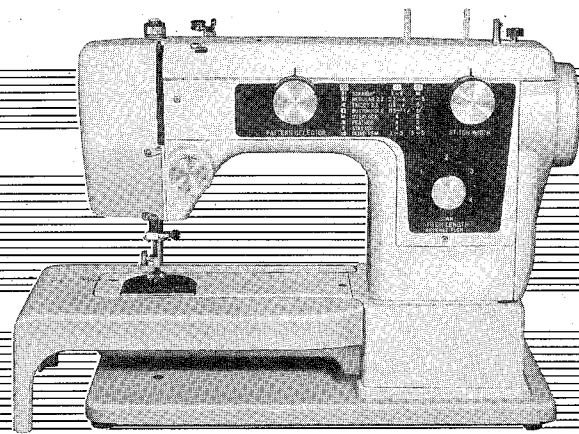


# INSTRUCTION BOOK



## IMPORTANT

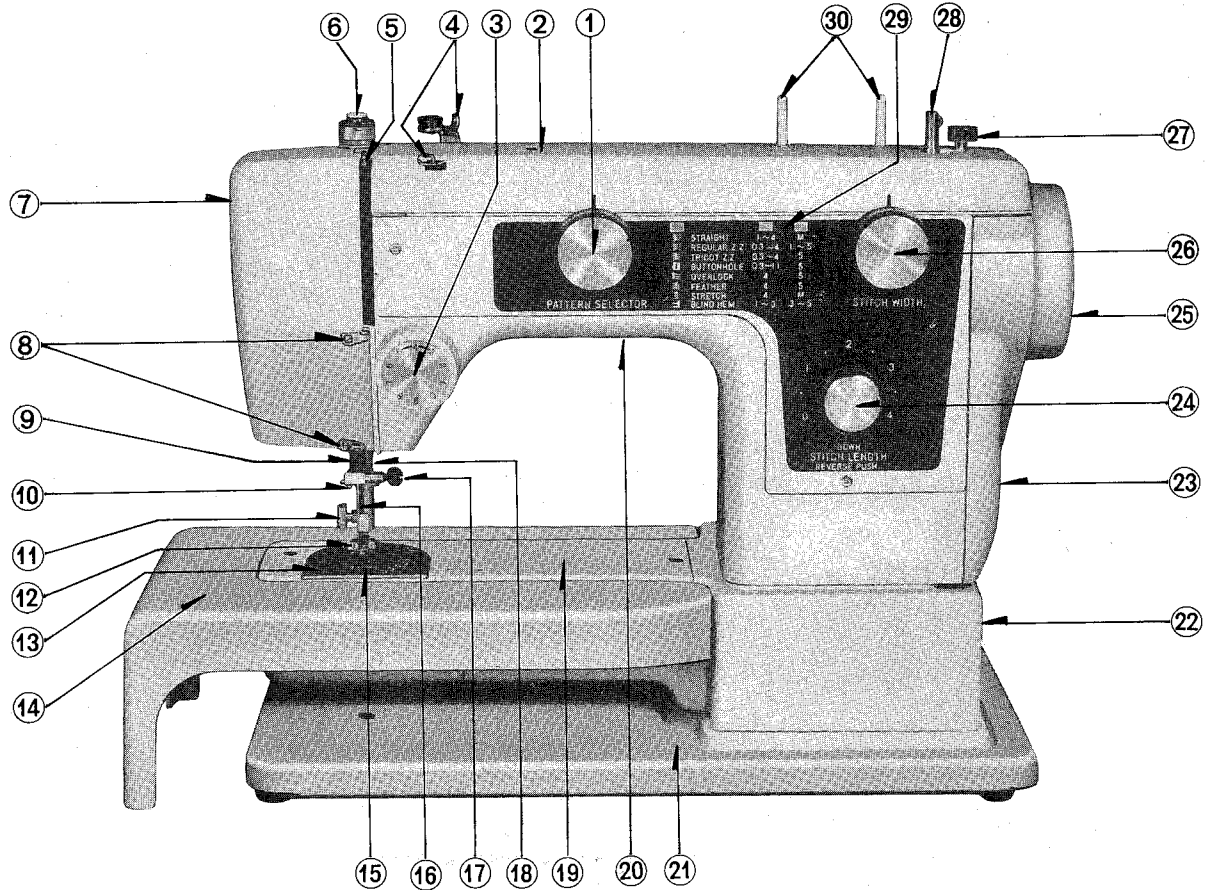
1. You should be cautious because of the up-and-down movement of the needle; you should watch the sewing machine permanently when sewing.
2. When the needle, the presser foot, the bobbin or other parts are being changed, during a work break or during maintenance work, the machine should be turned off, i.e. put out of circuit by pulling the plug out of the terminal at the motor or the wall socket.
3. Do not place anything on the foot controller, otherwise, the machine may start inadvertently, or the foot controller and the motor may be overheated.
4. The permissible maximum power of the lamp must be 15 watts.
5. When you use your sewing machine for the first time, place a piece of cloth under the presser foot and run the machine without thread for a few minutes and then wipe off oil on the surface.

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# NAMES OF PARTS



## NAMES OF PARTS

- ① Pattern selector knob
- ② Top cover
- ③ Thread tension regulator
- ④ Top cover thread guides
- ⑤ Thread take-up lever
- ⑥ Pressure regulator
- ⑦ Face plate
- ⑧ Face plate thread guides
- ⑨ Needle bar
- ⑩ Needle bar thread guide
- ⑪ Thumb screw
- ⑫ Presser foot
- ⑬ Needle plate
- ⑭ Detachable sewing table
- ⑮ Feed dog
- ⑯ Needle
- ⑰ Needle clamp screw
- ⑱ Presser bar
- ⑲ Free arm
- ⑳ Arm
- ㉑ Base plate
- ㉒ Bed
- ㉓ Belt cover
- ㉔ Stitch length regulator knob (Reverse feed knob)
- ㉕ Balance wheel
- ㉖ Stitch width regulator knob
- ㉗ Bobbin winder stopper
- ㉘ Bobbin winder spindle
- ㉙ Control panel
- ㉚ Spool pins

## **DETACHABLE SEWING TABLE**

For ordinary sewing, detachable sewing table will make your work easier.

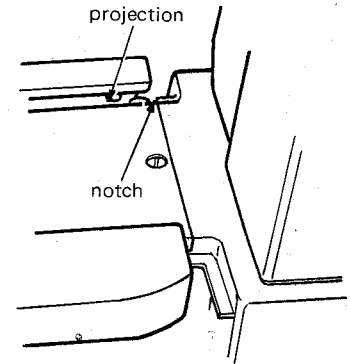
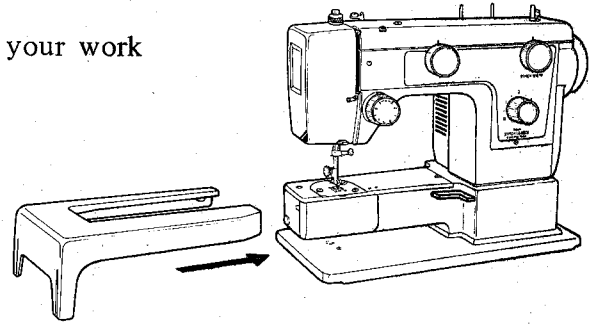
### **TO DETACH**

Lift the end of table near the projection and slide it out.

### **TO ATTACH**

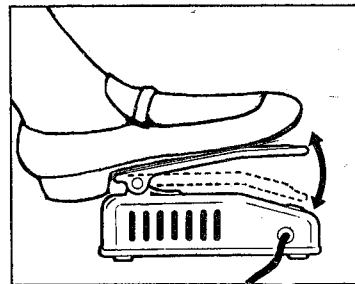
Slide the table over free arm of sewing machine until the projection of sewing table catches the corresponding notch of the free-arm.

**Note:** When sewing tubular materials, detach the sewing table for free arm sewing.



## TO USE FOOT CONTROL

Place the foot control in such a position that your foot rests comfortably on it. Press the foot control as you turn the balance wheel towards you with your right hand. You can control the speed of the machine with foot control – light pressure giving low speed and harder pressure higher speed.

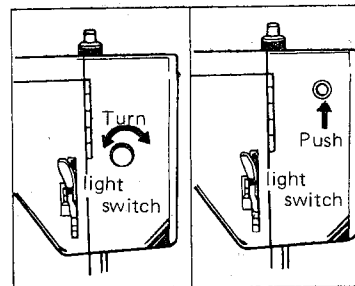


**CAUTION:** Do not place anything on foot controller, otherwise, the machine may start inadvertently or foot controller may be overheated.

## TO USE SEWLIGHT

### \*Switch

The light switch is found on the back of face plate.

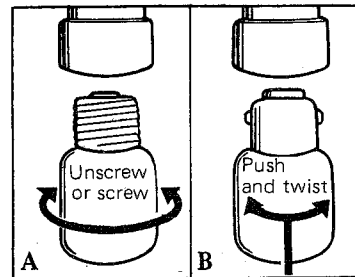


### \*Changing the Light Bulb

(A) Unscrew or screw.

(B) Push and twist.

\*Use a 15-watt bulb.





## NEEDLE AND THREAD CHART

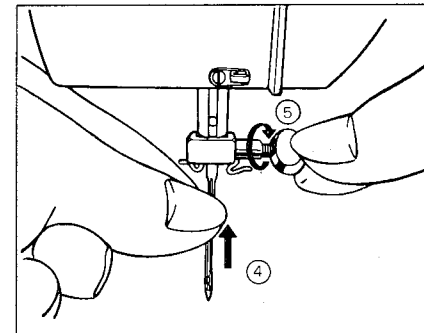
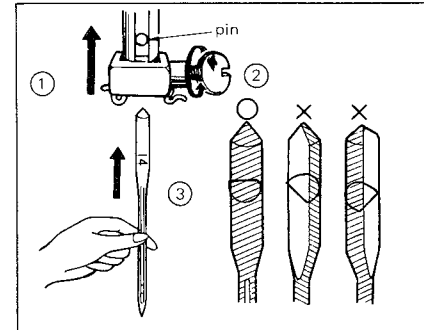
FABRIC		THREAD	NEEDLE
WEIGHT	TYPE		
FINE or LIGHT	Fine lace, organdie, chiffon, silk, lawn, crepe, tulle, voile, fine linen, georgette	Silk thread 50 Fine polyester thread Fine cotton thread	#9 or #11
LIGHT or MEDIUM	SYNTHETIC FABRICS: jersey, fine knit, bonded knits, nylon tricot	Silk thread 50 Polyester thread 50 Mercerized cotton thread 50 ~ 60	Blue tip scarf needle
LIGHT or MEDIUM	cotton, poplin, taffeta, linen, satin	Silk thread 50 Polyester thread 50 Mercerized cotton thread 50 ~ 60	#11 or #14
MEDIUM	dress wool, shirtings, crimplene, gingham, suitings, glass fibre, percale	Mercerized cotton thread 50 ~ 60 Polyester thread 50	#14
MEDIUM HEAVY or HEAVY	denim, tweed, flannel, corduroy, terry cloth, bonded fabrics, coatings, overcoatings, gabardine	Polyester thread 40 ~ 50 Heavy-duty Mercerized cotton 40 ~ 50	#14, #16 or #18

Note: The blue tip scarf needle (as shown in the page 26) is effective in preventing skipped stitches with stretch materials.

## TO INSERT NEEDLE

Insert the needle in the order of ①, ②, ③, ④ and ⑤.

- ①. Raise the needle bar to its highest point.
- ②. Loosen the needle clamp screw.
- ③. Turn the flat side of the needle to the back.
- ④. Insert the needle as high as it will go until it hits the pin.
- ⑤. Tighten the needle clamp screw firmly.



## \*TO CHOOSE CORRECT NEEDLE


The needle should be straight and the point of needle should not be bent or blunt.

Select the large eye enough to permit the thread smooth passing.








## PATTERN SELECTOR


Multiple utility stitches and buttonhole sewing are controlled by stitch pattern selector dial.


Pattern symbol “  ” is for straight and manual zigzag stitches.

This type of stitches also can be used for button sewing, hemming, zipper sewing, quilting, embroidery and etc.

Symbol “  ”, “  ” and “  ” is for buttonhole sewing.

Pattern symbol “  ” is for overcasting stitch and “  ” is for feather stitch.

Symbol “  ” is for triple lock stretch stitch.

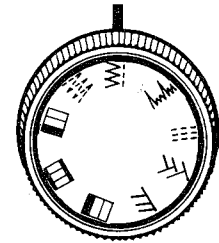
Pattern symbol “  ” is for blind stitch and twin needle stitch.

## STITCH WIDTH REGULATOR

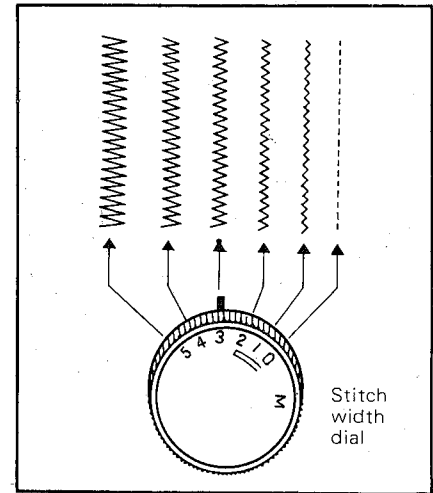
The width of zigzag stitch can be adjusted by turning the stitch width regulator dial.

The mark “M” is for straight stitching, chain stitching, sewing triple lock stretch stitch and using hemmer. Numerals from “0” to “5” on the dial indicate the width of zigzag stitch.

The lower the numeral, the narrower the stitch width.



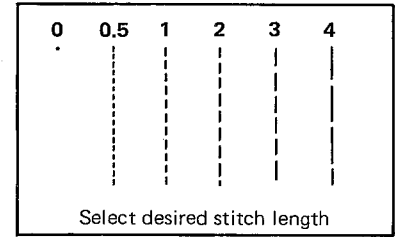
Pattern selector



## TO REGULATE LENGTH OF STITCH AND DIRECTION OF FEED

To regulate stitch length:

Set the line on the stitch length regulator knob against desired number on the stitch length indicator. The numerals represent the stitch length.

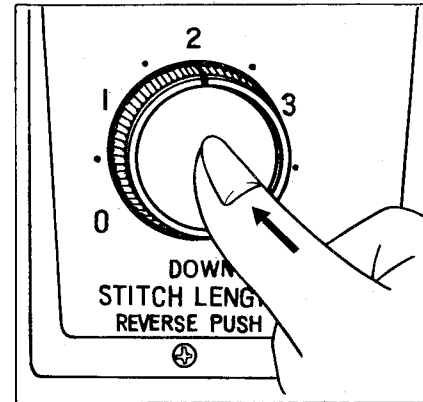
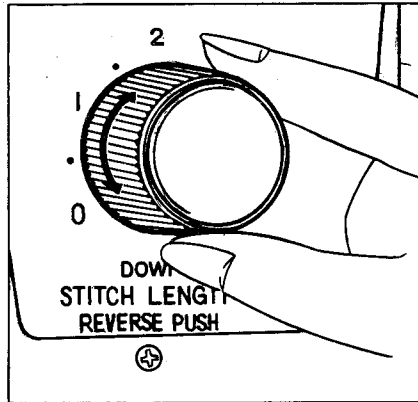


To sew in reverse:

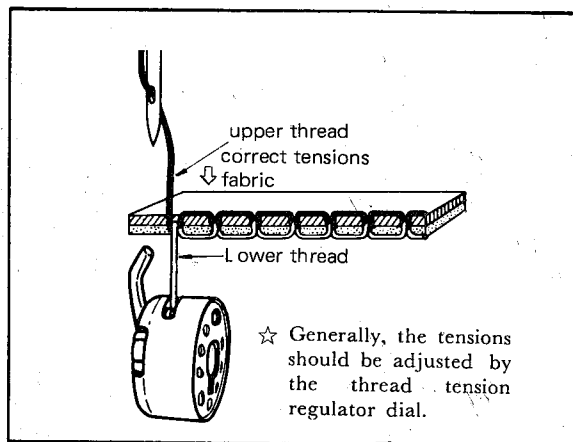
Press the reverse feed button as far as it will go and keep it in position until desired number of stitches are sewn. Reverse sewing will continue as long as the reverse feed button is pressed.

When the reverse button is released, the machine will return to forward sewing.

The reverse sewing is very useful when you need a reinforced sewing.



## TO REGULATE THREAD TENSIONS

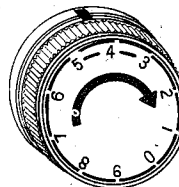


Correct tensions are important for the good appearance of the stitches. If the tensions are not correct, the result will be imperfect stitching. Adjust the tensions as illustrated.

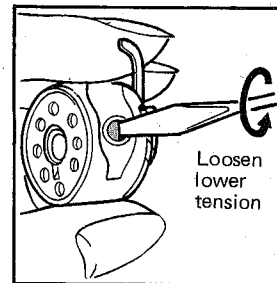
Note: \* The selection of the thread tension depends on the type of material. Please test it by sewing on a sample material to obtain suitable thread tension.



