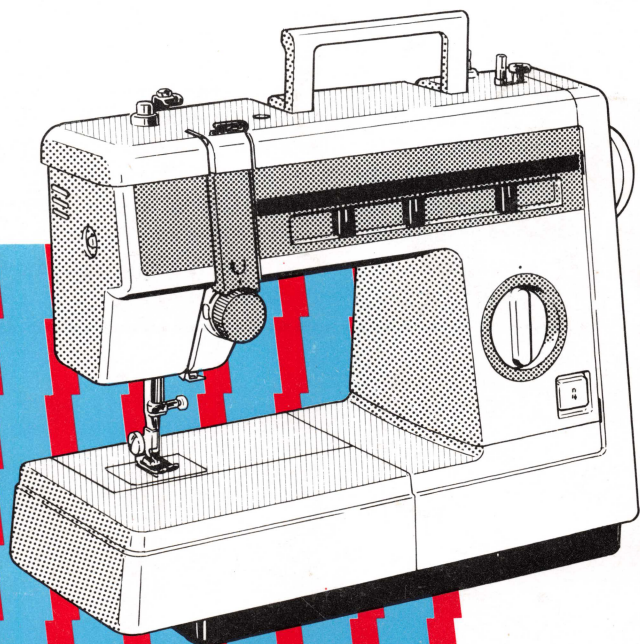


how to use and enjoy your

Sewing Machine



When leaving the sewing machine unattended, the mains switch of the machine must be switched off or the plug must be removed from the socket-outlet.

When servicing the sewing machine, or when removing covers or changing lamps, the machine or the electrical set must be disconnected from the supply by removing the plug from the socket outlet.

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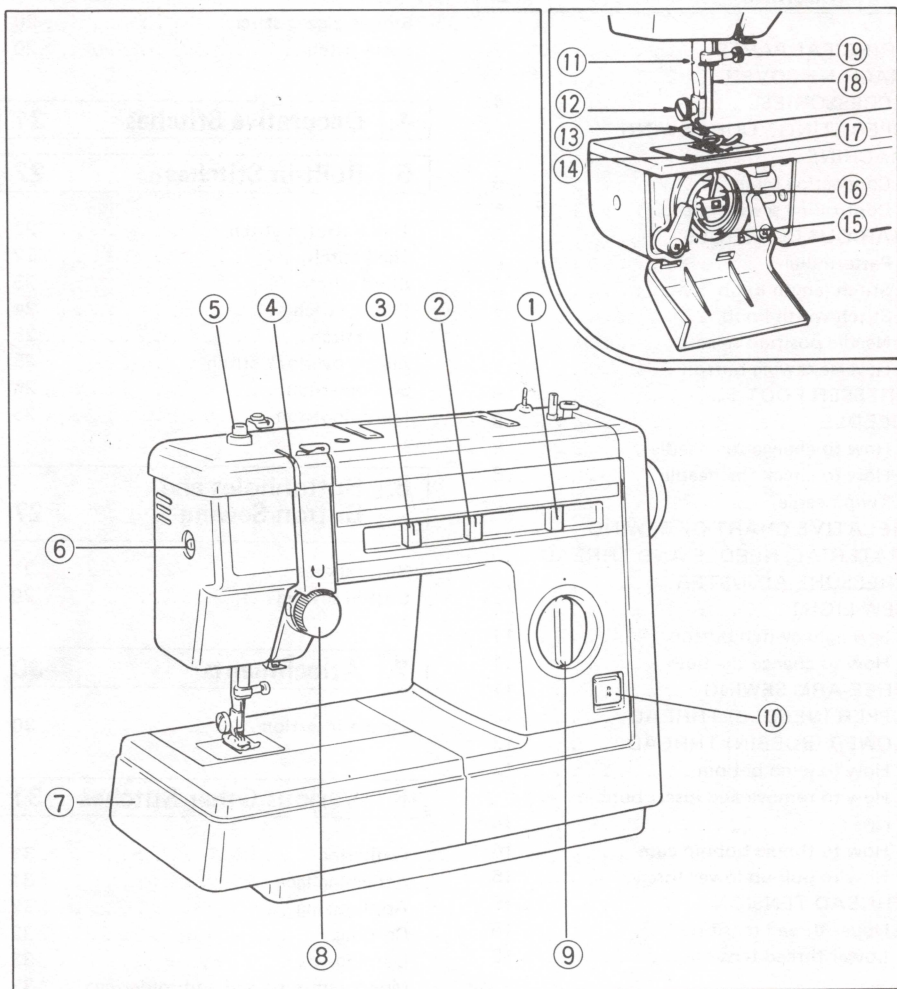
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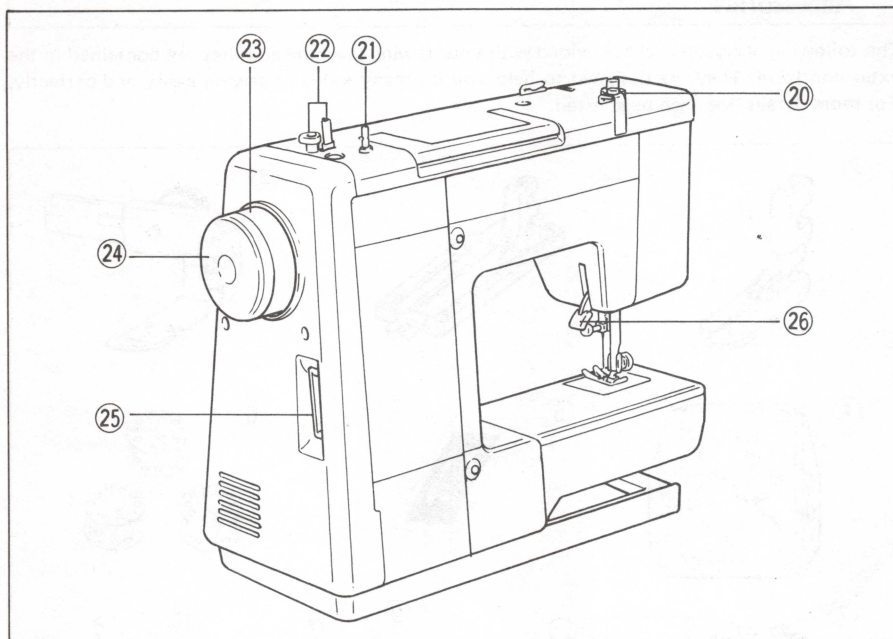
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Knowing Your Sewing Machine

Principal Parts



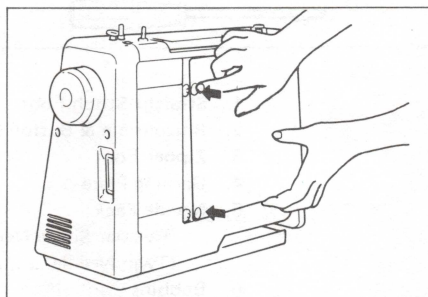
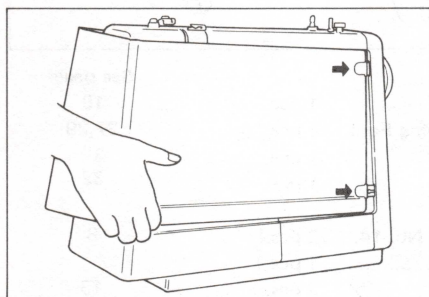
- | | |
|------------------------------|---------------------------|
| 1. Stitch Length Knob | 11. Thread Cutter |
| 2. Needle Position Selector | 12. Presser Foot Screw |
| 3. Stitch Width Knob | 13. Presser Foot (Zigzag) |
| 4. Thread Take-up Lever | 14. Needle Plate (Zigzag) |
| 5. Pressure Adjuster | 15. Shuttle Hook |
| 6. Sew-light Switch | 16. Bobbin Case |
| 7. Extension Table | 17. Feed Dog |
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- 20. Thread Guide and Bobbin Winder Disc
- 21. Spool Pin
- 22. Bobbin Winder Device
- 23. Balance Wheel

- 24. Stop Motion Knob
- 25. 3-prong Socket
- 26. Presser Foot Lifter

Machine Cover

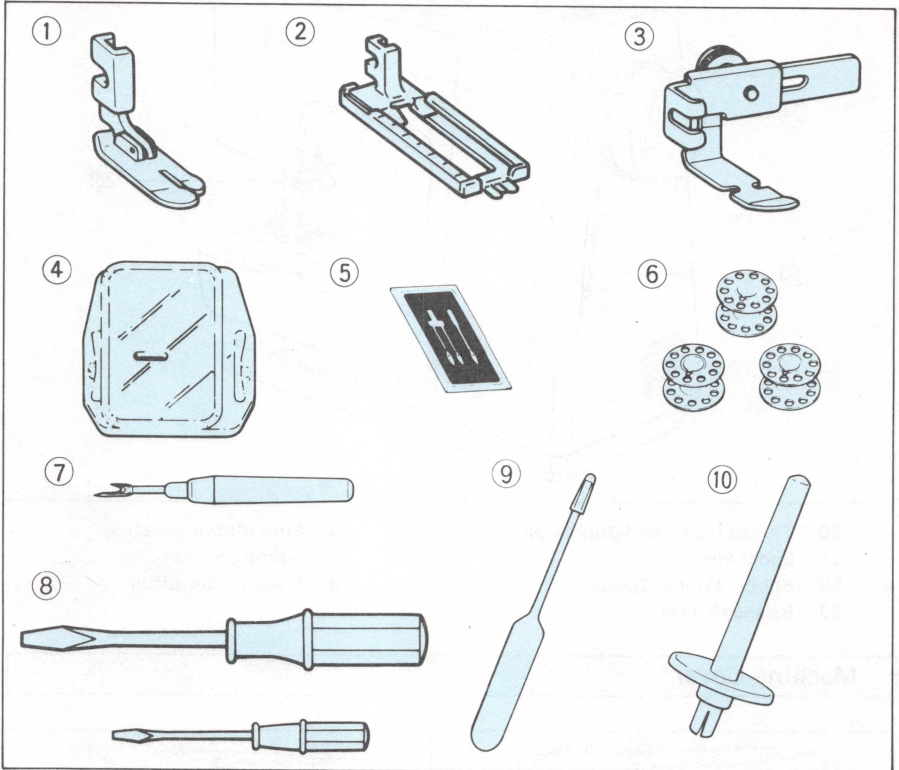


You may find machine cover in shipping box. For dust free storage, suggest you place this cover after your job.

1. Lower the presser foot and press the spool pin into machine.
2. Place the foot controller on the machine bed.
3. For front side of machine, insert two tabs into machine as illustrated.
4. Then for back side, button up at back of machine with two hook buttons as illustrated.

Accessories

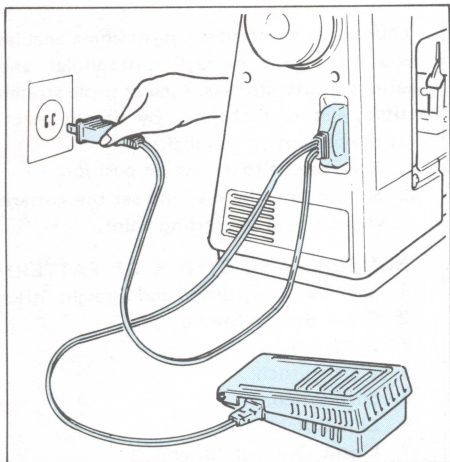
The following accessories are provided with your sewing machine and they are contained in the extension table. They are designed to help you do many kinds of sewing easily and perfectly. For more details, see each page listed.



