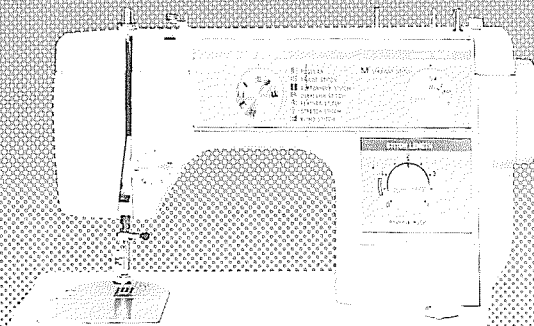


INSTRUCTION BOOK



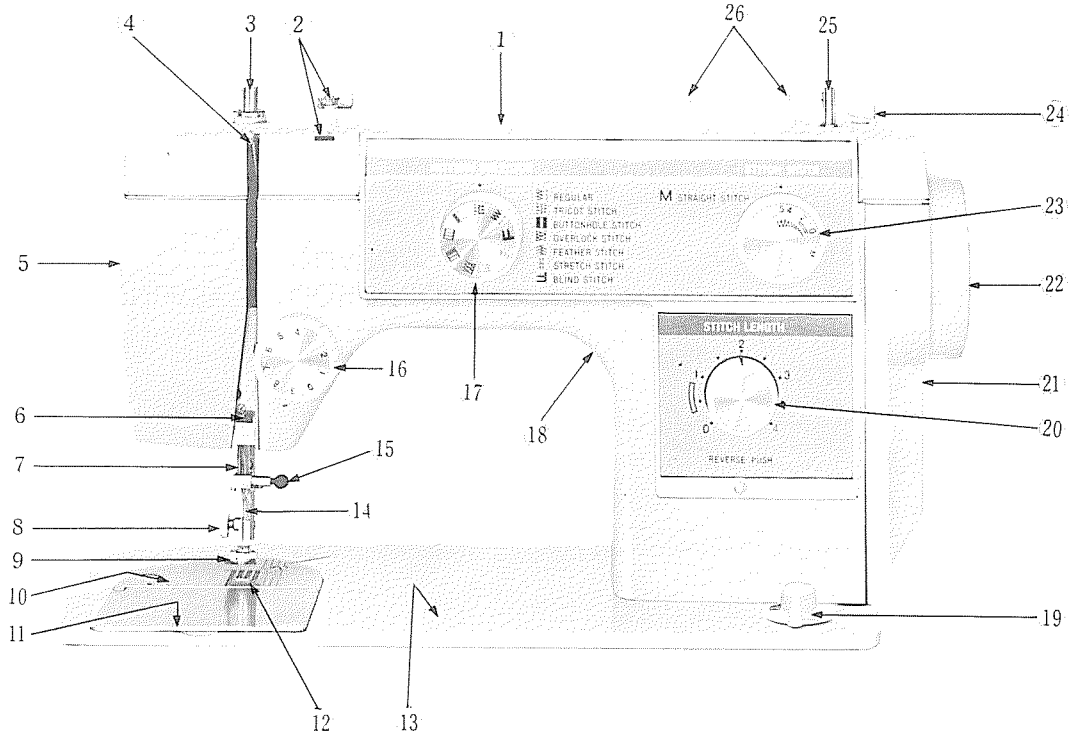
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NAMES OF PARTS

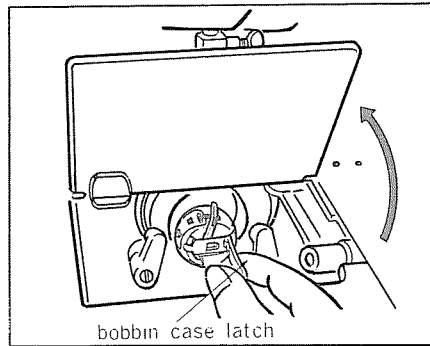


NAMES OF PARTS

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

TO TAKE OUT BOBBIN CASE

1. Turn the balance wheel towards you until the needle bar is at its highest point.
2. Open the shuttle cover plate so that the bobbin can be reached.
3. Lift the latch of bobbin case and draw out the bobbin case. While holding the latch open, the bobbin will lock in the bobbin case. Upon releasing the latch and turning the bobbin case downward, the bobbin will drop out.

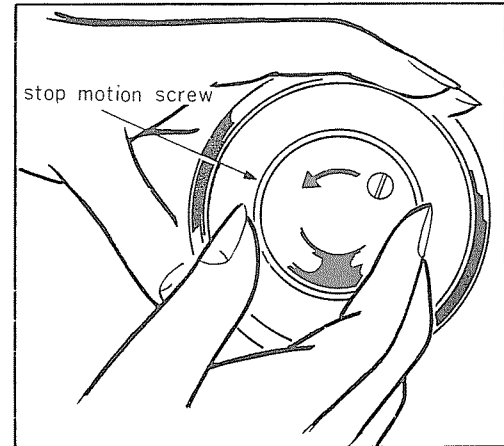


NOTE :

Be careful not to remove the bobbin case when the needle bar is at the lower position. Otherwise the needle and bobbin case may be damaged.

TO WIND THREAD ON BOBBIN

1. While holding the balance wheel with your left hand, turn the stop motion screw towards you with the right hand. This allows the balance wheel to turn freely, disengaging the stitching mechanism.



CONTINUED

2. Place a bobbin on the bobbin winder spindle, turn the bobbin until the notch in the bobbin meets the spring on the spindle, and push the bobbin down. Then push the bobbin winder spindle so that the bobbin winder stopper fits into the bobbin. (Fig. 1)
3. Place a spool of thread on the spool pin.
4. Pass the thread between the disks of the thread guide bracket.
5. Pass the end of the thread through one of the holes in the bobbin from inside to outside. (Fig. 2)
6. Holding the thread with your left hand, start machine running slowly until thread is wound several times. Then cut the free end of the thread. (Fig. 3)
7. Run the machine until the thread is wound sufficient for requirements in the bobbin and stop the machine. Then pull the bobbin winder spindle to its original position. Take out the bobbin from spindle and cut the thread.
8. Tighten the stop motion screw.

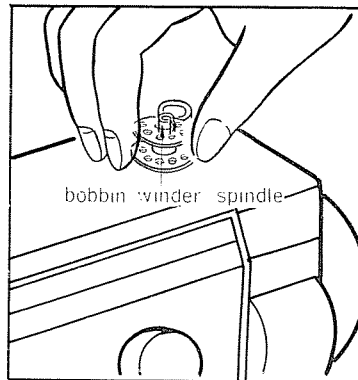


Fig. 1

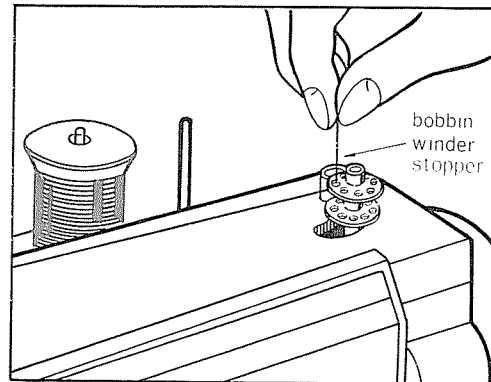


Fig. 2

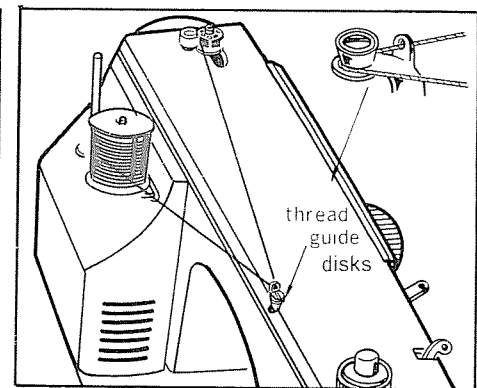
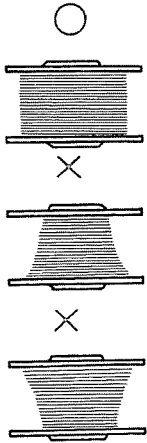
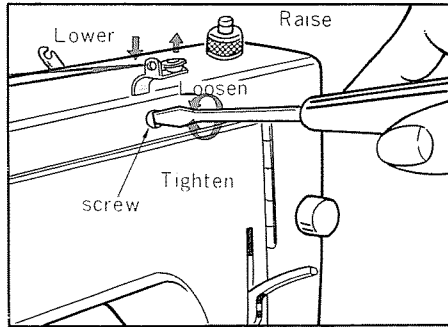


