Instruction Book



IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic safety precautions should always be followed, including the following:

This sewing machine is designed and manufactured for household use only.

Read all instructions before using this sewing machine.

DANGER— To reduce the risk of electric shock:

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

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

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

SAVE THESE INSTRUCTIONS

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

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



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

TABLE OF CONTENTS

GETTING READY TO SEW

Names of Parts 4
Standard Accessories 6
Extension Table 8
  Free arm sewing 8
Accessory Storage 8
Connecting the Power Supply 9
Controlling Sewing Speed 10
Speed control slider 10
Foot Control 10
Extra Wide Table 11
Machine Operating Buttons 12
Common Keys 13
Setting the Spool of Thread 14
  Additional spool pin 14
Winding the Bobbin 14-16
  Removing the bobbin 14
  Winding the bobbin 15
  Inserting the bobbin 16
Threading the Machine 17
Automatic Needle Threader 18
Drawing up the Bobbin Thread 19
Replacing Needles 20
Fabric, Thread and Needle Chart 20
Replacing the Presser Foot 21
Replacing the Foot Holder 22
  Removing the presser foot holder 22
  Attaching the dual feed holder 22
  Detaching and attaching the dual feed foot 23
  Attaching the darning foot PD-H 23
  Attaching the embroidery foot P 23
  Attaching the couching foot PC-1 or PC-2 23
Replacing the Needle Plate 24
Raising and Lowering the Presser Foot 25
Knee Lifter 25
Retractable Sewing Light 26
Optic Magnifier 26
Mode Selection 27
  On-screen Help 27

ORDINARY SEWING MODE

Ordinary Stitch Patterns 28-29
Function Keys in Ordinary Sewing Mode 30-31
Utility Stitches 32
Straight stitches 32
  Starting to sew 32
  Sewing from the edge of thick fabric 32
  Changing sewing direction 32
  Turning a square corner 32
  Securing seams 33
  Cutting threads 33
  Using the seam guide lines 33
  Angle scale on the needle plate 33
Variety of Straight Stitches 34
Sewing with the Dual Feed Device 35
  Dual feed balancing dial 35
Zigzag Stitches 36
Variety of Overcasting Stitches 37
Manual Stitch Settings 38
  Altering needle drop position (straight stitches) 38
  Altering stitch width 38
  Altering stitch length 38
  Adjusting thread tension 39
  Adjusting foot pressure control 39
  Foot up for pivoting 39
Favorite Stitch Adjustment 40-41
Cloth Guide 42
Other Utility Stitches 43-44
Buttonholes and Specialty Stitches 45
Variety of Buttonholes 45
B1 Sensor (Square) Buttonhole 46-47
  Double layer buttonhole 47
  Manual settings 48
  Using the stabilizer plate 49
B2 Automatic (square) buttonhole 50
Other Buttonholes 52
B13 Welted Buttonhole (Bound buttonhole) 53-54
Corded Buttonhole 55
Specialty Stitches 55-57
  B14 Button Sewing 55
  B15 Darning 56
  Fly Stitches (B17 to B20) 57
  Eyelets (B21 to B25) 57
Decorative Stitches 58-61
Quilting(Q) 62
  Using the quilting guide bar 62
  Q1-Q3 Patchwork piecing 62
  Q66-Q67 Hand-look quilt stitches 62
S1-S29 Decorative Satin Stitches 63
  Elongation ratio 63
Created Stitches (CS) 64
Twin Needle Sewing 65
Programming a Pattern Combination 66
  Mirror image of patterns 66
  Bridge stitches 66
Editing a Pattern Combination 67
  Deleting a pattern 67
  Inserting a pattern 67
Startover Key 68
  Current pattern startover 68
  First pattern startover 68
Checking Pattern Combination Length 69
Monogramming 70
  Function keys 70
Manual thread tension 71
  Individual thread tension adjustment 71
  Unified thread tension adjustment 71
  Spacing 71
  Reducing the size of letters 71
Programming a Monogram 72
Saving a Pattern Combination 73
  Creating a new folder 73
  Changing the folder name or file name 73
Opening a Pattern Combination 74
Sewing Application 75
Seaming 76
Overedge 77
Blind Hem 78
Shell Tuck 79
Rolled Hem 80
Zipper Sewing 81
  Lapped zipper sewing 81-83
  Concealed zipper sewing 84-85
Gathering 86
Basting 86
Button Sewing 87
Tacking 88
Applique 89

Patchwork 90
Quilting 91-93
Straight stitches (with dual feed) 91
Quilting guide bar for dual feed foot 91
Clasp stitches 91
Free quilting 92
One stitch off 92
Foot height for free motion quilting 92
Sculpture stitches 92
Hand-look quilt stitches 93
Variable zigzag 93
Maximum zigzag width adjustment 93

CUSTOMIZING MACHINE SETTINGS

Machine Setting Mode 94
Registering the custom settings 94
Common Setting Mode 95-98
Ordinary Sewing Setting Mode 99-101
Language Selection Mode 102
Correcting Deformed Stitch Patterns 102

EMBROIDERY MODE

Embroidery Unit 103-105
Attaching the embroidery unit 103
Extending the carriage arm 104
Detaching the embroidery unit 105
Attaching the Embroidery Foot 106
Attaching the Straight Stitch Needle Plate 107
Special Bobbin Holder for Embroidery 108
Bobbin Winding While Working on an Embroidery Project 108
Embroidery Hoops 109
Stabilizers 110
Types of the stabilizers 110
Setting the Fabric in an Embroidery Hoop 111
Attaching the Embroidery Hoop to the Machine 112
Thread Holder 112
Selecting Built-in Embroidery Designs 113
Design category 113
Hoop size 114
Monogramming 114-118
Function keys 115
Programming a monogram 116
Monogram placement 116
2- Letter monogram 117
Editing a monogram 118
Ready to Sew Window 119
Function keys 119
Pattern information 119
Stitch back/forward keys 120
Jump key 120
Cross key 120
Color section key 120
Color list key 120
Jog keys 120
Trace key 121
Hoop back key 121
Adjust key 122
• Auto thread tension level 122
• Cutting the tails of jump threads 122
• Embroidery foot height 122
Embroidery foot key 122
Embroidery mode key 123
Starting to Sew Embroidery 124
Applique Designs 125
Fringe Designs 126-129
Fringe designs for applique 128
Alternative method 129
Frame Designs 130
Lace Designs 131
Editing Mode 132-141
Selecting a hoop size 132
Opening the embroidery designs 132
Editing tool bar information 133
Selecting a pattern 133
Moving a pattern 133
Selecting a pattern with pattern selection keys 134
Resizing a pattern 134
Duplicating a pattern 134
Deleting a pattern 135
Rotating a pattern 135
Flipping a pattern 136
Creating a square frame 136
Grouping patterns 137
Sewing order 138
Color grouping 138
Single color sewing 139
Zooming in the editing window 139
Customizing the display colors 140
Monogramming in an arc 141
Free Arm Embroidery 142
Couching Designs 143-145
Pennant Designs 146

CUSTOMIZING EMBROIDERY MODE SETTINGS

Embroidery Mode Settings 147
Thread cutting 148
Saving and Opening a File 150
Saving a file 150
Creating a new folder 151
Deleting a file or folder 151
Opening a file 151
Changing a name of the file or folder 152
Direct PC-Link 152

CARE AND MAINTENANCE

Cleaning the Hook Area 153
Problems and Warning Signals 154
Troubleshooting 155-156
Troubleshooting (automatic needle threader) 157

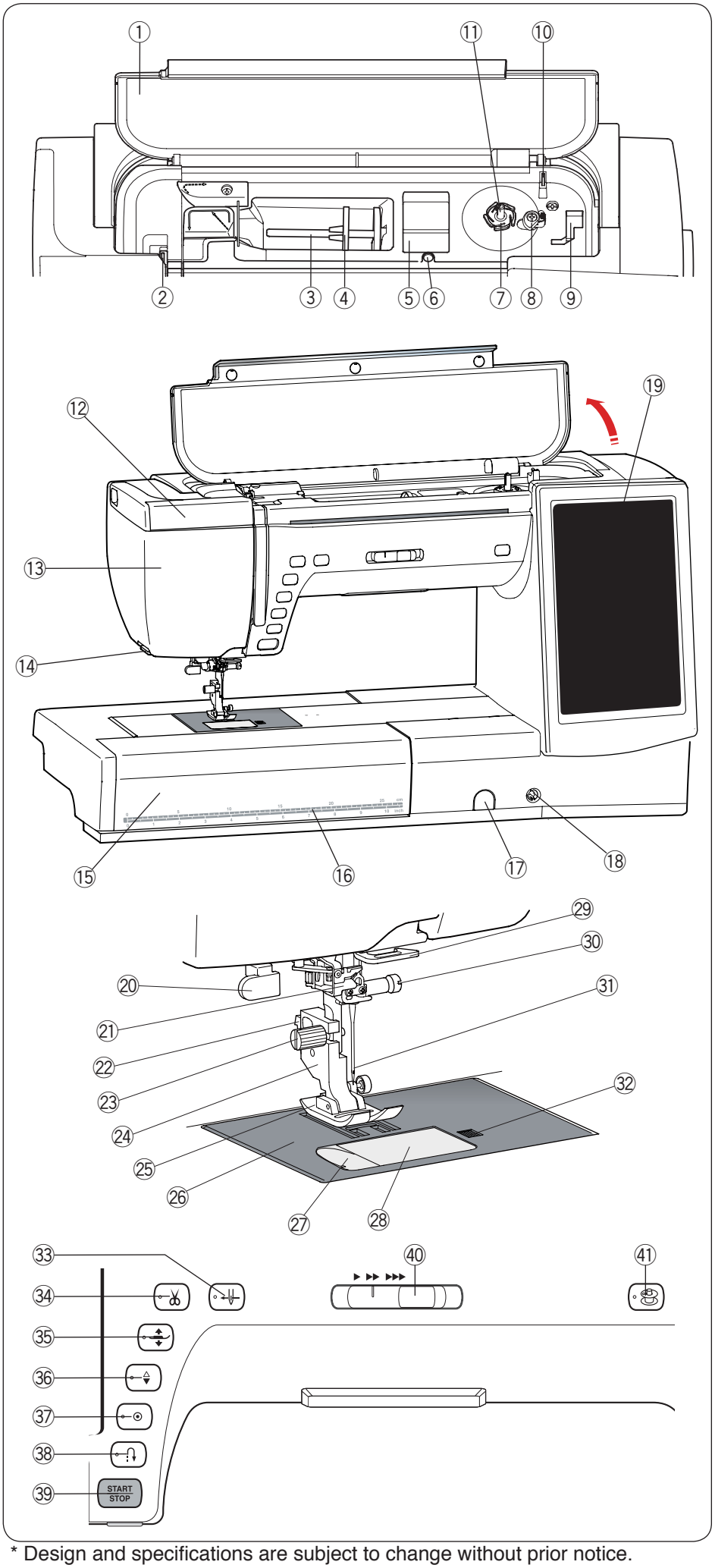
STITCH CHART

Ordinary Sewing 158-160

DESIGN CHART

Embroidery 161-169

INDEX 170-172



GETTING READY TO SEW

Names of Parts

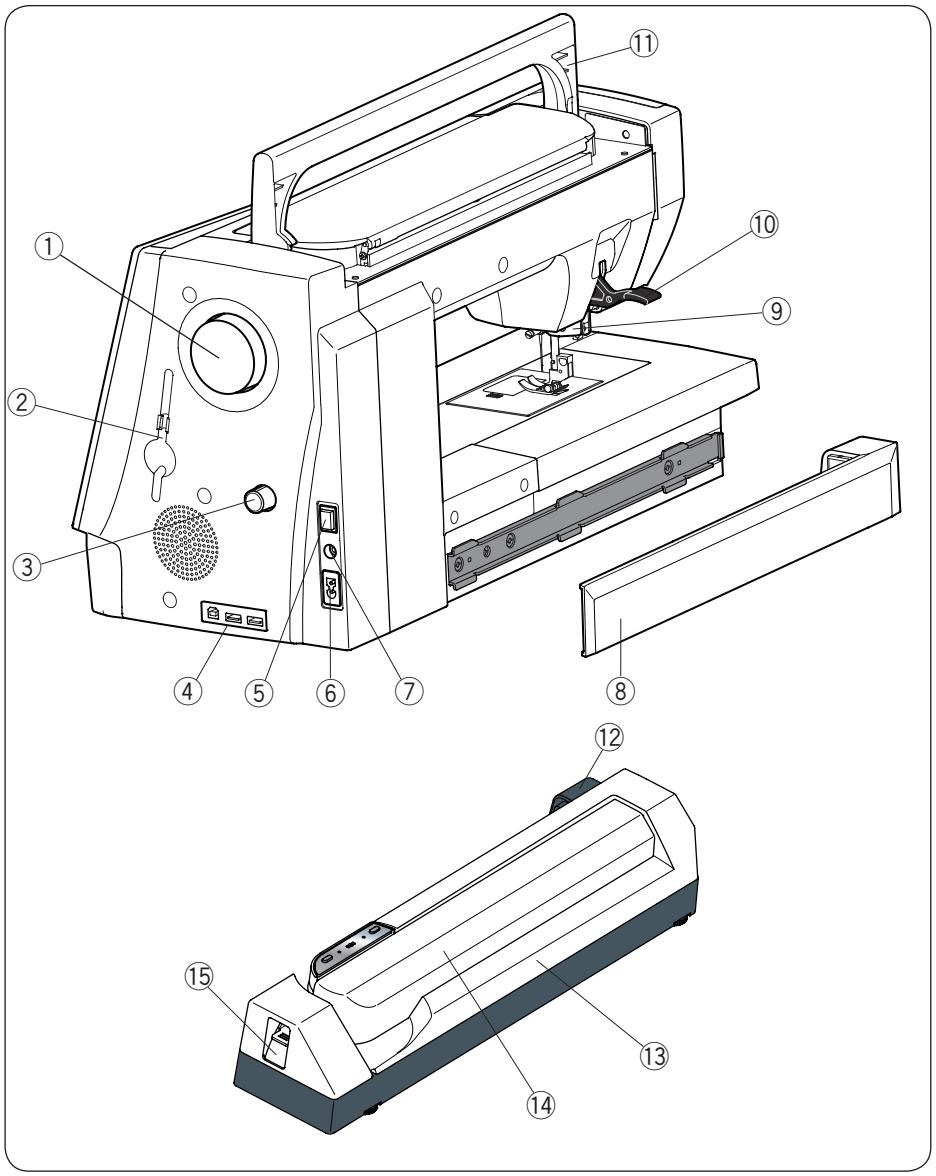
① Top cover
② Thread take-up lever
③ Spool pin
④ Spool holder (large)
⑤ Foot compartment
⑥ Hole for additional spool pin
⑦ Bobbin thread cutter A
⑧ Bobbin winder stopper
⑨ Foot compartment (for P foot)
⑩ Bobbin thread cutter B
⑪ Bobbin winder spindle

⑫ Retractable light
⑬ Face plate
⑭ Thread cutter/holder
⑮ Extension table
⑯ Centimeter/inch measurements
⑰ Feed balancing dial cap
⑱ Knee lifter socket
⑲ Visual touch screen

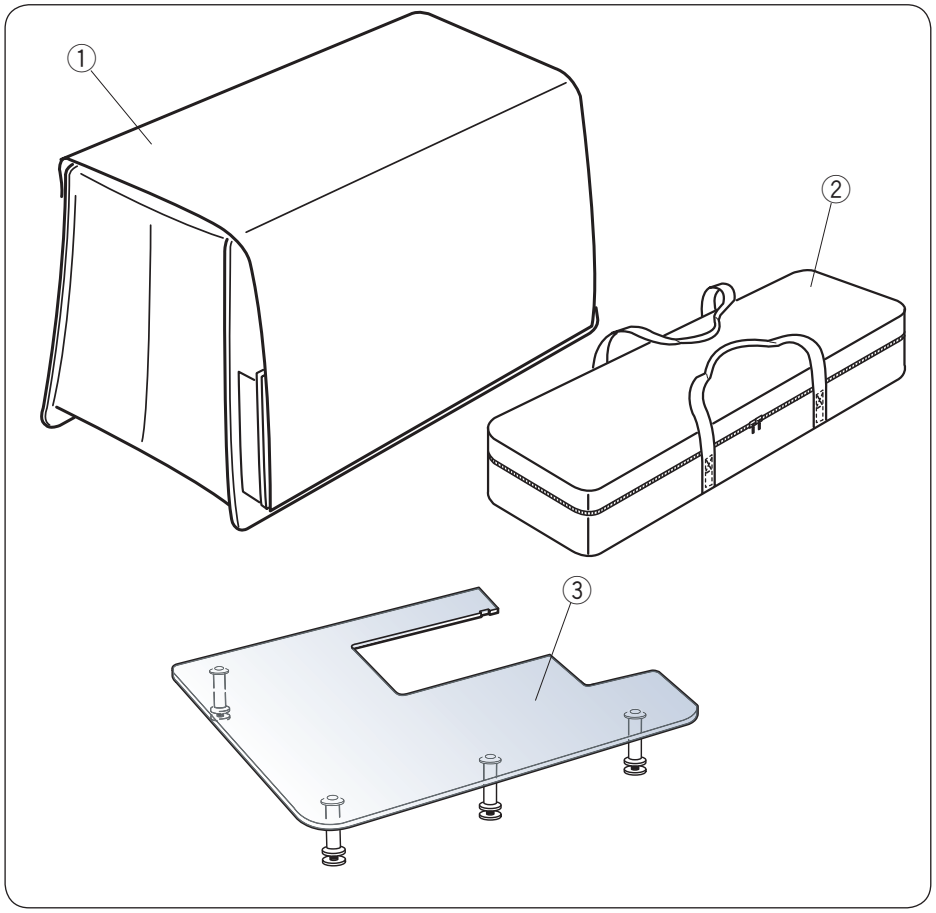
⑳ Buttonhole lever
㉑ Automatic needle threader
㉒ Lever
㉓ Thumbscrew
㉔ Presser foot holder
㉕ Presser foot
㉖ Needle plate
㉗ Thread cutter
㉘ Hook cover plate
㉙ Lower thread guide
㉚ Needle clamp screw
㉛ Needle
㉜ Hook cover release button

㉝ Needle threader button
㉞ Thread cutter button
㉟ Presser foot lifter button
㊱ Needle up/down button
㊲ Auto-lock button
㊳ Reverse button
㊴ Start/stop button
㊵ Speed control slider
㊶ Bobbin winding button

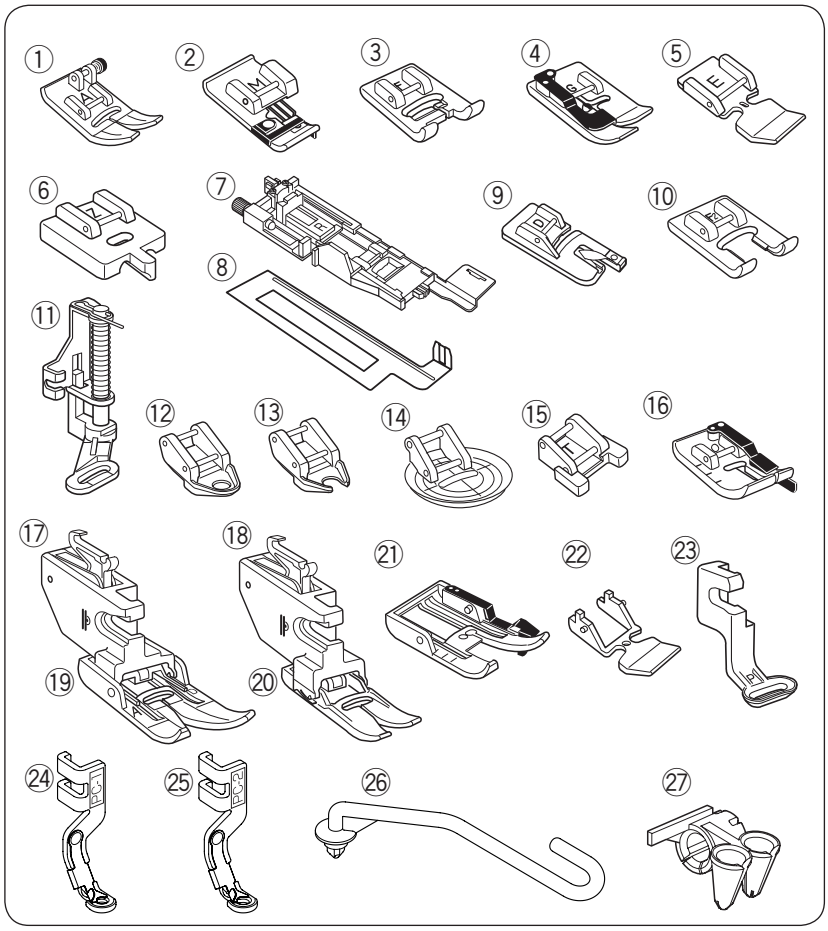
* Design and specifications are subject to change without prior notice.

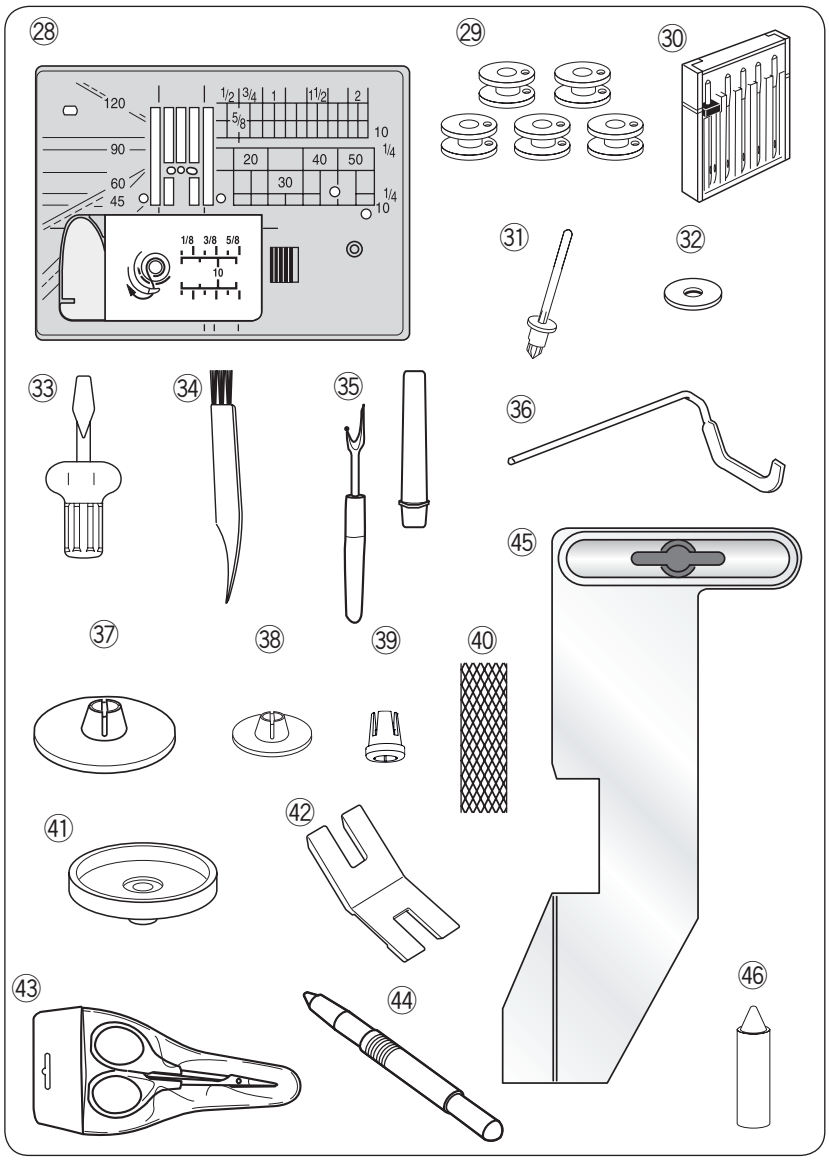


① Hand wheel
② Touch panel stylus holder
③ Dual feed balancing dial
④ USB ports
⑤ Power switch
⑥ Power inlet
⑦ Foot control jack
⑧ Cover
⑨ Dual feed drive
⑩ Presser foot lifter
⑪ Carrying handle
⑫ Embroidery unit socket
⑬ Embroidery unit
⑭ Carriage arm
⑮ Carriage arm release lever



① Semi-hard fabric cover
② Embroidery unit case
③ Extra wide table

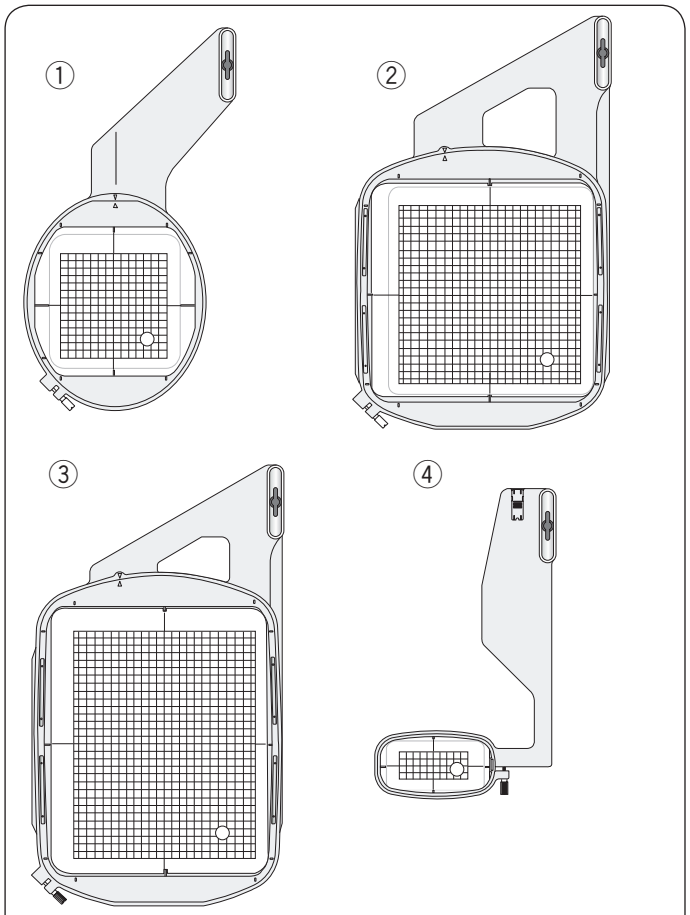


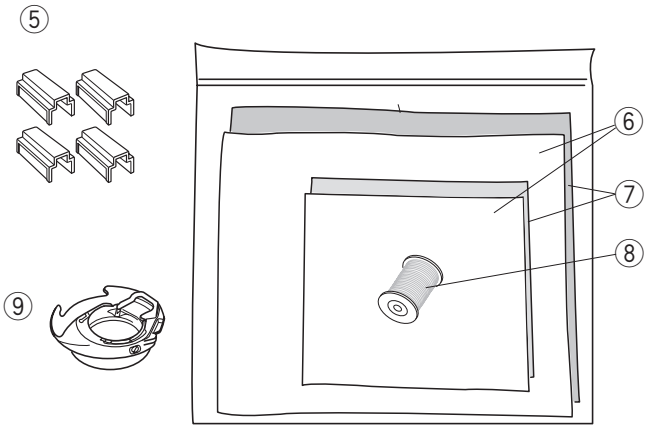


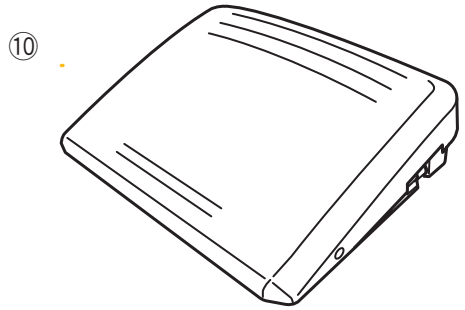
Standard Accessories

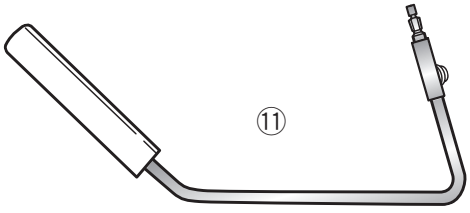
① Zigzag foot A (set on the machine)
② Overedge foot M
③ Satin stitch foot F
④ Blind hemming foot G
⑤ Zipper foot E
⑥ Concealed zipper foot Z
⑦ Automatic buttonhole foot R
⑧ Stabilizer plate
⑨ Rolled hem foot D
⑩ Open toe satin stitch foot F2
⑪ Darning foot PD-H
⑫ Free motion quilting closed-toe foot QC
⑬ Free motion quilting open-toe foot QO
⑭ Free motion quilting zigzag foot QV
⑮ Button sewing foot T
⑯ 1/4″ seam foot O
⑰ Dual feed holder (twin)
⑱ Dual feed holder (single)
⑲ Dual feed foot AD (twin)
⑳ Dual feed foot VD (single)
㉑ Dual feed quilt piecing foot OD (twin)
㉒ Dual feed zipper foot ED (single)
㉓ Embroidery foot P
㉔ Couching foot PC-1
㉕ Couching foot PC-2
㉖ Yarn guide bar
㉗ Yarn guide

㉘ Straight stitch needle plate
㉙ Bobbin x 5 (1 set on the machine)
㉚ Needle set
㉛ Additional spool pin
㉜ Felt
㉝ Screwdriver
㉞ Lint brush
㉟ Seam ripper (buttonhole opener)
㊱ Quilting guide bar
㊲ Spool holder (large) (set on the machine)
㊳ Spool holder (small)
㊴ Spool holder (special)
㊵ Net
㊶ Spool stand
㊷ Button shank plate
㊸ Scissors
㊹ Touch panel stylus
㊺ Cloth guide
㊻ Bobbin holder cleaner



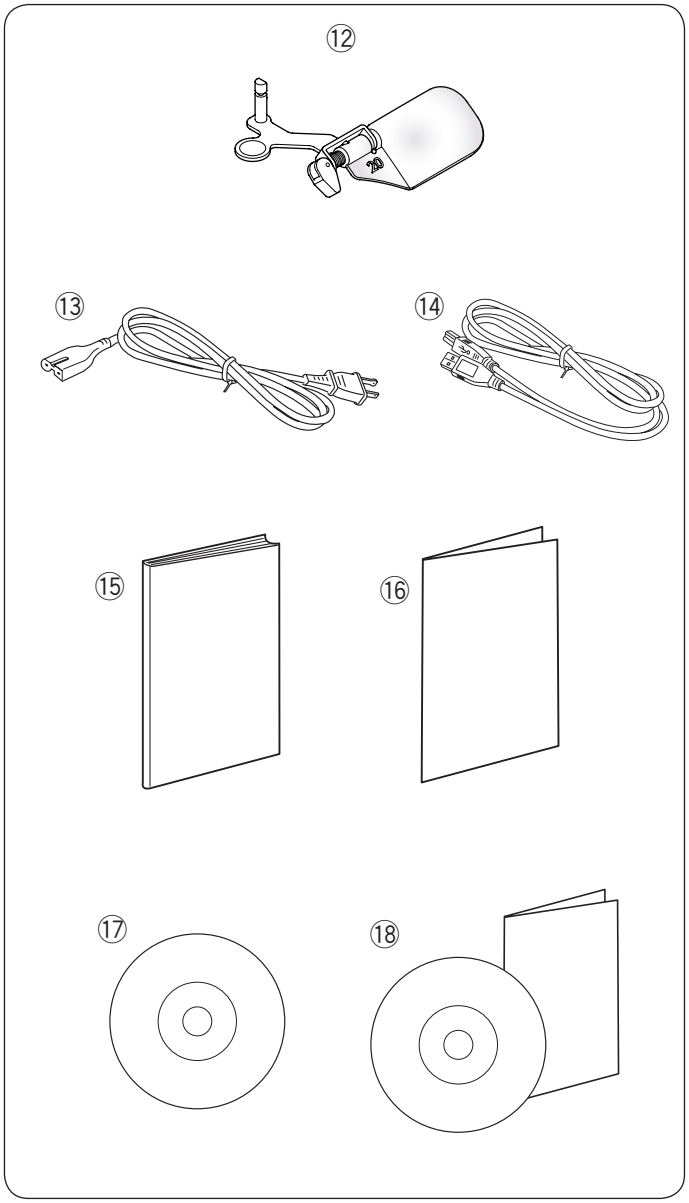


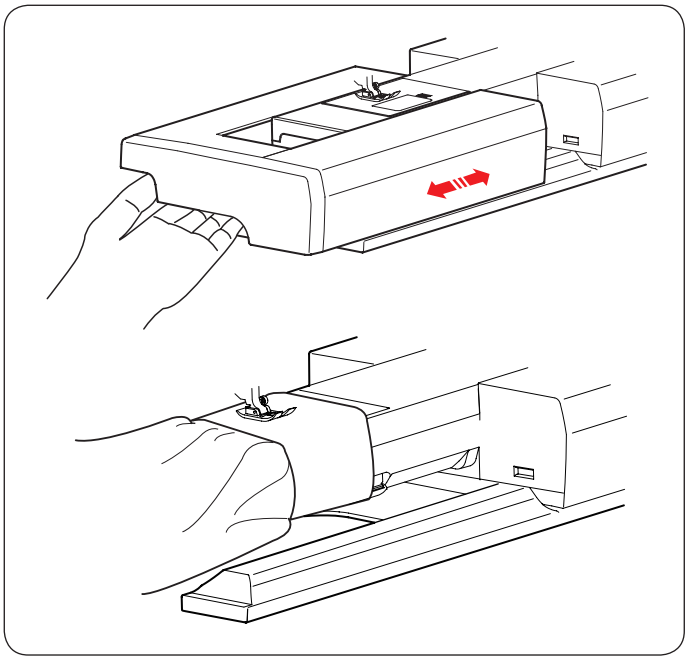




① Embroidery hoop SQ14 (with template)
② Embroidery hoop SQ23 (with template)
③ Embroidery hoop GR (with template)
④ Embroidery hoop FA10 (with template)
⑤ Magnetic clamps (for SQ23 and GR)
⑥ Felt
⑦ Stabilizers
⑧ Bobbin thread for embroidery
⑨ Special bobbin holder for embroidery
⑩ Foot control
⑪ Knee lifter
⑫ Optic magnifier (20)
⑬ Power cable*
⑭ USB cable
⑮ Instruction book
⑯ Key icon reference chart
⑰ Instructional video DVD
⑱ Acutools CD-ROM (with installation guide)

* The power cable included may differ from the illustration.





Extension Table

The extension table provides an extended sewing area and can be removed for free arm sewing.

To remove:

Draw the table to the left.

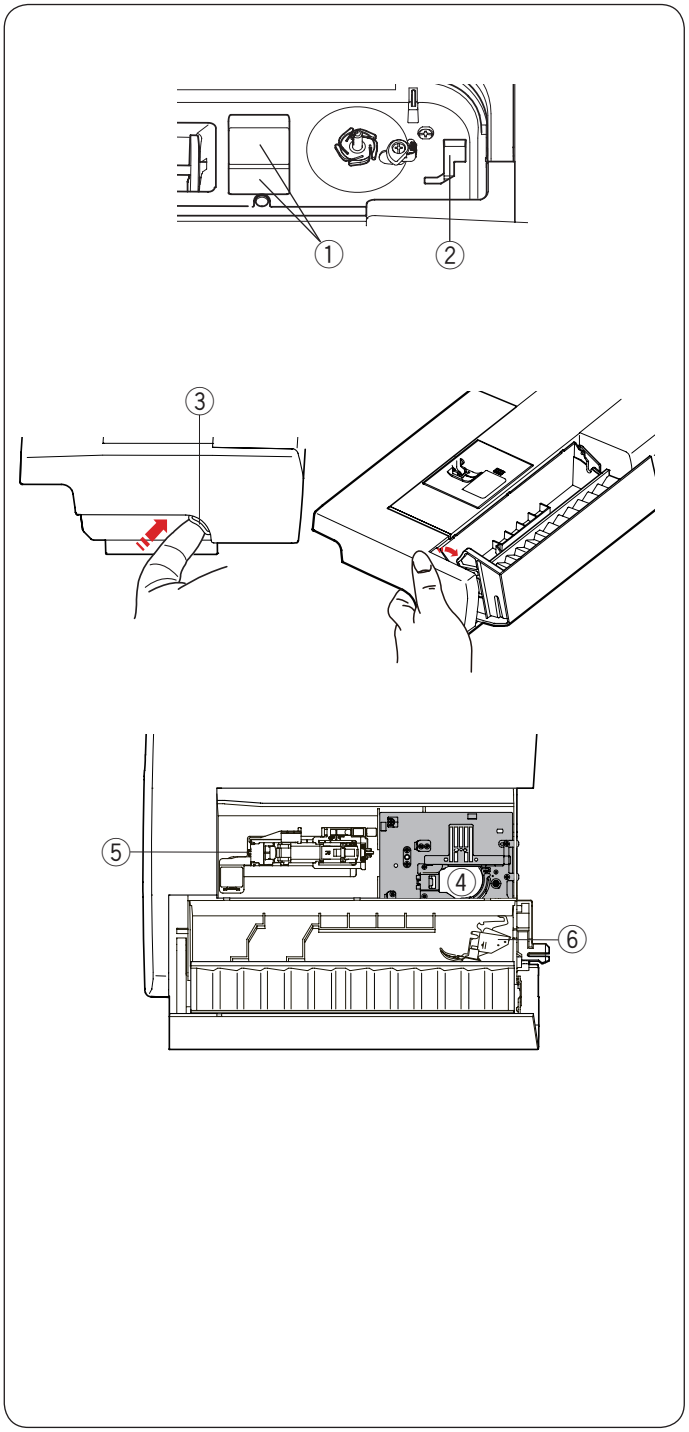
To attach:

Slide the table on the base and push it to the right.

Free arm sewing

The free arm is used for stitching sleeves, waistbands, pant legs or any other tubular garments.

It is also useful for darning socks or elbows.

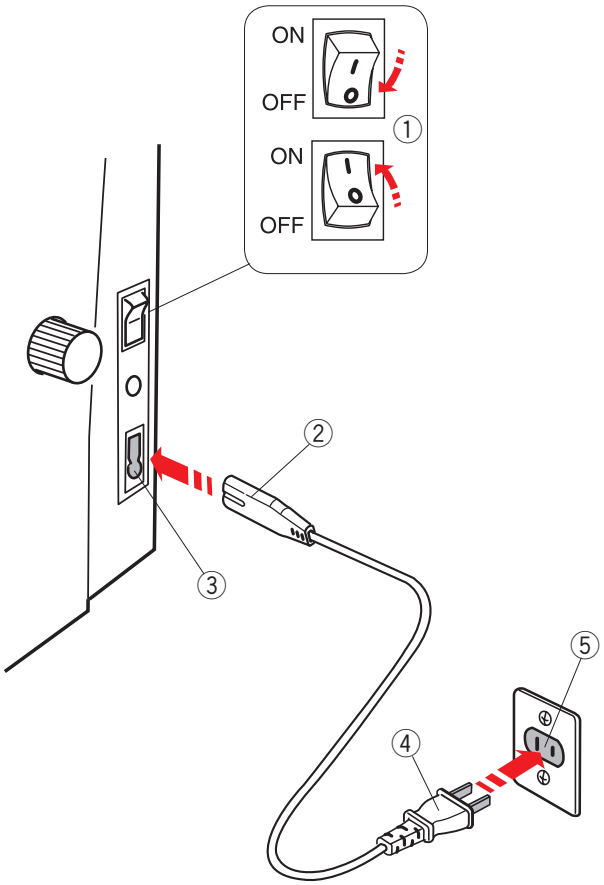


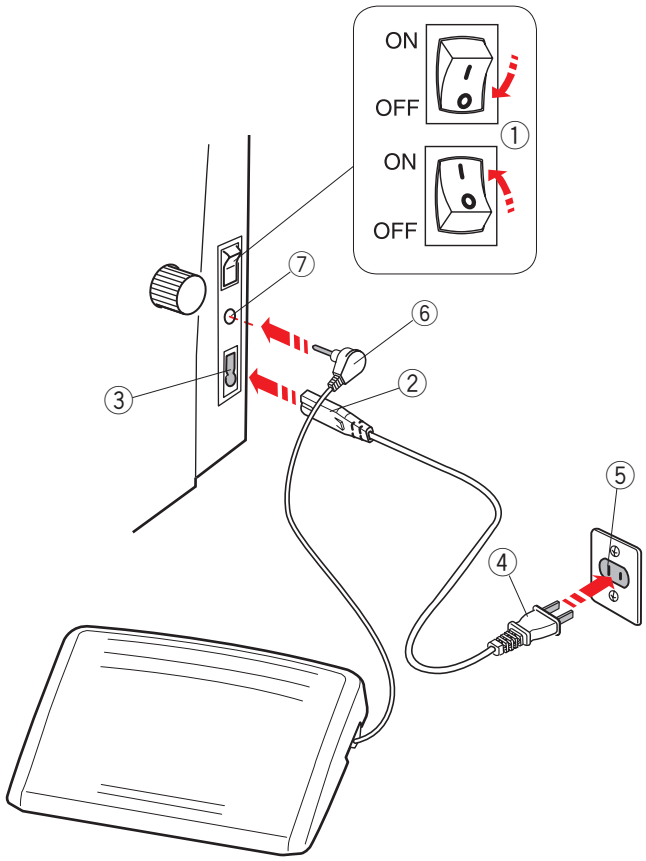
Accessory Storage

The accessories can be conveniently stored in the accessory case, the compartment in the extension table and the compartment under the top cover.

To store the accessories in the compartment of the extension table, push up the lever towards you to open the accessory storage.

① Foot compartment
② Foot compartment for P foot
③ Lever
④ Straight stitch needle plate (Place it upside down as shown.)
⑤ Automatic buttonhole foot and stabilizer plate
⑥ Dual feed holder (twin)





Connecting the Power Supply

1 First make sure the power switch ① is off.
2 Insert the machine plug ② of the power supply cord into the power inlet 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 Power inlet
④ Power supply plug
⑤ Wall outlet

NOTE:
Make sure to use the power 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 attaching or removing parts.
- when cleaning the machine.

Do not place anything on the 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 (see page 10).

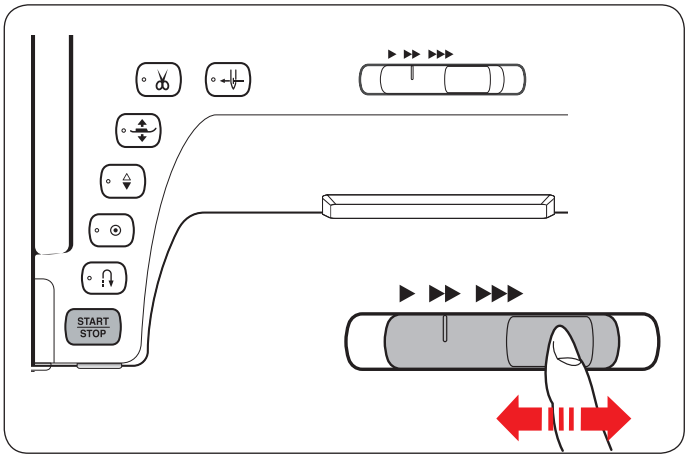
1 First make sure the power switch ① is off.
2 Insert the machine plug ② of the power supply cord into the power inlet ③.
3 Draw out the cord from the foot control and insert the pin connector ⑥ into the jack ⑦ on the machine.
4 Insert the power supply plug ④ into the wall outlet ⑤, and turn the power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

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

NOTE:
- The start/stop button does not work when the foot control is connected.
- The foot control cannot be used in the embroidery mode.
- Do not depress the thread cutter switch when inserting the pin connector into the jack of the foot control (Thread cutter switch is an optional item).

Operating Instructions:
The symbol “O” on a switch indicates the “off” position of the switch.
Foot controller Model 21390 is for use with sewing machine MC 14000.

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.



Controlling Sewing Speed

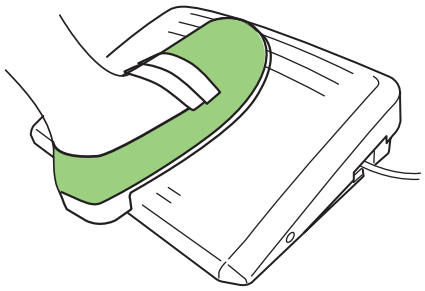
Speed control slider

You can limit the maximum sewing speed in both the ordinary sewing mode and embroidery mode 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

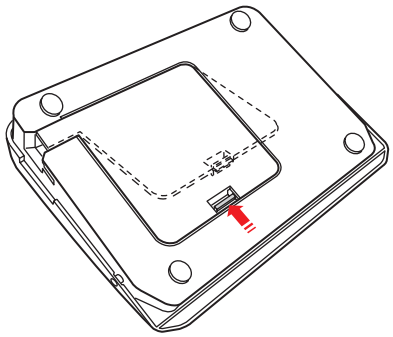
Pressing on the foot control can vary sewing speed. The harder you depress the foot control, the faster the machine runs.

NOTE:
The machine runs at the maximum speed set by the speed control slider when the foot control is fully depressed.

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

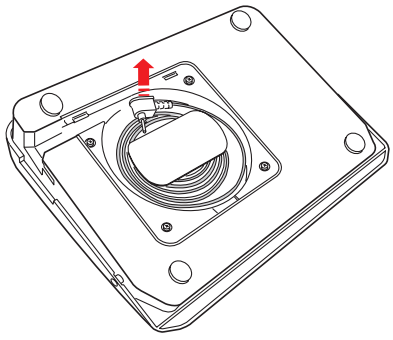
Foot Control Preparation

1



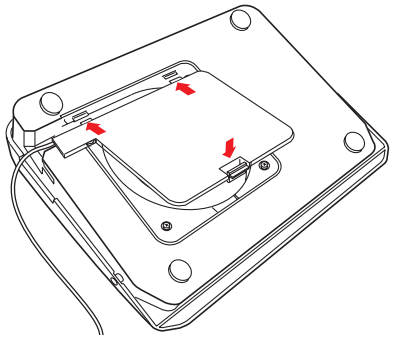
1 Turn the foot control upside down.
Open the cover of the foot control.

2

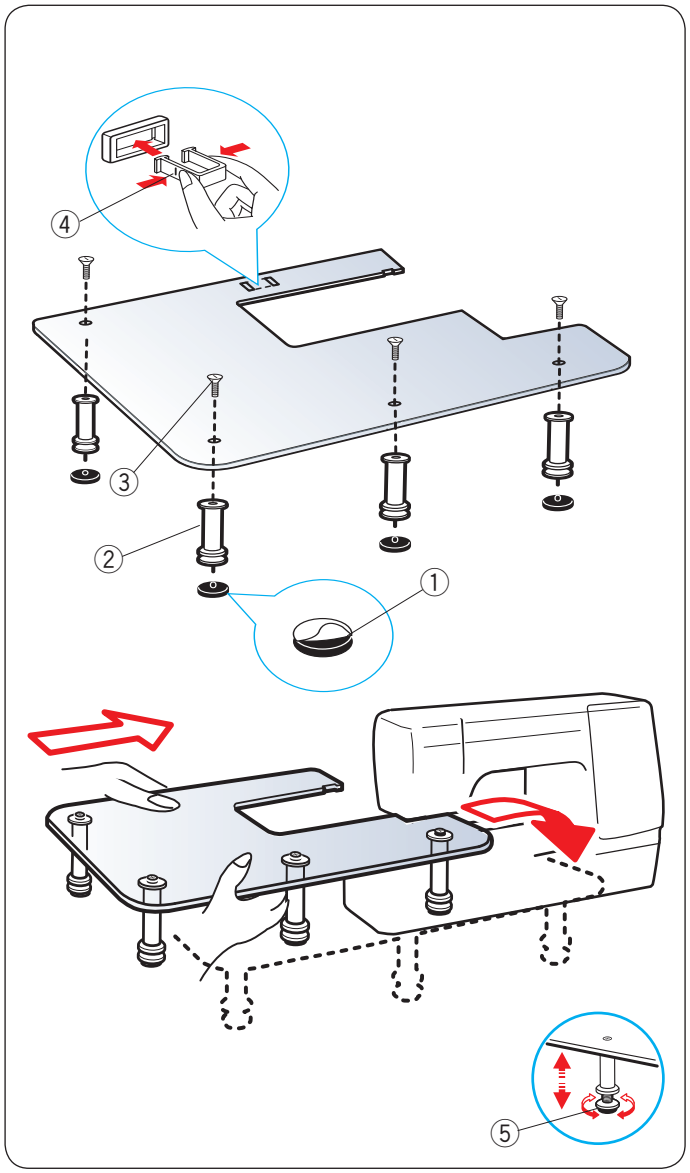


2 Draw out the cable from the foot control.

3



3 Close the cover.



Extra Wide Table

Peel off the backing paper from the rubber soles and attach them to the bottom of the legs

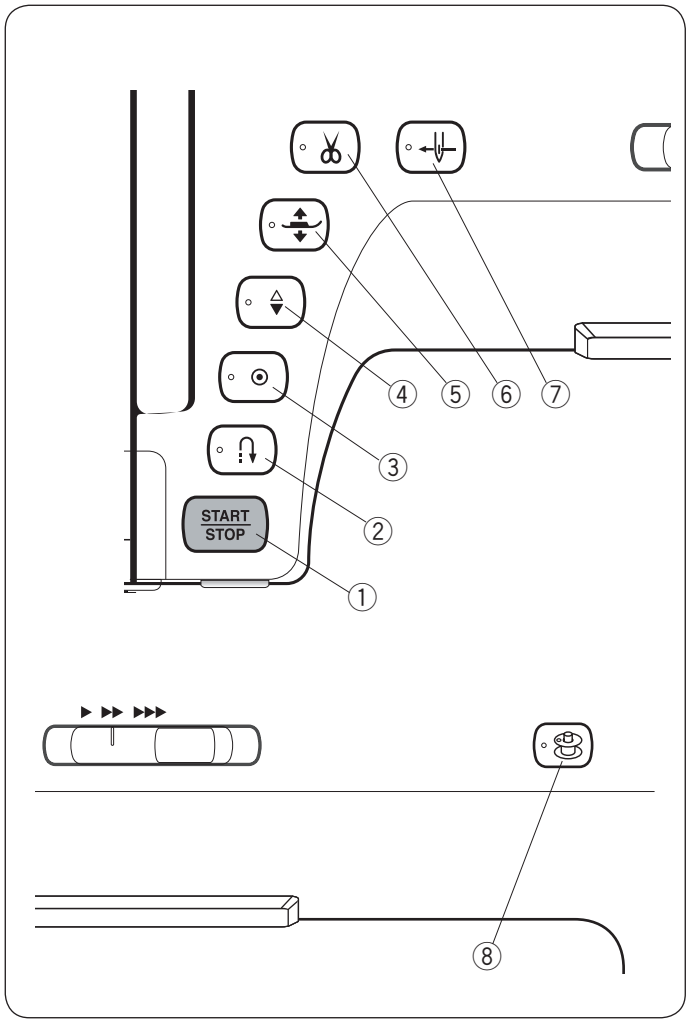
① Rubber sole
② Leg

Attach the 4 legs to the table top with the setscrew.
Attach the table support to the underside of the table by inserting the hooks into the slots.

③ Setscrew
④ Table support

Remove the extension table.
Place the assembled table on the machine.
Adjust the table height by turning the adjusting screws.

⑤ Adjusting screw



Machine Operating Buttons

① Start/stop button

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

In the ordinary sewing mode, the machine starts running slowly for the first few stitches. It then runs at the speed set by the speed control slider.

The machine runs slowly as long as this button is being pressed.

The button turns red when the machine is running, and green when it stops.

NOTE:
The start/stop button cannot be used in the ordinary sewing mode when the foot control is connected.

② Reverse button

When sewing stitch pattern U1, U4, U9-12, Q1-3 or BR1-4, the machine will sew in reverse as long as the reverse button is pressed.

If stitch pattern U1, U4, U9-12, Q1-3 or BR1-4 has been selected and the foot control is not connected, the machine will start sewing in reverse as long as the reverse button is pressed.

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 sewing stitch pattern U1, U4, U9-12, Q1-3 or BR1-4, the machine will immediately sew locking stitches and automatically stop when the auto-lock button is pressed.

When sewing all other patterns, the machine will sew to the end of the current pattern, sew locking stitches and stop automatically.

The machine will trim the threads automatically after locking the stitch when the thread cut after auto-lock option is turned on (refer to page 101).

④ Needle up/down button

The machine will always stop with the needle down except when buttonholes, darning, tacking, eyelets or monograms are selected.

Press this button to bring the needle bar up or down.

⑤ Presser foot lifter button

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

You can also use the presser foot lifter and knee lifter to raise and lower the presser foot.

⑥ Thread cutter button

Press this button when you finish sewing to trim the threads. The needle bar and presser foot automatically rise after trimming the threads.

Refer to page 33.

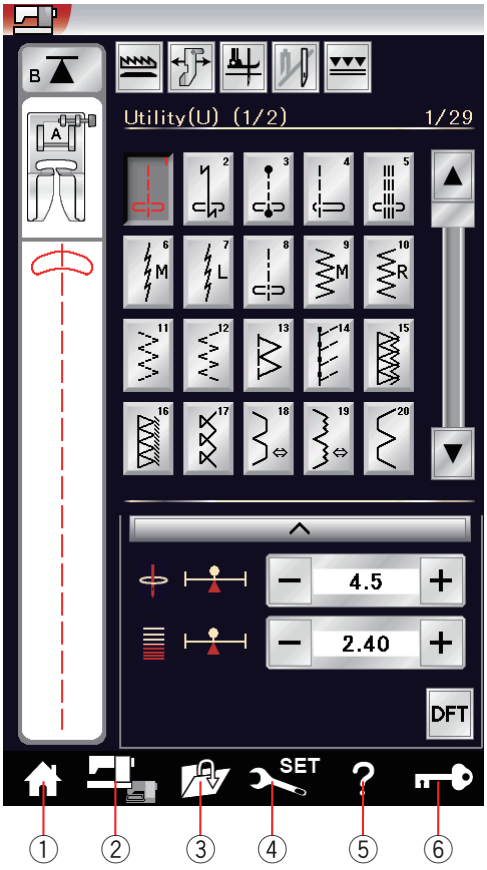
NOTE:
The thread cutter button does not function:
- directly after turning on the power.
- when the presser foot is raised with the foot lifter.
- after being pressed 3 times in a row.

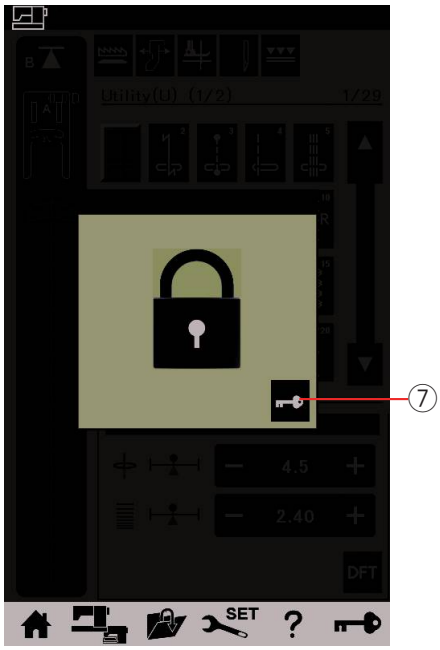
⑦ Needle threader button

Press this button to thread the needle thread through the needle eye (refer to page 18).

⑧ Bobbin winding button

Press this button to wind the bobbin (refer to page 15).





Common Keys

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

① **Home key**
Press this key to enter the category selection of the ordinary sewing mode or embroidery mode.

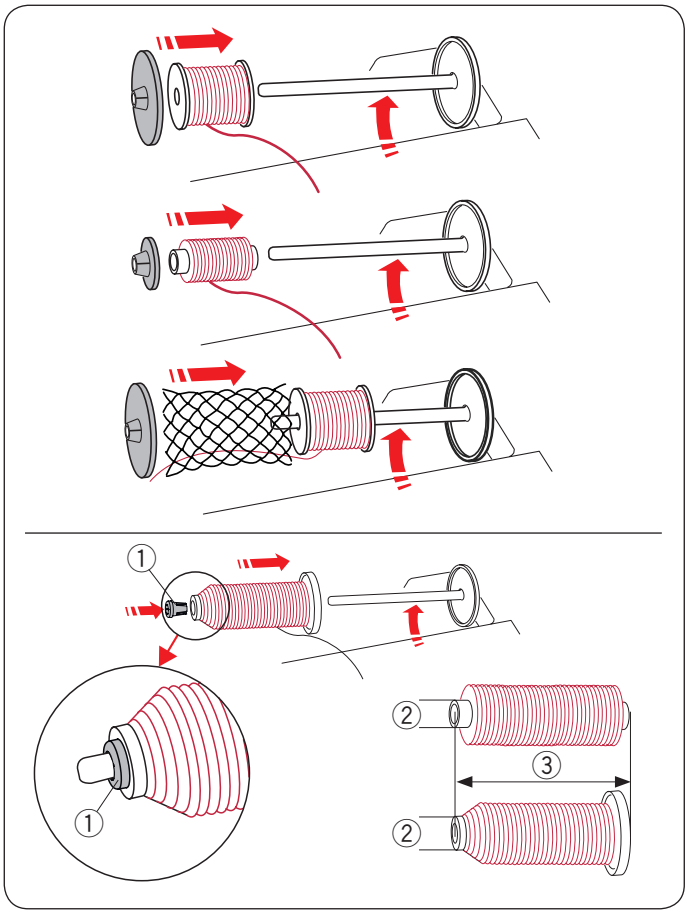
② **Mode switch key**
Press this key to enter into embroidery mode or to return to ordinary sewing mode.

③ **Open file key**
Press this key and the open file window will open.
You can open pattern combinations, monograms and embroidery designs saved in the machine's internal memory or on a USB flash drive.

④ **Set mode key**
Press this key to enter the setting mode. You can customize the machine settings to your preference.
The machine settings for common settings, ordinary sewing, embroidery and language selection are available in this mode.

⑤ **Help movie key**
Press this key to view the on-screen movie about the essential operations.

⑥ **Lockout key**
Press this key to lockout the machine when threading the machine, replacing the accessories etc.
To reduce the risk of injury, all the buttons and keys except for the presser foot lifter and needle threader button are deactivated.
To unlock the machine, press the unlock key ⑦ on the window.



Setting the Spool of Thread

Open the top cover.
Lift up the spool pin. Place the spool of thread on the spool pin.
Attach the large spool holder, and press it firmly against the spool of thread.

NOTE:
Use the small spool holder to hold narrow or small spools of thread.

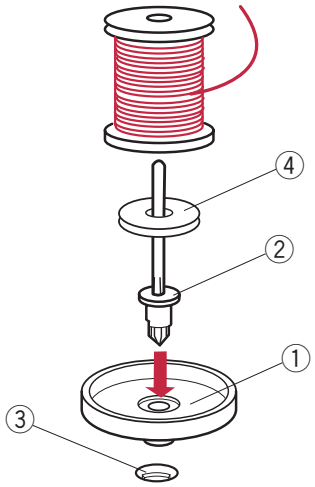
If you use a slippery thread such as monofilament transparent thread, put the net on the spool of thread to prevent the thread from slipping off the spool and jamming around the spool pin.

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

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

① Spool holder (special)
② Hole diameter (3/8″ to 7/16″)
③ Spool length (2 3/4″ to 3″)

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



Additional spool pin

Use the additional spool pin when you need to wind a bobbin without unthreading the machine while working on a sewing project (refer to page 108).
Set the spool stand ① under the additional spool pin ②.
Insert the additional spool pin ② into the hole ③.
Place the felt ④ and a spool on the pin.

① Spool stand
② Additional spool pin
③ Hole for additional spool pin
④ Felt

NOTE:
The additional spool pin is also used for twin needle sewing.

Winding the Bobbin

Removing the bobbin

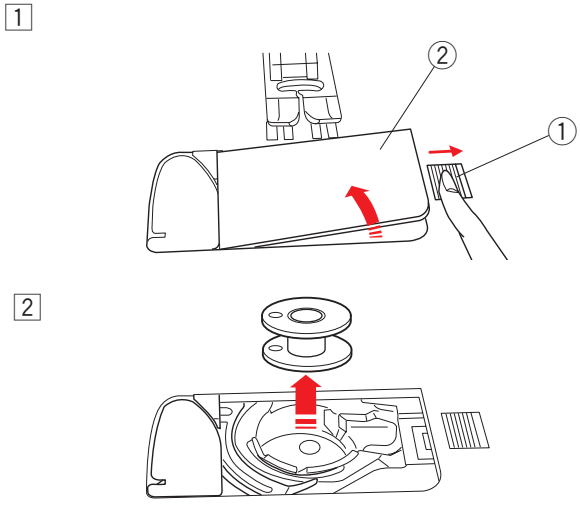
CAUTION:
Press the lockout key or turn the power switch off.

1 Slide the hook cover release button ① to the right, and remove the hook cover plate ②.

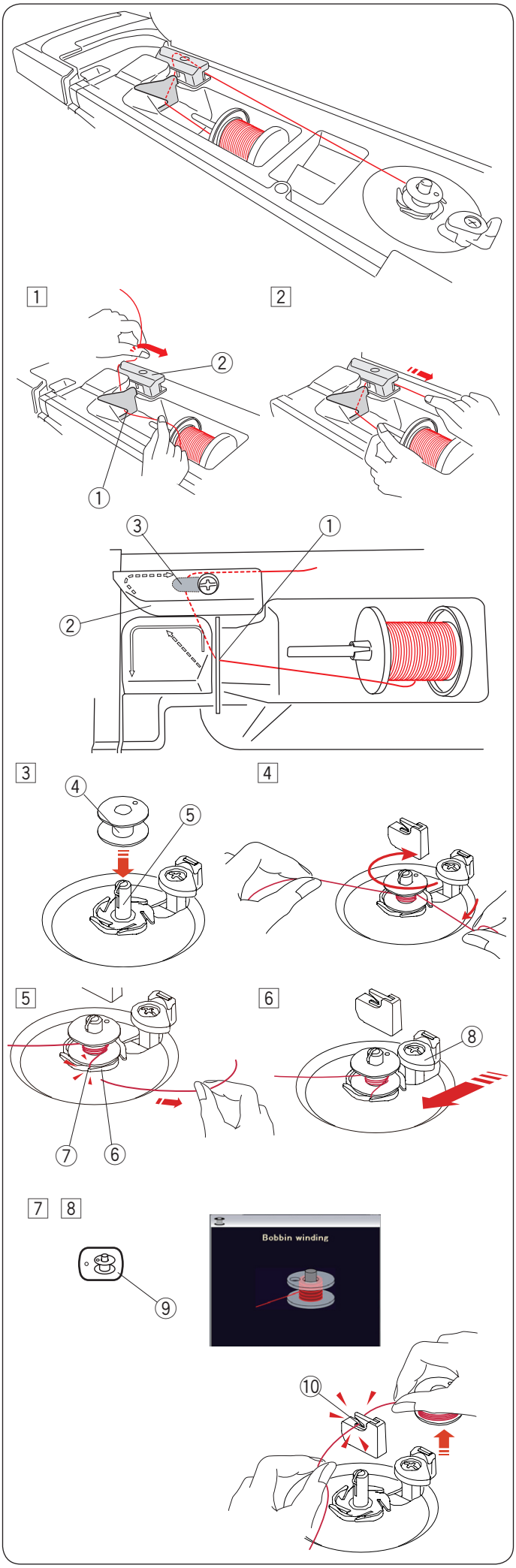
① Hook cover release button
② Hook cover plate

2 Remove the bobbin from the bobbin holder.

NOTE:
Use the plastic bobbins for horizontal hook marked with a “J”. Using other bobbins, such as pre-wound paper bobbins, may cause stitching problems and/or damage to the bobbin holder.



Winding the bobbin



1 Pull the thread from the spool.
Hold the thread with both hands and pass the thread into the guide slot ①.
Draw the thread to the left and forward around the thread guide ②.
Draw the thread to the rear and to the right around and under the guide plate ③.
① Guide slot
② Thread guide
③ Guide plate

2 Firmly pull the thread to the right while holding it with both hands.

NOTE:
You can adjust the bobbin winding speed in the setting mode (refer to page 98).

3 Put the bobbin on the bobbin winder spindle.
④ Bobbin
⑤ Bobbin winder spindle

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

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

6 Push the bobbin stopper ⑧ to the left.
⑧ Bobbin stopper

7 Press the bobbin winding button ⑨. The visual touch screen will show the bobbin winding sign.
⑨ Bobbin winding button

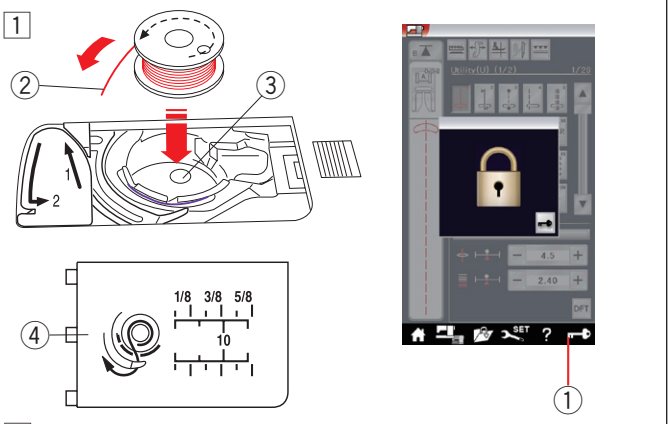
When the bobbin is fully wound, it will stop spinning and the bobbin stopper returns to its original position automatically.

8 Remove the bobbin. Cut the thread with bobbin thread cutter B ⑩.
⑩ Bobbin thread cutter B

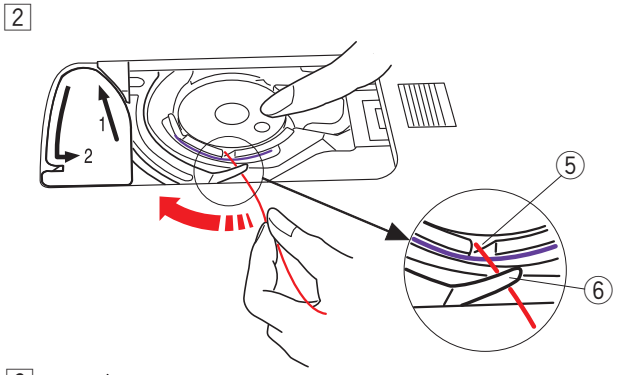
NOTE:
For safety purposes, the machine will automatically stop 1.5 minutes after starting bobbin winding.

Inserting the bobbin

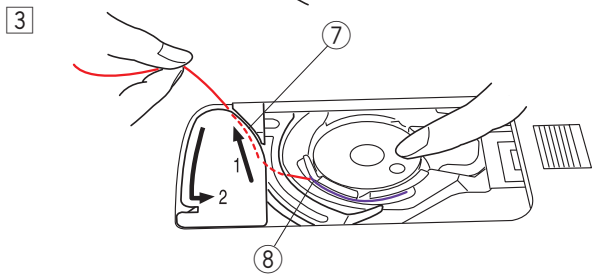
1 Press the lockout key.
Place a bobbin in the bobbin holder with the thread running off counterclockwise as shown on the hook cover plate.
① Lockout key
② End of thread
③ Bobbin holder
④ Hook cover plate

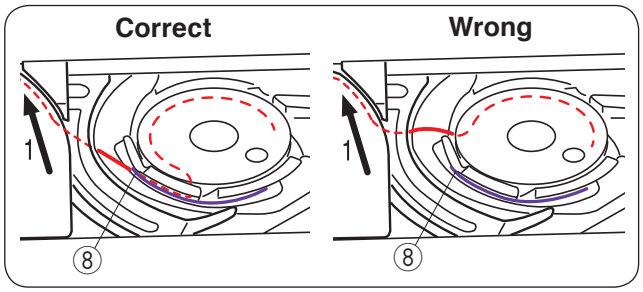


2 Hold the bobbin with your fingertip so it does not rotate.
Guide the thread into the front notch of the bobbin holder.
Pull the thread to the left to pass it under the guide.
⑤ Front notch
⑥ Guide



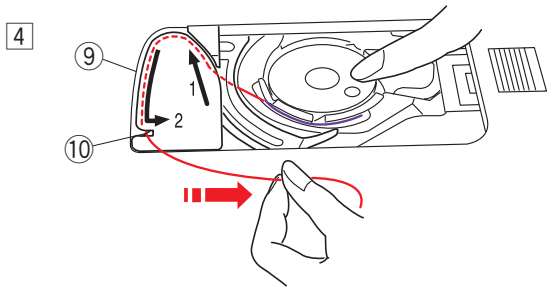
3 Draw the thread to the left to pass it into the guide path marked “1”.
Make sure that the thread comes out from the side notch of the bobbin holder.
⑦ Guide path 1
⑧ Side notch



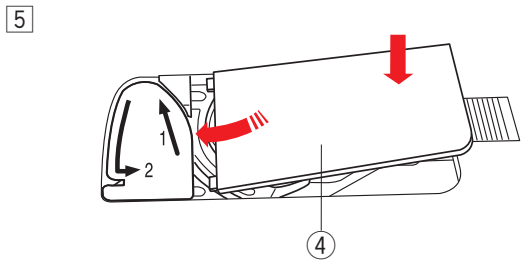


NOTE:
If the thread does not come out from the side notch, rethread from step 1.

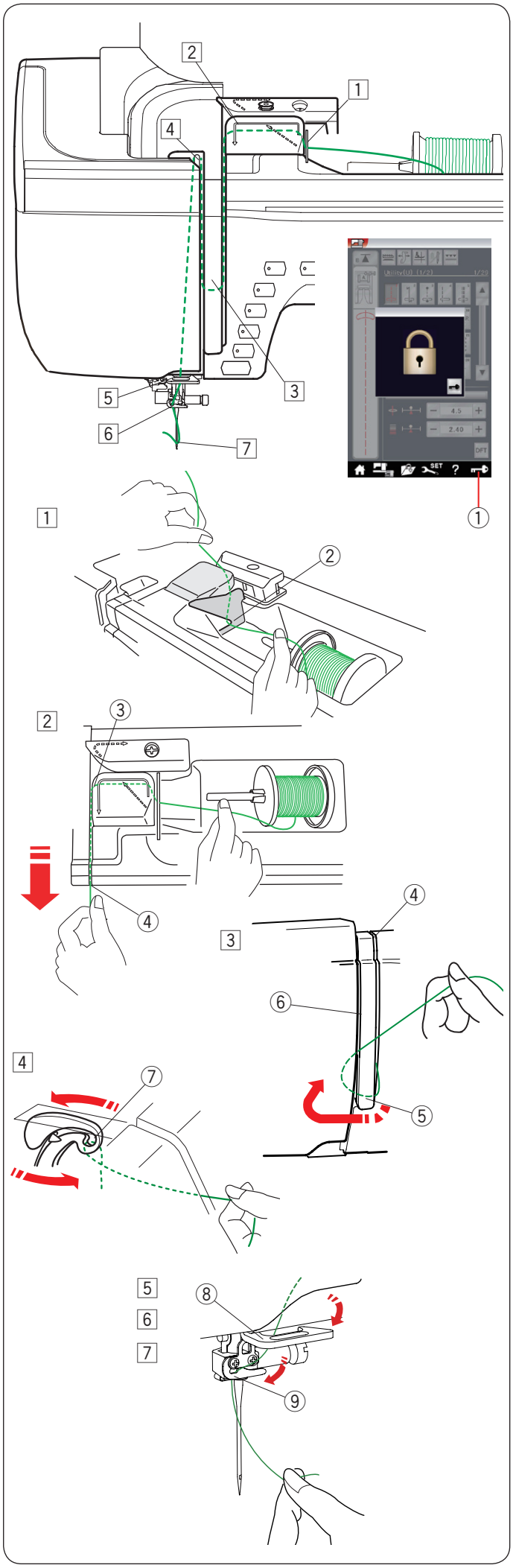
4 Continue to draw the thread along the guide path marked “2” and pull the thread to the right through the slit. The thread will be cut to a proper length and held in place.
⑨ Guide path 2
⑩ Slit (Thread cutter)



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



NOTE:
Unless otherwise noted, you can start sewing without drawing up the bobbin thread.
Refer to page 19 for how to draw up the bobbin thread.