		See page
1.	Straight Stitch Foot	1 pce. 18
2.	Buttonhole & Button Sewing Foot	1 pce. 27,29
3.	Zipper Foot	1 pce. 30
4.	Darning Plate	1 pce. 32
5.	Needle Pack	
	(Regular Single Needle No. 14.....)	3 pcs.) 8
	(Twin Needle.....)	1 pce.)
6.	Bobbins	3 pcs. 13
7.	Seam Ripper	1 pce. 28
8.	Screw Driver (Large & Small)	2 pcs.
9.	Oiler	1 pce. 35
10.	Extra Spool Pin	1 pce. 9

The above illustrated accessories are provided with this machine.

Operating Your Sewing Machine



CONNECTING PLUGS

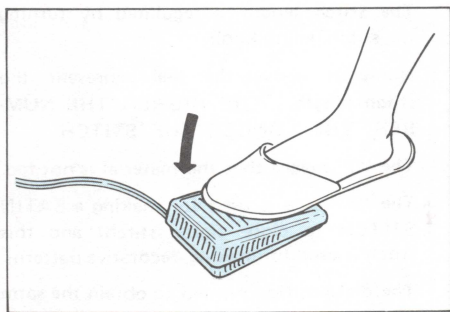
1. First connect the three-prong plug into the machine.
2. Then connect the electric supply plug into a wall outlet.

Caution

When changing needle, bobbin or light bulb, or when sewing machine is not in use, it is recommended that electrical supply plug is disconnected to avoid electrical hazards.

Remark:

The illustration on this page depicting the use of two pin plug is not applicable to use in U.K.



CONTROLLING SEWING SPEED

Place foot on foot control as shown in illustration.

When foot control is pushed down lightly, machine will run at a low speed.

When pressure on foot control is increased, machine will pick up speed.

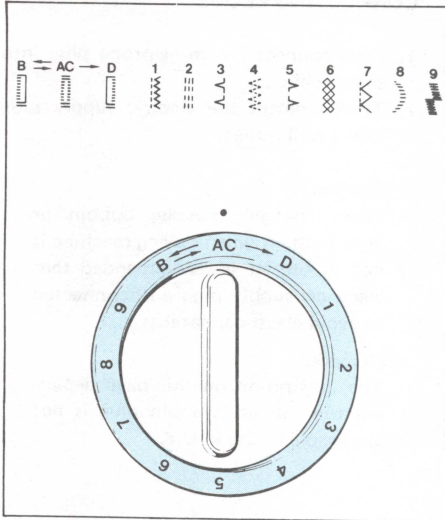
When foot control is released, machine will stop.

NOTE:

1. Care should be taken that nothing is placed on foot controller when machine is not in use.
2. A new sewing machine or one that has not been in use for a long period of time should be oiled as per instruction on page 35 & 36. After oiling, be sure to wiper up any excess oil.

Various Controls

PATTERN DIAL



Your built-in pattern sewing machine enables you to obtain perfect buttonholes and various utility stitches, such as triple stretch stitch, elastic stitch, etc., by simply selecting the pattern on this dial.

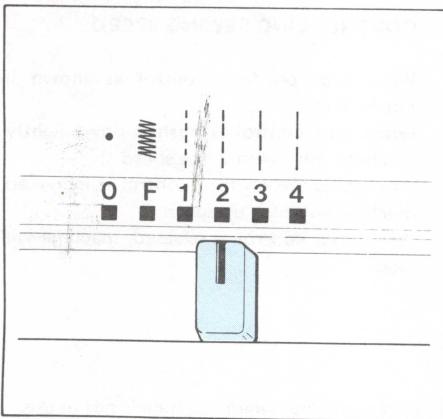
1. Raise needle to its highest position.
2. Simply turn the dial and set the pattern you desire at the setting point.

NUMBERS AND STITCH OF PATTERN

1. General Zigzag Stitch and Straight Stitch.
2. Triple Stretch Stitch.
3. Blind Stitch.
4. Elastic Stitch.
5. Shell Stitch.
6. Link Stitch.
7. Elastic Overlock Stitch.
8. Scallop Stitch.
9. Lightning Stitch.

A-B-C-D. Automatic Buttonhole.

STITCH LENGTH KNOB



The stitch length is regulated by turning the stitch length knob.

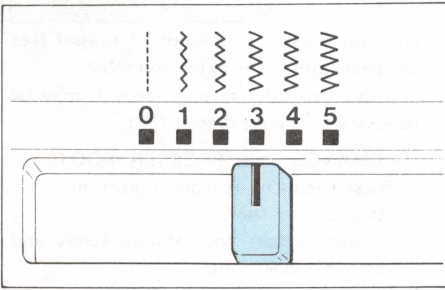
Numerals above the dial represent the stitch length. THE HIGHER THE NUMBER, THE LONGER THE STITCH.

The "0" means that the material is not fed.

The "F" area is used for making a SATIN STITCH (a close zigzag stitch) and this stitch is used for making decorative patterns.

The dial position needed to obtain the satin stitch is varied according to the material and thread being used. To determine exact dial position, you must observe the feeding of the material.

STITCH WIDTH KNOB



The zigzag width is regulated by operating the stitch width knob.

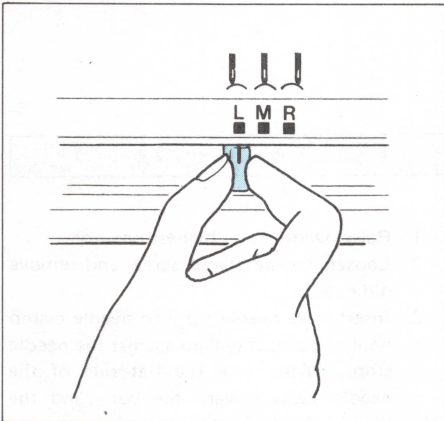
Numerals above the knob represent the width of stitch. THE HIGHER THE NUMBER, THE WIDER THE STITCH.

The "0" means straight stitch only.

NOTE: 1. Do not move the knob while the needle is in the material.

2. When using twin needle, knob should always be set at under "3".

NEEDLE POSITION SELECTOR



By shifting this lever to L (left), M (middle) or R (right), you will be able to sew straight and zigzag stitches as the base line.

When you sew close to the edge of material, select L or R so that you can obtain better feeding of the material.

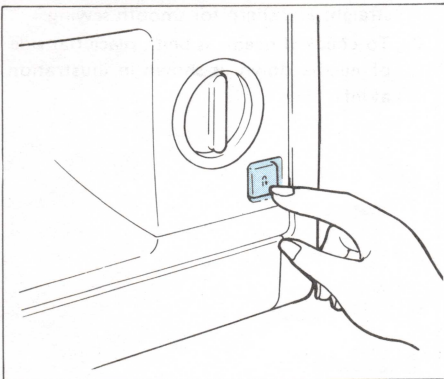
For almost all stitching, this selector to be set at M (middle) but set other position for following application.

1. Button sewing (page 29)
2. Decorative stitches (page 21)

NOTE: 1. Do not move the selector while needle is in the material.

2. Set the selector always at M when you use twin needle.

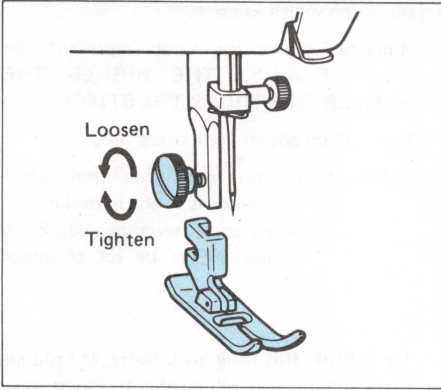
REVERSE SEWING BUTTON



To sew in reverse, push sewing button as far as it will allow. Hold button in this position until you wish to sew forward. When button is released it will spring back in position and you will sew in forward direction.

Reverse sewing is used for back-tacking and reinforcement.

Presser Foot



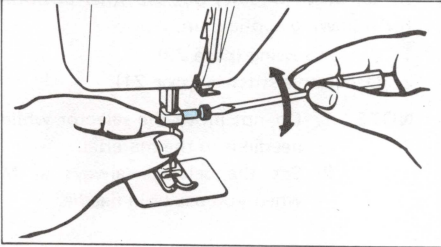
You will find various kinds of presser feet for special use in the extension table. According to your sewing needs, it may be necessary to change presser foot.

TO CHANGE THE PRESSER FOOT

1. Raise needle to its highest position.
2. Raise presser foot.
3. Loosen presser foot thumb screw and remove presser foot.
4. Place grooved side of the new presser foot against the flat of the presser bar.
5. Tighten thumb screw.

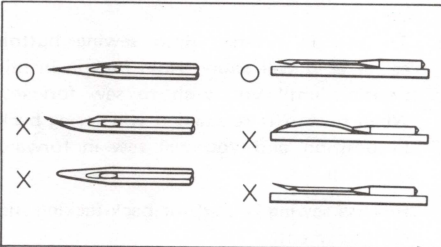
Needle

HOW TO CHANGE THE NEEDLE



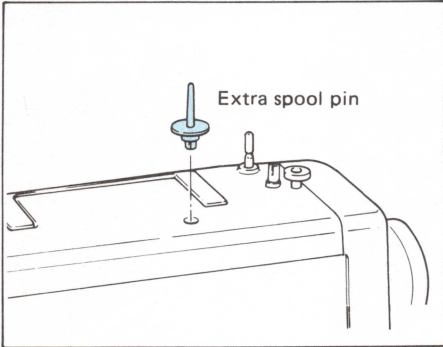
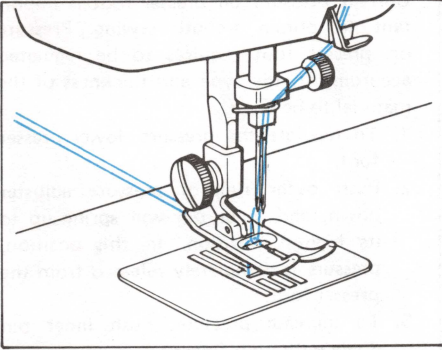
1. Raise needle to its highest position.
2. Loosen needle clamp screw and remove old needle.
3. Insert new needle up into needle clamp hole as far as it will go against the needle stop. Make sure the flat side of the needle faces toward the back and the long groove toward you.
4. Tighten needle clamp screw securely.

HOW TO CHECK THE NEEDLE



1. The sewing needle must always be straight and sharp for smooth sewing.
2. To check if needle is bent, place flat side of needle down as shown in illustration at left.

Twin Needle



Your sewing machine is specially constructed for optional twin needle sewing by setting extra spool pin into hole on the top of machine. You can use either one or two colors of upper thread.

Make sure that two threads used to thread twin needle are of the same weight.

If thread is not of the same weight, stitching will be faulty.

INSERTING TWIN NEEDLE

Insert in same manner as single needle. Flat side of needle should face toward back and long groove should face you.

THREADING TWIN NEEDLE

Follow instructions for single needle threading (see page 12), but thread each needle separately.

