

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 light is damaged, you should not use the product and send it to the manufacture or service agent to repair or replace at once."
21. "Caution - 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."

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



DISPOSAL:

This equipment is marked with the recycling symbol. Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary. (European Union only)

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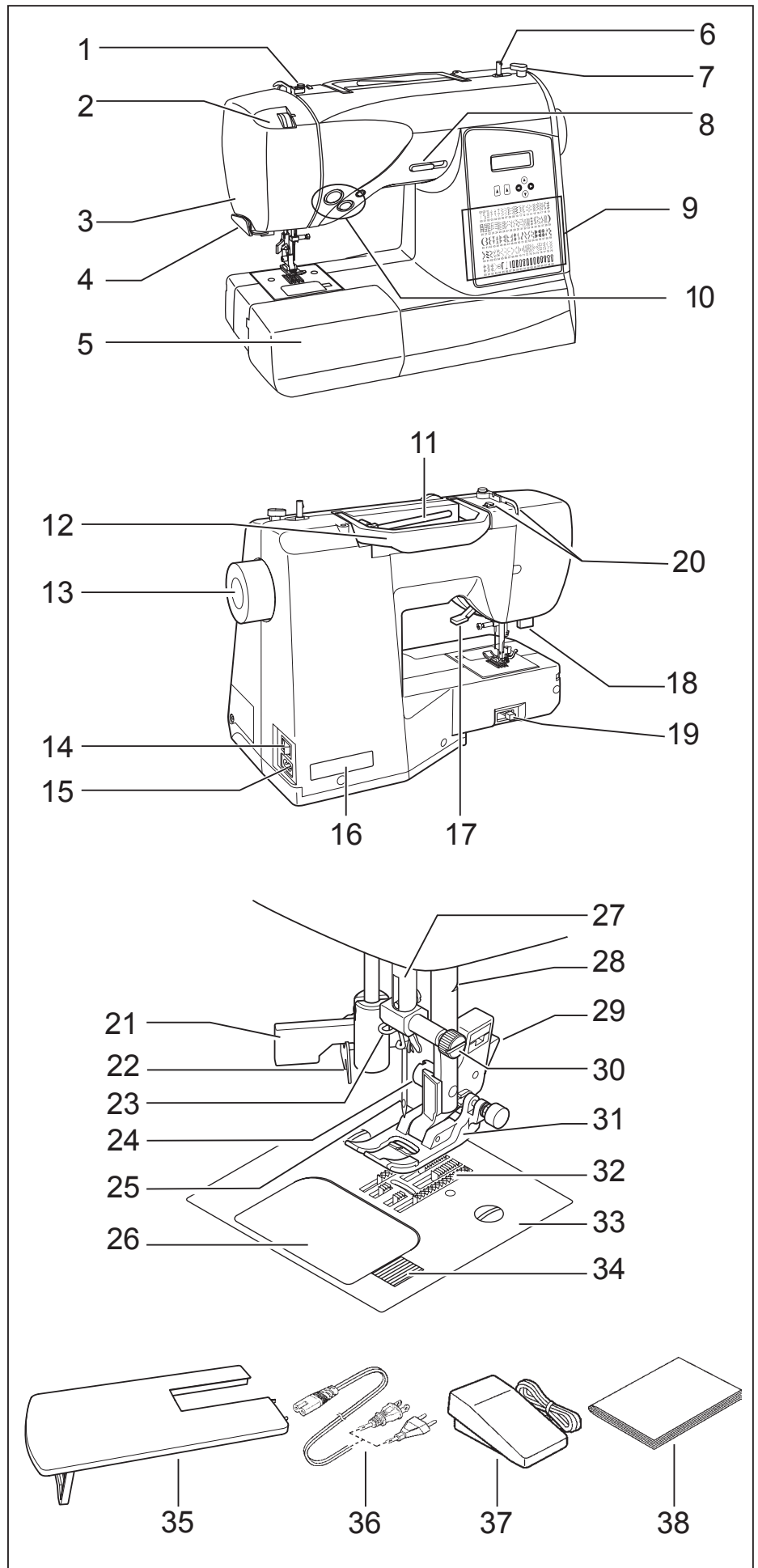
For European version

Dimensions: 376 mm × 197 mm × 301 mm
Mass of the equipment: 6.7 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)

1. KNOWING YOUR SEWING MACHINE

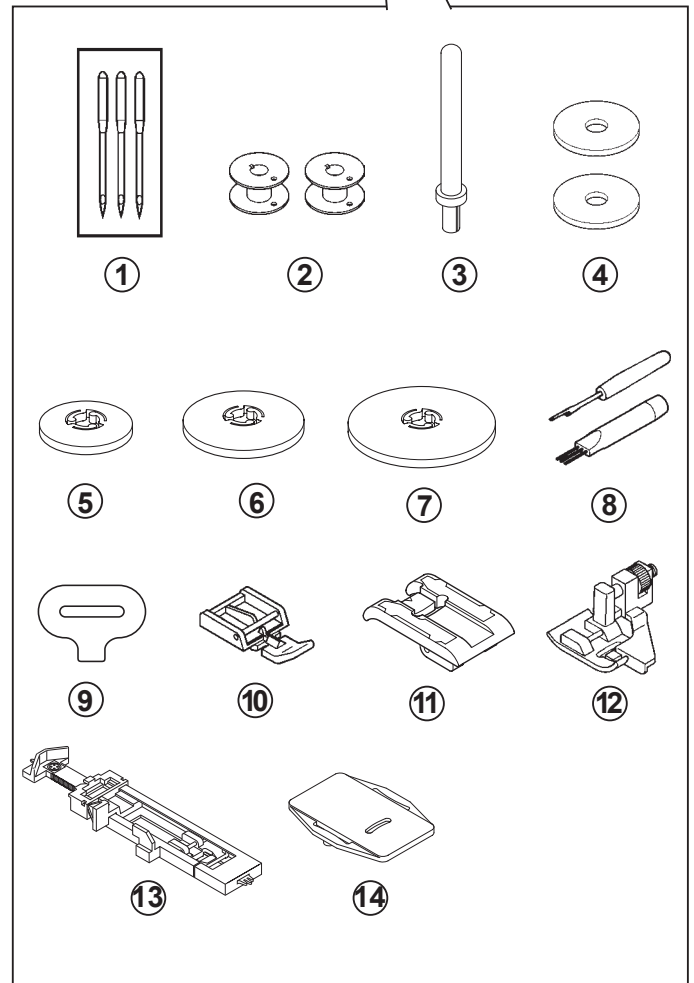
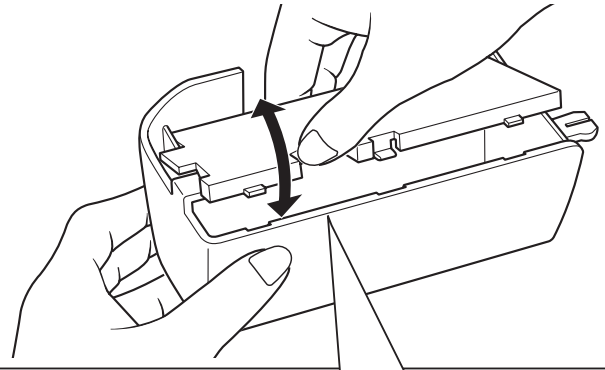
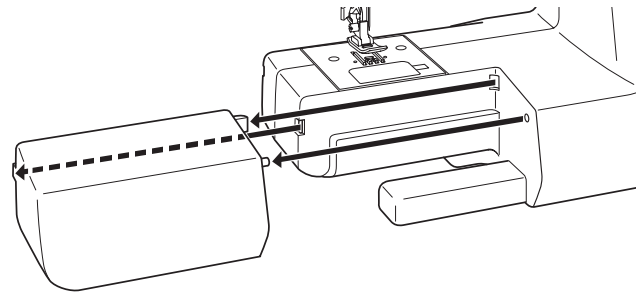
MACHINE IDENTIFICATION

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



ACCESSORIES

1. Needles
2. Bobbins (3 total - 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 machine without feed dog control function)



The Foot that comes on your Sewing machine is called the General Purpose Foot and will be used for the majority of your sewing.

The Satin Foot (11) is another very useful foot and should be used for most decorative sewing.

When purchasing additional bobbins, be sure they are Class 15 J.

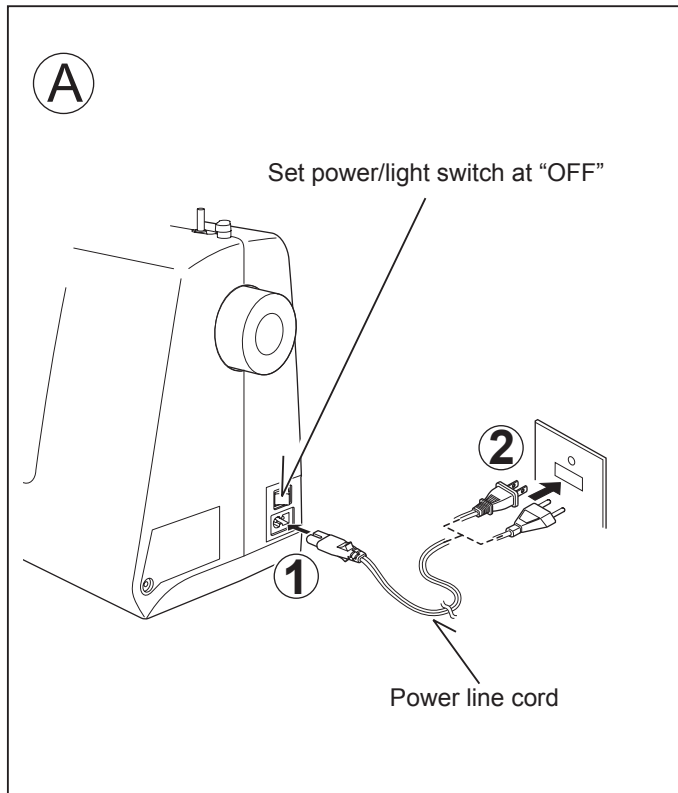
SETTING UP YOUR MACHINE

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

NOTE: This machine can be used either with or without foot control.

WHEN USING POWER LINE CORD ONLY

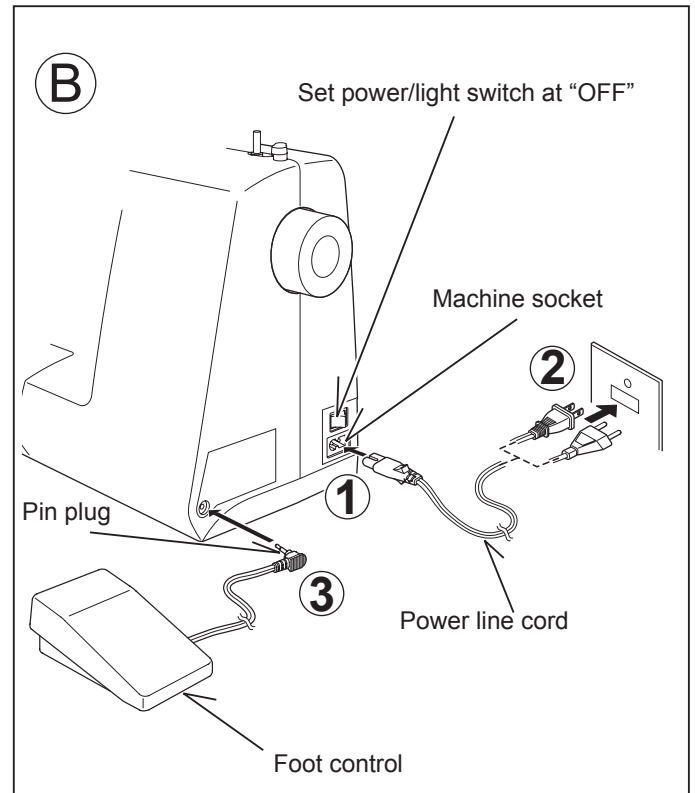
Connect the plug of the power line cord into the cord socket (1) and your wall outlet (2) as illustrated (A).



WHEN USING POWER LINE CORD AND FOOT CONTROL

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

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



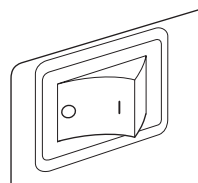
Always disconnect the machine from power supply by removing the plug from the wall-outlet.

POWER/LIGHT SWITCH

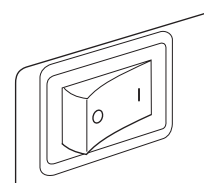
Your machine will not operate until the power/light switch is turned on. The same switch controls both the power and the light.

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

Power/light switch "OFF"



Power/light switch "ON"



SPOOL PINS

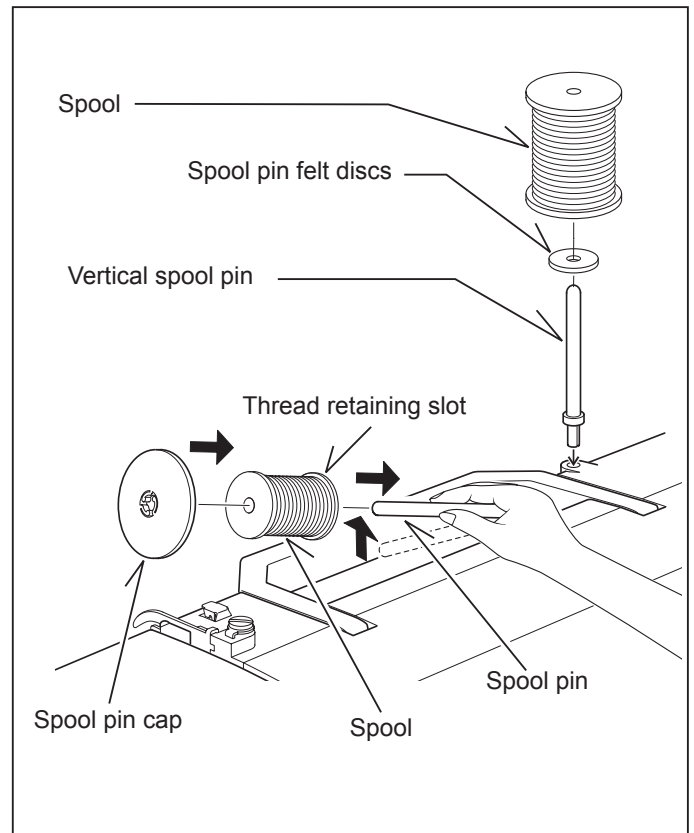
HORIZONTAL SPOOL PIN

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

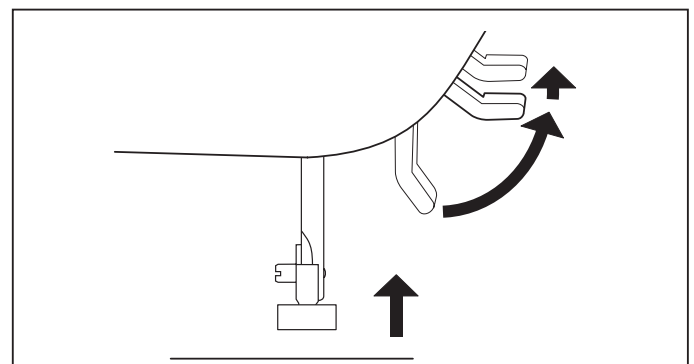
Attach the spool pin and place a felt disc over it. Place a spool of thread on the spool pin.



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, and to change presser foot.
3. Lift it to its highest position to accommodate thicker fabrics.



FEED DOG CONTROL (optional)

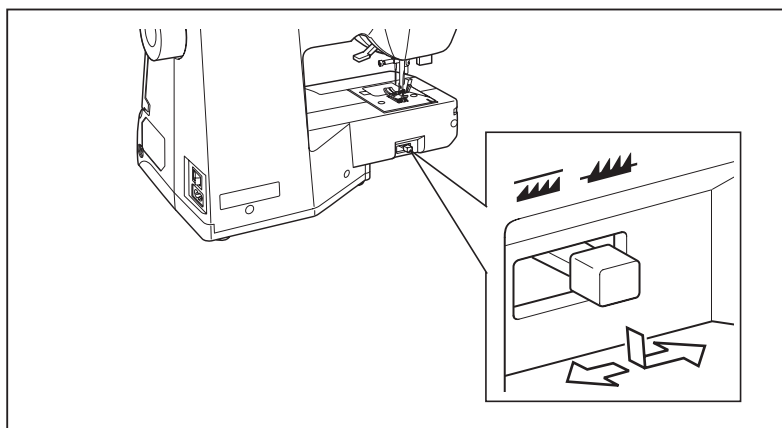
* Only for machine with this function

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.

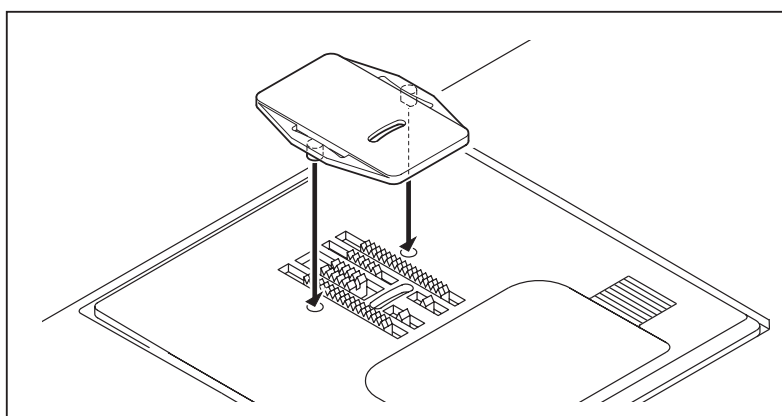


DARNING PLATE

* Only for machine without feed dog control function

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.