Fig. 3

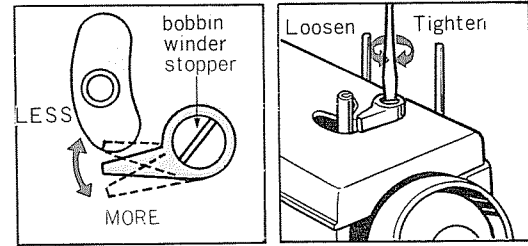
TO ADJUST BOBBIN WINDER



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 top cover thread guide slightly.
3. When it is wound excessively on the upper part of the bobbin, lower the top cover thread guide slightly.



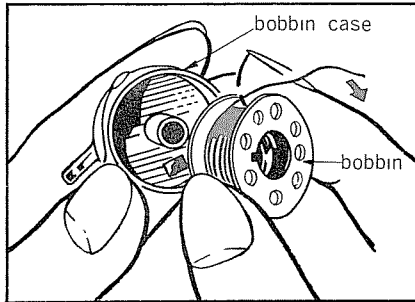
Note: After adjustment, tighten the screw firmly to reset the thread guide.



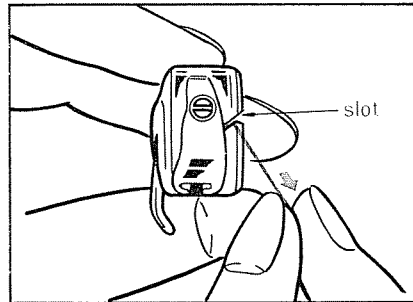
Note: The bobbin winder stopper should be adjusted so that the thread is wound 70 to 80% in the bobbin. When the bobbin is wound fully, the latch will be released automatically. If not, adjust the position of bobbin winder stopper as illustrated above.

TO THREAD BOBBIN CASE

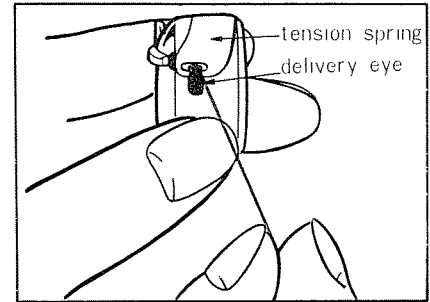
Holding the bobbin between the thumb and the forefinger of your left hand, pull out a few inches of thread.



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 INSERT BOBBIN CASE INTO SHUTTLE RACE

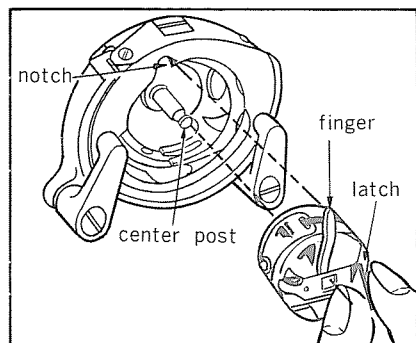
Raise the needle bar to the highest point.

Open the shuttle cover plate.

Hold the bobbin case by the latch and place it on the center post with the bobbin case finger into the notch at the top of the shuttle.

Release the latch and press the bobbin case into the shuttle until the latch catches on the center post with a click.

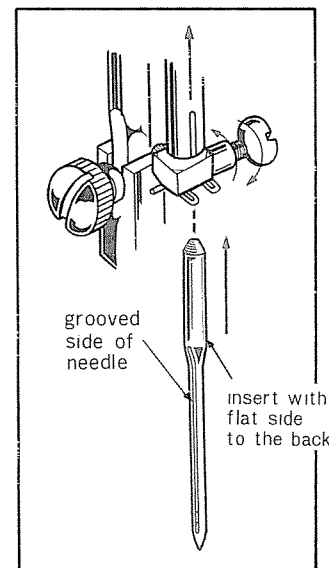
Permit the thread to hang down freely a few inches.



TO INSERT NEEDLE

Raise the needle bar to the highest point by turning the balance wheel with your right hand.

Loosen the needle clamp screw and insert the needle upward into the slot as far as it will go, with the flat side of the needle to the back and the grooved side to the front. Tighten the needle clamp screw firmly.



Note: Avoid using a bent or blunt needle. For perfect stitching, select a right needle and a thread to correspond with the fabric according to the table on Page 11.

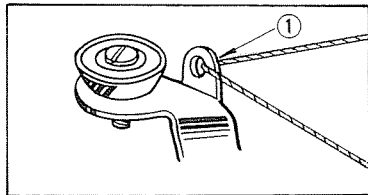
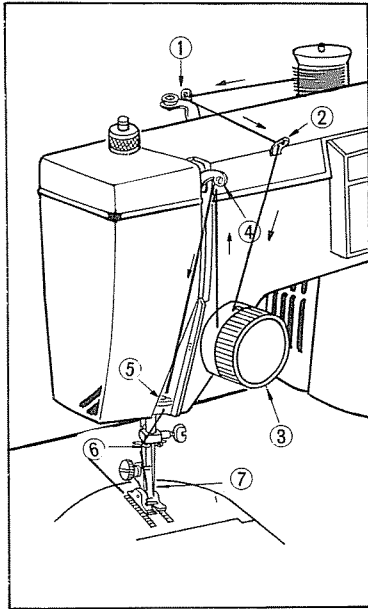
SIZE OF NEEDLE AND THREAD FOR SELECTED CLOTH

Size of Needles	Cloth	Size of Thread
No. 9	Thin calico, silk, serge and muslin.	No. 80-100 cotton thread or fine silk thread.
No. 11	Thin calico, cotton cloth, crepe de Chine, hosiery and silk.	No. 60-100 cotton thread or ordinary silk thread.
No. 14	Ordinary cotton cloth, thick silk, thin woolen goods, towels and shirting.	No. 50-60 cotton thread or ordinary silk thread.
No. 11 SS scarfed needle	Jersey, tricot and all synthetic stretch materials.	No. 60-100 nylon thread, or No. 100-150 silk or cotton thread.
No. 16	Thick cotton cloth, serge and thin woolen goods.	No. 30-40 cotton thread or ordinary silk thread.
No. 18	Ordinary woolen goods, trousers, overcoats, thick calico and children's clothes.	No. 30-40 cotton thread or ordinary silk thread.

NOTE :

Use a good quality mercerized cotton thread, if available, to avoid shrinking when laundered.

TO THREAD NEEDLE



Raise the thread take-up lever to the highest point by turning the balance wheel towards you.