NOTE FOR TWIN NEEDLE SEWING

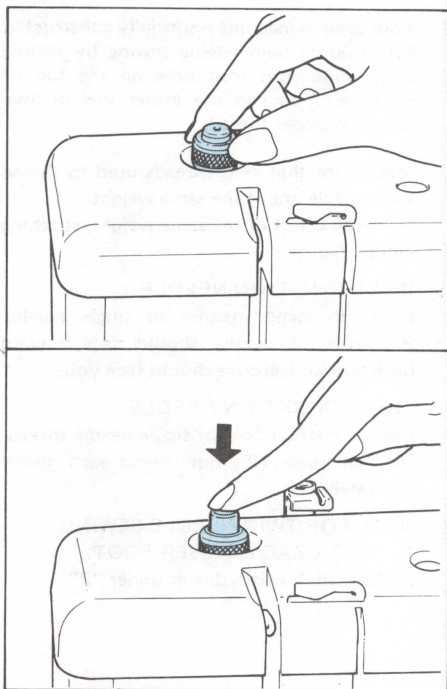
1. Use ZIGZAG PRESSER FOOT.
2. Use stitch width dial at under "3".

Relative Chart of Sewing Material, Needle and Thread

SEWING MATERIALS		NEEDLE SIZES	THREAD SIZES
VERY THIN	Fine tricot, Fine lace, Thin linen, Silk, Tulle, Chiffon	9	Cotton: 80-120 Synthetic Fine Mercerized Cotton
LIGHTWEIGHT	Organdy, Jersey, Voile, Taffeta, Synthetics; Silk, Batiste	11	Cotton: 60-80 Silk: "A" Synthetic Mercerized 50
MEDIUM	Cotton, Gingham, Poplin, Percale, Pique, Satin, Velvet, Lightweight wool, Fine corduroy, Suitings	14	Cotton: 50-60 Silk: "A" Synthetic Mercerized 50-60
HEAVY	Denim, Gabardine, Tweed, Corduroy	16	Cotton: 40-50 Mercerized Heavy-Duty
VERY HEAVY	Canvas, Overcoating, Upholstery	18	Cotton: 30-40 Mercerized Heavy-Duty




- NOTE: 1. Select correct size of needle and thread from above chart.
2. Use the same size thread for upper and lower threads.

Pressure Adjuster

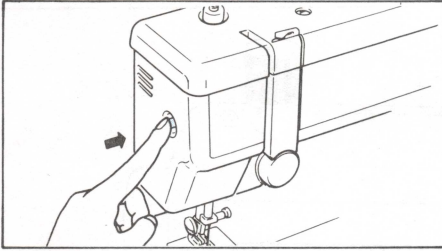


Correct pressure on presser foot is important to obtain smooth sewing. Pressure on presser foot requires to be regulated according to the type and thickness of the material to be sewn.

1. To regulate the pressure, lower presser foot.
2. Push outer ring of pressure adjuster down, and inner pin will spring up to its highest position. In this position, pressure is completely released from the presser foot.
3. To increase pressure, push inner pin down with your finger.

Pressure Adjuster	Sewing Purpose	Pressure on Foot
 UP	Darning Embroidering Monogramming	Free
 MIDDLE	Mending Normal use and lighter material such as silk and nylon	Medium
 DOWN	Thick and heavier materials	Heavy

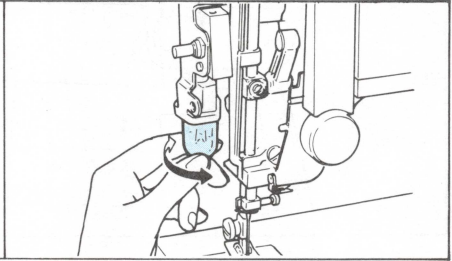
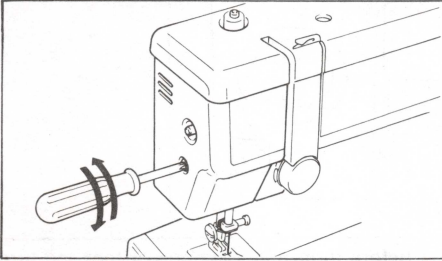
Sew-light



SEW LIGHT SWITCH BUTTON

To switch the light on or off, push the sew-light switch button.

HOW TO CHANGE THE LIGHT BULB



1. Remove face plate by loosening a screw on face plate.
2. Remove light bulb by turning it counterclockwise.
3. Replace light bulb and fix face plate.

NOTE: 1) Make sure to disconnect electric supply plug from wall outlet before changing light bulb.

- 2) Always use **CORRECT LIGHT BULB.**
MAXIMUM INPUT OF LAMP

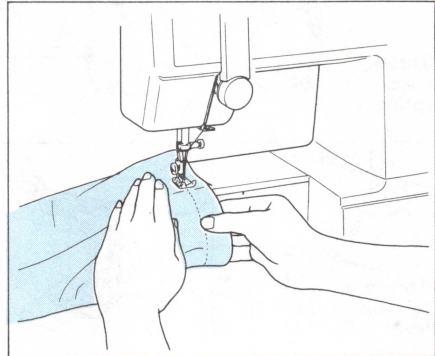
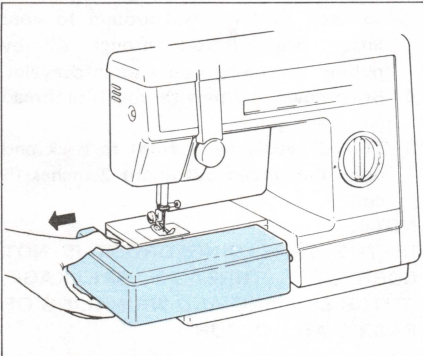
12W.110/115V AREA

15W.220/240V AREA

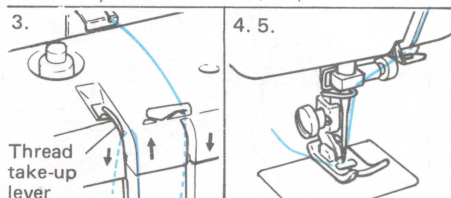
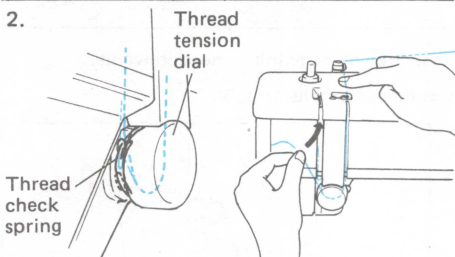
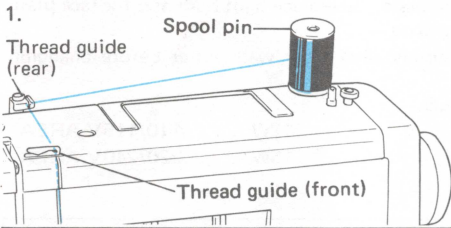
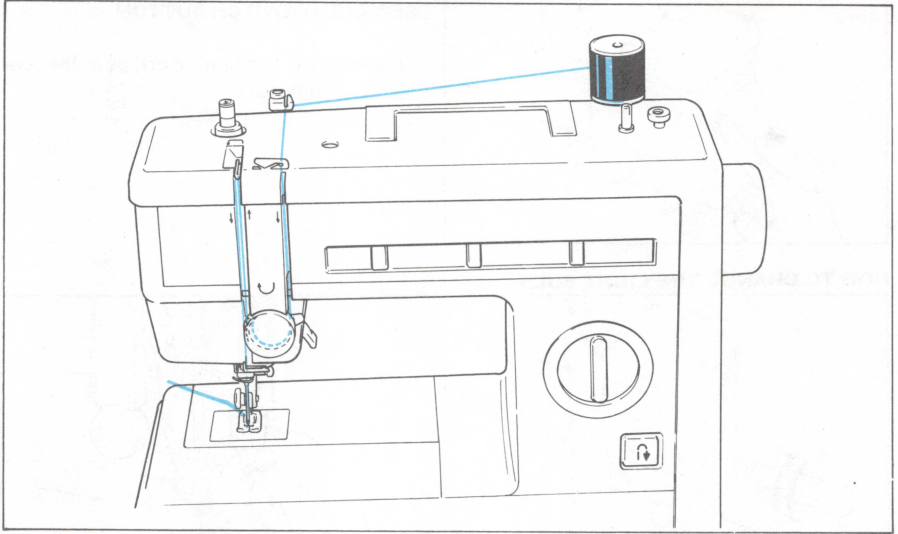
Free-Arm Sewing

For sewing tubular and hard to reach garment areas, free-arm sewing is most convenient.

To make your machine a free-arm model, simply slide out extension table.



Upper (Needle) Thread



Before threading, raise presser foot and turn balance wheel toward you to raise thread take-up lever to its highest position.

Then raise spool pin and place thread spool on the pin.

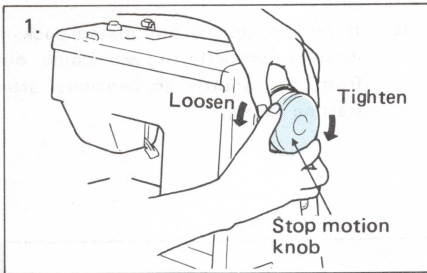
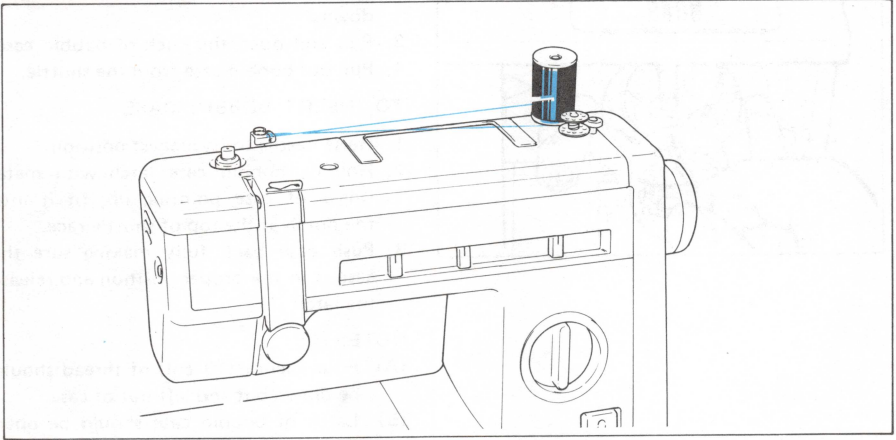
1. Pass thread through the both of thread guides from rear to front.
2. Bring thread down and up through upper thread tension dial from right to left so that thread picks up the thread check spring. With holding thread as illustrated, *pull up thread and deliver into the eye in tension disc.*
3. Thread take-up lever by guiding thread to back of lever and around to your left. Bring thread through slit by pulling it toward you and into eyelet.
4. Bring down and pass through the thread guard and guides.
5. Thread needle from front to back and draw the thread out about 2 inches (5 cm).

NOTE:

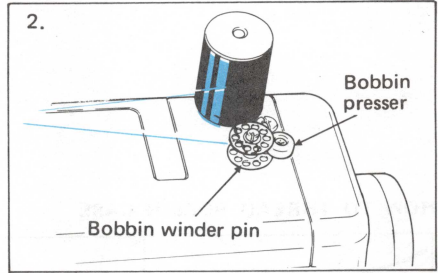
IF THE THREADING ORDER IS NOT CORRECT, THREAD BREAKAGE, STITCH SKIPPING AND WRINKLING OF FABRIC WILL OCCUR.

