elna
SWISS DESIGN

Instruction Manual

e9500

IMPORTANT SAFETY INSTRUCTIONS

This sewing machine is not a toy. Do not allow children to play with this machine.
The machine is not intended for use by children or mentally infirm persons without proper supervision.

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

When using an electrical appliance, basic safety precautions should always be followed, including the followings:
Read all instructions before using this appliance.

DANGER— To reduce the risk of electric shock:

1. The sewing machine 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 the machine to be used as a toy. Close attention is necessary when this sewing machine is used by or near children.
2. Use this sewing machine only for its intended use as described in this instruction book.
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 this sewing machine with any air openings blocked. Keep ventilation openings of this sewing machine 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.
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 the sewing machine off (“O”) when making any adjustment in the needle area, such as threading the needle with your hand, changing the needle, inserting the bobbin, and the like.
15. Always unplug this sewing machine from the electrical outlet when making any adjustments mentioned in this instruction book.

SAVE THESE INSTRUCTIONS

The design and specifications are subject to change without a prior notice.

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

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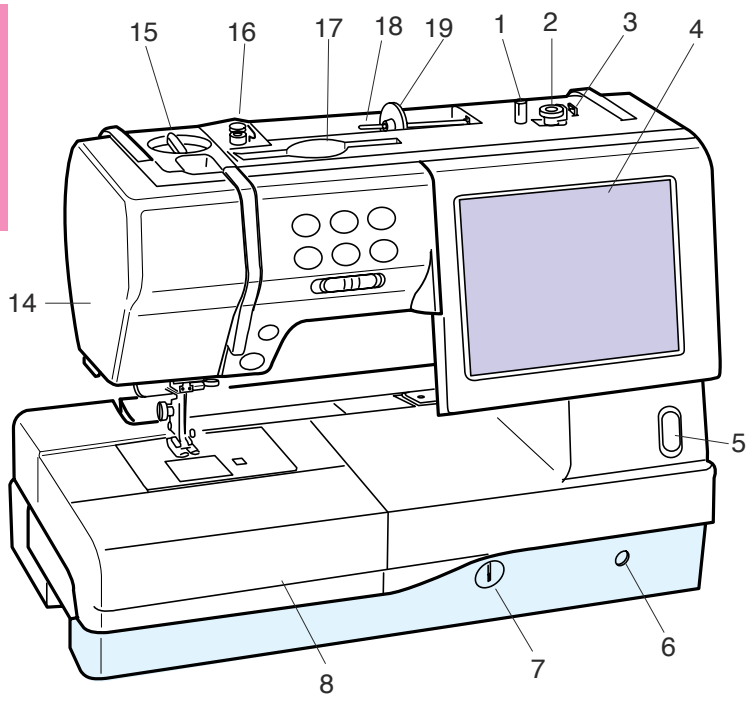
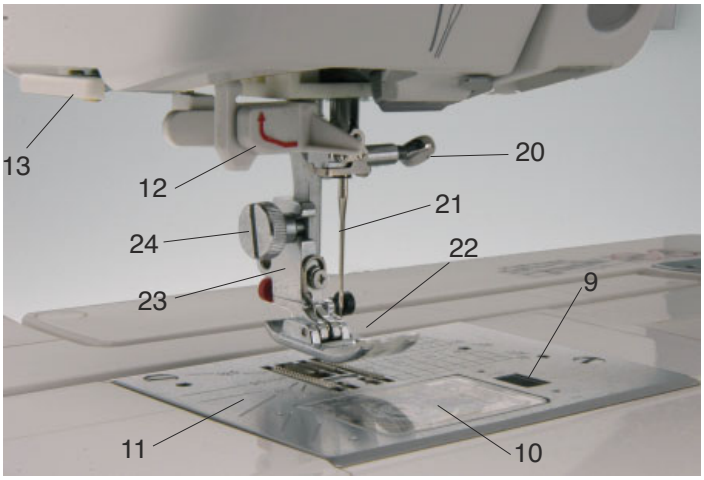
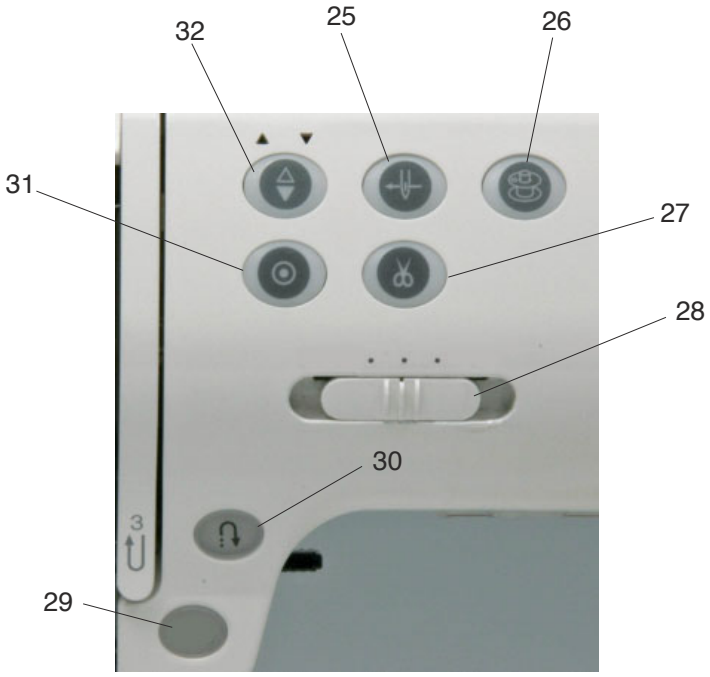
GETTING READY TO SEW

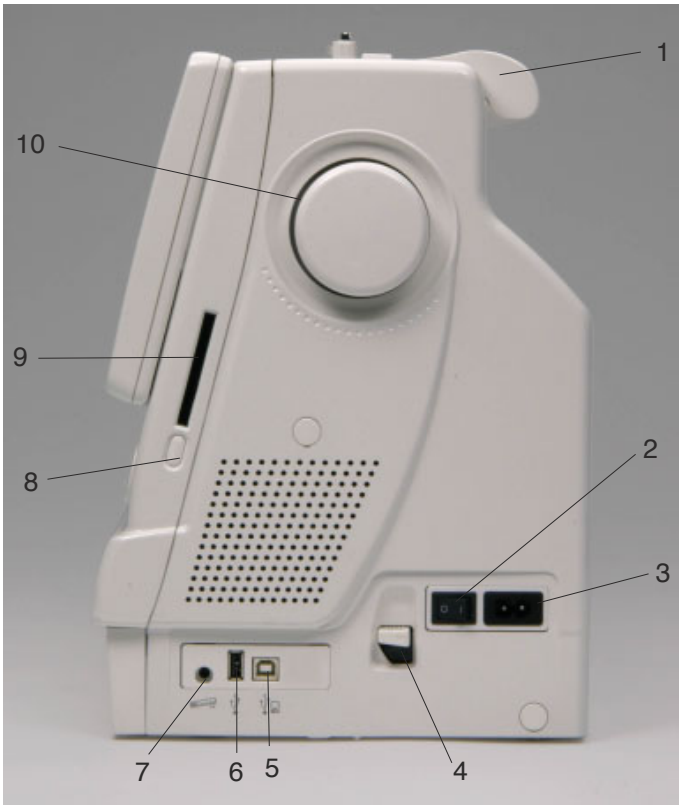
Names of Parts







1 Bobbin winder spindle
2 Bobbin winder stopper
3 Bobbin thread cutter
4 Visual touch screen
5 Screen up/down button
6 Knee lifter socket
7 Feed balancing dial
8 Extension table (accessory storage)
9 Hook cover release button
10 Hook cover plate
11 Needle plate
12 Automatic needle threader
13 Thread cutter/holder
14 Face plate
15 Foot pressure dial
16 Bobbin winding thread guide
17 Stylus holder (for the touch panel stylus)
18 Spool pin
19 Spool holder
20 Needle clamp screw
21 Needle
22 Zigzag foot A
23 Foot holder
24 Thumbscrew
25 Auto needle threader button
26 Bobbin winding button
27 Thread cutter button
28 Speed control slider
29 Start/stop button
30 Reverse button
31 Auto-lock button
32 Needle up/down button

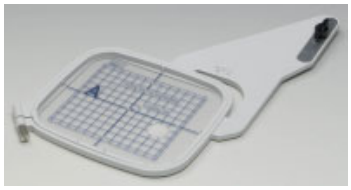


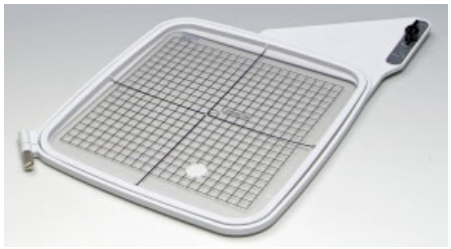
1 Carrying handle
2 Power switch
3 Machine socket
4 Carriage release lever
5 USB port (for direct PC link)
6 USB port (for CD-ROM drive/USB memory key)
7 Foot control jack
8 Card ejecting button
9 Card slot
10 Hand wheel
11 Buttonhole lever
12 Retractable carriage arm
13 Hard cover (accessory storage)

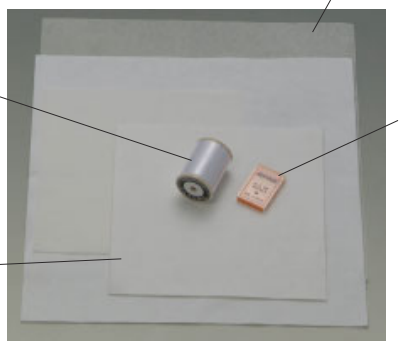
Standard Accessories and Storage

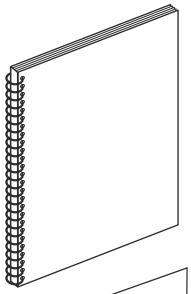
The embroidery hoops, foot control, power supply cord, knee lifter etc. can be conveniently stored in the hard cover.

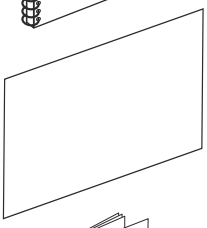
1 Embroidery hoop-ST (with template)
2 Embroidery hoop-SQ (with template)
3 Foot control
4 Power supply cord
5 Knee lifter
6 Set of red tip needles
7 Bobbin thread for embroidery
8 Felts
9 Stabilizers
10 Template sheets for built-in embroidery designs
11 USB cable
12 Instruction book
13 Key icon reference chart
14 M860 Tools CD-R (with instruction booklet)











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The extensiontable provides a handy compartment for storing various accessories.

1 Overcasting foot C
2 Rolled hem foot D
3 Zipper foot E
4 Satin stitch foot F
5 Blind hemming foot G
6 Cording foot H
7 Overedge foot M
8 1/4” seam foot O
9 Button sewing foot T
10 Automatic buttonhole foot R
11 Embroidery foot P
12 Darning foot P-2
13 Even feed foot with quilting bar
14 Quilting guide bar
15 Spool holder (large)
16 Spool holder (small)
17 Extra spool pin
18 Spool supporter
19 Felt cushion
20 Bobbins
21 Set of needles
22 Screwdriver
23 Screwdriver key
24 Scissors
25 Lint brush
26 Seam ripper (Buttonhole opener)
27 Button shank plate
28 Touch panel stylus

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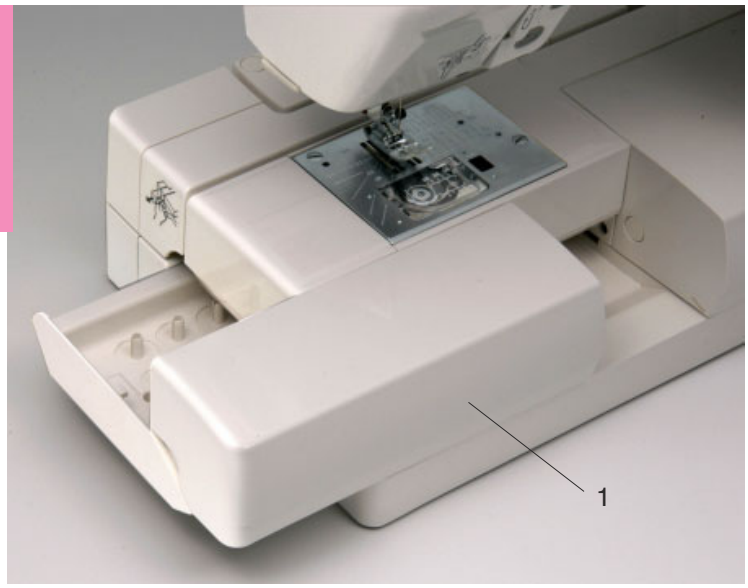


Extension Table

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

1 Extension table

To detach:

Draw the table out to the left.

To attach:

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

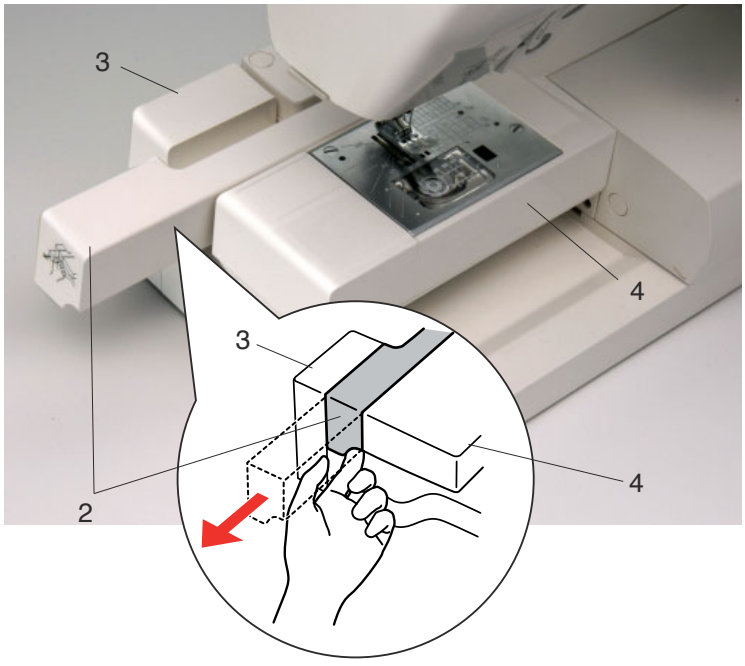
Free arm sewing

Free-arm sewing is used for stitching sleeves, waistbands, pant legs or any other tubular garments.
It is also useful for darning socks or mending knees or elbows.

For free arm sewing

1 Return the carriage to the home position (refer to page 67).
2 Turn the power switch off.
3 Remove the extension table.
4 Hook your finger on the bottom of the fillet and draw the fillet out to the left.

1 Extension table
2 Fillet



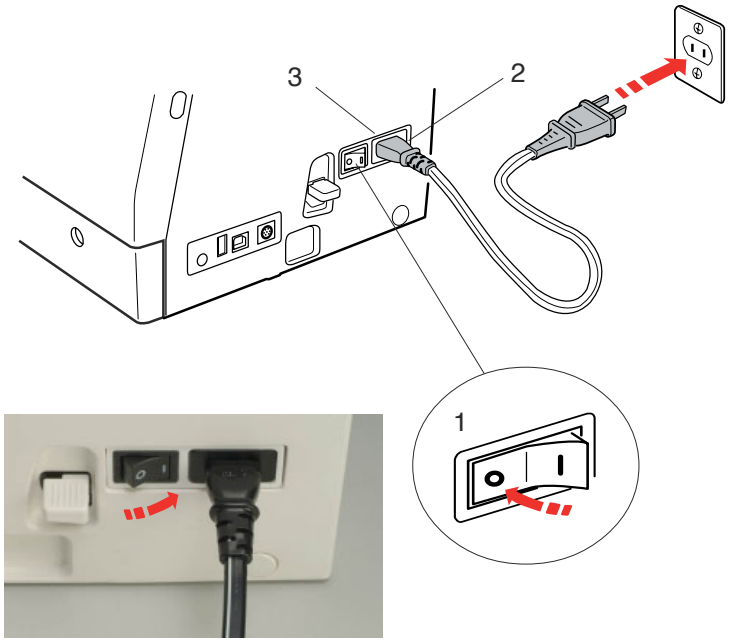
For flat bed sewing

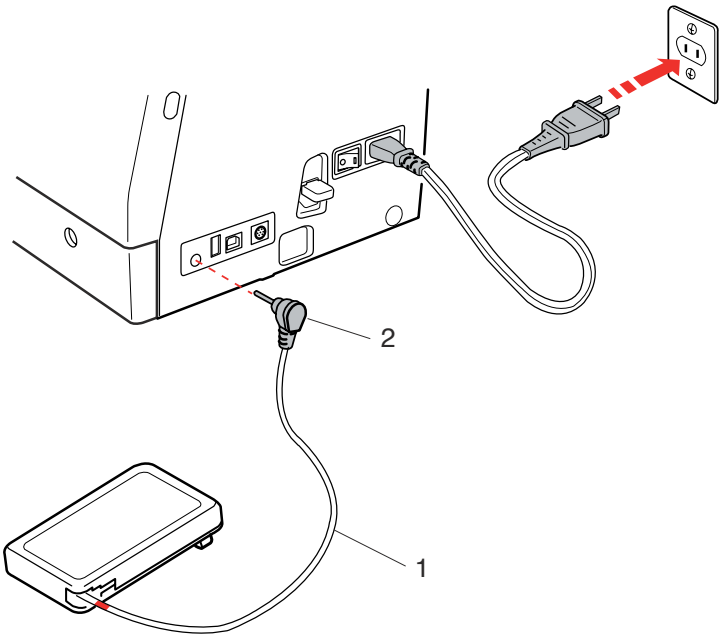
1 Return the carriage to the home position.
2 Turn the power switch off.
3 Insert the fillet and slide it to the right, between the free arm and carriage base.
4 Attach the extension table.

3 Carriage base
4 Free arm

NOTE:
Do not pull or push the carriage base.

Connecting the Power Supply





First turn the power switch off and then insert the foot control plug into the jack on the machine if you wish to use foot control.
Insert the machine plug of the power supply code into the machine socket.
Insert the power supply plug into the wall outlet. And turn the power switch on.

1 Power switch
2 Machine plug
3 Machine socket

NOTES:
Make sure to use the power supply cord that came with the machine.
If you turn off the power switch, wait for 5 seconds before turning it on again.
The foot control cannot be used in the embroidery mode.

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.

Operating Instructions:
The symbol “O” of a switch indicates the “off” position of a switch.

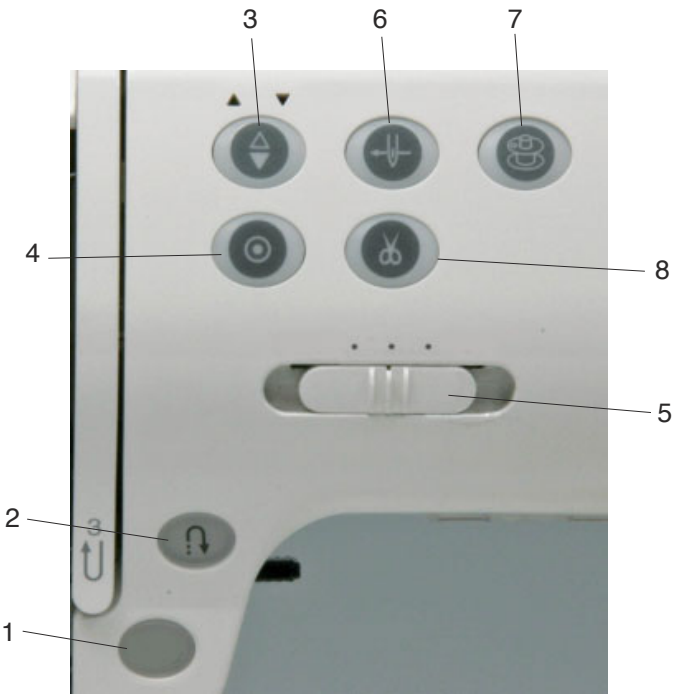
For the U.S.A. and Canada only
Polarized plug (one blade wider than the other):
To reduce the risk of electric shock, this plug is intended to fit in a polarized outlet only one way. If it does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

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

1 Foot control cord
2 Pin connector

Insert the machine plug of the power supply cord into the machine socket.
Insert the power supply plug into the wall outlet. And turn the power switch on.

CAUTION:
Do not pull the foot control cord beyond the red mark.



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

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

2 Reverse button

When sewing stitch pattern U1, U2, U8 or U9, the machine will sew in reverse as long as the reverse button is pressed. If the stitch pattern U1, U2, U8 or U9 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 stitches, the machine will immediately sew locking stitches and automatically stop.

3 Needle up/down button

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

Machine Operating Buttons

4 Auto-lock button

When sewing stitch pattern U1, U2, U8 or U9, the machine will immediately sew locking stitches and automatically stop when the auto-lock button is pressed.
When sewing all other stitches, 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 auto thread cutting is enabled (refer to page 22).

5 Speed control slider

This slider will set the maximum sewing speed in the ordinary sewing mode (refer to page 9).

6 Auto needle threader button

Press this button and follow the step-by-step instruction displayed on the visual touch screen to thread the needle.
Refer to page 13.

7 Bobbin winding button

Press this button to wind the bobbin.
Refer to page 10.

8 Thread cutter button

Press this button after finishing sewing and the machine will trim the threads automatically.
Refer to page 27.

NOTES:
The thread cutter button does not function:
- soon after turning on the power.
- when the presser foot is in the up position.
- when being pressed 4 times in a row.

Screen up/down button

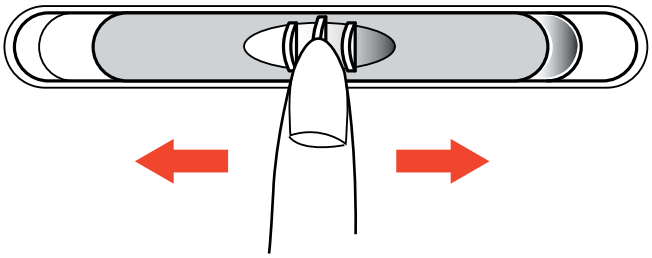
The visual touch screen can be raised to open (clear) the space for handling fabrics etc.

Pressing the ▲ button raises the screen, while pressing the ▼ button lowers the screen.

⚠ CAUTIONS:

Be sure to store the visual touch screen in the lowest position before carrying or storing the machine to prevent the screen from damage by impact.
Do not force to move the visual touch screen by hand.
Do not press the surface of the visual touch screen with hard or sharp objects like pencils, screwdrivers or the like. Use the touch panel stylus to press the visual touch screen.

Controlling Sewing Speed

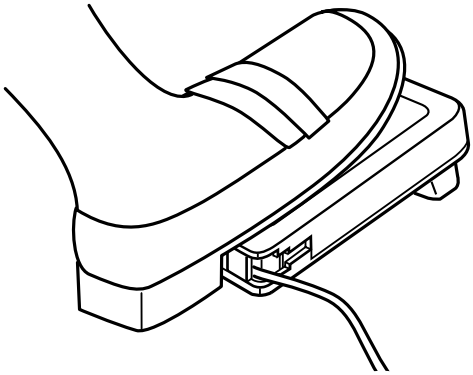


Speed control slider

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

Foot control

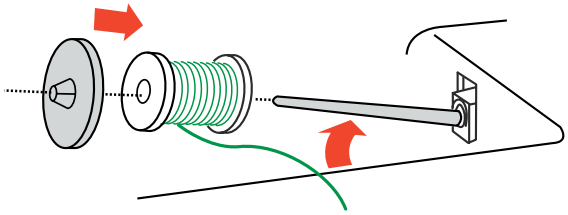
Pressing on the foot control can vary sewing speed. The harder you press the foot control, the faster the machine runs.

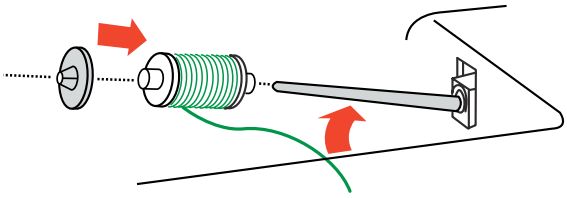


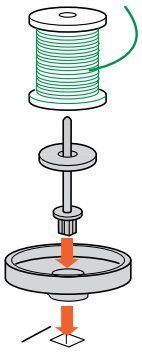
NOTE:
The machine runs at the maximum speed set by the speed control slider when the foot control is fully depressed.

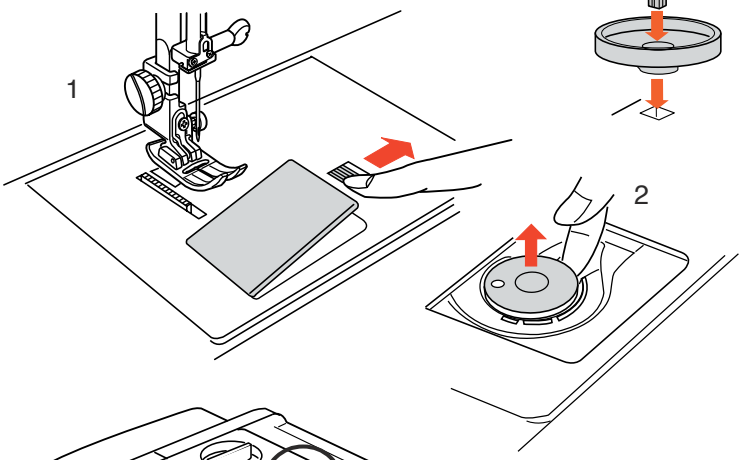
Operating Instructions:
Foot controller Model 21371 is for use with this machine.

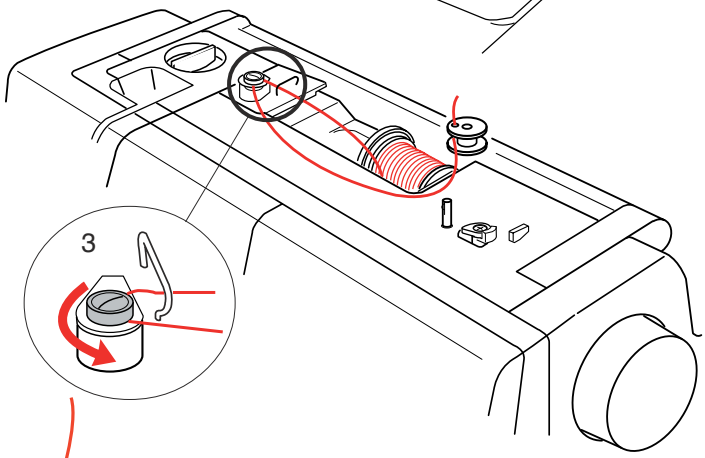
NOTE:
This machine is equipped with an automatic shutdown safety feature to prevent overheating whenever the machine is running overloaded. Follow the safety instructions that appear on the visual touch screen.

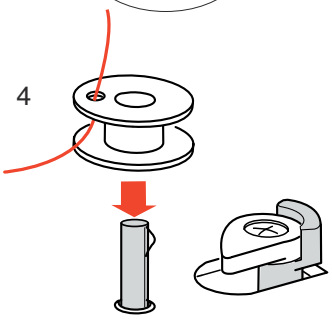


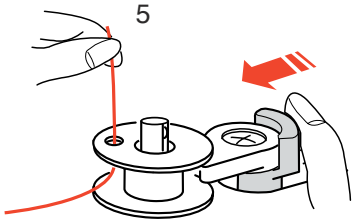


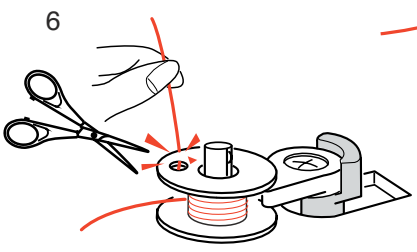












Setting the Spool of Thread

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

Extra spool pin

Use the extra spool pin when you need to wind a bobbin without unthreading the machine while working on a sewing project.
Insert the extra spool pin into the spool supporter and then into the hole beside the horizontal spool pin. Place the felt cushion on the spool pin and place a spool of thread on it as shown.

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

Winding the Bobbin

This machine has an exclusive motor for bobbin winding, which allows you to wind the bobbin while stitching.

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

2 Lift out the bobbin from the bobbin holder.

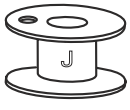
3 Pull the thread from the spool and pass the thread through the thread guide.
Draw the thread around and under the bobbin winding tension disk.

4 Pass the thread through the hole in the bobbin from the inside to the outside.

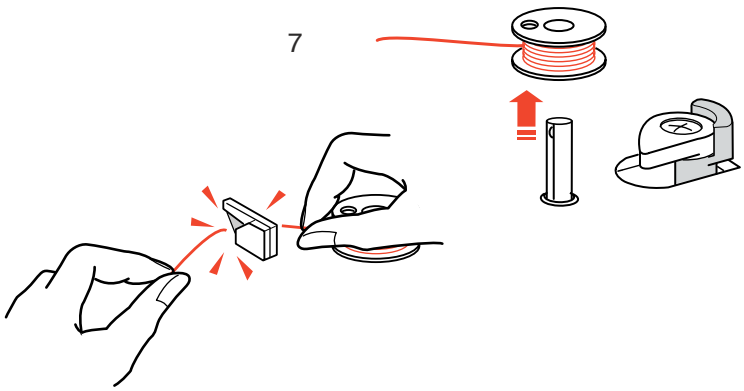
5 Put the bobbin on the bobbin winder spindle.
Push the bobbin winder stopper to the left.

6 Hold the free end of the thread in your hand and press the bobbin winding button .
Press the bobbin winding button again to stop the bobbin when it has wound several layers, and cut the thread close to the hole in the bobbin.

NOTE:

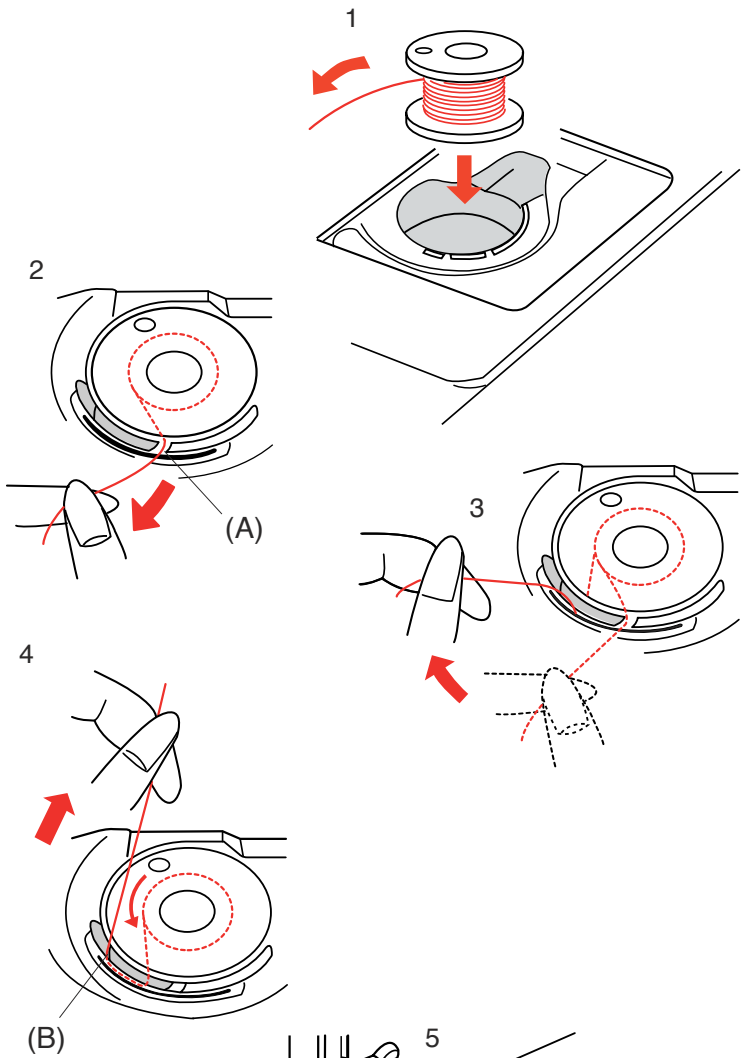


Use the plastic bobbins for horizontal hook(marked with "**J**"). Using other bobbins, such as prewound paper bobbins, may cause stitching problem or damage to the bobbin case.



7 Press the bobbin winding button again.
When the bobbin is fully wound, the bobbin winder stopper returns to the original position and the machine will stop automatically.
Cut the thread with the thread cutter.

Inserting the Bobbin



1 Place the bobbin in the bobbin holder with the thread running off counterclockwise.

2 Guide the thread into the front notch (A) on the bobbin holder.

3 Draw the thread to the left, sliding it between the tension spring blades.

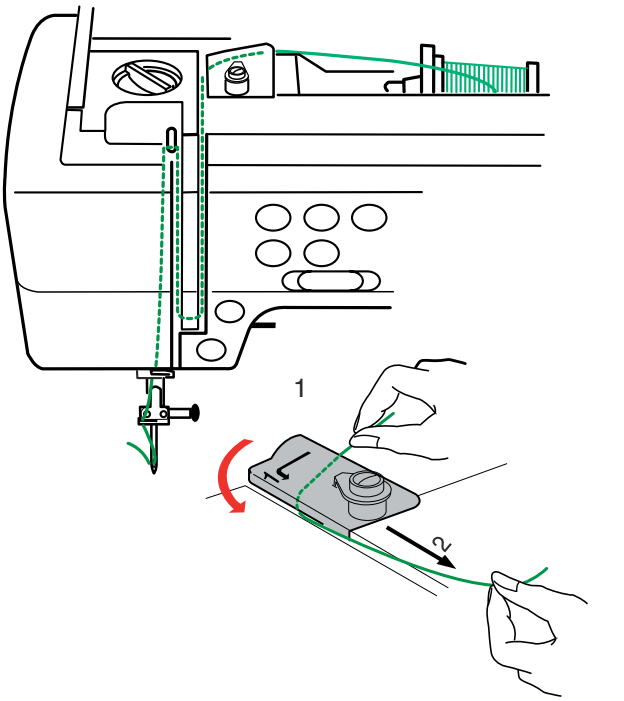
4 Continue to draw the thread lightly until the thread slips into the side notch (B).

5 Pull out about 10 cm (4") of thread to the rear.
Reattach the hook cover plate.

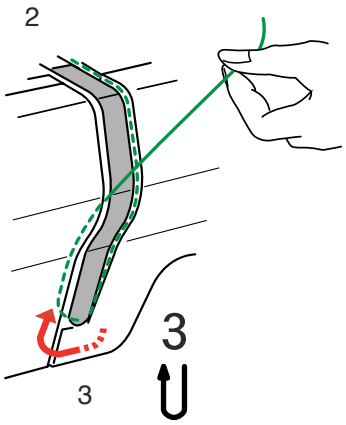
NOTE:
A threading chart is shown on the hook cover plate for your reference.

Threading the Machine

Raise the presser foot. Press the needle up/down button twice to raise the needle.
Turn the power switch off.

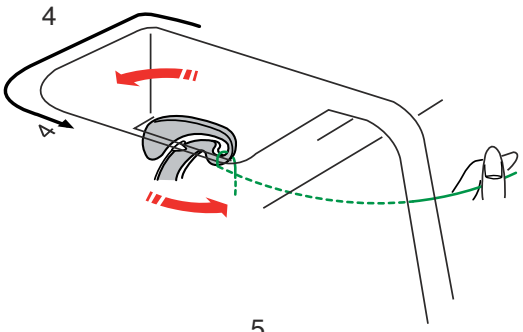


1 Draw the thread from the spool. Hold the thread with both hands and pass the thread under the thread guide plate. Tug the thread until it snaps.

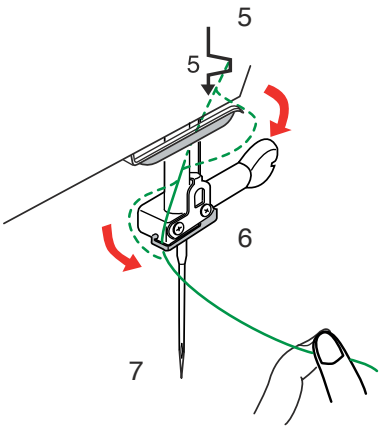


2 Draw the thread down along the right channel and around the bottom of the guide plate.

3 Pull the thread up along the left channel to the thread take-up lever.



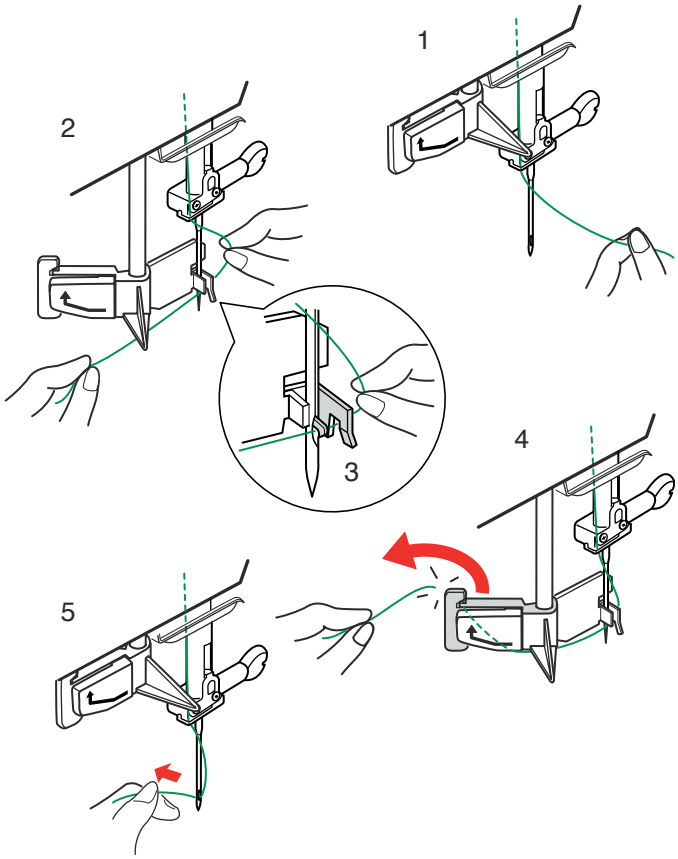
4 Firmly draw the thread up to the take-up lever and down into its eye from the right to the left, while holding the thread at the spool.



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

6 Slide the thread behind the needle bar thread guide on the left.

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



Using the Automatic Needle Threader

Turn the power switch on and lower the presser foot.

1 Hold the end of the needle thread gently.

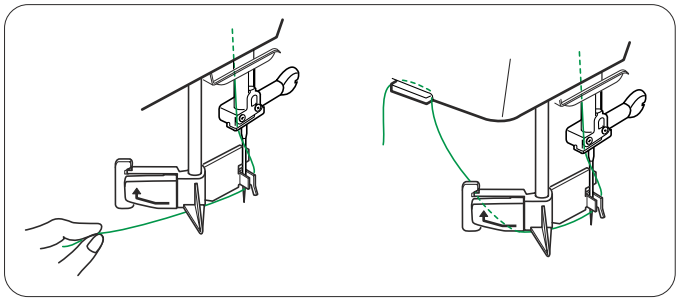
2 Press the auto needle threader button . The threader lowers automatically and the hook comes out through the needle eye from behind it.

3 Pull the thread down around the thread guide, then pass the thread from the right and under the hook as shown.

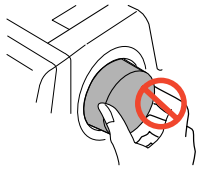
4 Draw the thread to the left and slip it into the slit of the thread holder from the bottom and cut the thread with the thread cutter as shown.

5 Press the auto threader button again. The threader goes up automatically and pulls the thread out through the needle eye. Pull the loop of thread to the back.

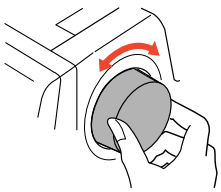
NOTES:
The automatic needle threader works well on the needles nos. 11-14, sewing threads nos. 50-90.
Thick threads, nos. 20 and 30, are not suitable for the automatic needle threader.



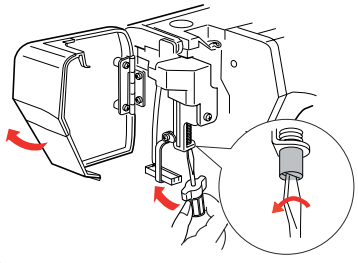
NOTES:
You may need to hold the thread end with your hand when threading certain kinds of threads.
When threading monofilament thread, hang the thread end on the thread holder on the face plate.



CAUTION:
Do not turn the handwheel while the automatic needle threader is in the lowered position to prevent it from damage. Do not touch the automatic needle threader while it is moving.



If the automatic needle threader is locked by turning the handwheel accidentally, release it as follows:
Carefully turn the handwheel to move the needle up or down a little, so that it frees the automatic needle threader.
Press the auto needle threader button to restore the automatic needle threader to the up position.