Tighten  
upper  
tension



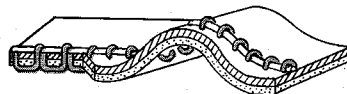
or



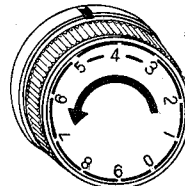
(A)

If the lower thread lies in the straight line underside of the fabric, this indicates that the top tension control is too weak. Setting this to No. 4 or higher will usually rectify the stitch.

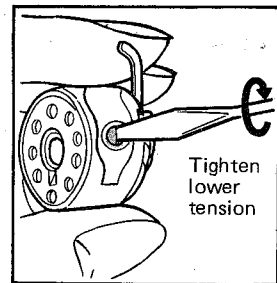
If the fault persists, it may be necessary to weaken the lower tension as illustrated (A).



Loosen  
upper  
tension



or



(B)

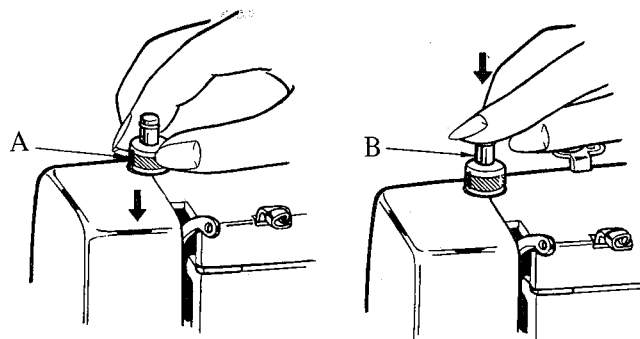
If the upper thread lies in the straight line on top of the fabric, this indicates that the top tension control is set too tight. Setting this to No. 4 or lower will usually rectify the stitch. If the fault persists, it may be necessary to tighten the lower tension as illustrated (B).

## TO ADJUST PRESSURE ON PRESSER FOOT

To release pressure of the foot, press down the ring (A), which will allow the regulator to spring up to its highest position and leave the material free from any pressure from the presser foot.

For sewing thin or light fabrics, press the top of the regulator (B) down slightly to get the required light pressure on the fabric.

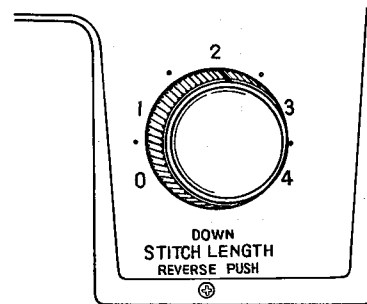
For sewing thicker or heavier fabrics, push the top of the regulator down further, in order to get a stronger pressure on the presser foot on the fabric.



## TO USE DROP FEED DEVICE

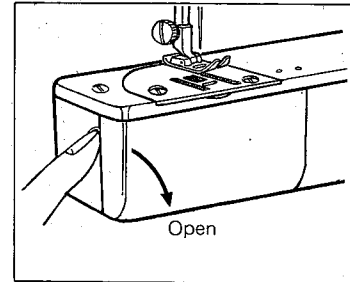
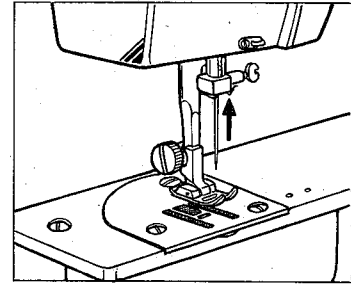
Darning and embroidering is facilitated by means of the special drop feed device which can be operated by the stitch length regulator knob. Turn the stitch length regulator knob to the mark (DOWN) and the feed dog will drop below the surface of the needle plate permitting the free movement of the cloth.

The feed dog resumes its normal operation when the stitch length regulator knob is turned back to "0" and over.

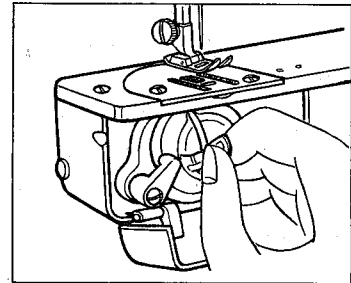


## TO REMOVE OR TO INSERT THE BOBBIN CASE

1. Raise the needle by turning balance wheel toward you.
2. Open the shuttle race cover so that the bobbin can be reached.

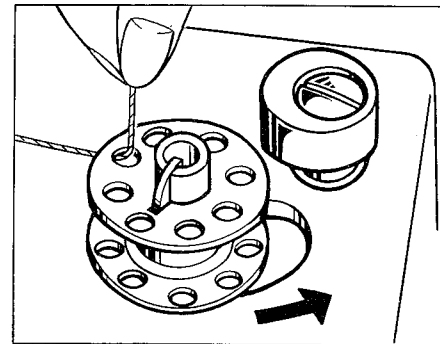
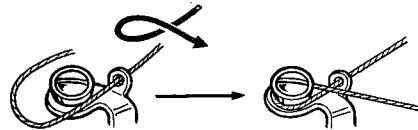
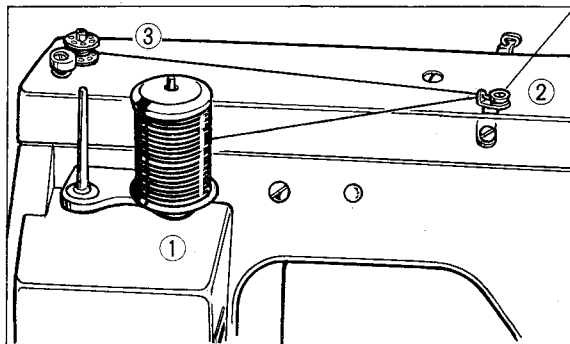
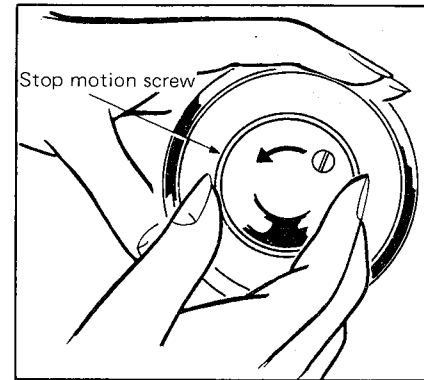


3. Lift the latch of bobbin case, and remove or insert the bobbin case. While holding the latch open, the bobbin will lock in the bobbin case.



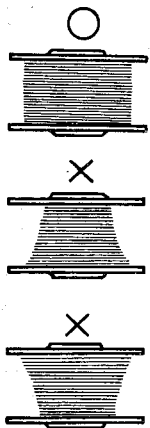
## TO WIND THREAD ON BOBBIN

1. While holding the balance wheel with your left hand, turn the stop motion screw you with the right hand.
2. Place a spool of thread on the spool pin (①).
3. Pass the thread between the discs of the thread guide bracket (②).
4. Pass the end of thread through hole in the bobbin from inside to outside and slip the bobbin on to the bobbin winder spindle (③).
5. Then push the bobbin winder spindle toward the balance wheel so that the bobbin winder stopper fits into the bobbin.
6. Run the machine until bobbin will stop.
7. Then pull the bobbin winder spindle to its original position and cut the thread.
8. Tighten the stop motion screw.

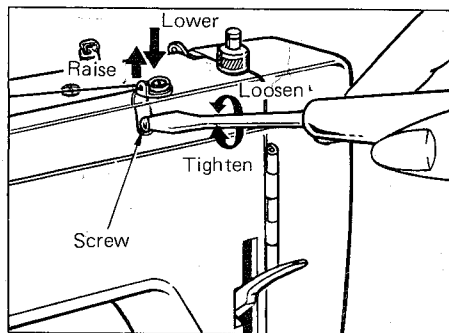




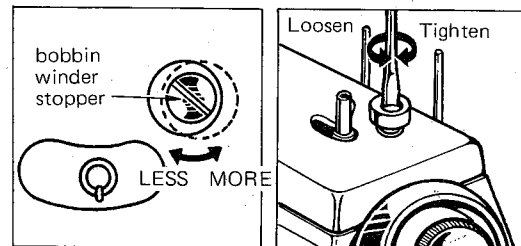
## TO ADJUST BOBBIN WINDER



1. The bobbin must be wound evenly.
2. When the bobbin is wound excessively on the lower part of the bobbin, loosen the screw and then raise the bobbin winder thread guide slightly.
3. When it is wound excessively on the upper part of the bobbin, lower the bobbin winder thread guide slightly.



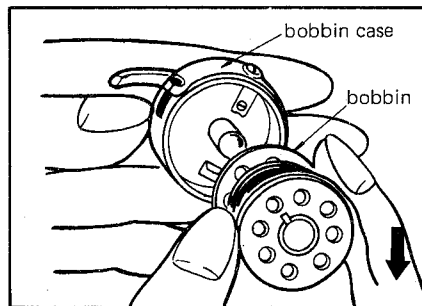
Note: After adjustment, tighten the screw firmly to reset the thread guide.



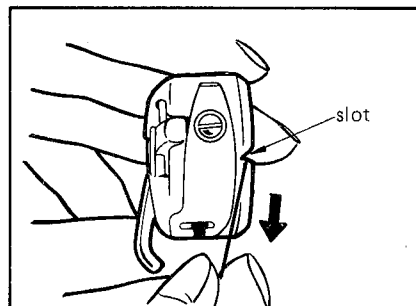
Note: The bobbin winder stopper should be adjusted so that the bobbin stops automatically when the thread is wound 70 to 80% in the bobbin.

## TO THREAD BOBBIN CASE

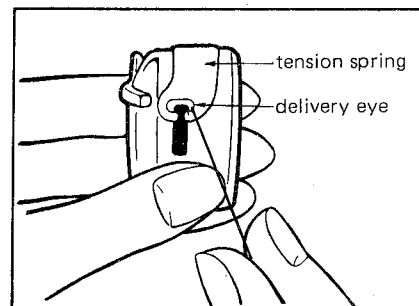
Hold the bobbin between the thumb and the forefinger of your left hand and pull out about 10 cm (4 inches) of thread.



Place bobbin into bobbin case. Make sure the thread unwinds in the direction of arrow.

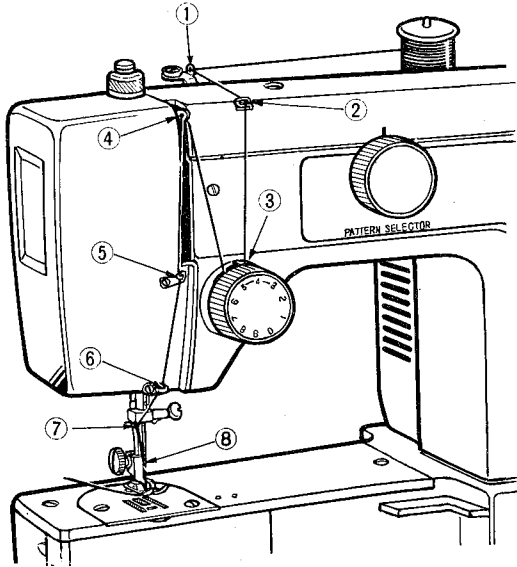


Guide the thread into the slot in the edge of the bobbin case.



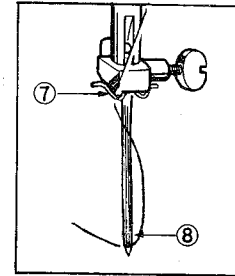
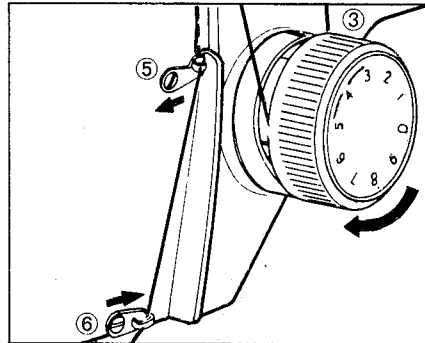
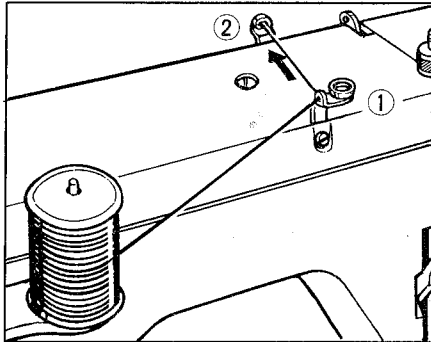
Pull it under the tension spring and then into the delivery eye.

## TO THREAD NEEDLE

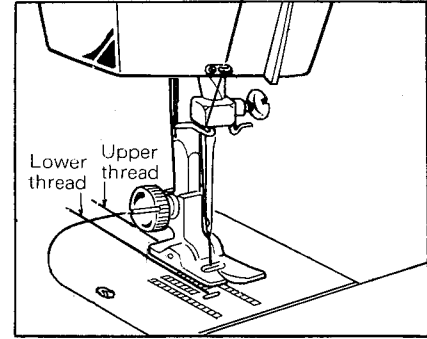
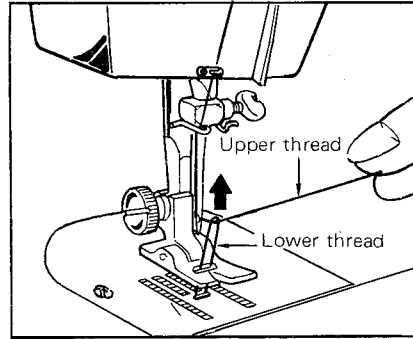
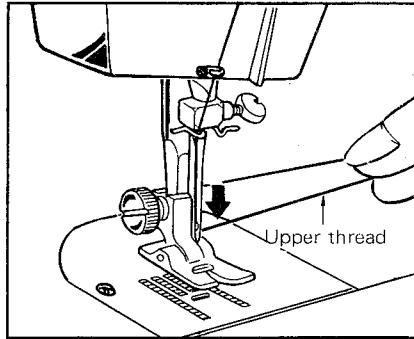


Raise the thread take-up lever to its highest point by turning balance wheel toward you. Then raise the presser bar lifter and lead the thread through all points from ① to ⑧ as follows:

1. Place a spool of thread on the spool pin.
2. Guide the thread into the top cover thread guides (① & ②).
3. Lead the thread between tension discs (③) from the right and pull it up. The thread will automatically pass through under tension guard and take-up spring.
4. Up the thread into the thread take-up lever (④), then down through thread guides (⑤ & ⑥) and into the guide (⑦) at the lower end of the needle bar.
5. Then pass through the eye (⑧) of the needle from front to back. Draw about 15 cm (5 inches) of thread through the eye of the needle.




## TO DRAW UP LOWER THREAD

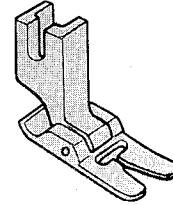


1. Hold the end of the upper thread with your left hand. Turn the balance wheel toward you slowly until the needle moves down and up again, then stop the balance wheel.
2. Pull the upper thread slowly, then the lower thread will be brought up from the needle hole in a loop.
3. Pull both ends of the threads from under the presser foot and place them away from you.

## STRAIGHT SEWING

presser foot .....	zigzag foot
pattern selector .....	
stitch width .....	M
stitch length .....	1 ~ 4

presser foot for zigzag stitch

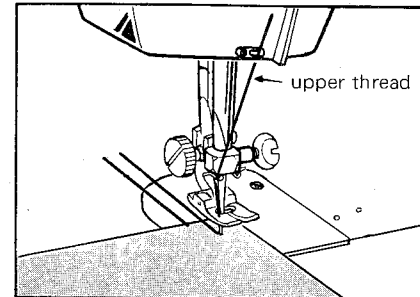


## TO START SEWING

Place the cloth under the presser foot.

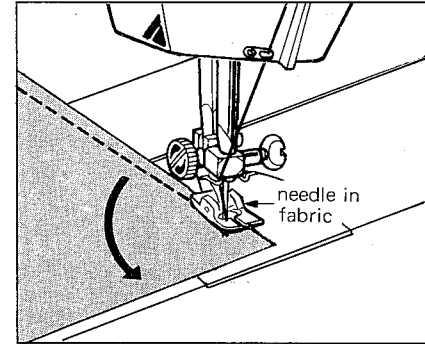
With the left hand hold loosely both ends of threads and turn the balance wheel with the right hand to let the needle penetrate the point from which to start sewing.

Lower the presser foot on the cloth and start sewing.



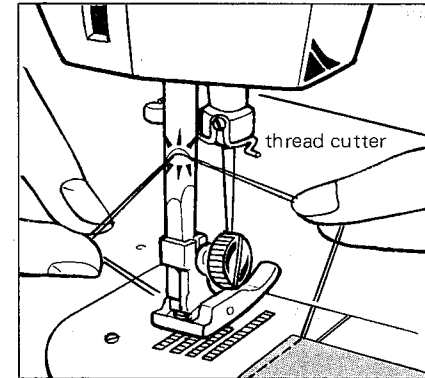
## ***TO TURN CORNER***

1. Stop sewing with the needle in the fabric and lift the presser foot.
2. Turn the fabric around the needle.
3. Lower the presser foot and start to sew again.