Raise presser foot with presser bar lifter and pass the thread in the order from ① to ⑧.

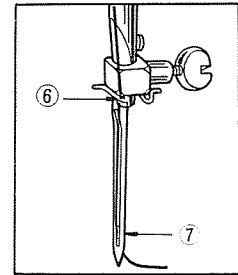
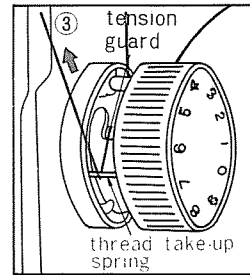
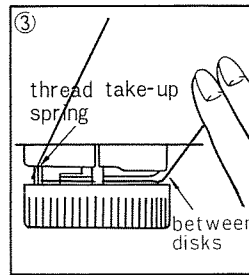
Pass the thread through top cover thread guides (① & ②).

While holding the spool with the right hand, pass the thread between the tension disks ③ from the right and pull it up. By so doing, the thread will automatically pass through and under tension guard.

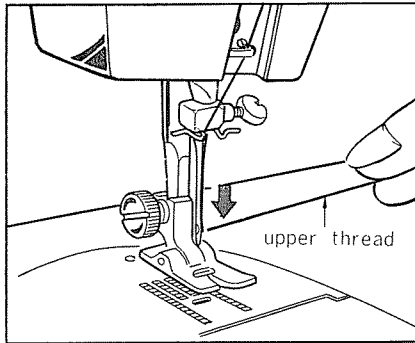
Up the thread and through the hole in the take-up lever ④, down through thread guide (⑤), and into the thread guide ⑥ at the lower end of the needle bar.

Then pass through the eye ⑦ of the needle from front to back.

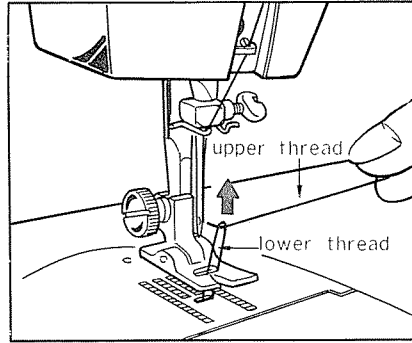
Draw about five inches of thread through the eye of the needle.



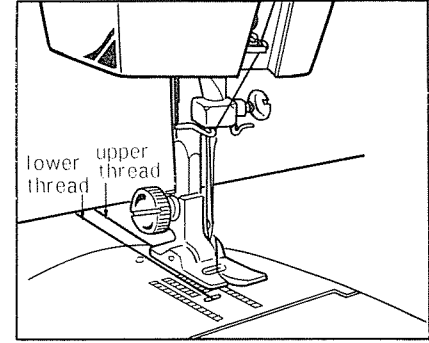
TO DRAW OUT LOWER THREAD



1. Hold the end of the upper thread with your left hand.
Turn the balance wheel towards 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.

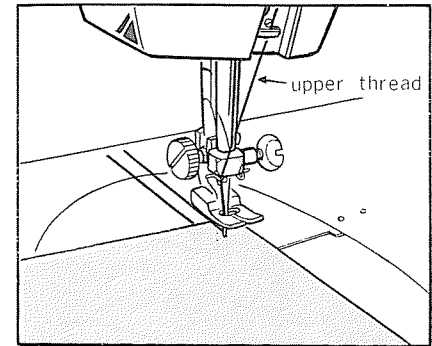
Note:

The threads will tangle unless they are placed opposite you.

TO START SEWING

1. Before you start sewing, take up the slack of the upper thread.

Turn the balance wheel towards you slowly with your right hand to allow the needle to penetrate the point from which to start sewing.



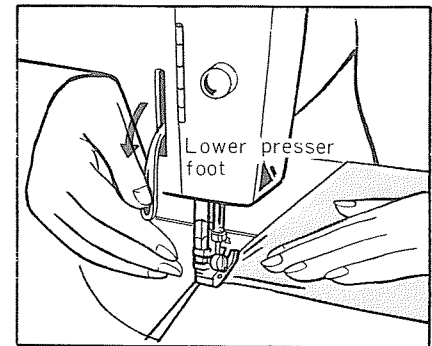
2. Lower the presser foot on the cloth and start sewing.

Note :

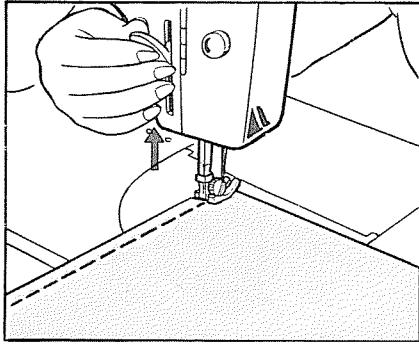
It is also necessary for you to gently guide the material with your hands.

Avoid pulling it because the machine does the feeding.

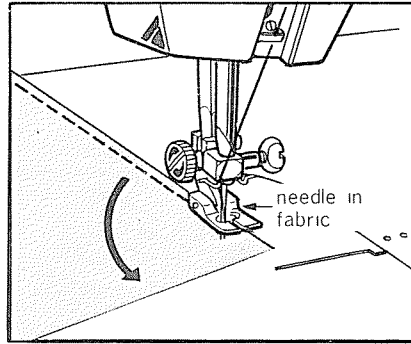
When you begin to sew from the edge of the material, pull the upper and lower threads away from you while you sew the first two or three stitches.



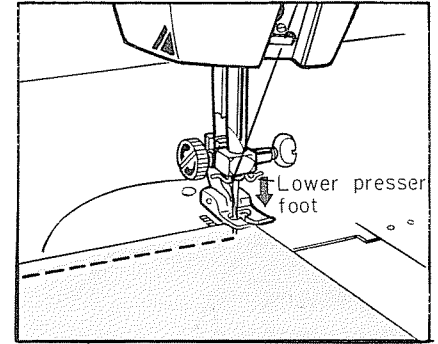
TO TURN CORNER



1. Stop sewing with the needle in the fabric and lift the presser foot.

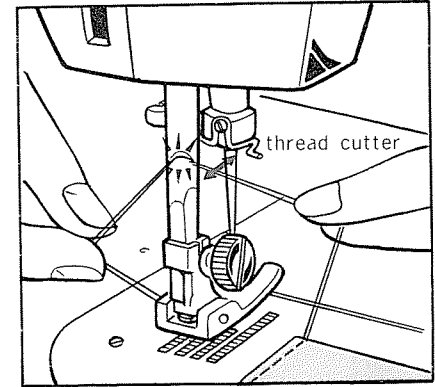
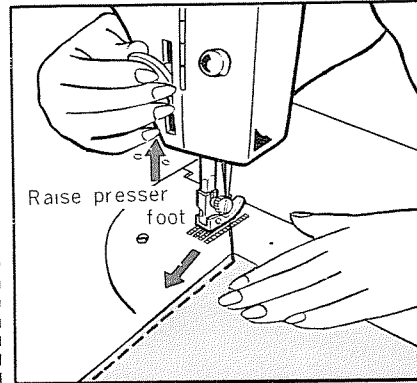
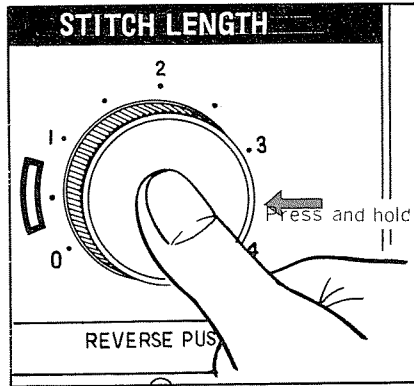