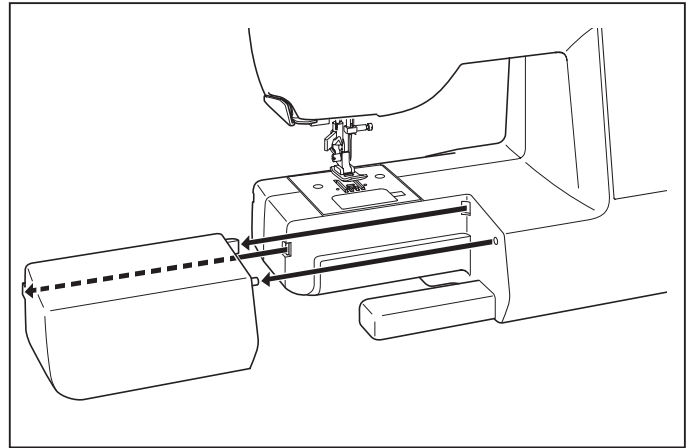
CONVERTING TO FREE-ARM SEWING

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.

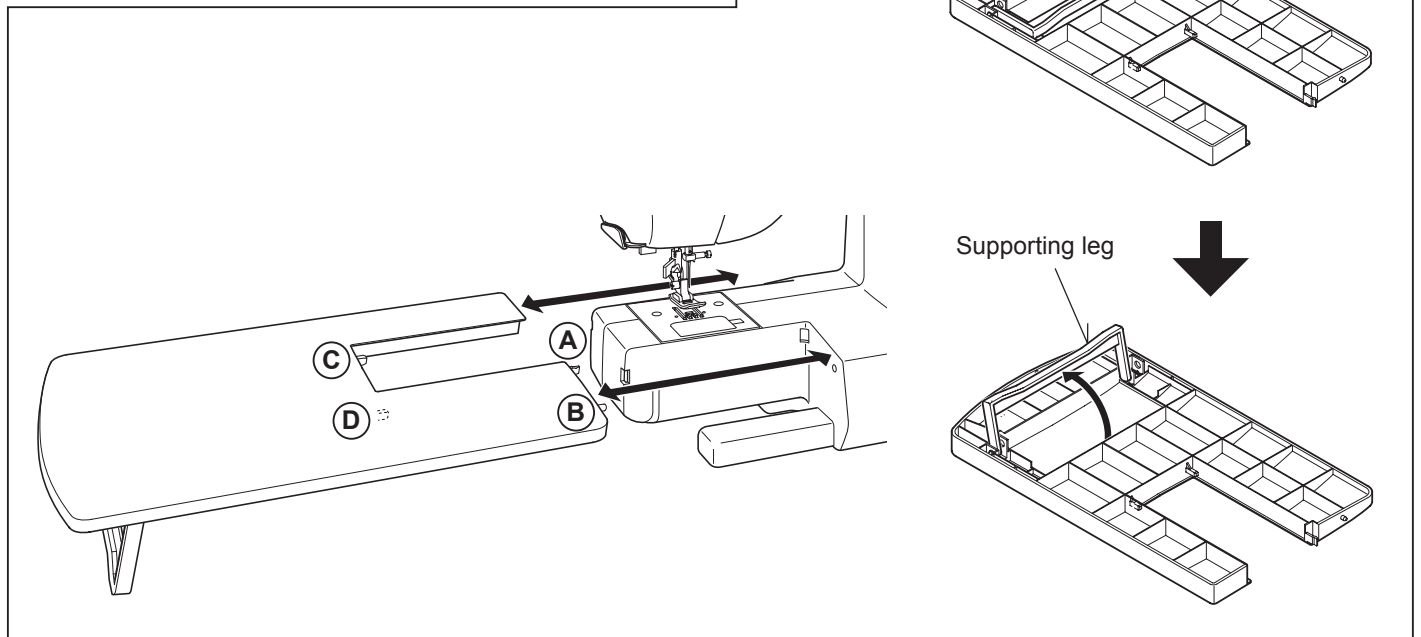
To remove the extension table, hold it firmly with both hands and pull it off to the left as shown. To replace, slide the extension table back into place until it clicks.

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



LARGE EXTENSION TABLE

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.

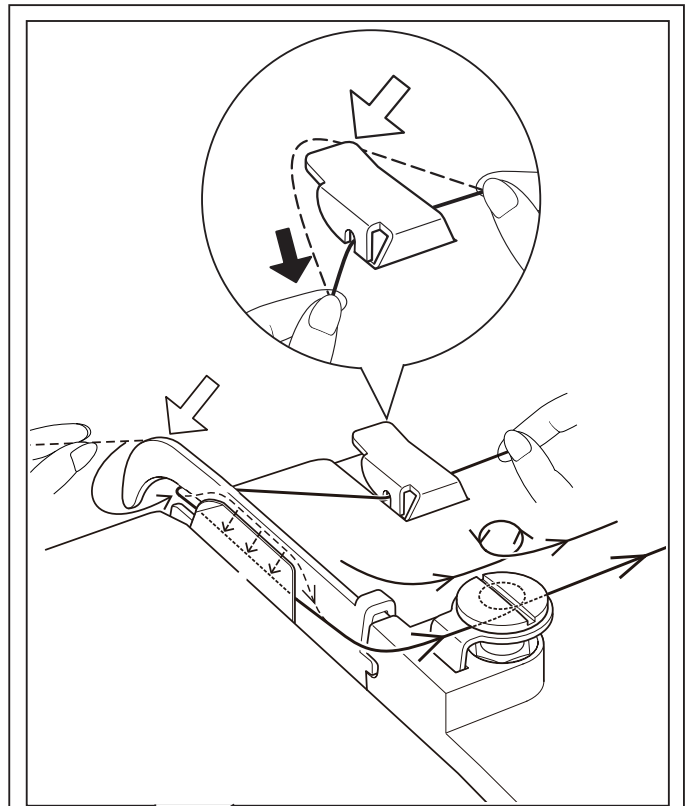


WINDING THE BOBBIN

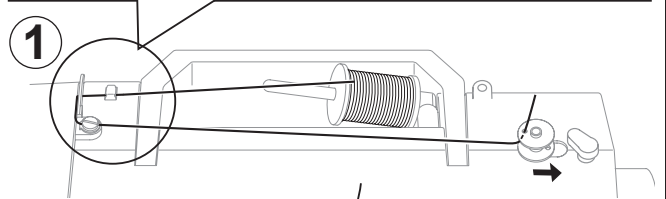
Be sure to use only Class 15J bobbins.

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.

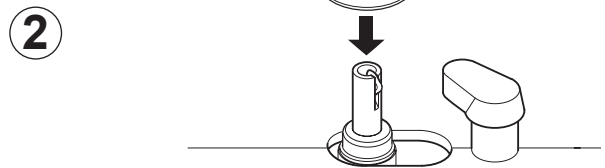
Be sure to pull thread securely into the bobbin winding tension disk.



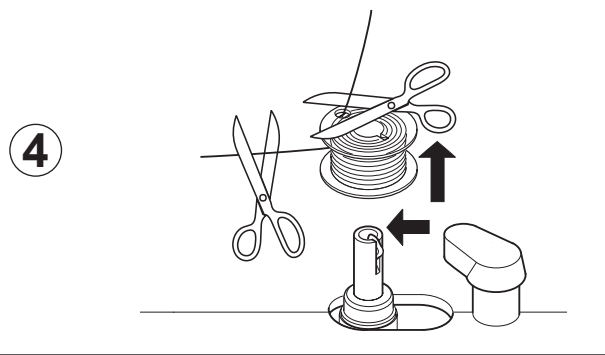
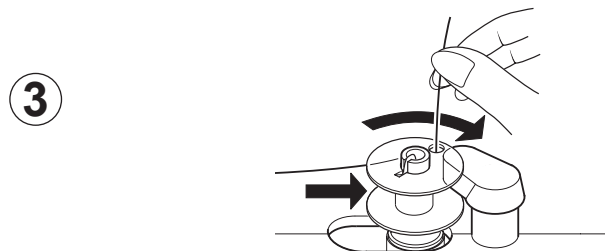
2. Put end of thread through the hole in bobbin as shown. Push bobbin winder shaft to far left position, if it is not already there.



3. 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. Stop to trim the thread tail, then step on the foot control to resume winding. Bobbin will automatically stop turning when completely filled. Push shaft to the left to remove bobbin and cut thread.



THREADING THE BOBBIN THREAD

1. Raise the needle to its highest position by rotating the hand wheel toward you (counter-clockwise).

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.

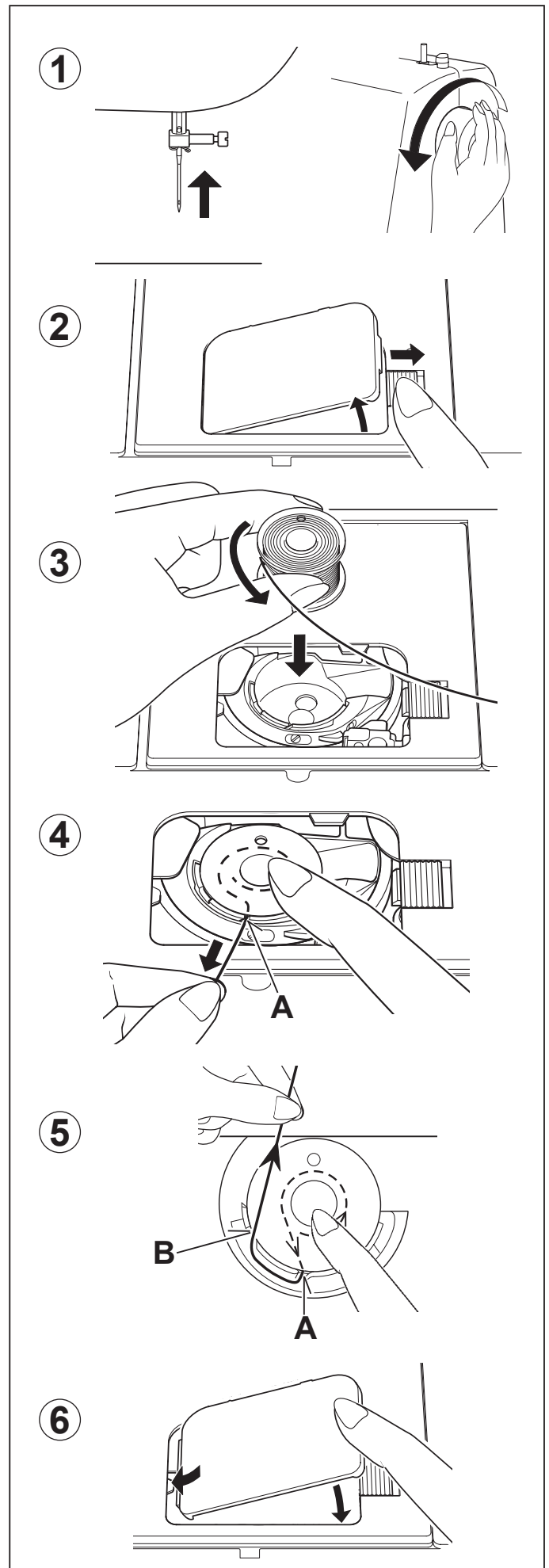
NOTE: This is a very important step as the bobbin can become unthreaded and cause sewing problems if it rotates clockwise.

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 slot (B). Then pull about 6" (15 cm) of thread and lead it towards back of the machine under the presser foot.

NOTE: This is also a very important step to assure the bobbin thread does not slip out of position.

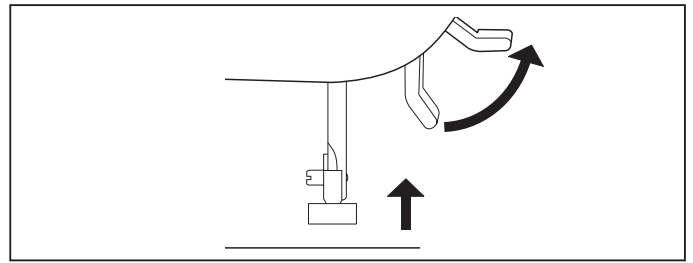
6. Replace the bobbin cover plate onto the needle plate.



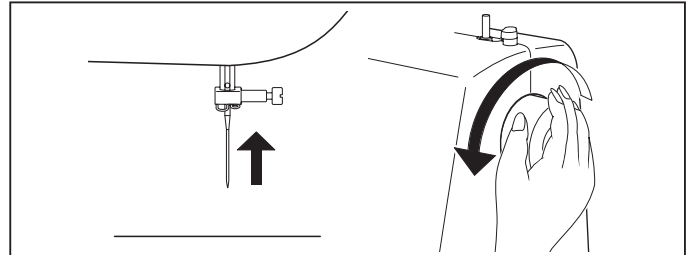
THREADING THE TOP THREAD

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.

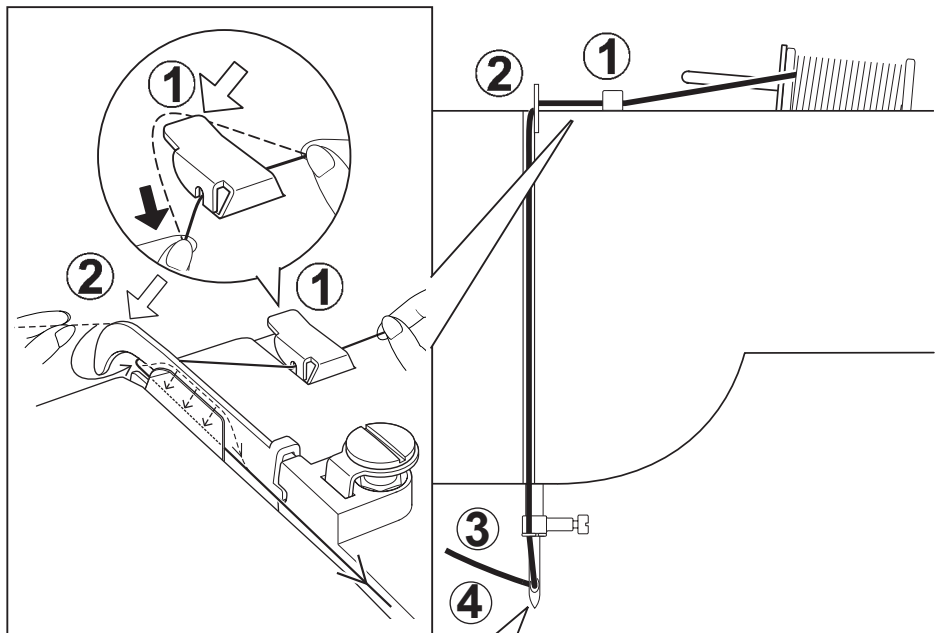


B. Turn the hand wheel toward you until the needle is in its highest position.



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

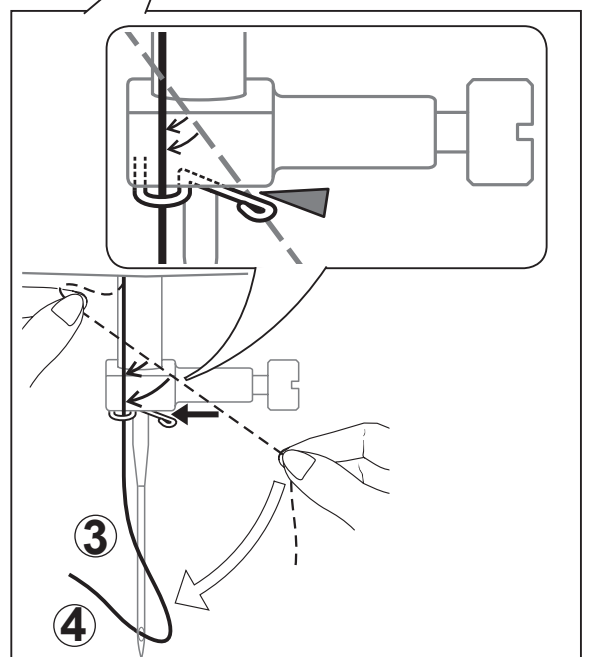
- * Guide the thread through thread guide (1), and then pull it into the pre-tension guide (2).
- * Guide the thread into the thread guide (3).
- * Pass the thread through the eye of the needle (4) from front to back. (See following page for instructions on operation of the Automatic Needle Threader.)



IMPORTANT:

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

- 1.) With the presser foot raised and the needle unthreaded, pull the thread. 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 mis-threaded the machine and need to re-thread it.