## ***TO FINISH SEAM***

1. At the end of a seam, press the reverse feed button to sew a few reverse stitches for reinforcement.
2. Stop the machine when the thread take-up lever is at its highest point. Raise the presser foot and remove the fabric away from you.
3. Sever the threads with either the thread cutter slotted in the presser bar or with a pair of scissors, leaving about 15 cm (6 inches) of thread from the eye of the needle.















# AUTOMATIC ZIGZAG SEWING

Special pattern forming cams are built in your machine for the following utility stitches.

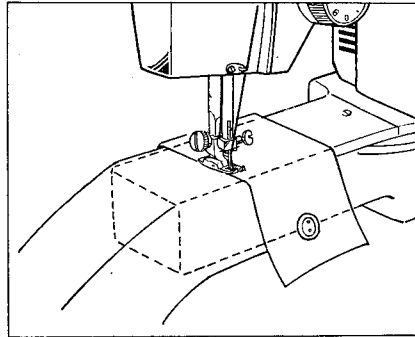
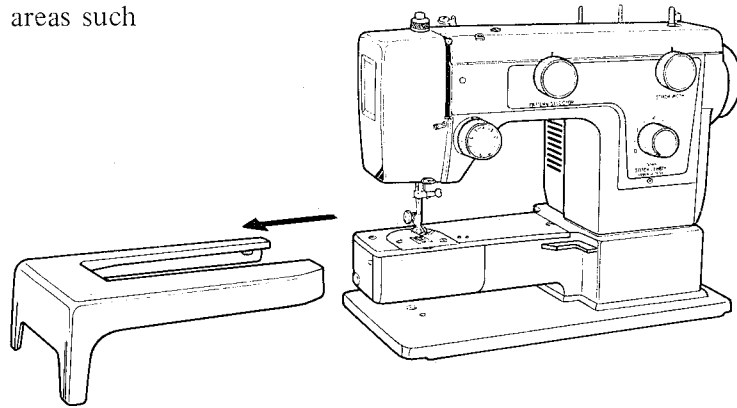
presser foot .....zigzag foot  
 pattern selector.....as shown below  
 stitch width .....as shown below  
 stitch length .....as shown below

**Note:**  
 To set dials, please follow the instructions given on applicable pages for each particular type of sewing.

Symbols	Patterns	Stitch Length	Zigzag Width	Symbols	Patterns	Stitch Length	Zigzag Width
		0.3 ~ 4	0 ~ 5			4	5
		0.3 ~ 4	5			4	M
		4	5			1 ~ 3	3 ~ 5

## TO SEW TUBULAR MATERIAL

The free arm feature of this machine is particularly suitable for sewing and darning tubular areas such as sleeves, trousers, socks, etc.





### **\*Sewing procedure:**

Insert the tubular fabric in the free arm, lower the presser foot and commence sewing. Guide the cloth gently with your hands.



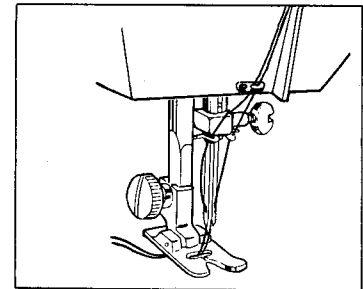
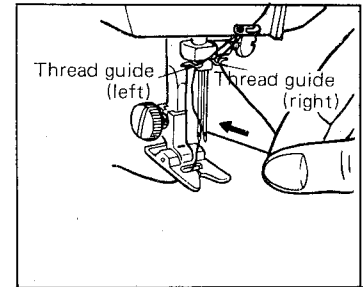
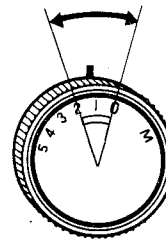
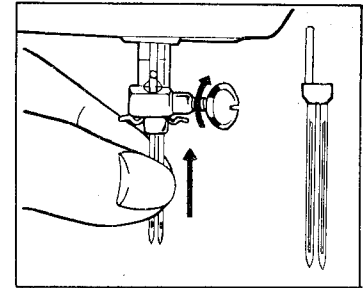
## TWIN NEEDLE SEWING

Colorful patterns are sewn with a twin needle using two threads of contrasting colors.

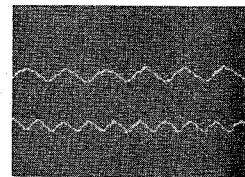
presser foot .....	zigzag foot
pattern selector .....	 or 
stitch width .....	0 ~ 2
stitch length .....	0.5 ~ 1

1. Set the desired width between “0-2” by turning the stitch width regulator knob.  
Do not set the dial over “2” to avoid needle breaking.
2. Insert the twin needle correctly as the same way as you do with the single needle.
3. Place two spools of threads on the spool pins.
4. Guide the threads the same way as in the case of the single needle threading and separate the threads so that each thread is guided through the thread guides either side of the needle bar.

Note: \* In turning the cloth at the corner, keep the needle up from the material.  
\* Otherwise the needle will break or bend.




## TRICOT STITCH

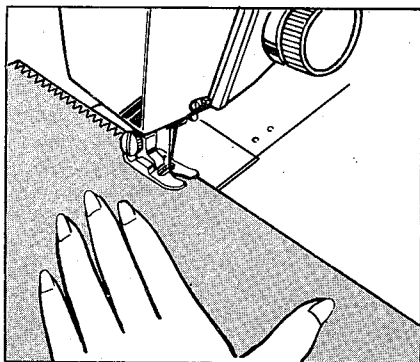


Tricot stitch is well suited for mending such as rents and tears.

This is also useful for application of elastic materials.

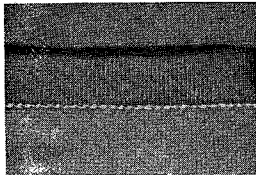
presser foot .....	zigzag foot
pattern selector .....	
stitch width .....	5
stitch length .....	0.3 ~ 4

1. Make sure that presser foot is for zigzag stitch.
2. Set the dials as shown left.
3. Commence sewing.



### Note:

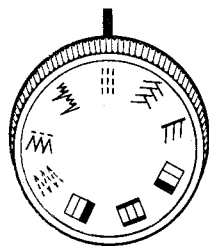
- \* Use the blue tip scarf needle (illustrated in page 26).
- \* In order to maintain the form or shape of the stretch material, the use of lining is recommended wherever possible.
- \* To set the machine from tricot stitching to zigzag stitching, be sure to set the stitch width dial at "5" before moving the other dials.



## STRETCH STITCH SEWING

If you want to sew stretch materials, this type of stitches enables you to prevent thread breakages. It is also useful for sewing stitches, such as crotch depth, pockets, etc., or any part of a garment where there is extra stress or pull.

presser foot .....	zigzag foot
pattern selector .....	
stitch length .....	4
stitch width .....	M



pattern selector

### Note:

\*To set the machine from stretch stitching to zigzag stitching, be sure to set the stitch width dial at "5" before moving other dials.

### WHEN SEWING STRETCH MATERIALS

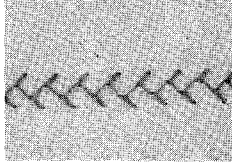
\*It is advisable to use the blue tip needle illustrated in the needle pack of the accessory set, for use of this needle will enable you to prevent skipped stitches in sewing stretch materials.

\*In order to maintain the shape when using stretch material, use of lining is advisable.




dark blue colored

## FEATHER STITCH SEWING

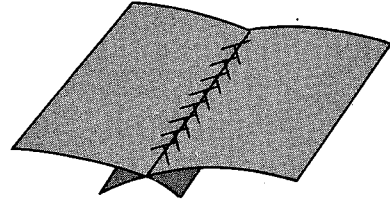
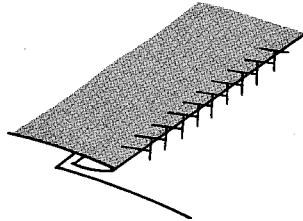
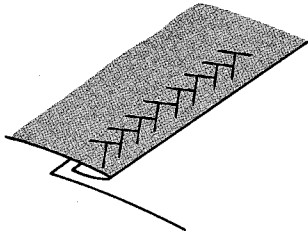


Feather stitch is effective as an ornamental stitch when used for mending such as rents and tears.

presser foot .....	zigzag foot
pattern selector .....	
stitch width .....	5
stitch length .....	4

Note :

- \* To set the machine from feather stitching to zigzag stitching, be sure to set the stitch width dial at "5" before moving the other dials.
- \* This stitch is also suited for sewing stretch materials.



## OVERCASTING

You can make neat, durable finish for raw-edge seams, especially in bulky fabrics or ones that fray easily.

presser foot .....	zigzag foot
pattern selector .....	≡
stitch width .....	5
stitch length .....	4

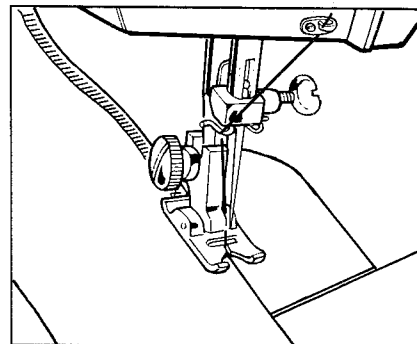
1. Place fabric under foot so that the stitches will be made over the hem.
2. Lower the presser foot and start to sew overcasting.
3. Gently guide the fabric as shown right.
4. Make a test sample to determine correct stitch setting.

Note :

Overcasting will be done most successfully when the right side stitches of zigzag fall slightly off the edge of the cloth.

Note :

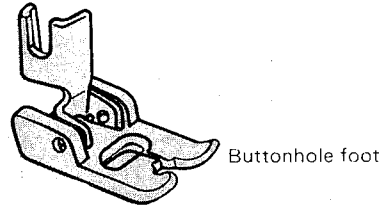
\* To set the machine from overcasting to zigzag stitching, be sure to set the stitch width dial at "5" before moving the other dials.



# BUTTONHOLE SEWING

The buttonhole stitch maker built into this machine will enable you to sew a buttonhole in a short time without turning fabric.

presser foot .....	buttonhole foot
pattern selector .....	□ → □ → □ → □
stitch width .....	5
stitch length .....	0.3 ~ 1.1



Replace the presser foot with the plastic buttonhole foot. With a pencil or tailor's chalk, mark the position and the length of the buttonhole on the fabric. Set the stitch length regulator knob at any point within the mark (Fig. 1) depending on what kind of satin stitches you may require.

(Coarse stitches for a heavy material and fine stitches for a light material are suggested for buttonhole sewing.)

Note: When you sew buttonholes on stretch material, it is recommended to base a piece of backing fabric underneath.

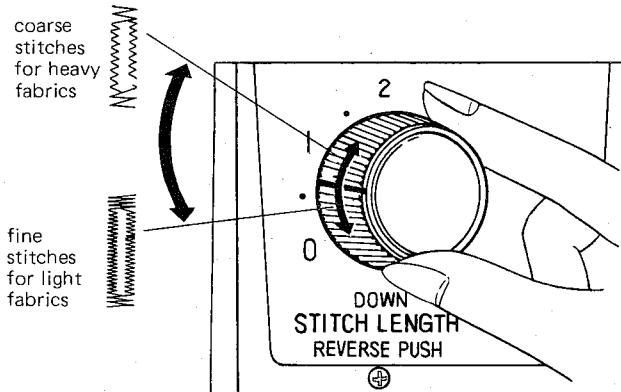


Fig. 1

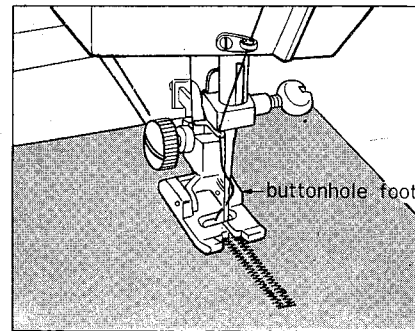




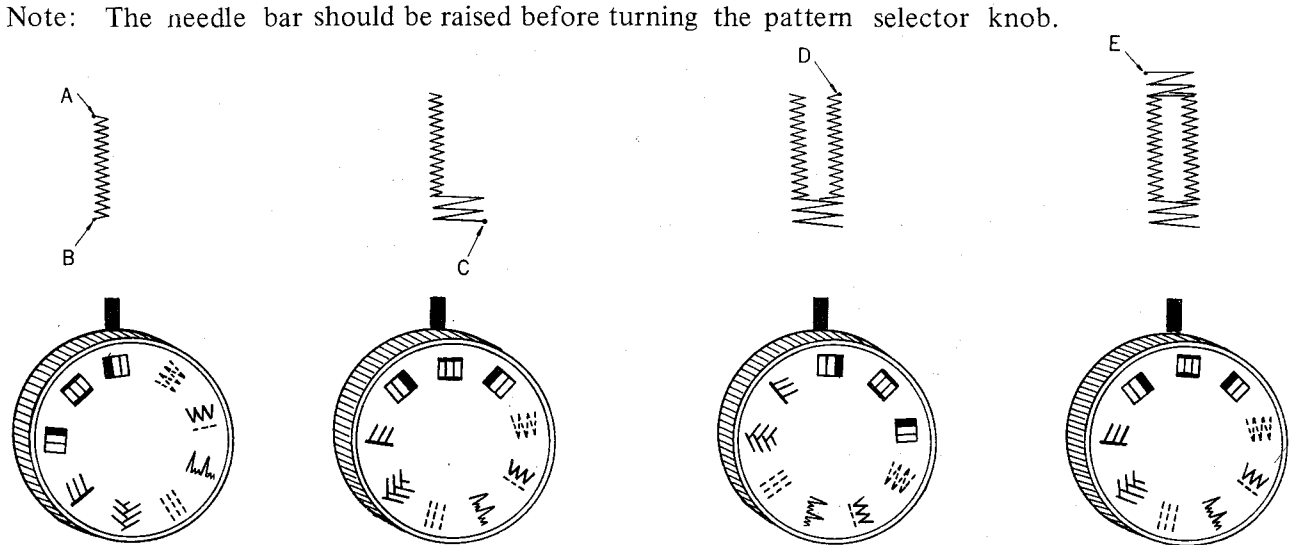


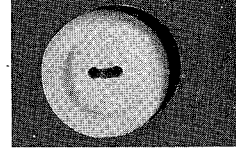
Fig. 2


CONTINUED

1. Set the buttonhole knob at “” and turn the balance wheel towards you until the needle comes to point (A).
2. Sew slowly until a desired length is sewn and stop the machine at the point (B).
3. Set the buttonhole knob at “” and sew about five stitches until the needle comes to the point (C).
4. Set the buttonhole knob at “”, sew until the right row is as the same size as the left one and stop the machine when the needle comes to the point (D).
5. Set the buttonhole knob at “” and sew about five stitches until the needle comes to the point (E).
6. To lock the thread, set the zigzag width regulator knob at “0” and sew a few stitches.
7. Cut the slot of the buttonhole with a seam ripper or a pair of scissors carefully not to cut through the bar tacks. (To make a heavier buttonhole, sew twice by repeating the same procedure.)



## SEWING ON A BUTTON

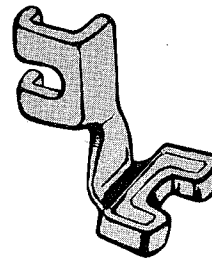
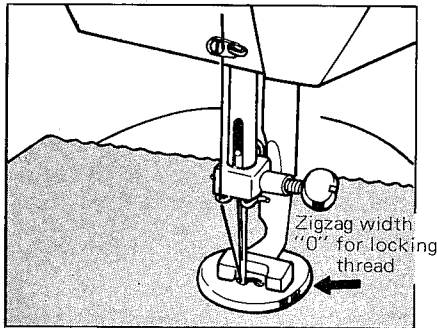


presser foot .....	button sewing foot
pattern selector .....	
stitch width .....	distance between the holes
stitch length .....	DOWN

1. Replace the presser foot with the button sewing foot.
2. Place a button on the fabric with its hole in horizontal line and the left side hole underneath the needle.
3. Set the stitch width knob at "0" and see if the needle drops into the left hole of button by turning the balance wheel towards you slowly.

4. Lower the presser foot on the button.
5. Set the stitch width knob in accordance with the distance between the holes in the button so that the needle drops in the right hole of the button.
6. Sew five or six stitches slowly.
7. To lock the thread, set the zigzag width at "0" and make three or four stitches.

Note: The needle should be raised before turning the stitch width regulator knob.




Button sewing foot





## SEWING IN A ZIPPER

presser foot .....	zipper foot
pattern selector .....	
stitch width .....	0
stitch length .....	1 ~ 4

Using the zipper foot you can sew zippers on the fabric.

Attach the zipper foot to the presser bar in place of the presser foot.

Pin or baste zipper to fabric and place the work in position under the presser foot.