2. Turn the fabric around the needle.



3. Lower the presser foot and start to sew again.

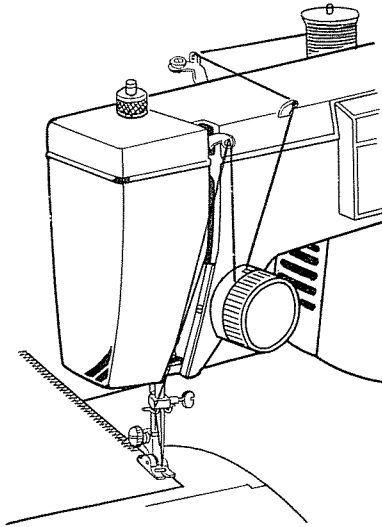
TO FINISH SEAM



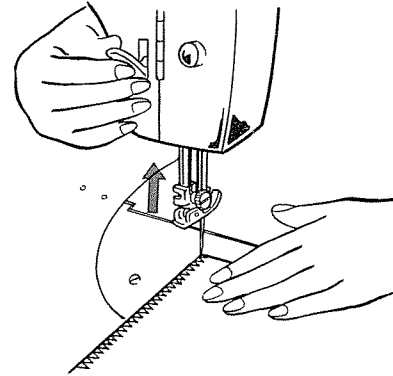
1. At the end of a seam, press the reverse feed knob to sew a few stitches for reinforcement.
2. Stop the machine when the thread take-up lever is at its highest point. Raise the presser foot and remove the fabric away from you.
3. Sever the thread with either the thread cutter slotted in the presser bar or with a pair of scissors, leaving about 5 inches of thread from the eye of the needle.

BASIC SEWING CYCLE

When you come to the end of the seam and it is necessary to remove the work from the machine, it is most important to complete the last stitch cycle fully before lifting the presser foot from the material. This is done by turning the balance wheel towards you in order that both the needle and the take-up lever are at their highest position. You will then find that the work is easily removed from the machine after you lift the presser foot, and the machine is in the correct starting position for the next seam.

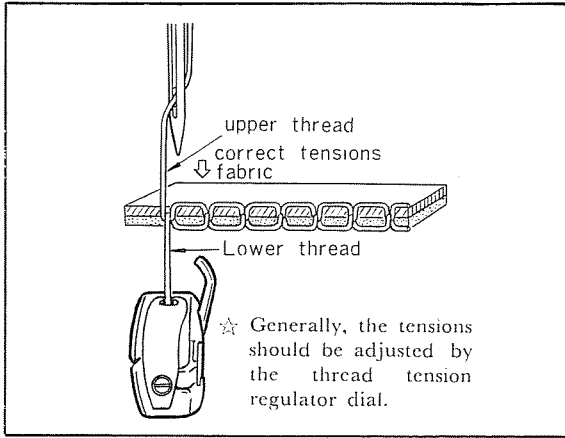


Turn the balance wheel towards you. The needle and the take-up lever are at their highest position.

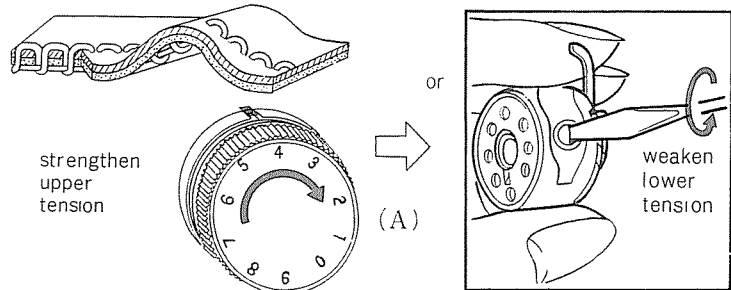


Lift the presser foot.

TO REGULATE THREAD TENSIONS

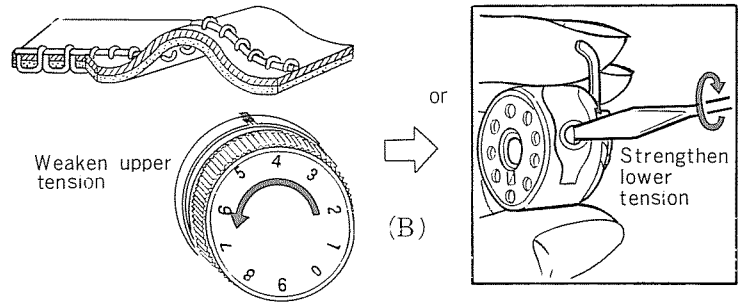


Correct tensions are important for the good appearance of the stitches. If the tensions are not correct, the result will be imperfect stitching. Adjust the tensions as illustrated.



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. 5 or higher will usually rectify the stitch.

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



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. 5 or lower will usually rectify the stitch. If the fault persists, it may be necessary to strengthen the lower tension as illustrated (B).

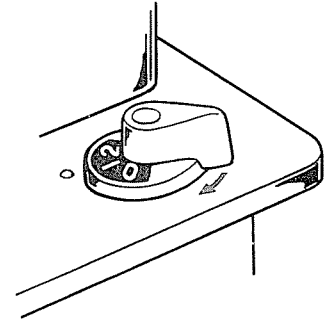
TO USE DROP FEED DEVICE

The drop feed device should be adjusted according to thickness of the cloth.

For sewing average or heavy materials, turn the drop feed knob to “2”.

For sewing light materials like silk, nylon, etc, turn the knob to “1”.

When the knob is turned to “0”, the feed drops below the surface of the needle plate, and you can move freely the cloth for darning or embroidery.

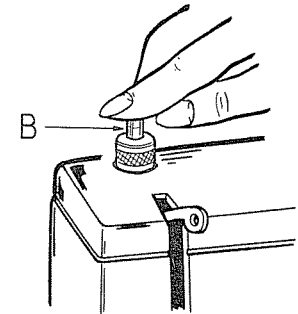
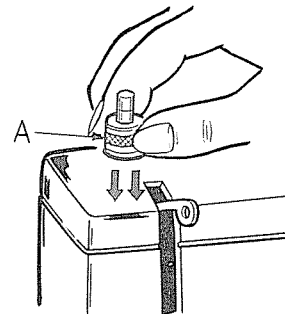


TO ADJUST PRESSURE ON PRESSER FOOT

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 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. Lower the numerals, shorter the stitch length.

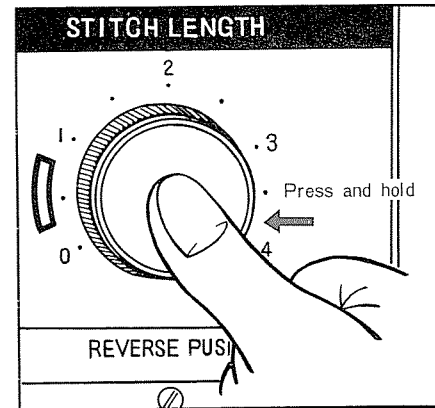
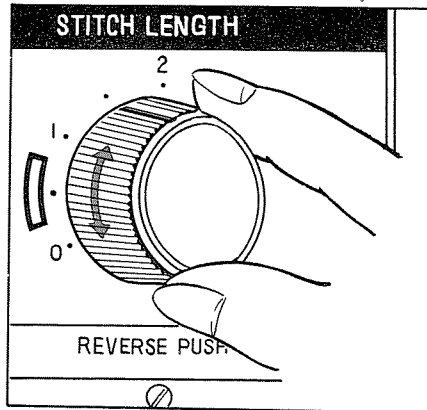
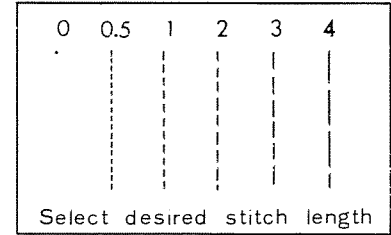
To sew in reverse :

Press the reverse feed knob 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 knob is pressed.