Lower (Bobbin) Thread

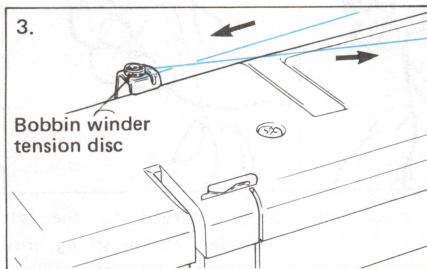
HOW TO WIND BOBBIN



1. Loosen stop motion knob by turning it toward you.



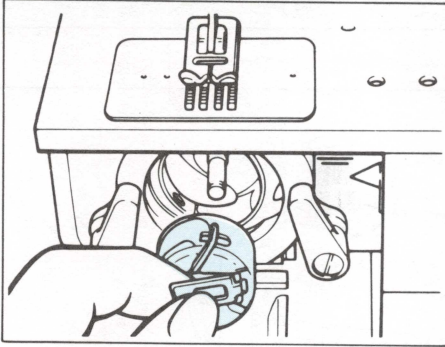
2. Place an empty bobbin on the bobbin winder pin.



3. Place thread spool on the spool pin and take thread through bobbin winder tension disc.

4. Wind the thread a few times around the bobbin clockwise and push the bobbin toward bobbin presser. Start the machine gently.
5. Bobbin stops winding when full.
6. Push the bobbin to the left and remove it. Tighten stop motion knob securely.

HOW TO REMOVE AND INSERT BOBBIN CASE



TO REMOVE BOBBIN CASE

1. Raise needle to its highest position.
2. Open the shuttle cover by turning it down.
3. Pull and open the latch of bobbin case.
4. Pull out bobbin case from the shuttle.

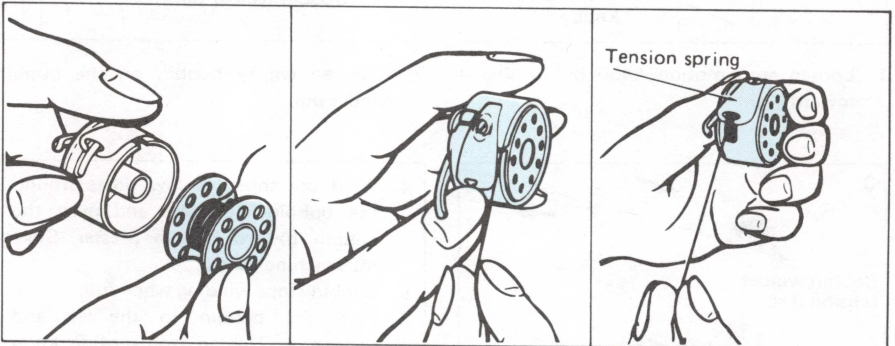
TO INSERT BOBBIN CASE

1. Raise needle to its highest position.
2. Holding bobbin case latch with metal finger of case pointing up, fit it into the notch at the top of shuttle race.
3. Push case back fully making sure the case is in the proper position and release the latch.

NOTE:

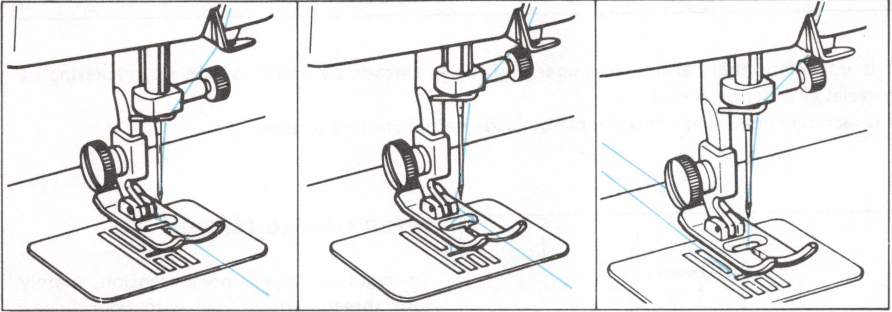
- (A) Four inches (10 cm) of thread should be drawn out and left out of case.
- (B) Latch of bobbin case should be open fully to prevent bobbin coming out of case.
- (C) If bobbin case is not placed back in machine properly it will come out from the shuttle immediately after starting to sew.

HOW TO THREAD BOBBIN CASE



1. Unwind about 4 inches (10 cm) of thread from the bobbin. Insert wound bobbin into bobbin case.
2. Pull trailing thread into the slot of case.
3. Pull thread to the left under tension spring until thread enters into delivery eye.

HOW TO PULL UP LOWER THREAD

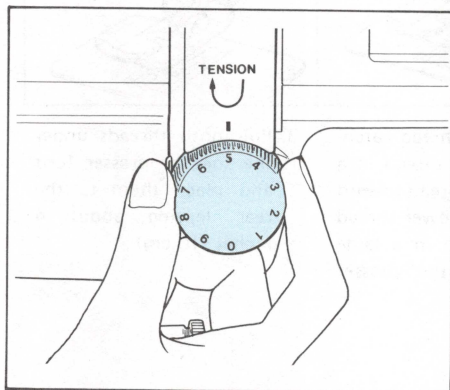


1. Raise needle and presser foot to the highest position. With left hand, hold the end of upper thread and with right hand, turn balance wheel toward you until the needle moves down and up again to its highest position.
2. Now upper thread catches the lower thread in a loop. Pull thread toward you so that lower thread will come up in a large loop from the presser foot.
3. Pull both threads under the toes of presser foot and place them to the rear leaving about 4 inches (10 cm).

Thread Tension

It is important that tension of upper and lower threads be equal to prevent puckering of material or other problems.

It is recommended that a test sample be made before starting to sew.



UPPER THREAD TENSION

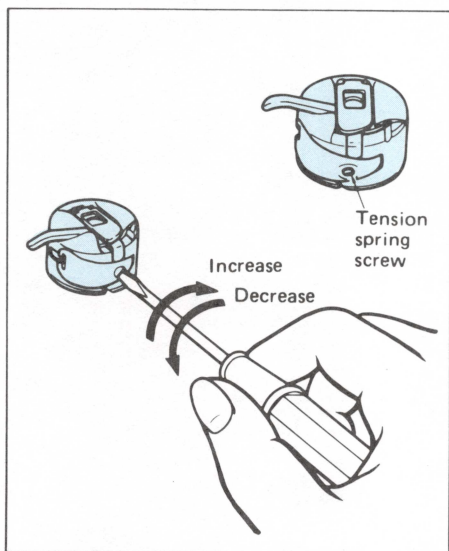
To regulate upper thread tension, merely turn thread tension dial with your fingers after lowering the presser foot.

THE HIGHER THE NUMBER, THE TIGHTER THE TENSION.

To increase tension: Turn dial to right to higher number.

To decrease tension: Turn dial to left to lower number.

NOTE: When sewing the zigzag stitch, it requires less upper tension than straight stitch.



LOWER THREAD TENSION

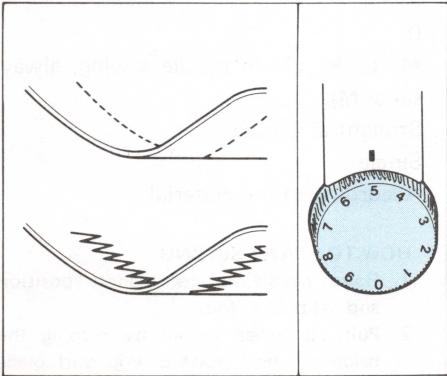
Lower thread tension has been already adjusted for general use at the factory before shipment, but when sewing extremely thin or heavy material, it also requires adjusting the lower thread tension.

To regulate the lower thread tension, turn small screw on the tension spring of the bobbin case with the small screw driver.

To increase tension: Turn the small screw clockwise very slightly.

To decrease tension: Turn the screw counterclockwise very slightly.

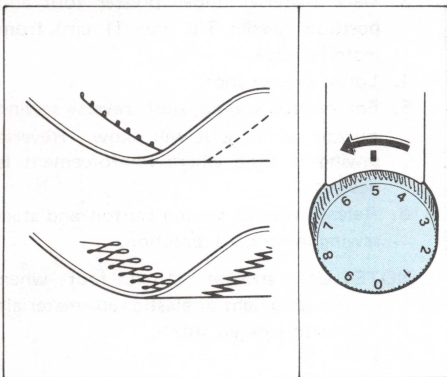
PERFECT STITCHING



Tension of upper and lower threads should be equal, just sufficiently strong to lock both threads in material.

Perfect stitching appears flat with no puckering of material.

INCORRECT STITCH (A)



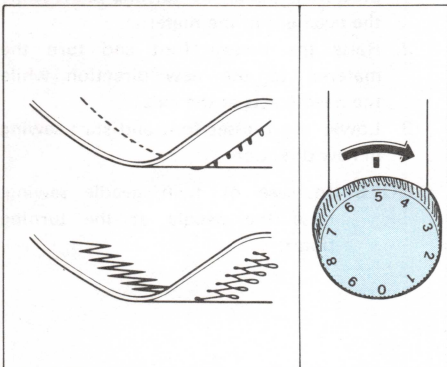
The upper thread lies on the surface of the material by pulling the lower thread up as shown.

This is caused by tight tension on the upper thread or loose tension on the lower thread.

To correct this, turn the upper thread tension dial to a lower number.

When perfect stitch cannot be obtained by only upper thread tension dial, adjust the bobbin tension accordingly.

INCORRECT STITCH (B)



The lower thread lies on the under surface of the material by pulling upper thread down as shown.

This is caused by loose tension on the upper thread or tight tension on the lower thread.

To correct this, turn the upper thread tension dial to a higher number.

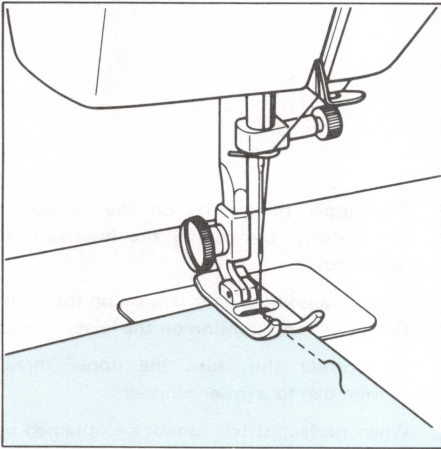
If perfect stitching cannot be obtained by changing upper thread tension, adjust the bobbin tension.

NOTE: It is recommended that test samples be made before starting to sew.

2

Straight Stitching

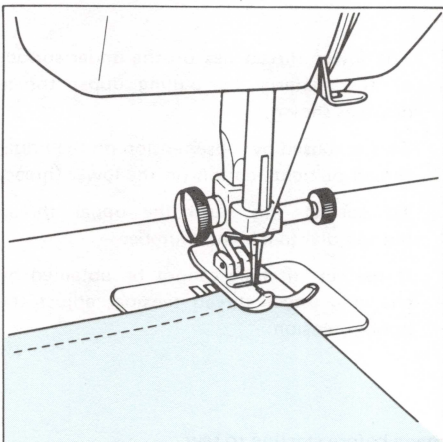
STITCH LENGTH	: F ~ 4
STITCH WIDTH	: 0
NEEDLE POSITION	: M. L. R. (Twin needle sewing, always set at M)
PRESSER FOOT	: Straight or Zigzag
NEEDLE	: Single
PRESSURE ADJUSTER	: According to the material



HOW TO START SEWING

1. Raise needle to its highest position and lift presser foot.
2. Pull up lower thread by turning the balance wheel toward you and place both upper and lower thread to the left.
3. Place material under presser foot and position needle 3/8 inch (1 cm) from material edge.
4. Lower presser foot.
5. For reverse sewing, push reverse sewing button as far as it will allow. Reverse sewing is used where reinforcement is needed.
6. Release reverse sewing button and start sewing in forward direction.