Loosen the zipper foot adjusting screw to set the foot on the left side of the needle, and sew the left side zipper as shown. (Fig. 2)

To sew the right-side zipper, loosen the screw and bring the foot to the right side of the needle.

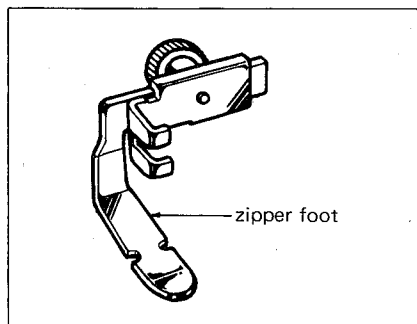


Fig. 1

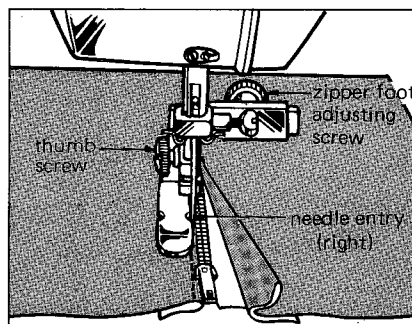
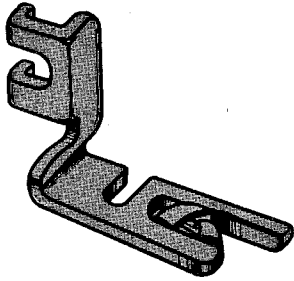


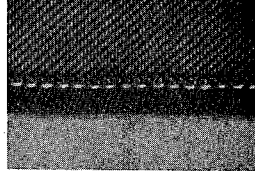
Fig. 2

## TO USE HEMMER



Hemmer foot

presser foot .....	hemmer foot
pattern selector .....	W
stitch width .....	M
stitch length .....	1 ~ 4



Cut off the right corner of the cloth so that it can be easily inserted into the hemmer.

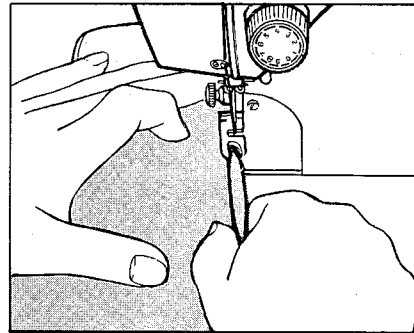
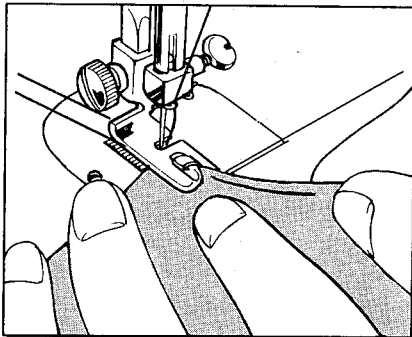
Folding the edge of the cloth a little, insert it into the mouth of hemmer.

Lower the hemmer foot on the cloth and start stitching slowly.

While sewing, hold the cloth carefully so that it is sufficiently fed into the mouth of hemmer.

When the cloth slips out of the mouth of hemmer, move the cloth to the right.

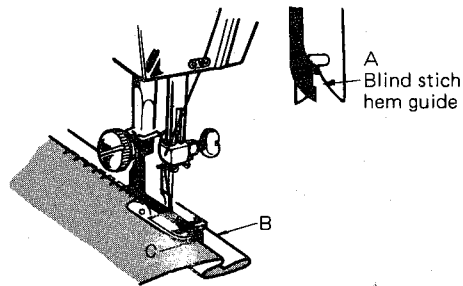
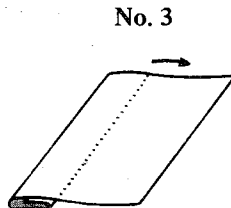
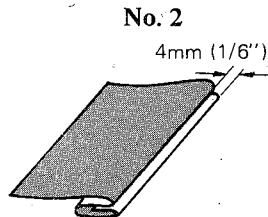
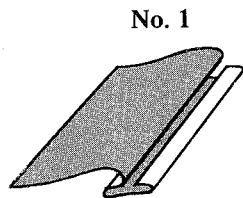
When the cloth is rolled up excessively, move it a little to the left.



## TO SEW BLIND STITCH HEM


presser foot .....	zigzag foot
pattern selector .....	$\frac{1}{4}$ zigzag
stitch width .....	3 ~ 5
stitch length .....	1 ~ 3
attachment.....	BS hem guide

1. Turn the balance wheel until the feed dog goes down below the needle plate level. Lower the presser foot.
2. Then loosen the presser foot thumb screw to insert the blind stitch hem guide between the screw and the presser foot.
3. Tighten the presser foot thumb screw making sure that the guide (A) is placed in the middle of the toes of the presser foot.
4. With the fabric inside out, fold it to the desired size of hem. (No. 1)
5. Fold it again leaving a margin of 4 mm (1/6 inch) on the bottom fold (B). (No. 2)
6. Place the fabric under the presser foot with the double fold line against the left side of the blind stitch hem guide.
7. Lower the presser foot and sew as you feed the double fold (C) along the guide.
8. Unfold the fabric and you will have a blind stitch hem. (No. 3).



## EMBROIDERING AND MONOGRAMMING



presser foot .....	take off
pattern selector .....	
stitch width .....	0 ~ 5
stitch length .....	DOWN

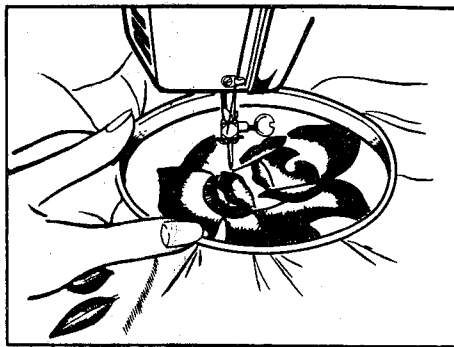
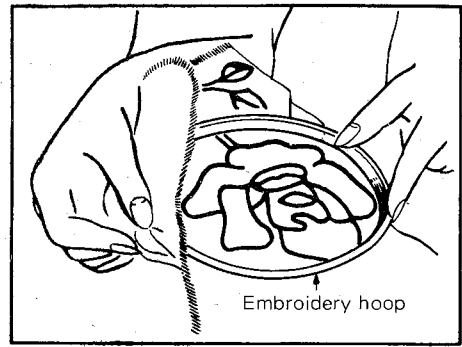
Set the stitch length dial at “DOWN”.

Then lower presser bar lifter. Hold the hoop closely on the machine bed with both hands, press the material with your left forefinger in the vicinity of the needle.

While moving the hoop slowly with the left hand following the design in the fabric, move the zigzag width dial to change the width.

(Set the upper thread tension as light as possible lest the lower thread be pulled up to on the surface.)

- \* Draw your desired design on the fabric with a pencil or tailor’s chalk before sewing.
- \* Embroidery will be done most successfully when the fabric is stretched and fixed in an embroidery hoop.



## TO CLEAN SHUTTLE RACE

Because your machine is specially equipped with the shuttle thread ejector which prevents jamming of the shuttle, it will rarely be necessary to open and clean the shuttle-race.

However, if for some reason it should be required to open and clean the shuttle-race;

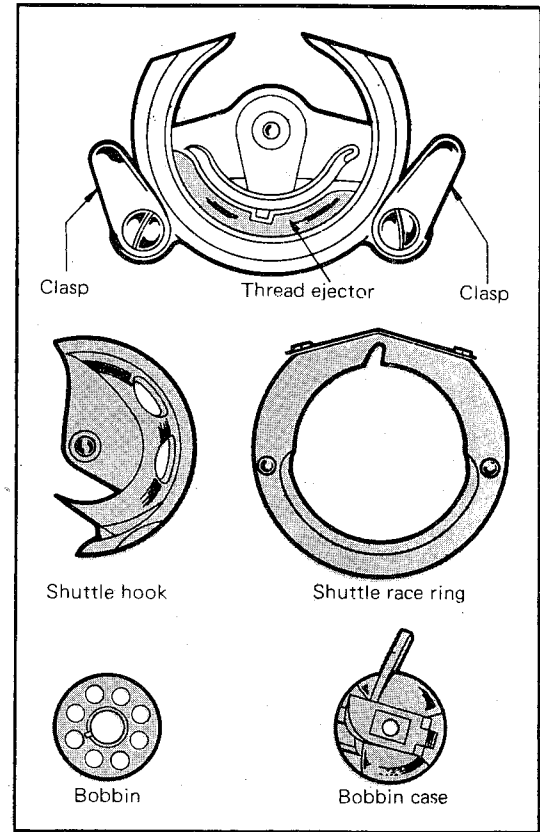
First raise the needle bar to its highest point and remove the bobbin case.

Next, twist the shuttle-race ring clasps outward and take out the shuttle-race ring.

Carefully remove shuttle hook and clean out shuttle race. Apply one or two drops of oil on shuttle race and shuttle hook, then wipe them off slightly.

\* Do not apply too much oil, otherwise it causes stain on fabric or thread breaking.

Replace shuttle hook, shuttle-race ring and lock with clasps. Be careful not to drop the shuttle to avoid possible damage.



## ***TO CLEAN FEED DOG***

It is necessary to keep the feed dog teeth always cleaned in order to ensure smooth sewing.

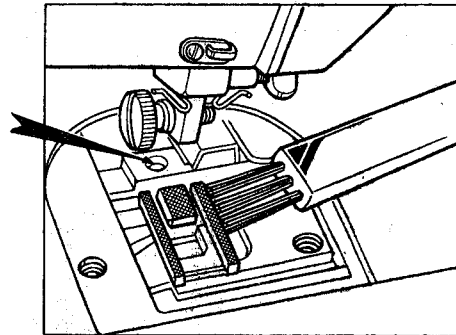
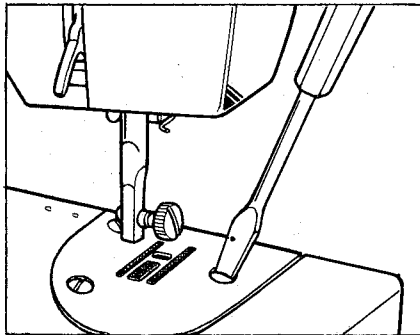
Remove the needle and the presser foot.

Unscrew the needle plate set screws with a driver to take off the needle plate from the machine bed.

With a brush, clean out dust and lint clogged on the feed dog teeth.

Reset the needle plate.

**NOTE:** After cleaning feed dog, apply a few drops of sewing machine oil without fail to the point as shown in the illustration.

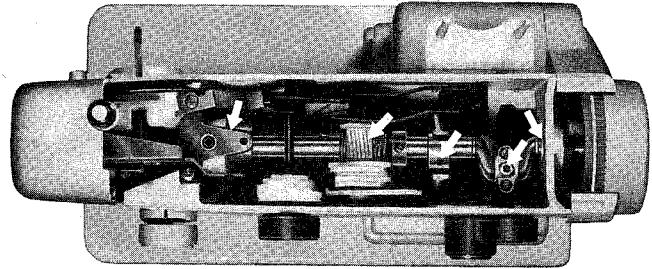
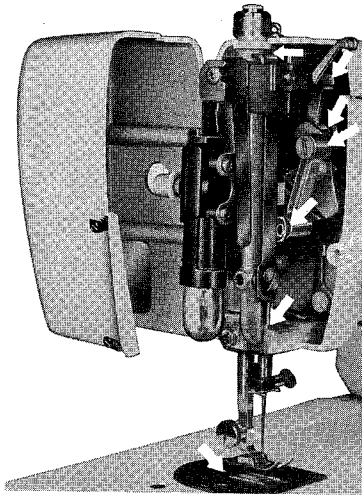


## ***TO OIL MACHINE***

Apply a few drops of fine quality sewing machine oil to the points indicated by the arrows in the figures. For a machine in constant use, oil two or three times a week.

In case the machine does not work smoothly due to standing idle for some time, apply a few drops of kerosene at the oiling points, and run the machine rapidly for a minute.

Before oiling, wipe off the oiling points. Also wipe off surplus oil after oiling.



## ***TO REGULATE BELT TENSION ON MOTOR***

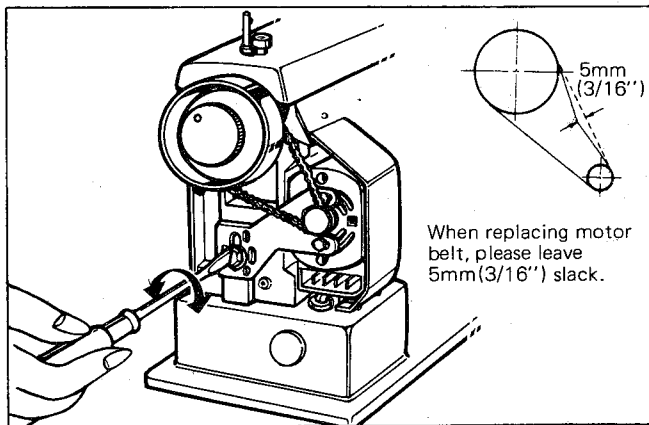
To adjust the belt tension, take off the belt cover and loosen the fixing screw about one turn with a screwdriver.

This will allow the motor to move downward or upward.

Then firmly tighten the screw, and the belt should have the correct tension.

### **CAUTION:**

Do not tighten the belt too tightly.





## UNSATISFACTORY CONDITIONS : CAUSES AND REMEDIES

THE UPPER THREAD BREAKS	
CAUSE	REMEDY
<ol style="list-style-type: none"><li>1. The needle is not threaded correctly.</li><li>2. The tension is too tight.</li><li>3. Something is wrong with the needle.</li><li>4. The thread used is too heavy for the needle.</li><li>5. Thread take-up spring is broken.</li><li>6. The needle is not set correctly.</li><li>7. The needle plate, the hook, or the presser foot is damaged.</li></ol>	<p>Thread the needle correctly.</p> <p>Loosen it.</p> <p>Replace it.</p> <p>Replace it.</p> <p>Replace it.</p> <p>Set it correctly.</p> <p>Replace it.</p>
THE LOWER THREAD BREAKS	
<ol style="list-style-type: none"><li>1. When the lower thread is not wound correctly, it gets entangled.</li><li>2. The lower thread is off the tension spring of the bobbin case.</li></ol>	<p>Wind it properly.</p> <p>Put it in its proper position.</p>
SKIPPED STITCHES	
<ol style="list-style-type: none"><li>1. The needle is not attached to the needle bar correctly.</li><li>2. The needle is either bent or blunt.</li><li>3. A worn needle is used.</li></ol>	<p>Attach it properly.</p> <p>Replace it.</p> <p>Replace it.</p>
THE NEEDLE BREAKS	
<ol style="list-style-type: none"><li>1. The needle is bent.</li><li>2. The needle is not attached properly.</li><li>3. The material is too thick or heavy.</li><li>4. The material is being pulled by the operator.</li><li>5. The needle is of inferior quality.</li></ol>	<p>Replace it.</p> <p>Attach it correctly.</p> <p>Use a needle of the correct size.</p> <p>Do not pull on the cloth.</p> <p>Replace it with better needle.</p>

CONTINUED

CONTINUED

### STITCHING FORMS LOOPS

CAUSE	REMEDY
1. The thread tension is not properly adjusted.	See instructions for adjustment of upper and lower thread tensions.
2. The needle is not threaded correctly and/or the bobbin is not wound properly.	Thread the needle and/or rewind the bobbin properly.
3. The weight of the material and the size of the thread are not appropriate.	See instructions covering the use of proper needle and threads with varying materials.
4. Thread take-up spring does not work well.	Replace it.