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

Note :

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

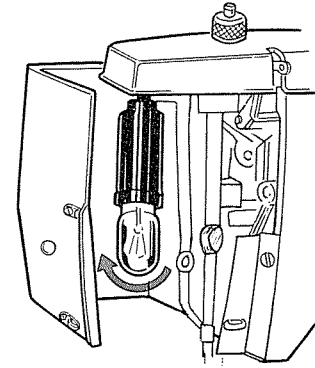


TO USE BUILT-IN SEWLIGHT

Sewlight is turned “on” or “off” by means of the switch which is found on the back of the face plate.

To change the electric bulb, swing open the face plate. Then the bulb can be unscrewed.

In the case of bayonet type bulb, remove the bulb by slightly pushing it upward and twisting it anti-clockwise, and then place a new bulb by fitting the pins on the bulb against the slot, pushing upward and twisting it clockwise.

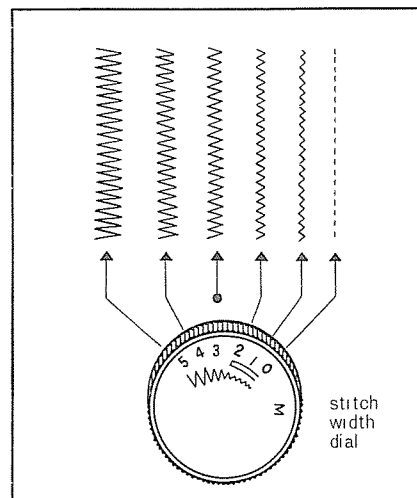


STITCH WIDTH REGULATOR


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

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

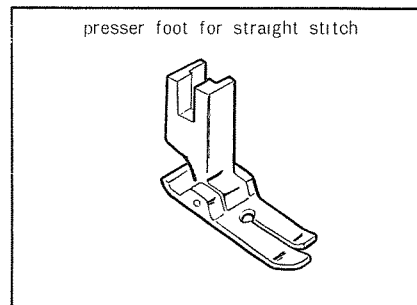
The lower the numeral, the narrower the stitch width.




STRAIGHT SEWING

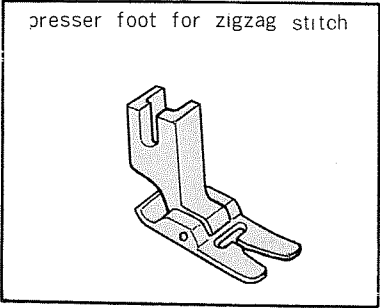
presser foot.....	straight presser foot
pattern selector.....	
stitch width.....	M
stitch length	1 ~ 4

Note : Even in straight sewing, it does not matter at all to use the zigzag presser foot, but in case a fine stitching is required, favorable to replace it with the straight presser foot.








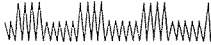

MANUAL ZIGZAG SEWING

presser foot..... zigzag presser foot
 pattern selector..... 
 stitch width 0 ~ 5
 stitch length 0.5 ~ 4



Note: Make sure that presser foot is for zigzag stitch.

By manually adjusting the stitch length and stitch width while running the machine some beautiful ornamental stitches can be made as follows.

Patterns	Stitch Length	Width	Patterns	Stitch Length	Width
	any length	0		any length	slowly 0 to 5 and quickly to 0
	short	5		long and short (repeat)	any width
	any length	1~5		any length	2-5-2
	any length	0-5-0			













AUTOMATIC ZIGZAG SEWING

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

presser foot.....	zigzag foot
pattern selector	any pattern
stitch width.....	M or 0 ~ 5
stitch length.....	0.3 ~ 4




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	0 ~ 5			4	5
		0.3 ~ 4	5			4	M or 0
		4	5			1 ~ 3	3 ~ 5

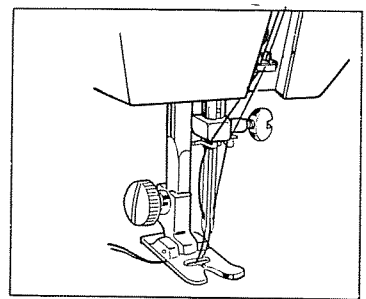
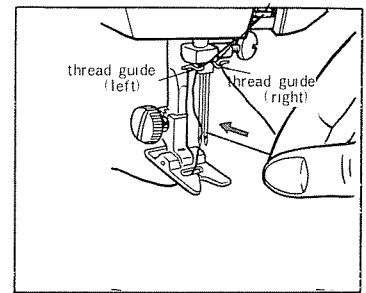
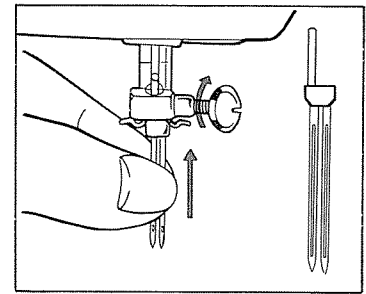
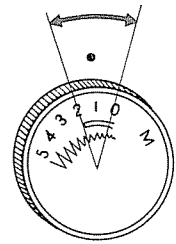
TWIN NEEDLE SEWING

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

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


1. Set the desired width between “0-2” by turning the stitch width knob.
Do not set the knob 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

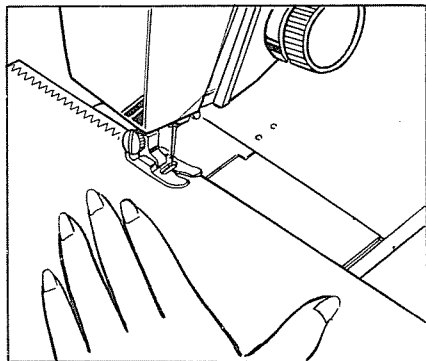
Tricot stitch is well suited for mending such as rents and tears. This is also useful for the reinforcement and application of elastic materials.

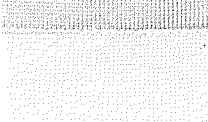
presser foot.....	zigzag foot
pattern selector	
stitch width.....	5
stitch length	0.5 ~ 4

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

Note :

- * Use the dark blue colored scarfed needle (illustrated in page 27).
- * 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 OR TRIPLE STRAIGHT STITCH

If you want to sew stretch materials, this type of stitches enables you to prevent thread breakings and frayings. 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.

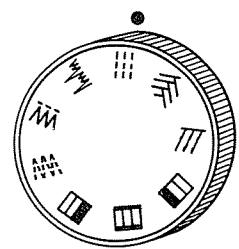
presser foot.....	straight foot
stitch length	4
pattern selector	⏏
stitch width.....	M or 0

Note :

- * First set the stitch length dial at “4”, then turn the other dials.
- * To set the machine from stretch stitching to zigzag stitching, be sure to set the stitch width dial at “5” before moving other dials.

