

MODEL 404
INSTRUCTION MANUAL

RICCAR

IBR 404

For life long service of your sewing machine,

please remember these simple points.

- ★ Read this sewing manual carefully.
- ★ Keep your machine regularly oiled and cleaned.
- ★ Use only genuine high-grade machine oil.
- ★ **IMPORTANT.** Use only the best cotton. Remember always to use the same thickness and quality in the bobbin as the top reel.
- ★ **IMPORTANT.** In all communications with your dealer or when ordering additional accessories or spares for your machine always quote MODEL NO and factory serial number.

CONGRATULATIONS!

You can be proud of your new zigzag sewing machine – an outstanding product of many years of research and development. The highest quality materials and functional design are combined in it to achieve perfect operating efficiency and years of dependable service.

If you have ever admired the beautiful and intricate sewing of professional seamstresses, you will be amazed and delighted to learn that you can now do it yourself with this remarkable zigzag sewing machine.

Before attempting to sew, however, please read this instruction book carefully. If you follow these instructions and give your machine proper care, it will operate perfectly for many years.

Should the machine fail to function correctly, stop sewing and review each step in the manual before starting again. Time spent in learning the features, controls and adjustments of your machine will eliminate errors and will result in complete satisfaction and enjoyment of your new sewing skills.

Yours very truly,

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**THIS IS ONLY APPLICABLE TO MACHINES MANUFACTURED
FOR THE UNITED KINGDOM**

IMPORTANT

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

GREEN AND YELLOW – EARTH

BLUE – NEUTRAL

BROWN – LIVE

WARNING: THIS APPLIANCE MUST BE EARTHED

NOTE: As the colours of the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

Connect GREEN and YELLOW wire to terminal marked E or by The Safety Earth Symbol \perp or coloured GREEN or GREEN and YELLOW.

Connect BROWN wire to terminal marked L or coloured RED.

Connect BLUE wire to terminal marked N or coloured BLACK.

WHEN USING A B.S. 1363 FUSED PLUG, A 3 AMP. FUSE MUST BE FITTED.

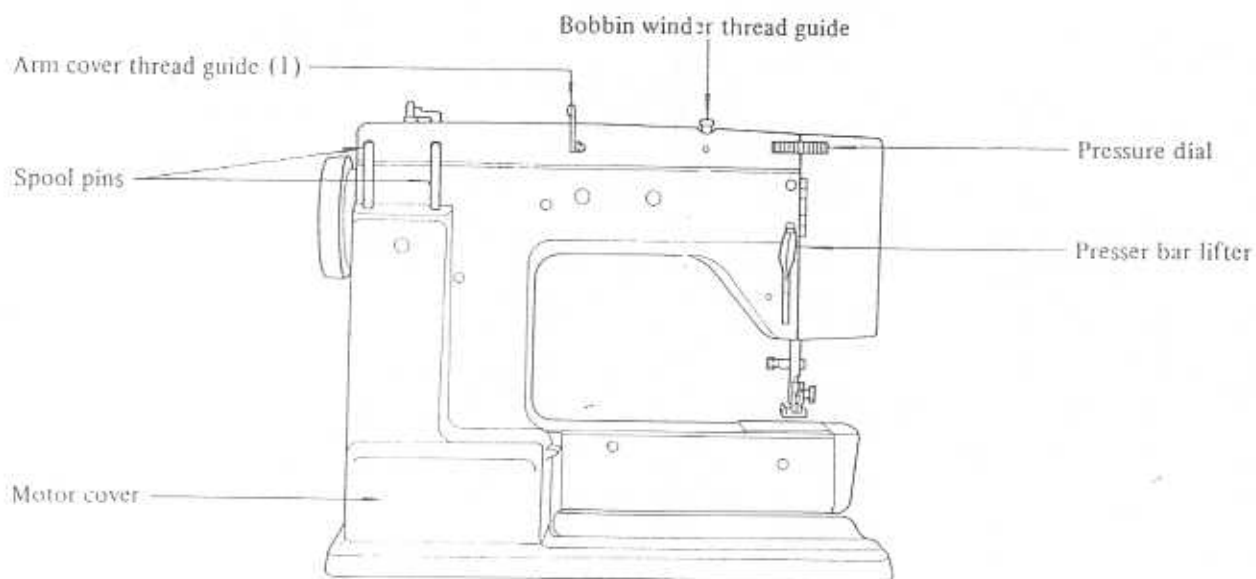
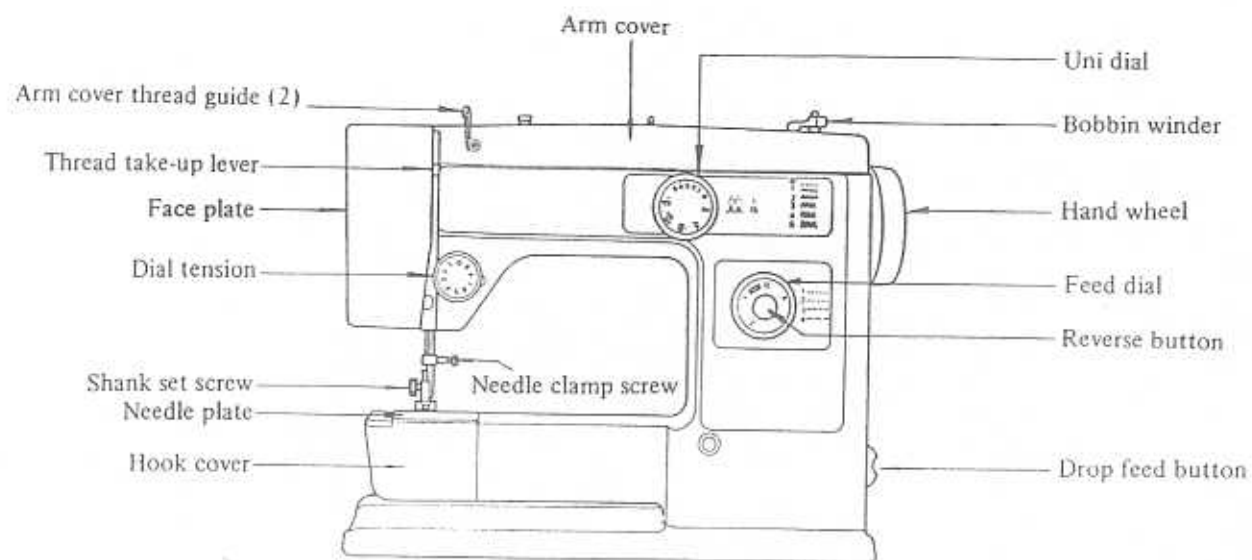
If any other type of plug is used protect with a 5 amp fuse either in the plug or adaptor or at the distribution board. If in doubt consult a competent electrician before use.

WHEN LEAVING THE MACHINE OR WHEN SERVICING OR CHANGING MECHANICAL PARTS OR ACCESSORIES, THE MACHINE MUST BE DISCONNECTED FROM THE SUPPLY BY REMOVING THE PLUG FROM THE SOCKET OUTLET.

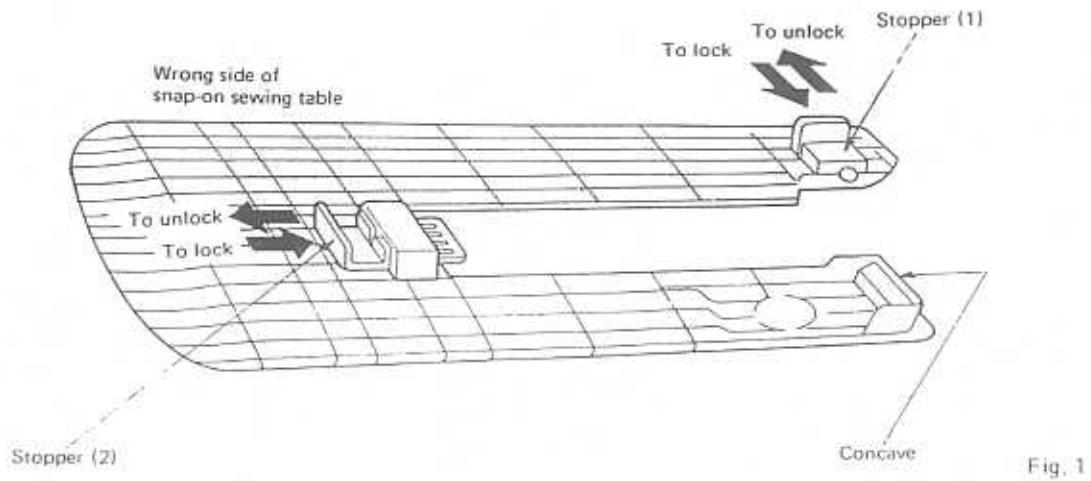
THE MAXIMUM INPUT OF LAMP: 240V 15W.

THIS APPLIANCE CONFORMS TO THE STATUTORY RADIO INTERFERENCE SUPPRESSION REGULATIONS.