Threading the Machine

Press the needle up/down button to raise the take-up lever to the highest position.
Press the lockout key to lockout the machine. The presser foot will go down and the upper thread tension disks will open.

① Lockout key

Pass the thread in order from 1 to 7.

1 Hold the thread with both hands and pass the thread into the guide slot.

② Guide slot

2 Hold the thread with both hands and draw the thread around the corner of the guide.
Firmly pull the thread toward you along the right channel until the thread snaps.

③ Corner of the guide
④ Right channel

3 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.

④ Right channel
⑤ Thread guide plate
⑥ Left channel

4 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.

⑦ Eye of the take-up lever

5 Then pull the thread down along the left channel and through the lower thread guide.

⑧ Lower thread guide

6 Slide the thread from the right of the needle bar thread guide to the left.

⑨ Needle bar thread guide

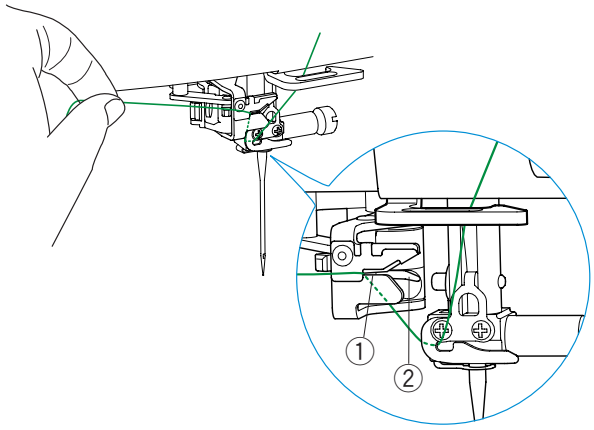
7 Thread the needle with the needle threader (refer to the next page).

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.

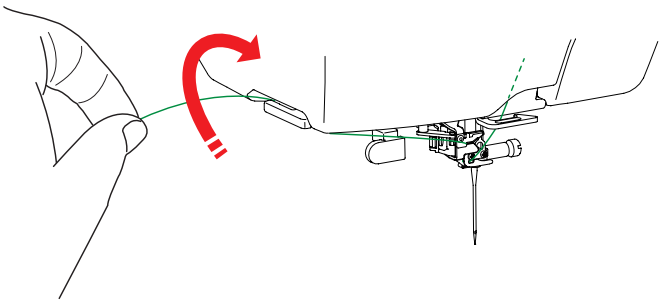
Make sure the machine is locked out.

1



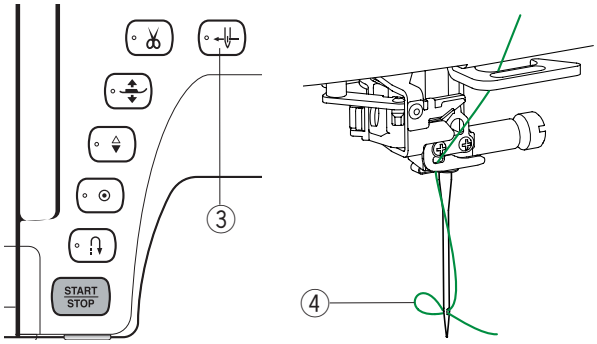
1 Draw the thread through the slit ① of the needle threader. The thread should pass under the hook ②.
① Slit
② Hook

2



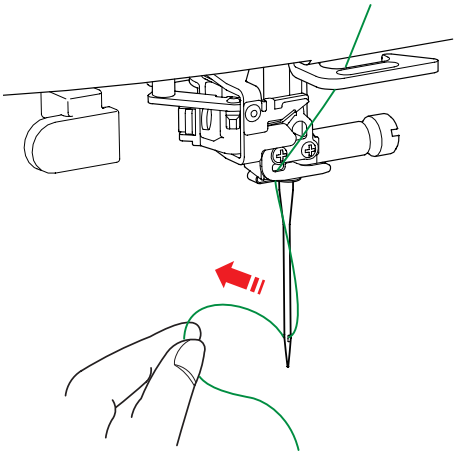
2 Pull the thread up and slip it between the thread cutter and face plate from behind.
Pull the thread toward you to cut.

3



3 Press the needle threader button ③.
The needle thread will be automatically threaded through the needle eye.
③ Needle threader button

4



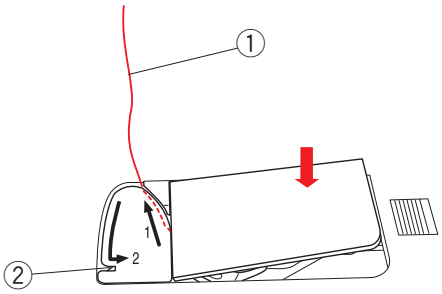
4 Pull the thread loop ④ to take the thread end out through the needle eye to the rear.
④ Thread loop

NOTE:
- The automatic needle threader cannot be used with the twin needle.
- If the thread is caught in the hook and the thread loop is not formed, remove the thread from the hook and pull it to take the thread end out through the needle eye.

Drawing up the Bobbin Thread

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

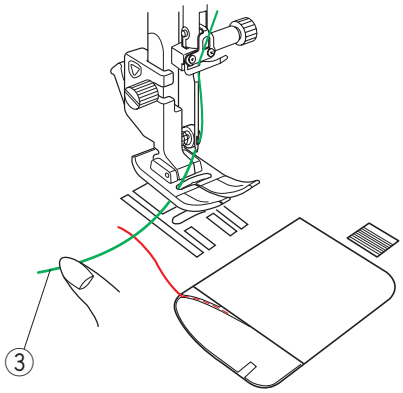
1



1 Remove the bobbin. Insert the bobbin into the bobbin holder again and rethread the bobbin holder according to the instructions on page 16, but leave a 10 cm (4″) tail of bobbin thread as shown.
① Bobbin thread

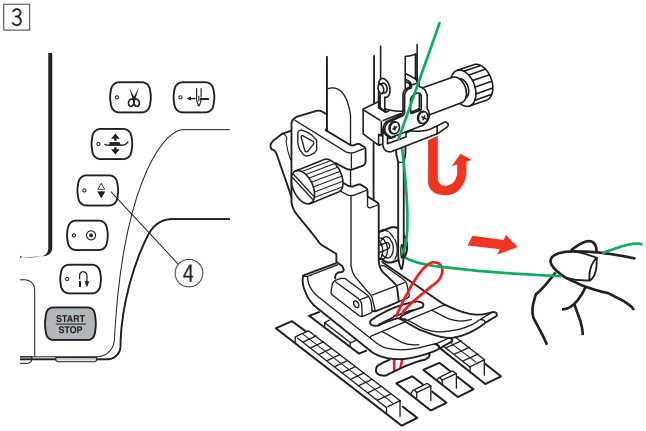
NOTE:
Do not cut the bobbin thread with the thread cutter.
② Thread cutter

2



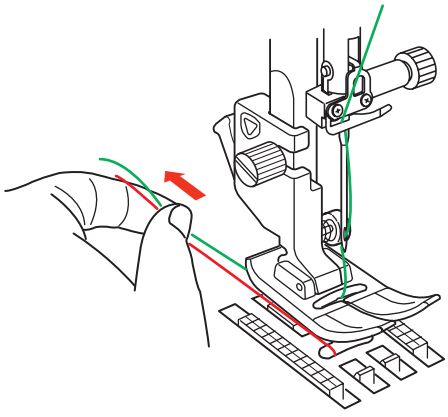
2 Raise the presser foot. Hold the needle thread lightly with your left hand.
③ Needle thread

3

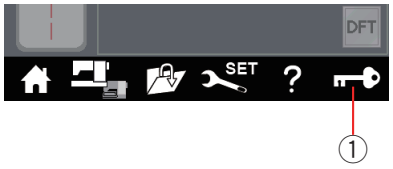


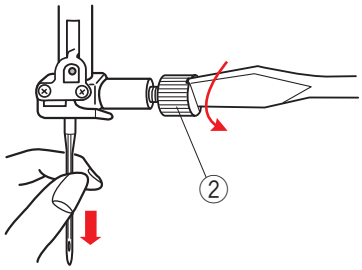
3 Press the needle up/down button twice to lower and raise the needle and pick up the bobbin thread.
④ Needle up/down button

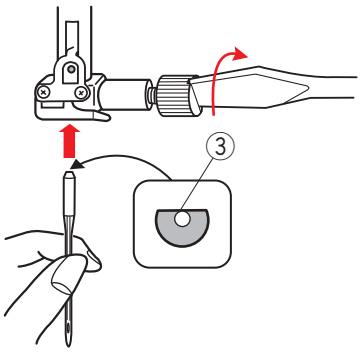
4

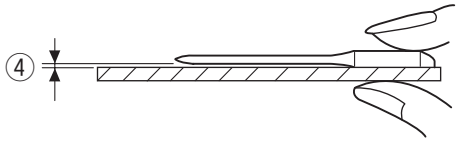


4 Pull both threads 10 cm (4″) under and behind the presser foot.









Replacing Needles

CAUTION:
Always make sure to press the lockout key to lockout the machine or turn the power switch off before replacing the needle.

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

Loosen the needle clamp screw by turning it counterclockwise.
Remove the needle from the clamp.
② Needle clamp screw

Insert a new needle into the needle clamp with the flat side of the needle to the rear.
③ 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.
④ Gap

Never use a blunt needle.

Fabric		Thread	Needle
Fine	Lawn Georgette Tricot Organza Crepe	Silk #80-100 Cotton #80-100 Synthetic #80-100	Blue tip needle Universal needle #9/65-11/75
Medium	Sheeting Jersey Broadcloth Fleece	Silk #50 Cotton #50-80 Synthetic #50-80	Red tip needle Purple tip needle Universal needle #11/75-14/90
Heavy weight	Denim Tweed Coating Quilting	Silk #30-50 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, Thread and Needle Chart

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

For embroidery:

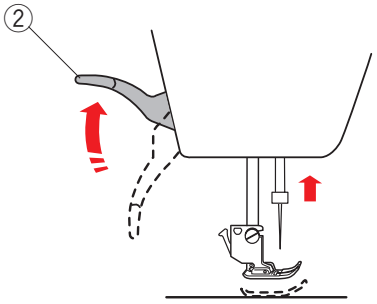
- In general, use a blue tip needle.
- Use a red tip needle or purple tip needle for thicker fabrics.
- Use a purple tip needle for dense stitch embroidery and Quilting designs.
- Janome bobbin thread for embroidery is recommended for bobbin.

Replacing the Presser Foot

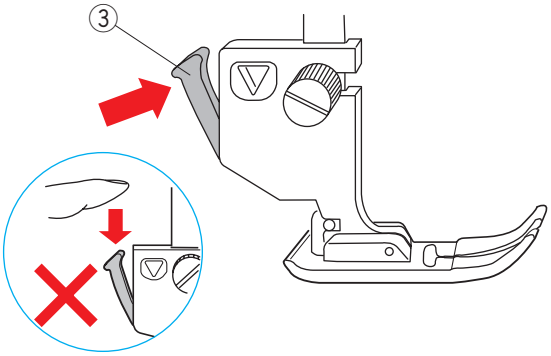
CAUTION:
Always make sure to press the lockout key to lock out the machine.



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

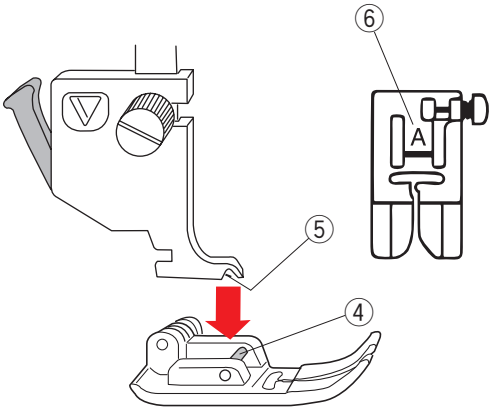


Raise the presser foot lifter.
② Presser foot lifter



Press the black lever on the backside of the foot holder.
The presser foot will snap off.
③ Lever

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



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

Each foot is marked with an identification letter.
⑥ Identification letter



Replacing the Foot Holder

Replace the foot holder, if you use the dual feed feet, darning foot or embroidery foot.

CAUTION:
Press the lockout key to lockout the machine before replacing the foot holder.

Removing the presser foot holder

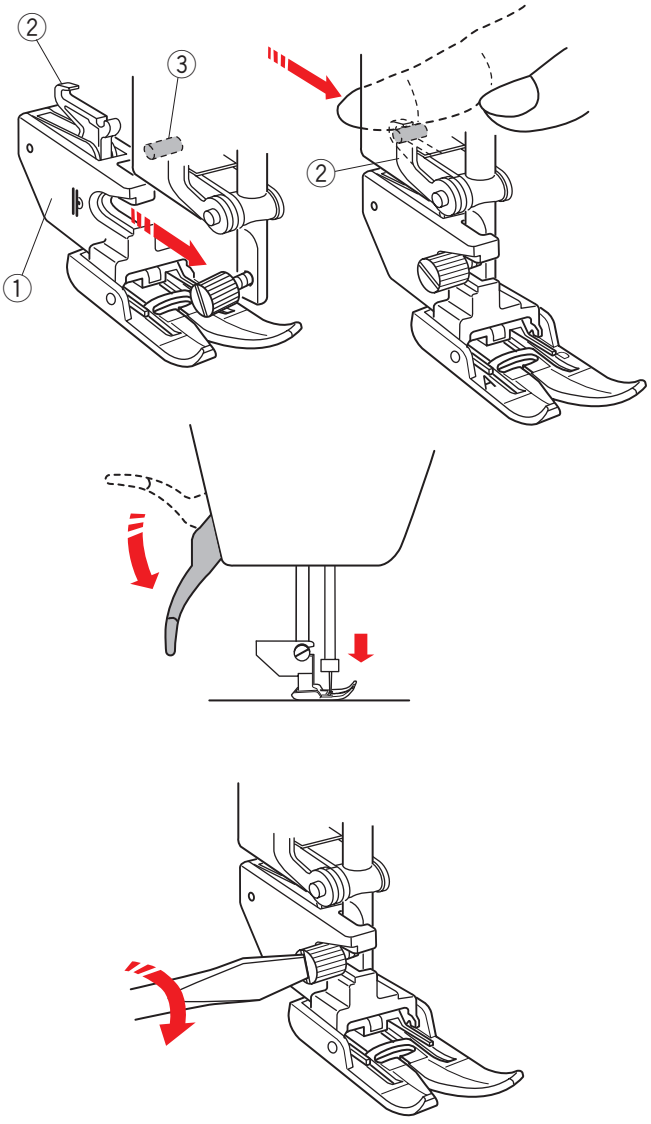
Raise the needle by pressing the needle up/down button. Press the lockout key and raise the presser foot with the presser foot lifter.

① Lockout key
② Presser foot lifter

Loosen the thumbscrew and remove the presser foot holder.

③ Thumbscrew

NOTE:
Use the foot holders included in the standard accessories only.



Attaching the dual feed holder

Attach the dual feed holder to the presser bar.

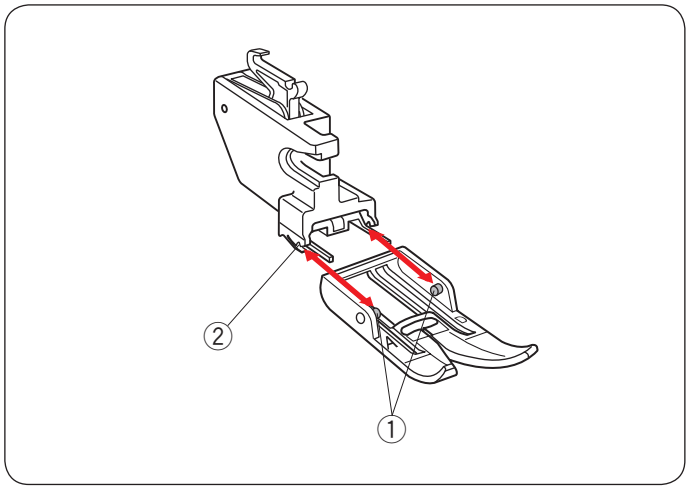
① Dual feed holder

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

Lower the presser foot lifter. Lower the needle to the lowest position by turning the hand wheel.

Tighten the thumbscrew securely with the screwdriver.

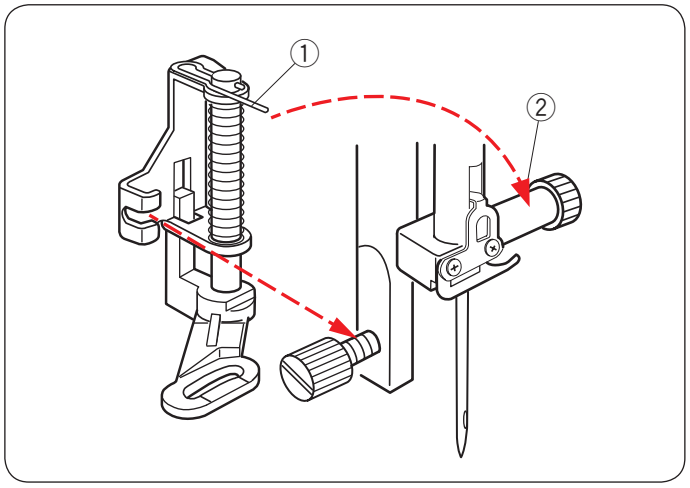


Detaching and attaching the dual feed foot

Pull the foot toward you to remove it.

Insert the pins of the foot into the slits of the foot holder and gently push the foot until it snaps into place.

① Pin
② Slit

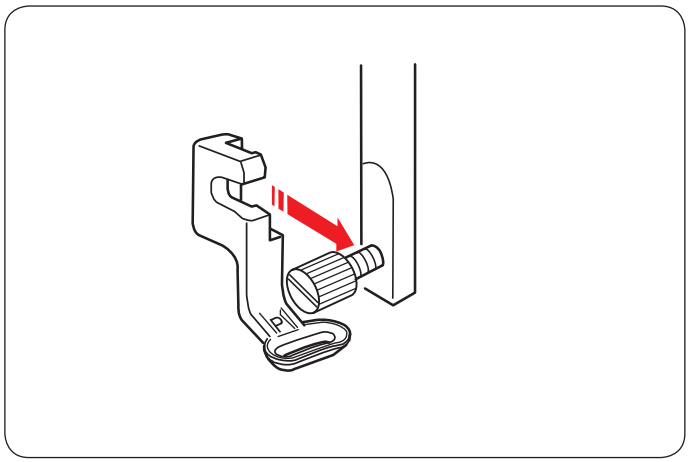


Attaching the darning foot PD-H

Attach the darning foot PD-H to the presser bar by putting the pin on the needle clamp screw.

① Pin
② Needle clamp screw

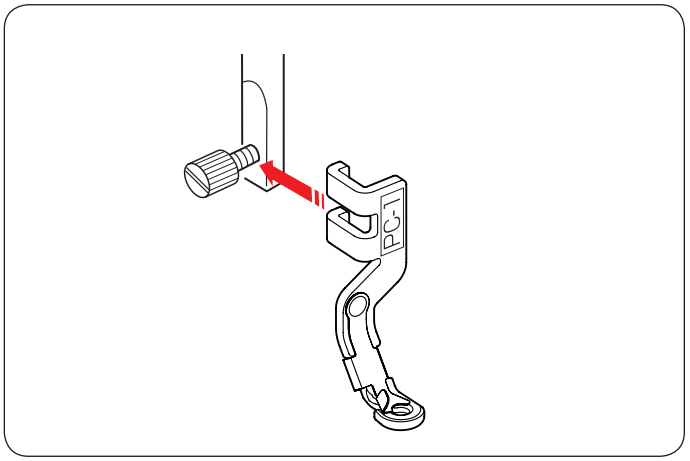
Tighten the thumbscrew firmly with the screwdriver.



Attaching the embroidery foot P

Attach the embroidery foot P to the presser bar from behind (refer to page 106).

Tighten the thumbscrew firmly with the screwdriver.

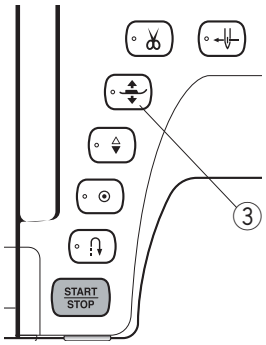


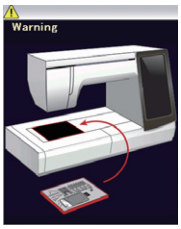
Attaching the couching foot PC-1 or PC-2

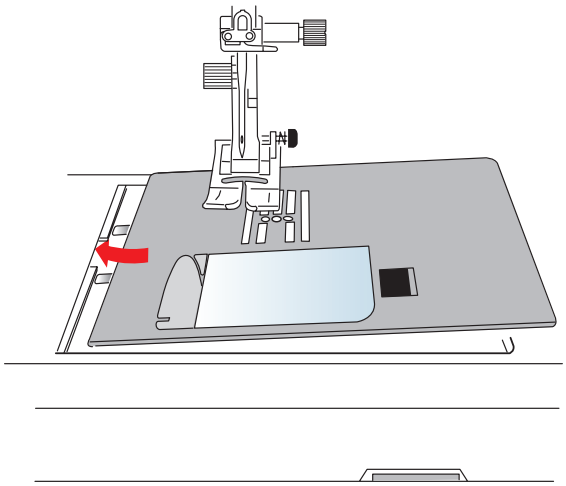
Attach the couching foot PC-1 or PC-2 to the presser bar from front (refer to page 143).

Tighten the thumbscrew firmly with the screwdriver.

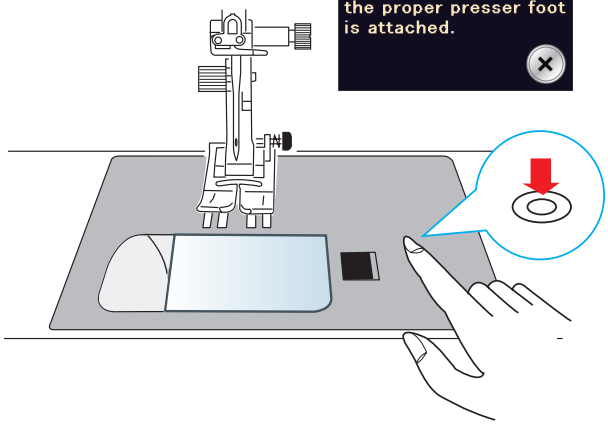












Replacing the Needle Plate

Use the straight stitch needle plate when sewing with the dual feed foot and also when embroidering.

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

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

Raise the needle and press the lockout key.
Press the presser foot lifter button to raise the presser foot.

① Lockout key
② Unlock key
③ Presser foot lifter button

Slide the extension table to the left to remove it.
Push down the needle plate release lever and the needle plate will snap off.

④ Needle plate release lever

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

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

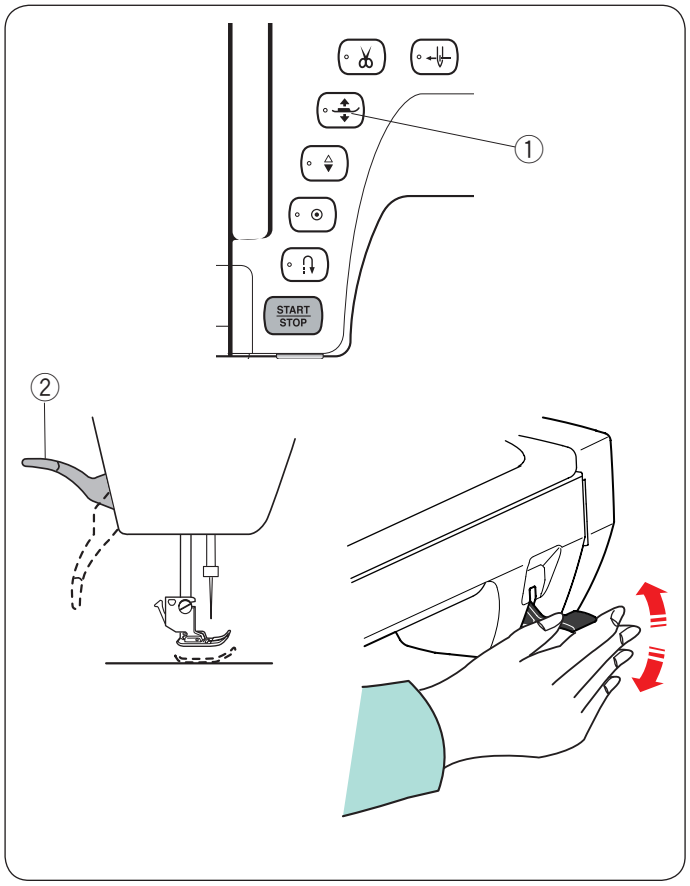
Push down on the mark of the needle plate until it locks in place.

Make sure the warning message disappears and the straight stitch is automatically selected.

Turn the hand wheel slowly and make sure that the needle does not hit the needle plate.

Press the unlock key to unlock.

CAUTION:
Never press the needle plate release lever while running the machine.



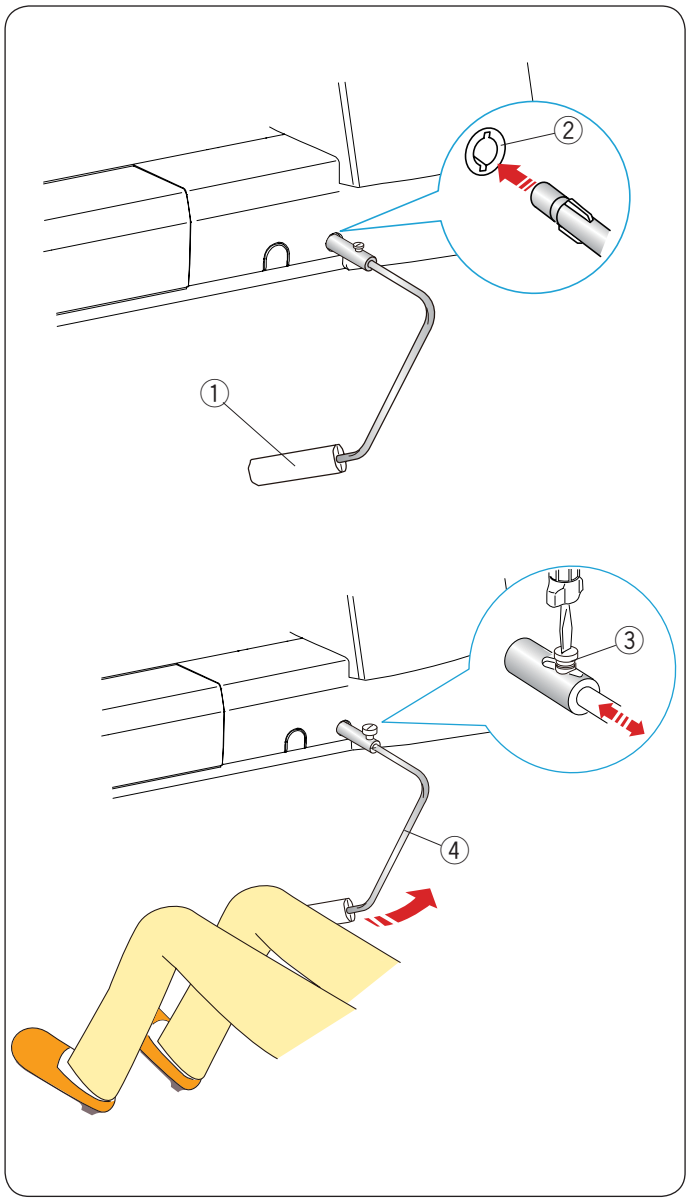
Raising and Lowering the Presser Foot

You can raise and lower the presser foot with the presser foot lifter button, the presser foot lifter or the knee lifter.

① Presser foot lifter button
② Presser foot lifter

You can raise the presser foot about 7 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 fabrics or embroidery hoops under the foot.

NOTE:
The presser foot cannot be lowered with the presser foot lifter if the foot was raised with the presser foot lifter button.
The knee lifter cannot be used in the embroidery mode.



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 Knee lifter socket

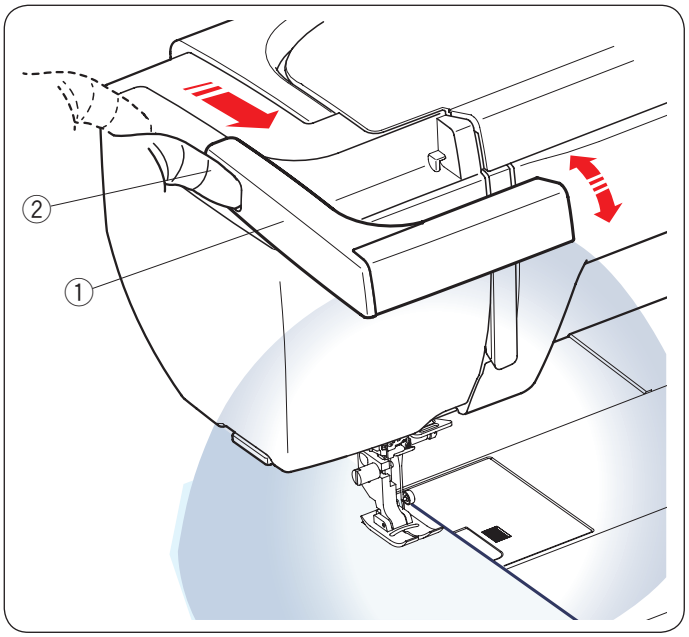
Adjusting the knee lifter

The angle of knee lifter can be adjusted to fit your knee.
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.

③ Setscrew
④ Angle bar

Using the knee lifter

Push the knee lifter with your knee to move the presser foot up and down.
The knee lifter controls zigzag width of the variable zigzag (refer to page 93).



Retractable Sewing Light

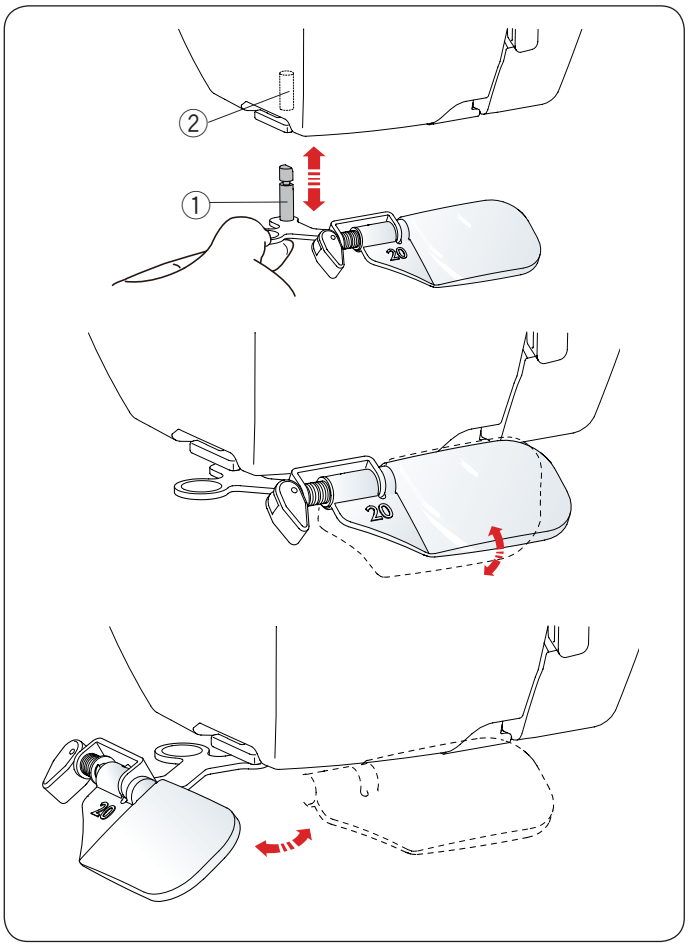
In addition to the twin LED lights, the machine is equipped with a retractable light.

Place your finger in the groove and slide the arm towards you. The light will turn on automatically.
Adjust the angle of the light to illuminate the working area.

① Arm
② Groove

Push back the arm to turn the light off and store it.

CAUTION:
Do not hit or exert excessive force on the arm of the retractable sewing light as this may cause damage when it is extended.



Optic Magnifier

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

Attaching the magnifier

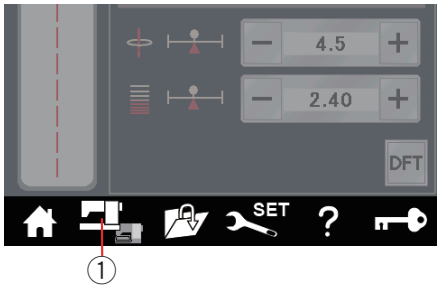
Hold the knob with your fingers and insert the pin into the hole in the bottom of the face plate.
Push the magnifier up until it snaps to fit.
Adjust the angle to get the best view.

① Pin
② Hole

Removing the magnifier

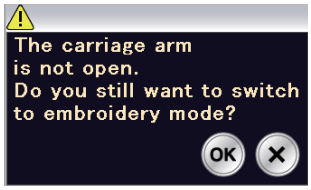
If the magnifier is not in use, turn it to the left out of sight or pull it down to remove.

CAUTION:
Do not use or leave the magnifier in the direct sunlight, otherwise 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.

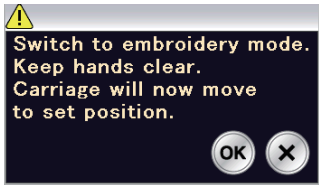


①

②



③



Mode Selection

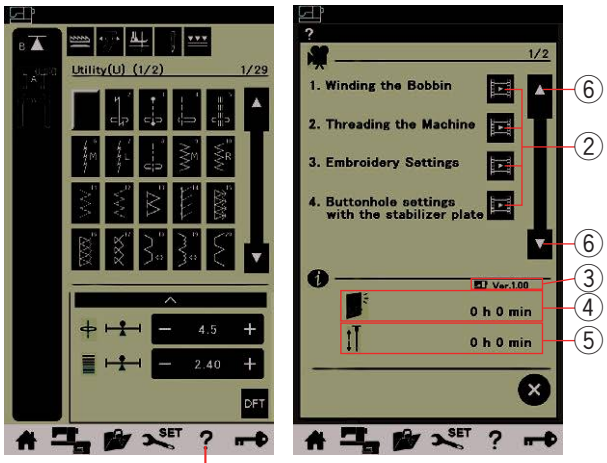
When you turn the power switch on, the visual touch screen will show the ordinary sewing mode after a few seconds.
The machine is set for straight stitch sewing.

> **NOTE:**
> After turning on the power, it takes several seconds to display the opening window.
> (This is the required boot up procedure.)

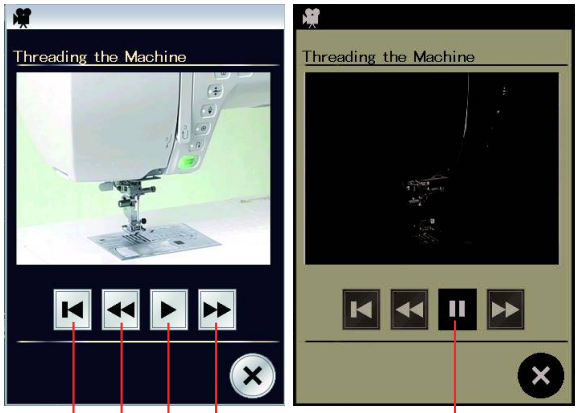
To switch to the embroidery mode, first turn the power switch off then attach the embroidery unit (refer to pages 103-104).
Turn the power switch on and press the mode switch key.

① Mode switch key

A confirmation message ② will appear. Do not press the OK key or X key. Open the carriage arm and a warning message ③ will appear. Press the OK key to switch to the embroidery mode and the carriage will move to the starting position.
To switch back to the ordinary sewing mode, press the mode switch key and follow the instructions in the confirmation message.



①



On-screen Help

Press the help key to open the help menu.
You can view movies on 7 topics of essential operations of the machine, total power-on time of the machine and total operating time of the machine.

Press the page key to display the next page or previous page.
Select the help topic by pressing the movie key and the movie window will open.

① Help key
② Movie key
③ Software version
④ Total power-on time
⑤ Total operating time
⑥ Page keys

Press the play key to start the movie and press the pause key to stop playing.
You can search through the movie in forward or reverse direction by pressing the fast forward key or rewind key.

⑦ Play key
⑧ Pause key
⑨ Fast forward key
⑩ Rewind key

Press the return key to return to the beginning of the movie.

⑪ Return key

Press the X key to close the current window.

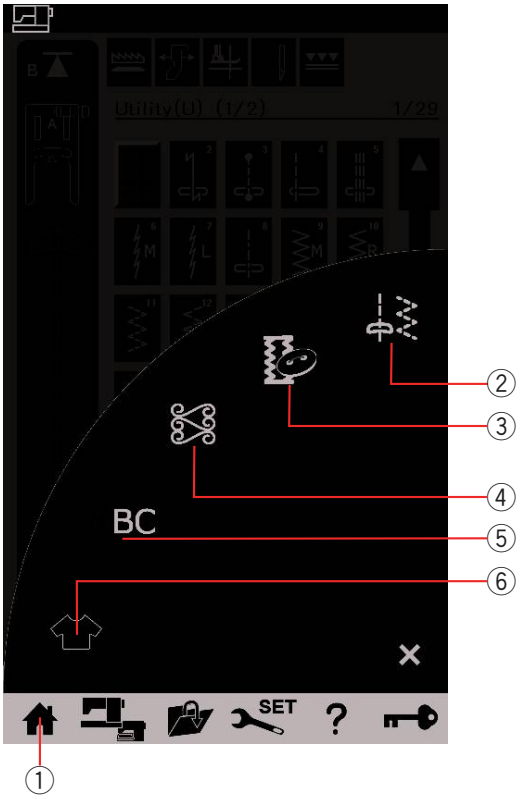
ORDINARY SEWING MODE

Ordinary Stitch Patterns

In the ordinary sewing mode, there are 5 categories available. Press the home key ① to enter the category selection.

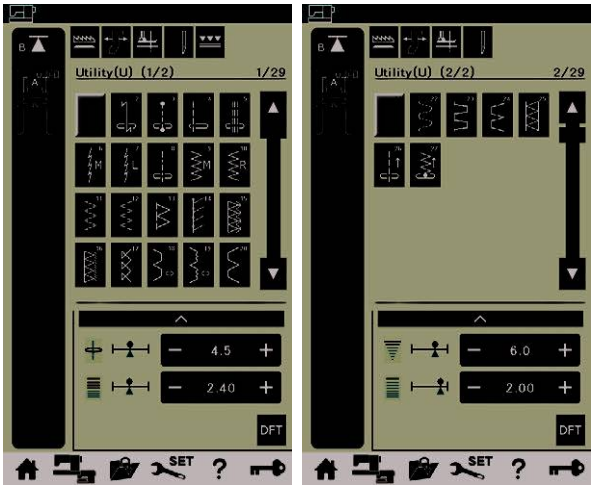
① Home key
② Utility stitches (U)
③ Buttonhole and specialty stitches (B)
④ Decorative and quilting stitches
⑤ Monogramming
⑥ Sewing applications

Press one of the icon keys to select the category.



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

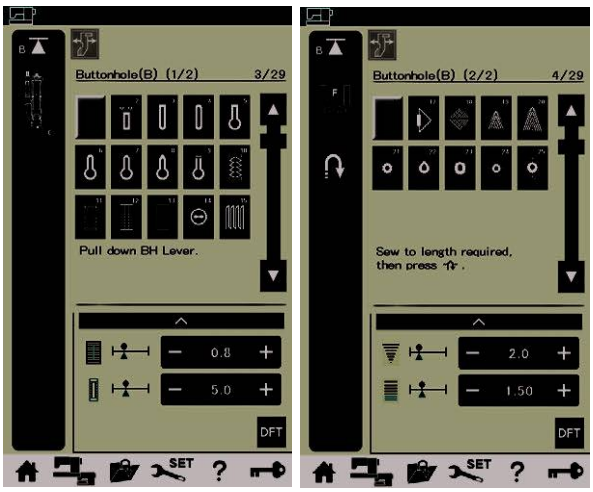
②



② Utility stitches (U)

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

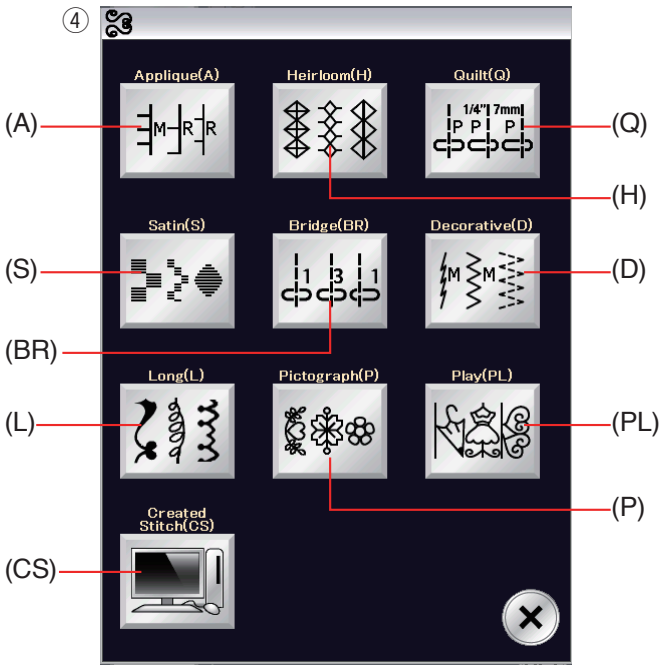
③



③ Buttonholes and specialty stitches (B)

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

④

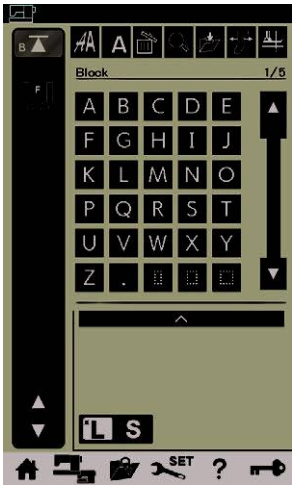


④ Decorative and quilting stitches

This category consists of the following 10 groups.

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

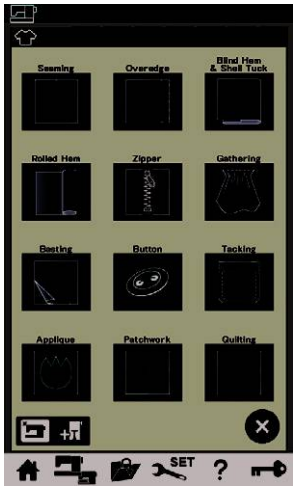
⑤



⑤ Monogramming

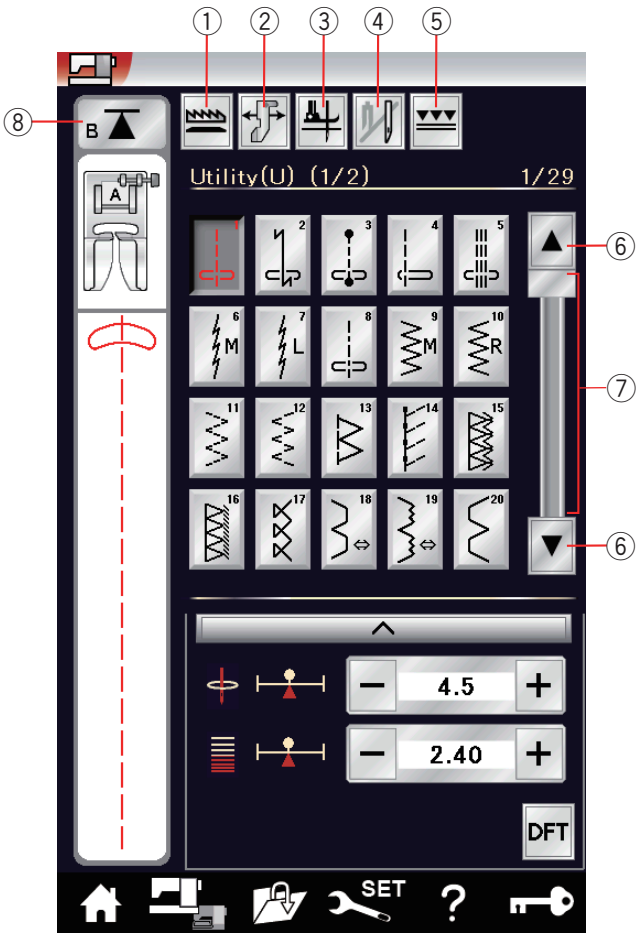
You can program lettering as well as a combination of characters and symbol patterns.

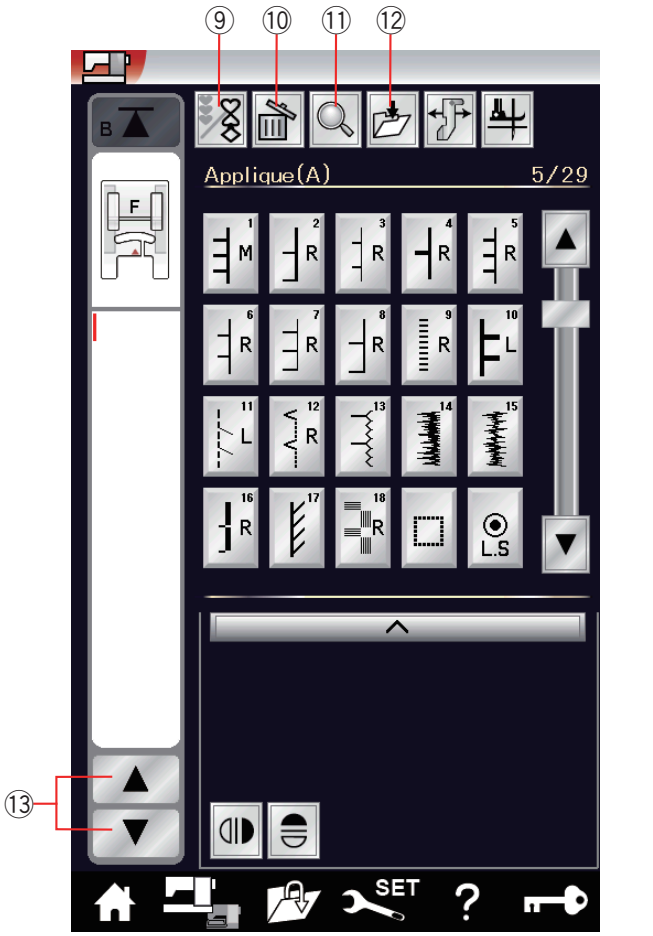
⑥



⑥ Sewing applications

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





Function Keys in Ordinary Sewing Mode

① **Drop feed key**
This key is available only with the utility stitch group. Press this key to drop or raise the feed dog.

② **Cloth guide key**
Press this key for cloth guide sewing (refer to page 42).

③ **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 39).

④ **Twin needle key**
Press this key to set the stitch width for twin needle sewing (refer to page 65).

⑤ **Dual feed key**
Press this key for dual feed sewing (refer to page 35).

⑥ **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.

⑦ **Touch bar**
Press on the touch bar to display the next page or previous page.

⑧ **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 68).

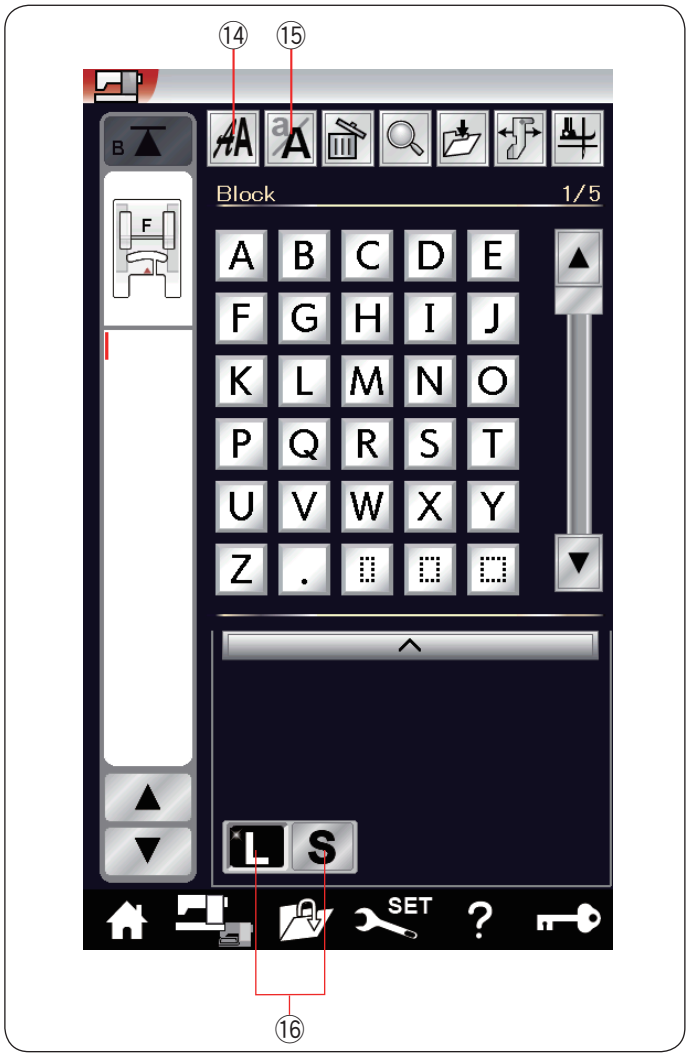
⑨ **Program key**
Press this key to program a pattern combination. When this key is pressed, the delete key, memory check key, save file key and cursor keys will appear.

⑩ **Delete key**
Press this key to delete the pattern from the pattern combination.

⑪ **Memory check key**
Press this key to view the stitch image of the entire pattern combination.

⑫ **Save file key**
Press this key to save the pattern combination as a file.

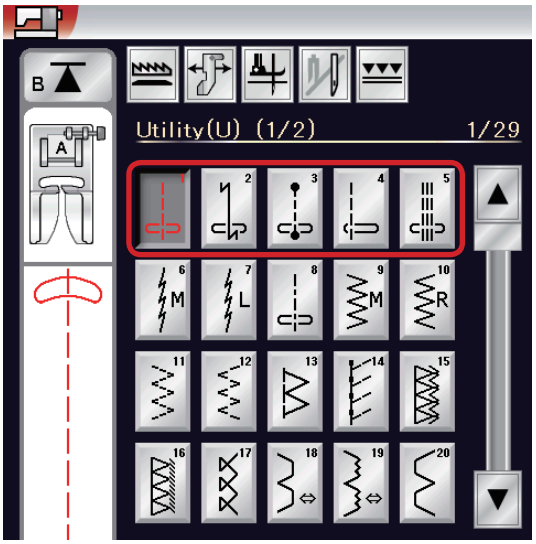
⑬ **Cursor keys**
Press one of the cursor keys to move the cursor up or down.

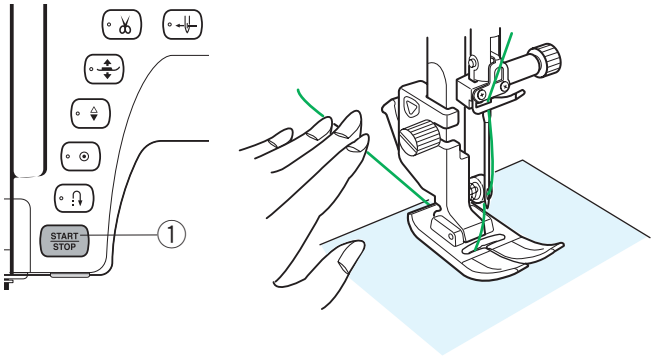


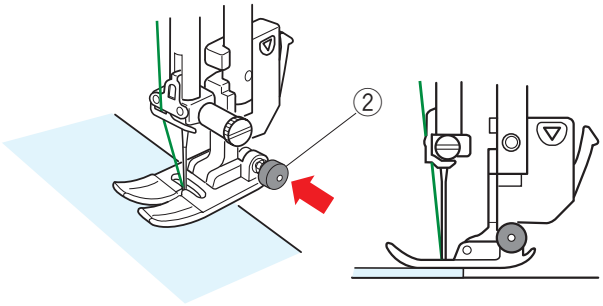
⑭ Font selection key
You can select one of 5 fonts (refer to page 70).
Select the desired font by pressing the corresponding key.

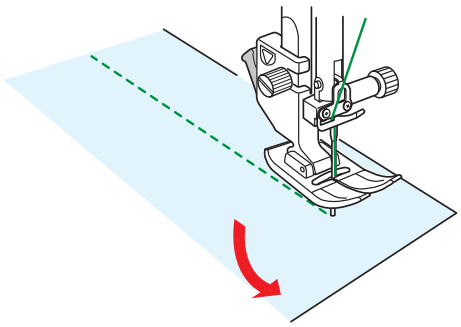
⑮ Letter case key
Press this key to select upper case or lower case for monograms.

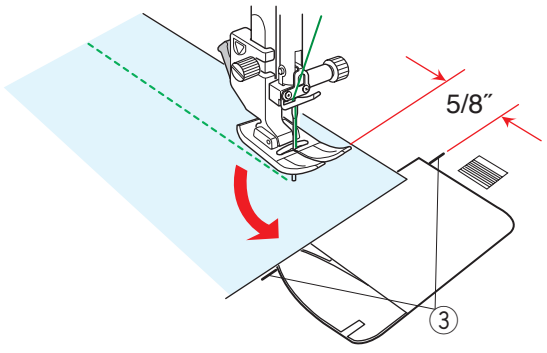
⑯ Letter size key
Press this key to select the full size (L) or small size (S).











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

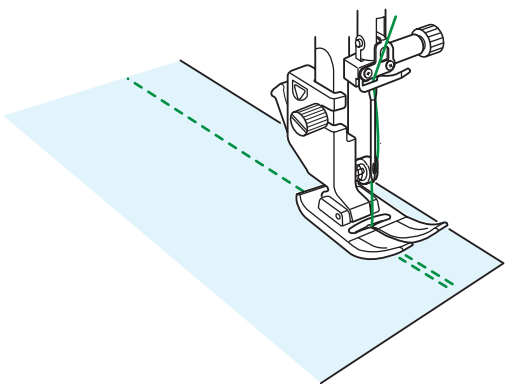
Stop the machine and press the presser foot lifter button to raise the presser foot.
Pivot the fabric around the needle to change the sewing direction as desired.
Start sewing in a new direction.

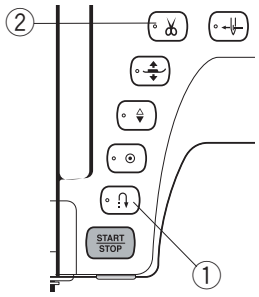
> **NOTE:**
> If you turn on the foot up option, the presser foot will automatically go up when the machine stops (refer to page 39).

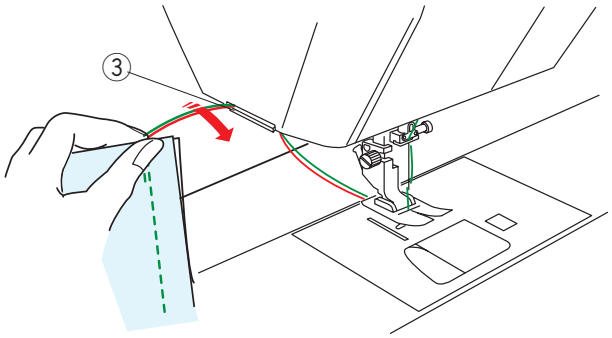
Turning a square corner

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

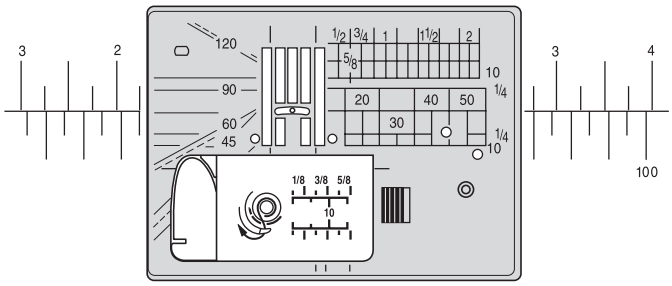
To cut the threads after finishing sewing, press the thread cutter button. The needle bar and presser foot will automatically go up after trimming the threads.

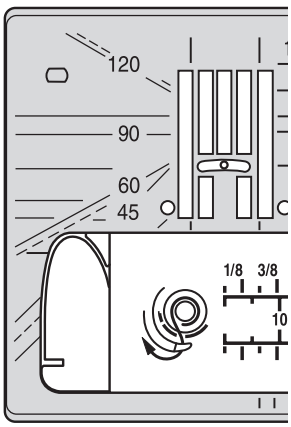
② Thread cutter button

NOTE:
The thread cutter button does not function when the presser foot is up.
Use the thread cutter on the face plate to cut specialized or thick threads if the auto thread cutter does not work well.

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.

③ Thread cutter





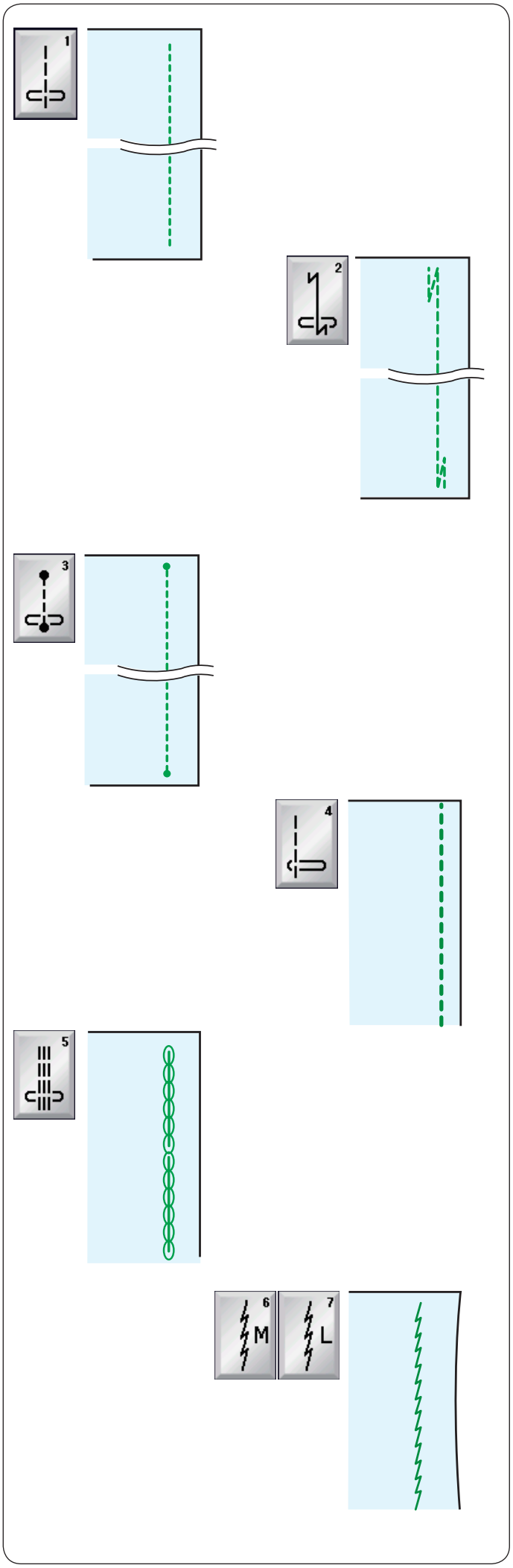
Using the seam guide lines

The seam guides on the needle plate and hook cover help you measure seam allowance.

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

Angle scale 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.



Variety of Straight Stitches

U1 Straight stitch in center needle position
Use this stitch for seaming, rolled hemming etc.

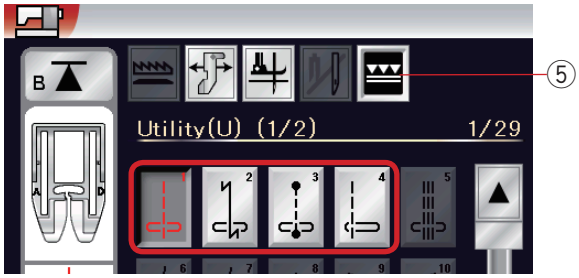
U2 Lock-a-matic stitch
Use this stitch to secure the beginning and the end of a seam with backstitching.
When you reach the end of the seam, press the reverse button once.
The machine will sew four reverse stitches, four forward stitches, and then stop sewing automatically.

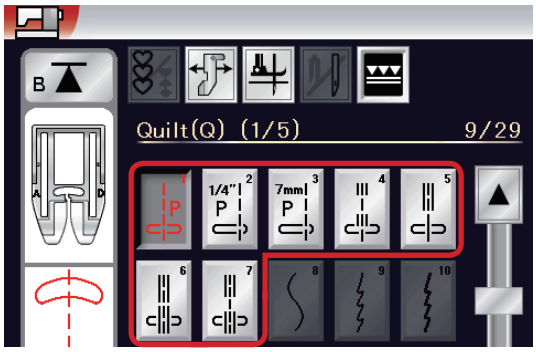
U3 Locking stitch
This unique stitch is used where an invisible locking stitch is needed.
The machine will sew several locking stitches at the beginning and continue sewing forward.
When you press the reverse button at the end of the seam, the machine will sew several locking stitches in place, then stop sewing automatically.

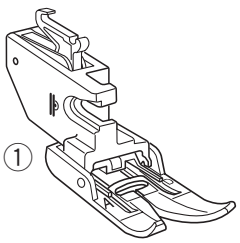
U4 Straight stitch in left needle position
Use this stitch to seam fabrics close to the edge.

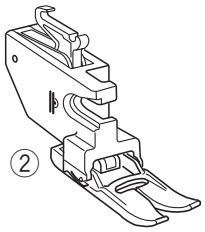
U5 Triple stretch stitch
This strong, durable stitch is recommended for areas where both elasticity and strength are needed to ensure comfort and durability.
Use it to reinforce areas such as crotch and armhole seams.
Also use it when constructing items such as backpacks for extra strength.

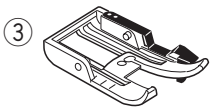
U6, U7 Stretch stitches
These are narrow stretch stitches designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely open flat.
Use U7 for seaming fine fabrics or stretch fabrics.

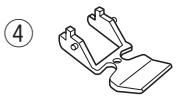


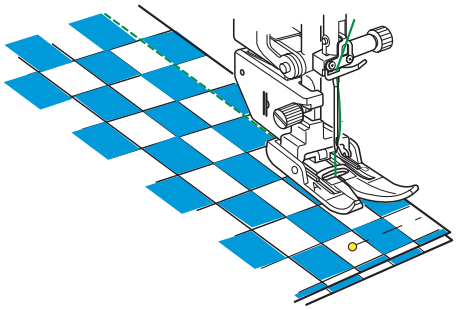


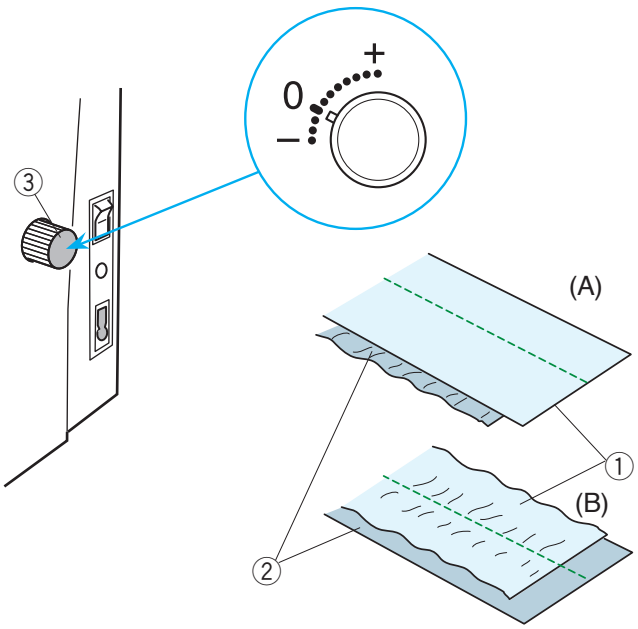












Sewing with the Dual Feed Device

Patterns U1 to U4 and Q1 to Q7 can be sewn with the dual feed device.

The dual feed device is extremely effective when sewing hard to feed materials such as PVC coated fabric or leather.
It also eliminates layer slippage.
The following 4 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

Attach the desired dual feed foot to the respective dual feed holder and attach to the machine (refer to page 22-23).
Press the dual feed key ⑤ and select the desired pattern.

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

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.

Dual feed balancing dial

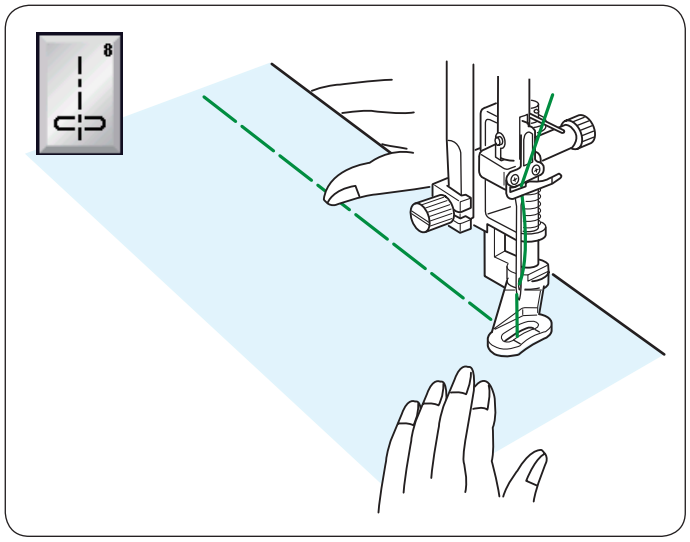
The dual feed balancing dial should be set at “0”, however you may need to adjust the dual feed balance depending on the type of fabric.

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

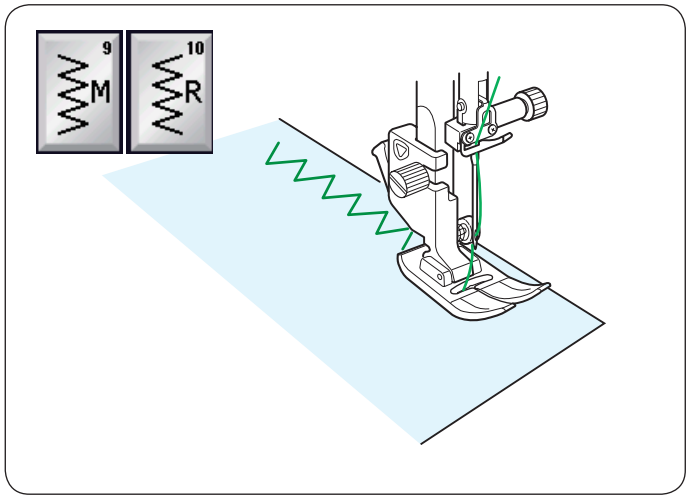
(A): If the lower layer puckers, turn the dual feed balancing dial toward “+”.

(B): If the upper layer puckers, turn the dual feed balancing dial toward “–”.

① Upper layer
② Lower layer
③ Dual feed balancing dial

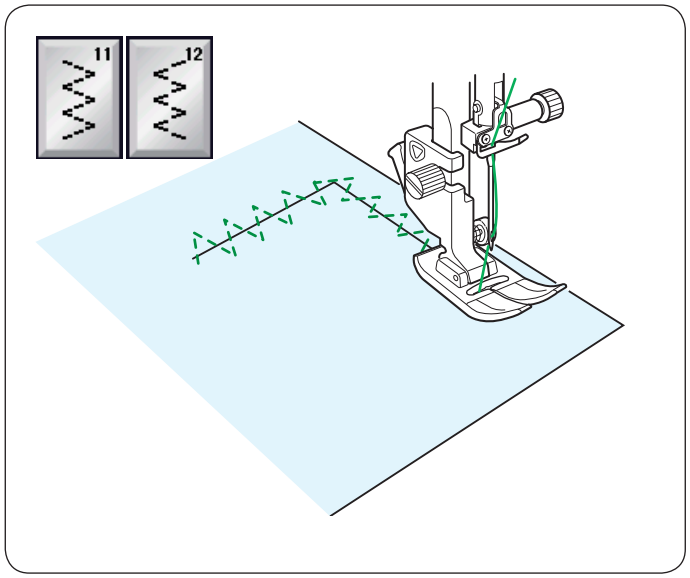


U8 Basting
See page 86 for sewing instructions.

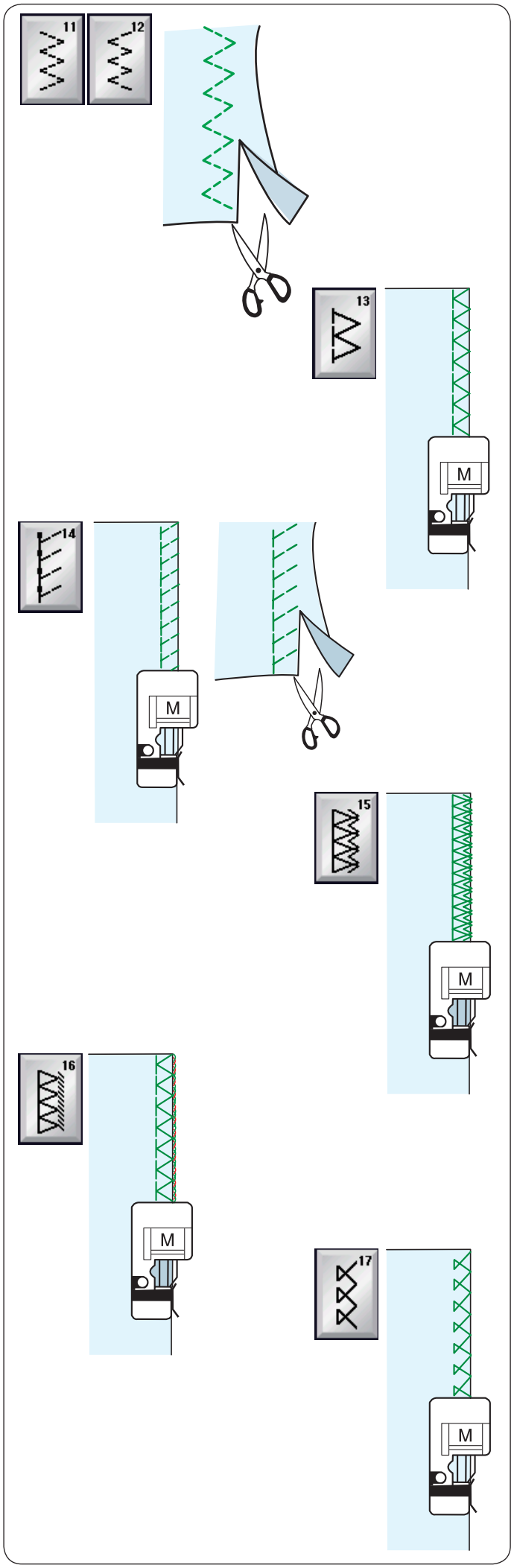


Zigzag Stitches

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.



