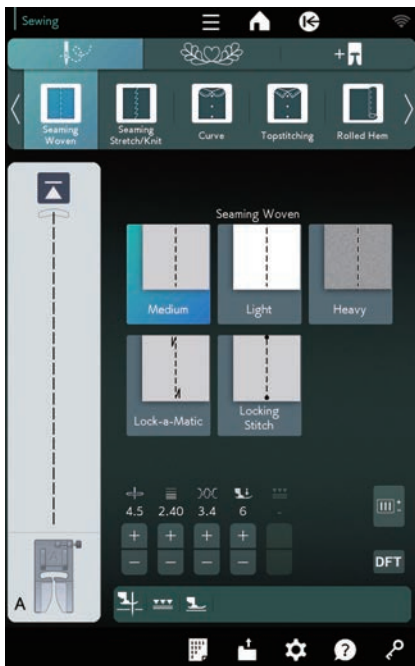
The option category of the sewing application provides you with 9 useful sewing applications.

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/Sequin
- ③ Piping
- ④ Cording
- ⑤ Pintucking
- ⑥ Free motion couching
- ⑦ Applique
- ⑧ Ruffler
- ⑨ Ultraglide

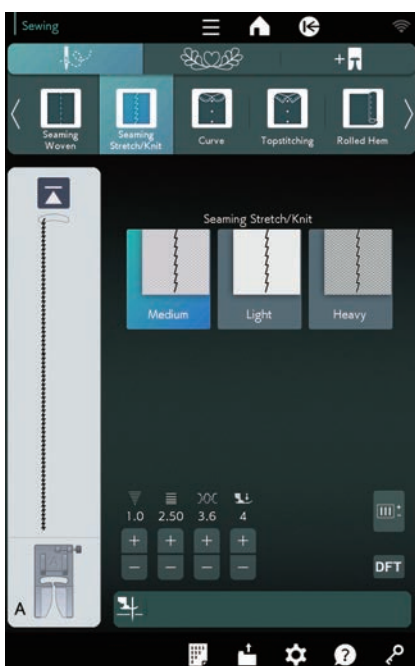
Refer to the instructions on optional foot for sewing.



### Sewing Application

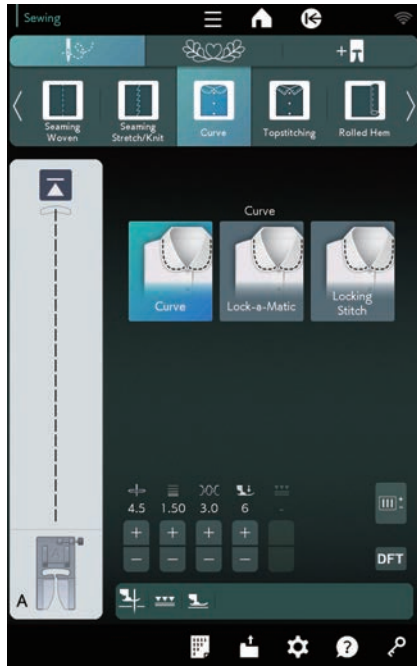
#### Seaming woven

Straight stitches for seaming regular woven fabrics.



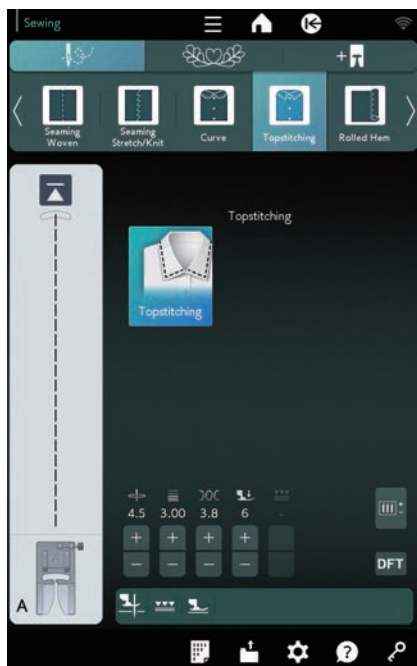
#### Seaming stretch/knit

Narrow stretch stitches for seaming stretch or knit fabrics.



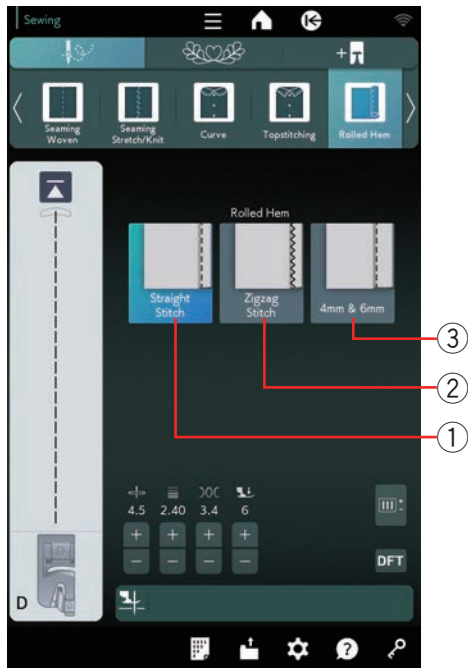
### Curve

Short straight stitches for seaming curved lines.



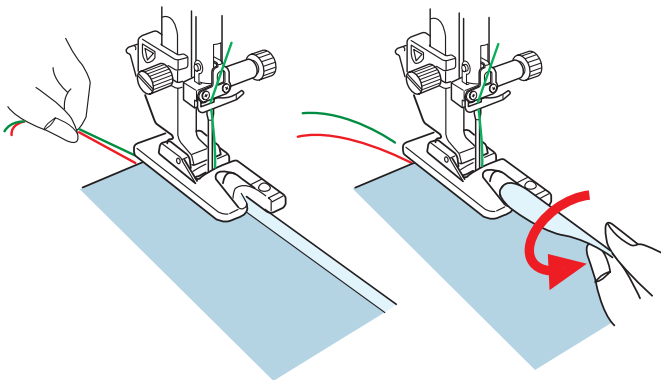
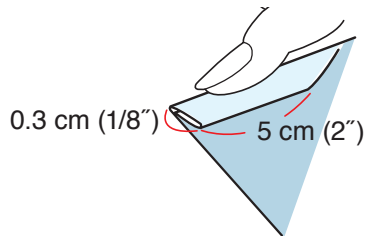
### Topstitching

Long straight stitches 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:

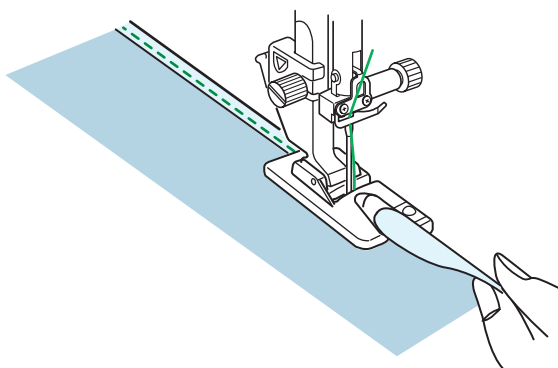
Attach rolled hem foot D.

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

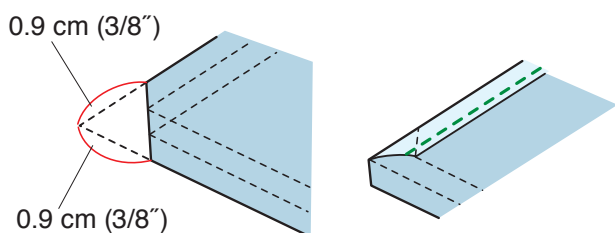
Place the fabric aligning the hem edge with the guide of the foot. Turn the handwheel to lower the needle to the starting point.

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.



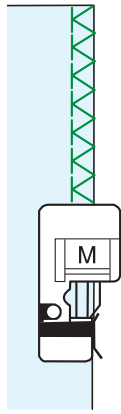
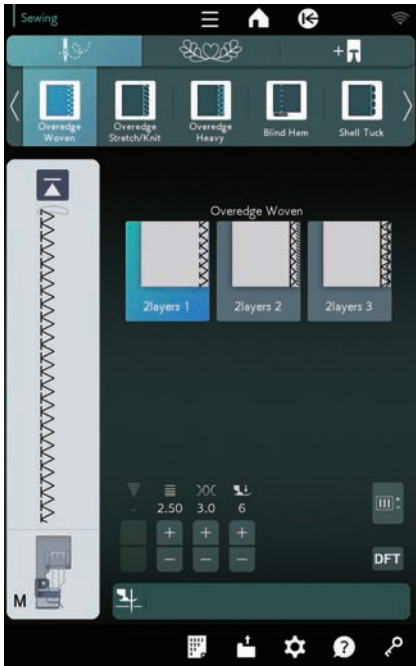
Lower the foot and sew while lifting the edge of the fabric to keep it feeding into the curl smoothly and evenly.



### NOTE:

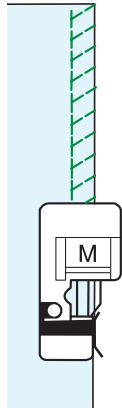
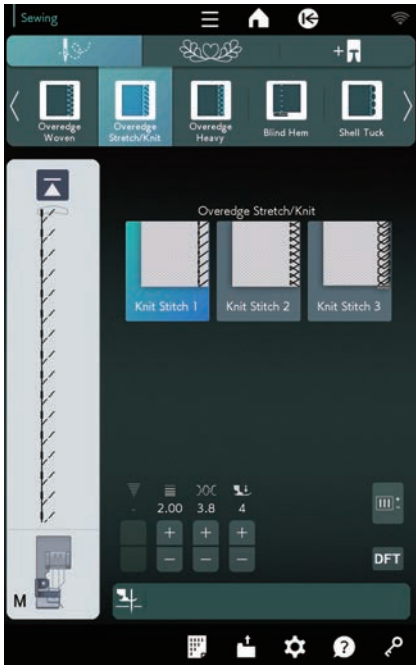
Trim the corners 0.9 cm (3/8") to reduce bulk.





### Overedge woven

Overcasting stitch for 2 layers of regular woven fabrics.

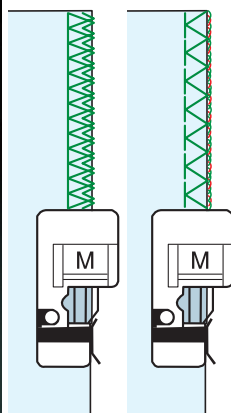
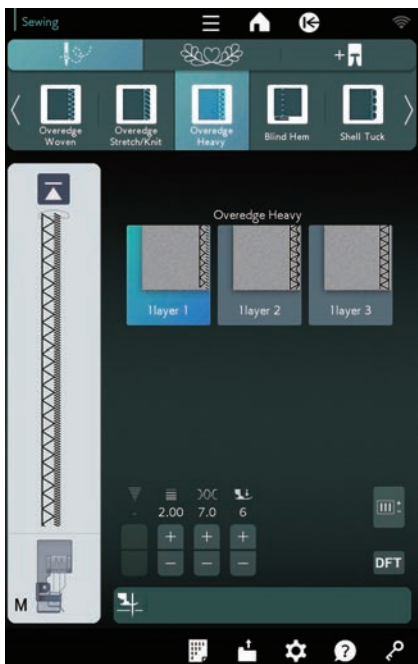
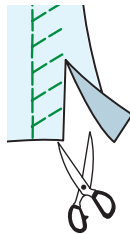


### Overedge stretch/knit

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

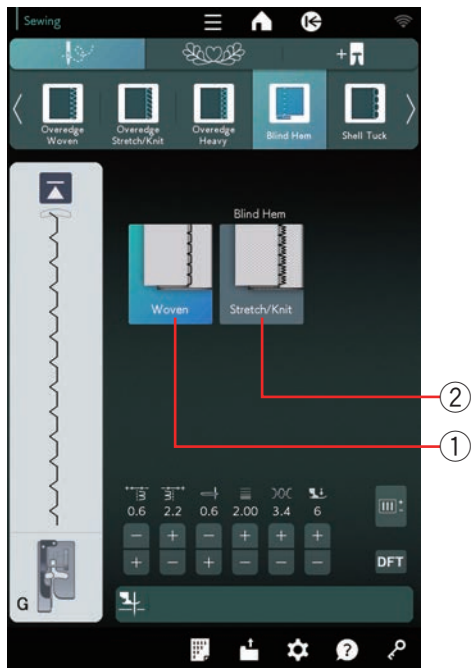
For better results, use zigzag foot A and sew leaving an adequate seam allowance.

After sewing, trim the seam allowance close to the stitches.



### Overedge heavy

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



## Blind hem

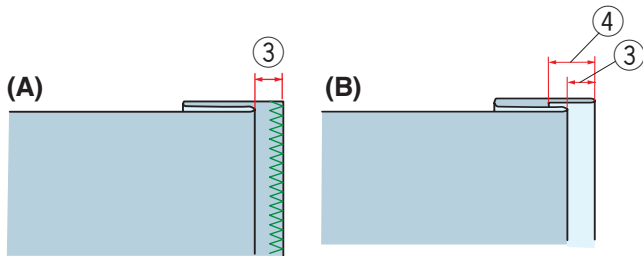
The following 2 options are available.

① Woven

For blind hemming regular woven fabric

② Stretch/Knit

For blind hemming stretch or knit fabric



### To sew:

Attach blind hem foot G.

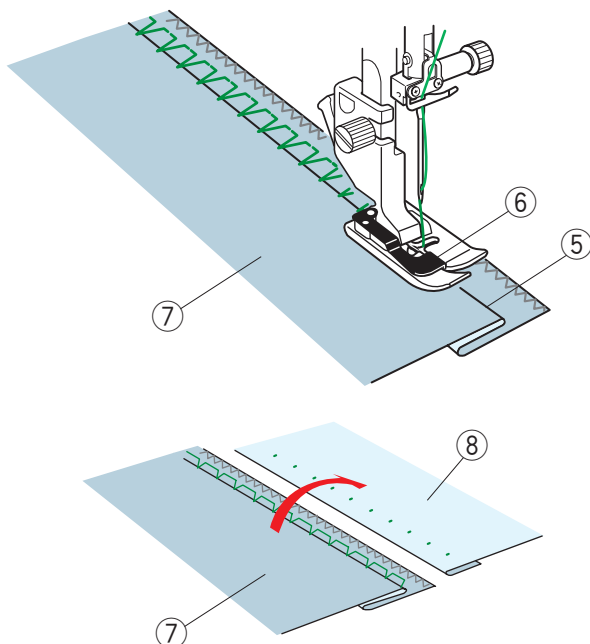
Fold the fabric to form a hem leaving a 0.5 cm (1/4") allowance as shown.

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

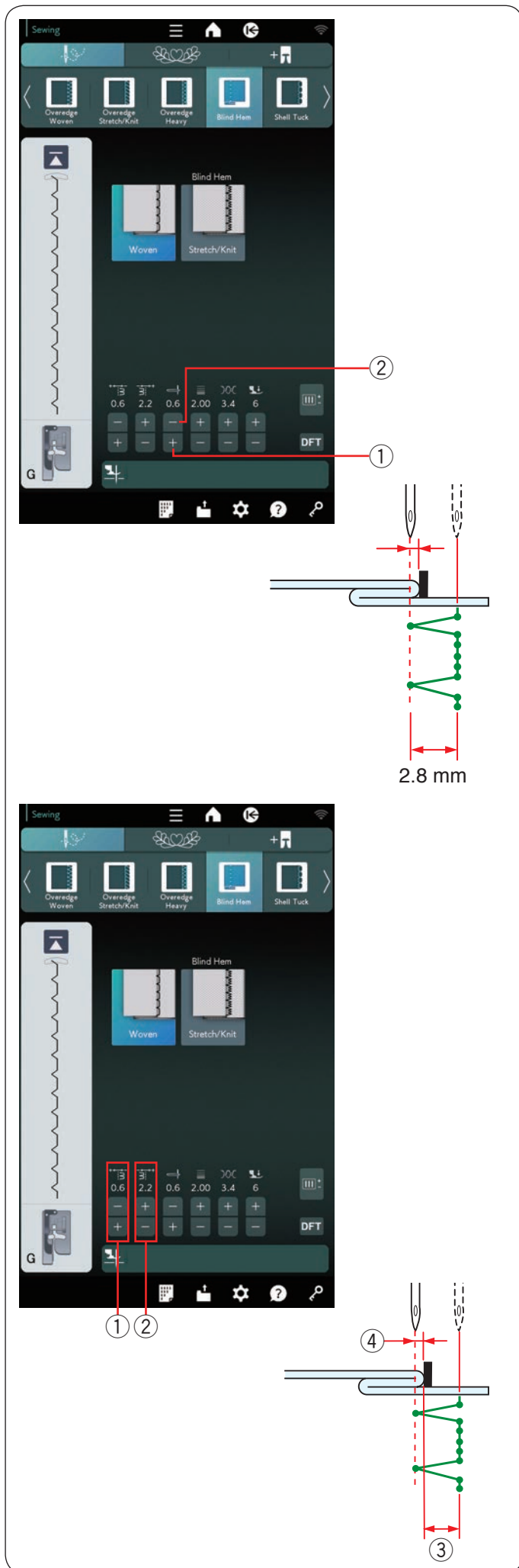
⑦ Wrong side of the fabric

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 “+” key ① in the lower 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.

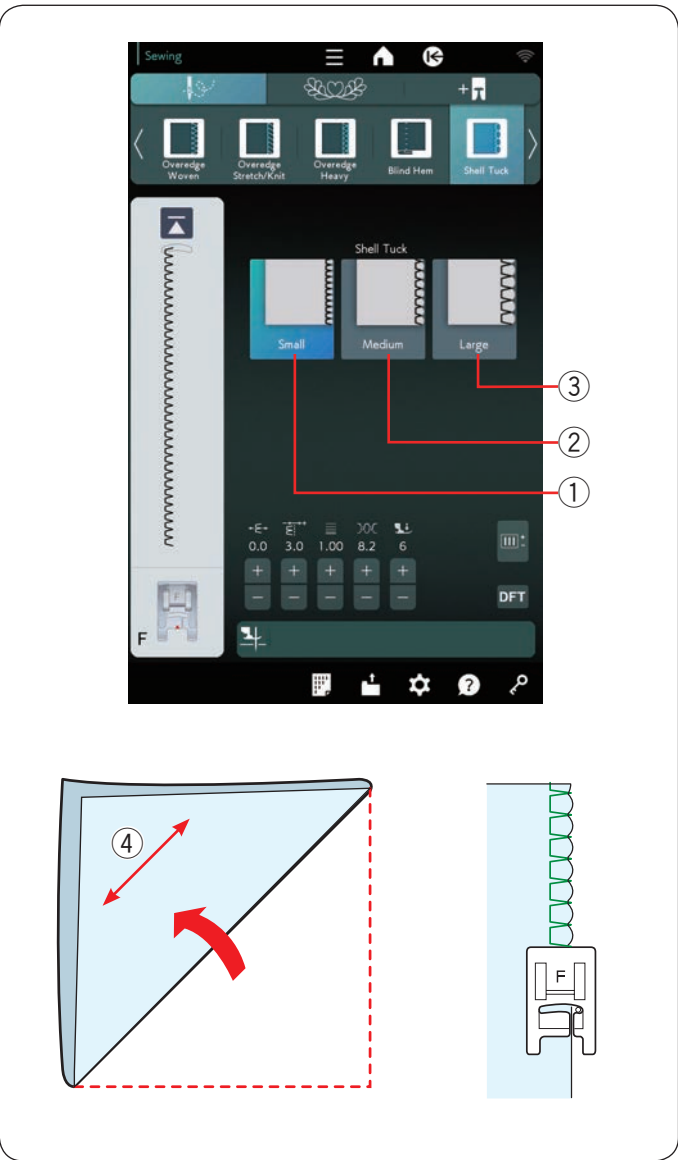
### Altering blind hem stitch width

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

Press the “-” key in ② to decrease stitch width ③.

#### NOTE:

You can move the left needle drop position ④ with the “+” or “-” key in ①.



### Shell tuck

The following 3 options are available.