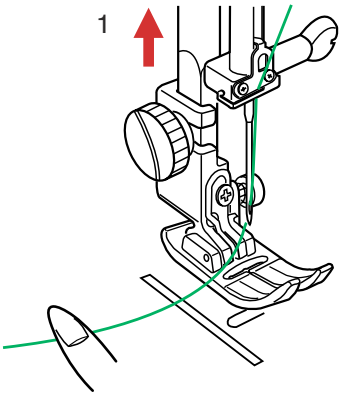


If the automatic needle threader will not return to the up position by pressing the auto needle threader button, correct it as follows:

1. Turn the power switch off.
2. Open the face plate.
3. Turn the threader shaft counterclockwise to release the hook from the needle eye.
4. Turn the power switch on and the automatic needle threader will return to the up position.
5. Close the face plate.

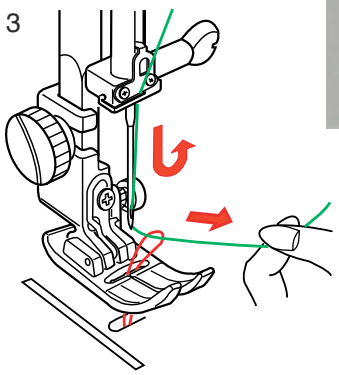
Drawing Up the Bobbin Thread

1 Raise the presser foot lifter.

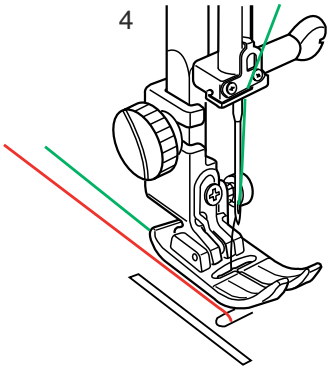


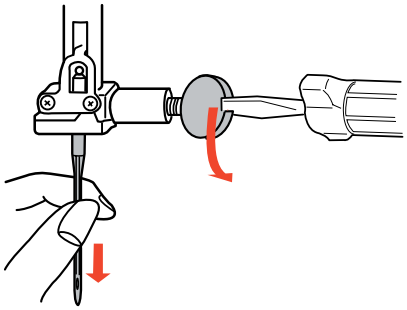
2 Hold the needle thread with your finger and press the up/down needle button twice to pick up the bobbin thread.

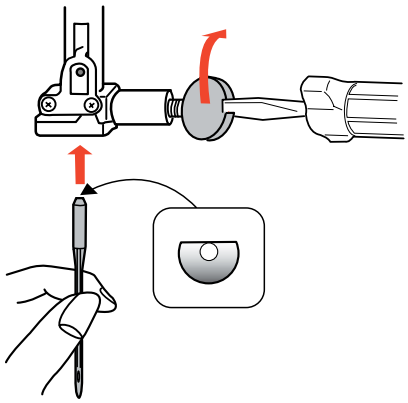
3 Draw up the needle thread to bring up a loop of the bobbin thread.

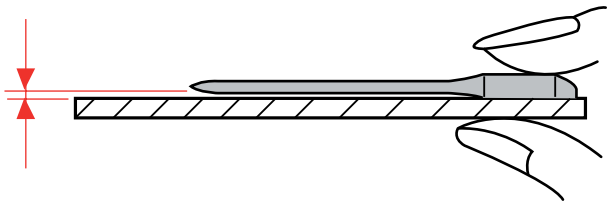


4 Slide 10 cm (4") of both threads to the back under the presser foot.









Changing Needles

CAUTION:
Always make sure to turn the power switch off and disconnect the machine from power supply before changing the needle.

Raise the needle by pressing the up/down needle button and lower the presser foot.
Turn the power switch off.

Loosen the needle clamp screw by turning it counter-clockwise.
Remove the needle from the clamp.

Insert a new needle into the needle clamp with the flat side of the needle to the rear.
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.
Never use a blunt needle.

Fabrics and needle chart

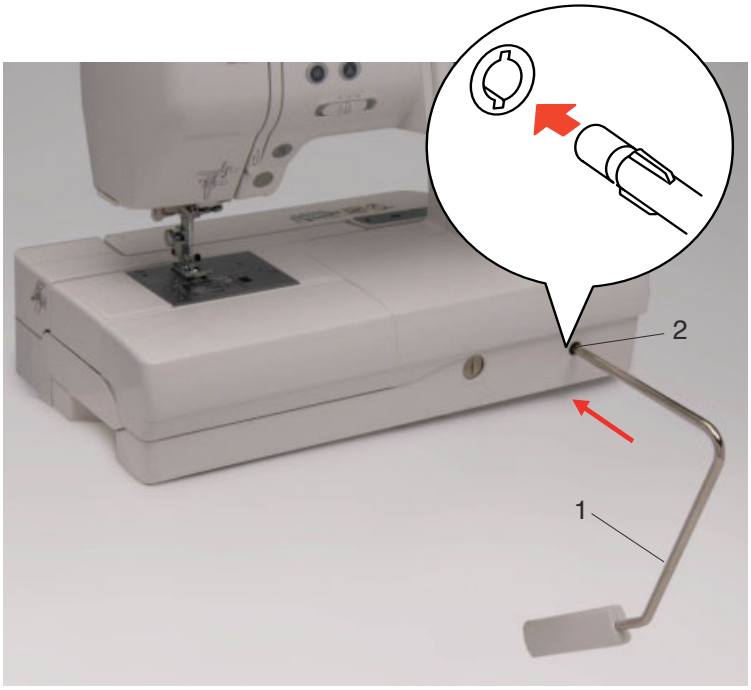
Weight	Fabric	Type of Needle	Needle Size
Very Light	Chiffon, Georgette, Fine Lace, Organdy Net, Tulle	Universal, Ball Point	9 (65)
Light	Batiste, Voile, Lawn, Pure Silk, Crepe de Chine, Sheer Crepe, Chambray, Handkerchief Linen, Gingham, Challis, Percale, Wool Crepe, Peau de Soie, Taffeta, Satin, Silk Surah, Satin-backed Crepe, Qiana	Blue Tipped Needle Universal	11 (75) 11 (75), 12 (80)
	Single Knits, Jersey, Swim wear, and Tricot	Blue Tipped Needle, Ball Point	11 (75)
	Leather Suede	Wedge Point Leather Needle	11 (75)
Medium	Flannel, Velour, Velvet, Muslin, Velveteen, Poplin, Corduroy, Broadcloth, Linen, Chintz, Gabardine, Felt, Terry, Burlap, Quilted Fabrics	Universal	14 (90)
	Double Knits, (synthetic and natural) Stretch Velour, Stretch Terry, Sweater Knits	Ball Point	14 (90)
	Leather, Vinyl, Suede	Wedge Point Leather Needle	14 (90)
Heavy	Denim, Sailcloth, Ticking	Denim Needle	16 (100)
	Double Faced Wool, Heavy Coating, Fake Fur, Drapery Fabrics	Universal	16 (100)
	Leather, Suede	Wedge Point Leather Needle	16 (100), 18 (110)
Very Heavy	Canvas, Duck, Upholstery Fabrics	Universal	16 (100)
	Topstitching for Special Finish	Topstitching Needle	14 (90)

Raising and Lowering the Presser Foot

The presser foot lifter raises and lowers the presser foot.

1 Presser foot lifter

You can raise the presser foot about 6 mm (1/4") higher than the normal up position by exerting more pressure when lifting the presser foot lifter. This helps you to place the layers of thick fabrics or embroidery hoops under the foot.



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

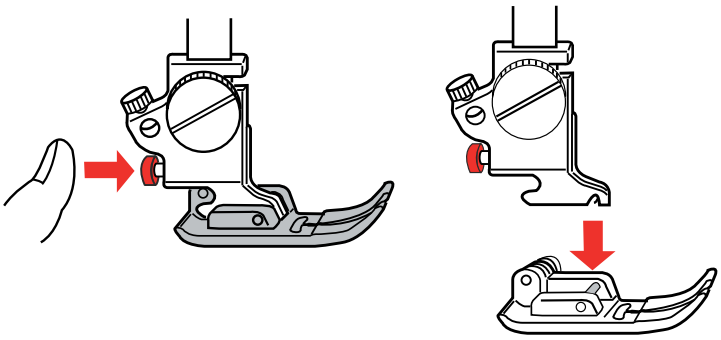
Match the ribs on the knee lifter with the notches in the knee lifter socket and insert the knee lifter.

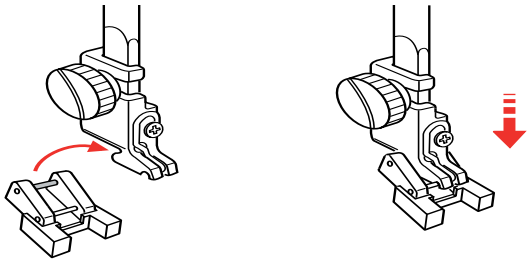
1 Knee lifter
2 Knee lifter socket

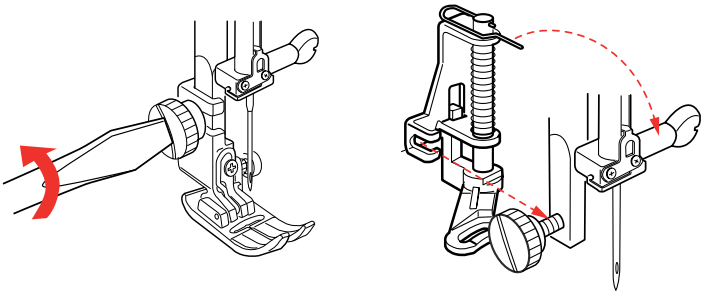
Using the knee lifter

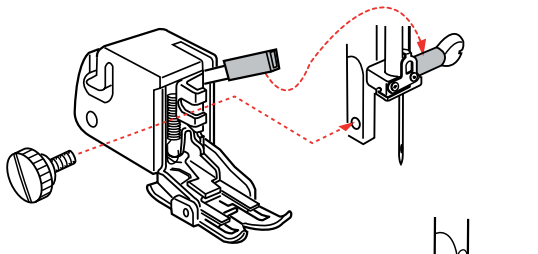
Push the knee lifter with your knee to easily move the presser foot up and down.
You can control how high the foot rises by the amount of knee pressure you exert.

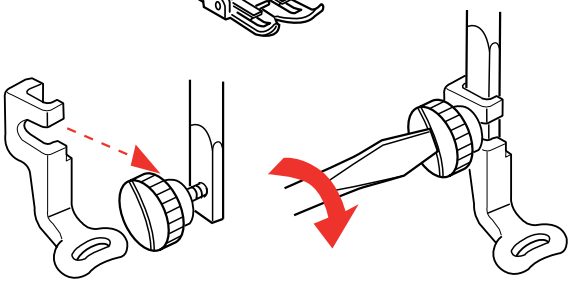
NOTE:
Do not touch the knee lifter while stitching, otherwise the fabric will not be fed smoothly.

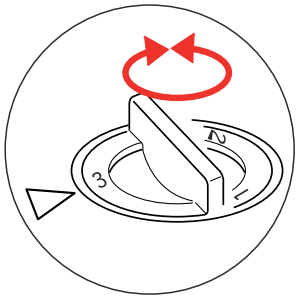












Removing and Attaching the Presser Foot

WARNING:
Turn the power switch off before changing the presser foot.

Removing the presser foot
Raise the needle to its highest position and raise the presser foot lifter.
Press the red button on the back of the foot holder.
The presser foot will drop off.

Attaching the presser foot
Place the presser foot you wish to use so that the pin on the foot lies just under the groove of the foot holder.
Lower the presser bar to lock the foot in place.

Button Sewing Foot T

Insert the rear pin on the foot into the groove of the foot holder.

Gently lower the presser bar while holding the foot with your fingers.

Darning foot P-2

Loosen the thumbscrew and remove the foot holder.
Attach the darning foot P-2 to the presser bar putting the pin on the needle clamp screw.
Tighten the thumbscrew firmly with the screwdriver.

Even feed foot

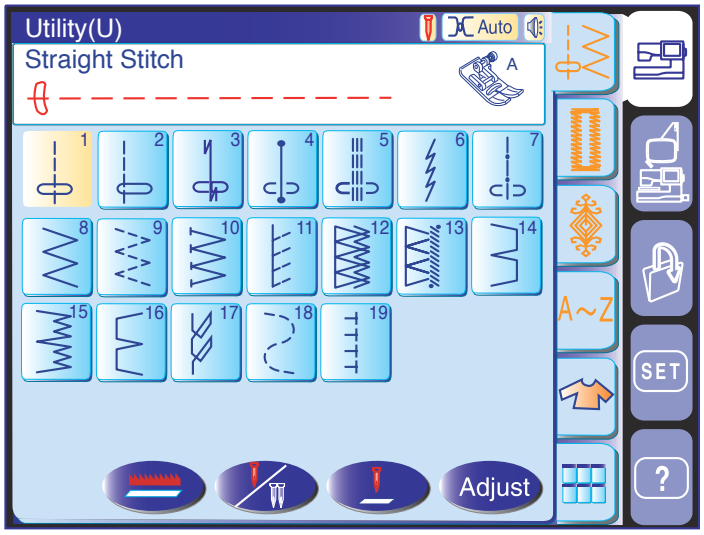
Loosen the thumbscrew and remove the foot holder.
Attach the even feed foot to the presser bar with the lever over the needle clamp screw and secure it with the thumbscrew.

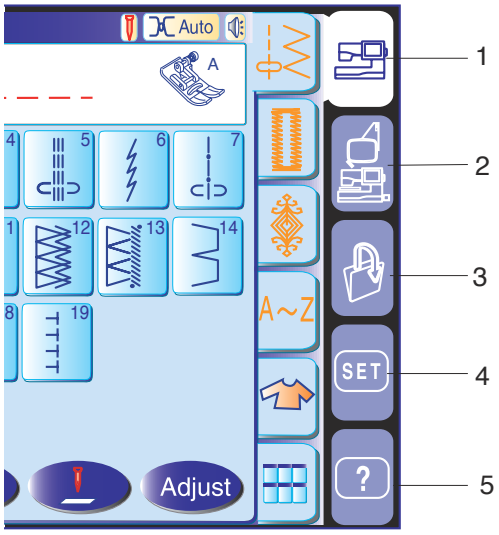
Embroidery Foot P

Loosen the thumbscrew and remove the foot holder.
Attach embroidery foot P to the presser bar from behind.
Tighten the thumbscrew securely with the screwdriver.

Adjusting the Foot Pressure

The foot pressure control dial should be set at “3” for regular sewing.
Reduce the pressure to “2” for appliqué, cutwork, drawn work, basting and embroidery.
Set the dial at “1” when sewing extra fine fabrics.





Mode Selection

When you turn on the power switch, the visual touch screen will show the opening “welcome” window, then the ordinary sewing mode will appear after a few seconds.
The machine will be set for the straight stitch sewing.

NOTE:
After turning on the power, it takes several seconds for the pattern selection window to be displayed on the visual touch screen.
(This is the required boot up time and is not a defect.)

1 Mode selection keys
Ordinary sewing mode key
Press this key to enter the ordinary sewing mode.

2 Embroidery mode key
Press this key to enter the embroidery mode.

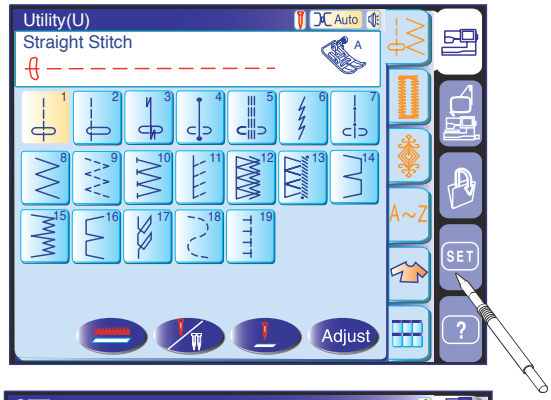
3 Open file key
Press this key to open files such as programmed stitch patterns and embroidery designs you have saved.

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

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

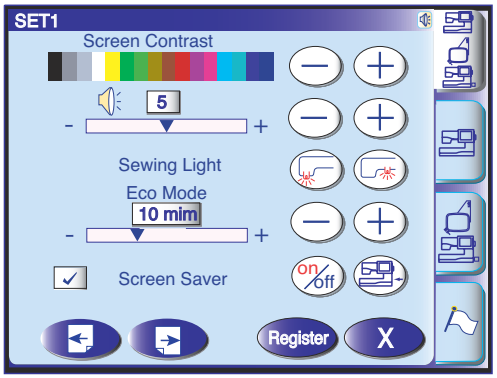
CAUTION:
Do not press the surface of the visual touch screen with hard or sharp objects like pencils, screwdrivers or the like.

Machine Settings



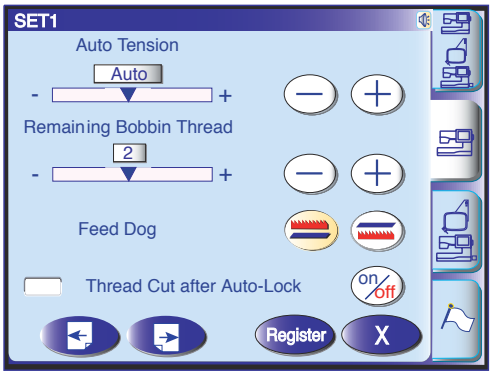
Set key
When you press the set key, you can customize the machine settings.
Press one of the 4 mode setting keys to select the mode to customize.

1



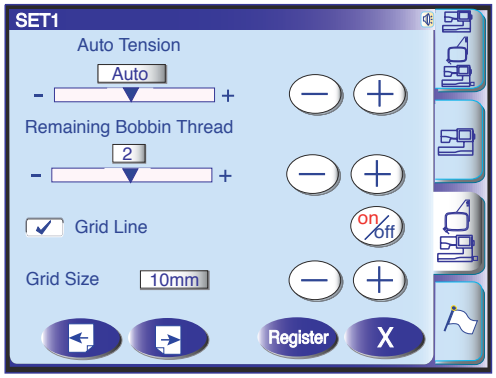
1 Common setting mode
In this mode, the machine settings or function for both ordinary sewing and embroidery can be customized or executed.

2



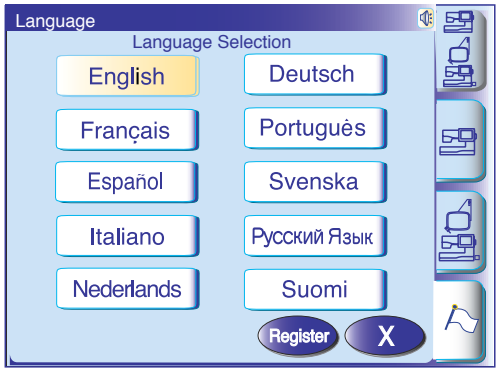
2 Ordinary sewing setting mode
In this mode, the machine settings or function for ordinary sewing can be customized or executed.

3



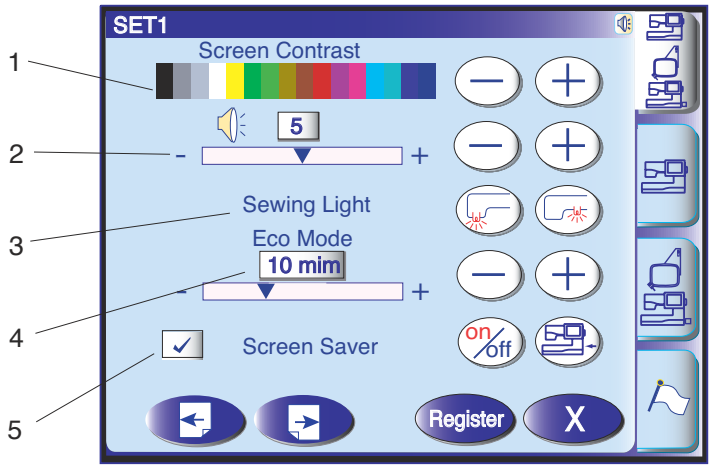
3 Embroidery setting mode
In this mode, the machine settings or function for embroidery can be customized or executed.

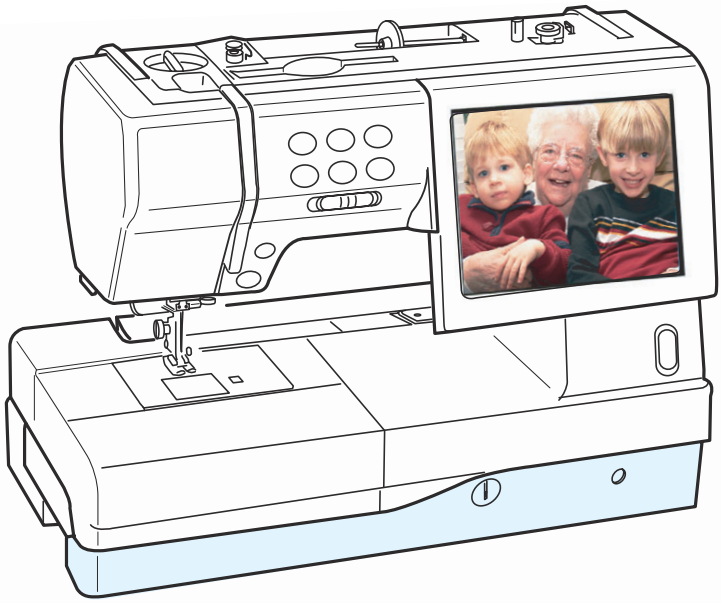
4



4 Language selection mode (Flag mode)
In this mode, you can select one of 10 languages for the messages displayed on the screen.

Registering the custom settings
After customizing the settings, press the register key (Register) to enable the new settings.
To cancel the changes to the settings, press the exit key (X) and the setting mode window will close.





Common settings

1 Screen contrast

The contrast of the visual touch screen can be adjusted with “+” or “–“ key.

2 Sound

The buzzer sound can be adjusted with the “+” or “–“ key. To mute the buzzer, set the value to “0”.

3 Sewing light options

The dual sewing lights can be turned on or off individually.

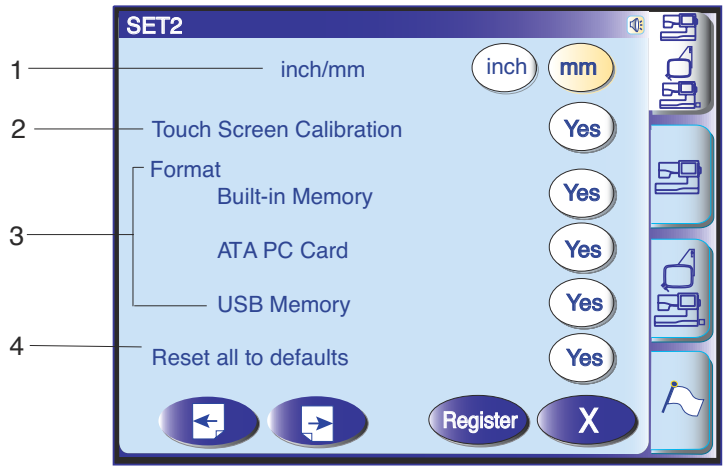
4 Eco mode

The sewing lights will turn off, and the visual touch screen will display go dark if you have not used the machine for a while. Touching the screen will turn on the lights and screen.
The eco mode timer can be set from 1 to 30 minutes by pressing the “+” or “–“ key.

5 Screen saver

Press the on/off key (on/off) to check the box. so the screen will show the screen saver instead of entering the eco mode (sewing lights do not turn off).
You can also create an original screen saver for your machine with the Screen Saver tool.
Save the data in an ATA PC card or USB memory key, and insert it into the port of the machine.
Press the import key to import the screen saver from the ATA PC card or USB memory key.

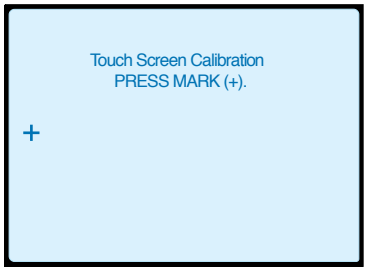
NOTES:
The Screen Saver tool is available in the M860 Tools CD-R included in the standard accessories.
For instructions on installation and operation of the software, refer to the separate instruction booklet.



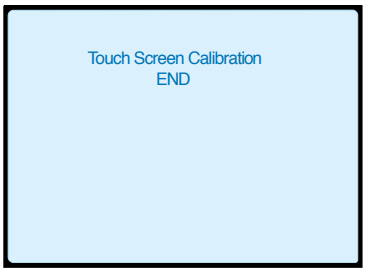
1 Inch/mm options

You can set your machine's measuring unit to either inch or millimeter by pressing the “inch” or “mm” key. The default unit setting is millimeter.

(A)

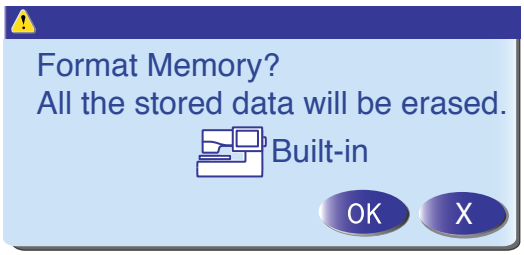


(B)



2 Touch screen calibration

If you think the touch panel keys are out of alignment, you can correct it in the key position adjustment window.
When you press the key, window (A) will be shown. With your finger, press the black cross as it appears in order. When you press the last black cross, the window (B) will be shown. The window will close and go back to the original screen with the new setting being registered.

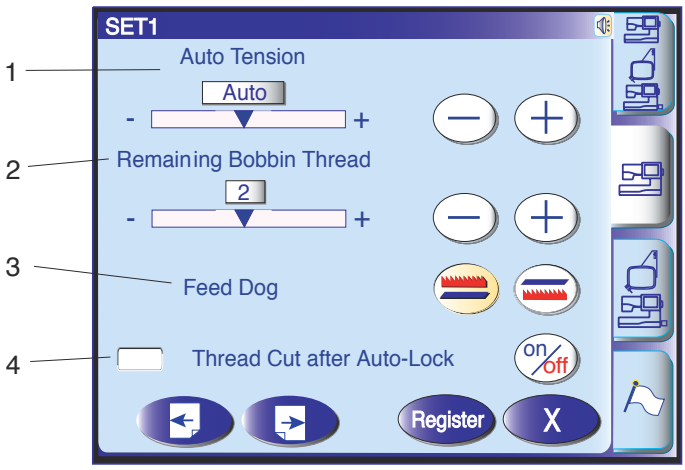


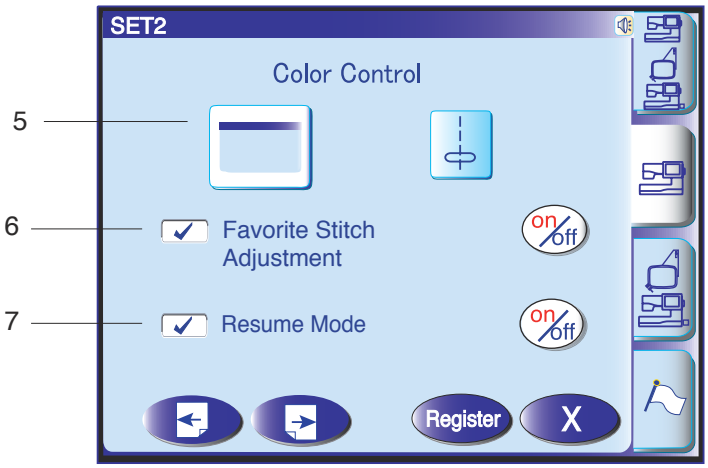
3 Formatting the memory

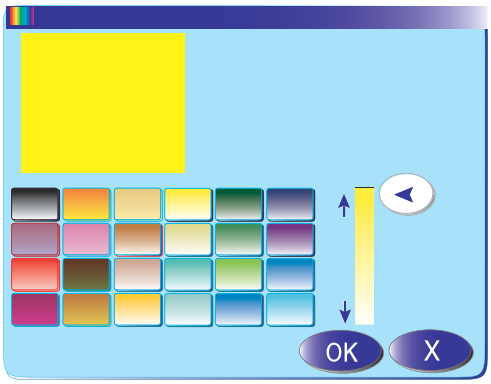
If the internal memory, ATA PC card or USB memory key does not function due to damage to the memory bank, you need to re-enable it by formatting the memory.

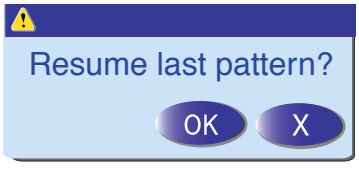
4 Resetting all to default

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









Ordinary sewing mode settings

1 Auto thread tension

The auto thread tension level can be adjusted with the "+" or "–" key.

2 Low bobbin thread warning

The low bobbin thread warning level can be adjusted with the "+" or "–" key.

3 Drop feed option

This option allows you to sew the decorative stitches with the feed dog lowered. Press the drop feed key to lower the feed dog. When you start the machine, the warning message will appear to advise you to raise the feed dog, however you can continue sewing with the feed dog lowered.
To raise the feed dog, return to the ordinary sewing setting mode and press the raise feed dog key then press the register key.

4 Auto thread cutting

In the following cases, the machine will trim the threads and stop automatically, if you check the box by pressing the "on/off" key.

1. Pressing the auto lock button
2. The auto lock stitch is programmed.
3. Sewing monogram
4. Sewing the pictograph patterns

5 Color options

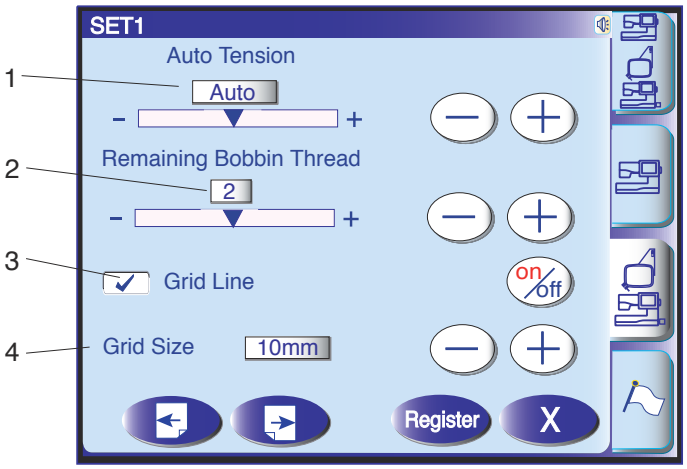
Press the key to select one of the 3 colors for the pattern selection keys, which will display in the color shown.
To change the screen background color, press the key to open the custom color window.
To select the hue, press one of the 24 color tiles.
To change the shade of the selected color, press and drag the slider up or down.

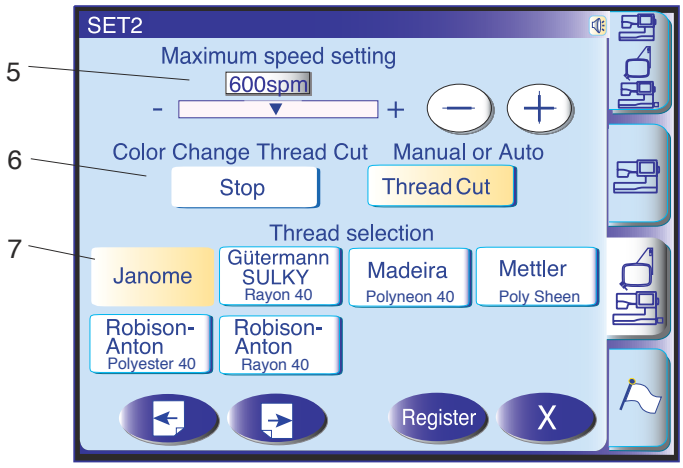
6 Favorite stitch adjustment on/off

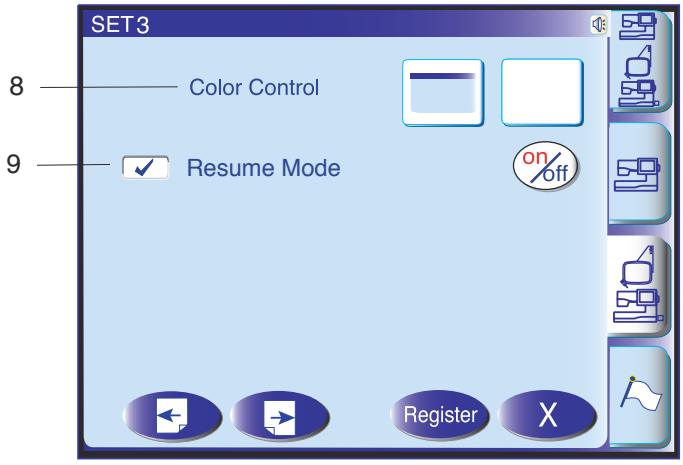
If you wish to save the altered settings for the utility stitches for the future use, press the key to check the box on.

7 Resume Mode

When Resume Mode is enabled, the last pattern sewn before turning the power off will be resumed when the power is turned on again.
To enable Resume Mode, press the on/off key to check the box on.
When you turn the power on, the confirmation window will open.
Press the OK key to resume the last sewn pattern.







Embroidery mode settings

1 Auto thread tension
The auto thread tension level can be adjusted with the “+” or “–“ key.

2 Low bobbin thread warning
The low bobbin thread warning level can be adjusted with the “+” or “–“ key.

3 Grid on/off
To show the grid, press the on/off key to check the box. To hide the grid, press the on/off key again to uncheck the box.

4 Grid size
The grid size can be changed by pressing the “+” or “–“ key.

5 Embroidery maximum speed
The maximum sewing speed can be changed from 400 to 800 spm for embroidery sewing by pressing the “+” or “–“ key.

NOTE:
Reduce the sewing speed when sewing patterns with narrow zigzag stitches that tend to distort at high speed.

6 Auto thread cutting
The machine will trim the threads and stop automatically to allow you to change the thread to the next color.

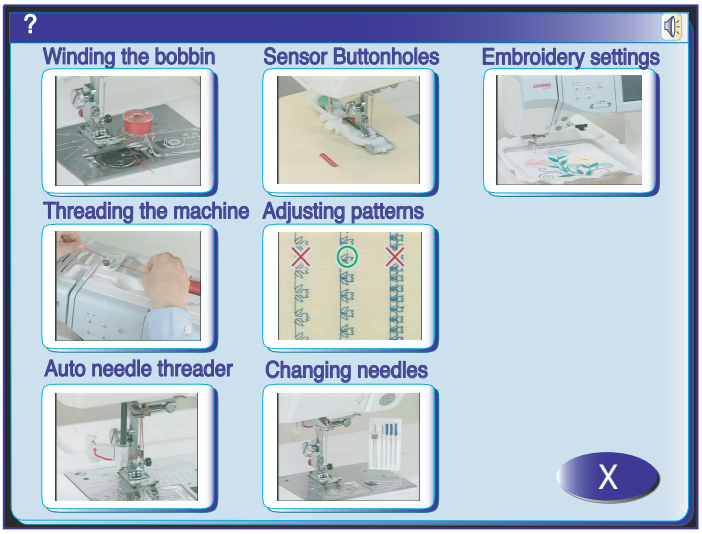
7 Thread selection
There are five brands of embroidery thread to choose from. Press the key of the thread you wish to use. The color code of the selected brand will be shown on the color/part key along with the name of the color.

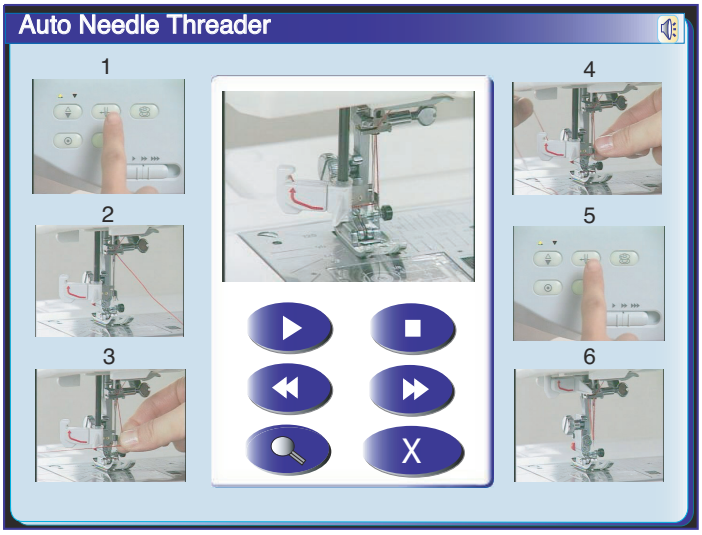
8 Color options
Press the key to select one of the 3 colors for the pattern selection keys, which will display in the color shown.
To change the screen background color, press the key to open the custom color window.
Refer to page 22.

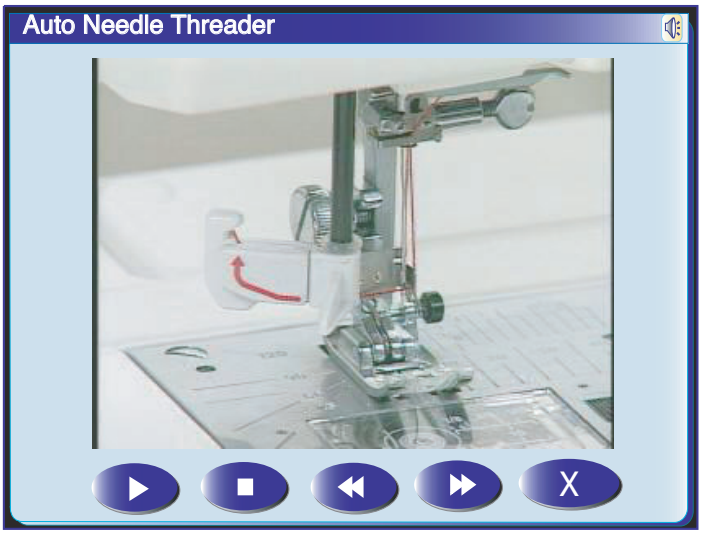
9 Resume Mode
When Resume Mode is enabled, the last pattern sewn before turning the power off will be resumed when the power is turned on again.
To enable Resume Mode, press the on/off key to check the box on.
When you turn the power on, the confirmation window will open.
Press the OK key to resume the last sewn pattern.

Language Selection (Flag mode)
You can select one of the following 10 languages by pressing the corresponding key.

1	English	2	French	3	Spanish
4	Italian	5	Dutch	6	German
7	Portuguese	8	Swedish	9	Russian
10	Finnish				







On-screen Help Movie

Press the help key to open the help movie menu. You can view 7 topics of essential operations of the machine.

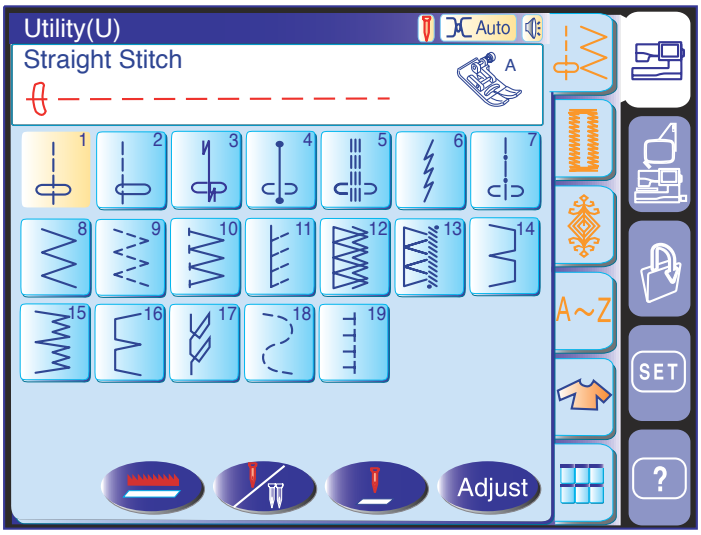
Select the help topic you wish to view by pressing the thumbnail, and the movie window will open.

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

Pressing the full screen key enlarges the movie window to full screen.

Press the exit key X to close the current window.

1



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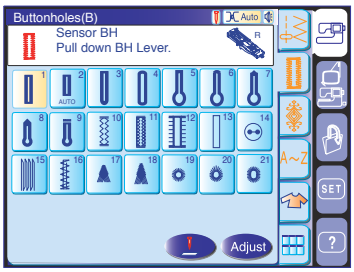

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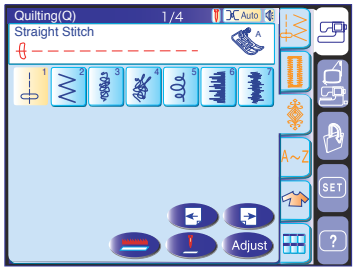

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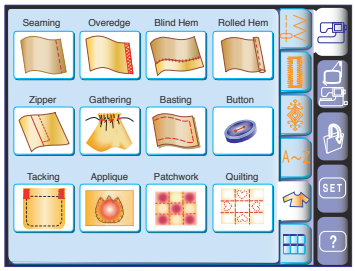
5



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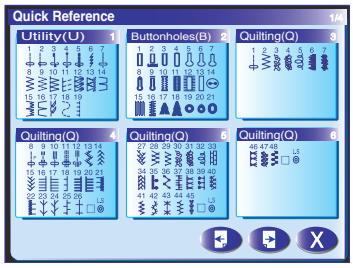
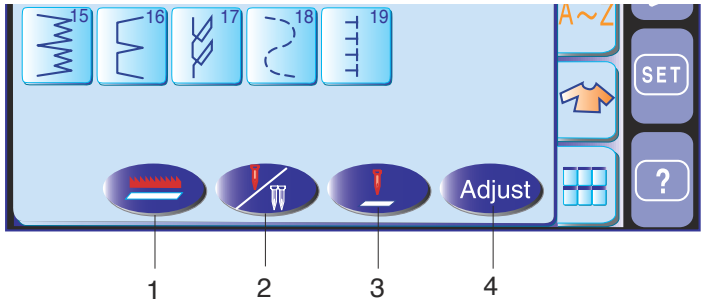




ORDINARY SEWING MODE

The stitches in the ordinary sewing mode are classified in 6 groups.
Press one of the tabs to select the group.