U11, U12 Multiple zigzag stitches
These stitches are used for mending tears.



Variety of Overcasting Stitches

U11, U12 Multiple zigzag stitch: Zigzag foot A
This stitch is used to finish a raw edge of synthetics and other stretch fabrics that tend to pucker.
Sew along the fabric edge leaving an adequate seam allowance. After sewing, trim off the seam allowance closer to the stitches.

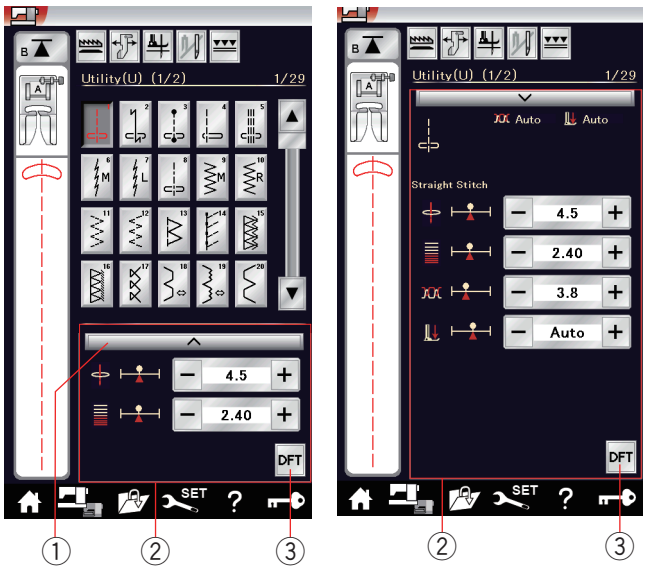
U13 Overcasting stitch: Overedge foot M
This stitch can be used to simultaneously seam and overcast edges of fabrics.
Use this stitch when you do not need to open seams flat.
Place the fabric edge next to the guide of the foot and sew.

U14 Knit stitch: Overedge foot M
This stitch is recommended for sewing such fabrics as synthetic knits and stretch velour as it provides the greatest amount of elasticity and strength.
Place the fabric edge next to the guide of the foot and sew.
For better results, use the zigzag foot A and sew leaving an adequate seam allowance.
After sewing, trim the seam allowance close to the stitches.

U15 Double overedge stitch: Overedge foot M
This stitch is excellent for fabrics that tend to fray extensively such as linens and gabardines.
Place the fabric edge next to the guide of the foot and sew.
Two rows of zigzag stitches are simultaneously sewn over the edge to insure that the fabric will not ravel.

U16 Overlock stitch: Overedge foot M
This stitch finishes the edges of fabric in a way similar to a commercial overlocking machine for a professional look.
Place the fabric edge next to the guide of the foot and sew.

U17 Overlock stitch: Overedge foot M
This stitch is used for overcasting knits and stretch fabrics. Place the fabric edge next to the guide of the foot and sew.

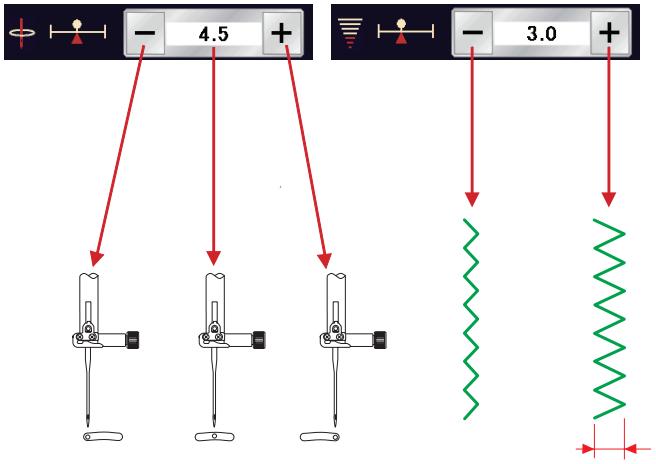


Manual Stitch Settings

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

When you press the setting bar, the manual setting window expands to show more options.
You can alter other settings such as needle thread tension and presser foot pressure value, depending on the selected stitch pattern.
Press the setting bar again to shrink the manual setting window.

① Setting bar
② Manual setting window
③ Default key



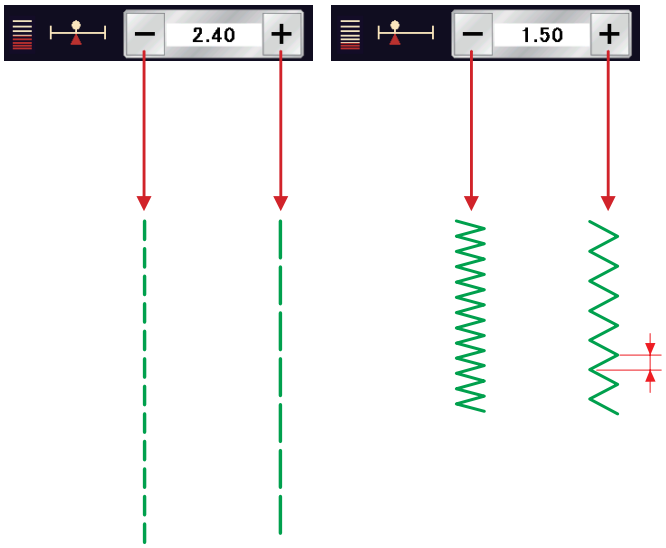
Altering needle drop position (straight stitches)

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

Press the “+” key to increase the stitch width.
Press the “–” key to decrease the stitch width.

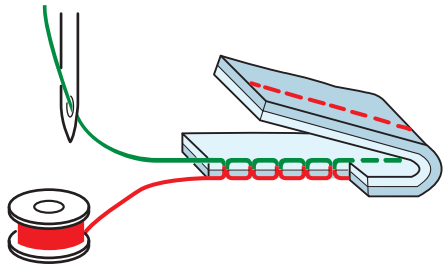
NOTE:
The adjustable range of patterns U6, U7, U9-U12 and U27 is 0.0 to 7.0.

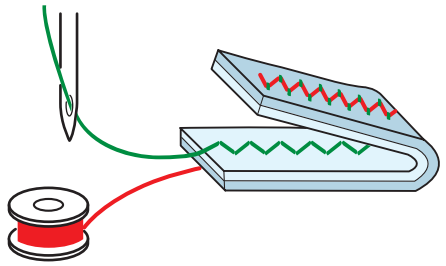


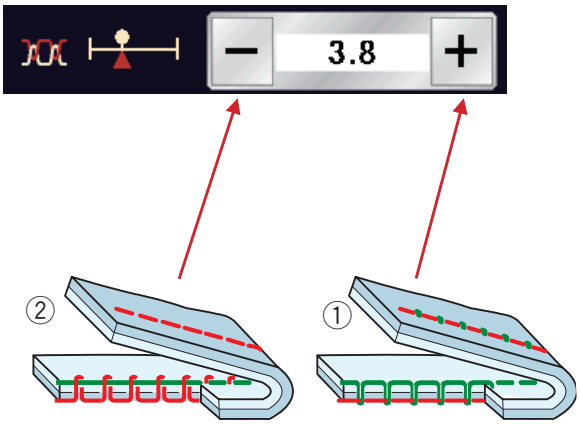
Altering stitch length

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

NOTE:
The adjustable range of patterns U6 is 0.0 to 5.0, U7 is 1.0 to 5.0, U9-U12 and U27 is 0.0 to 5.0.







Adjusting thread tension

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

Balanced thread tension

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

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

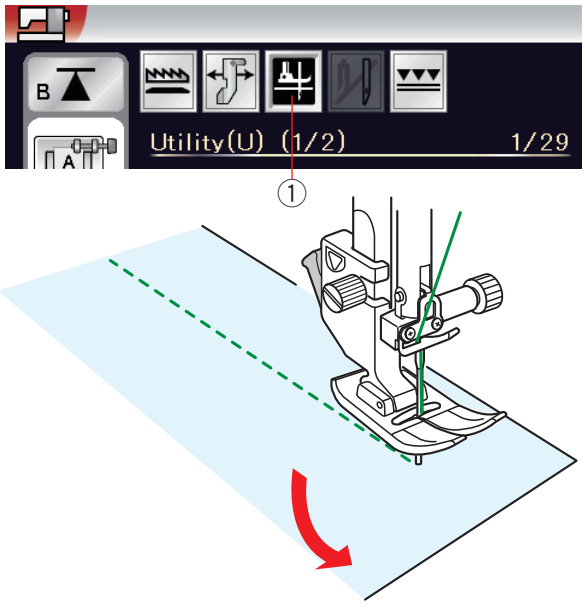
However you may need to manually adjust the tension balance depending on the sewing conditions, or you can fine-tune the thread tension to suit your preference.

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



Adjusting foot pressure control

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



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.

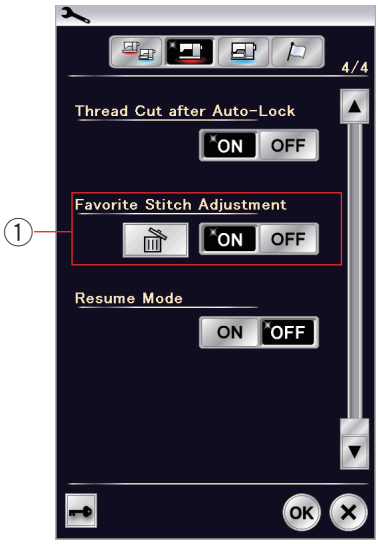
① Foot-up key

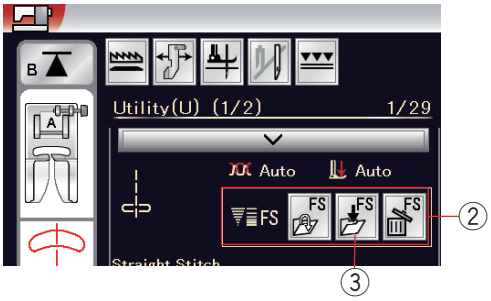
NOTE:
Height of the foot can be altered in the ordinary sewing setting mode (refer to page 99).

Favorite Stitch Adjustment

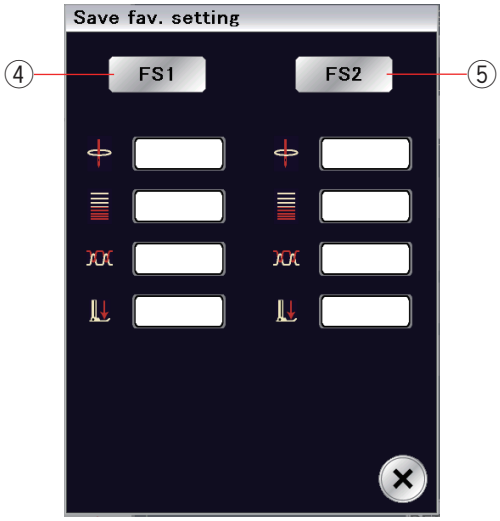
You can save customized stitch settings (stitch length, stitch width, thread tension and presser foot pressure, depending on the selected stitch patterns) as Favorite Stitch Adjustment. When the favorite stitch adjustment option is turned ON ① (refer to page 101), the last-used customized stitch settings are automatically assigned when the stitch pattern is selected.

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

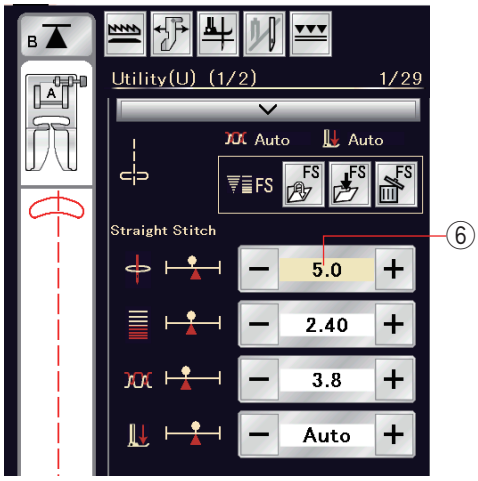




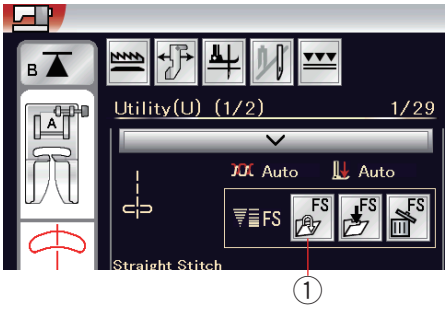
Example: To change the preset value of the needle drop position from “4.5” to “5.0”.
Turn the Favorite Stitch Adjustment option ON (refer to page 101).
Select stitch pattern U1.
Press the setting bar. The manual setting window expands to show more options.
The favorite stitch setting option ② appears on the manual setting window.
Change the needle drop position from “4.5” to “5.0” by pressing “+” key.
Press the save favorite key ③.



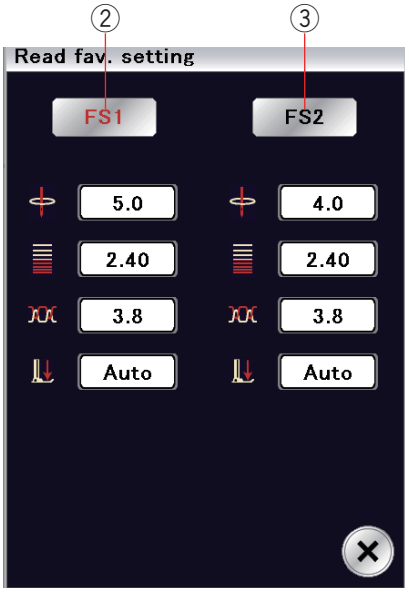
Save fav. setting dialog box will open.
You can store 2 sets of favorite stitch settings (FS1 and FS2). Press FS1 ④ or FS2 ⑤ to register the favorite stitch settings.



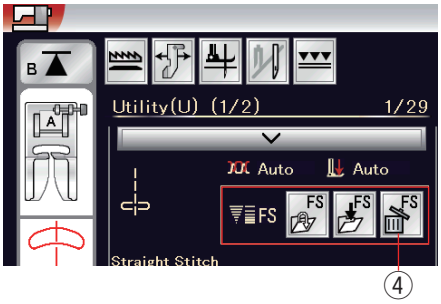
The cream-colored box ⑥ indicates that the customized preset stitch value is applied to the setting.



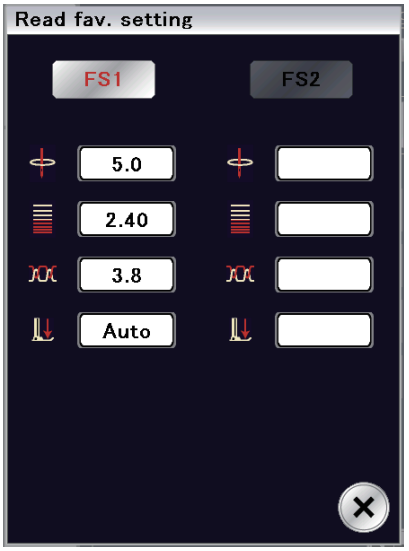
To select the favorite stitch settings, press the open favorite key ①.



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

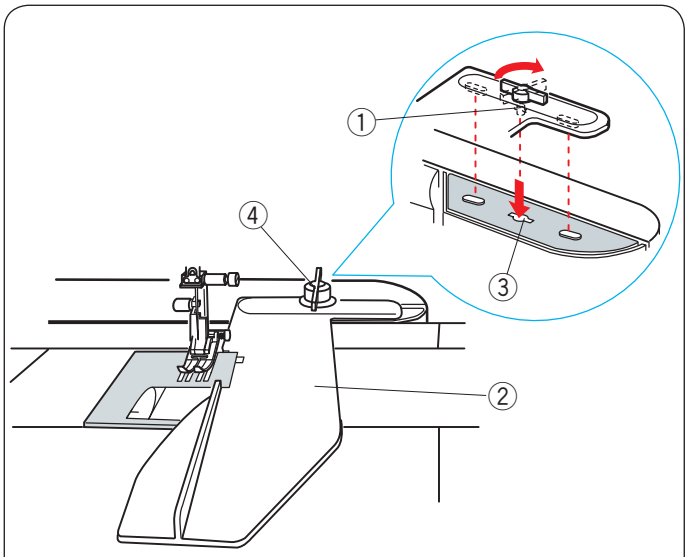


To delete favorite stitch settings, press the delete key ④.
Select the desired set of favorite stitch settings by pressing FS1 ② or FS2 ③.



Cloth Guide

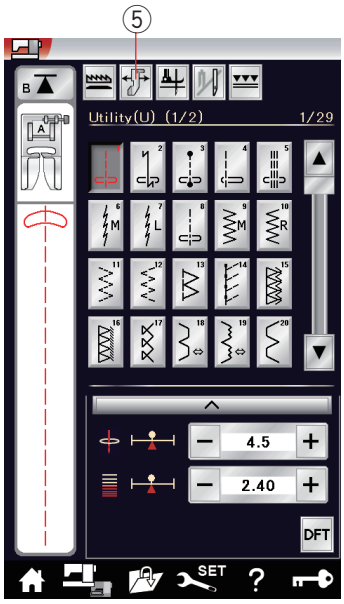
CAUTION:
- Always leave sufficient space to the left of the machine when using the cloth guide.
- Do not use the cloth guide when the buttonhole foot R is attached.
- The extension table cannot be opened when the cloth guide is in use.



Attaching the cloth guide

Attach the embroidery unit (see page 103).
Insert the pin on the cloth guide into the carriage hole.
Turn the attaching knob clockwise to secure the cloth guide.

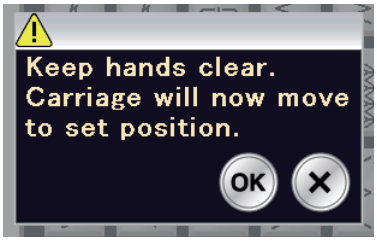
① Pin
② Cloth guide
③ Carriage hole
④ Attaching knob



Setting the cloth guide position

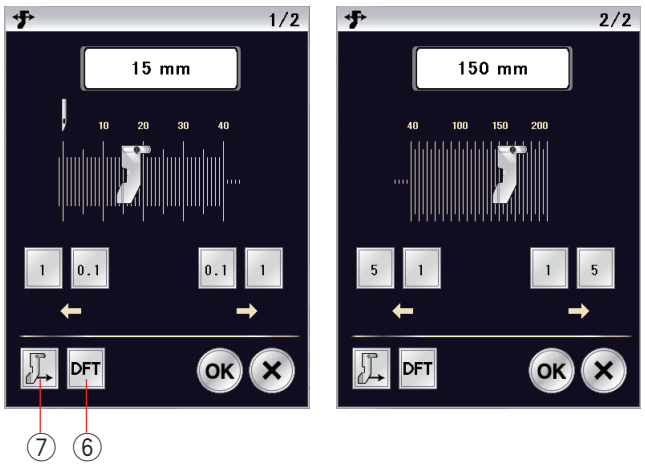
Press the cloth guide key.

⑤ Cloth guide key



The visual touch screen will show a warning message.
Press the OK key.

The cloth guide adjustment window will open.
Press the [1] [0.1] or [0.1] [1] key to move the cloth guide to the desired position.
The cloth guide will move the distance indicated on the key.
The cloth guide position is indicated on the scale bar and the distance from the center needle drop position is indicated in millimeters or inches.



Press the OK key to register the setting and close the cloth guide adjustment window.

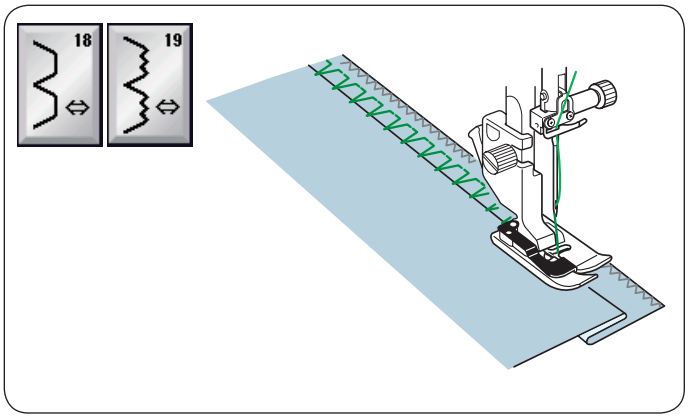
NOTE:
The machine will not run if the cloth guide adjustment window is open.

Press the default key to return the cloth guide to the default position (15 mm or 5/8″).

⑥ Default key

Make sure to return the carriage to the stored position by pressing the cloth guide storage key and remove the cloth guide after you finish sewing.

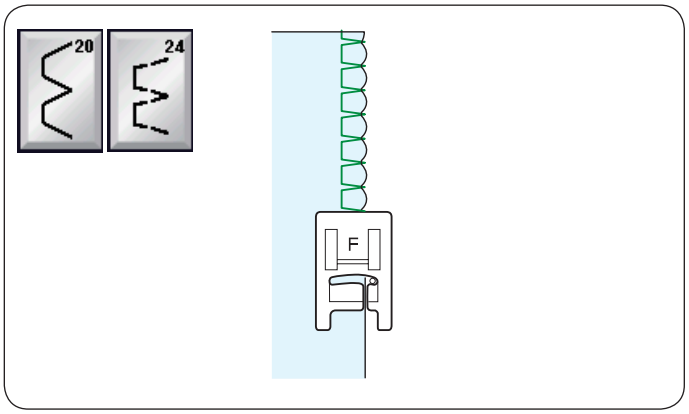
⑦ Cloth guide storage key



Other Utility Stitches

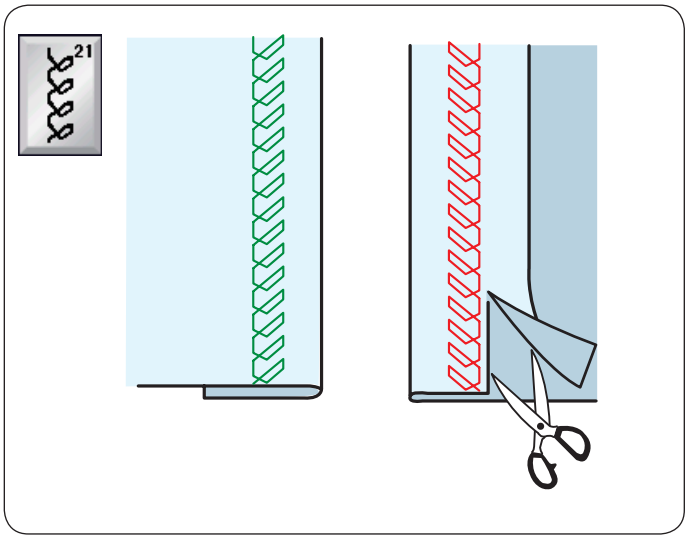
U18, U19 Blind hemming

Refer to page 78 for sewing instructions.



U20, U24 Shell tuck

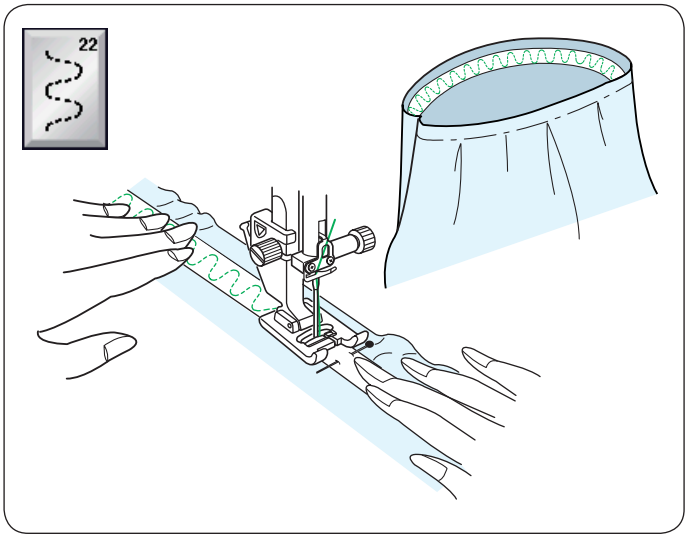
Refer to page 79 for sewing instructions.



U21 Visible hemming

Select pattern U21.

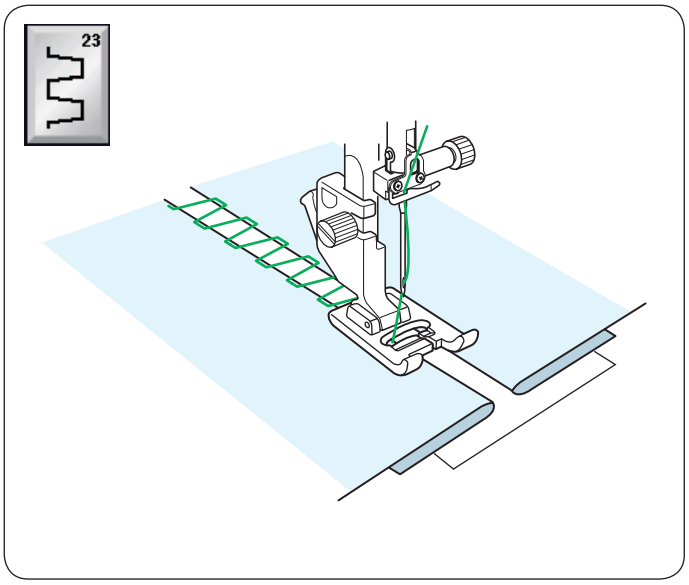
Fold and press a single hem. Place the fabric with the right side up.
Sew along the fold at the desired depth.
Trim the excess on the wrong side.



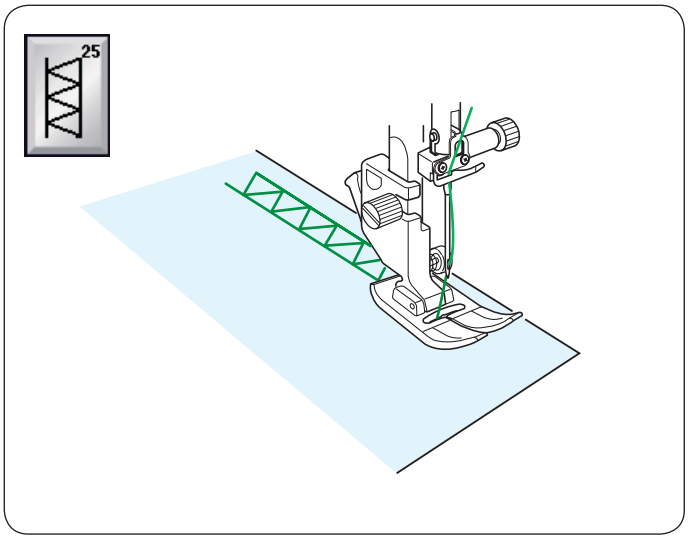
U22 Attaching elastic

Select pattern U22.

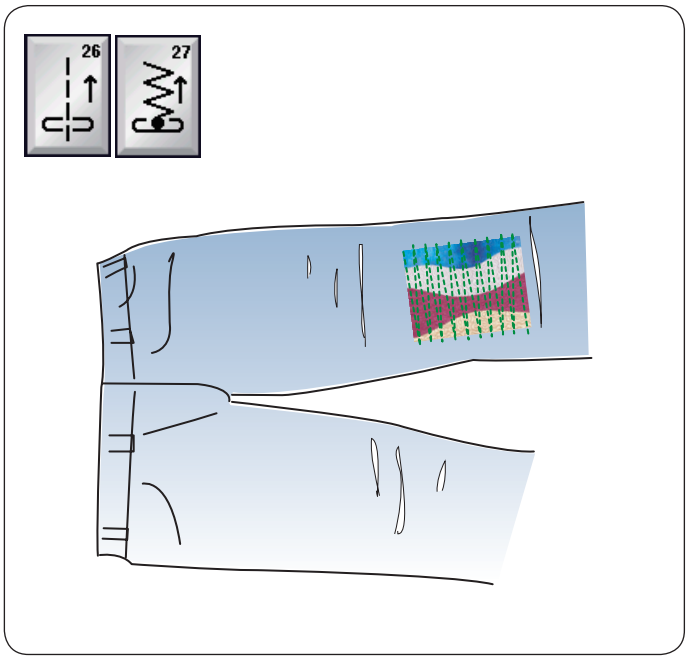
Mark the elastic into quarters. Match those to the center front, center back and side seams, and pin the elastic to the fabric.
Place the elastic under the foot and stitch into place while stretching the elastic evenly.



U23 Fagotting
Use this stitch to join two pieces of fabric to create an open work appearance and add stitch interest.



U25 Hemstitch
Use this stitch for fagoting or decorative stitch.



U26, U27 Backward stitches
U26 and U27 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.



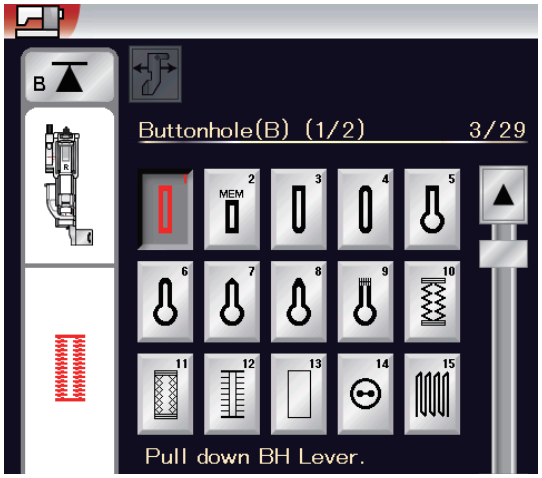
B12 Antique buttonhole
This buttonhole looks like the heirloom stitch. It has an attractive handmade appearance and makes a nice decorative buttonhole.



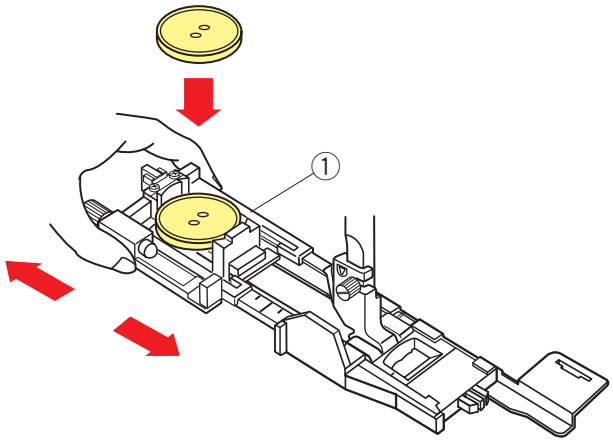
B13 Welted buttonhole
This is a template pattern for the hand sewn welted (bound) buttonhole.

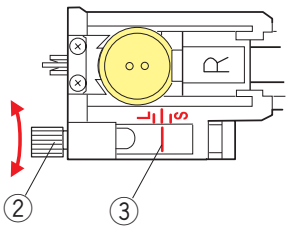
NOTE:
B3-B13 are sensor buttonholes and the sewing procedure is the same as for B1.

B1 Sensor (Square) Buttonhole

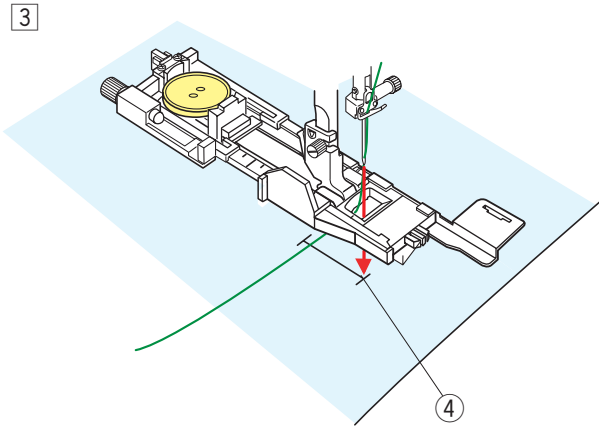


1
2





3



1 Pull open the button holder of the automatic buttonhole foot R, and place the button in the button holder. Push it tightly against the button.
① Button holder

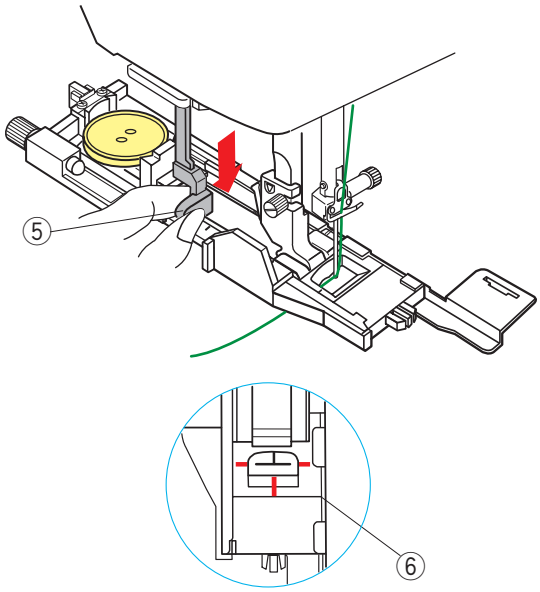
NOTE:
Use the blue needle for sewing buttonholes on fine to medium fabrics.

2 Attach the buttonhole foot. Raise the presser foot.

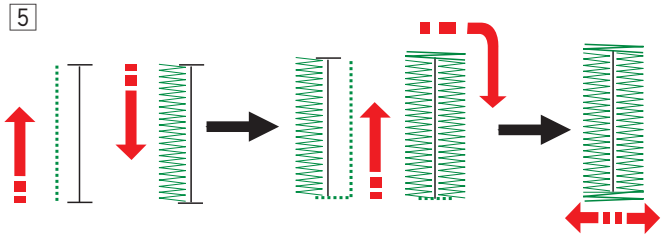
NOTE:
The buttonhole size is automatically set by placing a button into the button holder on the foot.
The button holder of the foot takes button sizes up to 2.5 cm (1″) in diameter.
Make a test buttonhole on an extra piece of the fabric. Check the length of the test buttonhole, and adjust the buttonhole 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

3 Draw the needle thread to the left through the hole of the foot.
Mark the buttonhole position on the fabric and place it under the buttonhole foot. Lower the needle at the starting point by turning the hand wheel.
④ Starting point

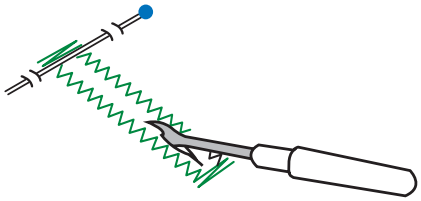
4



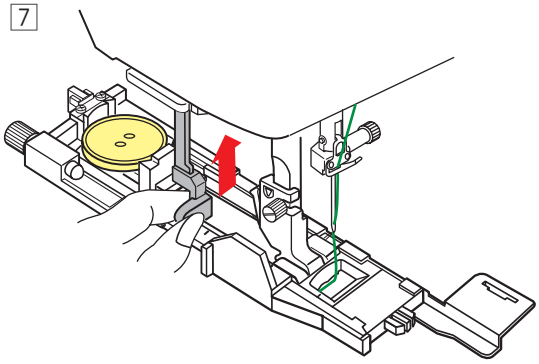
5



6



7



4 Lower the buttonhole foot and pull down the buttonhole lever as far as it will go.
Start sewing while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue sewing.
⑤ Buttonhole lever

NOTE:
A warning message will appear and the machine will stop automatically if you start the machine without pulling down the buttonhole lever. Press the X key, pull down the buttonhole lever and start again.
Make sure there is no gap between the slider and front stopper, otherwise the buttonhole will be out of position or the left and right lengths will be different.
⑥ No gap

NOTE:
Use the stabilizer plate when sewing thick fabrics or sewing across hems (refer to page 49).

5 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.

6 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.

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

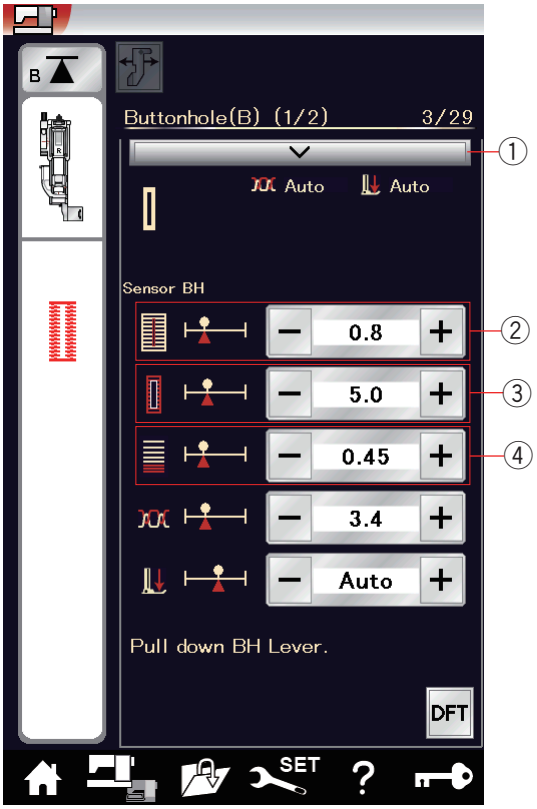
Patterns B3 to B13 are sensor buttonholes and the sewing procedure is the same as for buttonhole B1.

However, the sewing sequence varies depending on the type of the buttonhole.

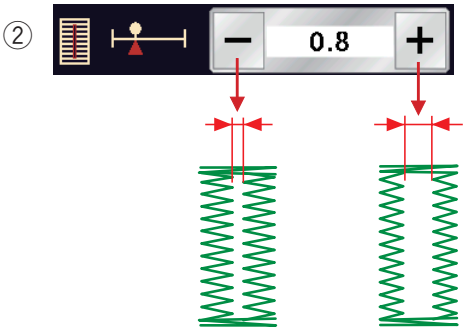


Double layer buttonhole
To make a sturdy buttonhole, sew another layer of buttonhole stitches over the previous stitches.
After the buttonhole is finished, simply start the machine again.
Do not raise the foot or buttonhole lever.

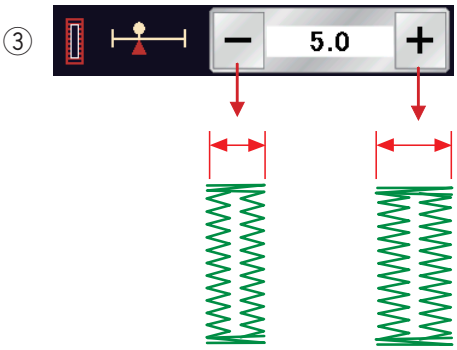
NOTE:
This function is disabled if Thread Cut after Auto-Lock option is turned on in the ordinary sewing setting mode (refer to page 101).



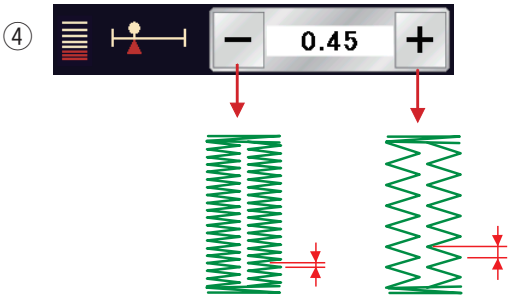
Manual settings
When you press the setting bar, the manual setting window expands to show more options.
① Setting bar



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



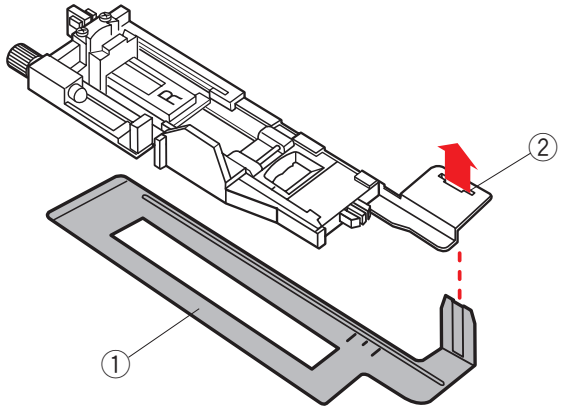
④ **Altering buttonhole stitch density**
Press the “+” key to make the buttonhole stitches less dense.
Press the “–” key to make the buttonhole stitches denser.

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 0.2 to 1.0.

Using the stabilizer plate

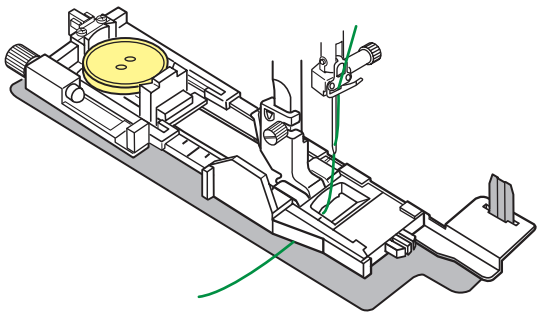
The stabilizer plate holds and supports the fabric so it is helpful when sewing buttonholes over the hem of thick fabrics.

1



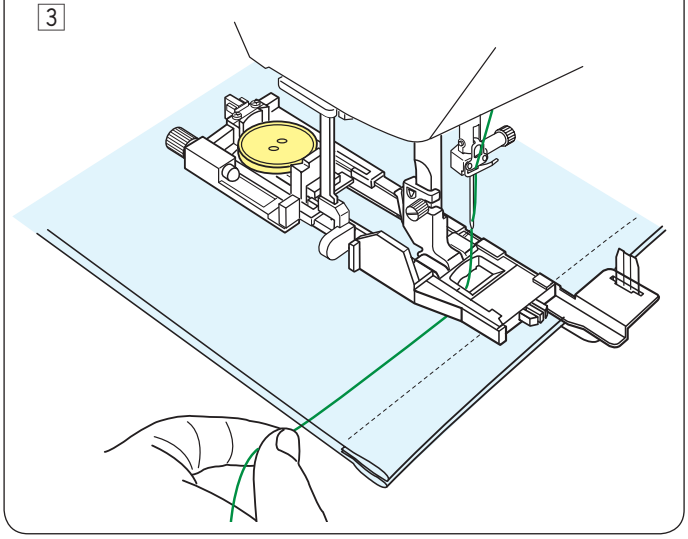
1 Insert the tab of the stabilizer plate ① into the slot ② of the buttonhole foot.
① Stabilizer plate
② Slot

2



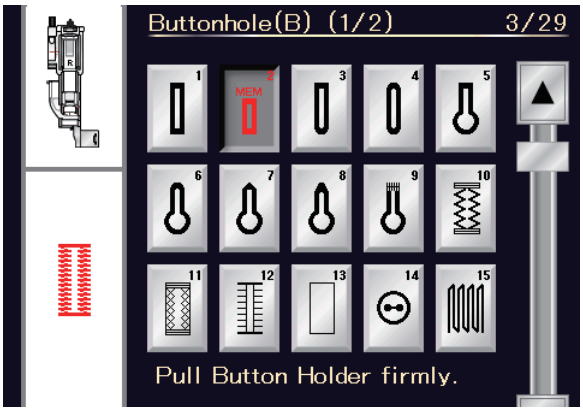
2 Place the button on the button holder of the foot.
Attach the buttonhole foot to the machine.
Insert the fabric between buttonhole foot and stabilizer plate. Draw the needle thread to the left between the foot and stabilizer plate.

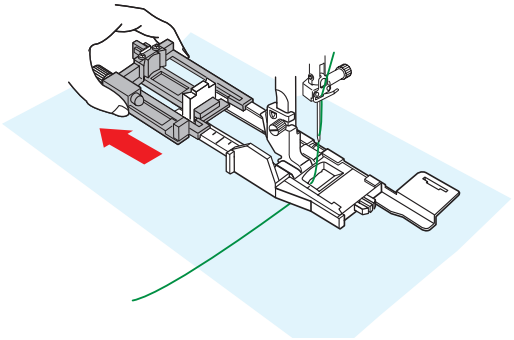
3

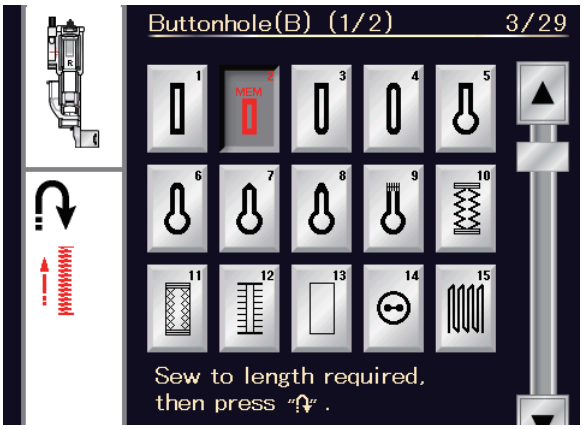


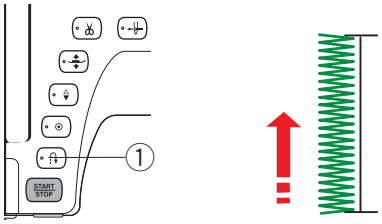
3 Place the fabric between the buttonhole foot and stabilizer plate. Lower the needle into the starting point by turning the hand wheel.
Lower the foot and buttonhole lever.
Start the machine while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue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

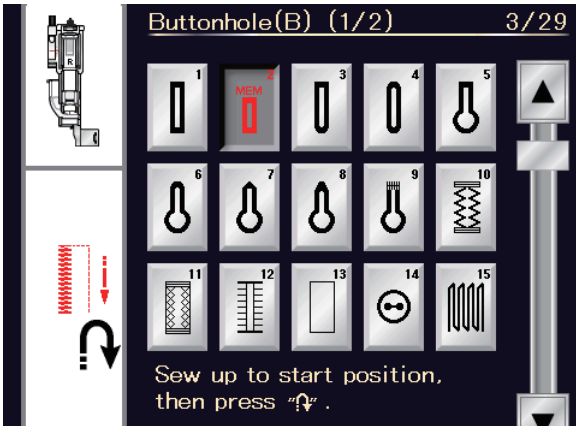
NOTE:
The sewing procedure is exactly the same as that for B1 sensor (square) buttonholes.

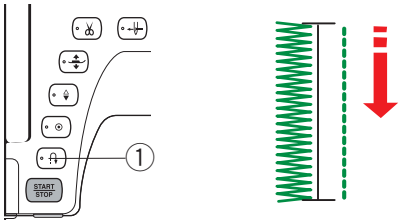












B2 Automatic (square) buttonhole

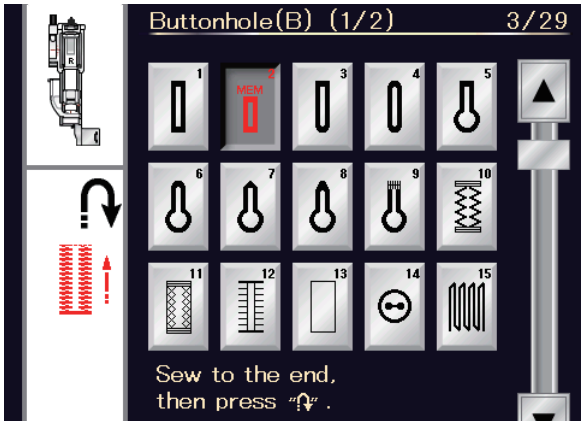
Pull the button holder all the way out.
Mark the buttonhole position on the fabric.
Place the fabric under the foot, and lower the needle at the starting point.
Lower the foot and start sewing while pulling the needle thread lightly to the left. After sewing a few stitches, free the thread and continue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

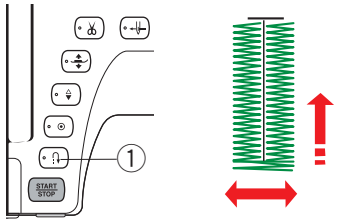
NOTE:
You do not need to pull down the buttonhole lever.
If you wish to sew a buttonhole longer than the size permitted by the automatic buttonhole foot R, use satin stitch foot F.

NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.2 to 1.0.

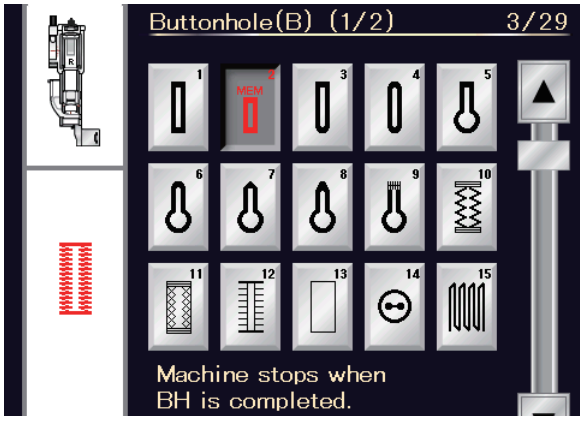
Step-1
Sew the left side up to the required buttonhole length and stop the machine. Then press the reverse button ①.

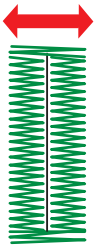
Step-2
Start sewing again, and the machine sews back with a straight stitch.
Stop the machine when you reach the starting point.
Then press the reverse button ①.





Step-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.

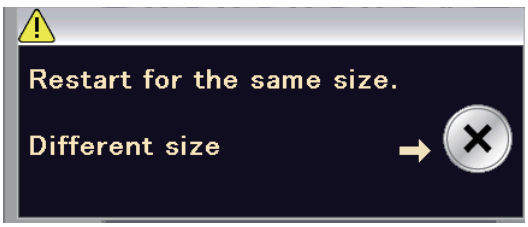




Step-4
Start sewing again, and machine sews the back bartack and locking stitches then stops automatically with the needle in the up position.

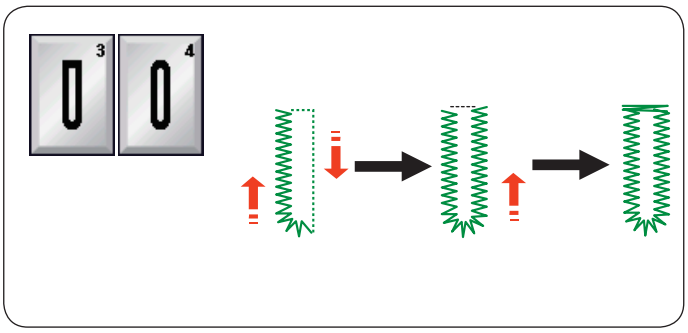
When the buttonhole is finished, a message will appear.

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.

NOTE:
To cut the buttonhole opening, refer to the instructions on page 47.
The memorized length will be cancelled if the presser foot is raised or the startover key is pressed before buttonhole is completed.

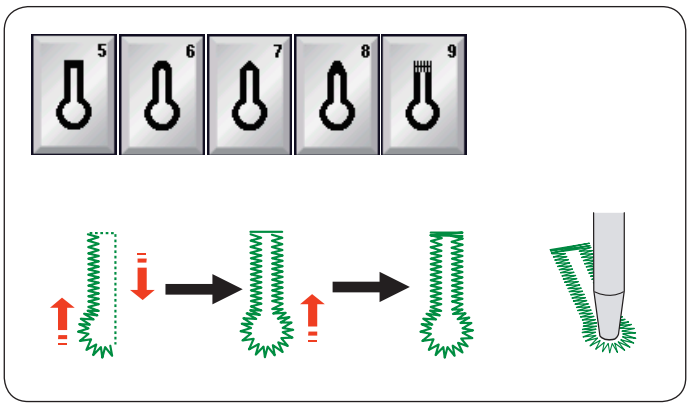


Other Buttonholes

B3, B4 Round end and fine fabric buttonholes

The sewing procedure is the same as that of B1 square (sensor) buttonhole (refer to page 46).

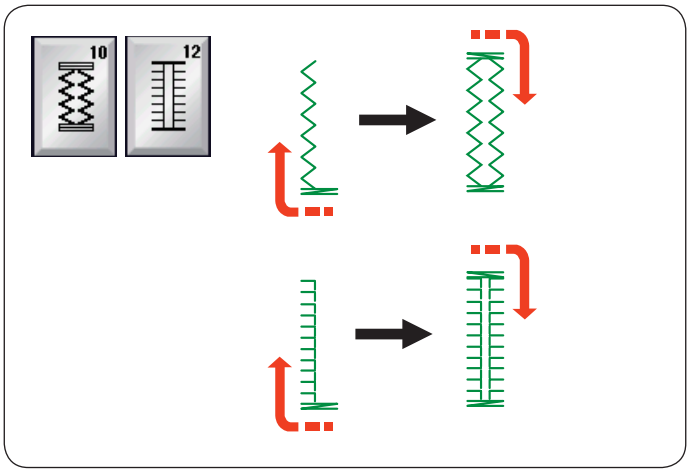
NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.2 to 1.0.



B5-B9 Keyhole buttonholes

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to page 46).
Use an eyelet punch to open the keyhole buttonhole.

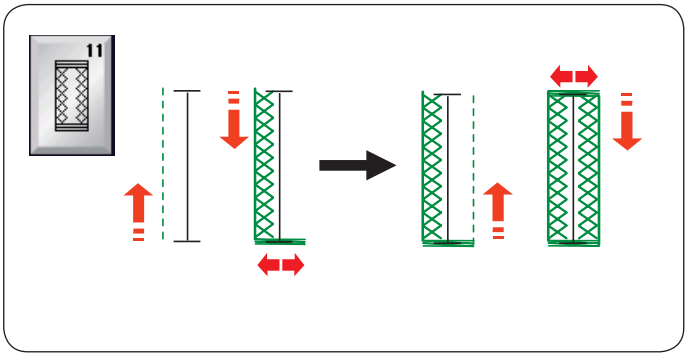
NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 5.6 to 9.0.
The stitch density can be adjusted from 0.2 to 1.0.



B10, B12 Stretch and Antique buttonholes

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to page 46).
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 0.5 to 1.0 (B10), from 0.5 to 2.5 (B12).



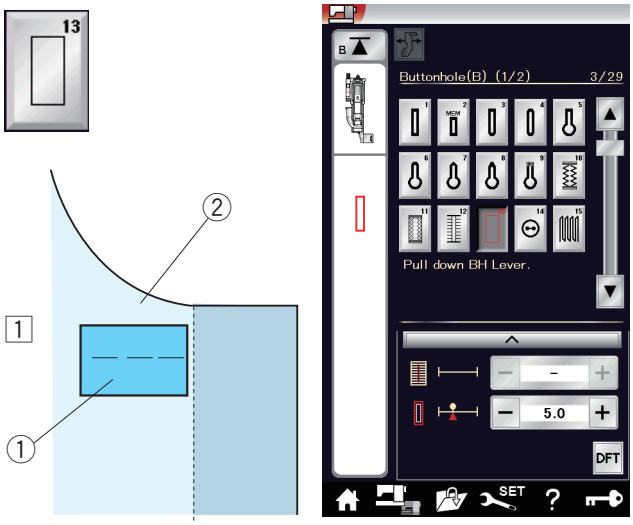
B11 Knit buttonhole

The sewing procedure is the same as B1 square (sensor) buttonhole (refer to page 46).

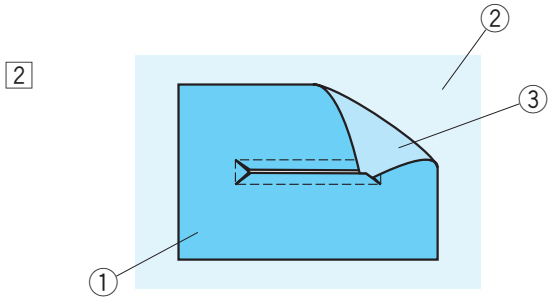
NOTE:
The opening width can be adjusted from 0.2 to 2.0.
The buttonhole width can be adjusted from 2.6 to 9.0.
The stitch density can be adjusted from 0.7 to 1.2.

B13 Welted Buttonhole (Bound buttonhole)

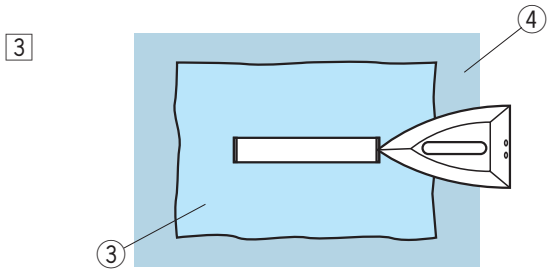
A welted buttonhole is made by stitching a strip or patch of fabric to the buttonhole.
Welted buttonholes are particularly suitable for tailored garments, but are not recommended for sheer or delicate fabrics where the patch might show through or add bulk.



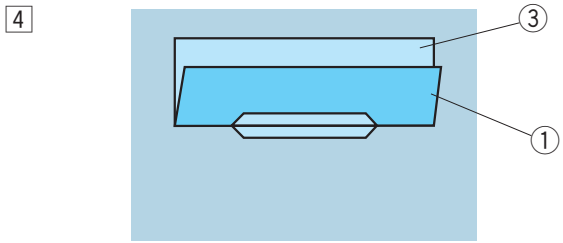
1 Baste a patch to the garment fabric with the right sides together.
- ① Wrong side of patch
- ② Right side of garment fabric



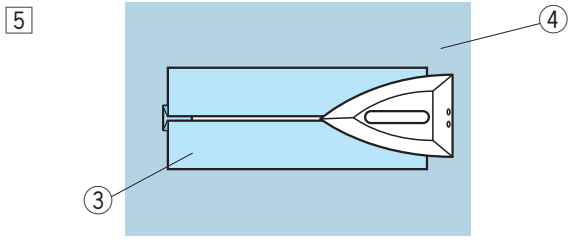
2 Select pattern B13.
Sew the welted buttonhole on both fabrics together.
Cut the buttonhole opening as illustrated then pull the patch out through the slit to the other side.
- ① Wrong side of patch
- ② Right side of garment fabric
- ③ Right side of patch



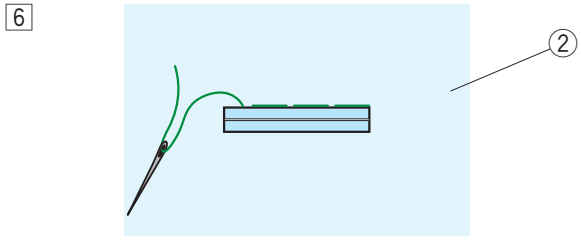
3 Pull out the patch until the right side of the patch is showing. Use an iron to press both corner ends until they are squared off.
- ③ Right side of patch
- ④ Wrong side of garment fabric



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

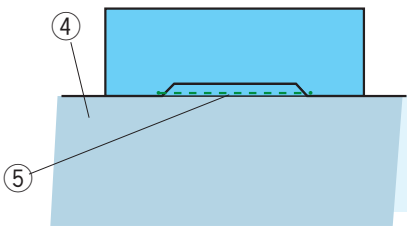


5 Press both folds with an iron.
- ③ Right side of patch
- ④ Wrong side of garment fabric



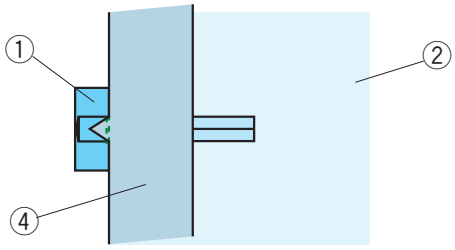
6 Baste both edges of the seam with a needle and thread by hand.
- ② Right side of garment fabric

7



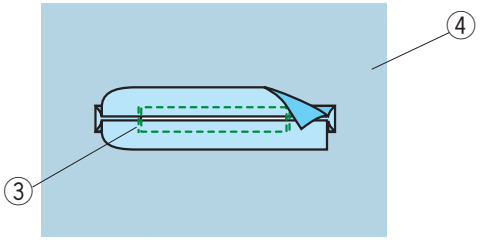
7 Fold over the length of the garment fabric, sew back and forth beside the original seam to secure flaps of the patch.
④ Wrong side of garment fabric
⑤ Sew back and forth

8



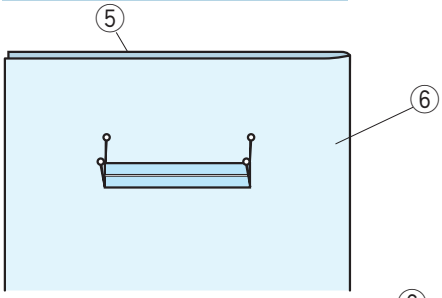
8 Fold over the end of fabric and sew back and forth three times over the triangular end.
① Wrong side of patch
② Right side of garment fabric
④ Wrong side of garment fabric

9



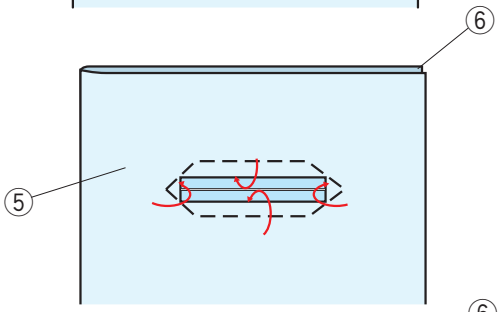
9 The patch should be cut 1 to 1.5 cm (7/16″ – 5/8″) away from the hole. The corners should be cut rounded off as shown.
③ Right side of patch
④ Wrong side of garment fabric

10



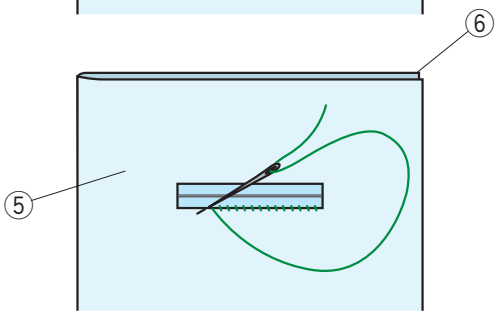
10 Place the facing on the wrong side of the garment fabric. Mark the 4 corners with pins as shown.
⑤ Facing
⑥ Garment fabric

11



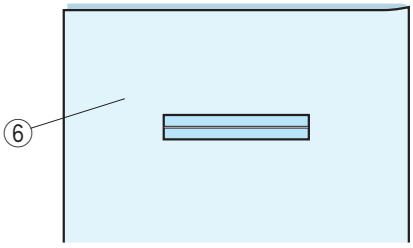
11 Turn all the layers over and cut the buttonhole opening on the facing in the same way as step 2.
Four marker pins show you the corner points on the facing. Fold back each flap between the facing and patch.
⑤ Facing
⑥ Garment fabric

12

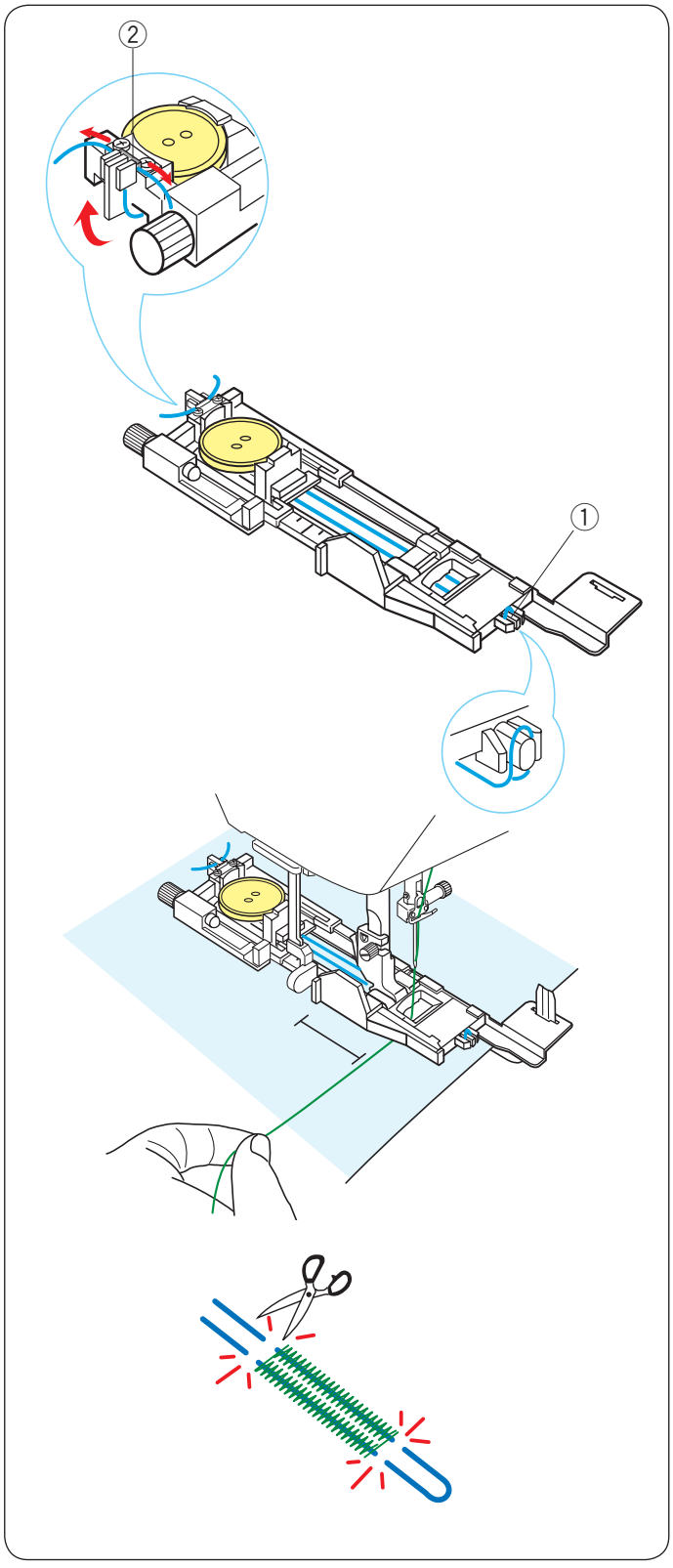


12 Stitch around the opening with a needle and thread as shown.
⑤ Facing
⑥ Garment fabric

13



13 The welted buttonhole is complete.
⑥ Garment fabric



Corded Buttonhole

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

Select pattern B1.

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

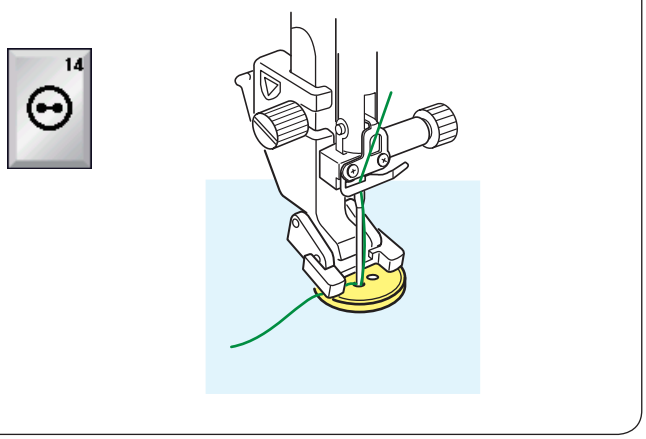
Set the stabilizer plate as necessary and attach the buttonhole foot.

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.

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 47.



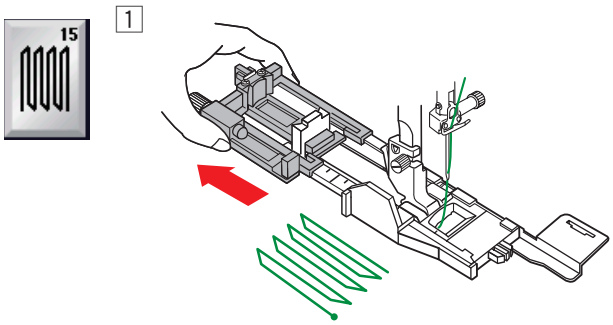
Specialty Stitches

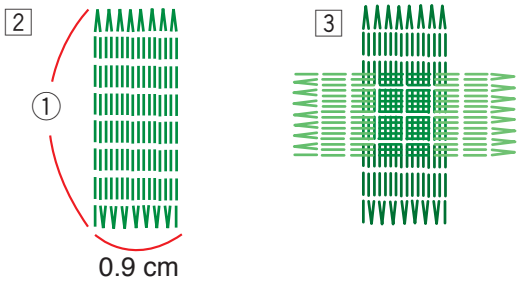
B14 Button Sewing

See page 87 for sewing instructions.

B15 Darning

1 Attach the automatic buttonhole foot R and pull the button holder all the way out.

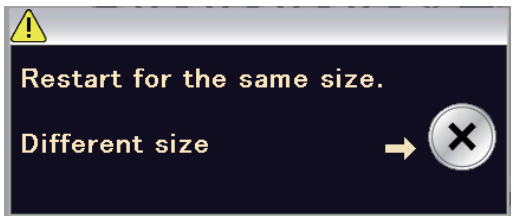




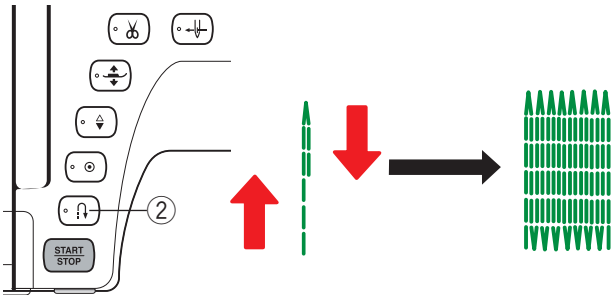
2 Start the machine and sew to the required length, then press the reverse button. This sets the darning length. Continue sewing until the machine stops automatically.
① Required length

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

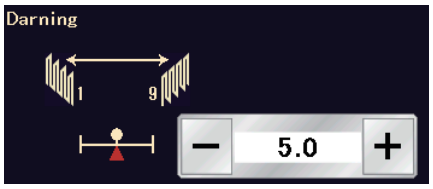
NOTE:
The maximum darning length is 2 cm (3/4″) and the maximum width is 0.9 cm (3/8″).



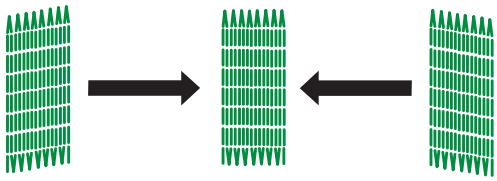
To sew the same size darning
When finished sewing, a confirmation message will appear.
Simply start the machine to sew another layer of darning stitches in the same size.
To sew the next layer of darning stitches in a different size, press the X key.