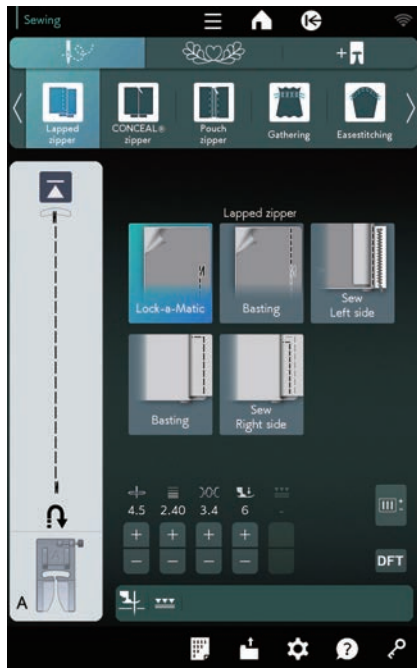
- ① Small  
Narrow shell tuck stitch
- ② Medium  
Medium width shell tuck stitch
- ③ Large  
Regular shell tuck stitch

### 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

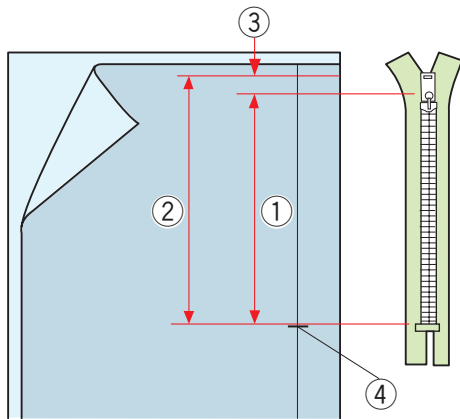
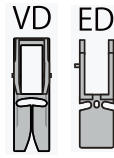


### Lapped zipper sewing

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 right touch screen when the dual feed key is pressed.  
 Dual feed zipper foot ED (single) is used with dual feed foot VD (single) together.



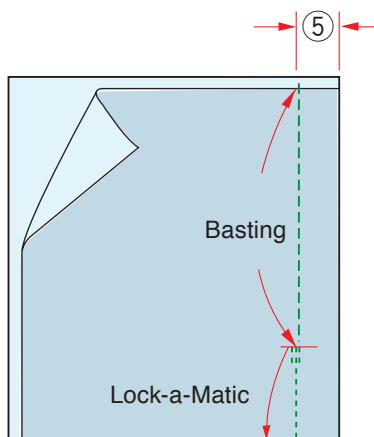
### Fabric preparation

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 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.



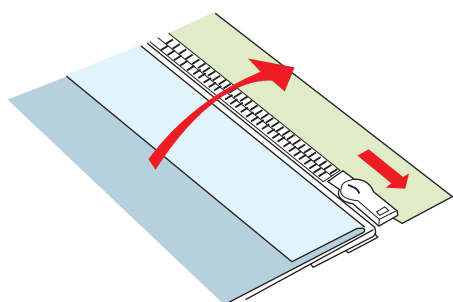
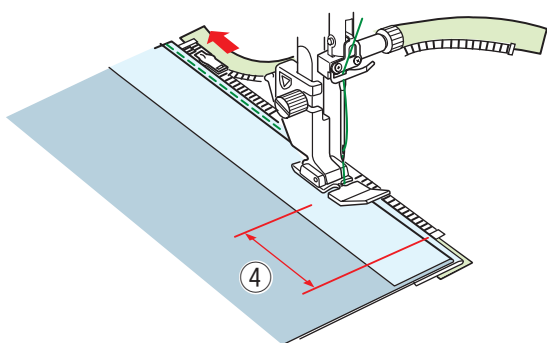
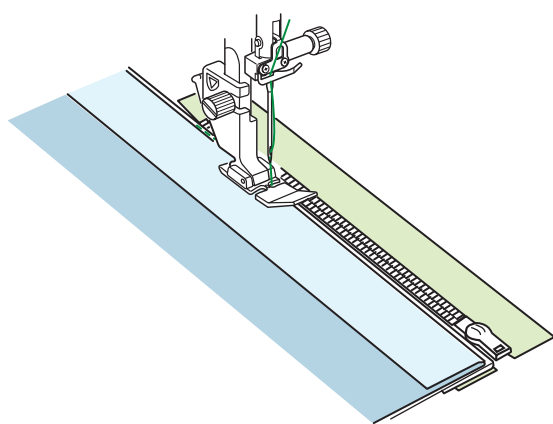
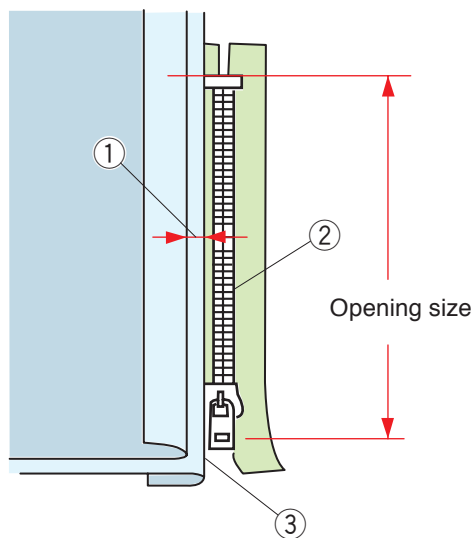
### Sew left side

Attach 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.

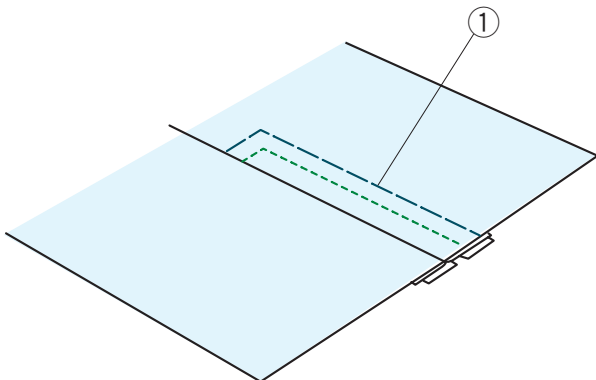
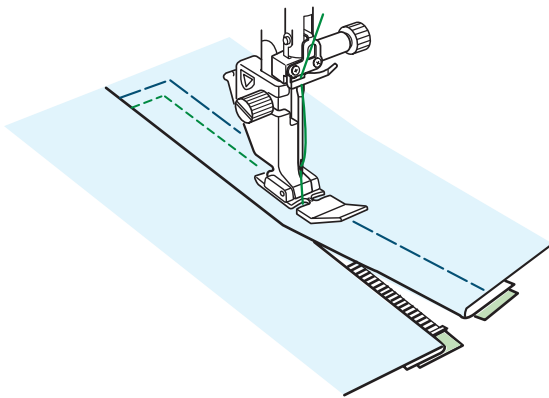
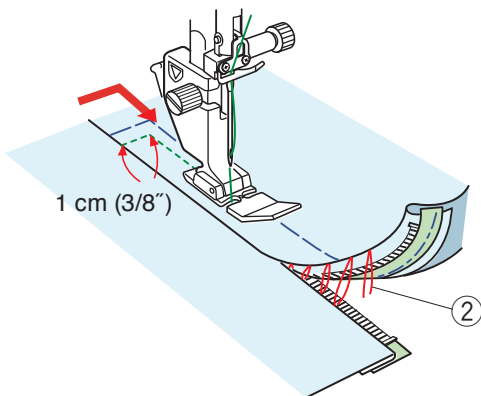
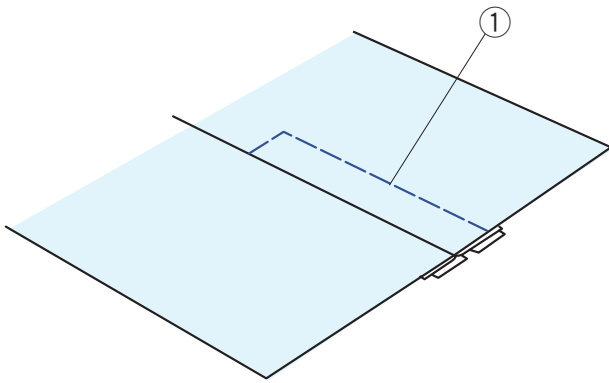
Stop 5 cm (2") before zipper foot E reaches the slider on the zipper tape.

- 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 zigzag foot A.

Baste the opened fabric and zipper tape together.

① Basting



### Sew right side

Replace the foot with 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.

Raise the foot and remove the basting stitches.

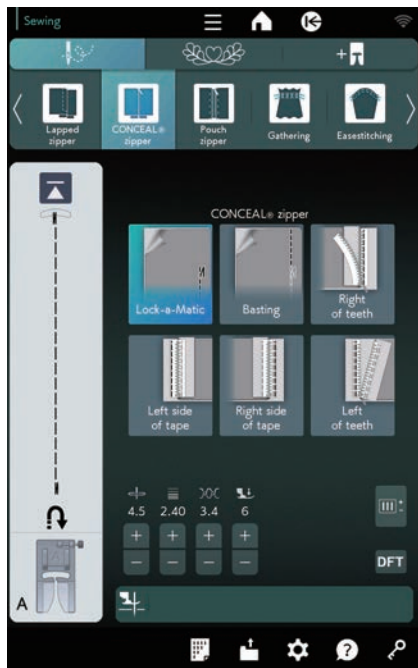
② Basting stitches

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.

① Basting

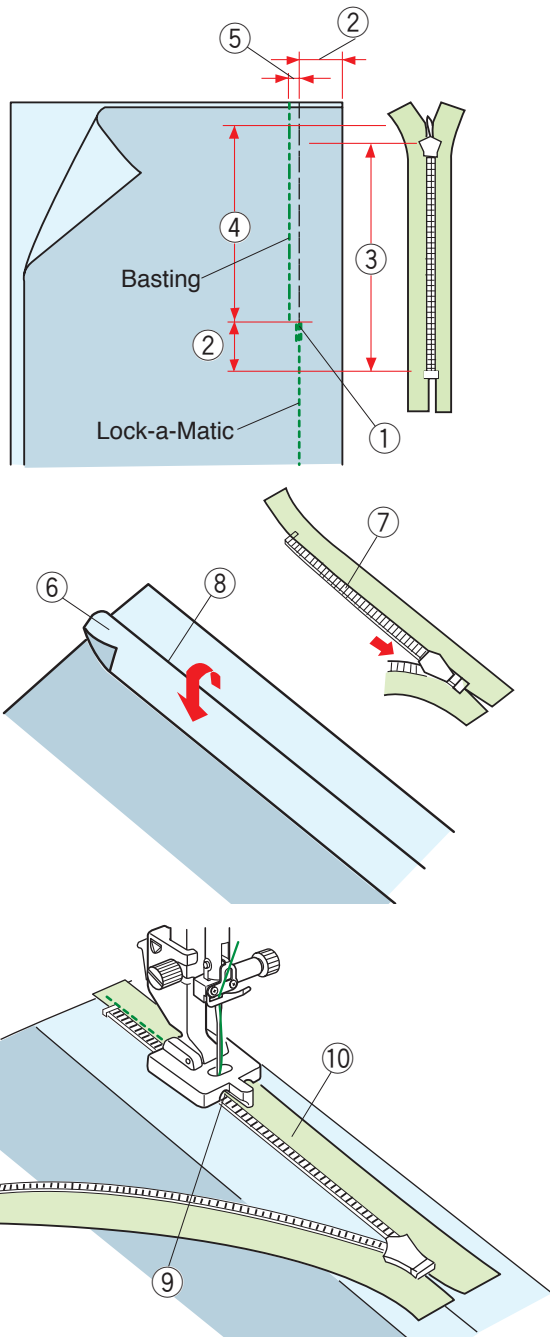


## CONCEAL® zipper\*

Press the CONCEAL® zipper foot Z\* 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 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

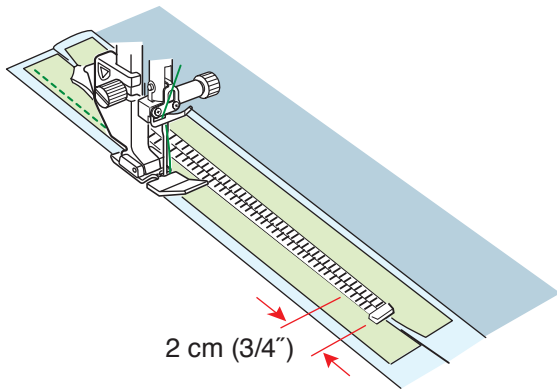
Attach CONCEAL® zipper foot Z\*.

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.

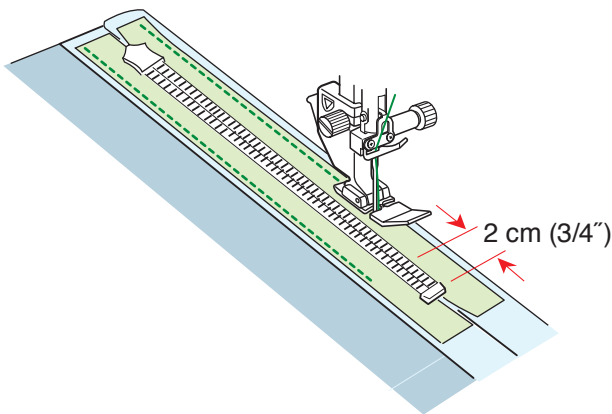
- ⑨ Left groove
- ⑩ Zipper tape

\* "CONCEAL" is a registered trademark of YKK Corporation.



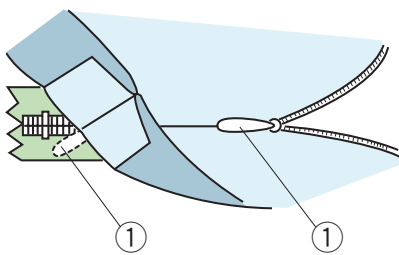
### Left side of tape

Raise the foot and close the zipper.  
 Replace the foot with 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

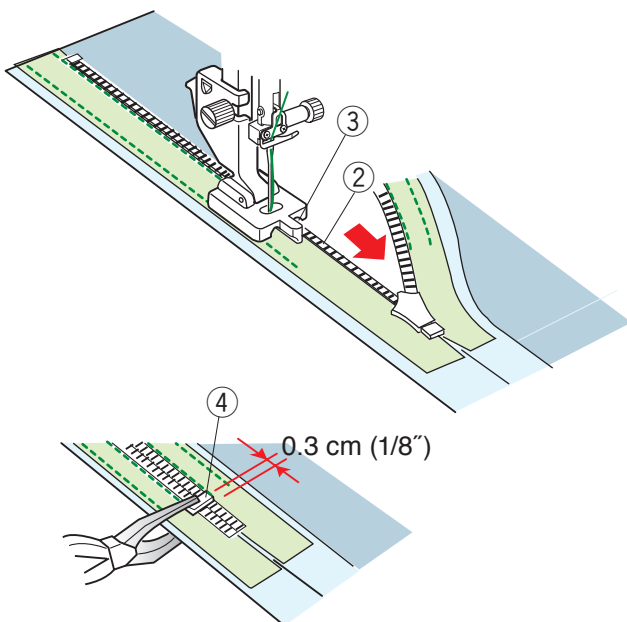
Turn and fold the bodice to the left.  
 Seam along the edge of the right zipper tape and reverse the stitches 2 cm (3/4") before the zipper bottom.



### Left of teeth

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

- ① Pull tab

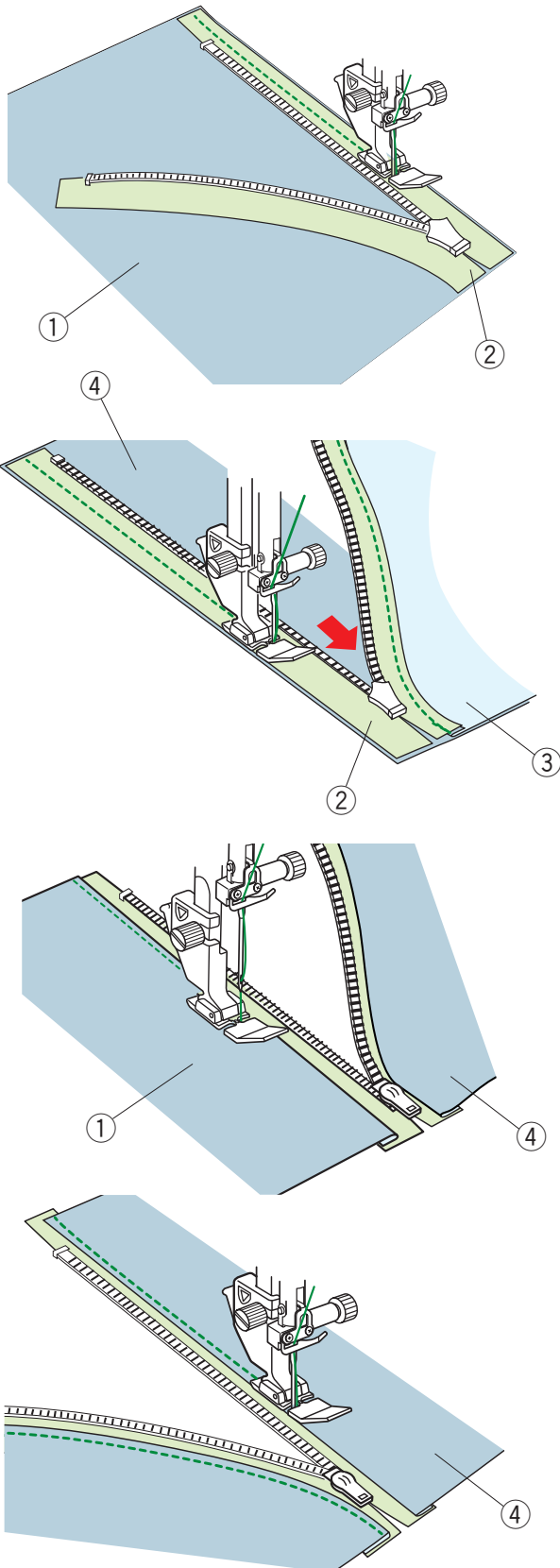
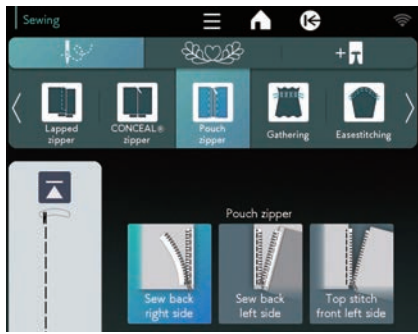


Raise the zipper teeth on the left and lower the foot so the right groove of the foot catches the zipper teeth.  
 Stitch through the zipper tape and fabric up to the end of the opening. Reverse the stitches to secure the seam.

- ② Zipper teeth
- ③ Right 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.

Prepare 2 pieces of fabric and a zipper tape.

### NOTE:

VD ED zipper foot ED (single) appear on the right touch screen when the dual feed key is pressed.



Zipper foot ED (single) is used with dual feed foot VD (single) together.



### Sew back right side

Attach 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.