NOTE:
In this manual, pattern number refers initial letter for each groups or categories.
For example pattern #15 in the buttonholes and specialty stitches is referred as pattern B17.

1 Utility stitches (U)

You can select the 19 utility stitches for seaming, overcastting, blind hemming, basting and shell tucking.

2 Buttonholes and specialty stitches (B)

There are 13 styles of buttonholes, button sewing stitch, darning, tacking, 2 types of fly stitches and 3 types of eyelets available in this section.

3 Decorative stitches

This group consists of 5 categories, i.e. (Q) patchwork/ quilting, (H) heirloom stitches/cross stitches, (S) decorative satin stitches, (D) decorative stitches and (P) pictograph stitches.
These stitches and patterns are programmable.

4 Monogramming

You can sew letterings as well as combination of characters and symbol patterns.

5 Sewing application

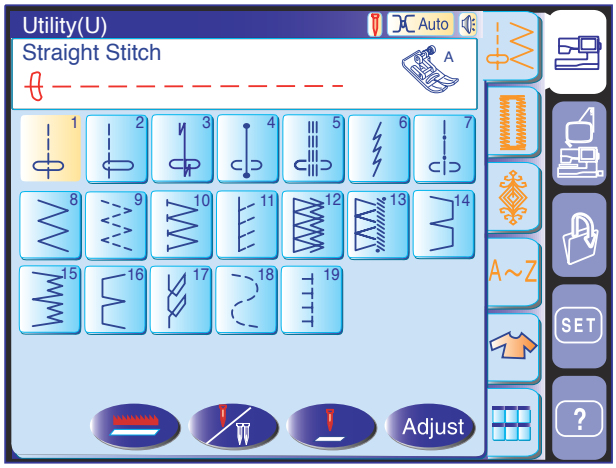
You can select the proper stitch for a specific sewing project from the designated stitches in this group.

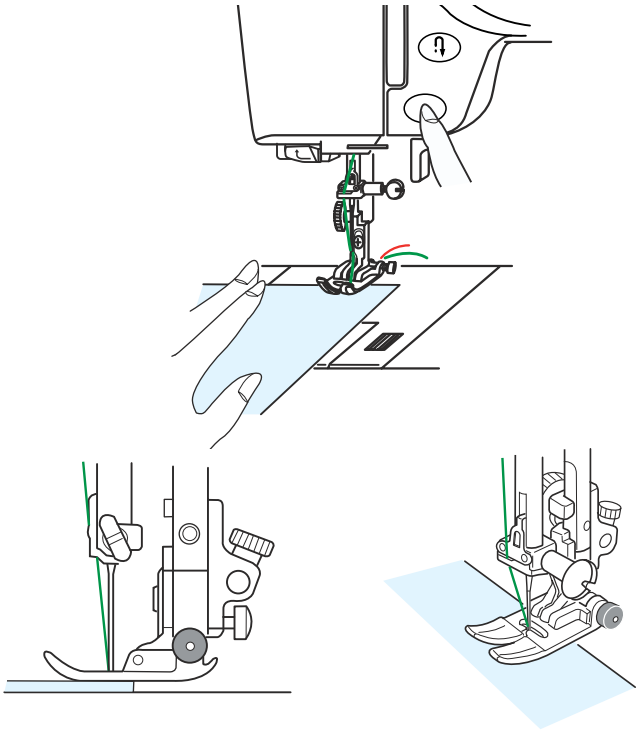
6 Quick menu (Quick Reference)

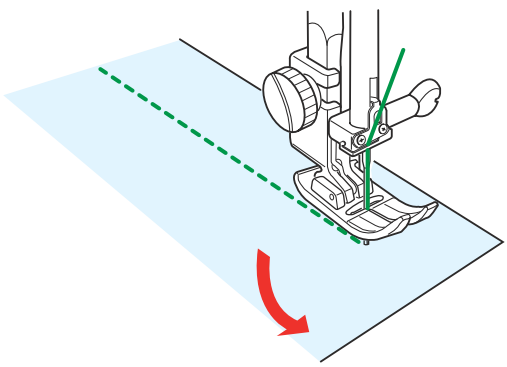
You can select the desired stitch from the categorized stitch list. This function is extremely useful when selecting decorative stitches, which extend over 7 pages.

Function keys

1 **Drop feed key:** To drop or raise the feed dogs.
2 **Twin needle key:** To set the stitch width for twin needle sewing. The key will be grayed out if the selected stitch is not suitable for twin needle sewing.
3 **Needle position key:** To set the needle position, up or down when the machine stops.
4 **Adjust key:** To open the manual setting windows for altering the stitch settings.







Utility Stitches

Straight stitches

Patterns U1 to U6 are straight stitches for seaming.
Press the pattern selection key of the desired stitch.

Starting to sew

Raise the presser foot and position the fabric next to a seam guideline on the needle plate. Lower the needle to the point where you want to start.
Pull the needle and bobbin threads towards the rear.

Press the start/stop button or foot control. Gently guide the fabric along the seam guideline letting the fabric feed naturally.

Sewing from the edge of thick fabric

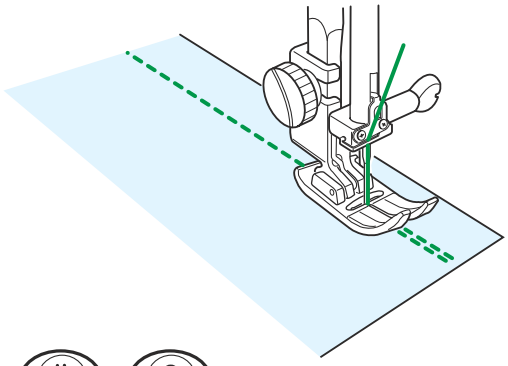
The black button on the zigzag foot locks the foot in the horizontal position.
This is helpful when you start sewing at the extreme edge of thick fabrics or sewing across a hem.

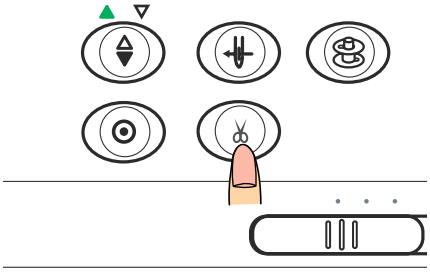
Lower the needle into the fabric at the point where you wish to start sewing.
Lower the foot while pushing in the black button. The foot will be locked in the horizontal position to avoid slipping.

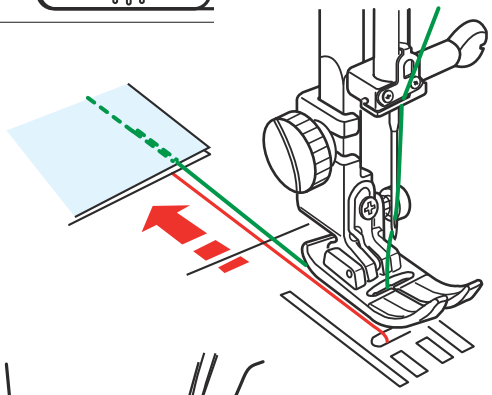
Changing sewing direction:

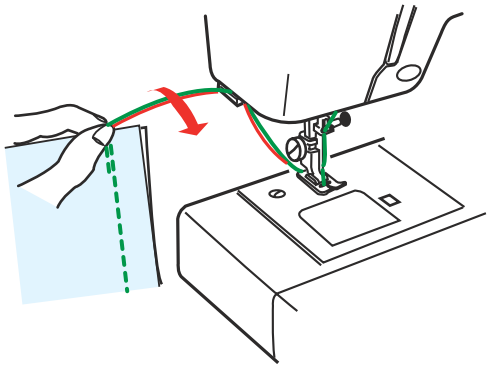
Stop the machine and bring the needle down into the fabrics by pressing the needle up/down button.
Raise the presser foot.
Pivot the fabric around the needle to change the sewing direction as desired.

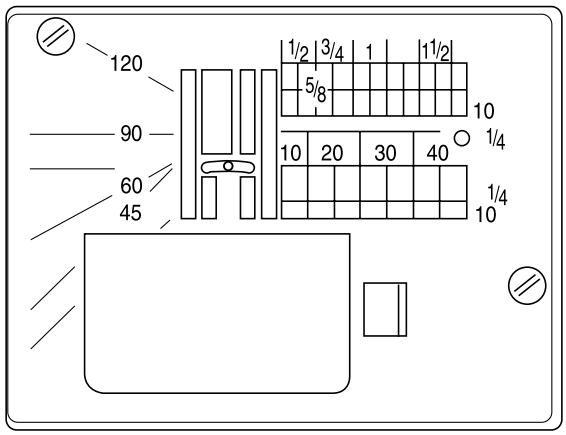
Lower the presser foot and start sewing in a new direction.











Securing seam

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.

Press the reverse button once when sewing the lock-a-matic stitch (pattern U3) or locking stitch (pattern U4) so the machine will lock the stitches off and stop automatically.

Cutting threads

After finishing sewing, press the thread cutter button to cut the threads.

NOTES:
The thread cutter button does not function when the presser foot is raised.
To start the next seam, it is recommended to bring the bobbin thread up and pull both needle and bobbin threads to the back under the presser foot.
Use the thread cutter on the face plate to cut the 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.

Using the seam guide lines

The seam guides on the needle plate and hook cover help you to 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

You can easily seam patchwork pieces at the desired angle without marking, by using the unique angle scales on the needle plate.
The angle scales are marked at 45, 60, 90 and 120 degrees.

Variety of straight stitches

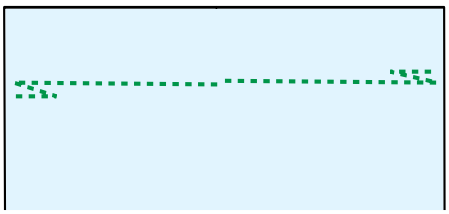
U1

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

U2

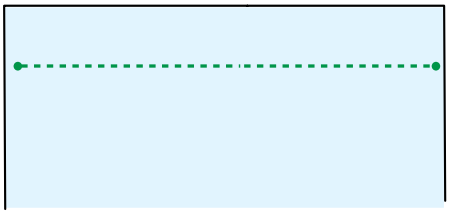
U2 Straight stitch in left needle position
Use this stitch to seam the fabrics along the edge.

U3



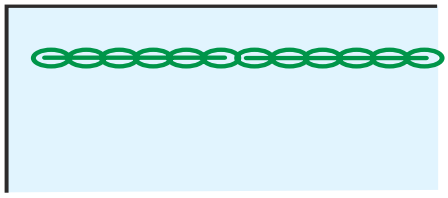
U3 Lock-a-matic stitch
Use this stitch to secure the beginning and the end of a seam with backstitching.
When you reach the end of the seam, press the reverse button once.
The machine will sew four reverse stitches, four forward stitches, and then stop sewing automatically.

U4



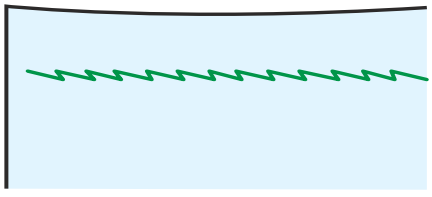
U4 Locking stitch
This unique stitch is used where an invisible locking stitch is needed.
Lower the needle close to the front edge of the fabric.
The machine will sew several locking stitches in place and continue sewing forward.
When you press the reverse button at the end of the seam, the machine will sew several locking stitches in place, then stop sewing automatically.

U5

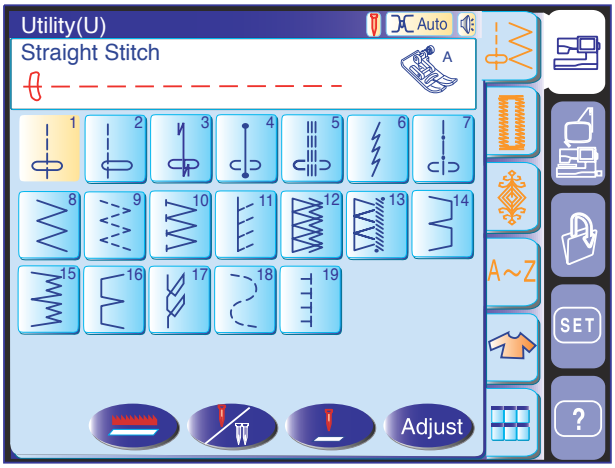


U5 Triple stretch stitch
This strong, durable stitch is recommended for areas where both elasticity and strength are needed to ensure comfort and durability.
Use it to reinforce areas such as crotch and armhole seams.
Also use it when constructing items such as backpacks for extra strength.

U6



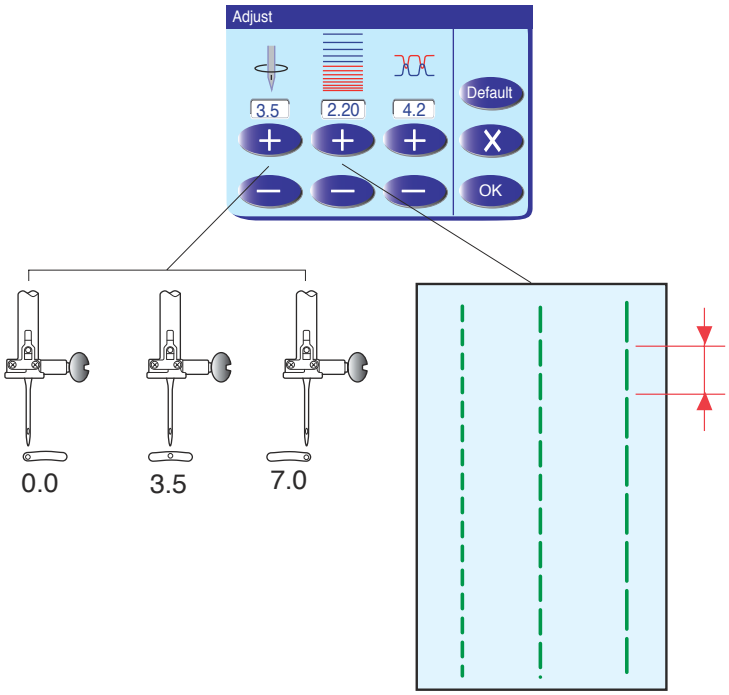
U6 Stretch stitch
This is a narrow stretch stitch designed to eliminate puckering on knit fabrics and bias seams, while permitting the seam to be pressed completely open flat.



Manual stitch settings

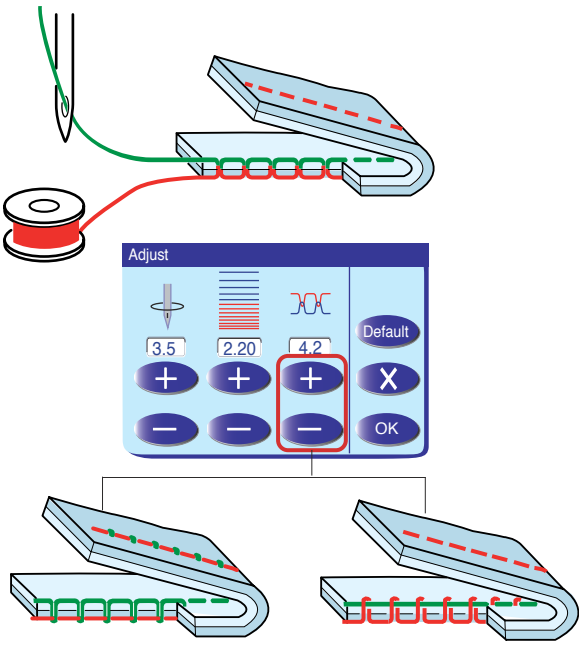
When you press the adjust key, the screen shows the manual setting window.

You can alter the needle drop position of the straight stitches, stitch length and needle thread tension.



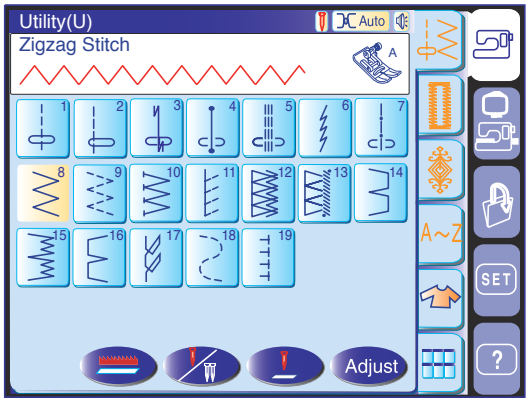
Press the “+” key to move the needle drop position to the right.
Press the “–” key to move the needle drop position to the left.

Press the “+” or “–“ key in the middle to alter the stitch length.



This machine is equipped with the automatic thread tension control, however you may need to manually adjust the tension balance depending on the sewing condition, or you can fine-tune the thread tension to suit your preference.

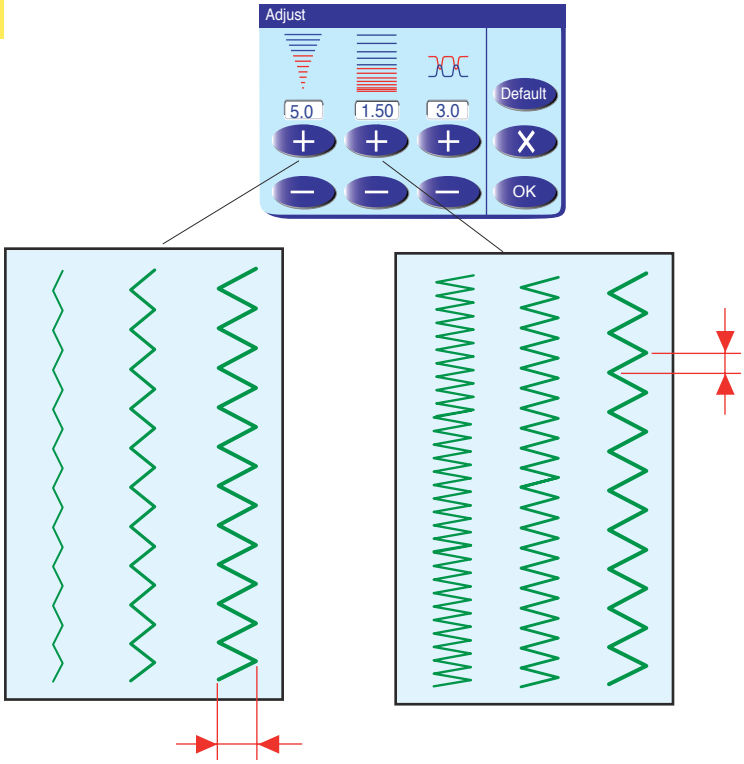
Press the “+” key to increase the tension.
Press the “–” key to decease the tension.



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 appliqué.



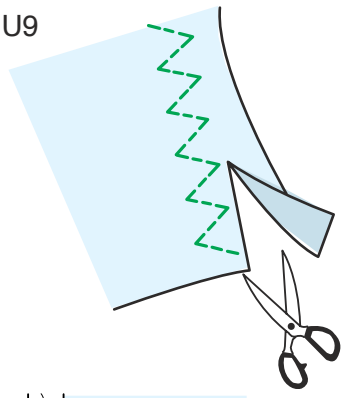
Manual stitch settings

When you press the adjust key, the screen shows the manual setting window.

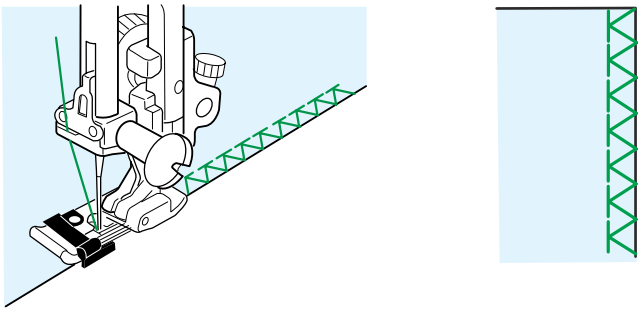
You can alter the stitch width (or needle drop position of the straight stitches), stitch length and needle thread tension.

Press the “+” or “–“ key below the property that you wish to change.

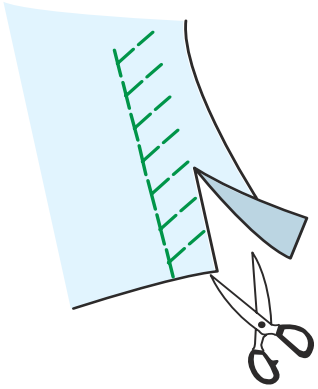
U9



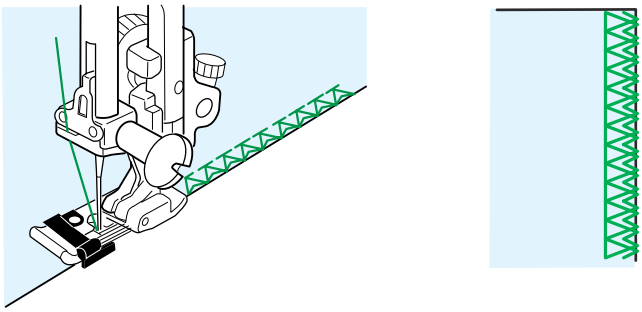
U10



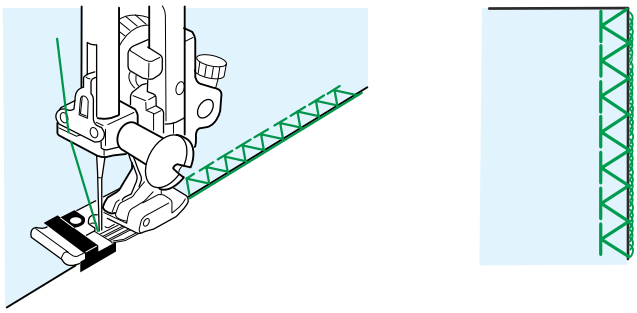
U11



U12



U13



Variety of overcasting stitches

U9 Multiple zigzag stitch (tricot 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.

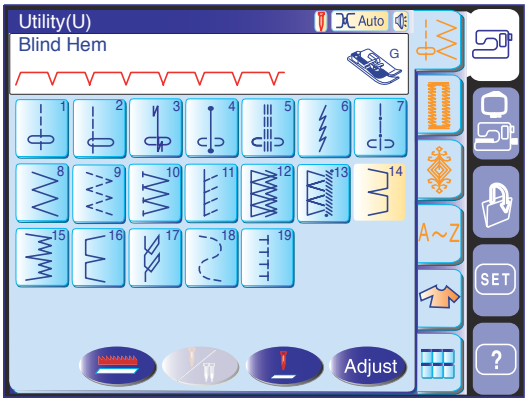
U10 Overcasting stitch: Overedge foot C
This stitch can be used to simultaneously seam and overcast edges of fabrics.
Use this stitch when you do not need to open seams flat.
Place the fabric edge next to the guide of the foot and then sew.

U11 Knit stitch: Zigzag foot A
This stitch is recommended for sewing such fabrics as synthetic knits and stretch velour as it provides the greatest amount of elasticity and strength.
Sew along the fabric edge leaving an adequate seam allowance.
After sewing, trim the seam allowance close to the stitches.

U12 Double overedge stitch: Overedge foot C
This stitch is excellent for fabrics that tend to fray extensively such as linens and gabardines.
Two rows of zigzag stitches are simultaneously sewn over the edge to insure that the fabric will not ravel.

U13 Overlock stitch: Ovrecasting foot M
This stitch finishes the edges of fabric similar to a commercial overlocking machine for a professional look.

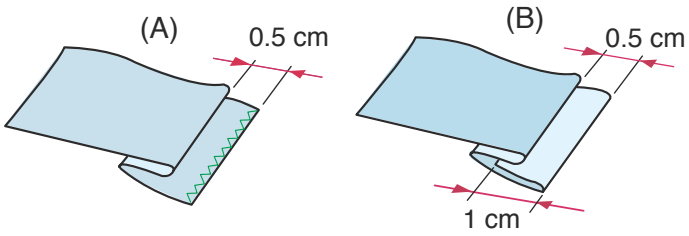
CAUTION:
When you use overedge foot C or overcasting foot M, you must set the zigzag width at 5.0 or wider to prevent the needle from hitting the foot wires.



Blind hemming

Select pattern U14 for woven fabrics or pattern U15 for elastic fabrics.

NOTE:
The stitch width of the patterns U14 and U15 cannot be changed, but the needle drop position will move.

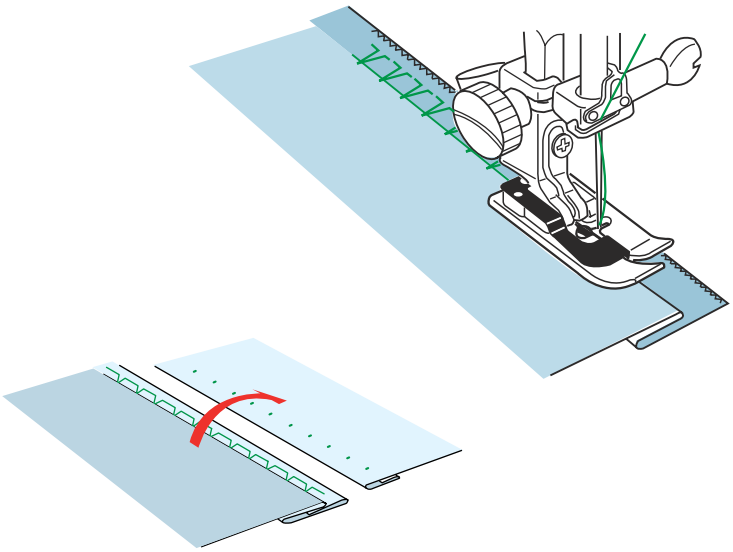


How to fold the fabric

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

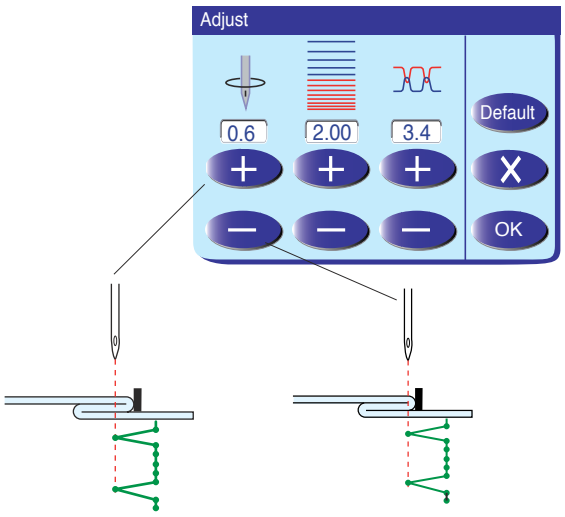
(A) Medium to heavy fabrics: The raw edge should be overcastted.

(B) Fine fabrics: Fold the raw edge 1 cm (1/2").



To sew

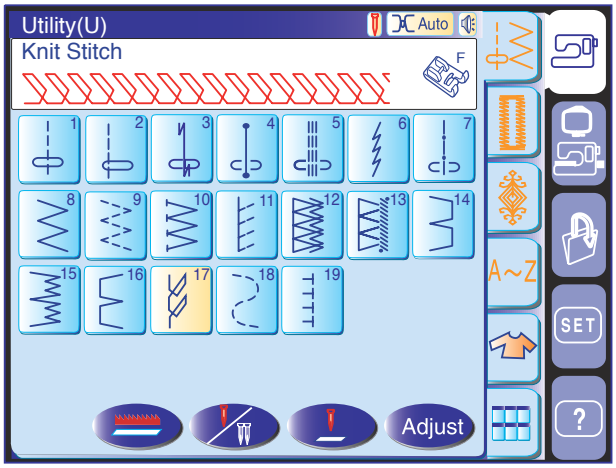
Position the fabric so that the fold comes to the left side of the guide on the foot. Lower the presser foot.
Adjust the position of the needle drop if necessary.
Sew guiding the fold along the guide.
After sewing is finished, open fabric flat.
The seam on the right side of the fabric is almost invisible.



Adjusting the needle drop position

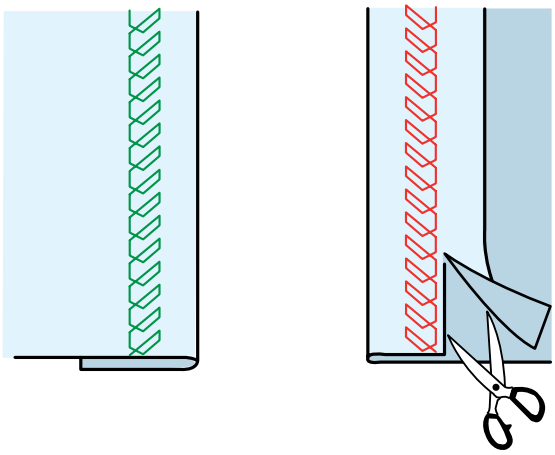
Press the adjust key to open the manual setting window.
Press the "+" key to move the needle drop positions to the left.
Press the "–" key to move the needle drop positions to the right.
Press the OK key to register the settings.
The needle should just pierce the folded edge when it comes over to the left side.

NOTE:
The needle drop position will move, while the stitch width remains consistent.



Visible hemming

Select pattern U17.



Fold and press a single hem. Place the fabric with the right side up.

Sew along the fold at the desired depth.

Trim an excess on the wrong side.

Buttonholes and Specialty Stitches

Variety of buttonholes

B1

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

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 you memorize the size to sew buttonholes of the same size.

B3

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

B4

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

B5

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

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

B7

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

B8

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

B9

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

B10

B10 Stretch buttonhole
This buttonhole can be used on stretch fabrics. It can be used as a decorative buttonhole.

B11

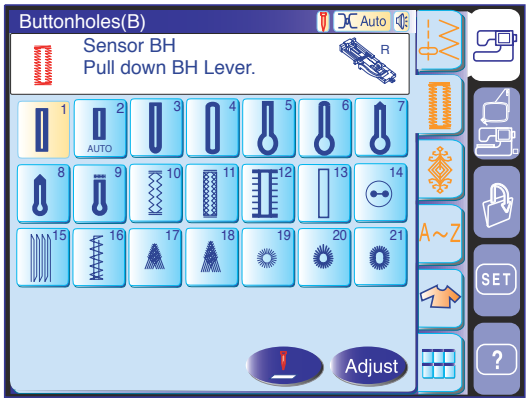
B11 Knit Buttonhole
This buttonhole is suitable for knit fabrics. It can also be used as a decorative buttonhole.

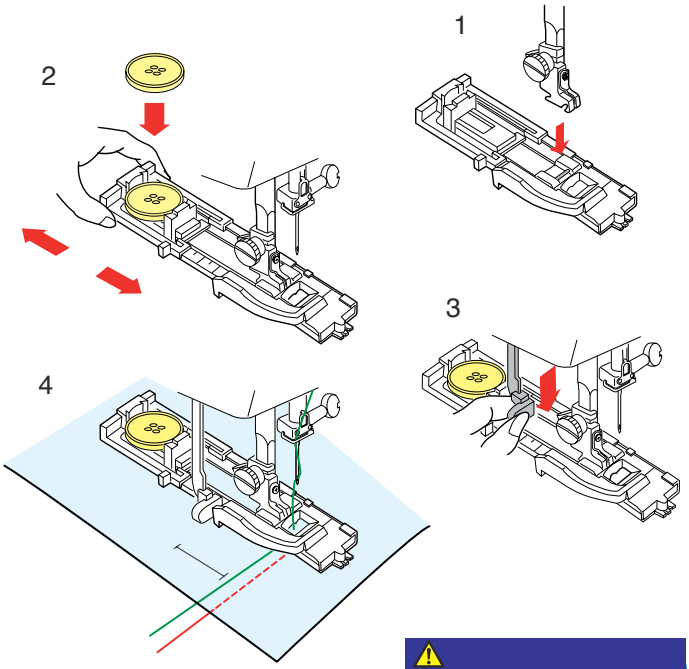
B12

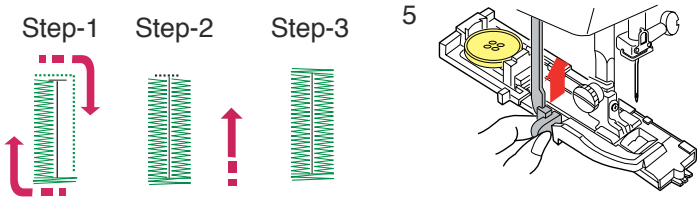
B12 Antique buttonhole
This buttonhole looks like the heirloom stitch. It has an attractive handmade appearance and makes a nice decorative buttonhole.

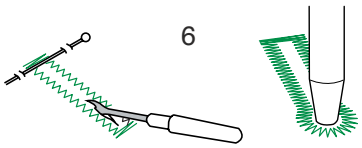
B13

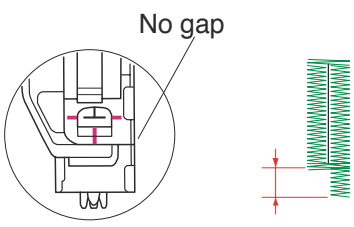
B13 Welted buttonhole
This is a template pattern for the hand sewn welted (bound) buttonhole.











Sensor (Square) buttonhole

Select pattern B1.

To sew

1 Attach the automatic buttonhole foot R snapping the pin into the groove of the foot holder. Raise the presser foot.

2 Pull the button holder to the rear, and place the button in it. Push it tightly against the button.

NOTES:
The buttonhole size is automatically set by placing a button into the button holder in the rear of the automatic buttonhole foot R.
The button holder of the foot takes a button size of up to 2.5 cm (1") in diameter.
If the button is extremely thick, make a test buttonhole on an extra piece of the fabric. If it is difficult to fit the button through the test buttonhole, you can lengthen the buttonhole by pulling the button holder back a little. The length of the buttonhole will be increased.

3 Pull the buttonhole lever down as far as it will go.

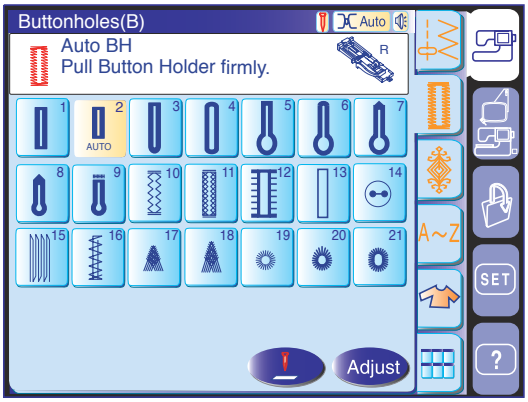
4 Press the start/stop button to sew the buttonhole.

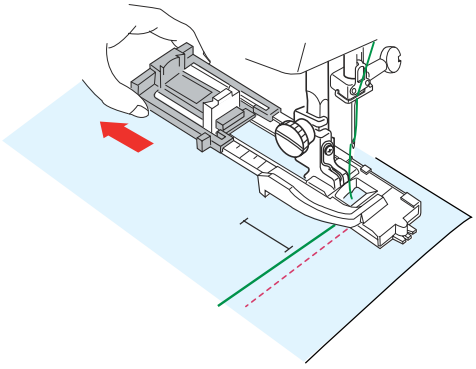
NOTE:
A warning message will appear and the machine will stop automatically if you start to sew a buttonhole without pulling down the buttonhole lever.
Press the exit key and pull down the buttonhole lever to restart.

5 When buttonhole sewing is finished, push the buttonhole lever up as far as it will go.

6 Remove the fabric and place a pin just below the bartack at each end to prevent accidentally cutting threads. Cut the opening with the seam ripper. Use an eyelet puncher to open a keyhole buttonhole.

NOTE:
Make sure there is no gap between the slider and front stopper, otherwise the left and right lengths will be different.

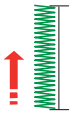


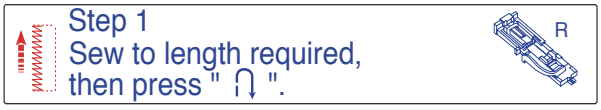


Automatic (square) buttonhole

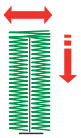
Select pattern B2.
Pull the button holder all the way out.
Mark the buttonhole position on the fabric. Insert the fabric under the foot. Press the up/down needle button twice. Remove the fabric to the left to draw the needle thread through the hole of the foot.
Insert the garment under the foot, and lower the needle at the starting point.
Then lower the automatic buttonhole foot R.

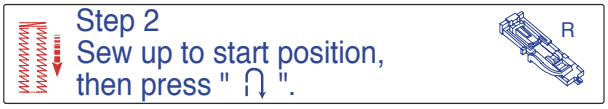
NOTES:
You do not need to pull down the buttonhole lever.
If you wish to change the buttonhole width and stitch density press the adjust key.
If you wish to sew a buttonhole longer than the size permitted by the automatic buttonhole foot R, use satin stitch foot F.



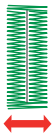


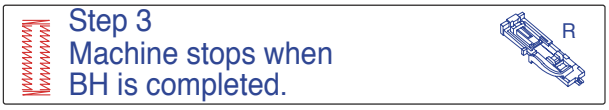
Step-1
Sew up the left side until the end of the buttonhole mark. Then press the reverse button.



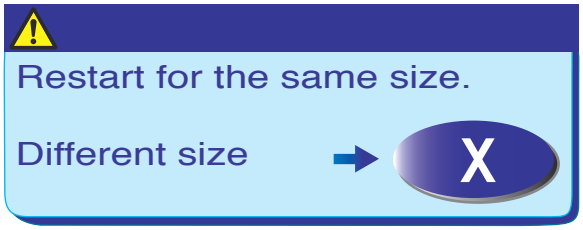


Step-2
Depress the foot control. The machine will automatically tack and sew down the right side of the buttonhole.
Stop the machine when you are directly opposite the starting point.
Press the reverse button.





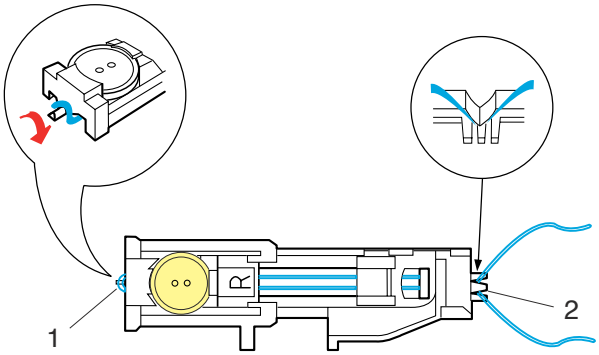
Step-3
Keep the foot control depressed. The machine will bartack, lock the stitches and automatically stop when the buttonhole is completed.

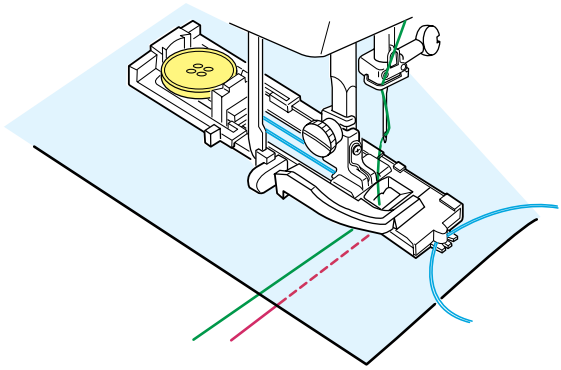


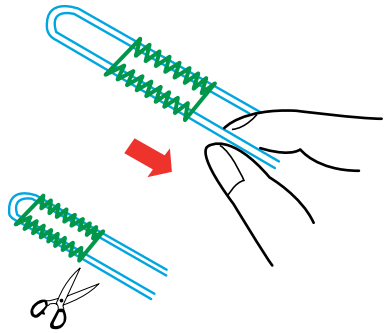
To make the next buttonhole, position the fabric and step down on the foot control.

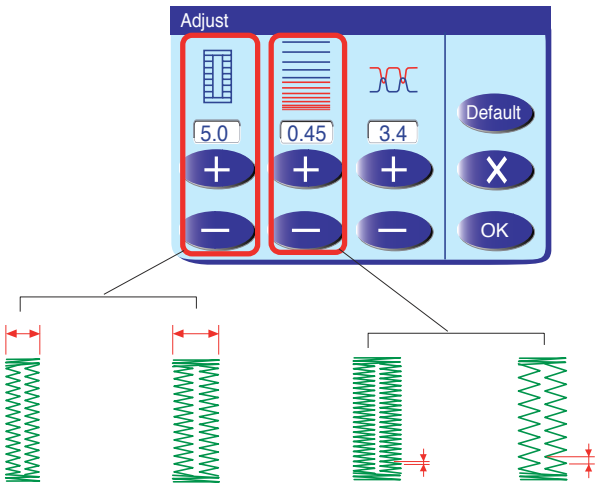
To sew the next button hole in a different size press the exit key X . The machine will sew another buttonhole identical to the first one each time you step down on the foot control.