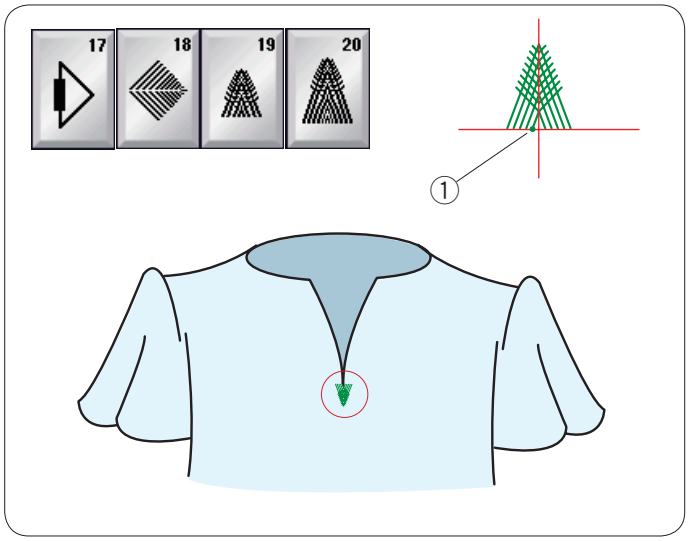


To sew a shorter layer of darning stitches
Sew the first line to the desired length and stop the machine.
Press the reverse button ② and start the machine again. The machine will sew the rest of the darning and stop automatically.



To adjust the evenness of darning stitches:
You can correct unevenness of darning stitches by pressing the “–” or “+” key in the adjusting window.
If the left corner is lower than the right side, press the “–” key to correct it, and vice versa.





Fly Stitches (B17 to B20)

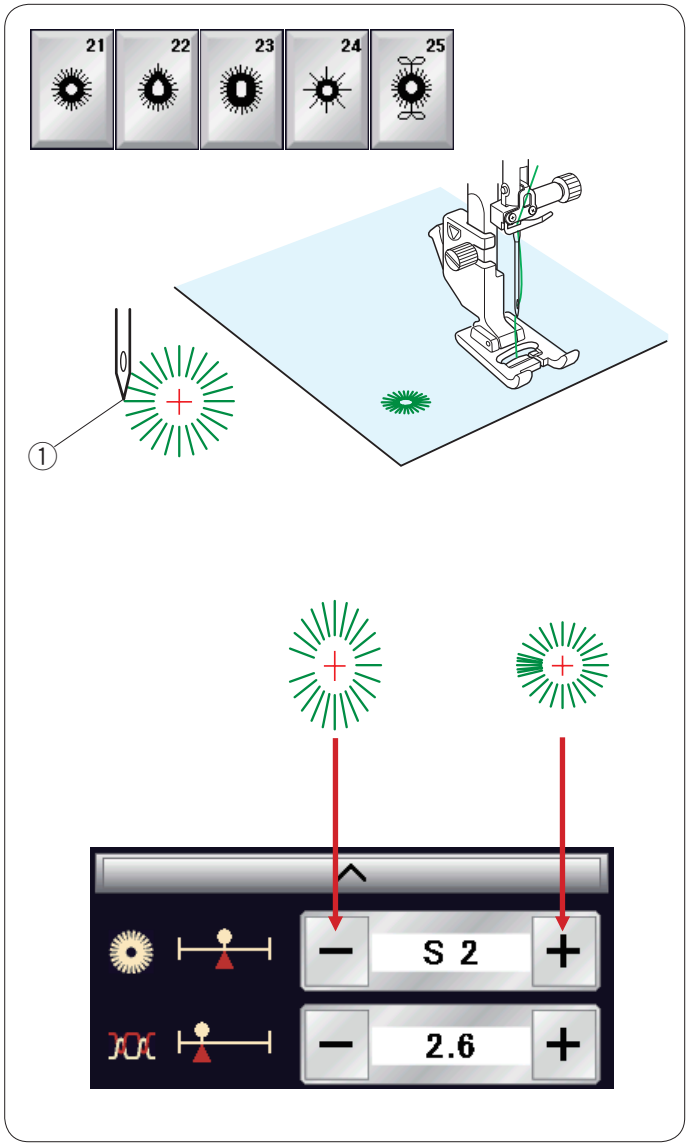
The fly stitch is a triangle tacking stitch for use on a zipper fly bottom and on the side pockets of men's pants.

Attach the satin stitch foot F.

To sew:

Place the garment under the foot and lower the needle at the starting point.
Sew the stitch until the machine stops automatically.

① Starting point



Eyelets (B21 to B25)

The eyelet is used for belt holes, etc.

Attach the satin stitch foot F.

To sew:

Place the garment under the foot and lower the needle to the starting point.
Sew until the machine stops automatically.

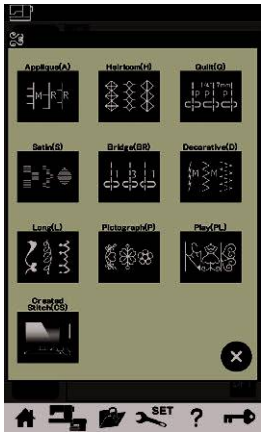
① Starting point

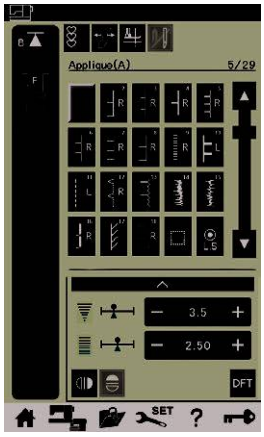
Open the eyelet with an awl, puncher or pointed scissors.

To correct the shape of an eyelet:
If the eyelet is open, press the “–” key.
If the eyelet overlaps, press the “+” key.

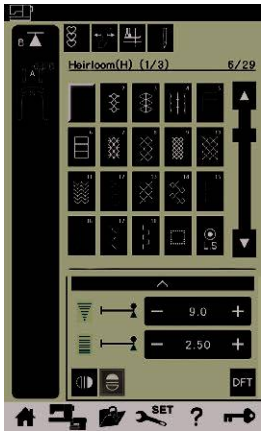
Decorative Stitches

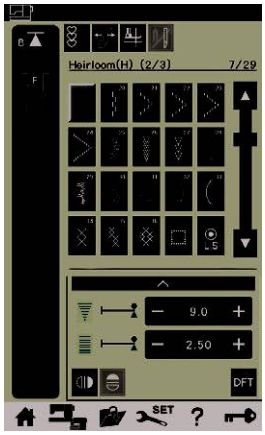
The patterns in this section are classified into 10 groups. These patterns are programmable and you can make a pattern combination.

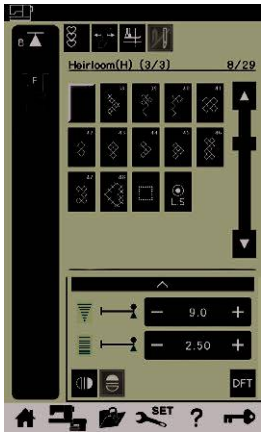




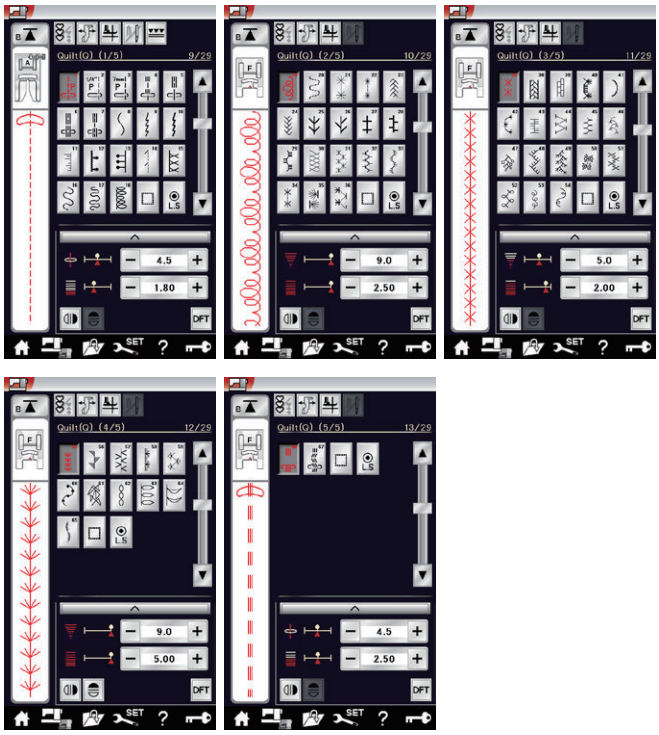
Applique stitches (A): 1 page
Stitches in this group are for applique.
(Refer to page 89.)



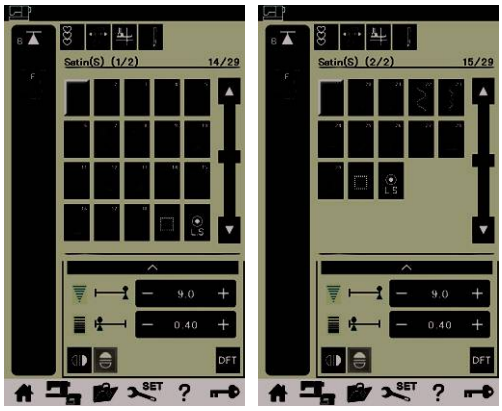




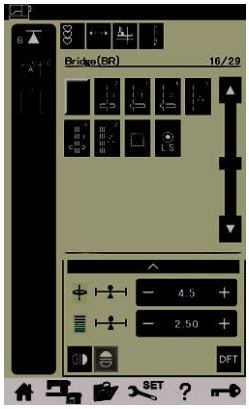
Heirloom stitches (H): 3 pages
This group provides heirloom stitches and cross stitches for craft sewing and home décor.



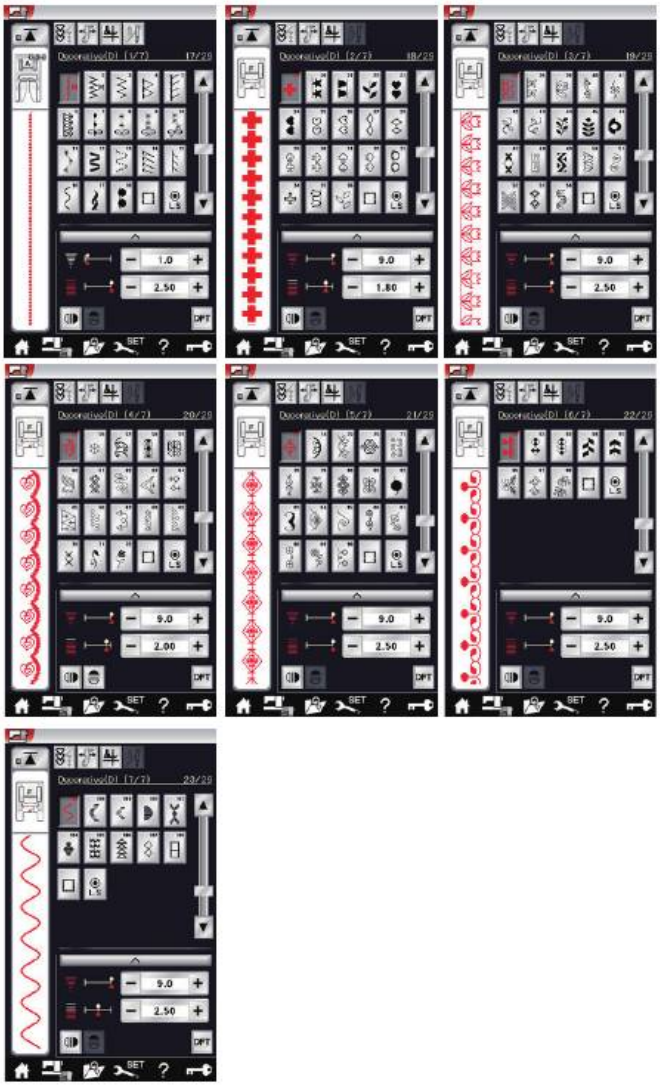
Quilting stitches (Q): 5 pages
Stitches in this group are for patchwork and quilting.
(Refer to pages 91-93.)



Satin stitches (S): 2 pages
The stitches in this group can be elongated up to 5 times their original length while the stitch density remains the same.
(Refer to page 63.)



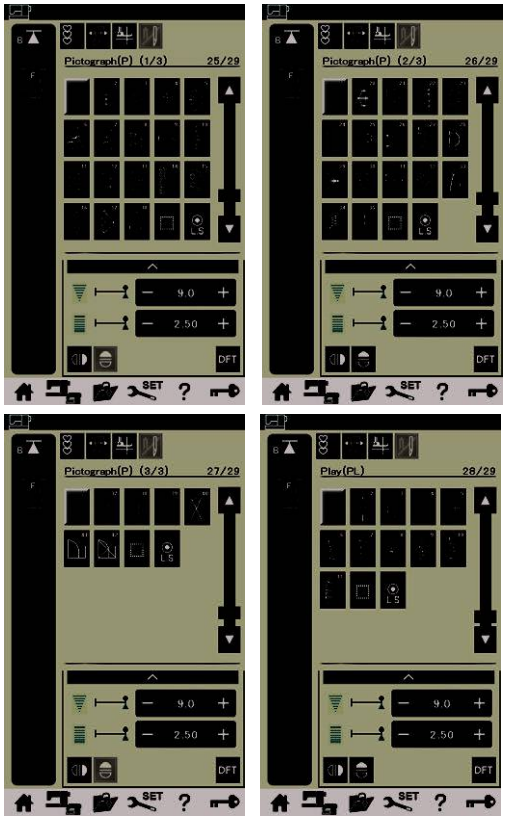
Bridge stitches (BR): 1 page
Bridge stitches are used for inserting straight stitches after a stitch pattern.
The number beside the stitch image on the straight stitch key indicates the stitch count of a programmable unit.
Patterns BR5 and BR7 will inherit the needle drop position and stitch length of the previous pattern in the programmed pattern combination.
(Refer to page 66.)



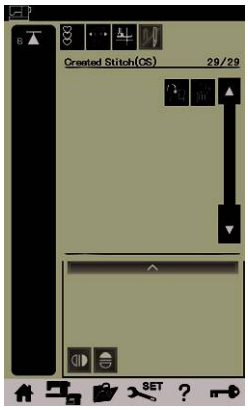
Decorative stitches (D): 7 pages
108 attractive patterns are available in this group.



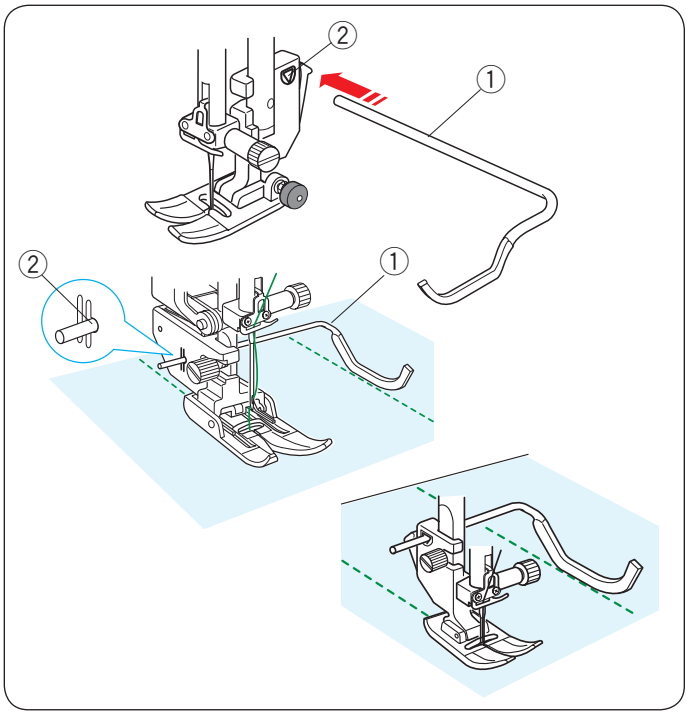
Long stitches (L): 1 page
Patterns in this group are ideal for decorating garments and for adding border trims.



Pictograph stitches (P): 3 pages
Play stitches (PL): 1 page
There are many cute designs, fancy motifs and calligraphy available in these groups.



Created stitches (CS)
In this section, you can select original stitch patterns created with Stitch Composer.
Refer to page 64 for how to transfer created stitch patterns from the PC to the machine.



Quilting(Q)

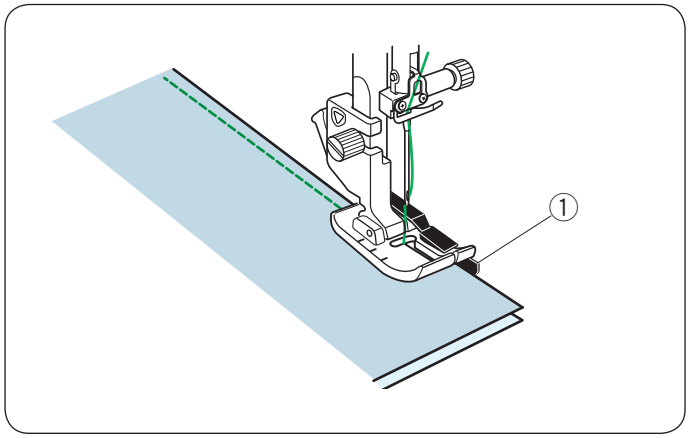
Using the quilting guide bar

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

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

① Quilting guide bar
② Hole

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



Q1-Q3 Patchwork piecing

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

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

① Guide



Q66-Q67 Hand-look quilt stitches

Patterns Q66 to Q67 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.

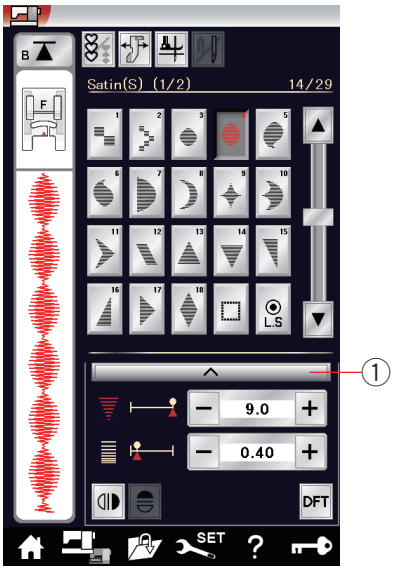
S1-S29 Decorative Satin Stitches

Elongation ratio

Patterns S1 to S29 are decorative satin stitches for which the pattern length can be elongated without changing the stitch density.

Press the setting bar ① to expand the manual setting window.

① Setting bar



Press the “+” key to elongate the stitch pattern.

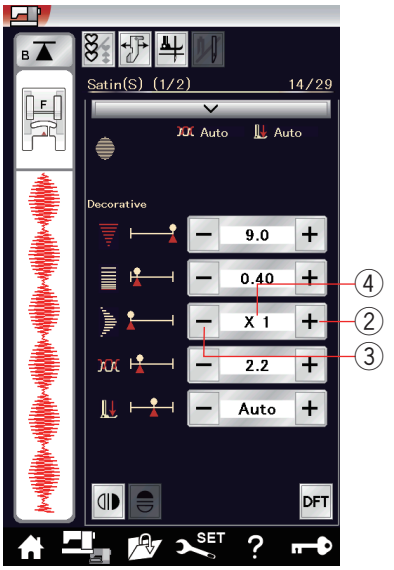
② “+” key (elongation)

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

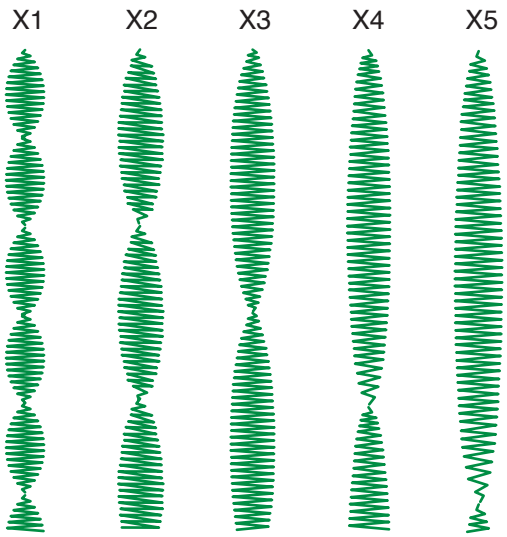
③ “–” key (elongation)

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

④ Elongation ratio



You can also alter stitch density and stitch width.

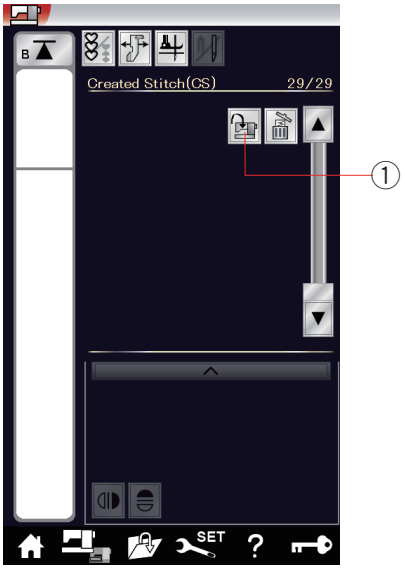


Created Stitches (CS)

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

Insert the USB flash drive containing the original stitch patterns and press the import key, or import them from Stitch Composer using a USB cable.

① Import key

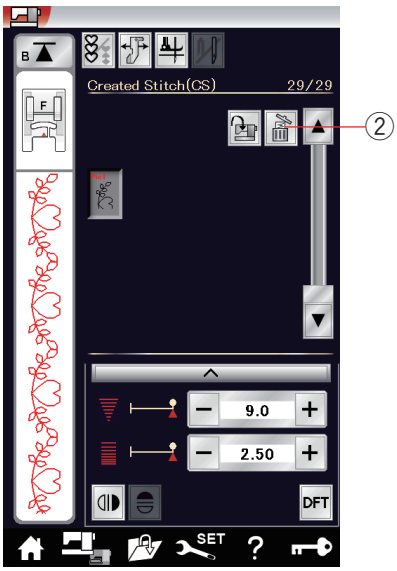




Select “USB1” or “USB2” and the folder list will appear. Select the desired folder to open and the file list will appear.

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.

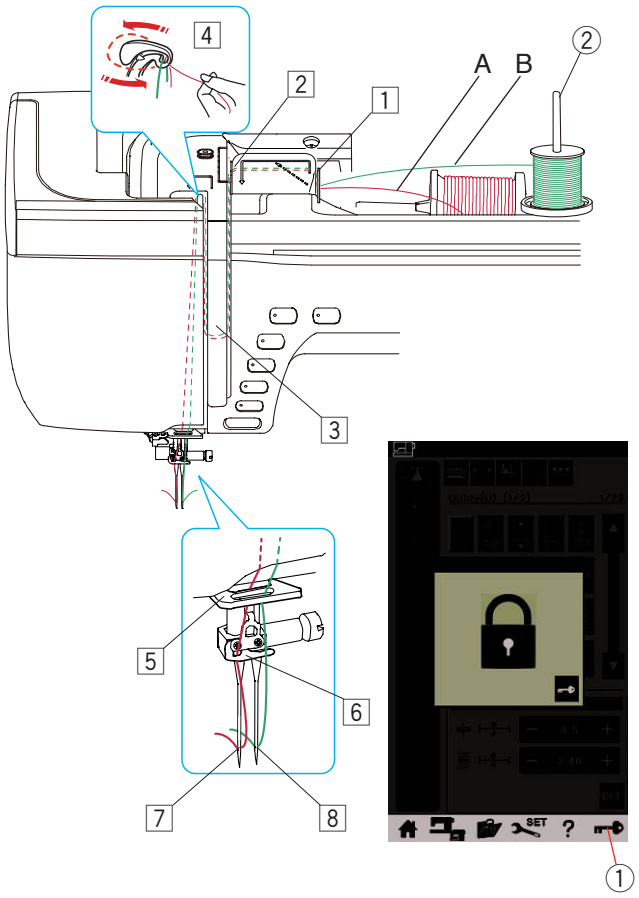


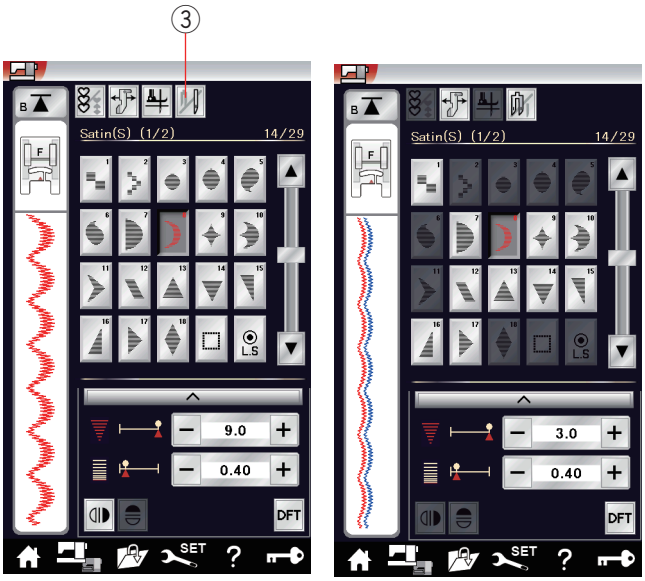
To delete the pattern, press the delete key and select the pattern to delete.
A confirmation message will appear. Press the OK key to delete the pattern.

② Delete key

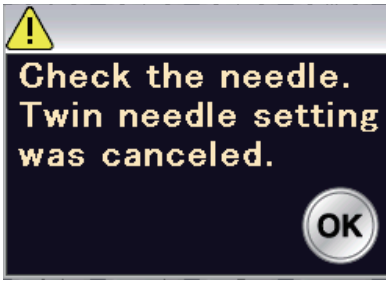
NOTE:

- Up to 30 patterns can be saved in this group.
- Twin needle sewing is not available for the created stitches.









Twin Needle Sewing

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

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

CAUTION:

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

① Lockout key

Insert the additional spool pin into the hole under the top cover.
Place a spool of thread and the felt on the additional spool pin and the spool stand (refer to page 14).

② Additional spool pin

Draw both threads from the spools and pass them through the threading points from 1 to 4.
Slip the thread A through the needle bar thread guide 5, then pass through points 6 and 7 as illustrated.
Thread the thread B through the front hole of needle bar thread guide 5, then pass it through the needle hole 8.

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

NOTE:

- Threading from points 1 to 4 is the same as for a single needle (refer to page 17).
- The needle threader cannot be used with the twin needle.

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

③ Twin needle key

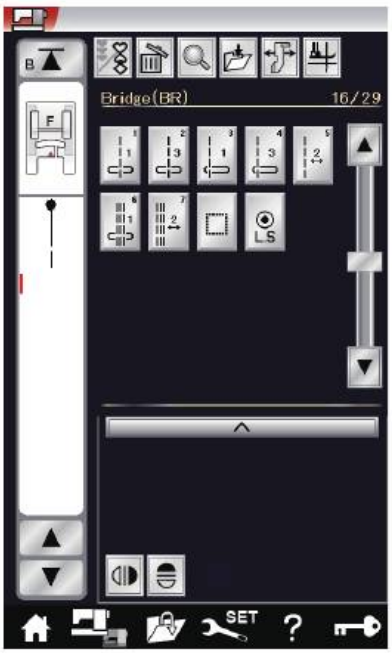
NOTE:

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

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







Programming a Pattern Combination

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

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

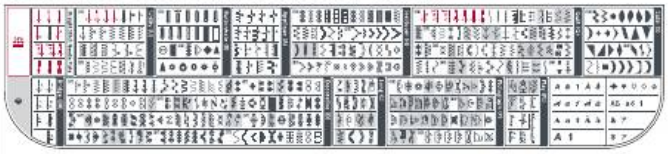
① Program key

Mirror image of patterns

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

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

NOTE:
Horizontal mirror image is available only for the specific patterns. For pattern identification, these patterns are shaded in light grey on the reference chart inside the top cover.



Mirror image function will be canceled and mirror image icon will disappear 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 memory check key to show the entire pattern combination at a glance.

⑦ Cursor keys
⑧ Memory check 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 (D7), for example, insert pattern BR5 after pattern D7.
Two counts of straight stitches are added to pattern D7.

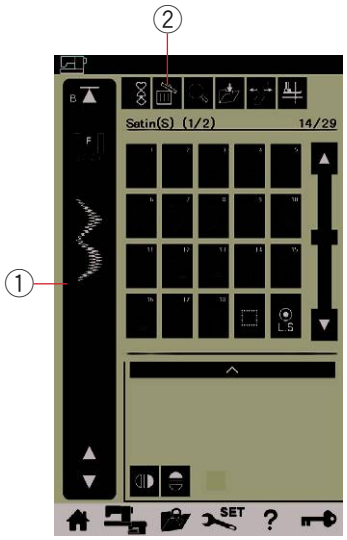
NOTE:
Patterns BR5 and BR7 will inherit the stitch length and needle drop position of the previous pattern in the pattern combination.

Editing a Pattern Combination

Deleting a pattern

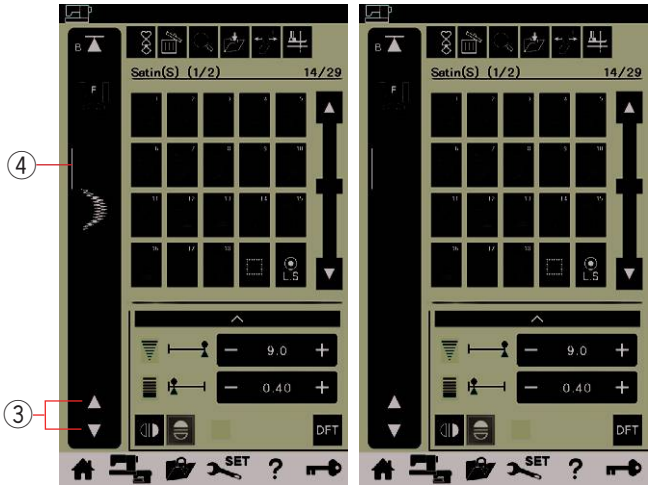
The pattern before the cursor or shown in red is deleted by pressing the delete key.

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 red. Press the delete key to delete the selected pattern.

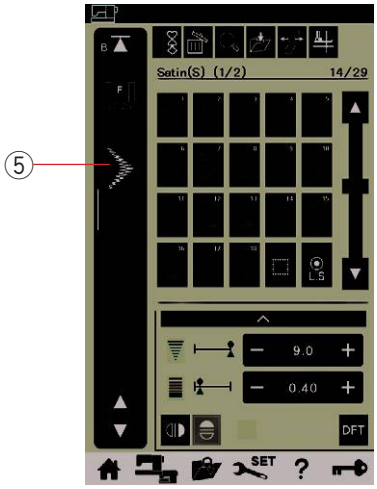
③ Cursor key
④ Selected pattern

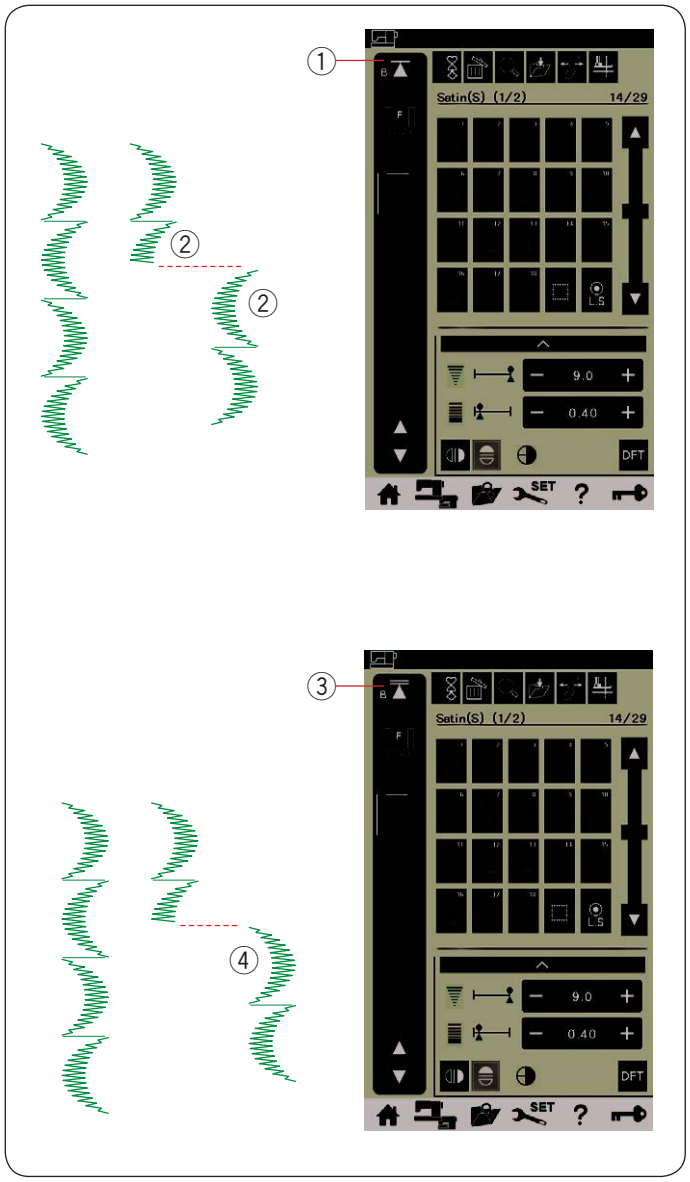


Inserting a pattern

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.
The key shows a triangle and single bar that means the machine will start over from the current pattern.

When you press the startover key, the key will change and show a triangle and double bar that means the machine will start over from the first pattern of the combination.

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.

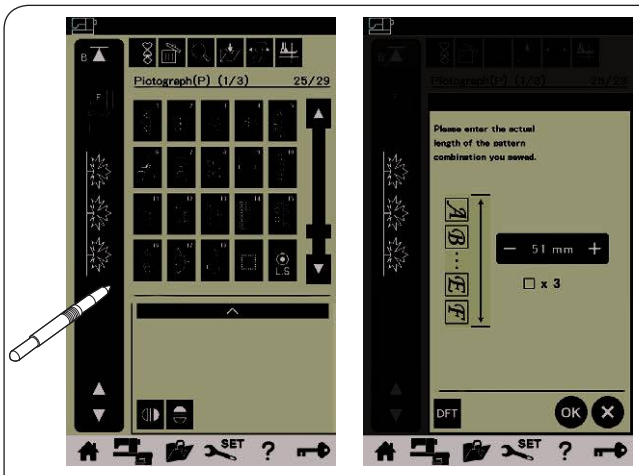
① Startover key (current pattern)
② Current pattern

First pattern startover

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)
④ First pattern

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

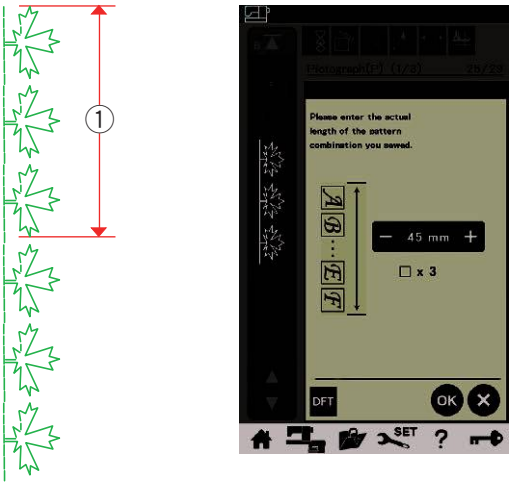


Checking Pattern Combination Length

You can check the total length of the pattern combination by pressing on the stitch image indicated in the left window.

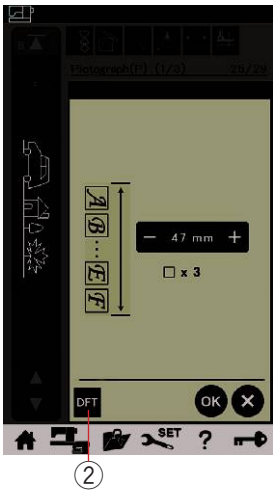
The readout of the total length is a theoretical value and the actual length may vary depending on sewing conditions.

For example, select the pattern P5 three times, and sew a pattern combination.



If the actual length differs considerably from the readout, measure the actual length and enter the nearest value by pressing the “+” or “–” key.
In this case, the theoretical value is 51 mm. However, if the actual length ① is 45 mm, enter 45 mm by pressing “–” key. Press the OK to register it.

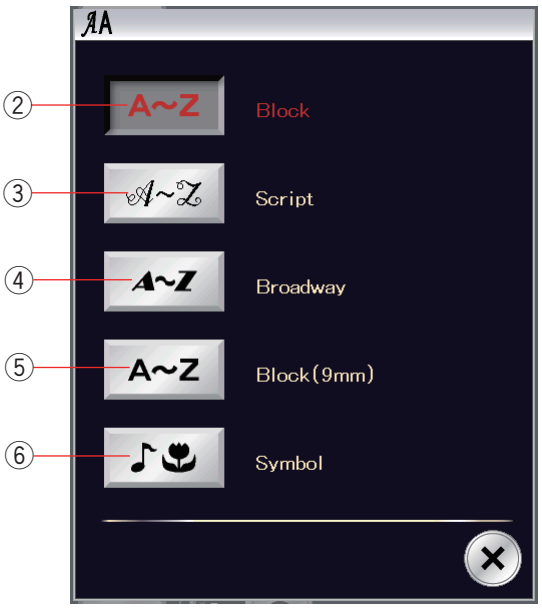
① Actual length



The readout is adjusted automatically when calculating the length of other pattern combinations.
The message “Please enter the actual length of the pattern combination” disappears to indicate that the displayed value is adjusted already.
For example select patterns P13, P21 and P5.
The theoretical value is 53 mm. However, the read out is calculated according to the measured actual length. In this case, the adjusted value is 47 mm.
Press the default key to cancel the readout adjustment.

② Default key





Monogramming

You can program letters and symbol designs for monogramming.
Press the home key to enter the category selection.
Press the monogramming icon to enter the monogramming mode (refer to page 28).
Press the font selection key and the font selection window will open.

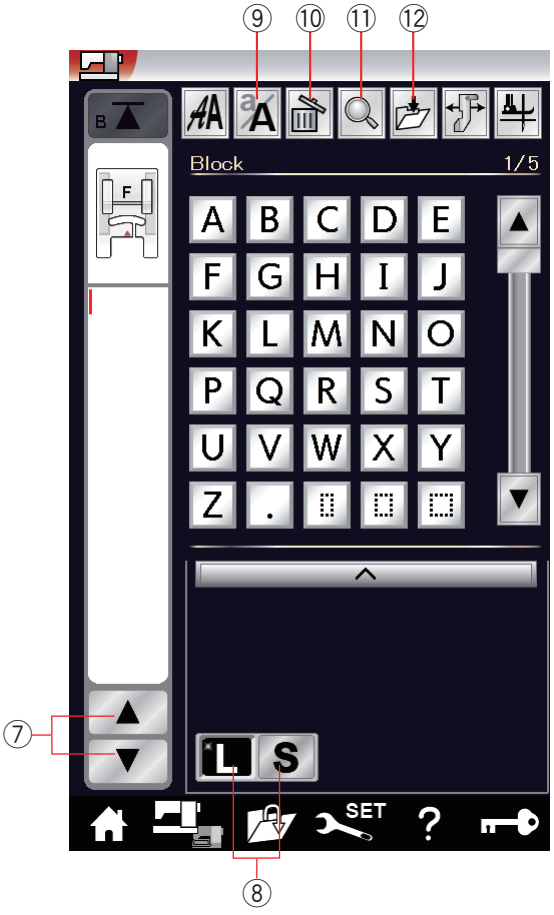
① Font selection key

You can select one of 5 fonts.
Select the desired font by pressing the corresponding key.

② Block font key
③ Script font key
④ Broadway font key
⑤ Block font (9 mm) key
⑥ Symbol key

The monogram mode window will open.

NOTE:
- The height of Block font (9 mm) is approximately 9 mm.
- If you select Russian or Japanese language for the visual touch screen, you can select Cyrillic or Japanese alphabets as well.



Function keys

⑦ Cursor key
Press the cursor key to move the cursor up or down.

⑧ Letter size key
Press this key to select the full size (L) or small size (S).

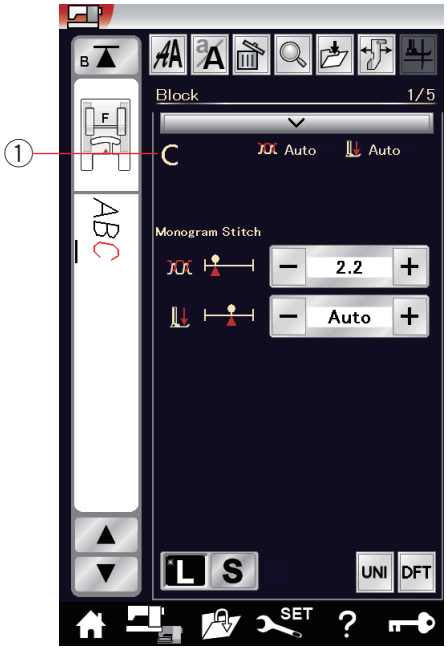
⑨ Letter case key
Press this key to select the upper case or lower case.

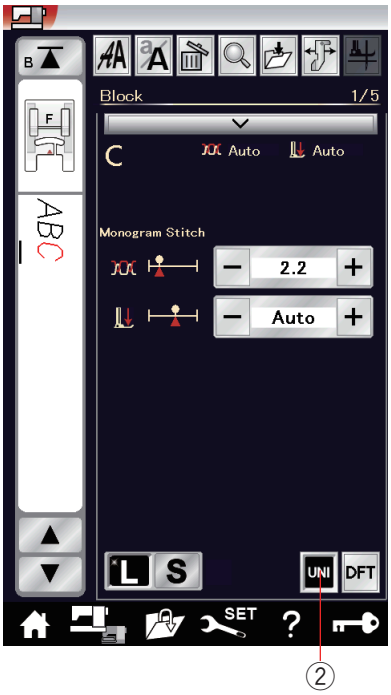
⑩ Delete key
Press this key to delete the selected character or symbol (refer to page 67).

⑪ Memory check key
Press this key to view the entire monogram (refer to page 66).

⑫ File save key
Press this key to save the monogram as a data file (refer to page 73).

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





Manual thread tension

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

To adjust the thread tension, press the setting bar to show the option.

Individual thread tension adjustment

To apply the thread tension adjustment to each letter individually, select the letter by moving the cursor.
The selected character will be displayed at the upper left corner ① when the setting bar is pressed.
Press "+" or "–" to adjust the thread tension of the selected letter. The adjusted thread tension is applied to the selected letter.

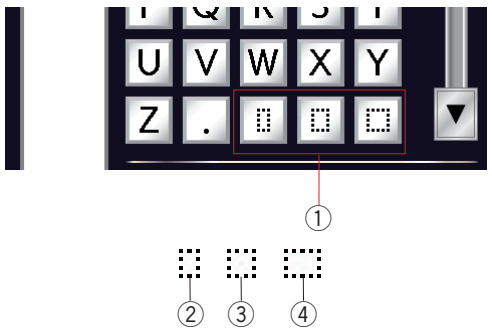
Unified thread tension adjustment

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

NOTE:
Unified thread tension adjustment can be applied to the monogram patterns such as Block, Script, Broadway and Block (9 mm) only.



Spacing

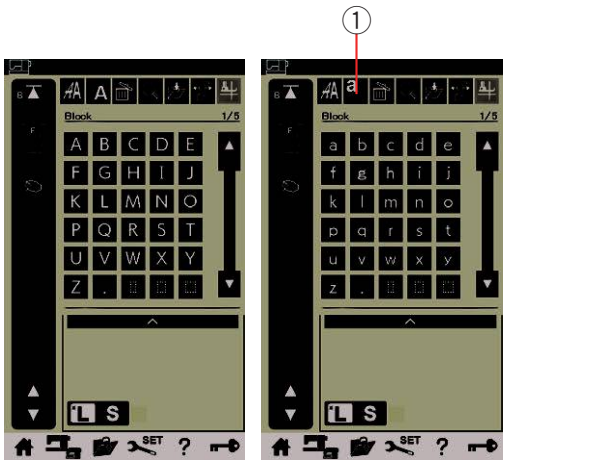
To enter a space in monogramming, press one of the three space keys on the lower right corner of the monogram selection.

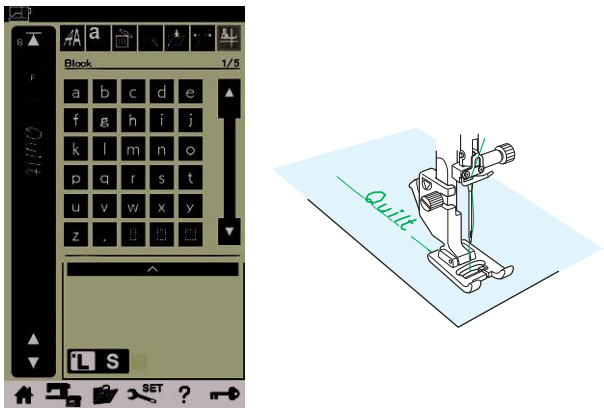
① Space keys
② Small-size space
③ Medium-size space
④ Large-size space

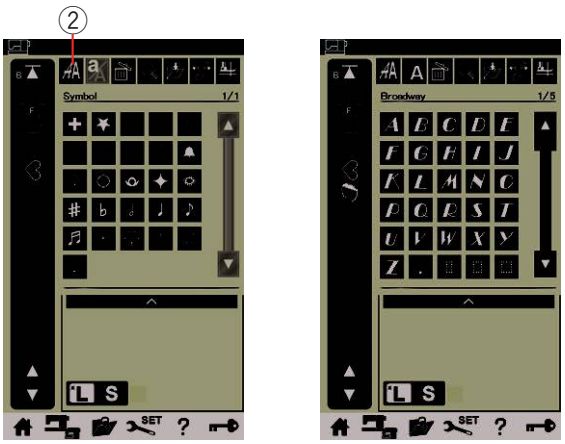


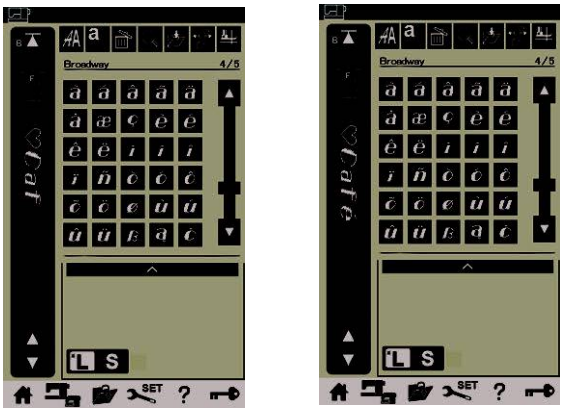
Reducing the size of letters

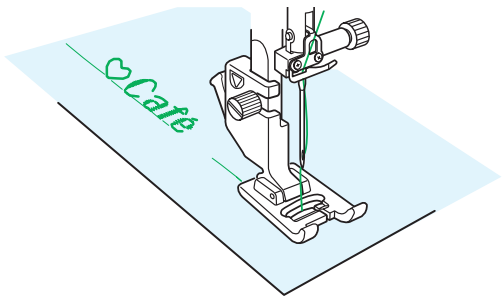
To reduce the height of a character to approximately 2/3 of its original size, select the character and press the letter case key "S" ①.











Programming a Monogram

Simply enter the characters by pressing the corresponding keys to program a monogram.

Example 1: “Quilt” in Block font

Select Block font. Enter “Q”.

Press the letter case key ① to select lower case.

① Letter case key

Enter “u”, “i”, “l” and “t”.

Example 2: “ ♡ Café” in Broadway font

Press the monogram key ② and select symbol.
Enter a hollow heart.

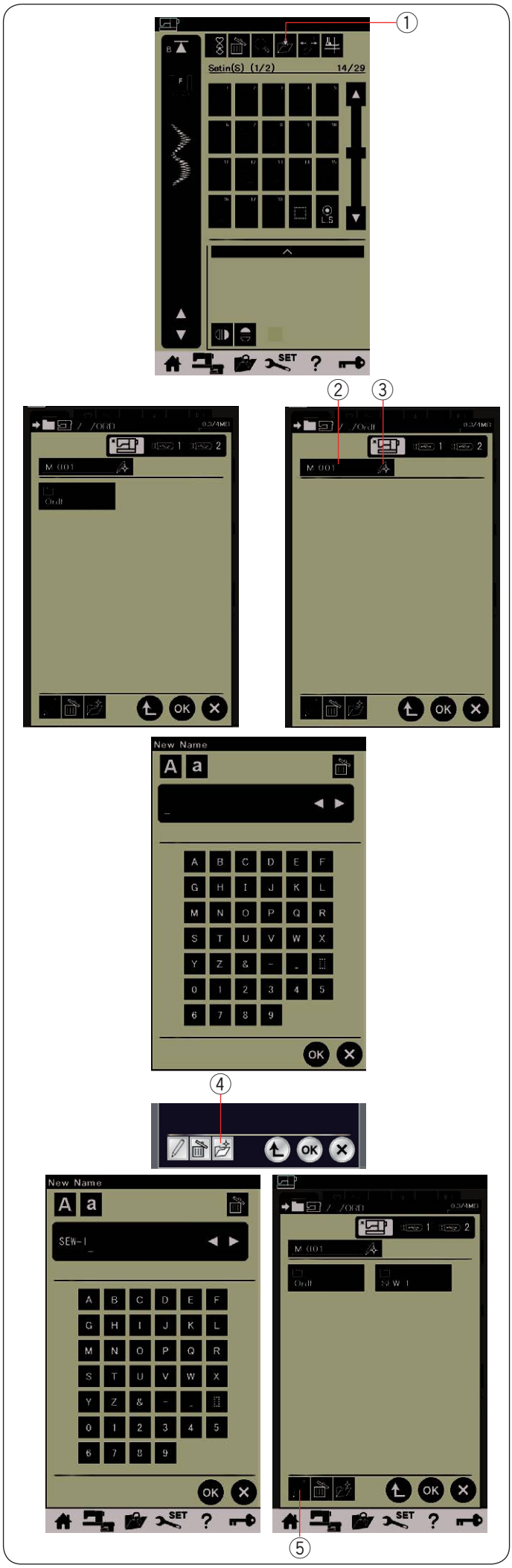
Press the monogram key and select Broadway font.
Enter “C”.

② Monogram key

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

Press the next page key to go to page 4 of 5.
Enter “é”.

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



Saving a Pattern Combination

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

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

NOTE:
The files and folders are displayed on different pages.

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.
④ New folder key

Changing the folder name or file name

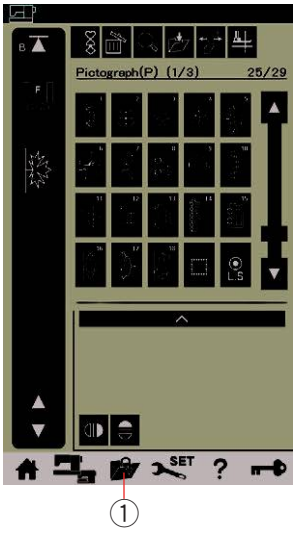
Press the rename key and select the folder or file of which you wish to change its name. The keyboard window will open.
Enter the new name and press the OK key.
The name of the folder or file will change.
⑤ Rename key

Opening a Pattern Combination

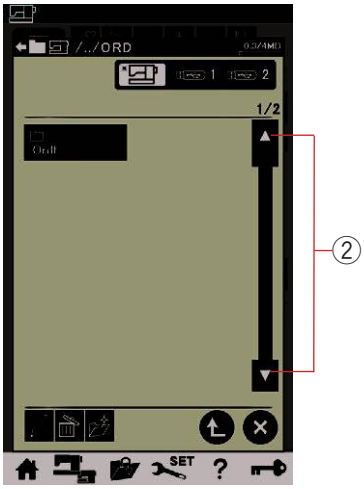
You can open the pattern combination and monogram saved in the machine's internal memory or a USB flash drive.

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

① Open file key



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

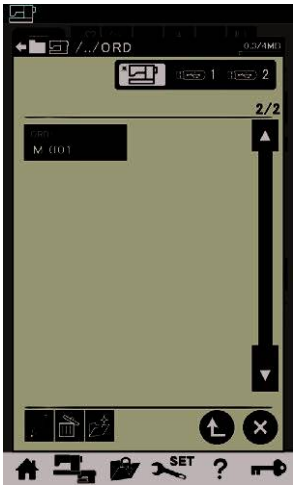


NOTE:

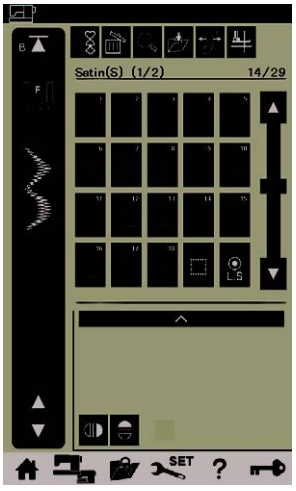
- If you created any folders before, those folders will also appear.
- If you cannot find the desired folder or the file in the page, press the next or previous page key ② to display the other pages.

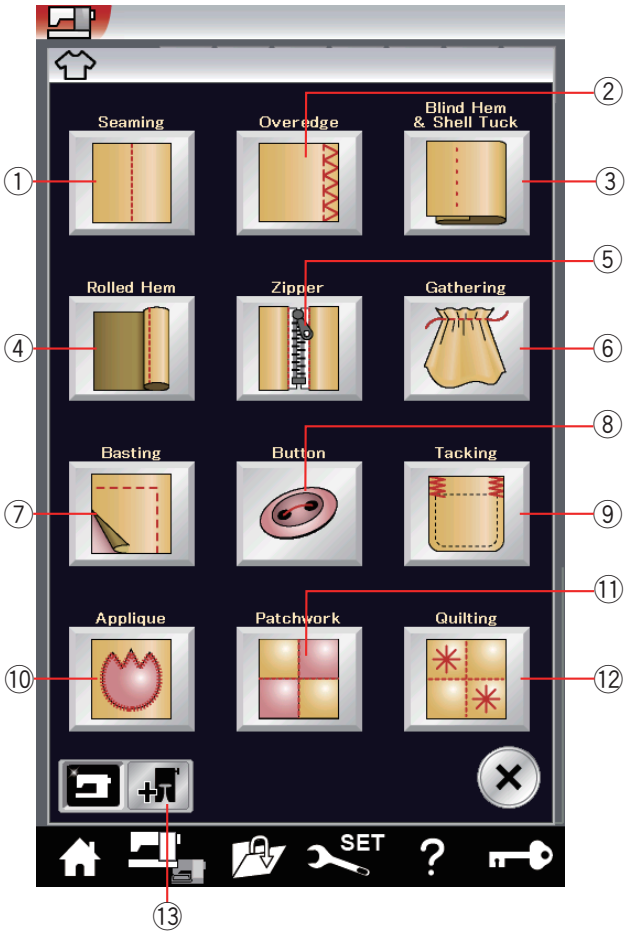
Select the desired folder and the file list will appear.

Select the desired file.



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





Sewing Application

Sewing application is a unique feature that provides you with 12 useful sewing applications.

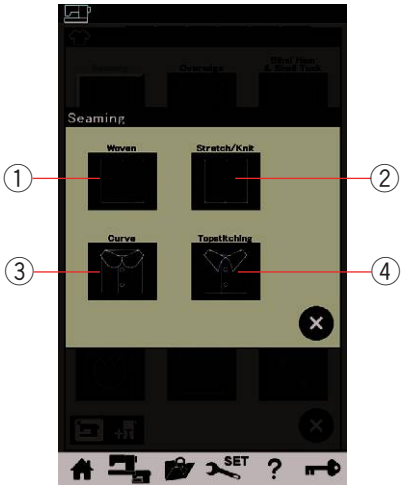
Press the sewing application key and the sewing application menu will open.

The 12 sewing applications are as follows:

① Seaming
② Overedge
③ Blind Hem & Shell Tuck
④ Rolled Hem
⑤ Zipper Sewing
⑥ Gathering
⑦ Basting
⑧ Button Sewing
⑨ Tacking
⑩ Applique
⑪ Patchwork
⑫ Quilting

The sewing applications using optional presser feet can be selected by pressing optional foot key ⑬.
Please refer to optional feet instructions for usage details.

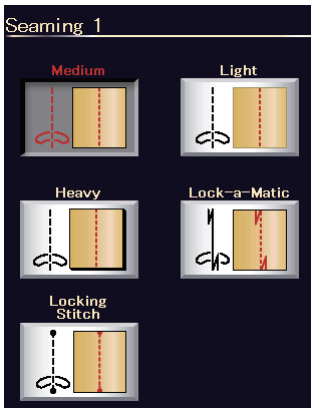
⑬ Optional foot key



Seaming

There are 4 types of stitches for seaming in this group.

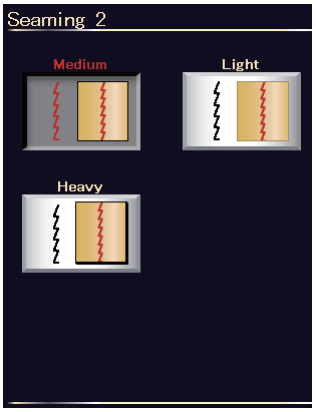
①



① **Woven (Seaming 1)**

Straight stitches for seaming regular woven fabrics.

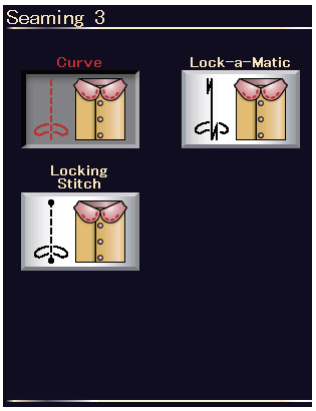
②



② **Stretch/Knit (Seaming 2)**

Narrow stretch stitches for seaming stretch or knit fabrics.

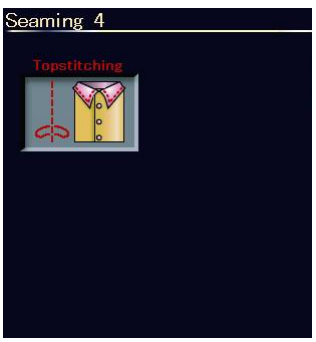
③



③ **Curve (Seaming 3)**

Short straight stitches for seaming curved line.

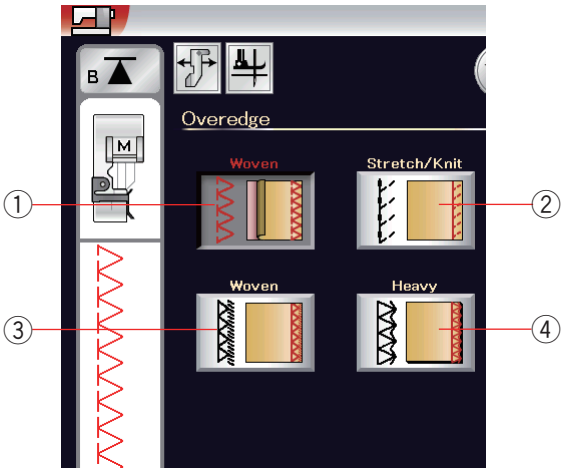
④

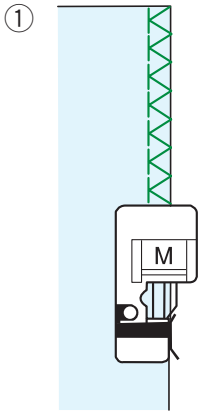


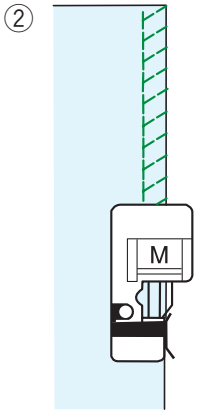
④ **Topstitching (Seaming 4)**

Long straight stitch for topstitching with thick threads.

Overedge



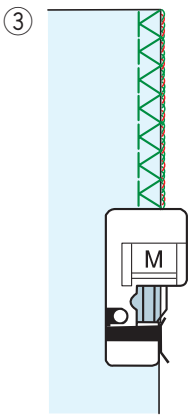


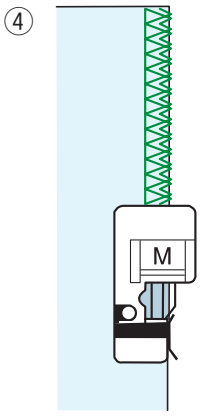


① **Woven**
Overcasting stitch for regular woven fabrics.

② **Stretch/Knit**
Knit stitch for finishing raw edges of stretch or knit fabrics.

For better results, use the zigzag foot A and sew leaving an adequate seam allowance.
After sewing, trim the seam allowance close to the stitches (refer to page 37).

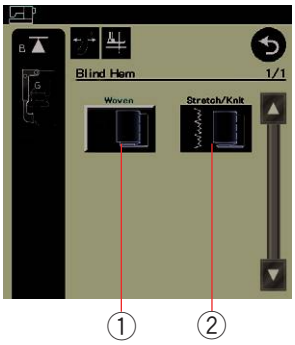


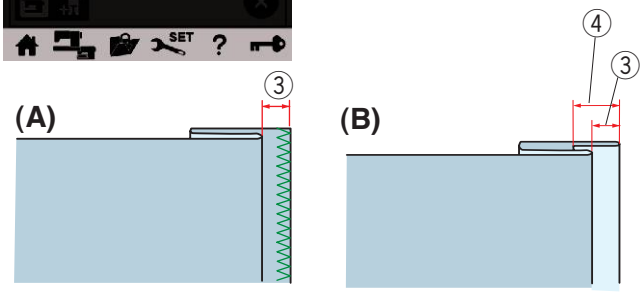


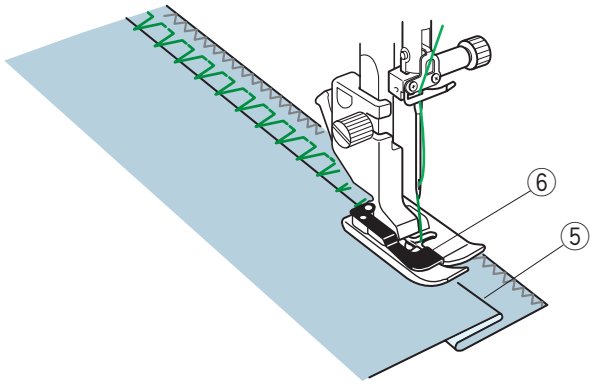
③ **Woven**
Overlock stitch similar to a professional overlocker stitch.

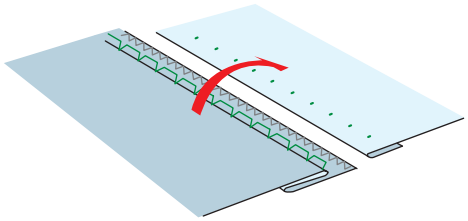
④ **Heavy**
Double overedge stitch for preventing raw edges of linens and gabardines from ravelling.

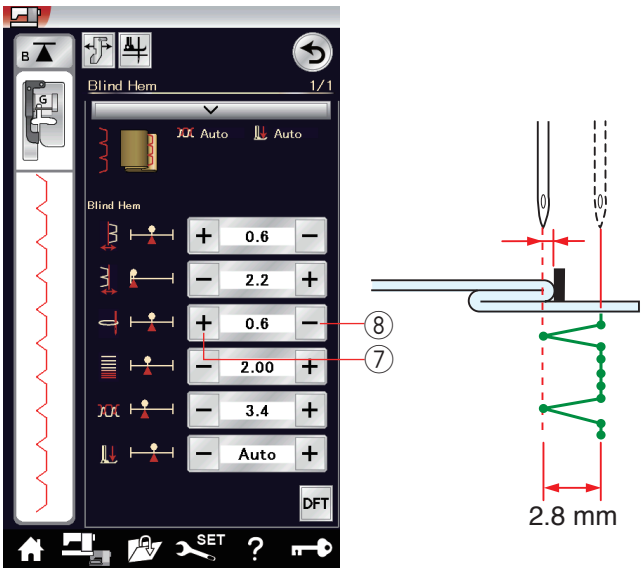












Blind Hem

Select “Blind Hem”.
The following 2 options are available.

① Woven
For blind hemming regular woven fabric

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

To sew:

Attach the blind hem foot G.

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

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

Position the fabric so that the fold comes to the left side of the guide on the foot. Lower the presser foot.
The needle should just pierce the folded edge when it comes over to the left side.
Adjust the position of the needle drop if necessary.
Sew guiding the fold along the guide.
⑤ Fold
⑥ Guide

After sewing is finished, open the fabric flat.
The seam on the right side of the fabric is almost invisible.

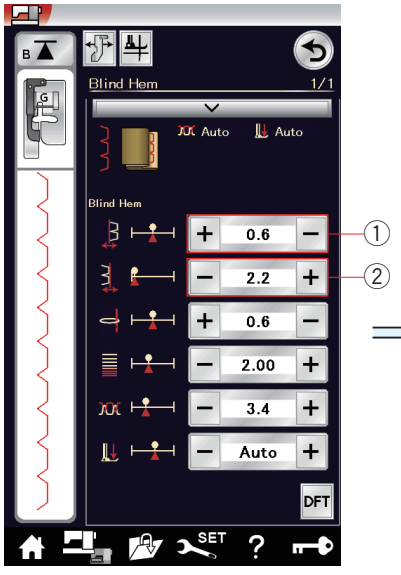
Adjusting the needle drop position

Press the setting bar to expand the manual setting window.

Press the “+” key ⑦ in the upper row to move the needle drop positions to the left.
Press the “–” key ⑧ in the upper row to move the needle drop positions to the right.

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

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

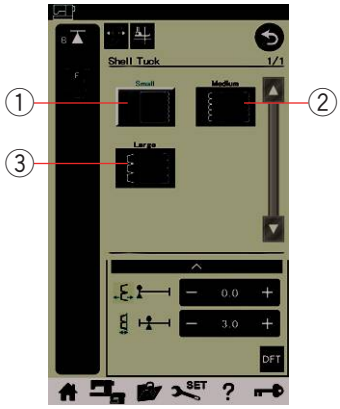


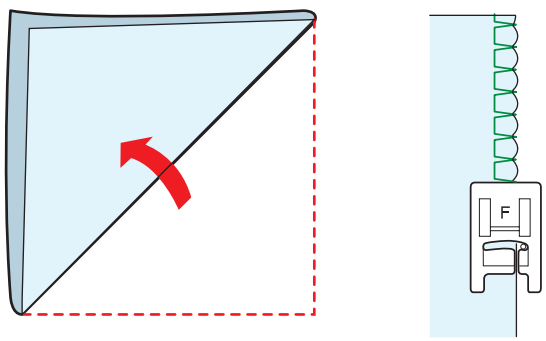
Altering blind hem stitch width

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

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







Shell Tuck

Select “Shell Tuck”.
The following 3 options are available.

① Small
Narrow shell tuck stitch

② Medium
Medium width shell tuck stitch

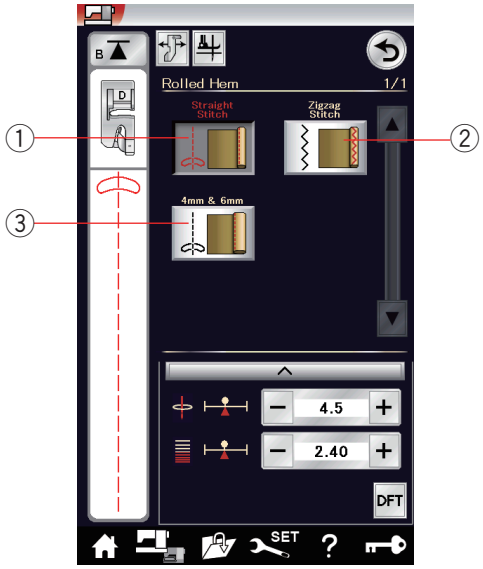
③ Large
Regular shell tuck stitch

To sew:

Use a light weight fabric (Tricot, for example).
Fold the fabric in bias 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.

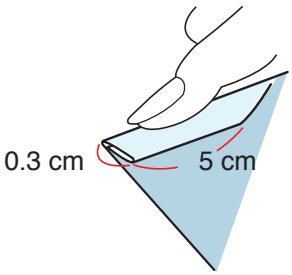


Rolled Hem

① Straight Stitch
Rolled hemming with straight stitch

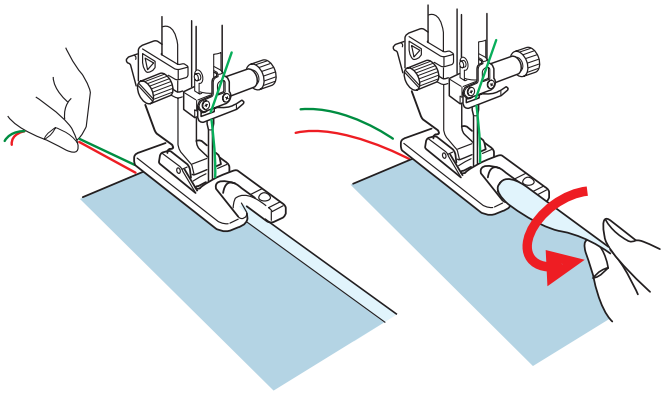
② Zigzag Stitch
Rolled hemming with narrow zigzag stitch

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



To sew:
Attach the rolled hem foot D.

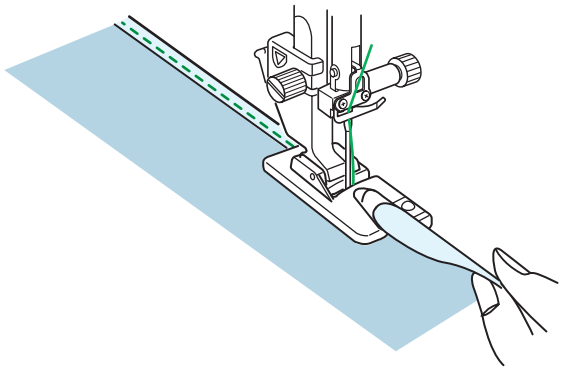
Fold the fabric edge twice to form a hem, 0.3 cm (1/8″) wide and 5 cm (2″) long then press.



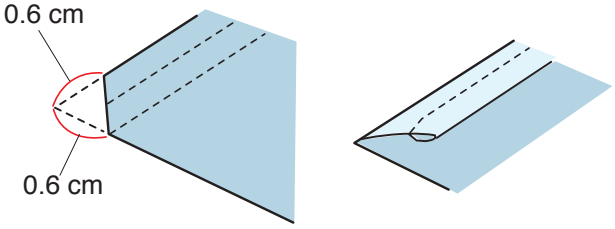
Place the fabric aligning the hem edge with the guide of the foot. Turn the hand wheel to lower the needle to the starting point.

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

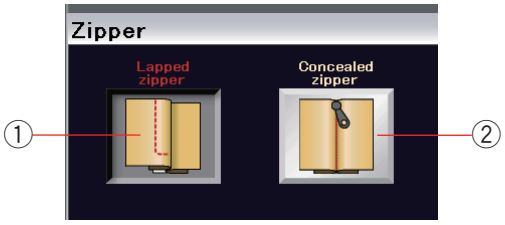
Stop the machine and lower the needle into the fabric. Raise the foot and insert the folded portion of the fabric into the curl of the foot.



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



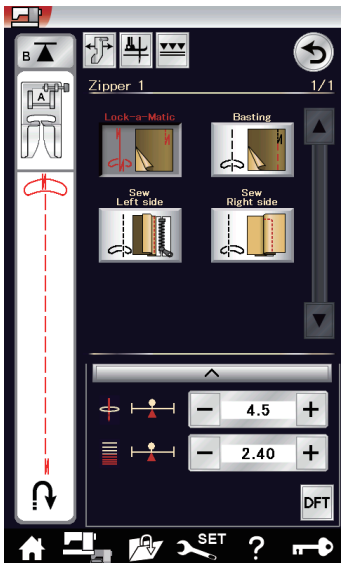
NOTE:
Trim the corners 0.6 cm (1/4″) to reduce bulk.



