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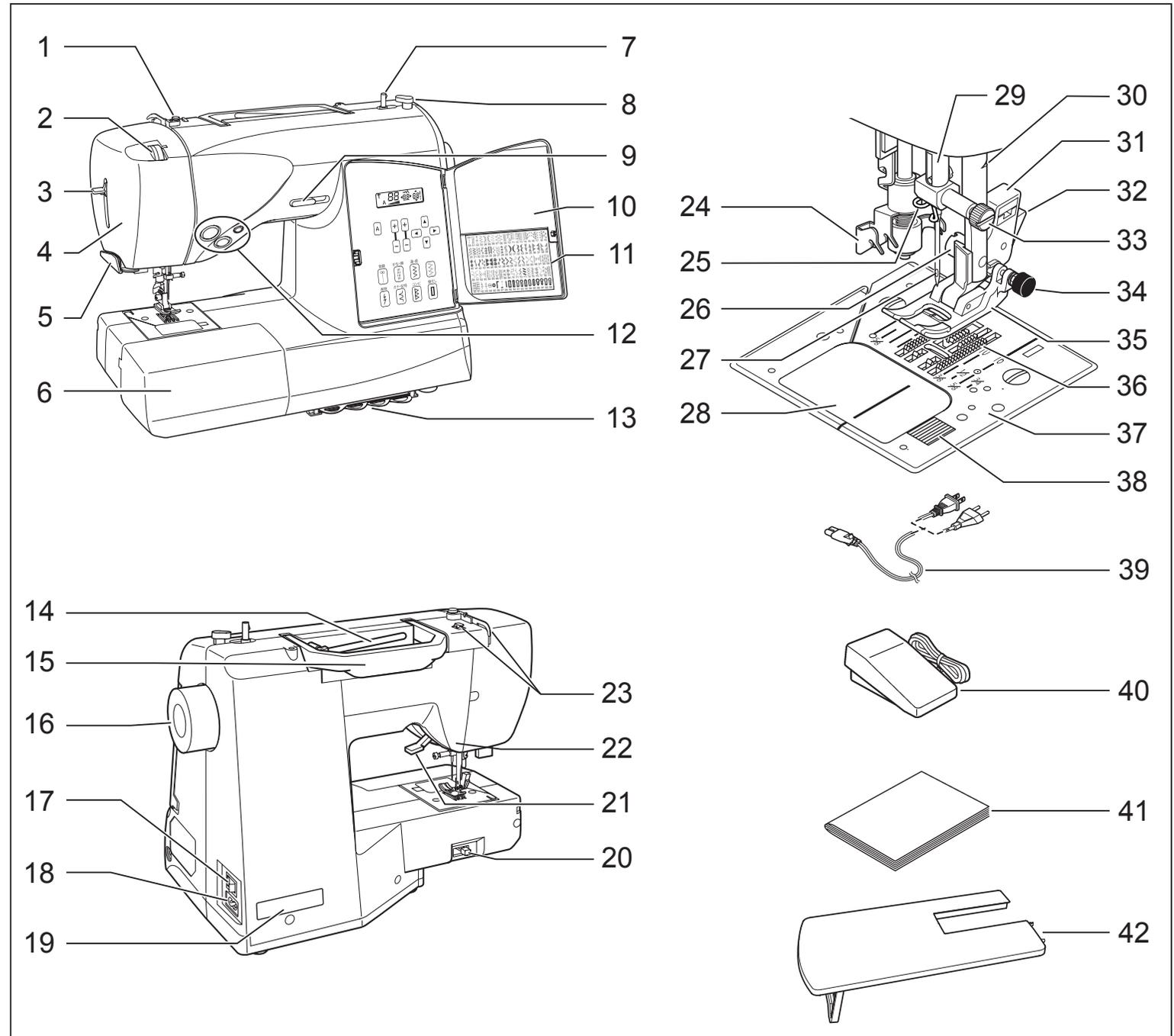
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1. KNOWING YOUR SEWING MACHINE

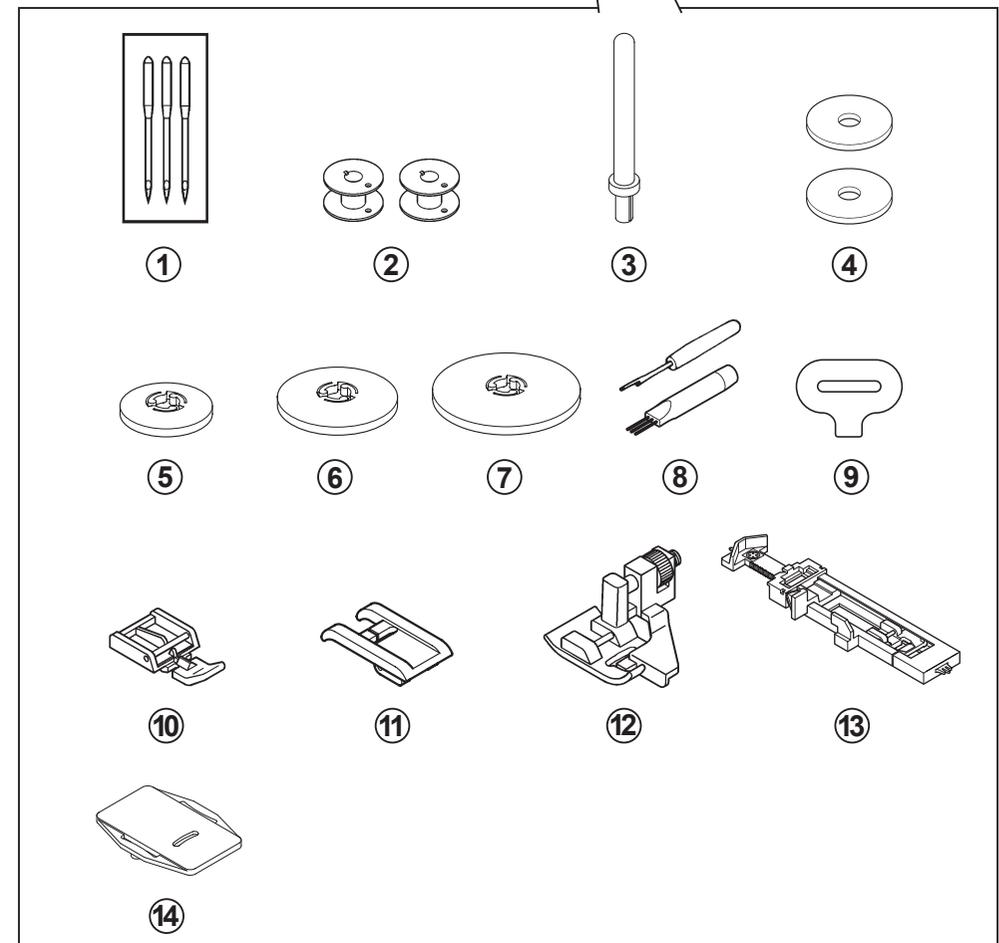
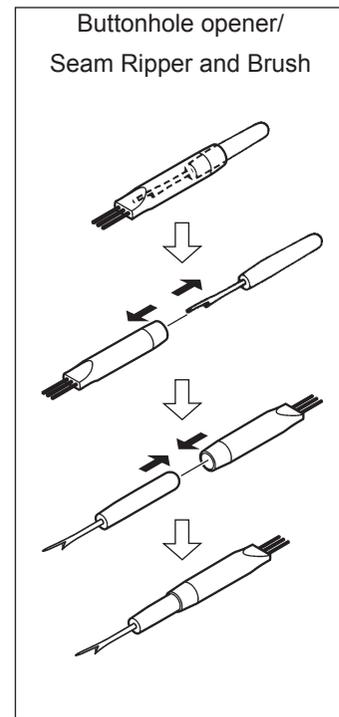
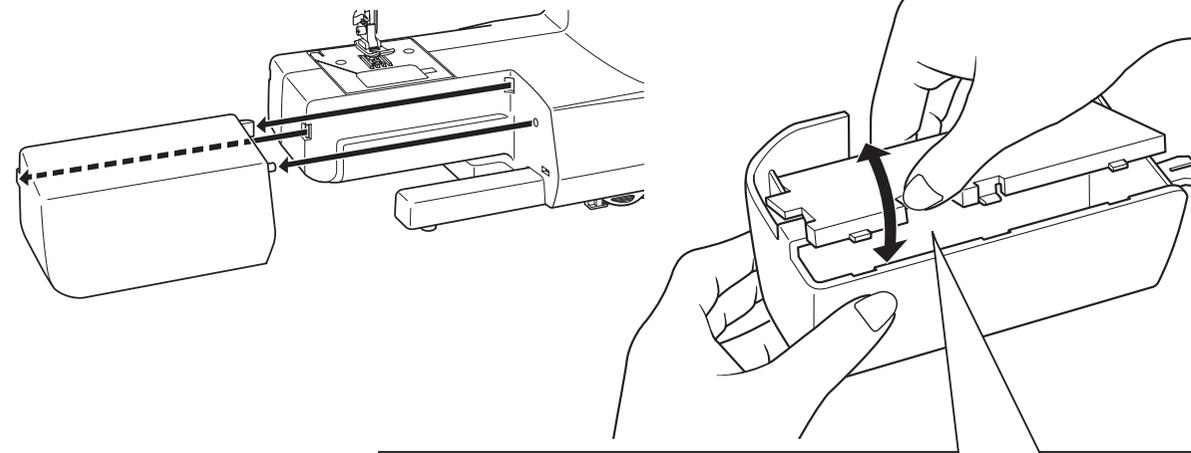
MACHINE IDENTIFICATION

- 1. Bobbin winding tension disc
- 2. Thread tension control
- 3. Automatic needle threader
- 4. Face cover
- 5. Thread cutter
- 6. Removable extension table/Accessory box
- 7. Bobbin winder shaft
- 8. Bobbin winder stop
- 9. Sewing speed control
- 10. Swing door
- 11. Pattern number reference guide
- 12. Operation buttons
- 13. Letter number reference sheet
- 14. Horizontal spool pin
- 15. Handle
- 16. Hand wheel
- 17. Power/light switch
- 18. Cord socket
- 16. Identification plate
- 17. Presser foot lifter
- 18. Buttonhole lever
- 19. Identification plate
- 20. Feed dog control (optional)
- 21. Presser foot lifter
- 22. Buttonhole lever
- 23. Thread guide
- 24. Twin thread guide
- 25. Thread guide
- 26. Presser foot screw
- 27. Needle
- 28. Bobbin cover plate
- 29. Needle bar
- 30. Alternate thread cutter
- 31. Presser foot holder
- 32. Foot release button
- 33. Needle clamp screw
- 34. Fixing pin (to hold presser foot horizontally)
- 35. Presser foot
- 36. Deed dogs
- 37. Needle plate
- 38. Bobbin cover release button
- 39. Power cord
- 40. Foot control
- 41. Instruction manual
- 41. Large extension table (optional)



ACCESSORIES

1. Needles
2. Bobbins (3total - 1 in machine)
3. Auxiliary spool pin
4. Spool pin felt discs (2)
5. Spool pin cap (mini)
6. Spool pin cap (small)
7. Spool pin cap (large)
8. Buttonhole opener/Seam Ripper and Brush
9. Screwdriver for needle plate
10. Zipper foot
11. Satin stitch foot
12. Blind stitch foot
13. Buttonhole foot
14. Darning plate
(Only for without feed dog control function machine)



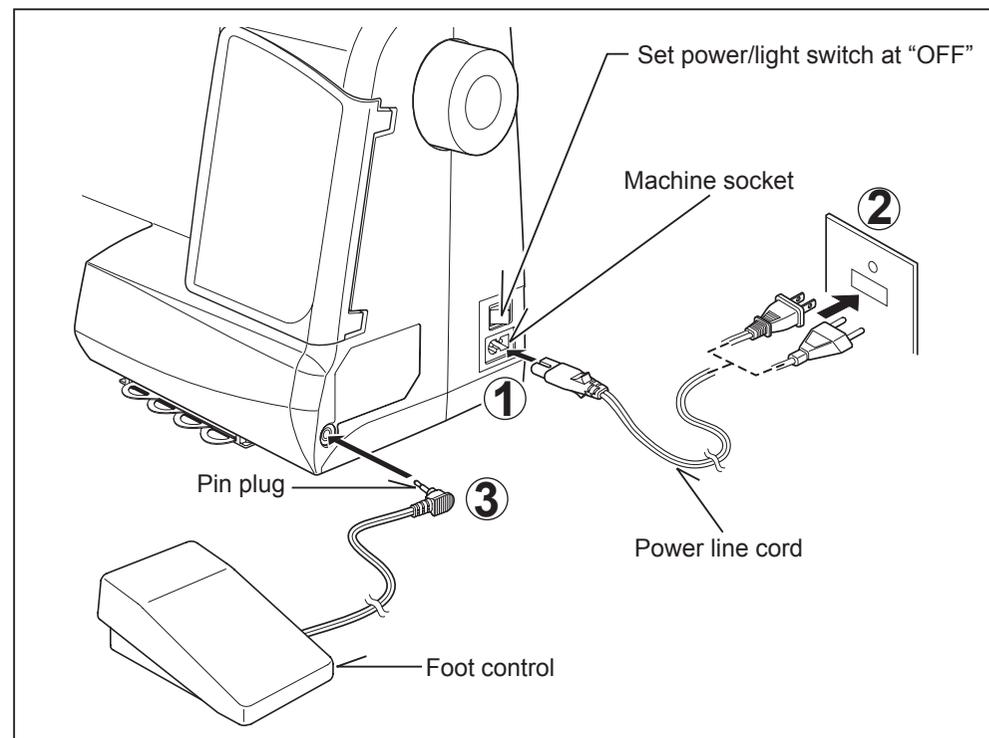
SETTING UP YOUR MACHINE

Be sure to wipe off any surplus oil from needle plate area before using your machine the first time.

POWER LINE CORD/FOOT CONTROL

Connect the plug of the power line cord into the cord socket (1) and your wall outlet (2) as illustrated.

Connect the foot control plug (3) into the machine socket.

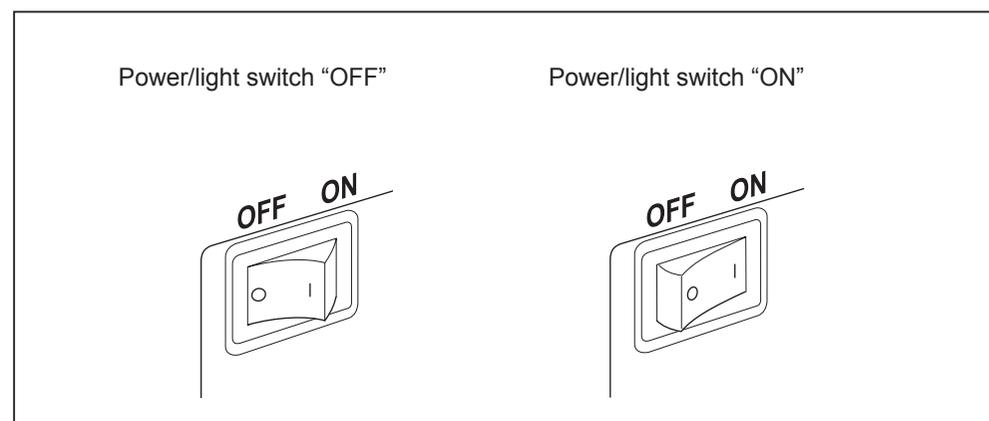


Always disconnect the machine from power supply by removing the plug from the wall-outlet.

POWER/LIGHT SWITCH

Your machine will not operate until the power/light switch is turned on. The same switch controls both the power and the light.

When servicing the machine, or changing needles, etc., machine must be disconnected from the power supply.



SPOOL PINS

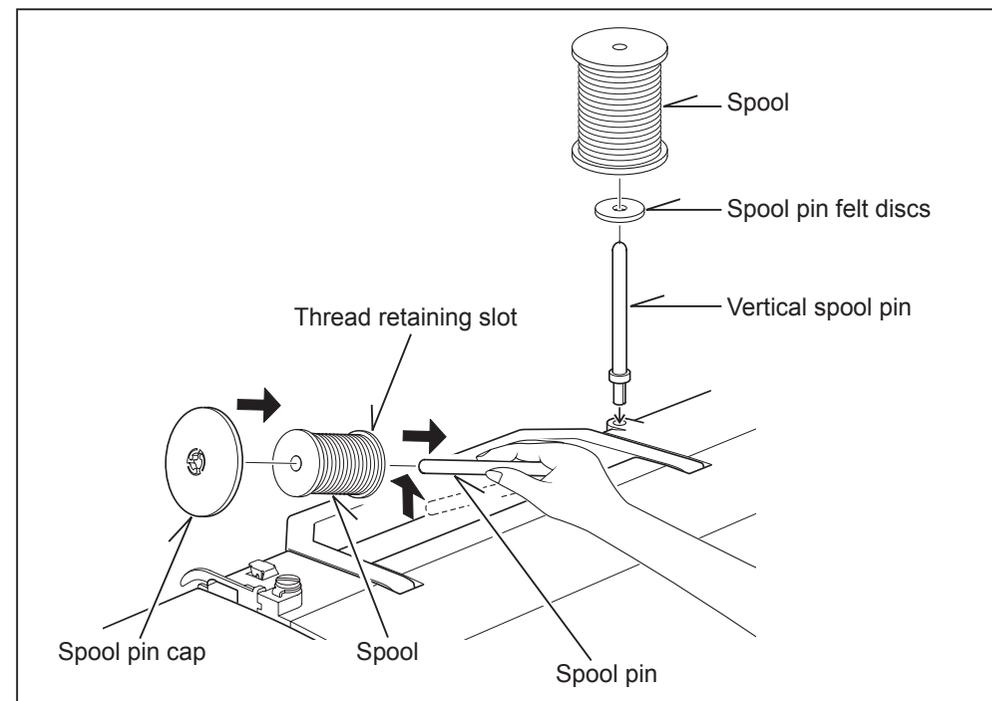
HORIZONTAL SPOOL PIN for normal thread spools

Place thread spool on the pin and secure with a spool cap to ensure smooth flow of thread. If the thread spool has a thread retaining slit, it should be placed to the right.

Select the correct spool pin cap according to the type and diameter of spool being used. The diameter of the spool pin cap should always be larger than that of the spool itself.

VERTICAL SPOOL PIN for large thread spools

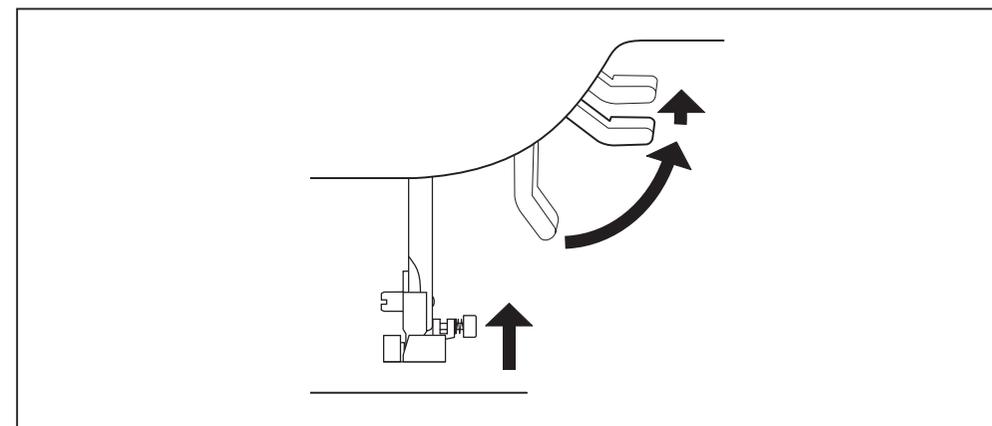
Attach the spool pin and place a felt disc over it. Place a spool of thread on the spool pin.



PRESSER FOOT LIFTER

There are three positions for your presser foot.

1. Lower the presser foot to sew.
2. Raise the lifter to the middle position to insert or remove fabric.
3. Lift it to its highest position to change the presser foot or to remove thick fabric.
* Machine does not sew when the presser lever is raised.



FEED DOG CONTROL (optional)

* Only for with this function machine

The feed dogs control the movement of the fabric that is being sewn. They should be raised for all general sewing purposes and lowered for darning, freehand embroidery and monogramming so that you, not the feed dogs, are guiding the fabric.

How to raise the Feed Dogs:

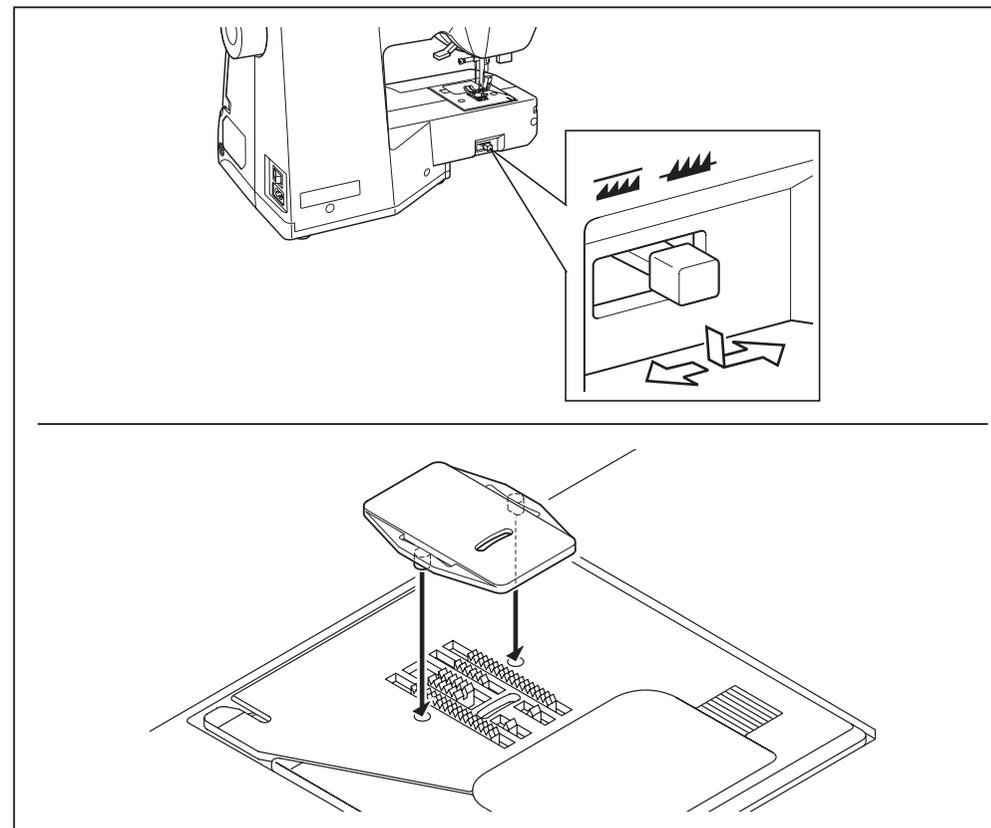
1. Make sure that your presser foot is in the raised (up) position, and that the needle is in the highest position.
2. With the back of the machine facing you, push the feed dog lever down and towards the right (symbol that shows the feed dogs above the line).
3. Turn the machine so that it now faces you, turn the handwheel counterclockwise (towards you) until you hear or see the feed dogs click back into place.

DARNING PLATE

* Only for without feed dog control function machine

Use the darning plate when you need to control fabric feeding for button sewing, free motion work and free motion darning.

Raise needle and presser foot, and position darning plate onto the needle plate with the two pins on the back inserted to the holes of needle plate.