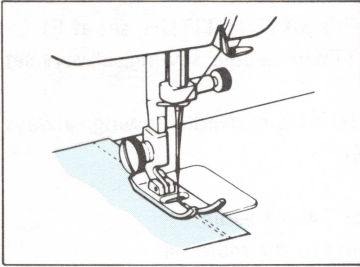
NOTE: Use straight stitch foot when sewing light or elastic type materials with straight stitch.



HOW TO CHANGE SEWING DIRECTION

1. Stop machine at the turning point while the needle is in the material.
2. Raise the presser foot and turn the material to the new direction while the needle acts as the axis.
3. Lower the presser foot and start sewing in new direction.

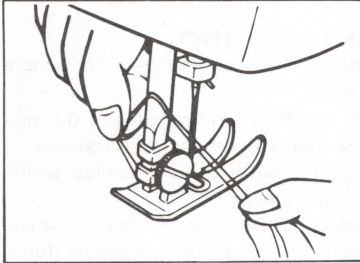
NOTE: In case of twin needle sewing, raise the needle at the turning point.



HOW TO FINISH YOUR SEWING PROJECT (REVERSE STITCHING)

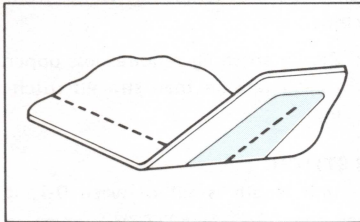
Reverse stitching is used to reinforce stitches near the edge of material or wherever reinforcement is needed.

1. This is done by stitching to the edge of material ... then stopping.
2. Depress reverse sewing button and stitch backwards for 3/8 inch (1 cm) from material edge.



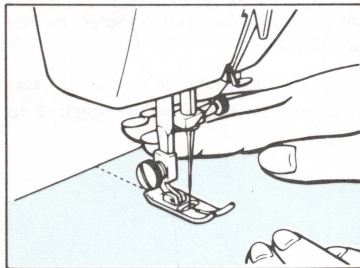
HOW TO REMOVE FINAL SEWING FROM MACHINE

1. Stop the machine.
2. Raise needle to its highest position and make sure that the thread take-up lever is also at its highest position.
3. Lift presser foot and pull out the material gently to the left side diagonally.
4. Cut both threads on the thread cutter.
5. Leave about 4 inches (10 cm) of threads between toes of the presser foot to the rear while the thread take-up lever is at the highest position, and you are ready to sew again without any chance of thread pulling out of the needle.



HOW TO SEW VERY THIN MATERIAL

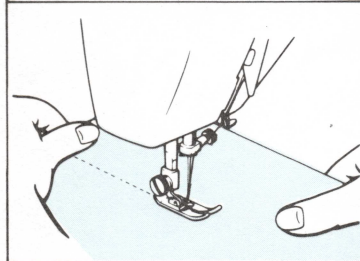
An underlay of thin paper will help to eliminate skipped stitches and puckering on very thin material.



HOW TO GUIDE YOUR MATERIAL

Do not pull the material. Let the machine do the work. Merely guide the material with your fingers in front of the presser foot as shown in the illustration.

If you pull the material, your needle might either bend or break.

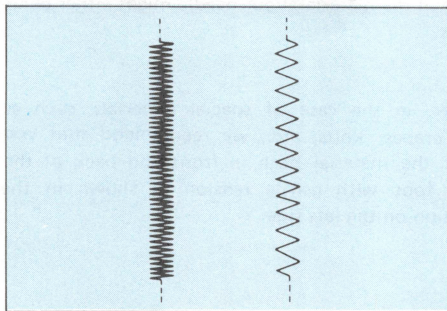
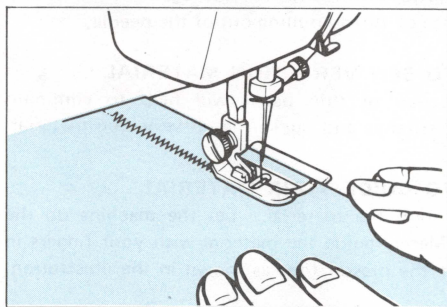
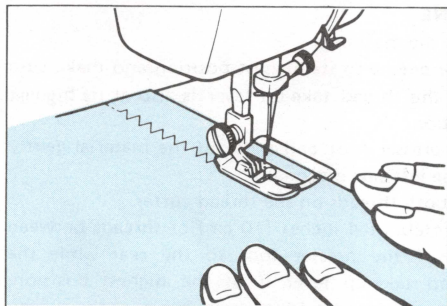


However, in the case of special materials, such as tricot, crepes, knits, etc., we recommend that you support the material both in front and back of the presser foot with gentle tension as shown in the illustration on the left side.

3

Zigzag Stitching

STITCH LENGTH	: 1 ~ 4 (For SATIN STITCH, set at F)
STITCH WIDTH	: 1 ~ 5 (Twin needle sewing, always set at 3)
NEEDLE POSITION	: M. L. R. (Twin needle sewing, always set at M)
PRESSER FOOT	: Zigzag
NEEDLE	: Single or Twin Needle
PRESSURE ADJUSTER	: According to the material



SIMPLE ZIGZAG STITCH

Set stitch length between 1-4 for simple zigzag stitch.

1. With stitch length to between 0-1 sew 5-6 *straight* stitches for reinforcement.
2. Set stitch width to your desired width and begin sewing.
3. Reset stitch width to "0" and set stitch length to between 0-1 to again reinforce stitches before removing work from machine.

NOTE: Zigzag stitching requires less upper thread tension than straight stitching.

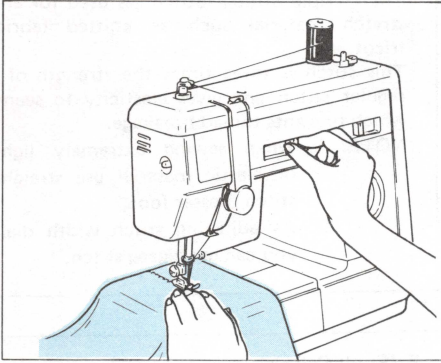
SATIN STITCH

When stitch length is set between 0-1, it produces the "SATIN STITCH" which is used for making fine buttonholes or decorative stitches.

NOTE: It is recommended that a *test sample* be made before starting to sew.

Decorative Stitches

STITCH LENGTH	: For SATIN STITCH set dial to between 0 ~ 1 (F)
STITCH WIDTH	: See Instruction Below
NEEDLE POSITION	: M. L. R.
PRESSER FOOT	: Zigzag
NEEDLE	: Single or Twin Needle
PRESSURE ADJUSTER	: According to the material



By using the "SATIN STITCH" as in the following instructions, various decorative stitches can be obtained.

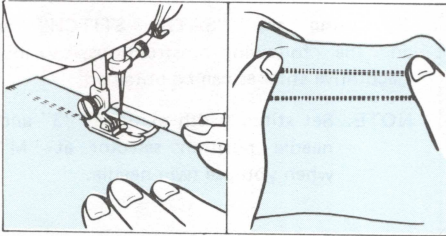
NOTE: Set stitch width at under "3" and needle position selector at "M" when you use twin needle.

Needle	Needle position	Patterns to be sewn	How to move stitch width
Single needle	L M R		At even speed from 0 to 5 (3) and from 5 (3) to 0. Repeat this.
Twin needle	M		
Single needle	L M R		Almost the same manner as above but make round patterns.
Twin needle	M		
Single needle	L M R		Slowly from 0 to 5 (3) and quickly back to 0. Repeat the movement.
Twin needle	M		

* NOTE: The number in the bracket represents the twin needle sewing.

Triple Stretch Stitch

PATTERN DIAL	:	2 (Triple Stretch Stitch)
STITCH LENGTH	:	4
STITCH WIDTH	:	0
PRESSER FOOT	:	Zigzag or Straight (See Note 1)
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material



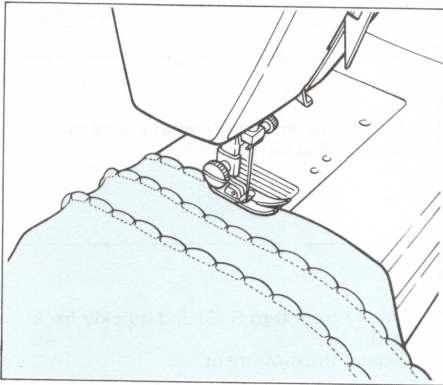
The "Triple Stretch Stitch" is used for any stretch material such as knitted fabric, tricot, etc.

This stitch is three times the strength of a regular stitch and gives elasticity to seams which prevents thread breakage.

- NOTE: 1. When sewing extremely light or elastic material use straight stitch presser foot.
2. As adjusting stitch width dial, you can get zigzag stitch.

Shell Stitch

PATTERN DIAL	:	5 (Shell Stitch)
STITCH LENGTH	:	4
STITCH WIDTH	:	5
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material

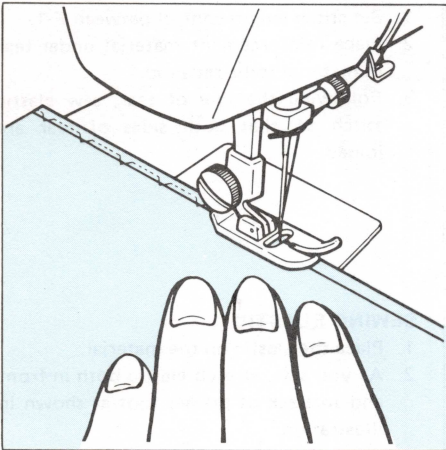


This stitch can be used for sewing a picoted edge on a light material.

1. Sew material on bias, placing material under the presser foot so that straight stitches are sewn on seam line and zigzag stitches are sewn slightly over seam edge.
2. This work requires a little tighter upper thread tension than normal.
3. Sew at slow speed.
4. Edge of material will be picoted.

Blind Stitch

PATTERN DIAL	: 3 (Blind Stitch)
STITCH LENGTH	: 1 ~ 2
STITCH WIDTH	: 3 ~ 5
PRESSER FOOT	: Zigzag
NEEDLE	: Single
PRESSURE ADJUSTER	: According to the material



BLIND STITCH

1. Thread used should be the same color as material used.
2. Fold material to size of hem desired and then fold back as shown in Figure A leaving 1/5 inch (5 mm) overlap at edge.
3. Sew on fold as in Figure B.
4. When material is unfolded you will have a blind stitched hem as in Figure C.