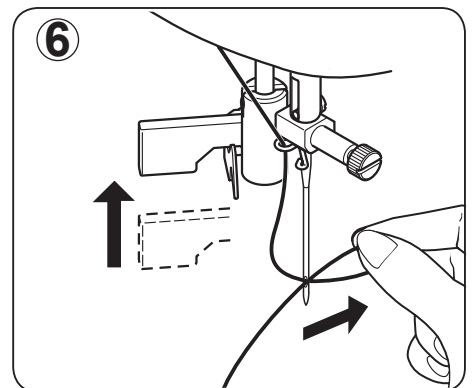
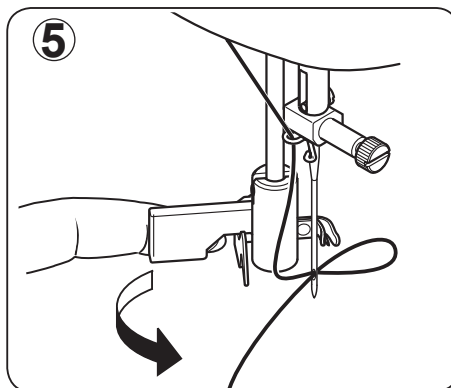
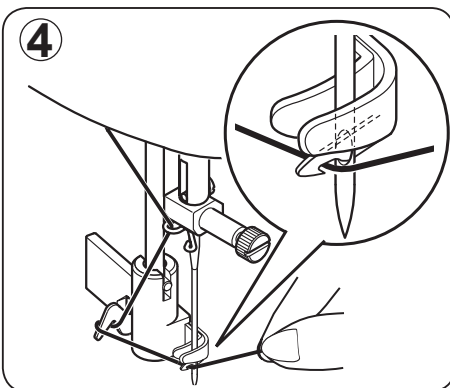
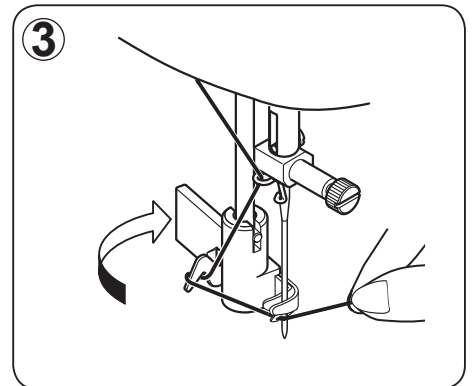
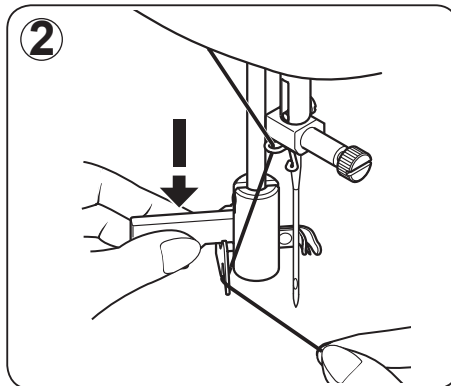
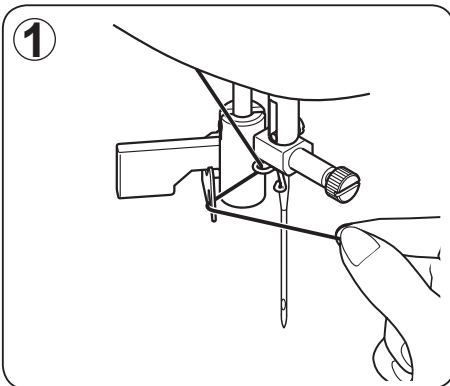


USING AUTOMATIC NEEDLE THREADER

Raise the needle to its highest position by rotating the hand wheel toward you (counter-clockwise).

1. Hook thread into thread guide as illustrated.
2. Pull down lever while holding the end of thread.
3. Rotate the lever to the rear of the machine.
4. Guide thread into hooked end and pull the thread upward.
5. Return the lever and needle will be threaded automatically.
6. Release the lever and pull thread away from you.

NOTE: For smooth threading it is recommended you set the machine for straight stitch when using the needle threader.



PICKING UP BOBBIN THREAD

1. Raise the presser foot lifter.

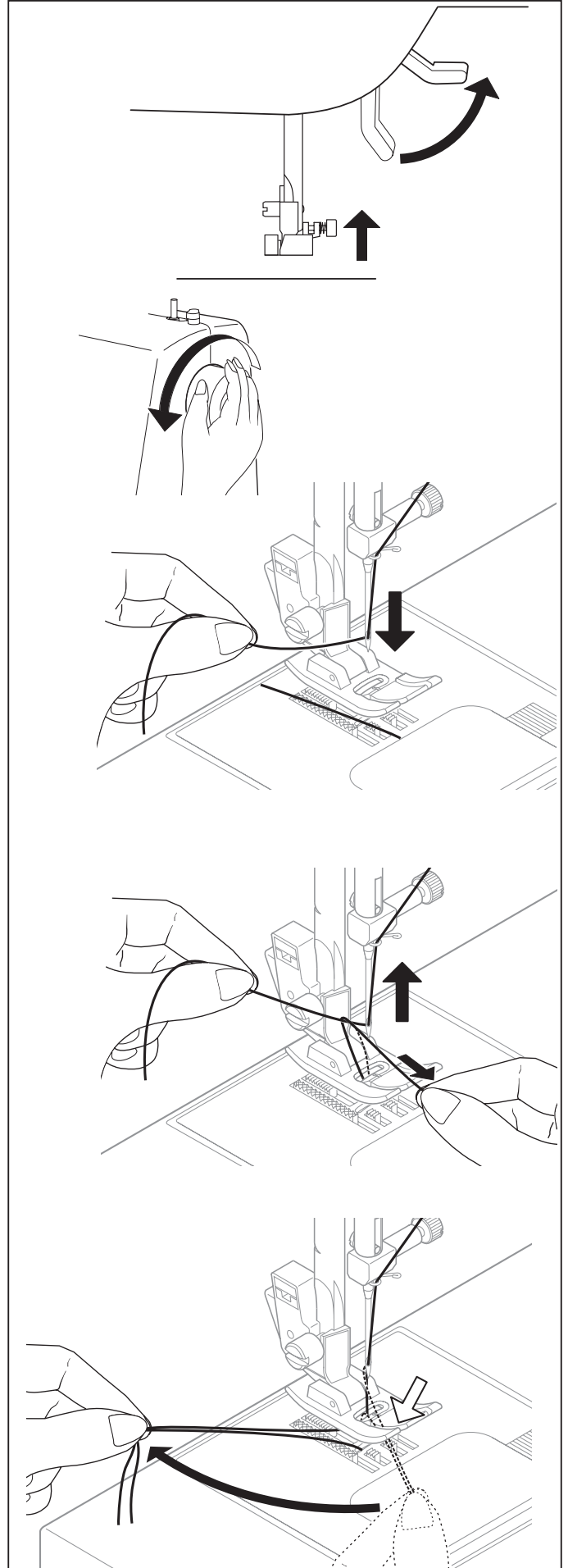
2. Holding needle thread loosely with your left hand, turn hand wheel toward you (counter-clockwise) with your right hand, first lowering the needle and continuing until the needle comes to its highest position.

NOTE: A quick way to pick up the bobbin thread is, with straight stitch selected, touch and release the reverse switch.

Your machine will perform one down-up cycle and stop with the needle up. Always stopping with the needle "fully up" is one of the features of your electronic sewing machine.

3. Lightly pull up the top thread, and pick up bobbin thread, which will appear through the needle plate slot.

4. Pull both top and bobbin threads together toward the back of the machine under the presser foot, leaving about 6" (15 cm) clear.



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

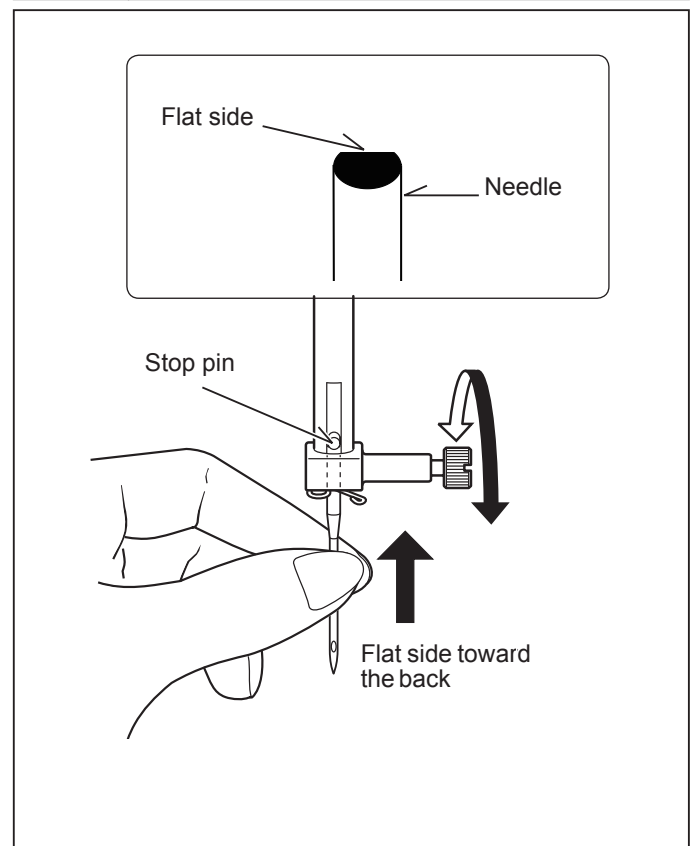
1. Raise the needle bar to its highest position by turning the hand wheel toward you (counter-clockwise).
2. Loosen the needle clamp screw by turning it toward you (counter-clockwise).
3. Remove the needle by pulling it downward.
4. Insert the new needle into the needle clamp with the flat side toward 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

Most of your sewing will be done with the tension control dial (on top of the machine) set at "AUTO".

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.

Make any adjustments with the 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 on the bottom side of your fabric.

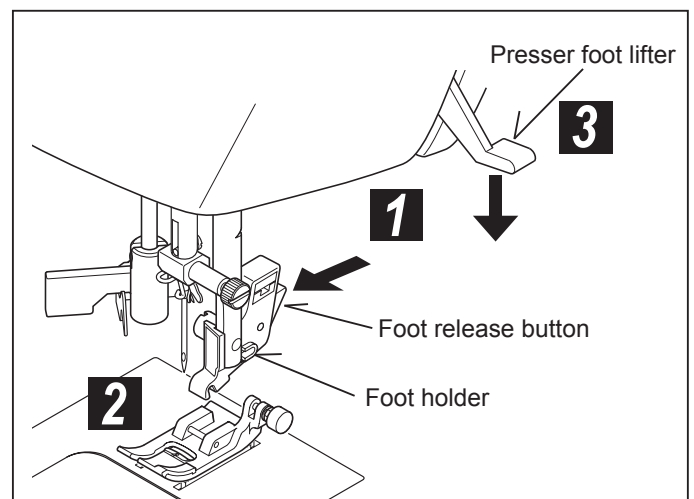
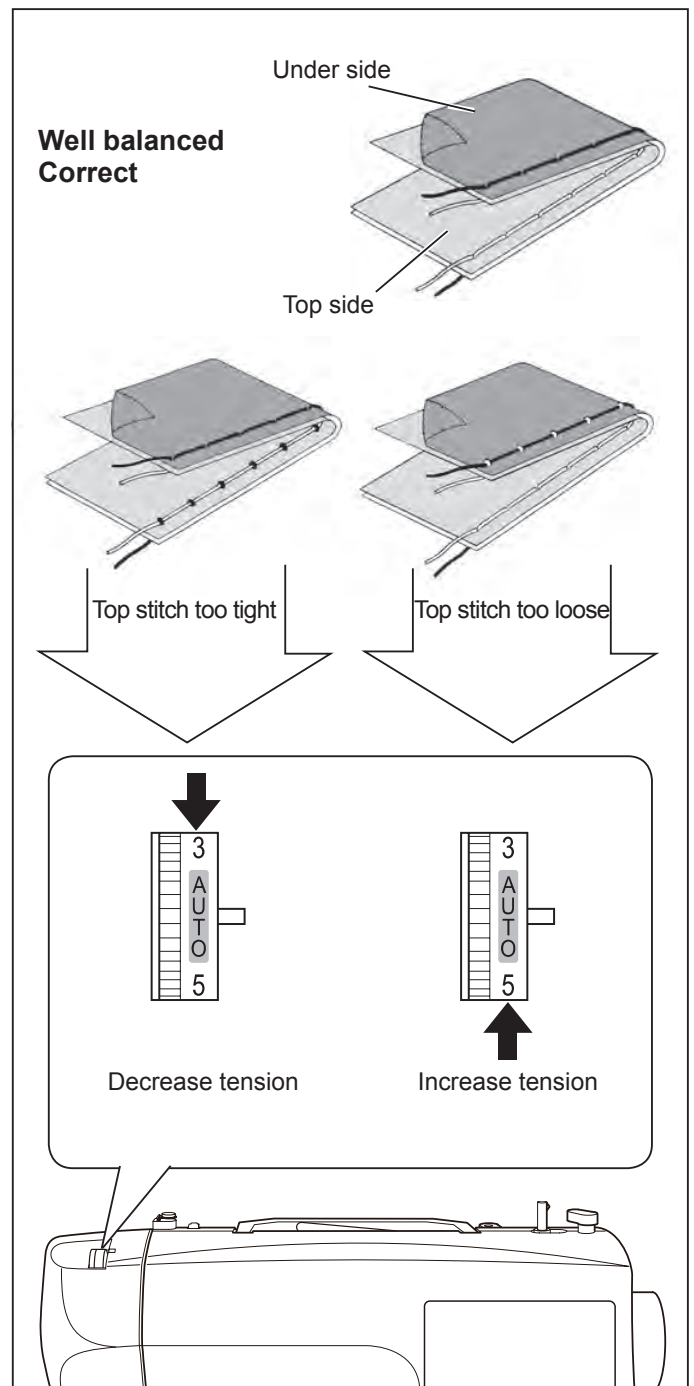
BOBBIN TENSION

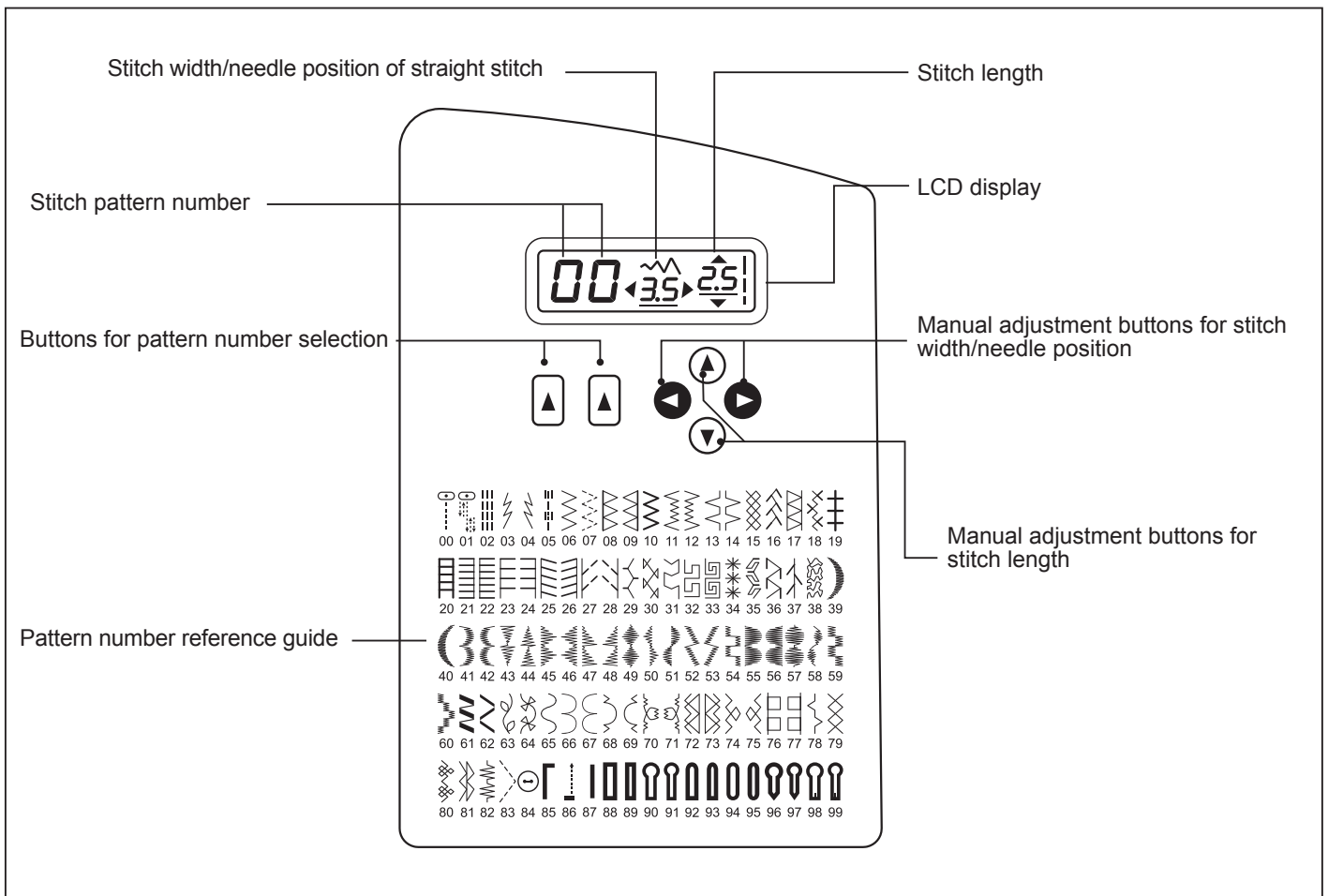
The bobbin tension has been correctly set at the factory, so you do not need to adjust it.

CHANGING PRESSER FOOT

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

1. Push presser foot release lever 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.





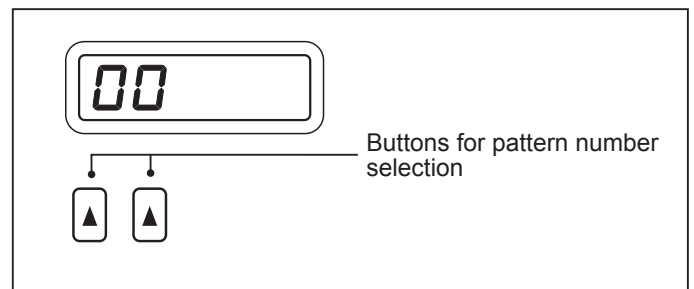
FUNCTIONS OF CONTROL PANEL

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.