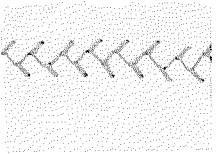
WHEN SEWING STRETCH MATERIALS

- * It is advisable to use the scarfed 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.




pattern selector





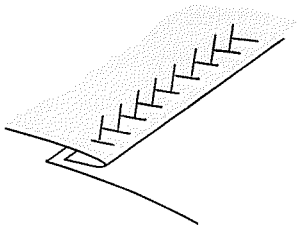
FEATHER STITCH SEWING

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

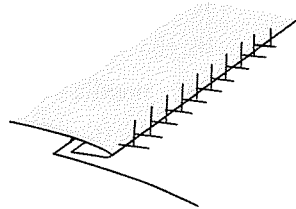
presser foot	zigzag foot
stitch length.....	4
pattern selector	
stitch width.....	5

Note :

- * First set the stitch length dial at “4” then turn the other dials.
- * 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.




or





OVERCASTING

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

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

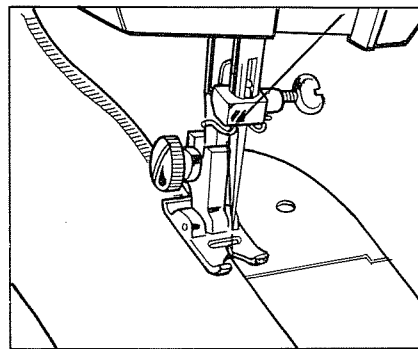
Note :

- * First set the stitch length dial at “4” then turn the other dials.
- * To set the machine from overcasting to zigzag stitching, be sure to set the stitch width dial at “5” before moving the other dials.


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 :

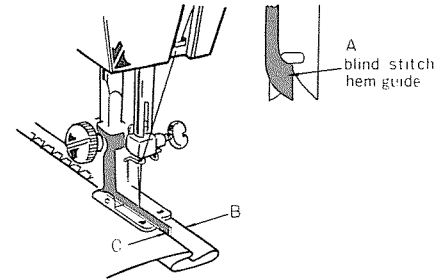
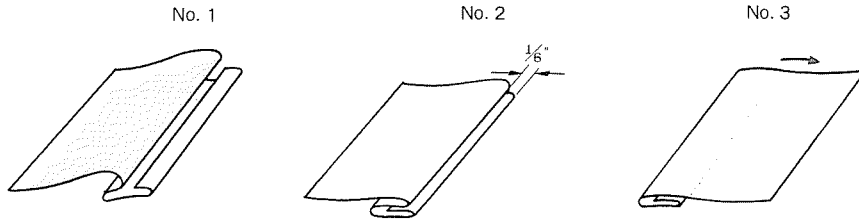
Overcasting will be done most successfully when the right side stitches of zigzag fall slightly off the edge of the cloth.



TO SEW BLIND STITCH HEM

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

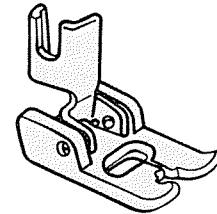
1. Turn the balance wheel until the feed dog goes down below the needle plate level. Lower the presser foot.
2. Then loosen the presser foot thumb screw to insert the blind stitch hem guide between the screw and the presser foot.
3. Tighten the presser foot thumb screw making sure that the guide (A)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



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 ~ 0.8



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.)

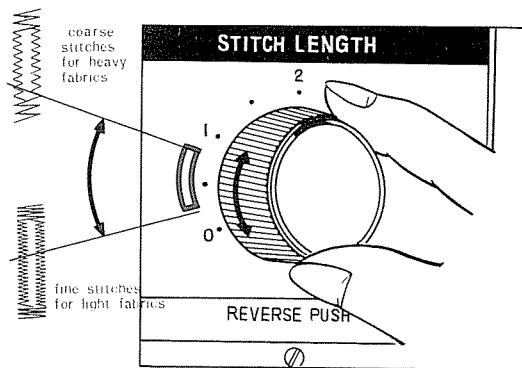


Fig. 1

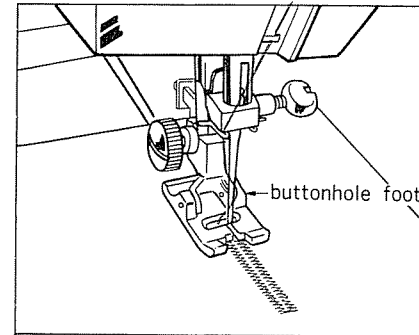




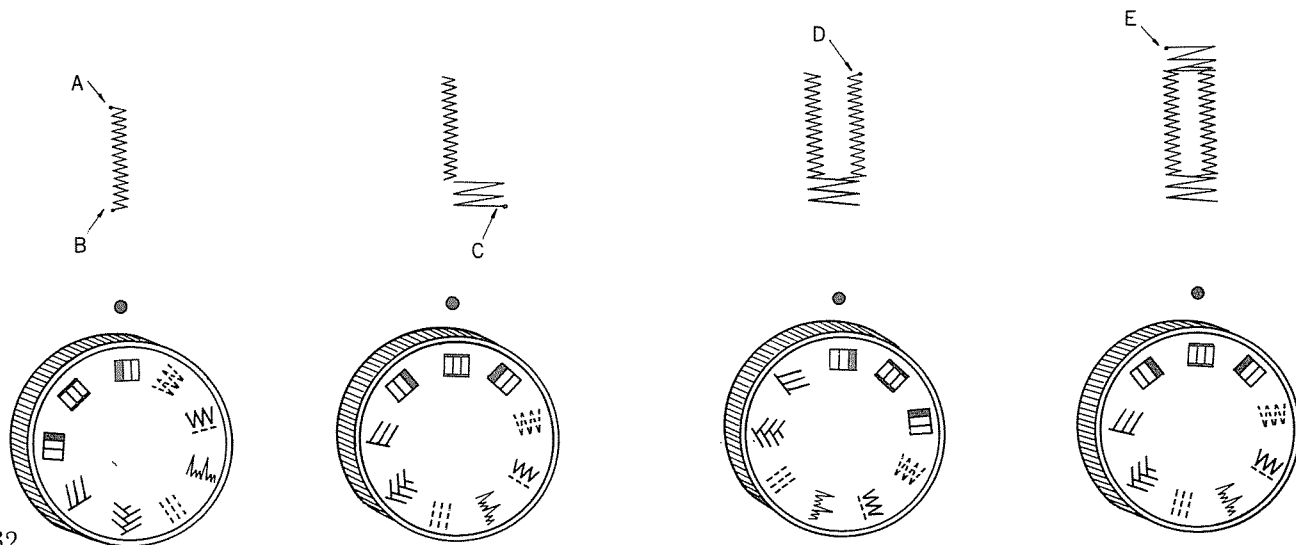


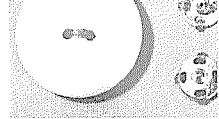
Fig. 2

TO SEW BUTTONHOLE

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 buttonhole cutter carefully not to cut through the bar tacks.
(To make a heavier buttonhole, sew twice by repeating the same procedure.)



SEWING ON A BUTTON

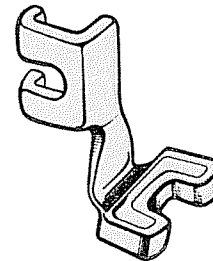
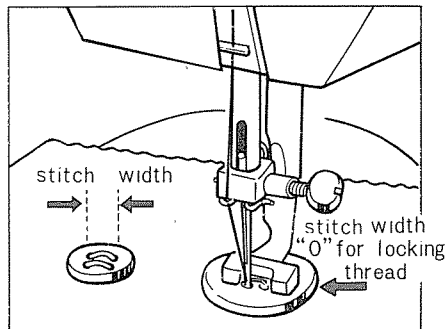



presser foot.....	button sewing foot
pattern selector.....	W
stitch width	distance between the holes
drop feed	0

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 the button by turning the balance wheel towards you slowly.