1. NAME OF MAIN PARTS



2. FITTING THE SNAP-ON SEWING TABLE

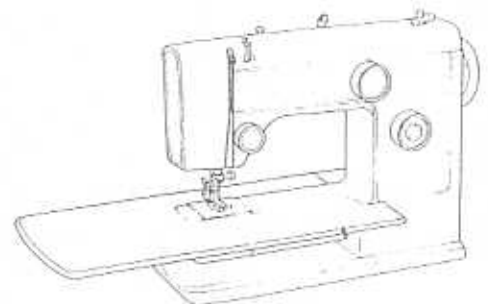
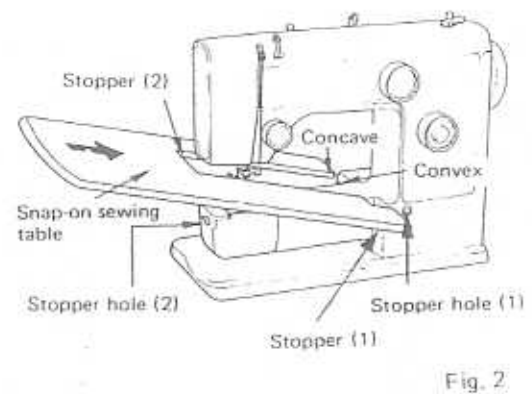


Hold the snap-on sewing table on the slant as shown and set the concave to the convex of machine pulling the stopper (1).
(Figs. 1 & 2)

Set the stopper (1) to the stopper hole (1) and let your finger go off for locking.

Lower the snap-on sewing table down to horizontal position pulling the stopper (2) toward left. Set the stopper (2) to the stopper hole (2) and let your finger go off.
(Figs. 1 & 3)

When you change the bobbin, pull the stopper (2) only toward left and push the left side of snap-on sewing table upward. You do not have to remove it completely.



3. TURNING ON AND OFF THE LIGHT

Sewing light equipment is built in the face plate and is turned on and off by means of the push switch located on the right side of vertical arm of machine. (Fig. 1)

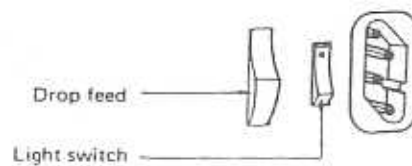


Fig. 1

When replacing the light bulb, first be sure to unplug your sewing machine. Swing out the face plate, then the light bulb is easily accessible and can be removed just as an ordinary light bulb. (Fig. 2)

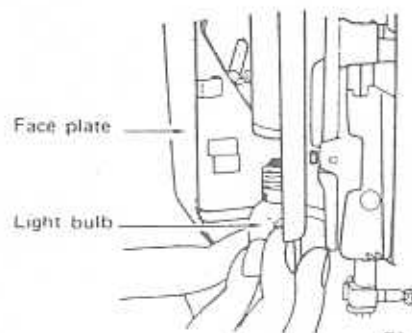


Fig. 2

Always ensure that the bulb is screwed in tightly.

4. CORRECT NEEDLE AND THREAD FOR FABRICS

Size of Needle	Fabric	Size of Thread
15 x 1 No. 9 No. 65	Thin calico, silk, serge and muslin.	No. 80 ~ 100 cotton thread or fine silk thread.
15 x 1 No. 11 No. 75	Thin calicon, cotton cloth, crepé de chine, hosiery and silk.	No. 60 ~ 100 cotton thread or ordinary silk thread.
15 x 1 No. 14 No. 90	Ordinary cotton cloth, thick silk, thin woolen goods, towels and shirting	No. 40 ~ 60 cotton thread or ordinary silk thread.
15 x 1 No. 16 No. 100	Thick cotton cloth, serge and thin woolen goods.	No. 30 ~ 60 cotton thread or ordinary silk thread.
15 x 1 No. 18 No. 110	Ordinary woolen goods, trousers, overcoats, thick calico and children's clothes.	No. 30 ~ 60 cotton thread or ordinary silk thread.

- Notes:
- 1) Use a good quality mercerized cotton thread, if available, to avoid shrinking when laundered.
 - 2) For sewing tricot, knitted fabrics and elastic materials, ball point needles are recommended. The use of ball point needles prevents damage to elastic threads and helps to avoid skip-stitching, because the ball point needles sew between threads, while ordinary needles may split and break threads or skip stitched. A blue colored needle in your accessory box has ball point.

5. INSERTING THE NEEDLE

It is very important to select a correct needle and thread in order to get a fine stitch. Select the proper needle according to the type of materials to be sewn, referring to the above chart.

A bent needle will not produce fine work. Check the needle by placing its flat side against a flat plane. If the needle is bent or a sharp point has been damaged, a faulty needle can cause (a) thread breakage (b) excessive noise while the machine is in motion (c) damage to the needle plate (d) skipped stitching, etc. (Figs. 1 & 2)

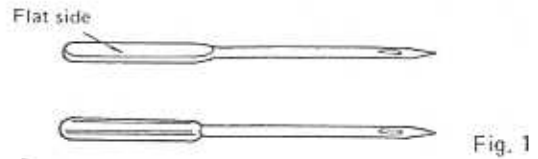


Fig. 1

Raise the needle bar to its highest point by turning the hand wheel toward you. Loosen the needle clamp screw and insert the needle upwards into the clamp as far as it will go, facing the flat side of needle to the rear. Tighten the needle clamp screw with a screw driver. (Fig. 3)

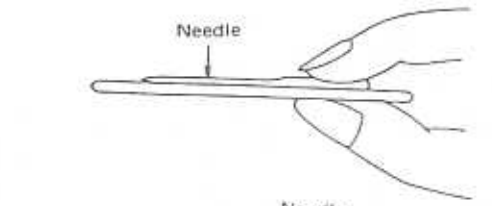


Fig. 2

After inserting the needle, check to see that it is correctly fitted. Turning the hand wheel toward you slowly, make sure that the needle is aligned with the center of the hole of the needle plate. During this procedure the Uni dial must be set at "0".

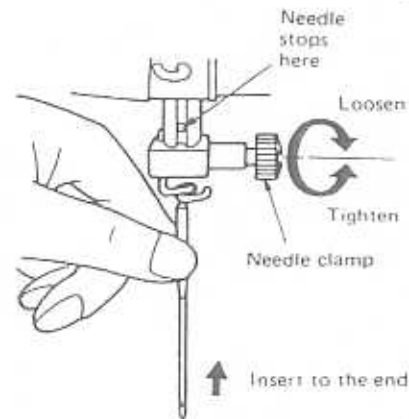


Fig. 3

6. WINDING THE BOBBIN

To wind the bobbin, first turn the stop motion counter-clockwise to disconnect the sewing mechanism. (Fig. 1)

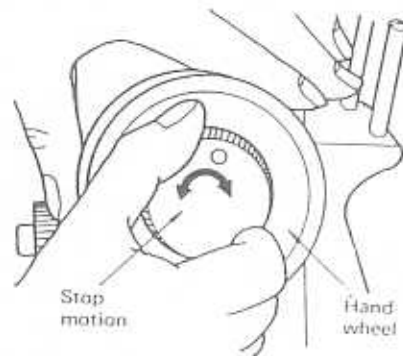


Fig. 1

Place a spool on the spool pin and lead thread through each threading point as illustrated in the (Fig. 3).

Wind the thread around the bobbin several times and insert the bobbin on the bobbin winder spindle making certain that the notch of bobbin engages with the projection on the spindle. (Fig. 2)

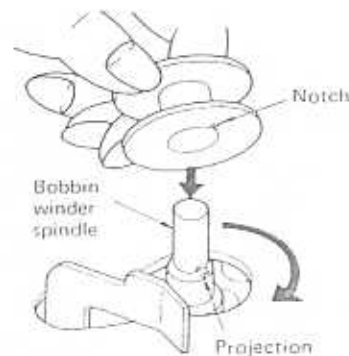


Fig. 2

Push the bobbin presser against the bobbin then turn the hand wheel slightly toward you while holding the end of the thread. See to it that the bobbin winder is not idling. (Fig. 3)

Place the foot control so that the foot rests on it comfortably. Start the machine for winding the bobbin gently pressing down the foot control. The more you press the foot control down, the faster the machine runs.

When the bobbin is full, the bobbin winder will automatically release.

Wind thread evenly as "A" and avoid winding as "B" or "C".

After the bobbin has been wound, turn the stop motion large screw clockwise to reengage sewing mechanism.

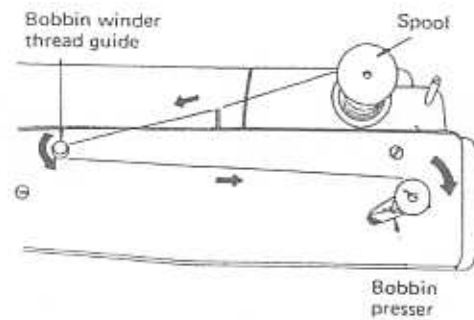


Fig. 3

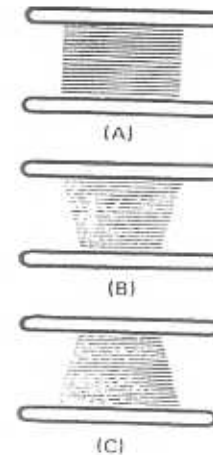


Fig. 4

7. THREADING BOBBIN CASE

Loosen out a few inches of thread from the bobbin. Put the bobbin into the bobbin case with the thread wound in the direction the arrow indicated in the figure (Fig. 1)

Guide the thread into the slot under the spring. Then pull the thread under the tension spring until it emerges from the opening at the end of the spring. (Figs. 2, 3 & 4)

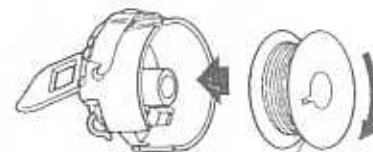


Fig. 1

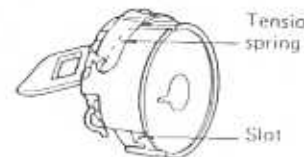


Fig. 2



Fig. 3

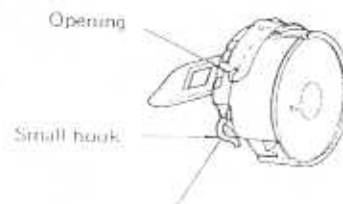


Fig. 4

8. INSERTING THE BOBBIN CASE INTO THE HOOK

To insert the bobbin case on the spindle, raise the needle bar to its highest point by turning the hand wheel toward you. Then open the shuttle hook cover toward you. (Fig. 1)

Pull about three inches of thread out of the bobbin case holding it by the hinged latch with your thumb and forefinger.