### SEAMS SHRINK OR PUCKER

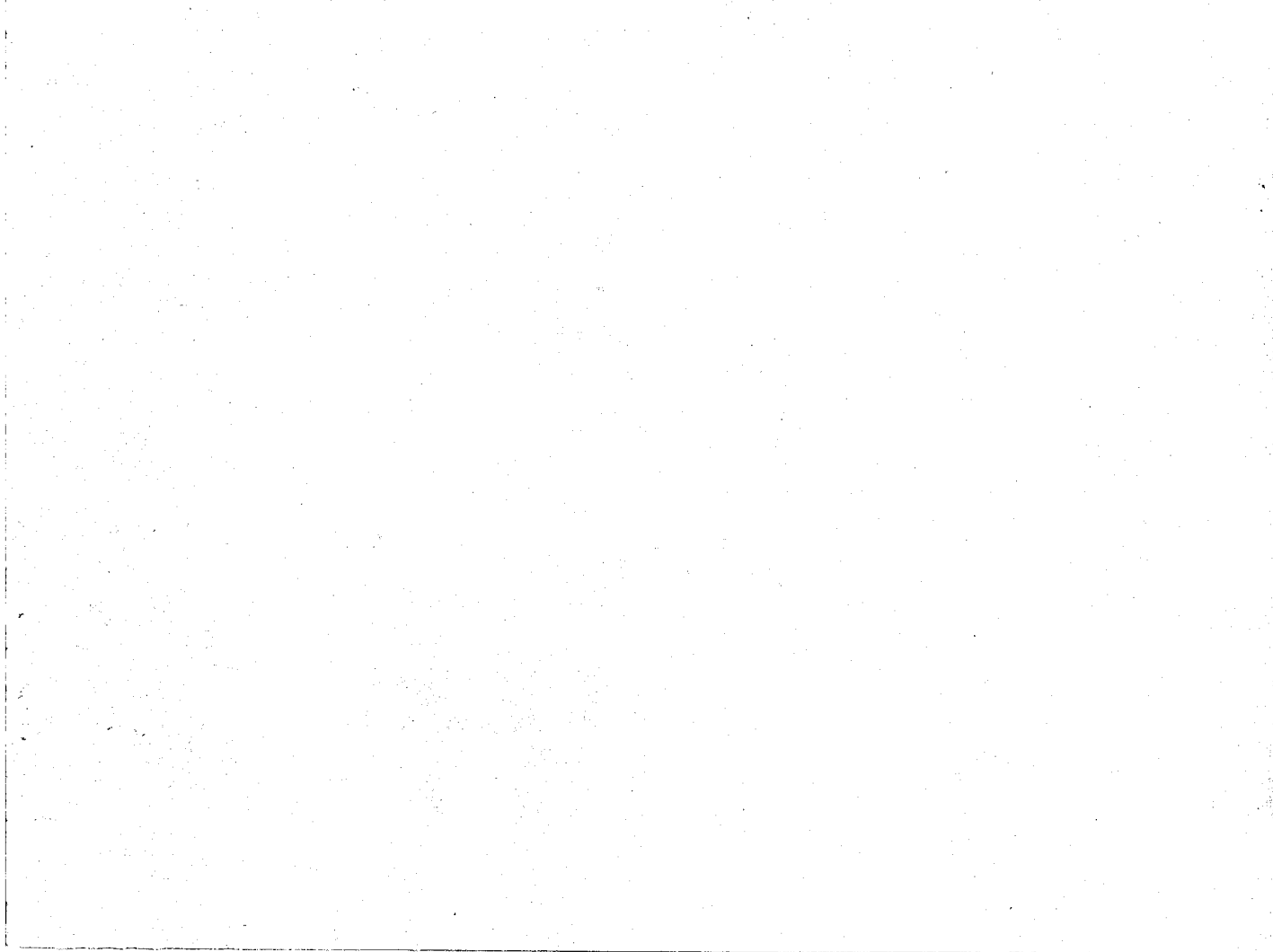
1. The thread tension is too tight.	See instructions for adjustment of upper and lower thread tensions.
2. The pressure of the presser foot is too strong.	See instructions for adjustment of the pressure of the presser foot.
3. Stitches are too small for the weight of the material.	Adjust the stitch length.

### IRREGULAR STITCHING

1. The upper and lower threads are of inferior quality.	Use thread of best quality.
2. The thread is wound around the bobbin unevenly.	Rewind it.

### THE MACHINE DOES NOT WORK SMOOTHLY AND IS NOISY

1. The machine is in need of oil.	Apply oil as per instructions.
2. Dust and waste thread have collected in the shuttle mechanism.	See instructions pertaining to cleaning the race and shuttle.
3. Oil of inferior quality is used and has coagulated.	Clean thoroughly and oil again with proper sewing machine oil of the best quality.
4. The tension on the belt is too tight.	Loosen the belt tension.





**MANUAL OF INSTRUCTION  
SEWING MACHINE MODEL 648**

## IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:—

GREEN AND YELLOW - EARTH    BLUE - NEUTRAL    BROWN - LIVE

As the colours of the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug - CONNECT AS FOLLOWS:—

The wire coloured GREEN AND YELLOW must be connected to the terminal marked E or by the earth symbol  $\perp$ , or coloured GREEN or GREEN AND YELLOW

The wire coloured BROWN must be connected to the terminal marked L, or coloured RED

The wire coloured BLUE must be connected to the terminal marked N, or coloured BLACK

If a 13 amp plug is used, fit a 3 amp fuse

For any other plug, protect with a 5 amp fuse or fuse wire

=====

### NOTES

When servicing or changing mechanical parts or lamp bulb the machine must be disconnected from the supply by removing the plug from the socket outlet.

Should it become necessary to replace the lamp bulb at any time, the correct type of bulb must be used, this being SBC type, 240 volts, 15 watt maximum.

**WARNING - THIS APPLIANCE MUST BE EARTHED**

## Do's and Don'ts

1. Always be aware of the up-and-down movement of the needle and do not turn your attention from the machine while it is running.
2. When changing the needle, the sewing foot, the bobbin or any other parts, always disconnect the machine by pulling the plug out of the wall socket.
3. Do not place anything on the foot control, otherwise the machine will start inadvertently, or the control or motor may burn out.
4. The maximum permissible power for the sewing lamp bulb is 15 watts.
5. When using your sewing machine for the first time, place a piece of waste fabric under the sewing foot and run the machine without thread for a few minutes. Wipe away any oil which may have appeared.

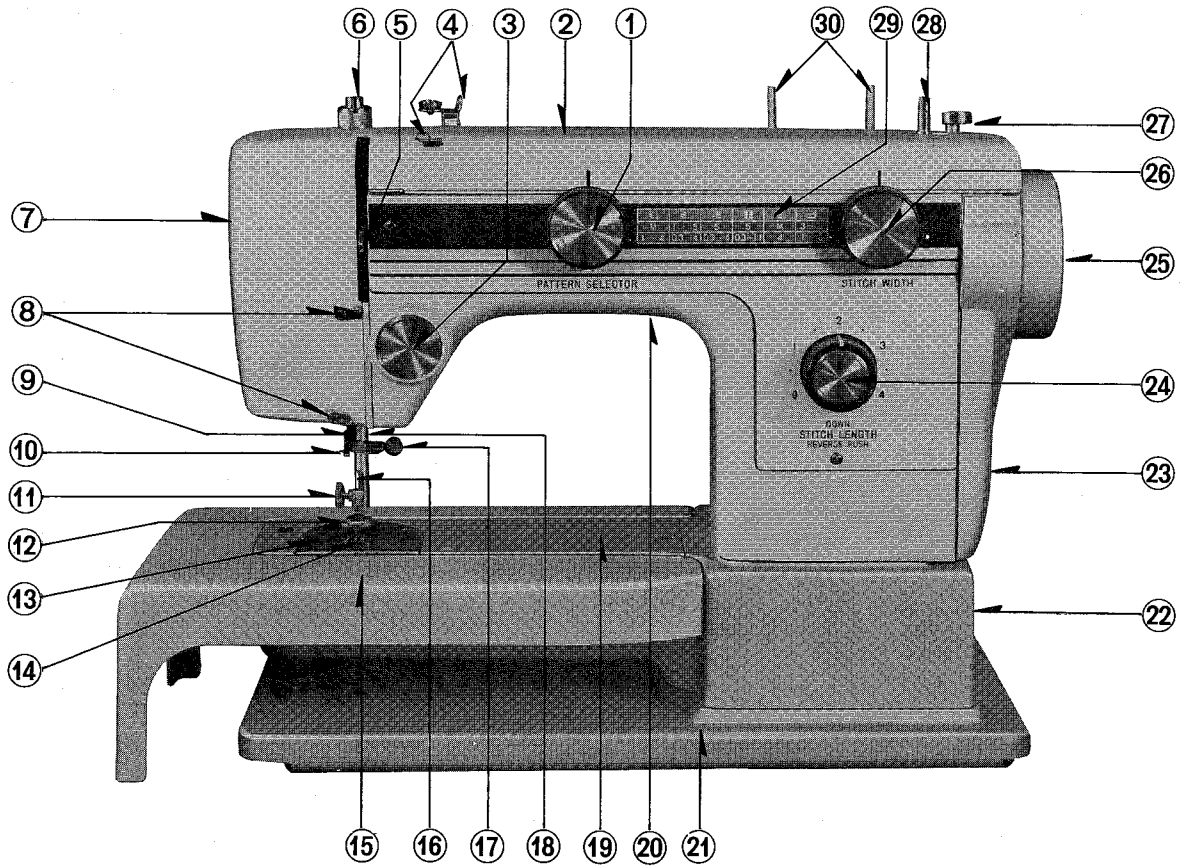
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# NAMES OF PARTS



## NAMES OF PARTS

- ① Pattern selector knob
- ② Top cover
- ③ Thread tension regulator dial
- ④ Top cover thread guides
- ⑤ Thread take-up lever
- ⑥ Pressure regulator
- ⑦ Face plate
- ⑧ Face plate thread guides
- ⑨ Needle bar
- ⑩ Needle bar thread guide
- ⑪ Thumb screw
- ⑫ Presser foot
- ⑬ Needle plate
- ⑭ Feed dog
- ⑮ Detachable sewing table
- ⑯ Needle
- ⑰ Needle clamp screw
- ⑱ Presser bar
- ⑲ Free arm
- ⑳ Arm
- ㉑ Base plate
- ㉒ Bed
- ㉓ Belt cover
- ㉔ Stitch length regulator knob (Reverse feed knob)
- ㉕ Balance wheel
- ㉖ Stitch width regulator knob
- ㉗ Bobbin winder stopper
- ㉘ Bobbin winder spindle
- ㉙ Control panel
- ㉚ Spool pins

## **DETACHABLE SEWING TABLE**

For ordinary sewing, detachable sewing table will make your work easier.

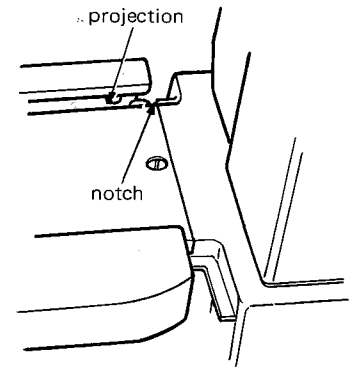
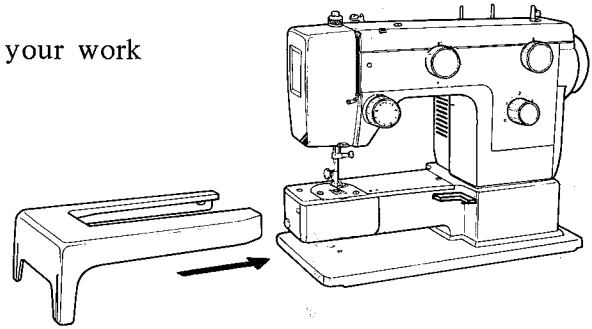
### **TO DETACH**

Lift the end of table near the projection and slide it out.

### **TO ATTACH**

Slide the table over free arm of sewing machine until the projection of sewing table catches the corresponding notch of the free-arm.

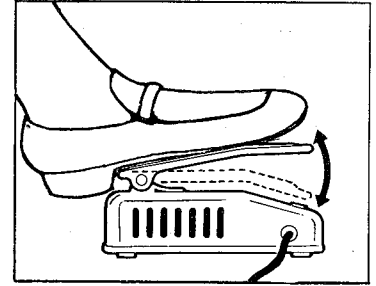
Note: When sewing tubular materials, detach the sewing table for free arm sewing.



## ***TO USE FOOT CONTROL***

Place the foot control in such a position that your foot rests comfortably on it. Press the foot control as you turn the balance wheel towards you with your right hand. You can control the speed of the machine with foot control – light pressure giving low speed and harder pressure higher speed.

**CAUTION:** Do not place anything on foot controller, otherwise, the machine may start inadvertently or foot controller may be overheated.

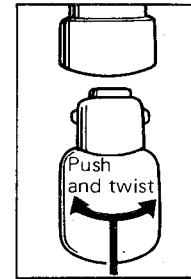


## ***TO USE SEWLIGHT***

Sewlight is connected directly to the main supply lead of the machine when the motor plug is inserted into the connector.

This results in the light acting as a warning when the machine is connected to the electricity supply.

To change the bulb, remove same by slightly pushing it upward and turning it anti-clockwise. Insert a new bulb by fitting the pins on the bulb into the slot, pushing upwards and turning it clockwise.



## NEEDLE AND THREAD CHART

FABRIC		THREAD	NEEDLE
WEIGHT	TYPE		
FINE or LIGHT	Fine lace, organdie, chiffon, silk, lawn, crepe, tulle, voile, fine linen, georgette	Silk thread 50 Fine polyester thread Fine cotton thread	#9 or #11
LIGHT or MEDIUM	SYNTHETIC FABRICS: jersey, fine knit, bonded knits, nylon tricot	Silk thread 50 Polyester thread 50 Mercerized cotton thread 50 ~ 60	Blue tipped needle
LIGHT or MEDIUM	cotton, poplin, taffeta, linen, satin	Silk thread 50 Polyester thread 50 Mercerized cotton thread 50 ~ 60	#11 or #14
MEDIUM	dress wool, shirtings, crimplene, gingham, suitings, glass fibre, percale	Mercerized cotton thread 50 ~ 60 Polyester thread 50	#14
MEDIUM HEAVY or HEAVY	denim, tweed, flannel, corduroy, terry cloth, bonded fabrics, coatings, overcoatings, gabardine	Polyester thread 40 ~ 50 Heavy-duty Mercerized cotton 40 ~ 50	#14, #16 or #18

Note: A BLUE TIPPED needle is supplied with the machine.

BLUE TIPPED needles are designed to sew stretch, very fine fabrics and synthetics, for preventing skipped stitches.

## TO INSERT NEEDLE

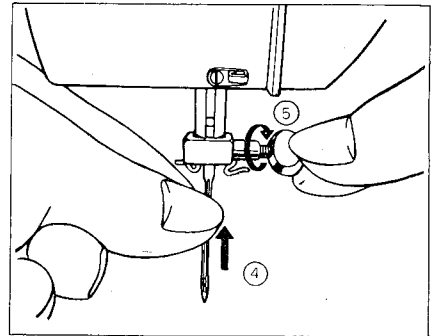
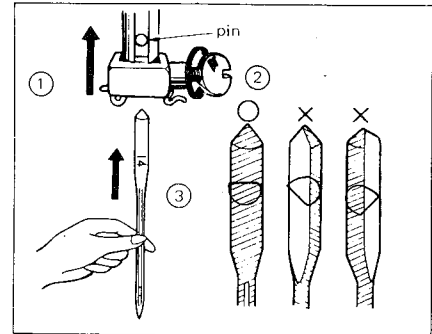
Insert the needle in the order of ①, ②, ③, ④ and ⑤.

- ①. Raise the needle bar to its highest point.
- ②. Loosen the needle clamp screw.
- ③. Turn the flat side of the needle to the back.
- ④. Insert the needle as high as it will go until it hits the pin.
- ⑤. Tighten the needle clamp screw firmly.

### \*TO CHOOSE CORRECT NEEDLE


The needle should be straight and the point of needle should not be bent or blunt.




Select the large eye enough to permit the thread smooth passing.






## ***PATTERN SELECTOR***

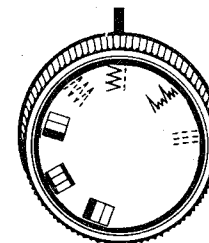
Utility stitches are controlled by pattern selector knob.

Pattern symbol “” is for straight and regular zigzag stitches. This type of stitches are also used in button sewing, hemming, zipper sewing, embroidery and etc.

Pattern symbol “”, “” and “” is for buttonhole sewing.

Pattern symbol “” is for tricot stitch and “” is for stretch stitch.

Pattern symbol “” is for blind stitch and twin needle stitch.

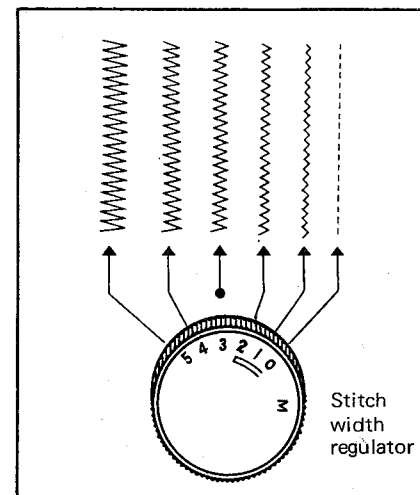


Pattern selector

## ***STITCH WIDTH REGULATOR***

The width of zigzag stitch can be adjusted by turning the stitch width regulator knob.

Numerals from “0” to “5” on the dial indicate the width of zigzag stitch.