Fig. A

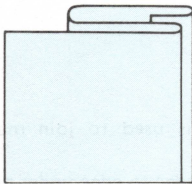


Fig. B

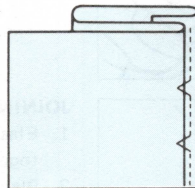
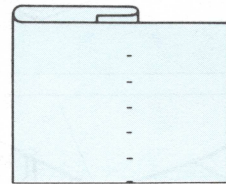
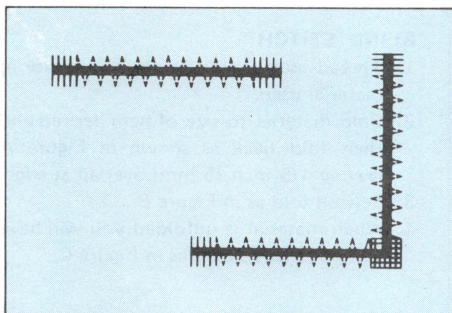


Fig. C



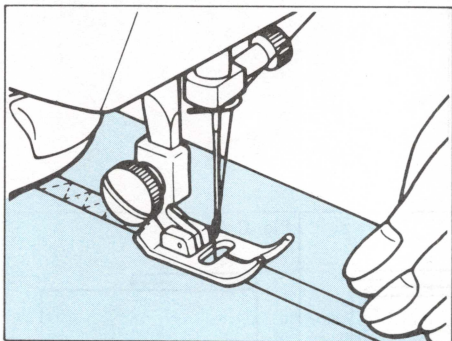
Elastic Stitch

PATTERN DIAL	: 4 (Elastic Stitch)
STITCH LENGTH	: 1 ~ 2
STITCH WIDTH	: 3 ~ 5
PRESSER FOOT	: Zigzag
NEEDLE	: Single
PRESSURE ADJUSTER	: According to the material



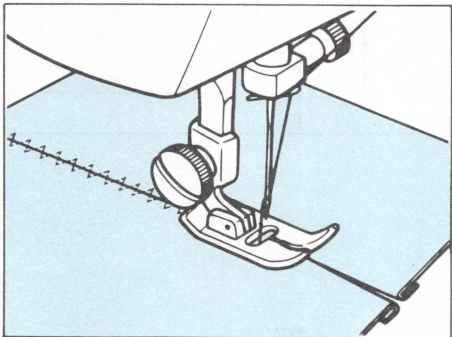
MENDING

1. Set stitch length control between F-1.
2. Place reinforcement material under tear in material to be repaired.
3. Following the line of tear, sew elastic stitch so that both sides of tear are joined.



SEWING ELASTIC

1. Place the elastic on the material.
2. As you sew, stretch elastic both in front and in back of presser foot as shown in illustration.



JOINING STITCH

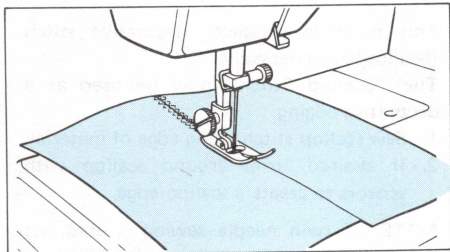
1. Elastic stitch is used to join material together.
2. Place material edge to edge under presser foot.
3. Sew together using elastic stitch. Care should be taken to keep the two material edges close together.

SEWING KNITS

Knitted garments are sewn by this elastic stitch effectively. Use nylon thread, and stitch will be invisible.

Link Stitch

PATTERN DIAL	:	6 (Link Stitch)
STITCH LENGTH	:	4
STITCH WIDTH	:	3 ~ 5
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single or Twin
PRESSURE ADJUSTER	:	According to the material

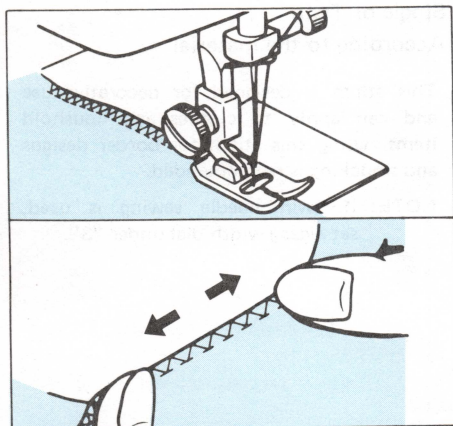


This stitch is ideal for smocking and it is useful for mending, overcasting and attaching elastic, stretch lace and blanket binding. Use this versatile stitch to create decorative designs on fabrics that stretch.

NOTE: If twin needle sewing is used, set zigzag width dial at under "3".

Elastic Overlock Stitch

PATTERN DIAL	:	7 (Elastic Overlock Stitch)
STITCH LENGTH	:	4
STITCH WIDTH	:	4
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material

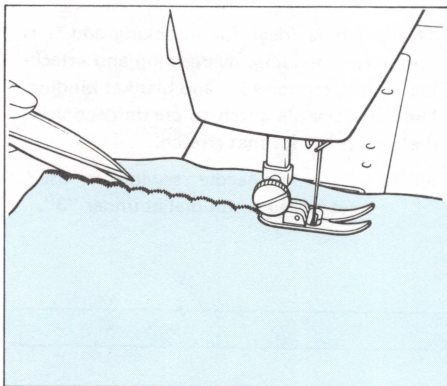


For stretch materials, an elastic overlock stitch can be made as follows:

Place edge of material under presser foot so that left side of straight stitch and right side of zigzag stitch appears and sew in this position.

Scallop Stitch

PATTERN DIAL	:	8 (Scallop Stitch)
STITCH LENGTH	:	F
STITCH WIDTH	:	3 ~ 5
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single or Twin Needle
PRESSURE ADJUSTER	:	According to the material



This machine produces decorative stitch (Scallop) automatically.

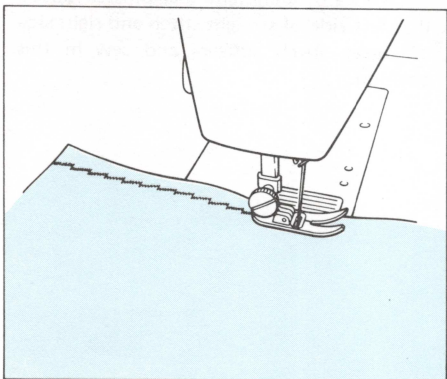
The "Scallop Stitch" may be used as a decorative edging.

1. Sew scallop stitch along edge of material.
2. If desired, trim around scallop with scissors to create a scallop edge.

NOTE: If twin needle sewing is used, set zigzag width dial at under "3".

Lightning Stitch

PATTERN DIAL	:	9 (Lightning Stitch)
STITCH LENGTH	:	F
STITCH WIDTH	:	3 ~ 5
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single or Twin
PRESSURE ADJUSTER	:	According to the material



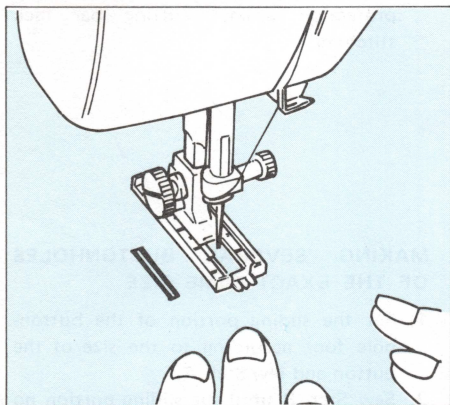
This stitch is designed for decorative use and can apply to clothes and household items. Using this stitch for border designs and smocking is recommended.

NOTE: If twin needle sewing is used, set zigzag width dial under "3".

6 Buttonholes and Button Sewing

Buttonholes

PATTERN DIAL	: A. B. C. D.
STITCH LENGTH	: F (Fine) ~ 3 (Coarse)
STITCH WIDTH	: See Instruction Below
NEEDLE POSITION	: M
PRESSER FOOT	: Buttonhole Foot
NEEDLE	: Single
PRESSURE ADJUSTER	: According to the material



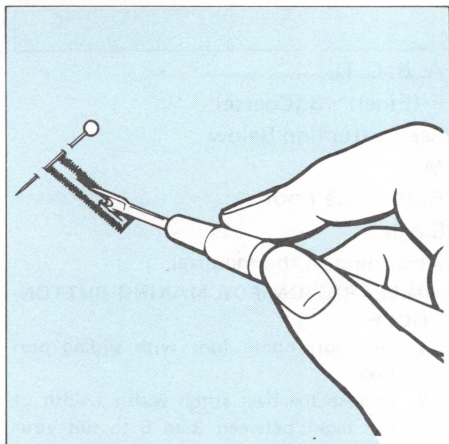
PREPARATION FOR MAKING BUTTONHOLE

1. Use buttonhole foot with sliding portion.
2. Choose the best stitch width (width of bar tuck) between 3 to 5 to suit your work.
3. Using tailor's chalk, mark the length of buttonhole you require on the material.
4. Attach the buttonhole foot and push the sliding portion toward rear until it stops.
5. Place the material under the presser foot so that front end of bar tuck can be sewn first.

NOTE: We suggest you to make a test sample before actual sewing.

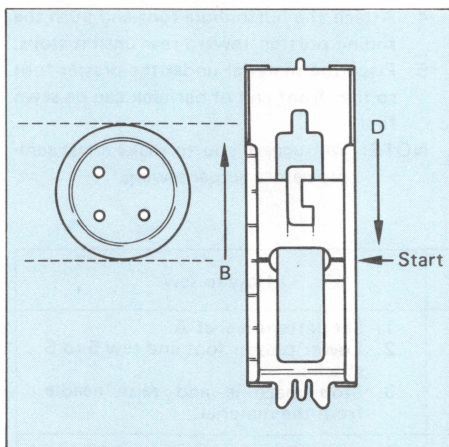
PROCEDURE OF MAKING BUTTONHOLE

Step	Sewing portion	Position of pattern dial	How to sew
Step A (Front end of bar tuck)			<ol style="list-style-type: none"> 1. Set pattern dial at A. 2. Lower presser foot and sew 5 to 6 stitches. 3. Stop machine and raise needle from the material.
Step B (Left side row)			<ol style="list-style-type: none"> 1. Turn the dial to the right and set at B. 2. Sew predetermined length. 3. Stop machine and raise the needle.
Step C (Back end of bar tuck)			<ol style="list-style-type: none"> 1. Turn the dial to the left and set at C (same position as A). 2. Sew 5 to 6 stitches. 3. Stop machine and raise the needle.
Step D (Right side row)			<ol style="list-style-type: none"> 1. Set the dial at D. 2. Sew the right side row until the needle reaches position D.



HOW TO SECURE STITCHING AND CUT MATERIAL FOR BUTTONHOLE.

1. To secure stitching, turn the material 90 degrees counter-clockwise and sew 5-6 *straight stitches*.
2. Remove from machine. Cut opening in buttonhole with seam ripper tool, taking care not to cut through any stitching.
3. It is recommended that pins are placed across both ends of buttonhole as protection against cutting bar tack stitching.

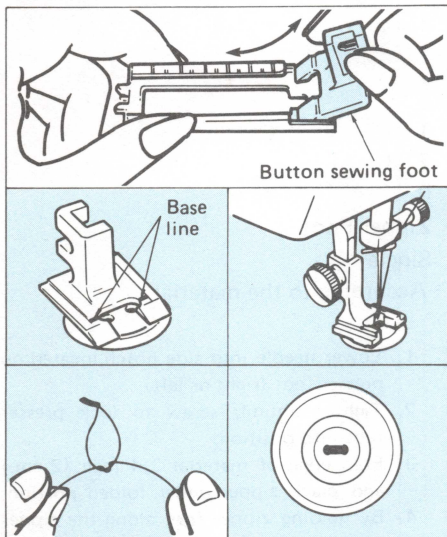


MAKING SEVERAL BUTTONHOLES OF THE EXACT SAME SIZE

1. Set the sliding portion of the buttonhole foot according to the size of the button and sew Step A.
2. Sew Step B until the sliding portion no longer moves.
3. Sew Step C.
4. Sew Step D until the sliding portion returns to Step A.
5. Repeat 1 through 4 for each additional buttonhole of the same size, using the same starting point.