Place the bobbin case on the spindle hanging the thread over your finger.

Release the hinged latch checking to see that the positioner at the right side of the bobbin case fits in the recess at the right side of the shuttle hook assembly. (Fig. 2)

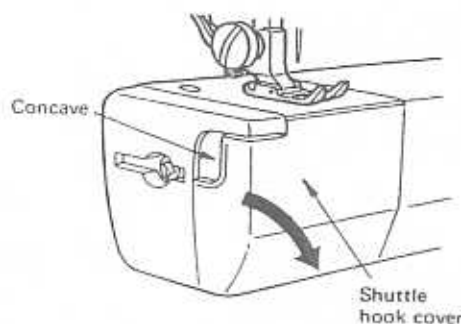


Fig. 1

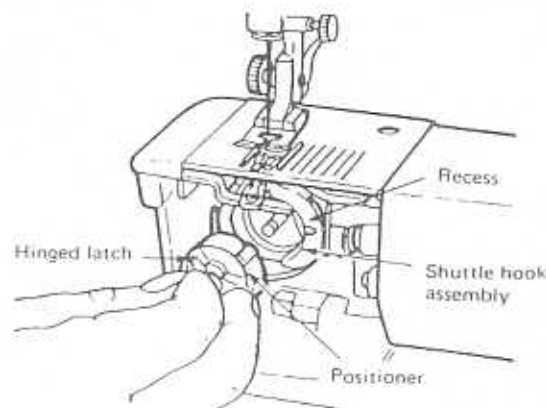


Fig. 2

9. UPPER THREADING

1. Spool pin
2. Arm thread guide
3. Arm thread guide
4. Dial tension (Fig. 5)
5. Dial tension thread guide
6. Thread take-up spring
7. Thread take-up lever
8. Face plate thread guide
9. Needle bar thread guide
10. Needle

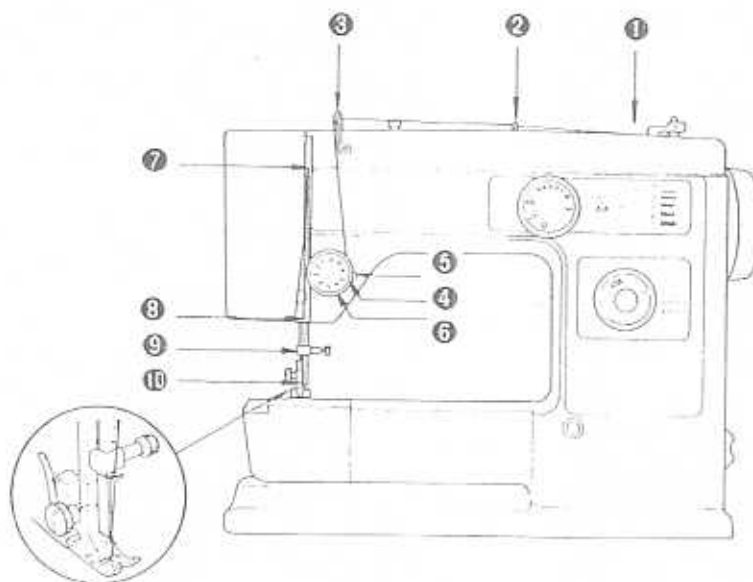


Fig. 1

Raise the needle bar to its highest position by turning the hand wheel toward you. Place a spool and lead thread from the arm thread guide through the needle as shown.

After threading the needle, draw sufficient thread from the needle to prevent it from slipping out of the needle when starting the machine.

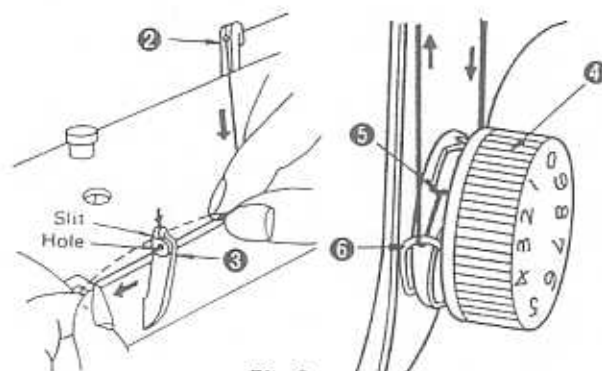


Fig. 2

Fig. 3

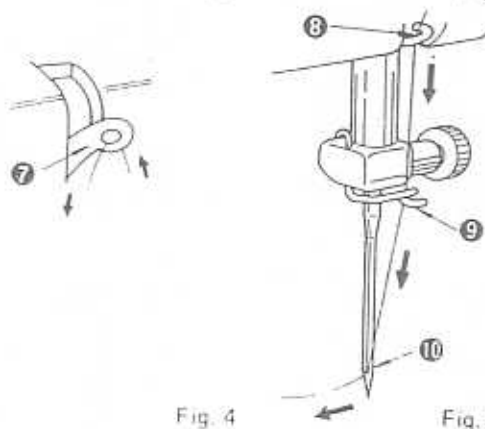


Fig. 4

Fig. 5

10. ADJUSTING THE PRESSURE DIAL

Pressure should be adjusted considering the thickness of material to be sewn in order to make fine and even seams and to execute a regular feeding of materials.

Generally, a heavy pressure is required for thick materials and a light pressure for fine materials.

For sewing thick materials, set the dial on or about 6 and for sewing fine ones set the dial on or about 2. (Fig. 1)

In sewing average materials, sew under moderate pressure by setting the dial on or about 4. (Fig. 2)

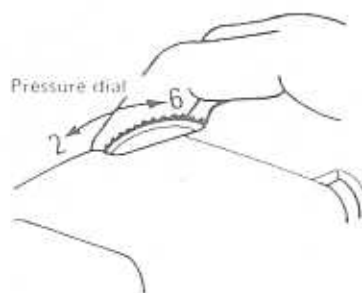


Fig. 1

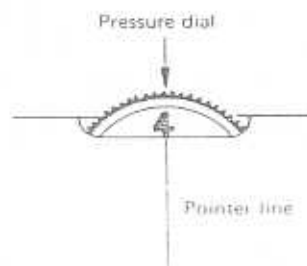


Fig. 2

11. ADJUSTING THE DROP FEED

The height of the feed dog is adjusted by switching the drop feed button located on the right side of the vertical arm.

When the mark "—" appears, the feed dog rises above the needle and when the mark "##" appears, it descends to its lower position. (Figs. 1 & 2)

When the feed dog is in higher position, functions to feed material through the machine and when in its lower position, it does not feed materials at all.

For general sewing, set the drop feed button at "—".

Set it at "##" for embroidery, darning, sewing on buttons etc., when no automatic feeding is required.

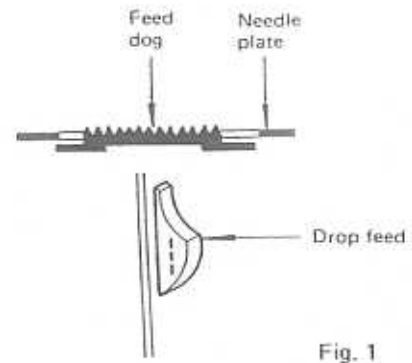


Fig. 1

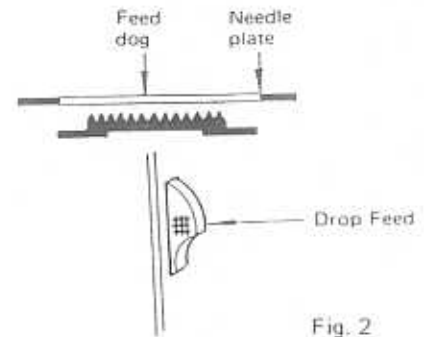


Fig. 2

12. ADJUSTING STITCH LENGTH AND REVERSE SEWING

Stitch length can be adjusted by means of the feed dial. The numerals on the dial represent the stitch length. The lower the numeral, the shorter the stitch length.

For reverse sewing push the reverse button. Reverse sewing will continue as long as the button is pushed. When the button is released, the machine will return to forward sewing. (Fig. 1)

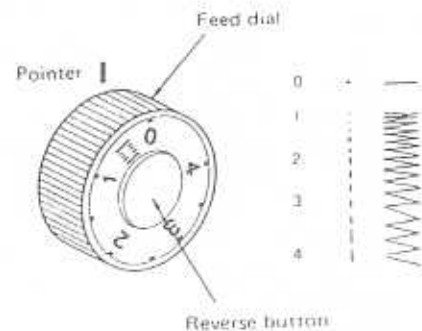


Fig. 1

13. ADJUSTING THREAD TENSION

A correctly locked stitch results when the upper and lower tensions are balanced so that the needle and bobbin threads are drawn equally into the material. (Fig. 1)

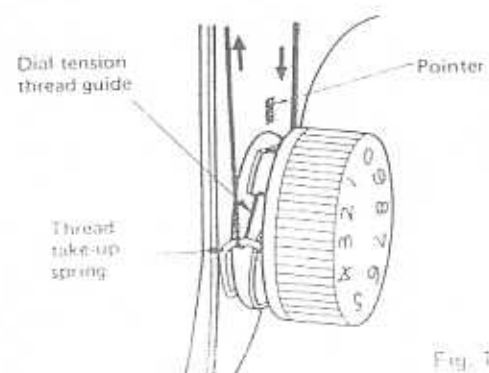


Fig. 1

The stitch "A" shows correct locking.