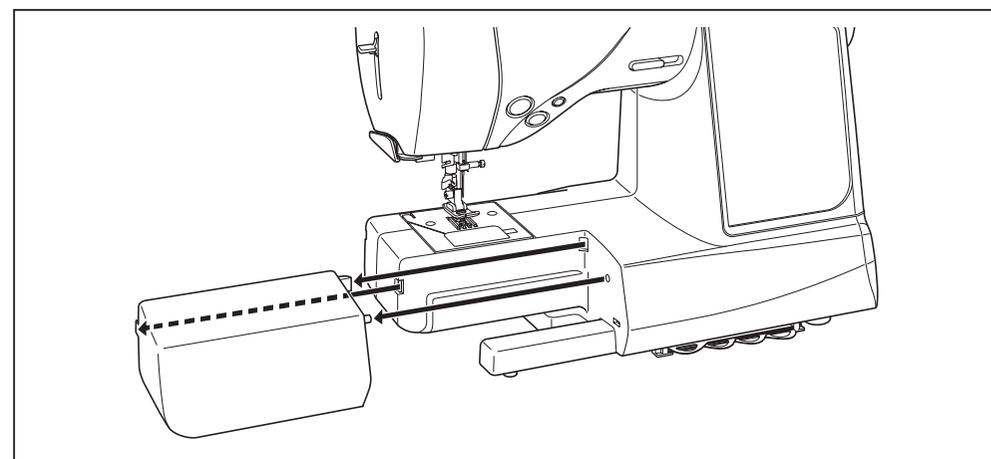
CONVERTING TO FREE-ARM SEWING

Your machine can be used either as a flat-bed or as a free-arm model.

With the extension table in position, it provides a large working surface as a standard flat-bed model.

To remove the extension table, hold it firmly with both hands and pull it off to the left as shown. To replace, slide the extension table back into place until it clicks.

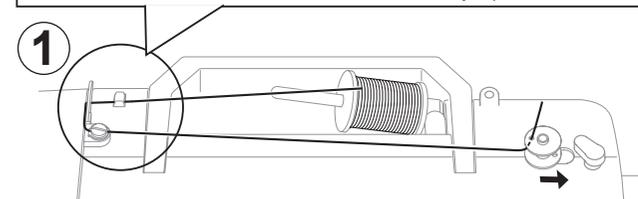
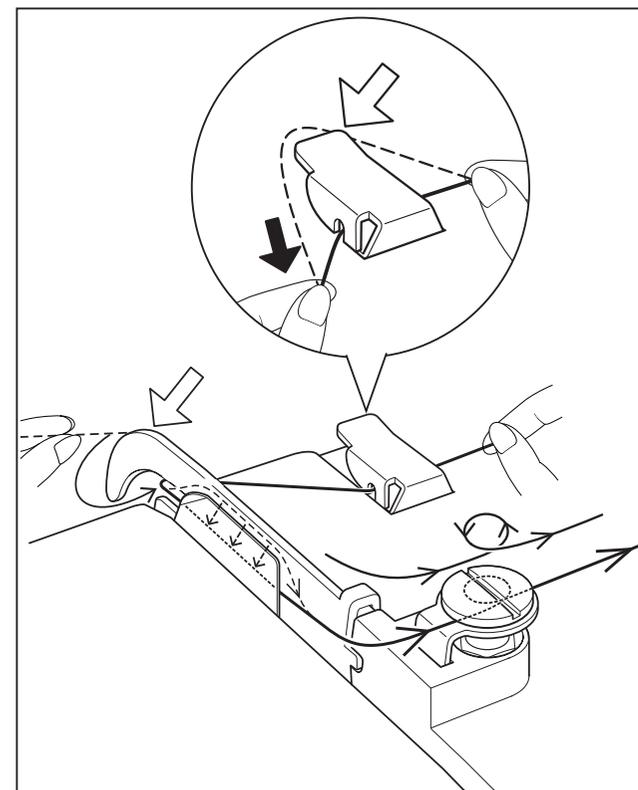
With the extension table removed the machine converts into a slim free-arm model for sewing children's clothes, cuffs, trouser legs, and other awkward places.



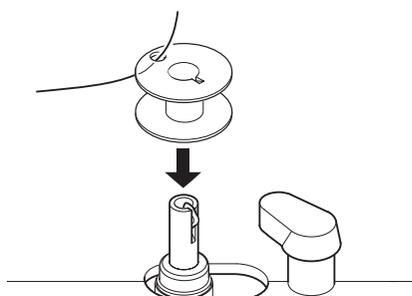
WINDING THE BOBBIN

Be sure to use Class 15 J bobbins.

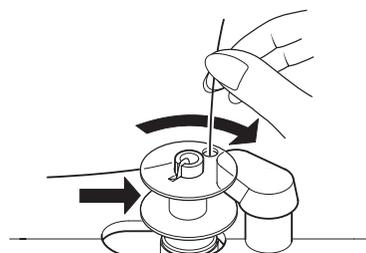
1. Place a spool of thread on the spool pin, and secure it with the spool pin cap. Pull the thread out from the spool and place it through thread guides as shown in illustration.
2. Put end of thread through the hole in bobbin as shown.
3. Push bobbin winder shaft to far left position, if it is not already there. Place bobbin onto shaft with end of thread coming from top of bobbin. Push bobbin winder shaft to the right until it clicks. Hold the end of thread.
4. Start machine and the bobbin starts to wind. Bobbin will automatically stop turning when completely filled. Push shaft to the left to remove bobbin and cut thread.



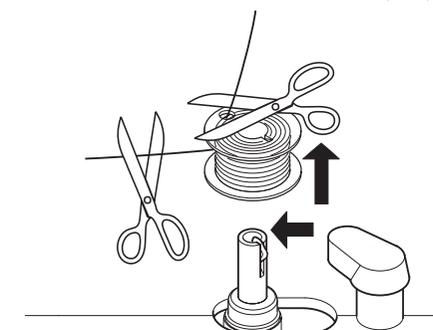
2



3



4



THREADING THE BOBBIN THREAD

1. Raise the needle to its highest position by rotating the hand wheel toward you.

2. Remove the bobbin cover plate by pushing the release button to the right. Bobbin cover will pop up sufficiently to allow you to remove the cover.

3. Insert the bobbin making sure the bobbin rotates counter-clockwise when you pull the thread.

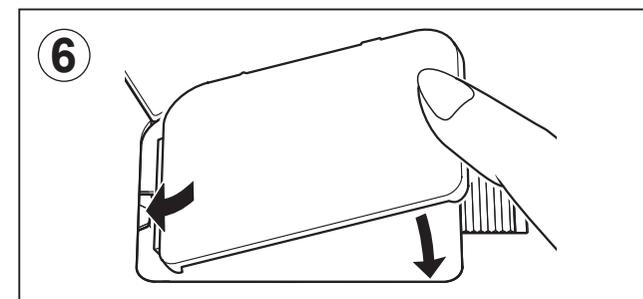
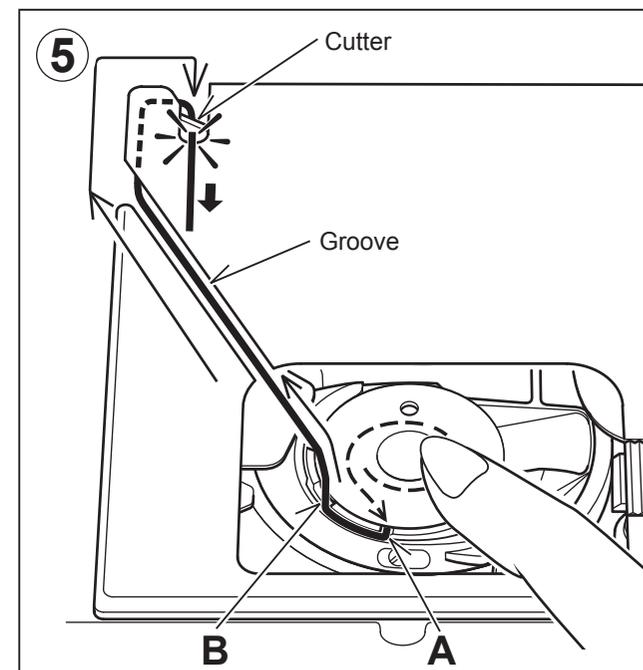
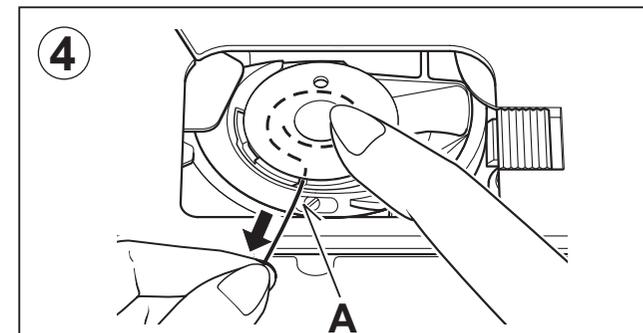
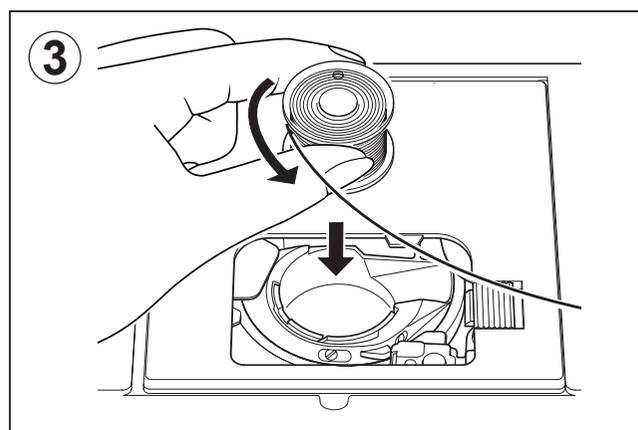
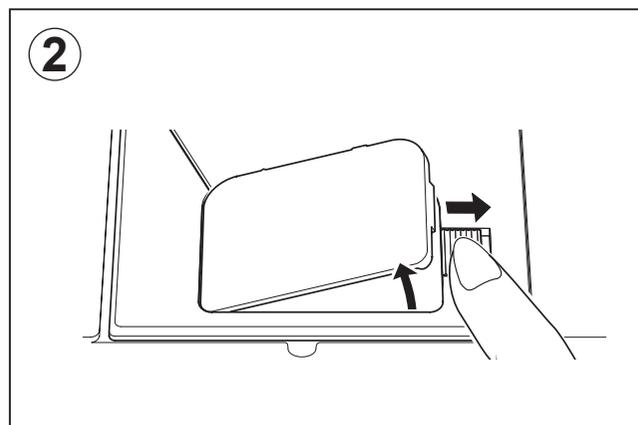
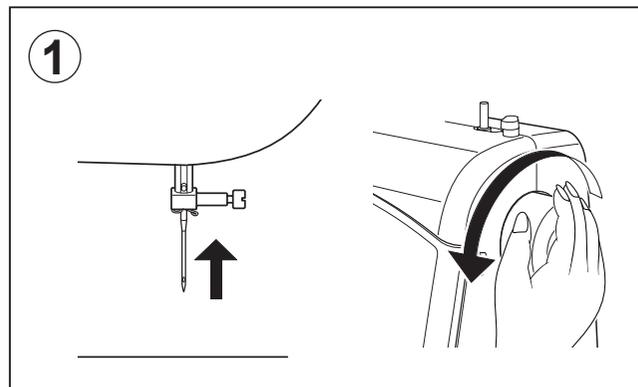
NOTE: This is a very important step. The bobbin must rotate counterclockwise when thread is pulled.

4. Pull thread through the slot (A) and then to the left.

5. With a finger held gently on top of the bobbin, pull the thread until it stops in the slot (B). Then pull the thread along the groove on the needle plate until it is snipped with cutter on the top left.

NOTE: Sewing can be started without picking up the bobbin thread.

6. Replace the clear bobbin cover plate onto the needle plate.



THREADING THE TOP THREAD

A. Raise the presser foot lifter. Always be sure to raise the presser foot lifter before threading the top thread. (If the presser foot lifter is not raised, correct thread tension cannot be obtained.)

B. Turn the hand wheel toward you until the needle is in its highest position.

C. Thread the machine with your left hand while firmly gripping the thread with your right hand in the following order as illustrated.

* Guide the thread through thread guide (1), and then pull it into the pre-tension guide (2).

* Pull the thread into the tension discs, passing the thread to the left of plate (2). Then guide the thread to the bottom of the groove.

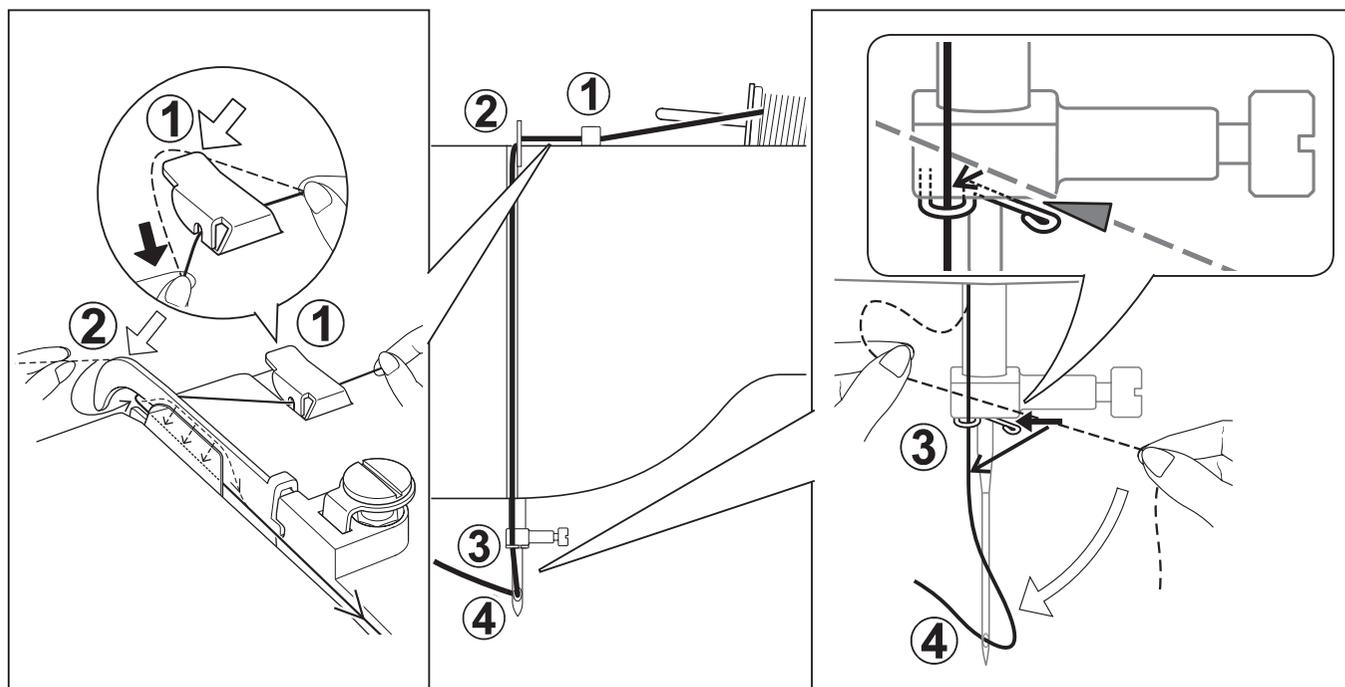
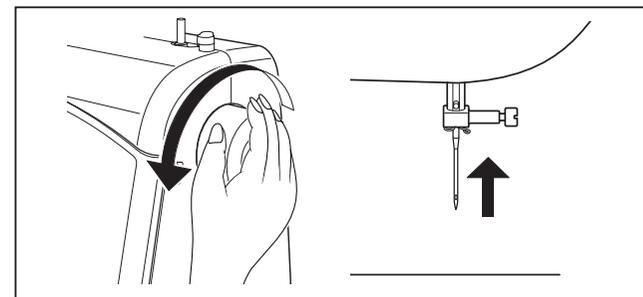
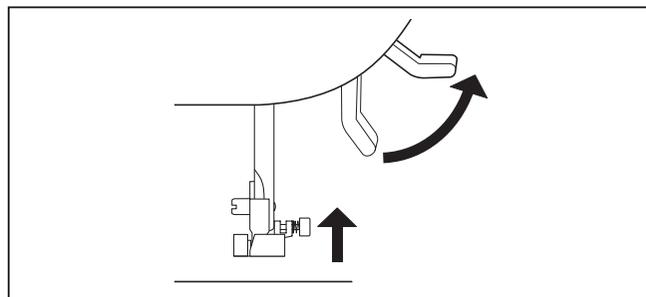
* Guide the thread into the thread guide (3).

* Pass the thread through the eye of the needle (4) from front to back. (See following page for instructions on operation of the Automatic Needle Threader.)

IMPORTANT:

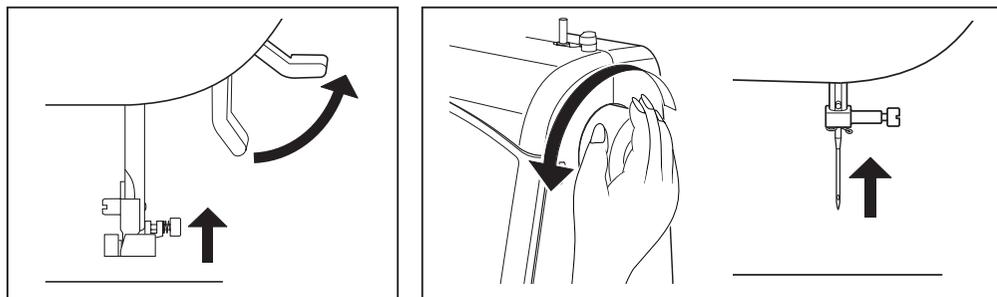
To verify that the machine is threaded properly in the tension discs, do this simple check:

- 1.) With the presser foot raised, pull the thread towards the back of the machine. You should detect only a slight resistance and little or no deflection of the needle.
- 2.) Now lower the presser foot and again pull the thread towards the the back of the machine. This time you should detect a considerable amount of resistance and much more deflection of the needle. If you do not detect the resistance you have miss-threaded the machine and need to re-thread it.



USING AUTOMATIC NEEDLE THREADER

★ Be sure to raise the presser foot lifter and raise the needle to its highest position before threading.



1. Thread the machine with your left hand while gripping the thread with your right hand. Hook thread to the thread guide on the needle bar and pull it toward you leaving about 4" (10 cm) clear.

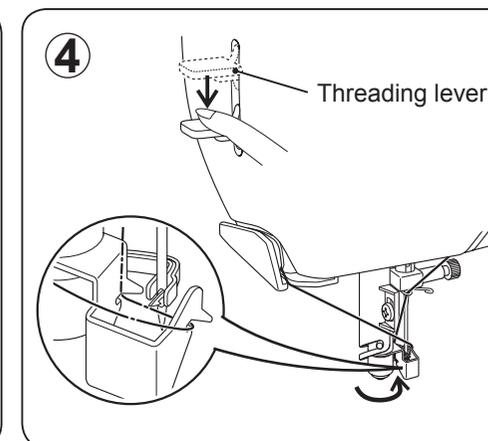
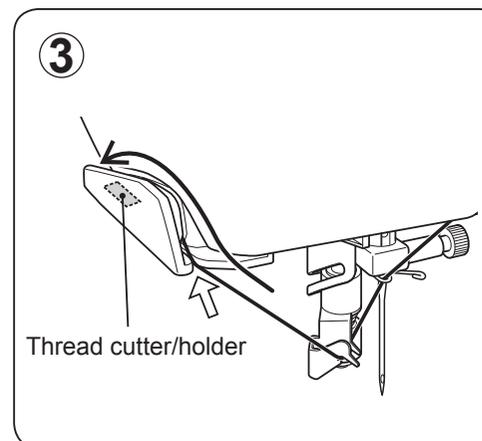
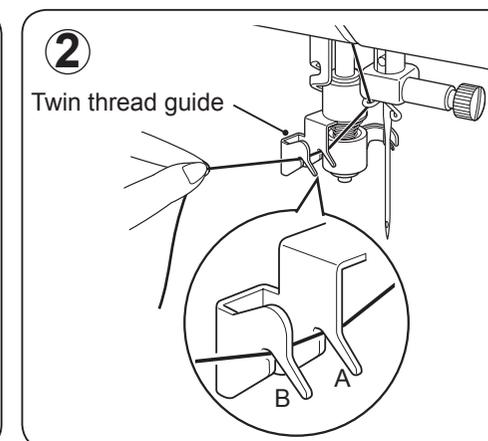
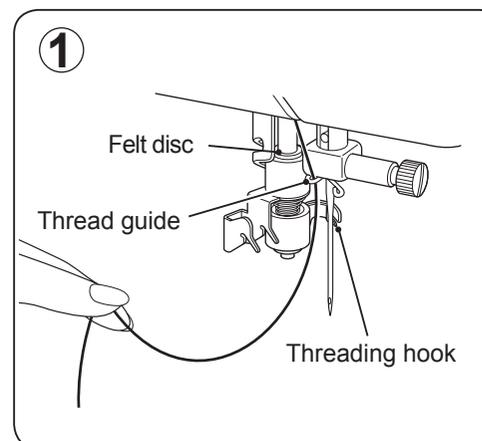
2. Hook thread to the twin thread guide (A and B).

3. Pull thread gently into the thread cutter/holder to cut and hold it in place.

Don't pull thread with strong force or thread may be pulled off from needle hole after threading.

4. Pull down the threading lever to its lowest position until the twin thread guide rotates and stops.

Make sure that the guide doesn't touch fabric, etc.



5. Release the threading lever and needle will be threaded automatically. If it should not return to the original position, raise it gently by hand.

6. Pull thread loop away from you.

If the needle has not been threaded correctly, re-thread from step 1.

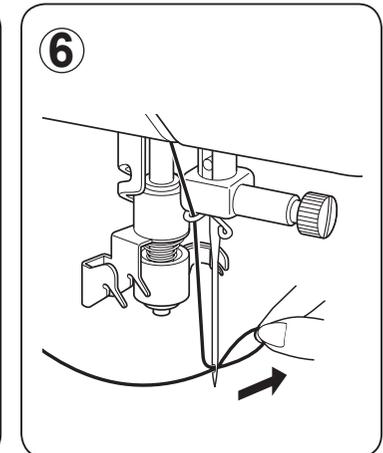
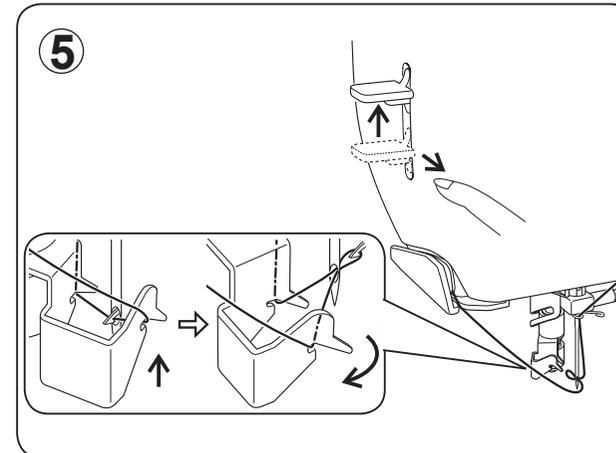
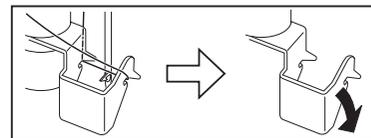
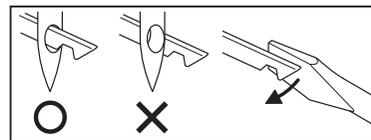
NOTE:

- ★ For smooth threading, it is recommended that the machine be set for straight stitch (in center needle position) when using the automatic needle threader.
- ★ Heavy thread cannot be threaded through fine needle.
- ★ Don't lower the threading lever while the machine is in operation or the threading hook may be broken.

IMPORTANT: If the needle cannot be threaded due to the nature of thread, manually thread the needle after hooking thread to the thread guide on the needle bar.

HELPFUL SUGGESTIONS:

- ★ Put a drop of sewing machine oil onto the felt disc, if the machine is used after a long interval.
- ★ If the threading hook is deviated from needle hole, adjust the position of the hook using a small screw driver.
- ★ If the threading hook cannot catch thread, adjust the vertical position by bending the twin thread guide.



NEEDLE, THREAD AND FABRIC CHART

Use the standard needles. The size of your needle should match the size of the thread and both should match the fabric.

For normal sewing, the same size and type of thread should be used in the bobbin as

on the upper part of the machine.
Never use a bent or dull needle.

For successful sewing of stretch fabrics use stretch stitch needles.

Thread Size	Needle Size	Fabric
Cotton 60 - 100 Synthetic Machine embroidery	Stretch stitch needle	All stretch fabrics.
Cotton Synthetic Silk A Machine embroidery	70 or 80	Sheer cottons, silk synthetics, fine laces, batiste, dimity.
Cotton 60 - 80 Mercerized 50 - 60 Synthetic	80 or 90	Medium weight cottons, medium weight synthetics, poplin, seersucker, gingham, velvet, light weight woollens, linen.
Cotton 30 - 60 Mercerized heavy duty	100	Heavy weight cottons, medium to heavy weight woollens, denim.