Zipper Sewing

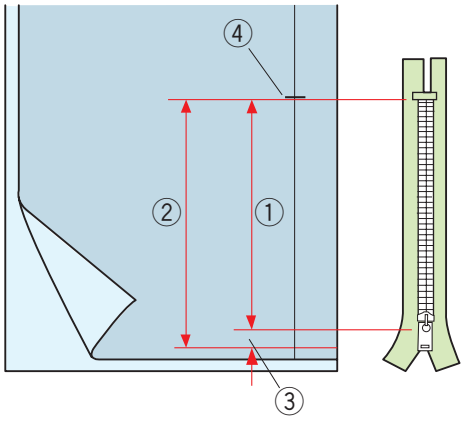
① Lapped zipper
Lapped zipper application with the zipper foot E

② Concealed zipper
Concealed zipper application with the concealed zipper foot Z



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.

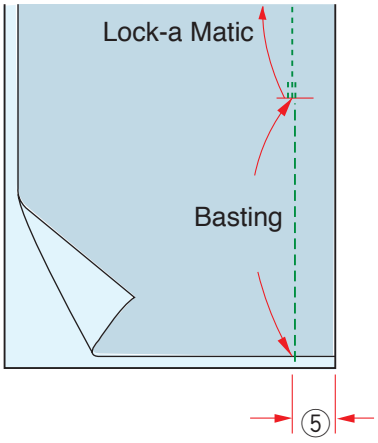


Fabric preparation

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

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

Attach the zigzag foot A.





Lock-a-Matic

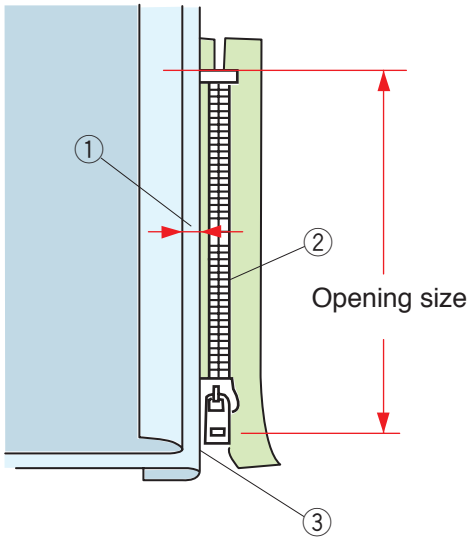
Place the right sides of the fabric together and sew to the end of the opening leaving a 2 cm (3/4″) allowance.

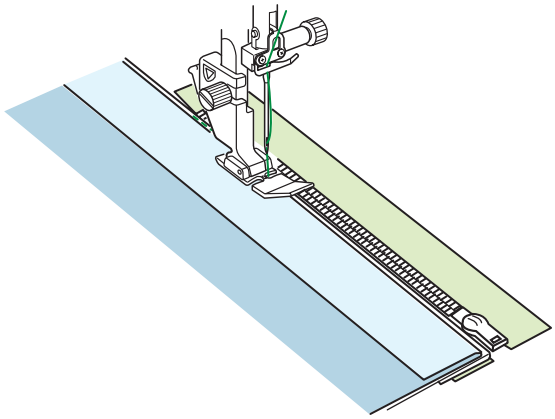
⑤ 2 cm (3/4″)

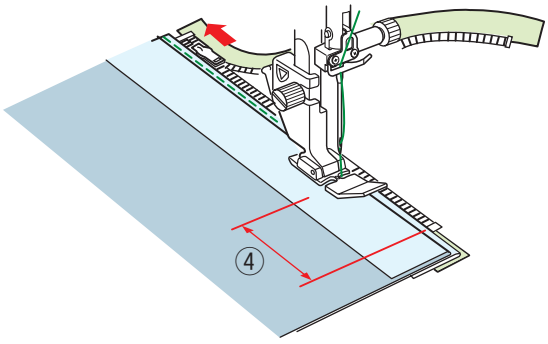


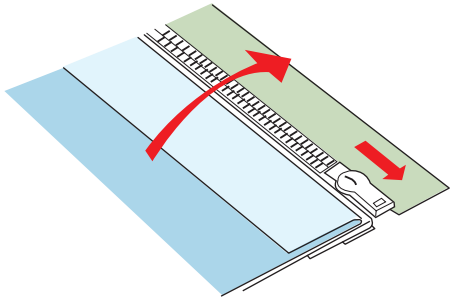
Basting

Baste the zipper opening.











Sew left side

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

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

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

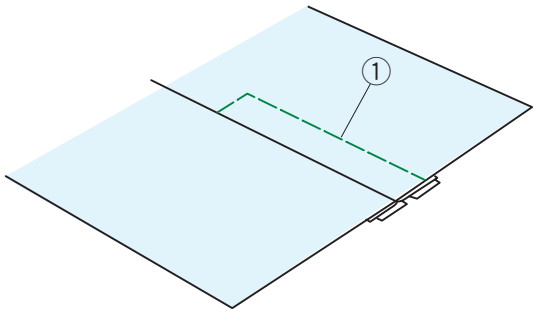
Sew through all layers next to the fold.

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

④ 5 cm (2″)

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

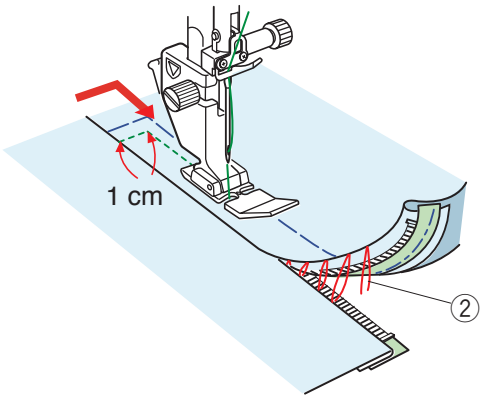
Close the zipper and spread the fabric open flat with the right side of the fabric facing up.





Basting

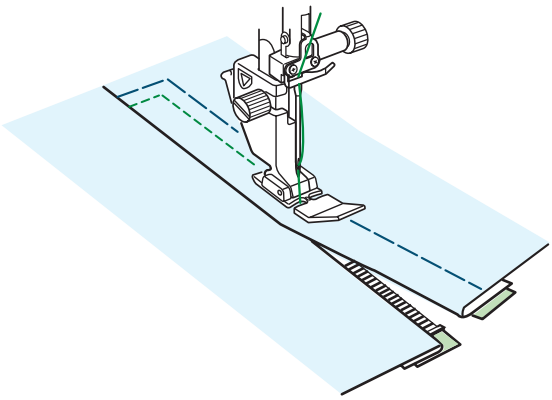
Replace the foot with the zigzag foot A.
Baste the opened fabric and zipper tape together.
① Basting





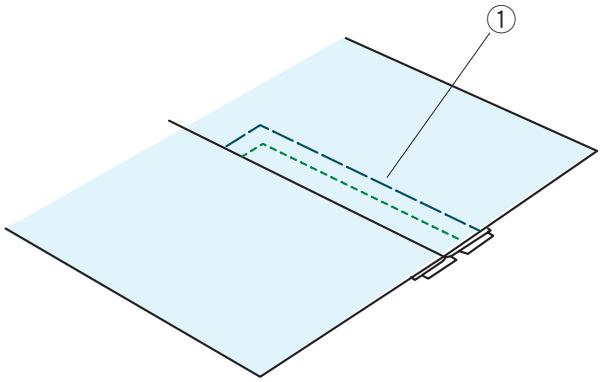
Sew right side

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

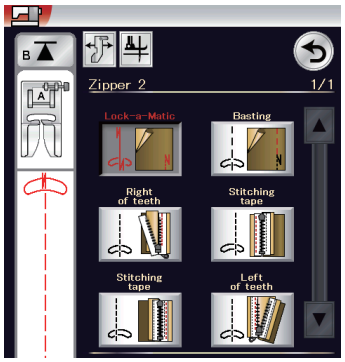


Open the zipper and move the slider to the rear of the foot.

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



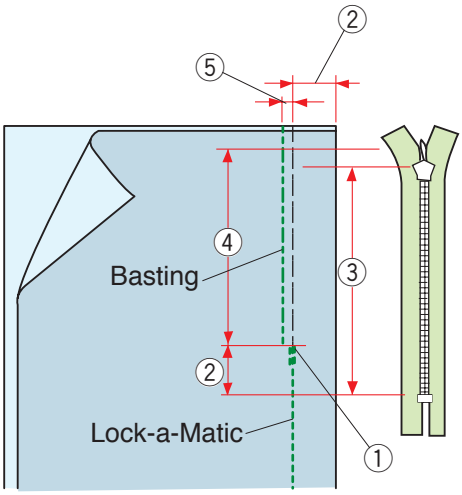
Remove the basting stitches.

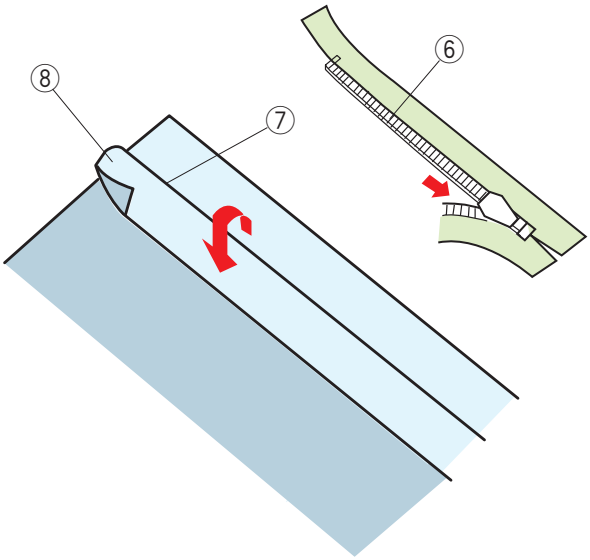


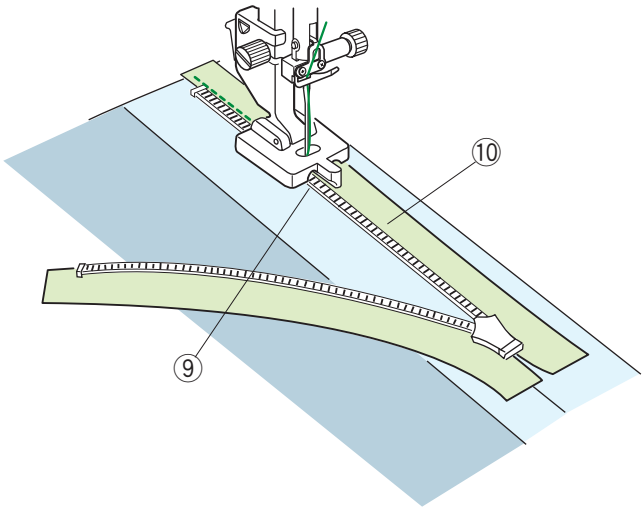
Concealed zipper sewing
Press the concealed zipper icon and the window will show the step-by-step icon keys.

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

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









Lock-a-Matic
Attach the zigzag foot A. Place the right sides of the fabric together and sew to the end of the opening with a 2 cm (3/4″) seam allowance. Press the reverse button to lock the seams.
① End of opening
② 2 cm (3/4″)
③ Zipper size
④ Opening size

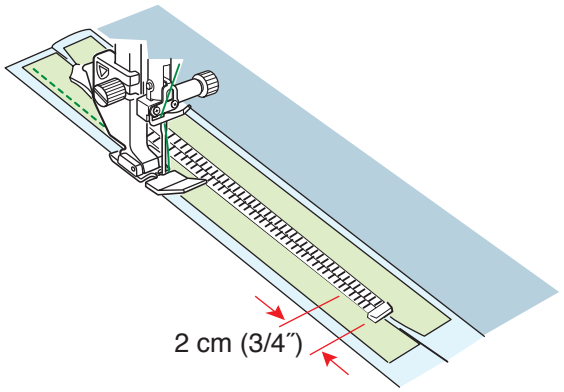


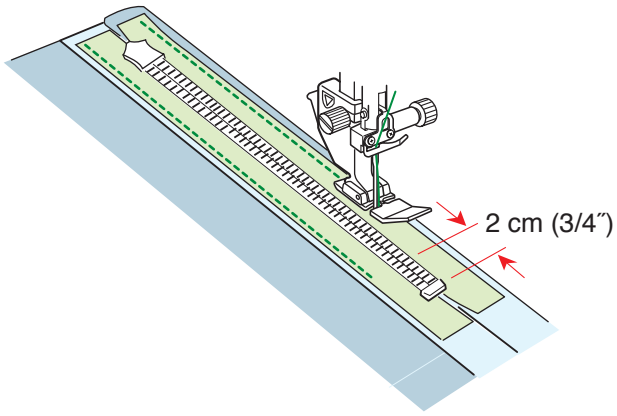
Basting
Baste the opening 0.3 cm (1/8″) inside of the seam line.
⑤ 0.3 cm (1/8″)

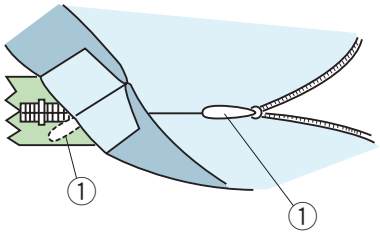
Place the right zipper teeth next to the fold and pin it in place.
Fold up the left seam allowance to the bodice. Open the zipper and put it on the right seam allowance with the back side up.
⑥ Zipper teeth
⑦ Fold
⑧ Left seam allowance

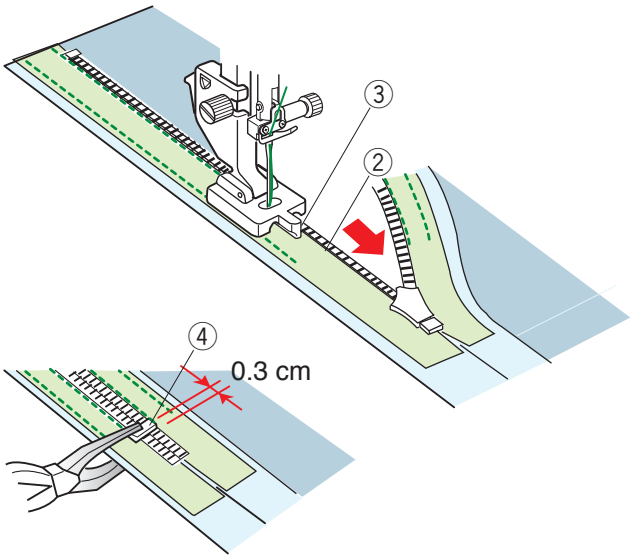


Right of teeth
Attach the concealed zipper foot Z.
Raise the zipper teeth on the right and lower the foot so the left groove of the foot catches the zipper teeth.
Stitch through the zipper tape and fabric up to the end of the opening.
Reverse the stitches to secure the seam.
⑨ Left groove
⑩ Zipper tape











Stitching tape

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



Stitching tape

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

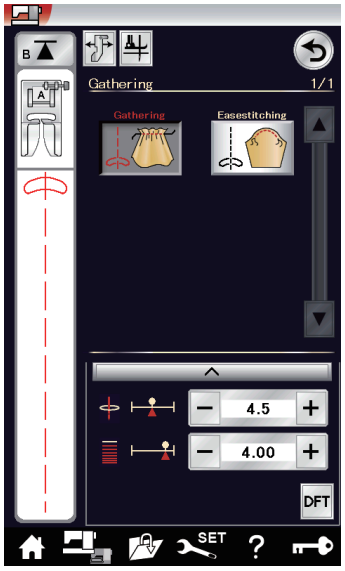


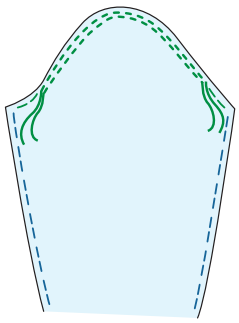
Left of teeth

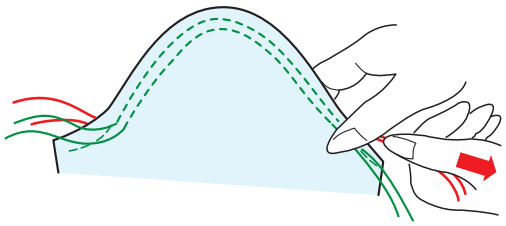
Raise the foot and replace it with the concealed zipper foot Z.
Remove the basting stitches.
Open zipper and insert the pull tab between fabric and zipper tape to allow the slider to reach the stopper.
① Pull tab

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

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







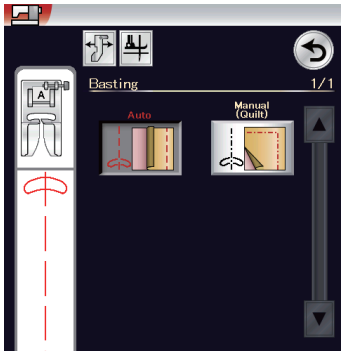
Gathering

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

Easing a sleeve top

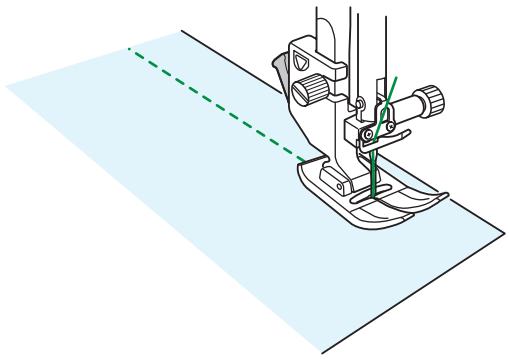
Pull both of the threads about 10 cm (4″).
Sew a pair of lines, 3 mm (1/8″) apart, along the edge of the sleeve top.

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.



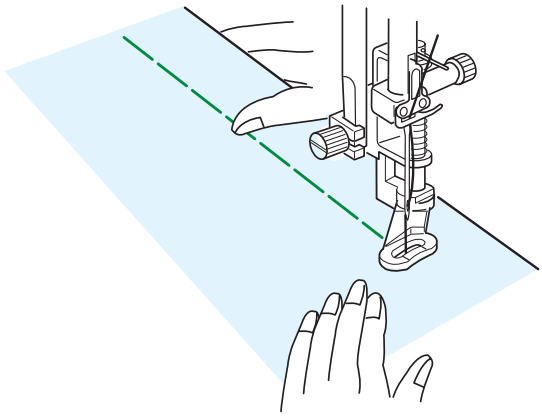
Basting

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)

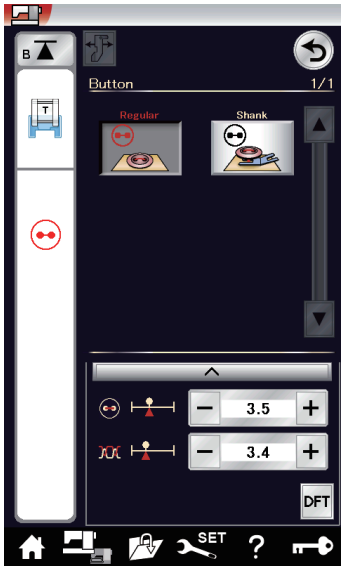
Attach the darning foot PD-H.
When basting is selected, the feed dog lowers automatically.

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

To sew

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

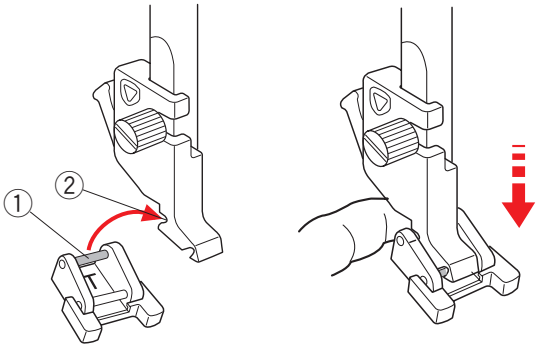
Slide the fabric to the rear for the next stitch.



Button Sewing

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

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

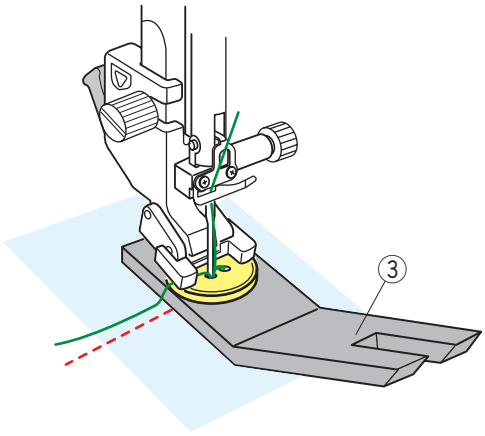


Attaching the button sewing foot T

Make sure to press the lockout key to lock the machine. 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 unlock key to unlock the machine.



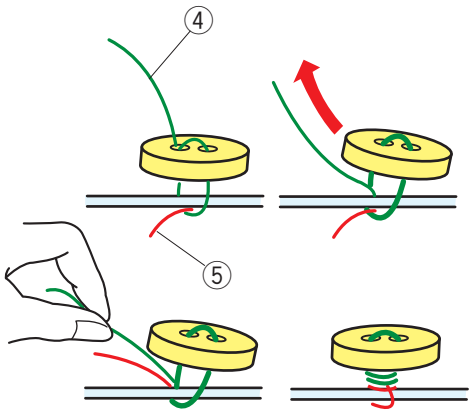
Place a button on the fabric and lower the needle into the left hole of the button by turning the handwheel with your hand.
Insert the button shank plate under the button.
Lower the foot to hold the button in place, aligning the direction of the button.

③ Button shank plate

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 threads at the beginning close to the fabric.

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

④ Needle thread at the end
⑤ Bobbin thread

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

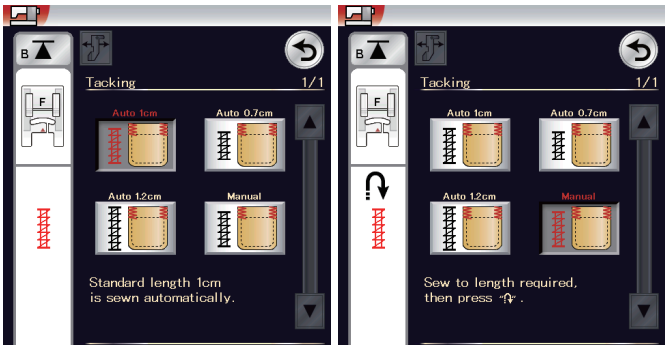
NOTE:
The button shank plate cannot be used if the button is too thick.

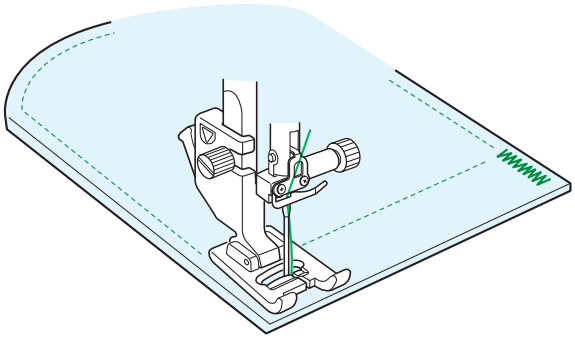
Tacking

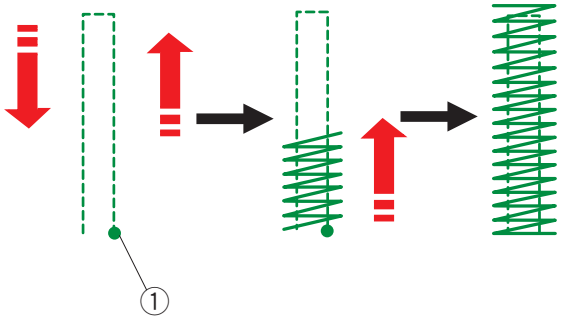
Tacking is used to reinforce pockets, crotches and belt carriers where extra strength is needed.

There are 3 auto tacking sizes and manual tacking available.

Attach the satin stitch foot F.



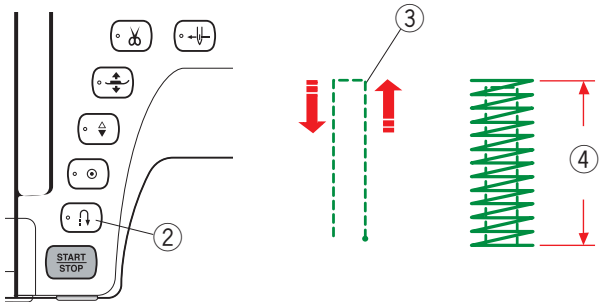




Auto tacking

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

① Starting point

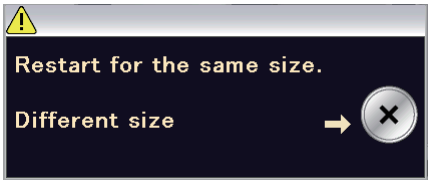


Manual tacking

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

③ Required length

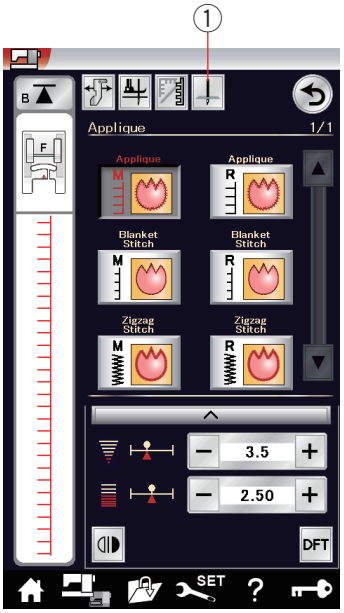
NOTE:
The maximum length of tacking is 1.5 cm (5/8″).

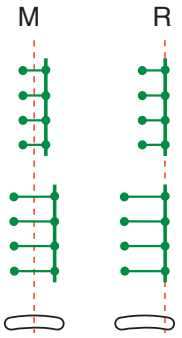


To sew the same size tack

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

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





Applique

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

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

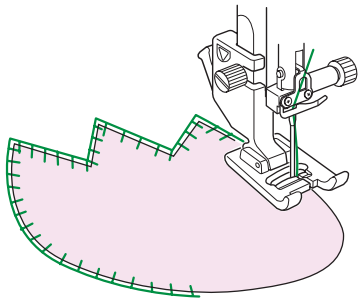
① Needle stop position key

The letter above the stitch image denotes the baseline of the needle drop position.

M: Middle (center)

R: Right

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



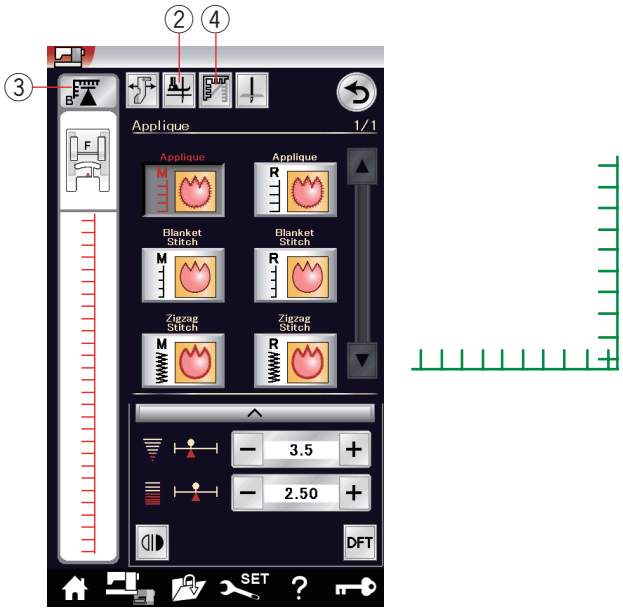
Pivoting at applique corners

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

Press the foot-up key to turn on this option

② Foot-up key

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



Starting over from the corner

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

③ Startover key

Two options of startover are available for applique stitches. Press the cornering key to select normal startover or cornering startover .

The key icon will change to show which option is being selected when pressing the key.

④ Cornering key

Normal startover:

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

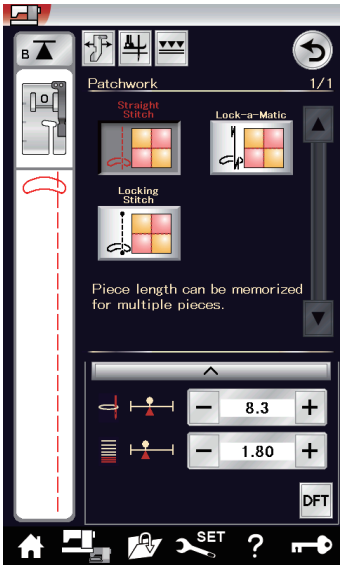
Cornering startover:

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

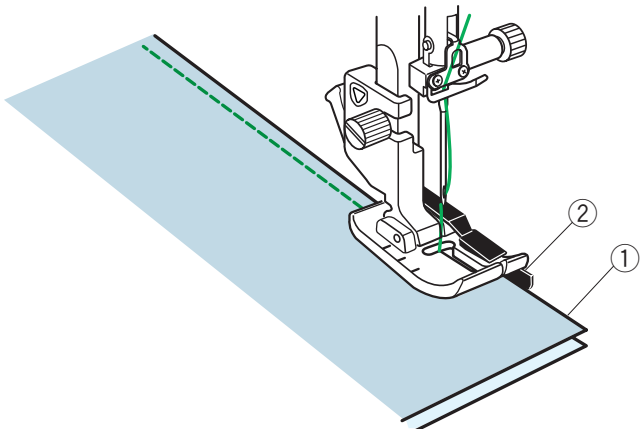
Patchwork

Patchwork piecing

There are 3 stitches for seaming patchwork pieces in this section.

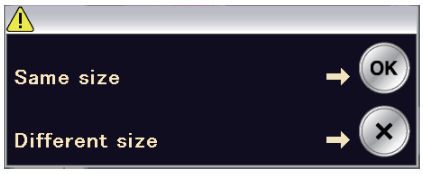


The default stitch length is set at 1.8 mm, ideal for patchwork piecing, but you can fine tune the stitch length by pressing the “+” or “–” key.

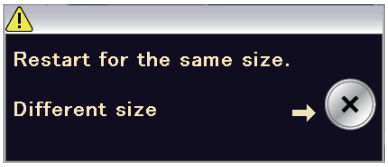


Attach 1/4″ seam foot O, which helps you to keep a constant 1/4″ (6.4 mm) seam allowance.
Put 2 pieces of fabric with right sides together.
Place the patchwork pieces under the foot so that the edge of the fabric matches the guide on the presser foot.

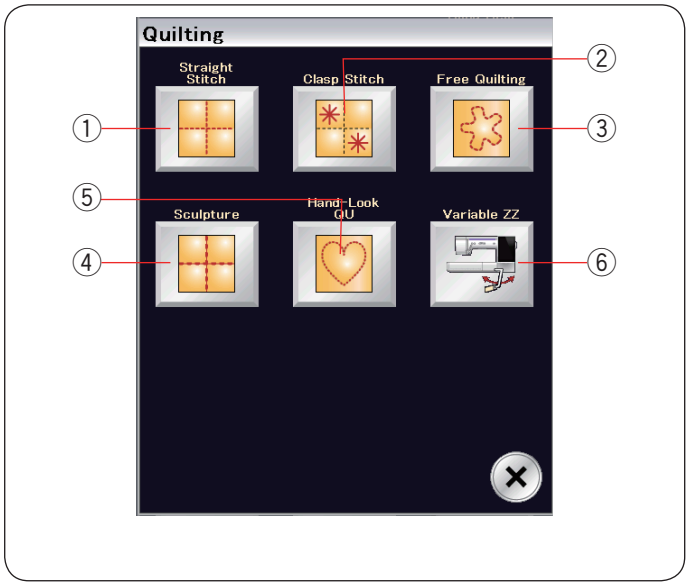
① Edges of fabric
② Guide on the 1/4″ seam foot O



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.



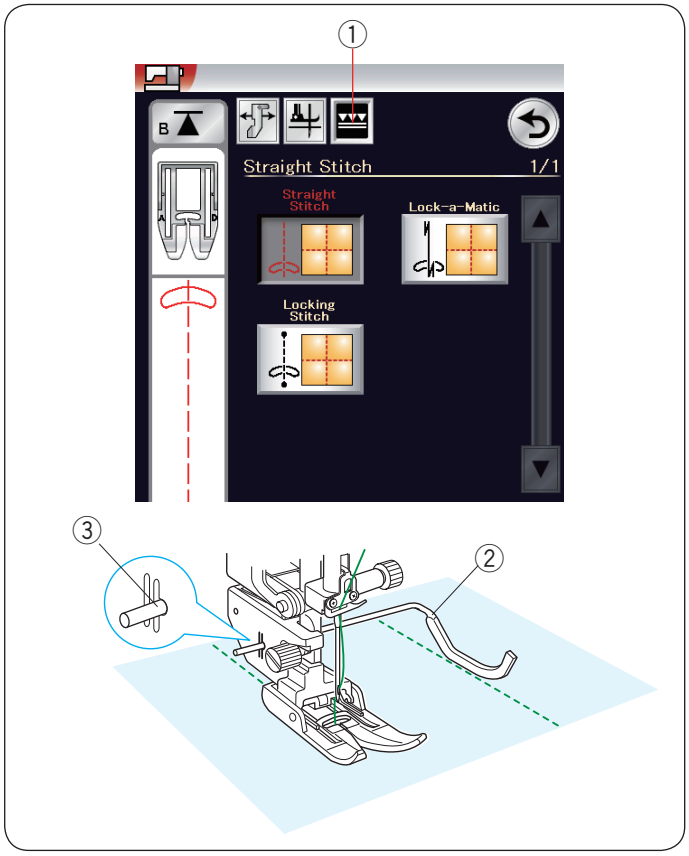
After sewing the memorized length, a message will appear.
To sew the same length, start the machine and it will stop automatically after sewing the memorized length.



Quilting

In this section, 6 types of useful stitches for quilting are available.

① Straight stitches (with dual feed)
② Clasp stitches
③ Free motion quilting stitches
④ Sculpture stitches (with dual feed)
⑤ Hand-look quilt stitches
⑥ Variable zigzag stitches



Straight stitches (with dual feed)

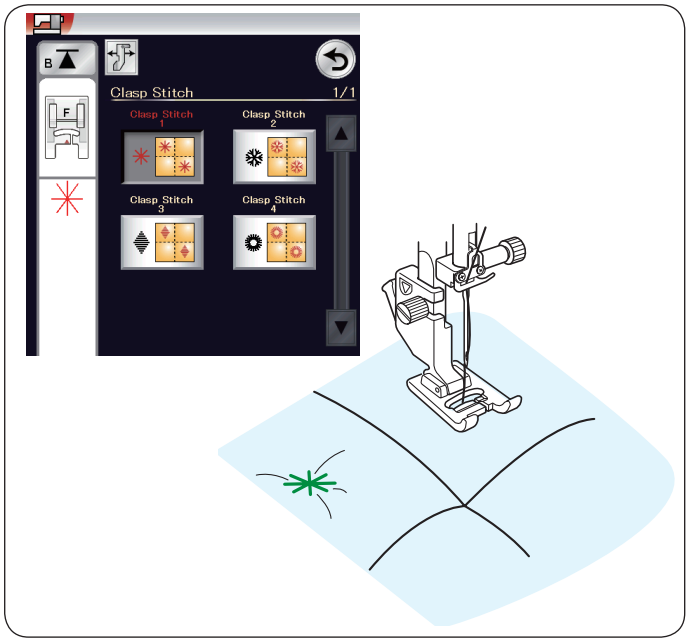
Straight stitches in this section are suitable for seaming quilt layers using the dual feed foot (refer to page 22 for how to attach it). Press the dual feed key ① and attach the dual feed foot.

Quilting guide bar for dual feed foot

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

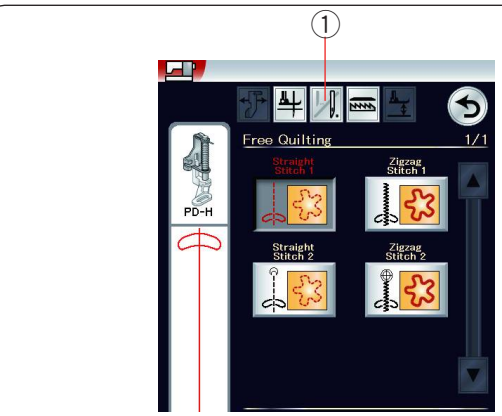
Insert the quilting guide bar into the hole in the rear of the foot holder.
Shift the quilting guide bar to the desired spacing.
② Quilting guide bar
③ Hole

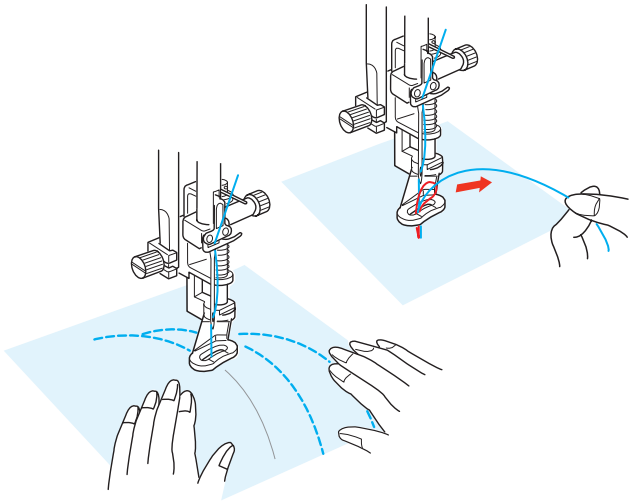
Sew rows of stitching while tracing the previous row of stitches with the quilting guide bar.

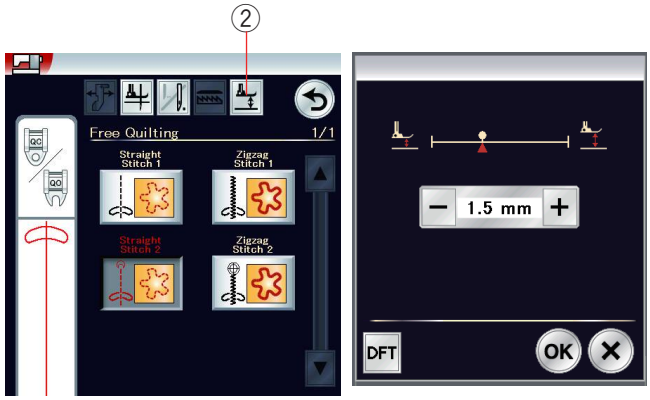


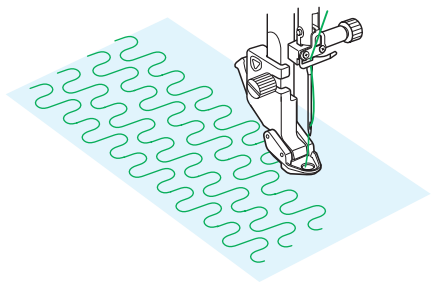
Clasp stitches

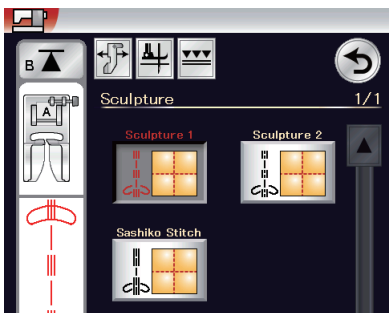
You can close quilt layers and batting using the clasp stitch.
Use the satin stitch foot F.
The machine sews one unit of the pattern and automatically stops with the needle in up position when completed.











Free quilting
For ordinary and bulky quilts, select the upper stitches and use the darning foot PD-H (refer to page 23 for how to attach the darning foot).
Select the lower stitches for flatter quilts and use the free quilting foot QC, QO or QV.

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

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

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

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

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

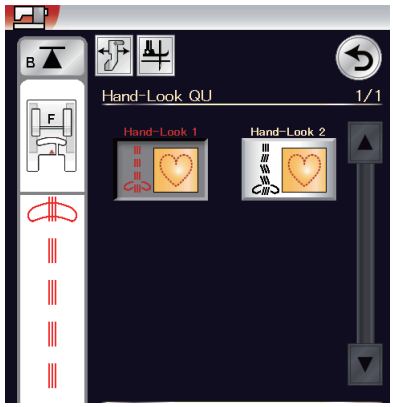
Foot height for free motion quilting
When straight stitch 2 or zigzag stitch 2 is selected, the height of down position of the free motion quilting feet (QC, QO, QV) is optimized automatically.

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

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

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

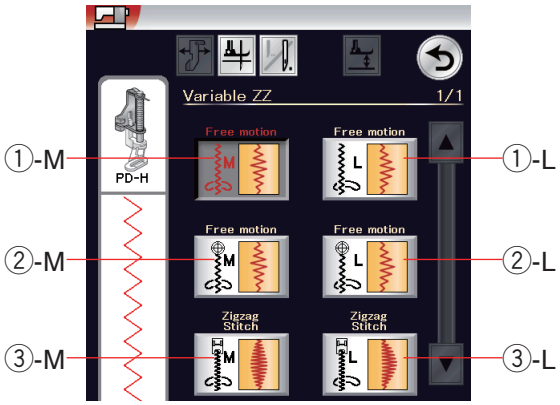
Sculpture stitches
These stitches are used to accentuate design outlines and to create a mock hand-quilt.

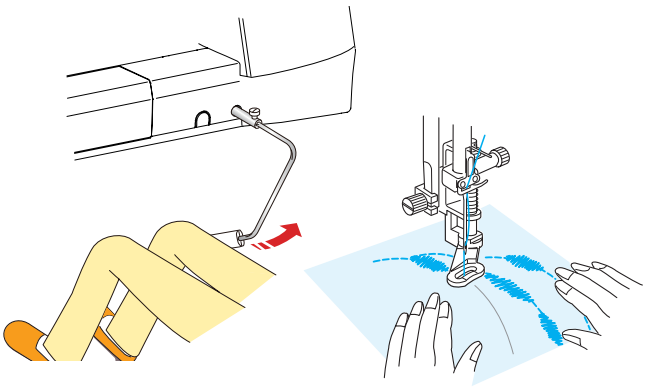


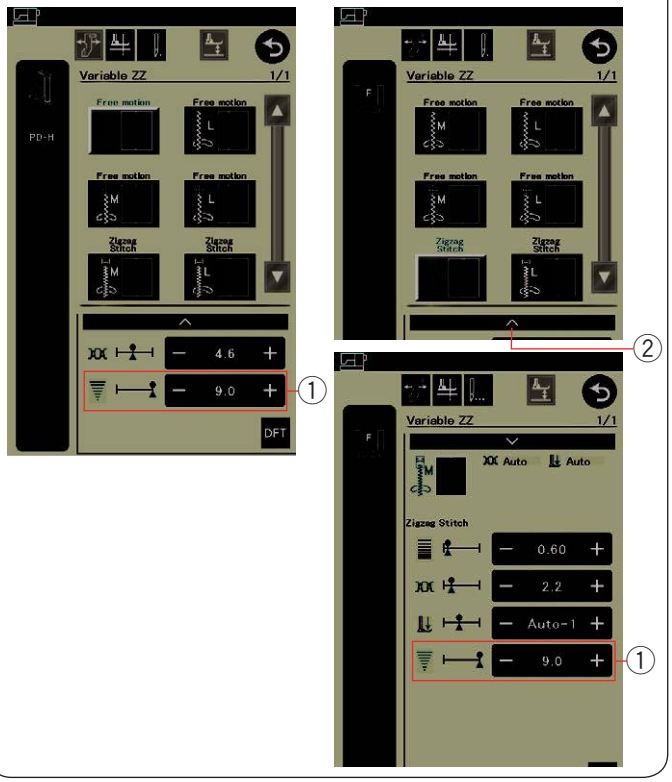
Hand-look quilt stitches

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 will look as if sewn by hand.

NOTE:
Use the net to prevent the thread from slipping off and jamming. Refer to page 14.







Variable zigzag

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

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

Select ②-M or ②-L, using the clear view free quilt foot QV for sewing flat and firm fabrics. The feed dog drops automatically. Guide the fabric with your hands while sewing.

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

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

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

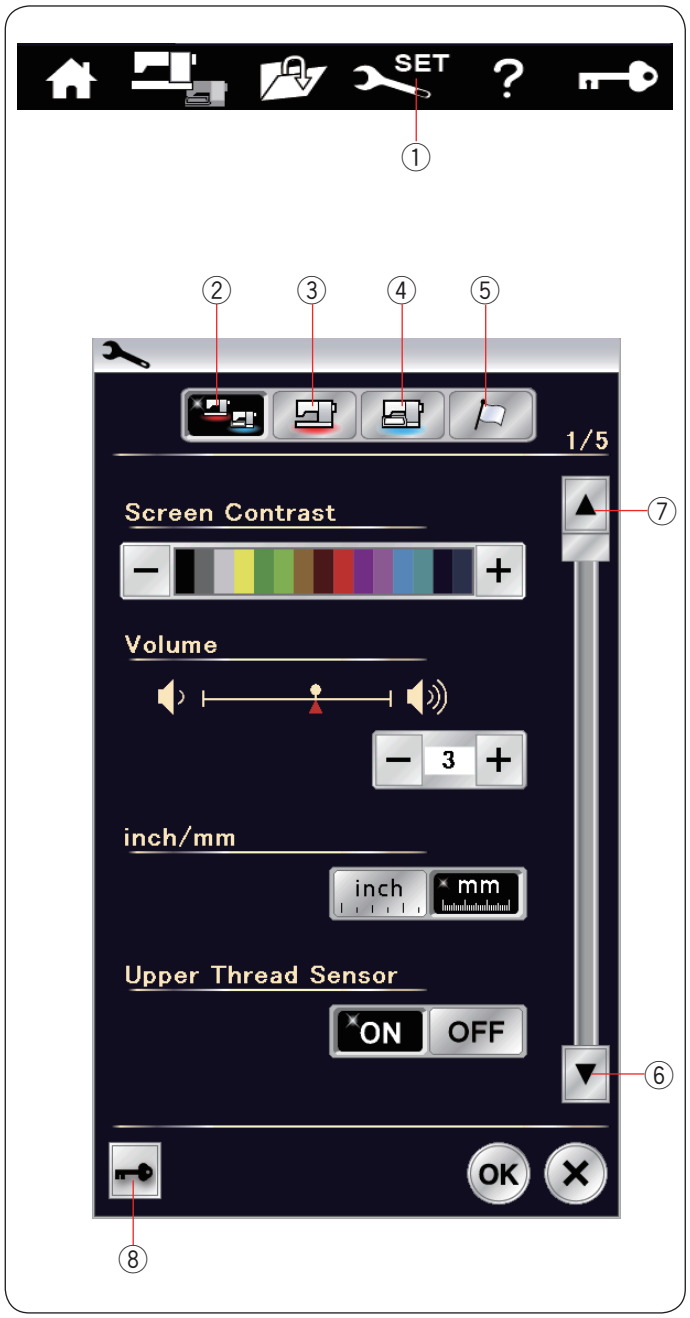
Maximum zigzag width adjustment

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

Press the “+” or “–” key beside the maximum zigzag width setting ① to limit the maximum zigzag width to your preference.

For the variable zigzag stitches with the satin stitch foot, press the setting bar ② to open the maximum zigzag width setting.

① Maximum zigzag width setting
② Setting bar



CUSTOMIZING MACHINE SETTINGS

Machine Setting Mode

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 4 keys to select the mode to customize.

② **Common Setting Mode**
In this mode, you can customize the machine settings and options for both ordinary sewing and embroidery.

③ **Ordinary Sewing Setting Mode**
In this mode, you can customize the machine settings and options for ordinary sewing (refer to pages 99-101 for the operation).

④ **Embroidery Setting Mode**
In this mode, you can customize the machine settings and options for embroidery (refer to pages 147-149 for the operation).

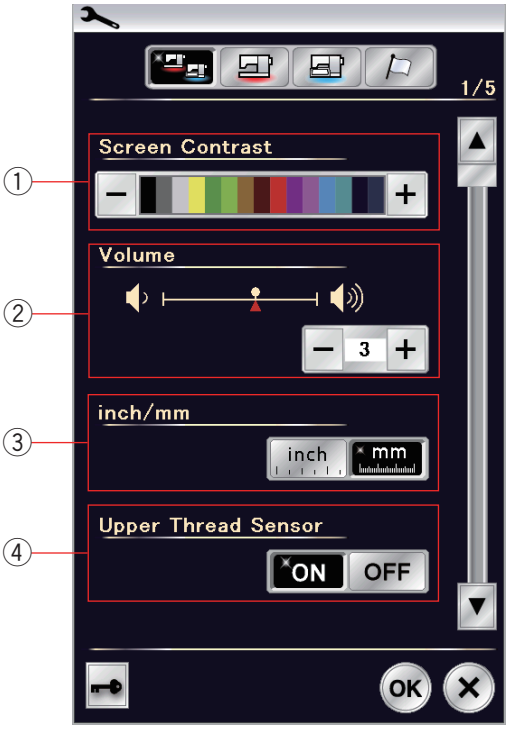
⑤ **Language Selection Mode**
In this mode, you can select the desired language for the screen messages.

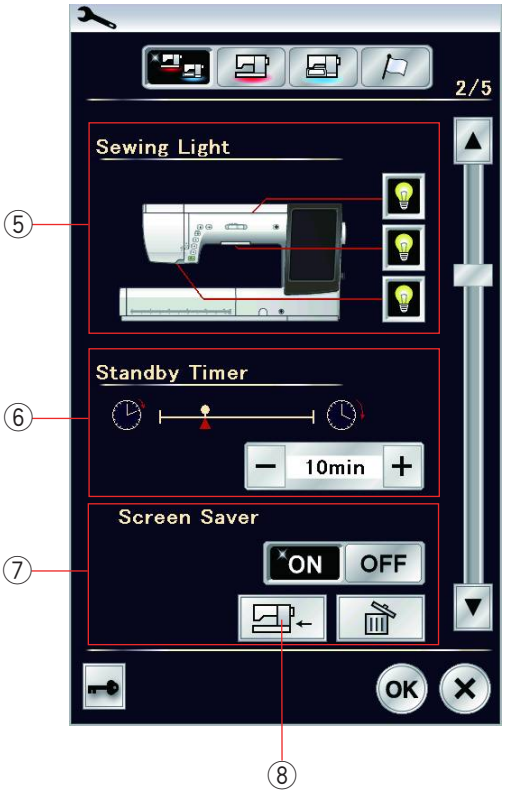
To browse pages in each mode, press the next page key or previous page ley

⑥ Next page key
⑦ Previous page key

⑧ **Lockout key**
Refer to page 13 for the operation.

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.





Common Setting Mode

① Screen Contrast

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

② 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.

③ Inch/mm Option

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

④ Upper Thread Sensor

If you need to run the machine without threads, turn off the upper thread sensor.

Press the next page key to show the next menu.

⑤ Sewing Light

The sewing lights can be turned on or off individually, however the retractable sewing light will always turn on when extended.
Press the corresponding light keys to turn on or off the sewing lights.

⑥ 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.

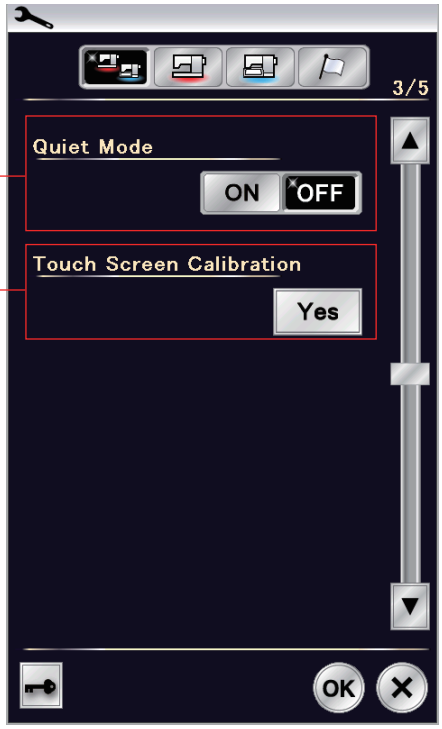
⑦ Screen Saver

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

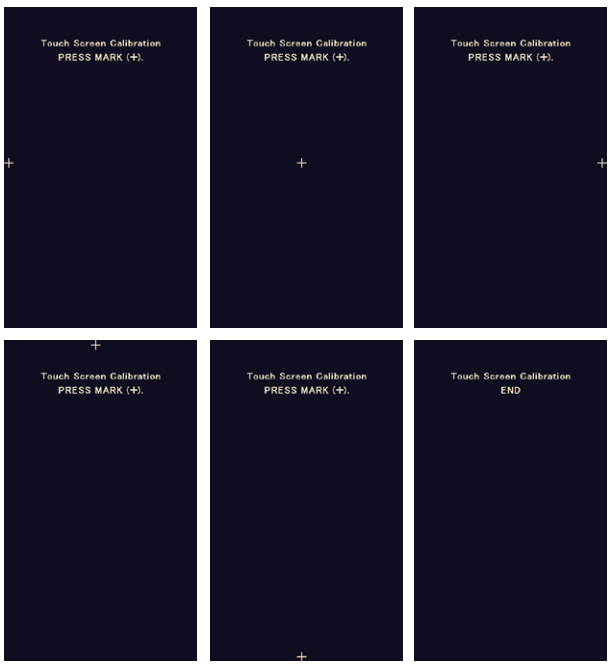
Press the import key to import a screen saver from a USB flash drive.
You can create an original screen saver with Screen Saver Tool included in the Acutools CD-ROM.
The imported screen saver data will be deleted if the delete key is pressed, or the internal memory is formatted (refer to page 98).

⑧ Import key

Press the next page key to show the next menu.







⑨ Quiet Mode

If you prefer the machine to run more quietly, turn on this option so the signal sound, start-up sewing speed and maximum embroidery speed will be set at the lowest levels.
The quiet mode setting overrules any previous settings for these parameters.

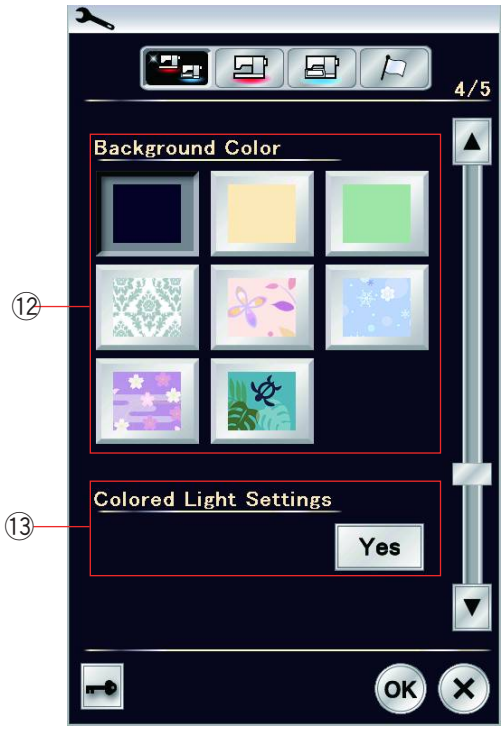
NOTE:
Custom settings for sound volume, start-up speed and maximum embroidery speed are disabled, and the quiet sign ⑪ will appear on the right upper corner of the screen when the quiet mode is on.

⑩ Touch Screen Calibration

You can calibrate the key positions of the touch screen if you feel the touch screen key is not responding properly.

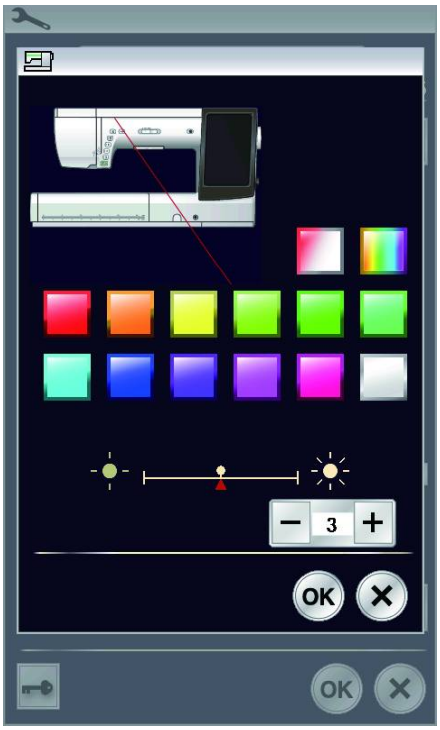
Press the Yes key to open the calibration window.
Press the “+” sign with the touch panel stylus as the sign appears.
When you press the last sign, the screen shows “END” and the calibration window will close.

Press the next page key to show the next menu.



⑫ Background Color

You can select from the colorful wallpapers for the background of the visual touch screen by pressing the relevant icon.

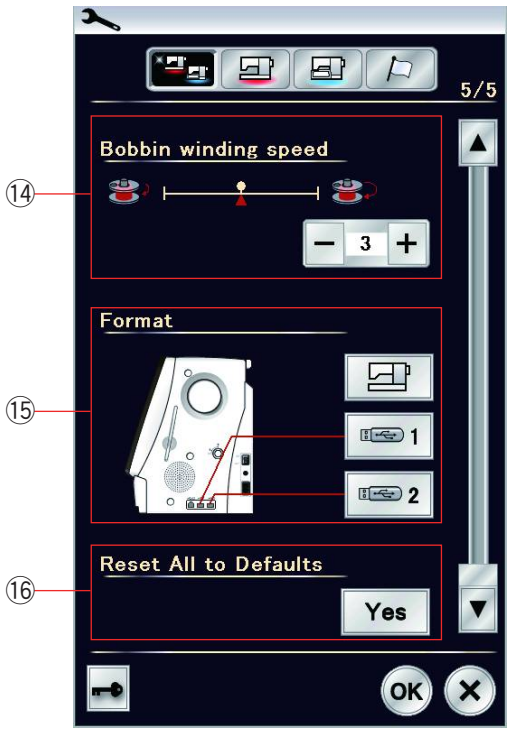


⑬ Colored Light Settings

If you wish to change the color of the glow light, press the Yes key and open the color selection window.
You can change the color of the glow light by pressing the desired color key.
You can adjust the brightness of the light by pressing the “+” or “–” key.

NOTE:
This option will be off when turning the color light off (refer to page 95).

Press the next page key to show the next menu.



⑭ **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.

⑮ **Formatting the memory**

If the internal memory of the machine or USB flash drive does not function due to damage to the memory bank, you need to re-enable it by formatting the memory.

To format the machine's internal memory, press the machine icon key and a confirmation message will appear. Press the OK key to format.

To format a USB flash drive, press one of the USB icon and the confirmation window will open. Press the OK key to format.

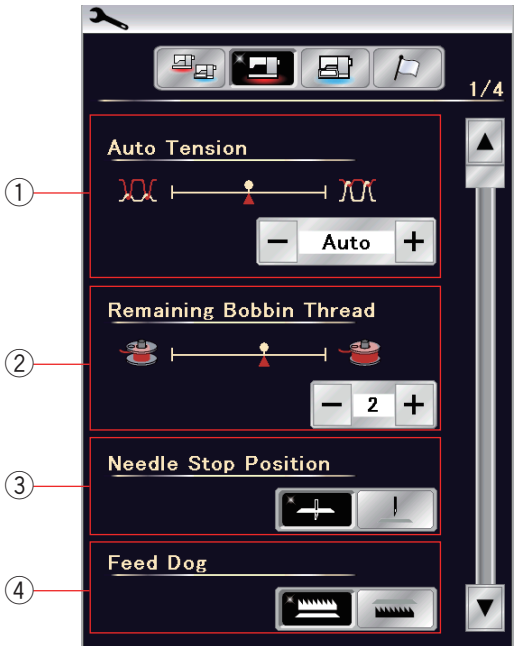
CAUTION:

Do not turn off the power or disconnect the USB flash drive while a warning message is displayed otherwise it may damage the memory bank.

⑯ **Reset All to Defaults**

Press the Yes key to reset all the parameters to the original values (factory settings).

Press the OK key to register the new menu.



Ordinary Sewing Setting Mode

① **Auto thread tension**
You can adjust the auto thread tension level by pressing the “+” or “–” key.

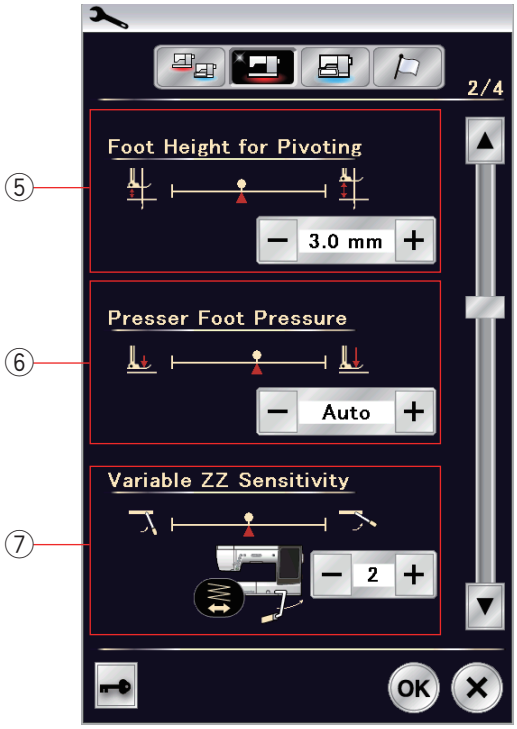
② **Low bobbin thread warning**
You can adjust the low bobbin thread warning level by pressing the “+” or “–” key.
To turn off the low bobbin thread warning, press the “–” key until “OFF” shows in the window.

③ **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.

④ **Drop feed option**
Turn this option on if you wish to sew decorative stitches and sewing applications with the feed dog down.
Press the drop feed key to turn on this option.

Press the next page key to show the next menu.

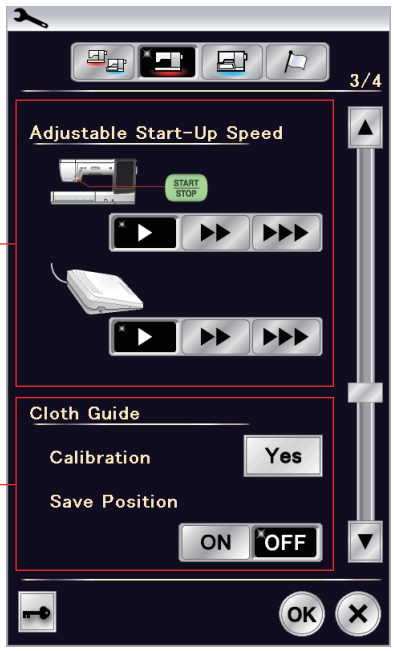


⑤ **Foot height for pivoting**
When the foot up option is turned on, the presser foot will automatically go up when the machine stops.
The height of the foot in the up position can be adjusted by pressing the “+” key or “–” key in accordance with thickness of the fabrics.

⑥ **Foot pressure**
The foot pressure is automatically optimized but you can adjust the foot pressure manually by pressing the “+” key or “–” key.

⑦ **Variable zigzag sensitivity**
You can adjust the amount of needle swing against the knee lifter movement for variable zigzag in sewing applications.
Press the “–” key so the needle swings a small amount when moving the knee lifter.
Press the “+” key so the needle swings a large amount when moving the knee lifter.

Press the next page key to show the next menu.



⑧ 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.



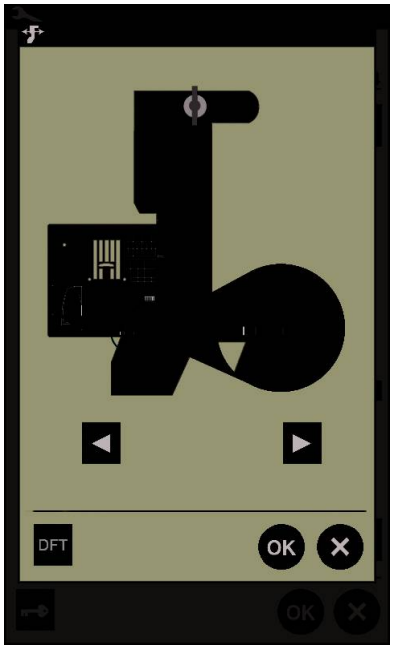
⑨ Cloth Guide

Calibration of the default position

The default position of the cloth guide is 15 mm (5/8″) from the center needle drop position. However, you can fine tune the default position of the cloth guide.

Press the Yes key and a warning message will appear. Press the OK key and the carriage will move to the standard position.

> **NOTE:**
> The embroidery unit must be attached when calibrating.

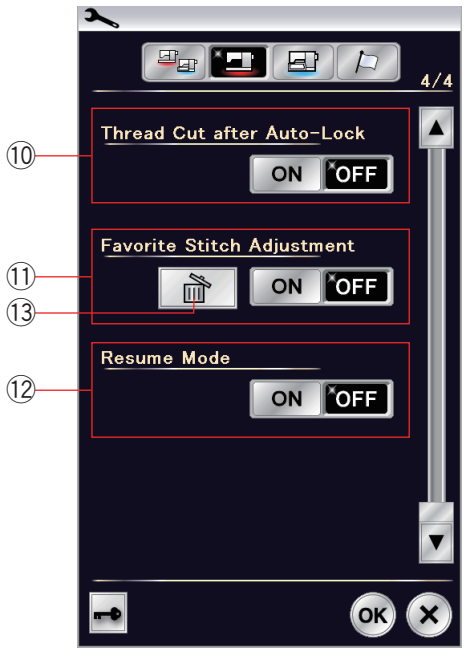


Press the ◀ key or ▶ key to adjust the position of the cloth guide.
Press the OK key. The message is displayed and the carriage will return to the home position.

Saving favorite positions

If you have set the cloth guide to your favorite position, 6.4 mm (1/4″) in the manual setting window for example (refer to page 42), you can save this position for future use.
To save favorite positions, press the ON/OFF key to turn ON the save position option.

Press the next page key to show the next menu.





⑩ Thread Cut after Auto-Lock

The machine automatically trims the threads after sewing locking stitches when this option is turned on.

⑪ Favorite Stitch Adjustment

If you wish to save the changes to manual stitch settings, turn on this option by pressing the ON/OFF key.
If this option if turned off, the manual stitch setting will be cleared when turn the power switch off.
Press the delete icon ⑬ to clear the manual stitch setting.

NOTE:
This option is available for all stitches in ordinary sewing mode except monogram.

⑫ Resume Mode

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

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

NOTE:
Resume data will be cleared under the following conditions:

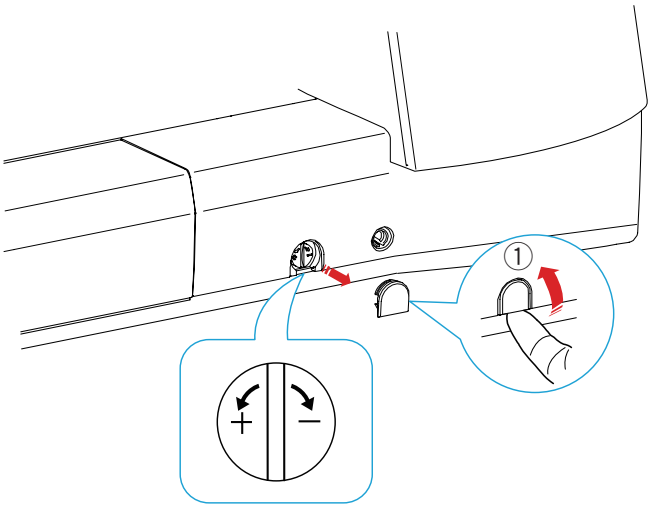
- Created stitch is imported with the import key.
- Created stitch is deleted with the delete key.
- Created stitch is deleted, imported or renamed with Acutools.
- The internal memory is formatted.

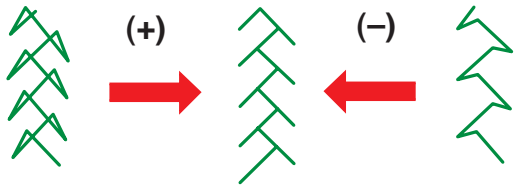
After customizing the settings, press the OK key to enable the new settings.

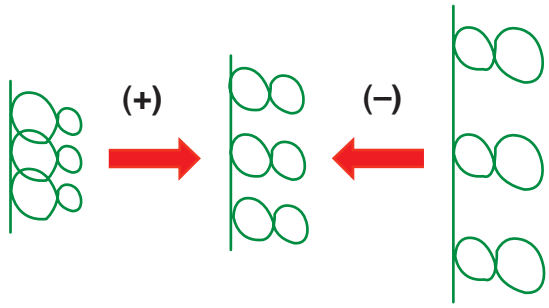


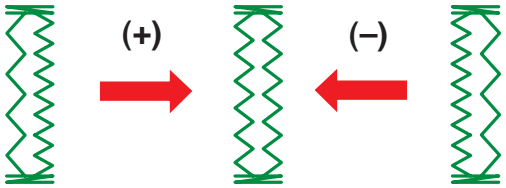
Language Selection Mode

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









Correcting Deformed Stitch Patterns

The sewing results of the stretch stitch patterns may vary depending upon the 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, letters, numbers or the manual buttonhole stitch are deformed, correct them with the feed balancing dial.
Remove the cap with your finger.

① Cap

NOTE:
In normal sewing, set the feed balancing dial to the neutral position, i.e. the groove on the dial is centered with the standard setting mark.

Decorative stretch stitch patterns

If the pattern is compressed, turn the dial in the direction of “+”.
If the pattern is drawn out, turn the dial in the direction of “–”.

Letters and numbers

If the pattern is compressed, turn the dial in the direction of “+”.
If the pattern is drawn out, turn the dial in the direction of “–”.

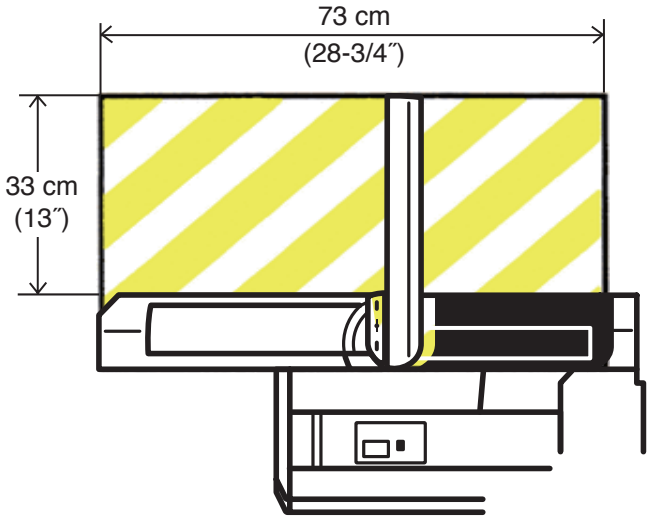
Stitch balance of the stretch buttonhole (B10)

The stitch balance of the right and left rows of the stretch buttonhole may vary depending on sewing conditions.
If the stitches are not balanced, correct the unevenness with the feed balancing dial.
If the right row is denser, turn the dial in the direction of “+”.
If the left row is denser, turn the dial in the direction of “–”.

NOTE:
Return the feed balancing dial to the neutral position and attach the cap when sewing is finished.