## TO REGULATE LENGTH OF STITCH AND DIRECTION OF FEED

To regulate stitch length:

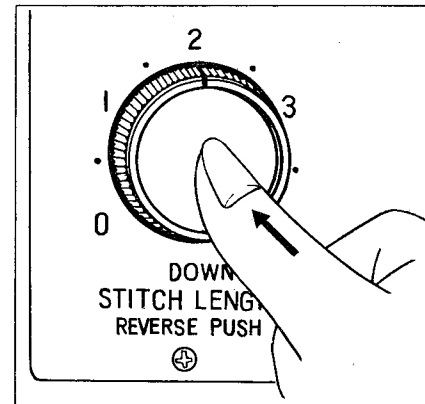
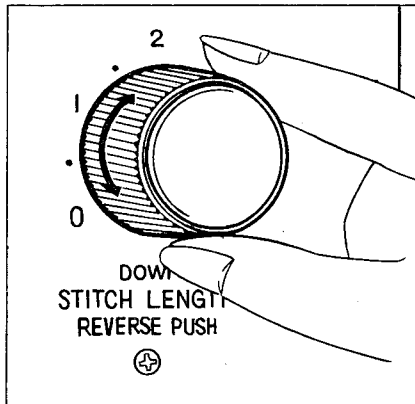
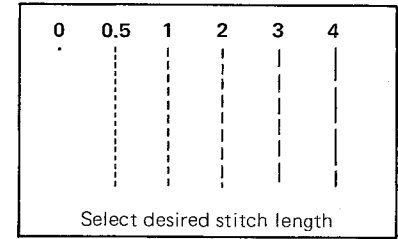
Set the line on the stitch length regulator knob against desired number on the stitch length indicator. The numerals represent the stitch length.

To sew in reverse:

Press the reverse feed button as far as it will go and keep it in position until desired number of stitches are sewn. Reverse sewing will continue as long as the reverse feed button is pressed.

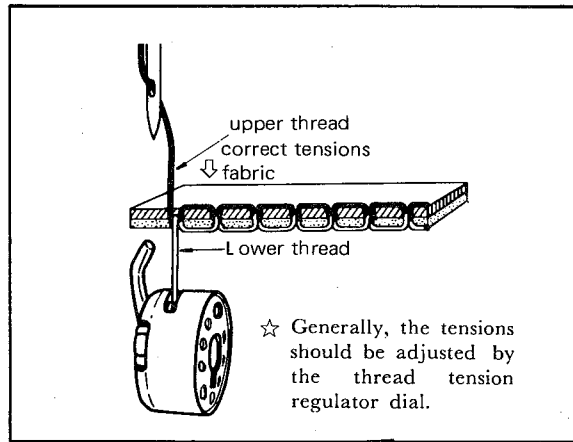
When the reverse button is released, the machine will return to forward sewing.

The reverse sewing is very useful when you need a reinforced sewing.





## TO REGULATE THREAD TENSIONS

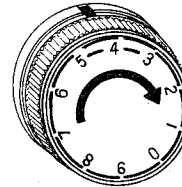


Correct tensions are important for the good appearance of the stitches. If the tensions are not correct, the result will be imperfect stitching. Adjust the tensions as illustrated.

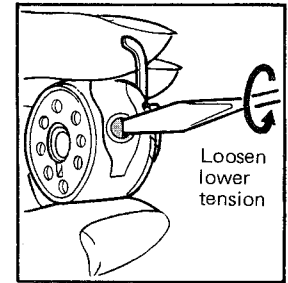
Note: \* The selection of the thread tension depends on the type of material. Please test it by sewing on a sample material to obtain suitable thread tension.



Tighten  
upper  
tension

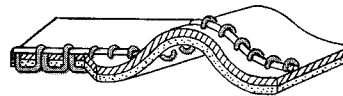


or  
(A)

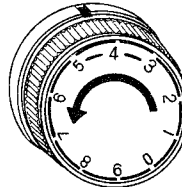


If the lower thread lies in the straight line underside of the fabric, this indicates that the top tension control is too weak. Setting this to No. 4 or higher will usually rectify the stitch.

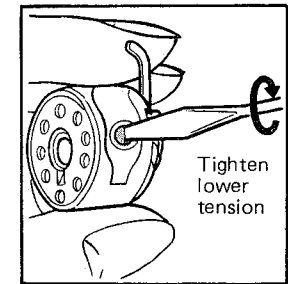
If the fault persists, it may be necessary to weaken the lower tension as illustrated (A).



Loosen  
upper  
tension



or  
(B)



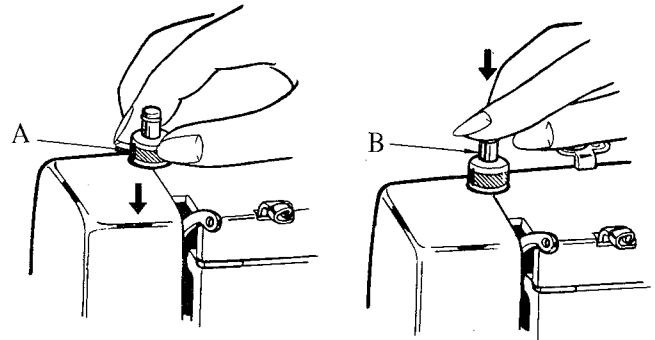
If the upper thread lies in the straight line on top of the fabric, this indicates that the top tension control is set too tight. Setting this to No. 4 or lower will usually rectify the stitch. If the fault persists, it may be necessary to tighten the lower tension as illustrated (B).

## TO ADJUST PRESSURE ON PRESSER FOOT

To release pressure of the foot, press down the ring (A), which will allow the regulator to spring up to its highest position and leave the material free from any pressure from the presser foot.

For sewing thin or light fabrics, press the top of the regulator (B) down slightly to get the required light pressure on the fabric.

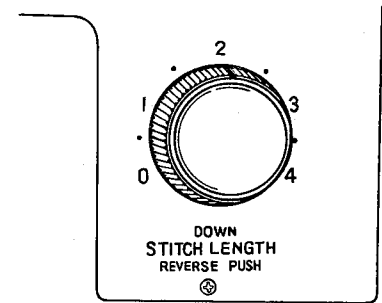
For sewing thicker or heavier fabrics, push the top of the regulator down further, in order to get a stronger pressure on the presser foot on the fabric.



## TO USE DROP FEED DEVICE

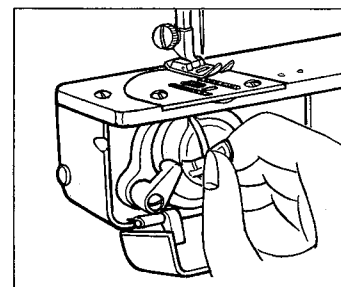
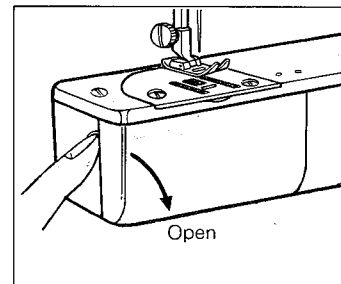
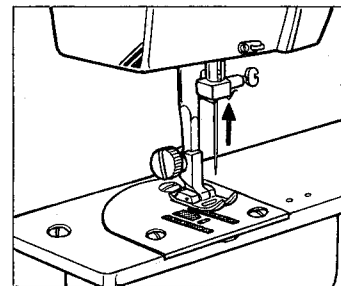
Darning and embroidering is facilitated by means of the special drop feed device which can be operated by the stitch length regulator knob. Turn the stitch length regulator knob to the mark (DOWN) and the feed dog will drop below the surface of the needle plate permitting the free movement of the cloth.

The feed dog resumes its normal operation when the stitch length regulator knob is turned back to "0" and over.



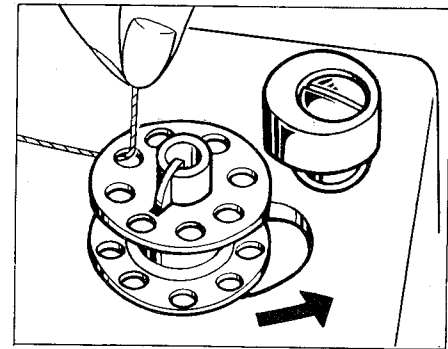
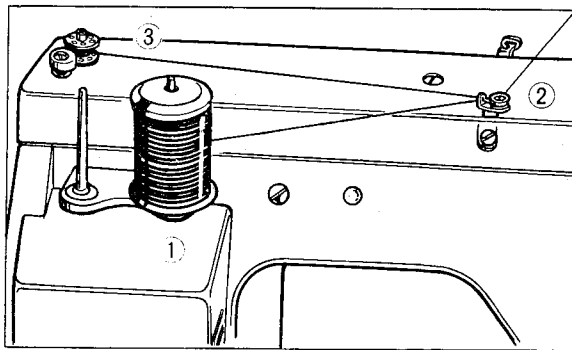
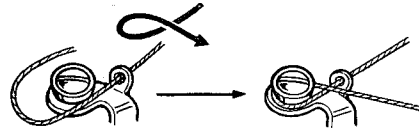
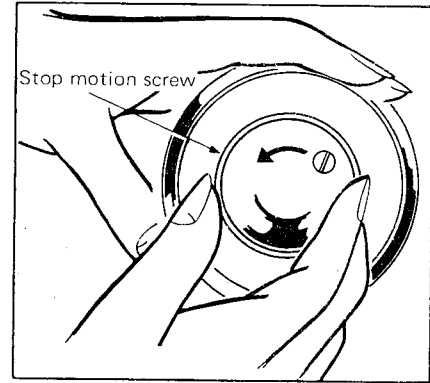
## ***TO REMOVE OR TO INSERT THE BOBBIN CASE***

1. Turn the balance wheel towards you until the needle bar is at its highest point.
2. Open the shuttle race cover.
3. Open the latch to its fullest extent and withdraw the bobbin case.

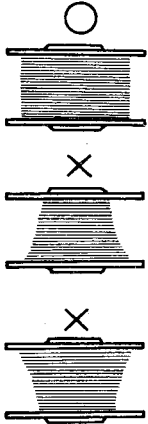


## TO WIND THREAD ON BOBBIN

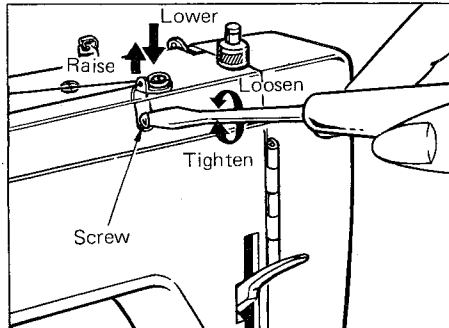
1. While holding the balance wheel with your left hand, turn the stop motion screw toward you with the right hand.
2. Place a spool of thread on the spool pin ( ① ).
3. Pass the thread between the discs of the thread guide bracket ( ② ).
4. Pass the end of thread through hole in the bobbin from inside to outside and slip the bobbin on to the bobbin winder spindle ( ③ ).
5. Then push the bobbin winder spindle so that the bobbin winder stopper fits into the bobbin.
6. Run the machine until bobbin will stop.
7. Then pull the bobbin winder spindle to its original position and cut the thread.
8. Tighten the stop motion screw.



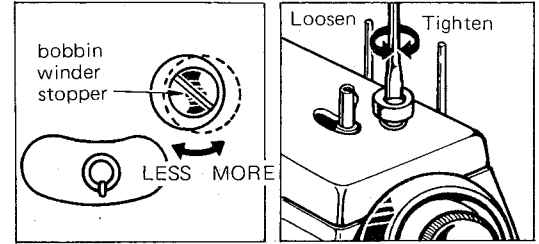
## TO ADJUST BOBBIN WINDER



1. The bobbin must be wound evenly.
2. When the bobbin is wound excessively on the lower part of the bobbin, loosen the screw and then raise the bobbin winder thread guide slightly.
3. When it is wound excessively on the upper part of the bobbin, lower the bobbin winder thread guide slightly.



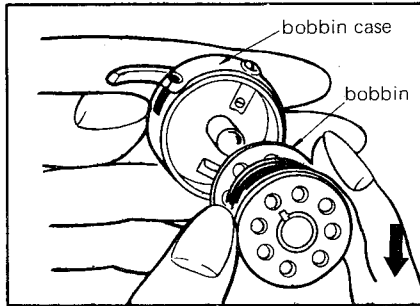
Note: After adjustment, tighten the screw firmly to reset the thread guide.



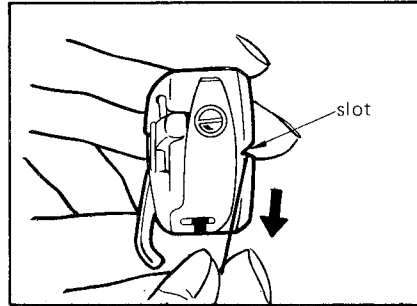
Note: The bobbin winder stopper should be adjusted so that the bobbin stops automatically when the thread is wound 70 to 80% in the bobbin.

## TO THREAD BOBBIN CASE

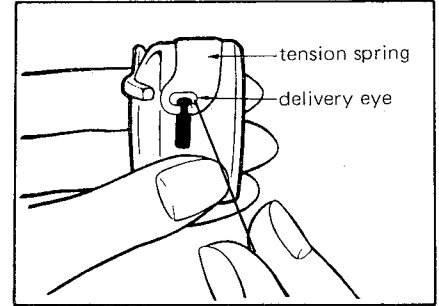
Hold the bobbin between the thumb and the forefinger of your left hand and pull out about 10 cm (4 inches) of thread.



Holding the bobbin case in your left hand, turn the open side up and place the threaded bobbin into it as shown above.

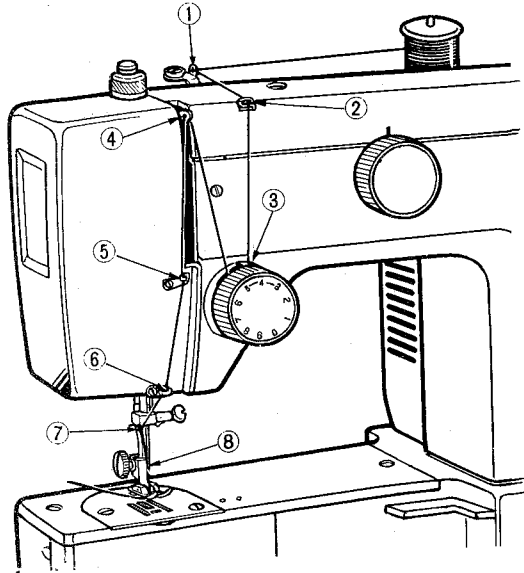


Guide the thread into the slot in the edge of the bobbin case.



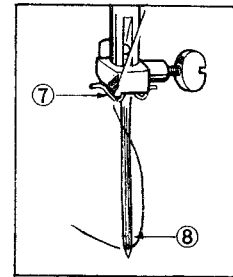
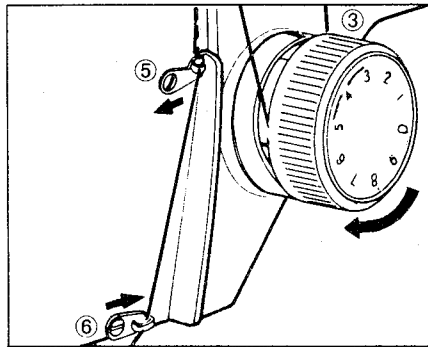
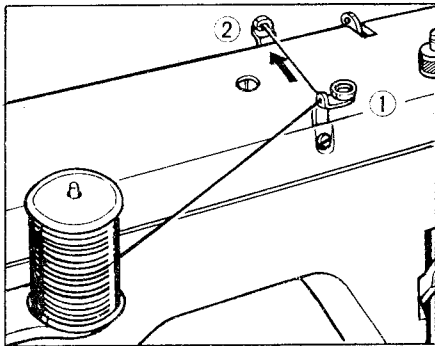
Pull it under the tension spring and then into the delivery eye.

## TO THREAD NEEDLE

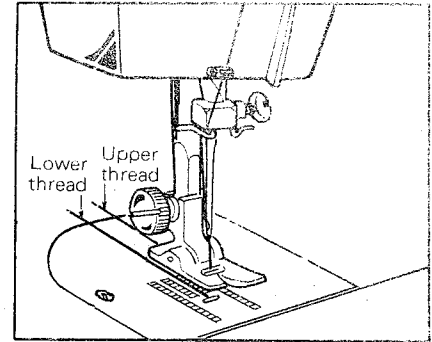
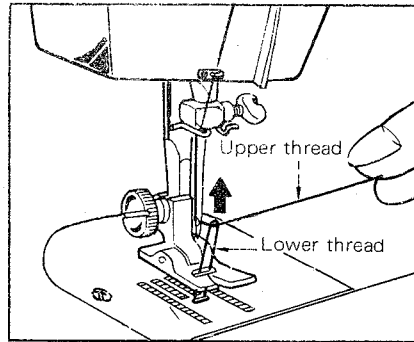
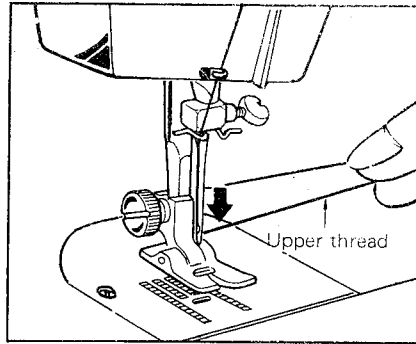


Raise the thread take-up lever to its highest point by turning balance wheel toward you. Then raise the presser bar lifter and lead the thread through all points from ① to ⑧ as follows:

1. Place a spool of thread on the spool pin.
2. Guide the thread into the top cover thread guides (① & ②).
3. Lead the thread between tension discs (③) from the right and pull it up. The thread will automatically pass through under tension guard and take-up spring.
4. Up the thread into the thread take-up lever (④), then down through thread guides (⑤ & ⑥) and into the guide (⑦) at the lower end of the needle bar.
5. Then pass through the eye (⑧) of the needle from front to back. Draw about 15 cm (5 inches) of thread through the eye of the needle.