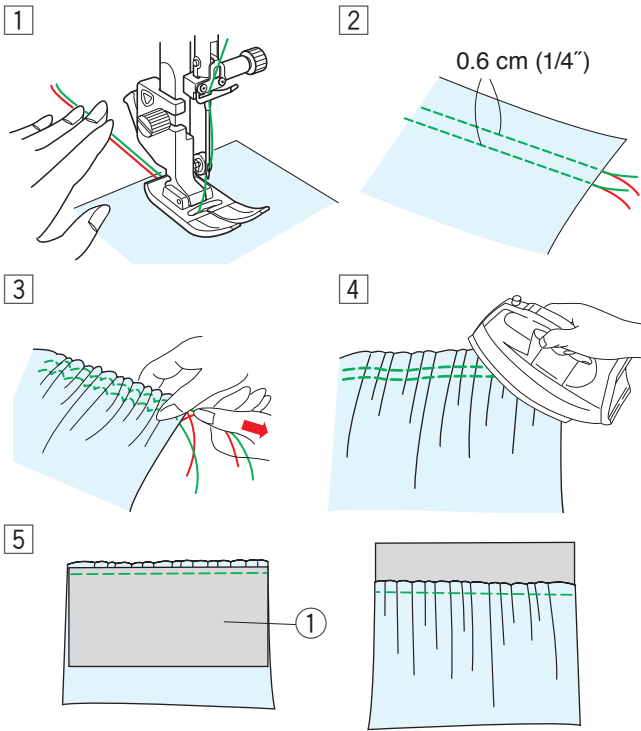
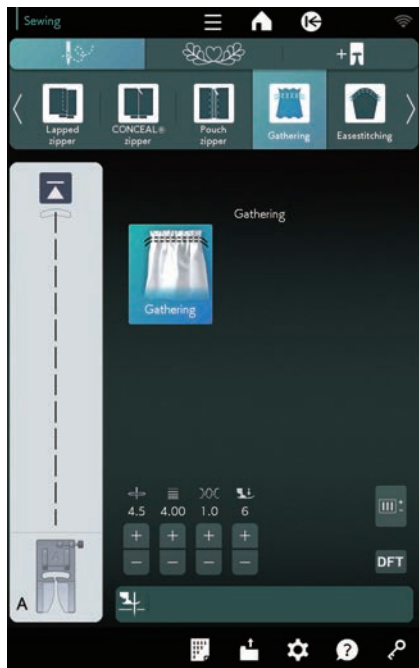
Stop 5 cm (2") before zipper foot E reaches the slider on the zipper tape. Close the zipper and stitch the remainder of the seam.



### 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.

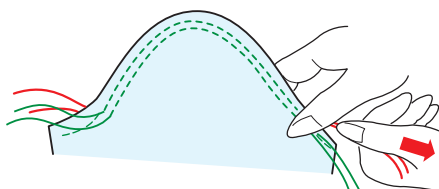
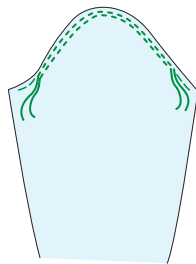
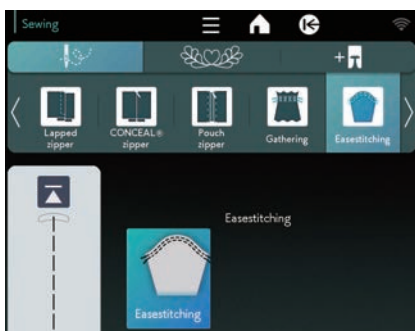


## Gathering

- 1 Pull both threads 10 cm (4") under and behind the presser foot (refer to page 36).
- 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 Straight Stitch U1. Set the thread tension to "3.4" 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.

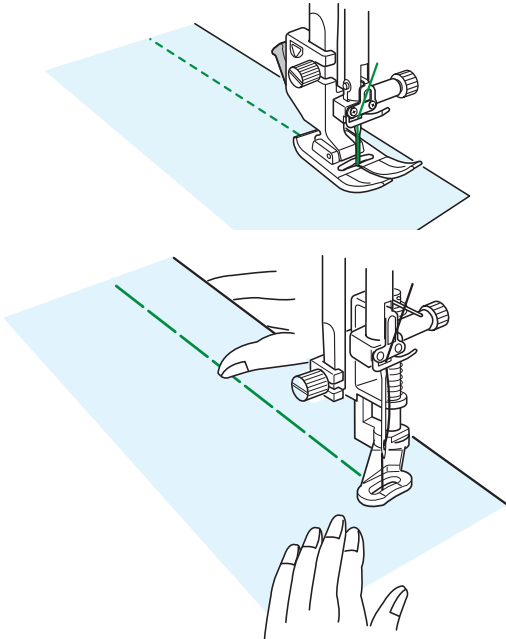
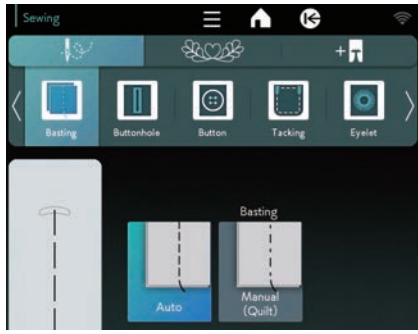
### NOTE:

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:

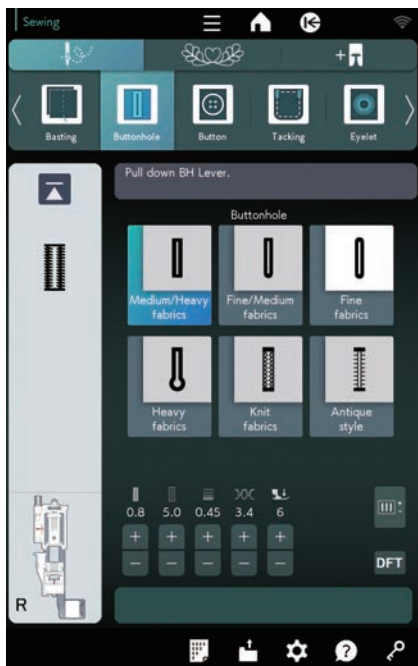
Refer to page 27 for how to attach the darning foot PD-H.

### To sew

Hold the fabric taut and depress the foot control.

The machine will sew one stitch and stop automatically.

Slide the fabric to the rear for the next stitch.



## Buttonhole

Please refer to pages 62-75 for “BUTTONHOLES AND SPECIALTY STITCHES”.

### Medium/Heavy fabrics

Please refer to pages 63-66 for “B1 Sensor (Square) buttonhole”.

### Fine/Medium fabrics

Please refer to page 70 for “B3 Round end buttonhole”.

### Fine fabrics

Please refer to page 70 for “B4 Fine fabric buttonhole”.

### Heavy fabrics

Please refer to page 70 for “B5 Keyhole buttonhole”.

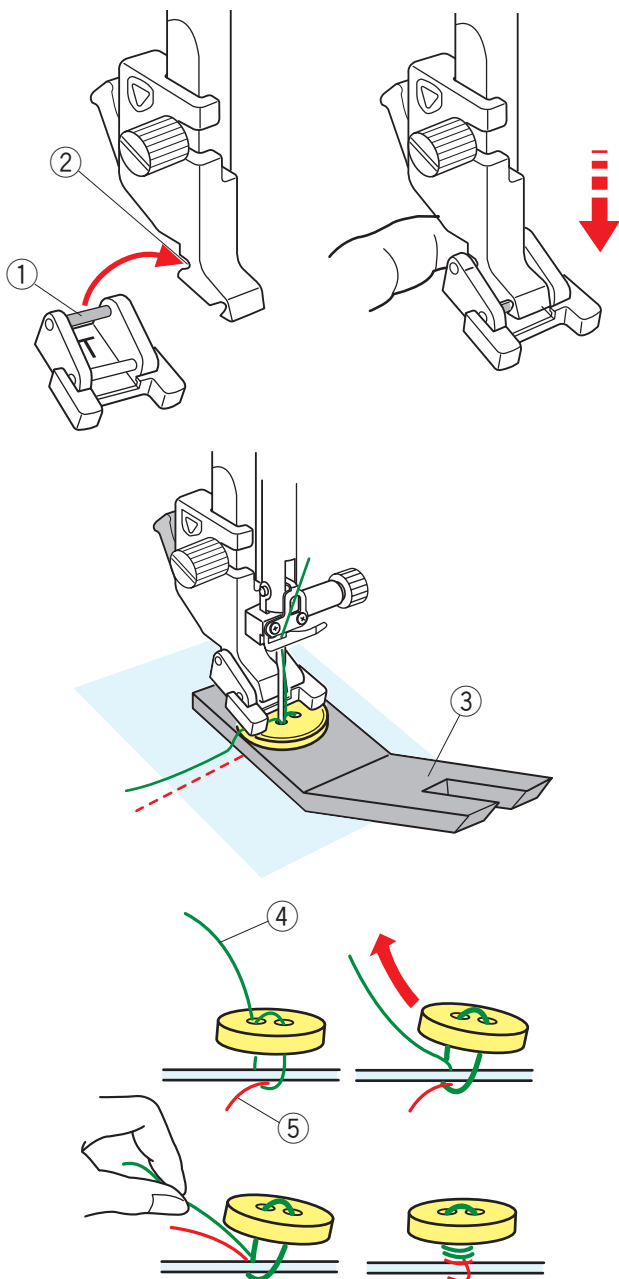
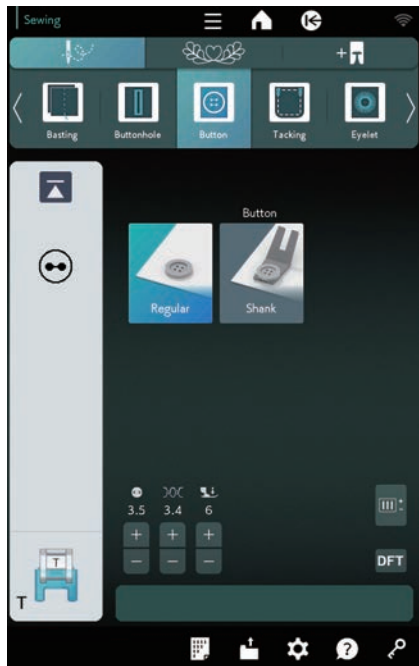
### Knit fabrics

Please refer to page 70 for “B11 Knit buttonhole”.

### Antique style

Please refer to page 70 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 dogs lower automatically when selecting the button sewing section.


### Attaching 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 tying.
- Choose your desired type.

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.

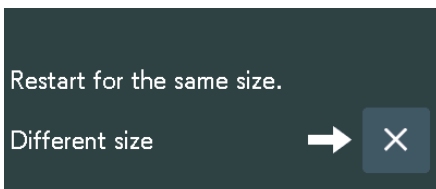
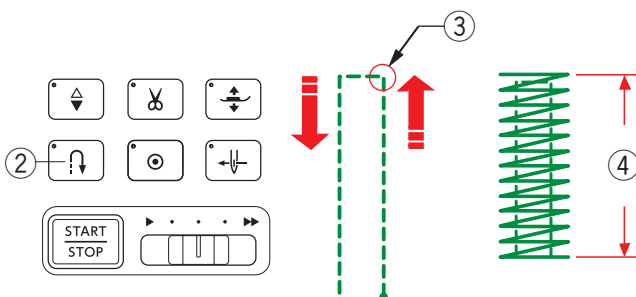
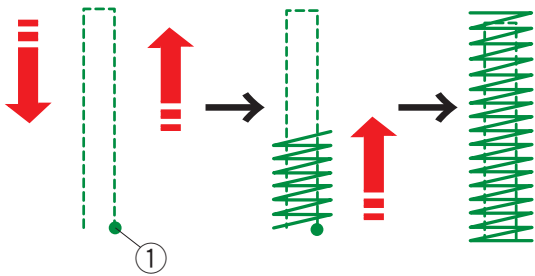
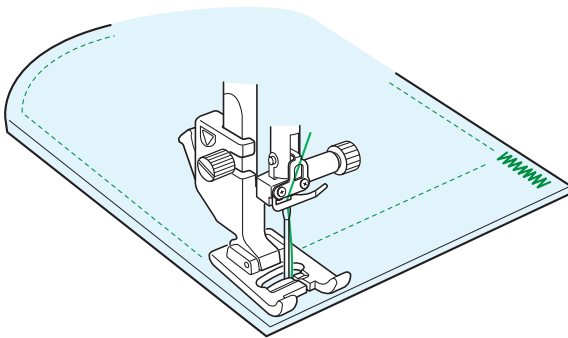
Pull the needle thread to bring the bobbin thread up to the right side of the fabric.

- 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 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

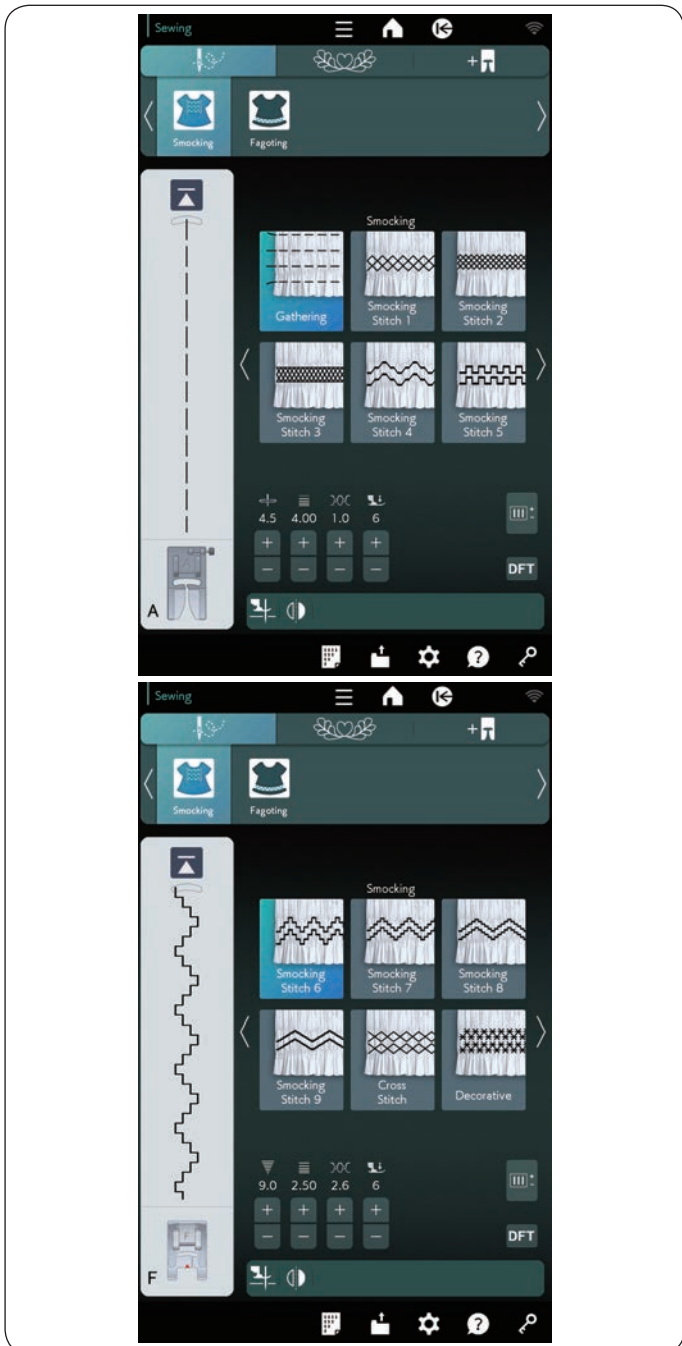
To sew another tack in the same size, simply start the machine and sew until the machine stops automatically.

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



## Eyelet

Please refer to page 75 for “B21-B25 Eyelets”.

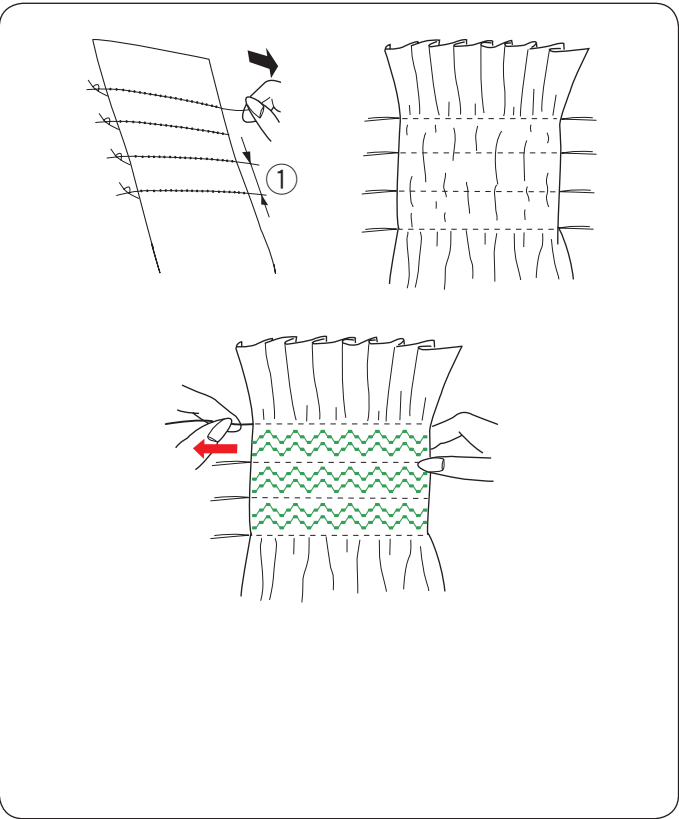


## Smocking

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

### NOTE:

The purple tip needle is recommended for smocking.



**(Smocking: continued from previous page)**

**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.

Use an iron to press the gathered fabric.

**NOTE:**

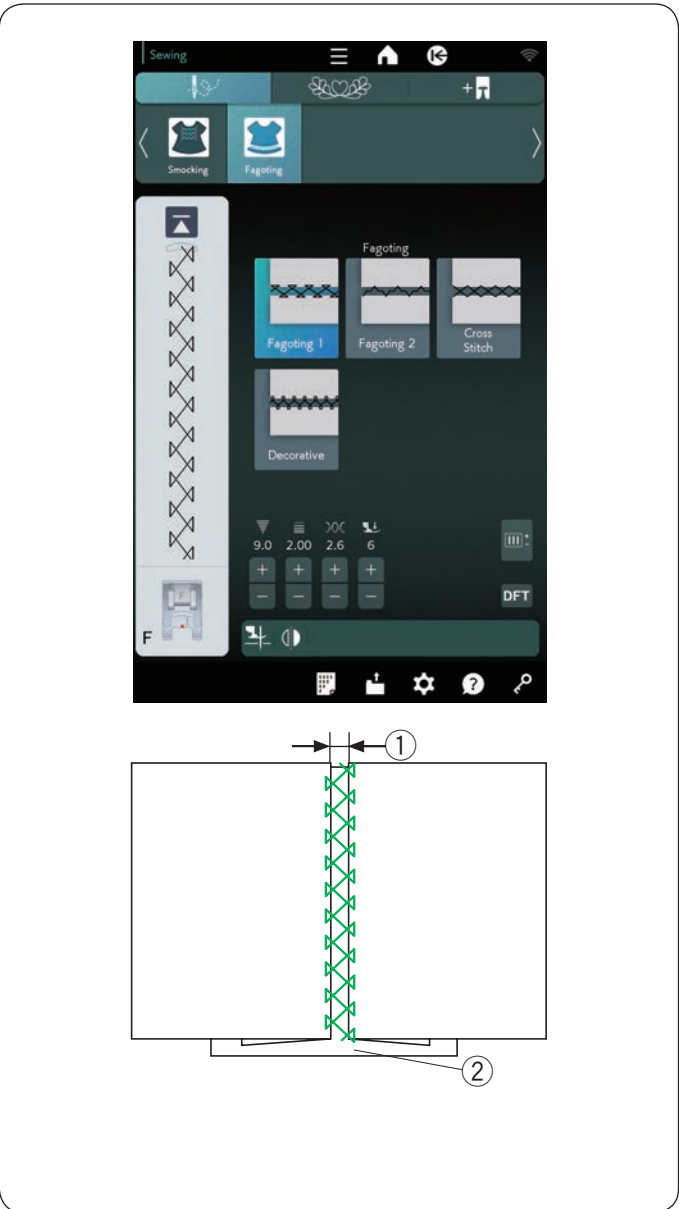
Pull up the bobbin thread and draw a 4" (10 cm) thread tail to the back before starting to sew.  
Use the thread cutter on the face plate.