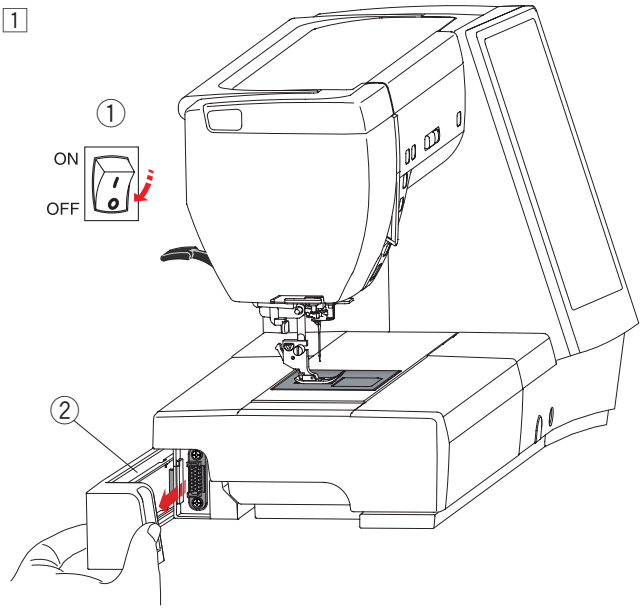
EMBROIDERY MODE

Embroidery Unit



NOTE:
Be sure to provide sufficient space around the machine to allow the hoop to move freely.
Do not place anything inside the area shown on the left.

1

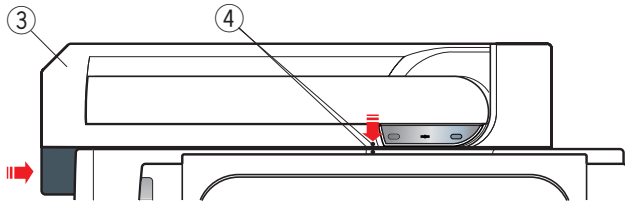


Attaching the embroidery unit

1 Turn the power switch off.
Remove the cover from the machine.
① Power switch
② Cover

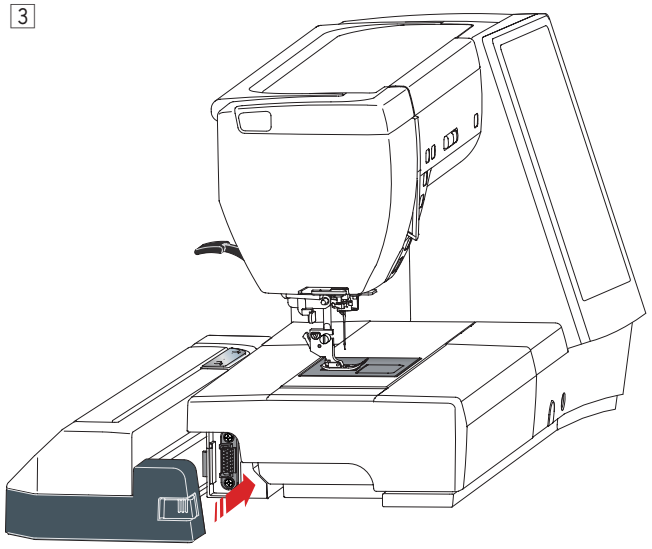
NOTE:
Always attach the extension table except when using the free-arm hoop.

2



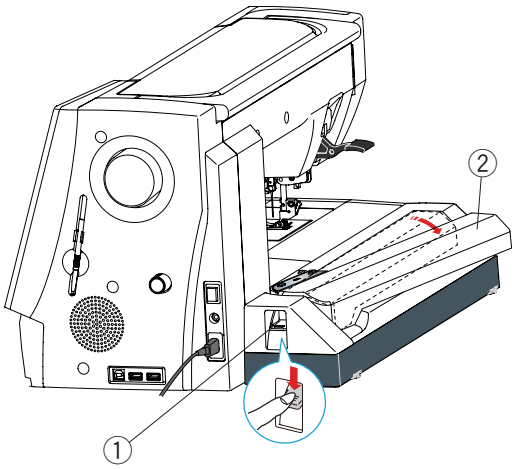
2 Place the embroidery unit on the back side of the machine base, matching the small dots as shown.
③ Embroidery unit
④ Small dots

3

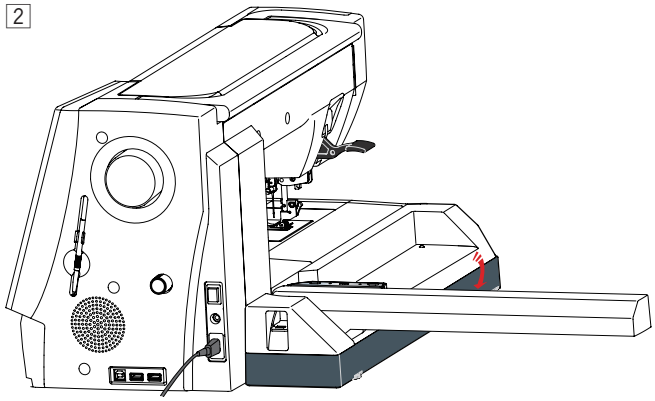


3 Slide the embroidery unit along the machine to the right and push the embroidery unit firmly until it fits securely.

1



2



Extending the carriage arm

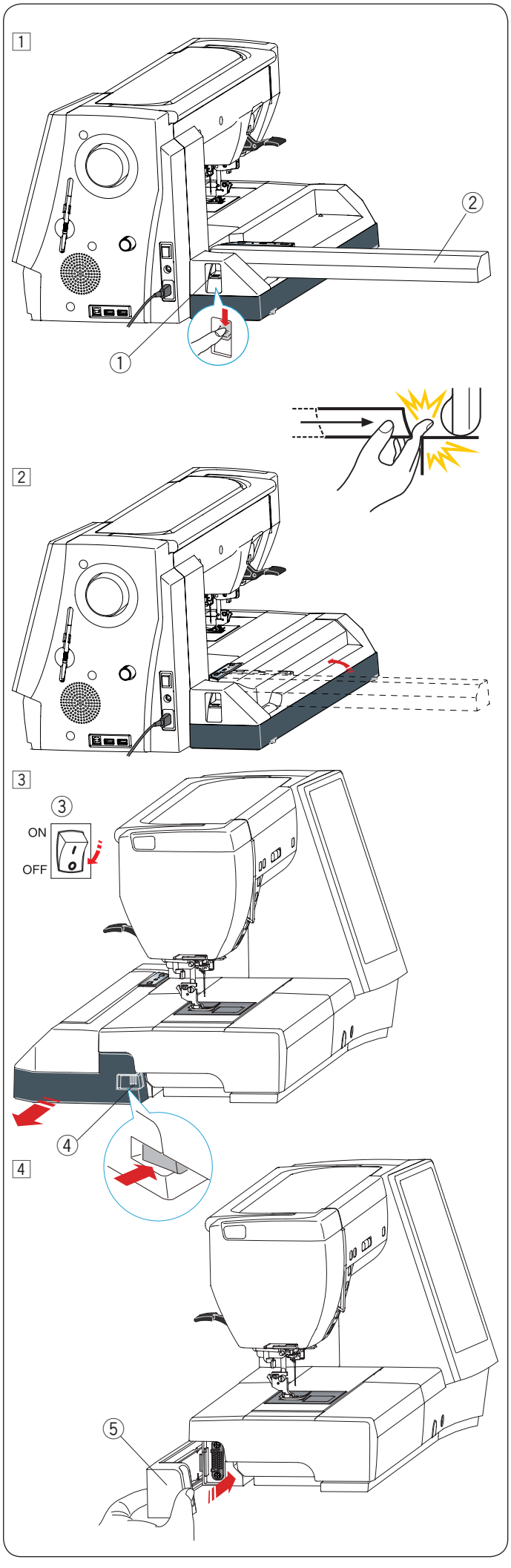
1 Press down the carriage arm release lever to extend the carriage arm.

① Carriage arm release lever
② Carriage arm

2 Swing out the carriage arm until it locks in the fully extended position.

CAUTION:

Do not push on the carriage arm when it is extended.
Do not forcefully move the carriage or carriage arm by hand.
Do not hold the carriage or carriage arm while it is moving.
Failure to follow these instructions may result in damage to the carriage mechanism.



Detaching the embroidery unit

NOTE:
- Be sure to remove the embroidery unit when carrying or storing the machine.
- If the needle is in down position, make sure to raise the needle by pressing the needle up/down key.

1 Remove the hoop from the carriage and return the carriage to the home position (refer to page 121).
① Carriage arm release lever
② Carriage arm

WARNING:
Be careful not to get your finger caught between the embroidery unit and machine bed with the extension table removed when the carriage returns to home position.

2 Push down the carriage arm release lever to retract the carriage arm.

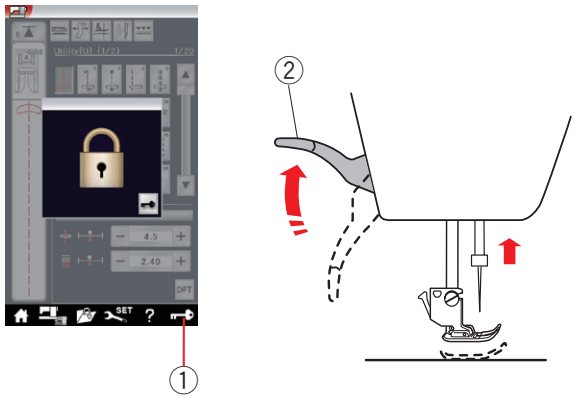
3 Turn the power switch off.
Push the embroidery unit release button.
Slide the embroidery unit to the left and remove it.
③ Power switch
④ Embroidery unit release button

4 Attach the cover to the machine.
⑤ Cover

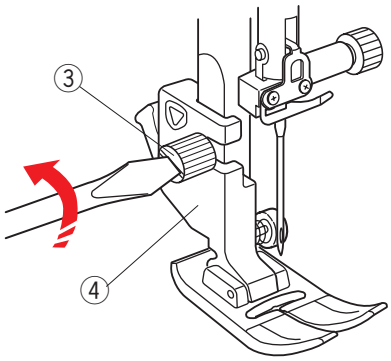
Attaching the Embroidery Foot

Use the embroidery foot P for embroidery.

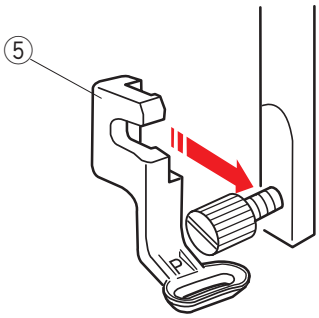
1 Turn the power switch on.
Raise the needle by pressing the needle up/down button.
Press the lockout key and raise the presser foot with the presser foot lifter.
① Lockout key
② Presser foot lifter



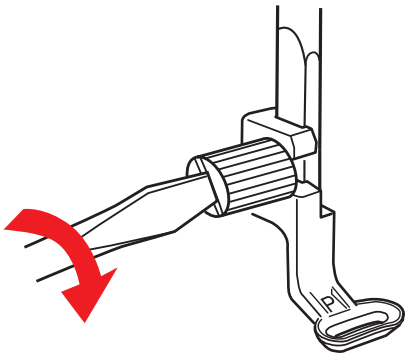
2 Loosen the thumbscrew with the screwdriver and remove the foot holder.
③ Thumbscrew
④ Foot holder



3 Attach the embroidery foot P to the presser bar from behind. Tighten the thumbscrew partially by hand.
⑤ Embroidery foot P



4 Lower the foot with the presser foot lifter.
Tighten the thumbscrew securely with the screwdriver.



Attaching the Straight Stitch Needle Plate

Use the straight stitch needle plate for embroidery.

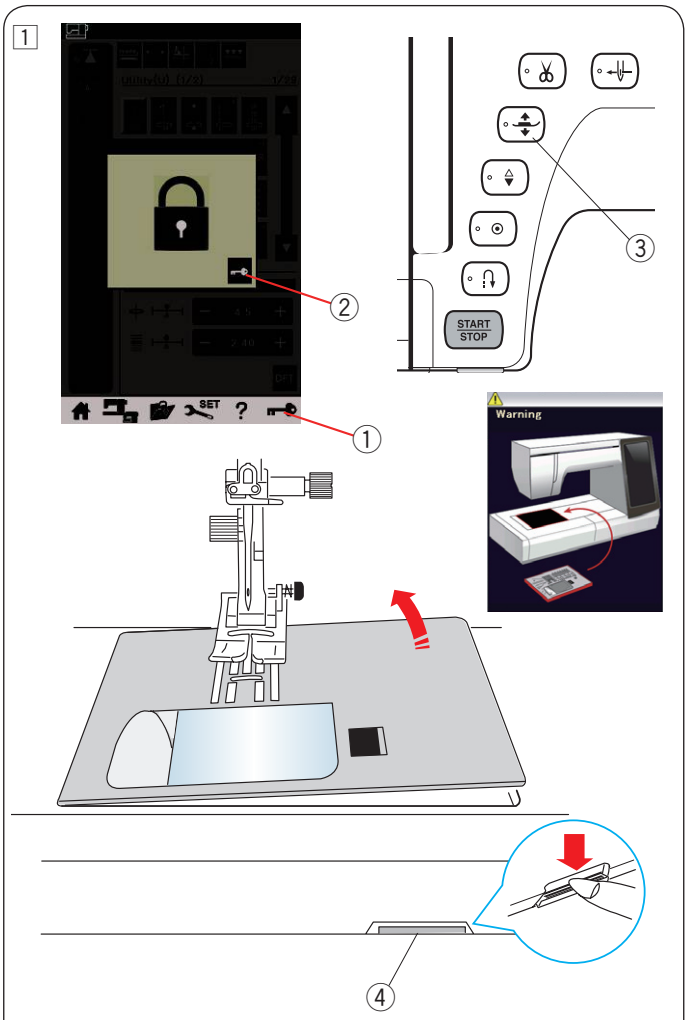
CAUTION:
Always make sure to press the lockout key to lockout the machine before replacing the needle plate.

1 Raise the needle and press the lockout key.
Press the presser foot lifter button to raise the presser foot.

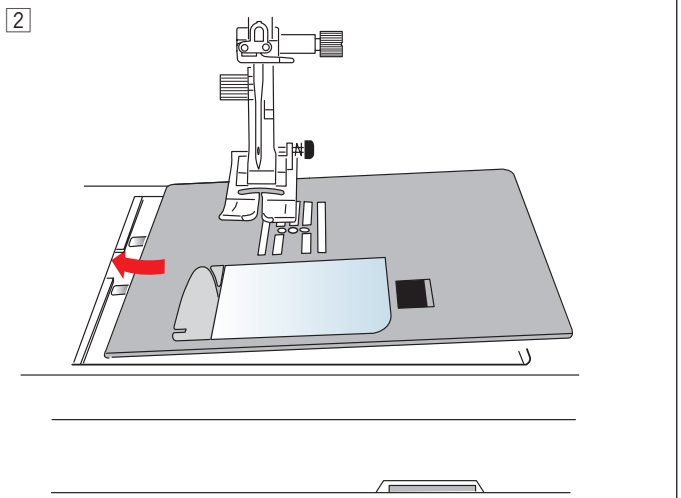
Slide the extension table to the left to remove it.
Push down the needle plate release lever and the needle plate will snap off.

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

① Lockout key
② Unlock key
③ Presser foot lifter button
④ Needle plate release lever



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

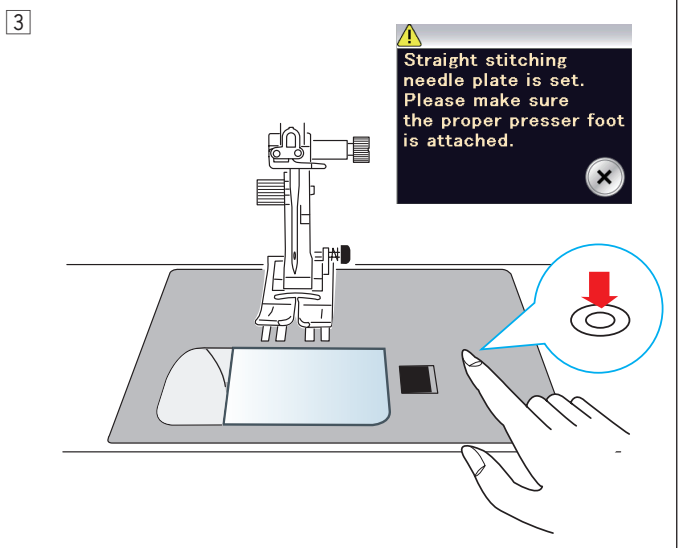


3 Push down on the mark of the needle plate until it locks in place.

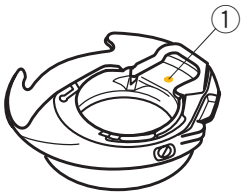
Make sure the warning message disappears and the straight stitch is automatically selected.

Turn the hand wheel slowly and make sure that the needle does not hit the needle plate.

Press the unlock key to unlock.



CAUTION:
Never press the needle plate release lever while running the machine.

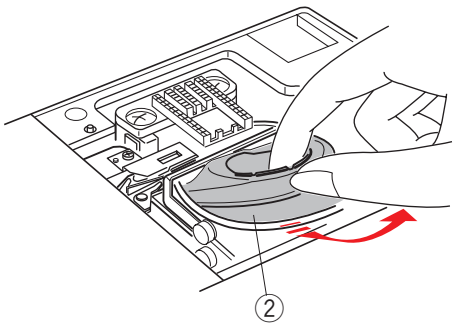


Special Bobbin Holder for Embroidery

Replace the standard bobbin holder with the special bobbin holder for embroidery when using bobbin threads other than Janome bobbin thread for embroidery.

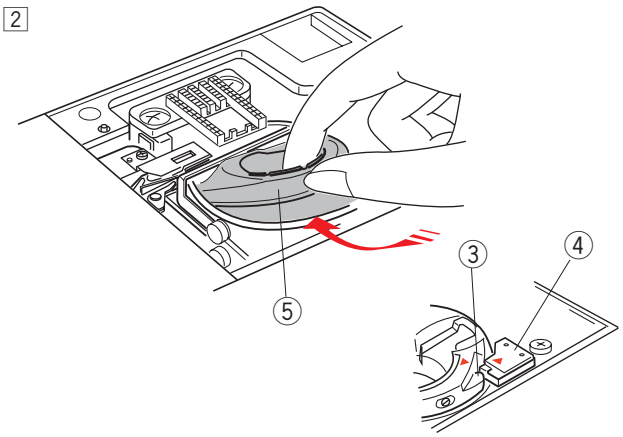
NOTE:
The special bobbin holder is marked with a yellow dot for identification.
① Yellow dot

1



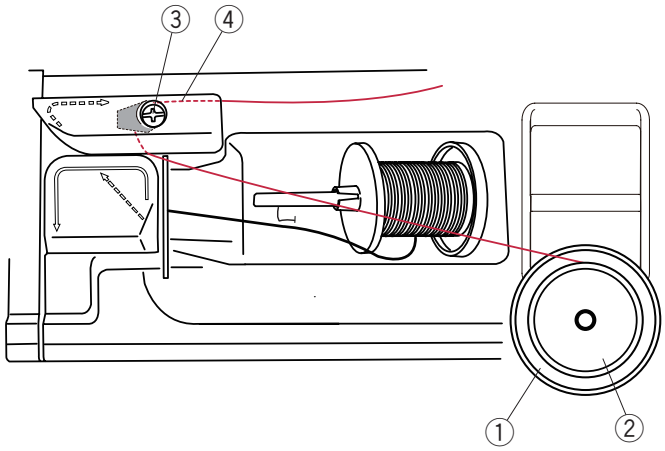
1 Remove the needle plate (refer to the previous page). Take out the standard bobbin holder.
② Standard bobbin holder

2



2 Insert the special bobbin holder into the hook race. Make sure to match the knob of the bobbin holder with the stopper on the machine.
Attach the needle plate.
③ Knob
④ Stopper
⑤ Special bobbin holder for embroidery

NOTE:
Use the standard bobbin holder when sewing lace designs and quilting designs that use the same thread for the bobbin as the needle thread.

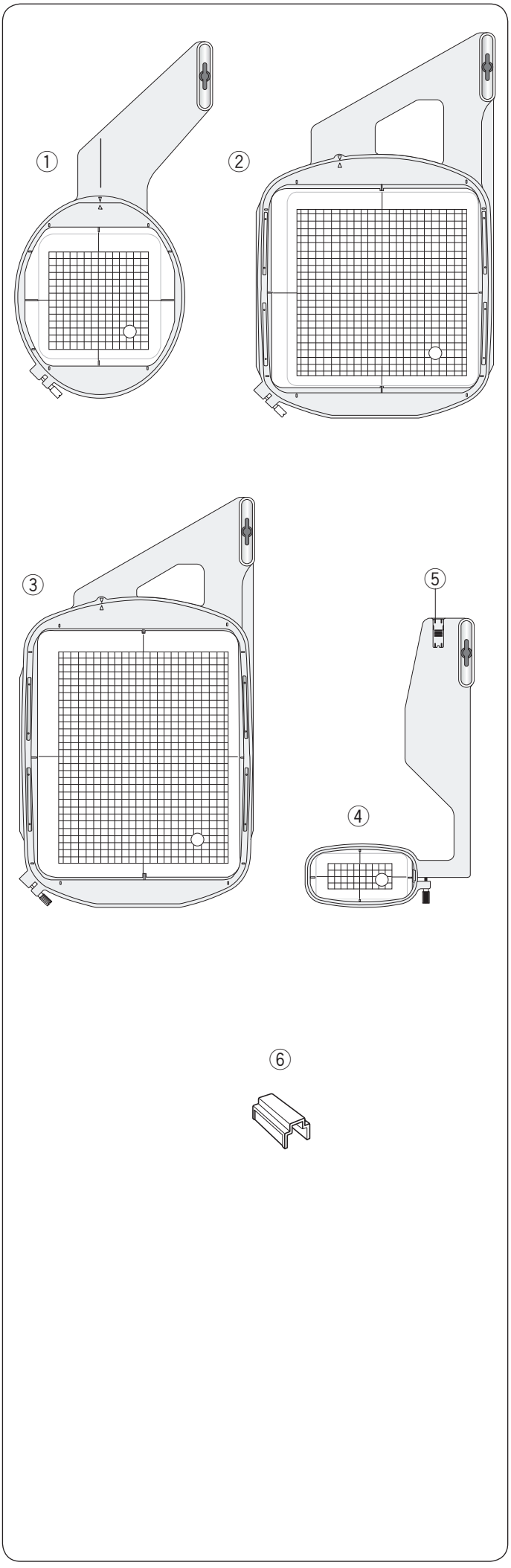


Bobbin Winding While Working on an Embroidery Project

You can wind a bobbin while running the machine.

To set the additional spool pin, please refer to page 14.
Draw the thread to the left and forward around the thread guide ③.
Draw the thread to the rear and to the right around and under the guide plate ④.
Firmly pull the thread to the right.
Follow the procedure from 3 to 8 of page 15 to wind the bobbin.

① Spool stand
② Spool
③ Thread guide
④ Guide plate



Embroidery Hoops

There are 4 embroidery hoops included in the standard accessories.

① Embroidery hoop SQ14
An oval embroidery hoop with a 14 cm (5.5”) square embroidery area.

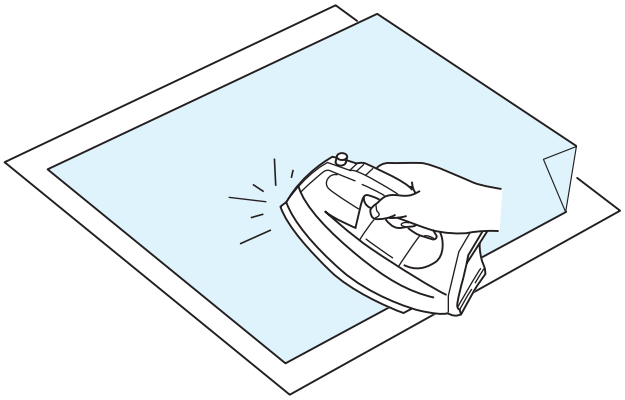
② Embroidery hoop SQ23
A square embroidery hoop with a 23 cm (9.1”) square embroidery area.

③ Embroidery hoop GR
An extra large embroidery hoop with a 23 cm by 30 cm (9.1″ by 11.8″) embroidery area.

④ Embroidery hoop FA10
A free arm embroidery hoop with a 10 cm by 4 cm (3.9″ by 1.6″) embroidery area.

⑤ Blocking plate

⑥ Magnetic clamp (SQ23 and GR)
A short magnetic clamp for holding the fabric to the embroidery hoops SQ23 and GR.



Stabilizers

To create the best quality embroidery, it is important to use stabilizers.

How to use:

Attach the stabilizer to the wrong side of the fabric.
You may need to use more than one layer.
For firm fabrics, you may place a thin sheet of paper under the fabric.
The non-adhesive type should be used when embroidering fabric which cannot be ironed or for sections which are difficult to iron.
Cut the stabilizer larger than the embroidery hoop and set it on the hoop so that the entire piece is fastened to the hoop to prevent any looseness in the fabric.

Attaching the stabilizer

Place the wrong side of fabric and the glossy side of the stabilizer together. Fold up a corner of the stabilizer and fuse it with an iron.

NOTE:
Fold up a corner of the stabilizer, to make it easier to peel off the excess stabilizer after stitching.
Ironing temperatures vary depending on the kind of adhesive stabilizer you are using.

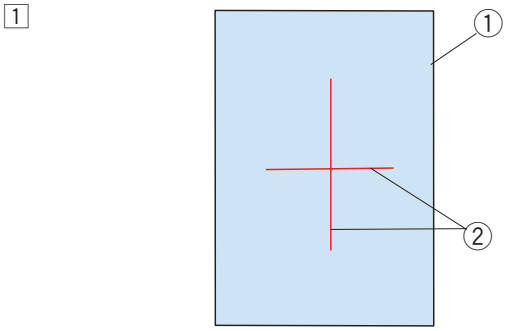
Types of the stabilizers

Type	Usage	Property
Tear-away	Stable woven fabrics	Made from a fiber that will tear easily.
Iron-on	Knits and all kinds of unstable fabrics	Adhesive type fusible with an iron.
Cut-away	Knits and all kinds of unstable fabrics	Non-woven fabric that does not tear.
Water soluble	Cutwork or lace embroidery Right side of looped fabrics such as towels to avoid loops coming through the embroidery	A thin film that will dissolve in water.
Heat-away	Cutwork or lace embroidery	A thin film that will melt away with heat.

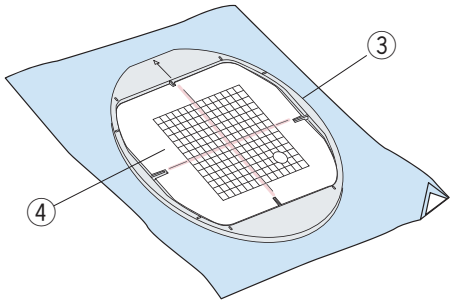
NOTE:
Sticky type stabilizers can be used only for securing a small piece of fabric or work that cannot be secured in the hoop, or for securing velvet and other napped fabric that would be permanently marked by the hoop.
Clean the bobbin holder after stitching as glue can get stuck on it.

Setting the Fabric in an Embroidery Hoop

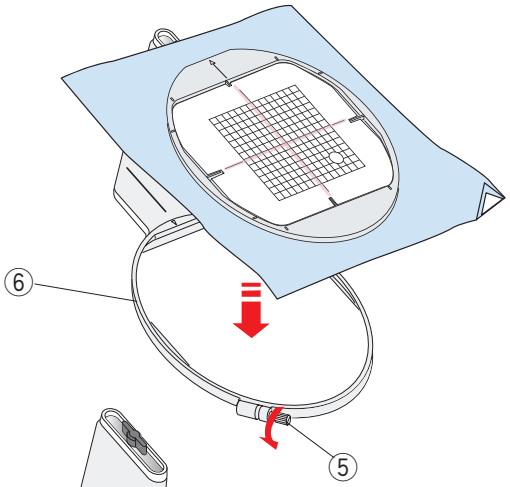
1 Prepare a fabric and attach a stabilizer to the wrong side of the fabric.
The fabric and stabilizer should be larger than the hoop size.
Draw the centerlines on the fabric with tailor's chalk.
① Fabric
② Centerlines



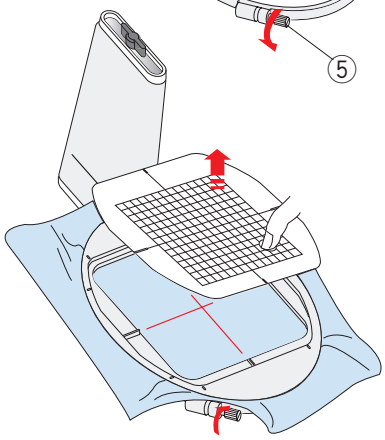
2 Lay the inner hoop and template on the fabric, matching the centerlines of the fabric with the template.
③ Inner hoop
④ Template



3 Loosen the hoop tightening screw on the outer hoop. Place the inner hoop and fabric on the outer hoop.
⑤ Hoop tightening screw
⑥ Outer hoop

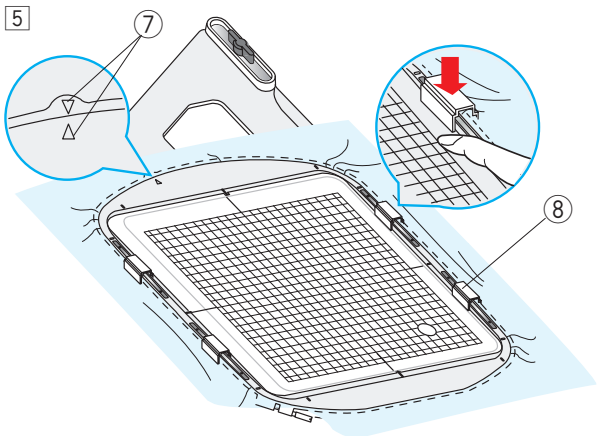


4 Push the inner hoop and fabric into the outer hoop. Tighten the screw on the outer hoop to stretch the fabric. Make sure that the fabric is stretched tightly in the hoop.
Remove the template.



NOTE:
Make sure to match the alignment marks of the outer and inner hoops when stretching the fabric.
⑦ Alignment marks

5 Clamp the fabric to the hoop with the short magnetic clamps when using hoop SQ23 or hoop GR.
⑧ Magnetic clamp (short)



NOTE:
Thick layers of fabric and stabilizer may cause skipped stitches, or broken threads and needles. Avoid sewing on the layers thicker than 3 mm (1/8″).

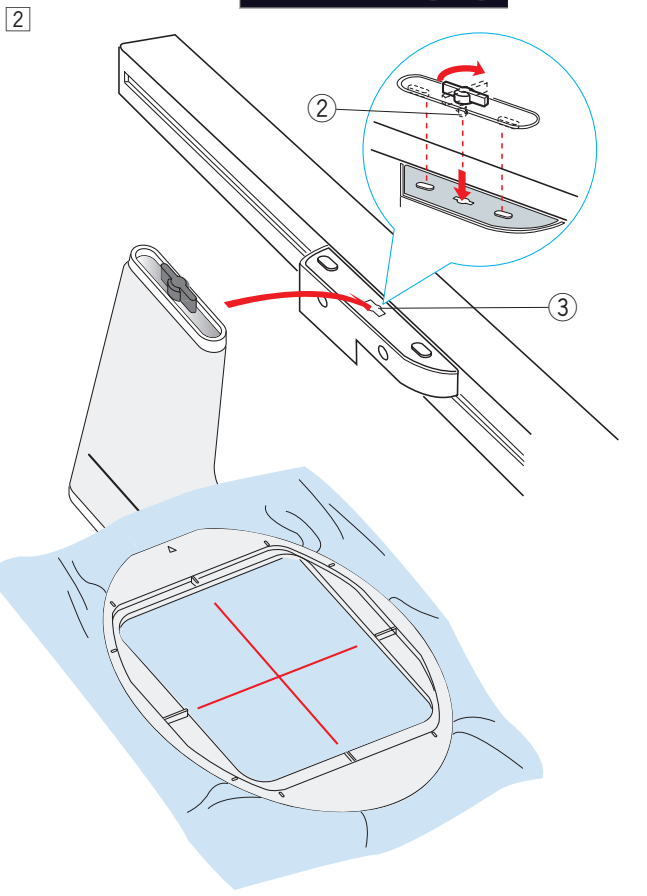
Attaching the Embroidery Hoop to the Machine

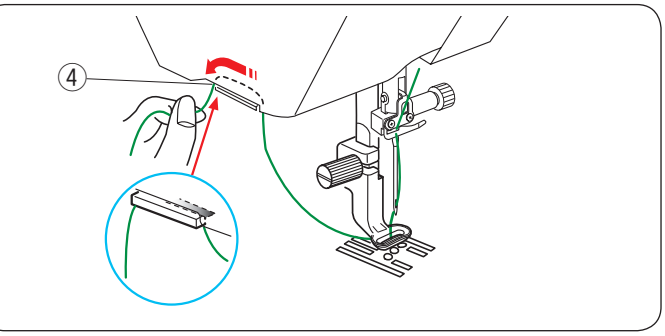
1 Turn the power switch on and open the carriage arm. Press the mode switch key and a warning message will appear.
Press the OK key and the carriage will move to the starting position.
The visual touch screen will display the embroidery mode window.
① Mode switch key



NOTE:
If you press the mode switch key with the carriage arm retracted, a confirmation message will appear. Do not press the OK key or X key. Instead, open the carriage arm.

2 Place the hoop on the machine and attach the hoop to the carriage by inserting the lock pin of the hoop into the hole in the carriage.
Turn the knob clockwise to secure the hoop.
② Lock pin
③ Hole

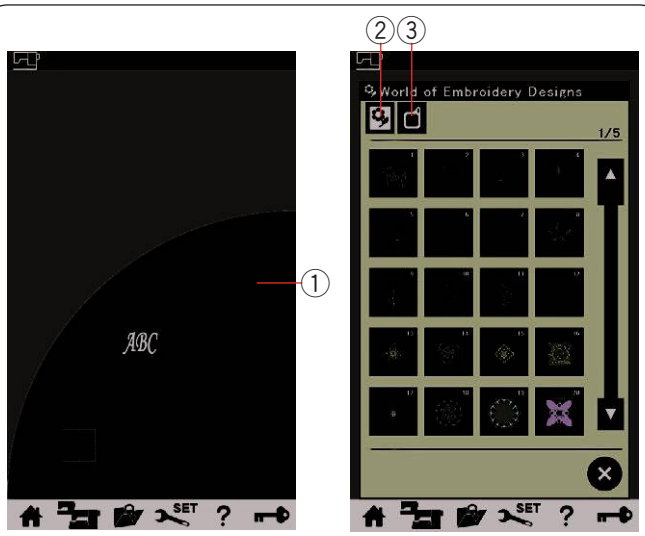




Thread Holder

To avoid sewing over a tail of the needle thread, place the thread end on the thread holder.
④ Thread holder

Pass the needle thread through the hole in the embroidery foot and draw it up to the thread holder. Hang the thread on the thread holder from front to back.



Selecting Built-in Embroidery Designs

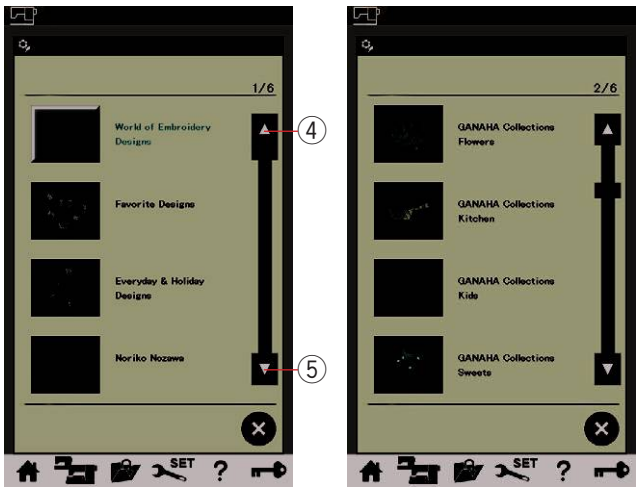
Press the built-in design key and the first page of the design list of World of Embroidery Designs will open.

① Built-in design key

Press the design category key to browse the design list by design category, or press the hoop selection key to browse the designs by hoop size.

② Design category key

③ Hoop selection key



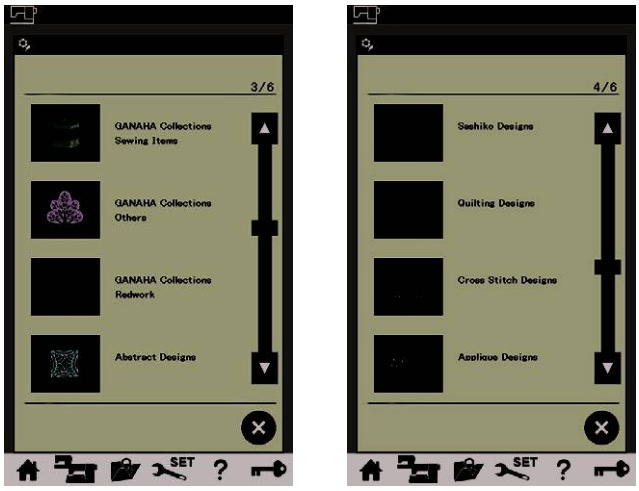
Design category

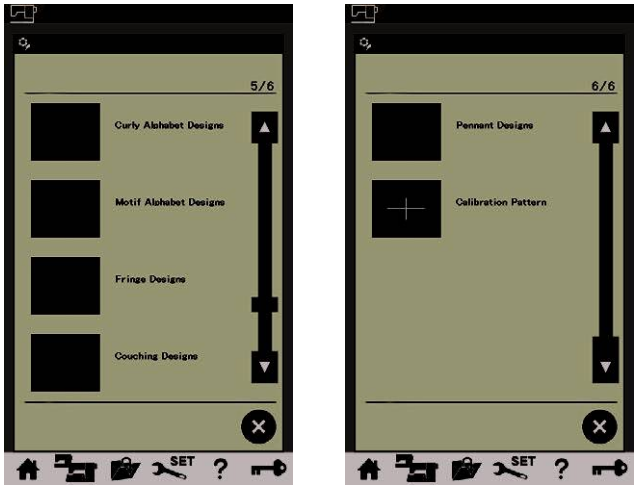
Press the design category key ② to show the design lists by category.

Press the previous/next page keys to browse the design lists.

④ Previous page key

⑤ Next page key





Page 1 of 6
- World of Embroidery Designs
- Favorite Designs
- Everyday & Holiday Designs
- Noriko Nozawa

Page 2 of 6
- GANAHA Collections Flowers
- GANAHA Collections Kitchen
- GANAHA Collections Kids
- GANAHA Collections Sweets

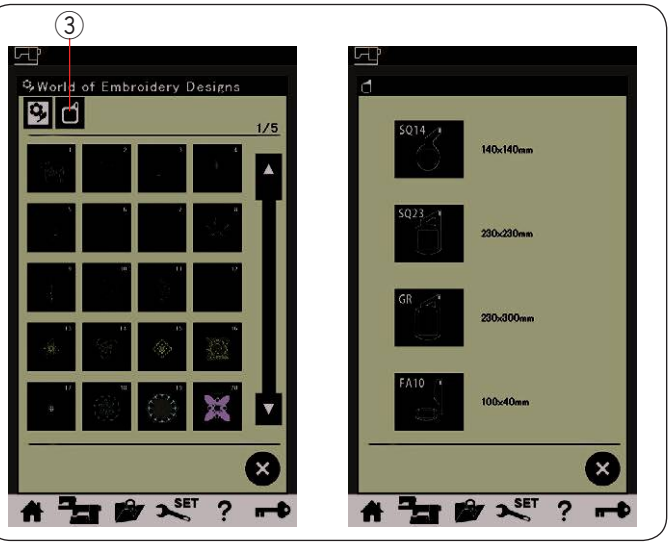
Page 3 of 6
- GANAHA Collections Sewing Items
- GANAHA Collections Others
- GANAHA Collections Redwork
- Abstract Designs

Page 4 of 6
- Sashiko Designs
- Quilting Designs
- Cross Stitch Designs
- Applique Designs

Page 5 of 6
- Curly Alphabet Designs
- Motif Alphabet Designs
- Fringe Designs
- Couching Designs

Page 6 of 6
- Pennant Designs
- Calibration Pattern

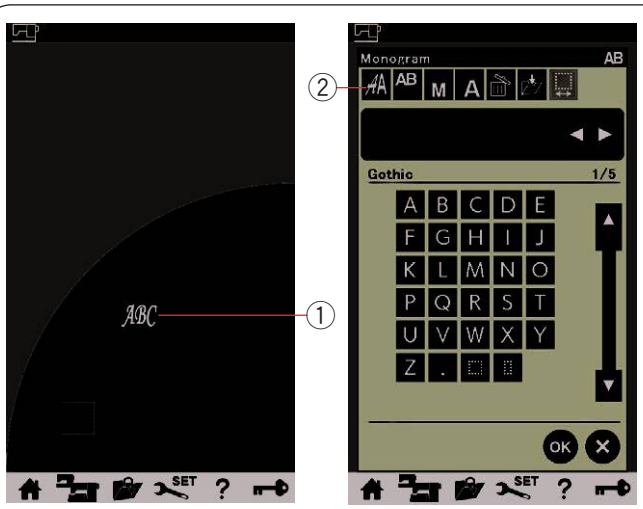
Press the desired category to select and the pattern selection window will open.
Browse the pattern list with the previous/next page keys, and select the desired pattern by pressing the pattern icon key.



Hoop size

Press the hoop selection key ③ and the hoop selection window will open. Select the same hoop as the one attached to the machine.

Browse the design list with the previous/next page keys, and select the desired pattern by pressing the pattern icon key.
The visual touch screen will show the hoop confirmation window.



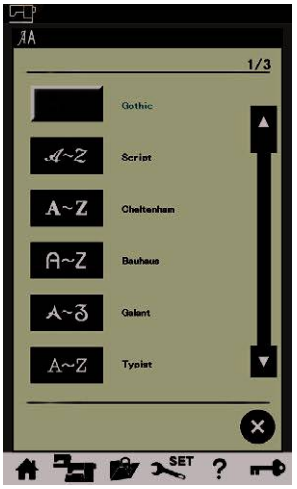
Monogramming

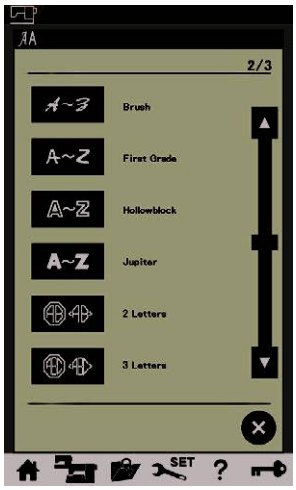
Press the monogram key and the monogram window for Gothic font will open.
Press the font selection key to open the font selection window.

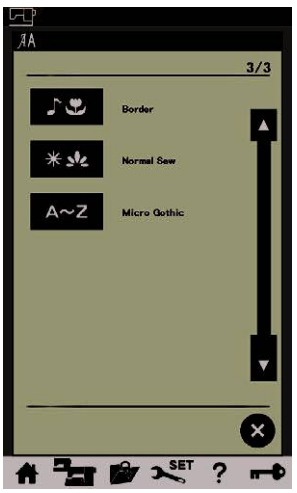
① Monogram key
② Font selection key

You can select one of the 11 fonts for monogramming as well as 2-letter, 3-letter, border patterns and normal sew patterns.

The following fonts and patterns are available:







Page 1 of 3
- Gothic font
- Script font
- Cheltenham font
- Bauhaus font
- Galant font
- Typist font

Page 2 of 3
- Brush font
- First grade font
- Hollowblock font (upper case only)
- Jupiter font (upper case only)
- 2-Letter
- 3-Letter

Page 3 of 3
- Border patterns
- Normal sew patterns (patterns similar to ordinary stitches)
- Micro Gothic font



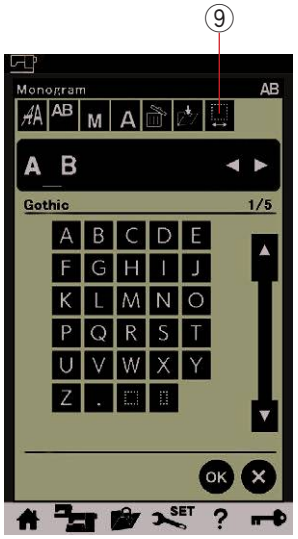


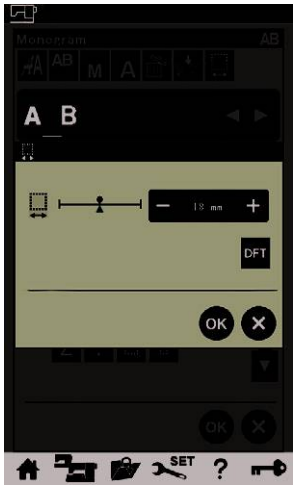
Press the icon key of the desired font and the monogram window will open.

Browse pages with the previous/next page keys.
You can enter alphabet letters, numbers, symbols and European letters.

NOTE:
- If you select Russian or Japanese language for the visual touch screen, you can select Cyrillic or Japanese characters as well.
- The height of Micro Gothic font is approximately 5 mm.







Function keys

① Font selection key
Press this key to open the font selection window.

② Lettering orientation key
Press this key to select the horizontal or vertical orientation.

③ Letter size key
You can select the following 3 letter sizes by pressing this key.
The approximate letter sizes of upper case are as follows:
L (Large): 30 mm (1.2″)
M (Medium): 20 mm (0.8″)
S (Small): 10 mm (0.4″)

④ Letter case key
Pressing this key changes the letter case from upper case to lower case and vice versa.

⑤ Delete key
Press this key to delete the character above the cursor.

⑥ Save file key
Pressing this key opens the save file window and allows you to save the text or monogram as a file.

⑦ Cursor key
Press these keys to move the cursor to the left or right.

⑧ OK key
Press this key to confirm your entry and open the embroidery screen.

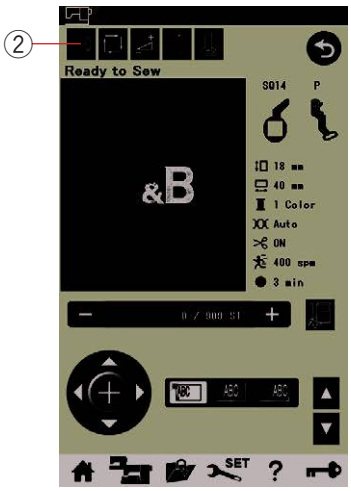
⑨ Space adjust key
This key is activated only when a space is entered.

If the spaces between characters look uneven, insert a blank space between characters and adjust the space width to justify.

Press this key to open the space adjustment window.
To increase the space width, press the “+” key.
To decrease the space width, press the “–” key.

NOTE:
The space width is shown only in millimeters.







Programming a monogram

Example: Programming “**R&B**” in Gothic style font.

Enter “R”, the cursor shifts to the right and “**R**” is automatically memorized.

Press the letter size key and select small size.
① Letter size key

Enter “&”, the cursor shifts to the right and “**&**” is automatically memorized.

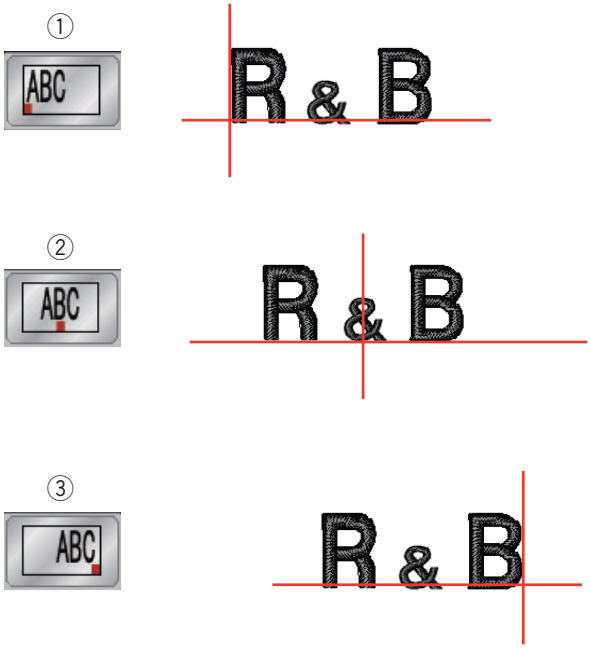
Press the letter size key and select medium size.

Enter “B”, the cursor shifts to the right and “**B**” is automatically memorized.

Press the OK key and a warning message will appear.
Press the OK key and the carriage moves to starting position.
The hoop confirmation window will appear.
Press the OK key.
The screen changes to the ready to sew window.

Color change

You can sew a multi-colored monogram by changing the thread color of each letter if you press the color change key before sewing.
The machine will stop automatically when each character has been sewn.
Change the thread to the next color and start sewing again.
② Color change key



Monogram placement

You can select one of 3 monogram placements: left justify, center justify and right justify.

① Left Justify
Press the ABC key to start sewing from the left end reference line on the template.

② Center Justify
Press the ABC key to sew in the center of the hoop.

③ Right Justify
Press the ABC key to sew from the right end reference line on the template.

2- Letter monogram

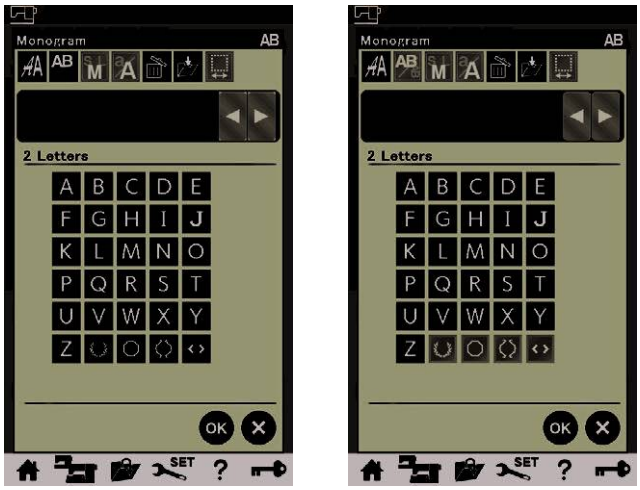
Example: 2-Letter in an octagon

1



1 Press the font selection key ①.
Select 2-letter ②.

2



2 Select the octagon.

3

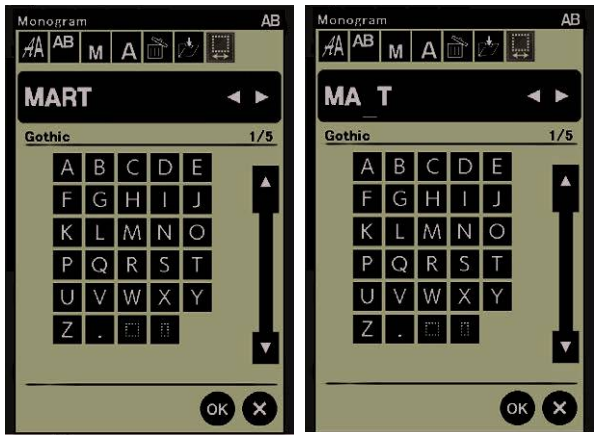


3 Enter “**A**” and “**B**”.
Press the OK key and a warning message will appear.
Press the OK key and the carriage moves to the starting position.
The hoop confirmation window will appear.
Press the OK key.
The screen changes to the ready to sew window.

NOTE:
The 3-letter monogram is sewn in the same way as the 2-letter monogram.
The starting position for the 2-letter and 3-letter monogram is in the center of the hoop.

Editing a monogram

1



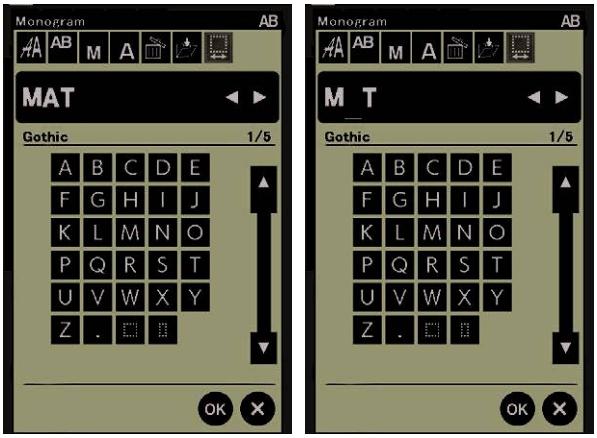
1 Deleting a character: Deleting “**R**” from “**MART**”
Press the cursor key to move the cursor under “**R**”.

2



2 Press the delete key and letter “**R**” is deleted.

3

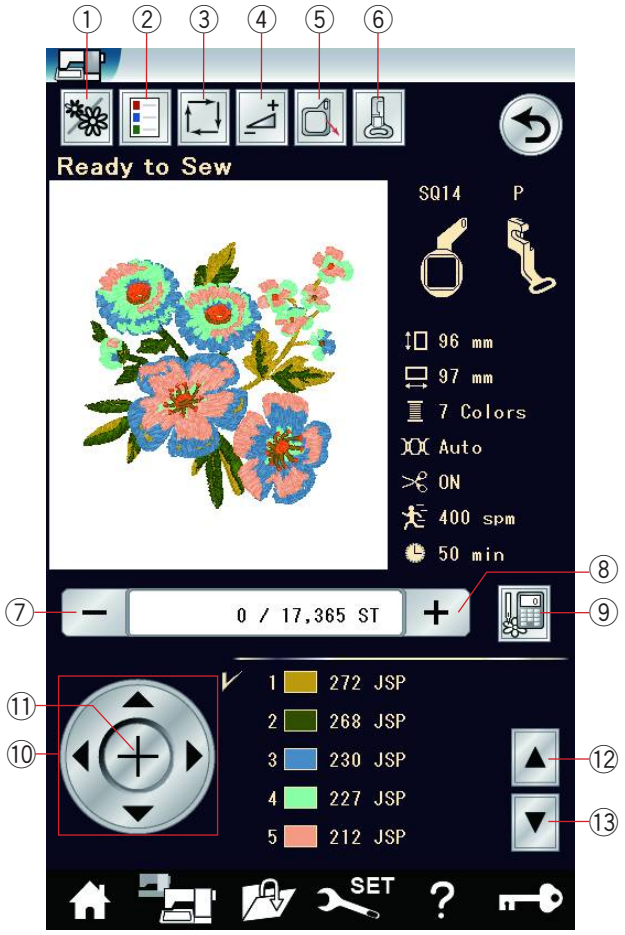


3 Inserting a character: Inserting “**E**” into “**MAT**”
Press the cursor key to move the cursor under “**A**”.

4



4 Enter “**E**”.
The letter “E” is inserted before “**A**”.

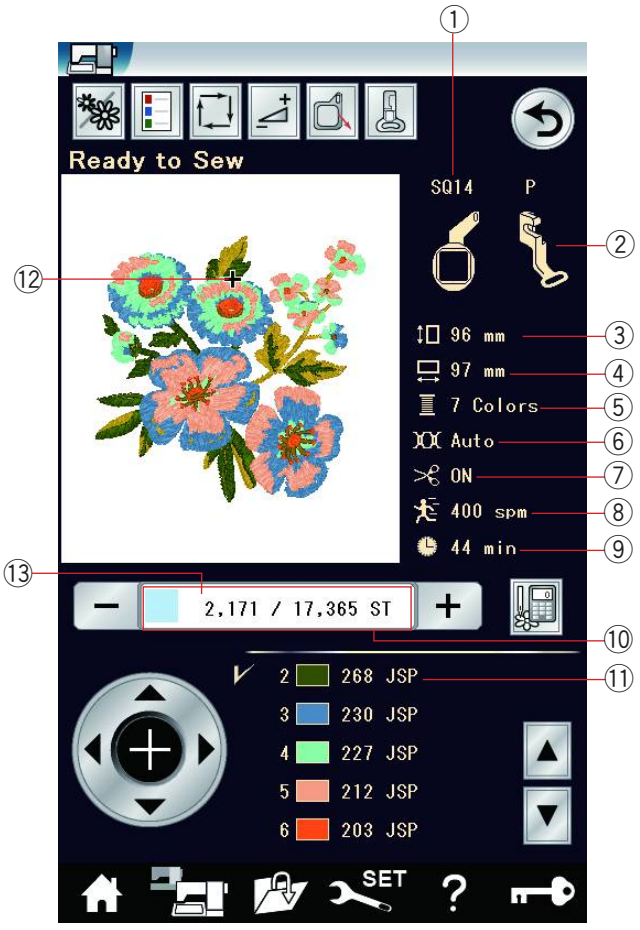


Ready to Sew Window

The ready to sew window shows embroidery function keys and information on the selected pattern.

Function keys

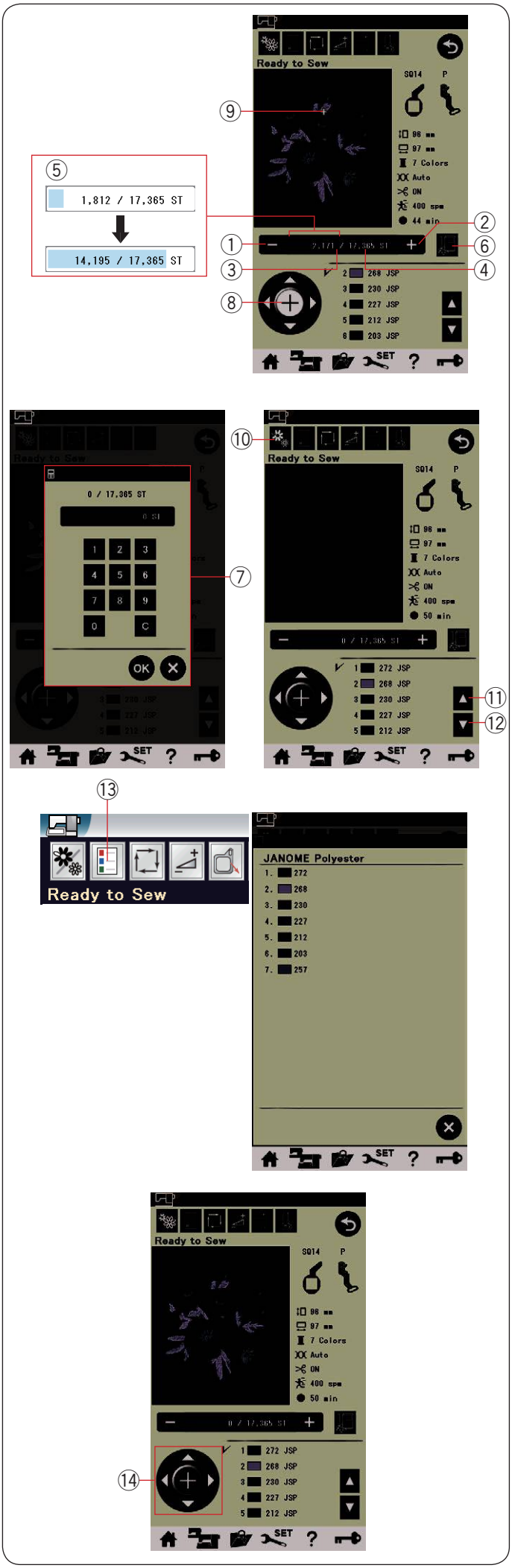
① Color section key
② Color list key
③ Trace key
④ Adjust key
⑤ Hoop back key
⑥ Embroidery foot key
⑦ Stitch back key
⑧ Stitch forward key
⑨ Jump key
⑩ Jog key
⑪ Cross key
⑫ Previous color section key
⑬ Next color section key



Pattern information

The visual touch screen displays the following details:

① Hoop size
② Presser foot type
③ Vertical dimension of the design
④ Horizontal dimension of the design
⑤ Number of thread colors (layers)
⑥ Tension setting
⑦ Auto thread cutting
⑧ Maximum sewing speed
⑨ Required sewing time
⑩ Stitch count
⑪ Thread color
⑫ Cross mark
⑬ Progress bar



Stitch back/forward keys

Press the "–" key ① to move the hoop back to a previous sewing point.

Press the "+" key ② to move the hoop ahead.

The hoop will move one stitch each time the key is pressed. Hold down the key to travel faster and jump 10, 100 or 500 stitches at a time. The stitch count ③ and the total number of stitch count ④ are displayed in the stitch count window.

You can use these keys to move the embroidery hoop to where the thread has broken or run out.

① Stitch back key
② Stitch forward key
③ Stitch count
④ Total number of stitch count

The pale blue bar in the stitch count window is the progress bar. The progress bar ⑤ appears when the stitch count increases, and indicates the progress of the embroidery sewing project. When the project is completed, the progress bar returns to 0.

⑤ Progress bar

Jump key

If you want to jump to the desired sewing point directly, press the jump key ⑥ and the numeric keypad window ⑦ will open. Enter the desired stitch count number and press the OK key.

The hoop moves to the sewing point you entered.

⑥ Jump key
⑦ Numeric keypad window

Cross key

Press the cross key ⑧ to display the current sewing point as a cross mark ⑨. Press the cross key again to hide the cross mark.

⑧ Cross key
⑨ Cross mark (Current sewing point)

Color section key

Press this key ⑩ to show the complete image of the selected design or partial image of each color section only.

To view the next color section, press the next color section key ⑫.

To view the previous color section, press the previous color section key ⑪.

You can sew only the specific color section by pressing the next color section key ⑫ until the desired section is displayed.

⑩ Color section key
⑪ Previous color section key
⑫ Next color section key

Color list key

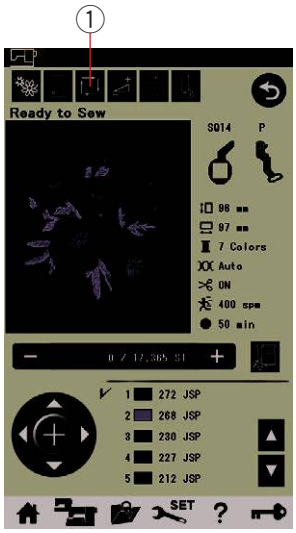
Press this key to view a list of thread colors employed in the selected design.

⑬ Color list key

Jog keys

Adjust the hoop position with the jog keys so that the needle position comes right above the center of the reference lines on the fabric.

⑭ Jog keys

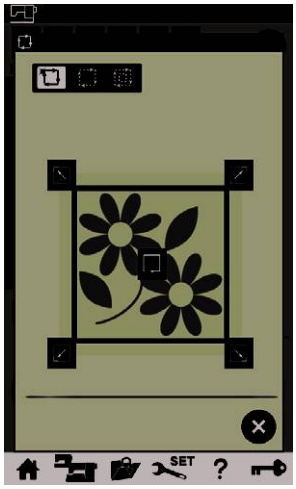


Trace key
You can check the size of the embroidery area by tracing the pattern outline without stitching or with basting stitches.

Press the trace key and the trace option window will open.

① Trace key

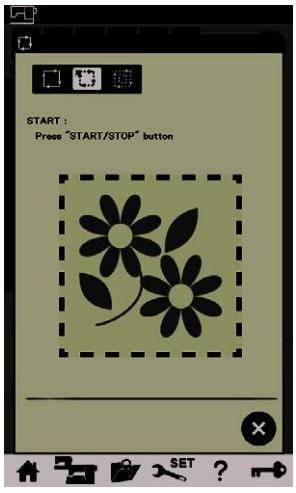
1



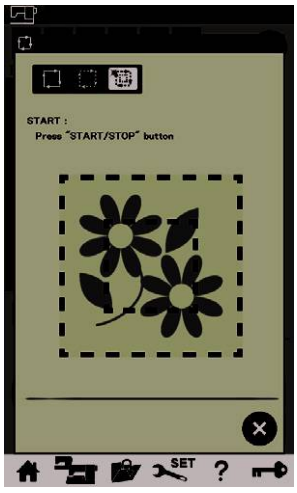
The following 3 options are available:

1. Trace without stitching
Press the key to open the trace without stitching window.
Press the trace key to start tracing or press one of the keys to move the hoop to a corner.

2



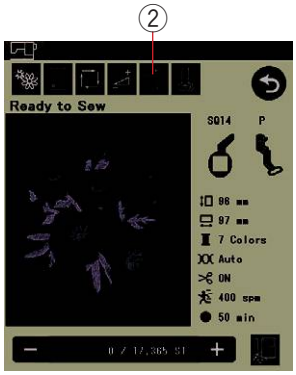
3

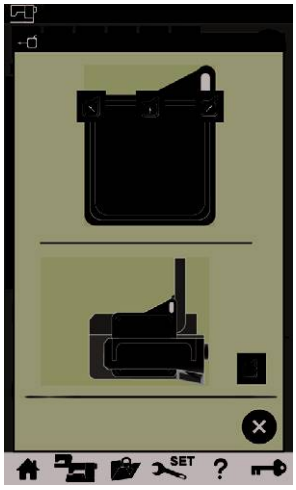


2. Trace and baste (single)
Press the key to open the trace and baste (single) window.
Press the start/stop button to start tracing with basting stitches.

3. Trace and baste (double)
Press the key to open the trace and baste (double) window.
Press the start/stop button to start tracing with basting stitches. First, the machine bastes inside the pattern then traces the pattern outline with basting stitches.

NOTE:
The machine will baste around the embroidery area with a 5 mm allowance.
However, the allowance will be null if the pattern spreads over the maximum limit of embroidery area.
To close the tracing option window, press the X key.

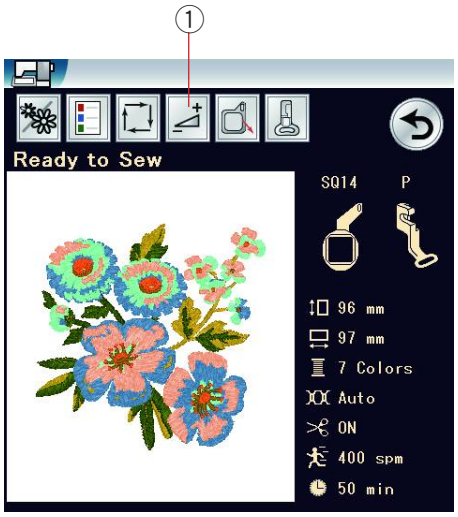




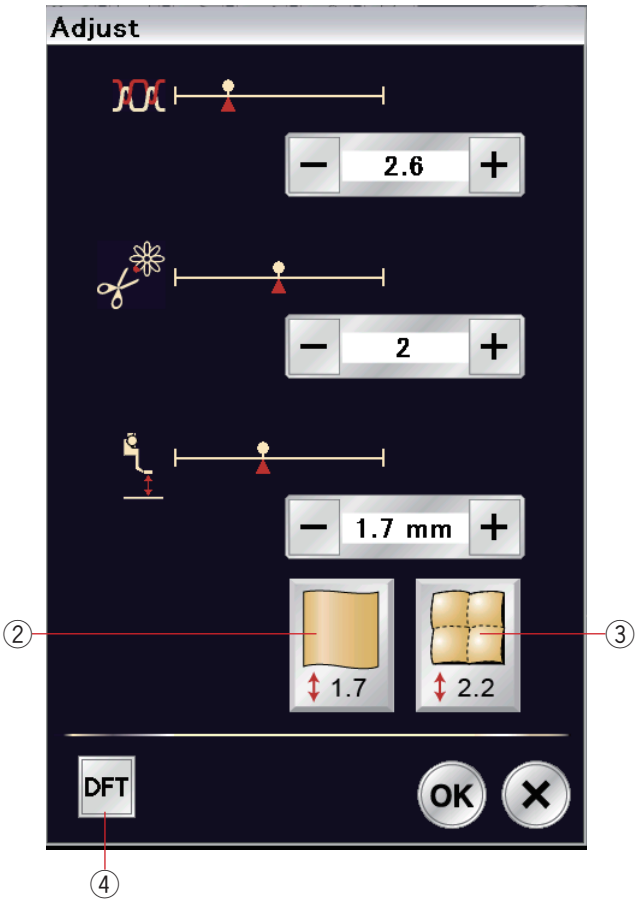
Hoop back key
Raise the needle by pressing the needle up/down key, if the needle is in down position.
Press the hoop back key ② and hoop back option window will open.
Press the key and the confirmation window open.
Press the OK to move the carriage back to the home position and return to the Ready to Sew screen. Press one of the keys to move the carriage to a standby position.
Press the X key to close the hoop back option window.

② Hoop back key

The hoop will go back to the original position when pressing the start/stop button.



Adjust key
Press the adjust key to open the manual setting window. You can adjust the following settings in this window.
① Adjust key

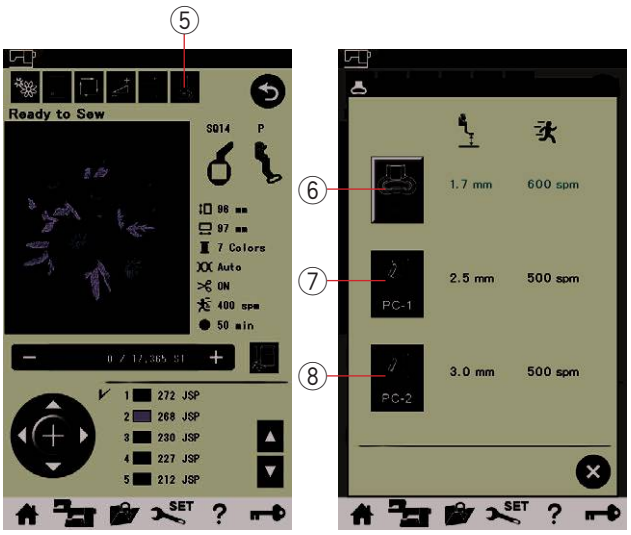


• **Auto thread tension level**
Press the "+" or "–" key to adjust the thread tension to your preference.

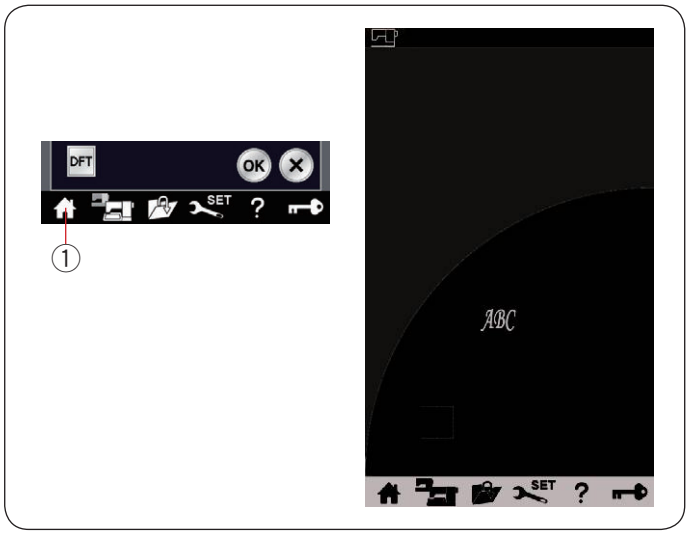
• **Cutting the tails of jump threads**
This option is can be used when the "jump thread cutting length" setting or "cutting command" is activated (refer to page 148).
Press the "+" or "–" key to adjust the tail length of jump thread.