Button Sewing

PATTERN DIAL	:	1
STITCH LENGTH	:	0
STITCH WIDTH	:	This dial is used to control distance between holes in button.
NEEDLE POSITION	:	L or R
PRESSER FOOT	:	Button Sewing Foot
NEEDLE	:	Single
PRESSURE ADJUSTER	:	Middle

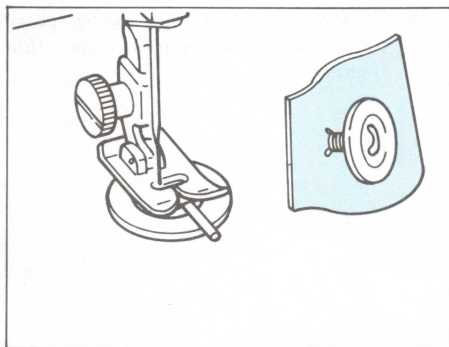


1. Removing the sliding portion of button-hole foot, you will have a button sewing foot.
To remove the sliding portion, slide it to right and pull the shank upward with holding metal legs as illustrated.
2. Place button between the presser foot and the material, making sure that holes of button fall in line with the base line of button sewing foot.
3. Set stitch width control to regulate distance of stitch between the holes in the button. Lower presser foot and check to see that needle enters holes in button properly.
4. At slow speed sew approximately 10 stitches.
5. Remove from machine. Cut upper and lower threads and with normal sewing needle sew threads through to back of button and tie.

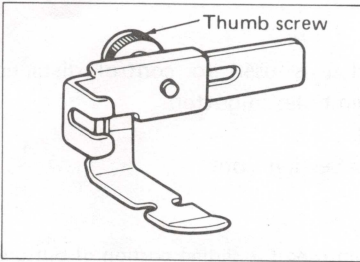
BUTTON FITTING WITH THREAD SHANK

You will often need the thread shank of button for heavier materials.

1. Place a needle on the button as illustrated and sew as regular method of button fitting.
2. After about 10 stitches, remove the fabric from the machine, leaving upper thread little longer in order to form a thread shank.
3. Pull upper thread between the button and the material through the hole of button and upper thread tightly around the stitches.
4. Fasten the thread ends.



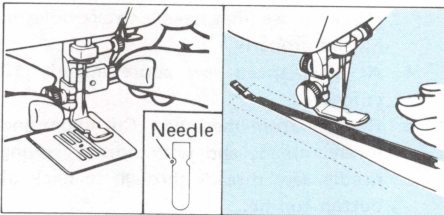
Zipper Insertion



Zipper foot is used to sew various types of zippers and can easily be positioned to right or left side of needle. When zipper is being sewn at right side of needle, position zipper foot by loosening thumb screw and sliding zipper foot to the left.

When the zipper is being sewn at left side of needle, position zipper foot by loosening thumb screw and sliding zipper foot to the right.

PATTERN DIAL	: 1
STITCH LENGTH	: 2–3
STITCH WIDTH	: 0
PRESSER FOOT	: Zipper Foot
NEEDLE	: Single
PRESSURE ADJUSTER	: According to the material

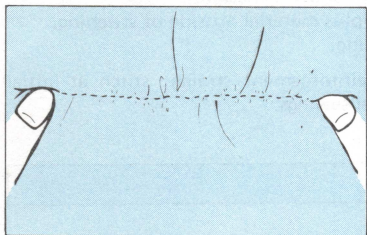


1. Lower needle into side notch located on presser foot (right or left).
2. Tighten thumb screw to lock presser foot into position.
3. Fold edge of material 3/4 inch (2 cm.) and place zipper under folded portion.
4. By guiding zipper foot along the zipper teeth you will stitch close to edge of zipper in correct position.
5. To sew opposite side of zipper loosen thumb screw and position zipper foot (right or left).

8 Various Other Stitches

Gathering

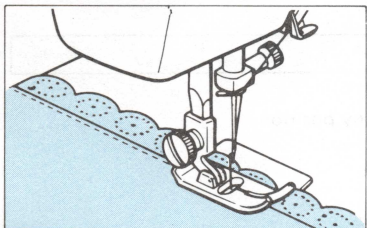
PATTERN DIAL	:	1
STITCH LENGTH	:	4
STITCH WIDTH	:	0
PRESSER FOOT	:	Straight
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material



1. Loosen upper thread tension (set dial at about '2') so that lower thread lies on the under side of material.
2. Sew a single row or multiple rows of straight stitching.
3. Pull lower thread(s) to gather up material.

Attaching Lace

PATTERN DIAL	:	1
STITCH LENGTH	:	2-4
STITCH WIDTH	:	0
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material

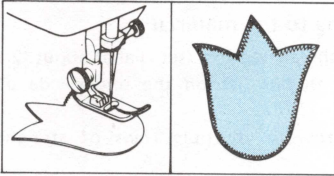


1. Place lace under material letting it overlap edge 1/4 inch (5 mm).
2. Place under presser foot and sew.

NOTE: If satin stitch or a decorative stitch is used to sew lace, it will add an decorative touch.

Appliqueing

PATTERN DIAL	:	1
STITCH LENGTH	:	F-2
STITCH WIDTH	:	1-3
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material

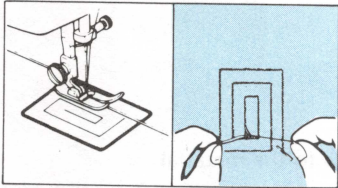


1. Baste cut design to the material.
2. Sew carefully following design.
3. Cut away surplus material outside of stitching.
4. Remove basting.

NOTE: Make reinforcement straight stitch at initial and final sewings.

Cording

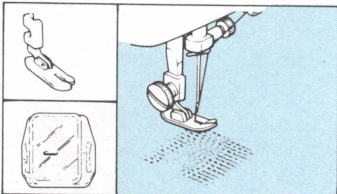
PATTERN DIAL	:	1
STITCH LENGTH	:	F-2
STITCH WIDTH	:	In accordance with thickness of cord being used, set stitch width.
PRESSER FOOT	:	Zigzag
NEEDLE	:	Single
PRESSURE ADJUSTER	:	According to the material



1. Set stitch width dial.
2. Place cord on fabric to be sewn.
3. Lower presser foot making sure cord is centered and sew using zigzag stitch. Guide cord by hand to where you desire it.

Darning

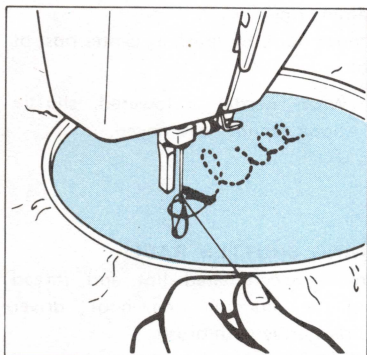
PATTERN DIAL	:	1
STITCH LENGTH	:	Set at any position
STITCH WIDTH	:	0
PRESSER FOOT	:	Straight
NEEDLE PLATE	:	Zigzag
NEEDLE	:	Single
PRESSURE ADJUSTER	:	Up
OTHERS	:	Darning plate



1. Place darning plate on needle plate.
2. Place material with area to be darned under presser foot.
3. Lower presser foot.
4. Stitch by slowly drawing material back and forth.
5. Repeat until area to be darned is completely filled in.

Monogramming and Embroidering, Using Embroidery Hoop

PATTERN DIAL	:	1
STITCH LENGTH	:	Set at any position
STITCH WIDTH	:	0—5
PRESSER FOOT	:	Removed
NEEDLE	:	Single
OTHERS	:	Darning plate



PREPARATION FOR MONOGRAMMING AND EMBROIDERING

1. Place darning plate on needle plate.
2. Set your sewing machine as per above instructions.
3. Draw lettering (for monogramming) or design (for embroidering) on the right side of the material.
4. Stretch work between embroidery hoops as firmly as possible.
5. Place the work under the needle and lower presser bar.
6. Pull lower thread up through the work as starting position by turning balance wheel and make a few holding stitches.
7. Hold the hoop with thumb and forefingers of both hands while pressing the material with middle and third fingers and supporting the outside of hoop with smaller finger.



MONOGRAMMING

1. Sew, moving hoop slowly along the lettering at an even rate of speed.
2. Secure with a few straight stitches.

(NOTE: These instructions also apply to embroidering)

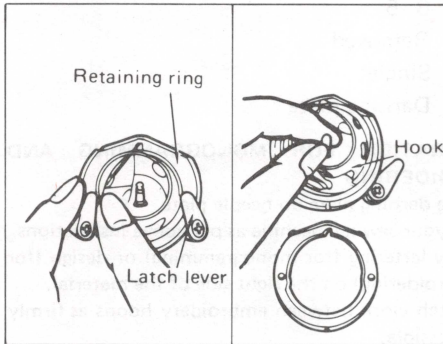
EMBROIDERING

1. Stitch outline of design by moving embroidery hoop accordingly.
2. Fill in design stitch from outline of design to inside and from inside to edge of outline alternately until design is completely filled in. Keep stitching close together.

NOTE: A long stitch is made by moving embroidery hoop rapidly and a short stitch is made by moving it slowly.

Cleaning

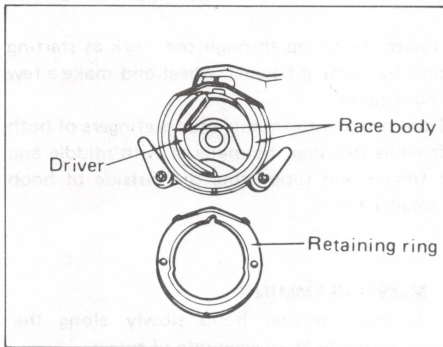
The sliding parts of the shuttle race should be cleaned regularly so that lint does not accumulate.



HOW TO REMOVE THE SHUTTLE HOOK

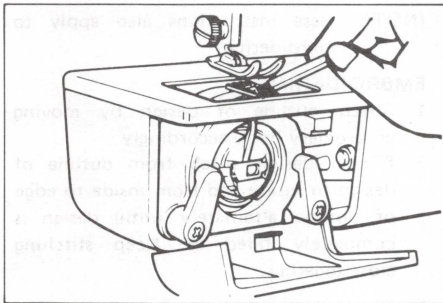
1. Raise needle to its highest position.
2. Open shuttle cover.
3. Take out bobbin case.
4. Push latch levers outside and remove retaining ring.
5. Remove hook by grasping center post of hook.

NOTE: When needle is lowered, shuttle hook cannot be removed.



CLEANING SHUTTLE RACE

1. Remove accumulated lint and thread from the retaining ring, hook, driver and race body with brush.
2. A cloth dampened with machine oil should be used to wipe shuttle race clean.
3. Clean shuttle hook in same manner as above.
4. Reassemble.



CLEANING FEED DOG

1. Take out needle plate.
2. Clean upper part of feed dog and shuttle race body with brush.

How to Oil Sewing Machine

For smooth and silent operation, the moving parts of the machine should be oiled periodically. (See diagram below.)