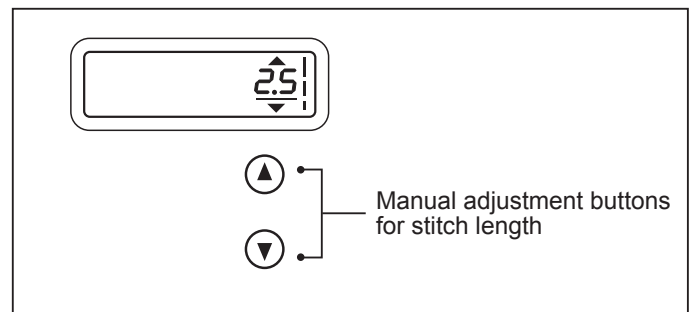
Both left and right digits scroll up to 9.



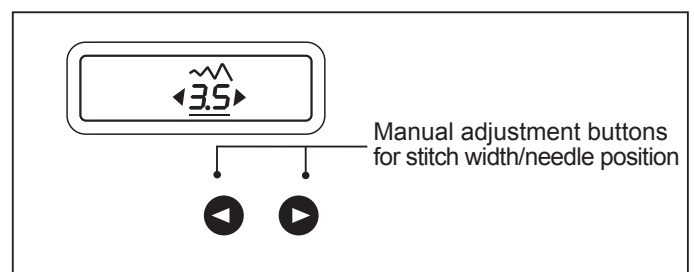
STITCH LENGTH AND STITCH WIDTH/NEEDLE POSITION ADJUSTMENT BUTTONS

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.

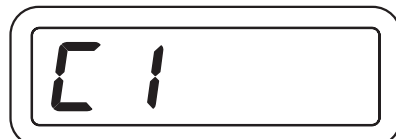


NOTE: Some patterns offer more options for manual adjustments than others.

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.



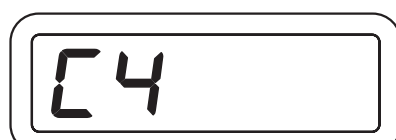
Buttonhole lever is not lowered or raised.
→ Lower buttonhole lever when sewing buttonholes.
→ Raise buttonhole lever when sewing stitch patterns.



Foot control plug is pulled out, while operating foot control.
→ Push in foot control plug.



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.



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.



Breakage of top thread is detected.
→ Supply top thread and restart.



Bobbin winder is in operation.
→ Move bobbin winder to left when it is not used.



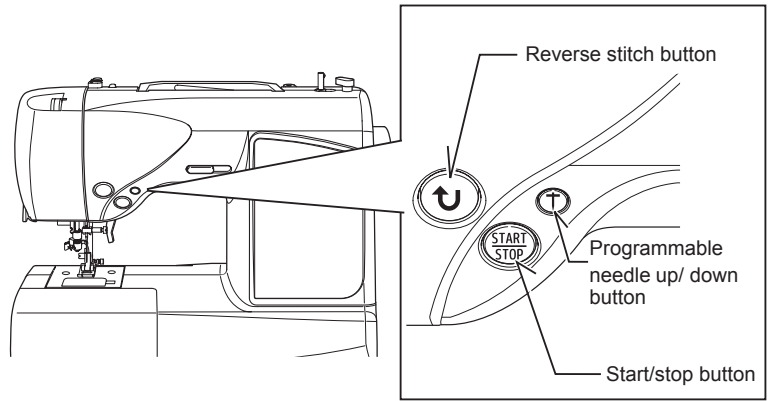
OPERATION BUTTONS

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.

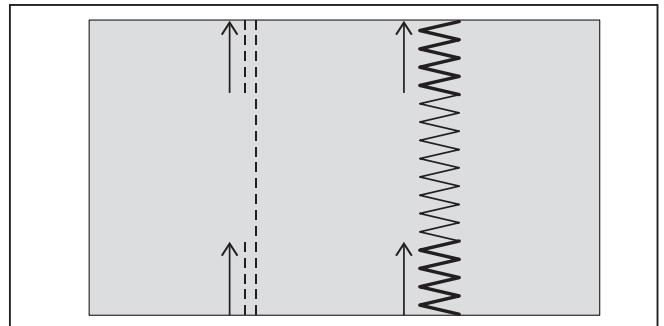
Push it again to stop needle at up position.

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.

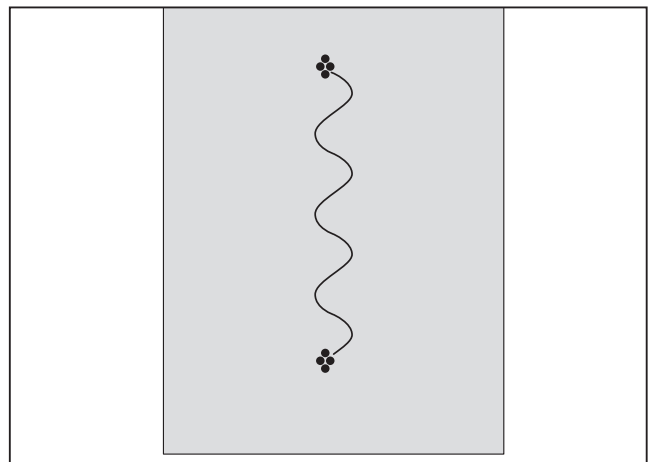


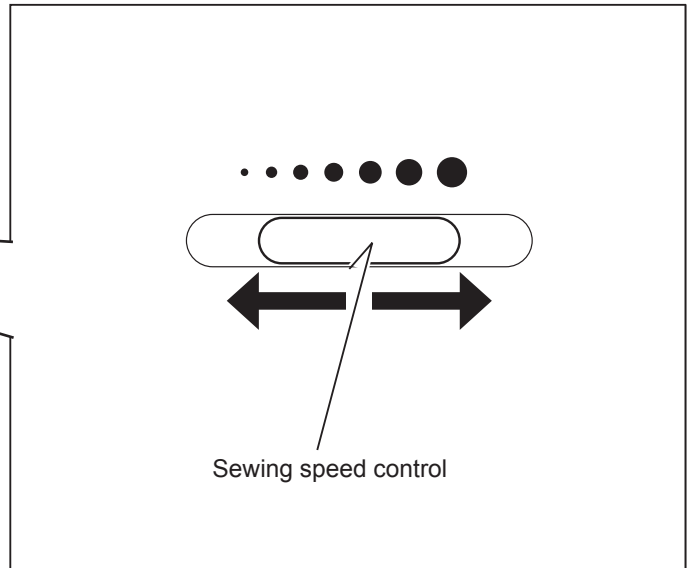
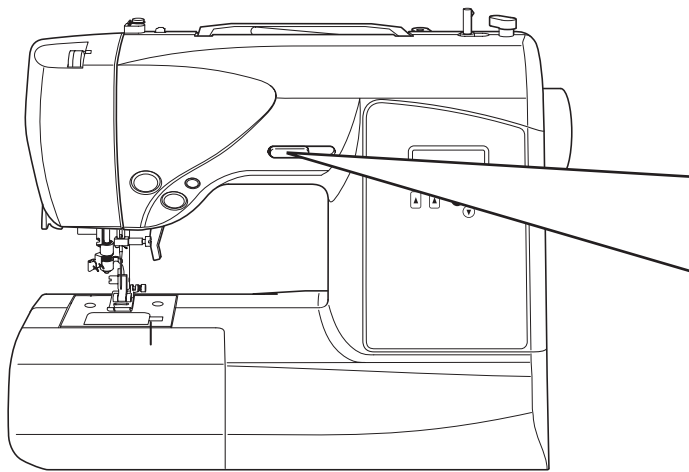
* Tacking stitch function for tie-off of other stitches ()

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

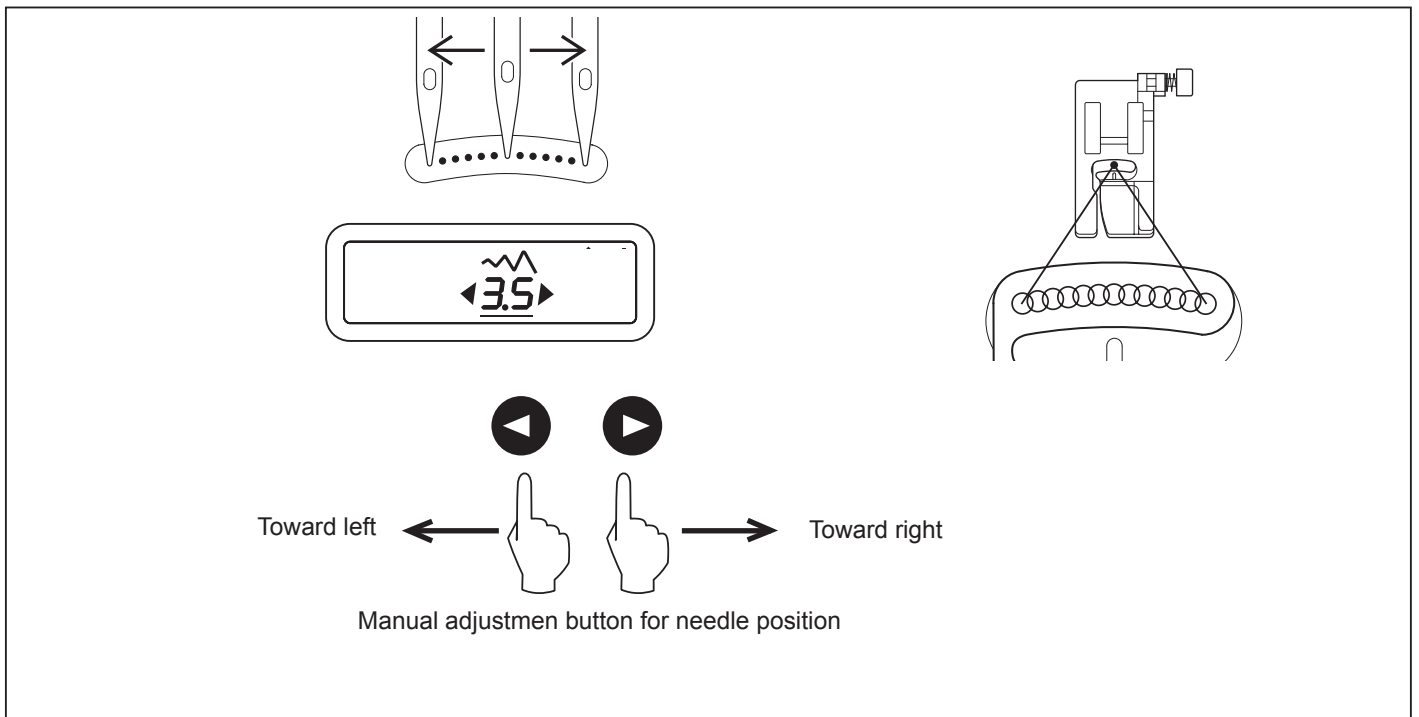
Sewing speed is set by using the sewing speed control. The sewing speed control is moved horizontally to determine the amount of speed required.

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.



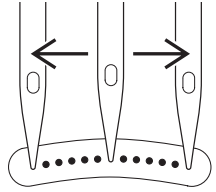

STRAIGHT STITCH NEEDLE POSITION









The position of the needle when sewing straight stitch may be adjusted to anyone of 13 different positions with Manual adjustmant button for needle position.































































2. STARTING TO SEW






























QUICK REFERENCE TABLE OF STITCH LENGTH AND WIDTH

STITCH	No.	LENGTH (mm)			NEEDLE POSITION	
		AUTO	MANUAL	TWIN NEEDLE*	AUTO	MANUAL
	00	2.5	0.5 – 4.8	○	CENTER	LEFT - RIGHT
	01	2.0	2.0 – 4.0	×		
	02	2.5	1.5 – 3.0	○		

STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*	STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	03	1.0	1.0	2.5	1.5-3.0	○		07	6.0	2.5 - 3.0, 4.5, 6.0	1.5	0-2.5	○
	04	1.0	1.0	2.5	1.5-3.0	○		08	5.5	3.5 - 7.0	2.5	1.5 - 3.0	○
	05	–	–	2.5	2.0 - 4.0	○		09	5.5	3.5 - 7.0	2.5	1.5 - 3.0	○
	06	5.0	0 – 6.0	2.0	0 – 3.0	○		10	5.0	2.0 - 6.0	2.5	1.5 - 3.0	○

STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*	STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	11	3.0	2.0, 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 - 3.0	○		26	5.0	1.0 - 6.0	2.0	0.8 - 2.5	○
	12	3.0	2.0, 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 - 3.0	○		27	5.0	1.0 - 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 - 3.0	○
	13	3.0	1.0 - 6.0	2.0	1.0 - 3.0	○		28	5.0	1.0 - 3.0, 4.0, 5.0, 6.0, 7.0	2.0	1.0 - 3.0	○
	14	3.0	1.0 - 6.0	2.0	1.0 - 3.0	○		29	6.0	3.5 - 7.0	2.5	1.5 - 2.5	○
	15	6.0	3.0, 4.5, 6.0	2.0	1.5 - 3.0	○		30	6.0	2.0, 4.0, 6.0	2.5	1.0 - 3.0	○
	16	6.0	3.0, 4.5, 6.0	2.0	1.0 - 3.0	○		31	6.0	2.0 - 7.0	2.5	1.0 - 2.5	○
	17	5.5	3.5 - 7.0	2.5	1.5 - 3.0	○		32	7.0	3.5 - 4.0, 5.0, 6.0, 7.0	2.5	1.3 - 3.0	○
	18	6.0	3.0, 4.5, 6.0	2.0	1.5 - 3.0	○		33	7.0	3.0, 4.0, 5.0, 6.0, 7.0	1.8	1.5 - 2.5	○
	19	5.0	2.0 - 3.0, 4.0, 5.0, 6.0, 7.0	2.5	1.5 - 3.0	○		34	5.0	5.0, 6.0	3.0	-	×
	20	5.0	1.0 - 7.0	2.5	1.5 - 3.0	○		35	6.5	3.5 - 7.0	2.5	1.5 - 2.5	○
	21	5.0	1.0 - 7.0	2.5	1.5 - 3.0	○		36	5.5	3.0 - 7.0	2.5	1.5 - 2.5	○
	22	5.0	1.0 - 7.0	2.5	1.5 - 3.0	○		37	5.0	1.0 - 7.0	2.5	0.8 - 2.5	○
	23	7.0	1.0 - 7.0	2.5	1.5 - 3.0	○		38	6.0	-	-	-	×
	24	7.0	1.0 - 7.0	2.5	1.5 - 3.0	○		39	7.0	3.5 - 7.0	0.8	0.5 - 1.5	○
	25	5.0	1.0 - 6.0	2.0	0.8 - 2.5	○		40	7.0	3.5 - 7.0	0.8	0.5 - 1.5	○

STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*	STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	41	7.0	3.5 - 7.0	0.5	0.3 - 1.5	○		56	7.0	3.0 - 7.0	0.5	0.3 - 3.0	○
	42	7.0	3.5 - 7.0	0.5	0.3 - 1.5	○		57	7.0	3.5 - 7.0	0.5	0.3 - 2.5	○
	43	7.0	3.5 - 4.0, 6.0, 7.0	0.5	0.3 - 1.5	○		58	7.0	3.5 - 7.0	0.5	0.3 - 1.5	○
	44	7.0	3.5 - 4.0, 6.0, 7.0	0.5	0.3 - 1.5	○		59	7.0	3.0 - 7.0	0.5	0.3 - 1.5	○
	45	7.0	3.5 - 4.0, 6.0, 7.0	0.5	0.3 - 1.5	○		60	6.0	3.0, 4.5, 6.0	0.5	0.3 - 1.3	○
	46	7.0	3.5 - 4.0, 6.0, 7.0	0.5	0.3 - 1.5	○		61	5.0	2.0 - 6.0	0.5	0.5 - 1.0	○
	47	7.0	3.5 - 4.0, 6.0, 7.0	0.5	0.3 - 1.5	○		62	5.0	2.0 - 7.0	0.5	0.5, 0.8	○
	48	7.0	3.5 - 4.0, 6.0, 7.0	0.5	0.3 - 1.5	○		63	7.0	3.5, 7.0	2.0	1.5 - 2.5	○
	49	7.0	3.0 - 7.0	0.5	0.3 - 1.5	○		64	7.0	3.5 - 7.0	2.5	1.5 - 2.5	○
	50	7.0	3.0 - 7.0	0.5	0.3 - 1.5	○		65	7.0	3.5, 7.0	1.8	0.8 - 2.5	○
	51	7.0	3.0 - 7.0	0.5	0.3 - 1.5	○		66	7.0	3.5 - 7.0	1.3	0.8 - 4.0	○
	52	7.0	3.0 - 7.0	0.5	0.3 - 1.5	○		67	7.0	3.5 - 7.0	1.3	0.8 - 4.0	○
	53	7.0	3.0 - 7.0	0.5	0.3 - 1.5	○		68	7.0	3.5 - 7.0	1.8	1.0 - 4.0	○
	54	7.0	3.5 - 7.0	0.5	0.3 - 1.5	○		69	7.0	3.5 - 7.0	1.8	1.0 - 4.0	○
	55	7.0	3.0 - 7.0	0.5	0.3 - 3.0	○		70	7.0	3.0 - 7.0	2.5	1.0 - 2.5	○

STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*	STITCH	No.	WIDTH (mm)		LENGTH (mm)		TWIN NEEDLE*
		AUTO	MANUAL	AUTO	MANUAL				AUTO	MANUAL	AUTO	MANUAL	
	71	7.0	3.0 - 7.0	2.5	1.0-2.5	○		86	-	-	-	-	×
	72	6.0	3.0, 4.5, 6.0	2.5	1.5-2.5	○		87	6.0	-	0.5	0.5, 0.8	×
	73	6.0	3.0, 4.5, 6.0	2.5	1.5-2.5	○		88	5.5	-	0.5	0.5, 0.8	×
	74	6.0	3.0, 4.5, 6.0	2.5	1.5-2.5	○		89	3.5	-	0.5	0.5, 0.8	×
	75	6.0	3.0, 4.5, 6.0	2.5	1.5-2.5	○		90	5.5	-	0.5	0.5, 0.8	×
	76	5.0	3.0 - 7.0	2.5	1.5-2.5	○		91	3.5	-	0.5	0.5, 0.8	×
	77	5.0	3.0 - 7.0	2.5	1.5-2.5	○		92	5.5	-	0.5	0.5, 0.8	×
	78	6.0	3.0 - 7.0	2.0	1.0-2.5	○		93	3.5	-	0.5	0.5, 0.8	×
	79	5.0	3.5 - 7.0	2.5	1.5-2.5	○		94	5.5	-	0.5	0.5, 0.8	×
	80	6.3	3.8, 5.0, 6.3	1.3	1.0-2.0	×		95	3.5	-	0.5	0.5, 0.8	×
	81	7.0	3.0 - 7.0	2.5	1.5-2.5	○		96	5.5	-	0.5	0.5, 0.8	×
	82	6.0	2.0 - 7.0	1.5	0.5-2.0	○		97	3.5	-	0.5	0.5, 0.8	×
	83	7.0	3.0, 4.0, 5.0, 6.0, 7.0	1.5	0.5-1.5	○		98	5.5	-	0.5	0.5, 0.8	×
	84	3.0	2.0 - 4.5	0	-	×		99	3.5	-	0.5	0.5, 0.8	×
	85	6.0	-	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. Reverse stitch button
- C. Start/stop button
- D. Presser foot lifter
- E. Programmable needle up/down button
- F. Stitch width adjustment buttons
- G. Stitch length adjustment buttons
- H. Sewing speed control

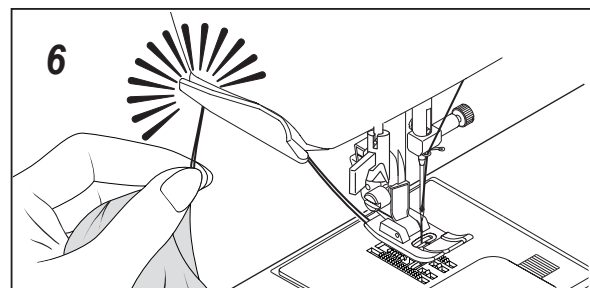
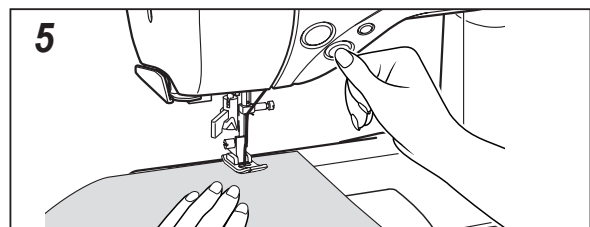
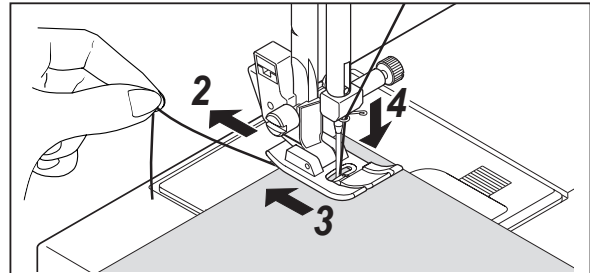
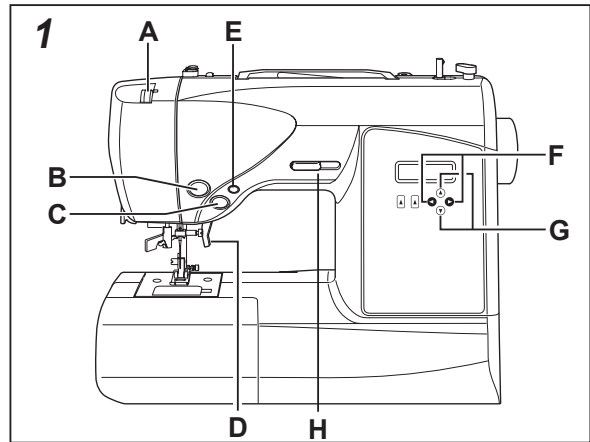
NOTE: Since a straight stitch has no width, the stitch width control is used to change the needle position.

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.

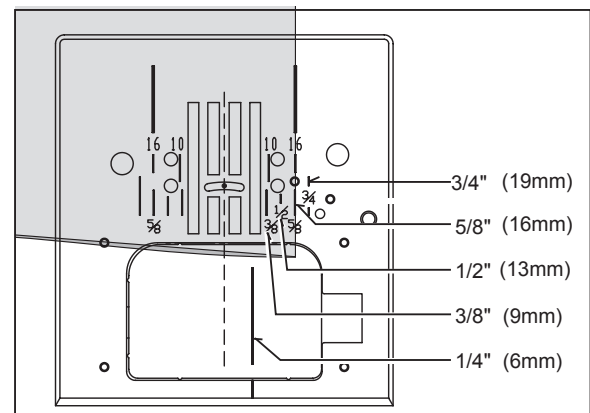
NOTE: To secure the stitching and avoid raveling, press the reverse stitch button and sew a few stitches at the start and end of the seam.



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.

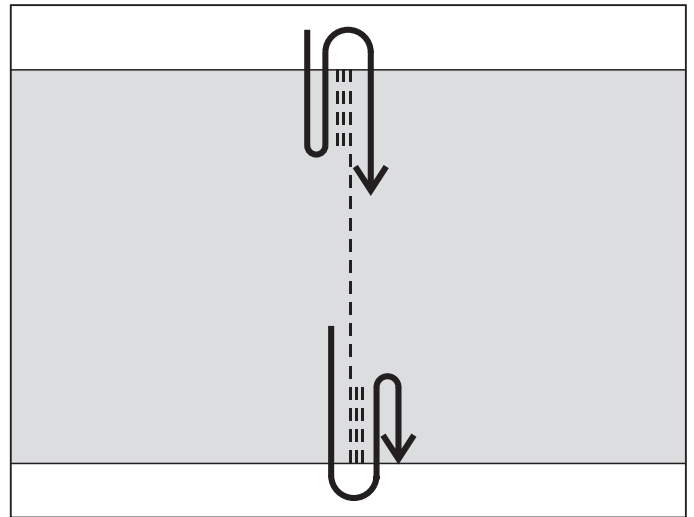
The guide line on the bobbin cover plate is 1/4" (6mm) seam guide line which is used for piecing quilt blocks and also for narrow seams, such as those in doll clothes or baby garments.



STRAIGHT STITCH WITH AUTO TIE-OFF FUNCTION



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



INSERTING ZIPPERS AND PIPING

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

INSERTING 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.

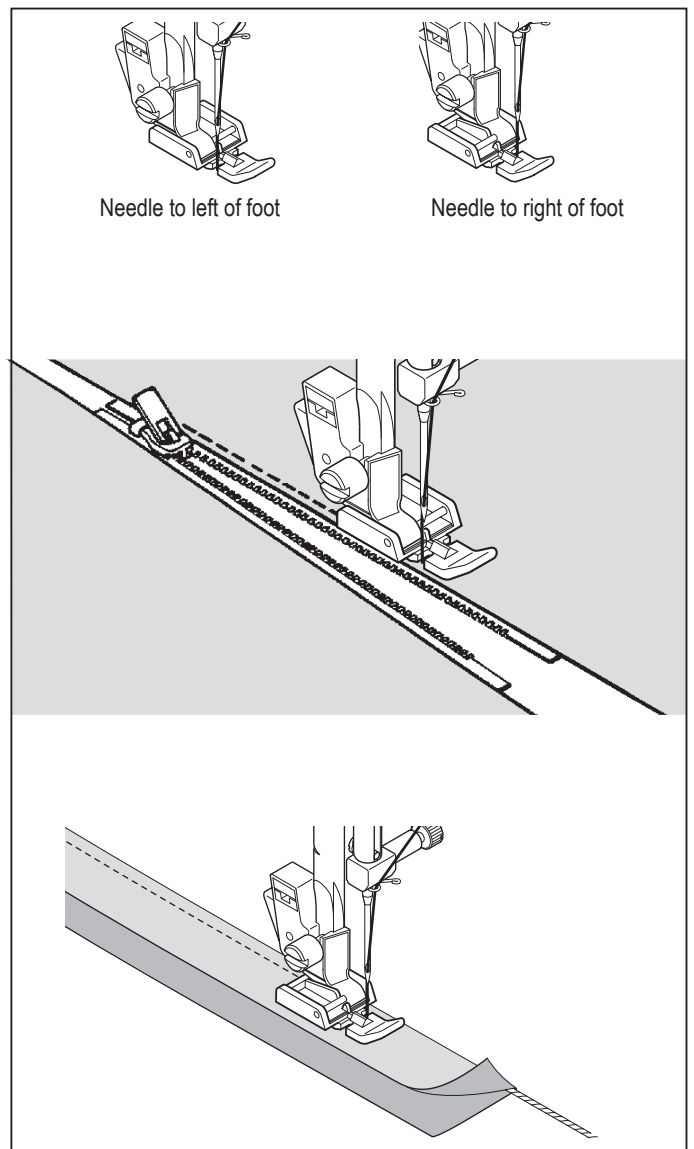
To sew down the left side, attach right side of foot to foot holder.

PIPING

To pipe soft furnishings, cover cord with a bias strip of fabric and pin or tack it to the main piece of fabric.

Attach left side of zipper foot to foot holder so that needle passes through the opening on the left side of the foot.

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 15 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.

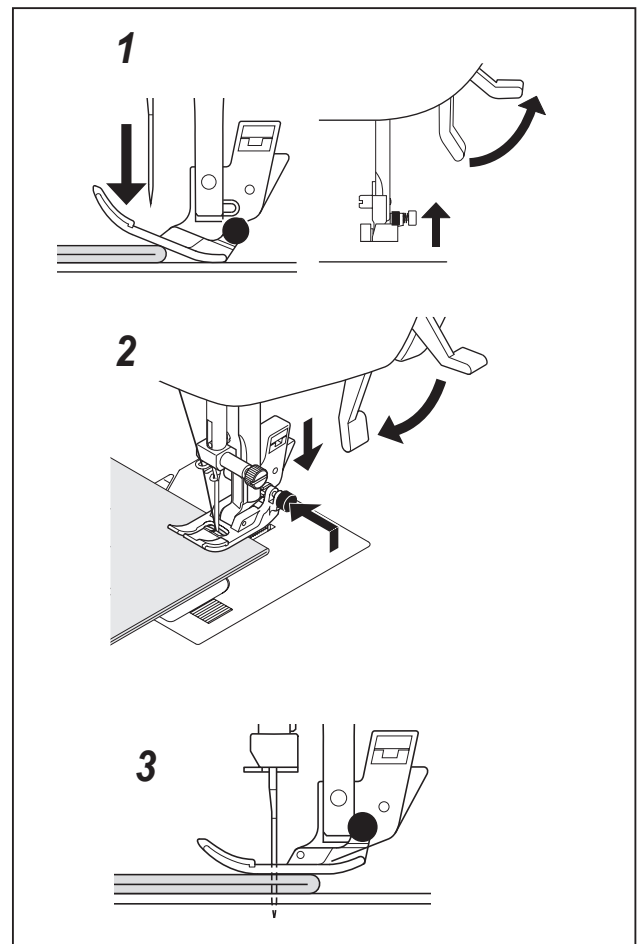
*Start to sew with thin cloth pulling the end of upper and lower threads.

*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.

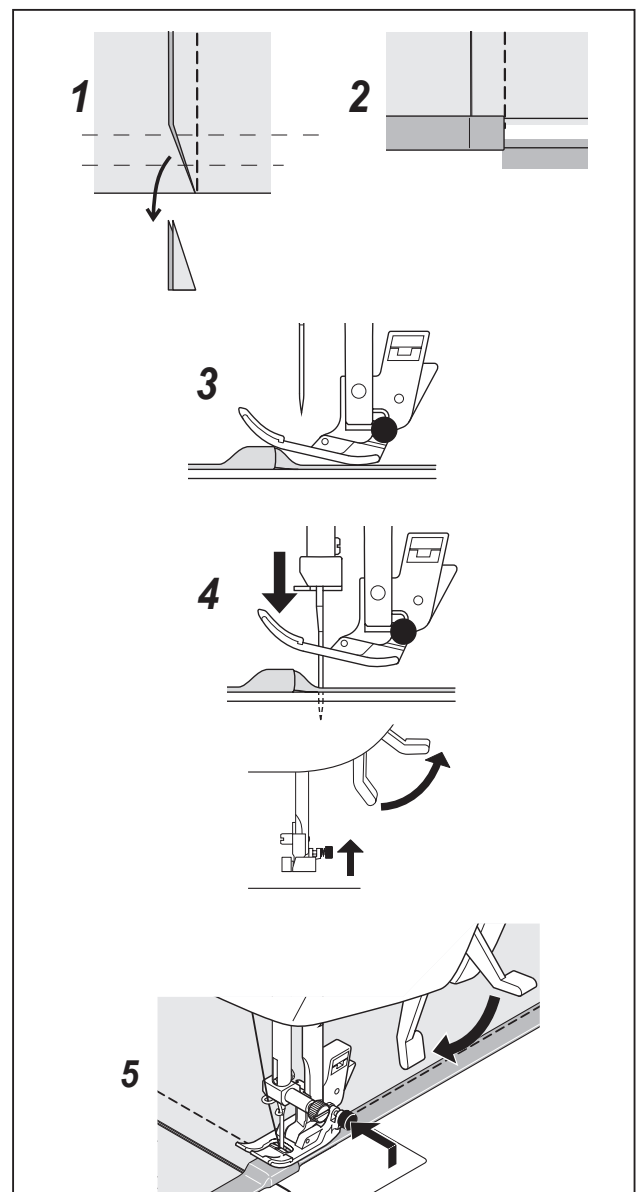


HEMMING BOTTOM OF JEANS

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 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.



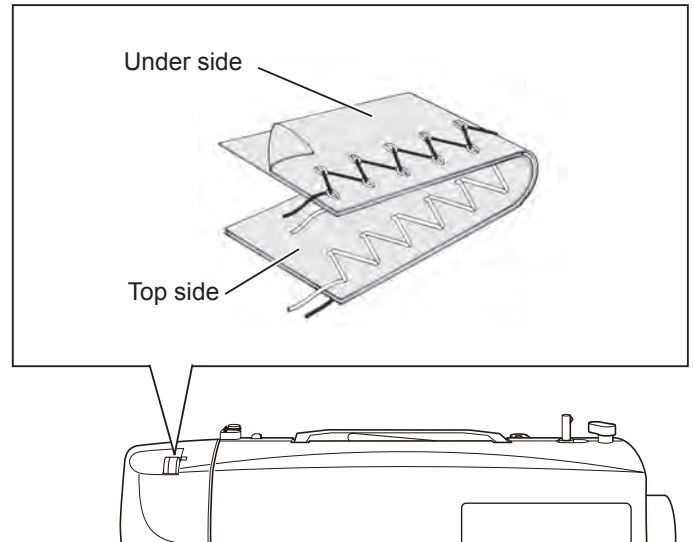
ZIGZAG STITCHING



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

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.

		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																

SATIN STITCH

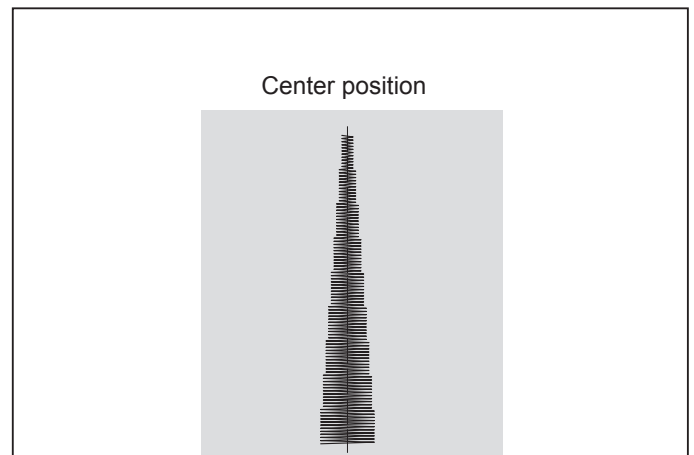
This is a closely spaced stitch for appliqué, bar-tacking, etc. Slightly loosen the top thread tension and manually adjust the stitch length between 0.5 and 2.0 for satin stitching. Use a backing of stabilizer or interfacing to avoid puckering.

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



PLACEMENT OF PATTERNS

The satin stitch increases from the center needle position; making it possible to create center tapered stitch, as illustrated.





BLINDHEM STITCH



The blindhem stitch is primarily used for creating nearly invisible hems on curtains, trousers, skirts, etc.

Settings : Presser foot - Blind stitch foot
:Thread Tension Control : AUTO

-  – Regular blind stitch for normal woven fabrics
- 13
-  – Elastic blind stitch for soft, stretchable fabrics
- 10

1. With matching thread finish the raw edge. On fine fabric turn up and press a small 1/2" or less hem. On medium to heavyweight fabrics overcast the fabric's raw edge.
2. Now fold the fabric as illustrated with the wrong side up.