• **Embroidery foot height**
Press one of the fabric icon keys to select the recommended height or press the "+" or "–" key to fine tune the foot height.
② Plain fabric key
③ Quilting key

Press the OK key to activate the new settings.
To return to the default settings, press the default key.
④ Default key



Embroidery foot key
Press this key to open the embroidery foot window. Press one of the presser foot icon key. The presser foot height and the sewing speed will be automatically adjusted to suite the selected presser foot.
⑤ Embroidery foot key
⑥ Embroidery foot (P)
⑦ Couching foot (PC-1)
⑧ Couching foot (PC-2)



Embroidery mode key

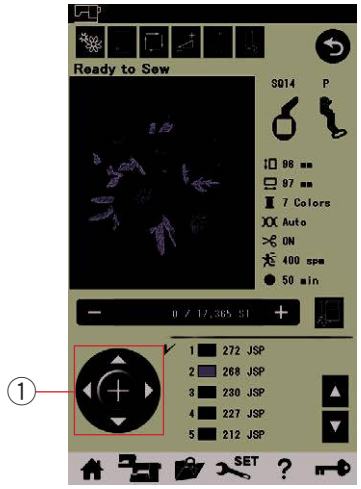
Press this key to open the embroidery mode window.

① Embroidery mode key

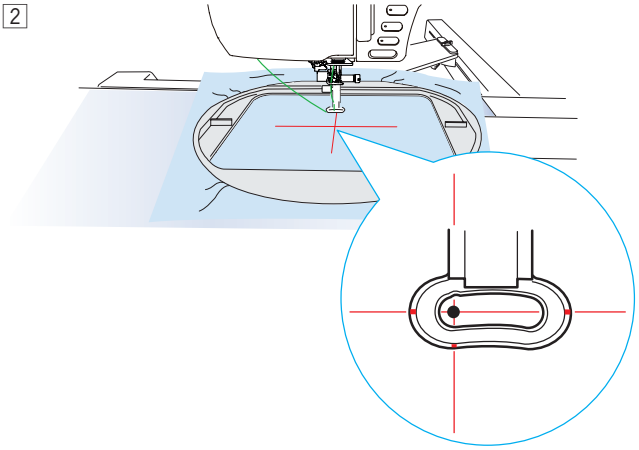
Starting to Sew Embroidery

1 Select the desired pattern.

1



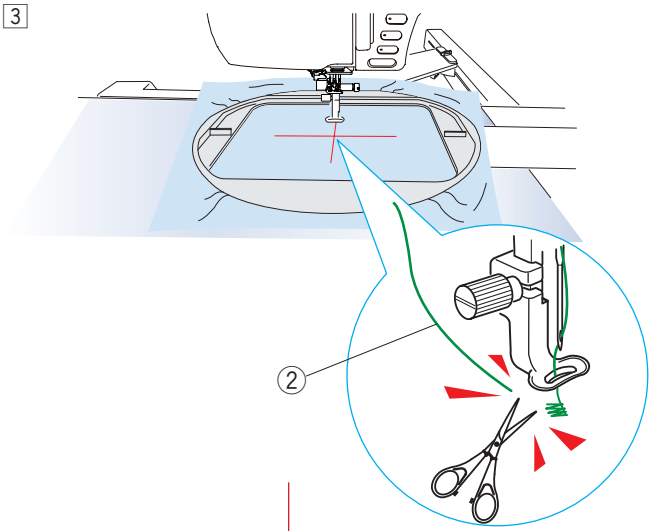
2

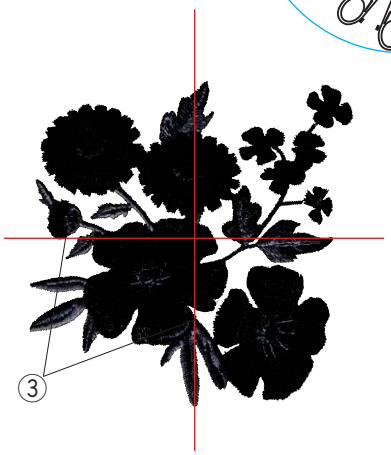


2 Adjust the hoop position with the jog keys so that the needle position comes right above the center of the centerlines on the fabric.

① Jog key

3





3 Press the start/stop button and sew 5 to 6 stitches.
Press the start/stop button again to stop the machine.

The presser foot will be raised automatically.
Cut the loose thread close to the beginning of the starting point.

② Loose thread

Press the start/stop button to start sewing again.
The machine will stop (and trim the threads if the auto thread cutting is activated) automatically when the first color section is finished.
Change the thread to the next color and sew the next section.

Sewing results

The embroidery pattern is sewn against the centerlines on the fabric as shown.

③ Centerlines on the fabric

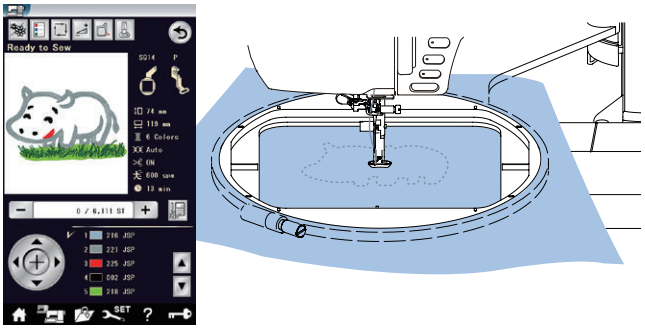
NOTE:
Refer to page 148 for how to set auto thread cutting.

Applique Designs

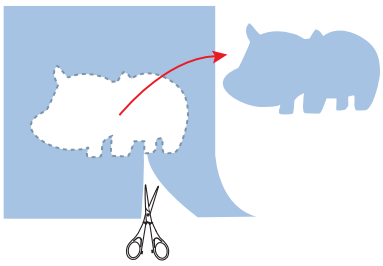
Prepare applique fabric larger than hoop size.

Example: Applique Design SQ14-143

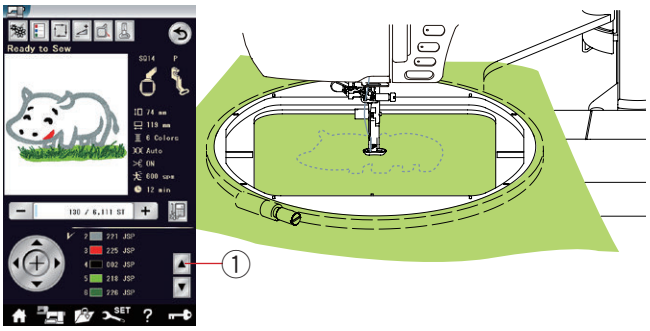
1 Set the applique fabric to the hoop.
Sew the first section (color) only.



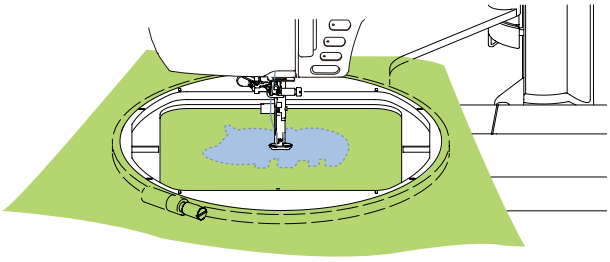
2 Remove the hoop and unhoop the applique fabric. Cut the applique fabric along the stitching line to make an applique piece.



3 Prepare background fabric and set it to the hoop. Attach the hoop to the carriage.
Press the previous color section key to go back to the first section (color) and sew the first section (color) to mark the applique position.
① Previous color section key



4 Place the applique piece on the background fabric and align the applique piece with the positioning mark. Fix the applique piece in place with sticky tape or a pin.

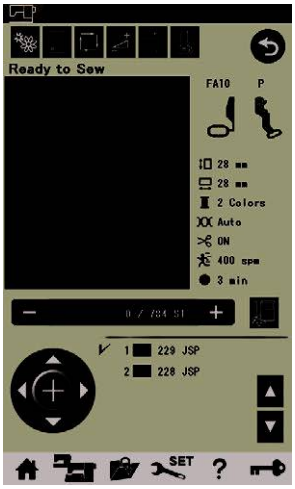


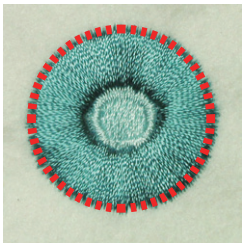
5 Sew the remaining sections (colors) of the applique design.

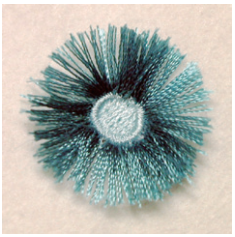


Fringe Designs

Fringe designs are special patterns for creating fringed flower or border designs.
The embroidery design easily turns into an attractive fringed flower.



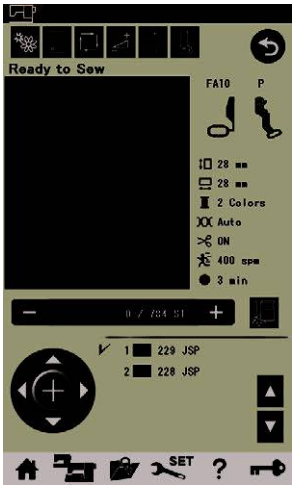




Example: Fringe design FA10-36

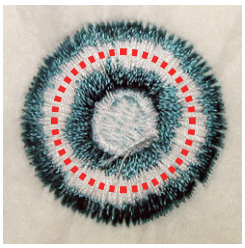
Select fringe design FA10-36 and sew the pattern as you would sew a normal embroidery design.

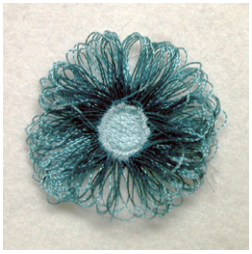
Remove the fabric from the hoop.
Cut the needle threads along the red broken line at the outer edge of the pattern as shown.
Ruffle the threads to make fringe.



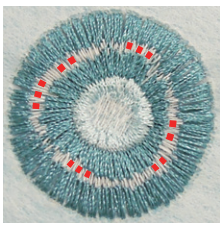
Example: Fringe design FA10-36

Select fringe design FA10-36 and sew the pattern as you would sew a normal embroidery design.





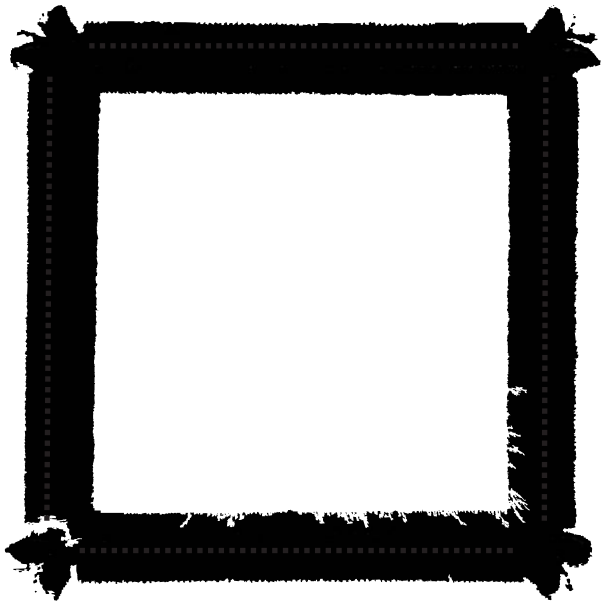
Remove the fabric from the hoop.
Cut the bobbin threads on the wrong side of the fabric along the red broken line as shown.
Pull the needle threads up and bring the loop ends to the right side of the fabric to make fringe.



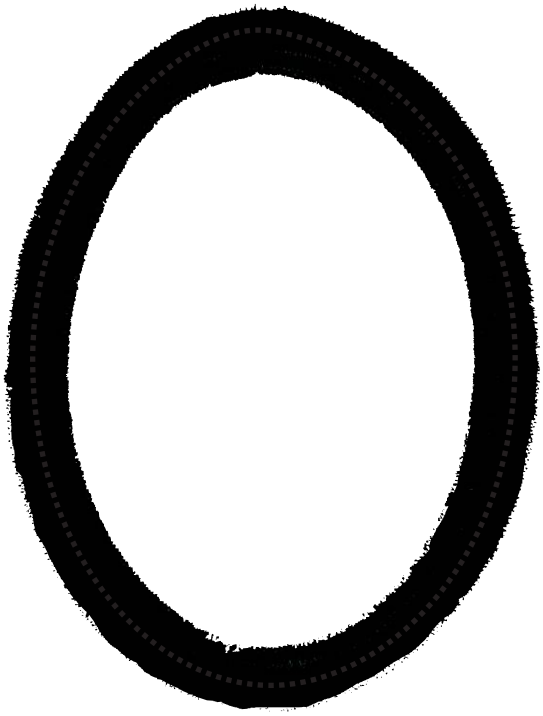
If the bobbin threads on the wrong side of the fabric are too narrow, cut the bobbin threads along the red broken line as much as possible, and then remove the bobbin threads by pulling them.
Pull the needle threads up and bring the loop ends to the right side of the fabric to make fringe.

Example: Cutting lines
Cut the bobbin threads on the wrong side of the fabric along the broken line as shown.
Pull the needle threads up and bring the loop ends to the right side of the fabric to make fringe.
If the bobbin threads on the wrong side of the fabric are too narrow, cut the threads along the broken line as much as possible, and then remove the bobbin threads by pulling them.

SQ14-176



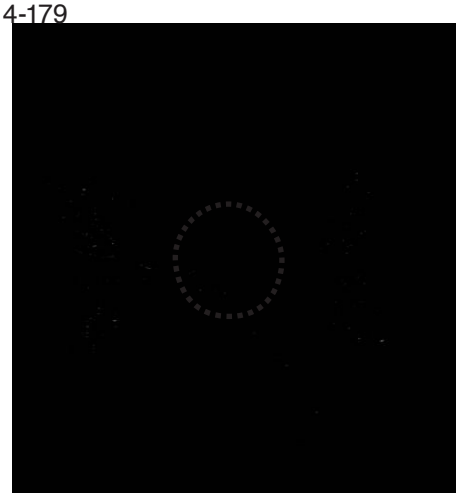
SQ14-177



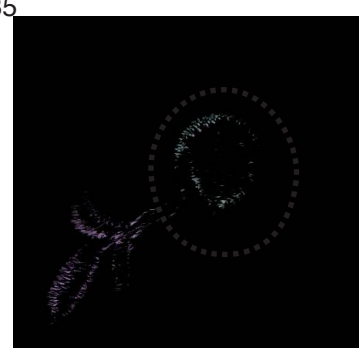
SQ14-178



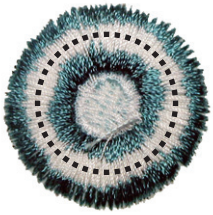
SQ14-179



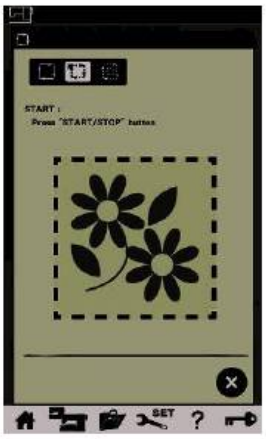
FA10-35



FA10-36





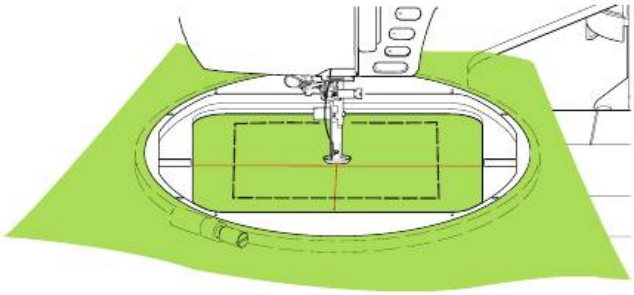


Fringe designs for applique

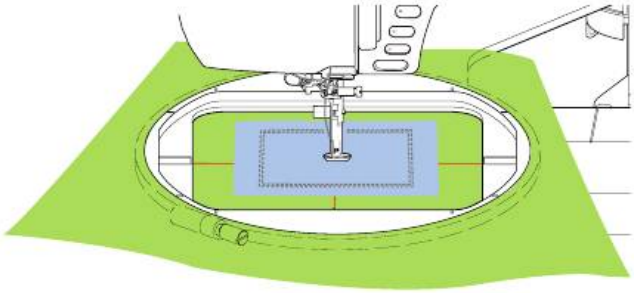
Fringe designs SQ14-176 and SQ14-177 are special designs for machine embroidery applique.
You can attach applique piece to background fabric and embroider applique design at the same time.

Example: Fringe design SQ14-176

Prepare background fabric and applique fabric.
Select fringe design SQ14-176, and set the background fabric to the hoop.

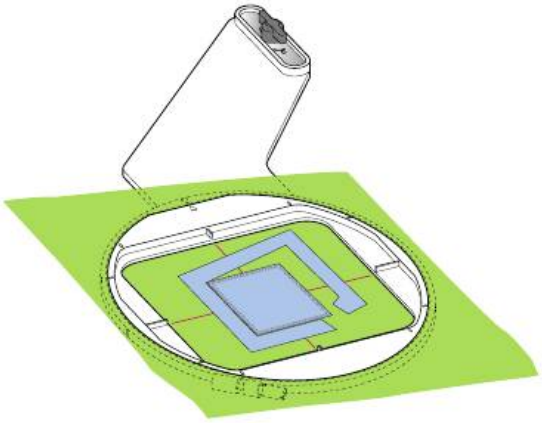


Attach the hoop to the carriage and press the trace key.
Press the key to select trace and baste (single) (refer to page 121).
Start the machine to mark around embroidery design with basting stitches.

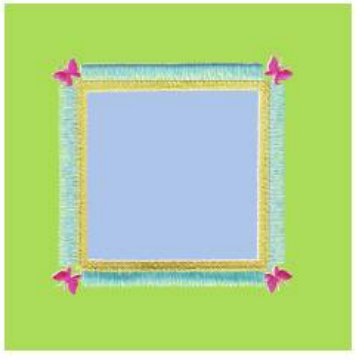


Cut the applique fabric the same size as the marked area.
Place the applique piece on the marked area and sew the first section (color).

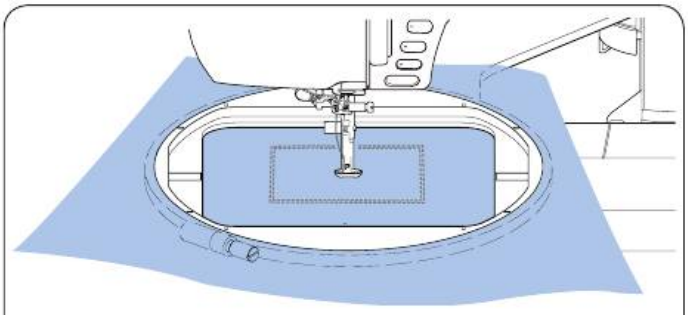
NOTE:
Pin the applique piece or use spray adhesive to fix it in place as necessary.



Remove the hoop from the machine, but do not unhoop the fabric.
Remove the basting stitches. Cut away the excess applique fabric as close to the seam line as possible.

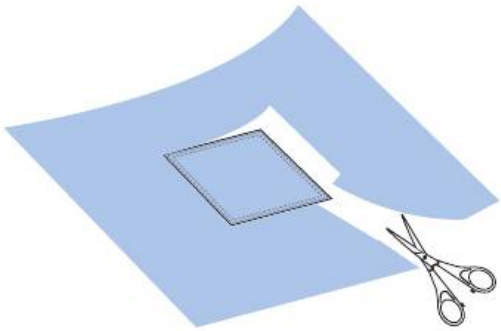


Attach the hoop to the machine again.
Sew the remaining sections (colors) of the applique design.



Alternative method

Prepare applique fabric larger than hoop size.
Set the applique fabric to the hoop.
Sew the first section (color) only.

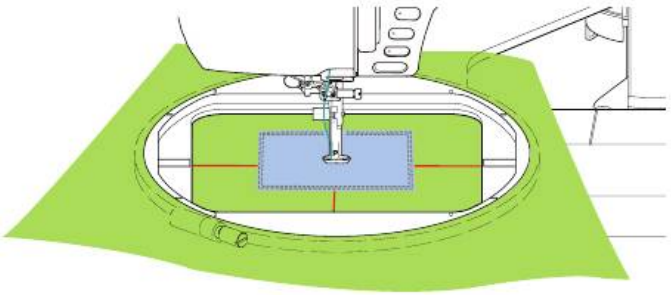


Remove the hoop and unhoop the applique fabric. Cut the applique fabric along the stitching line to make an applique piece.

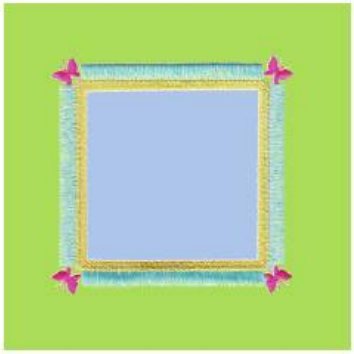


Prepare background fabric and set it to the hoop.
Attach the hoop to the carriage.
Press the previous color section key to go back to the first section (color) and sew the first section (color) to mark the applique position.

① Previous color section key



Place the applique piece on the background fabric and align the applique piece with the positioning mark. Fix the applique piece in place with sticky tape or a pin.

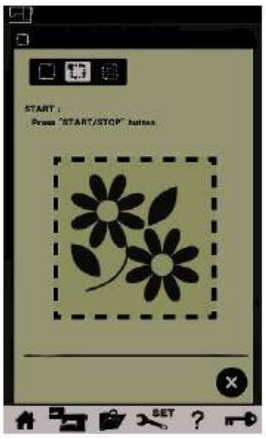


Sew the remaining sections (colors) of the applique design.

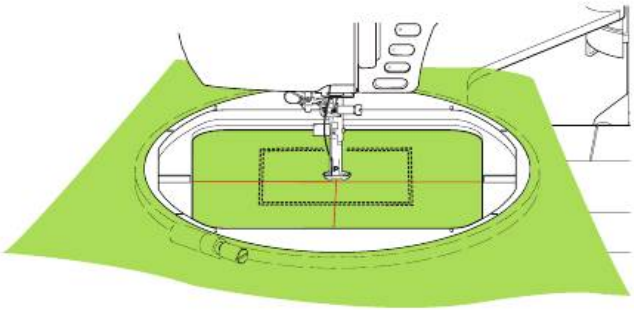
Frame Designs

Fringe designs SQ14-176 and SQ14-177 can also be used as the frame designs.
Example: Fringe design SQ14-176 for framing a picture

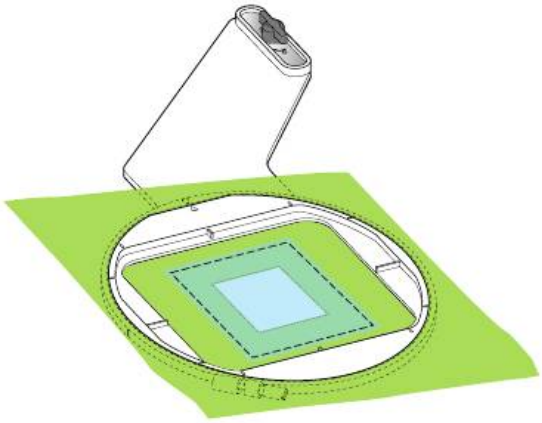




Prepare heat-away stabilizer.
Select fringe design SQ14-176.

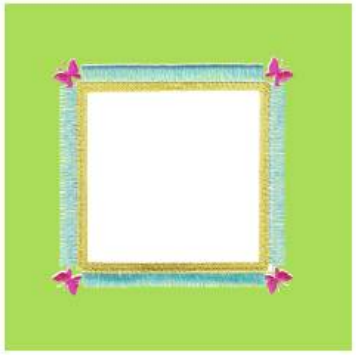


Set the fabric to the hoop.
Sew the first section (color) only.



Remove the hoop from the machine, but do not unhoop the fabric.

Cut away the inside of the marked area.
Baste the heat-away stabilizer over the marked area.



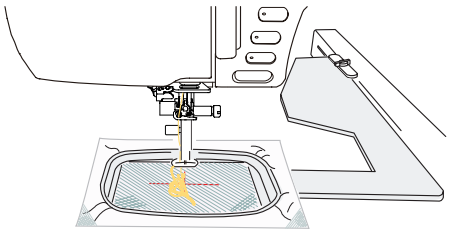


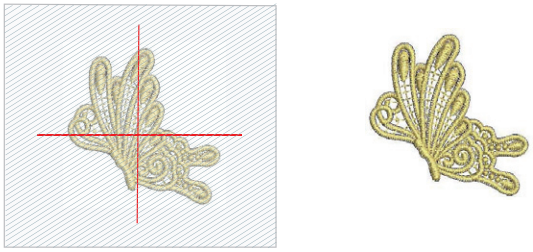
Attach the hoop to the machine again.
Sew the remaining sections (colors) of the applique design.
Remove the unnecessary parts of the stabilizer.
Melt away the rest of stabilizer with an iron.



Prepare your favorite picture, etc.
Frame your favorite picture as shown.







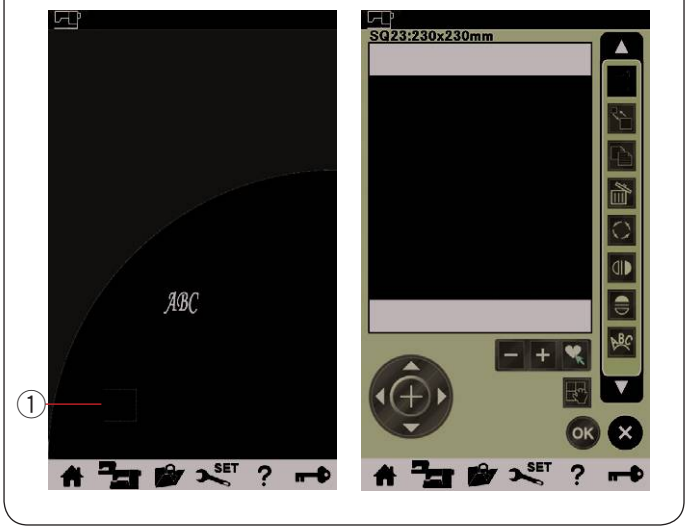
Lace Designs

You can make a free standing lace by sewing the lace designs on organdy.

Use the same thread for the bobbin as the needle thread.
Use a fully wound bobbin.
Adjust the embroidery foot height to 2.2 mm or higher (refer to page 122 or 147).
Set the low bobbin thread warning level to 3 or 4 (refer to page 147).
Set the sewing speed to 600 spm or less with the speed control slider.

Select the desired lace design (FA10-1 or FA10-2) pattern and sew.

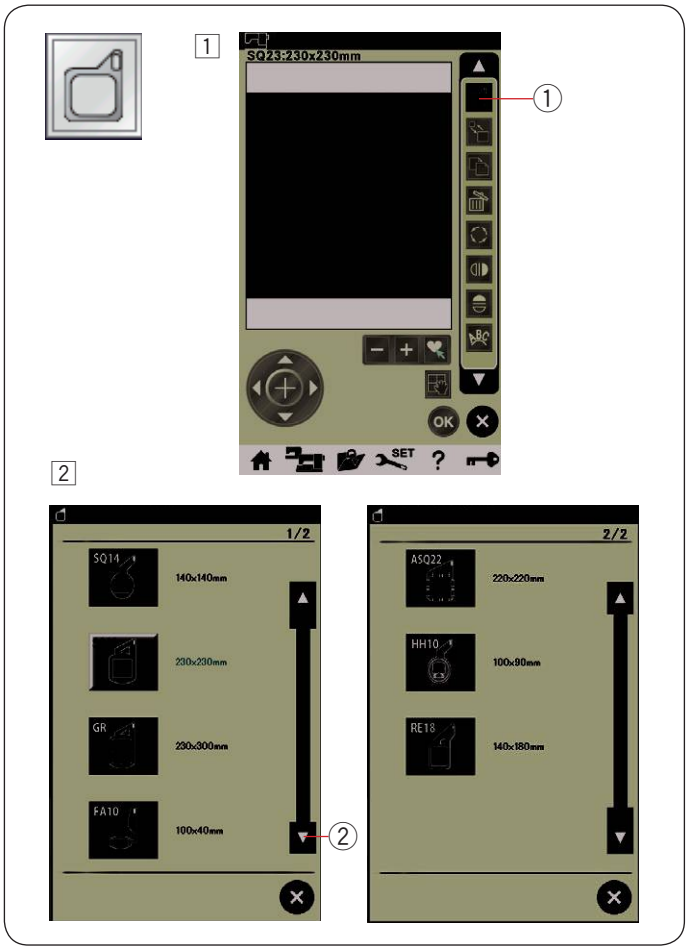
Remove the organdy from the hoop.
Trim away the organdy surrounding the design pattern with scissors.



Editing Mode

In the editing mode, you can edit and combine patterns to create original embroidery designs.
Press the editing mode key ① and the editing window for the hoop SQ23 will open.

① Editing mode key



Selecting a hoop size

You can select other hoop sizes.

1 Press the hoop selection key ① and the hoop selection window will open.

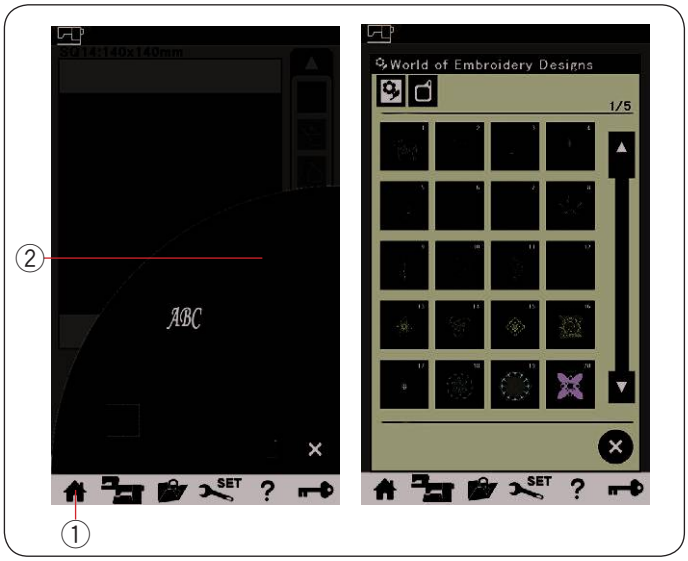
① Hoop selection key

2 Press the next page key ② to show the other hoops.
Press the hoop icon key to select the desired hoop.
Select the desired hoop.
The screen will return to the editing window.

② Next page key

NOTE:

- In the editing mode, you cannot select patterns larger than the size of the selected hoop.
- ASQ22 hoop (220 x 220 mm), HH10 hoop (100 x 90 mm) and RE18 hoop (140 x 180 mm) are optional items.



Opening the embroidery designs

You can open the built-in designs, monogram, and designs from the USB flash drive in the editing window.

To open design patterns, press the home key ①.
Press the built-in design key ②.
Select the desired pattern from the design list (refer to page 113).

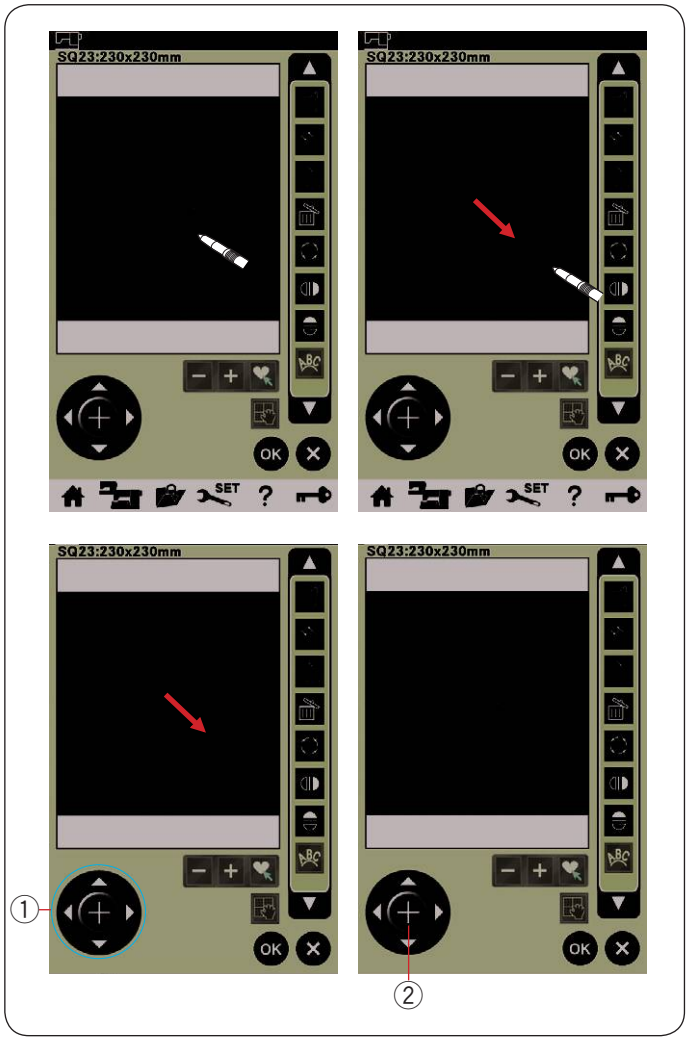
① Home key
② Built-in design key



Editing tool bar information

The editing tool bar contains the following keys as shown. Press the down arrow key ⑥ to show the next set of editing tools. Press the up arrow key ⑤ to show the previous set of editing tools.

① Layout key
② Cross key
③ Pattern selection keys
④ Scroll key
⑤ Up arrow key
⑥ Down arrow key
⑦ Hoop selection key
⑧ Resize key
⑨ Duplicate key
⑩ Delete key
⑪ Rotate key
⑫ Vertical mirror image key
⑬ Horizontal mirror image key
⑭ Arc key
⑮ Group key
⑯ Corner layout key
⑰ Sewing order key
⑱ Custom color key
⑲ Color group key
⑳ Single color sewing key
㉑ Zoom key
㉒ Save file key



Selecting a pattern

To select the pattern to edit, press on the pattern image in the editing window.
The green frame appears around the selected pattern.

Moving a pattern

To move the embroidery pattern in the editing window, press and drag the pattern to a desired location with the touch panel stylus or your fingertip.

NOTE:
Do not drag the pattern on the screen with a sharp pointed object.

You can move the selected pattern also by pressing the layout keys.
Press the layout keys ① to move the pattern to the desired position in the editing window.

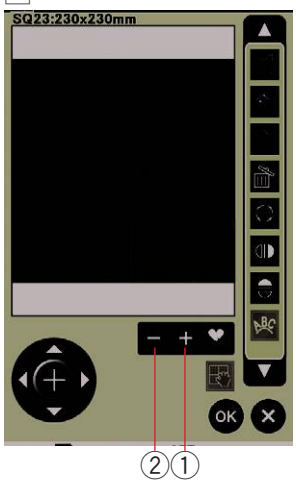
Press the cross key ② to move the pattern to the center of the editing window.

① Layout keys
② Cross key

The carriage will not move when you press the layout keys since the pattern position will move relative to the hoop, not to the machine.



1



2



Selecting a pattern with pattern selection keys

When multiple patterns are closely positioned, it can be hard to select the desired pattern.

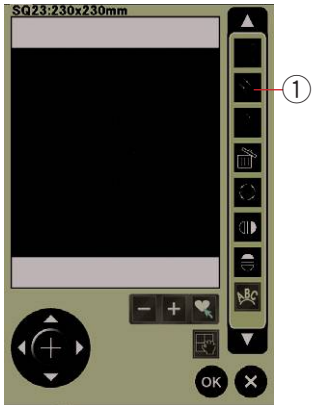
Pattern selection keys appear when multiple patterns are shown in the editing window for easier pattern selection.

1 Press the “+” ① key or “–” ② key and the red frame appears.

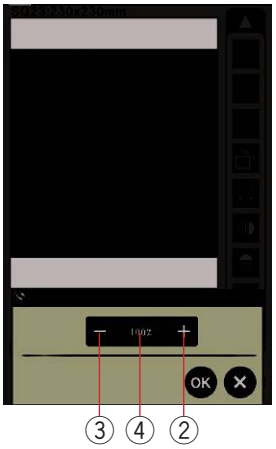
2 Press the “+” ① or “–” ② key until the red frame surrounds the pattern you want to select.
Press key ③ to select the desired pattern.



1



2



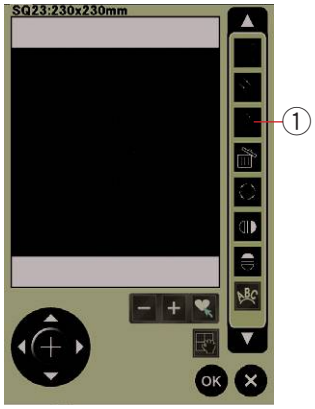
Resizing a pattern

1 Press the resize key to open the resize option window.
① Resize key

2 You can change the embroidery pattern size from 80% to 120% of the original size.
Press the “+” key ② to enlarge the pattern size.
Press the “–” key ③ to reduce the pattern size.
The size will change 1% each time you press the “+” or “–” key. To change the size quickly, press and hold the “+” or “–” key.
The scale of a resized pattern is displayed in percentage ④.
Press the OK key to confirm the new size.



1



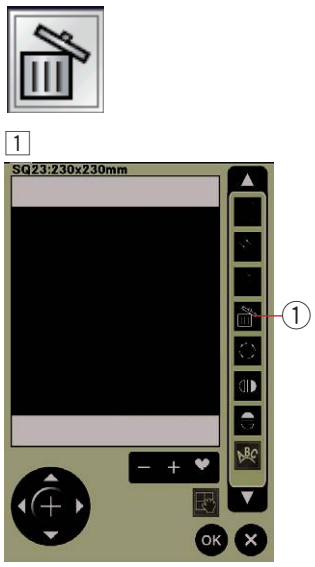
2



Duplicating a pattern

1 Press the duplicate key to make a copy of the selected pattern.
① Duplicate key

② The duplicated pattern will be superimposed over the original pattern. Move the duplicate to show the original pattern.

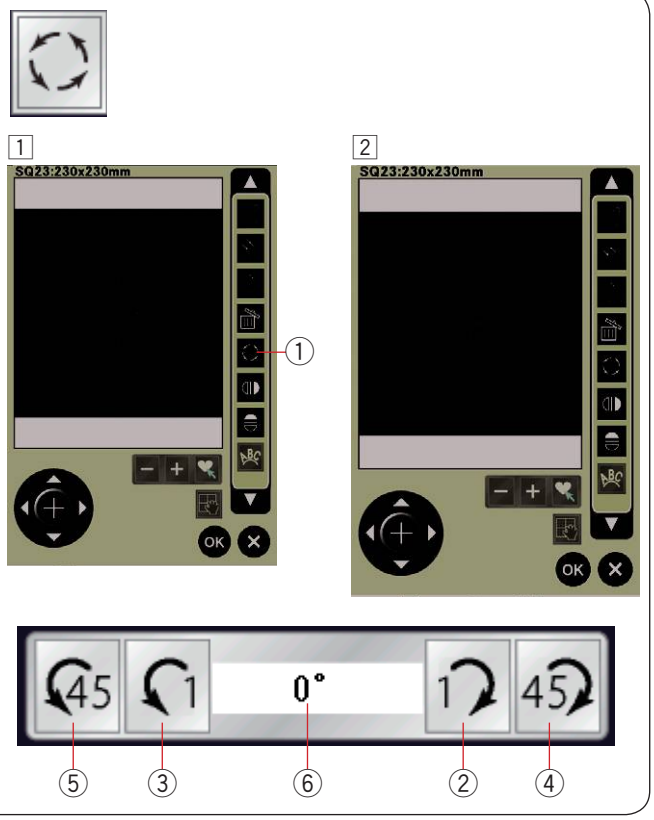


Deleting a pattern

1 Press on the pattern to delete.

2 Press the delete key ① to delete the selected pattern.

① Delete key

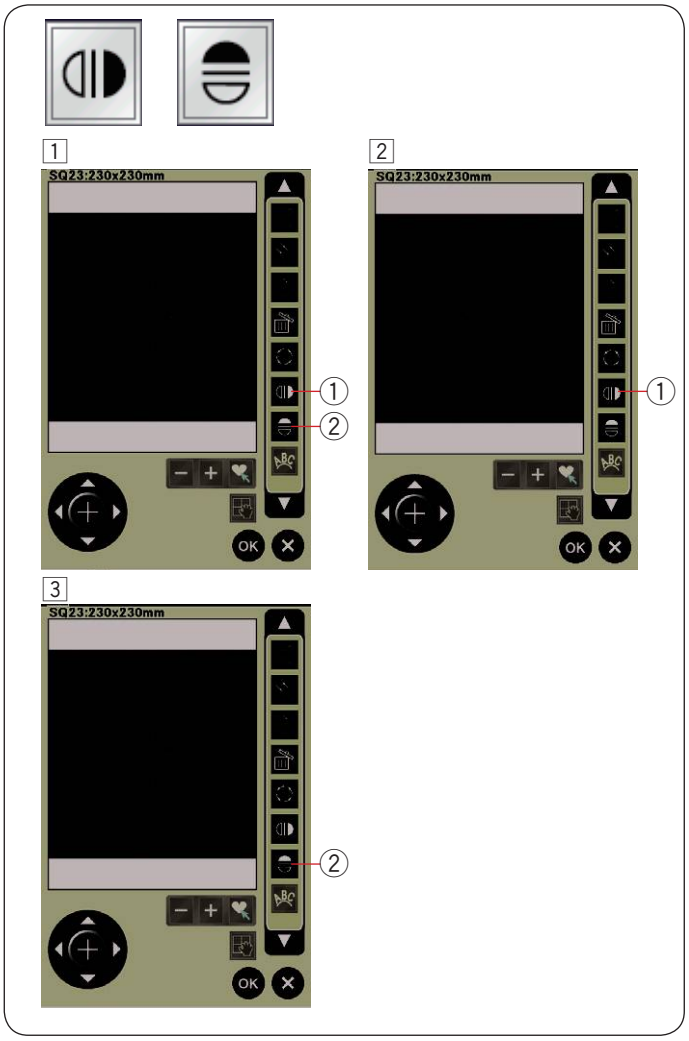


Rotating a pattern

1 Press the rotate key to open the rotation option window.

① Rotate key

2 Press the key ② to rotate the selected pattern 1 degree clockwise.
Press the key ③ to rotate the selected pattern 1 degree counterclockwise.
Press the key ④ to rotate the selected pattern 45 degrees clockwise.
Press the key ⑤ to rotate the selected pattern 45 degrees counterclockwise.
The angle of a rotated pattern is displayed in the window ⑥.
Press the OK key to confirm.

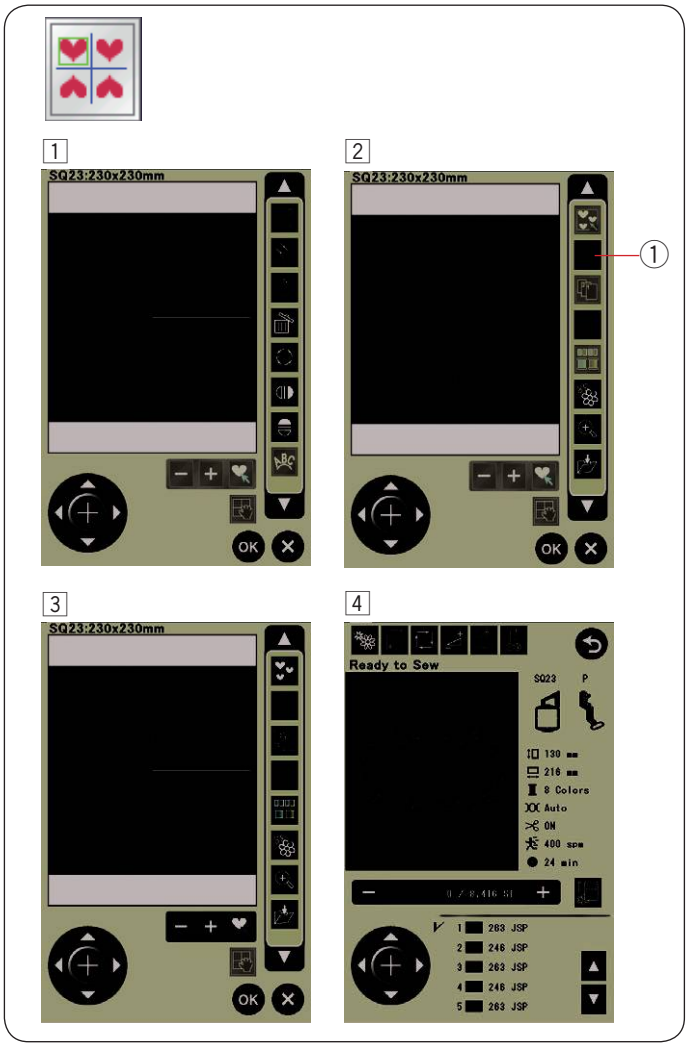


Flipping a pattern

1 Press the vertical or horizontal mirror image key.
① Vertical mirror image key
② Horizontal mirror image key

2 Press the key ① to create the vertical mirror image of a selected pattern.

3 Press the key ② to create the horizontal mirror image of a selected pattern.



Creating a square frame

1 Select pattern Border Design SQ14-7.
Move the design down and to the right.

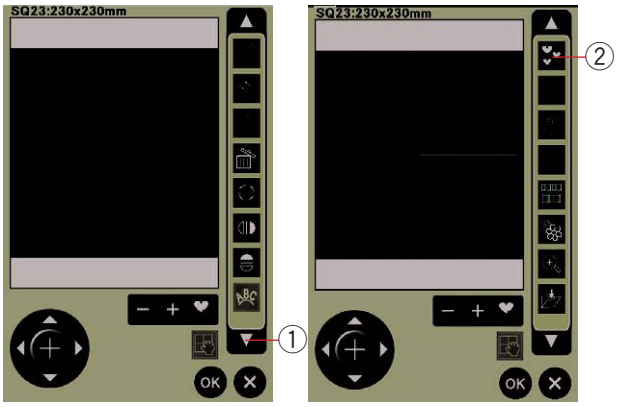
2 Press the corner layout key.
① Corner layout key

3 The pattern will automatically be copied and placed symmetrically into 4 corners.
Press the OK key.

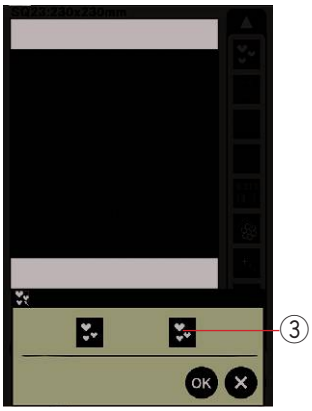
4 The ready to sew window will open.



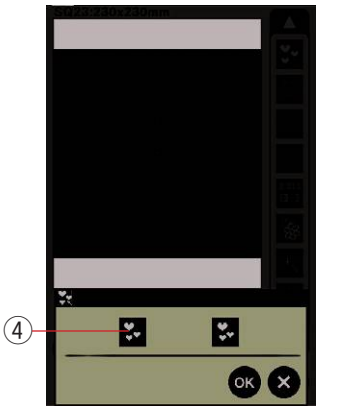
1



2



3



4



Grouping patterns

1 You can group patterns together.
Press the down arrow key ① to show the next set of editing tools.
Press the group key ② and the grouping option window will open.
① Down arrow key
② Group key

2 Press the group all key ③ and press the OK key to group all the patterns in the editing window.
③ Group all key

3 If you wish to group the selected patterns only, press the group select key ④.
Select the desired patterns by pressing on the pattern images.
Press the selected pattern again to deselect the pattern.
Press the OK key to group the selected patterns.
④ Group select key

4 The grouped patterns can be moved and duplicated as a unit.
When grouping the selected patterns only, the rest of the patterns are grayed out and cannot be selected.
To ungroup the patterns, press the group key again.





Sewing order
You can change the sewing order of a pattern combination.

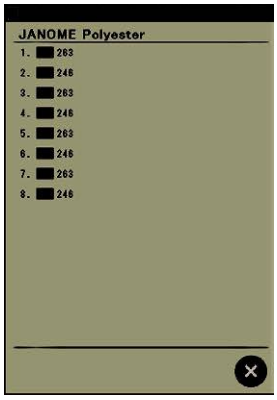
Press the sewing order key ① and press on the images of the pattern one by one.
The patterns will be sewn in the order you press on the images.
Press the sewing order key ① again to return to the previous screen.
① Sewing order key



Color grouping
When combining duplicated patterns, you can reduce the number of color sections with color grouping.

1

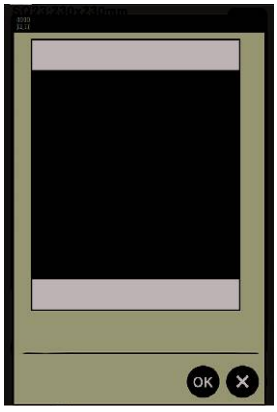




1 For example, the combined design pattern created on page 136 has 8 color sections.

2

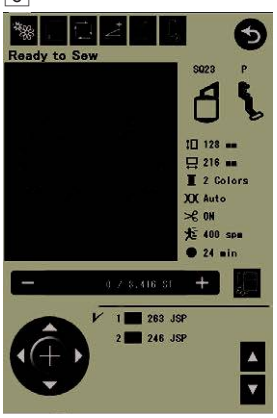




2 Press the color group key ① and the color grouping window will open.

Press the OK key to unite all color sections of the same color and the ready to sew window opens.
① Color group key

3





3 The number of color sections is reduced to 2.

NOTE:
Color grouping will be cancelled when returning to the editing window.



1



2



3



Single color sewing

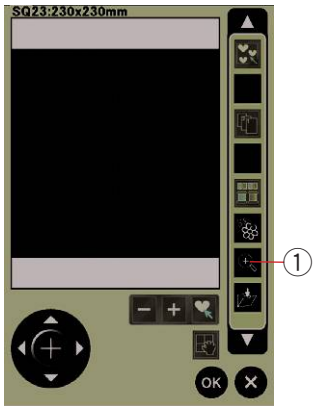
If you want to sew a pattern or a pattern combination in one color only, press the single color sewing key ①. The machine will not stop until the entire design is sewn.

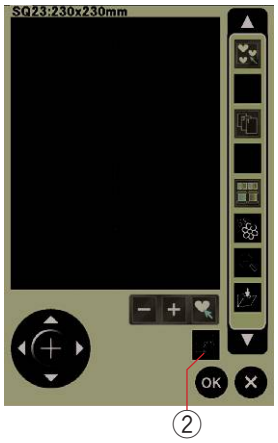
1 Press the single color sewing key ①.
2 Press the OK key.

3 The design(s) will be displayed in gray.
Press the start/stop button to start single color sewing. The design will be sewn without stopping for color change.









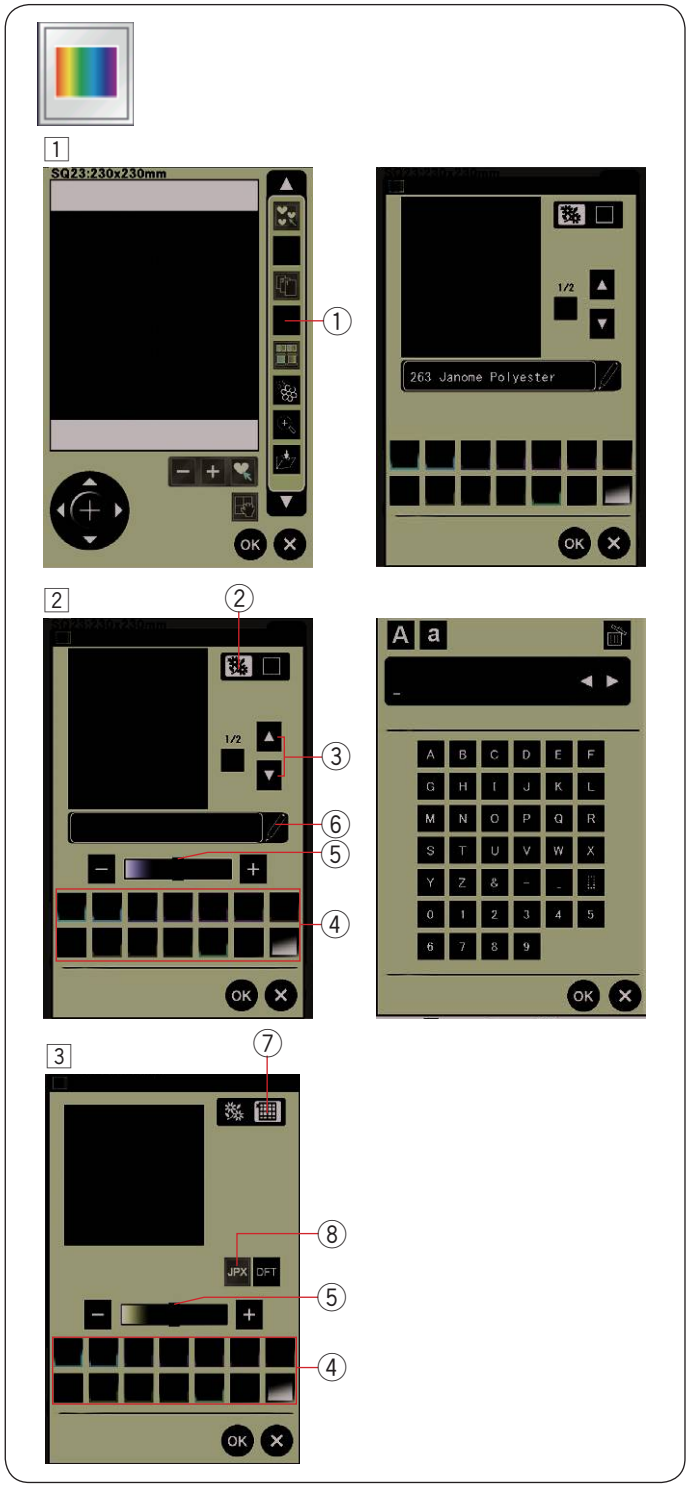
Zooming in the editing window

Press the zoom key to view the enlarged image in the editing window. Pressing the zoom key again to return to the original view.

① Zoom key

To scroll the window, press the scroll key and drag the window in the desired direction. Press the scroll key again to cancel the scroll command.

② Scroll key



Customizing the display colors

You can simulate the colors of the actual fabric and threads on the screen by customizing the colors of the design image and editing window.

1 Press the custom color key and the custom color window will open.
① Custom color key

2 If you wish to change the color of the design pattern, press the design color key.
Press the scroll keys until the desired section is displayed in the preview window.
② Design color key
③ Scroll keys

To select the hue, press one of the 14 color tiles.
To change the shade of the selected color, press "+" or "–" key, or drag the slider to the left or right.
④ Color tiles
⑤ Slider

You can assign a name to the customized color for the color section by pressing the name key.
The assigned name will be displayed instead of the name and code of the thread color in the embroidery window.
⑥ Name key

3 To change the background color, press the background color key and select the desired color.
To select the hue, press one of the 14 color tiles.
To change the shade of the selected color, press "+" or "–" key, or drag the slider to the left or right.
⑦ Background color key

NOTE:
If a design in *.JPX format is open, you can display the background image in the editing window by pressing the background image key.
⑧ Background image key

Monogramming in an arc

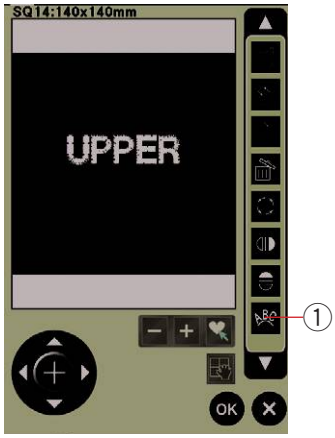
In the editing mode, you can make a monogram in an upper or lower arc.

1 Enter the characters and press the OK key.

1



2

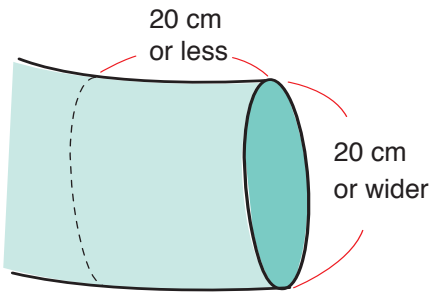


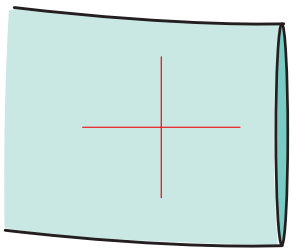
2 The entered characters are displayed in the editing window.
Press the arc key and the arc layout window will open.
① Arc key

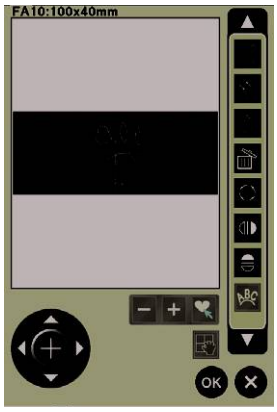
3



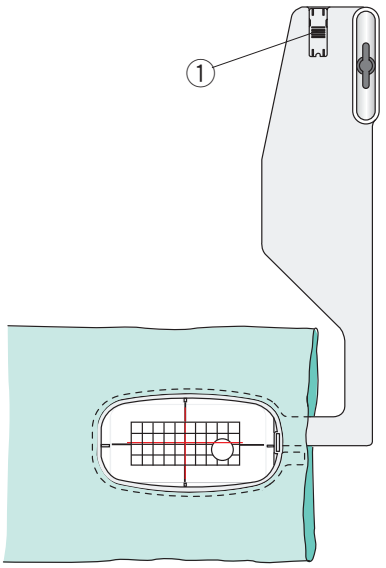
3 Press the upper arc key ② to make an upper arc.
Press the lower arc key ③ to make a lower arc.
Press the enlarge key ④ to make an arc longer.
Press the shorten key ⑤ to make an arc shorter.
Press the OK key to confirm.
② Upper arc key
③ Lower arc key
④ Enlarge key
⑤ Shorten key

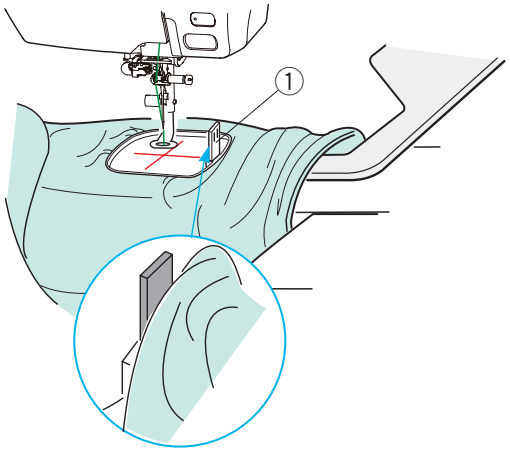












Free Arm Embroidery

The free arm hoop FA10 is specially designed for embroidering tubular garments such as sleeves, pant legs etc.

Check the opening size of the tubular portion of the garment. The opening width must be 20 cm (8”) or wider. The area to be embroidered should be within 20 cm (8”) from the opening.

Draw centerlines on the fabric with tailor’s chalk.

Open the editing window and select the hoop FA10.
Select the design list by hoop size and select the hoop FA10.
Select design pattern FA10-3.
Rotate design pattern 90 degrees counterclockwise (refer to page 135).
Press the OK key to open the ready to sew window.

Remove the extension table.

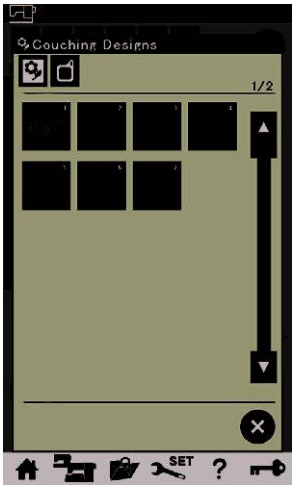
Set the garment in the hoop FA10 as shown.
Position the garment so that the centerlines match those on the template in the hoop.

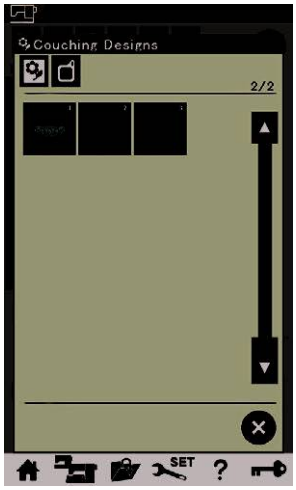
Place the garment over the free arm of the machine and attach the hoop FA10 to the carriage.

Roll up the cuff so that it will not jam at the neck of the free arm.
Insert the blocking plate into the inner hoop to prevent the cuff from overlapping the embroidery area.
① Blocking plate

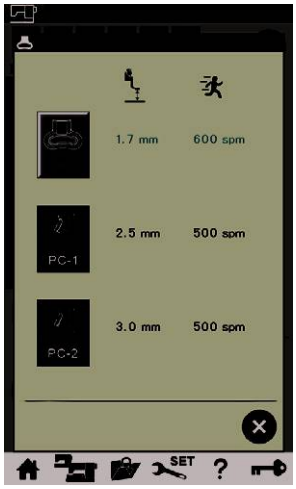
Press the start/stop button to sew making sure that the garment can move freely around the free arm.

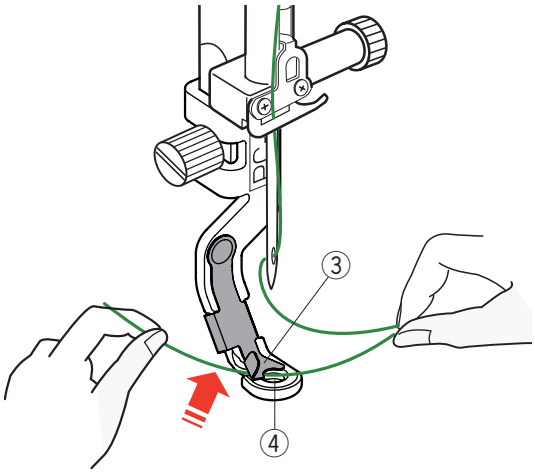
Remove the hoop from the carriage when finished sewing. Remove the garment from the free arm.

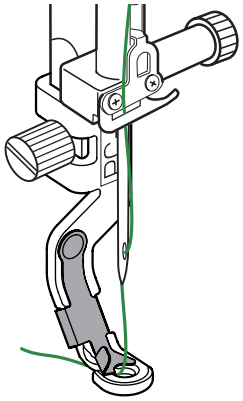












Couching Designs

Enjoy embellishing your work with yarns.
Use the couching foot PC-1 or PC-2 for the couching designs.
For weight 3 yarn (light), use the couching foot PC-1.
For weight 4 yarn (medium) use the couching foot PC-2.

NOTE:

- Use the weight 3 yarn (light) or weight 4 yarn (medium) for the couching design project.
- Do not sew on a hard string.
- Test sew to check the sewing results.
- Do not use the single color sewing key for the couching designs.
- Use the same color thread for the bobbin and the needle thread as the yarns for the best result.

Select one of the couching design.
In the ready to sew window, press the embroidery foot key ①.
Select the couching foot PC-1 for the weight 3 yarn (light).
Select the couching foot PC-2 for the weight 4 yarn (medium).
The presser foot height and sewing speed will be automatically adjusted to suite the selected couching design sewing.

If the yarn layers become too thick, press the adjust key ② and adjust the presser foot manually (refer to page 122).

CAUTION:
Press the lockout key to lock the machine when attaching/removing the presser foot, yarn guide, and threading the threads and yarns to the machine.

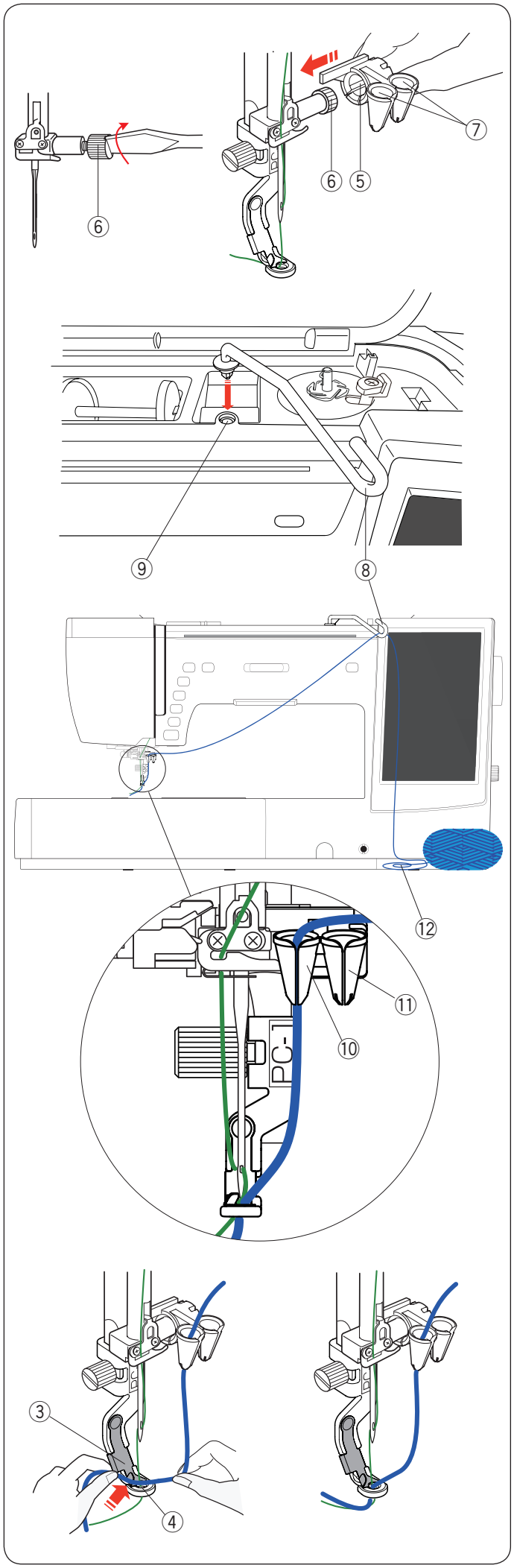
Preparation

Attach the selected couching foot to the machine.
To attach the couching foot, refer to page 23.

Turn the handwheel toward you.
Be sure that the needle through the center of the couching foot.

Hold the thread with both of your hands.
Slide the thread under the plate, and slip it into the presser foot hole.

③ Plate
④ Presser foot hole



Retighten the needle clamp screw firmly with the screwdriver.
Slide the yarn guide ⑤ onto the needle clamp screw ⑥ firmly with the mouths ⑦ of the yarn guides up as shown.

⑤ Yarn guide
⑥ Needle clamp screw
⑦ Mouths

NOTE:
Be careful not to turn the needle clamp screw when sliding the yarn guide onto the needle clamp screw.

Insert the yarn guide bar ⑧ into the hole for the additional spool pin ⑨.
Turn the yarn guide to the right until it stops.

⑧ Yarn guide bar
⑨ Hole for the additional spool pin

Pass the yarn through the yarn guide bar.

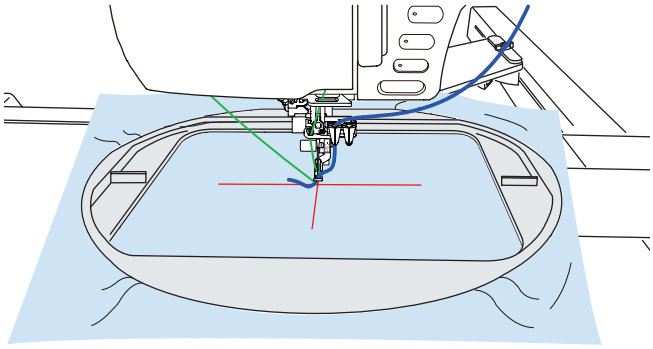
Thread the yarn by passing it through the slit on the mouth.
Thread the yarn through the left mouth for the couching foot PC-1 ⑩.
Thread the yarn through the right mouth for the couching foot PC-2 ⑪.

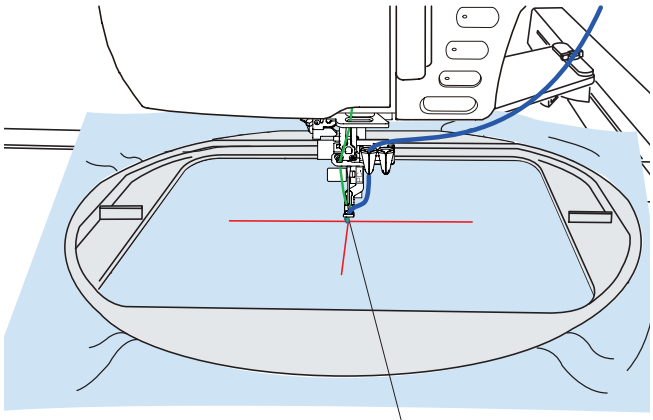
⑩ Mouth for couching foot PC-1
⑪ Mouth for couching foot PC-2

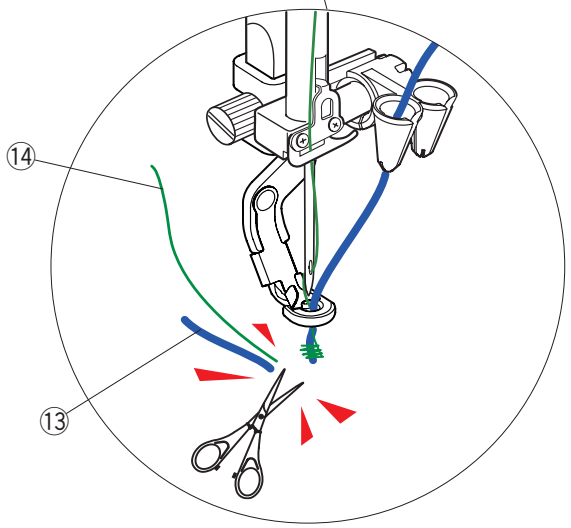
Unwind the ball of yarn ⑫ and splay out the yarn on a sewing table to ensure smooth feeding without tangling.

Hold the yarn with both of your hands.
Slide the yarn under the plate, and slip it into the presser foot hole.
Draw the yarn and needle thread to the rear.

③ Plate
④ Foot hole







To sew:

NOTE:
The knots may appear at some points of a ball of yarn. Be careful not to feed the knot of yarn into the mouth of the yarn guide while sewing.

Set the fabric to the hoop.
Attach the hoop to the carriage.

Press the start/stop button and sew 5 to 6 stitches.
Press the start/stop button again to stop the machine.

Cut the loose yarn ⑬ and thread ⑭ to the beginning of the starting point.
Press the start/stop button to start sewing again.
⑬ Loose yarn
⑭ Loose thread

The machine will stop (and trim the threads if the auto thread cutting is activated) automatically when the first color section is finished.

Change the thread to the next color and yarn.
Sew the next section.

NOTE:
Remove the couching foot when finished couching design. The needle may strike the couching foot when switching the ordinary sewing mode.

NOTE:
When you combine couching designs, it is necessary to stop the machine and trim the excess yarn after the yarn jumps to the next couching design.

Pennant Designs

You can make your own flag garland with the pennant designs.

1 Select the design list by hoop size and select the hoop GR.
Select design pattern GR-40.

2 Edit your pennant design in the editing mode.

3 Press the OK key to open the ready to sew window. Set the fabric in the hoop and attach the hoop to the carriage.
Press the start/stop button to sew.

4 Remove the hoop from the carriage when finished sewing. Remove the fabric from the hoop.
Cut out the pennant design along the outer seam.