## TO DRAW UP LOWER THREAD




1. Hold the end of the upper thread with your left hand. Turn the balance wheel toward you slowly until the needle moves down and up again, then stop the balance wheel.
2. Pull the upper thread slowly, then the lower thread will be brought up from the needle hole in a loop.
3. Pull both ends of the threads from under the presser foot and place them away from you.

### **\*BEFORE START SEWING**

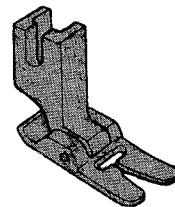
Wipe off oozed oil over your machine before start sewing at first in use, because this machine has been applied rust proof oil and lubricant.



## STRAIGHT SEWING

presser foot .....	zigzag foot
pattern selector .....	
stitch width .....	M
stitch length .....	1 ~ 4

presser foot for zigzag stitch

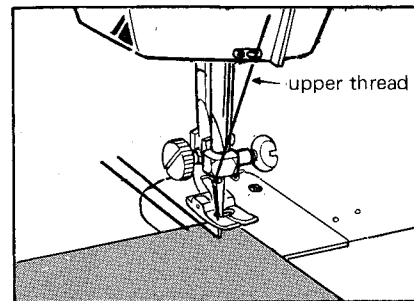


## TO START SEWING

Place the cloth under the presser foot.

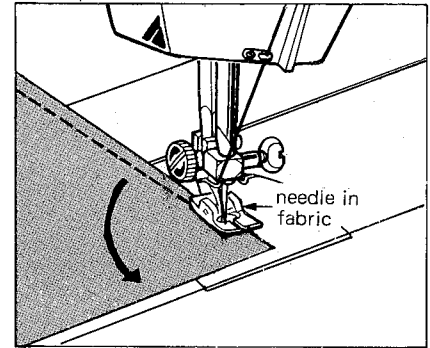
With the left hand hold loosely both ends of threads and turn the balance wheel with the right hand to let the needle penetrate the point from which to start sewing.

Lower the presser foot on the cloth and start sewing.



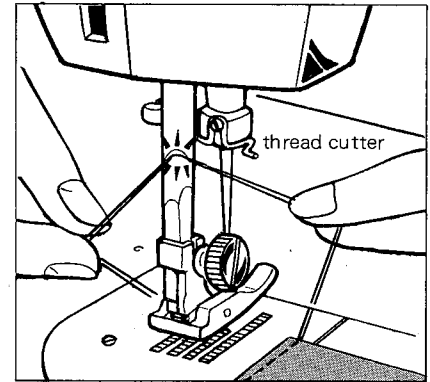
## ***TO TURN CORNER***

1. Stop sewing with the needle in the fabric and lift the presser foot.
2. Turn the fabric around the needle.
3. Lower the presser foot and start to sew again.



## ***TO FINISH SEAM***

1. At the end of a seam, press the reverse feed button to sew a few reverse stitches for reinforcement.
2. Stop the machine when the thread take-up lever is at its highest point. Raise the presser foot and remove the fabric away from you.
3. Sever the threads with either the thread cutter slotted in the presser bar or with a pair of scissors, leaving about 15 cm (6 inches) of thread from the eye of the needle.



## **AUTOMATIC ZIGZAG SEWING**

Special pattern forming cams are built in your machine for the following utility stitches.

presser foot .....zigzag foot  
 pattern selector .....as shown below  
 stitch width .....as shown below  
 stitch length .....as shown below

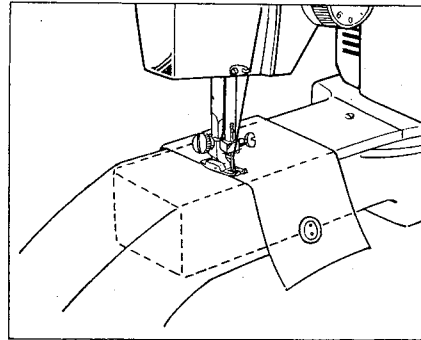
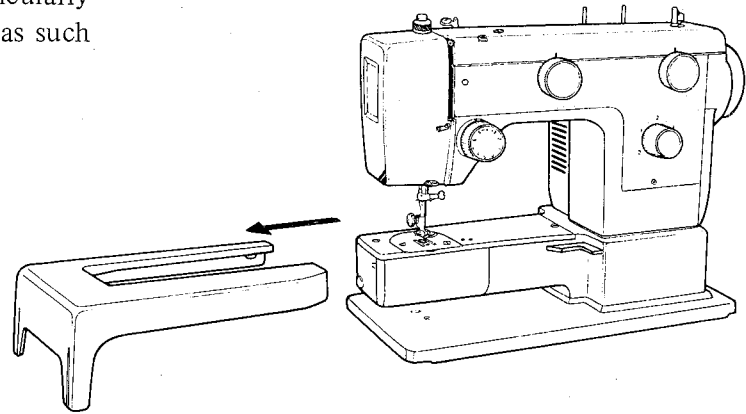
Note:

To set dials, please follow the instructions given on applicable pages for each particular type of sewing.

Symbols	Patterns	Stitch Length	Stitch Width	Symbols	Patterns	Stitch Length	Stitch Width
		0.3~4	1~5			4	M
		0.3~4	5			1~3	3~5

## *TO SEW TUBULAR MATERIAL*

The free arm feature of this machine is particularly suitable for sewing and darning tubular areas such as sleeves, trousers, socks, etc.





### **\*Sewing procedure:**

Insert the tubular fabric in the free arm, lower the presser foot and commence sewing. Guide the cloth gently with your hands.

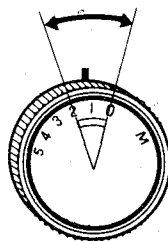
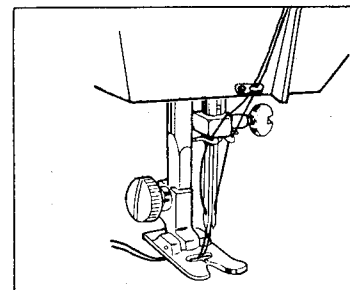
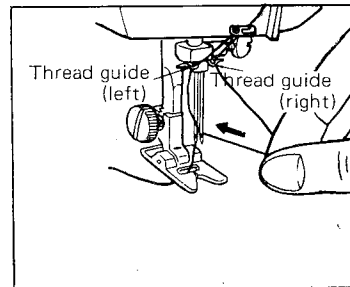
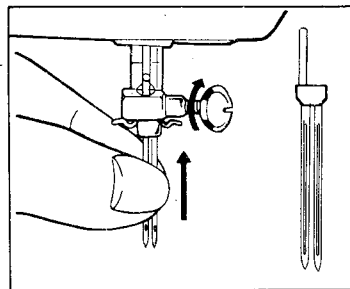
## TWIN NEEDLE SEWING

Colorful patterns are sewn with a twin needle using two threads of contrasting colors.

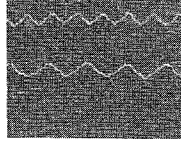
presser foot .....	zigzag foot
pattern selector .....	 or 
stitch width .....	0 ~ 2
stitch length .....	0.5 ~ 1

1. Set the desired width between "0-2" by turning the stitch width regulator knob.  
Do not set the dial over "2" to avoid needle breaking.
2. Insert the twin needle correctly as the same way as you do with the single needle.
3. Place two spools of threads on the spool pins.
4. Guide the threads the same way as in the case of the single needle threading and separate the threads so that each thread is guided through the thread guides either side of the needle bar.

Note: \* In turning the cloth at the corner, keep the needle up from the material.  
\* Otherwise the needle will break or bend.




## TRICOT STITCH OR MULTIPLE ZIGZAG SEWING

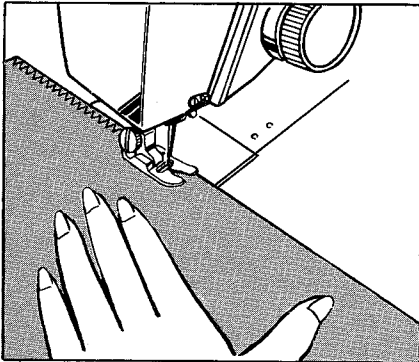


Tricot stitch is well suited for mending such as rents and tears.

This is also useful for application of elastic materials.

presser foot .....	zigzag foot
pattern selector .....	
stitch width .....	5
stitch length .....	0.3 ~ 4

1. Make sure that presser foot is for zigzag stitch.
2. Set the dials as shown left.
3. Commence sewing.



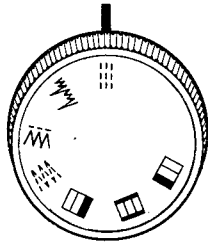
### Note:

- \* Use the blue tipped needle (illustrated in page 26).
- \* In order to maintain the form or shape of the stretch material, the use of lining is recommended wherever possible.
- \* To set the machine from tricot stitching to zigzag stitching, be sure to set the stitch width dial at "5" before moving the other dials.

## STRETCH STITCH SEWING

If you want to sew stretch materials, this type of stitches enables you to prevent thread breakages. It is also useful for sewing stitches, such as crotch depth, pockets, etc., or any part of a garment where there is extra stress or pull.

presser foot .....	zigzag foot
pattern selector .....	⋮
stitch length .....	4
stitch width .....	M



pattern selector

### Note:

\*To set the machine from stretch stitching to zigzag stitching, be sure to set the stitch width dial at "5" before moving other dials.

### WHEN SEWING STRETCH MATERIALS

\*In order to maintain the shape when using stretch material, use of lining is advisable.

\*It is advisable to use the blue tipped needle illustrated in the needle pack of the accessory set, for use of this needle will enable you to prevent skipped stitches.

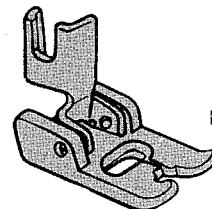


dark blue colored

## BUTTONHOLE SEWING

The buttonhole stitch maker built into this machine will enable you to sew a buttonhole in a short time without turning fabric.

presser foot	.....	buttonhole foot
pattern selector	.....	■ → ■■ → ■■■ → ■■■■
stitch width	.....	5
stitch length	.....	0.3 ~ 1.1



Buttonhole foot

Replace the presser foot with the plastic buttonhole foot.

With a pencil or tailor's chalk, mark the position and the length of the buttonhole on the fabric.

Set the stitch length regulator knob at any point within the mark (Fig. 1) depending on what kind of satin stitches you may require.

(Coarse stitches for a heavy material and fine stitches for a light material are suggested for buttonhole sewing.)

Note: When you sew buttonholes on stretch material, it is recommended to base a piece of backing fabric underneath.

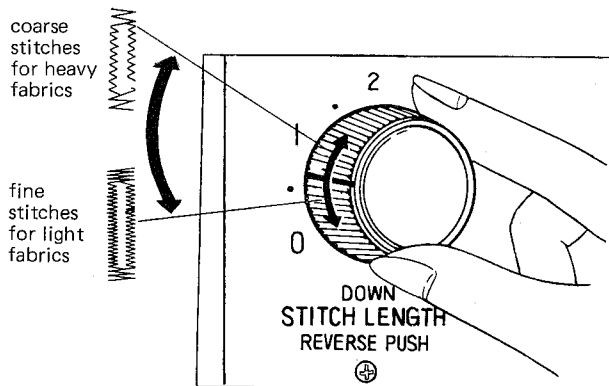


Fig. 1

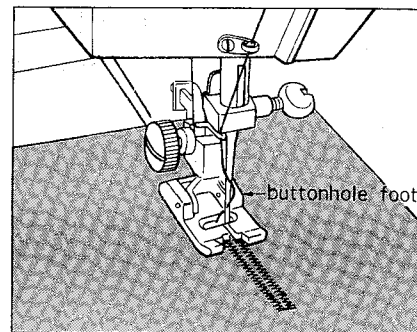




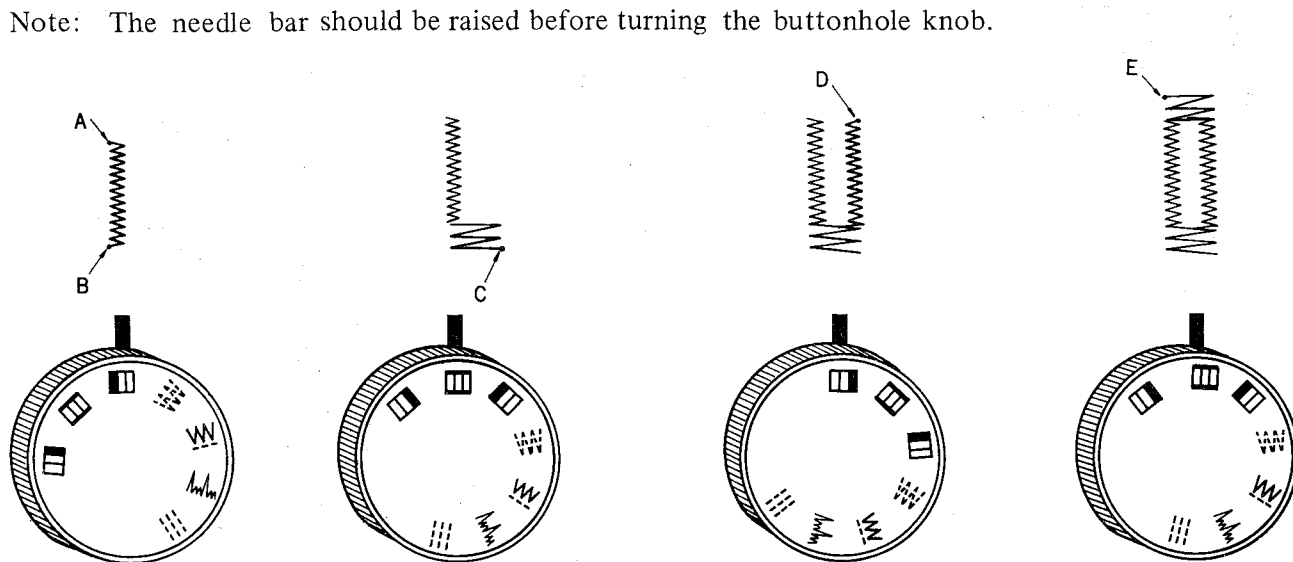


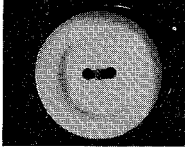
Fig. 2




1. Set the buttonhole knob at “” and turn the balance wheel towards you until the needle comes to point (A).
2. Sew slowly until a desired length is sewn and stop the machine at the point (B).
3. Set the buttonhole knob at “” and sew about five stitches until the needle comes to the point (C).
4. Set the buttonhole knob at “”, sew until the right row is as the same size as the left one and stop the machine when the needle comes to the point (D).
5. Set the buttonhole knob at “” and sew about five stitches until the needle comes to the point (E).
6. To lock the thread, set the zigzag width regulator knob at “0” and sew a few stitches.
7. Cut the slot of the buttonhole with a seam ripper or a pair of scissors carefully not to cut through the bar tacks. (To make a heavier buttonhole, sew twice by repeating the same procedure.)



## SEWING ON A BUTTON

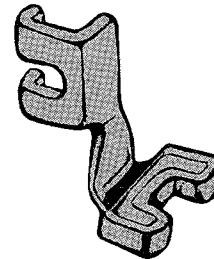
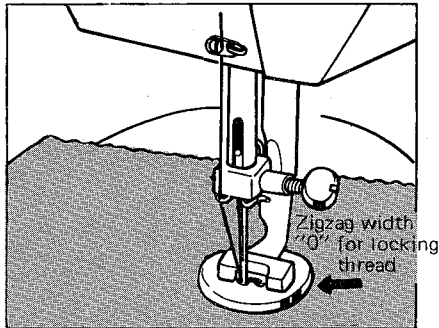


presser foot .....	button sewing foot
pattern selector .....	
stitch width .....	distance between the holes
stitch length .....	DOWN

1. Replace the presser foot with the button sewing foot.
2. Place a button on the fabric with its hole in horizontal line and the left side hole underneath the needle.
3. Set the stitch width knob at "0" and see if the needle drops into the left hole of button by turning the balance wheel towards you slowly.

4. Lower the presser foot on the button.
5. Set the stitch width knob in accordance with the distance between the holes in the button so that the needle drops in the right hole of the button.
6. Sew five or six stitches slowly.
7. To lock the thread, set the zigzag width at "0" and make three or four stitches.


Note: The needle should be raised before turning the stitch width regulator knob.



Button sewing foot  
(optional extra)



## SEWING IN A ZIPPER

presser foot .....	zipper foot
pattern selector .....	
stitch width .....	0
stitch length .....	1 ~ 4

Using the zipper foot you can sew zippers on the fabric.