NOTE:
To cut the buttonhole opening, refer to the instructions on the previous page.









Corded buttonhole

To sew the corded buttonhole, follow the same procedure as for the sensor buttonhole; refer to the instructions on pages 33.

Select the pattern B1.

With the Automatic buttonhole foot R raised, hook the filler cord on the spur on the back of the buttonhole foot.
Bring the ends of cord toward you under the buttonhole foot clearing the front end.
Hook the ends of the filler cord into the Forks on the front of the automatic buttonhole foot R, to hold them tight.

1 Spur
2 Forks

Lower the needle into the garment where the buttonhole will start and lower the foot.
Press the start/stop button or foot control to sew the buttonhole.
Each side of the buttonhole and the bartacks will be sewn over the cord. The machine stops automatically when finished.

Remove the fabric from the machine and cut the sewing threads only.
Pull the left end of the filler cord to tighten.
Thread the end of the cord through a darning needle and draw it to the wrong side of the fabric and cut.

NOTES:
Set the stitch width in accordance with the thickness of the cord used.
To cut the buttonhole opening, refer to the instructions on page 33.

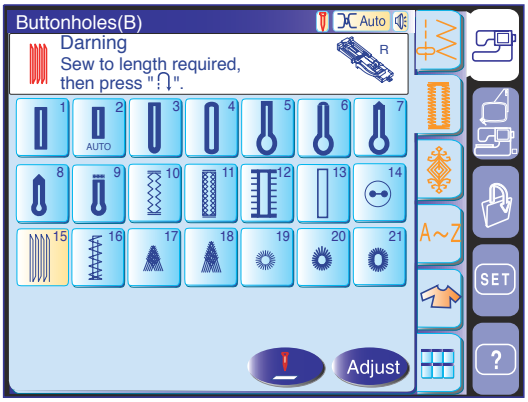
Manual settings

Altering buttonhole width

Press the adjust key and the
manual setting window will open.
Press the “+” key to increase the buttonhole width.
Press the “–“ key to decrease the buttonhole width.
Press the OK key to register the settings.

Altering buttonhole stitch density

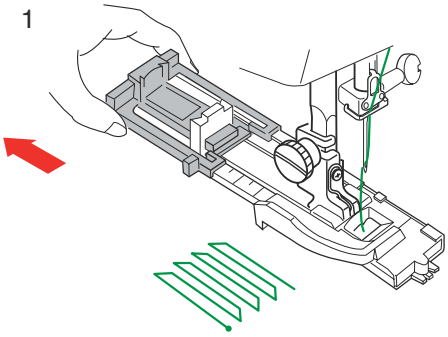
Press the“+” key to make the buttonhole stitches less dense.
Press the “–“ key to make the buttonhole stitches denser.



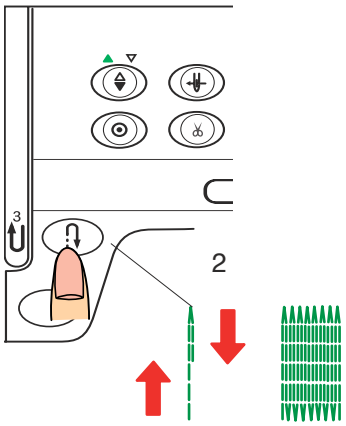
Darning

The machine automatically darns rips and holes. Large and small holes can be mended quickly and easily with this unique stitch.

Select pattern B15.

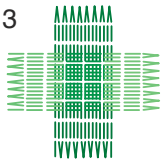


1. Attach the automatic buttonhole foot R and pull the button holder all the way out.

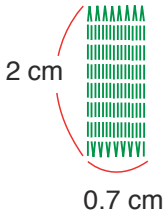


To sew

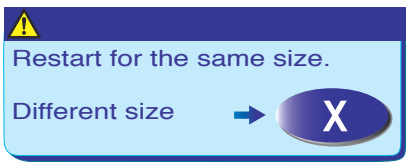
2. Depress the foot control and sew to the required length, then press the reverse button. The darning length has now been determined.
   Depress the foot control and continue sewing until the machine stops automatically.



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

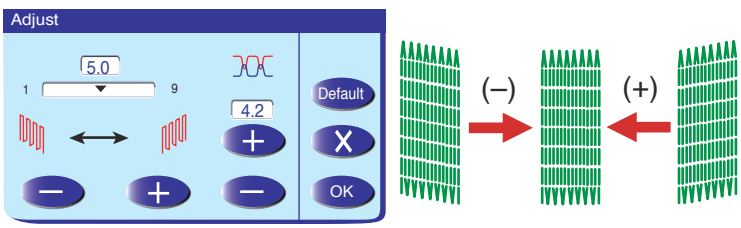


NOTE:
The maximum length of darning is 2 cm (3/4") and the maximum width is 0.7 cm (1/4").



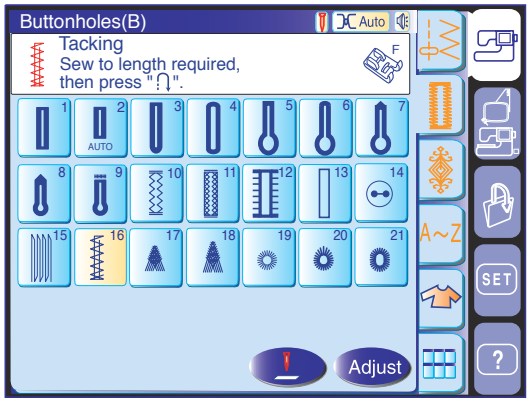
To sew the same size darning

Simply depress the foot control to sew another darning in the same size.
To sew the next darn in a different size, press the exit X key.



To adjust the evenness of darning stitches:

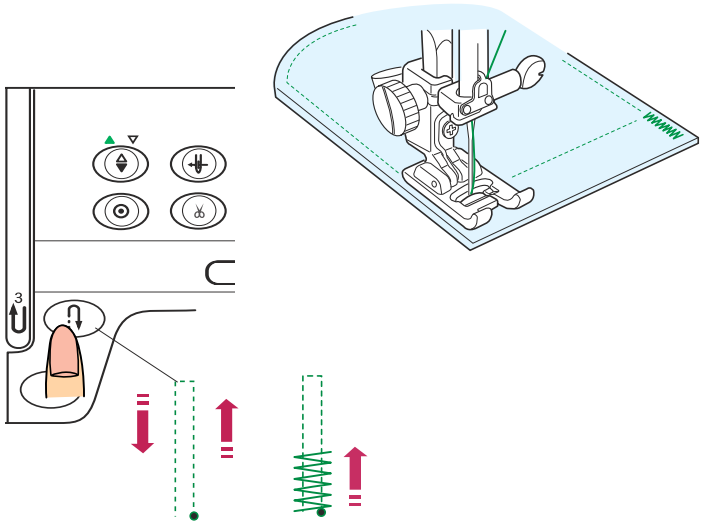
You can correct the unevenness of darning by pressing the "–" or"+" key.
If the left corner is lower than the right side, press the "+" key to correct it, and vice versa.



Tacking

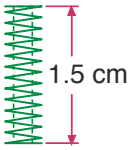
Tacking is used to reinforce pockets, crotches and belt carriers where extra strength is needed.

Select pattern B16 and attach the satin stitch foot F.

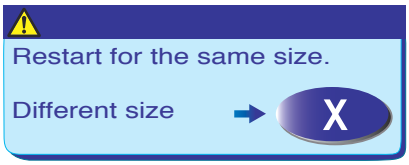


To sew

Depress the foot control and sew to the required length, then press the reverse button. The tacking length has now been determined.



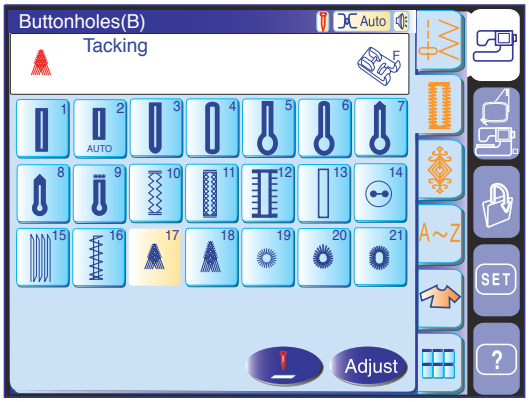
NOTE:
The maximum length of tacking is 1.5 cm (5/8”).



To sew the same size tack

To sew another tack in the same size, simply depress the foot control until the machine stops automatically.

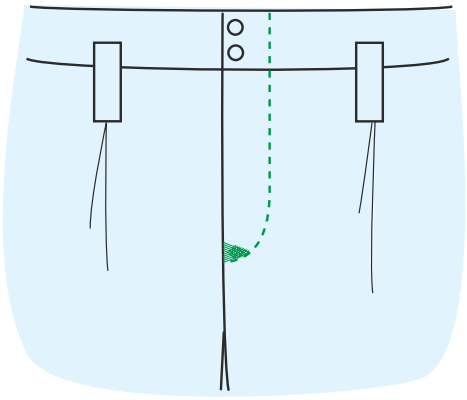
To sew the next tack in a different size, press the exit X key.



Fly stitches (B17 and B18)

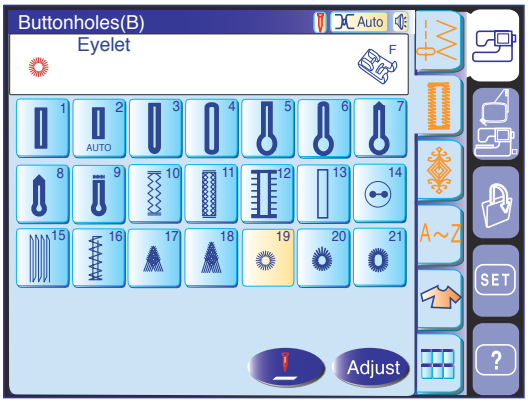
The fly stitch is a triangle tacking stitch for use at a zipper fly bottom and side pockets of men's pants.

Attach the satin stitch foot F.



To sew:

Place the garment under the foot and lower the needle at the bottom of the zipper fly.
Sew the stitch until the machine stops automatically.

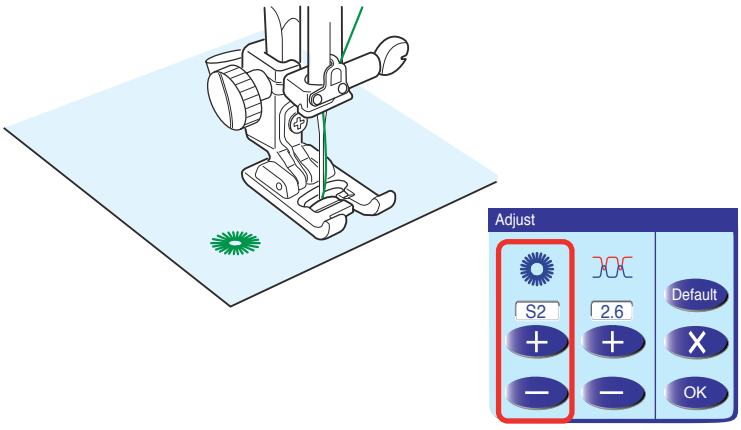


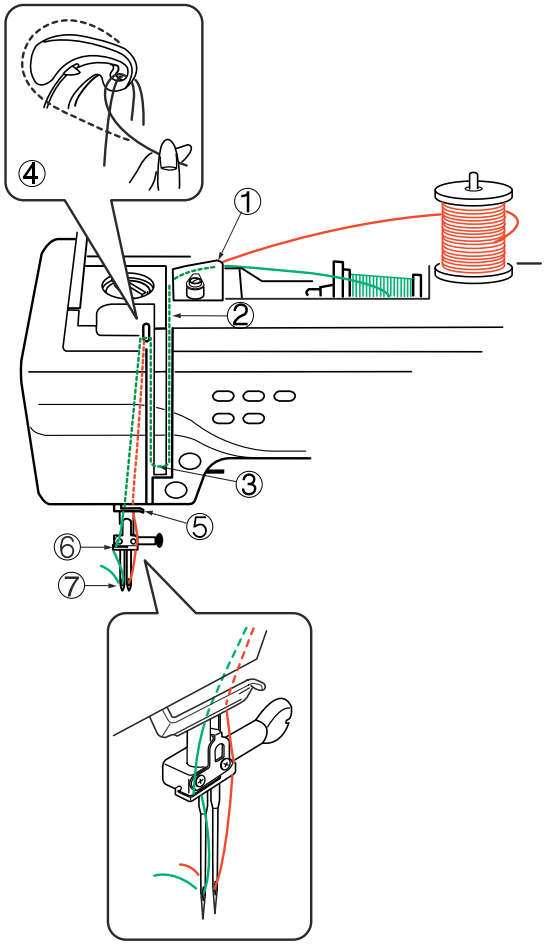
Eyelet

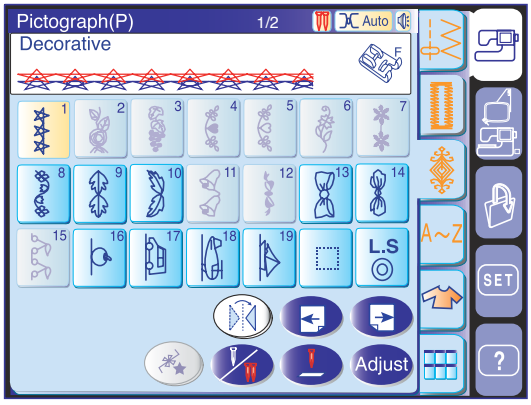
The Eyelet is used for belt holes etc.

Select the pattern B19, B20 or B21 and attach the satin stitch foot F.
Depress the foot control to sew. The machine will stop automatically when completed.

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.







Twin Needle Sewing

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

CAUTIONS:

Turn the power switch off before changing the needle.
Use the twin needle included in the standard accessories.

NOTE:

When you sew patterns with the twin needle, test the stitches first before you sew.
Use the zigzag foot A or satin stitch foot F for twin needle sewing.

Insert the extra spool pin and spool supporter. Then put a felt cushion and spool on it.
Draw both threads from the spools and pass them through the threading points from 1 to 5.
Make sure that the two strands of thread from the spools do not get tangled.

NOTES:

Make sure each thread winds off from the spools as shown.
Threading from points 1 to 5 is the same as for a single needle.

Slip one of the threads through the needle bar thread guide on the left, and the other one on the right.
Thread the needles from the front to back.

NOTES:

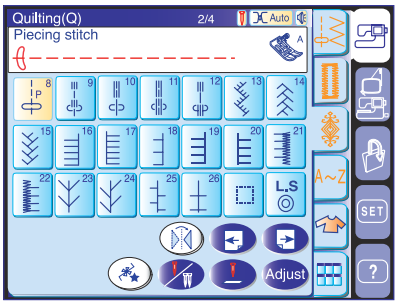
The Automatic needle threader cannot be used for the twin needle.
When changing the sewing direction, raise the needle and turn the fabric.

Select the pattern then press the twin needle key.
If the selected pattern is not suitable for twin needle sewing, the twin needle key will gray out and be disabled.

After the 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.

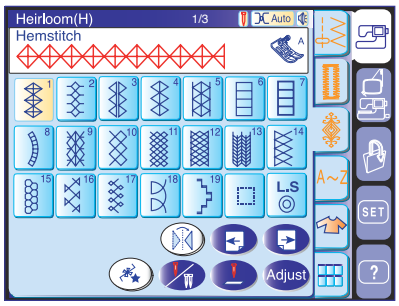
Decorative Stitches

The patterns in this section are programmable and you can make a pattern combination.

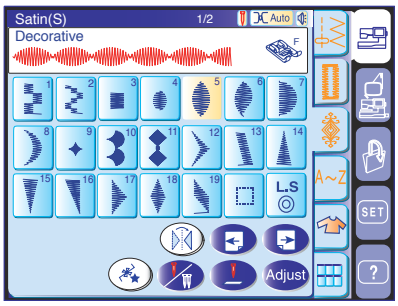


Patchwork and quilting stitches (Q)
There are 48 stitches in this group for patchwork, quilting and appliqué.

NOTE:
Patterns Q1 to Q7 are not programmable.

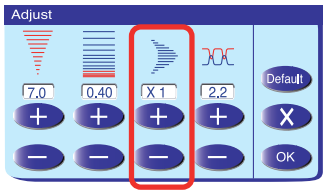


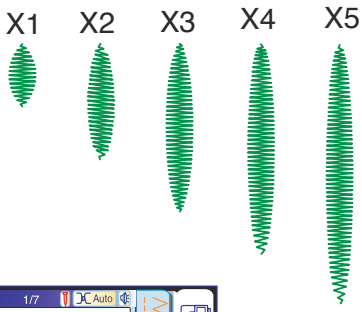
Heirloom stitches (H)
This group provides the heirloom stitches and cross stitches for craft sewing and home décor.

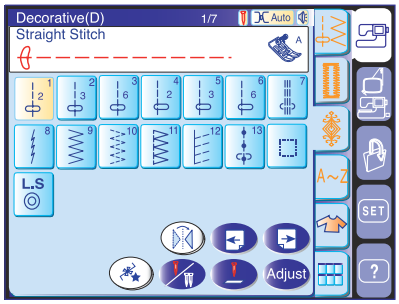


Decorative satin stitches (S)
The stitches in this group can be elongated up to 5 times of their original length while the stitch density remains the same.

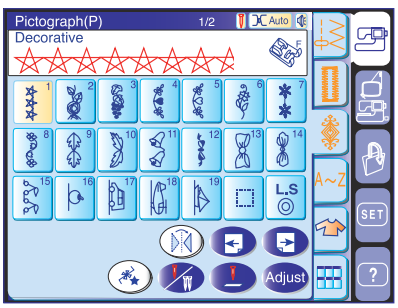
To elongate the stitch, press the adjust key to open the manual setting window.
Press the "+" key to increase the elongation ratio or press the "–" key to decrease the elongation ratio.
The stitch density and width can also be altered.
Press the OK key to register the elongation ratio.



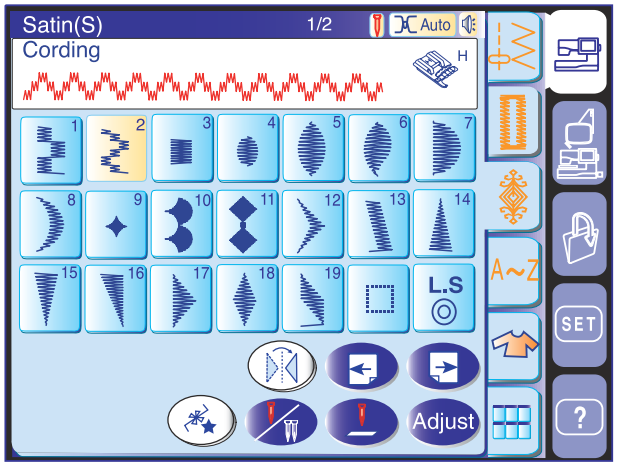




Decorative stitches (D)
Some utility stitches are included as programmable stitches in this group. The number beside the stitch image on the straight stitch key indicates stitch counts of a programmable unit.



Pictograph stitches (P)
There are 25 stitch patterns of seasonal motifs and cute designs for embellishing children's wear.

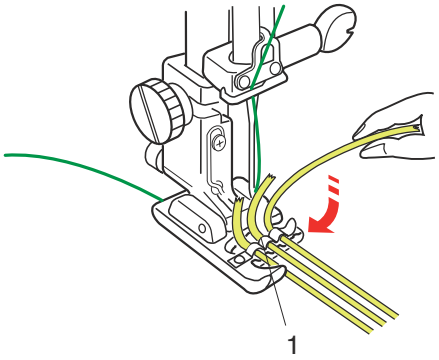


Cording

Use the cording foot H to sew over one or three strands of cording.
Knitting yarns, embroidery flosses, lace threads and fine wool tarns can be used for cording.

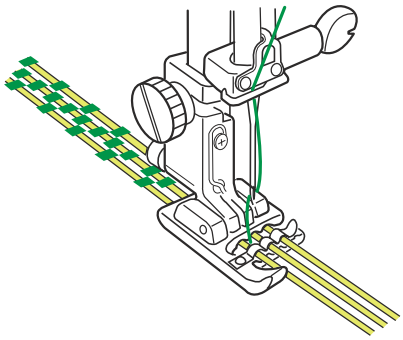
Attach the cording foot H.
Select pattern S2 for three strands cording.

NOTE:
Pattern U9 (triple zigzag stitch) can also be used.



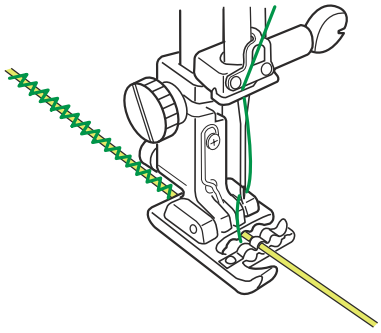
Insert three strands of cording under the spring on the foot. Make sure to pass each strand separately under the spring.

1 Spring

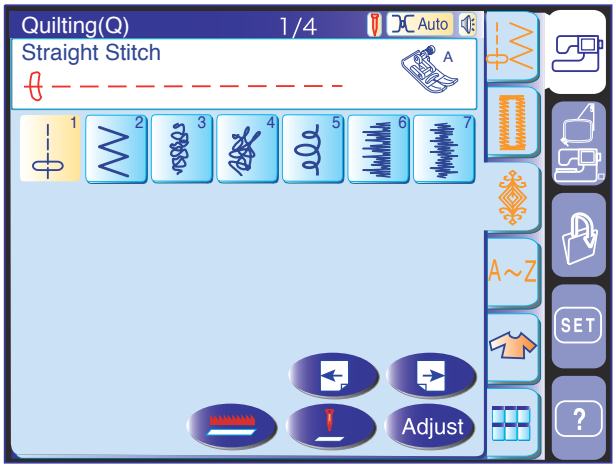


Pull 10 cm (4”) of strands under the foot and to the rear. The grooves on the bottom of the foot will hold cording in place while stitching over the cording.

Sew carefully over the cording while guiding the strands parallel and even.



For a single strand cording, insert a strand into the center groove on the foot.
Select pattern U4 (zigzag stitch) and adjust the stitch width in accordance to the thickness of the cording.

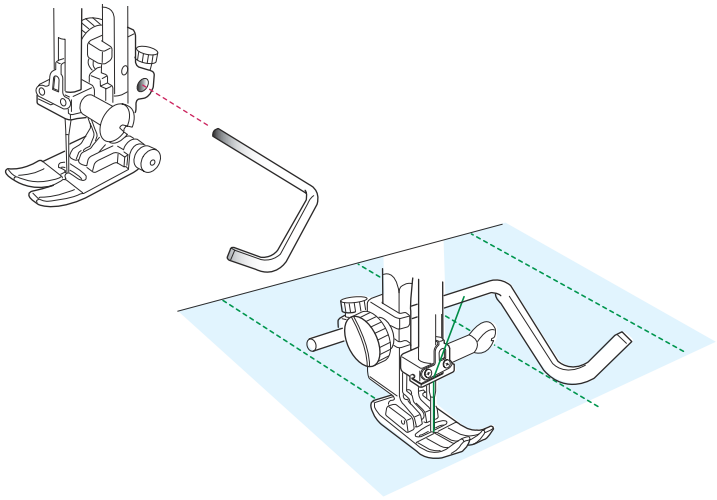


Patchwork and Quilting (Q)

There are 48 stitch patterns for patchwork and quilting in this group.
Patterns Q1 to Q7 on the first page are special stitches for quilting, grouped together to make use of the drop feed option.
The drop feed key is displayed in the pattern selection window, in place of the programming related keys.

Using the quilting guide bar

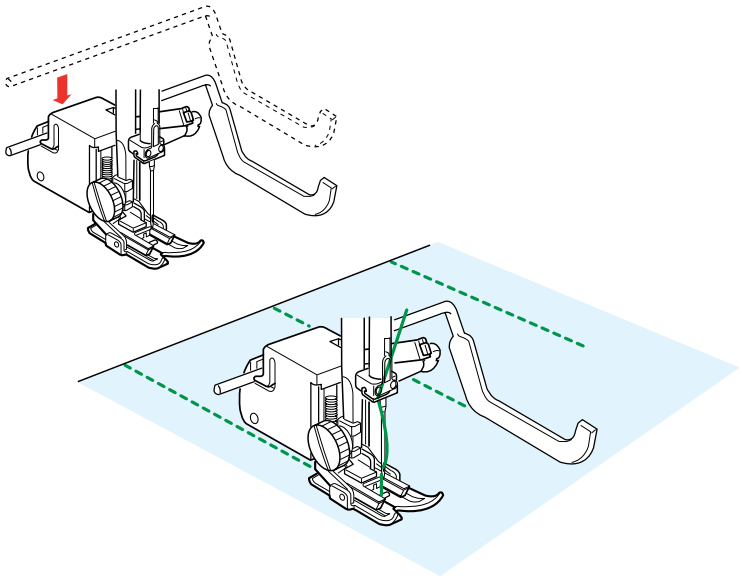
The quilting guide bar is helpful when sewing parallel, evenly spaced rows of stitching.
Two kinds of quilting guide bars are included in the standard accessories, one for use with the zigzag foot and the other is for even feed foot.



To attach the quilting guide bar for the zigzag foot:

Loosen the screw on the back of the foot holder and insert the quilting bar into the hole of the foot holder.

Set the quilting guide bar at the desired spacing, and retighten the screw.
Sew rows of stitching while tracing the previous row of stitching with the quilting guide bar.

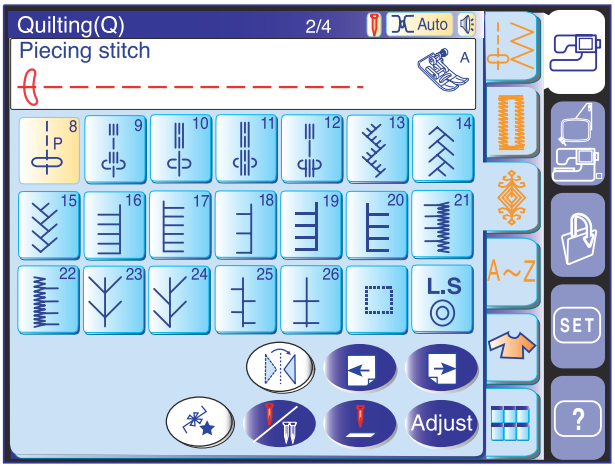


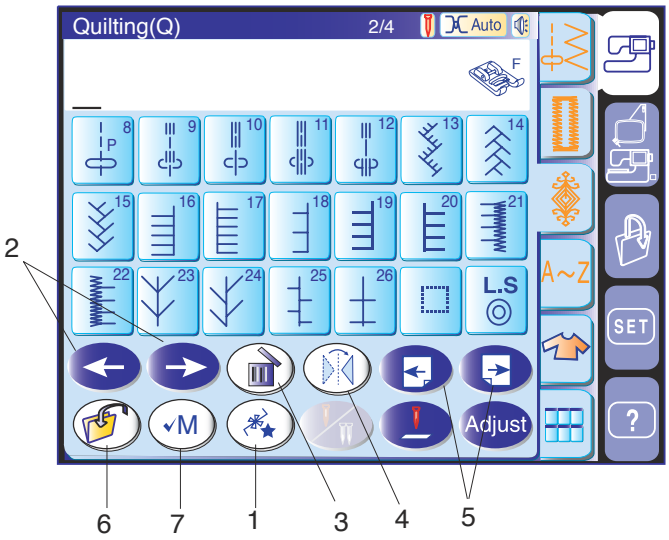
To attach the quilting guide bar for the even feed foot:

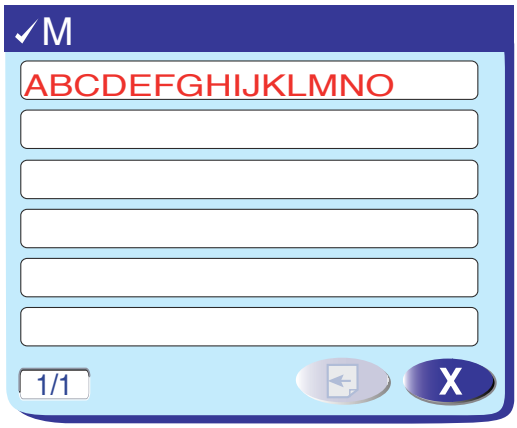
Push the quilting bar down into the slot on the plastic cover of the even feed foot.

Shift the quilting guide bar at the desired spacing.

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







Programming Pattern Combinations

Function keys

1 Program key

Press this key to program pattern combinations. When you press this key the cursor keys, delete key, memory check key and save file key will be displayed.

2 Cursor keys

Press the cursor keys to move the cursor to the right or left. Use these keys to select a pattern to delete or adjust.

3 Delete key

Press this key to delete the selected pattern.

4 Mirror image key

Press this key to program a mirror image of the selected pattern.

5 Page keys

Press key to view the previous page.
Press key to view the next page.

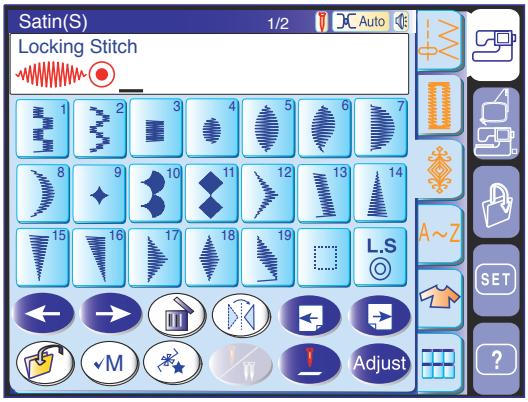
6 Save file key

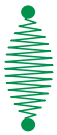
Press this key to save the programmed pattern combination.

7 Memory check key/Start over key

Press this key to review the programmed patterns.

This key will change to the start over key (B) after starting the machine.
Pressing the start over key allows you to sew the programmed patterns from the beginning.



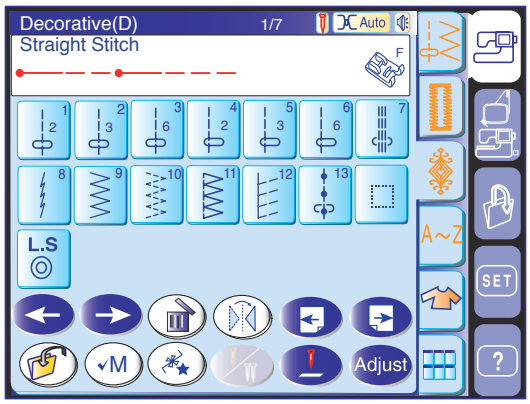


Programming the auto lock stitch

The auto lock stitch L.S can be programmed at the end of the pattern combination.
This stitch is included on each of the programmable stitch pages.

Press the auto lock stitch after programming the pattern combination.
The machine will sew the patterns and lock the stitch at the end of the combination then stop automatically.

NOTE:
If the auto thread cutting is enabled in the ordinary sewing mode setting, the machine will trim the threads after the auto lock stitch (refer to page 22).



Programming French Knot

Example: Expanding the space between French Knots
Press the program key.
Select the pattern D13 (French Knot).
Select the pattern D1. Two counts of straight stitch will be inserted.
Select the pattern D13.
Select the pattern D2. Three counts of straight stitch will be inserted.

Start to sew. The machine will sew the programmed French Knots repeatedly.

Editing the stitch pattern combination

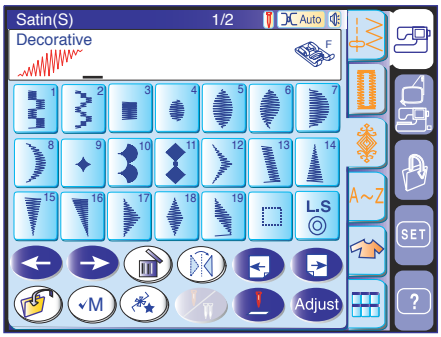
Example: To program the combination of patterns S19, D61 and mirror image of S19

1 Open the satin stitch page and press the program key. Select pattern S19.

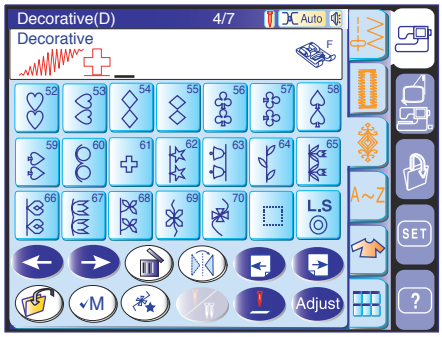
2 Open page 4 of the decorative stitch page. Select pattern D61.

3 Open the satin stitch page again. Press the mirror image key and select pattern S19.

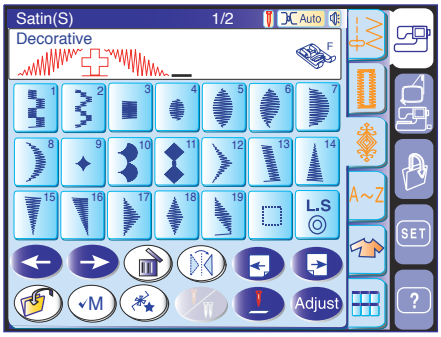
1



2



3



Editing the stitch pattern combination

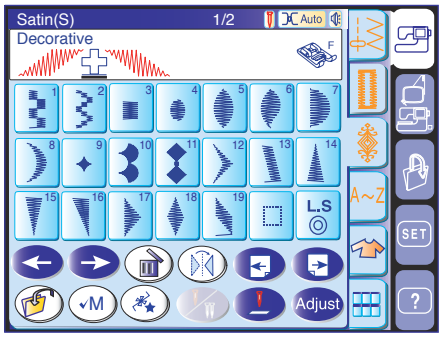
Example: To replace pattern D61 of the above example with pattern D48

4 Press the cursor key to move the cursor under pattern D61.

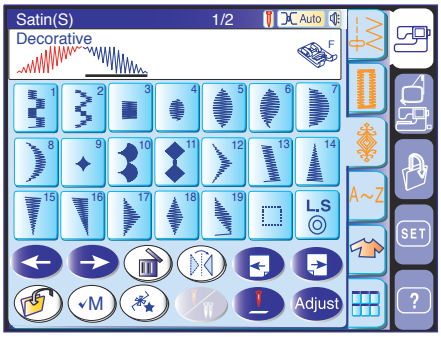
5 Press the delete key and pattern D61 will be deleted.

6 Open the page 4 of the decorative stitch page. Select the pattern D48. Pattern D48 will be inserted before the cursor.

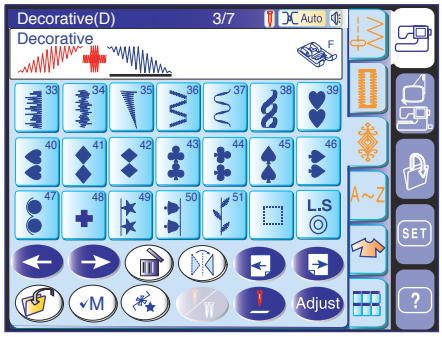
4



5



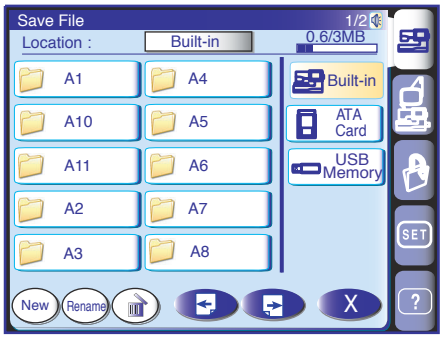
6



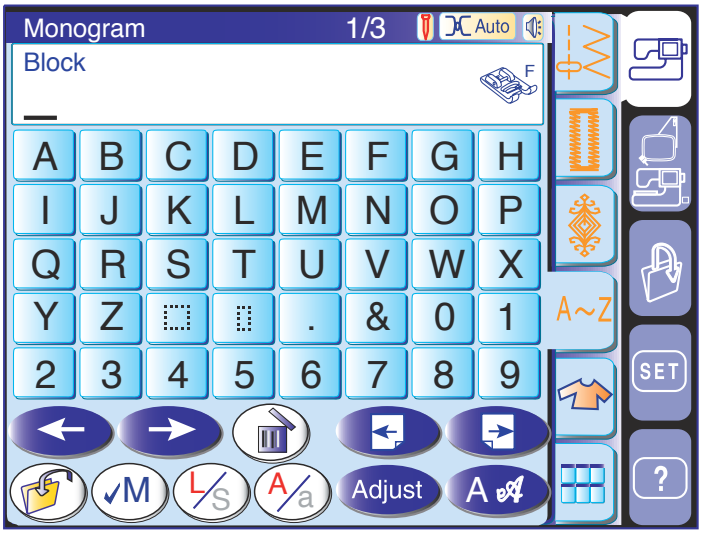
Saving the pattern combination

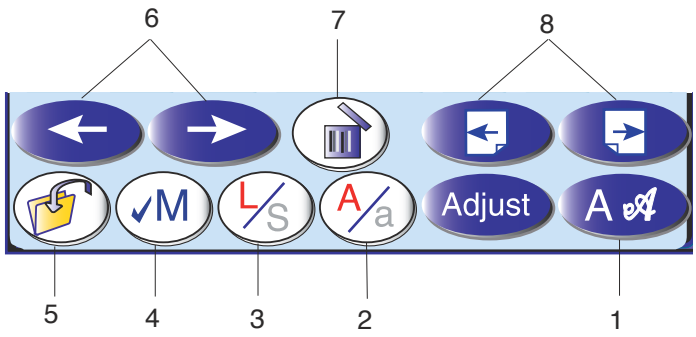
Pressing the save file key opens the save file window to allow you to save the programmed pattern combination as a file.

To open the saved file, press the open file key.



NOTE:
Refer to pages 86, 87 for detailed instructions.





Monogramming

You can combine letters and symbols for monogramming.

1 Font key

Pressing this key opens the font selection window. You can select one of the 3 fonts and symbol marks.

2 Upper/lower case key

You can select upper or lower case letters by pressing this key.

3 Letter size key

By pressing this key, the size of the letter will change to approximately 2/3 of the full size letter. If you press it again, the letter will go back to the original size.

4 Memory check key

Pressing the memory check key (✓M) will display the entire pattern combination.
After starting the machine, the key will change to the start over key (B).

5 Save file key

You can save the monogramming or text as a file.

6 Cursor keys

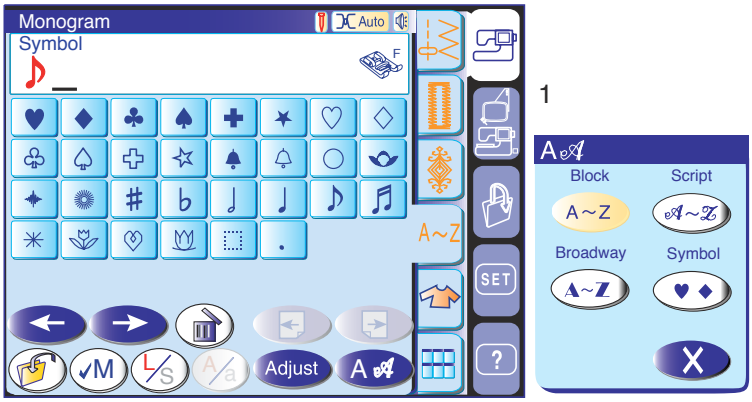
These keys are for editing your monogram.
Press the left arrow key to move the cursor to the left.
Press the right arrow key to move the cursor to the right.

7 Delete key

Press this key to delete the character or symbol with the cursor under it.

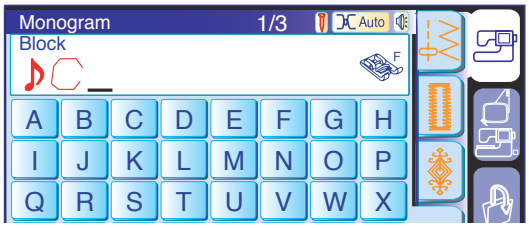
8 Page keys

Press key to view the previous page.
Press key to view the next page.
Punctuation marks and diacritics are available on the subsequent pages.

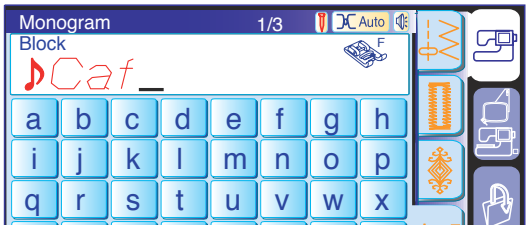


1

2

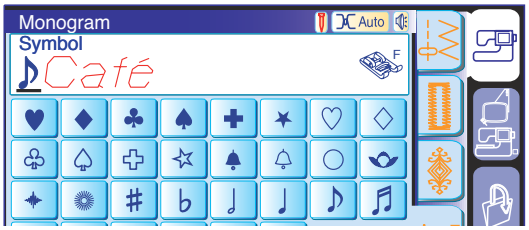


3



4

5



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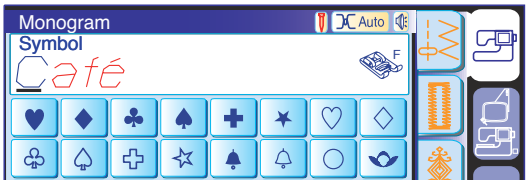

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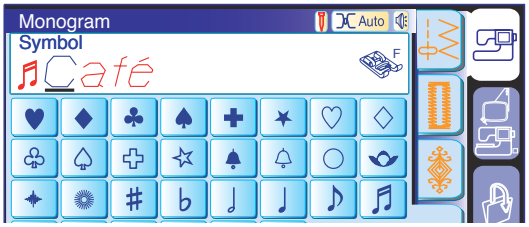


Programming a monogram

Simply enter the characters to program a monogram.