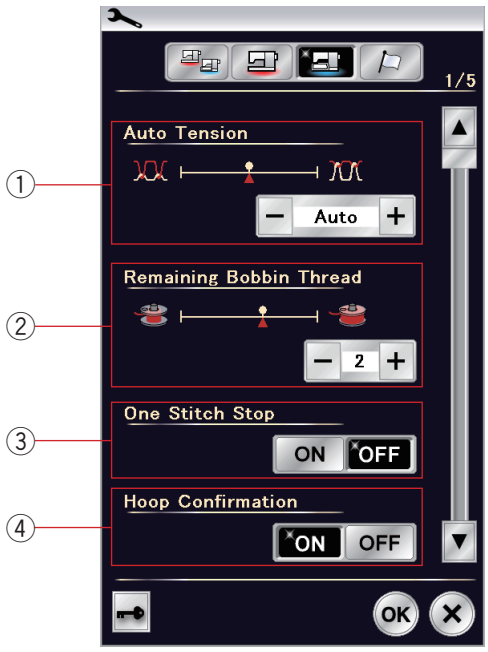
5 Fold back the top of the pennant to the wrong side of the fabric as shown.
Use press cloth and Iron the folded edge.

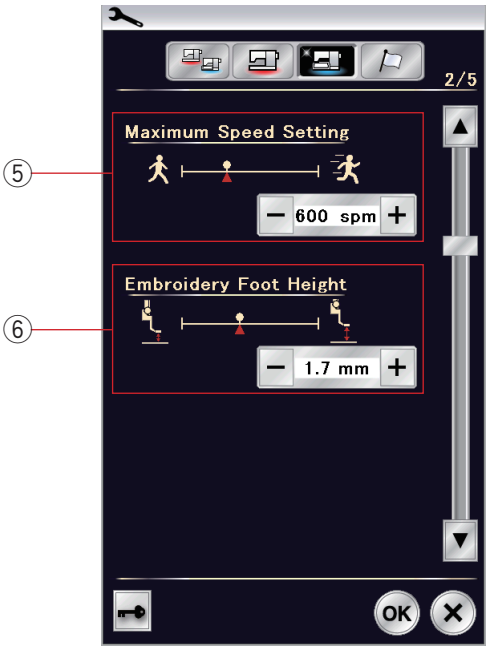
6 Sew the folded edge or paste the wrong side of the folded edge with a double-sided tape or glue.
Be sure to leave the space to pass the cord.

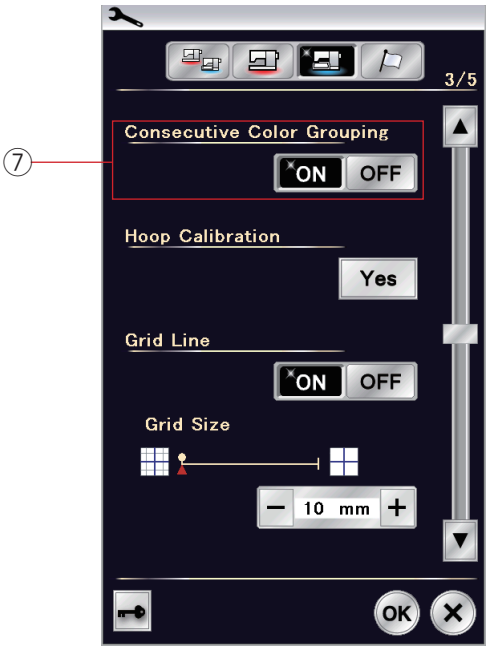
7 Pass the cord through the hole as shown.

8 Cut the fabric to the same size as the pennant design. Sew the fabric to cover the back of the pennant.

9 Repeat the procedure above and make your own flag garland.







CUSTOMIZING EMBROIDERY MODE SETTINGS

Embroidery Mode Settings

Press the embroidery setting mode key (refer to page 94).

① Auto thread tension

The auto thread tension level can be adjusted with the "+" or "–" key. Increase the value when using the same threads on the bobbin and needle.

② Low bobbin thread warning

The low bobbin thread warning level can be adjusted with the "+" or "–" key. To turn this option off, press the "–" key until "OFF" shows in the window.

③ One stitch stop on/off

When this function is turned on, the machine sews one stitch and stops automatically so that you can bring the bobbin thread up before sewing.

④ Hoop confirmation on/off

The hoop confirmation message will appear every time before opening the ready to sew window. However you can turn this option off by selecting off.

Press the next page key to go to the next menu.

⑤ Maximum embroidery speed

The maximum embroidery sewing speed can be set from 400 to 1000 spm in 100 spm intervals by pressing the "+" or "–" key. (Sewing speed can be varied with the speed control slider even while running the machine.)

> **NOTE:**
> Reduce the sewing speed when sewing patterns with narrow zigzag stitches that tend to warp at high speeds.

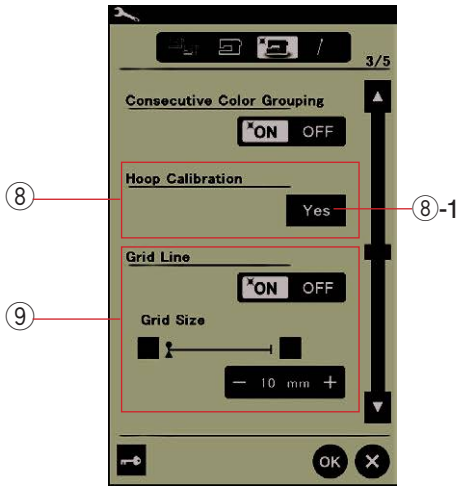
⑥ Embroidery foot height

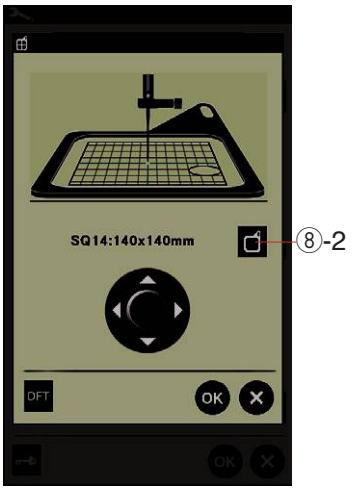
The machine measures fabric thickness and automatically sets the presser foot to the optimum height.
However, you can fine tune the foot height according to fabric material and/or other sewing conditions by pressing the "+" or "–" key. The adjustable range is 0 mm to 4 mm.

Press the next page key to go to the next menu.

⑦ Consecutive color grouping on/off

If an imported stitch data file or design files of a pattern combination contain consecutive sections in the same color, these sections are automatically grouped together as one section when opening the file or saving the pattern combination as a file or going to the ready to sew window. This function is invalid when combining the built-in designs and externally sourced designs.
Turn this option off if you do not wish to group the sections together.





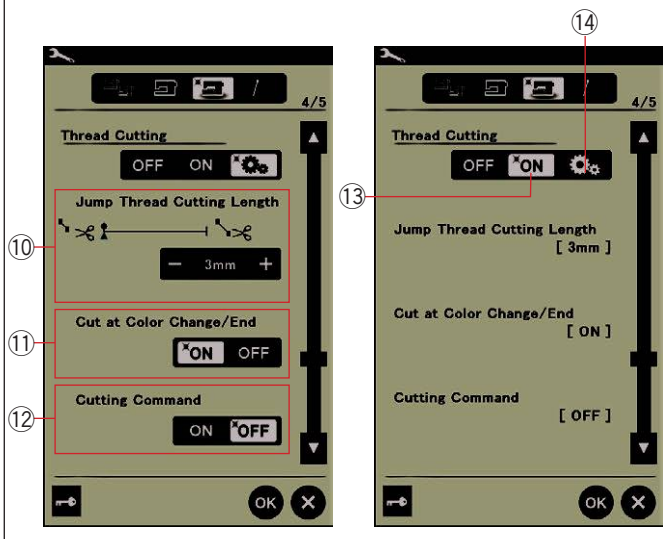
⑧ Hoop calibration
You can calibrate the center position of the hoops.
You need to enter embroidery mode before opening the embroidery setting window.
Extend the carriage arm and press the Yes key.
⑧-1 Yes key

The carriage moves to the center position.
Press the hoop selection key to open the hoop selection window.
⑧-2 Hoop selection key

Select the hoop and attach it to the carriage. Set the template in the hoop.
Adjust the hoop position by pressing the jog keys so that the needle is right above the hole in the template and press the OK key.

⑨ Grid line on/off
Turn this option on to show grid in the editing window.
The grid size can be altered from 10 to 30 mm with the "+" or "–" key when this option is on.
Turn this option off to hide the grid.

Press the next page key to go to the next menu.



Thread cutting
There are 3 thread cutting options for embroidery.

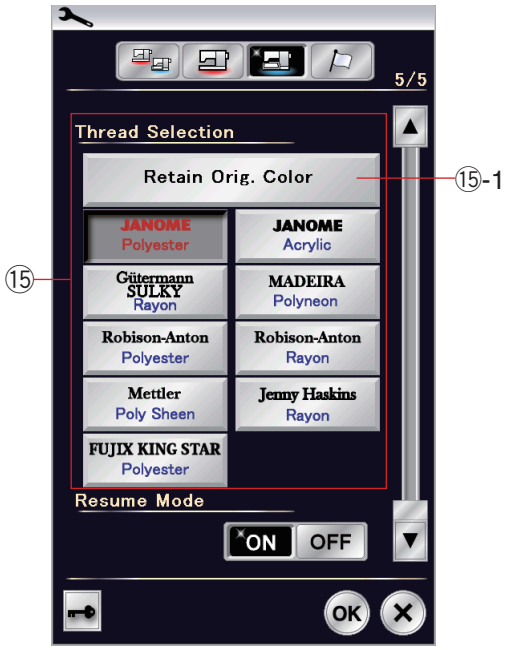
⑩ Jump thread cutting length
When this option is turned on, the machine trims the jump threads if the jump thread length is the same or more than the set value.

⑪ Cut at color change/end
When this option is turned on, the machine trim the thread when it stops to change the thread to the next color.

⑫ Cutting command
When this option is turned on, the machine trim the threads at the trim code if the imported stitch data file contains a trim command (cutting command).

⑬ Easy setting
When this setting is turned on, the machine will trim the threads if the jump thread is 3 mm or longer, or when the machine stops to change the thread to the next color.
Press the OK key to confirm the easy setting.

⑭ Advanced setting
When this setting is turned on, you can configure the Jump thread cutting ⑩, Cut at color change/end ⑪, and Cutting Command ⑫ options individually.
Press the OK key to confirm the advanced setting.

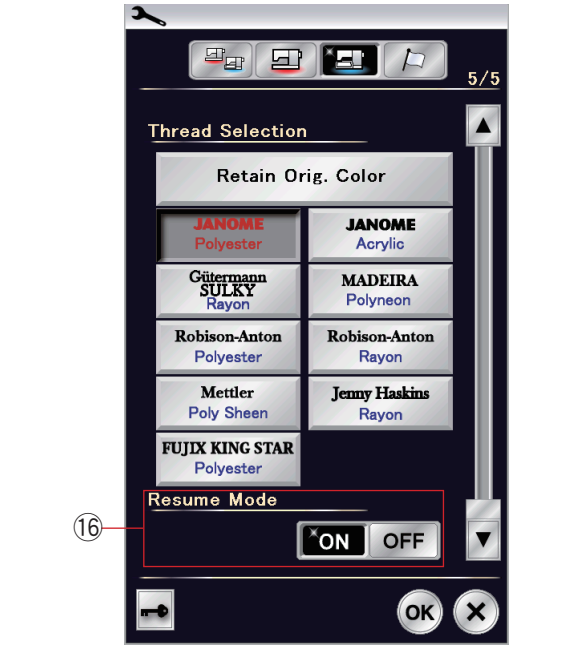


⑮ Thread selection

There are 9 types of embroidery thread to choose from. Press the key of the thread you wish to use. The color code of the selected brand is shown on the color/part key along with the name of the color.

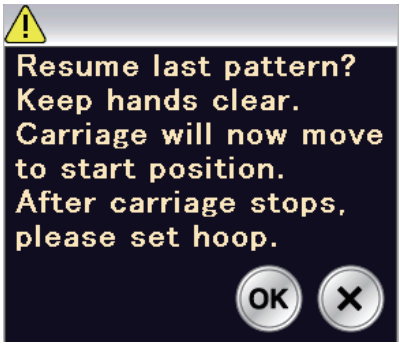
If you use imported embroidery stitch data containing proper thread information, press the retain original color key to retain this information.

⑮-1 Retain original color key



⑯ Resume mode

When Resume Mode is turned on, the last stitch sewn before turning the power off will resume when you turn the power on again.



When you turn the power on, the confirmation window opens. Press the OK key to resume the last stitch of the sewn pattern.



After customizing the settings, press the OK key to enable the new settings.
To exit the setting mode without changing the settings, press X key.

Saving and Opening a File

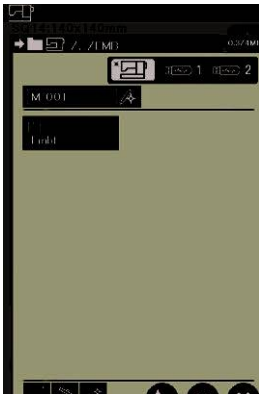
Saving a file

You can save original embroidery designs created in embroidery mode as files in the built-in memory and/or USB flash drive.

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

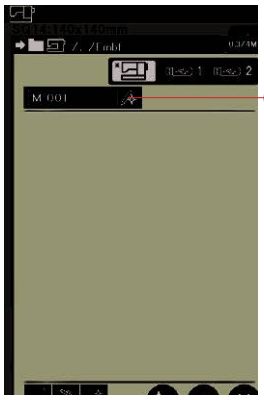
① Save file key





A folder labeled “Embf” (embroidery mode) is displayed on the screen.

To select a folder, press the folder icon.



File names are assigned automatically in numerical order starting from M_001.....

Press the OK key and the file is saved in the selected folder.

To assign a particular name to the file, press the rename key.

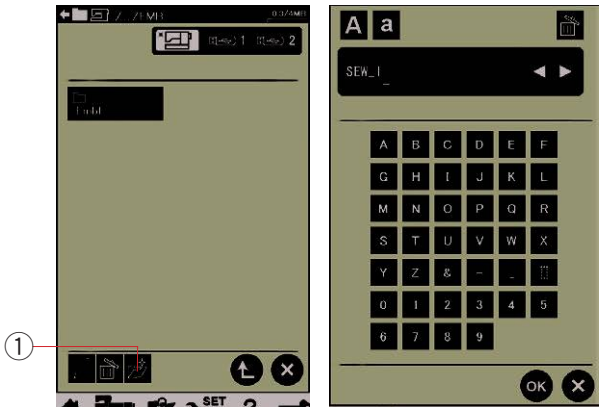
② Rename key





The keyboard window opens.
Enter a new name and press the OK key.
The file is saved under the new name.

When you attempt to save a file with a name that already exists, the confirmation message will appear.
Press the OK key to overwrite the existing file or press the X key if you do not want to overwrite it.



Creating a new folder

Press the new folder key and the keyboard window will open.

① New folder key

Enter a folder name and press the OK key.

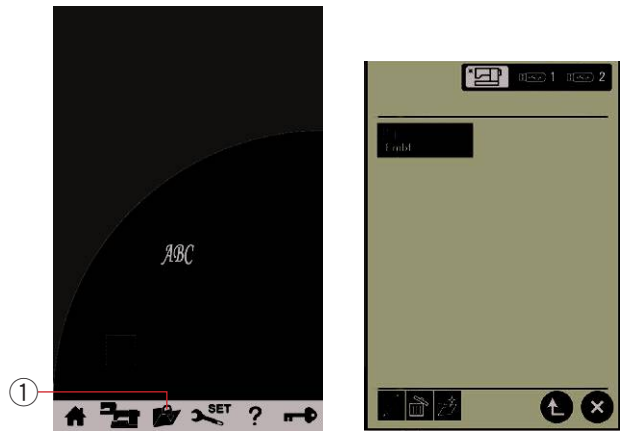
A new folder is created under the assigned name.



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.

② Delete key



Opening a file

To open saved files, press the open file key to open the open file window.

① Open file key

Select the folder location, either the built-in memory or USB flash drive.

Open the folder that contains the desired file by pressing the folder icon.

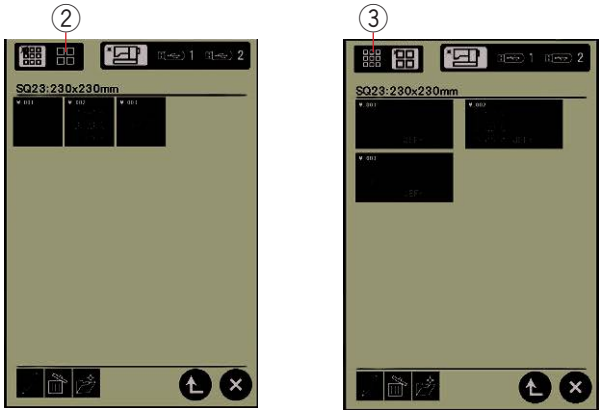
The file list of the selected folder is displayed.

To open the file, press the file icon.

In the embroidery mode, file attributes can be shown on the file icon.

To show the file attribute, press the “large icon” key.

② Large icon key



There are 6 file attributes as follows:

JEF: *.JEF (Janome embroidery format)

JEF+: *.JEF+ (editable Janome embroidery format)

JPX: *.JPX (*.JEF+ with a background image)

: *.JPX (Acufil embroidery format)

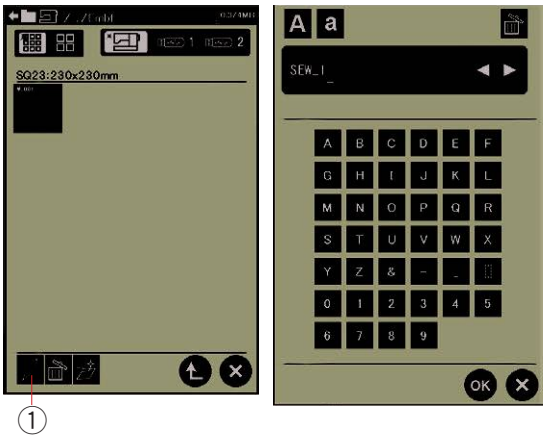
: *.JPX (Cutwork embroidery format)

DST:*.DST (Tajima embroidery format)

To hide file attribute, press the small icon key.

③ Small icon key

NOTE:
Tajima (*.DST) format does not have thread color information. Janome’s thread color will be assigned automatically when opening.

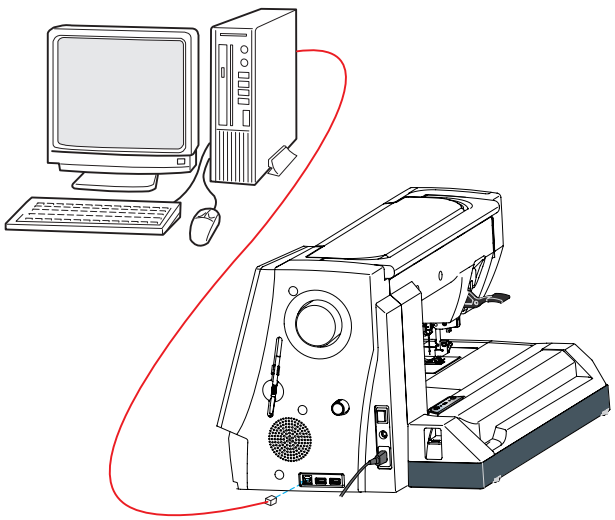


Changing a name of the file or folder

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

① Rename key

If you enter a name that already exists, the message “The same name exists.” will appear.
Press the X key and enter another name.



Direct PC-Link

You can connect the MC 14000 to a PC with the USB cable included in the standard accessories.

You need to install Acutools and the USB driver for the MC 14000 on your computer.

Acutools and the USB driver are available in the Acutools CD-ROM included in the standard accessories.

Start up the MC 14000 and PC, and insert the type “A” USB connector into the PC.
Insert the type “B” connector into the MC 14000.

You can send original stitch patterns created with Stitch Composer and original embroidery design data from a PC to the MC 14000.

Refer to on-screen help of Acutools for more details.

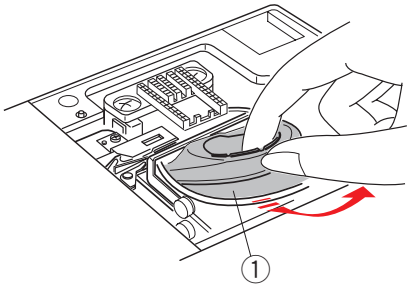
CAUTION:
Do not turn the power off or disconnect the USB cable while the data transfer is in progress, as this will cause loss of data and can damage the machine’s memory.

CARE AND MAINTENANCE

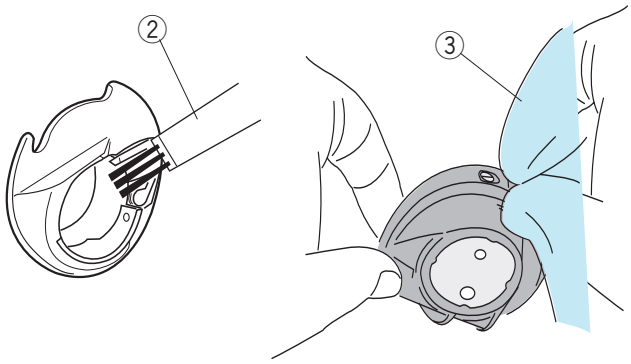
Cleaning the Hook Area

Clean the hook area at least once a month.
Remove the needle plate (refer to page 24).
Turn the power switch off and unplug the machine.
Remove the needle and presser foot.

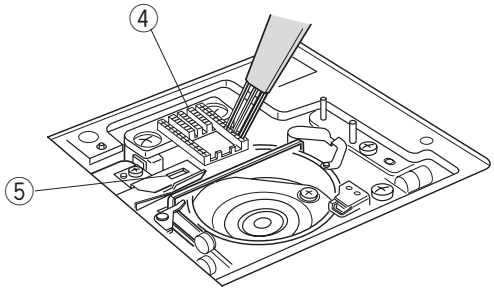
NOTE:
Do not dismantle the machine in any way other than as explained in this section.



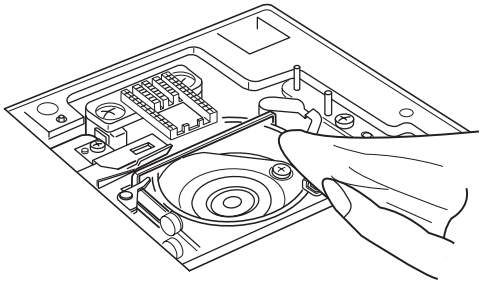
Take out the bobbin and bobbin holder.
① Bobbin holder



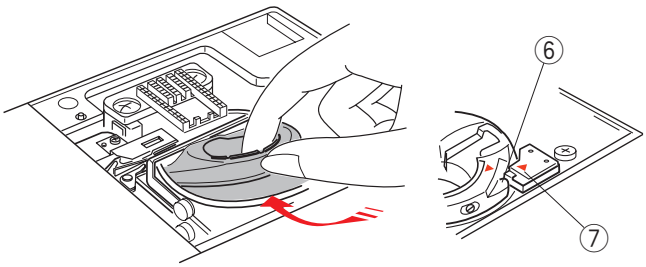
Clean the bobbin holder with a lint brush.
Apply a few drops of the bobbin holder cleaner (included in the standard accessories) to a soft cloth and wipe the bobbin holder both inside and outside.
② Lint brush
③ Soft cloth



Clean the feed dog and auto thread cutter device with the lint brush.
④ Feed dog
⑤ Auto thread cutter device



Clean the inside and lip of the hook race with a soft cloth.

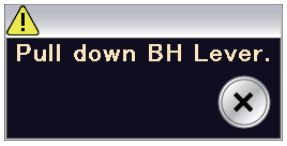
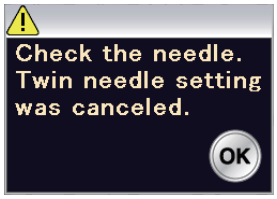
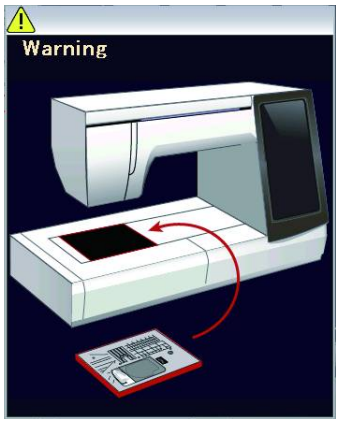
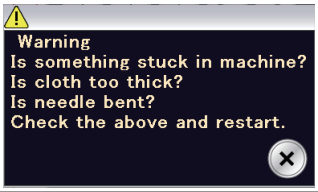


Insert the bobbin holder so that the knob fits next to the stopper in the hook race.
Insert the bobbin.
⑥ Knob
⑦ Stopper

Attach the needle plate, presser foot and needle.

Problems and Warning Signals

If the visual touch screen shows a warning sign, follow the guidance below.

Warning Sign	Cause	Try this
	The start/stop button is pressed with the foot control connected.	Disconnect the foot control.
	The foot control is out of order.	Contact the service center or the store from whom the machine was purchased.
	The machine will stop if the buttonhole is sewn without lowering the buttonhole lever.	Lower the buttonhole lever and start the machine again.
	The twin needle key is pressed when the twin needle sign is indicated on the LCD screen.	Replace the twin needle with a single needle and press the OK key.
	The machine is started with the feed dog lowered.	Raise the feed dog unless you want to sew with the feed dog lowered.
	The needle plate is removed.	Attach the needle plate. Check if the needle plated is attached properly.
	The machine is halting due to overload.	Wait for at least 15 seconds to restart. Remove tangled threads around take-up lever, hook race and automatic thread cutting mechanism.

IMPORTANT:

To carry the sewing machine, hold the carrying handle with your hand, and support the sewing machine with the other hand.
Clean the outside of the machine with a soft cloth. Do not use chemical solvents.
Store the machine in cool and dry place.
Do not store the machine in an area of high humidity, near a radiator or in direct sunlight.
The power supply cord and embroidery hoops can be stored in the semi-hard fabric cover.
Make sure to store the embroidery carriage arm before turning off the power switch.

Troubleshooting

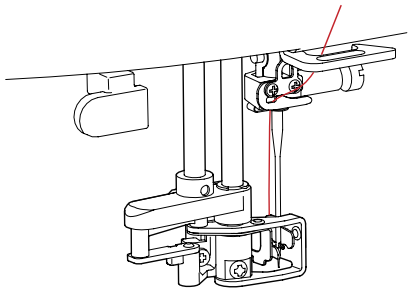
Condition	Cause	Reference
The machine is noisy.	1. Thread is jammed in the hook area. 2. The feed dog is packed with lint.	See page 153. See page 153.
The needle thread breaks.	1. The needle thread is not threaded properly. 2. The needle thread tension is too tight. 3. The needle is bent or blunt. 4. The needle is inserted incorrectly. 5. The thread is too heavy for the needle. 6. The needle thread was not set in the thread holder when embroidery sewing started.	See page 17. See page 39. See page 20. See page 20. See page 20. See page 112.
The bobbin thread breaks.	1. The bobbin thread is not threaded properly in the bobbin holder. 2. Lint has collected in the bobbin holder. 3. The bobbin is damaged and does not turn smoothly.	See page 16. See page 153. Replace the bobbin.
The needle breaks.	1. The needle is inserted incorrectly. 2. The needle is bent or blunt. 3. The needle clamp screw is loose. 4. The needle thread tension is too tight. 5. The needle is too fine for the fabric being sewn. 6. The fabric was pulled toward you when sewing free motion quilting with the free motion quilting open-toe foot QO.	See page 20. See page 20. See page 20. See page 39. See page 20. See page 92.
Visual Touch Screen is not clear.	1. The contrast of the screen is not adjusted properly.	See page 95.
Skipped stitches	1. The needle is inserted incorrectly. 2. The needle is bent or blunt. 3. The needle and/or threads are not suitable for the fabric being sewn. 4. A blue needle is not being used for sewing stretch, very fine or synthetics. 5. The needle thread is not threaded properly. 6. The needle is defective (rusted, burr on needle eye or tip). 7. The embroidery hoop is not set properly. 8. The fabric is not stretched tightly enough on the embroidery hoop. 9. A purple needle is not being used for sewing thick fabrics, denims and across the hem.	See page 20. See page 20. See page 20. See page 20. See page 17. Change the needle. See page 112. See page 111. See page 20.
Seam puckering	1. The needle tension is too tight. 2. The needle thread or the bobbin thread is not threaded correctly. 3. The needle is too heavy for the fabric being sewn. 4. The stitch length is too long for the fabric. 5. The stitch width is too wide. 6. The fabric is not stretched tightly enough on the embroidery hoop.	See page 39. See pages 15-17. See page 20. Make stitches shorter. Reduce the stitch width. See page 111.
Slipping layers	1. The dual feed foot is not being used for sewing hard to feed material.	Use the dual feed foot.
The cloth is not feeding smoothly.	1. The feed dog is packed with lint. 2. The dual feed foot is not being used for sewing hard to feed material. 3. The stitches are too fine. 4. The feed dog is lowered.	See page 153. Use the dual feed foot. Make stitches longer. See page 30.
The machine does not run.	1. The machine is not plugged in. 2. A thread is caught in the hook race. 3. A faulty foot control is plugged in while the machine is turned on (buzzer sounds once when plugging in). 4. The start/stop button is used for ordinary sewing with the foot control plugged in.	See page 9. See page 153. Replace the foot control. See page 9.

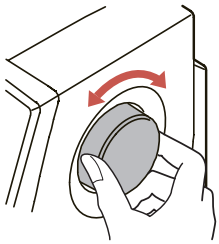
Condition	Cause	Reference
Crunching sound occurs when running the machine.	1. Something is caught between the carriage and the arm. 2. The carriage is hitting something around the machine. 3. The power is turned on when the feed dog is lowered.	Remove the object. See page 103. It is initializing sound, not a defect.
Patterns are distorted.	1. The needle thread tension is too loose. 2. The stitch length is not suitable for the fabric being sewn. 3. Feed balancing dial is not properly set. 4. Interfacing is not used for sewing stretch and very fine fabrics. 5. The embroidery hoop attaching knob is loose. 6. The embroidery hoop is hitting something around the machine. 7. The fabric is not stretched tightly enough on the embroidery hoop. 8. The fabric is caught or trapped when sewing embroidery. 9. The embroidery foot is trapped by a jump thread. 10. The embroidery foot stumbles on a mound of embroidery threads.	See page 39. See page 38. See page 102. Use an interfacing. See page 112. See page 103. See page 111. Stop the machine and free the fabric. Trim the jump thread. Adjust the foot height (see page 122).
The automatic buttonhole stitches are not balanced.	1. The stitch length is not suitable for the fabric being sewn. 2. The feed balancing dial is not set properly. 3. Interfacing is not being used with stretch fabric.	See page 48. See page 102. Use an interfacing.
Pattern selection keys do not work.	1. The electronic control circuit is not working correctly. 2. The key position is out of alignment	Turn the switch off and turn it on again. See page 96.
Threads frequently bunch up on the underside of the stippling design pattern.	1. The minimum length of the jump thread cutting is too short.	See page 148.
The automatic needle threader does not return to up position.	1. The automatic needle threader is not working correctly.	See page 157.
The visual touch screen swells.	1. The machine has exposed to high humidity and high temperature.	Use and store the machine in a cool and dry area.

It is not abnormal for a faint humming sound to be heard from the internal motors.
The LCD screen and function key area may become warm after several hours of continuous use.

Troubleshooting (automatic needle threader)

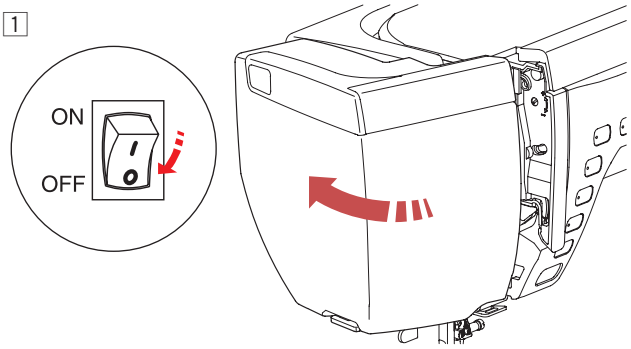
If the automatic needle threader stuck and will not return to the up position automatically, correct it as follows:





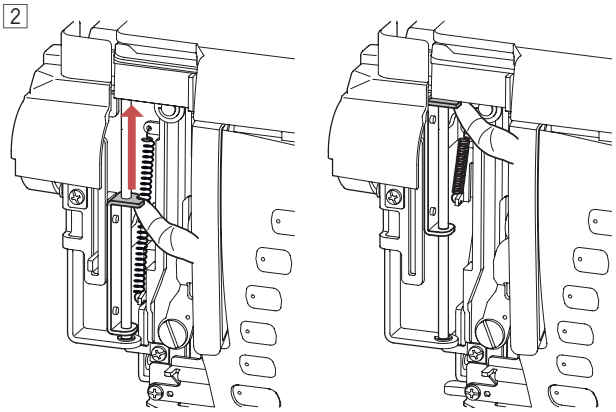
Carefully turn the handwheel away from you or toward you to move the needle up a little. The automatic needle threader will return to the up position automatically.
If the automatic needle threader still does not return to the up position, follow the procedure below.

1



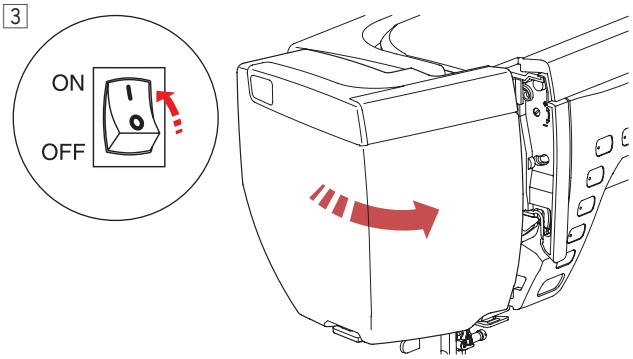
1 Turn the power switch off.
Open the face plate.

2



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

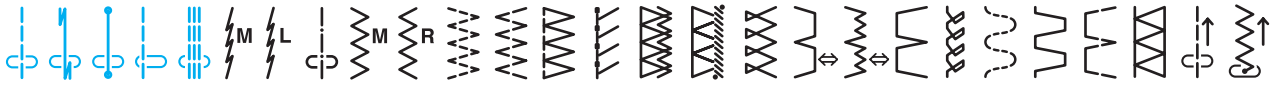
3



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

STITCH CHART
Ordinary Sewing

Utility (U)



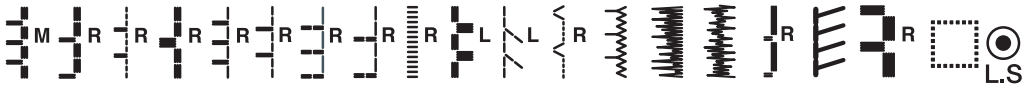
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

Buttonhole (B)



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Applique (A)



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18

Heirloom (H)

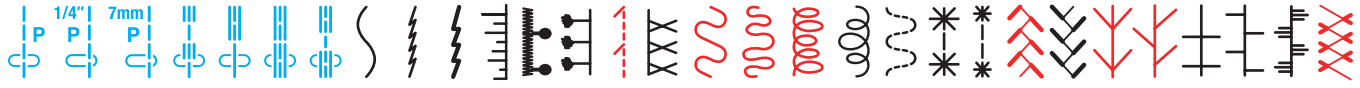


01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

Quilt (Q)



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60



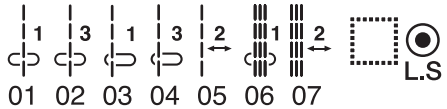
61 62 63 64 65 66 67

Satin (S)



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Bridge (BR)



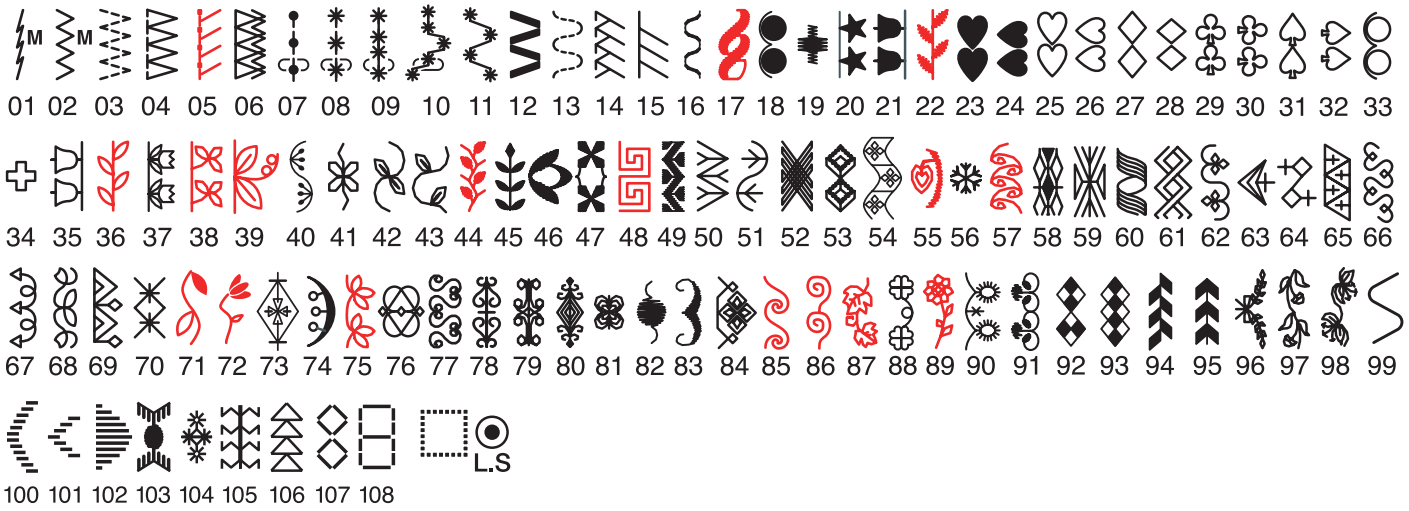
01 02 03 04 05 06 07

* Stitch patterns in blue can be used with the straight stitch needle plate.

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

STITCH CHART
Ordinary Sewing

Decorative (D)



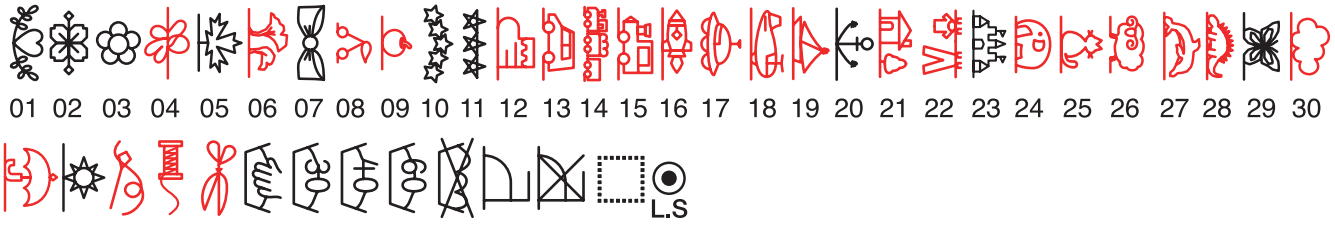
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66
67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
100 101 102 103 104 105 106 107 108

Long (L)



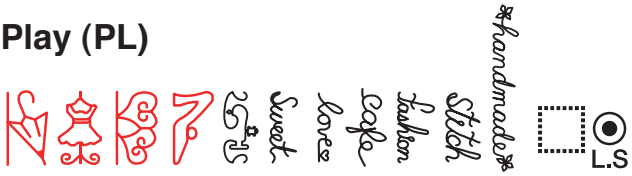
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18

Pictograph (P)



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40 41 42

Play (PL)



01 02 03 04 05 06 07 08 09 10 11

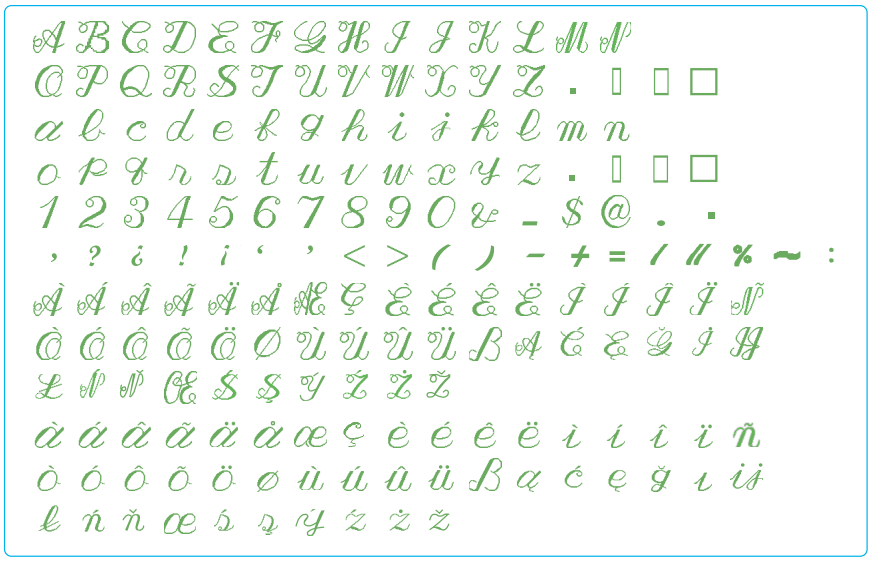
* Stitch patterns in red can be flipped vertically (Horizontal mirror image).

STITCH CHART
Ordinary Sewing

Block



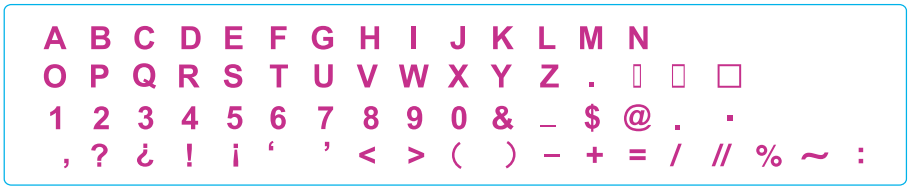
Script



Broadway



Block (9 mm)



Symbol



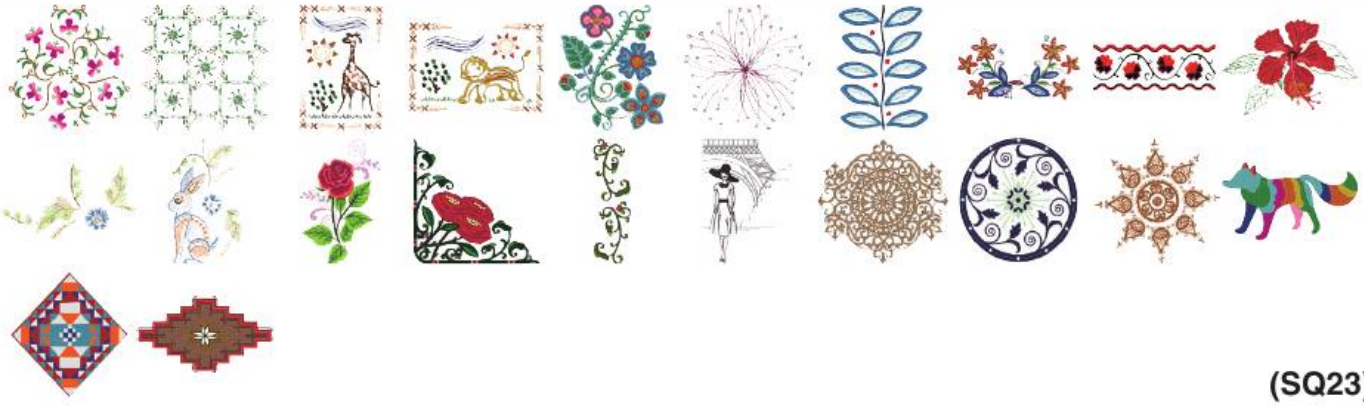
DESIGN CHART
Embroidery

Pattern images are not to scale.

World of Embroidery Designs



(SQ14)



(SQ23)



(GR)

Favorite Designs



(SQ14)



(SQ23)



(GR)

DESIGN CHART
Embroidery

Pattern images are not to scale.

Favorite Designs



(FA10)

Everyday & Holiday Designs



(SQ14)



(SQ23)



(FA10)

Noriko Nozawa



(GR)

GANAHA Collections
Flowers



(SQ14)



(FA10)

* The gaps in the outline and the white spaces that appear between the color patterns on Noriko Nozawa designs are part of the design.

DESIGN CHART
Embroidery

Pattern images are not to scale.

GANAHA Collections
Kitchen



(SQ14)

GANAHA Collections
Kids



(SQ14)



(FA10)

GANAHA Collections
Sweets



(SQ14)

GANAHA Collections
Sewing Items



(SQ14)

GANAHA Collections
Others



(SQ14)

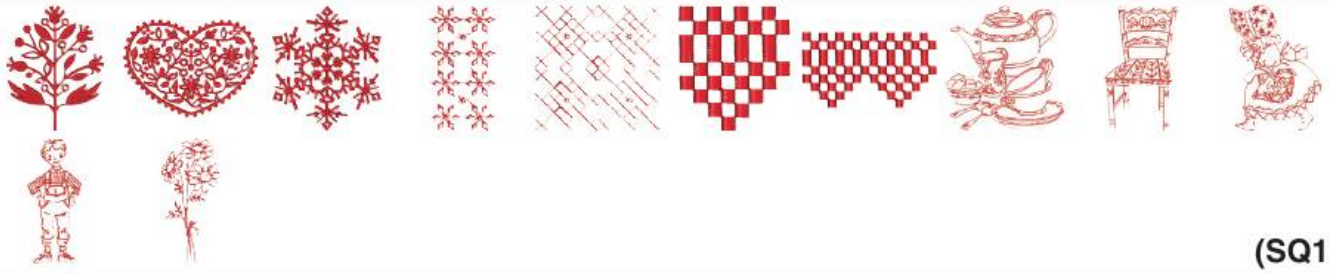


(FA10)

DESIGN CHART
Embroidery

Pattern images are not to scale.

GANAHA Collections
Redwork



(SQ14)



(GR)



(FA10)

Abstract Designs



(SQ14)



(SQ23)

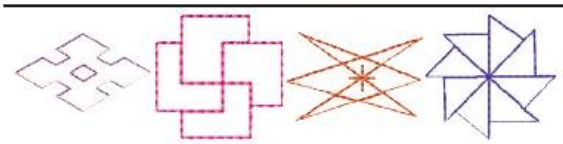
Sashiko Designs



(SQ14)



(GR)



(FA10)

DESIGN CHART
Embroidery

Pattern images are not to scale.

Quilting Designs

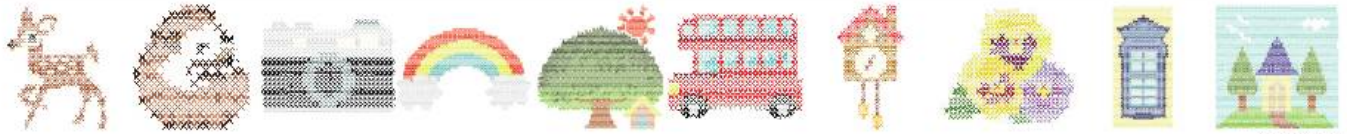


(SQ14)



(SQ23)

Cross Stitch Designs



(SQ14)



(FA10)

Applique Designs



(SQ14)

Curly Alphabet Designs



(SQ23)

DESIGN CHART
Embroidery

Pattern images are not to scale.

Motif Alphabet Designs



(SQ14)

Fringe Designs



(SQ14)



(FA10)

Couching Designs



(SQ14)



(SQ23)

Pennant Designs



(SQ14)



(SQ23)



(GR)

Calibration Pattern

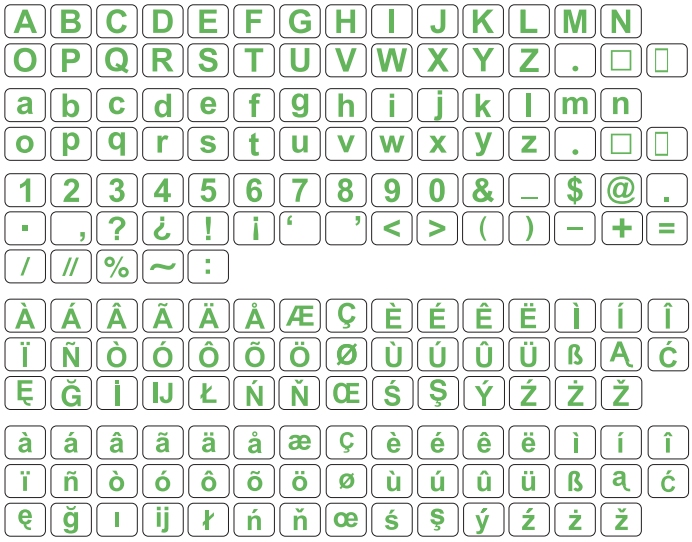


(SQ14)

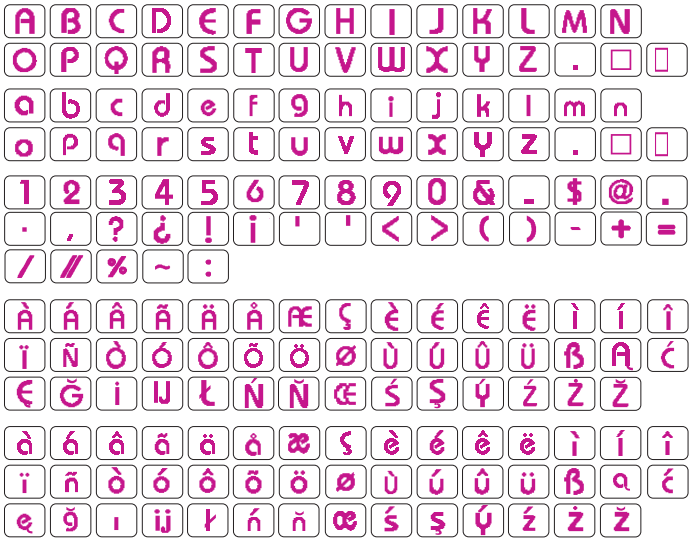
DESIGN CHART

Embroidery

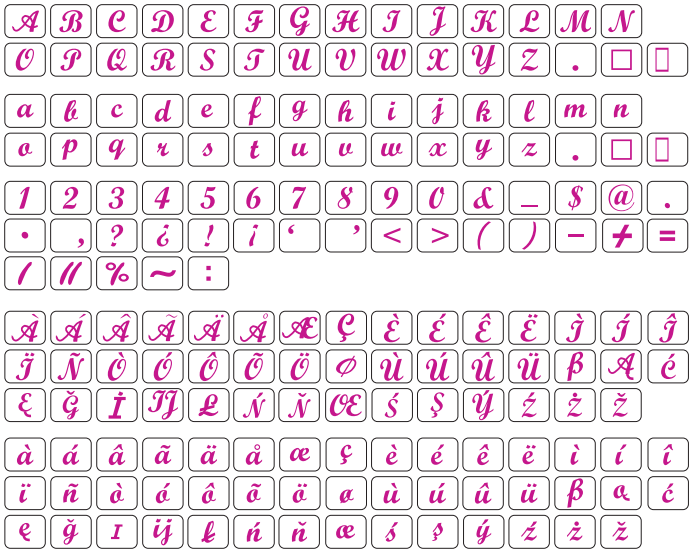
Gothic



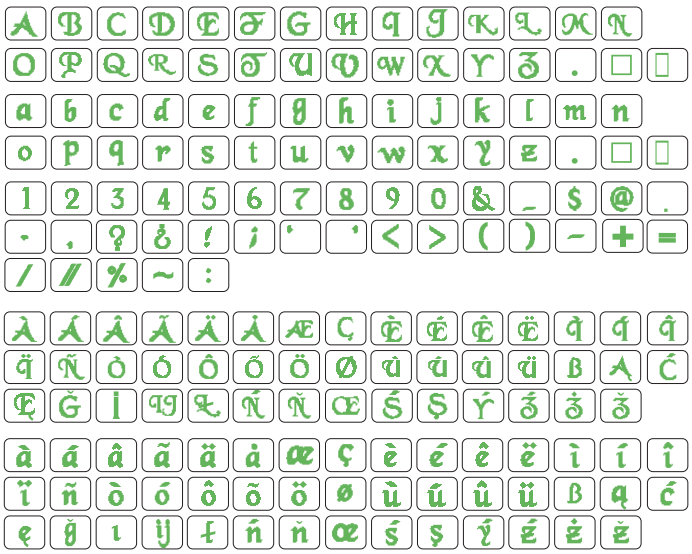
Bauhaus



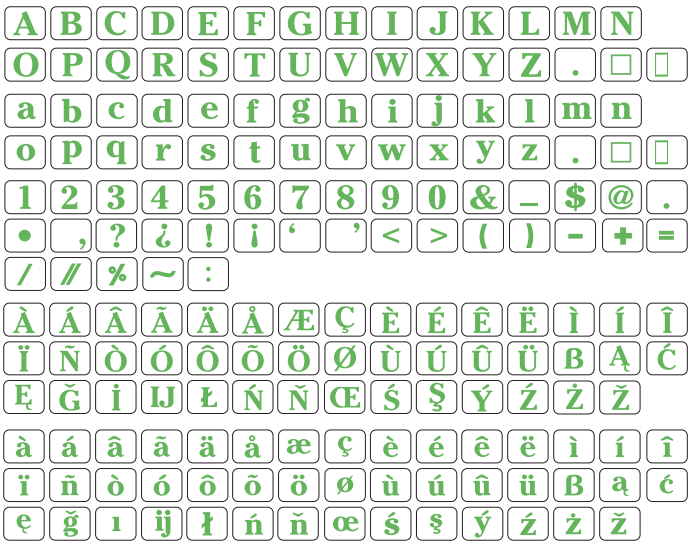
Script



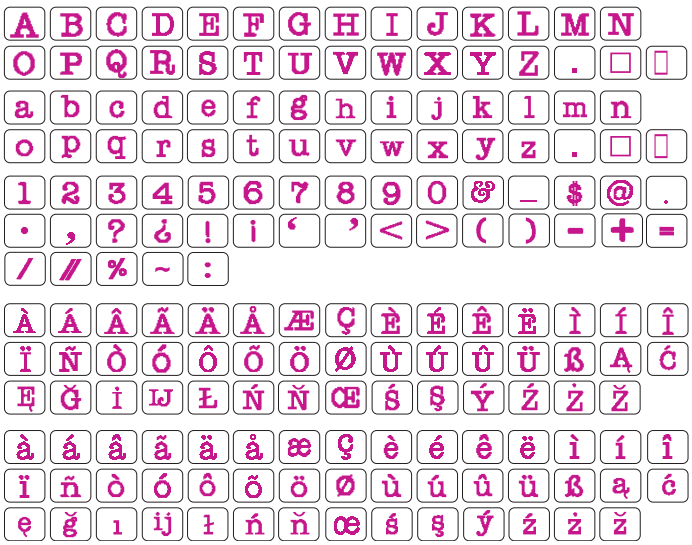
Galant



Cheltenham



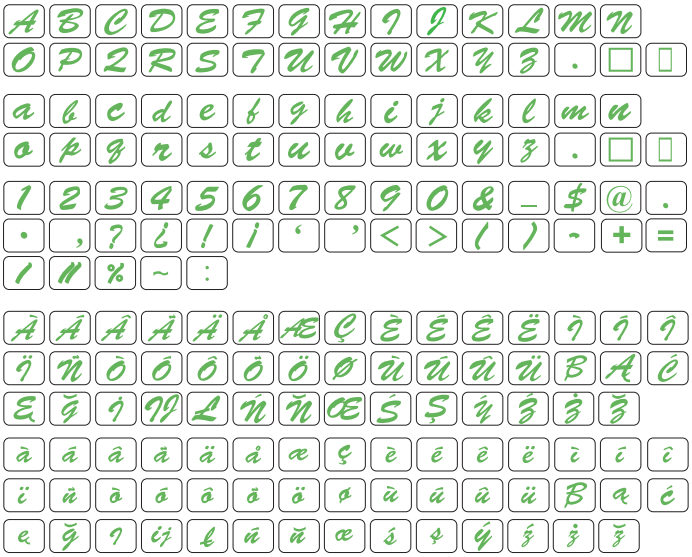
Typist



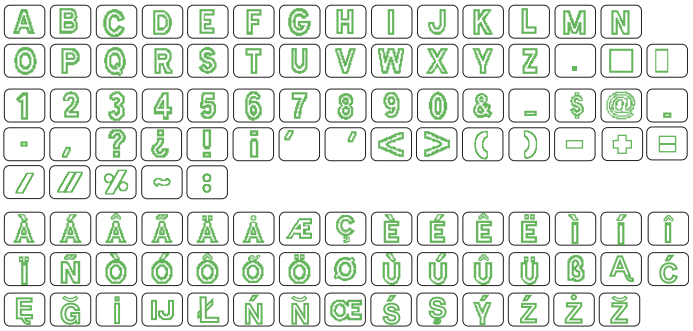
DESIGN CHART

Embroidery

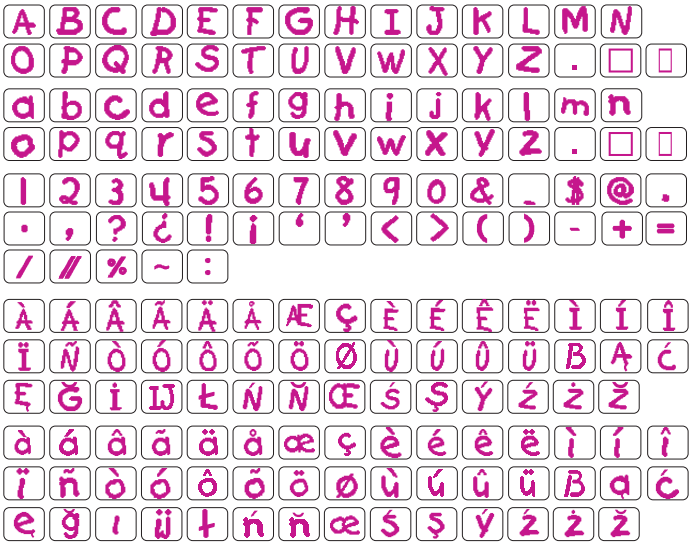
Brush



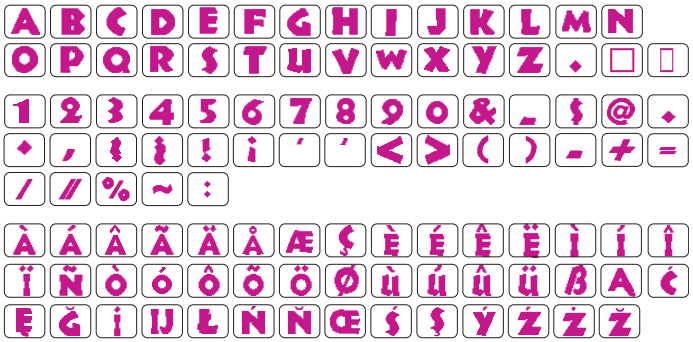
Hollowblock



First Grade



Jupiter



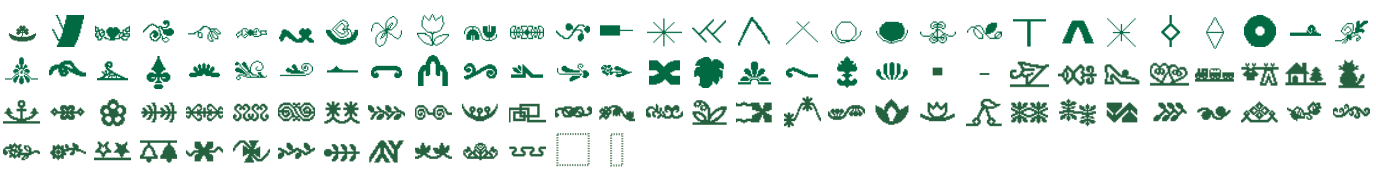
2-letters / 3-letters



Border

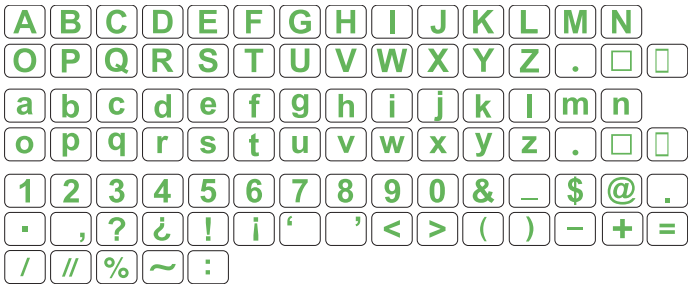


Normal Sew



DESIGN CHART
Embroidery

Micro Gothic



INDEX

A

Accessory Storage....8
Adjustable Start-Up Speed....100
Applique (Embroidery)....125, 128-129
Applique (Ordinary Sewing Mode)....58, 89
  Pivoting at applique corner....89
  Starting over from the corner....89
Attaching the Embroidery Foot....23, 106
Attaching the Embroidery Hoop to the Machine....112
Attaching the embroidery unit....103
Attaching the Straight Stitch Needle Plate....107
Auto thread tension....99, 122, 147
Automatic Needle Threader....4, 18, 157
Automatic (square) buttonhole....50-51

B

Background Color....97, 140
Basting....36, 86
Blind Hem....43, 78-79
Bobbin winding....14-16, 108
Bobbin winding speed....98
Bridge stitches....59, 66
Button Sewing....55, 87
Buttonholes....45-55
  Automatic (square) buttonhole....50-51
  Corded Buttonhole....55
  Manual settings....48
  Other Buttonholes....52
  Sensor (Square) Buttonhole....46-49
  Using the stabilizer plate....49
  Variety of Buttonholes....45
  Welted Buttonhole (Bound buttonhole)....53-54

C

Care and Maintenance....153
  Cleaning the Hook Area....153
Changing sewing direction....32
Checking Pattern Combination Length....69
Cloth Guide....6, 30, 42, 100
  Calibration of the default position....100
  Saving favorite positions....100
Colored Light Settings....97
Common Keys....13
Concealed zipper sewing....84-85
Connecting the Power Supply....9
Consecutive color grouping....147
Controlling Sewing Speed....10, 96, 100, 147
Corded Buttonhole....55
Correcting Deformed Stitch Patterns....102
Created Stitches (CS)....61, 64, 101
Cut at color change/end....148
Cutting command....122, 148
Cutting threads....33

D

Darning....56
Decorative satin stitches....63
Decorative Stitches....58-61
DESIGN CHART....161-169
Detaching the embroidery unit....105
Direct PC-Link....152
Drawing up the Bobbin Thread....19
Drop feed....30, 99
Dual feed device....5, 6, 35, 91
  Attaching the dual feed holder....22
  Dual feed balancing dial....5, 35
  Dual feed drive....5
  Quilting bar for dual feed foot....91
  Sewing with the Dual Feed Device....35
  Straight stitches (with dual feed)....91

E

Editing Mode....132-141
  Color grouping....138
  Creating a square frame....136
  Customizing the display colors....140
  Deleting a pattern....135
  Duplicating a pattern....134
  Editing tool bar information....133
  Flipping a pattern....136
  Grouping patterns....137
  Monogramming in an arc....141
  Moving a pattern....133
  Opening the embroidery designs....132
  Resizing a pattern....134
  Rotating a pattern....135
  Selecting a hoop size....132
  Selecting a pattern....133
  Selecting a pattern with pattern selection keys....134
  Sewing order....138
  Single color sewing....139
  Zooming in the editing window....139
Editing a Pattern Combination....67
  Deleting a pattern....67
  Inserting a pattern....67
Elongation ratio....63
Embroidery foot....6, 23, 106
Embroidery foot height....122, 147
Embroidery Hoops....7, 109, 142
  Embroidery hoop FA10....7, 109
  Embroidery hoop GR....7, 109
  Embroidery hoop SQ14....7, 109
  Embroidery hoop SQ23....7, 109
Embroidery Mode Settings....147-149
Embroidery Unit....103-105
  Attaching the embroidery unit....103
  Detaching the embroidery unit....105
  Extending the carriage arm....104
Extending the carriage arm....104
Extension Table....4, 8
Extra Wide Table....5, 11
Eyelets....57

F

Fabric, Thread and Needle Chart....20
Favorite Stitch Adjustment....40-41, 101
Fly Stitches....57
Foot Control....7, 9, 10
Foot Control Preparation....10
Foot height for free motion quilting....92
Foot height for pivoting....99
Foot pressure....39, 99
Formatting the memory....98
Frame Designs....130
Free Arm Embroidery....142
Free arm sewing....8
Free quilting....92
Fringe designs....113, 126-127
Function Keys in Ordinary Sewing Mode....30-31

G

Gathering....86
Grid line....148

H

Heirloom stitches....58
Hoop calibration....148
Hoop confirmation....147
Hoops....7, 109

I
Inch/mm Option....95

J
Jump key....120
Jump thread cutting....122, 148

K
Knee Lifter....7, 25, 93

L
Lace Designs....131
Language Selection Mode....94, 102
Lapped zipper sewing....81-83
Low bobbin thread warning....99, 147

M
Machine Operating Buttons....12
Machine settings....94-102, 147-149
  Common Setting Mode....95-98
  Embroidery Mode Settings....147-149
  Language Selection Mode....102
  Machine Setting Mode....94
  Ordinary Sewing Setting Mode....99-101
Manual Stitch Settings....38-39
  Adjusting foot pressure control....39
  Adjusting thread tension....39
  Altering needle drop position (straight stitches)....38
  Altering stitch length....38
  Favorite Stitch Adjustment....40-41
  Foot up for pivoting....39
Maximum embroidery speed....147
Maximum zigzag width adjustment....93
Mirror image....66, 133, 136
Mode Selection....27
Monogramming (Embroidery Mode)....114-118
  2-Letter monogram....117
  Editing a monogram....118
  Function Keys....115
  Monogram placement....116
  Programming a monogram....116
Monogramming (Ordinary Sewing Mode)....70-72
  Function keys....70
  Individual thread tension adjustment....71
  Manual thread tension....71
  Programming a monogram....72
  Reduce the size of letters....71
  Spacing....71
  Unified thread tension adjustment....71

N
Names of Parts....4-5
Needle plate....4, 6, 24, 107
Needle stop position....89, 99
Needles....20

O
On-screen Help....27
One-stitch off (stop)....92, 147
Opening a Pattern Combination....74
Optic Magnifier....7, 26
Ordinary Sewing Setting Mode....99-101
Overcasting Stitches....37, 77
Overedge....37, 77

P
Patchwork....62, 90
Pennant Designs....146
Pivoting at applique corners....89
Programming a Pattern Combination....66
  Bridge stitches....66
  Mirror image of patterns....66

Q
Quiet Mode....96
Quilting....62, 91-93
  Clasp stitches....91
  Foot height for free motion quilting....92
  Free quilting....92
  Hand-look quilt stitches....62, 93
  One stitch off....92
  Patchwork piecing....62
  Quilting guide bar for dual feed foot....91
  Sculpture stitches....92
  Straight stitches (with dual feed)....91
  Using the quilting guide bar....62
  Variable zigzag....93
Quilting guide bar....6, 62, 91

R
Raising and Lowering the Presser Foot....25
Ready to Sew Window....119-123
  Adjust Key....122
    • Auto thread tension level....122
    • Cutting the tails of jump threads....122
    • Embroidery foot height....122
  Color list key....120
  Color section key....120
  Cross key....120
  Embroidery foot key....122
  Embroidery mode key....123
  Function keys....119
  Hoop back key....121
  Jog keys....120
  Pattern information....119
  Stitch back/forward keys....120
  Trace key....121
Replacing the Foot Holder....22-23
  Attaching the darning foot PD-H....23
  Attaching the dual feed holder....22
  Attaching the embroidery foot P....23
  Detaching and attaching the dual feed foot or couching feet....23
  Removing the presser foot holder....22
Replacing the Needle Plate....24
Replacing Needles....20
Replacing the Presser Foot....21
Resume Mode....101, 149
Retractable Sewing Light....4, 26
Rolled Hem....80

S
Saving and Opening a File....73-74, 150-152
  Opening a Pattern Combination....74
  Saving a Pattern Combination....73
    Changing the folder name or file name....73
    Creating a new folder....73
  Saving and Opening a File....150-152
    Changing a name of the file or folder....152
    Creating a new folder....151
    Deleting a file or folder....151
    Opening a file....151
    Saving a file....150
Screen Contrast....95
Screen Saver....95
Seam guide lines....33
Securing seams....33
Selecting Built-in Embroidery Designs....113
Sensor (Square) Buttonhole....45, 46-49

Setting the Fabric in an Embroidery Hoop 111
Setting the Spool of Thread 14, 65, 108
Additional spool pin 14
Sewing Application 75-93
Applique 89
Basting 86
Blind Hem & Shell Tuck 78-79
Button Sewing 87
Gathering 86
Overedge 77
Patchwork 90
Quilting 91-93
Clasp stitches 91
Free quilting 92
Hand-look quilt stitches 93
Quilting guide bar for dual feed 91
Sculpture stitches 92
Straight stitches (with dual feed) 91
Variable zigzag 93
Rolled Hem 80
Seaming 76
Tacking 88
Zipper Sewing 81-85
Sewing from the edge of thick fabric 32
Sewing Light 26, 95, 97
Shell Tuck 43, 79
Sound Volume 95, 96
Special Bobbin Holder for Embroidery 7, 108
Specialty Stitches 55-57
Button Sewing 55
Darning 56
Eyelets 57
Fly Stitches 57
Stabilizer plate 6, 49
Stabilizers 110
Standard Accessories 6-7
Standby Timer 95
Starting to Sew Embroidery 124
Startover Key 30, 68
Current pattern startover 68
First pattern startover 68
STITCH CHART 158-160
Straight stitches 32-34

T

Tacking 88
Thread Cut after Auto-Lock 101
Thread cutting (Ordinary Sewing Mode) 33
Thread cutting (Embroidery Mode) 148
Cut at color change/end 148
Cutting command 148
Jump thread cutting length 148
Thread Holder 4, 112
Thread selection 149
Threading the Machine 17-19, 65, 144
Touch Screen Calibration 96
Troubleshooting 155-157
Troubleshooting (automatic needle threader) 157
Troubleshooting (Problems and Warning Signals) 154
Turning a square corner 32
Twin Needle Sewing 65

U

Upper Thread Sensor 95
Utility Stitches 32-44
Changing sewing direction 32
Cutting threads 33
Other Utility Stitches 43-44
Securing seams 33
Sewing from the edge of thick fabric 32
Starting to sew 32
Straight stitches 32
Turning a square corner 32
Using the seam guide lines 33

V

Variable zigzag 93
Variable zigzag sensitivity 99
Variety of Overcasting Stitches 37
Variety of Straight Stitches 34-36
Visual Touch Screen 4, 95, 96, 97, 102

W

Welted Buttonhole (Bound buttonhole) 45, 53-54
Winding the Bobbin 14-16, 108
Bobbin Winding While Working on an Embroidery Project 108
Inserting the bobbin 16
Removing the bobbin 14
Winding the bobbin 15

Z

Zigzag Stitches 36
Zipper Sewing 81-85
Concealed zipper sewing 84-85
Lapped zipper sewing 81-83