**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.

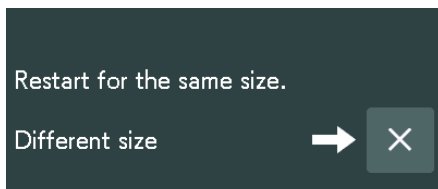
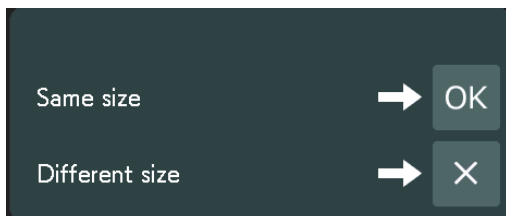
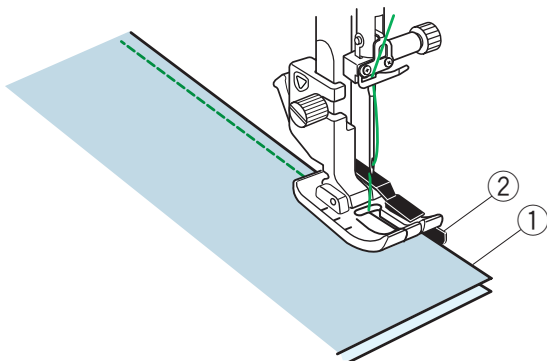
Attach 1/4” seam foot O, which helps you to keep a constant 1/4” (6 mm)\* seam allowance.

Put 2 pieces of fabric 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 1/4” seam foot O

\* You can choose 1/4” (6 mm) or 7 mm seam allowance.



When you stop the machine, a message will appear.

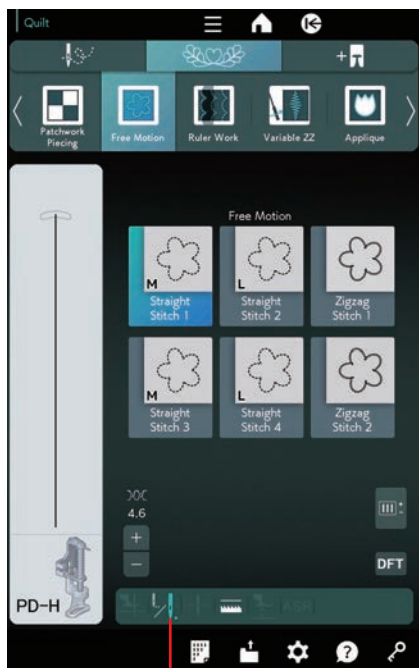
Press the OK key and the machine memorizes the seam length to sew another piece of the same length.

Press the X key to sew in a different size.

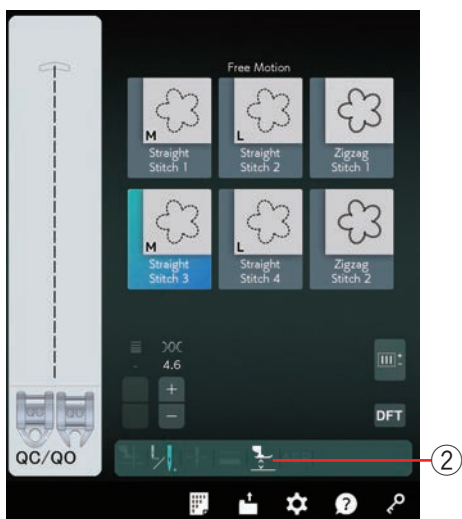
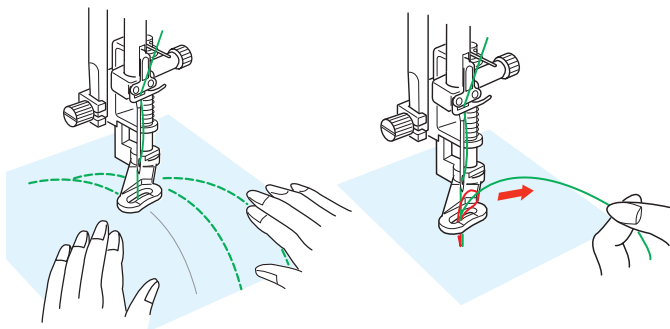
After sewing the memorized length, a message will appear.

To sew the same length, start the machine and it will stop automatically after sewing the memorized length.

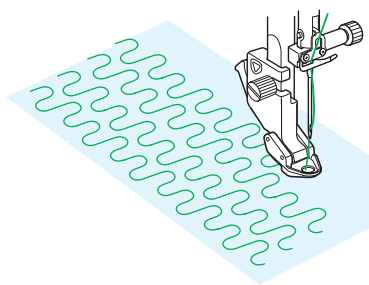
Press the X key to sew in a different size.



①



②



## Quilting

The straight stitch needle plate is recommended for straight stitch 1, straight stitch 2, straight stitch 3 and straight stitch 4 (refer to page 37 for how to replace the needle plate).

For ordinary and bulky quilts, select “Straight Stitch 1”, “Straight Stitch 2” or “Zigzag Stitch 1”, and use darning foot PD-H (refer to page 27 for how to attach the darning foot).

Select “Straight Stitch 3”, “Straight Stitch 4” or “Zigzag Stitch 2” for flatter quilts and use one of the free quilting feet QC, QO or QV.

Refer to page 145 (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 3”, “Straight Stitch 4” or “Zigzag Stitch 2” is selected, the height of the 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 fabric bounces 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 stitches.
- Do not move the quilt layers toward you when the open-toe foot is attached.



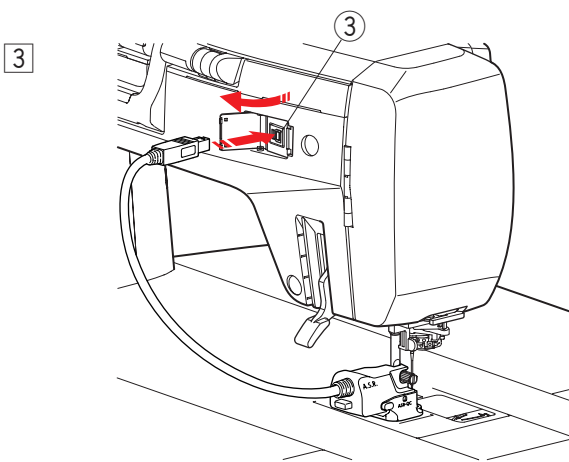
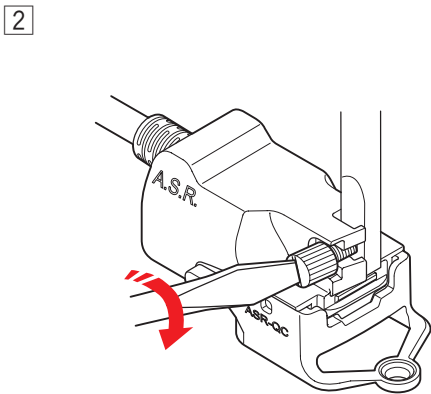
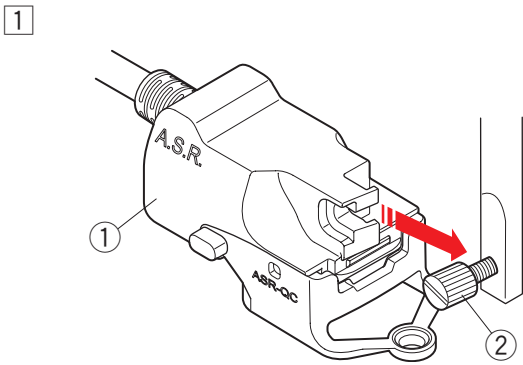
## Stitch Regulator Function / A.S.R. Foot Holder

The A.S.R. foot holder (Accurate stitch regulator foot holder) reacts to movement of the fabric and provides the same stitch length for free motion, ruler work or variable zigzag.

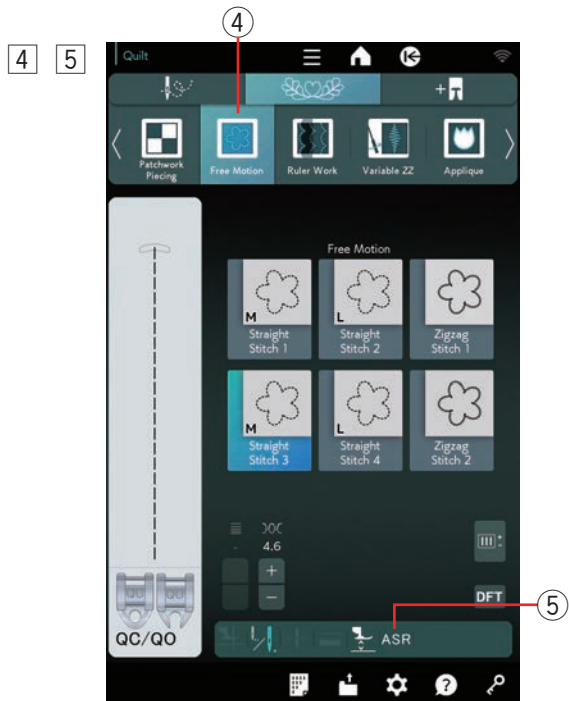
- 1 Remove the foot holder (refer to page 25).  
Attach the A.S.R. foot holder to the presser bar.
  - 1 A.S.R. foot holder

Tighten the thumbscrew with your fingers.

  - 2 Thumbscrew
- 2 Tighten the thumbscrew securely with the screwdriver.



- 3 Insert the plug into the attachment connector on the rear of the machine.
  - 3 Attachment connector

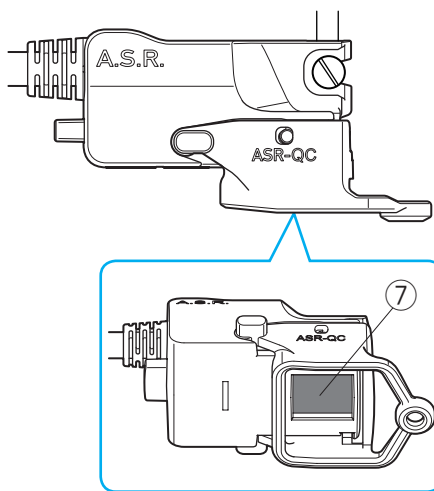
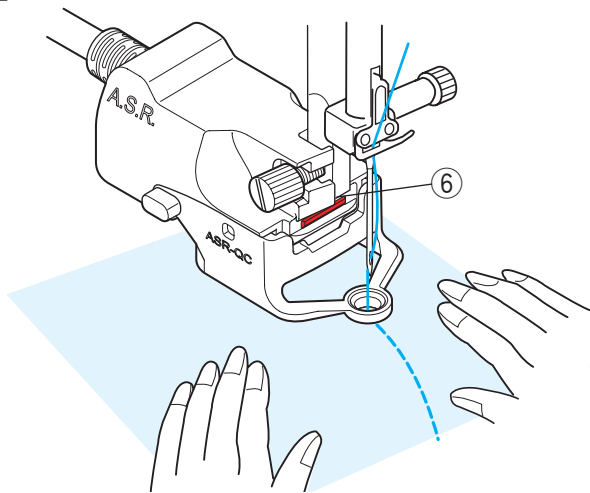


- 4 Press "Free Motion".
  - 4 Free Motion

The feed dogs drop automatically for free motion sewing.
- 5 Press "Straight Stitch 3", "Straight Stich 4" or "Zigzag Stitch 2".  
Press the ASR key.
  - 5 ASR key

Patterns not suitable for the stitch regulator function cannot be selected (pattern selection keys are grayed out).

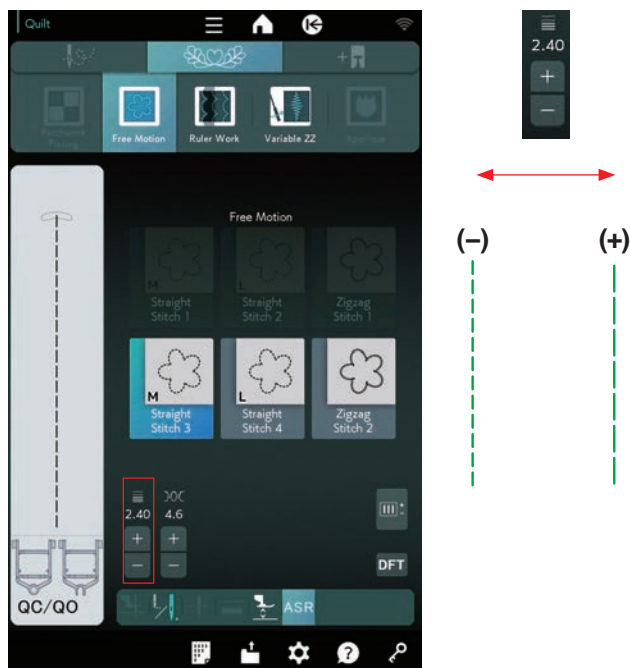
6



- 6 Sew the fabric while guiding it with your hands.  
 The status indicator ⑥ will turn red during operation.  
 The buzzer sounds and the stitch length will be longer than the setting when the fabric moves too fast.
- \* The A.S.R. foot holder also can be used with ruler work or variable zigzag (refer to the next page).

**NOTE:**

- Set the speed control slider at the fastest position (refer to page 16).
- Sewing results may vary depending upon sewing conditions. Always make a test stitch on an extra piece of fabric to check sewing results. Move the speed control slider to set the sewing speed to middle if the stitch length become too short when the fabric guiding with your hands.
- The machine sews at low speed when you are not guiding fabric.
- The stitch regulator sensor cannot detect fabric movement in the area 2 cm (3/4") from the rear side edge of the fabric (the sensor only can detect the fabric movement under the sensor ⑦).
- The machine sews at low speed in the area 2 cm (3/4") from the edge of the fabric.
- Regularly check if the inside of the sensor ⑦ on the underside of the A.S.R. foot holder is not dirty.
- Regularly clean the black window on the underside of the A.S.R. foot holder with a soft cloth.



**Adjusting stitch length**

The stitch length varies depending on (the color or thickness of) the fabric or the presser height. Press the adjust key to adjust stitch length. Press the “+” key to increase the stitch length. Press the “-” key to decrease the stitch length.

**NOTE:**

The adjustable range of stitch length is 1.0 to 4.0 mm.

## Changing the foot attachment

This foot holder comes with the ASR closed-toe foot ASR-QC attached. However, it is also compatible with the ASR open-toe foot ASR-QO, the ASR clear view foot ASR-QV, and the ASR ruler work foot ASR-QR.

- ① ASR closed-toe foot ASR-QC
- ② ASR open-toe foot ASR-QO
- ③ ASR clear view foot ASR-QV
- ④ ASR ruler work foot ASR-QR

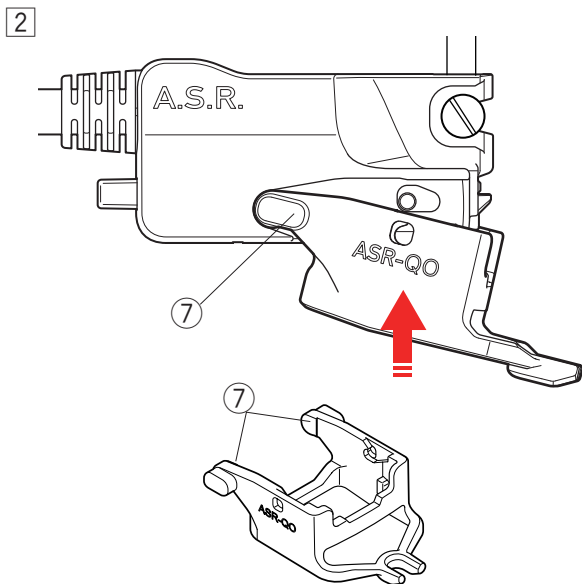
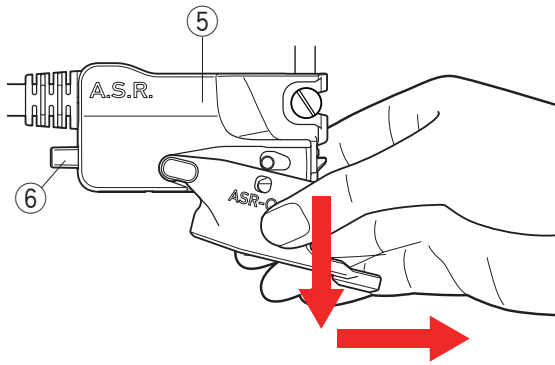
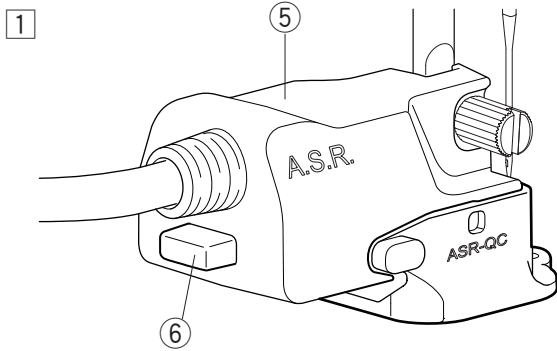
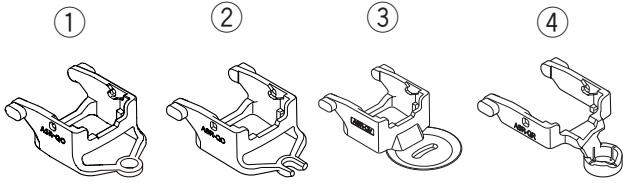
Refer to pages 154 and 155 for ruler work or variable zigzag settings.

- ① To remove the foot, pull the A.S.R. foot in the direction of arrows while pushing the button on the backside of the A.S.R. foot holder.

- ⑤ A.S.R. foot holder
- ⑥ Button

- ② To attach the foot, set both ends to the A.S.R. foot holder and push the foot up to fit in place.

- ⑦ Both ends

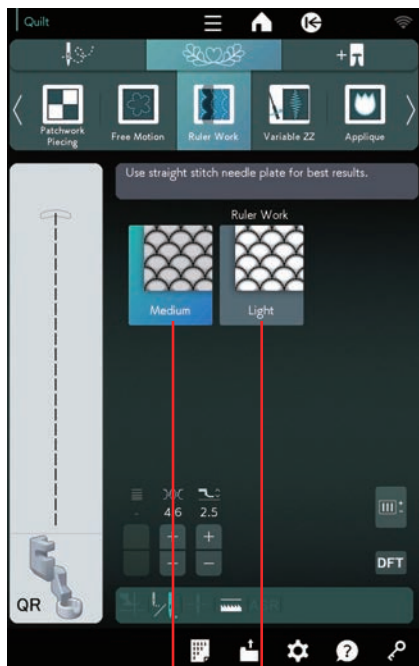


## Ruler Work



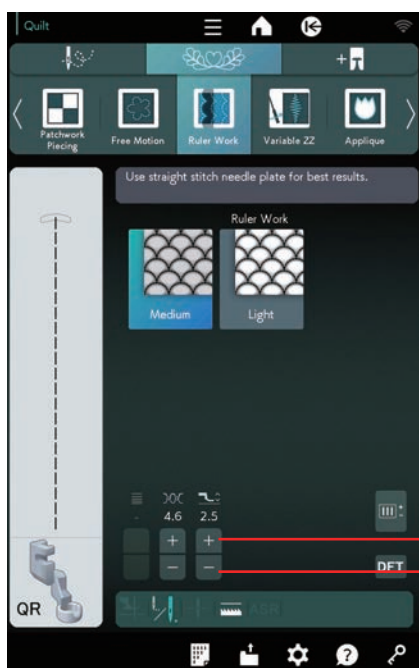
### CAUTION:

Do not lower the needle while the foot is raised, otherwise the needle clamp may hit the foot and cause injury or breakage.



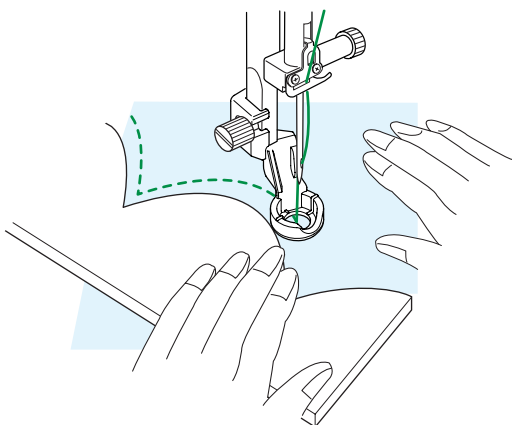
①

②



③

④



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 “Ruler Work” is displayed as shown.

Refer to page 26 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 finely adjust the presser foot height by pressing the “+” ③ or “-” ④ key on the manual setting window.