Changing the needle

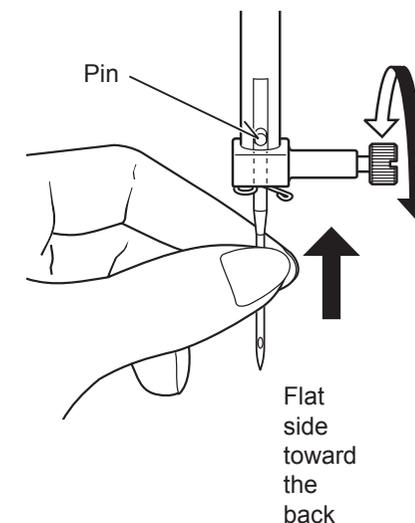
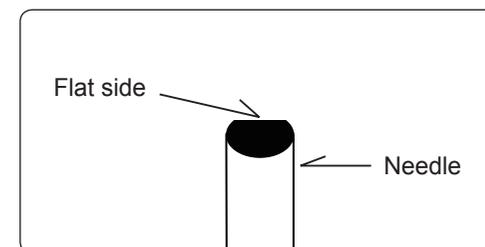
1. Raise the needle bar to its highest position by turning the hand wheel counter clockwise.
2. Loosen the needle clamp screw by turning it counter clockwise.
3. Remove the needle by pulling it downward.
4. Insert the new needle into the needle clamp with the flat side toward the back.
5. Push the needle up as far as it can go.
6. Tighten the needle clamp screw with the screw driver.

NOTE: Tighten snugly, but do not over tighten.

Helpful Hint: Placing a scrap of fabric under the presser foot and lowering the presser foot makes it easier to change the needle and will preclude dropping the needle into the needle plate slot.



Always disconnect the machine from power supply by removing the plug from the wall-outlet.



ADJUSTING TOP THREAD TENSION

90% of your sewing will be accomplished with the word "4" exposed on the tension control dial on top of the machine.

Helpful Hint: A slight adjustment to a higher number or a lower number may improve sewing appearance.

STRAIGHT STITCHING

The correct appearance of your stitching is largely determined by the balanced tension of both top and bobbin threads. The tension is well balanced when these two threads 'lock' in the middle of layers of the fabric you are sewing.

If, when you start to sew, you find that the stitching is irregular, you will need to adjust the tension control. Do this, however, only after you have determined that the machine is correctly threaded (see page 10).

Make all adjustments with presser foot 'down'.

A balanced tension (identical stitches both top and bottom) is usually only desirable for straight stitch sewing.

ZIG ZAG and DECORATIVE SEWING

For zigzag sewing and decorative stitch functions, thread tension should be less than for straight stitch sewing.

You will always obtain a nicer stitch and less puckering when the upper thread appears slightly on the bottom side of your fabric.

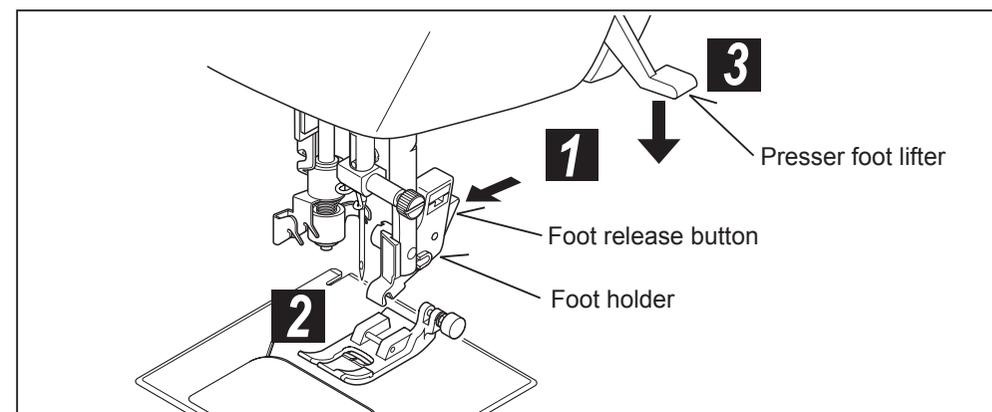
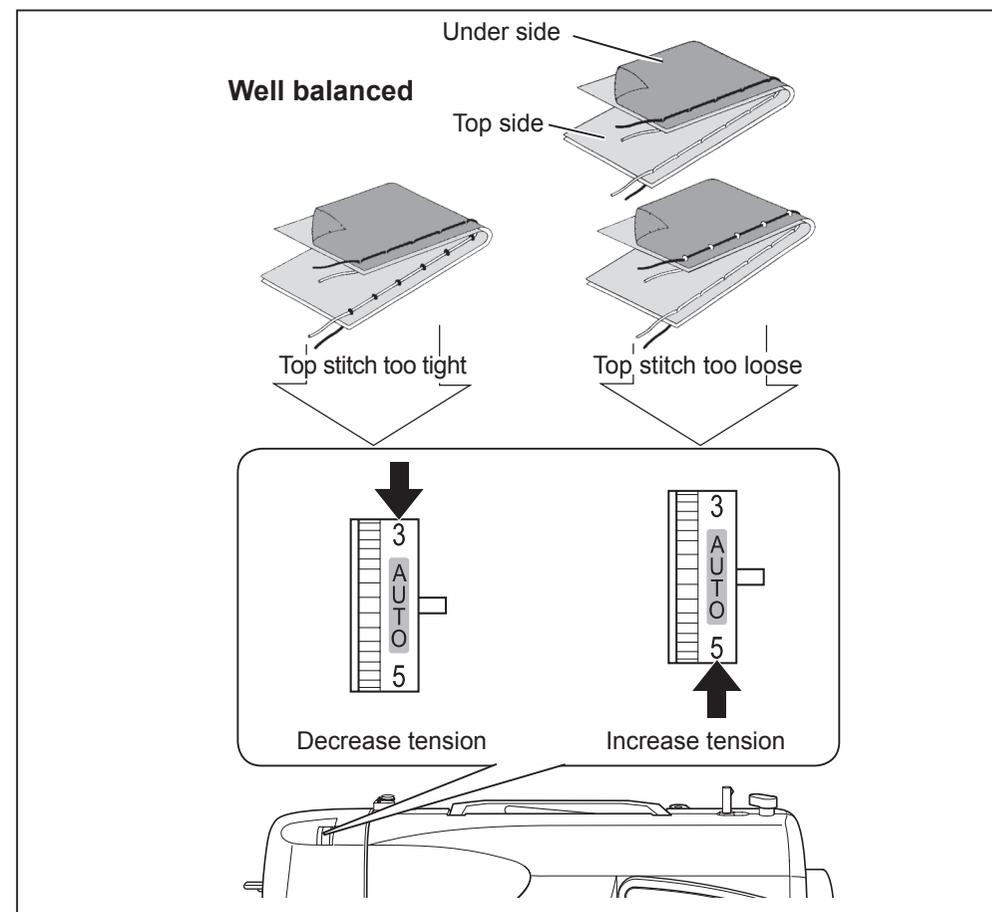
BOBBIN TENSION

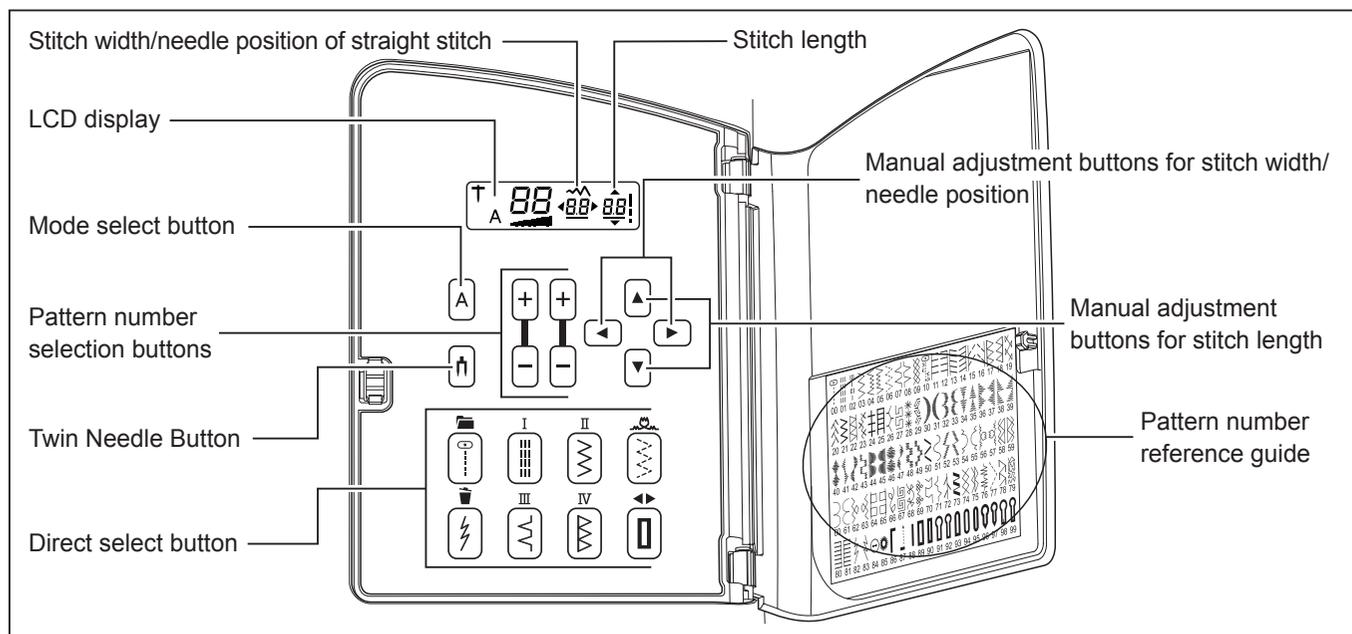
The bobbin tension has been correctly set at the factory, so you do not need to adjust it.

CHANGING PRESSER FOOT

Be sure needle is in the up position. Raise presser foot lifter.

1. Push presser foot release button to remove the foot.
2. Place the desired foot on the needle plate aligning the presser foot pin with the foot holder.
3. Lower the presser foot lifter so that the foot holder snaps on the foot.





FUNCTIONS OF CONTROL PANEL

Open the swing door by pushing the word "PUSH". When the machine is turned on, straight stitch (00) is selected and pop-up screen for individual settings appears on the LCD display.

Pattern number selection buttons / Direct select button

If the letter "A" is indicated on the LCD display, push the mode select button to turn off the letter "A".

1. DIRECT SELECT BUTTON

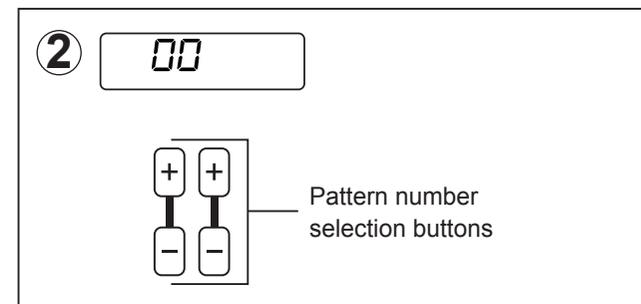
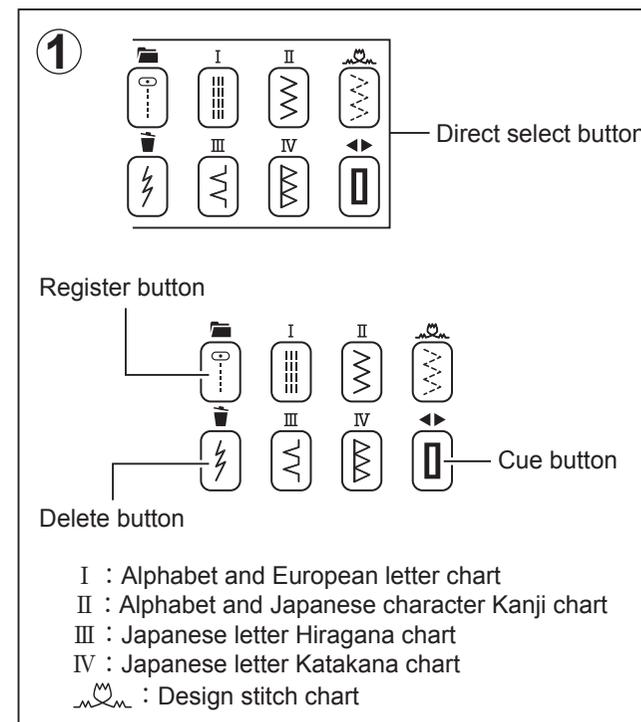
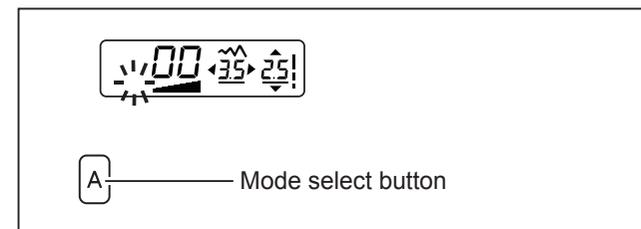
These buttons are used for direct pattern selection. Pop-up screen for individual preference settings will appear after selecting one of six patterns.

2. PATTERN NUMBER SELECTION BUTTONS

When the machine is turned on, straight stitch is selected and pop-up screen for individual preference settings appears on the LCD display.

To select stitch patterns, use left button for pattern number selection to select left digit and right button to select right digit referring to pattern number reference guide.

Both left and right digits scroll up to 9.



3. STITCH LENGTH AND STITCH WIDTH/ NEEDLE POSITION ADJUSTMENT BUTTONS

Your sewing machine will produce your stitching requirements at an Auto/Default stitch Length and Width.

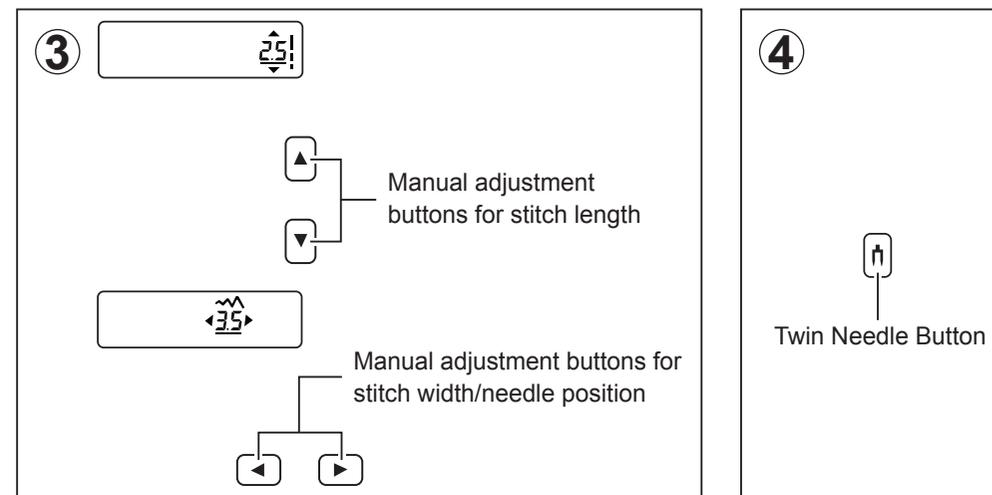
Default settings of stitch length and width are underlined on the display.

You can manually change the length, width or needle position for straight stitch according to your preference pushing manual adjustment buttons.

NOTE: Some patterns offer more options for manual adjustments than others.

4. TWIN NEEDLE BUTTON

Width setting for twin needle sewing can be activated, if it is available for a selected pattern. LED turns on when twin needle sewing is activated.



HELPFUL MESSAGES

If an incorrect operation is made, a helpful message will be displayed. When a helpful message is displayed, fix the problem following the instructions below.

Bobbin winder is moved to right (operating position) during sewing. → Check bobbin winder and move it to left.	C1
Buttonhole lever is not lowered or raised. → Lower buttonhole lever when sewing buttonholes. → Raise buttonhole lever when sewing stitch patterns.	C2
Foot control plug is pulled out, while operating foot control. → Push in foot control plug.	C3
Machine is locked up due to thread entangled with bobbin case or rotation interrupted forcibly. → Turn off power switch and eliminate the problem that caused the machine to stop.	C4
Reverse/tacking stitch button is pushed, while buttonhole stitch is selected. → Tacking stitch is made automatically after buttonhole stitch is completed. It is not necessary to push the reverse/tacking stitch button.	C5
Needle thread is cut or comes off. → Raise presser foot lever and re-thread needle.	C6
Start/stop switch or reverse stitch switch is pushed while presser foot lever is raised. → Lower presser foot lever. Presser foot is raised while sewing. → Raise presser foot after machine is stopped.	C7
Bobbin winder is in operation. → Move bobbin winder to left when it is not used.	JL

OPERATION BUTTONS

START/STOP BUTTON ()

When sewing without having the foot controller connected, the machine starts slowly when the start/stop button is pushed. When it is pushed again, needle moves and stops at its highest position.

When using foot control, simply press foot pedal with your foot until you reach a slow even speed. The harder you push, the faster the machine will sew. Release pressure on foot pedal to stop the machine.

Slow mode is available by pressing and holding the start/stop button when the foot controller is disconnected.

NOTE: When foot control is connected, start/stop button cannot be used.

PROGRAMMABLE NEEDLE UP/DOWN BUTTON ()

Push the switch and needle will stop at down position whenever you stop sewing.

Push it again to stop needle at up position.

DUAL PURPOSE REVERSE/TACKING STITCH BUTTON ()

* Reverse stitch function for straight and zigzag stitches ()

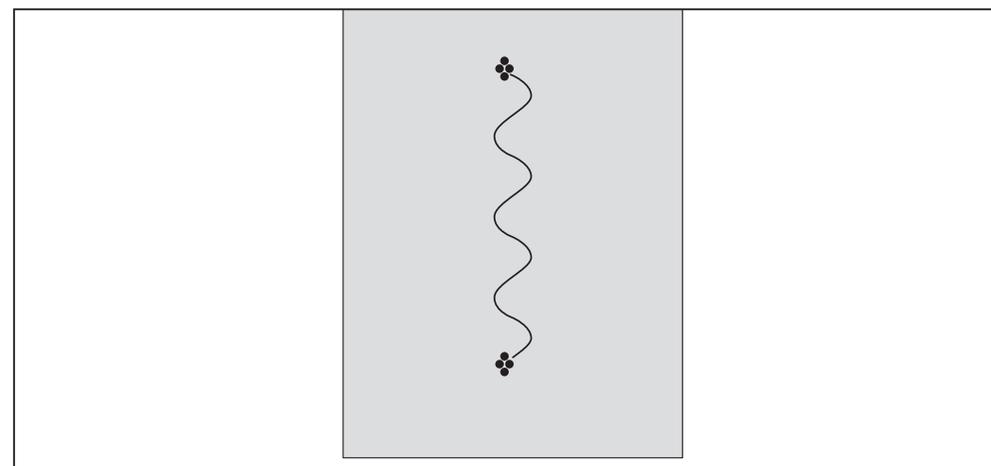
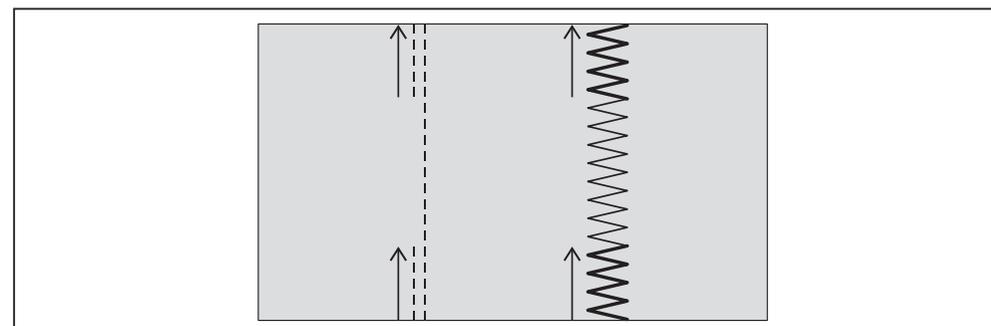
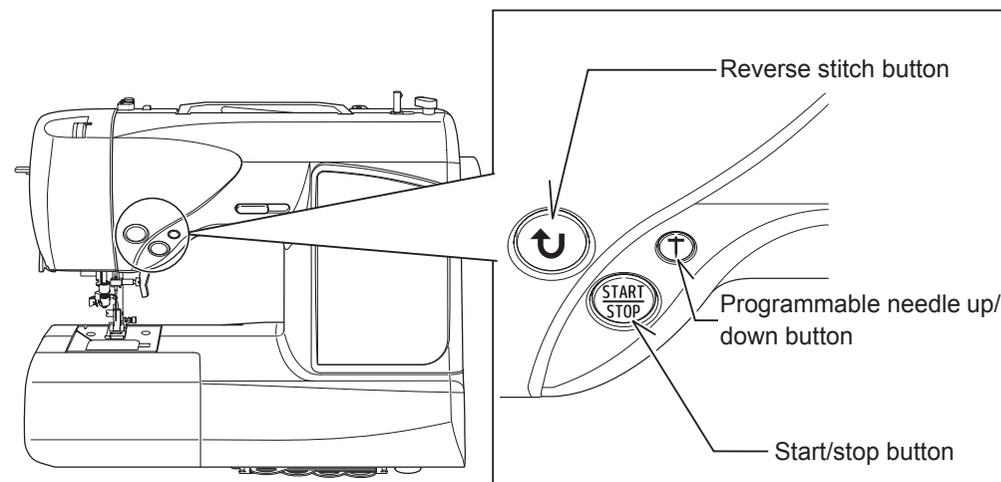
Reverse sewing is carried out while the reverse stitch button is pushed.

The machine will continue to sew in reverse as long as the reverse button is pressed.

* Tacking stitch function for tie-off of other stitches ()

The sewing machine makes 4 tiny tacking stitches to tie off the sewing on all patterns except straight, zigzag and buttonhole stitches. The position of the tacking stitches will be at the exact spot in the pattern where the reverse/tacking stitch button is pushed.

NOTE: This function is very useful for tying off the sewing pattern to avoid raveling at the start and end of sewing.

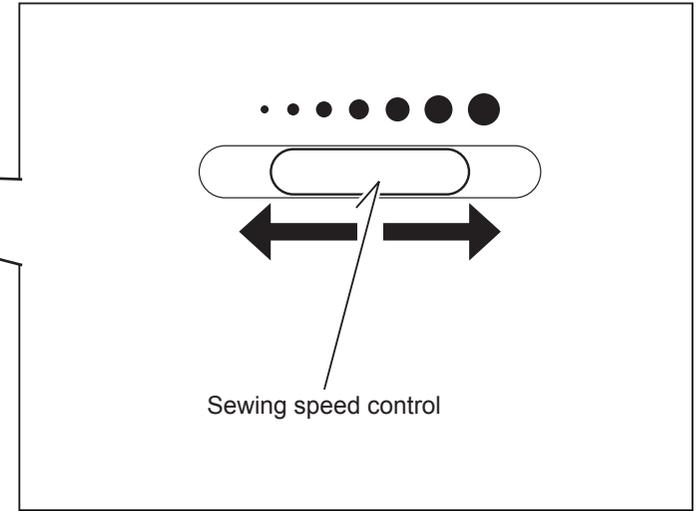
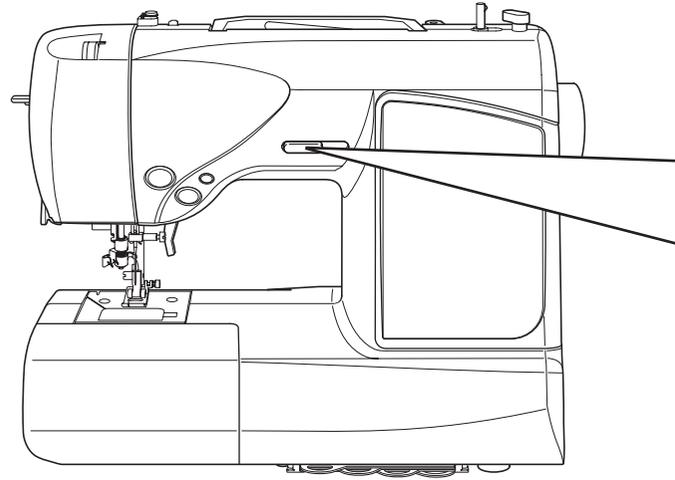


SEWING SPEED CONTROL

Sewing speed is set by using the sewing speed control. The sewing speed control is moved horizontally to determine the amount of speed required.