Attach the zipper foot to the presser bar in place of the presser foot.

Pin or baste zipper to fabric and place the work in position under the presser foot.

Loosen the zipper foot adjusting screw to set the foot on the left side of the needle, and sew the left side zipper as shown. (Fig. 2)

To sew the right-side zipper, loosen the screw and bring the foot to the right side of the needle.

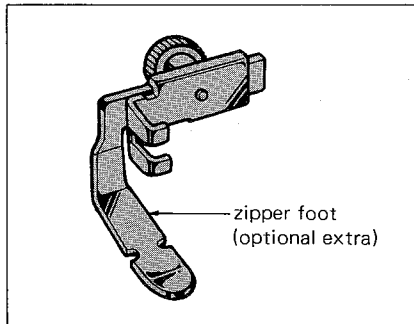


Fig. 1

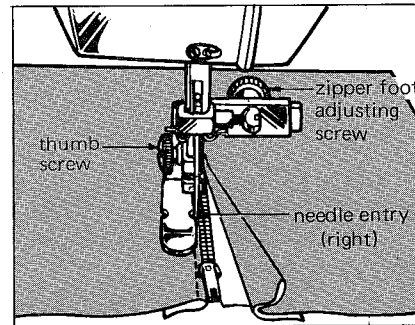
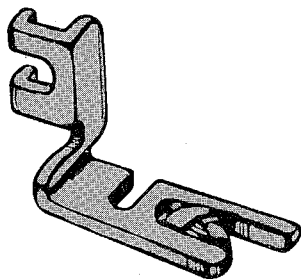


Fig. 2

## TO USE HEMMER



Hemmer foot  
(optional extra)

presser foot .....	hemmer foot
pattern selector .....	
stitch width .....	M
stitch length .....	1 ~ 4

Cut off the right corner of the cloth so that it can be easily inserted into the hemmer.

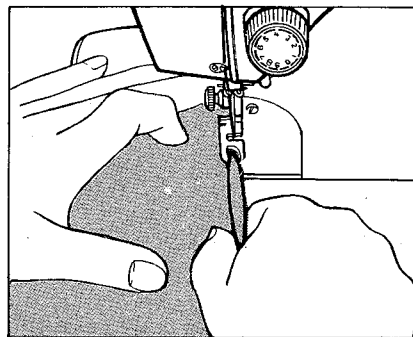
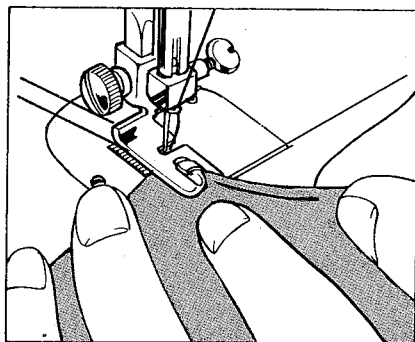
Folding the edge of the cloth a little, insert it into the mouth of hemmer.

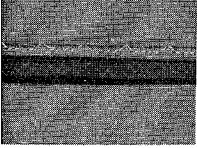
Lower the hemmer foot on the cloth and start stitching slowly.

While sewing, hold the cloth carefully so that it is sufficiently fed into the mouth of hemmer.


When the cloth slips out of the mouth of hemmer, move the cloth to the right.

When the cloth is rolled up excessively, move it a little to the left.





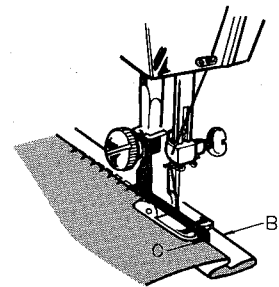
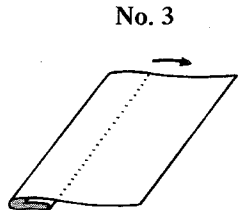
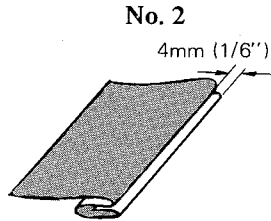
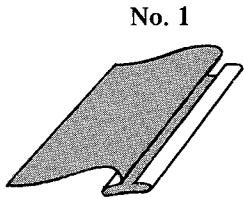
## TO SEW BLIND STITCH HEM

presser foot .....	zigzag foot
pattern selector .....	
stitch width .....	3 ~ 5
stitch length .....	1 ~ 3
attachment.....	BS hem guide

1. Turn the balance wheel until the feed dog goes down below the needle plate level. Lower the presser foot.
2. Then loosen the presser foot thumb screw to insert the blind stitch hem guide between the screw and the presser foot.
3. Tighten the presser foot thumb screw making

sure that the guide (A) is placed in the middle of the toes of the presser foot.


4. With the fabric inside out, fold it to the desired size of hem. (No. 1)
5. Fold it again leaving a margin of 4 mm (1/6 inch) on the bottom fold (B). (No. 2)
6. Place the fabric under the presser foot with the double fold line against the left side of the blind stitch hem guide.
7. Lower the presser foot and sew as you feed the double fold (C) along the guide.
8. Unfold the fabric and you will have a blind stitch hem. (No. 3).



A  
Blind stitch  
hem guide  
(optional extra)

# EMBROIDERING AND MONOGRAMMING



presser foot .....	take off
pattern selector .....	
stitch width .....	0 ~ 5
stitch length.....	DOWN

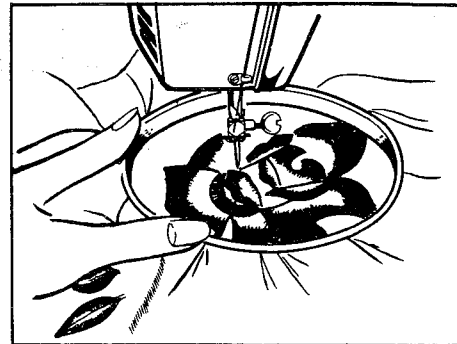
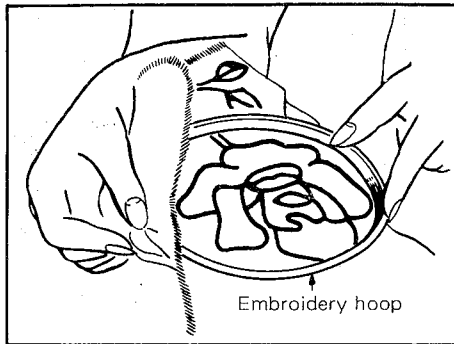
Set the stitch length dial at “DOWN”.

Then lower presser bar lifter. Hold the hoop closely on the machine bed with both hands, press the material with your left forefinger in the vicinity of the needle.

While moving the hoop slowly with the left hand following the design in the fabric, move the zigzag width dial to change the width.

(Set the upper thread tension as light as possible lest the lower thread be pulled up to on the surface.)

- \* Draw your desired design on the fabric with a pencil or tailor’s chalk before sewing.
- \* Embroidery will be done most successfully when the fabric is stretched and fixed in an embroidery hoop.



## TO CLEAN SHUTTLE RACE

Because your machine is specially equipped with the shuttle thread ejector which prevents jamming of the shuttle, it will rarely be necessary to open and clean the shuttle-race.

However, if for some reason it should be required to open and clean the shuttle-race;

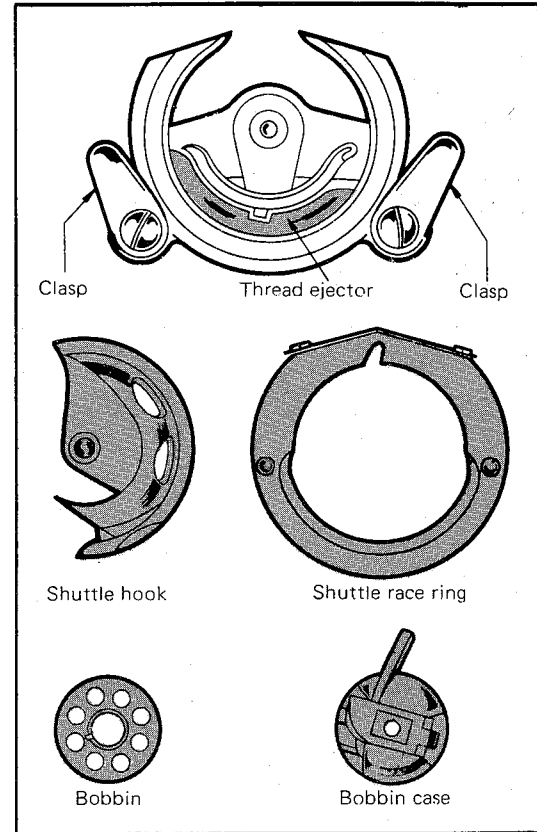
First raise the needle bar to its highest point and remove the bobbin case.

Next, twist the shuttle-race ring clasps outward and take out the shuttle-race ring.

Carefully remove shuttle hook and clean out shuttle race. Apply one or two drops of oil on shuttle race and shuttle hook, then wipe them off slightly.

\* Do not apply too much oil, otherwise it causes stain on fabric or thread breaking.

Replace shuttle hook, shuttle-race ring and lock with clasps. Be careful not to drop the shuttle to avoid possible damage.



## ***TO CLEAN FEED DOG***

It is necessary to keep the feed dog teeth always cleaned in order to ensure smooth sewing.

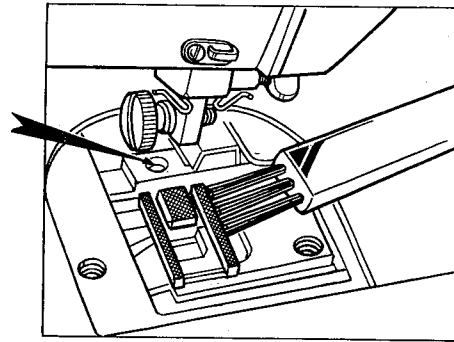
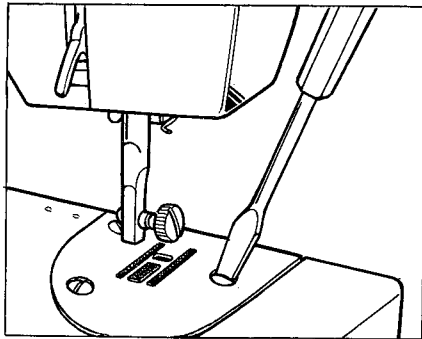
Remove the needle and the presser foot.

Unscrew the needle plate set screws with a driver to take off the needle plate from the machine bed.

With a brush, clean out dust and lint clogged on the feed dog teeth.

Reset the needle plate.

**NOTE:** After cleaning feed dog, apply a few drops of sewing machine oil without fail to the point as shown in the illustration.



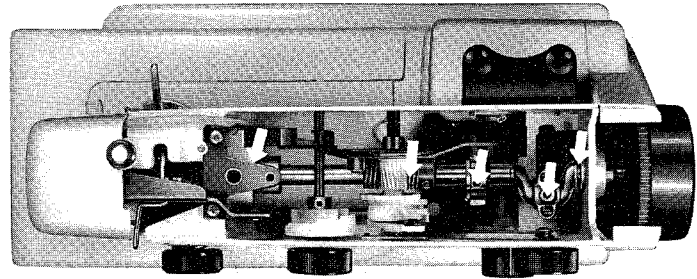
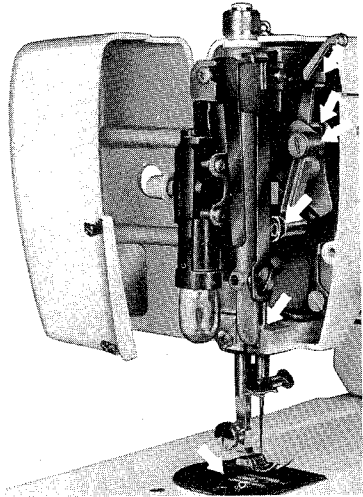


## ***TO OIL MACHINE***

Apply a few drops of fine quality sewing machine oil to the points indicated by the arrows in the figures. For a machine in constant use, oil two or three times a week.

In case the machine does not work smoothly due to standing idle for some time, apply a few drops of kerosene at the oiling points, and run the machine rapidly for a minute.

Before oiling, wipe off the oiling points. Also wipe off surplus oil after oiling.



## ***TO REGULATE BELT TENSION ON MOTOR***

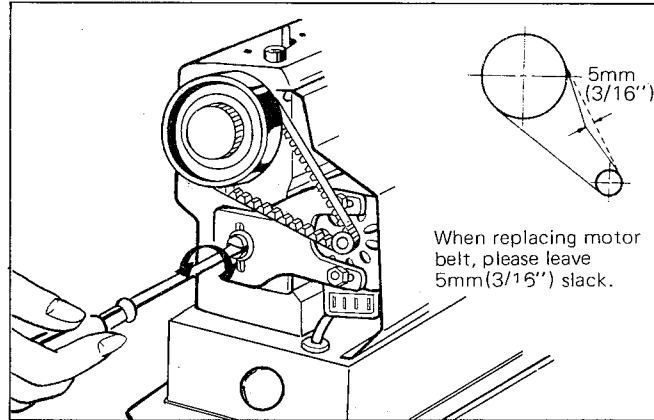
To adjust the belt tension, take off the belt cover and loosen the fixing screw about one turn with a screwdriver.

This will allow the motor to move downward or upward.

Then firmly tighten the screw, and the belt should have the correct tension.

### **CAUTION:**

Do not tighten the belt too tightly.



## UNSATISFACTORY CONDITIONS : CAUSES AND REMEDIES

### THE UPPER THREAD BREAKS

CAUSE	REMEDY
<ol style="list-style-type: none"><li>1. The needle is not threaded correctly.</li><li>2. The tension is too tight.</li><li>3. Something is wrong with the needle.</li><li>4. The thread used is too heavy for the needle.</li><li>5. Thread take-up spring is broken.</li><li>6. The needle is not set correctly.</li><li>7. The needle plate, the hook, or the presser foot is damaged.</li></ol>	<p>Thread the needle correctly. Loosen it. Replace it. Replace it. Replace it. Set it correctly. Replace it.</p>

### THE LOWER THREAD BREAKS

<ol style="list-style-type: none"><li>1. When the lower thread is not wound correctly, it gets entangled.</li><li>2. The lower thread is off the tension spring of the bobbin case.</li></ol>	<p>Wind it properly. Put it in its proper position.</p>
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### SKIPPED STITCHES

<ol style="list-style-type: none"><li>1. The needle is not attached to the needle bar correctly.</li><li>2. The needle is either bent or blunt.</li><li>3. A worn needle is used.</li></ol>	<p>Attach it properly. Replace it. Replace it.</p>
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### THE NEEDLE BREAKS

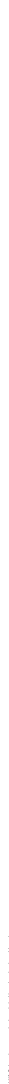
<ol style="list-style-type: none"><li>1. The needle is bent.</li><li>2. The needle is not attached properly.</li><li>3. The material is too thick or heavy.</li><li>4. The material is being pulled by the operator.</li><li>5. The needle is of inferior quality.</li></ol>	<p>Replace it. Attach it correctly. Use a needle of the correct size. Do not pull on the cloth. Replace it with better needle.</p>
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CONTINUED

CONTINUED

<b>STITCHING FORMS LOOPS</b>	
<b>CAUSE</b>	<b>REMEDY</b>
<ol style="list-style-type: none"><li>1. The thread tension is not properly adjusted.</li><li>2. The needle is not threaded correctly and/or the bobbin is not wound properly.</li><li>3. The weight of the material and the size of the thread are not appropriate.</li><li>4. Thread take-up spring does not work well.</li></ol>	<p>See instructions for adjustment of upper and lower thread tensions.</p> <p>Thread the needle and/or rewind the bobbin properly.</p> <p>See instructions covering the use of proper needle and threads with varying materials.</p> <p>Replace it.</p>
<b>SEAMS SHRINK OR PUCKER</b>	
<ol style="list-style-type: none"><li>1. The thread tension is too tight.</li><li>2. The pressure of the presser foot is too strong.</li><li>3. Stitches are too small for the weight of the material.</li></ol>	<p>See instructions for adjustment of upper and lower thread tensions.</p> <p>See instructions for adjustment of the pressure of the presser foot.</p> <p>Adjust the stitch length.</p>
<b>IRREGULAR STITCHING</b>	
<ol style="list-style-type: none"><li>1. The upper and lower threads are of inferior quality.</li><li>2. The thread is wound around the bobbin unevenly.</li></ol>	<p>Use thread of best quality.</p> <p>Rewind it.</p>
<b>THE MACHINE DOES NOT WORK SMOOTHLY AND IS NOISY</b>	
<ol style="list-style-type: none"><li>1. The machine is in need of oil.</li><li>2. Dust and waste thread have collected in the shuttle mechanism.</li><li>3. Oil of inferior quality is used and has coagulated.</li><li>4. The tension on the belt is too tight.</li></ol>	<p>Apply oil as per instructions.</p> <p>See instructions pertaining to cleaning the race and shuttle.</p> <p>Clean thoroughly and oil again with proper sewing machine oil of the best quality.</p> <p>Loosen the belt tension.</p>





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