The stitch "B" shows that the upper thread tension is too strong. This can be corrected by turning the dial tension to a lower number.

The stitch "C" shows that the upper thread tension is too weak. This can be corrected by turning it a higher number.

The higher the number, the stronger the upper thread tension. (Fig. 1)

For usual sewing it is sufficient to adjust only the dial tension as explained above. Sometime, however, it comes to be necessary to adjust the bobbin thread tension by turning the bobbin case spring screw. (Fig. 2)

To check the proper lower thread tension hang the bobbin case by holding the thread end. If the thread tension is proper, the thread pulls out about 1 cm or 2/5" (Fig. 3)

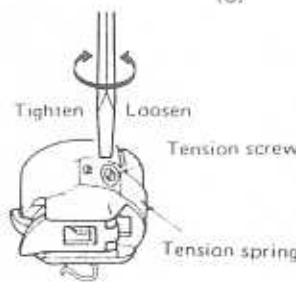
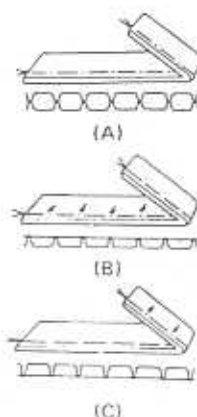


Fig. 2

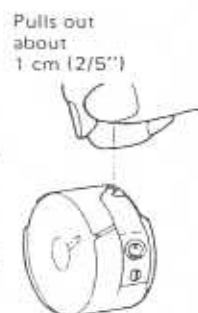


Fig. 3

14. CHANGING THE PRESSER FOOT

To attach the shank, raise the needle bar to its highest point by turning the hand wheel toward you and attach the shank to the presser bar by means of the shank set screw. (Fig. 1)

Place a presser foot exactly under the shank. Lower the presser bar by means of the presser bar lifter checking to see that the groove of shank fits to the presser foot pin. Then pull the one-touch lever. (Fig. 2)

To take off the presser foot, pull the one-touch lever after having raised the needle bar. (Fig. 3)

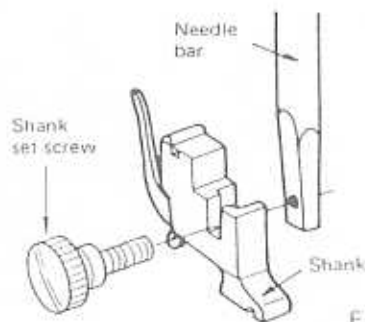


Fig. 1

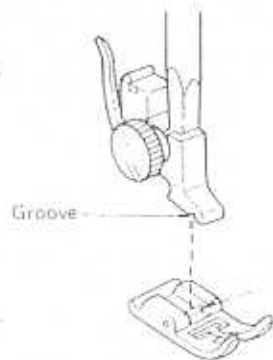


Fig. 2

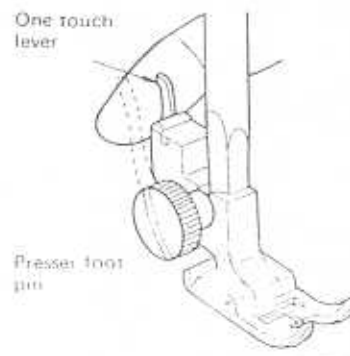


Fig. 3

15. STRAIGHT STITCH SEWING

For normal straight stitch sewing, set the machine as follows.

1. Uni dial 0
2. Feed dial 1 ~ 4
3. Drop feed - - -
4. Presser foot Universal foot

In normal sewing, the universal foot is adequate. (Fig. 2)

In straight sewing, be sure that the needle is aligned with the center of the needle hole of the presser foot and the needle plate by turning the hand wheel toward you. (Fig. 3)

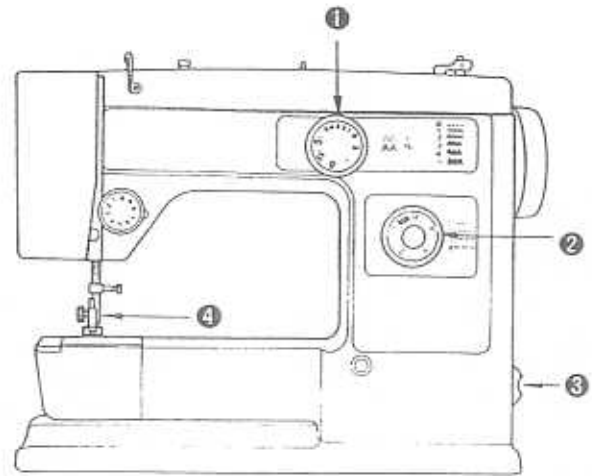
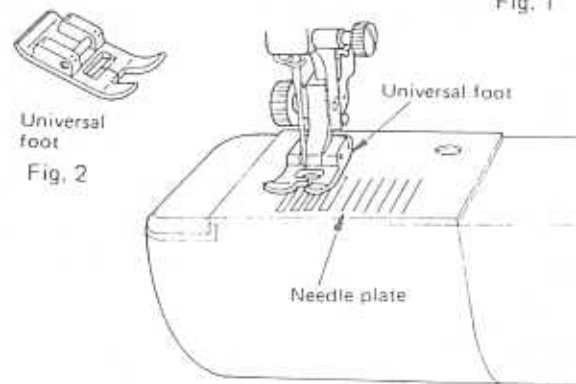


Fig. 1



Universal foot
Fig. 2

Fig. 3

16. START SEWING

Hold the upper thread lightly with your left hand. Turn the hand wheel toward you with your right hand until the needle enters into the needle hole to catch the lower thread and comes up again bringing it up through the needle hole. (Fig. 1)

Pick up the ends of both threads together and draw them through under the presser foot to the back of machine. (Fig. 2)

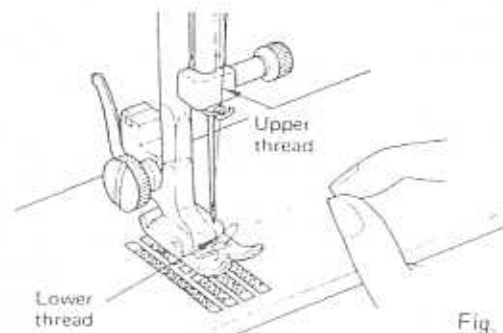


Fig. 1

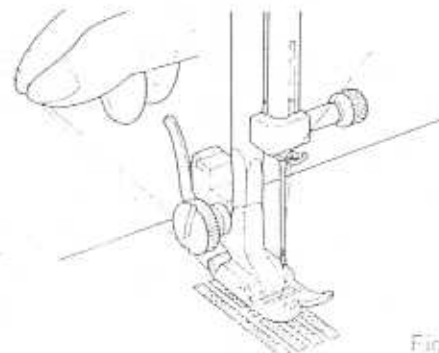


Fig. 2

Place material under the presser foot and position needle in the material. Lower the presser foot by means of the presser bar lifter and start sewing. (Figs. 3 & 4)

It is not necessary to pull or push the fabric by hand, just guide it slightly in the desired direction. (Fig. 5) Place the foot control so that the foot rests on it comfortably. Start the machine by gently pressing down the foot control. The more you press the foot control down, the faster the machine runs.

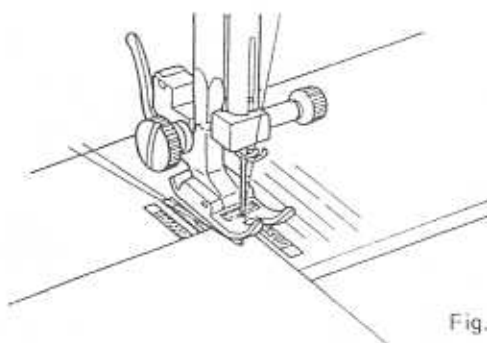


Fig. 3

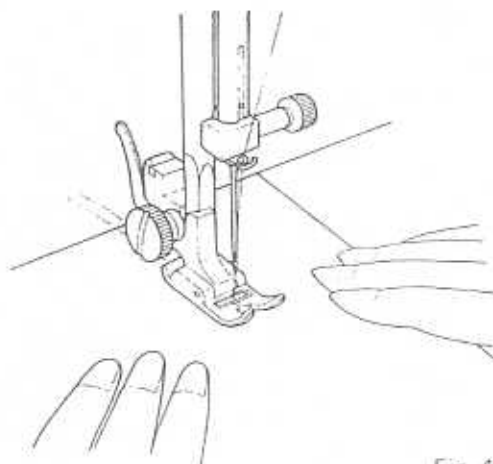


Fig. 4

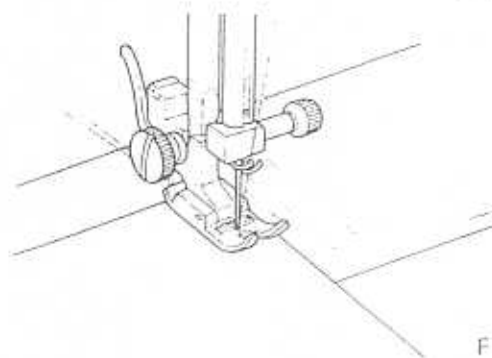


Fig. 5

17. CHANGING SEWING DIRECTION

To change sewing direction, raise the presser foot leaving the needle in the material and change the direction of the material. (Fig. 1)