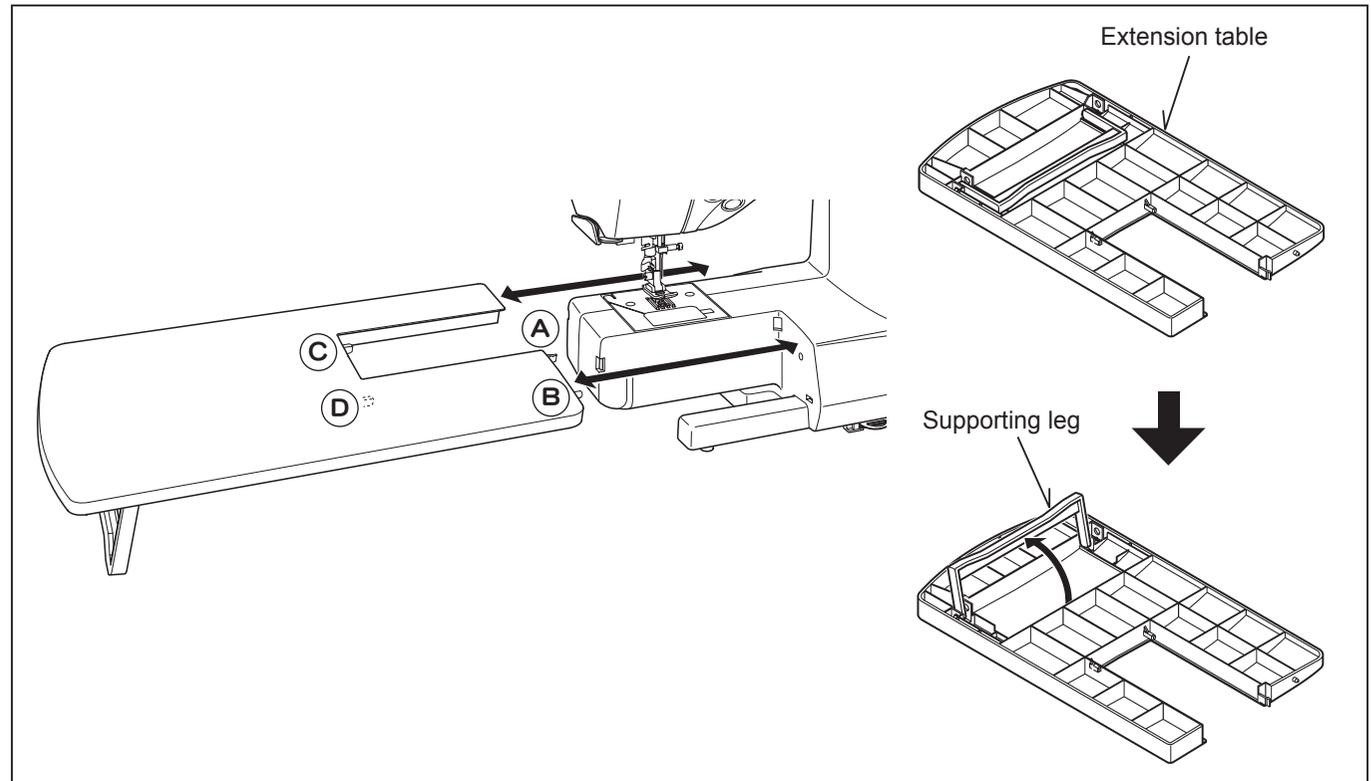
Regardless of the setting, maximum speed may be limited depending on which pattern has been selected.

NOTE: When using the foot control, if the sewing speed control is set on the lower setting, the machine will not sew faster than the speed at which the speed control is set, even when the foot control is fully depressed.



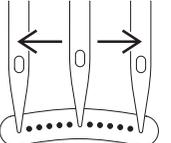
LARGE EXTENSION TABLE (optional)

To place onto the machine, lift the supporting leg of the extension table, and slide the table into place while fitting the guide pins A, B, C and D into machine as illustrated.



2. STARTING TO SEW

QUICK REFERENCE TABLE OF STITCH LENGTH AND WIDTH

STITCH	No.	NEEDLE POSITION		LENGTH		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL	
	00	CENTER		2.5	0.5 – 4.8	○
	01			2.5	1.5 – 3.0	○

STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*	STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	02	CENTER	–	2.5	2.0 – 4.0	○		08	3.0	1.0 – 6.0	2.0	1.0 – 3.0	○
	03	5.0	0 – 6.0	2.0	0 – 3.0	○		09	6.0	3.0, 4.5, 6.0	2.0	1.5 – 3.0	○
	04	3.0	2.0, 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 – 3.0	○		10	CENTER	–	2.0	2.0 – 4.0	×
	05	3.0	2.0, 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 – 3.0	○		11	7.0	1.0 – 7.0	2.5	1.5 – 3.0	○
	06	6.0	2.5 – 3.0, 4.5, 6.0	1.5	0 – 2.5	○		12	7.0	1.0 – 7.0	2.5	1.5 – 3.0	○
	07	3.0	1.0 – 6.0	2.0	1.0 – 3.0	○		13	5.0	1.0 – 6.0	2.0	0.8 – 2.5	○

STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*	STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	14	5.0	1.0 – 6.0	2.0	0.8 – 2.5	○		29	6.5	3.5 – 7.0	2.5	1.5 – 2.5	○
	15	5.0	1.0 – 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 – 3.0	○		30	7.0	3.5 – 7.0	0.8	0.5 – 1.5	○
	16	5.0	1.0 – 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 – 3.0	○		31	7.0	3.5 – 7.0	0.8	0.5 – 1.5	○
	17	5.5	3.5 – 7.0	2.5	1.5 – 3.0	○		32	7.0	3.5 – 7.0	0.5	0.3 – 1.5	○
	18	5.5	3.5 – 7.0	2.5	1.5 – 3.0	○		33	7.0	3.5 – 7.0	0.5	0.3 – 1.5	○
	19	6.0	2.0, 4.0, 6.0	2.5	1.0 – 3.0	○		34	7.0	3.5 – 4.0, 6.0, 7.0	0.5	0.3 – 1.5	○
	20	6.0	3.0, 4.5, 6.0	2.0	1.0 – 3.0	○		35	7.0	3.5 – 4.0, 6.0, 7.0	0.5	0.3 – 1.5	○
	21	5.0	2.0 – 6.0	2.5	1.5 – 3.0	○		36	7.0	3.5 – 4.0, 6.0, 7.0	0.5	0.3 – 1.5	○
	22	5.5	3.5 – 7.0	2.5	1.5 – 3.0	○		37	7.0	3.5 – 4.0, 6.0, 7.0	0.5	0.3 – 1.5	○
	23	6.0	3.0, 4.5, 6.0	2.0	1.5 – 3.0	○		38	7.0	3.5 – 4.0, 6.0, 7.0	0.5	0.3 – 1.5	○
	24	5.0	2.0 – 3.0, 4.0, 5.0, 6.0, 7.0	2.5	1.5 – 3.0	○		39	7.0	3.5 – 4.0, 6.0, 7.0	0.5	0.3 – 1.5	○
	25	5.0	1.0 – 7.0	2.5	1.5 – 3.0	○		40	7.0	3.0 – 7.0	0.5	0.3 – 1.5	○
	26	6.0	3.5 – 7.0	2.5	1.5 – 2.5	○		41	7.0	3.0 – 7.0	0.5	0.3 – 1.5	○
	27	7.0	3.5 – 4.0, 5.0, 6.0, 7.0	2.5	1.3 – 3.0	○		42	7.0	3.0 – 7.0	0.5	0.3 – 1.5	○
	28	5.0	5.0, 6.0	3.0	–	×		43	7.0	3.5 – 7.0	0.5	0.3 – 1.5	○

STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*	STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	44	7.0	3.0 – 7.0	0.5	0.3 – 3.0	○		59	6.0	3.0,4.5,6.0	2.5	1.5 – 2.5	○
	45	7.0	3.0 – 7.0	0.5	0.3 – 3.0	○		60	7.0	3.5 – 7.0	1.3	0.8 – 4.0	○
	46	7.0	3.5 – 7.0	0.5	0.3 – 2.5	○		61	7.0	3.5 – 7.0	1.3	0.8 – 4.0	○
	47	7.0	3.5 – 7.0	0.5	0.3 – 1.5	○		62	6.0	3.0,4.5,6.0	2.5	1.5 – 2.5	○
	48	7.0	3.0 – 7.0	0.5	0.3 – 1.5	○		63	6.0	3.0,4.5,6.0	2.5	1.5 – 2.5	○
	49	6.0	3.0,4.5,6.0	0.5	0.3 – 1.3	○		64	5.0	3.0 – 7.0	2.5	1.5 – 2.5	○
	50	5.0	2.0 – 7.0	0.5	0.5, 0.8	○		65	5.0	3.0 – 7.0	2.5	1.5 – 2.5	○
	51	7.0	3.5, 7.0	1.8	0.8 – 2.5	○		66	7.0	3.5, 7.0	2.0	1.5 – 2.5	○
	52	7.0	3.0 – 7.0	0.5	0.3 – 1.5	○		67	7.0	3.0,4.0,5.0, 6.0,7.0	1.8	1.5 – 2.5	○
	53	7.0	3.0 – 7.0	0.5	0.3 – 1.5	○		68	7.0	3.5 – 7.0	2.5	1.5 – 2.5	○
	54	7.0	3.5 – 7.0	1.8	1.0 – 4.0	○		69	6.3	3.8,5.0,6.3	1.3	1.0 – 2.0	×
	55	7.0	3.5 – 7.0	1.8	1.0 – 4.0	○		70	6.0	2.0 – 7.0	2.5	1.0 – 2.5	○
	56	7.0	3.0 – 7.0	2.5	1.0 – 2.5	○		71	6.0	3.0 – 7.0	2.0	1.0 – 2.5	○
	57	7.0	3.0 – 7.0	2.5	1.0 – 2.5	○		72	5.0	1.0 – 7.0	2.5	0.8 – 2.5	○
	58	6.0	3.0,4.5,6.0	2.5	1.5 – 2.5	○		73	5.0	2.0 – 6.0	0.5	0.5 – 1.0	○

STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*	STITCH	No.	WIDTH		LENGTH		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	74	5.0	3.5 – 7.0	2.5	1.5 – 2.5	○		87	6.0	–	–	–	×
	75	7.0	3.0 – 7.0	2.5	1.5 – 2.5	○		88	6.0	–	0.5	0.5, 0.8	×
	76	6.0	2.0 – 7.0	1.5	0.5 – 2.0	○		89	5.5	–	0.5	0.5, 0.8	×
	77	7.0	3.0, 4.0, 5.0, 6.0, 7.0	1.5	0.5 – 1.5	○		90	3.5	–	0.5	0.5, 0.8	×
	78	5.5	3.0 – 7.0	2.5	1.5 – 2.5	○		91	5.5	–	0.5	0.5, 0.8	×
	79	6.0	–	Varied	–	×		92	3.5	–	0.5	0.5, 0.8	×
	80	5.0	1.0 – 7.0	2.5	1.5 – 3.0	○		93	5.5	–	0.5	0.5, 0.8	×
	81	5.0	1.0 – 7.0	2.5	1.5 – 3.0	○		94	5.5	–	0.5	0.5, 0.8	×
	82	1.0	–	2.5	1.5 – 3.0	○		95	3.5	–	0.5	0.5, 0.8	×
	83	1.0	–	2.5	1.5 – 3.0	○		96	5.5	–	0.5	0.5, 0.8	×
	84	3.0	2.0 – 4.5	0.0	–	×		97	3.5	–	0.5	0.5, 0.8	×
	85	7.0	–	2.0	–	×		98	5.5	–	0.5	0.5, 0.8	×
	86	6.0	–	0.5	0.5, 0.8	×		99	3.5	–	0.5	0.5, 0.8	×

* Whenever using twin needle, set stitch width at 3.5 or less.

STRAIGHT STITCHING

Straight stitch is most frequently used for all types of sewing. Let's begin by following the steps below.

1. SETTINGS

- Presser foot - General Purpose Foot
- Thread tension control - 4

NOTE: Based upon the weight of the fabric, slight "fine tuning" of the tension may be desired.

- A. Thread tension control
- B. Programmable needle up/down button
- C. Reverse stitch button
- D. Start/stop button
- E. Presser foot lifter
- F. Sewing speed control

NOTE: Since a straight stitch has no width, the stitch width control is used to change the needle position.

2. Pull both threads under the presser foot toward the back of the machine, leaving about 6" (15cm) clear.
3. Place the fabric under the presser foot and lower the presser foot lifter.
4. Turn the hand wheel counter clockwise until the needle enters the fabric.
5. Start the machine. Guide the fabric gently with your hands. When reaching the edge of the fabric, stop the sewing machine.

NOTE: The Needle Plate has both Metric and Inch Markings as an aid for guiding your fabric when sewing a seam.

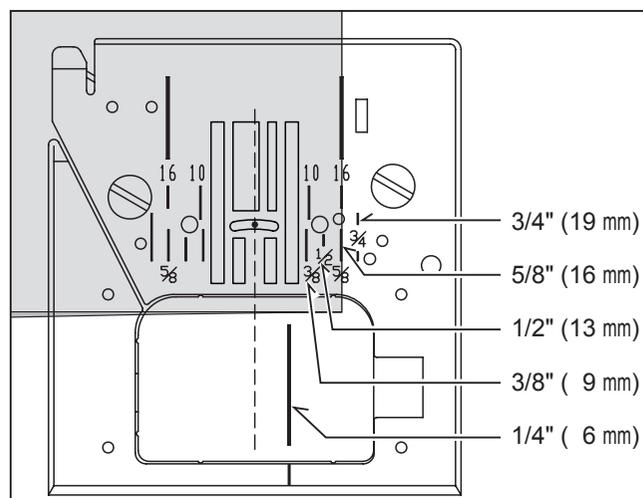
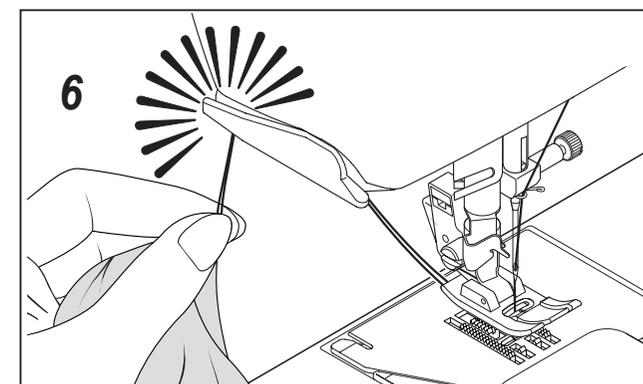
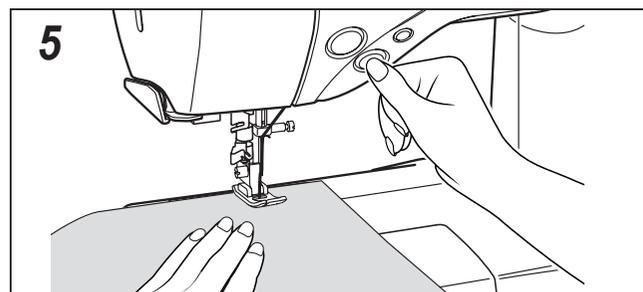
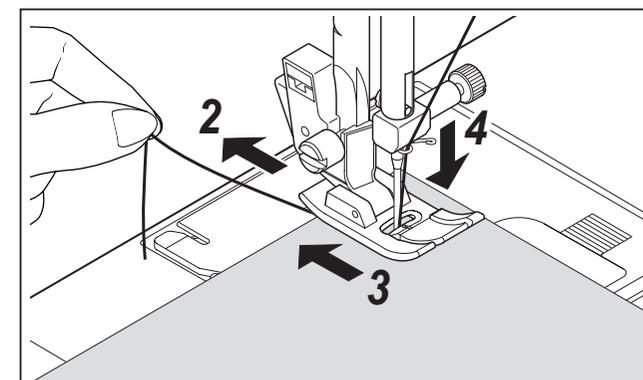
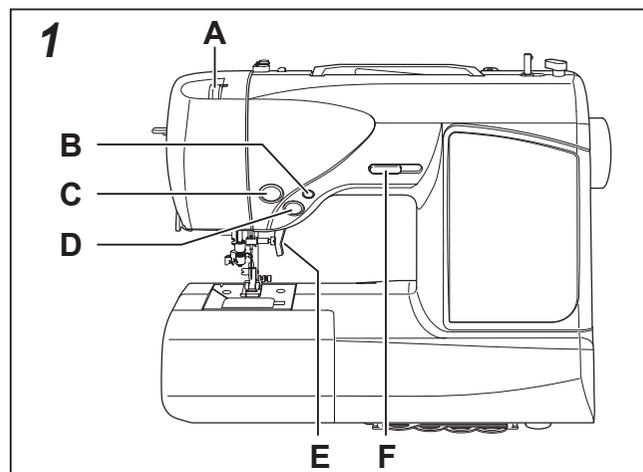
6. First turn the handwheel counter clockwise until the needle is at its highest position, then raise the presser foot, draw the fabric to the rear and cut off excess threads with the thread cutter located on the top of face cover as shown.

NOTE: To secure the stitching and avoid raveling, press the reverse stitch button and sew a few stitches at the start and end of the seam.

KEEPING SEAMS STRAIGHT

To keep the seam straight, use one of the numbered guide lines on the needle plate. The numbers indicate distance from the needle at its center position.

The guide line on the bobbin cover plate is 1/4" (6mm) seam guide line which is used for piecing quilt blocks and also for narrow seams, such as those in doll clothes or baby garments.



INSERTING ZIPPERS AND PIPING

Use zipper foot to sew to the right or left of the zipper or to sew close to the cording.

ZIPPERS

To sew down the right side, attach left side of zipper foot to presser foot holder so that the needle passes through the opening on the left side of the foot.

To sew down the left side, attach right side of foot to foot holder.

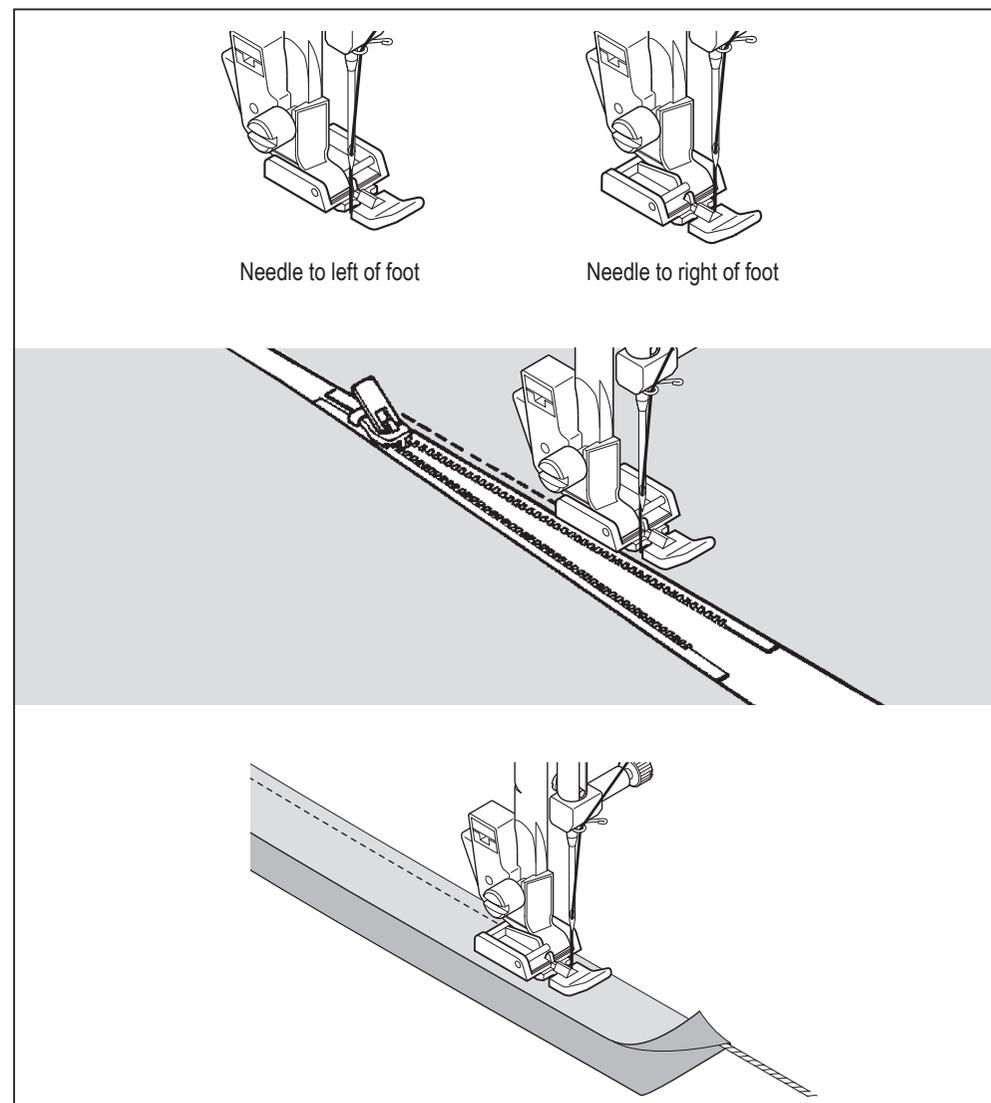
PIPING

Create a piping by covering a filler cord with a bias strip of fabric.

Attach the right side of the zipper foot to the foot holder so that the needle passes through the right side of the zipper foot.

Baste the seam allowances together, enclosing the filler cord, forming a seam tape for the piping. Then, pin or tack to the main fabric piece for sewing.

Helpful Hint: Slight adjusting of the needle position to sew closer to the piping may be accomplished with the Stitch Width Control.



HANDLING HARD-TO-SEW FABRICS

*See chart on page 13 about detail of needle, thread and fabric.

SEWING ON DOUBLE FABRICS

When fabric feeding is not smooth or double thick fabrics are sewn, use fixing pin to hold presser foot horizontally.

1. Lower needle and raise presser foot lever.
2. Raise fixing pin and push it to left so that it may be inserted into U-groove. Lower presser foot lever.
3. Fabric is fed with presser foot held horizontally. Sew forward further and fixing pin will be released to its original position.

SEWING ON THIN CLOTH (LACE, THIN FABRIC)

Use fine needle (#9 or #11) and thread which is suitable for the size of needle.

*It is recommended to place thin paper under cloth to save skipped stitch or wrinkles.

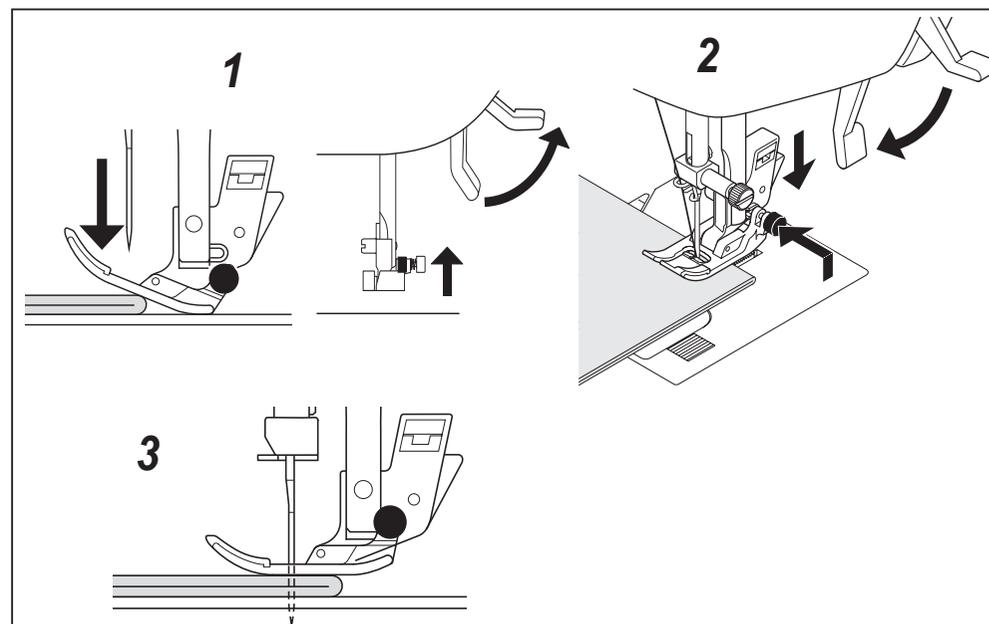
*Start to sew with thin cloth pulling the end of upper and lower threads.