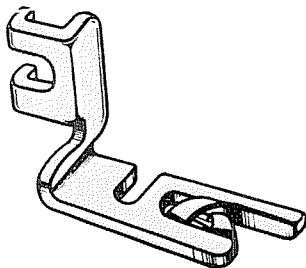
4. Lower the presser foot on the button.
5. Set the stitch width knob in accordance with the distance between the holes in the button so that the needle drops in the right hole of the button.
6. Sew five or six stitches slowly.
7. To lock the thread, set the zigzag width at "0" and make three or four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

Note: Hooks are also sewn on by the same procedure.





TO USE HEMMER



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

Cut the right corner of the cloth to a point little so that it can be easily inserted into the hemmer.

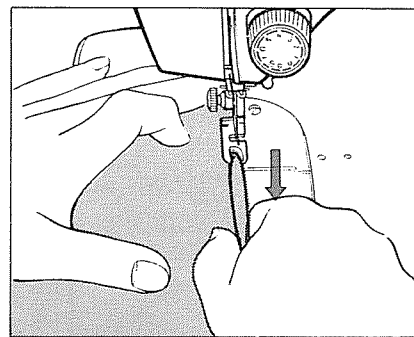
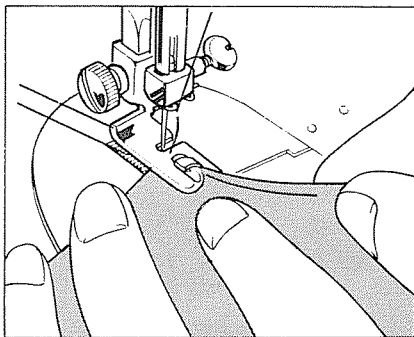
Folding the edge of the cloth a little, insert it into the mouth of hemmer.

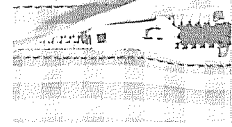
Lower the hemmer foot on the cloth and start stitching slowly.

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.





SEWING IN A ZIPPER

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

Using the double purpose zipper foot (zipper and quilter) included in the accessories, you can sew zippers on the fabric.

Loosen the screw (A) to take off the hook shaped quilter attachment (C) from the zipper foot. 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 thumb screw (B) 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 (D) to the right side of the needle.

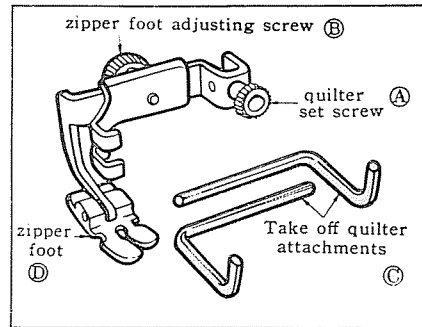


Fig. 1

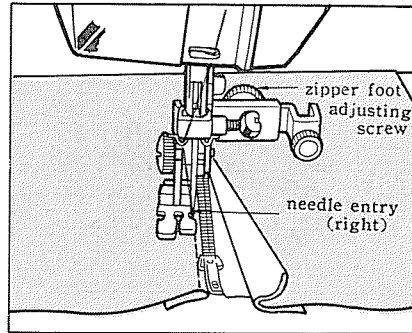
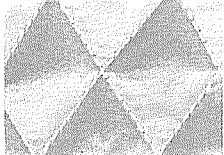


Fig. 2



TO USE QUILTING ATTACHMENT

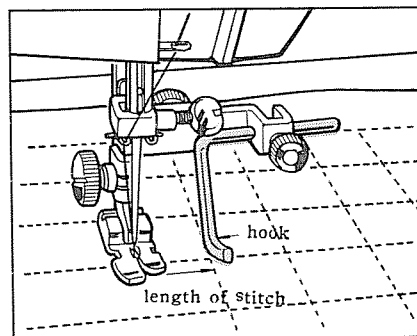
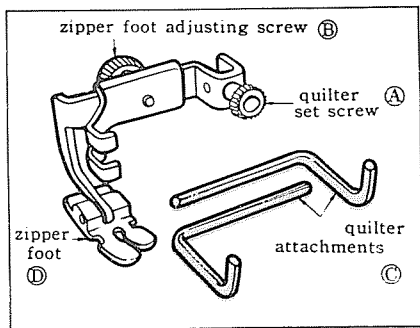
presser foot.....	zipper foot
pattern selector	W
stitch width.....	0
stitch length	1 ~ 4

distance between the parallel lines.

To attach the quilter to foot, loosen the thumb screw (A) and clamp the quilter by the thumb screw. Adjust the curved hook to the desired distance from the needle and adjust it to press into the fabric. When sewing, the hook should follow the preceding line of stitching.

The quilting attachment (C) will enable you to sew parallel lines on padded fabrics without the necessity marking them in advance.

There are two kinds of quilters in the accessories to be attached to the right or left side of the clamp on the zipper foot depending on the



CLOTH GUIDE

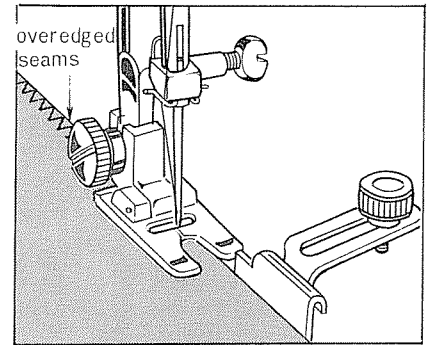
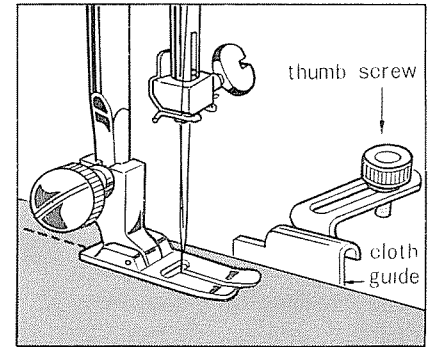
The cloth guide is used for stitching close to the edge of the fabric, or to make a wide hem up to $1\frac{1}{2}$ inches in a straight and uniform line.

1. Place the guide in the holes to the right of the needle plate and tighten the thumb screw firmly, adjusting the guide to the desired position.
2. Run the machine with the edge of the fabric touching the guide.

Note: You can also make overedged seams using the cloth guide.

This sewing assure the durable finish of the cloth if the fabric is likely to ravel.

Lower the presser foot and lock the zigzag width knob at a certain width so that right side stitches of zigzag fall slightly off the edge of the cloth.





EMBROIDERY

presser foot.....	take off
pattern selector.....	W
stitch width	0
drop feed	0

Set the drop feed knob at “0”.