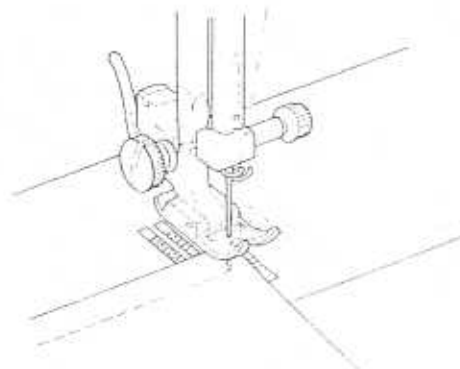


Fig. 1

After making the change, lower the presser foot and resume sewing. (Fig. 2)

For reverse sewing push the reverse button. Reverse sewing will continue as long as the button is pushed. When the button is released, the machine will return to forward sewing. (Figs. 1 & 2)

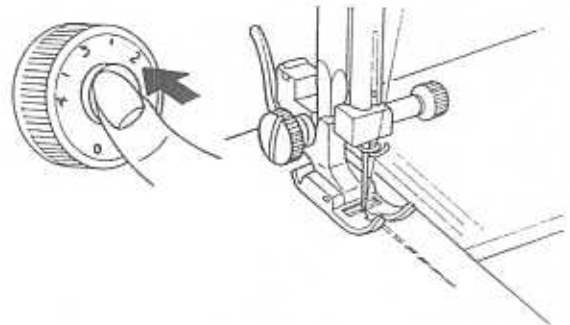


Fig. 2

18. REMOVING MATERIAL

Stop the machine with the needle bar at the highest point. Raise the presser foot by means of the presser bar lifter and remove the material by pulling it diagonally to the left. (Fig. 1)

Be sure to remove the material diagonally to the left and cut the thread with the thread cutter, leaving about 12 cm (5") free at the ends. This makes it easier to resume sewing. (Fig. 2)

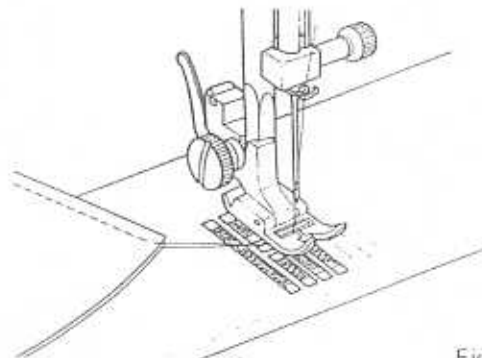


Fig. 1

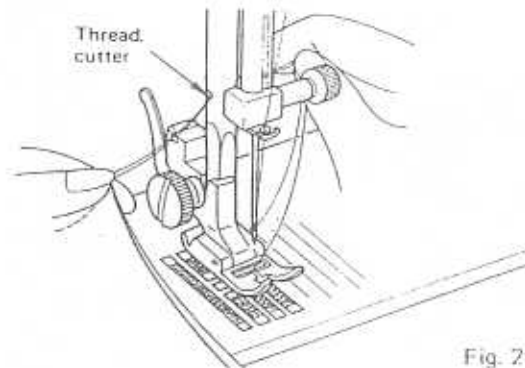


Fig. 2

19. ADJUSTING ZIGZAG WIDTH

The width of zigzag stitch can be adjusted by means of the uni dial. Numerals from 0 to 5 on the uni dial indicate the width of zigzag sewing. (Fig. 1)

The lower the numeral, the narrower the stitch width.

The zigzag stitches illustrated here shows the width obtained with each uni dial setting from 0 to 5. (Fig. 2)

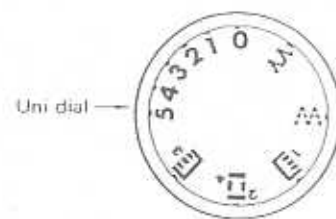


Fig. 1

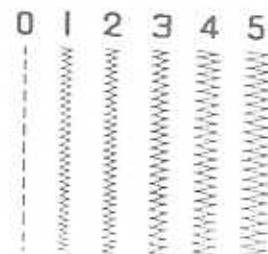






Fig. 2

20. MANUAL ZIGZAG SEWING

For sewing zigzag stitches, set the machine as indicated.

1. Uni dial Desired zigzag width
2. Feed dial 0.5 ~ 1
3. Drop feed ---
4. Presser foot Universal foot


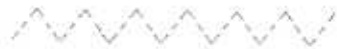
Varied zigzag patterns can be obtained by alternately changing positions of the uni dial and feed dial.

PATTERN				
UNI DIAL (Zigzag width)	Set dial between 1 ~ 5	Turn dial from 0 to 5 and return it from 5 to 0 at the same speed.	Turn dial from 0 to 5 and return it from 5 to 0 drawing same curved lines.	Turn dial slowly and at the same speed from 0 to 5 and return it quickly from 5 to 0.
FEED DIAL (Stitch length)	0.5 ~ 1	0.5 ~ 1	0.5 ~ 1	0.5 ~ 1

21. AUTOMATIC ZIGZAG SEWING

For sewing automatic pattern, set the machine as indicated.

1. Uni dial Desired pattern
2. Feed dial As recommended
3. Drop feed ---
4. Presser foot Universal foot or as recommended

Uni dial (Automatic pattern)	Recommended feed dial (Stitch length)
	1 ~ 2
	0.5 ~ 1

22. USING THE HEMMER

Edge sewing or lace inserting can be done by using the hemmer. For this work, set the machine as indicated below.

1. Uni dial 0 ~ 2
2. Feed dial 2 ~ 3
3. Drop feed - - -
4. Presser foot Hemming foot

Fold over edge of fabric about 0.25 cm (1/10") for a length of about 5 cm (2"). (Fig. 1)

Pick up the thread ends together and draw them through under the presser foot to the back of machine. Place the fabric under the presser foot and lower the needle on the very edge of pre-folded fabric by turning the hand wheel toward you. (Fig. 2)

Lower the presser foot by means of the presser bar lifter and sew about 4 to 5 stitches on the pre-folded edge. To help sew smoothly in the beginning, pull slightly the thread ends away from you. (Fig. 3)

After having sewn about 4 to 5 stitches, lift the presser foot keeping the needle sticking in the edge. Roll in correctly the edge into the scroll of the presser foot pulling the fabric toward you by your right hand. Lower the presser foot and commence sewing. (Fig. 4)

Pull gently the thread ends through under the presser foot away from you until the edge is sewn about 2 to 3 cm (1"). Guide and feed just enough fabric correctly into the presser foot to fill out the scroll by pulling the pre-folded 0.8 cm (1/3") wide edge slightly toward left by your right hand. (Fig. 5)

If too much fabric is fed into the scroll, the seam will become bulgy and uneven, if too little the hem will not be folded in sufficiently.

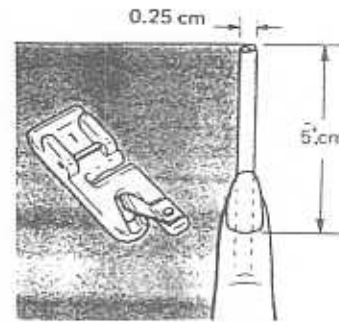


Fig. 1

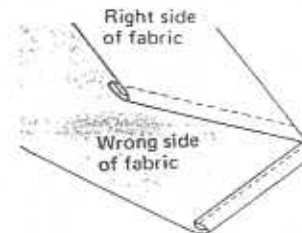


Fig. 2

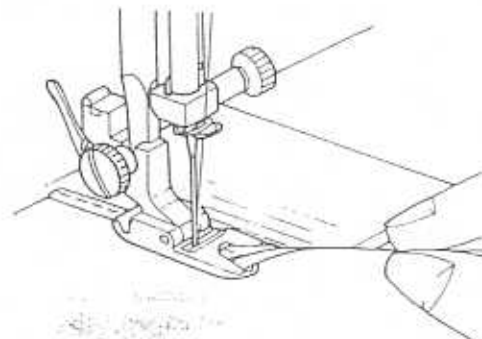


Fig. 3

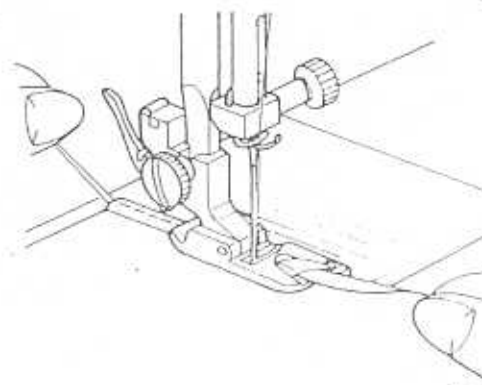


Fig. 4

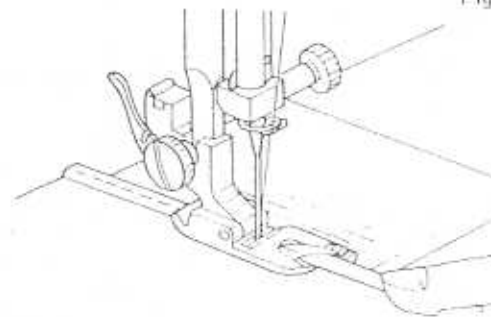


Fig. 5

23. PARALLEL SEWING (QUILTING)

To sew parallel lines, the quilting guide is very convenient. The distance of the guide from the needle determines the width between the rows of stitches.