OIL 1 to 2 DROPS TO THE POINTS MARKED

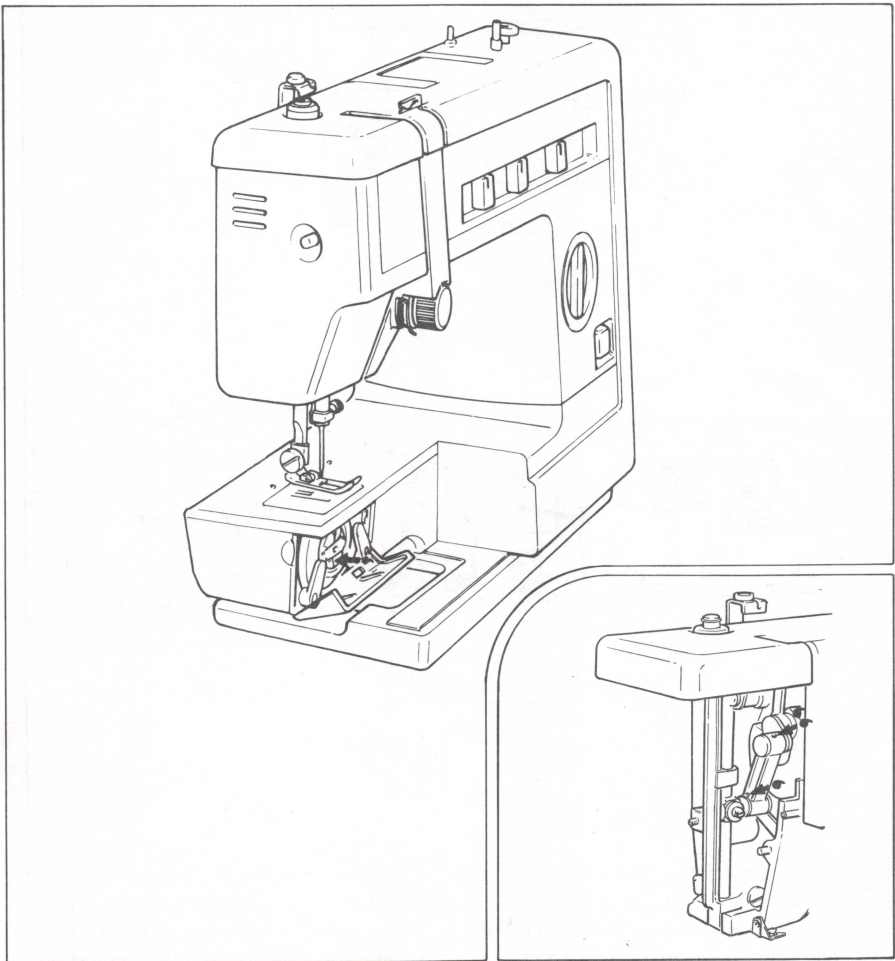


OIL 3 to 4 DROPS TO THE POINTS MARKED

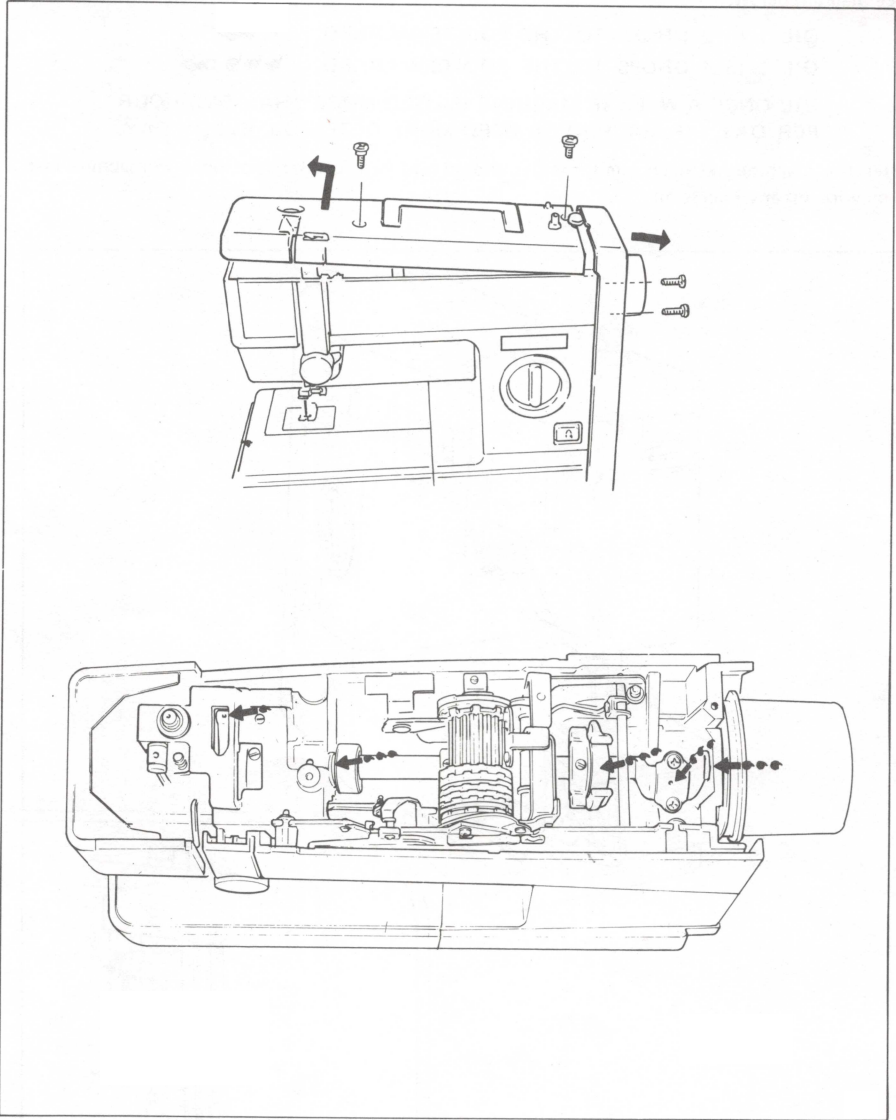


OIL ONCE A WEEK IF MACHINE IS USED MORE THAN ONE HOUR PER DAY. IF MACHINE IS USED MORE OFTEN OIL EVERY DAY.

After the machine has been oiled, remove thread and with presser foot up, run machine fast. Then wipe up any excess oil.



Occasionally, remove the top cover by loosening two screws on it and apply machine oil to oiling points as illustrated. Also, apply machine oil to inner parts of free-arm as illustrated by loosening two screws.



NOTE: If machine has not been used for a long period of time, oil tends to coagulate and operation of machine will not be smooth. Apply a few drops of oil to oiling points, and with presser foot up run machine for a few minutes. Then wipe up any excess oil.

Check List for Better Sewing

Check this list if you are having the following problems:

IF MATERIAL DOES NOT FEED

1. Darning plate is on needle plate.
2. Needle plate is out of position.
3. Stop motion knob is loose.
4. Stitch length regulator is at 0.

IF NEEDLE BREAKS

1. Needle is inserted incorrectly.
2. Needle clamp screw is loose.
3. Bent needle is used.
4. Upper threading is not correct.
5. Upper thread tension is too tight.
6. Wrong needle and thread for cloth being sewn are used.
7. Material pulled excessively.

IF LOOPS FORM ON FABRIC

1. Tension of upper or lower thread is wrong.

IF MATERIAL SHOULD PUCKER

1. Thread tension is too tight.
2. Threading is not correct.
3. Thread is caught by something.
4. Lower thread is unevenly wound on bobbin.

IF UPPER THREAD BREAKS

1. Upper threading is not correct.
2. Needle eye is not sharp.
3. Upper thread is too large for needle eye.
4. Upper thread tension is too tight.
5. Needle is inserted incorrectly.

IF LOWER THREAD BREAKS

1. Lower thread is entangled in shuttle.
2. Lower thread tension is too tight.
3. Lower threading is not correct.

IF MACHINE SKIPS STITCHES

1. Needle is not sharp and straight.
2. Needle is inserted incorrectly.
3. Wrong needle and thread for cloth being sewn are used.
4. Upper threading is not correct.
5. Lint is clinging to under-side of needle plate.

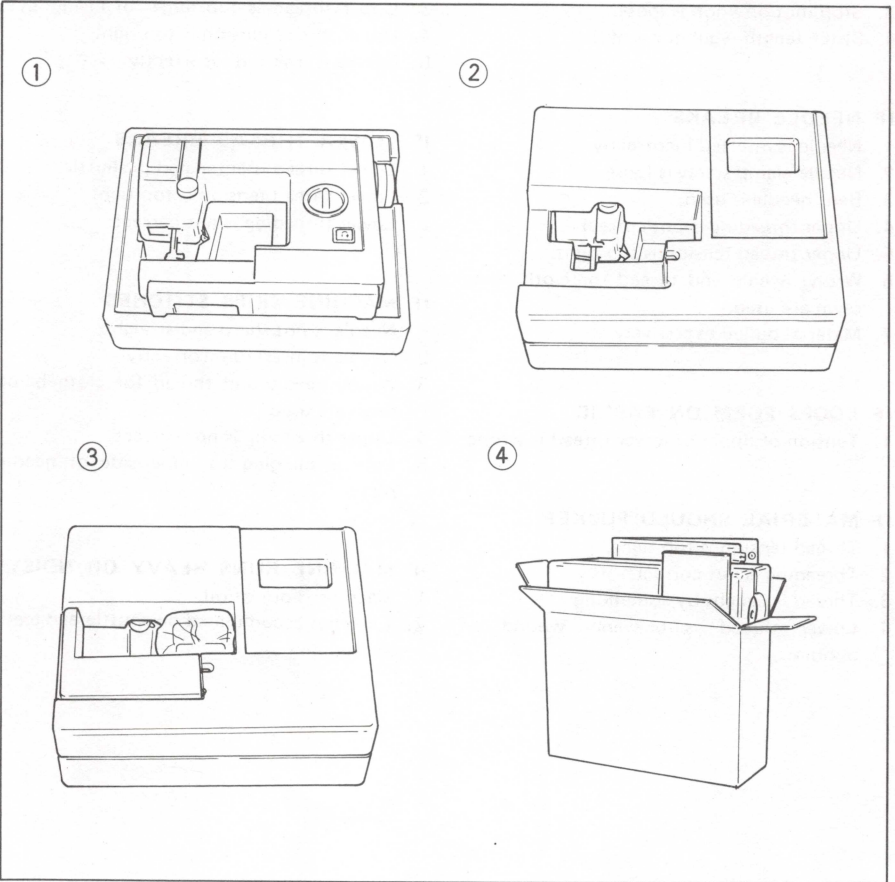
IF MACHINE RUNS HEAVY OR NOISY

1. Machine is out of oil.
2. Lint has accumulated on shuttle and teeth of feed dog.

Repacking the Machine

Keep the carton and packing material for future use in the event it becomes necessary to reship the sewing machine.

(Improper packing or improper packing material could result in damage during shipping.)
Instructions for repacking the machine are illustrated below.



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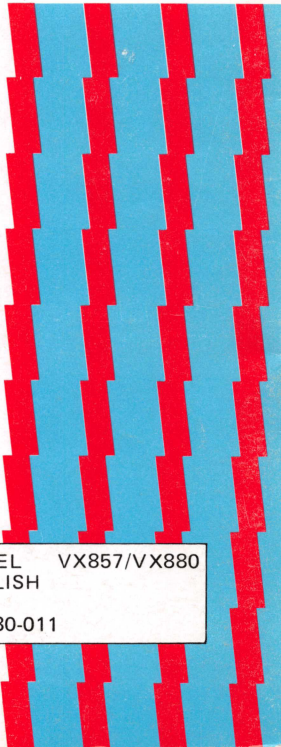
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