Example: “ ♪ Café” in Block style

1 Press the font key and select the symbols.
Select “ ♪ ”.

2 Press the font key and select Block style.
Press the letter size key to select the small size letterrs. Enter **“C”**.

3 Press the letter case key to switch to the lower case.
Press the letter size key to select the original size letters. Enter **“a”** and **“f”**.

4 Press the next page key twice. Enter **“é”**

NOTE:
Insert a space after a symbol if a symbol and character overlap.

Editing the monogram

Example: to replace “ ♪ ” of the above example with “ ♬ ”.

5 Press the left cursor key to move the cursor under “ ♪ ”.

6 Press the delete key and “ ♪ ” will be deleted.

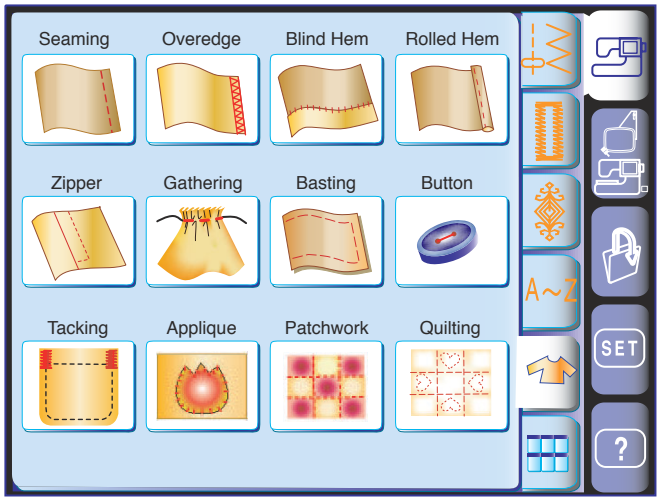
7 Press the font key and select the symbols.
Enter “ ♬ ” and it will be inserted before **“C”**.

Saving the monogram

Pressing the save file key opens the save file window to allow you to save the monogram as a file.

To open the saved file, press the open file key.

NOTE:
Refer to page 88 for detailed instructions.



Sewing Application

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

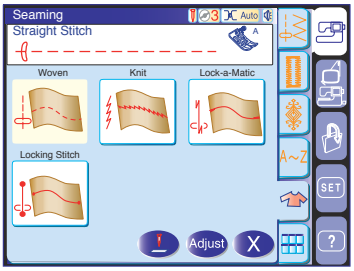
When you press the sewing application key, you will be able to choose the right stitch and its appropriate setting for your sewing project.
The machine will automatically set up for the selected project.

There are 12 applications that you can choose from the menu.

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

NOTE:
Do not press the sewing application key while programming a pattern combination, otherwise the programmed pattern combination will be cleared.

1



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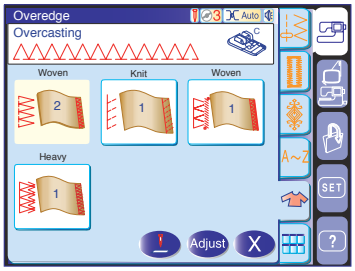

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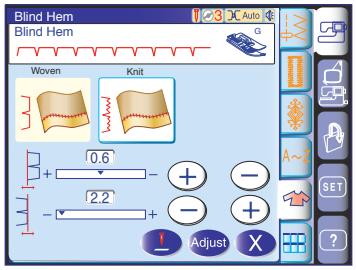

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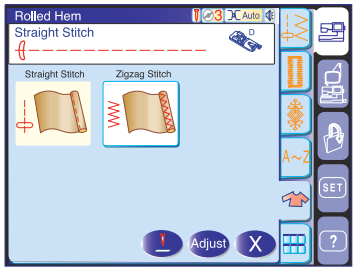

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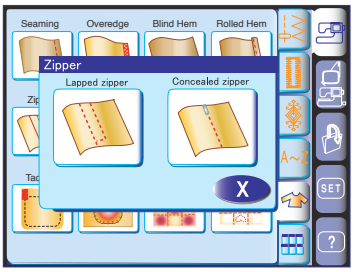

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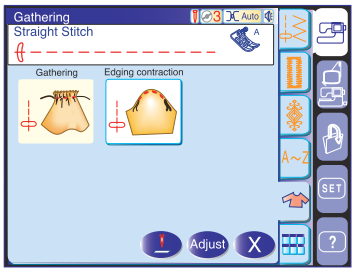

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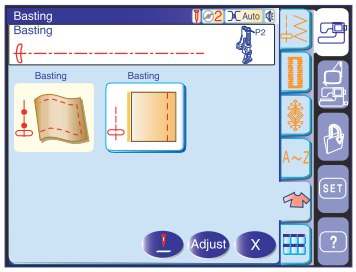

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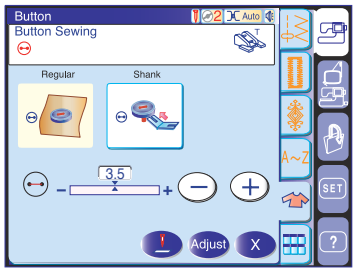

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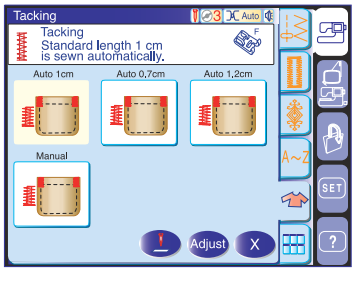

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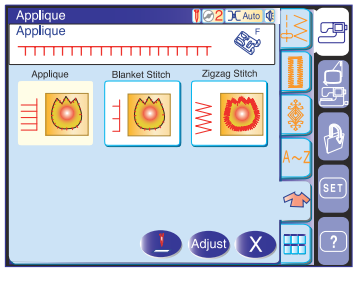

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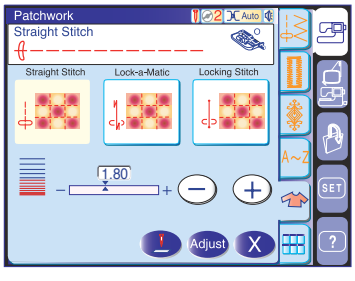

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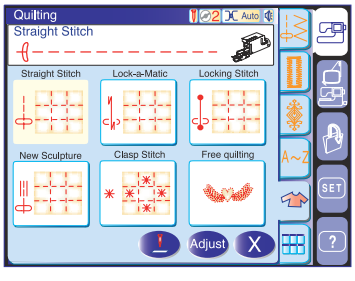
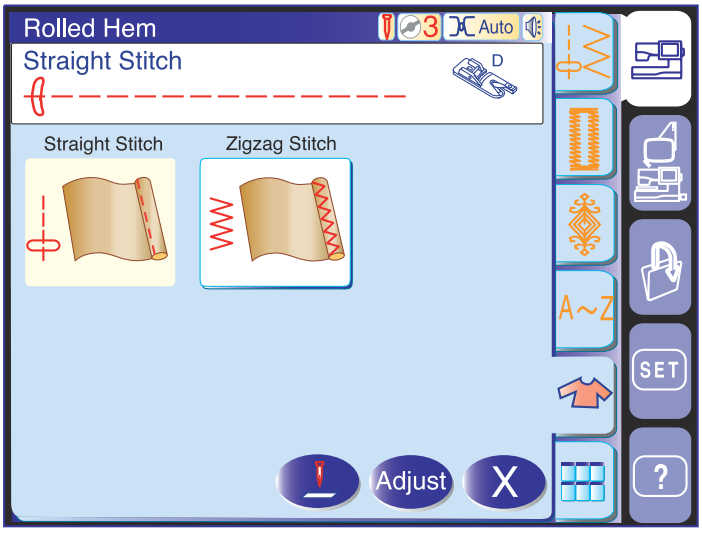
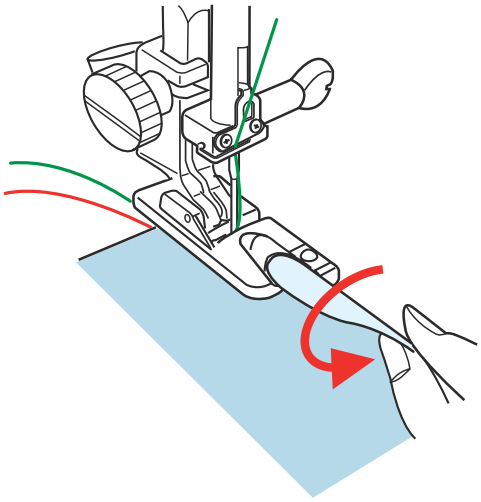




Rolled hemming

This section provides two options of the rolled hemming, one with straight stitch and the other with zigzag stitch.

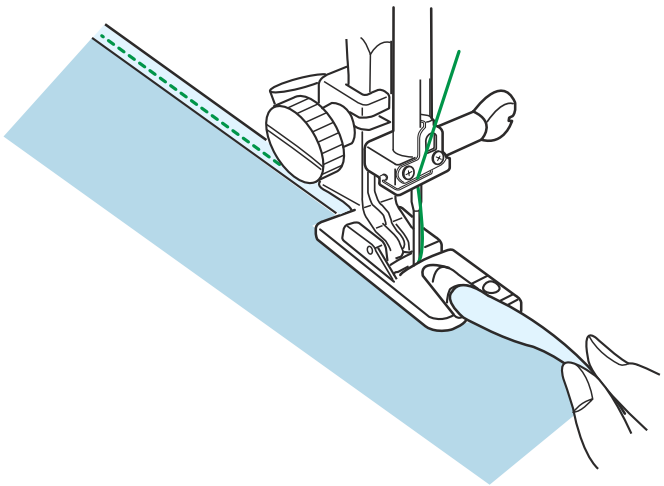


Attach the rolled hem foot D.

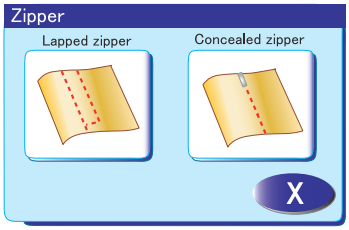
Fold the fabric edge twice to form a hem, 0.3 cm (1/8”) wide and 5 cm (2”) long then press.

Place the fabric aligning the hem edge with the guide of the foot.
Lower the foot and sew several stitches slowly while pulling on the threads to assist feeding the fabric.

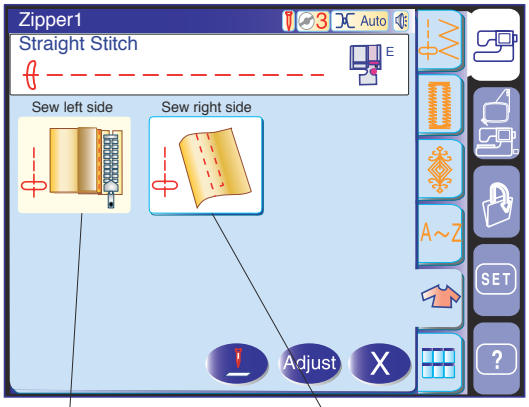
Stop the machine and lower the needle into the fabric. Raise the foot and insert the folded portion of the fabric into the curl of the foot.



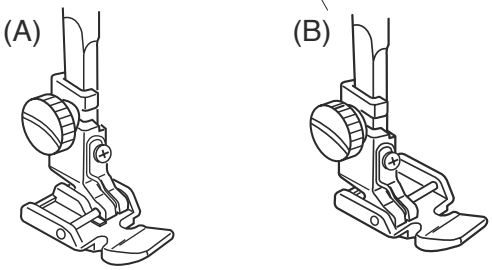
Lower the foot and sew while lifting the edge of the fabric to keep it feeding into the curl smoothly and evenly.



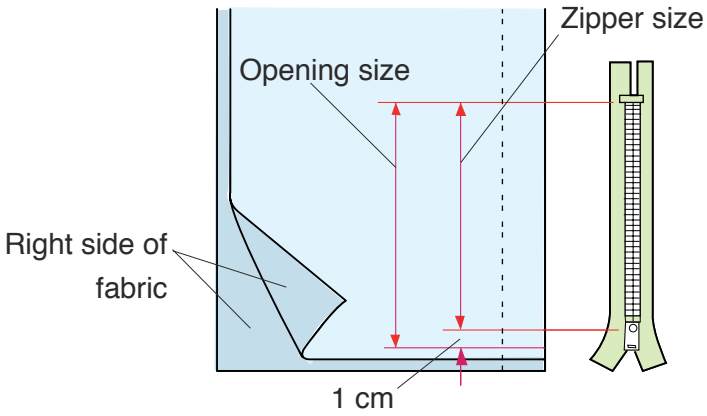
Zipper sewing
This section provides 2 options of zipper sewing, one for lapped zipper and the other for concealed zipper.



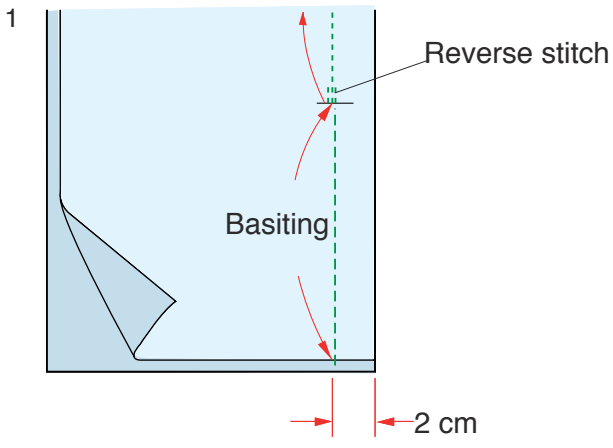
Lapped zipper sewing
Press the lapped zipper icon and the zipper sewing window will open.



(A) To sew the left side of the zipper, attach zipper foot E with the pin on the right-hand side.
(B) To sew the right side of the zipper, attach zipper foot E with the pin on the left-hand side.

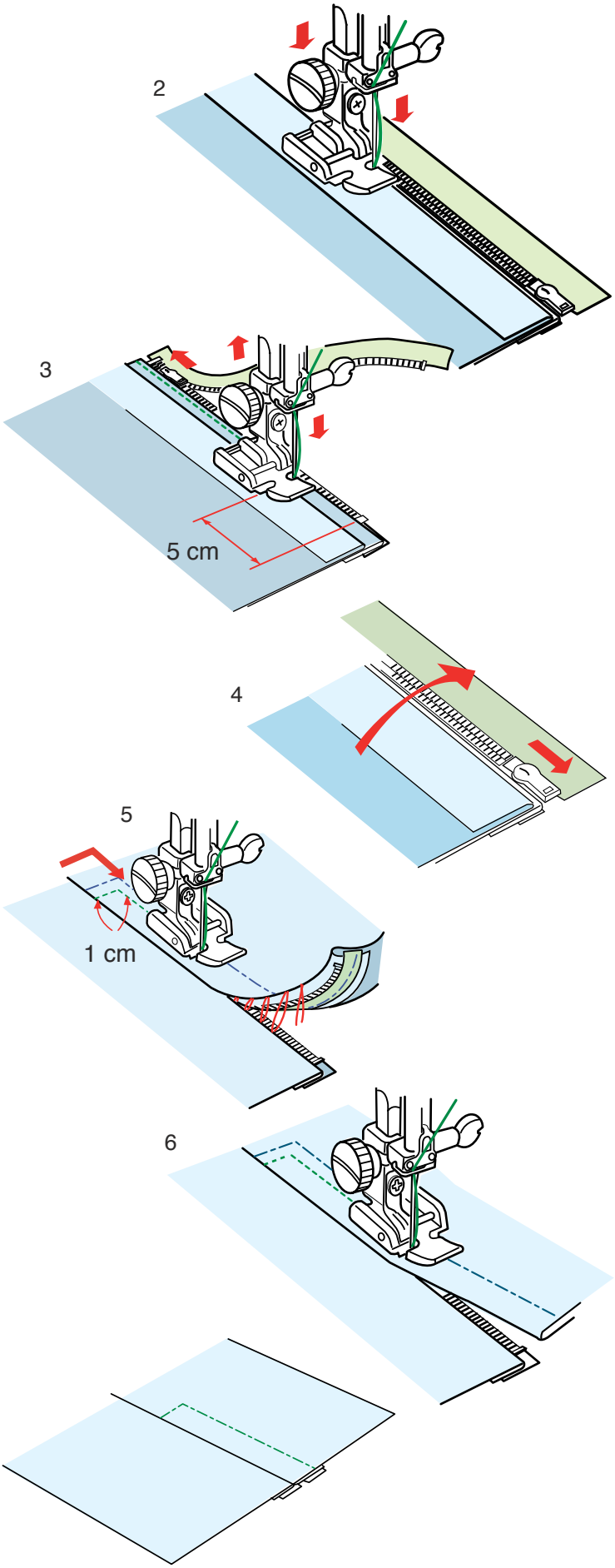


Fabric preparation
Add 1 cm (3/8″) to the zipper size.
This is the overall opening size.



Place the right sides of the fabric together and sew to the end of the opening with a 2 cm (13/16″) seam allowance.
Reverse stitch to lock the seam.
Manually increase the stitch length to 5.0 and baste the zipper opening with the thread tension loosened.

To sew
1. 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.
   Set the stitch length and thread tension back to the default.



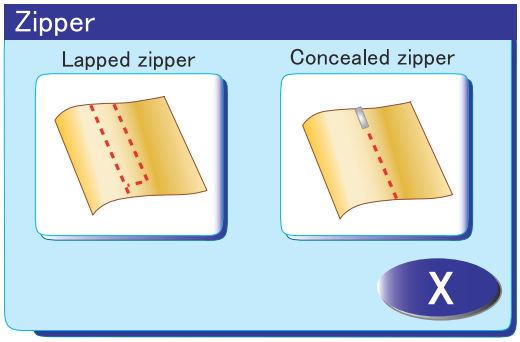
2. Attach zipper foot E with the pin on the right hand side. Lower the foot onto the topside at the bottom of the zipper so that the needle pierces the fabric next to the fold and the zipper tape. Sew along the zipper guiding the zipper teeth along the bottom edge of the foot.

3. Sew through all layers next to the fold.
Stop 5 cm (2″) before zipper foot e reaches the slider on the zipper tape.
Lower the needle slightly into the fabric.
Raise the foot and open the zipper. Lower the foot and stitch the remainder of the seam.

4. Close the zipper and spread the fabric open flat with the right side of the fabric facing up. Baste the opened fabric and zipper tape together.

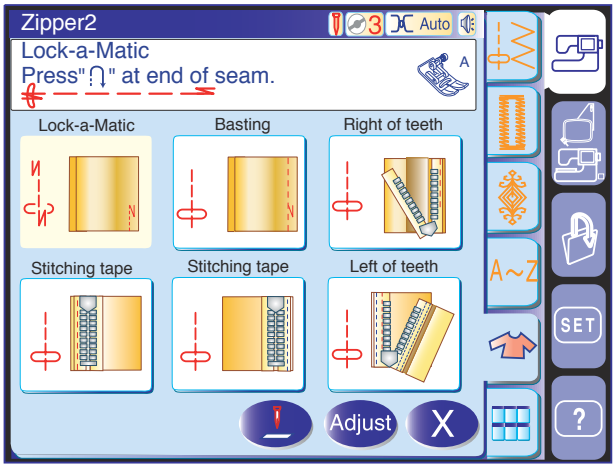
5. Attach the zipper foot E to the left pin.
Backstitch across the end of opening to 1 cm (3/8″).
Stitch through the garment and zipper tape, guiding the zipper teeth along the bottom edge on the foot.
Stop about 5 cm (2″) from the top of the zipper.
Lower the needle into the fabric, raise the foot,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

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

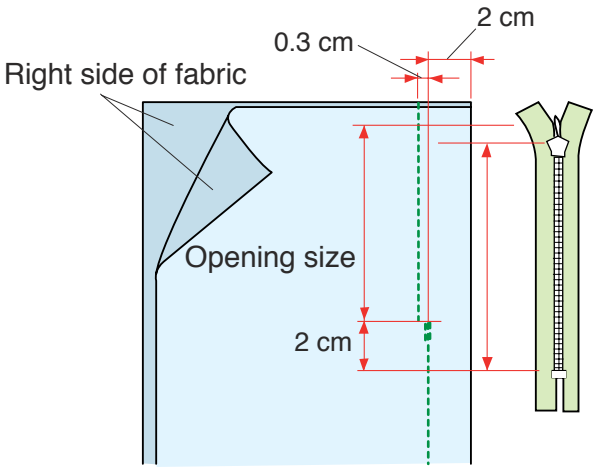


Concealed zipper sewing

NOTE:
You need the optional concealed zipper foot (part number 200-333-001), available from authorized dealers.

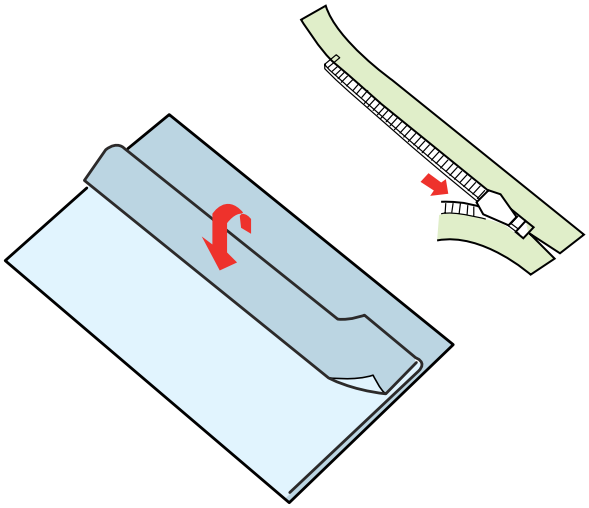


Press the concealed zipper icon and the window will show the step-by-step icon keys.
Press each icon key as you go through the sewing process and the machine will automatically set up for each step of sewing and the required foot will be shown on the screen.

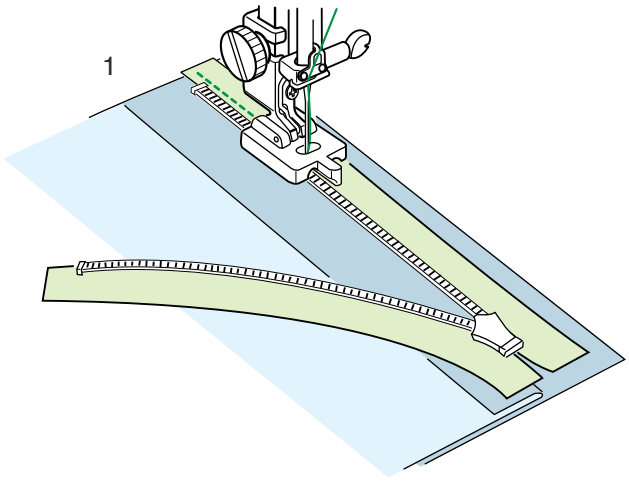


Fabric reparation

Provide a concealed zipper 2 cm (3/4”) longer than the opening size.
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 (13/16˝) seam allowance. Press the reverse button to lock the seams.
Press the basting icon key and baste the opening 0.3 cm (1/8”) inside of the seam line.

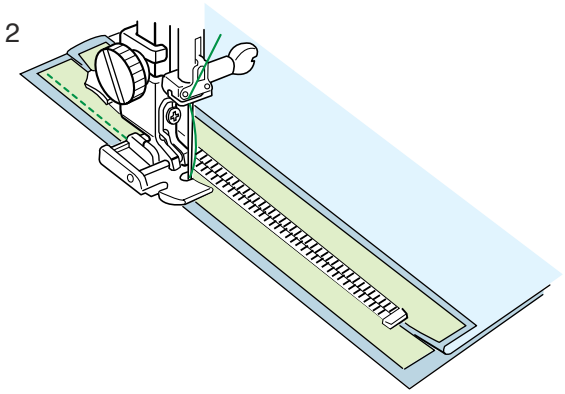


Place the right zipper teeth next to the fold and pin it in place.
Fold up the left seam allowance to the bodice. Open the zipper and put it on the right seam allowance with the back side up.

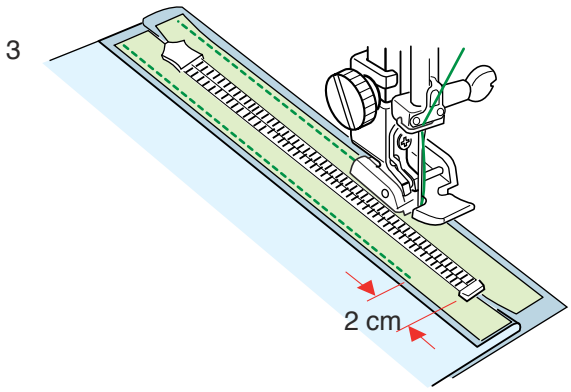


To sew

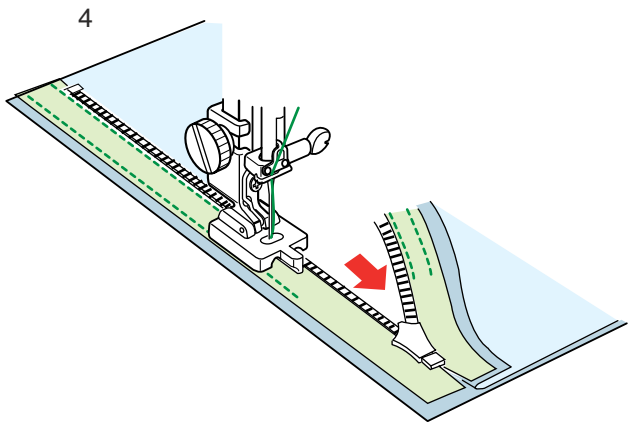
1 Press the right of teeth icon key and attach the concealed zipper foot (optional item).
Raise the zipper teeth on the right and lower the foot so the left groove of the foot catches the zipper teeth.
Stitch through the zipper tape and fabric up to the end of the opening. Reverse the stitches to secure the seam.



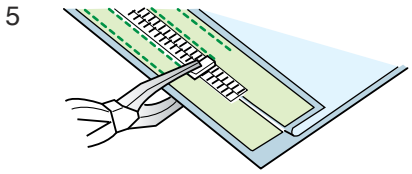
2 Press the stitching tape icon key. Raise the foot and open the zipper. Attach the zipper foot E with the right side of the pin.
Turn and fold the bodice to the right. Seam along the edge of the left zipper tape and reverse the stitches 2 cm (3/4”) before the zipper bottom.



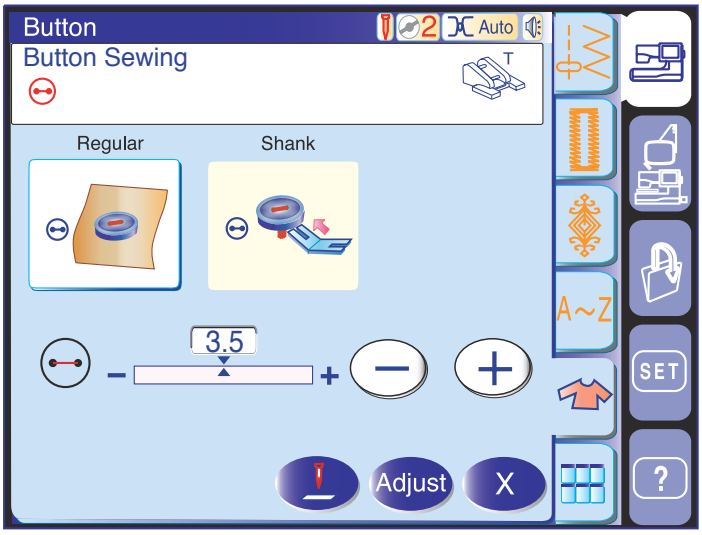
3 Press the second stitching tape icon key. Raise the foot and reattach it with the left side of the pin.
Turn and fold the bodice to the left. Seam along the edge of the right zipper tape and reverse the stitches 2 cm (3/4”) before the zipper bottom.



4 Press the left of teeth icon key. Raise the foot and replace it with the concealed zipper foot.
Remove the basting stitches and open the zipper completely.
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.



5 Slide up the stopper to 0.3 cm below the end of the opening and fasten the stopper with pliers.



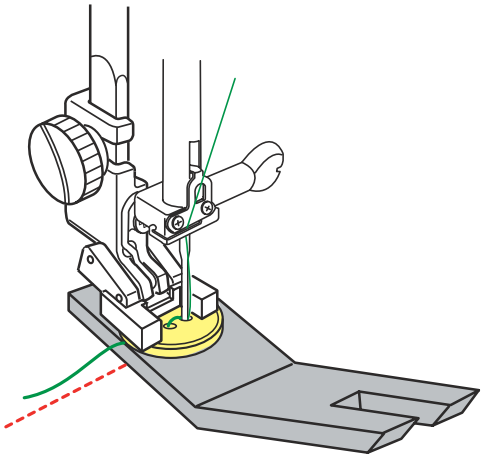
Button sewing

Use the button sewing foot T and reduce the foot pressure.

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

The feed dog will automatically lowered when selecting the button sewing section.

Attach the button sewing foot T (refer to page 17) and set the foot pressure dial at “2”.

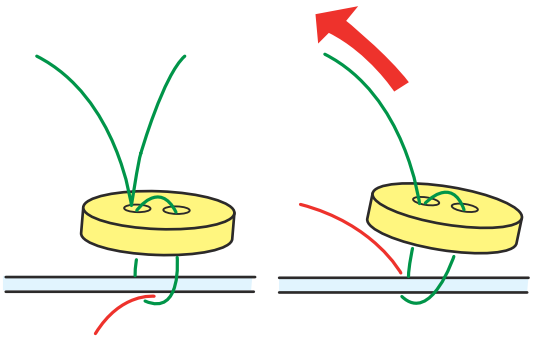


Place a button on a fabric and lower the needle into the left hole in the button by turning the handwheel with your hand.
Lower the foot to hold the button in place, aligning the direction of the button.

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 in the button.

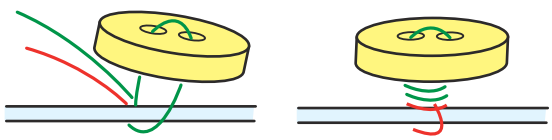
Lower the needle into the fabric and push the button shank plate into between the button and fabric.

Start the machine to sew until it stops automatically.



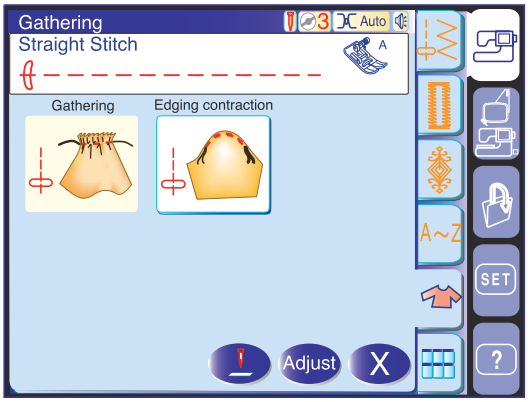
Remove the fabric from the machine.

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



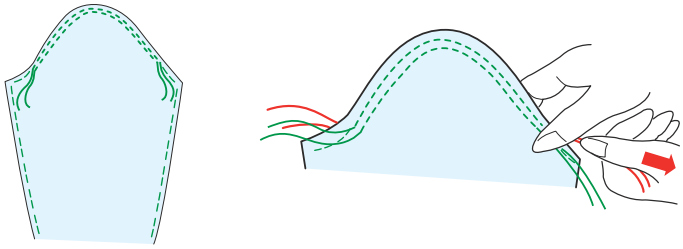
Draw the both threads between the button and fabric.

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



Gathering

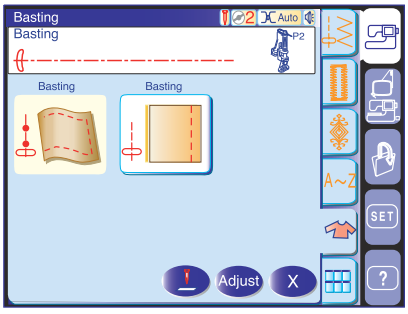
In addition to the regular gathering stitch, this section offers you a special stitch for easing sleeve tops.

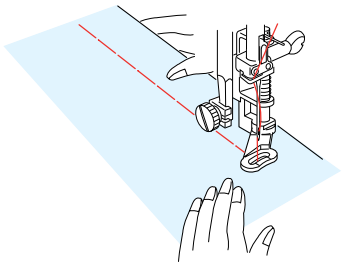


Easing a sleeve top (Edging contraction)

Sew a pair of lines, 1/8” (3 mm) apart, along the edge of the sleeve top. Pull the needle threads to contract the sleeve top carefully, matching it with the armhole size.

Make sure not to make gathers in the sleeve top.





Basting

Attach the satin stitch foot F or darning foot P-2.

When the basting is selected, the feed dog will be automatically lowered.

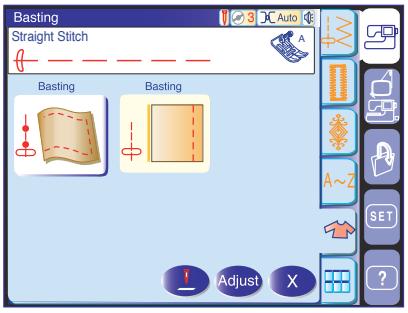
NOTE:

Refer to page 17 for how to attach the darning foot P-2.

To sew

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

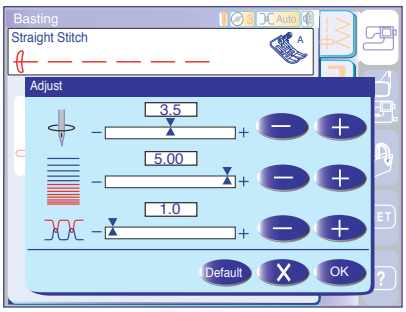
Slide the fabric back for the next stitch.

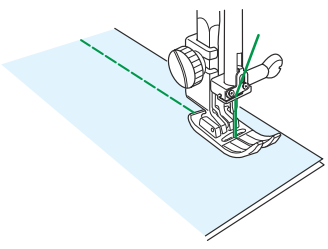


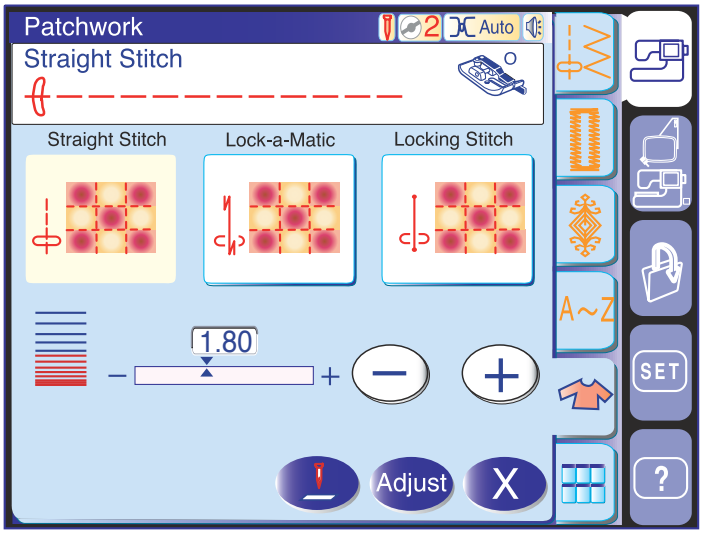
Basting (Straight Stitch)

This stitch is used for basting zipper tape or fitting of garments.

Sew in the same way as that of straight stitch sewing.





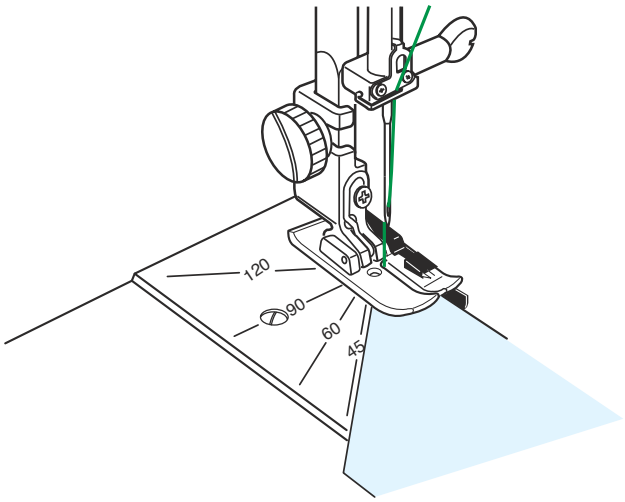


Patchwork

Patchwork piecing

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

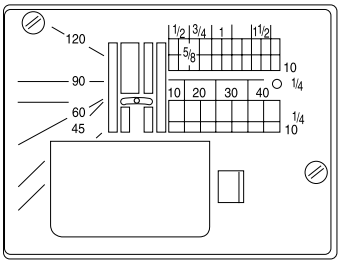
The default stitch length is set at 1.8 mm, ideal for patchwork piecing, but you can fine tune the stitch length by pressing the “+” or “-“ key..



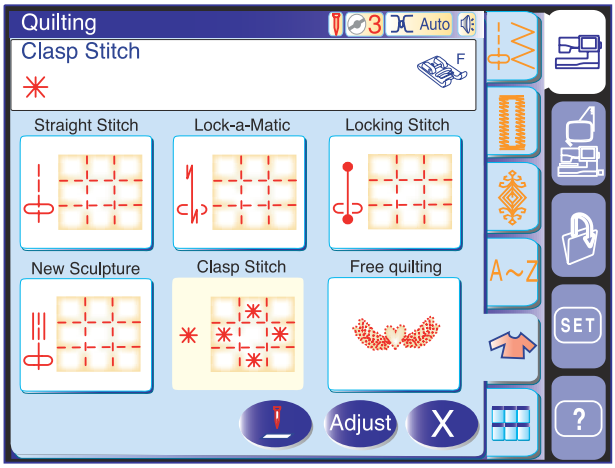
Attach 1/4” foot O, which helps you to keep a constant 1/4” (6 mm) seam allowance.

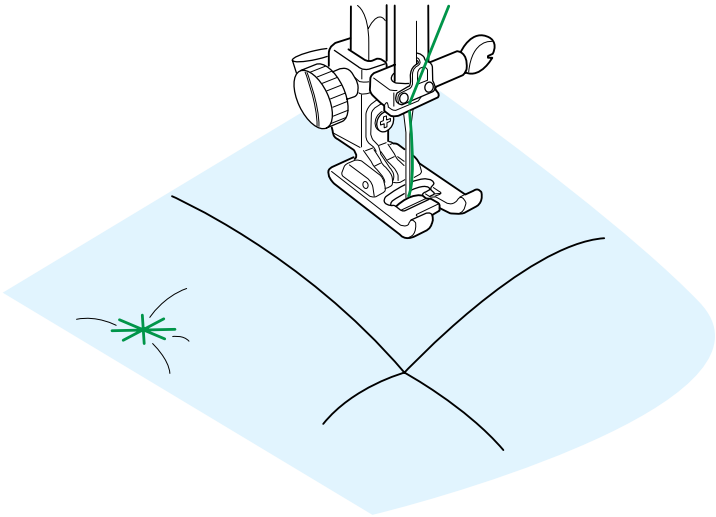
Put 2 pieces of fabric with right sides together.

Place the patchwork pieces under the foot so that the edge of the fabric matches the guide on the presser foot.



You can seam patchwork pieces at the desired angle without marking, by using the angle scale on the needle plate.

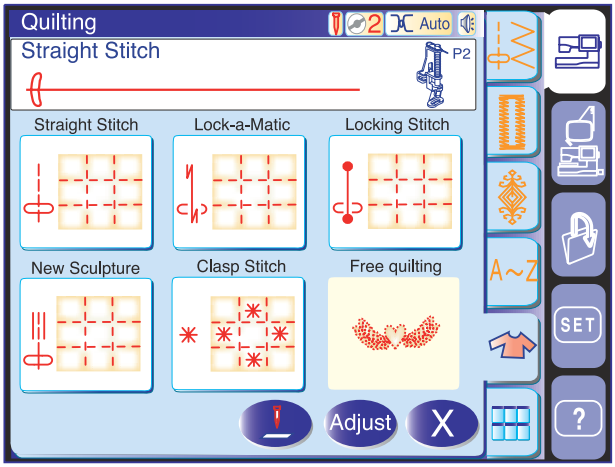


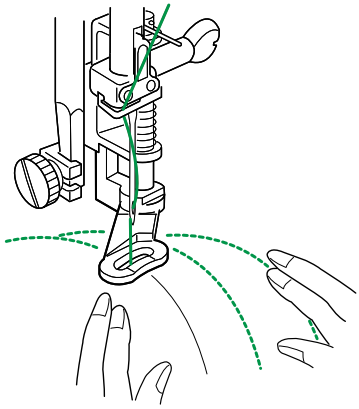


Quilting

Clasp stitch

You can secure multi-layers of fabric and batting using the clasp stitch.
Attach the satin stitch foot F.
The machine will automatically stop after sewing one cycle of the stitch.