*Set stitch length at its fine range.

SEWING ON THICK CLOTH (TOWELLING)

Use thick needle (#16) with longer stitch length and slow speed.

*It is recommended to place thin paper under cloth depending upon the nature of cloth.

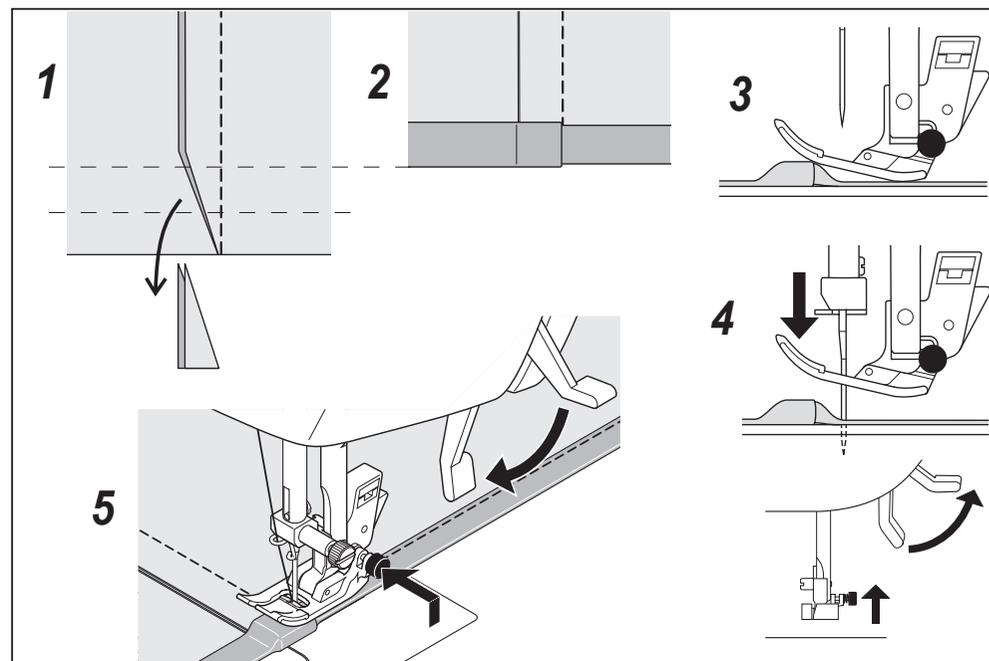


HEMMING BOTTOM OF JEANS

Use needle #16 and thread #30.

1. Cut inside portion diagonally as illustrated.
2. Turn up two times along dotted lines.
3. Start to sew slowly and stop when tip of presser foot is raised at thicker portion.
4. Lower needle and raise presser foot lever.
5. Raise fixing pin and push it to left so that it may be inserted into U-groove. Lower presser foot lever.
6. Re-start to sew.

NOTE: When sewing folded up portion with thick cloth such as denim, start to sew from the thickest portion. Lower needle by turning hand wheel and guide cloth by hand to prevent thread tangling.



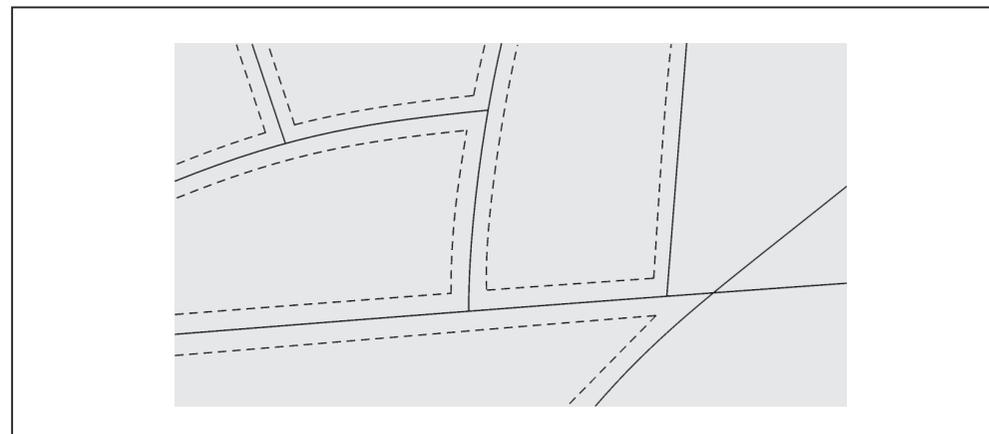
HAND-LOOK QUILT STITCH



This stitch is designed to look like hand sewing for topstitching and quilting.

1. Thread bobbin with desired top stitching color. When sewing the machine will pull this thread to the top.
2. Thread machine with invisible or lightweight thread the color that matches your fabric. This thread should not show.
3. Increase thread tension a little bit at a time until you achieve the desired appearance.
4. Start to sew.

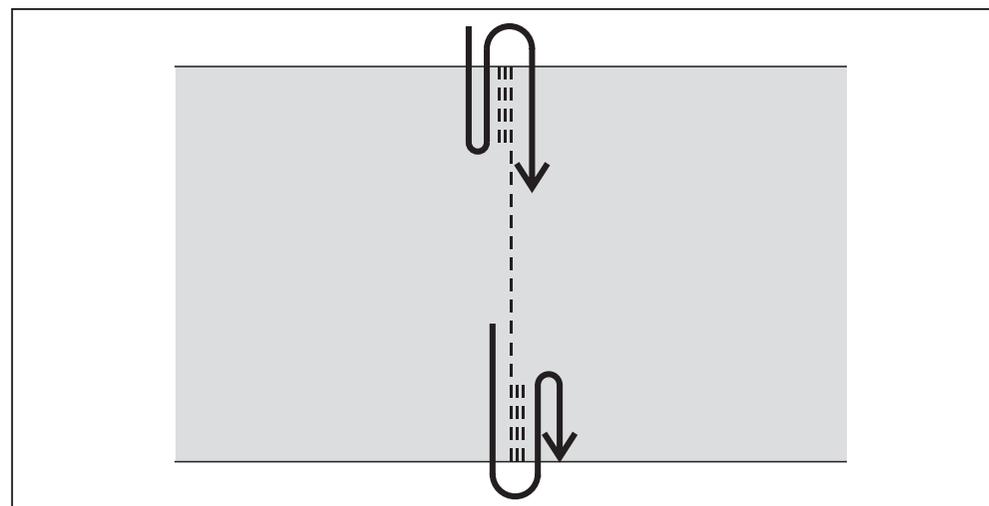
NOTE: For a dramatic appearance, experiment with different tension and stitch length combinations.



STRAIGHT STITCH WITH AUTO TIE-OFF FUNCTION



1. Press the foot control and the machine will sew 4 stitches forward and then 4 stitches in reverse and continue to sew forward until the foot control is released.
2. Push the reverse button and the machine will sew 4 stitches in reverse and then 4 stitches in forward and stop.



ZIGZAG STITCHING



03

SETTINGS :Presser foot - General Purpose Foot
:Thread tension control - 4

The top thread may appear on the bottom depending on the thread, fabric, type of stitch and sewing speed, but the bobbin thread must never appear on the top of the fabric.

If bobbin thread is pulling to the top or you are experiencing puckering, slightly reduce the tension with the Thread Tension Control.

ADJUSTING STITCH WIDTH AND LENGTH

 Dark grey box indicates the Auto/default value set automatically when the pattern is selected.
For the Zigzag Pattern the stitch length is 2 mm and the stitch width is 5 mm.

 The light grey boxes indicate all the possible personal preference options available to set manually.

NOTE: The values shown in the chart are actual sewing lengths and widths and do not correspond to the scale and number markings on the sewing machine.

SATIN STITCH

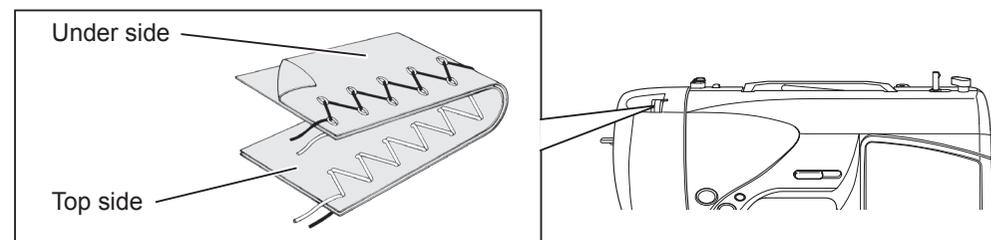
This is a closely spaced zig zag stitch used for appliqué, bar-tacking, etc. Slightly loosen the top thread tension and manually adjust the stitch length between 0.5 and 2.0 for satin stitching.

Use a backing of stabilizer for lightweight fabrics to avoid puckering.

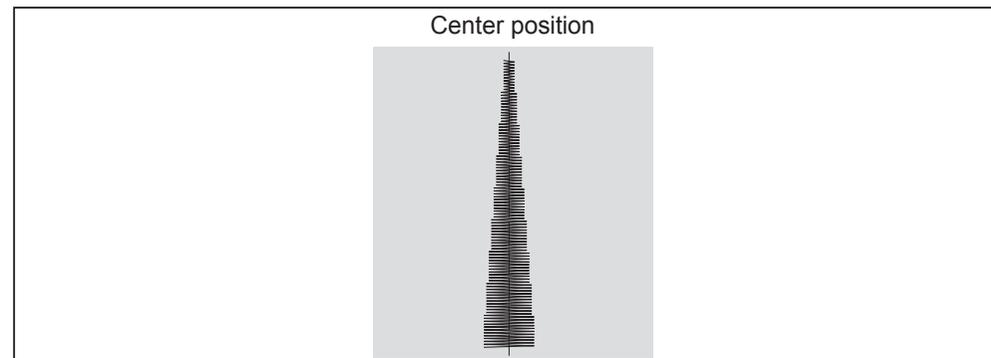
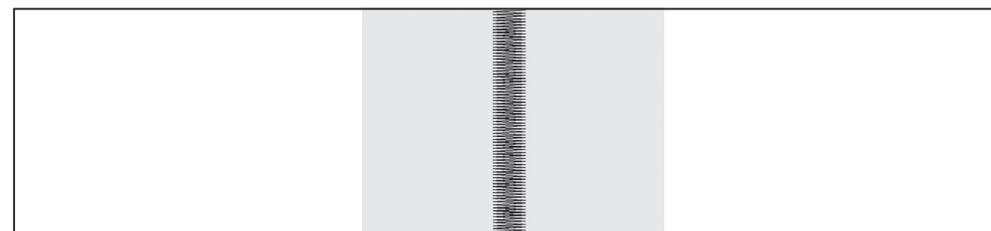
NOTE: When sewing a dense stitch, the Satin Stitch Foot (Optional) MUST be used.

PLACEMENT OF PATTERNS

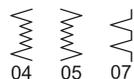
Stitch width of pattern increases from center needle position as illustrated.



		STITCH WIDTH													
		mm	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
STITCH LENGTH	0														
	0.25														
	0.5														
	0.75														
	1.0														
	1.25														
	1.5														
	1.75														
	2.0														
	2.5														
3.0															



BLINDHEM STITCH



The blindhem stitch is primarily used for hemming curtains, trousers, skirts, etc.

SETTINGS :Presser foot - Blind Foot
:Thread tension control - 4

  – Elastic blind stitch for soft, stretchable fabrics

 – Regular blind stitch for normal woven fabrics

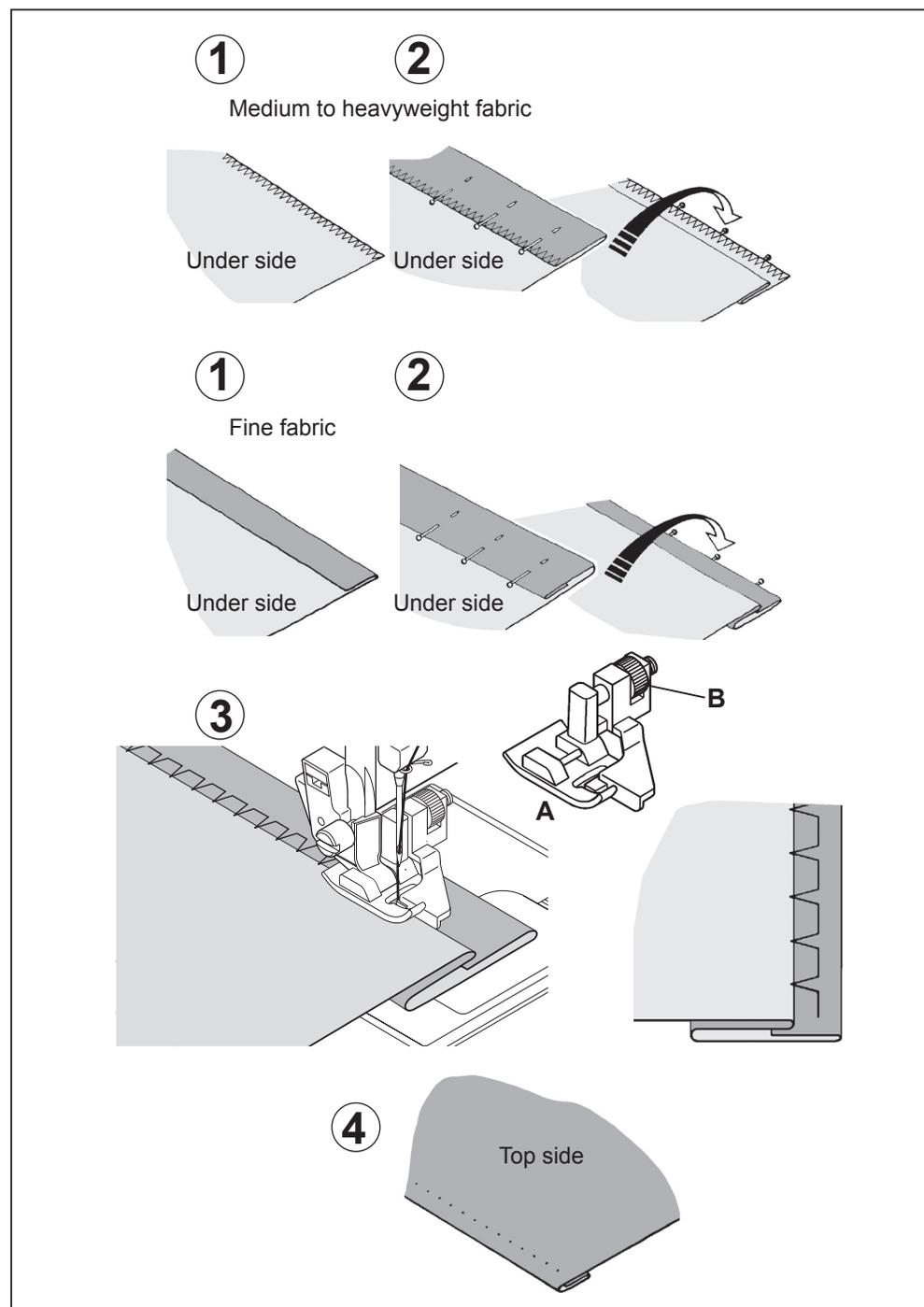
1. First finish the raw edge. Do this by turning it under on fine fabrics or overcasting it on medium to heavyweight fabrics. Then turn the hem up the required depth, press and pin in place.
2. Now fold the fabric as illustrated with the wrong side up.
3. Place the fabric under the foot. Turn the handwheel counter clockwise by hand until the needle swings fully to the left. It should just pierce the fold of the fabric. If it does not, adjust the guide (B) on the Blindhem Foot (A) so that the needle just pierces the fabric fold and the guide just rests against the fold.

NOTE: For a narrower or wider blindhem, first manually adjust the length and width controls to your desired length and width. Then adjust the guide on the foot.

Sew slowly, guiding the fabric carefully along the edge of the guide.

4. When completed, the stitching is almost invisible on the right side of the fabric.

NOTE: It takes practice to sew blind hems. Always make a sewing test first.



MULTI-STITCH ZIGZAG



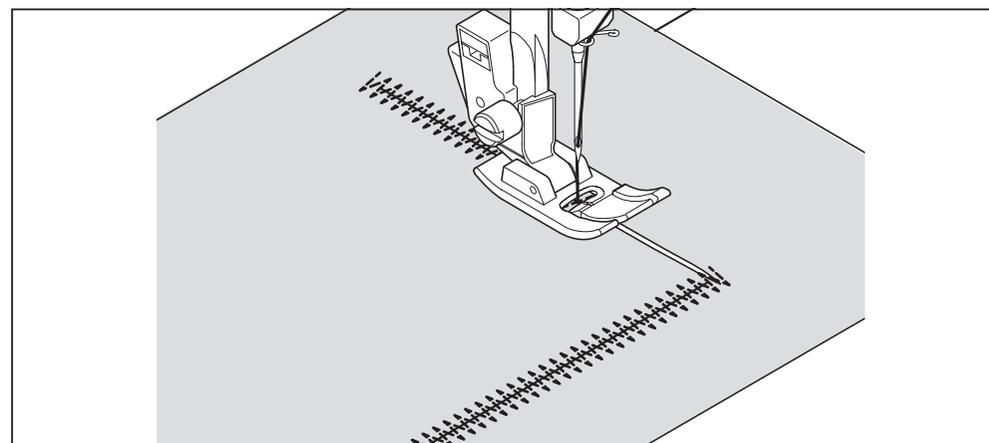
SETTINGS :Presser foot - General Purpose Foot
:Thread tension control - 4

This is a strong stitch because as its name implies, it makes three short stitches where the normal zig-zag makes only one.

For this reason it is recommended for overcasting nearly all types of fabrics.

It is also ideal for bartacks, mending tears, patching, sewing towelling and attaching flat elastic.

NOTE: Mending a tear or overedging as shown in illustration requires manual adjustment of the length control.



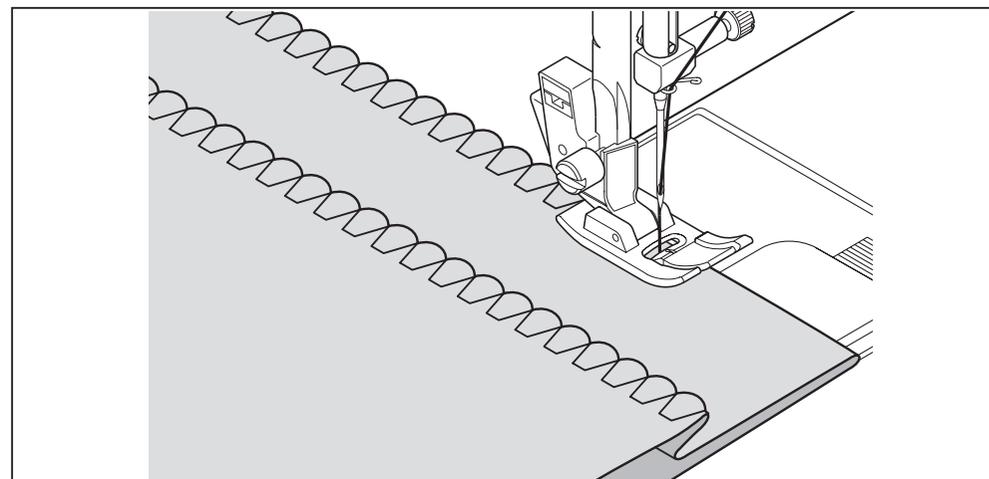
SHELL STITCH



SETTINGS :Presser foot - General Purpose Foot
:Thread tension control - 4

Turn under the raw edge and press. Place the fabric right side up so that the zigzag part of the stitch sews just over the folded edge, pulling the fabric in to form a shell hem. Trim away excess fabric close to the stitching line.

Helpful Hint: For a variety in appearance experiment with different width, length and tension settings.



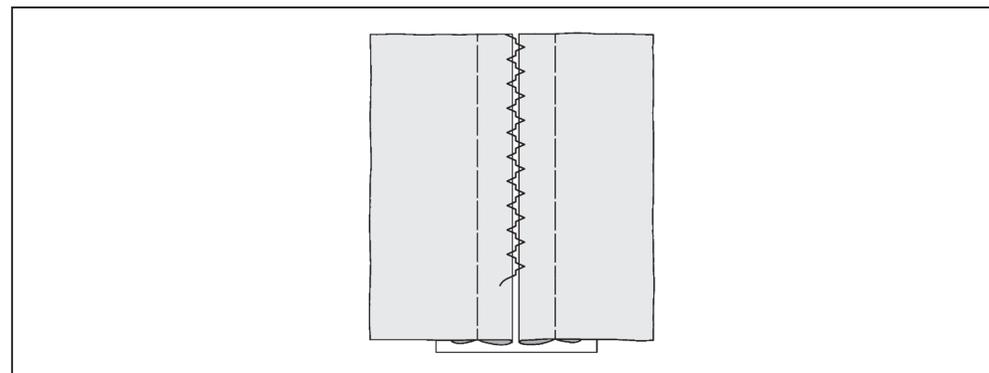
EDGE-JOINING STITCH



SETTINGS :Presser foot - General Purpose Foot
:Thread tension control - 4

This is a popular decorative stitch (used in sleeves or fronts of blouses and dresses). To attach two separate pieces of fabric together, leave a little space in between.

To prepare the fabric: Fold under the seam allowances on the cut edges, and press. Baste folded edges to tissue paper with about 1/8" (0.3 cm) space between. Stitch over the 1/8" (0.3 cm) allowance, just catching the fabric fold on both sides with needle. Remove bastings and paper; press.



STRETCH AND DECORATIVE STITCHES

SETTINGS :Presser foot - General Purpose Foot or Satin Stitch Foot (Optional)
:Thread tension control - 4

Stretch stitches are mainly for use on knit, or stretchable fabrics, but can also be used on woven materials.

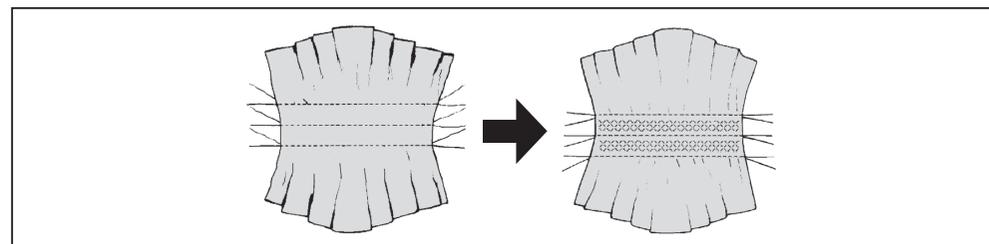
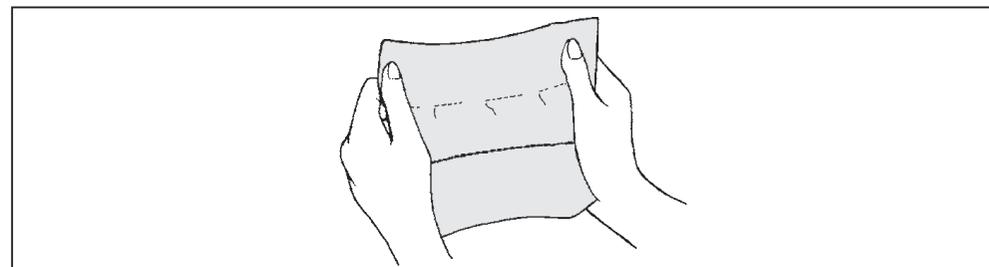
STRAIGHT STRETCH STITCH



Straight stretch stitch is far stronger than an ordinary straight stitch because it locks three times - forwards, backwards and forwards.

It is particularly suitable for reinforcing the seams of sportswear in stretch and non-stretch fabrics, and for curved seams which take a lot of strain.

Use this stitch also to top-stitch lapels, collars and cuffs to give a professional finish to your garments.