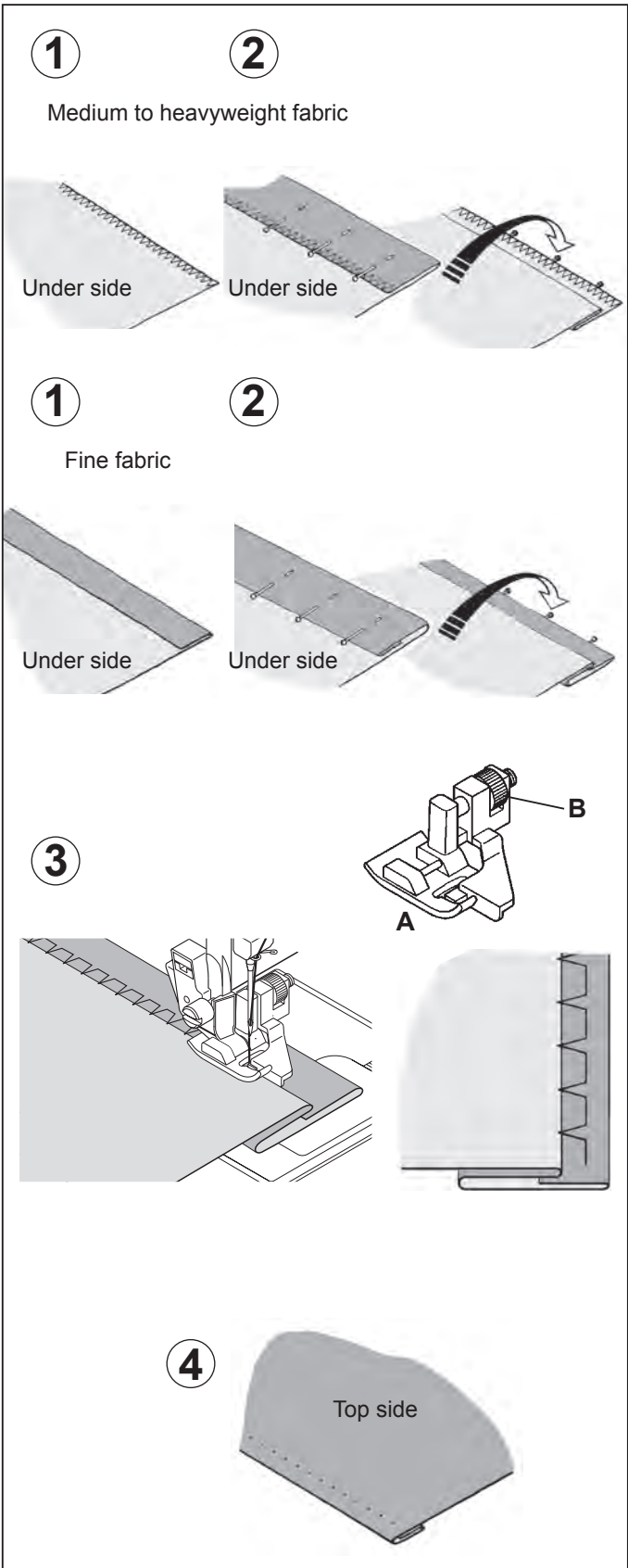
3. Place the fabric under the foot. Turn the handwheel towards you (counter-clockwise) by hand until the needle swings fully to the left. It should just pierce the fold of the fabric. If it does not, adjust the guide (B) on the Blindhem Foot (A) so that the needle just pierces the fabric fold and the guide just rests against the fold.

NOTE: In addition to the adjustment on the foot, the stitch width control can be used. The stitch width control changes the swing of the needle for a narrower or wider stitch.

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. Do a test sew first.



MULTI-STITCH ZIGZAG



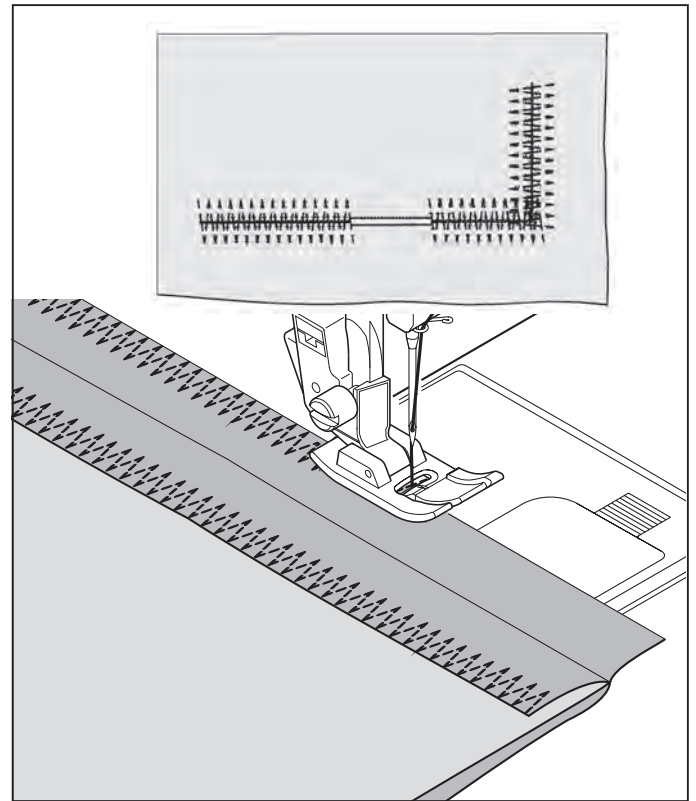
SETTINGS :Presser foot - General Purpose Foot
:Thread tension control - AUTO

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 all types of fabrics.

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

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



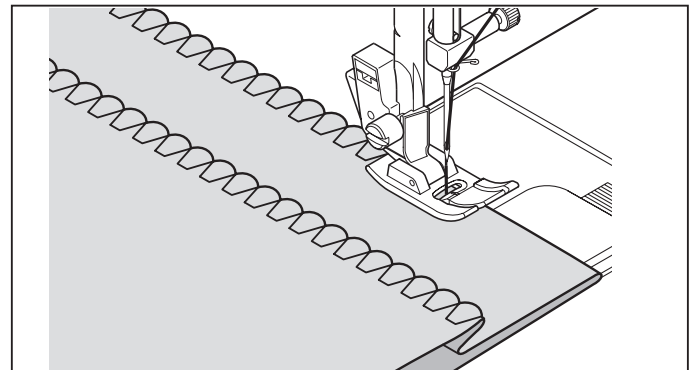
SHELL STITCH



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

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 from the backside, close to the stitching line.

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



SEWING ON A BUTTON



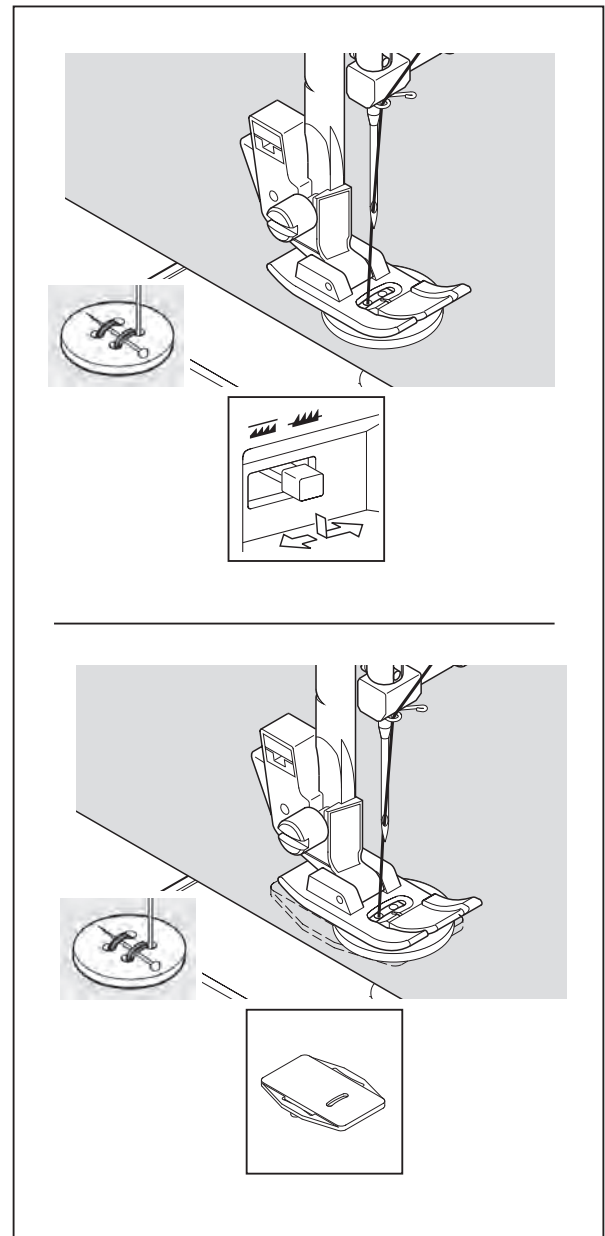
84

- SETTINGS :Presser foot - General Purpose Foot
:Place Darning plate
:Down Feed dog control

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

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

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



DECORATIVE AND STRETCH STITCHES

SETTINGS :Presser foot - General Purpose Foot or Satin Stitch Foot
:Thread tension control - AUTO

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

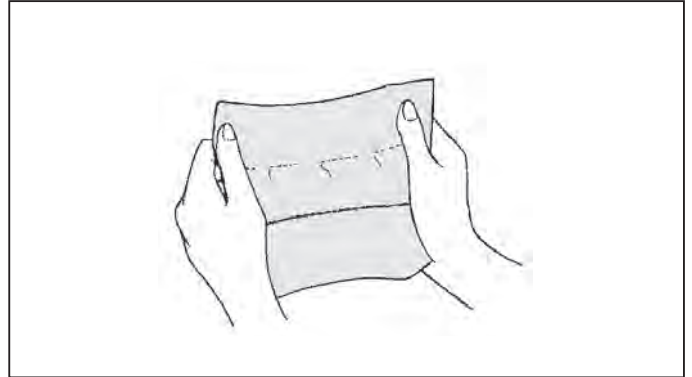
STRAIGHT STRETCH STITCH



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.

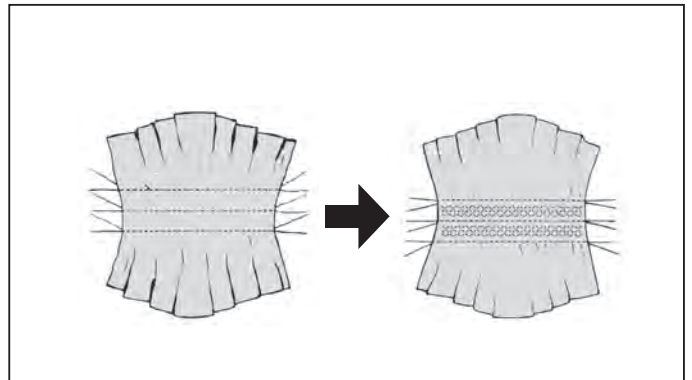


HONEYCOMB STITCH



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

1. For smocking, first make several rows of gathers across the fabric that you wish to smock.
2. Cut an underlay fabric (such as organdy) and place it under the shirring.
3. Sew the honeycomb stitch over the gathered rows, securing them in place.

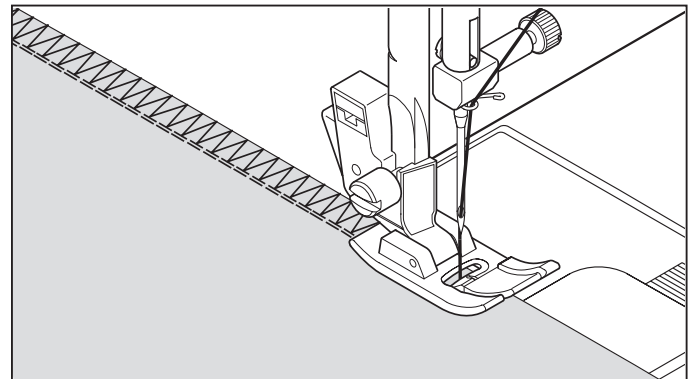


OVEREDGE STITCH



This is the same type stitch used by the garment industry in making sportswear – it forms and finishes the seam in one operation.

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

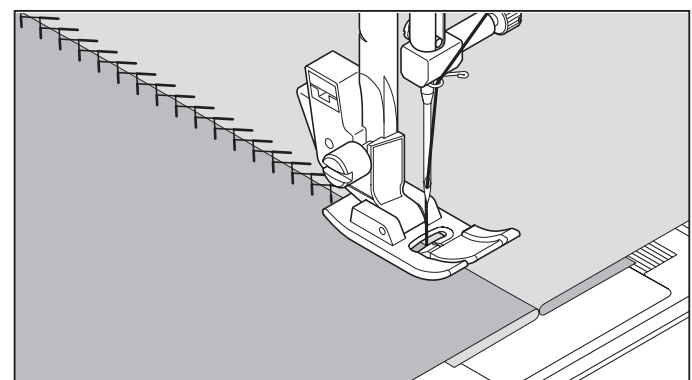


FEATHER STITCH



The pleasing appearance of this stitch enables it to be used for decorative topstitching or for attaching laces and trims.

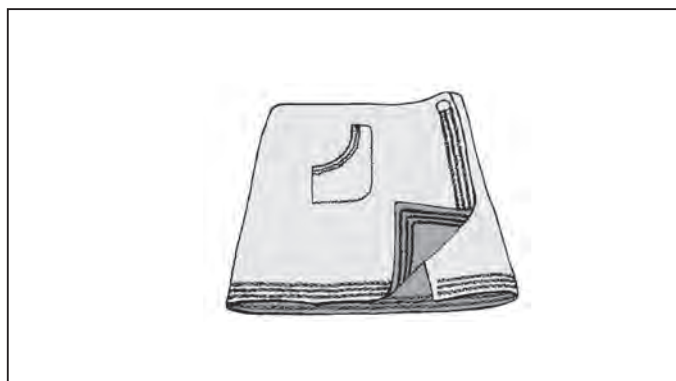
It is also ideal for quilting applications and edge-joining.



RIC-RAC STITCH



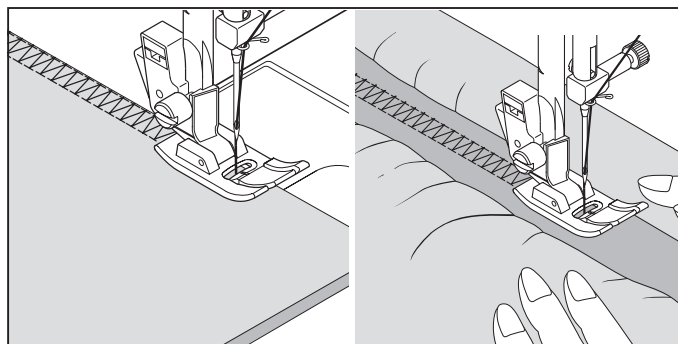
Ric-rac is primarily used for a decorative top-stitch. It is ideal for edging neck-bands, armholes, sleeves and hems. When manually adjusted to a very narrow width, it also can be used for sewing high stress seams.



DOUBLE OVERLOCK STITCH



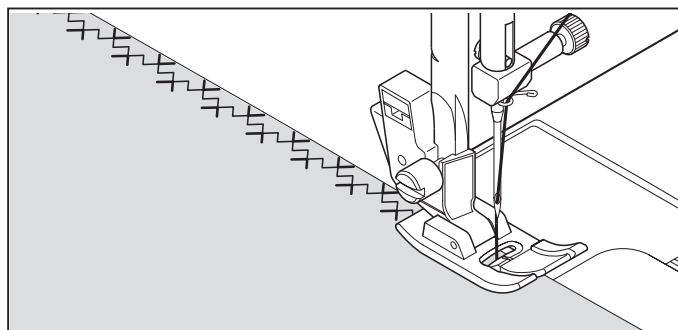
The Double overlock stitch has three main uses. It is perfect for attaching flat elastic, for overcasting, and for seaming and overcasting in one operation. It is primarily used on slightly stretch fabrics and non-stretch fabrics such as linen, tweed, and medium to heavy-weight cotton.



CRISS-CROSS STITCH



Used primarily for decorative machine stitching.

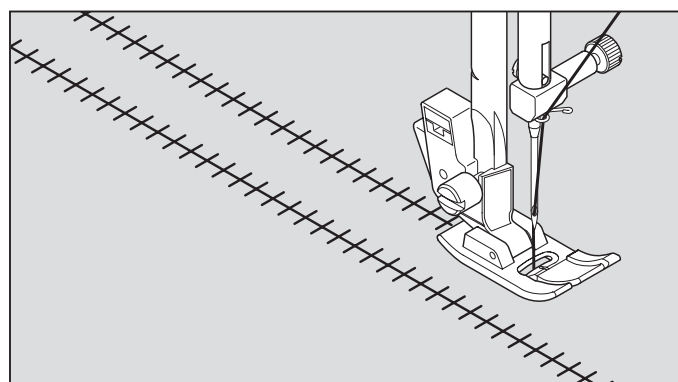


ENTREDEUX STITCH



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.