Attach the A.S.R. foot and press ASR key to use A.S.R. function (refer to page 153).

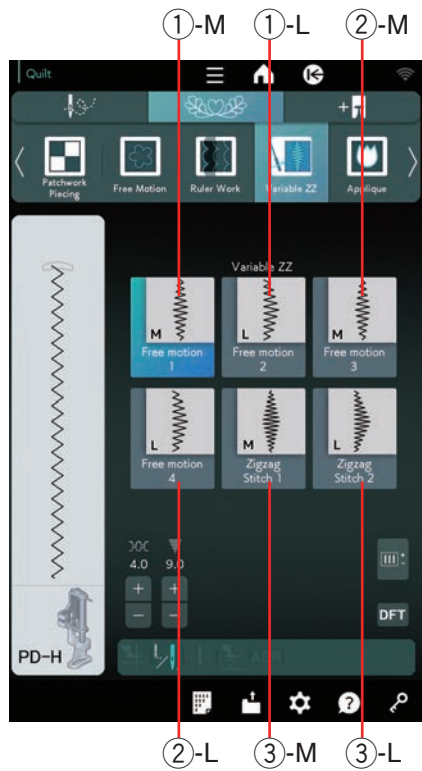
Use the ASR ruler work foot ASR-QR for ruler work.

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).
- When you use the A.S.R. function, printing, marks or tape on the upper side of ruler can cause stitching length problems. Place printing, marks or tape on the lower side of the ruler.
- Opaque or colored rulers can cause stitching length problem. Use a transparent ruler.



## Variable Zigzag

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

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

Select ②-M or ②-L, using clear view free quilt foot QV or variable zigzag foot QZ (refer to page 145 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.

Select ②-M or ②-L, using the A.S.R. function.

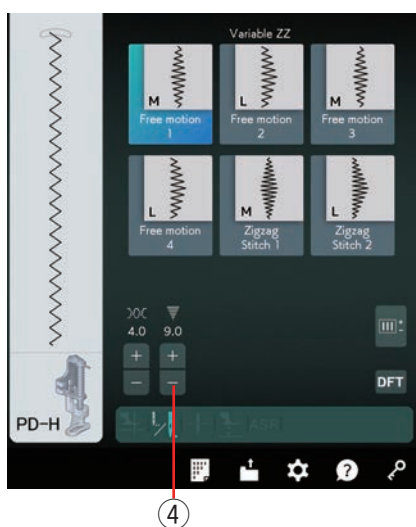
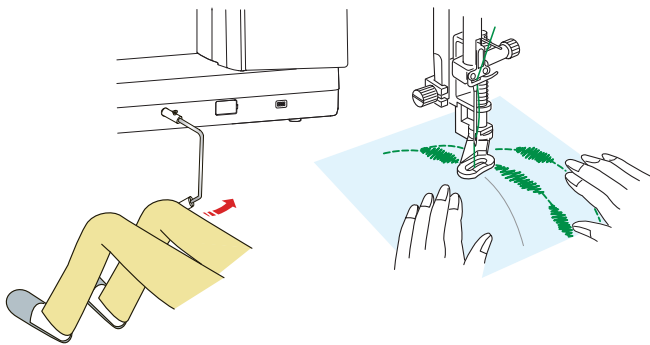
The fabric is fed by the feed dogs and the stitch width can be varied with the knee lifter.

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:

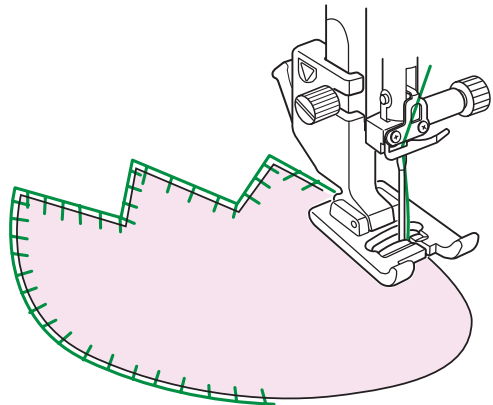
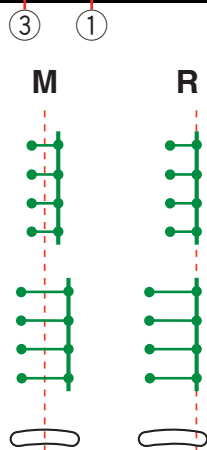
- When the machine stops, you can raise and lower the presser foot with the knee lifter.
- The purple tip needle is recommended for free motion quilting to prevent skipped stitches.



## 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.



## Applique

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

You can select the needle stop position to be 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 row ②.

### Pivoting at applique corners

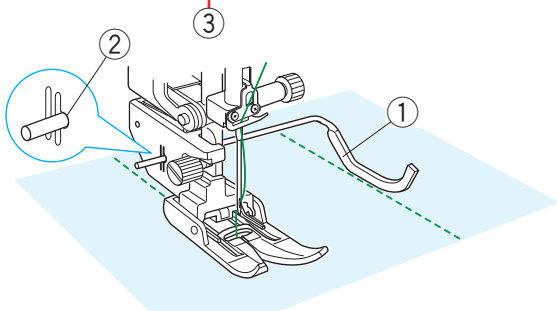
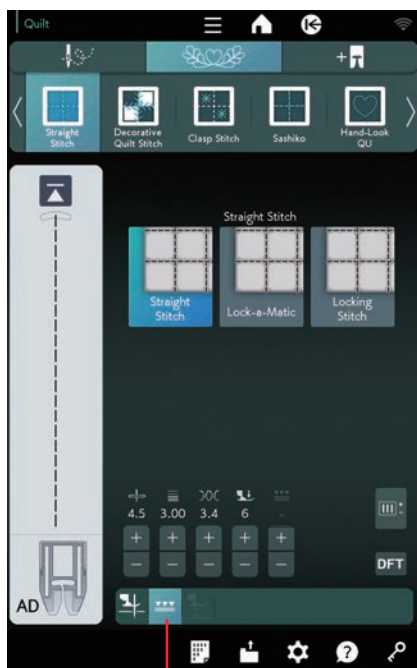
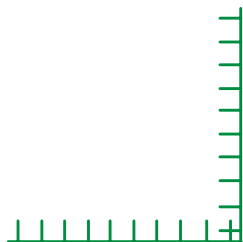
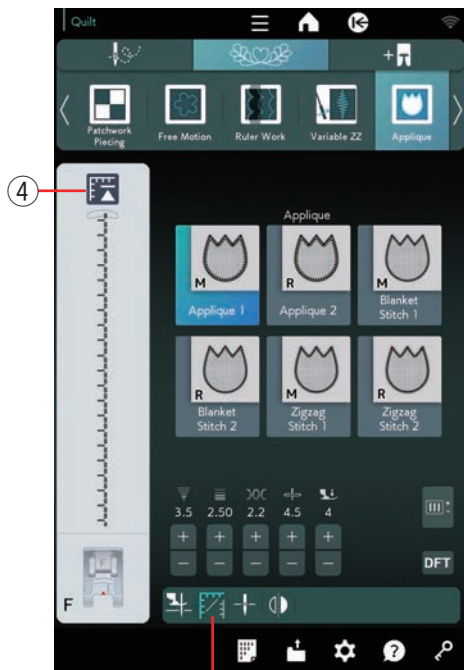
When sewing an applique with sharp corners, you may turn on the “Foot up for pivoting” option so that the presser foot automatically goes up when the machine stops.

Press the foot-up key to turn on this option

- ③ 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.

#### ④ Startover key

Two of startover options 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.

#### ⑤ 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 26 for how to attach it). Refer to page 95 if you wish to use zigzag foot A with a quilting guide bar.

### 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.

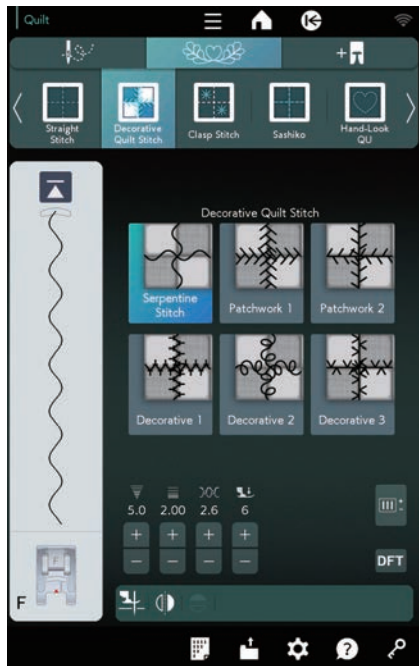
#### ① Quilting guide bar

#### ② Hole

Press the dual feed key.

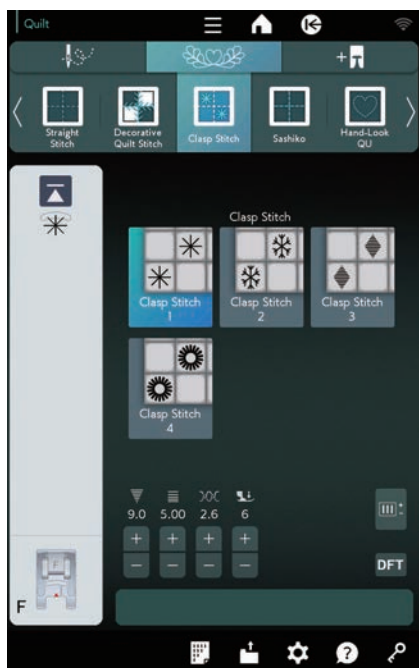
#### ③ Dual feed key

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



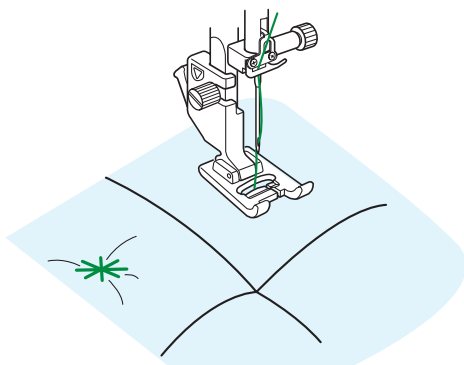
## Decorative Quilt Stitch

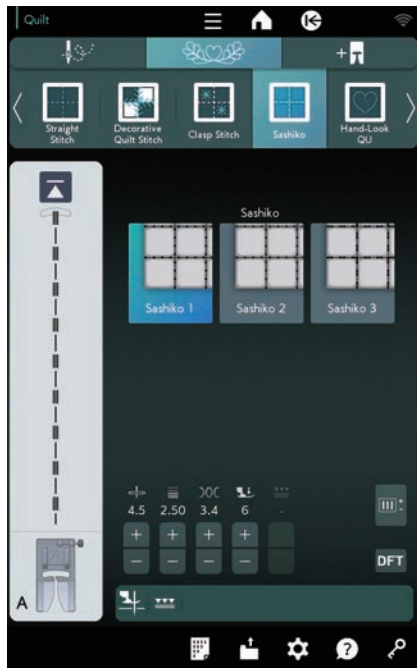
You can decorate the seam on the quilt or patchwork fabric with decorative quilt stitches.  
Use satin stitch foot F.



## Clasp Stitches

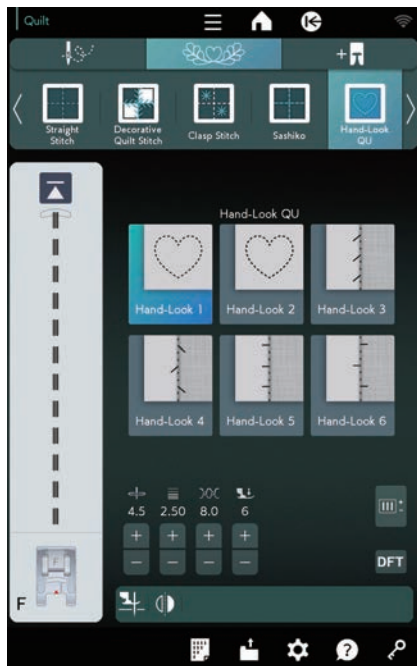
You can close quilt layers and batting using the clasp stitch.  
Use satin stitch foot F.  
The machine sews one unit of the pattern and automatically stops with the needle in the up position when completed.





## 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.

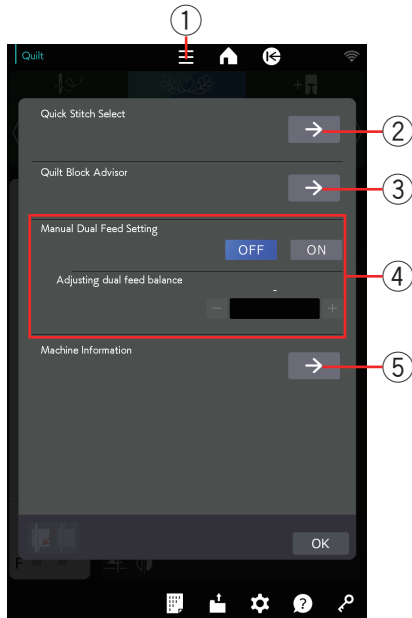
## INFORMATION AND CUSTOMIZING

### Function Menu

Press the function menu key ① to open the function menu.

You can select or set 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 38-39 for the category abbreviations).

Press 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 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 96-99.

### Back left Position Key

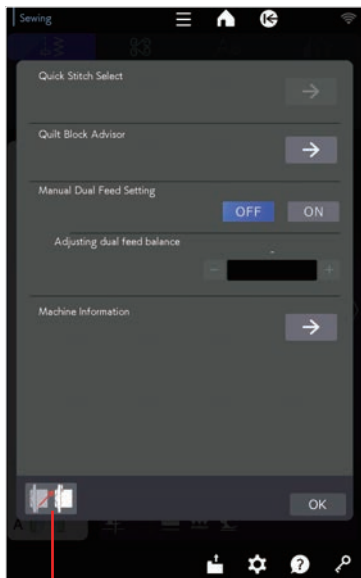
You can use this key when you use the Embroidery unit.  
 Press the back left position key and the confirmation window will open.

Press the OK key to move the carriage to the back left position.

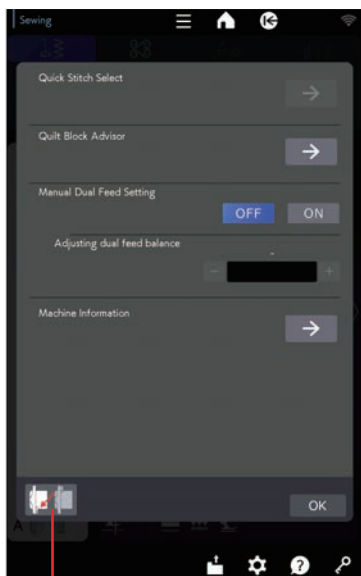
- ⑥ Back left position key

Press the key once again to move the carriage to the home position (front left position).

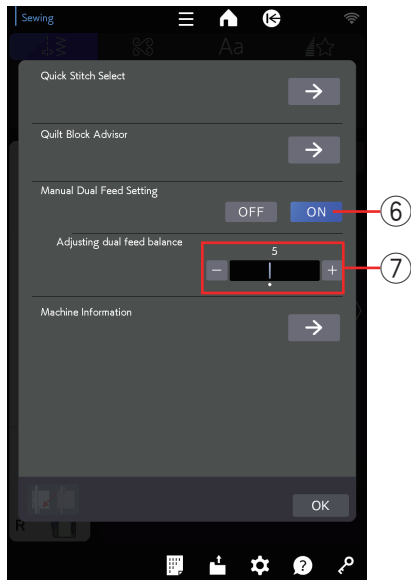
- ⑦ Home position (front left position) key



⑥



⑦



## 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:

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

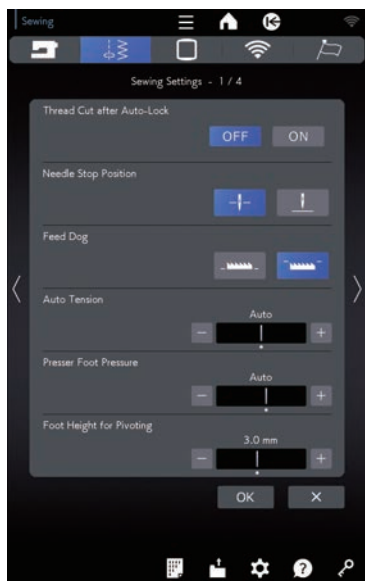
You may need to adjust the dual feed balance ⑦ depending on the type of fabric. Refer to page 45 for how to adjust the dual feed balance.

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



### NOTE:

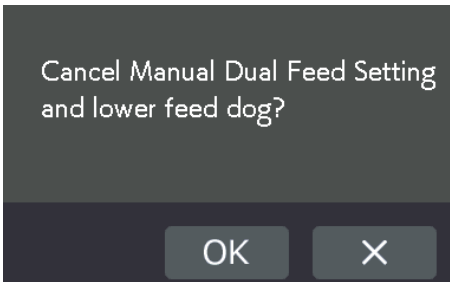
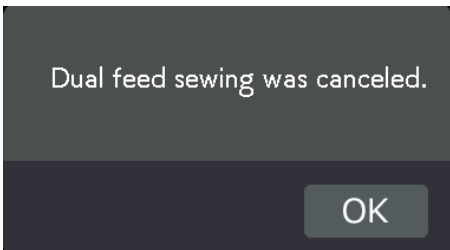
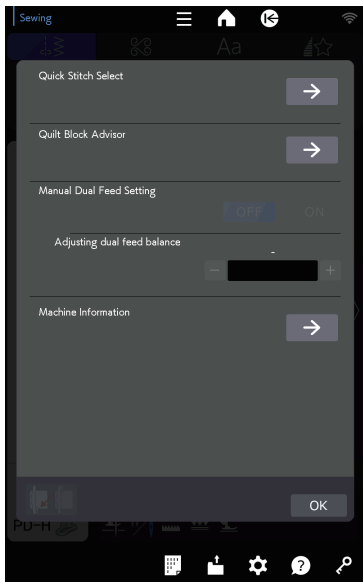
- The dual feed key ⑧ will gray out if the manual dual feed setting is turned on.
- The patterns U8 and B14, and the sewing applications that are not suitable for the manual dual feed setting are grayed out and cannot be selected.



### 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.



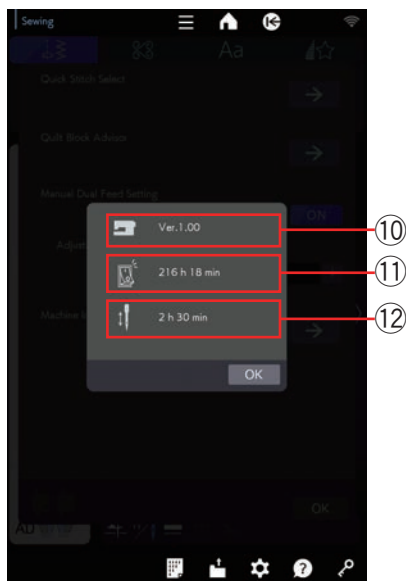
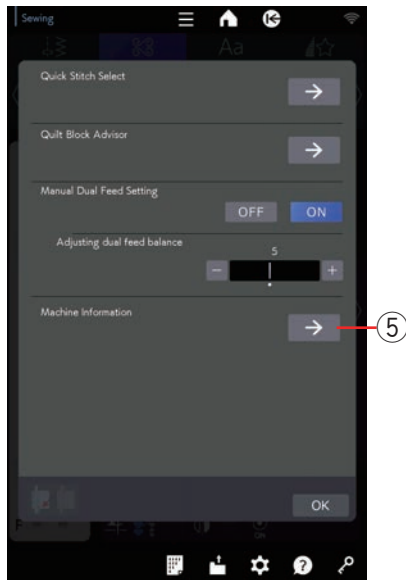


**NOTE:**  
If the manual dual feed setting is turned on when dual feed sewing is turned on in ordinary sewing mode, dual feed sewing will switch to the manual dual feed setting.

**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 dogs are dropped.
- To cancel dropping the feed dogs, 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 dogs are raised for dual feed sewing.