Adjust accordingly and when sewing guide the fabric in such a way that the quilting guide runs parallel with the preceding seam. (Fig. 1)

Adjust position of quilter bar in order to get desired seams paralleled with other rows of seams. Guide the quilter bar along the edge of the material or on any other row of seam already sewn.

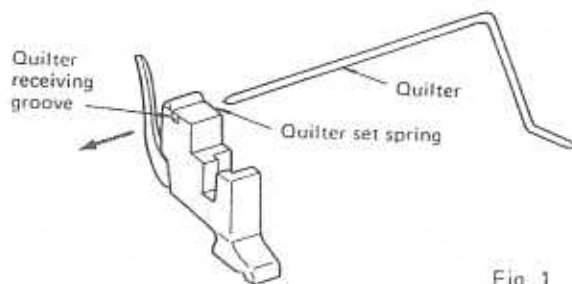


Fig. 1

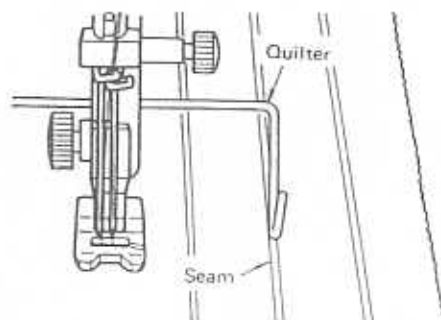


Fig. 2

24. ZIPPER SEWING

For zipper sewing, set the machine as follows.

1. Uni dial 0
2. Feed dial 2 ~ 3
3. Drop feed ---
4. Presser foot Zipper foot

SEWING RIGHT HAND SIDE OF ZIPPER

Attach snap on zipper foot so that the needle passes on its left hand side. Sew along right hand side of zipper until foot reaches zip slider. Stop with needle in the fabric, raise presser foot, move slider under and away from foot and complete right hand side. (Figs. 1 & 2)

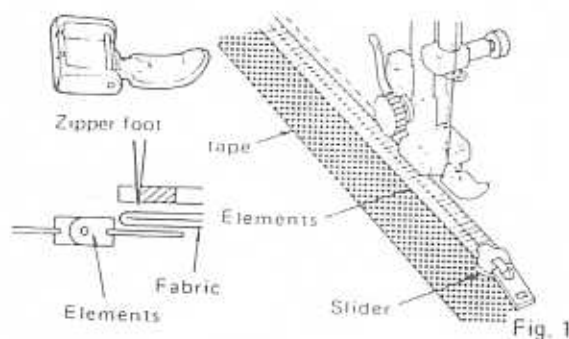


Fig. 1

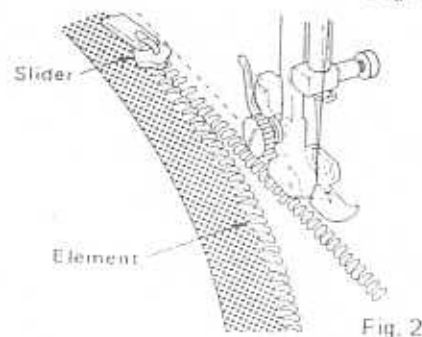


Fig. 2

SEWING LEFT HAND SIDE OF ZIPPER

Change position of foot so that needle now passes on its right hand side. Repeat same process as before. (Fig. 3)

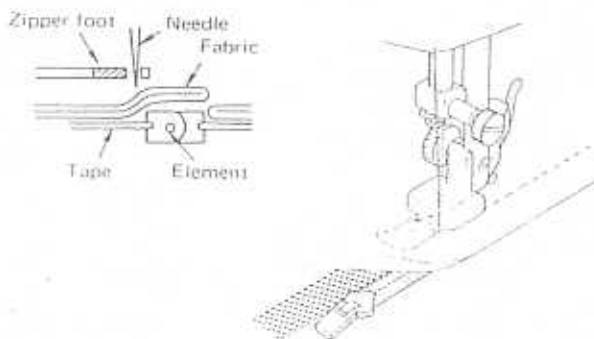


Fig. 3

25. STAIN STITCH AND CURVING

The satin stitch is easily sewn by setting the stitch dial between 0 and 0.5. This stitch is generally used for decorative pattern, monogram, etc.

For tapered satin stitch, simply reduce the zig-zag width to suit your requirements.

For sewing curving pattern, run the machine at half speed being careful to keep a full stitch while moving the material by hand or better still use an embroidery frame with a diameter between 4 to 5 inches, if necessary. (Figs. 1 & 2)

For the satin stitch, set the machine as follows.

1. Uni dial 3 ~ 5
2. Feed dial 0.5
3. Drop feed ---
4. Presser foot Satin stitch foot

For the curving, set the machine as follows.

1. Uni dial 3 ~ 5
2. Feed dial / / / /
3. Drop feed # # #
4. Presser foot Satin stitch foot

26. ATTACHING CORD (1)

For attaching cord as illustrated, set the machine as follows.

1. Uni dial 0
2. Feed dial 1 ~ 3
3. Drop feed ---
4. Presser foot Zipper foot

The zipper foot can also be used to sew close to suitable cord as illustrated. (Fig. 1)

Satin stitch foot



Release



Satin stitch foot (Bottom)

Fig. 1

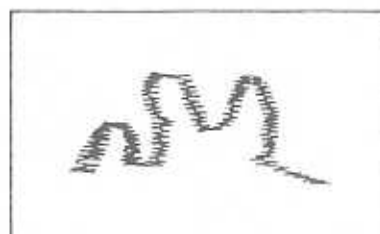


Fig. 2

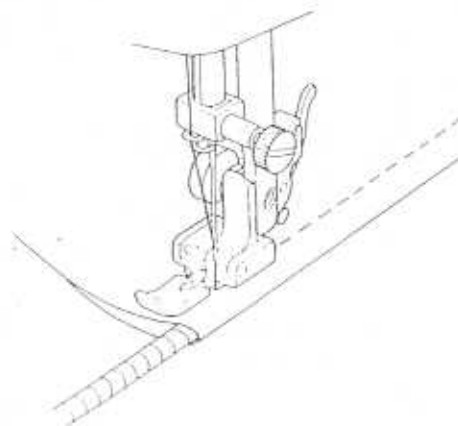


Fig. 1

27. ATTACHING CORD (2)

For cording, proceed as follows.

1. Uni dial Width of cord
2. Feed dial 1 ~ 3
3. Drop feed ---
4. Presser foot Cording foot

Pass a cord or string through the hole of the cording foot. Adjust the zigzag width according to the width of cord. (Fig. 1)

Start sewing taking care that stitches appear either side of the cord (Figs. 2 & 3)

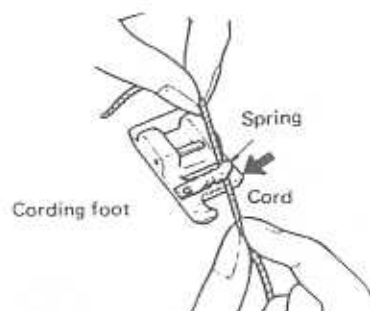


Fig. 1

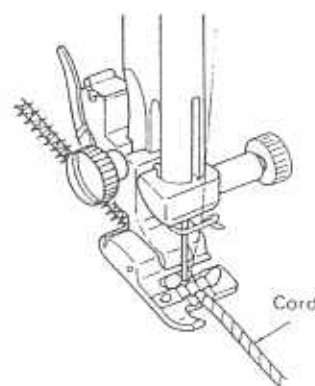


Fig. 2

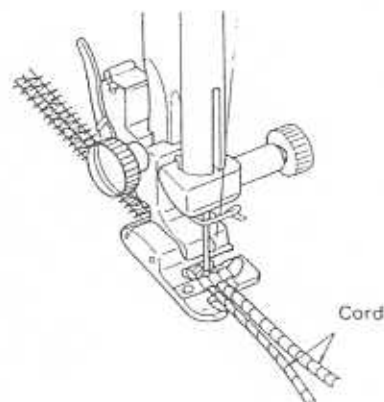


Fig. 3

28. APPLIQUE

Applique is one of the most interesting and fancy applications of your zigzag sewing machine. You will find its effectiveness by using contrasting fabrics.

For applique, set the machine as follows.

1. Uni dial 0 ~ 3
2. Feed dial 0.5 ~ 3
3. Drop feed ---
4. Presser foot Universal foot

After the stitching has been completed, trim off all the excess material.

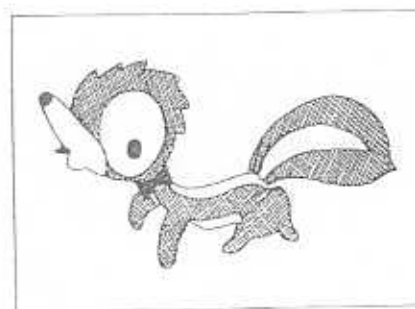


Fig. 1

29. EMBROIDRY

To make embroidery set the machine as follows.

1. Uni dial 0 ~ 5
2. Feed dial / / / /
3. Drop feed #
4. Presser foot No foot needed

Use an embroidery frame with a diameter between 4 to 5 inches and needle No. 11 together with embroidery thread. Stretch fabric tightly over the frame and secure it tight by tightening screw.

Set the machine to sew either straight or zigzag stitch according to the motif to be sewn. After you have been accustomed to the embroidery work, you may do it without the foot in order to get a better view of the work.