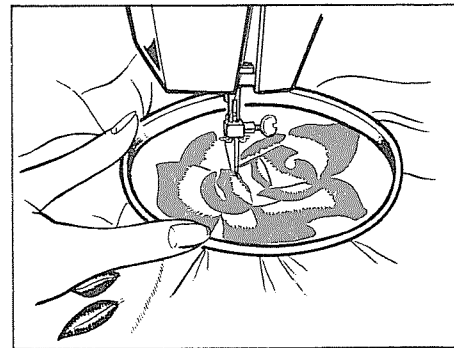
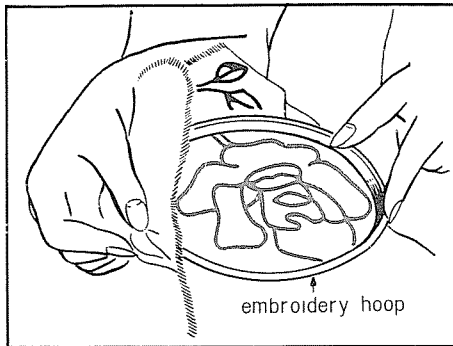
Then lower presser bar lifter and draw your desired design on the fabric with a pencil or tailor’s chalk.

Embroidery will be done most successfully when the fabric is stretched and fixed in an embroidery hoop.

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 knob to change the width.

(Make tension of the upper thread as weak as possible lest the lower thread be pulled up to on the surface.)



TO CLEAN SHUTTLE RACE

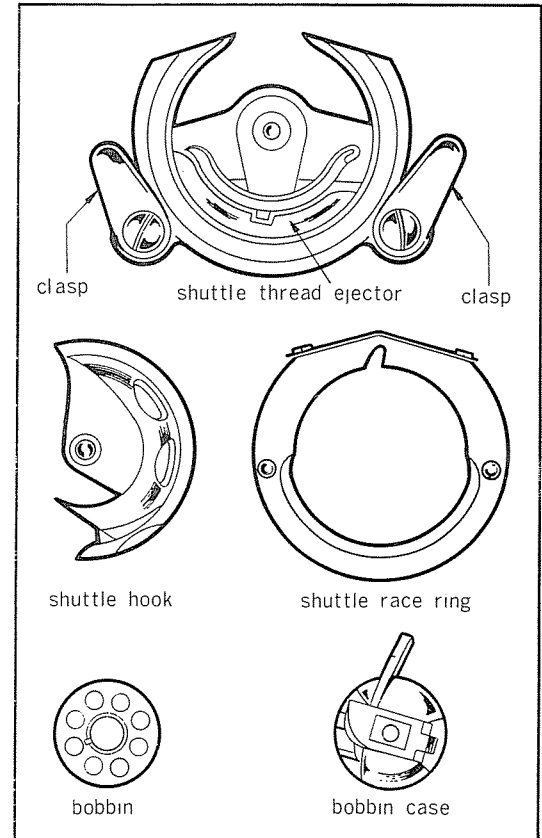
Because your machine is specially equipped with the shuttle thread ejector which prevents jamming of the shuttle, it will rarely be necessary to open and clean the shuttle-race.

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



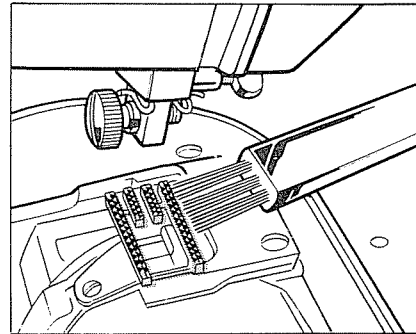
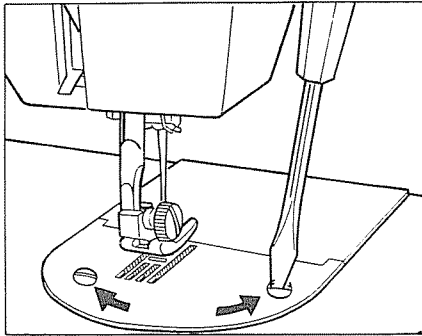
TO CLEAN FEED DOG

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

Unscrew the needle plate set screws with a small 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.

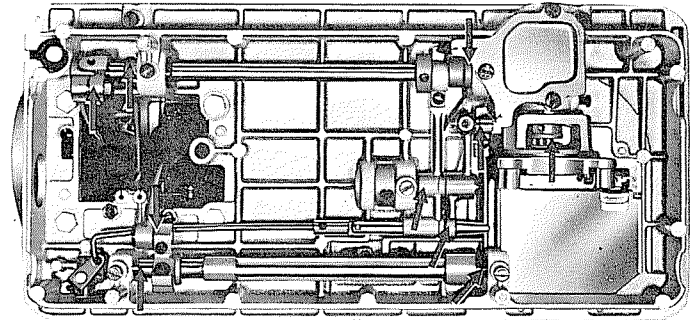
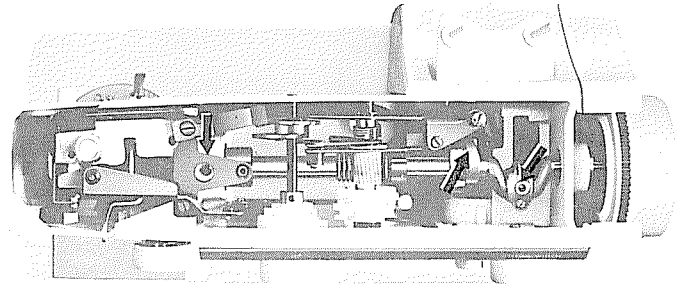
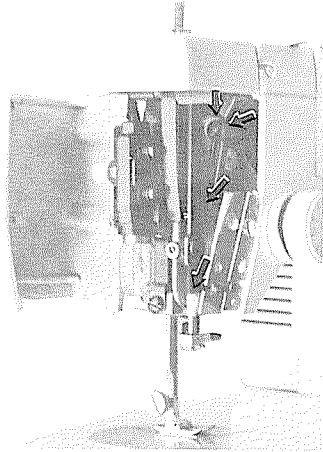


TO OIL MACHINE

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.



TO REGULATE BELT TENSION ON MOTOR

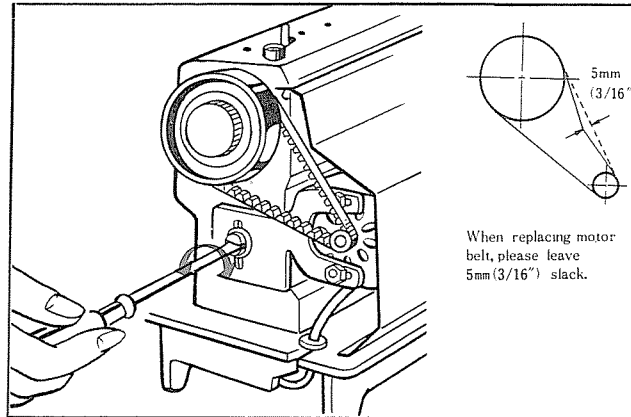
To adjust the belt tension, take off the belt cover and loosen the fixing screw about one turn with a screwdriver.

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

<i>CAUSE</i>	<i>REMEDY</i>
<ol style="list-style-type: none">1. The needle is not threaded correctly.2. The tension is too tight.3. Something is wrong with the needle.4. The thread used is too heavy for the needle.5. Thread take-up spring is broken.6. The needle is not set correctly.7. The needle plate, the hook, or the presser foot is damaged.	<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">1. When the lower thread is not wound correctly, it gets entangled.2. The lower thread is off the tension spring of the bobbin case.	<p>Wind it properly.</p> <p>Put it in its proper position.</p>
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SKIPPED STITCHES

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

THE NEEDLE BREAKS

<ol style="list-style-type: none">1. The needle is bent.2. The needle is not attached properly.3. The material is too thick or heavy.4. The material is being pulled by the operator.5. The needle is of inferior quality.	<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>
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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.

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693—400—000 (E-N)
Printed in Japan