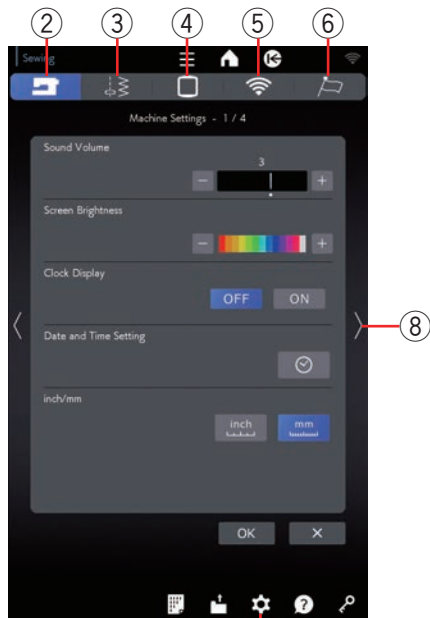


### Machine Information

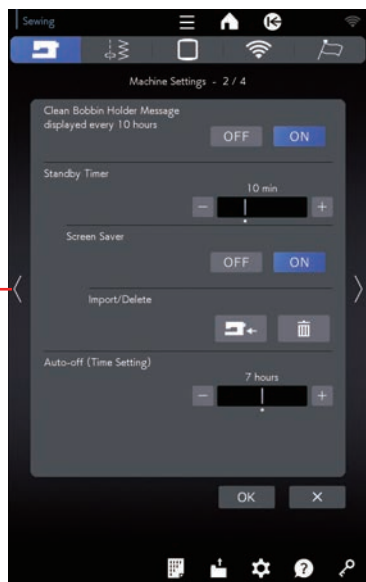
You can see the software version of the machine, total power-on time of the machine and total operating time of the machine.

Press the machine information key ⑤ to open the machine information window.

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



①



⑦

## 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 5 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 166-168).

### 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 169-170).

### ④ Embroidery setting mode key

In this mode, you can customize the machine settings and options for embroidery (refer to the Instruction book for Embroidery).

### ⑤ Wireless LAN setting mode key

In this mode, you can set up the Wireless LAN connection for both ordinary sewing and embroidery (refer to pages 171-174).

### ⑥ Language setting mode key

Press the language setting mode key to enter the language setting mode. In this mode, you can select the desired language for screen messages (refer to page 175).

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

⑦ Previous page key

⑧ 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 Sound Volume

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 Clock Display

You can turn off the clock display by pressing the OFF key.

### ④ 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 as a 24-hour clock or 12-hour clock. If you select the display for the time as the 12-hour clock, you can also select AM or PM.

- ⑥ Year
- ⑦ Month
- ⑧ Day
- ⑨ Hour
- ⑩ Minute
- ⑪ 24-hour clock
- ⑫ 12-hour clock
- ⑬ AM / PM

### ⑤ 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.

Press the next page key to show the next menu.

### ⑭ Clean Bobbin Holder Message displayed every 10 hours

The caution message for cleaning the bobbin holder and the hook race will be displayed when a certain time (10 hours) passes if this option is turned on.

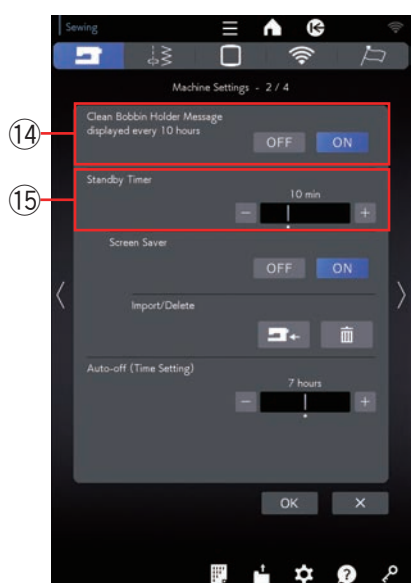
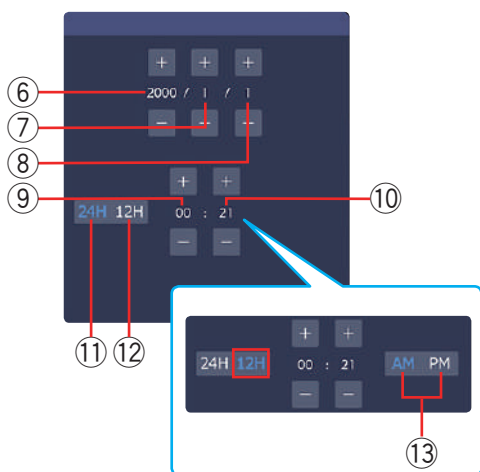
The caution message will not be displayed when this option is turned off.

### ⑮ 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.






### ⑩ Screen Saver

Press the ON 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.” (to download the Screen Saver Tool, refer to the quick start guide that comes with this sewing machine.)

The imported screen saver data will be deleted if the delete key  is pressed, or the internal memory is formatted (refer to page 168).

⑪ Import key

### ⑫ Auto-off (Time Setting)

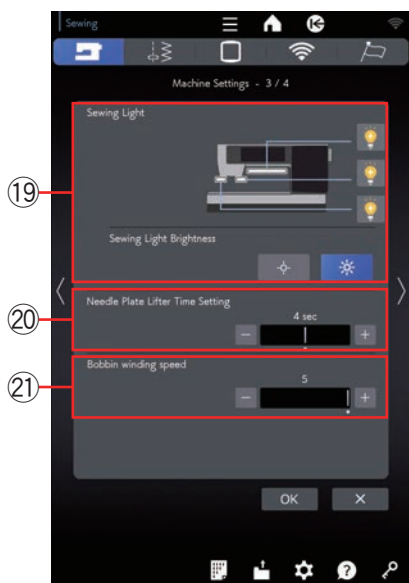
The machine will be automatically turned off if you do not use it within the time period set by this timer.

The “Auto-off (Time Setting)” 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.



### ⑬ Sewing Light

The sewing lights can be turned on or off individually. Press the corresponding light keys to turn the sewing lights on or off.

You can set the brightness of sewing lights to either bright light or low light.

### ⑭ Needle Plate Lifter Time Setting

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

### ⑮ 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.



### ②② Format

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 one of the USB icons 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.

### ②③ Reset All to Defaults

Press the Yes key to reset all the parameters except wireless LAN settings 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 Feed Dog

Turn this option on if you wish to sew decorative stitches and sewing applications with the feed dogs down. Press the drop feed key to turn on this option.

### ④ Auto Tension

You can adjust the auto thread tension level by pressing the “+” or “-” key.

### ⑤ Presser Foot Pressure

The foot pressure is automatically optimized but you can adjust the foot pressure manually by pressing the “+” key or “-” key.

### ⑥ 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.

Press the next page key to show the next menu



### ⑦ 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.

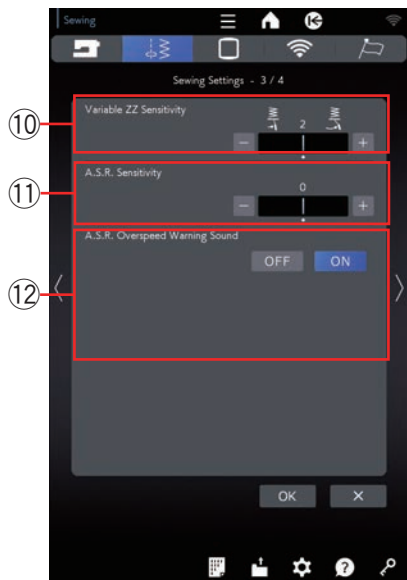
### ⑧ Upper Thread Breakage Sensor

If you want to turn off the auto-stop function when the upper thread (needle thread) breaks, turn off the upper thread breakage sensor.

### ⑨ Bobbin Thread Remaining Sensor

If you want to turn off the auto-stop function when the bobbin thread runs out, turn off the bobbin thread remaining sensor.

Press the next page key to show the next menu



### ⑩ Variable ZZ Sensitivity

You can adjust the amount of needle swing with 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 A.S.R. Sensitivity

You can adjust and save the A.S.R. sensitivity setting. Press the “+” key to increase A.S.R. sensor sensitivity. Example: Press the “+” key when the stitch length is not stable or the sewing speed changes too slowly. Press the “-” key to decrease A.S.R. sensor sensitivity. Example: Press “-” key when the sewing speed is too fast.

### ⑫ A.S.R. Overspeed Warning Sound

The buzzer sounds when the fabric moves too fast in the default setting. Press the “OFF” key to delete the buzzer sound.



### ⑬ 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 is turned off, the manual stitch setting will be cleared when the power switch is turned off.

Press the delete icon  to clear the manual stitch setting.

#### NOTE:

This option is available for all stitches except monogram.

### ⑭ Resume Mode

Turn on this option when you wish to resume the last pattern sewn before turning the power switch off.

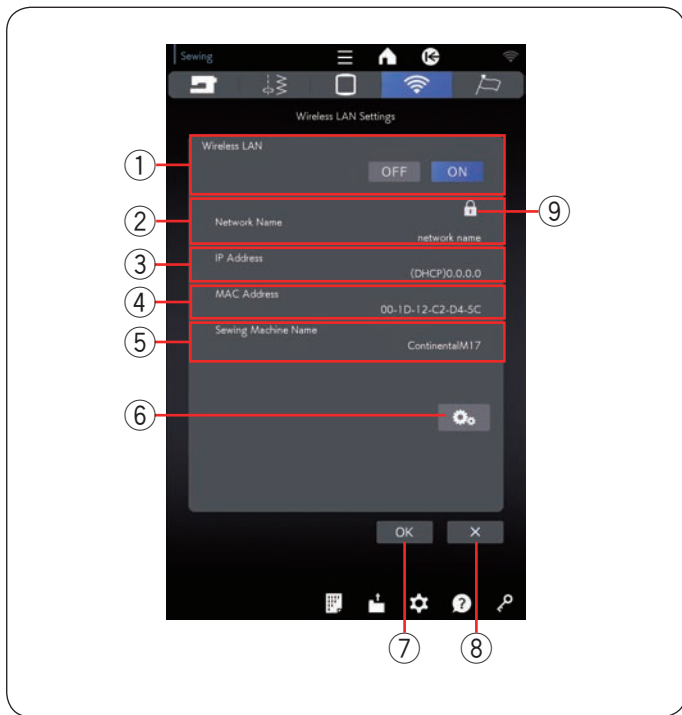
When the power is turned on again, the confirmation message will appear. Press the OK key to resume the last pattern.

#### 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.



### ③ IP Address

The IP address of your machine is displayed. “(DHCP)” is displayed in front of the IP address when the DHCP option is turned on. The IP address can be changed in the network settings.

### ④ MAC Address

The MAC address of the Continental M17 is displayed.

### ⑤ Sewing Machine Name

The sewing machine name for network identification is displayed. The sewing machine name can be changed in the network settings.

### ⑥ Network setting Key

Press this key to open the Network Settings window.

### ⑦ OK key

Press this key to confirm the wireless LAN network connection setting.

### ⑧ Cancel key

Press this key to cancel the wireless LAN network connection setting.

## Wireless LAN Setting Mode

### Connecting wireless LAN network

A wireless router device that complies with the IEEE802.11b/g/n wireless standard is required for connecting your machine with a wireless LAN network.

### Starting Wireless LAN Settings

The default setting of the wireless LAN connection is “ON” ①. The network setting key ⑥ is enabled.

Press the network setting key ⑥ to enter the network settings.

Choose one of the 4 methods to connect with the wireless LAN connection (refer to pages 172-173).

#### ① Wireless LAN connection

The default setting of the wireless LAN connection is “ON”. The Wireless LAN connection and the network setting key ⑥ are enabled. Press “OFF” to disconnect wireless LAN connection.

#### ② Network Name

The name of the wireless network (SSID) connected with your Continental M17 is displayed. The lock icon ⑨ appears if the connected access point is secured with an encryption key.

#### NOTE:

The use of home appliances such as a microwave oven, bluetooth devices or cordless phones can reduce the range of the Wireless LAN connection (if your wireless router’s network standard is using IEEE802.11b or IEEE802.11g). You may need to reduce the distance between the machine and the wireless LAN access point, or install the wireless LAN access point at an appropriate location.

#### NOTE:

- If you select Push Button for the security setting of your wireless LAN router, check the following:
    - Select “ASCII” for the encryption type.
    - Select the initial number for the key index number (the initial number can be “0” or “1”, depending on the wireless LAN router.)
  - For setting up, refer to your wireless router’s instructions.
  - Connect only one device to the wireless LAN access point. To use applications for Continental M17\* when you are using several Janome sewing machines at the same time, turn OFF the wireless LAN settings or the power switches of the machines that are not currently in use. Then connect the machine (Continental M17) to the wireless LAN access point.
    - \* AcuAssist, AcuSetter, AcuSketch, ScreenSaverTool, Embroidery-Link, etc.
- (To download applications for Continental M17, refer to the quick start guide that comes with this sewing machine.)

## Network settings

### NOTE:

Please refer to your wireless router's instructions when using the push-button or PIN method to connect with the wireless LAN network connection.

### ① Wireless LAN settings push-button configuration method

Press "Push button" ①.

The Push-Button Sys. dialog box appears on the screen. Press the Wireless LAN settings button on the wireless LAN router.

The dialog box appears and the wireless LAN router will automatically connect with your Continental M17.

To use the Wireless LAN settings push-button configuration method, the wireless router must support this method. Please also refer to the wireless router's instructions about this method.

### NOTE:

The machine displays "Connection to the network failed" if it cannot receive a signal from a wireless LAN access point within 2 minutes.

### ② Wireless LAN settings PIN method

If the wireless router supports the Wireless LAN settings PIN method, you can connect the machine using this method.

Press "PIN Code" ②. The PIN Code System dialog box appears.

Register the PIN code to the router before the PIN Code System dialog box is closed to establish the network.

To enter the PIN code to your wireless router, please refer to the instructions of your wireless router's Wireless LAN settings PIN method setup.

### NOTE:

The machine displays "Connection to the network failed" if the Wireless LAN connection is not established within 2 minutes.

### ③ Search for access point

Press "Search" ③.

The machine will search for any wireless LAN access point within the range, and the names of network will be listed.

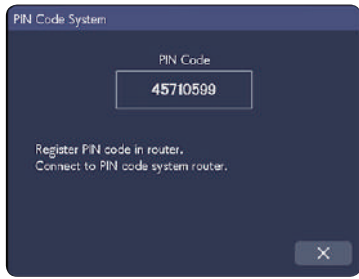
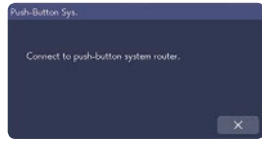
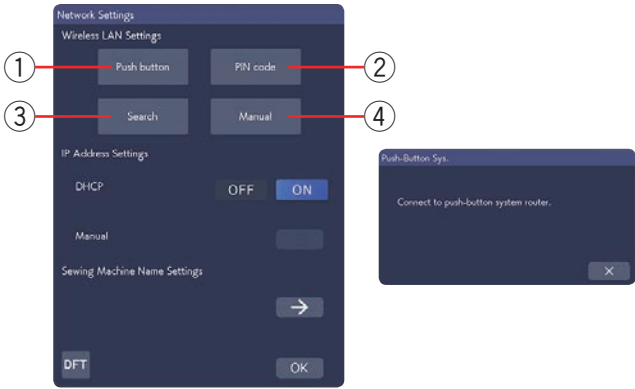
The lock icon ⑤ appears on the right side of the list if the connection requires an encryption key to get connected.

The signal strength icon ⑥ shows the strength of the connection signal. The number of waves above the dot indicates the signal strength of the wireless connection.

Press the wireless network name you would like to connect with.

### NOTE:

If you cannot find the wireless LAN access point you are looking for, press the refresh key ⑦ to search for the wireless LAN access point again.

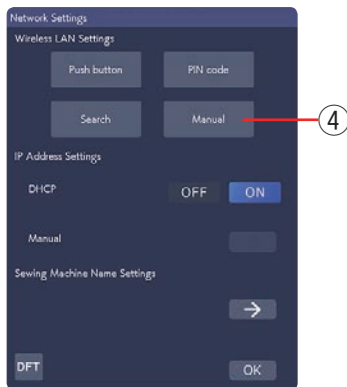




If the selected wireless network requires an encryption key for connection, the Encryption Key Entry dialog box appears. Be careful to enter uppercase or lowercase letters as required.

Enter the encryption key and press the OK key to establish the network.

Press show/hide key ⑧ to show or hide the entry.



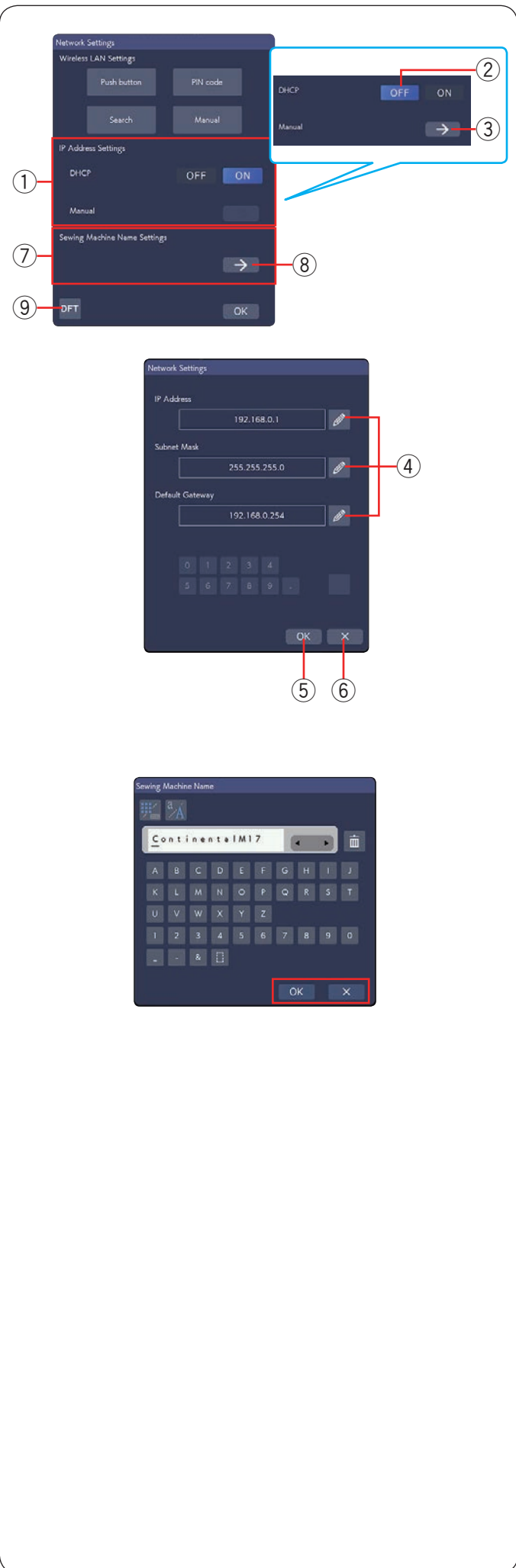
#### ④ Manual method

Press “Manual” ④. Enter the network name you would like to connect with. Press the OK key.

If the selected wireless network requires an encryption key for connection, the Encryption Key Entry dialog box appears.

Enter the encryption key and press the OK key to establish the network.





### ① IP Address Settings (network settings)

Turn the DHCP option ON to use DHCP to assign an IP address.

If you want to configure the network settings manually, press the DHCP option OFF ②, and press the arrow key ③ for the Manual option.

The network settings window appears.

Press the icon ④ of the item you would like to set, choosing from IP Address, Subnet Mask or Default Gateway.

Enter the setting by pressing the numeric keys that appear under the settings.

Press the key ⑤ to assign the settings.

Press the OK key ⑤ to confirm the network settings.

Press the X key ⑥ to cancel the settings.

#### NOTE:

- You do not need to turn off the DHCP option and configure the network settings manually unless you know the appropriate IP address, Subnet Mask and Default Gateway for this machine.
- When the DHCP option of Continental M17 is turned ON, turn on the DHCP option of your wireless router as well.

### ⑦ Sewing Machine Name Settings

Press the arrow key ⑧ to open the sewing machine name setting window.