The embroidery can be done by simply controlling the uni dial with your right hand as you guide the material very slowly in the direction required but be careful not to let the thread pile up on one place.

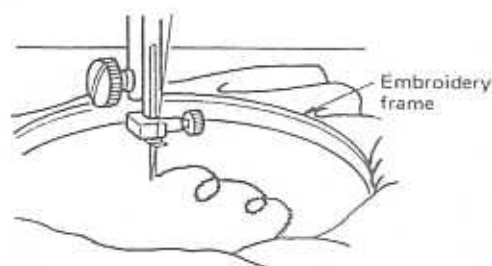


Fig. 1

30. MONOGRAM

To make monogram, set the machine as follows.

1. Uni dial 3 ~ 5
2. Feed dial / / / /
3. Drop feed #
4. Presser foot Universal foot or without foot

Use embroidery frame mentioned in EMBROIDERY

With both hands, guide the material very slowly in the direction required but be careful not to let the thread pile up in one place.

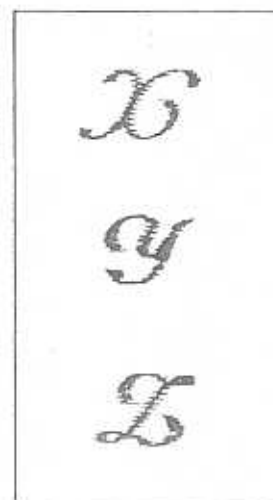


Fig. 1

31. TWIN NEEDLE SEWING

Insert the twin needle, the same way as the single needle. (Fig. 1)

Place two spools on the spool pins. Threading is done the same way as with the single needle but please be careful not to entangle.

Twin needle sewing is achieved the same way as with single needle but when changing sewing direction, do so with the twin needle out of the material. If direction is changed with the twin needle in the material, the needle may get bent or broken.

WHEN DOING TWIN NEEDLE SEWING, THE UNI DIAL MUST NOT BE SET LARGER THAN "3".

IF THE UNI DIAL IS SET ON 4 ~ 5, THE NEEDLE WILL STRIKE THE NEEDLE PLATE AND BE BENT OR BROKEN.

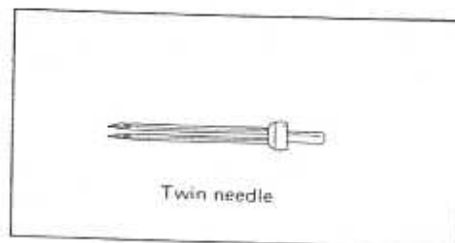


Fig. 1

32. SEWING ON BUTTON, EYE, HOOK, ETC.

To sew on a button, eye, hook, etc., proceed as follows.

- | | |
|-----------------------|----------------------------------|
| 1. Uni dial | According to width between holes |
| 2. Feed dial | //// |
| 3. Drop feed | ### |
| 4. Presser foot | Button foot |

Place a button under the presser foot in the position where the needle goes into left hole of button. Lower foot and turn the hand wheel toward you until the needle comes out of hole. (Fig. 1)

While moving the uni dial slowly, let the needle go down into the right hole by turning the hand wheel slowly. Stop the uni dial at this position.

Run machine at medium speed and sew about six to eight stitches. Sew about six stitches to fasten off, setting the uni dial to "0".

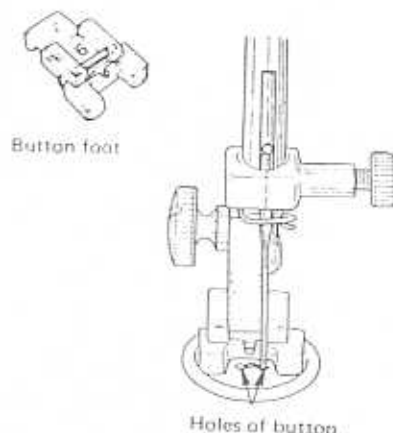


Fig. 1

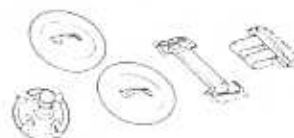


Fig. 2

33. PATCHING AND QUICK MENDING OF WORN-OUT PARTS

1. Uni dial AA
2. Feed dial 0.5 ~ 1
3. Drop feed ---
4. Presser foot Universal foot

Cover the damaged part with a like colored patch. Sew with the three step zigzag stitch around the edges of the patch with similar colored thread. Then cut out the defective parts of the original close to the zigzag stitching. With this simple method the patching is done in one operation and extra thickness or fell seams are avoided. (Fig. 1)

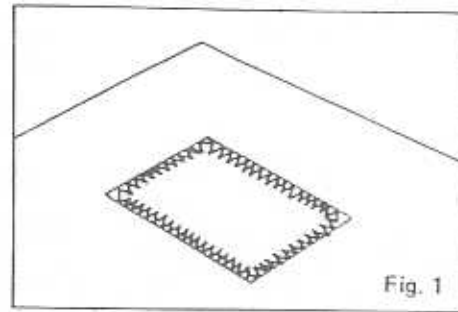


Fig. 1

The three step zigzag stitch helps you to darn and mend worn-out parts neatly and quickly. The quick mending is done by moving the fabric slowly and slightly sideways while the fabric is being stitched back and forth with the help of reverse sewing button. Stretch the material tightly and hold it as close to the presser foot as possible or use an embroidery frame. (Fig. 2)

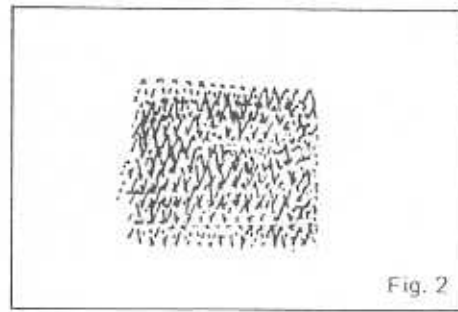


Fig. 2

34. ATTACHING INTERFACING

For securing interfacings into place, set the machine as follows.

1. Uni dial 5
2. Feed dial 4
3. Drop feed ---
4. Presser foot Blind hem foot

This stitch ensures perfect tailoring and holds the interfacings firmly in place through laundering and dry cleaning.

Fold the fabrics as illustrated, placing outer fabric inside, interfacing outside.

Start sewing taking care that stitches appear as illustrated (Fig. 1)

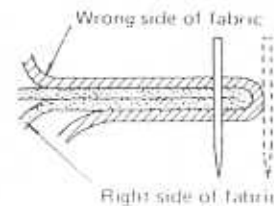


Fig. 1

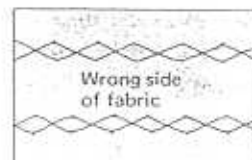


Fig. 2



Fig. 3

35. FAGOTTING AND MENDING TEAR

To join two pieces of fabric, set the machines as follows.

1. Uni dial $\Delta\Delta$
2. Feed dial 0.5
3. Drop feed ---
4. Presser foot Universal foot

Place a piece of lining fabric under the tear or a part to be joined together, if necessary, and sew with matching thread.

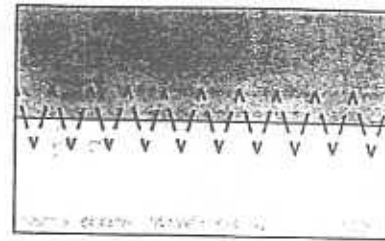


Fig. 1

36. BLIND HEM STITCH

This machine is provided with a specially designed blind hem stitch sewing foot. Good use of it can be made when sewing skirts, curtains, etc. The stitches do not show on the right side.

For this work set the machine as follows.

1. Uni dial $\Delta\Delta$
2. Feed dial 2 ~ 3
3. Drop feed ---
4. Presser foot Blind hem foot

Fold the material as shown in the figure 2.

Depending on the material to be sewn, adjust stitch length and zigzag width by controlling the feed and uni dials.

Turning the hand wheel toward you, stop the machine when the needle is to the extreme left and is about to pierce the material. Place the material so that the sideward stitches pierce the fold. Then lower the presser foot.

Adjust the stitch guide so that it rests next to the folding line and sew. Setting of the stitch guide is done with the thumb screw.

After finishing sewing, release the fold. (Fig. 2)

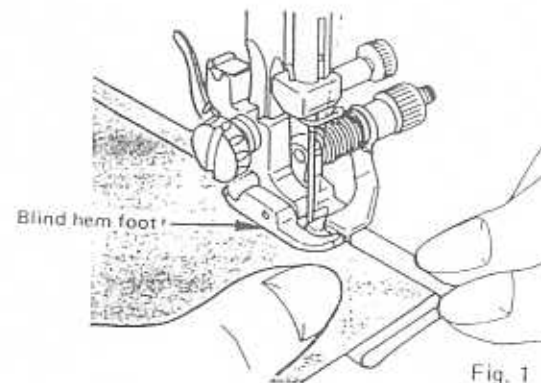


Fig. 1

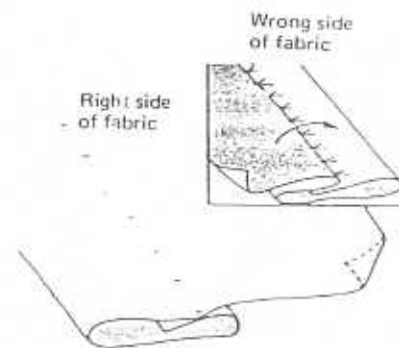


Fig. 2

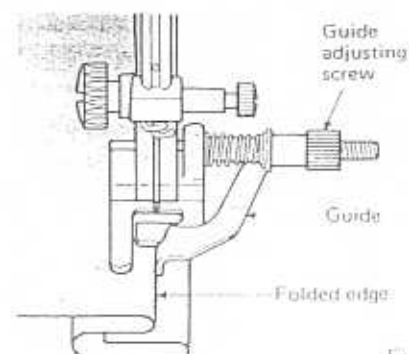


Fig. 3

37. BUTTONHOLE

To make buttonholes, set the machine as follows.