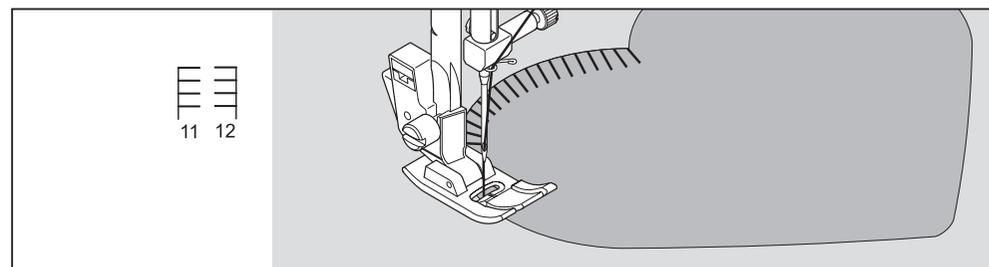


HONEYCOMB STITCH

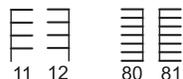


The Honeycomb stitch is ideal for smocking and useful for overcasting and attaching elastic and stretch lace.

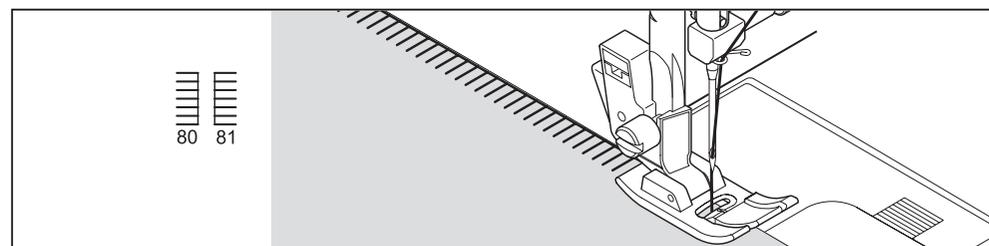
1. Make several rows of gathers across the fabric that you wish to smock.
2. With a narrow strip of fabric directly under the line of gathering, stitch over the gathers. The design will be a series of small diamonds.



BLANKET STITCH



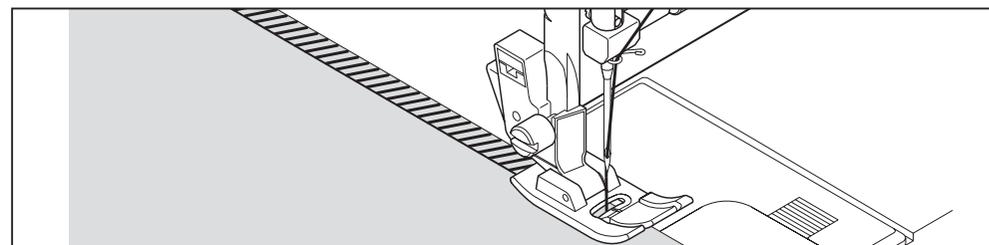
The Blanket stitch is traditionally a hand sewn stitch used to put bindings on blankets. This multi-purpose stitch can also be used for attaching fringe, attaching edgings, couching, applique and drawn thread hemstitching.



SLANT PIN STITCH



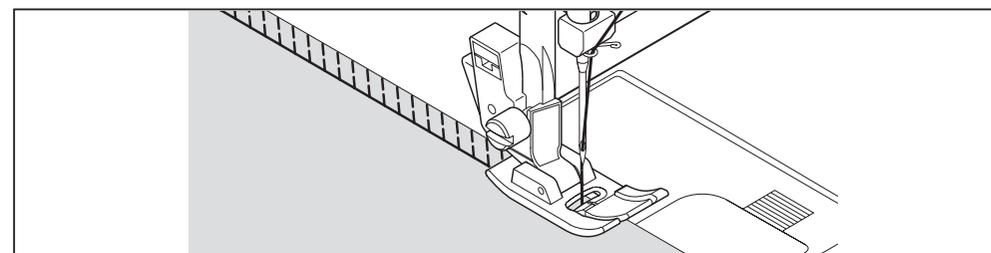
Excellent for hemstitching table and bed covers with an elegant touch. Picot-like stitch can also be made on sheer materials. Sew along the raw edge of fabric and trim close to the outside of the stitching.



SLANT OVEREDGE STITCH



Seams and overcasts in one operation to produce a narrow, supple seam, particularly suited to swimwear, sportswear, T-shirts, babywear in stretch nylon, stretch towelling, jersey and cotton jersey.

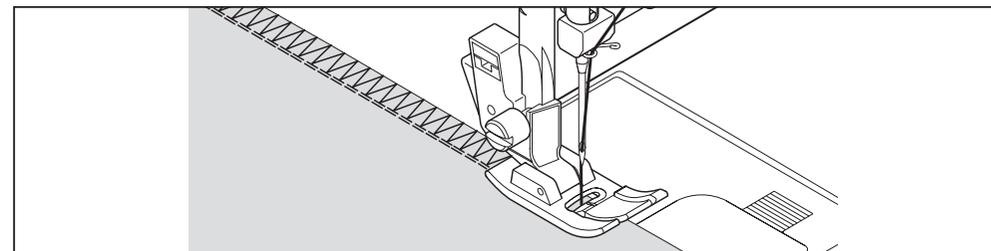


OVEREDGE STITCH



This is a similar stitch used by the garment industry in making sportswear – it sews and finishes the seam in one operation.

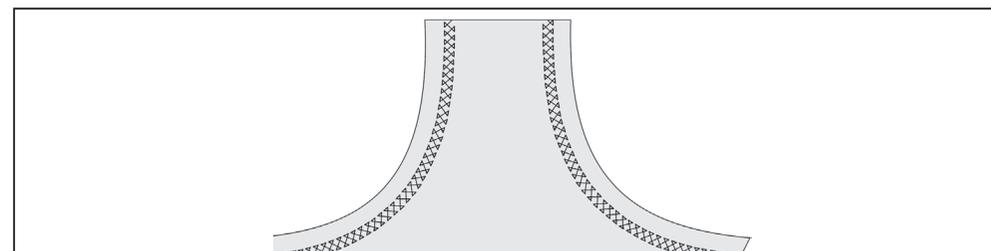
It's very effective for use in repairing raw or worn edges of garments.



CROSSED STITCH



Use to sew and finish elastic fabrics or for decorative stitching.

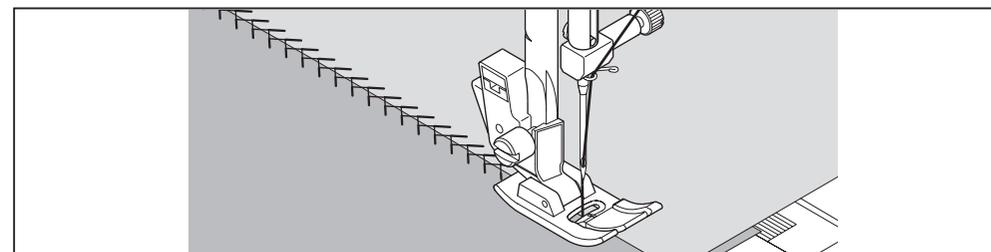


FEATHER STITCH



The pleasing appearance of this stitch enables it to be used for top-stitching, or attaching lace or inset panels.

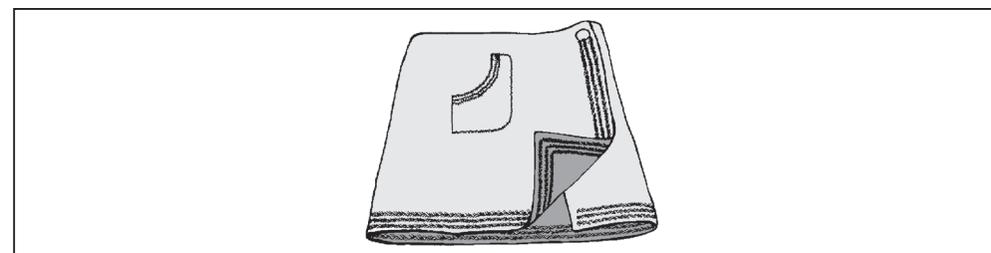
It is also ideal for quilting applications and joining fabrics.



RIC-RAC STITCH



Ric-rac stitch is primarily used for a decorative top-stitch. It is ideal for edging neck-bands, armholes, sleeves and hems. When manually adjusted to a very narrow width, it also can be used for seaming in areas that will receive stress.

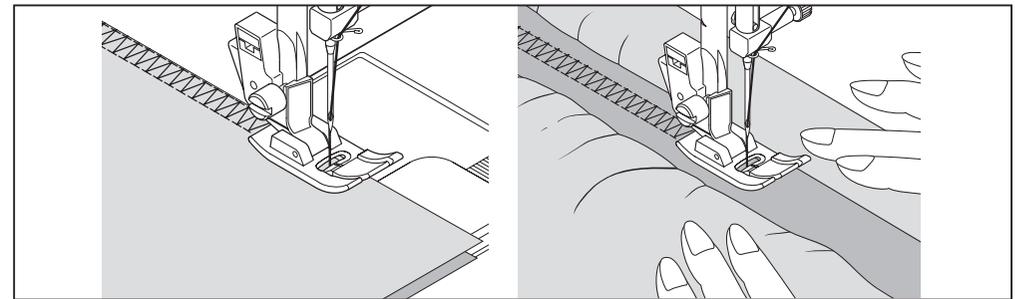


DOUBLE OVERLOCK STITCH



22

The Double overlock stitch has three main uses. It is perfect for attaching flat elastic when making or repairing garments, for overcasting and for seaming and overcasting in one operation. It is primarily used on fabrics with slight stretch and non-stretch fabrics such as linen, tweed, and medium to heavy-weight cotton.

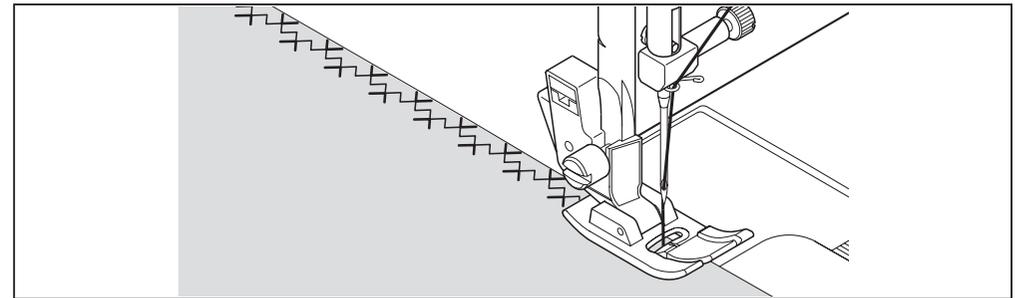


CRISS-CROSS STITCH



23

Used to sew and finish stretch fabrics or for decorative stitching, such as when creating a border.



ENTREDEUX STITCH

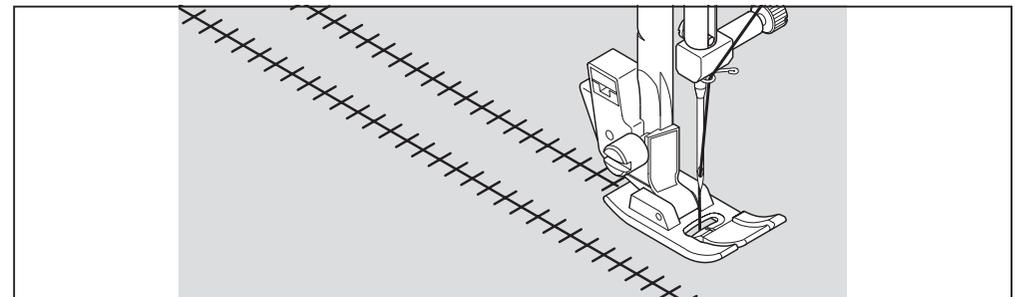


24

Useful for decorative stitching on borders and for use in heirloom sewing. The Entredeux stitch is most often sewn with a Wing Needle to create holes in the stitch pattern.

Helpful Hint: A slight + adjustment of the tension will increase the size of the hole when using a Wing Needle.

Lightweight woven fabrics will provide best results.



LADDER STITCH

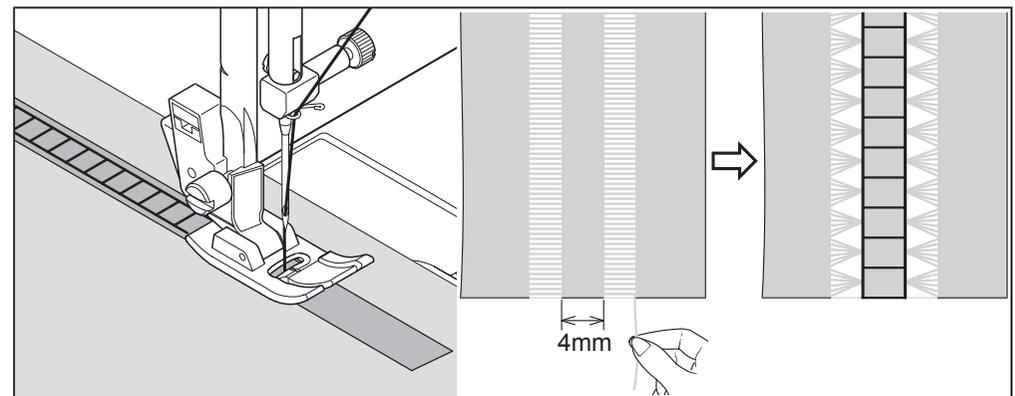


25

The Ladder stitch is primarily used for drawn thread hemstitching. It can also be used for sewing over thin tape in a same or contrasting color. Place the stitch in the center and a special effect will be obtained for decoration.

Another use for the ladder stitch is couching over narrow ribbon, yarn or elastic.

For drawn thread work, choose a coarse linen type fabric. After sewing, draw the thread out within the ladder for an open airy appearance.

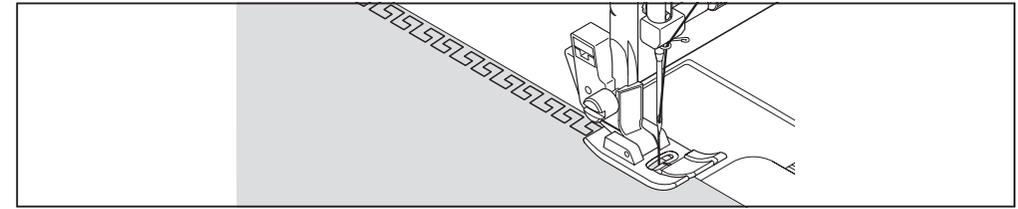


GREEK KEY STITCH



27

A traditional pattern suited for decorative borders, hems and edge finishings.

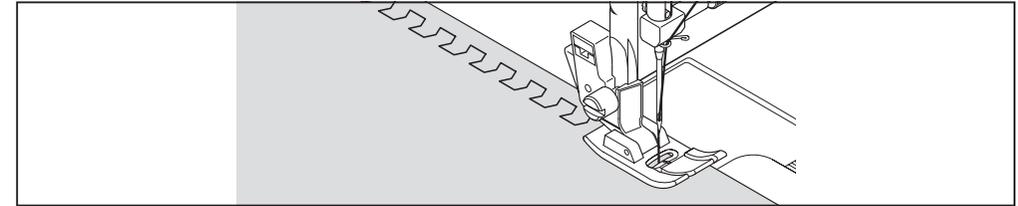


CHEVRON STITCH



70

Use to create decorative borders and for embellishment.

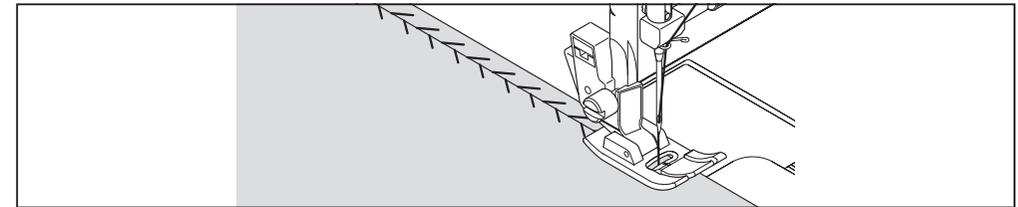


THORN STITCH



72

It is a versatile stitch used for joining fabric pieces and as a decorative touch.

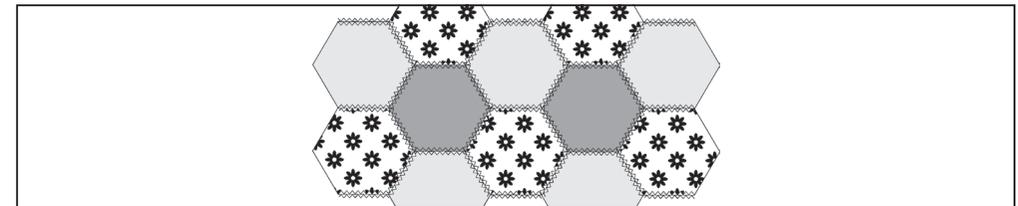


WIZARD STITCH



75

Wizard stitch, as well as being a decorative stitch, is ideal for patching stretch fabrics such as jersey and knitwear.

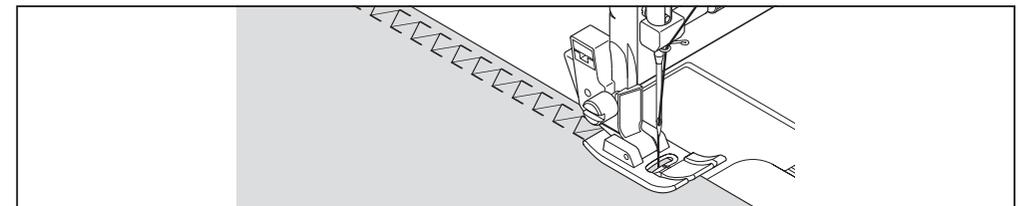


FISHBONE STITCH



78

Use to create decorative borders or embellishment.

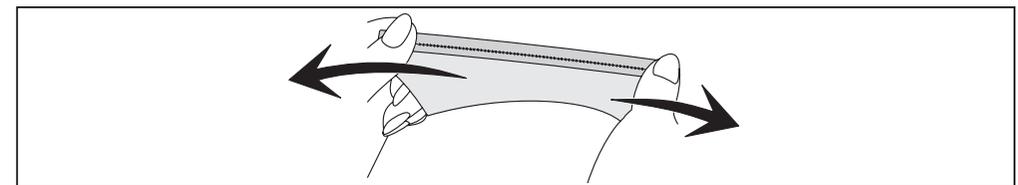


ELASTIC STRAIGHT STITCH



82 83

This stitch is especially suitable for elastic material, because it can expand and contract with fabric.



MORE DECORATIVE STITCHES & IDEAS FOR DECORATIVE MACHINE STITCHING

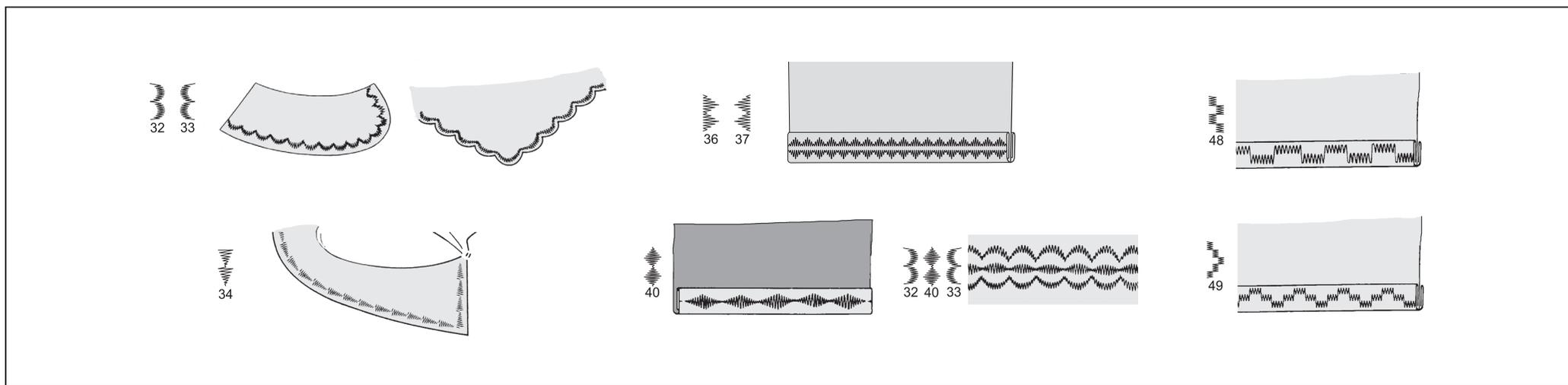
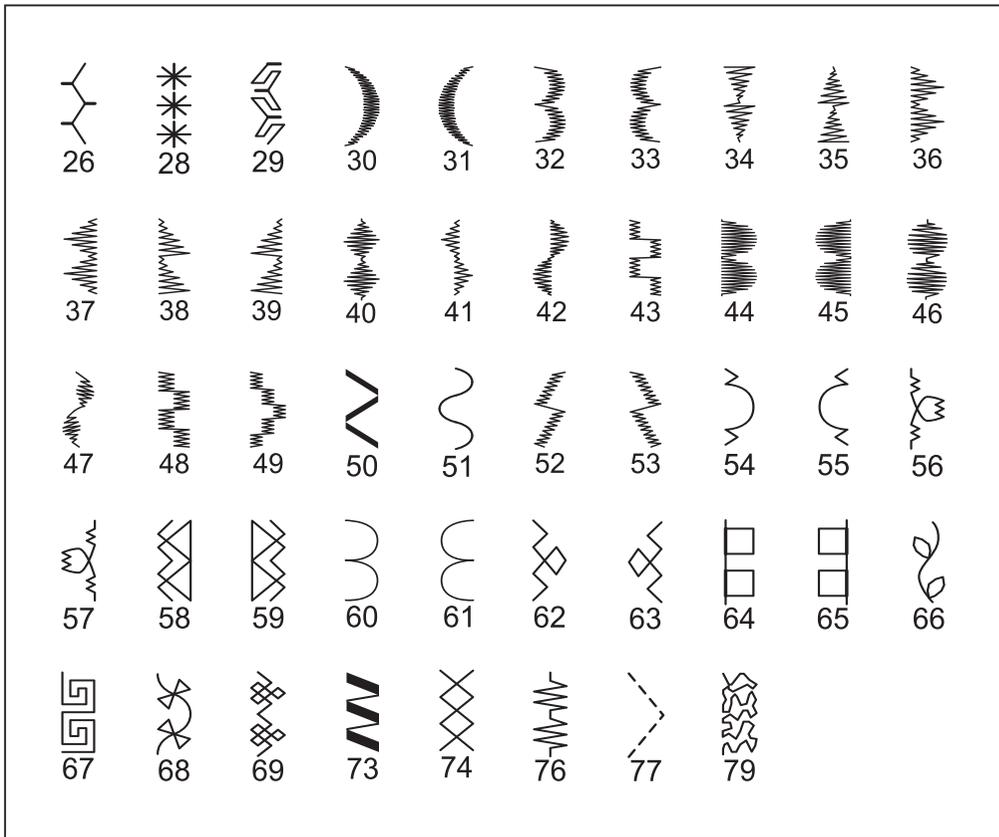
SETTINGS :Presser foot - Satin stitch foot
:Thread tension control - 4 or 1

You should carry out a test sewing on an extra piece of the fabric being sewn to check the decorative pattern to be used.

Before starting to sew, check that there is enough thread wound onto the bobbin to ensure that the thread will not run out during sewing.

For best results, stabilize fabric with a tear-away or wash-away stabilizer underneath when stitching.

Helpful Hint: Bobbin thread should not appear on the top side of the fabric, so it may be necessary to slightly lower the tension setting.