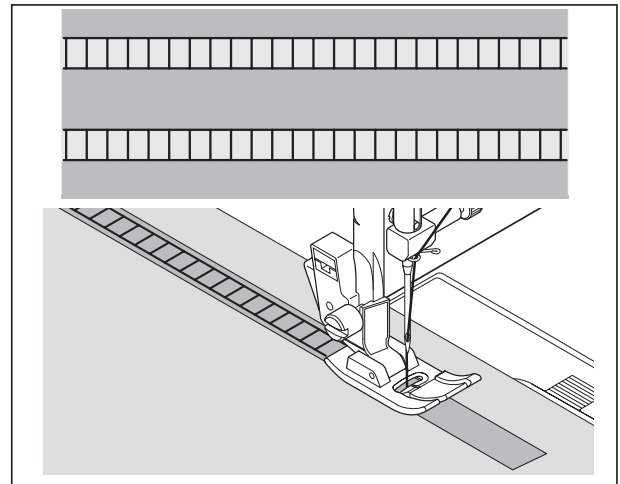


LADDER STITCH



The Ladder stitch is primarily used for drawn thread work and hemstitching. For drawn thread work, choose a firm, linen-type fabric and sew the stitch, making sure you follow the grain line of the fabric. When finished sewing, draw the threads out within the ladder for an open, airy appearance.

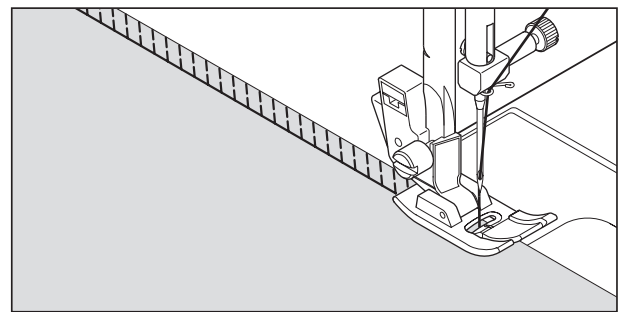
The Ladder stitch can also be used for stitching over ribbon or trim.



SLANT OVEREDGE STITCH



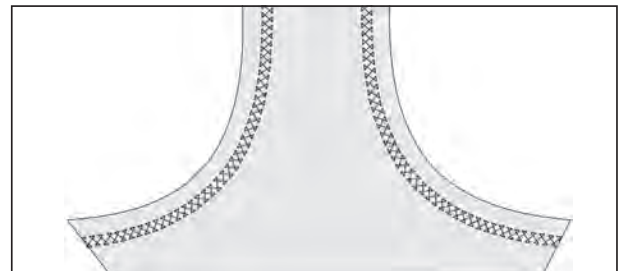
Seams and overcasts in one operation to produce a narrow, supple seam, particularly suited to swimwear, sportswear, T-shirts, babywear in stretch nylon, jersey and cotton jersey.



CROSSED STITCH



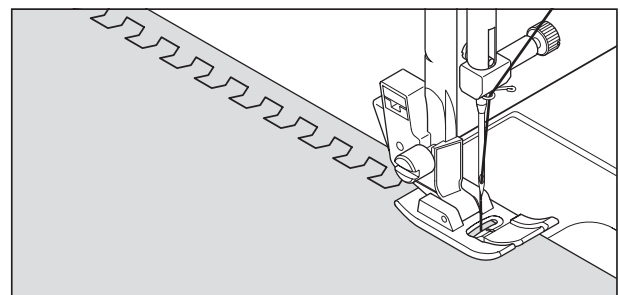
Use to sew and finish elastic fabrics or for decorative work.



CHEVRON STITCH



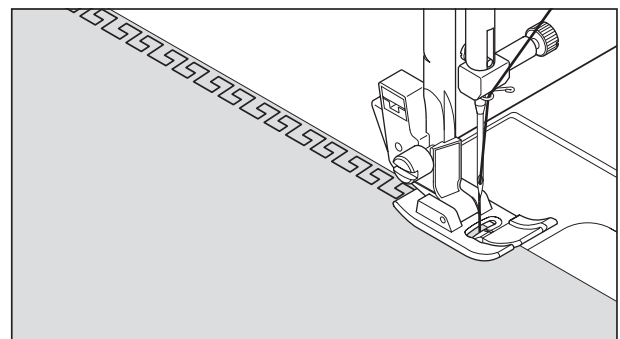
Use to create decorative borders.



GREEK KEY STITCH



A traditional pattern suited for decorative borders and edge finishings.



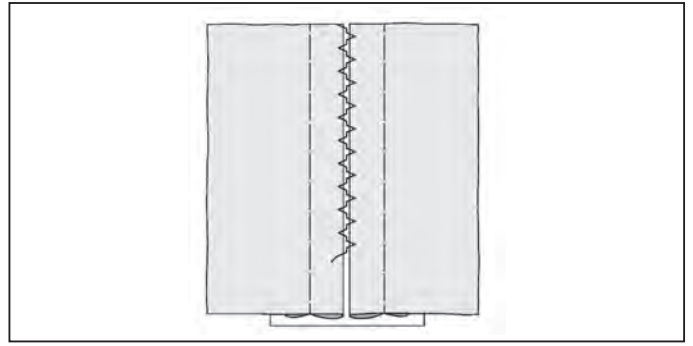
EDGE-JOINING STITCH



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

This is a popular decorative stitch. It can also be used for joining two separate pieces of fabric, leaving a little space in between. To attach two separate pieces of fabric together, leave a little space in between. To prepare the fabric:

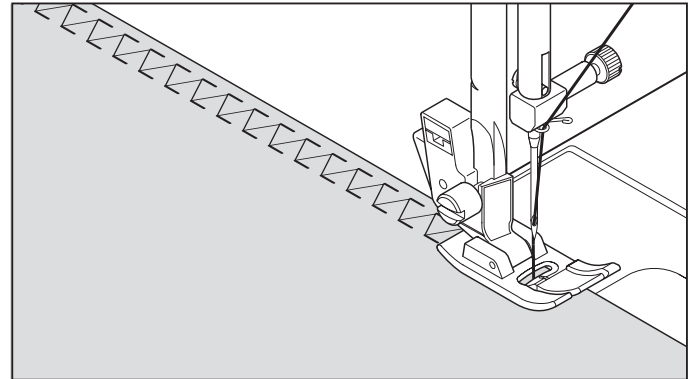
Fold under the seam allowances on the cut edges, and press. Baste folded edges to tissue paper with about 1/8" (0.3 cm) space between. Stitch over the 1/8" (0.3 cm) allowance, just catching the fabric fold on both sides with needle. Remove bastings and paper; press.



FISHBONE STITCH



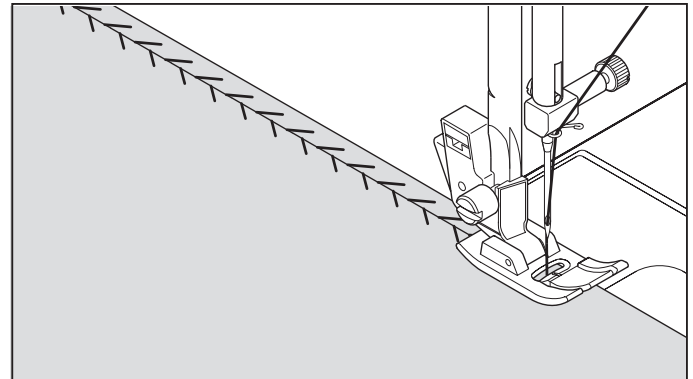
Used mainly for decorative machine stitching.



THORN STITCH



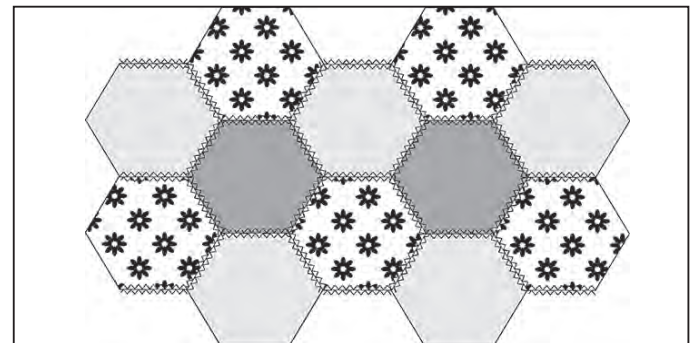
It is a versatile stitch used for joining fabric pieces as well as for decorative machine stitching.



WIZARD STITCH



Used mainly for decorative machine stitching.



MORE DECORATIVE STITCHES & IDEAS FOR DECORATIVE MACHINE STITCHING

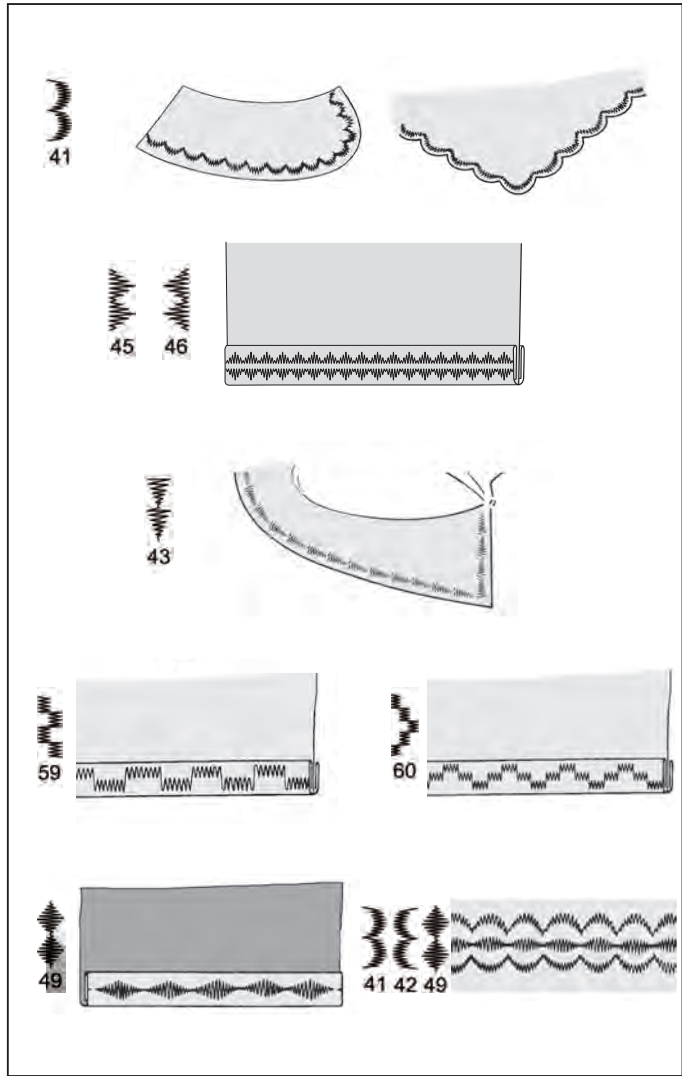
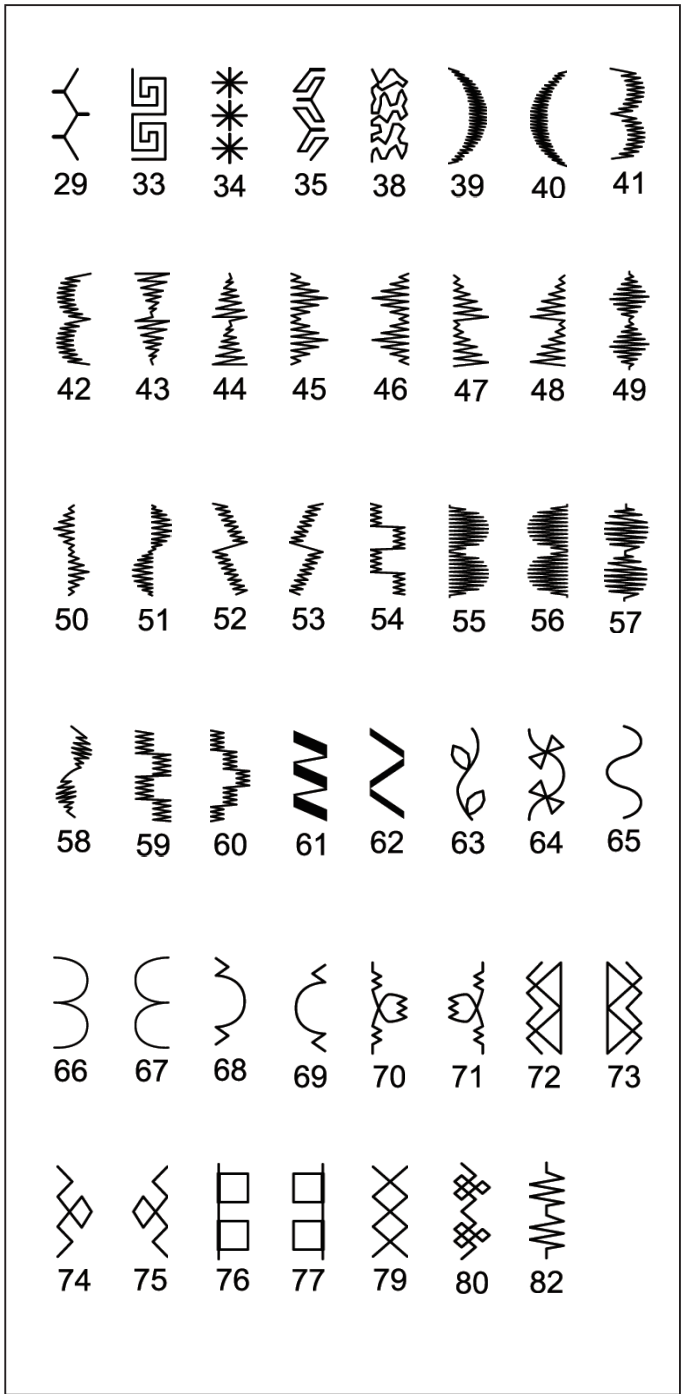
SETTINGS :Presser foot - Satin Stitch Foot
 :Thread tension control - AUTO or -1

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.

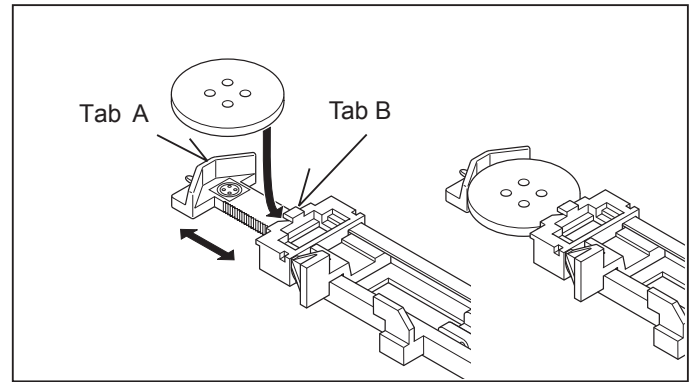


BUTTONHOLE MAKING

AUTOMATIC 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. All of this is done in one easy step.



PROCEDURE

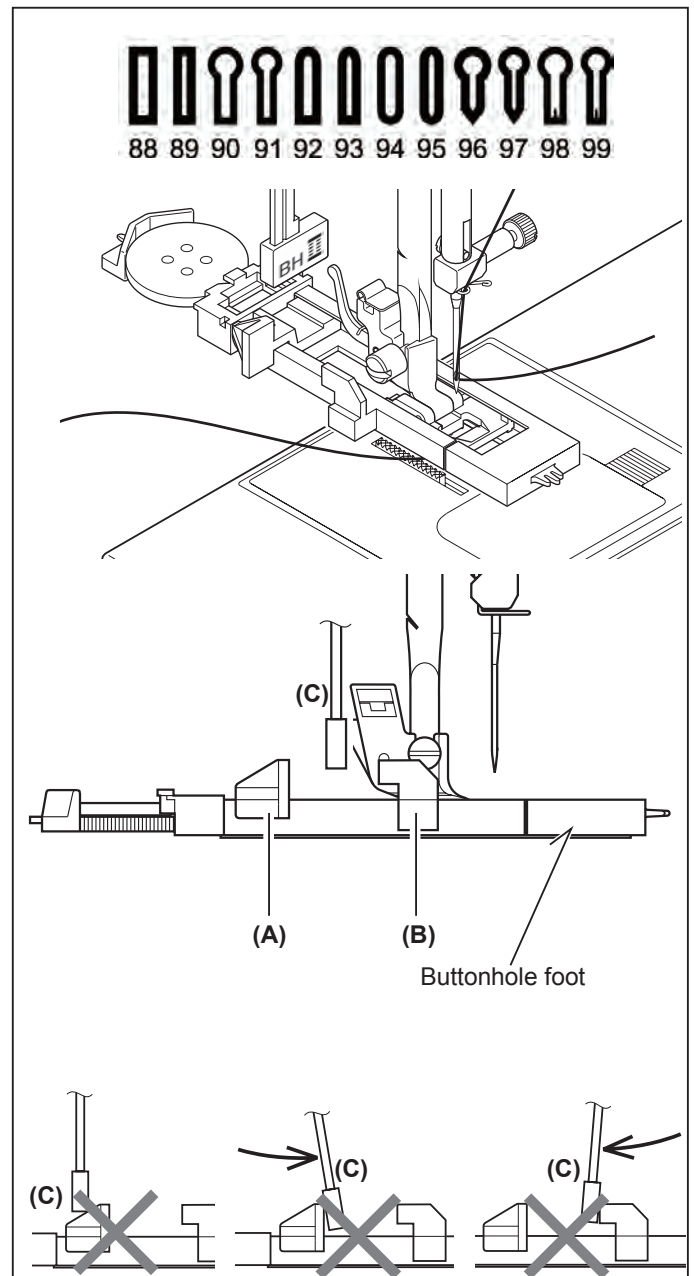
- * Use an interfacing in the area of the garment where buttonholes are placed. Stabilizer or regular interfacing can be used.
- * Make a practice buttonhole on a scrap of the actual fabric from your project. Then try the buttonhole with your button.