Enter the sewing machine name for the network identification.

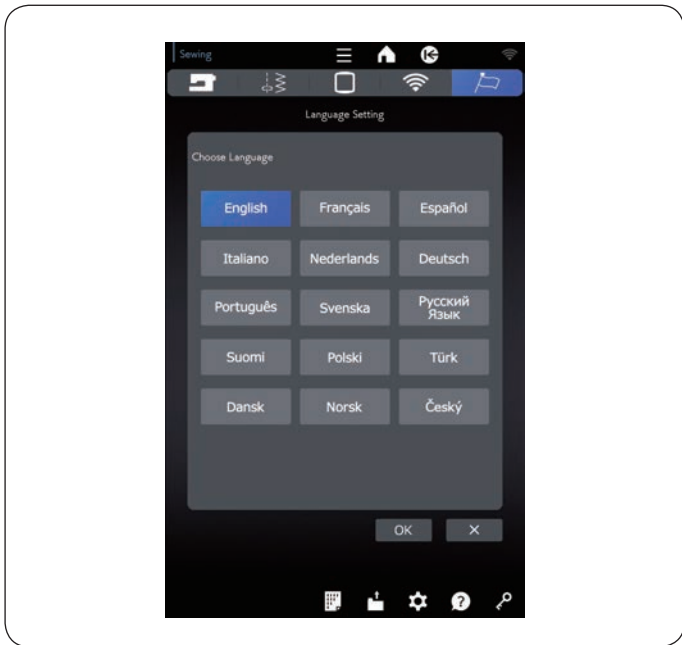
Press the OK key to change the name.

Press X to cancel the settings.

### ⑨ Default key

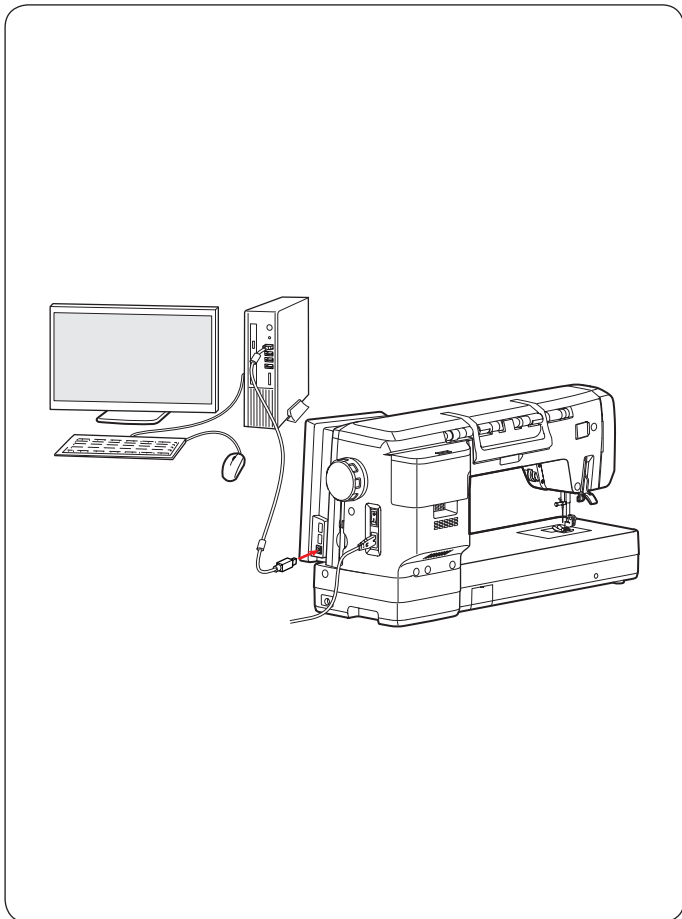
Press default key ⑨ to reset the Wireless LAN settings (factory settings).





### Language Setting Mode

Select the desired language and press the OK key. The right touch screen shows messages in the selected language.



### Direct PC / Mac-Link

You can connect the machine to your PC / Mac with the USB cable included in the standard accessories or wireless LAN. To connect the machine to your PC / Mac with the USB cable, you need to install Stitch Composer or Artistic Digitizer Jr. for the CM17 on your computer.

For more information, access the following URL.

URL: [https://www.janome.co.jp/e/e\\_downloads/CM17\\_softwares.html](https://www.janome.co.jp/e/e_downloads/CM17_softwares.html)

To connect the machine to your PC / Mac with wireless LAN refer to page 171.

#### **CAUTION:**

- Make sure to use the USB cable that came with the machine.
- Do not turn the power off or disconnect the USB cable while the data transfer is in progress, as this will cause loss of data and can damage the machine's memory.

## 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.

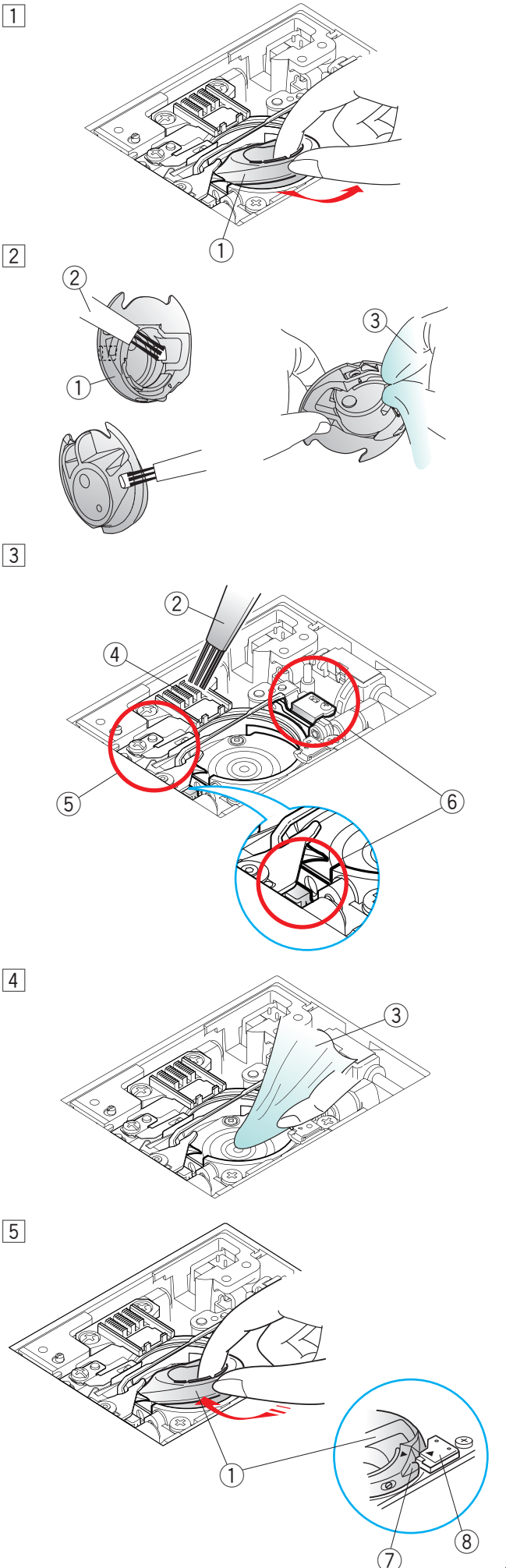
### **CAUTION:**

- 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.

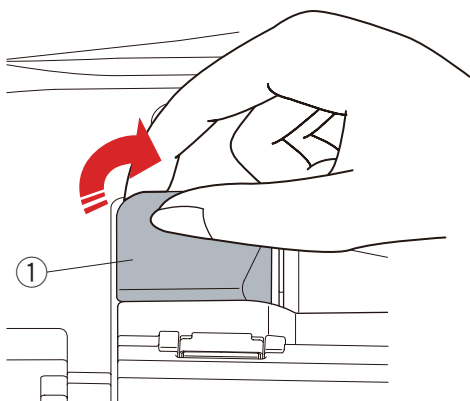
### Cleaning the Hook Area

Clean the hook area frequently.

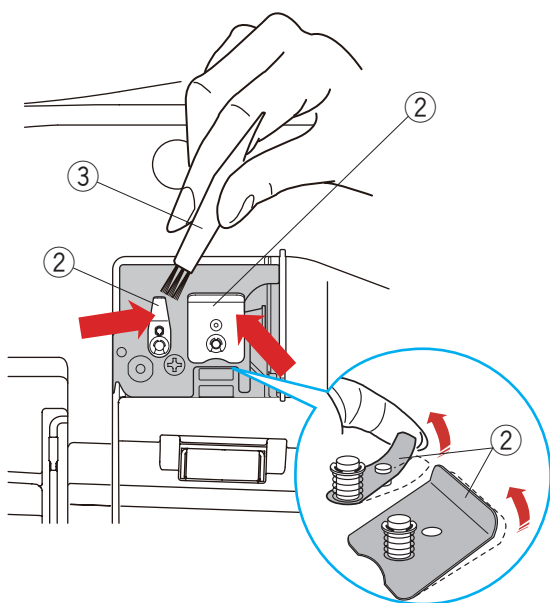
- 1** Remove the needle plate (refer to page 37).  
Turn the power switch off and unplug the machine.  
Remove the needle and foot holder (refer to pages 25 and 27).  
Take out the bobbin and bobbin holder.
  - ① Bobbin holder
- 2** Clean the bobbin holder with a lint brush.  
Apply a few drops of the bobbin holder cleaner (included in the standard accessories) to a soft cloth and wipe the bobbin holder both inside and outside.
  - 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.
  - ③ Soft cloth
- 5** Insert the bobbin holder so that the knob fits next to the stopper in the hook race.  
Attach the needle plate, presser foot and needle.  
Insert the bobbin.
  - ⑦ Knob
  - ⑧ Stopper



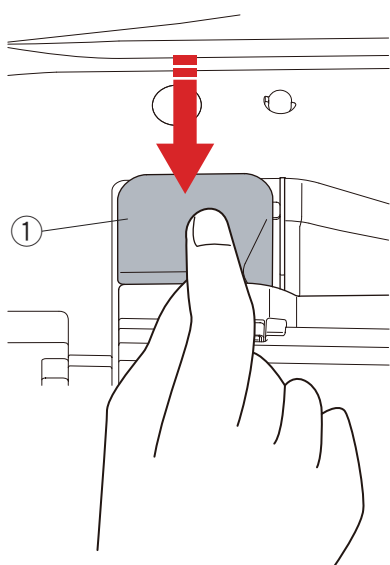
1



2



3



### Cleaning the Inside of the Thread Guide

Clean the inside of the thread guide plate under the top cover at least once a month.

1 Remove the needle thread and remove the thread guide plate by pulling it up.

① Thread guide plate

2 Clean the area around and under the pre-tension leaf with the lint brush.

\* Hold the tip of the pre-tension leaf softly and brush out the dust.

② Pre-tension leaf

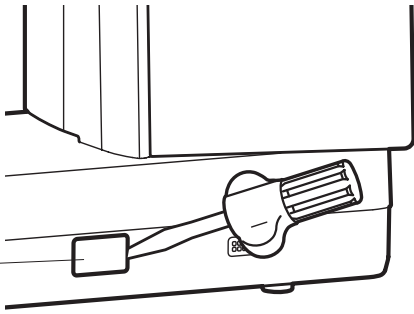
③ Lint brush

3 Set the thread guide plate on the machine.

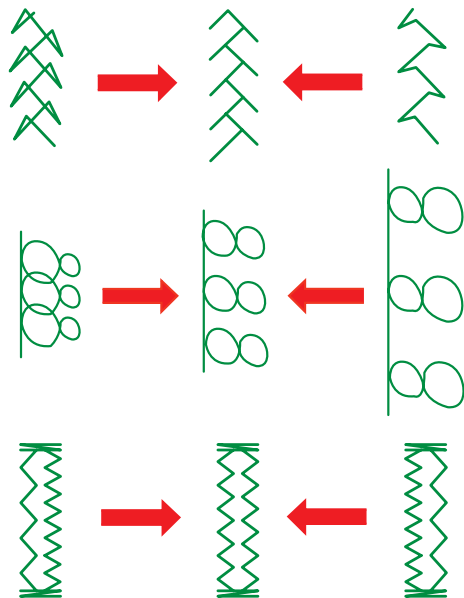
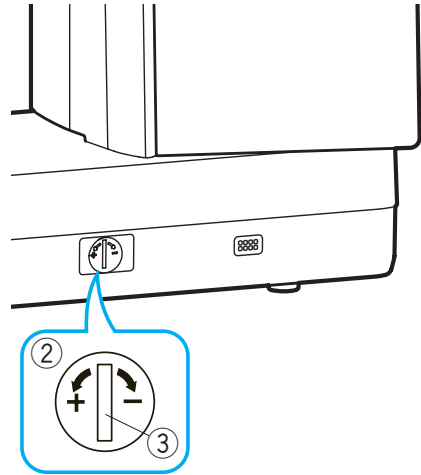
Push the thread guide plate down to snap it in place.

① Thread guide plate

1



2



## Correcting Distorted Stitch Patterns

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 are distorted, correct them with the feed balancing dial.

1 Open the feed balancing dial cap with a screwdriver.

① Feed balancing dial cap

2 Set the feed balancing dial at the neutral position for normal sewing.

② Feed balancing dial

③ Neutral position

### NOTE:

Return the feed balancing dial to its neutral position when sewing is finished.

### Stretch stitch pattern (Q27)

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 side is denser, turn the dial in the direction of “+”.

If the left side is denser, turn the dial in the direction of “-”.

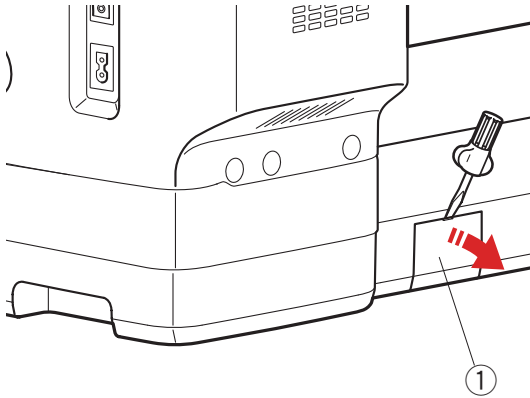
## Replacing the Coin Cell Battery for the Internal Clock

If the clock on the right touch screen always indicates “0:00” when turning the power switch on, replace the coin cell battery in the sewing machine.

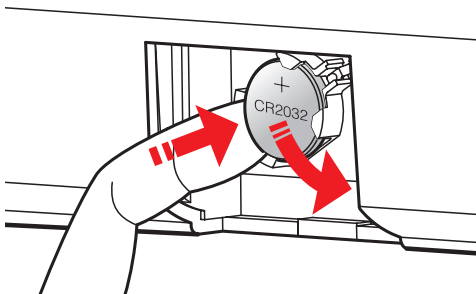
### **WARNING:**

- Battery may explode if mistreated. Do not recharge, disassemble or dispose of by fire.
- Turn off the power switch before replacing the battery.
- Replace the battery with “CR2032” type only. Use of another may present a risk of fire or explosion.
- Chemical Burn Hazard. Keep the battery away from children.
- The batteries must be disposed of properly.

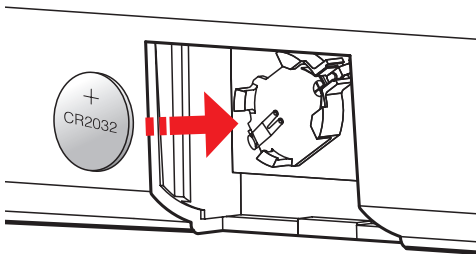
1



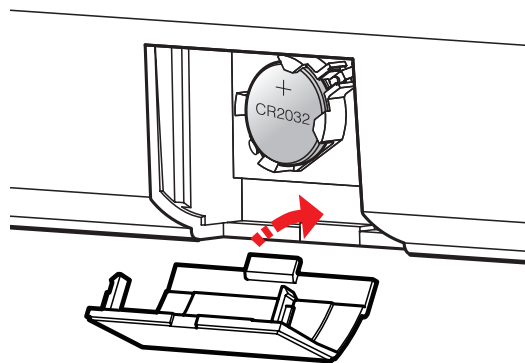
2



3



4



1 Remove the battery cover ① with a screwdriver.

① Battery cover

2 Remove the coin cell battery.

3 Install the “CR2032” battery with the “+” mark facing up.

4 Attach the battery cover.

Set the clock again after replacing the battery (refer to page 166).

## Replacing the Needle Plate Emergency Procedure



### 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 on the lockout screen, you can replace the needle plate using the needle plate release dial.

① Needle plate release key

① Raise the needle by turning the handwheel toward you.

Press the presser foot lifter button to raise the presser foot.

② Handwheel

③ Presser foot lifter button

② Remove the needle plate release dial cap with a screwdriver.

④ Needle plate release dial cap

③ Push and turn the needle plate release dial clockwise with the screwdriver to remove the needle plate.

⑤ Needle plate release dial

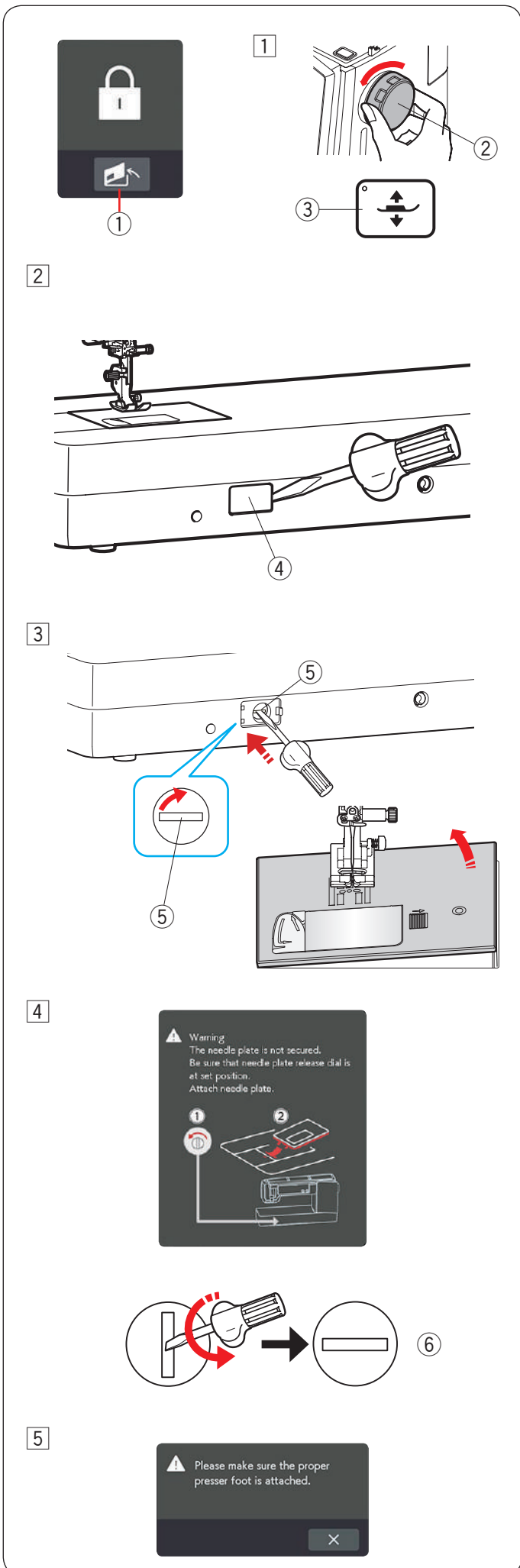
④ A warning message will appear that the needle plate is not secured.

Turn the needle plate release dial counterclockwise with the screwdriver to be at set position.

Attach the needle plate.