SEWING ON A BUTTON



84

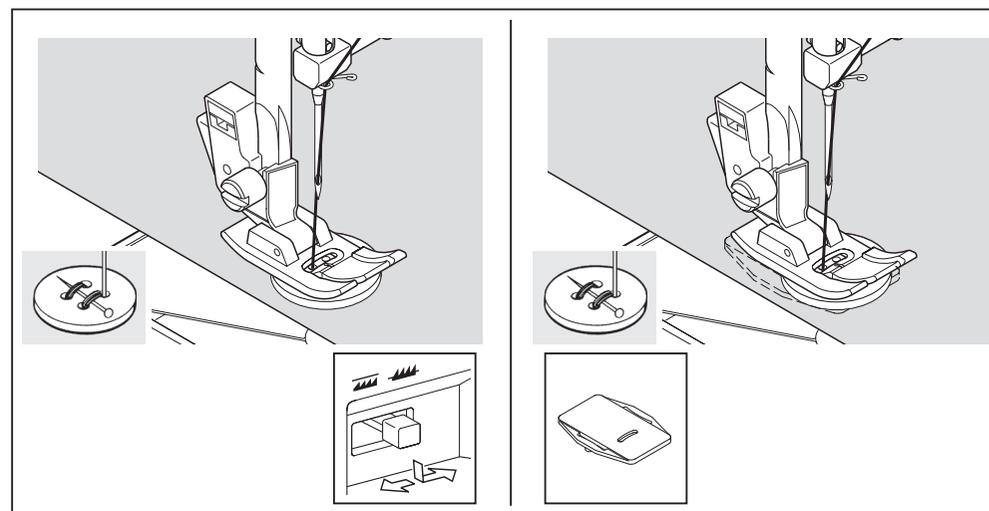
SETTINGS :Presser foot - General Purpose Foot

:Darning plate / Feed dog control - 

Position your fabric and button under the presser foot. Lower presser foot. Turn the handwheel to make sure needle clears both left and right openings of button. Adjust width if required. Sew 10 stitches across.

If a shank is required, place a pin on top of the button and sew over top of it.

Helpful Hint: To secure thread, pull both threads to the backside of the fabric and tie together.



EYELET STITCH



85

This stitch is to make eyelet (outer dia.-7 mm, inner dia.-3 mm) on belts etc.

SETTINGS :Presser foot - General Purpose Foot

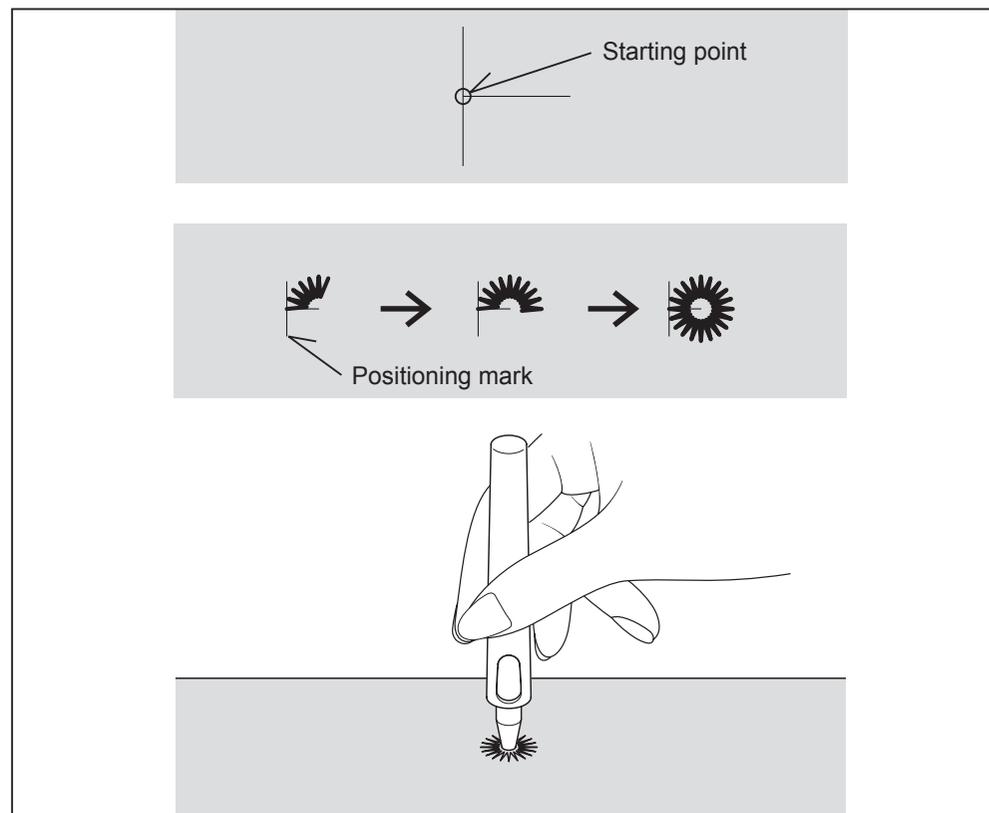
:Thread tension control - 4

PROCEDURE

*Use an interfacing in the area of garment where eyelets are placed.

*Make a practice on a scrap of the fabric you are using.

1. Select the pattern 85.
2. Carefully mark the position of eyelet on the fabric as illustrated.
3. Place the fabric under the foot. Pull out the bobbin thread underneath the fabric to a length of about 4 inches (10 cm) to the rear.
4. Lower needle onto the starting point and lower presser foot. Start the machine. When completed, the machine stops automatically after seam is fastened.
5. Make a hole at the center with an eyelet punch.
*Eyelet punch is not included.
*Sew again to make it strong if pitch is too big.



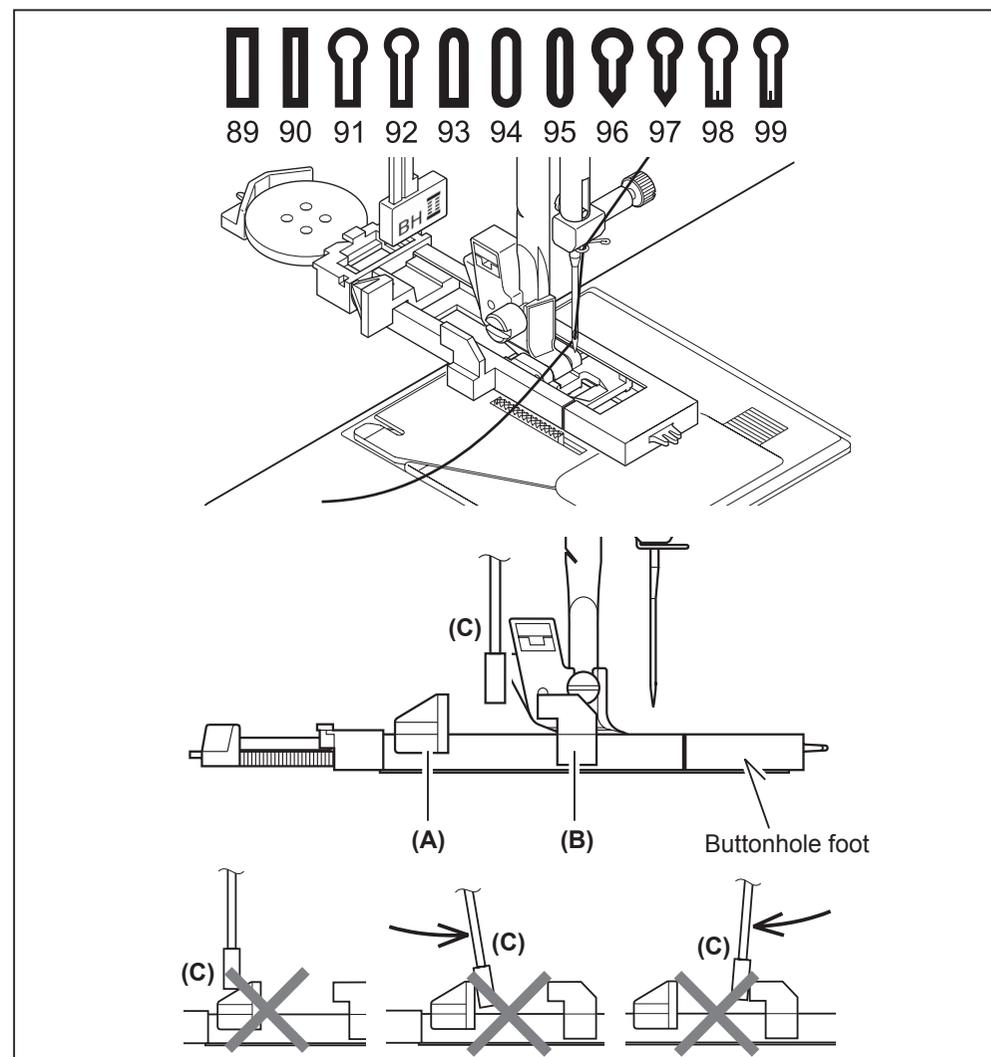
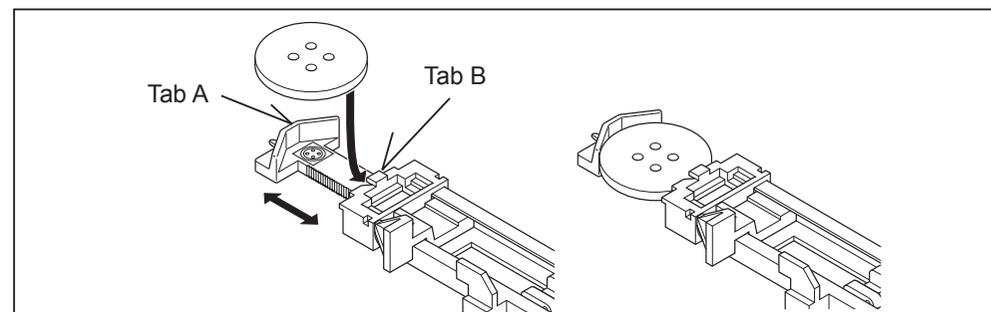
SEWING A BUTTONHOLE USING BUTTONHOLE FOOT

Your machine offers you two different widths of bartack, keyhole and round end buttonholes sewn by a system that measures the size of the button and calculates the size of buttonhole required.

PROCEDURE

- * Use an interfacing in the area of the garment where buttonholes are placed. Stabilizer or regular interfacing can be used.
- * Make a practice buttonhole on a scrap of the fabric you are using. Then try the buttonhole with the selected button.

1. Select one of buttonhole patterns.
2. Replace the presser foot with the buttonhole foot. (Refer to "Changing presser foot" on page 14.)
3. Insert the button into the buttonhole foot. (Refer to "Using buttonhole foot" above.)
4. Lower the buttonhole lever (C) so that it drops down vertically between the stoppers (A) and (B).



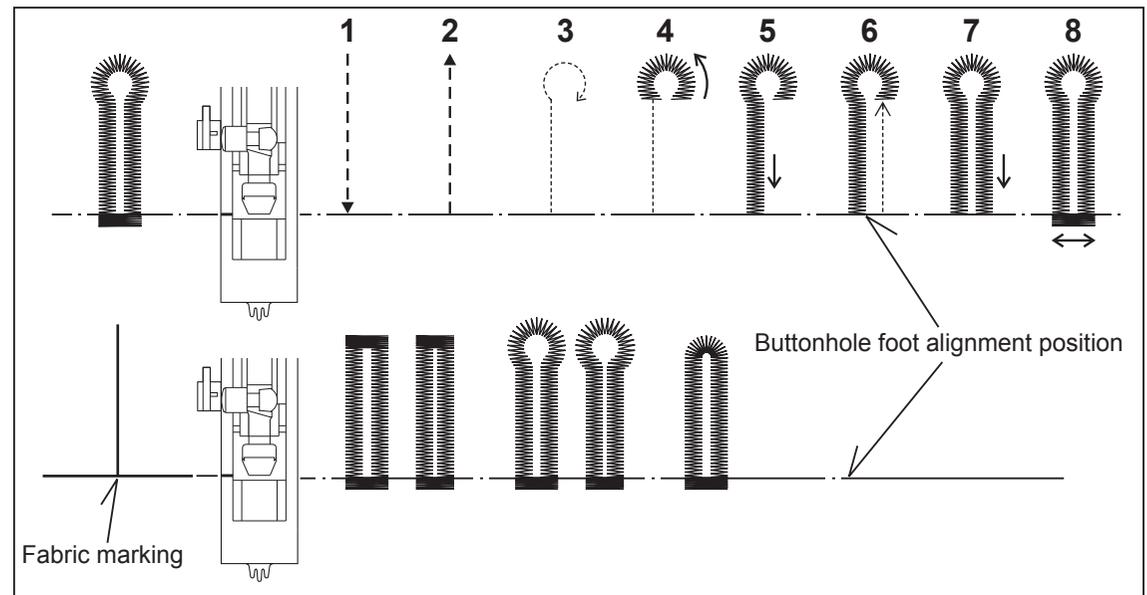
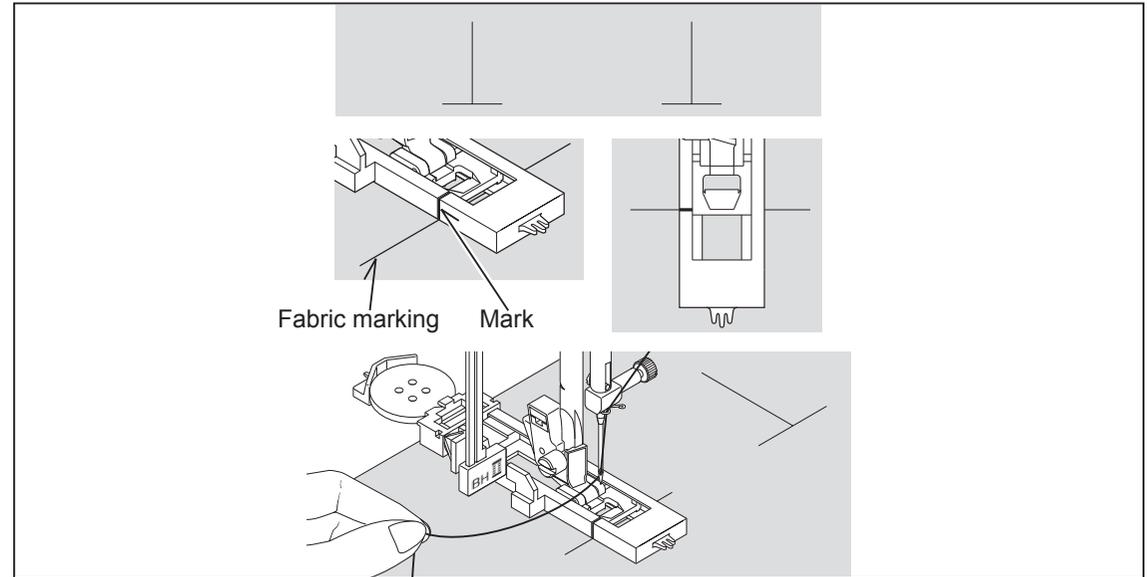
5. Carefully mark the position of buttonhole on your garment.

6. Place the fabric under the foot. Pull out the bobbin thread underneath the fabric to a length of about 4 inches to the rear.

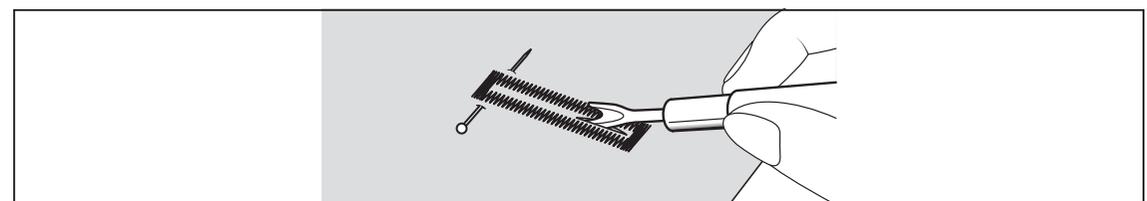
7. Align the buttonhole mark on the fabric with the mark on the buttonhole foot, and then lower the buttonhole foot.

8. While holding the top thread, start the machine.

* Sewing will be completed automatically in the following order.



9. When sewing is finished, use a buttonhole opener to open up the fabric in the center of the buttonhole. Be careful not to cut the ends of the buttonhole.

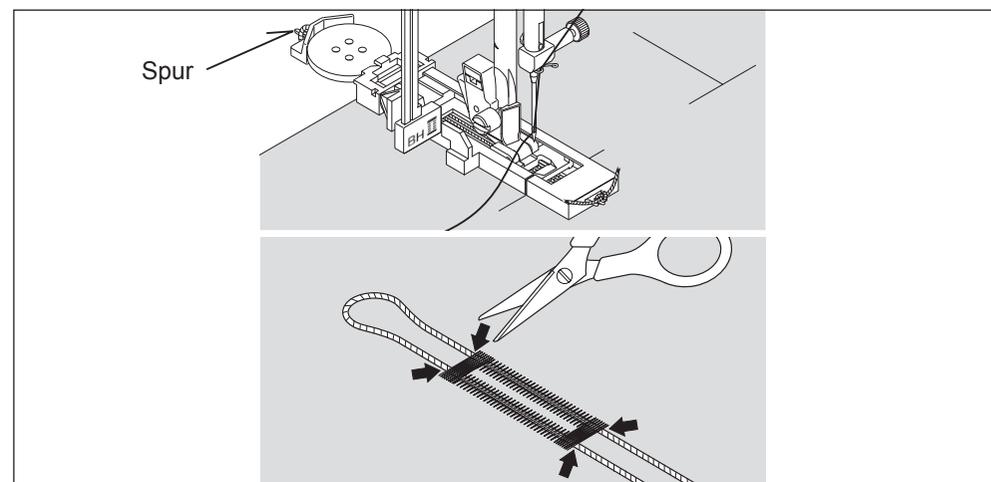


CORDED BUTTONHOLES

Hook filler cord (crochet thread or buttonhole twist) over the spur and pull both ends of the cord forward under the foot and tie off the cord as shown in the illustration.

Sew buttonhole so that zigzag stitches cover the cord.

When completed, release the cord from foot and snip off extra length.

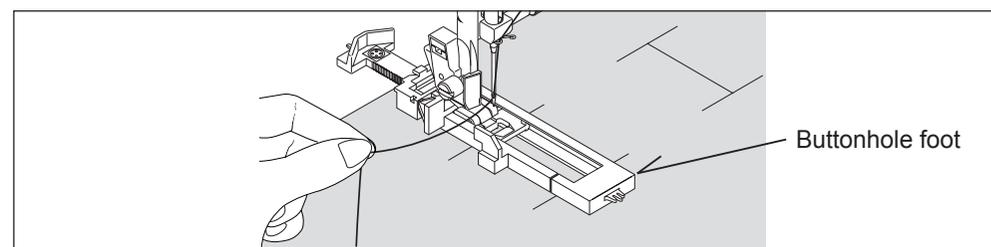


MANUAL BUTTONHOLE

* Use the automatic buttonhole foot up to 1 3/4 " (45 mm) in length, but don't lower the buttonhole lever or a beep will sound.

* Use the satin foot (Optional) to create larger buttonholes.

* Carefully mark the buttonhole length on your garment. Place the fabric with the buttonhole marked under the buttonhole foot. Slide the foot forward so that the needle pierces the fabric at the beginning of the buttonhole.



PROCEDURE

1. Start the machine to form first bartack and left side of buttonhole.
2. Sew second bartack and stitch backward until needle reaches beginning of buttonhole.
3. Stitch forward to the end of buttonhole mark to complete buttonhole.
4. Push the reverse stitch switch to tie off the stitches.

NOTE: If stitch length is manually set at 0.8 (mm) for step 1, set the stitch length at 0.8 (mm) for step 3 as well.

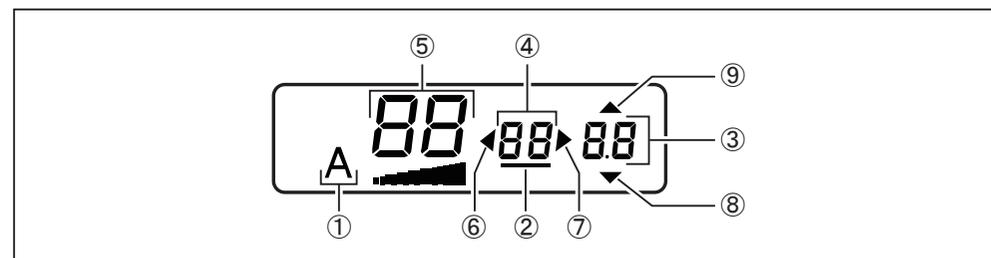
①	 86	
②	 87	
③	 88	
④		

Letter sewing

* Satin stitch foot is recommended.

■ Instruction of LCD display

- ① "A" indicates letter sewing mode.
 - ② The under bar indicates that displayed letter is registered already at the displayed number position.
 - ③ Letter space : It shows space amount between each letter stitches. It is displayed from 0.0-3.5.[Initial setting is 0.5]
 - ④ Registered position : It indicates registered order.
 - ⑤ Registered stitch:It shows the number selecting from letter stitch pattern and design stitch pattern.
 - ⑥ Left arrow : It can select the number prior to the number on display.
 - ⑦ Right arrow : It can select the number next to the number on display.
 - ⑧ Down arrow : It can narrow the space between letters.
 - ⑨ Up arrow : It can widen the space between letters.
- *Letter font and size are fixed.



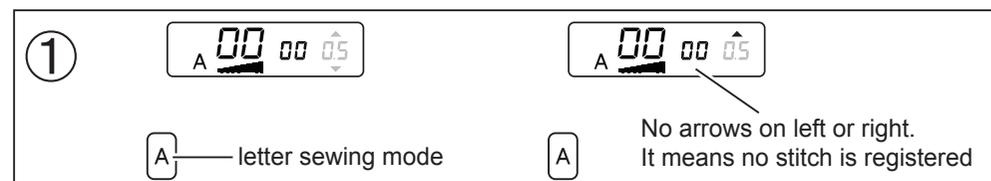
■ Select letter stitches

Select letters

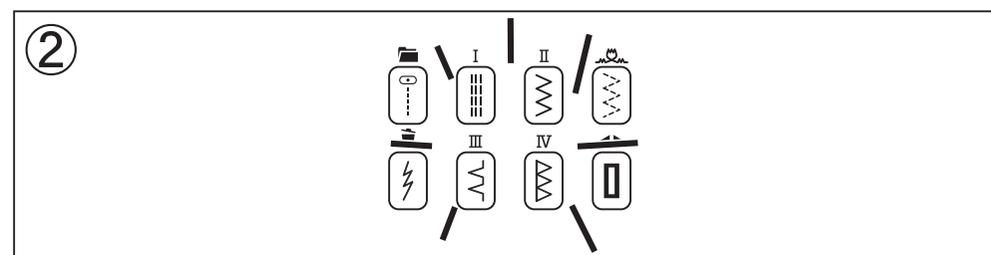
(Example) When selecting "J", it is registered as the number 10 from Alphabet & European letter chart.

1. Press the letter sewing mode button and then "A" sign appears on the LCD display.

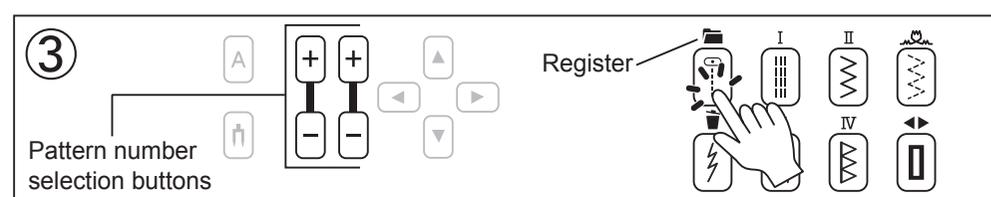
Note : Check no letter is registered before selecting the letter stitch. If no arrows on left or right side of the registered position number, it means the memory is clear.



2. Press one of the blinking direct select buttons; I ~IV or flower mark.



3. Select the letter stitch number by pressing Pattern number selection button (\pm) and then press register button to confirm.



4. Press start and stop button or FC and start sewing.
 ※ Registered letters are kept in the machine until turning off power or delete the letters.

■ Combination of letter stitch

It can combine the letter stitches up to 40.

(Example) 「 ABC  」 / Letter number : 01, 02 and 03 from alphabet & European letter chart and 56 from design stitch chart.

1. Refer to above select letters stitch procedure.
2. To register first letter "A", number 01, press the direct stitch button I and select the number "01" by pressing the Pattern number selection button. And confirm the letter stitch by pressing register button.

Note : 「  」 (00) means space.

3. Repeat same procedure until the end.
4. After the stitches are all registered, check the stitch order by pressing the letter stitch position button. And then press the start/stop button or FC to start sewing.

■ Checking the registered stitches

1. By pressing the letter stitch position button, each stitch number is on display. Letter stitch number and stitch position can be checked on the display.