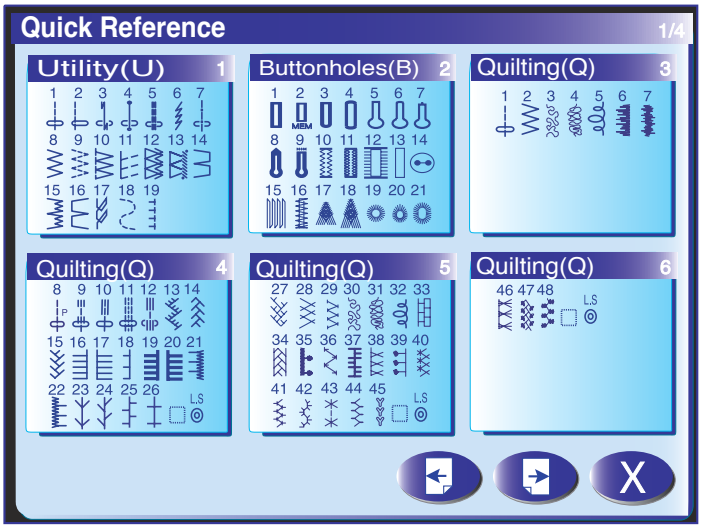


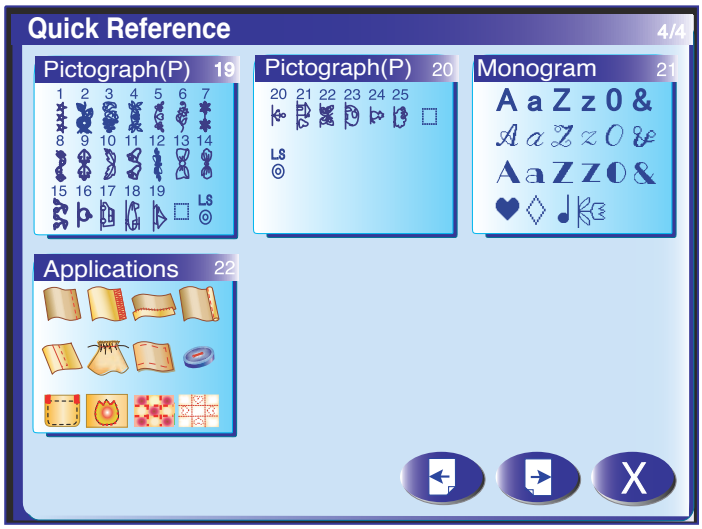
Free quilting

Attach the darning foot P-2 (refer to page 17).

To Sew

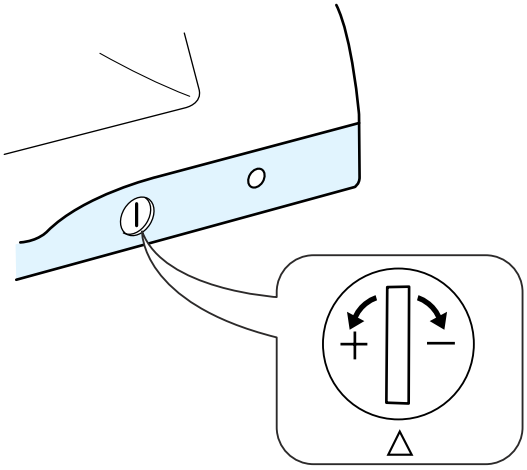
Lower the foot, then guide the fabric with your hands to stitch along the pattern marked on the fabric.





Quick Menu (Quick Reference)

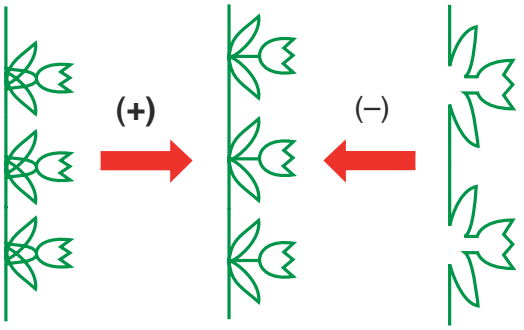
The quick menu window shows the at-a-glance lists of stitches by category, from which you can select the desired stitch quickly and easily.
Press one of the 9 lists and the stitch selection window of the selected category will open.



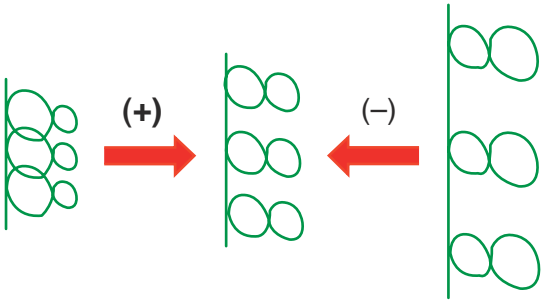
Correcting Deformed Stitch Patterns

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 make test sewing 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.

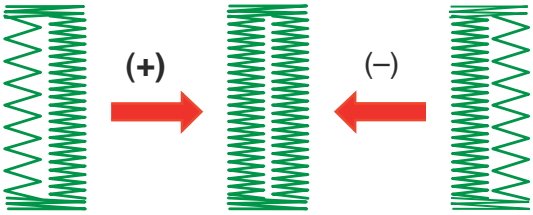
NOTE:
In normal sewing, set the feed balancing dial to the neutral position, i.e. the groove on the dial is centered with the standard setting mark.



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 “–”.

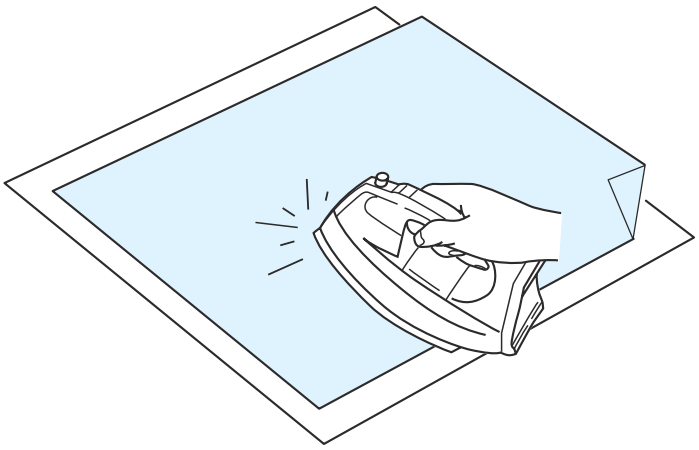


Letters and numbers
If the pattern is compressed, turn the dial in the direction of “+”.
If the pattern is drawn out, turn the dial in the direction of “–”.



Stitch balance of the auto buttonhole
The stitch balance of the right and left rows on the auto buttonhole may vary depending on conditions of sewing. 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 its neutral position when the sewing is finished.



Stabilizes

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

Usage:

The stabilizer should be attached to the wrong side of fabric.

More than one layer may be required.

For firm fabrics, you may place a thin 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 with the hoop to prevent looseness of 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.

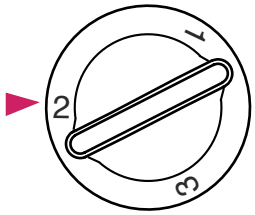
NOTES:

Fold up a corner of the stabilizer, to make it easier to peel off the excess stabilizer after stitching.

Ironing temperatures vary depending on kind of adhesive type stabilizer.

Types of 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 to be fused 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 towel to avoid loops coming through the embroidery	A thin film that will dissolves in water.
Sticky	Securing a small piece of fabric or work that cannot be secured in the hoop Velvet and other napped fabric that would be permanently marked by the hoop	Sticky paper



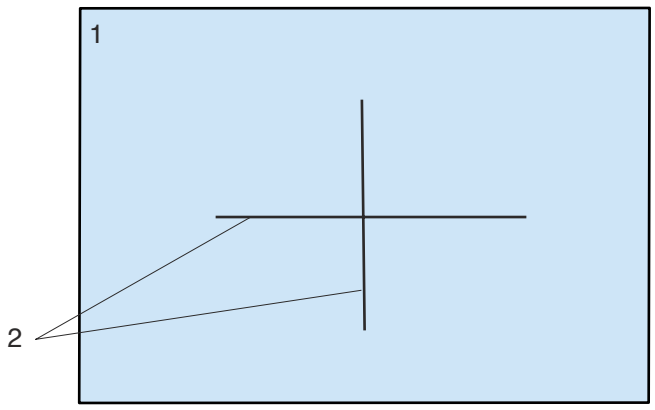
Foot Pressure

Set the foot pressure dial at “2” for embroidery.

Needles

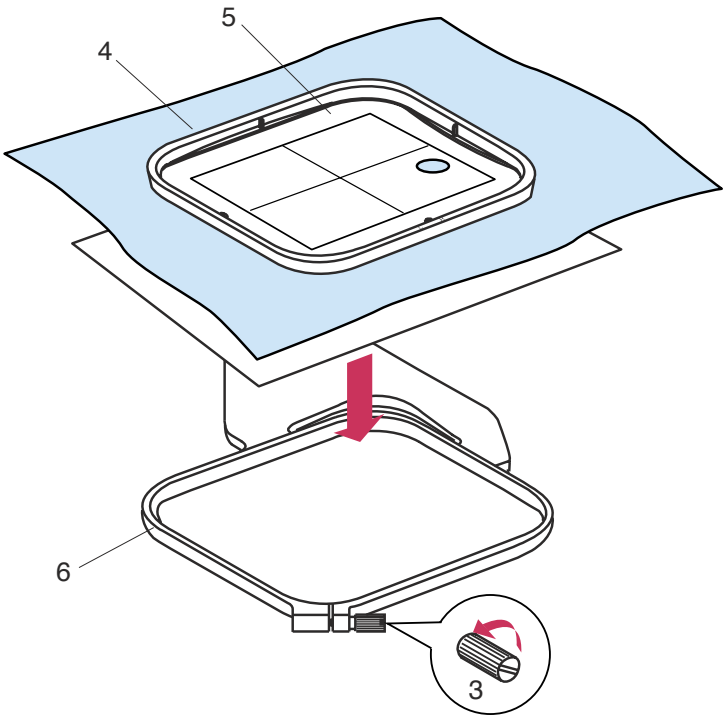
Use the blue tipped needle (for fine to medium weight fabrics) or red tipped needle (for medium to heavy weight fabrics).

Setting the Fabric in an Embroidery Hoop



Mark the Centerlines on the right side of the fabric with tailor's chalk.

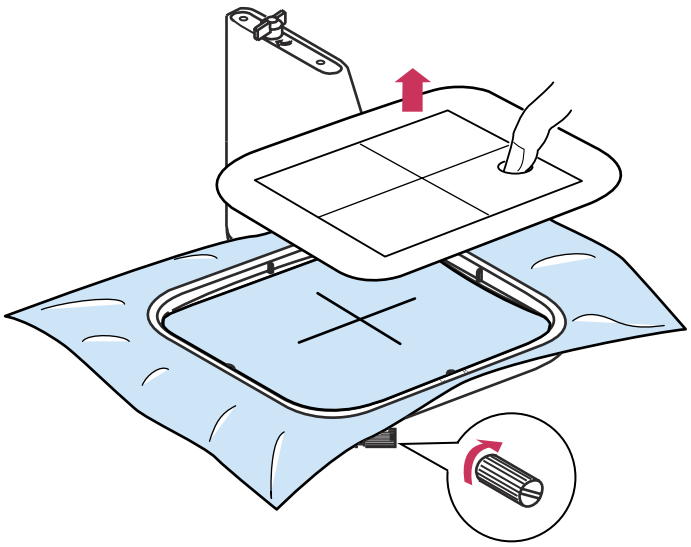
1 Fabric
2 Centerlines



Loosen the hoop tightening screw on the outer hoop.
Lay the inner hoop and template on the fabric, matching the centerlines.

3 Hoop tightening screw
4 Inner hoop
5 Template
6 Outer hoop

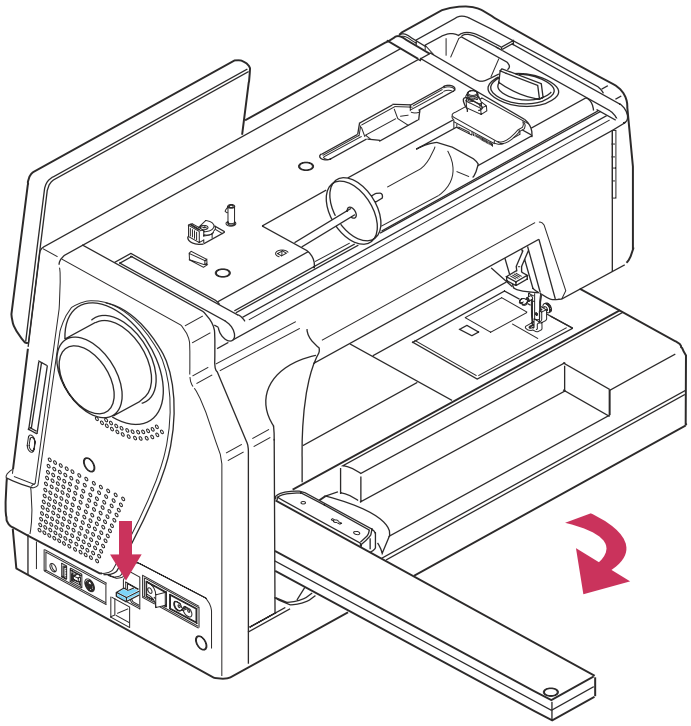
NOTES:
When placing the fabric on the embroidery hoop, place the outer hoop on a flat surface.
For thin and stretchy fabrics, use an adhesive type stabilizer (iron-on type) on the wrong side of the fabric. More than one layer may be required.



Push them into the outer hoop.
Tighten the screw on the outer hoop to stretch the fabric. Make sure that the fabric is stretched drum-tight in the hoop.

Remove the template.

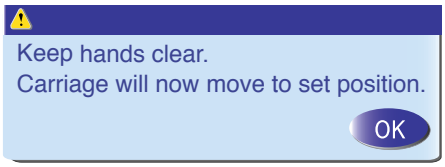
Setting the Embroidery Carriage Arm



Turn the power switch on and raise the presser foot.

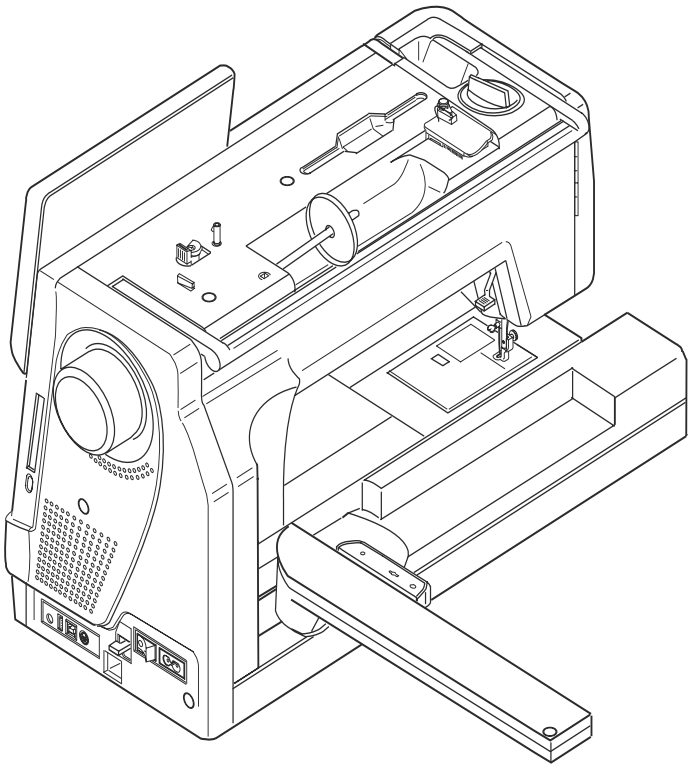
Press down and hold the carriage release lever and swing out the carriage arm until it is fully extended. Release the carriage release lever.

Press the embroidery mode key.



The visual touch screen will show a warning message.

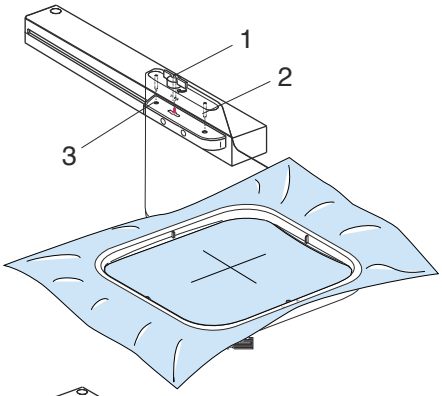
Press the OK key.

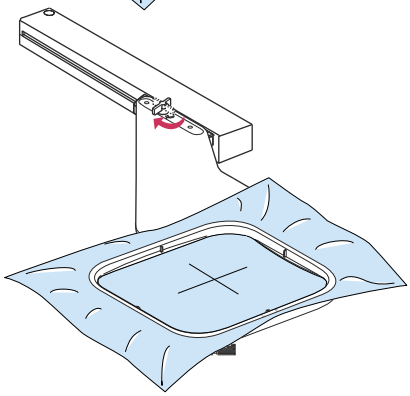


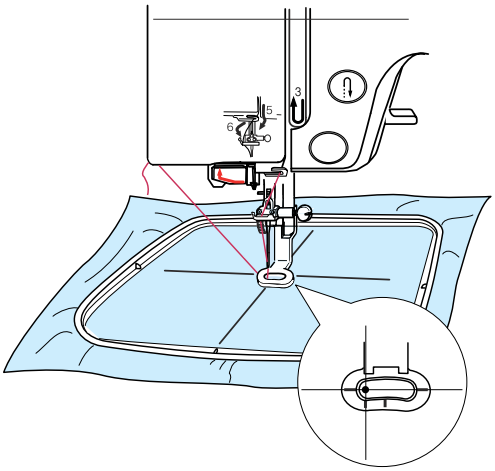
The carriage will move to the position for setting the hoop.

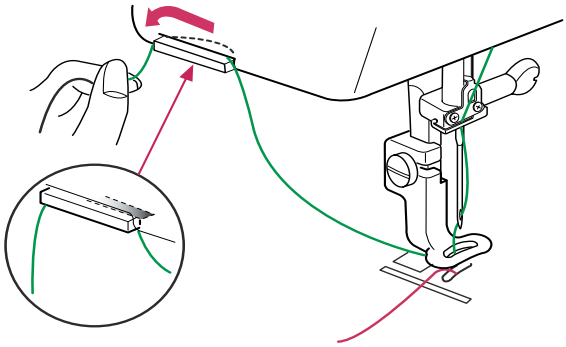
NOTE:
Be sure to set the carriage arm in the extended position before pressing the embroidery mode key.

CAUTION:
Do not push or lift the carriage once it is set in the extended position to prevent it from being damaged.









Attaching the Embroidery Hoop to the Machine

Turn the attaching knob so it is parallel with the carriage arm, and set the hoop on the carriage.

Attach the hoop by fitting the pins into the carriage holes.

1 Attaching Knob
2 Pins
3 Carriage Holes

Turn the attaching knob clockwise to secure the hoop

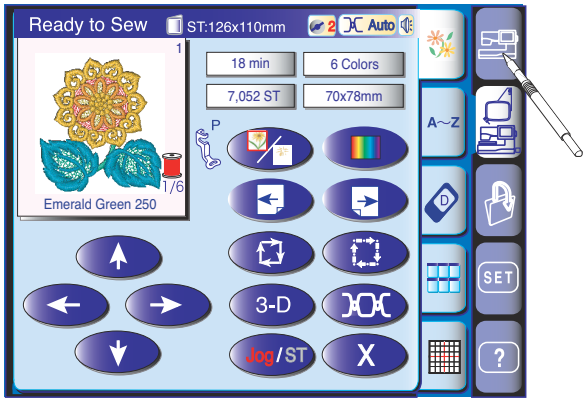
CAUTIONS:

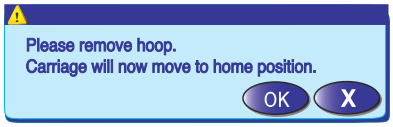
Do not attach the hoop unless the carriage arm is in the setting position.
Always provide sufficient clearance for the embroidery carriage behind your machine before starting embroidery.
Never try to move the carriage with hand or touch the carriage while it is moving.
Make sure to return the carriage to the stored position before turning the power off.

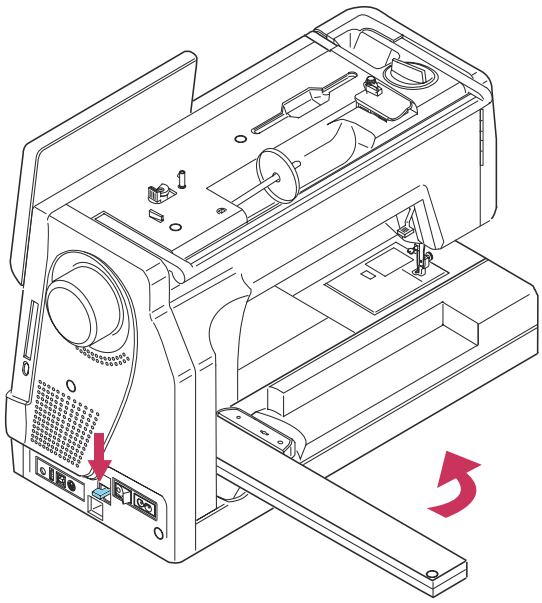
Thread Holder

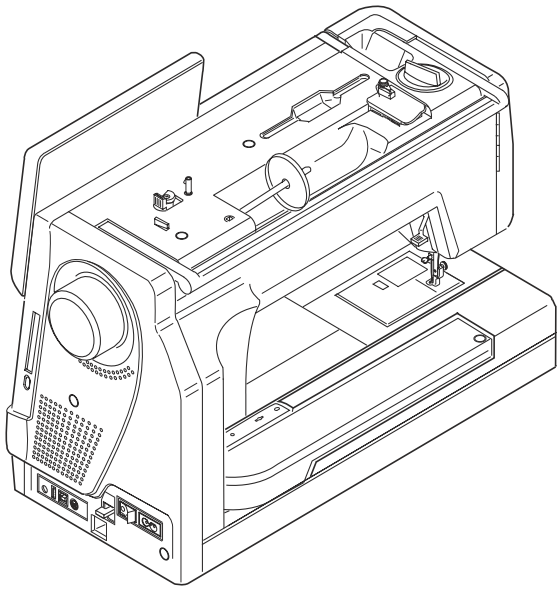
To avoid sewing on the needle thread, place the thread end on the thread holder.

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 the front to back.









Detaching the Hoop form the Carriage

Press the embroidery tab.
Remove the hoop from the carriage.

The visual touch screen will show the warning message.
Press the OK key and the carriage will move to the home position.

The visual touch screen will show the ordinary sewing mode.

Retract the carriage in the stored position.

CAUTION:
Do not return the carriage with the hoop attached.

Mode Selection

Press the embroidery mode key to enter the embroidery mode. The following 5 categories are available in the embroidery mode.

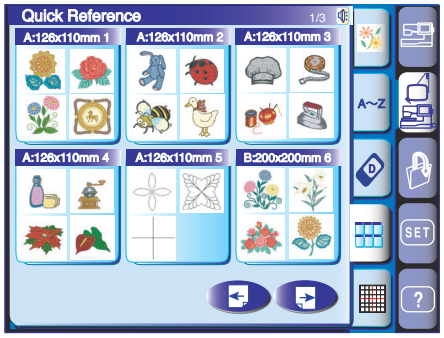
Press the next page key to view the next page.
Press the previous page key to view the previous page.

1

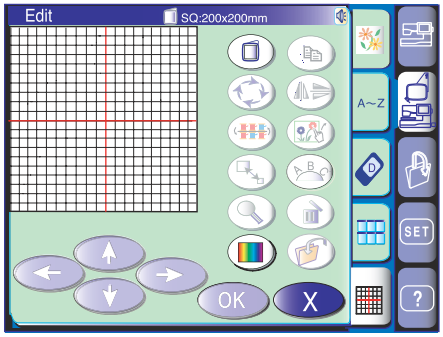
2

3

4



5



1 Built-in designs

The visual touch screen shows the built-in design window when the embroidery mode key is pressed. This machine provides 122 ready to sew built-in embroidery designs.

2 Monogramming

Press the monogramming key to open the monogramming window. You can sew monograms in 12 different fonts, plus border designs and stitch patterns similar to the ordinary sewing (refer to page 72).

3 PC Design card

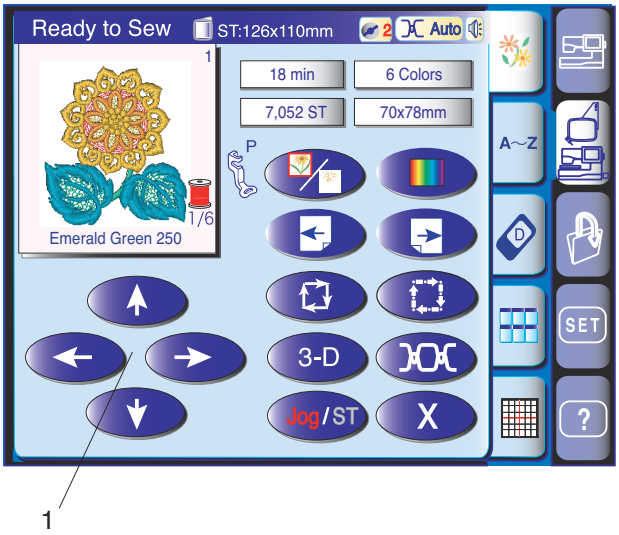
Press the PC design card key to sew the designs from the PC Design cards (optional items).

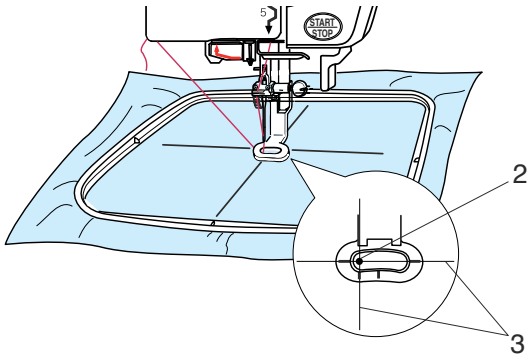
4 Quick design menu (Quick Reference)

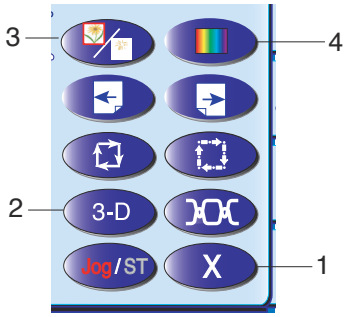
You can select the desired embroidery design from the categorized design lists.

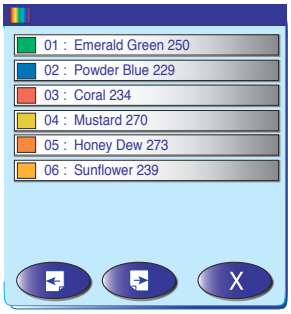
5 Editing

In the Editing window, you can modify and combine patterns to create original designs.









Built-in Designs

Press the Built-in Design Tab.
Press the pattern selection key to select the desired pattern.
The embroidery screen will appear.
Adjust the hoop position with the jog keys so that the needle drop position comes right above the center of the reference lines on the fabric.

1 Jog keys
2 Needle drop position
3 Centerlines

1 Exit key

Press this key to return to the pattern selection window.

2 Stitch preview key

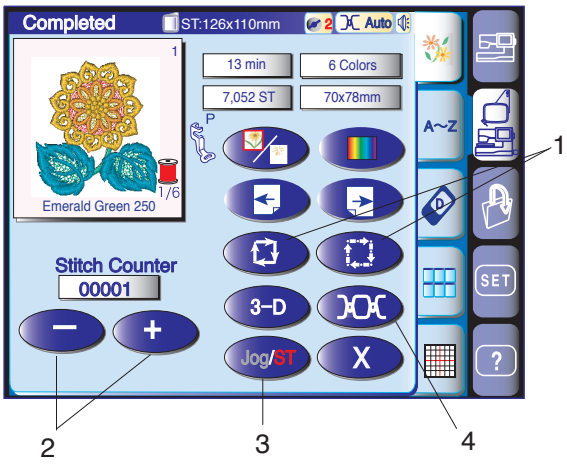
Press this key to show the stitched image of the selected design

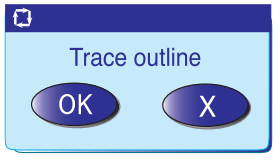
3 Color/section key

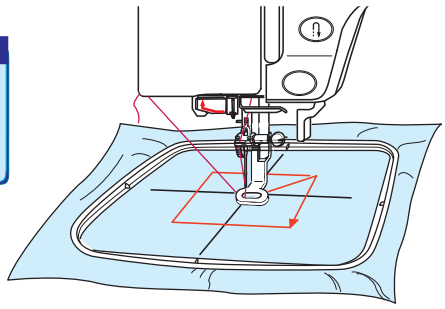
Press this key to show the complete image of the selected design or partial image of each color sections.
To view the next color section, press the next page key. Press the previous page key to view the previous color section.
The machine will automatically stop sewing (and trim the threads if the auto thread cutting is activated) when one part of the embroidery design is finished.
Change the thread and start sewing again.
Sewing the specific color/section by skipping
You can sew only the specific color sections of the design by pressing the next page key until the desired section is displayed.

4 Color list key

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







1 Trace keys

You can check the size of the sewing area by tracing the design outline without stitching or with basting stitches. Press the key to start tracing without stitching, or press the key to open the confirmation window for tracing with basting stitches.
Press the OK key to start tracing with basting stitches. The carriage will returned to the starting position after tracing.

NOTE:
The machine will baste around the embroidery area with a 5 mm allowance when **"tracing with basting stitch"** is selected.
However, an allowance will be null If the pattern spreads over the maximum limit of embroidery area.

2 Stitch back/forward keys

When embroidery sewing has started, the screen will indicate the current stitch counts. The Jog keys will disappear and the stitch back/forward keys will be shown in stead. You can use these keys to move the embroidery hoop to where the thread has broken or run out.
Press the "+" key to move the hoop back to a previous sewing point. The hoop will move backward 10 stitches each time this key is pressed.
Press the "–" key to move the hoop ahead. The hoop will move forward 10 stitches each time this key is pressed.

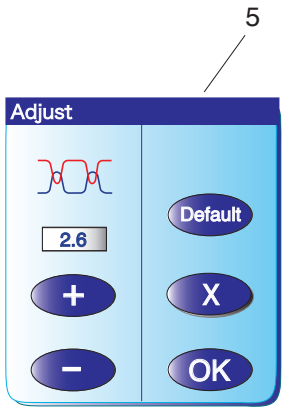
3 Jog/ST key

Press this key to toggle the jog keys to the stitch back/ forward keys or vice versa.

4 Tension adjust key

When pressing this key the thread tension adjust window will open. You can adjust the auto thread tension level by pressing the "+" or "–" key. Press the default key Default to return the tension setting to the default.

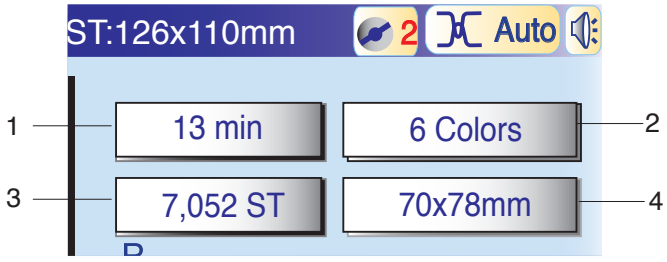
5 Tension adjust window

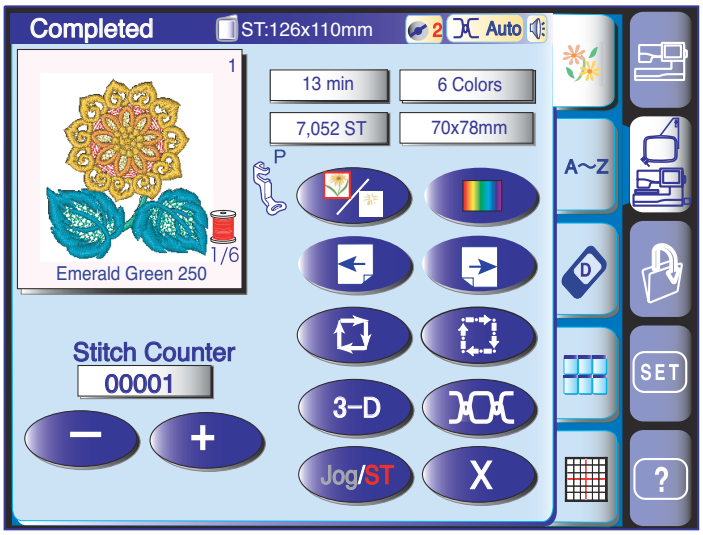


Screen Information

Beside the design image, the approximate sewing time in minutes, number of colors, design size and the hoop that should be used for the selected design are shown.

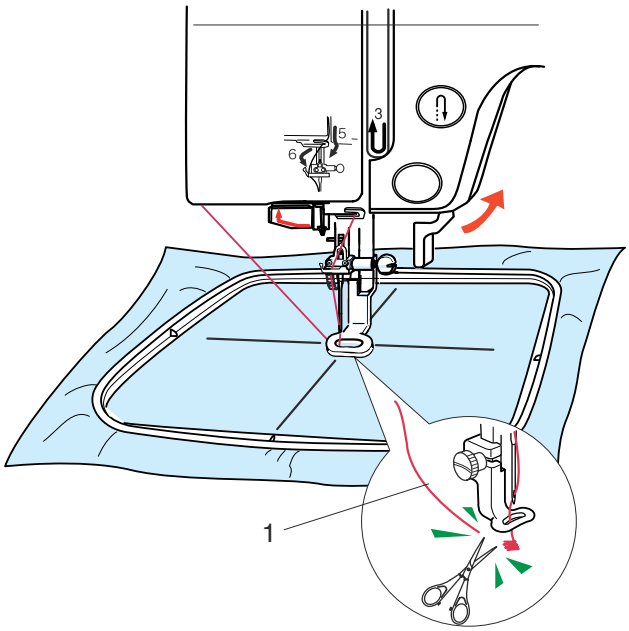
1 Sewing time in minutes
2 Number of colors
3 Design size
4 Total stitch counts of the design





Starting to Sew Embroidery

Press the Pattern Selection key to select the desired pattern.



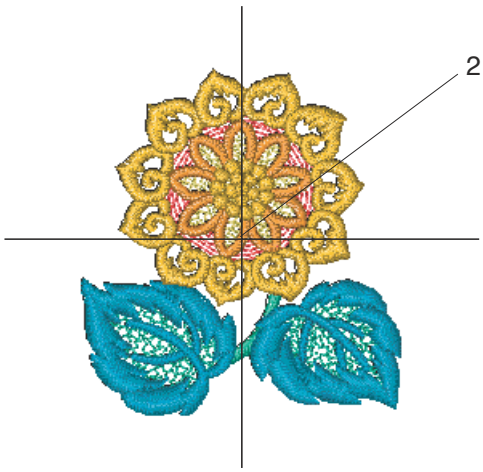
Lower the presser foot.
Press the start/stop button and sew 5 to 6 stitches.

Press the start/stop button again to stop the machine.

Raise the presser foot, cut the loose thread close to the beginning of the starting point and lower the presser foot.

1 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 and sew the next section.



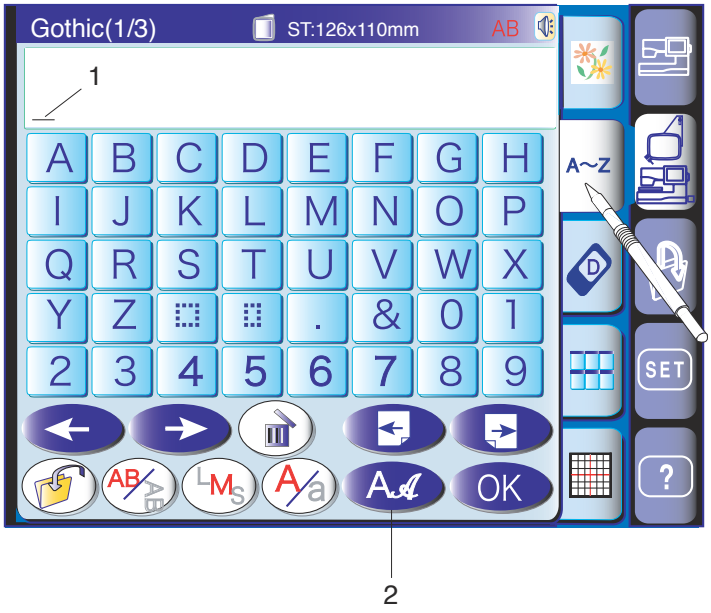
Sewing results

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

2 Centerlines on the Fabric

NOTE:

The embroidery stitch pattern position is over the centerlines is indicated on the template sheets.



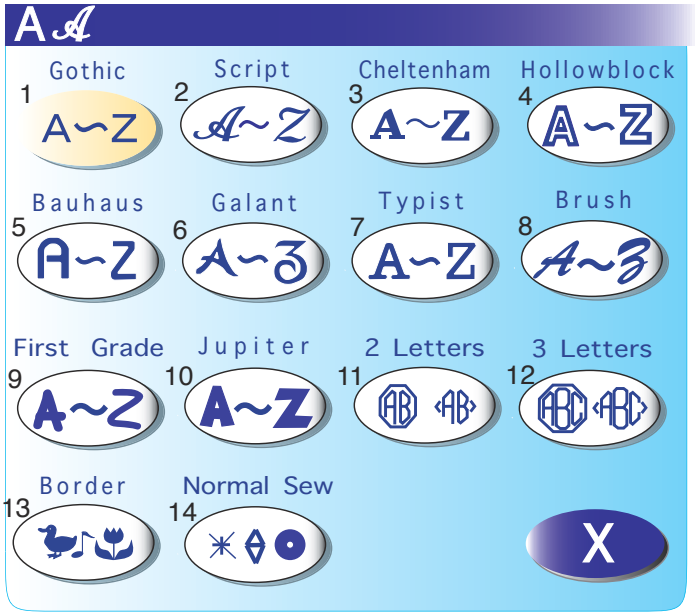
Monogramming

Press the monogram key to open the monogram window.

In the monogram window, you can program words by pressing the alphabet keys directly.
After you press an alphabet key, the letter is memorized and the cursor is moved to the right.

1 Cursor

NOTE:
Use the standard hoop ST for monogramming.



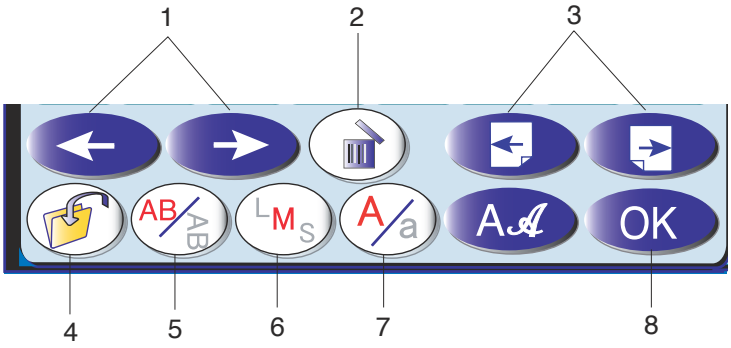
Font selection

You can change the type of font for monogramming by pressing the font key.
The font selection window will open.

2 Font key

To select the desired font, press one of the following options:

1 Gothic font
2 Script font
3 Cheltenham font
4 Hollowblock font (upper case only)
5 Bauhaus font
6 Galant font
7 Typist font
8 Brush font
9 First grade font
10 Jupiter font (upper case only)
11 2-Letter
12 3-Letter
13 Border patterns
14 Normal sew patterns (patterns similar to ordinary stitches)



1 Cursor key

Press these keys to move the cursor to the left or right.

2 Delete key

Press this key to delete the character above the cursor.

3 Page keys

Press these keys to view the next page or previous page. The European accented letters are available on the next page.

4 Save file key

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

5 Lettering orientation key

Pressing this key will select the horizontal or vertical orientation alternately.

6 Letter size key

You can select the following 3 letter sizes by pressing this key.