⑥ Set position

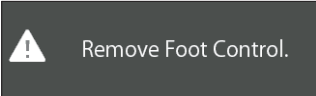

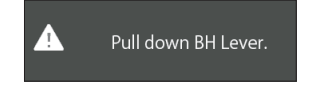
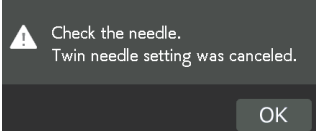
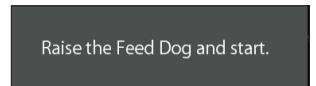
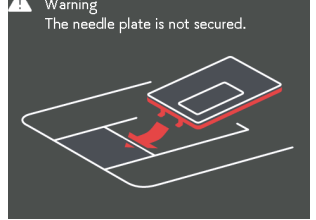
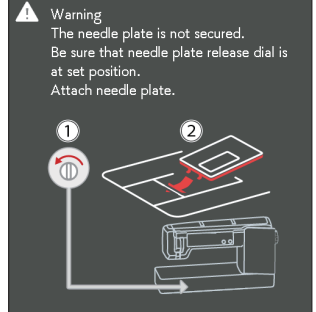
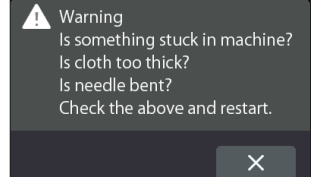
⑤ A message will appear, with the instruction to that press the X key after attaching the proper presser foot.






## Problems and Warning Signals

If a buzzer sounds and the right touch screen shows a warning sign, follow the guidance below.

Warning Sign	Cause	Try this
 <p>Remove Foot Control.</p>	<p>The start/stop button is pressed with the foot control connected.</p>	<p>Disconnect the foot control.</p>
 <p>Warning</p>	<p>The foot control is broken.</p>	<p>Contact the service center or the store from whom the machine was purchased.</p>
 <p>Pull down BH Lever.</p>	<p>The machine will stop if the buttonhole is sewn without lowering the buttonhole lever.</p>	<p>Lower the buttonhole lever and start the machine again.</p>
 <p>Check the needle. Twin needle setting was canceled.</p> <p>OK</p>	<p>The twin needle key is pressed when the twin needle sign is indicated on the right touch screen.</p>	<p>Replace the twin needle with a single needle and press the OK key.</p>
 <p>Raise the Feed Dog and start.</p>	<p>The machine is started with the feed dogs lowered.</p>	<p>Raise the feed dogs unless you want to sew with the feed dog lowered.</p>
 <p>Warning The needle plate is not secured.</p>	<p>The needle plate is removed.</p> <p>The needle plate is not properly attached to the set position.</p>	<p>Attach the needle plate. Check if the needle plate is attached properly.</p> <p>Press down the needle plate with your finger to snap it into the set position.</p>
 <p>Warning The needle plate is not secured. Be sure that needle plate release dial is at set position. Attach needle plate.</p>	<p>The needle plate is removed with the needle plate release dial.</p>	<p>Turn the needle plate release dial at set position. Attach the needle plate.</p>
 <p>Warning Is something stuck in machine? Is cloth too thick? Is needle bent? Check the above and restart.</p> <p>X</p>	<p>The machine stops due to overload.</p>	<p>Wait for at least 15 seconds to restart. Remove tangled threads around take-up lever, hook race and automatic thread cutting mechanism.</p>

## Troubleshooting

Condition	Cause	Reference
The needle thread breaks	<ol style="list-style-type: none"> <li>1. The needle thread is not threaded properly.</li> <li>2. The needle thread tension is too tight.</li> <li>3. The needle is bent or blunt.</li> <li>4. The needle is incorrectly inserted.</li> <li>5. The needle thread is not set under the presser foot when start sewing.</li> <li>6. The fabric is moved too fast when stitching free motion quilting.</li> <li>7. The thread is tangled around the spool.</li> </ol>	Pages 33-34 Page 55 Change the needle. Page 27 Page 42 Page 150 Use the spool holder.
The bobbin thread breaks	<ol style="list-style-type: none"> <li>1. The bobbin thread is not threaded properly in the bobbin holder.</li> <li>2. Lint has collected in the bobbin holder.</li> <li>3. The bobbin is damaged and does not turn smoothly.</li> </ol>	Page 32 Page 176 Change the bobbin.
The needle breaks	<ol style="list-style-type: none"> <li>1. The needle is incorrectly inserted.</li> <li>2. The needle is bent.</li> <li>3. The needle clamp screw is loose.</li> <li>4. The needle is too fine for the fabric being used.</li> <li>5. An inappropriate presser foot is used.</li> <li>6. The fabric was pulled toward you when sewing free motion quilting with free motion quilting open-toe foot QO.</li> </ol>	Page 27 Change the needle. Page 27 Page 28 Use the correct foot. Page 150
Skipped stitches	<ol style="list-style-type: none"> <li>1. The needle is incorrectly inserted, bent or blunt.</li> <li>2. The needle and/or threads are not suitable for the work being sewn.</li> <li>3. A blue tip needle is not being used for sewing stretch, very fine fabrics and synthetic fabrics.</li> <li>4. The needle thread is not threaded properly.</li> <li>5. A poor quality needle is used.</li> <li>6. A purple tip needle is not being used for sewing thick fabrics, denims and across the hem.</li> </ol>	Page 27 Page 28 Use the stretch stitch needle. Pages 33-34 Change the needle. Page 28
Seam puckering	<ol style="list-style-type: none"> <li>1. The needle thread tension is too tight.</li> <li>2. The needle thread is not threaded properly.</li> <li>3. The needle is too heavy for the fabric being sewn.</li> <li>4. The stitch length is too long for the fabric.</li> <li>5. The foot pressure is not adjusted properly.</li> <li>6. A stabilizer is not used when sewing very fine fabrics.</li> </ol>	Page 55 Pages 33-34 Page 28 Make stitch shorter. Page 55 Apply a stabilizer.
The fabric is not feeding smoothly	<ol style="list-style-type: none"> <li>1. The feed dog is packed with lint.</li> <li>2. The stitches are too fine.</li> <li>3. The feed dogs are not raised after "drop feed" sewing.</li> </ol>	Page 176 Make stitch longer. Page 40
Loops on the seams	<ol style="list-style-type: none"> <li>1. The needle thread tension is too loose.</li> <li>2. The needle is too thick or too fine for the fabric.</li> </ol>	Page 55 Page 28
The machine does not run	<ol style="list-style-type: none"> <li>1. The machine is not plugged in.</li> <li>2. Thread is caught in the hook race.</li> <li>3. The start/stop button is used with the foot control plugged in.</li> </ol>	Pages 13-14 Page 176 Page 14
Buttonhole sewing is not sewn properly	<ol style="list-style-type: none"> <li>1. The stitch density is not suitable for the fabric being sewn.</li> <li>2. The interfacing has not been used for the stretch or synthetic fabric.</li> <li>3. The buttonhole lever is not lowered.</li> </ol>	Page 66 Apply an interfacing. Page 64
The machine is noisy	<ol style="list-style-type: none"> <li>1. Thread is caught in the hook race.</li> <li>2. Lint is built up in the hook race or bobbin holder.</li> </ol>	Page 176 Page 176
Auto thread cutting failed	<ol style="list-style-type: none"> <li>1. Thread is too thick for the auto thread cutting.</li> <li>2. Threads are caught in the thread cutter mechanism.</li> </ol>	Page 18 Page 176
Pattern selection keys are grayed out	<ol style="list-style-type: none"> <li>1. The needle plate for straight stitch is attached to the machine.</li> <li>2. Dual feed key is on.</li> <li>3. Twin needle key is on.</li> </ol>	Page 37 Page 44 Page 104

Condition	Cause	Reference
The sewing speed does not increase and buzzer sounds when using the A.S.R. foot holder.	1. The speed control slider is at the low position (left side).	Move the speed control slider to the rightmost (maximum sewing speed).
Visual Touch Screen is not clear.	1. The screen brightness is not adjusted properly.	Page 166
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 55
The bobbin thread detecting sensor does not work; There is no signal sound when the bobbin thread has run out and the machine does not stop sewing.	1. The bobbin thread remaining 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 169 Page 176 Page 29
The automatic needle threader does not return to up position.	1. The automatic needle threader is not working correctly.	Page 184
The machine cannot connect to the wireless LAN access point.	1. The wireless router device does not comply with IEEE802.11b/g/n wireless standard. 2. The wireless router device using WEP security, and encryption type or/and key index is not set correctly.	Page 171 Page 171
The machine's wireless LAN connection is unstable.	1. The wireless router device's DHCP option is not turned on. 2. A microwave oven, bluetooth device or cordless phone is being used between the machine and the access point.	Page 174 Page 171
Wireless LAN connection ON/OFF keys are grayed out on the wireless LAN setting mode.	1. The wireless LAN setting mode is selected too soon after the machine is turned on. 2. The electrical circuit does not work properly.	Wait for a while before entering the wireless LAN setting mode. Turn off and then turn on the machine.
The wireless LAN setting has been set, but the signal strength icon is grayed out  on the upper right corner of the right touch screen and the machine can not connect to the wireless LAN.	1. The wireless LAN setting was not completed correctly. 2. The electrical circuit does not work properly.	Complete the wireless LAN setting correctly (refer to the pages 171-174). Turn off and then turn on the machine.
The USB flash drive is not read.	1. Format setting of the USB flash drive is not correct. 2. The USB flash drive is malfunctioning.	Pages 185-186 Replace the USB flash drive.

It is not abnormal for a faint humming sound to be heard from the internal motors.

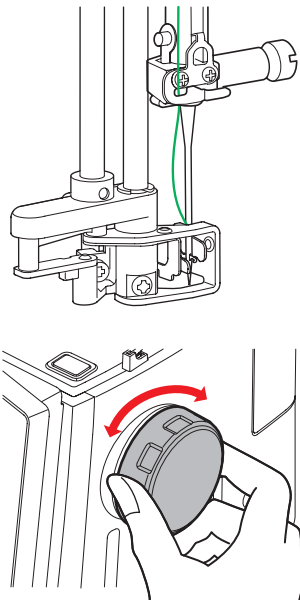
The visual touch screen and function key area may become warm after several hours of continuous use.

## Troubleshooting (Automatic Needle Threader)

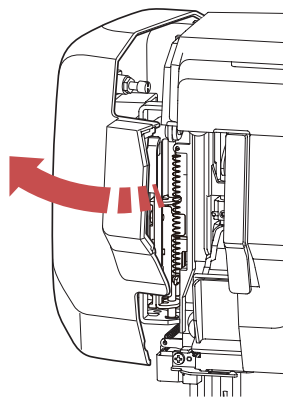
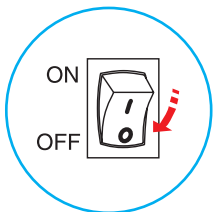
If the automatic needle threader is stuck and will not return to the up position automatically, correct it as follows:

Carefully turn the handwheel away from you or toward you to move the needle up a little. The automatic needle threader will return to the up position automatically.

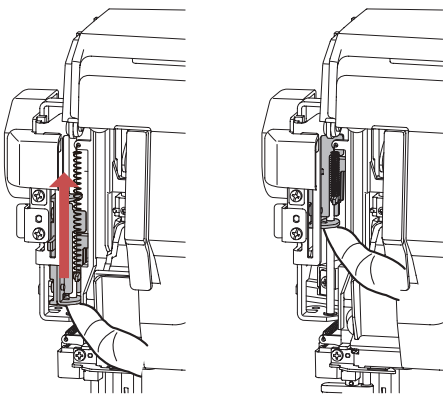
If the automatic needle threader still does not return to the up position, follow the procedure below.



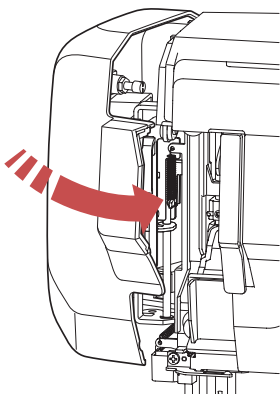
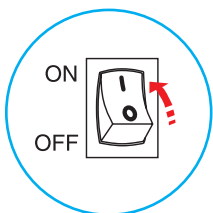
1



2



3



- 1 Turn the power switch off.  
Open the face plate.

- 2 Lift the shaft plate with your finger as far as it goes.

- 3 Close the face plate.  
Turn the power switch on.

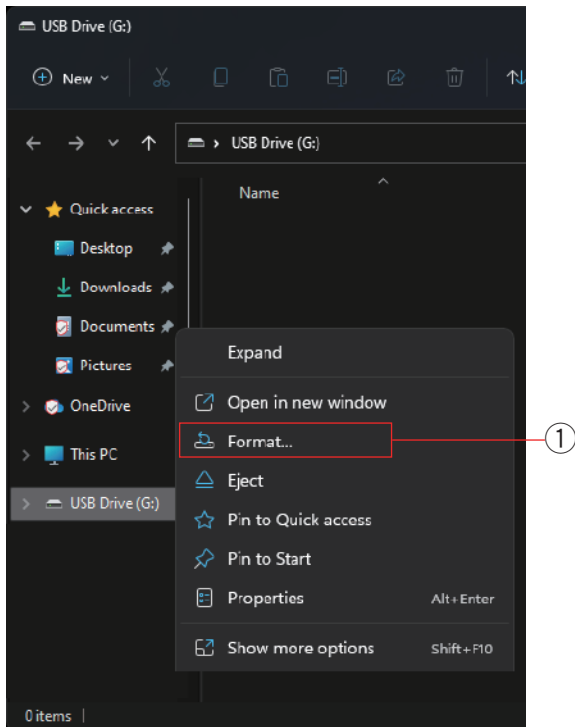
## Formatting USB Flash Drives

### NOTE:

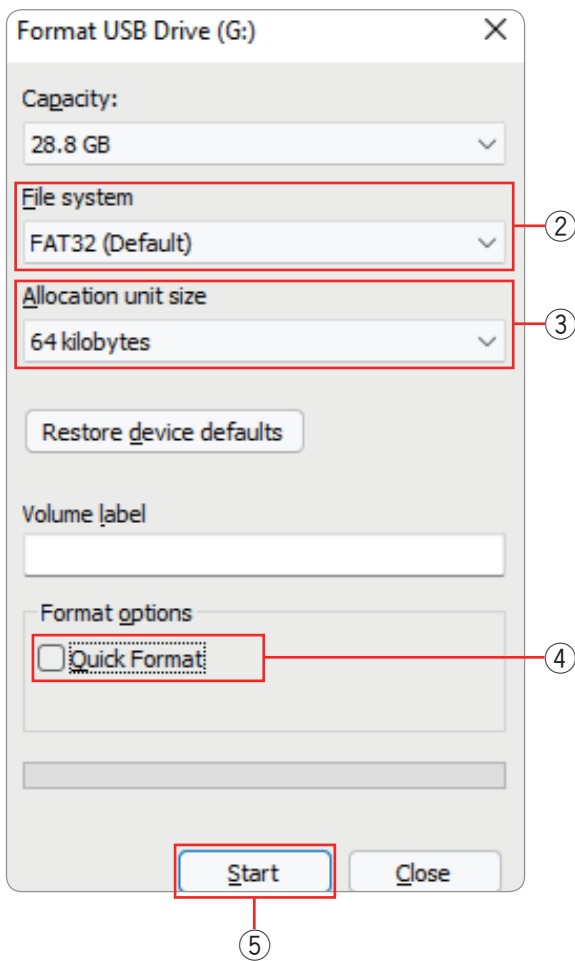
Formatting of USB flash drive must be carried out on a personal computer using Microsoft Windows.\*

For Windows 11 and 10 users, screen shot samples using Windows 11 are shown.

- 1 Using File Explorer, right click on the USB flash drive. Click format.
  - 1 Format



2 3 4



- 2 Format dialogue will be displayed. Select FAT16 or FAT32 from file system.
  - 2 File system

### NOTE:

If FAT16 or FAT32 cannot be selected, use other PC. Do not use Windows 8.1 for formatting. Or use other USB flash drive which can be read.

- 3 From allocation unit size, select a size of 64 kilobytes or less.
  - 3 Allocation unit size

### NOTE:

Do not check the quick Format.

- 4 Quick Format
- 4 Click the start key.
    - 5 Start key

\* Windows is a registered trademark of Microsoft Corporation.

## Formatting USB Flash Drives (Continued)

- 5 After the start key is clicked, the confirmation message will be displayed.

### NOTE:

If there is any important data remaining on the USB flash drive, click the cancel key. After saving the data elsewhere, begin the process again from [1](#).

- 6 Cancel key

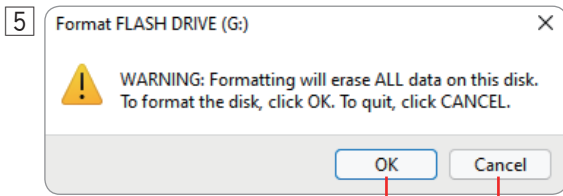
Click the OK key to begin formatting.

- 7 OK key

- 6 A message will be displayed when the formatting is complete.

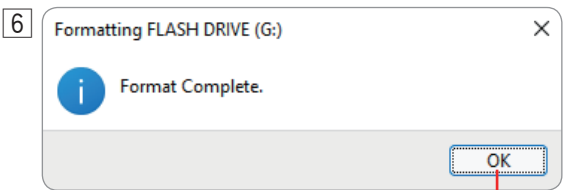
Click the OK key.

- 8 OK key



7

6



8



## Stitch Chart

Utility (U)								Buttonhole (B)							Applique (A)						1
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	1	2	3	4	5	6	
9	10	11	12	13	14	15	16	8	9	10	11	12	13	14	7	8	9	10	11	12	
17	18	19	20	21	22	23	24	15	16	17	18	19	20	21	13	14	15	16	17	18	
25	26	27	28	29	30	22	23	24	25	19	20	21	22								

Part No.: 868-821-A01

Cross-stitch (C)						Heirloom (H)									Quilt (Q)						2	
1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6		
7	8	9	10	11	12	10	11	12	13	14	15	16	17	18	7	8	9	10	11	12	13	14
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	15	16	17	18	19	20	21
19	20	21	22	23	24	29	30	31	32	33	34	35	36	37	38	22	23	24	25	26	27	28

Part No.: 868-821-A02

\* Stitch patterns in blue can be flipped vertically (Horizontal mirror image).



## Stitch Chart

Satin (S)			Bridge (BR)			Decorative (D)																	5
37	38	39	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
40	41	42	4	5	6	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
43	44	45	7	8	9	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	
46	47	10	11	12	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68		

Part No.: 868-821-A05

Decorative (D)																							6		
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	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	
119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166			

Part No.: 868-821-A06

\* Stitch patterns in blue can be flipped vertically (Horizontal mirror image).

## Stitch Chart

Botanical (BO)																	Long (L)					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	1	2	3	4	5	6
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	7	8	9	10	11	12
35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	13	14	15	16	17	18
52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	19	20	21	22	23			

Part No.: 868-821-A07

Animals (AN)									Life Style (LS)												
1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10	11	12	13
10	11	12	13	14	15	16	17	18	14	15	16	17	18	19	20	21	22	23	24	25	26
19	20	21	22	23	24	25	26	27	27	28	29	30	31	32	33	34	35	36	37	38	39
28	29	30	31	32	40	41	42	43	44	45	46	47	48	49							

Part No.: 868-821-A08

\* Stitch patterns in blue can be flipped vertically (Horizontal mirror image).

## Stitch Chart

Kids(K)																			Seasons(SE) 9			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	1	2	3	
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	4	5	6	
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	7	8	9	
58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	10	11	12			

Part No.: 868-821-A09

Seasons(SE)			Words (W)					Mirage (M)					Straight Plate-Utility			HP Plate-Utility			Monograms 10			
13	14	15	1	2	3	4	5	1	2	3	4	5	1	2	3	1	2	3	A a 1 À			
			Sweet	Love	LOVE	Love	Coffee												À a 1 À			
16	17	18	6	7	8	9	10	6	7	8	9	10	4	5	4	A a 1 À						
			fashion	stitch	Quilt	Sewing	Happy									A 1						
19	20	21	11	12	13	14	15	11	12	13	14	15	Straight Plate-Quilt			HP Plate-Quilt			АБ аб 1			
			life	Chus	*Handmade*	Birthday	Thank you						1	2	3	1	2	3				
			16	17				16	17	18	19	20	4	5	6	7	8	4	5	6	Horizontal Mirror Image	
			Dad	Mom																	1 ... Blue	

Part No.: 868-821-A10

\* Stitch patterns in blue can be flipped vertically (Horizontal mirror image).