■ Add the stitches

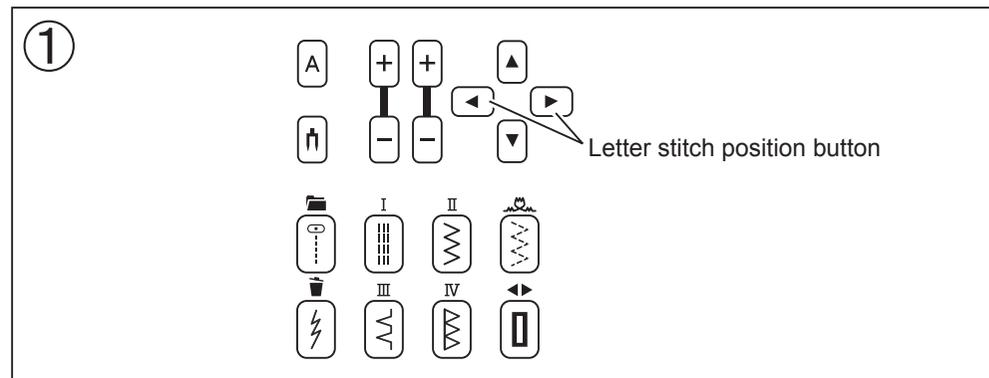
(Example) 「 ABC  」 / Letter number : 01, 02 and 03 from alphabet & European letter chart and 56 from design stitch chart. And add "J" in the beginning.

1. Press the letter stitch position button (left or right arrow) and move the stitch number prior to the position you want to add. In the example, select the stitch position number "00".
2. Select and register the letter stitch. In the example, select "10" (J) from alphabet and European letter chart.

■ Delete the stitches

(Example) 「 ABC  」 / Letter number : 01, 02 and 03 from alphabet & European letter sheet and 56 from design stitch. Delete "B" from this.

1. Press the letter stitch position button and show the stitch number you want to delete. And press the delete button. In the example, select "02" (B) by pressing the letter stitch position.
To delete all registered letters.
 - Press delete button for a long period or turn off and on the power and press the letter sewing mode button.



■ Cue the registered letters

You can sew from indicated letter when trial sewing or not sewn correctly.

(Example) 「ABC_m」, start sewing from "B".

1. Register the stitches according to above procedure.
2. Press the letter stitch position button and show the position number on the display.
In the example, select "02" as position number of "B".
3. Press "cue button" and then start/stop button for sewing.

■ Change the space of each letters

(Example) 「ABC_m」 / Changing the space between letters.

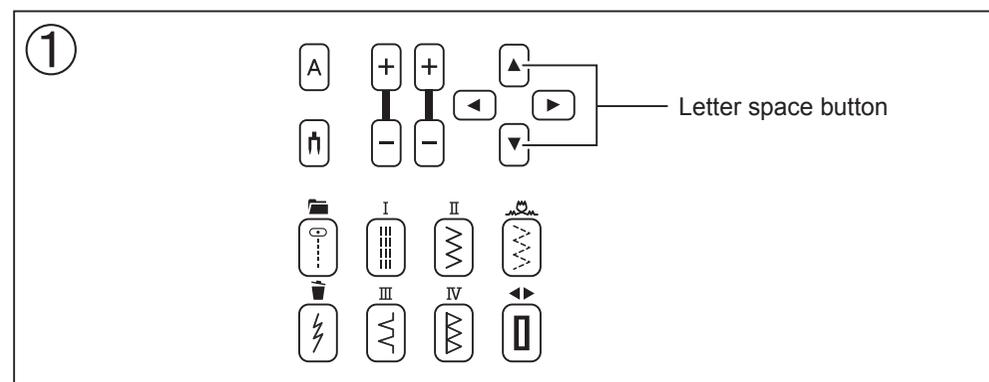
Change all spaces

1. Press letter sewing mode button two times. And check the registered position is "01" on the display.
Up sign : It can be widen space between each letter stitches
Down sign : It can be narrow between each letter stitches.
※ Letter space can be set up from 0.0 to 3.5.
2. Press start/stop button or FC to start sewing from the set up point.
※ The number of set up is kept until power off.

Change space after certain letter.

(Example) 「ABC_m」 / widen the letter space after "B".

1. Press letter sewing mode button two times. And check the registered position is "01" on the display. Press start/stop button and start sewing.
2. When the position number "02" of "B" on the display, press stop sewing.
3. Press the up sign of letter space button to widen the space.
4. Then press start/stop button or FC to restart sewing.
The set width continues until the end. If you change the space again, stop sewing and set up the width again by above procedure.



3. CARING FOR YOUR MACHINE

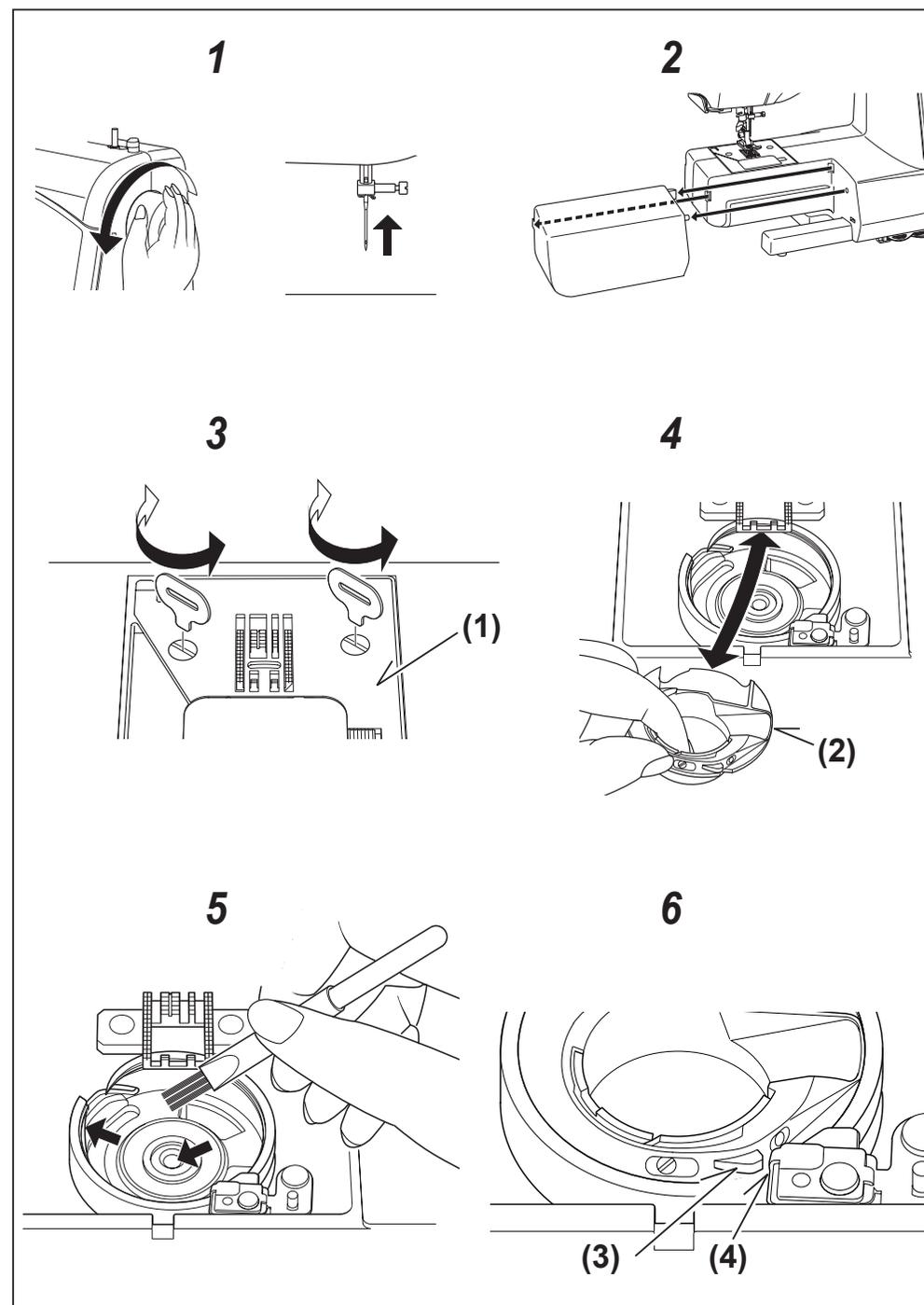
CLEANING HOOK AREA AND FEED DOGS



Always disconnect the machine from power supply by removing the plug from the wall-outlet.

To ensure the best possible operation of your machine, it is necessary to keep the essential parts clean at all times.

1. Raise the needle to its highest position.
2. Remove the extension table by pulling it off to the left.
3. Remove the needle plate (1).
4. Remove the bobbin case (2).
5. Clean the feed dogs and hook area with the lint brush.
Put one drop of sewing machine oil on the hook race as indicated by the arrows. (A, B)
6. Replace the bobbin case with the projection (3) positioned against the spring (4). Replace the needle plate.

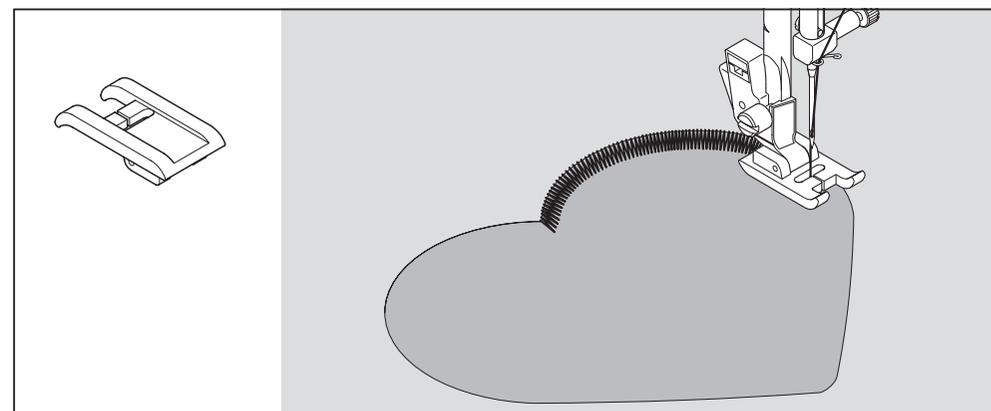


4. OTHER INFORMATION

SATIN STITCH FOOT

The Satin stitch foot is grooved on the bottom to permit dense stitching to pass under it easily. It is most useful for sewing satin stitches and as an alternative to the General Purpose Foot when sewing stretch stitches.

Closely spaced zig-zag stitches are called satin stitches. This is an attractive stitch used primarily for appliqueing and bar tacking. Slightly loosen top thread tension for satin stitching. Use a backing of stabilizer or interfacing to avoid puckering.



TWIN NEEDLE

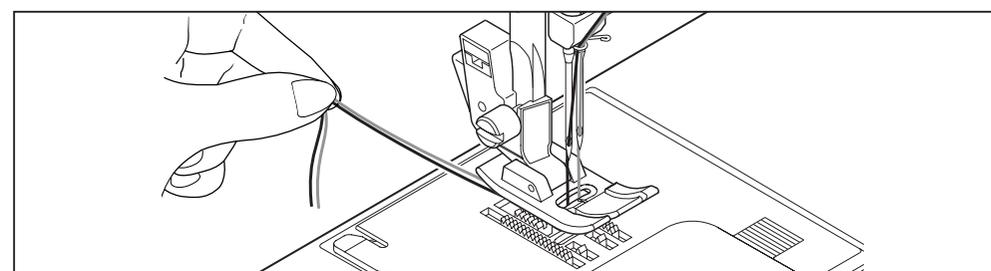
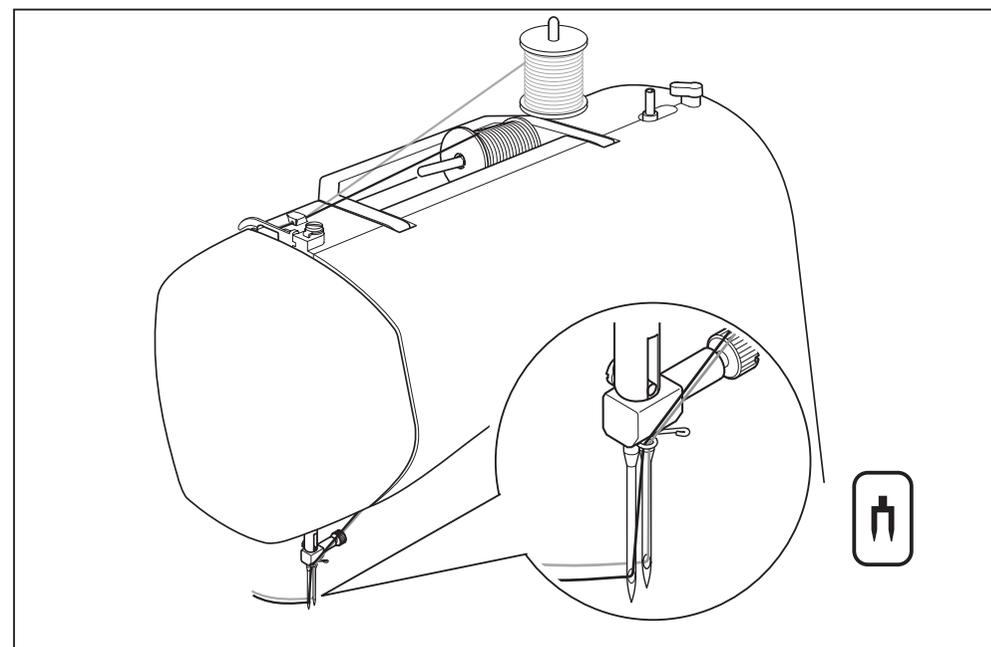
A twin-needle produces two rows of parallel stitches for pin tucks, double top stitching and decorative sewing.

When using twin-needles, **the stitch width should never be set above twin needle mark**, regardless of the stitch you have selected. Doing so will result in broken needles and possible damage to your machine.

THREADING THE TWIN NEEDLE

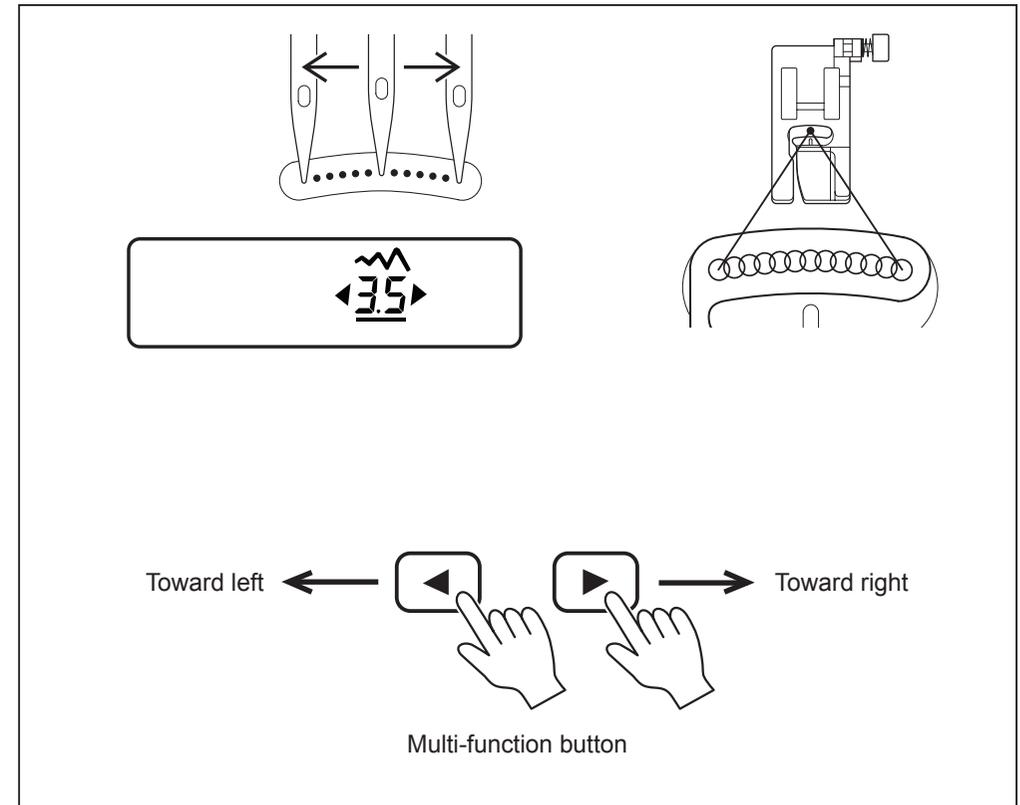
1. Place a spool on each spool pin. Thread the two threads as one except double thread guides are provided. Draw one thread through each of these and through each needle front to back.
2. Pick up bobbin thread as for single needle sewing. Pull the three threads together under the presser foot to the back of the machine, leaving about 15 cm clear.

NOTE: Needle threader cannot be used to thread the twin needle.



STRAIGHT STITCH NEEDLE POSITION

The position of the needle when sewing straight stitch may be adjusted to anyone of 13 different positions with the Stitch Width Control as illustrated:



5. PERFORMANCE CHECKLIST

GENERAL PROBLEMS

Machine does not sew.

- * Power switch is turned off. – Turn on the switch.
- * Buttonhole lever is not raised when sewing stitch patterns. – Raise buttonhole lever.
- * Buttonhole lever is not lowered when sewing buttonhole. – Lower buttonhole lever.
- * Presser foot lifter is raised. – Lower the presser foot to sew.

Machine jams/knocks.

- * Thread is caught in hook. – Clean hook (see page 42).
- * Needle is damaged. – Replace needle (see page 13).

Fabric does not move.

- * Presser foot is not lowered – Lower presser foot.
- * Stitch length is too short – Lengthen stitch length.
- * Feed dogs are lowered – Raise feed dogs.

Desired pattern cannot be selected.

- * Twin needle mode switch has been turned on and lit red. – Turn off the switch.

STITCHING PROBLEMS

Machine skips stitches.

- * Needle is not all the way up into needle clamp (see page 13).
- * Needle is bent or blunt. – Replace needle (see page 13).
- * Machine is not threaded correctly (see page 10).
- * Thread is caught in hook. – Clean hook (see page 42).

Stitches are irregular.

- * Needle size is not correct for thread and fabric (see page 13).
- * Machine is not threaded correctly (see page 13).
- * Top thread tension is too loose (see page 14).
- * Fabric is being pulled or pushed against machine feeding action. – Guide it gently.
- * Bobbin has not been wound evenly. – Rewind bobbin.

Needle breaks.

- * Fabric is being pulled or pushed against machine feeding action. – Guide it gently.
- * Needle size is not correct for thread and fabric (see page 13).
- * Needle is not all the way up into the needle clamp (see page 13).

THREAD PROBLEMS

Thread bunches.

- * Top and bobbin threads are not drawn back under presser foot before starting seam.
 - Draw both threads back under presser foot about 4 inches (10 cm) and hold until a few stitches are formed.

Needle thread breaks.

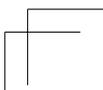
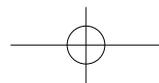
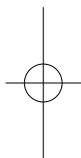
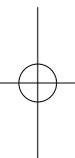
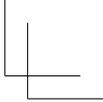
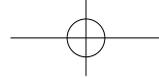
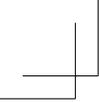
- * Machine is not threaded correctly (see page 10).
- * Top thread tension is too tight (see page 14).
- * Needle is bent. – Replace needle (see page 13).
- * Needle size is not correct for thread and fabric (see page 13).

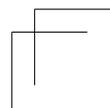
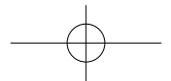
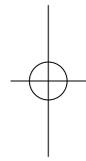
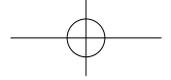
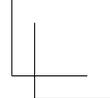
Bobbin thread breaks.

- * Bobbin case is not threaded correctly (see page 9).
- * Lint accumulates in bobbin case or hook. – Remove lint (see page 42).

Fabric puckers.

- * Top thread tension is too tight. – Adjust thread tension (see page 14).
- * Stitch length is too long for sheer or soft fabric. – Shorten stitch length.





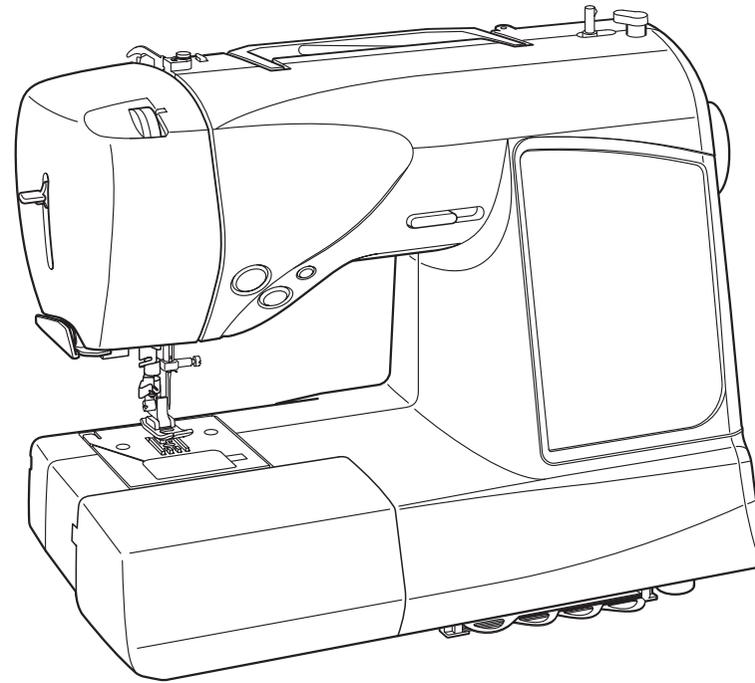
ENGLISH

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INSTRUCTION MANUAL

“IMPORTANT SAFETY INSTRUCTIONS”

“When using an electrical appliance, basic safety precautions should always be followed, including the following.”
“Read all instructions before using this sewing machine.”

“DANGER— To reduce the risk of electric shock:”

1. “This 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 to be used as a toy. Close attention is necessary when this sewing machine is used by or near children.”
2. “This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.”
3. “Use this sewing machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.”
4. “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 the sewing machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.”
5. “If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.”
6. “Never operate the sewing machine with any air openings blocked. Keep ventilation openings of the sewing machine and foot control free from the accumulation of lint, dust, and loose cloth.”
7. “Never drop or insert any object into any opening.”
8. “Indoors use only.”
9. “Do not operate where aerosol (spray) products are being used or where oxygen is being administered.”
10. “To disconnect, turn switch to the off („0“) position, then remove plug from outlet.”
11. “Switch off or unplug the appliance when leaving it unattended, unplug the appliance before carrying out maintenance or replacing lamps.”
12. “Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.”
13. “Keep fingers away from all moving parts. Special care is required around the sewing machine needle.”
14. “Never sew with a damaged needle plate as this can cause needle to break.”
15. “Do not use bent needles.”
16. “Do not pull or push fabric while stitching. It may deflect the needle causing it to break.”
17. “Switch the sewing machine off (“0”) when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot, etc.”
18. “Always unplug sewing machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.”
19. “To avoid electrical shock never put the machine nor the mains cable or mains plug into water or other liquids.”
20. “The LED lamp maximum power is 0.3w, maximum voltage is DC 5v, if the LED lamp is damaged, you should not use the product and send it to the manufacture or service agent to repair or replace at once.”
21. “Attention the following to avoid injury:
 - Unplug the foot controller of the appliance when leaving it unattended:
 - Unplug the foot controller of the appliance before carrying out any maintenance.”

“**CAUTION—** Moving parts-To reduce risk of injury, switch off before servicing. Close cover before operating machine.”

“SAVE THESE INSTRUCTIONS”

“This product is for household use, or equivalent.”

FOOT CONTROL (USA & Canada only)

Use Model YC-485 EC or Model JF-1000 with this sewing machine.

POLARIZED PLUGS CAUTION (USA & Canada only)

This appliance has a 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 the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not modify the plug in any way.

This appliance complies with EEC Directive 2004/108/EC covering the electromagnetic compatibility.



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.

For European version

Dimensions: 387 mm × 197 mm × 301 mm
Mass of the equipment: 7.0 kg
Rated Voltage: 230 V ~
Rated Frequency: 50 Hz
Rated input: 65 W
Using ambient temperature: Normal temperature
Acoustic noise level: less than 70 db(A)