1. Select one of buttonhole patterns.

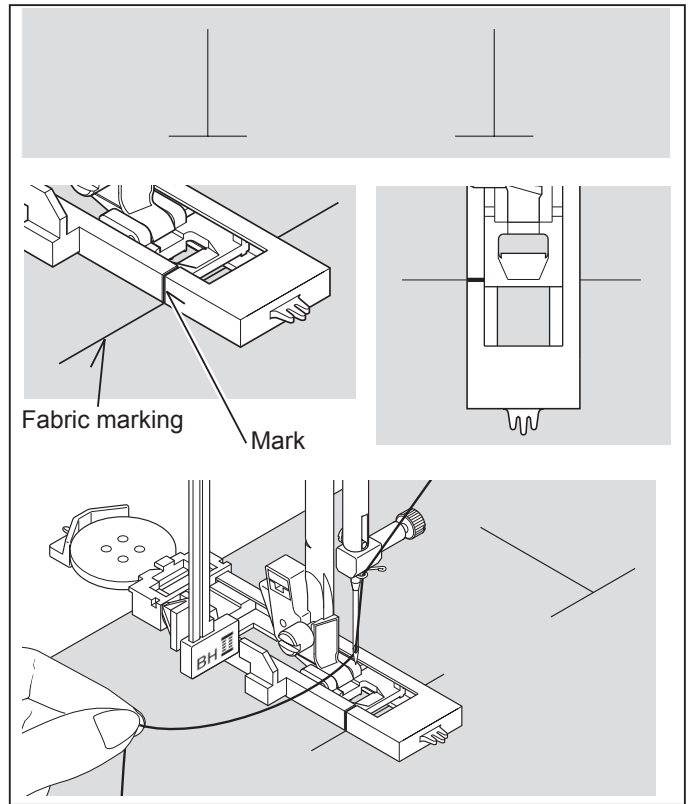
2. Replace the presser foot with the buttonhole foot. (Refer to "Changing presser foot" on page 16.)

3. Insert the button into the buttonhole foot. (Refer to "Using buttonhole foot" above.)

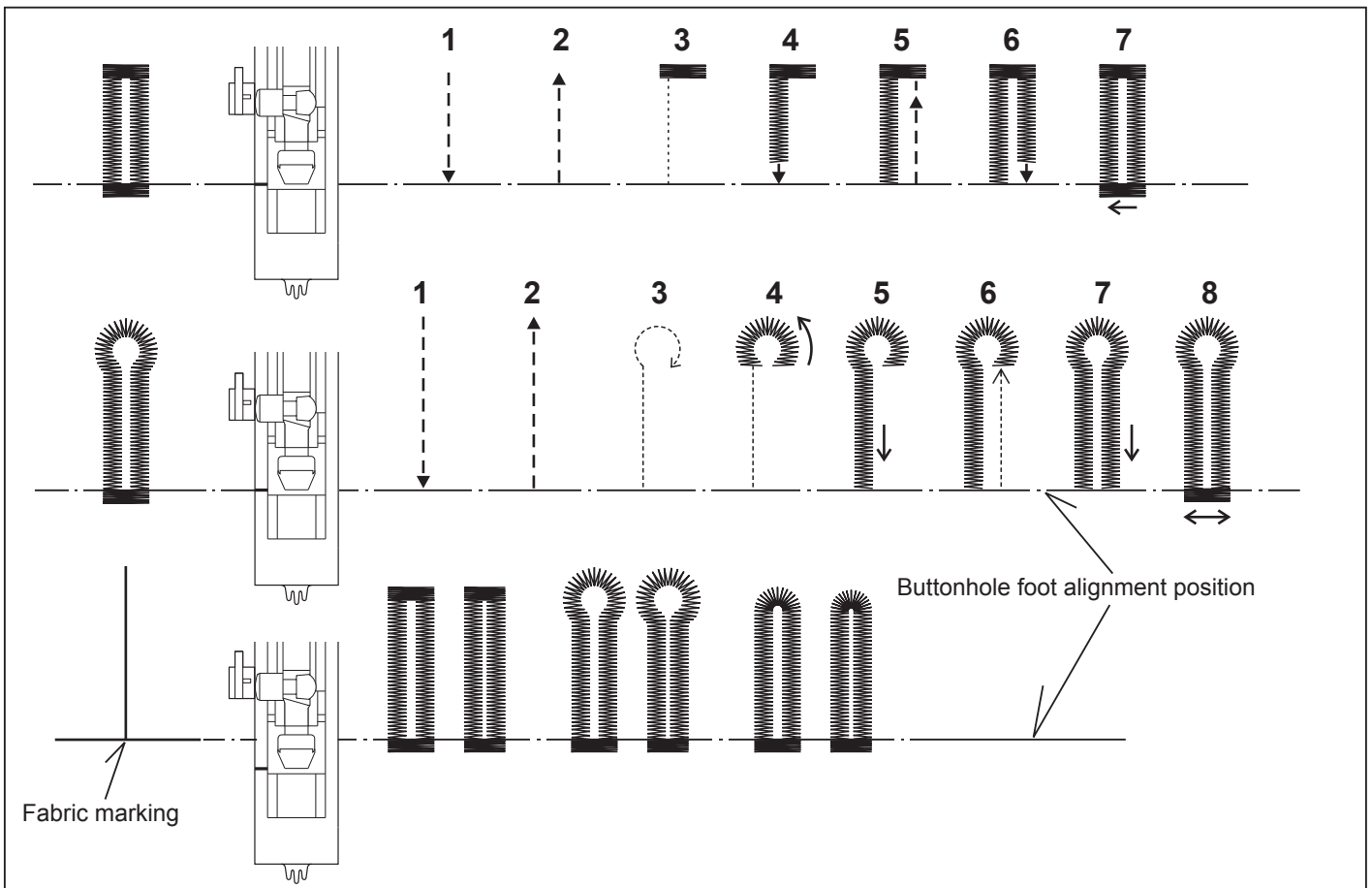
4. Lower the buttonhole lever (C) so that it drops down vertically between the stoppers (A) and (B).



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.

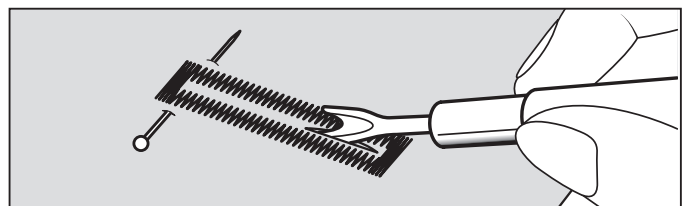


* Sewing will be completed automatically in the following order.



9. When sewing is finished, use a buttonhole opener/seam ripper to open up the fabric in the center of the buttonhole. Be careful not to cut any of the stitching.

Note: It may be helpful to place a pin in front of the bartack as you cut the buttonhole open, to prevent cutting the stitches.

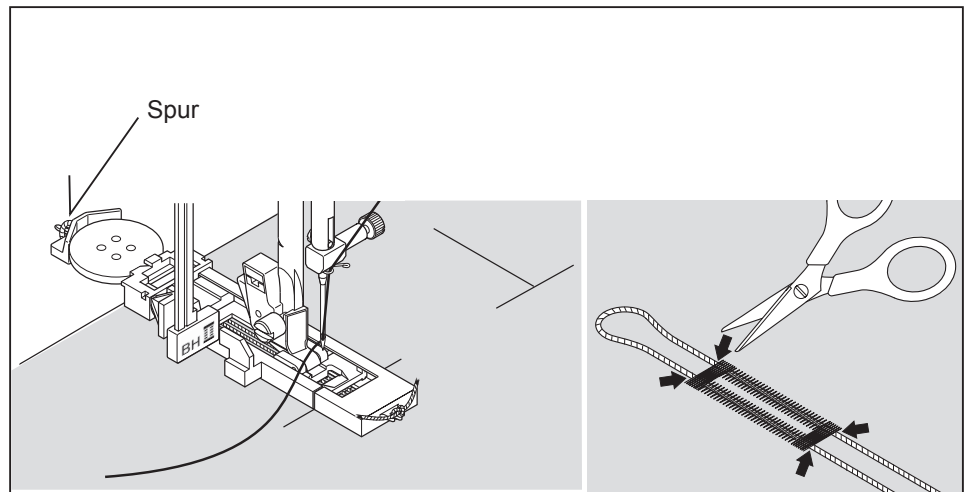


CORDED BUTTONHOLES

Hook filler cord (such as 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 stitch foot 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.

<p>①</p>	<p>85</p>	
<p>②</p>	<p>86</p>	
<p>③</p>	<p>87</p>	
<p>④</p>		

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.

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 needle plate (1).

3. Remove the bobbin case (2).

4. 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)

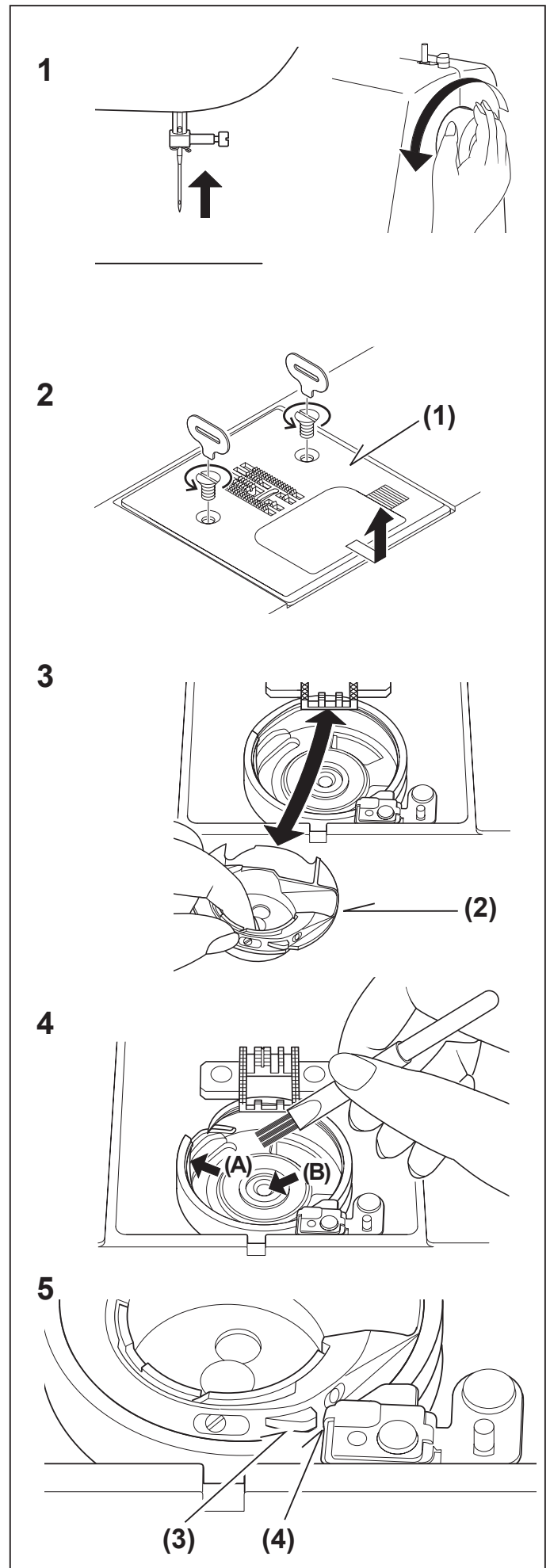
NOTE: Sewing Machine Oil is suggested. DO NOT use "all purpose" oil as it is not suited for sewing machine lubrication.

5. Replace the bobbin case with the projection (3) positioned against the spring (4). Replace the needle plate.

Cleaning the sewing machine and footcontroller

After using, keep sewing machine and footcontroller clean. Use dry rags to remove dust from the sewing machine and footcontroller.

NOTE: Use dry rags to avoid electrical shock.

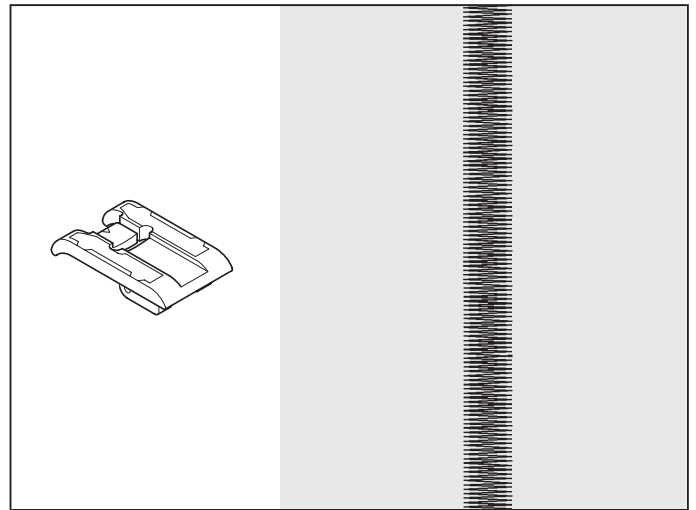


4. OTHER INFORMATION

SATIN STITCH FOOT

The Satin Stitch Foot is grooved 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.

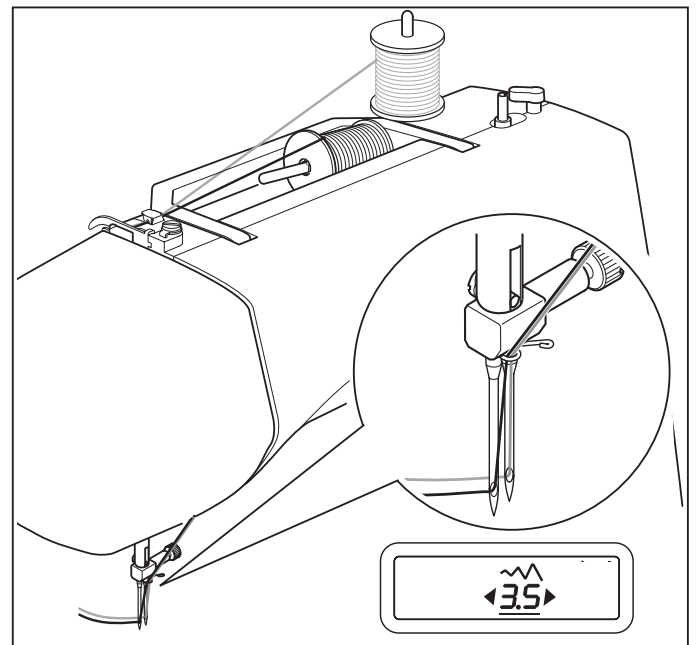
Closely spaced zig-zag stitches are called satin stitches. This is an attractive stitch used primarily for appliqueing and bar tacking. Slightly loosen top thread tension for satin stitching. Use a backing of tissue paper or interfacing for to avoid puckering.



TWIN NEEDLE (Optional)

IMPORTANT:
When using a twin-needles, set stitch width at 3.5 or less, or otherwise needle may be broken.

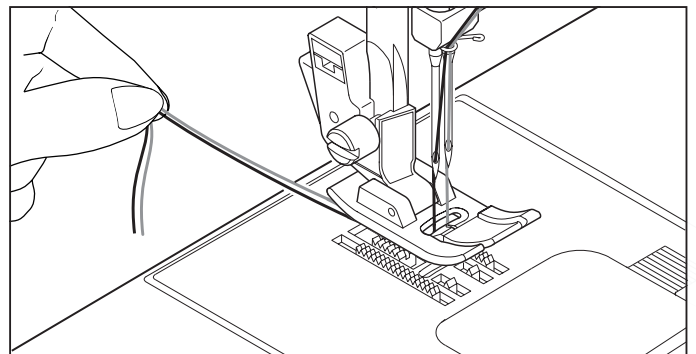
A twin-needle produces two rows of parallel stitches for pin tucks, double top stitching and decorative sewing.



THREADING THE TWIN NEEDLE

1. Insert the second spool pin. Place a spool on each spool pin. Thread the two threads as one. Draw one thread through each needle from 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 6" (15 cm) of thread.

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



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.
- * Bobbin winder is engaged. – Disengage bobbin winder (see page 10).
- * Top thread incorrectly. – Re-thread the top thread correctly.
page 12).

Machine jams/knocks.

- * Thread is caught in hook. – Clean hook (see page 39).
- * Needle is damaged. – Replace needle (see page 15).

Fabric does not move.

- * Presser foot is not lowered – Lower presser foot.
- * Stitch length is too short - Lengthen stitch length.

STITCHING PROBLEMS

Machine skips stitches.

- * Needle is not all the way up into needle clamp (see page 15).
- * Needle is bent or blunt. – Replace needle (see page 15).
- * Machine is not threaded correctly (see page 12).
- * Thread is caught in hook. – Clean hook (see page 39).

Stitches are irregular.

- * Needle size is not correct for thread and fabric (see 15 page).
- * Machine is not threaded correctly (see page 12).
- * Top thread tension is too loose (see page 16).
- * 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 15).
- * Needle is not all the way up into the needle clamp (see page 15).
- * Twin needle is being used but stitch width is set too wide (see page 40).
- * Too much thread appears on the underside of stitching.
- * Upper thread not correctly thread (see page 12).

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 6 inches (10 cm) and hold until a few stitches are formed.

Needle thread breaks.

- * Machine is not threaded correctly (see page 12).
- * Top thread tension is too tight (see page 16).
- * Needle is bent. – Replace needle (see page 15).
- * Needle size is not correct for thread and fabric (see page 15).

Bobbin thread breaks.

- * Bobbin case is not threaded correctly (see page 11).
- * Lint accumulates in bobbin case or hook. – Remove lint (see page 39).

Fabric puckers.

- * Top thread tension is too tight. – Adjust thread tension (see page 16).
- * Stitch length is too long for sheer or soft fabric. – Shorten stitch length.