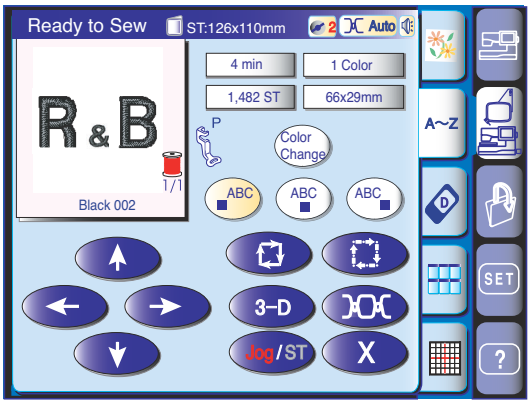
L (Large): 30 mm
M (Medium): 20 mm
S (Small): 10 mm

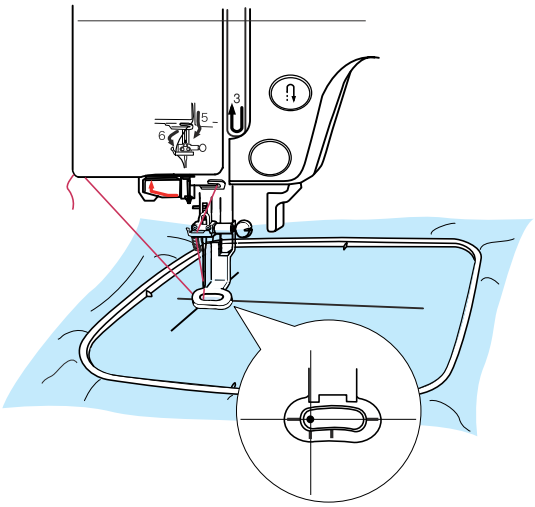
7 Letter case key

Pressing this key changes the letter case, upper case or lower case.

8 OK key

Pressing this confirms your entry and opens the “Ready to Sew” screen.





Programming a monogram

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

1. Press the letter size key and select large size.

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

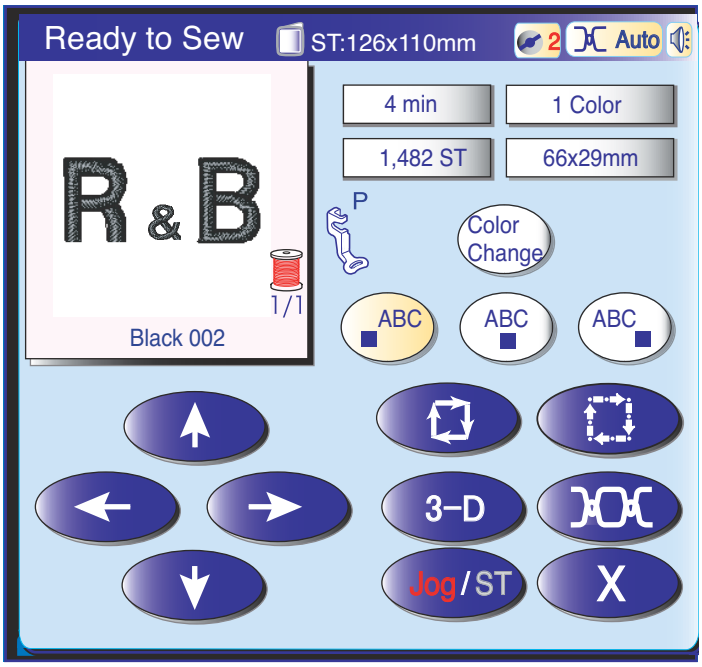
3. Press the letter size key and select medium size.
4. Enter **“&”**, the cursor shifts to the right and **“&”** is automatically memorized.

5. Press the letter size key and select large size.
6. Enter **“B”**, the cursor shifts to the right and **“B”** is automatically memorized.

7. Press the OK key.
8. The screen will change to the “Ready to Sew” screen.

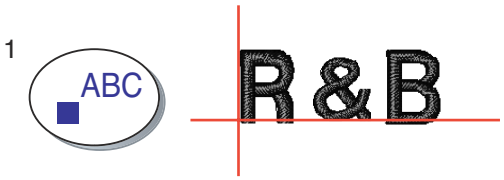
9. Press the start/stop button to start sewing the monogram. The machine will stop automatically after sewing is finished.

NOTE:
Use the jog keys to adjust the position of the hoop to match the reference lines.



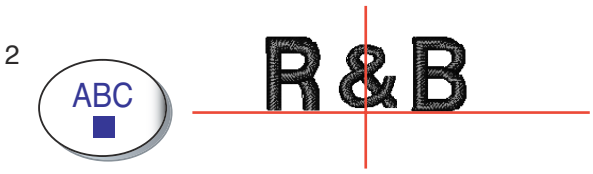
Placement of monogramming

You can select from one of the 3 placements for monogramming: left justify, center justify and right justify.



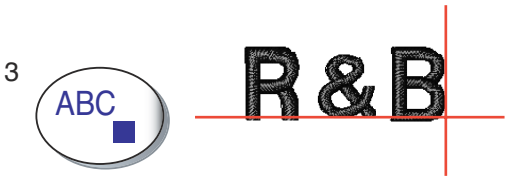
1 Left Justify

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



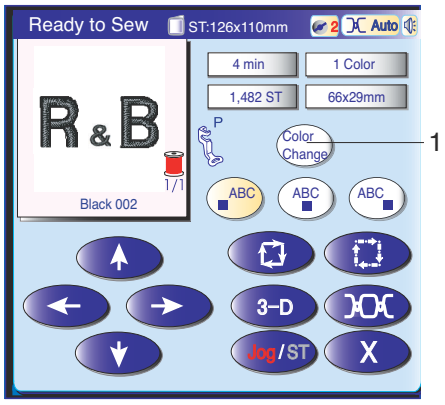
2 Center Justify

Press the ABC key to sew in the center of the hoop.



3 Right Justify

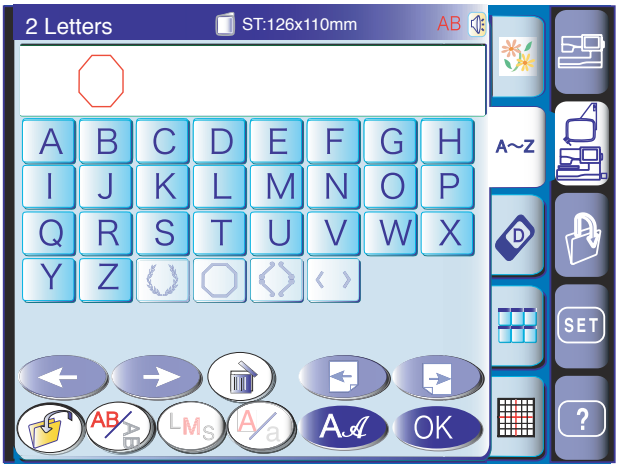
Press the ABC key to sew from the right end reference line on the template.



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 letter has been sewn.
Change the thread to the next color and start sewing again.

1 Color change key

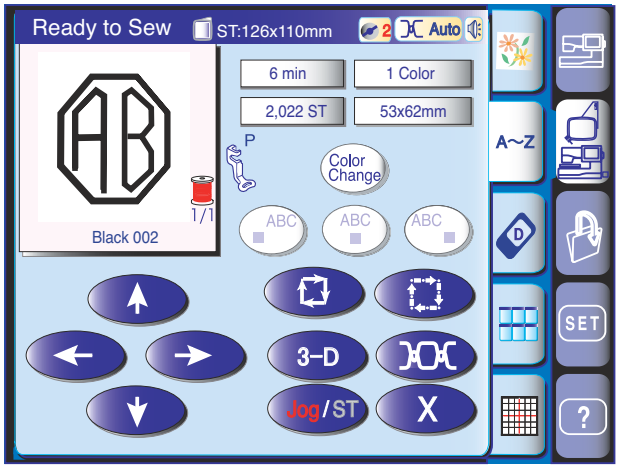


2- Letter monogram

Example: 2-Letter in an octagon

Press the font key.
Select 2-letter.
Select the octagon.

Enter **“A”**.
Enter **“B”**.



Press the OK key and the screen will change to the “Ready to Sew” screen.

Press the start/stop button to start sewing.
The machine will stop automatically when the monogram is completed.

NOTES:
The 3-letter monogram will be 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

Deleting a character

Enter **“M”**, **“A”**, **“R”** and **“T”**.

Press the cursor key to shift the cursor under **“R”** to delete.

Press the delete key and letter **“R”** will be deleted.

Inserting a character

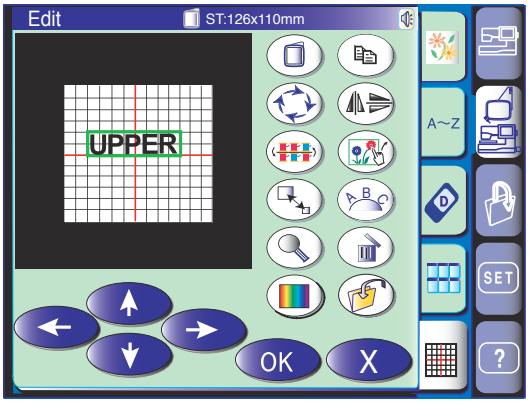
Press the cursor key to shift the cursor under **“A”**.

Enter **“E”**.
The letter **“E”** will be inserted before **“A”**.

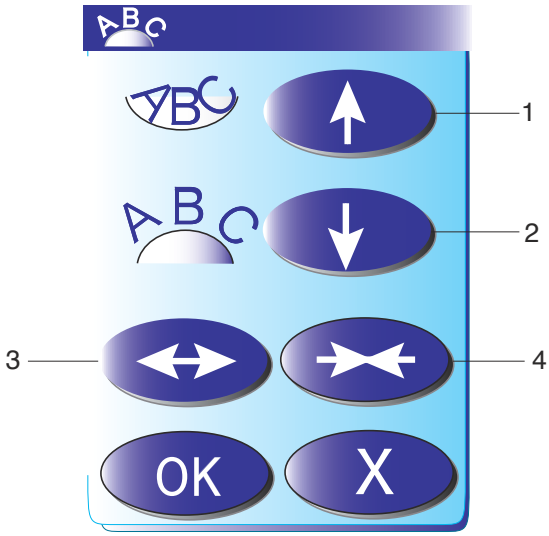
Monogramming in arc

You can make a monogram in an upper or lower arc.

Enter the characters and press the OK key.



The embroidery screen will appear. Press the edit key to enter the editing mode.



Press the arc key to open the arc layout window.

1 Upward arrow key

Press this key to make a lower arc.

2 Downward arrow key

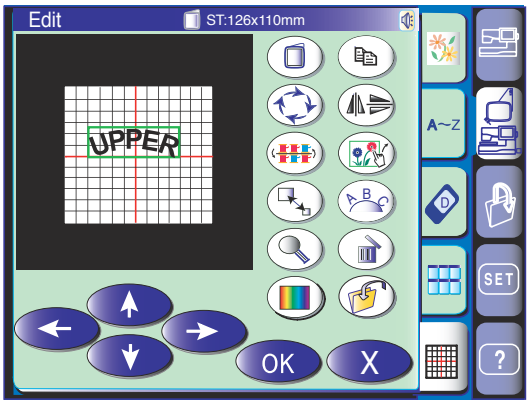
Press this key to make an upper arc.

3 Outward double-head arrow key

Press this key to enlarge an arc.

4 Inward double-head arrow key

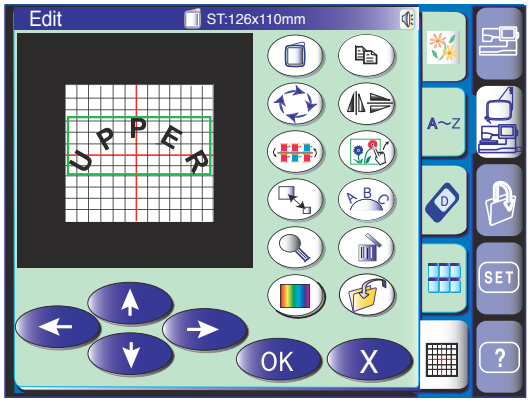
Press this key to shrink an arc.



Press the downward arrow key to make an upper arc.

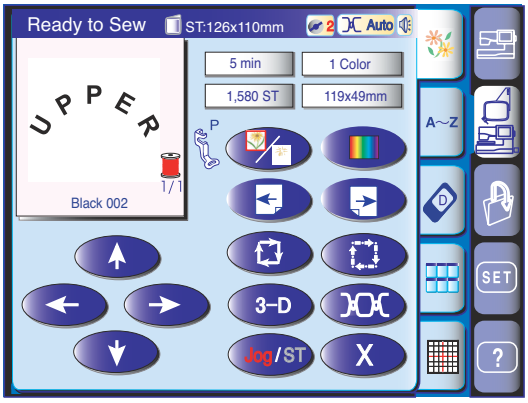
Each time you press the arrow key the arc will be deeper.
Pressing the arrow key in the opposite direction makes the arc shallower.

NOTE:
The curvature will change when pressing the downward or upward arrow key, but the arc length will remain the same.

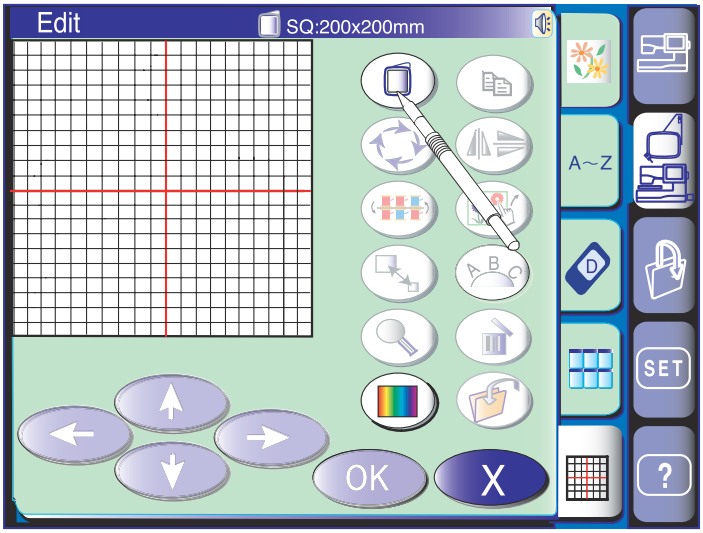


Press the double-head arrow key to adjust the size of the arc.
Move the arc to the desired position by pressing the layout keys or dragging the arc with your fingertip.

After choosing the shape of the arc, press the OK key in the arc layout window to apply the settings.



Press the OK key in the editing window and the design will be shown on the “Ready to Sew” screen.



Editing Mode

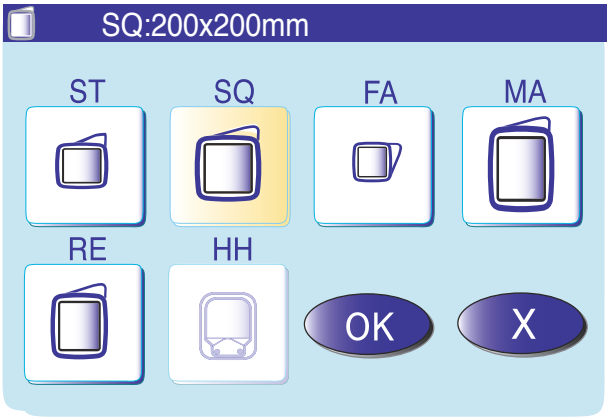
In the editing mode, you can edit and combine designs to create your original embroidery.

Press the editing mode key to open the editing window.

Selecting the hoop

You need to select the appropriate hoop before editing the designs.

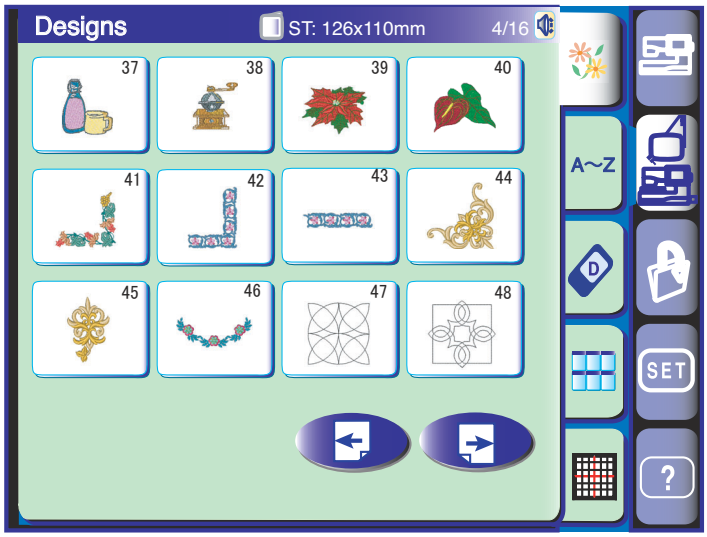
Press the hoop selection key and the hoop selection window will open.



Select one of the following hoops and press the OK key.

- Embroidery hoop ST: 126 mm by 110 mm
- Embroidery hoop SQ: 200 mm by 200 mm
- Free-arm hoop FA: 50 mm by 50 mm (optional item)
- Embroidery hoop MA: 200 mm by 280 mm (optional item)
- Embroidery hoop RE: 140 mm by 200 mm (optional item)
- Embroidery hoop HH: 100 mm by 90 mm (optional item)

The editing window will open in the selected hoop size.



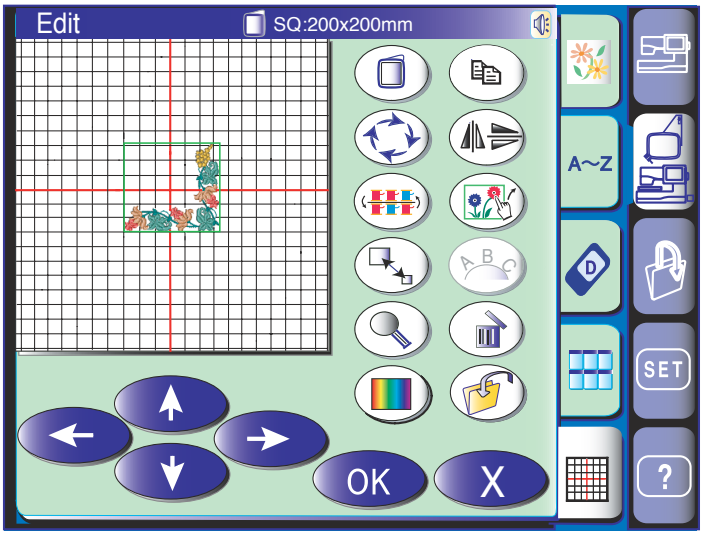
NOTE:
To select the embroidery hoop HH, first you need to select the hoop RE.
Please refer to the instruction sheet of the Hat Hoop for how to use it.

Opening the embroidery designs

You can open the built-in designs, monogram, and designs from the optional PC cards, CD-ROM drive and USB memory key in the editing window.

To import design patterns into the editing window, select the desired pattern in the pattern selection window.

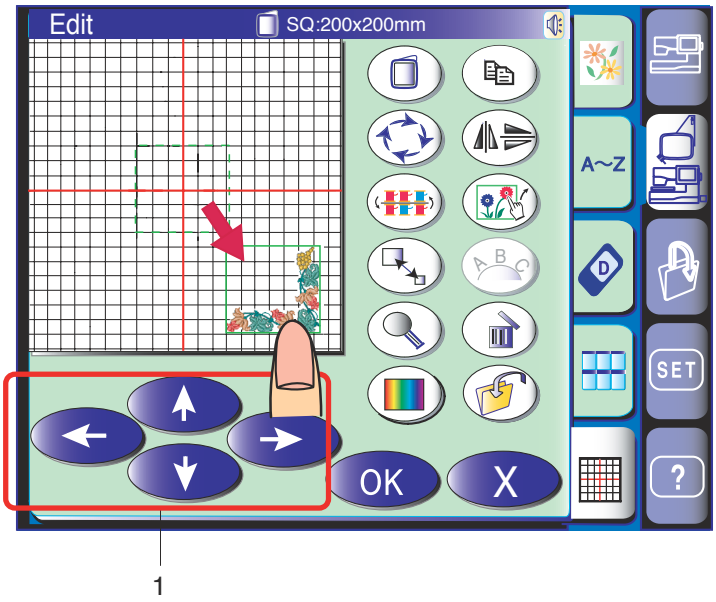
The screen will return to the editing window with the selected pattern displayed in the editing window



Selecting the pattern to edit

To select the pattern to edit, press the pattern image in the editing window.

The selected pattern will be framed.



Moving a pattern

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

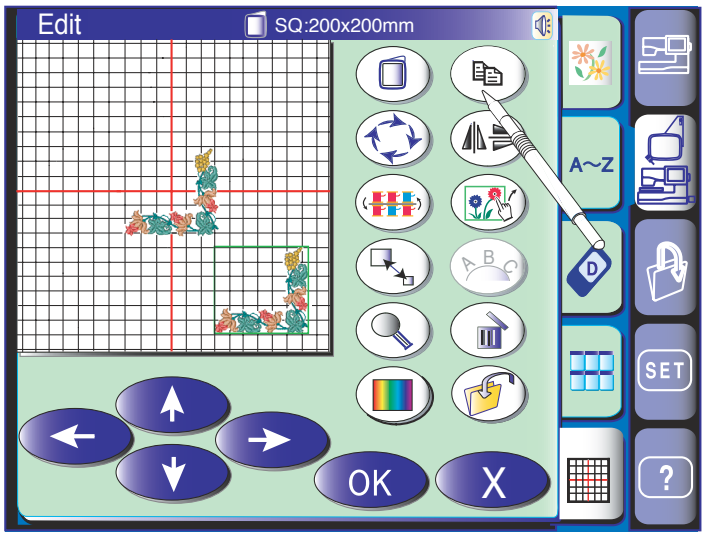
NOTE:
Do not drag the pattern on the screen with a sharp pointed object.

You can move the selected pattern also by pressing the layout keys.

Press the layout keys to move the pattern to the desired position in the editing window.

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

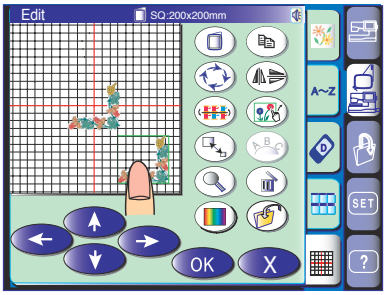
1 Layout key

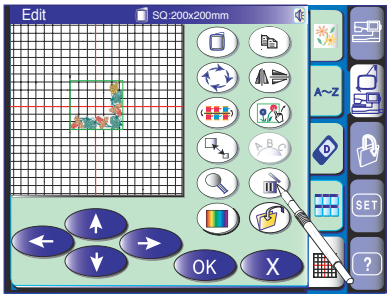


Duplicating a pattern

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

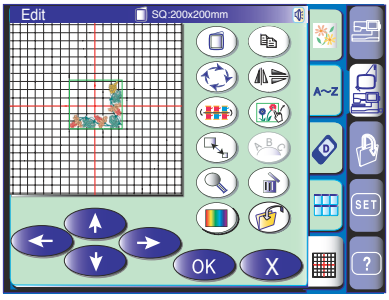
NOTE:
The original pattern will be superimposed with a duplicate. Move the duplicate to show the original pattern.

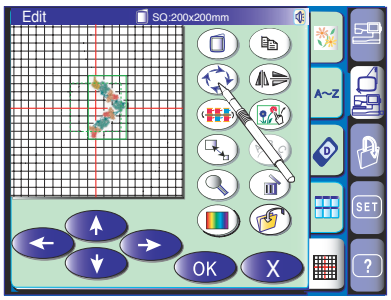


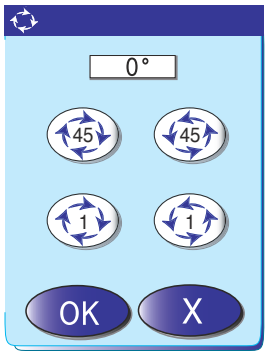


Deleting the pattern

Select the design to delete.
Press the delete key to delete the selected pattern.



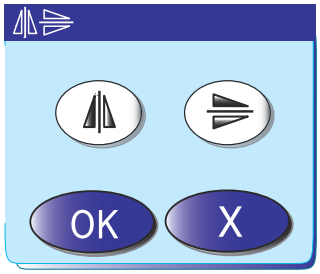


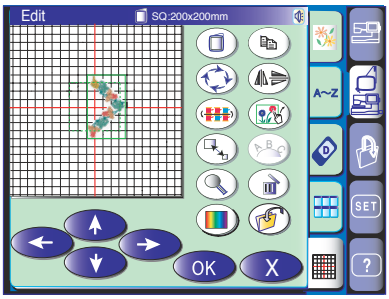


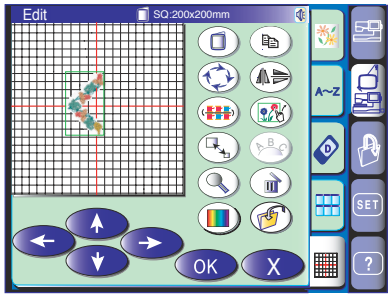
Rotating the pattern

Press the rotate key to open the rotation option window.
Press the 45 keys to rotate the selected pattern 45 degrees clockwise or counterclockwise.

Press the 1 key to rotate the selected pattern one degree clockwise or counterclockwise.
Press the OK key to confirm the rotation.

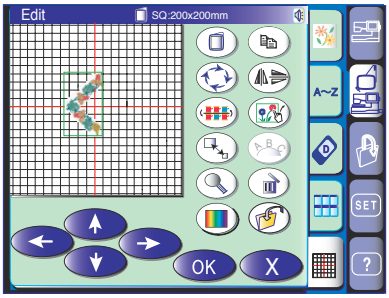


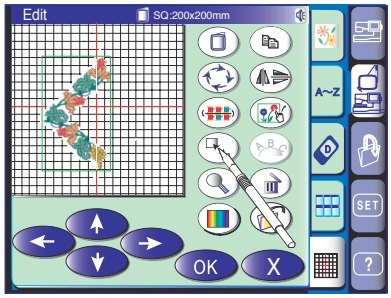


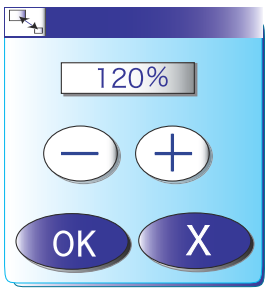


Flipping a pattern

Press the flip key to open the flip option window.
Press one of the flip keys to flip the selected pattern horizontally or vertically.
Press the OK key to confirm the flipping.





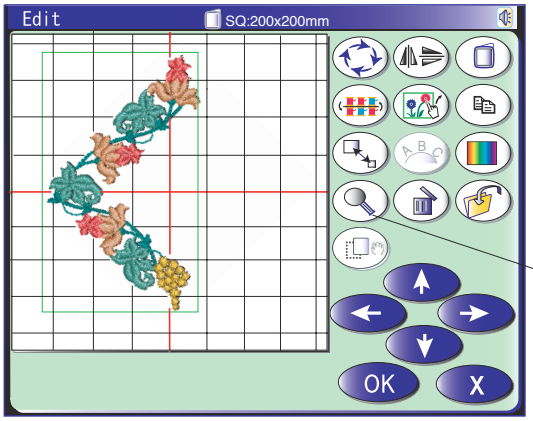


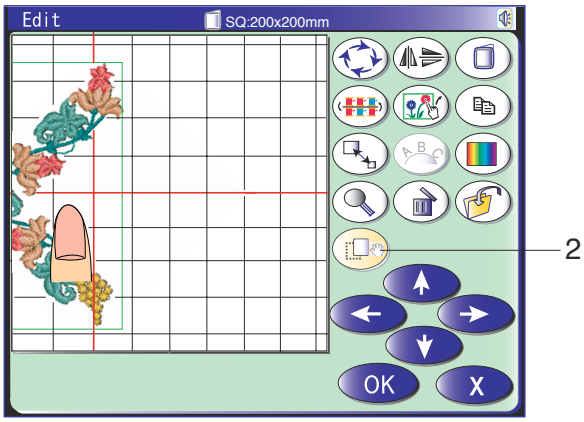
Resizing a pattern

When you press the resize key, the resize window will open.

You can change the size of embroidery pattern from 80% to 120% of the original pattern size. The size will change 1 % each time you press the plus or minus key. To change the size quikly, pess and hold the “+” or “–” key.
Press the “+” key to enlarge the size of the pattern.
Press the “–“ key to reduce the size of the pattern.

When you press the OK key, the embroidery pattern in the new size will appear in the editing window.
When you press the exit key, the embroidery pattern size will not change and the resize window will close.





Zooming in, on the editing window

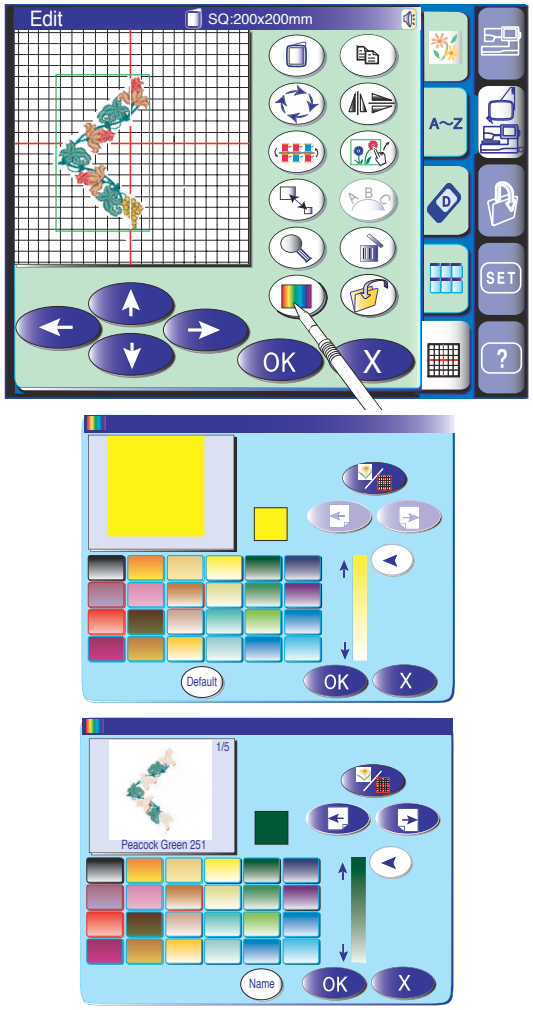
Press the zoom-in key to get the zoom-in view of the editing window. Pressing the zoom-in key again will further enlarge the view.

1 Zoom-in 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

Press the exit key X to return to the original window.



Customizing the display color

The background color of the editing screen and section color of the design image can be changed to your preference.

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

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

Press the color/part key to select the editing window or design image to change the color.

If you wish to change the thread color, select the color section of the design you wish to change by pressing the page keys .

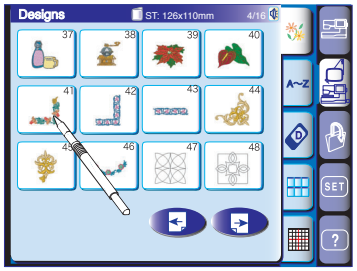
To select the hue, press one of the 24 color tiles.

To change the shade of the selected color, press and drag the slider up or down.

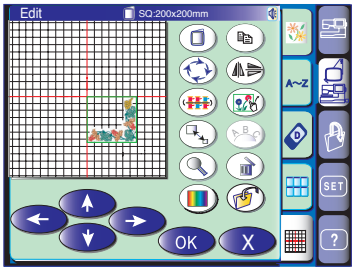
You can assign a name to the customized color for the color section by pressing the name key .

The assigned name will be displayed instead of the name and code of the thread color in the embroidery window.

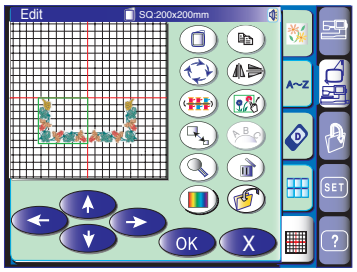
1



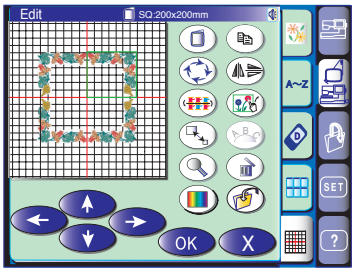
2

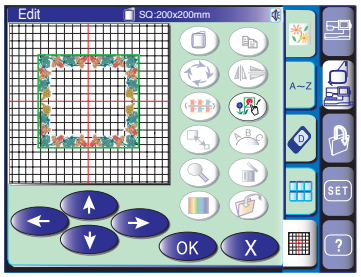


3

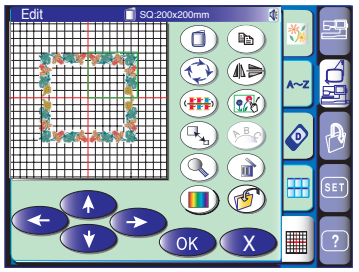


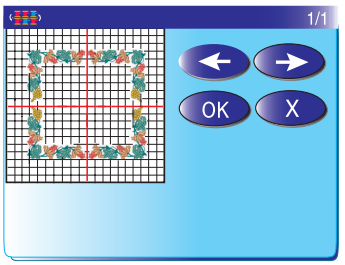
4



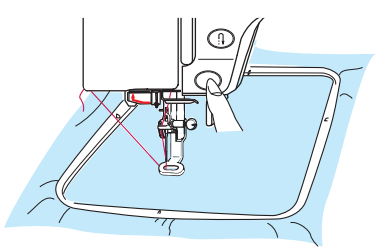


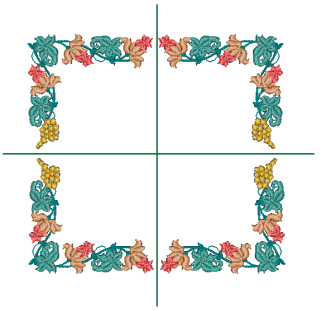
5





6





Combining the patterns (creating a square frame)

1 Select pattern ST41.

2 Press the editing key.
Select the hoop SQ.
Press the layout key to move the design down and to the right.
Press the duplicate key.

3 Press the horizontal flip key.
Press the layout key to move the duplicate to the left.
Press the duplicate key.

4 Press the vertical flip key.
Press the layout key to move the duplicate up.
Press the duplicate key.
Press the horizontal flip key.
Press the layout key to move the duplicate to the right.

NOTE:
If you press the grouping key , you can move the combined patterns as a single group.

5 Press the color grouping key to unite the color sections of the same color.
The color grouping window will open.

6 Press the OK key and the embroidery window for the combined patterns will open.

NOTE:
Press the exit key to return to the previous screen without grouping the color.

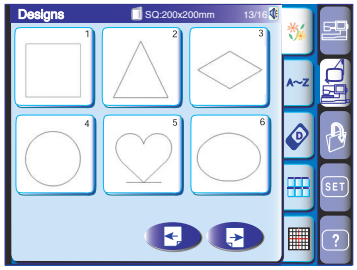
NOTE:
The starting point of the edited design is always in the center of the hoop.

NOTE:
Patterns with a custom color cannot be grouped.

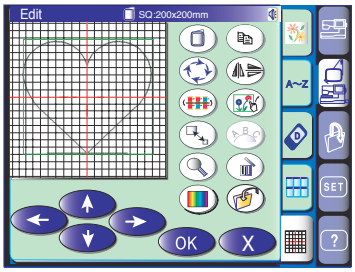
NOTE:
When you have grouped the color section, the last sewn pattern can be resumed, but the last stitch cannot be resumed.

Using a template pattern to create the pattern chain

1



2

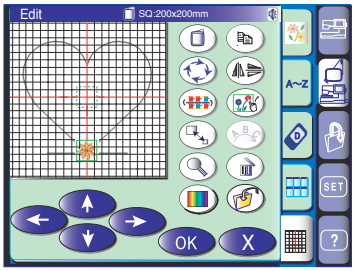


1 Select built-in pattern Template 5.
Press the editing key.

2 The editing window with the selected pattern will open

3

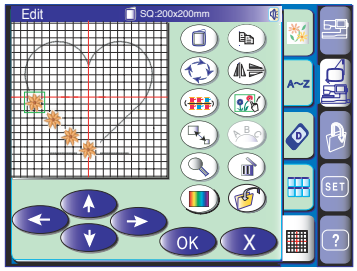
4



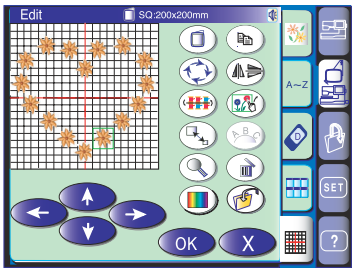
3 Select pattern FA20. A design image will appear in the editing window.

4 Drag the pattern to the bottom corner of the backdrop.
Press the duplicate key.

5



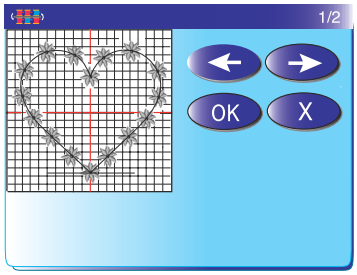
6



5 Lay the duplicate along the backdrop.

6 Repeat the above steps to form a heart-shape with a series of patterns.

7, 8

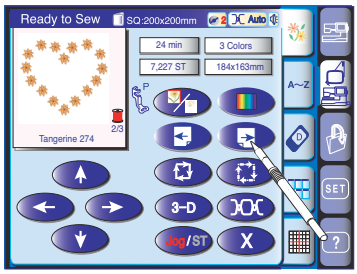


7 Press the color grouping key to unite the color sections of the same color.

8 Press the OK key.
The “Ready to Sew” screen will open.

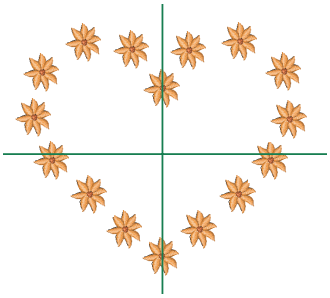
9 Press the next section key to skip the template pattern.

9



10 Press the Start/Stop button to sew.

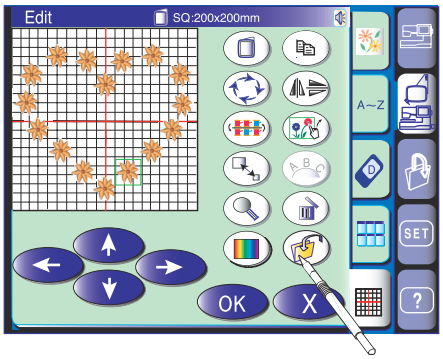
10



NOTE:
Patterns Template1 to 14 are used as backdrops for the chain of the patterns.
The template patterns can be resized from 50% to 150 % of the original size.

FILE MANAGEMENT

Saving and Opening a File

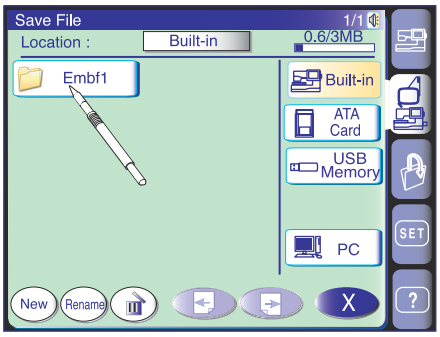


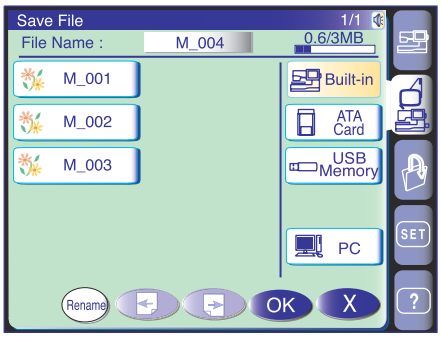
Saving a file

An original embroidery design created in the editing mode or programmed pattern combination in the ordinary sewing mode can be saved as a file in the built-in memory, ATA PC card (optional item), USB memory key (optional item) or the PC connected with a USB cable (in embroidery mode only).

When you press the save file key , folders labeled “Embf” (in the embroidery mode) or “Ordf” (in the ordinary sewing mode) will be displayed on the screen.

Press the icon of the desired folder to select.

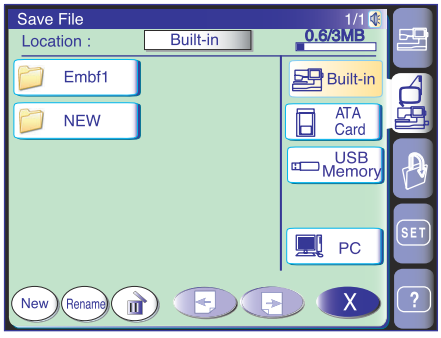




The save file window will open. The file name will automatically be assigned starting from M_001.... in order.

Press the OK key and the file will be saved in the selected folder.

To return to the previous screen press the exit key X.



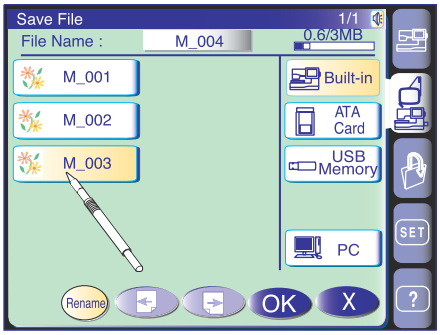
Creating a new folder

You can create your own folder and assign the desired name to it.
Press the new folder key New and the keyboard window will open to allow you to assign the desired name to the new folder.

Enter the folder name and press the OK key.

A new folder with the assigned name will be displayed in the folder list window.

NOTE:
You can save as many files or folders as the available memory space allows.
A scale bar in the upper right corner in the window indicates the memory size.

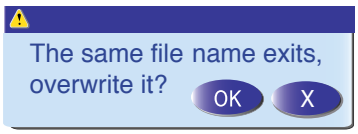


Changing the name of the folder or file

To change the folder or file name, press the rename key (Rename) and select the folder or file you wish to change its name.

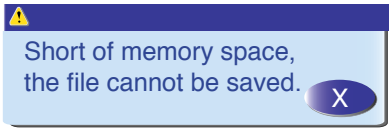
The keyboard window will open.
Enter a new name and press the OK key.

NOTES:
Only 8 characters can be entered.
Press the delete key to delete the last character.

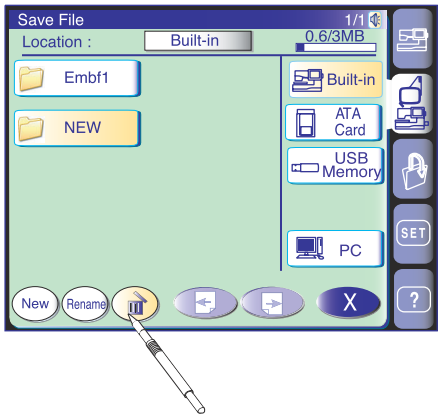


When you attempt to save a file with the name already exists, the confirmation message will appear. Press the OK key to overwrite the existing file.

Press the exit key (X) if you do not wish to overwrite it.



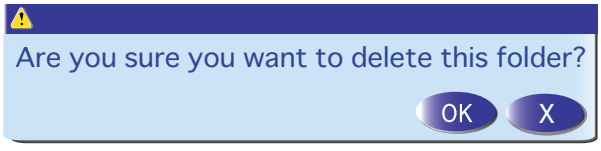
When the memory is full, the warning message will appear. Press the OK key, and delete the file or folder that you do not need.



Deleting the file or folder

You can delete the folder or file no longer needed.
Press the delete key then select the folder or file to delete.
The confirmation window will appear. Press the OK key to delete the selected folder or file.

NOTE:
The folders and files in the CD-ROM, PC Design card or PC connected to the machine cannot be deleted.



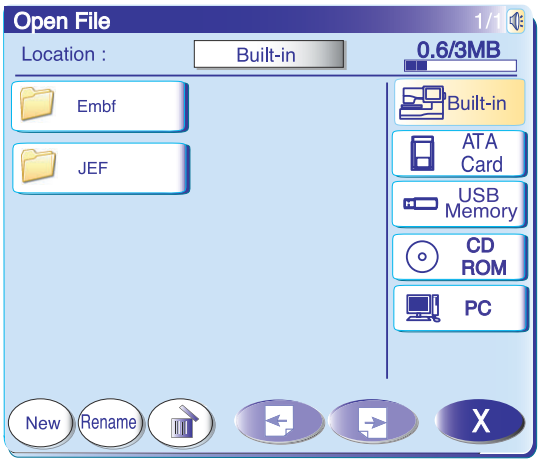
CAUTION:
Do not turn the power off, eject the card or remove the USB memory key while a warning message is displayed on the screen.
Otherwise the saved data will be lost or the memory will be damaged.

Opening the file

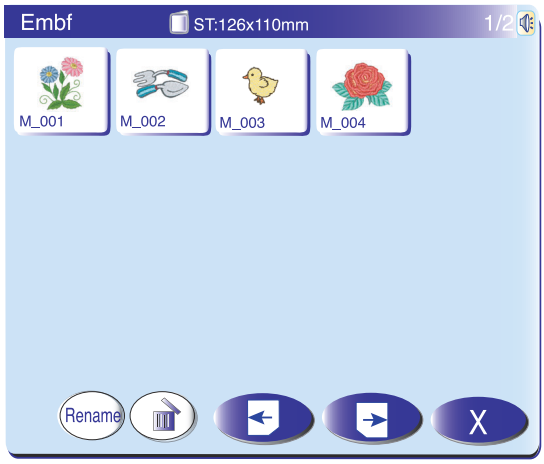
To open the saved files, press the open file key and the open file window will open.

Select the folder location, either in the built-in memory, ATA PC card, USB memory key, CD-ROM drive (in embroidery mode only) or the PC connected with a USB cable (in embroidery mode only).

Open the folder that contains the file you wish to open by pressing the folder icon.



A file list of the selected folder will be displayed. Press the next page key to view the remaining files.

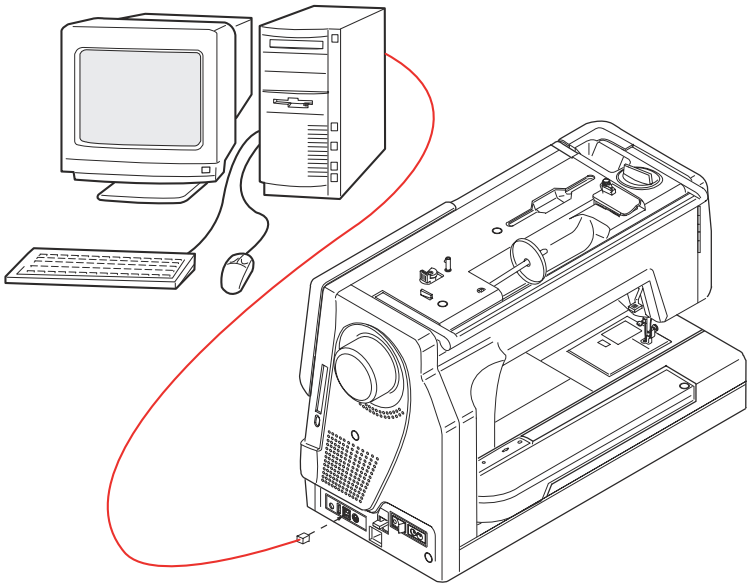


Press the file icon and the screen will display the “Ready to Sew” window of the saved design or programmed pattern combination.

NOTES:

The USB memory keys (optional item) are available from computer shops and camera shops.

The CD-ROM drive (optional item) is available from the authorized dealers.



Direct PC-Link

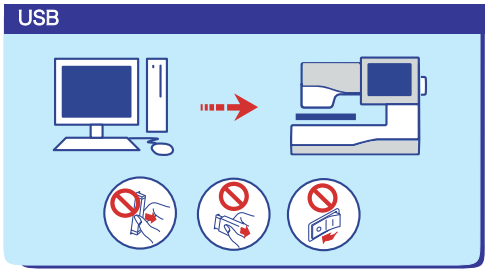
Connecting the machine and PC

This machine can be connected to the PC with the USB cable included in the standard accessories.

You need to install the USB driver for the machine and the PC Folder Tool on your computer.
The USB driver and PC Folder Tool are available in the M860 Tools CD-R included in standard accessories.

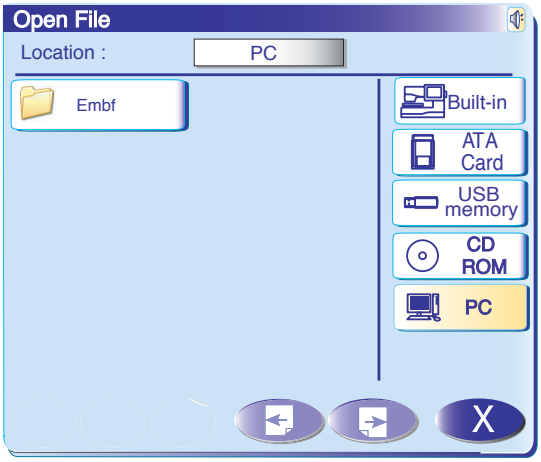
The PC Folder Tool allows you to transfer the data bilaterally between the machine and PC.

NOTE:
Refer to the instruction booklet of the M860 Tools CD-R for more details.



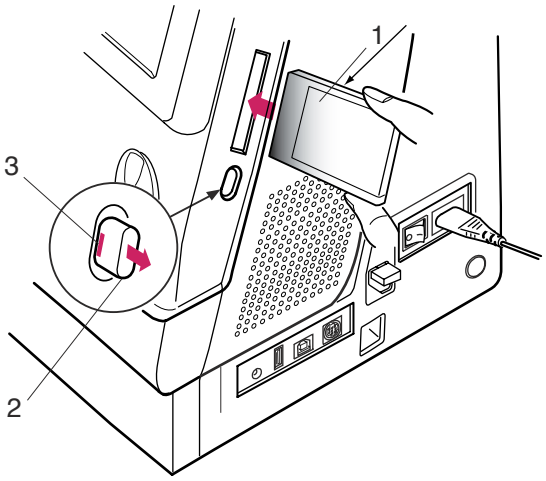
Start up the machne and PC, and insert the type “A” USB connector into the PC.
Insert the type “B” connector into the machine.

Press the PC-link tab to establish the communication between the machine and PC.



Now, you can save and open the files, or transfer the data between the machine and PC.

CAUTION:
Do not turn the power off or disconnect the USB cable while the data transfer is in progress.
Otherwise the data will be lost or the memory will be damaged.



OPTIONAL ITEMS

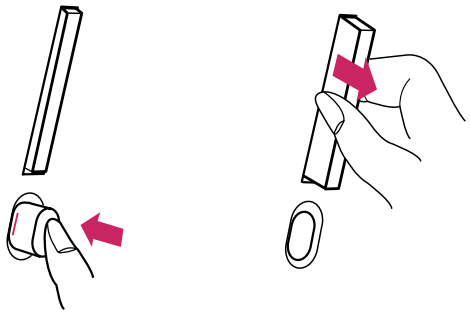
PC Design Cards
You can import attractive embroidery designs from optional PC Design cards.

Inserting the PC Design card
Insert the PC Design card into the slot with the front side of the card facing toward you.
Push the card in until it clicks, then the eject button will pop out.

1 Front side of card (Marked with a triangle)

When the card is properly set, the red bar on the eject button will pop out.

2 Eject button
3 Red bar



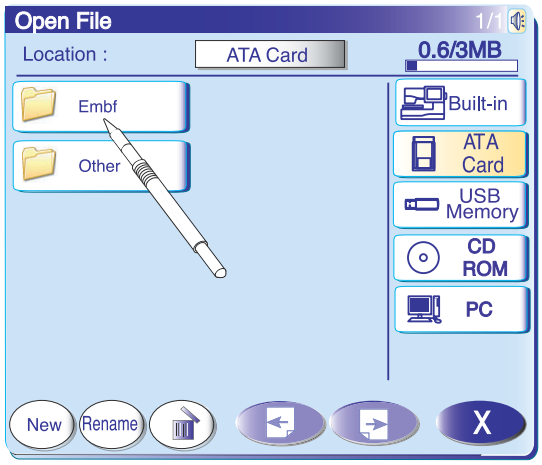
Ejecting the PC card
Press the eject button to eject the PC card.
Take out the PC Card from the machine.

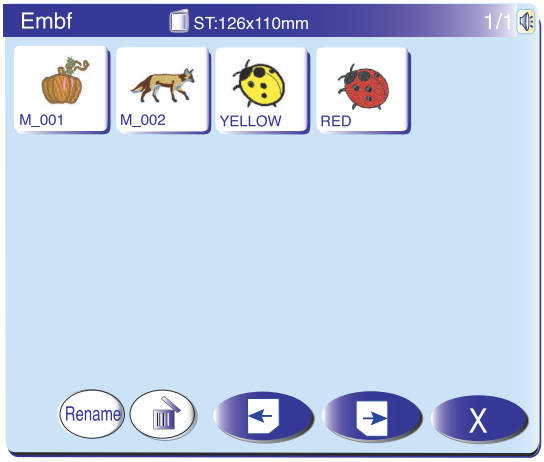
NOTE:
When turning the power switch on with the PC card inserted, it will take a few moments to start up the machine.

Importing embroidery designs from a PC Design card.
Press the card tab in the embroidery mode.
The pattern selection window of the PC Design card will open.
Press the next page key to view the rest of the card contents.
Press the icon key of the design you wish to import.

NOTE:
You cannot access PC Design cards using the open file mode.

CAUTION:
Do not turn the power off, eject the card or remove the USB memory key while a warning message has been displayed on the screen.
Otherwise the saved data will be lost or the memory will be damaged.





ATA PC card

This machine is compatible with an ATA PC card, which can be used to save files and transfer data between the machine and your PC.
The ATA PC card consists of an adapter and CompactFlash card available at computer shops and camera shops.

Insert an ATA PC card into the card slot of the machine.

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

Press the ATA card tab and the folder list will be displayed on the screen.
Press the desired folder icon to open.

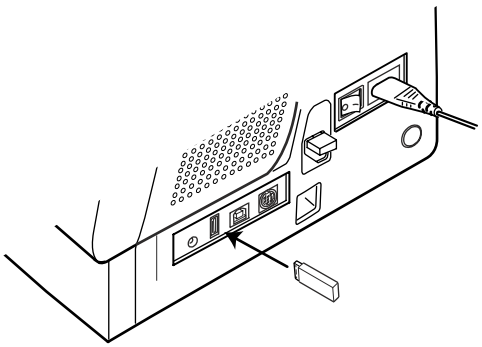
Select the desired pattern by pressing the pattern icon.

NOTES:
You cannot access the ATA PC card by pressing the card tab in the embroidery mode.

The following CompactFlashes are recommended for use with this machine:

Sandisk (64 MB, 96 MB, 128 MB)
SONY (128 MB)
Lexar Media (128 MB)
Princeton (128 MB)
PQI (128 MB)
Kodak (128 MB)
Hagiwara Syscom (128 MB)

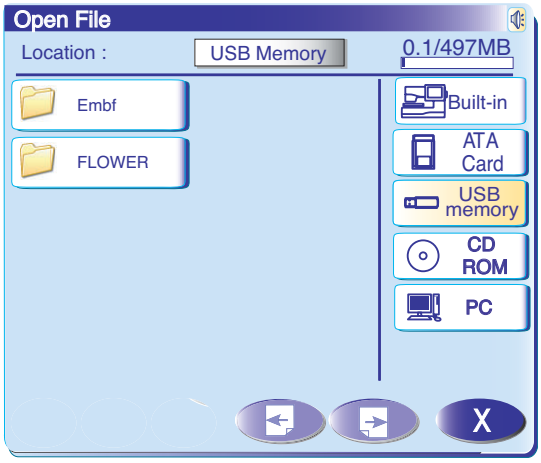
CAUTION:
Do not turn the power off, eject the card or remove the USB memory key while a warning message has been displayed on the screen.
Otherwise the saved data will be lost or the memory will be damaged.



USB Memory Keys

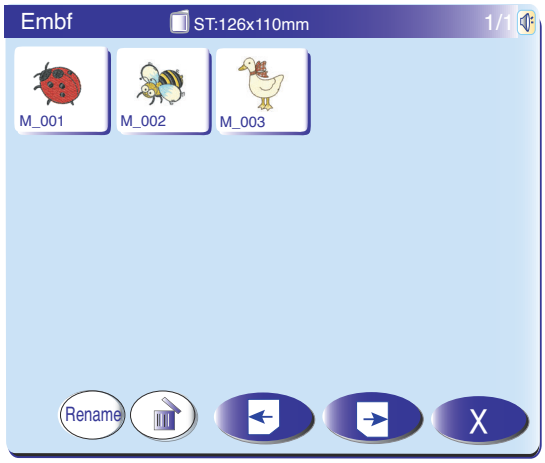
The USB memory keys can be used to save the stitch data and transfer the embroidery designs between the machine and your PC.
The USB memory key is available at camera shops, PC supplies stores etc. in various forms.
Following USB memory keys are recommended to use with this machine

Insert the USB memory key into the type “A” USB port on the machine.



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

Press the USB memory tab and the folder list will be displayed on the screen.
Press the desired folder icon to open.

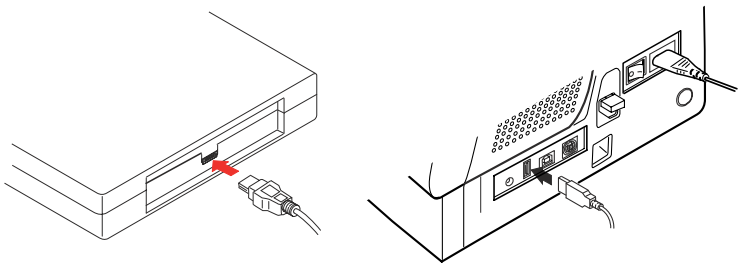


Select the desired pattern by pressing the pattern icon.

CAUTION:
Do not turn the power off, eject the card or remove the USB memory key while a warning message has been displayed on the screen.
Otherwise the saved data will be lost or the memory will be damaged.

NOTE:
The following USB memory keys are recommended for use with this machine:

I-O Data	EasyDisk PT
I-O Data	EasyDisk EDL-128M/B
SolidAlliance	i-Duck
Lexer Media	JumpDrive
Green House	PicoDrive Light GH-UFD128LT
Logitec	Mobile USB Memory LMC-128UD2
Hagiwara Syscom	USB PurePro
Adtec	I-Stick AD-UI128M/U2W
Buffalo	Clip Drive RUF-C128ML-K/U2
Buffalo	Clip Drive RUF-C128M/U2
Powerglobal iNdex	I-Stick 2.0 QSI-128
Sandisk	Cruzer Mini SDCZ2-128
SONY	Pocket Bit USM128D
Imation	FlashGo! FG-128USB2
Elecom	MF-FU2128B2GT

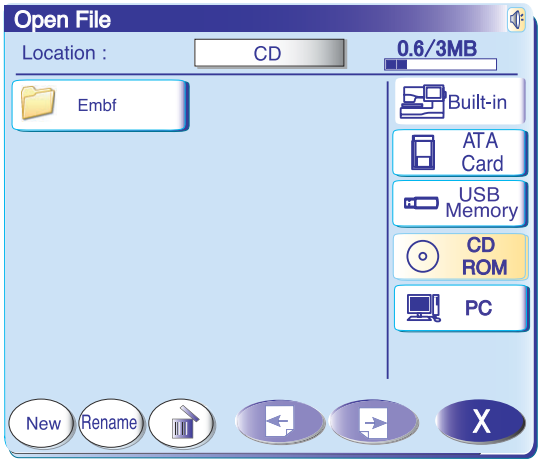


CD-ROM Drive

NOTE:
Do not use any other CD drives than the exclusive CD-ROM drivefor this machine, which is available from authorized dealers.

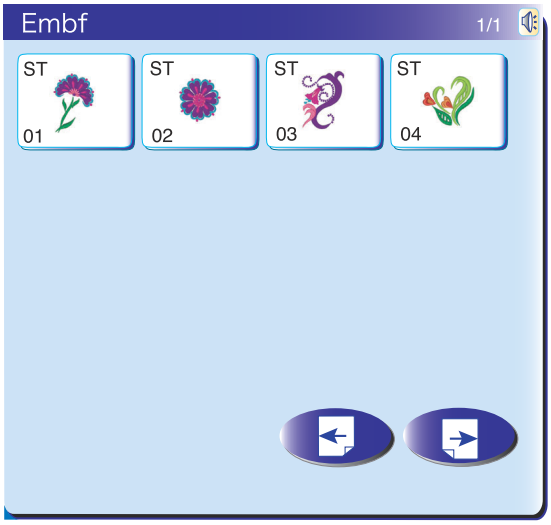
Insert the mini USB connector into the USB port on the back of the CD-ROM drive.

Plug the USB connector into the USB port on the machine. The CD-ROM drive does not need external power since it is supplied from the machine via the USB cable.



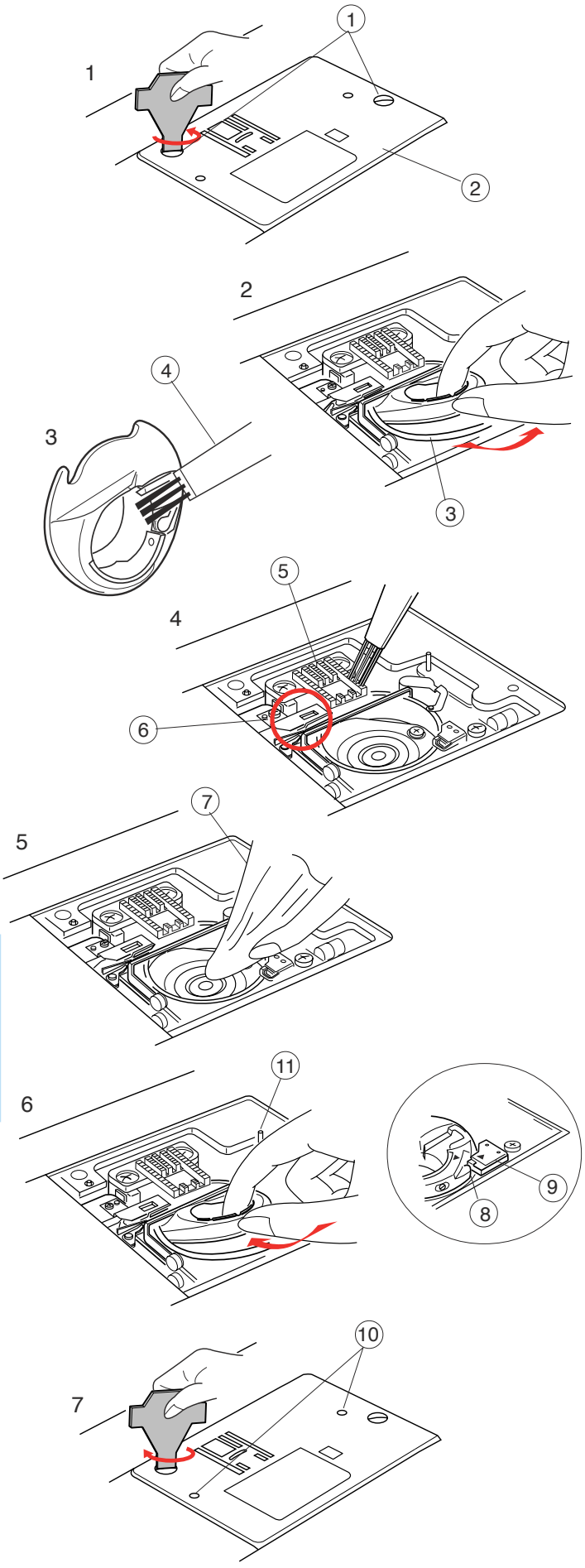
Turn on the machine and press the open file key.

The open file window will open.
Press the CD ROM tab and select the folder that contains embroidery design data in the Jef format.



Select the desired pattern by pressing the pattern icon.

NOTES:
The hoop size of the design will be indicated on the upper left corner of the pattern icon key.



CARE AND MAINTENANCE

This machine is equipped with LED sewing lights, which will not burn out and do not need to be replaced.

Cleaning the Hook Race and Feed Dog

Press the up/down needle button to raise the needle, then unplug the sewing machine.
Remove the needle and presser foot.

NOTE:
Do not dismantle the machine other than what is explained on this page.

1. Remove the setscrews with the screwdriver key supplied with the machine. Remove the needle plate.
   (1) Setscrews
   (2) Needle plate

2. Take out the bobbin and bobbin holder.
   (3) Bobbin holder

3. Clean the bobbin holder with a lint brush.
   (4) Lint brush

4. Clean the feed dog and auto thread cutter device with the lint brush.
   (5) Feed dog
   (6) Auto thread cutter device

5. Clean the hook race with a soft dry cloth.
   (7) Soft dry cloth

Assembling the hook race

6. Insert the bobbin holder so that the knob fits next to the stopper in the hook race.
   Insert the bobbin.
   (8) Knob
   (9) Stopper

7. Reattach the needle plate, aligning the guide holes on the needle plate with the needle plate guide pins and tighten the screw.
   (10) Guide holes
   (11) Needle plate guide pins

NOTE:
After cleaning the machine, make sure the needle and presser foot are attached.

Troubleshooting

Problem	Cause	Reference
The machine is noisy.	1. Threads have been caught in the hook mechanism. 2. The feed dog is packed with lint.	See page 94. See page 94.
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 has not been set in the thread holder when embroidery sewing started.	See page 12. See page 29. See page 15. See page 15. See page 15. See page 66.
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 11. See page 94. 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 fabric is not drawn to the rear when sewing is finished. 6. The needle is too fine for the fabric being sewn.	See page 15. See page 15. See page 15. See page 29. See page 27. See page 15.
Visual Touch Screen is not clear.	1. The contrast of the screen is not adjusted properly.	See page 20.
PC Card does not work.	1. The PC Card is not inserted correctly.	See page 90.
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 work being sewn. 4. A blue tipped needle is not being used for sewing stretch, very fine and synthetics. 5. The needle thread is not threaded properly. 6. A defective (rusted, burred needle eye) needle is used. 7. The embroidery hoop is not set properly. 8. The fabric is not stretched tight enough in the embroidery hoop.	See page 15. See page 15. See page 15. See page 15. See page 12. Change the needle. See page 66. See page 64.
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 presser foot pressure is not adjusted correctly. When sewing extremely lightweight materials place interfacing underneath the fabric. 6. The fabric is not stretched tight enough in the embroidery hoop.	See page 12. See pages 11, 12. See page 15. Make stitches shorter. See page 17. See page 64.

Problem	Cause	Reference
Slipping layers	1. The presser foot pressure is not adjusted correctly. 2. The even feed foot is not used.	See page 17. Use the even feed foot.
The cloth is not feeding smoothly.	1. The feed dog is packed with lint. 2. The presser foot pressure is too weak. 3. The stitches are too fine. 4. The fabric is not fed when sewing is starting. 5. The feed dog is lowered.	See page 94. See page 17. Make stitches longer. See page 26. See page 22.
The machine does not run.	1. The machine is not plugged in. 2. A thread is caught in the hook race. 3. The control circuit is not working correctly. 4. The start/stop button is used for ordinary sewing with the foot control plugged in.	See page 7. See page 94. Turn the switch off and turn it on again. See page 8.
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	Remove the object. See page 66.
Patterns are distorted.	1. The needle thread tension is too light. 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 tight enough in the embroidery hoop. 8. The fabric is caught or trapped when sewing embroidery.	See page 29. See pages 29, 30. See page 57. Use an interfacing. See page 66. See page 66. See page 64. Stop the machine and free the fabric.
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 used with stretch fabric.	See pages 37. See page 57. 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 21.

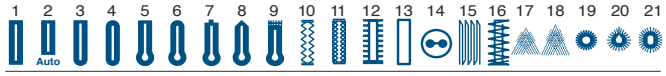
Clean the outside of the machine with a soft cloth. Do not use chemical solvents.
Store the machine in cool and dry place.
Do not store the machine in a area of high humidity, near a radiator or in direct sunlight.
The power supply cord can be stored in the hard cover.
Make sure to store the visual touch screen and embroidery carriage arm before turning off the power switch.

STITCH CHART

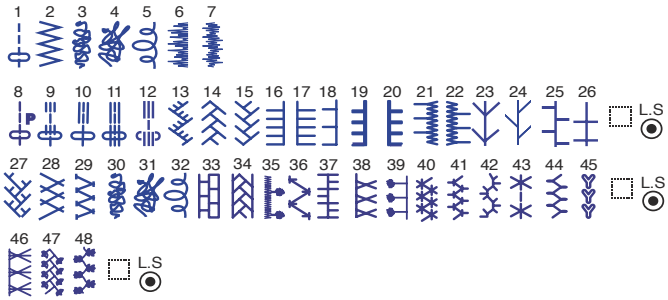
Ordinary Sewing

U: Utility Stitches

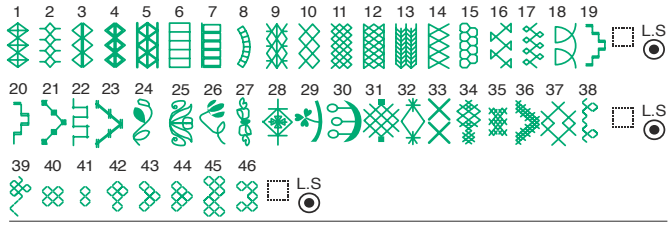
B: Buttonholes and Specalty Stitches



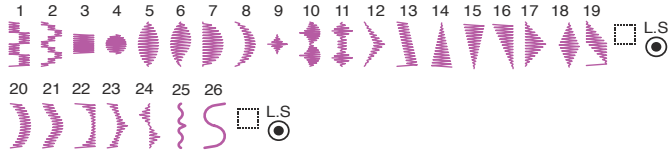
Q: Patchwork and Quilting Stitches



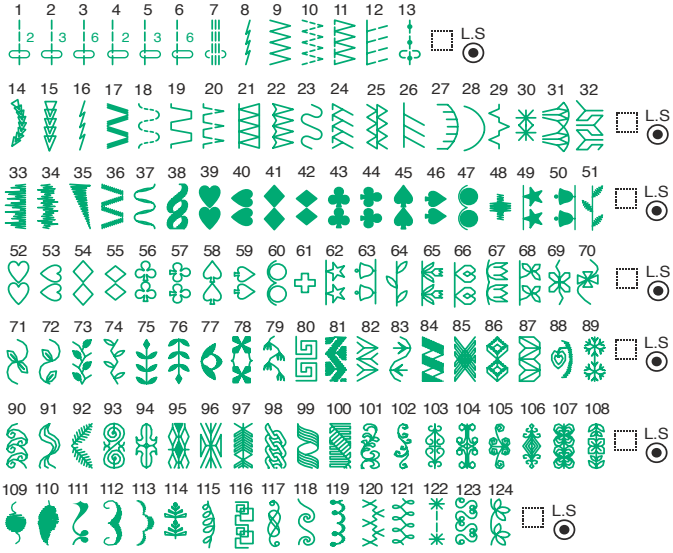
H: Heirloom Stitches



S: Decorative Satin Stiches



D: Decorative Stitches

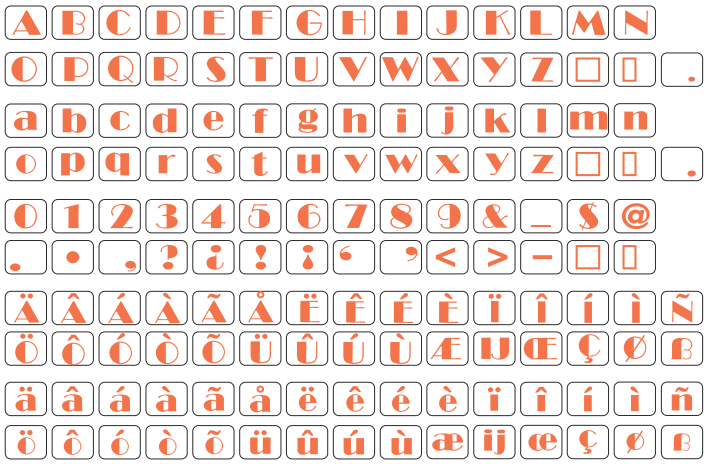


P: Pictograph Stitches

Block

Script

BroadWay



Symbol

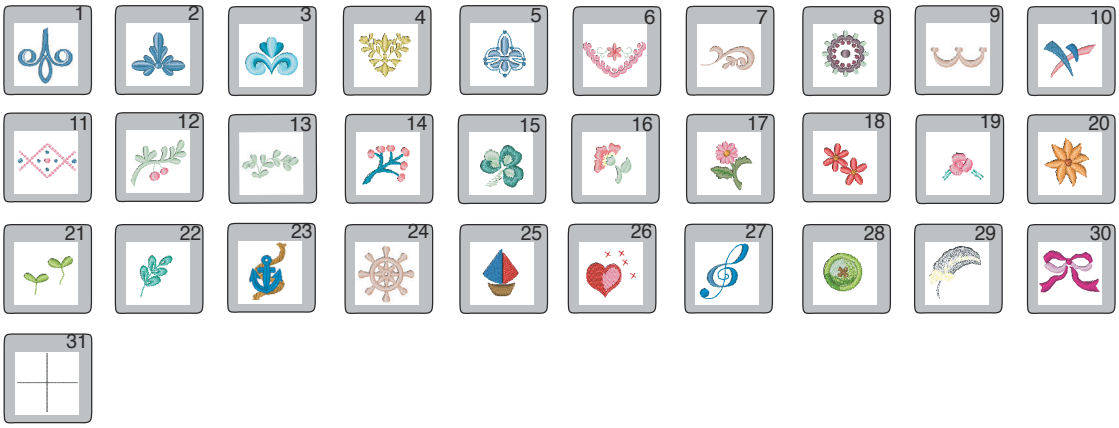
DESIGN CHART

ST: for Hoop-ST

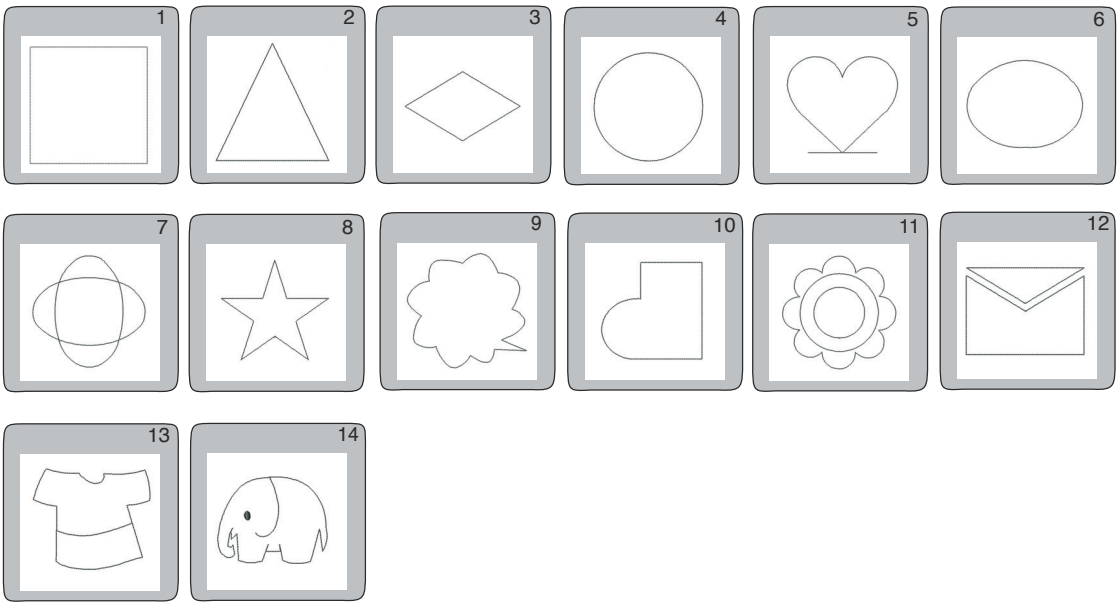
SQ: for Hoop-SQ

DESIGN CHART

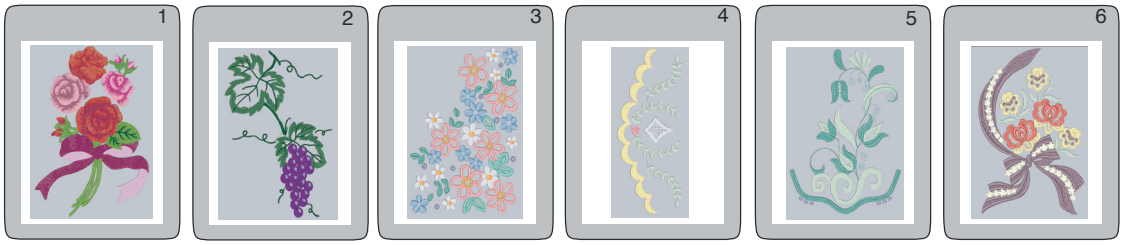
FA: for Free-arm Hoop-FA



TP: Template Pattern for Hoop-SQ



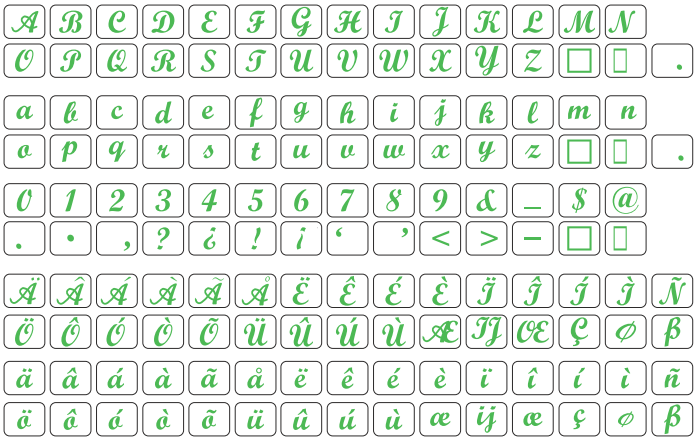
MA: for Hoop-MA



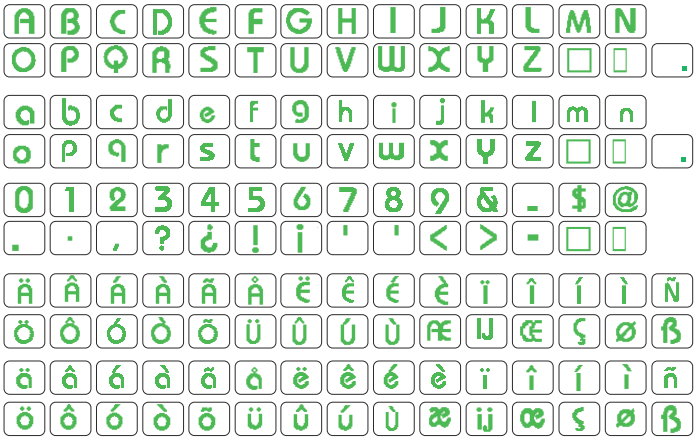
Gothic

Hollowblock

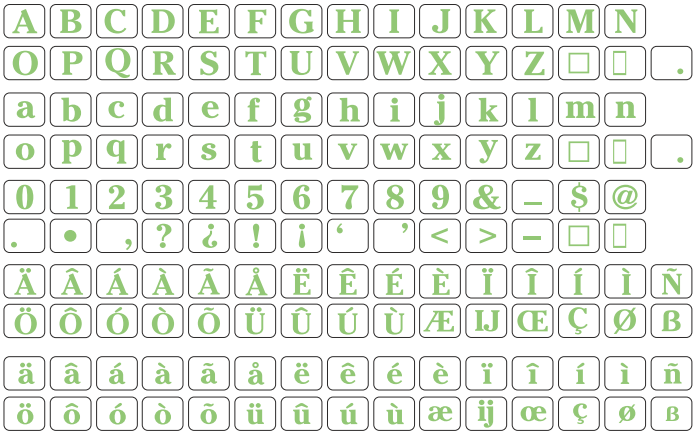
Script



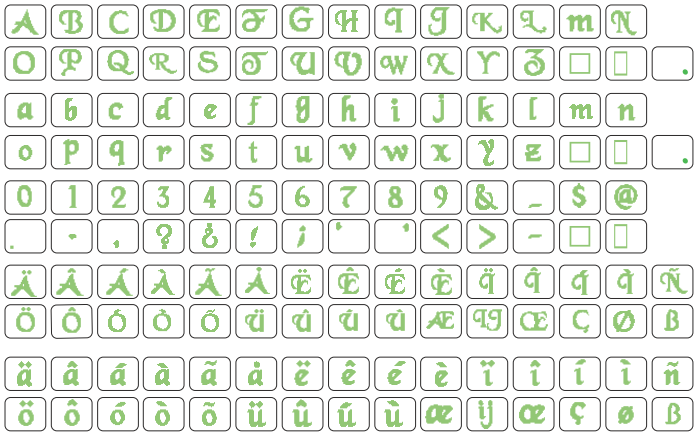
Bauhaus



Cheltenham

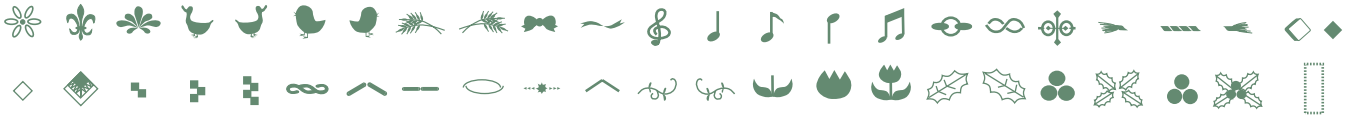


Galant



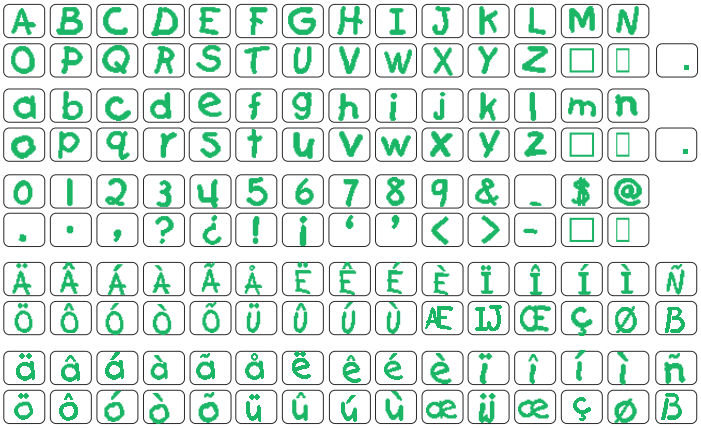
3-letters / 2-letters

Program border



Typist

First Grade



Brush

Jupiter

Normal Sew

Elna International Corp.SA Geneva, Switzerland

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