1. Uni dial 
2. Feed dial 
3. Drop feed 
4. Presser foot Buttonhole foot

Trace length of buttonhole with chalk on material and sew slowly following markings so you can stitch buttonhole exactly as you desire. It is suggested that you sew test samples on a piece of same fabric before you make buttonholes on the garment.

Set the uni dial as shown in figure 1 and sew the left side stitch of buttonhole at desired length.

After sewing the left side stitch, turn the uni dial as shown in figure 2 and sew about six stitches for lower bar tacking while turning the hand wheel slowly.

Turn the uni dial as shown in figure 3 and proceed to sew the right side of buttonhole.

After sewing the right side seam, turn the uni dial as shown in figure 4 and sew about six stitches for upper bar tacking while turning the hand wheel slowly.

Cut the opening for the button with the ripper. Use a pin to make sure you do not damage the buttonhole. (Fig. 5)

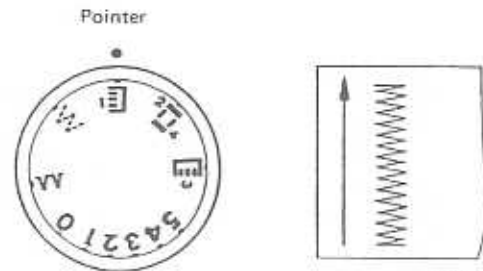


Fig. 1

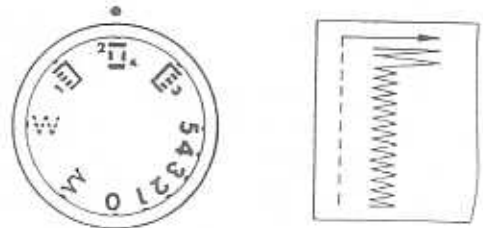


Fig. 2

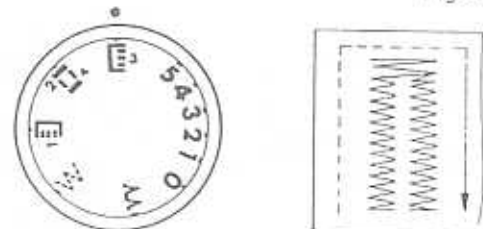


Fig. 3

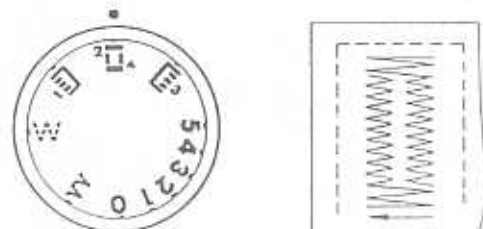


Fig. 4

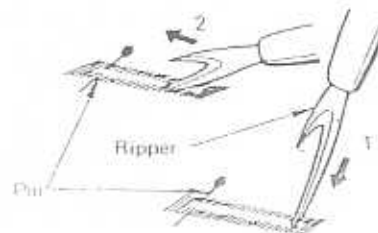
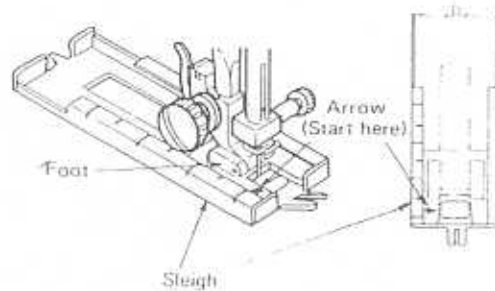


Fig. 5

38. SEWING ELASTIC MATERIAL

For elastic zigzag sewing, set the uni dial to $\Delta\Delta$. This stitch is most useful for darning and mending.

1. Uni dial $\Delta\Delta$
2. Feed dial 0.5 ~ 1
3. Drop feed ---
4. Presser foot Universal foot

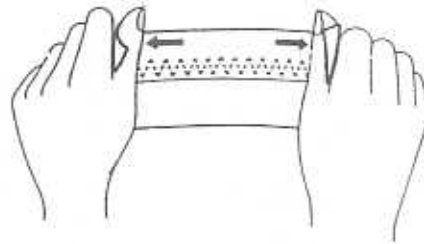


Fig. 1

39. ATTACHING ELASTIC TAPE

For stitching elastic tapes into waistbands, cuffs, etc., set the machine as follows.

1. Uni dial $\Delta\Delta$
2. Feed dial 0.5 ~ 1
3. Drop feed ---
4. Presser foot Universal foot

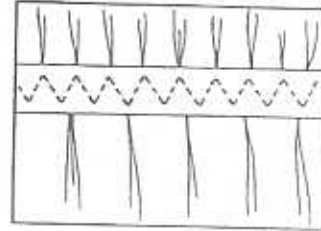


Fig. 1

The above zigzag stitches remain supple and stretch with the elastic.

40. FREE-ARM SEWING

Take off the snap-on sewing table and use the free arm for sewing sleeves, trousers etc.

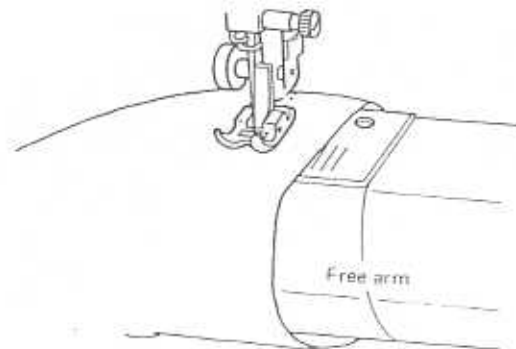


Fig. 1

41. CLEANING THE FEED DOG

Pieces of thread and/or dust accumulating between the needle plate and feed dog will cause trouble.

Always keep the machine clean. Remove the needle, presser foot and needle plate with a screw driver. (Fig. 1)



Fig. 1

After removing the parts, clean all necessary parts with a brush while turning the hand wheel toward you. Be sure that cleaning is through.

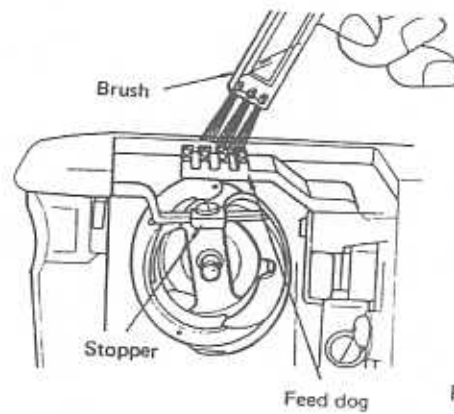


Fig. 2

42. CLEANING SHUTTLE RACE AND HOOK

Raise the needle bar to its highest point by turning the hand wheel toward you.

- 1) Open the shutter hook cover.
- 2) Take out the bobbin case.

Clean dust and gummed oil off each part with an oiled cloth. When finished cleaning and oiling, reassemble reversing the above procedure.

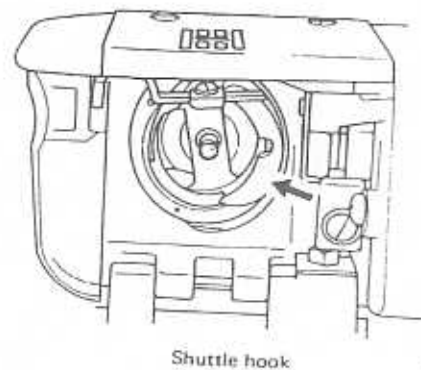


Fig. 1

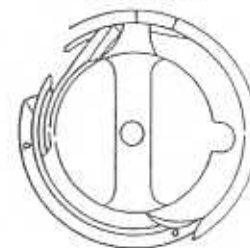


Fig. 2

43. ADJUSTMENT OF MOTOR DRIVE BELT

To adjust the tension of motor drive belt, loosen the set screw holding the mounting bracket, then move the bracket up to loosen, or down to tighten the belt as required.

Please do not have the belt too tight as motor will not operate effectively. When correctly adjusted, tighten the set screw on bracket.

The machine is so assembled that adjustment of the belt to be out of alignment is not necessary.

Pushing lightly by fingers the center part of the belt, adjust the belt so as to have its flexion by 9 to 10 mm.

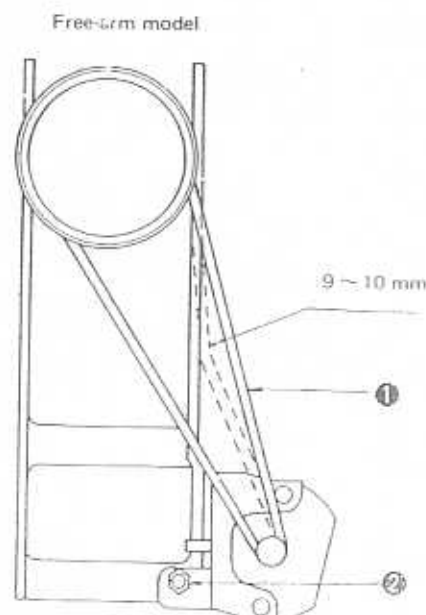


Fig. 1

44. UNSATISFACTORY CONDITIONS: CAUSES AND REMEDIES

Unsatisfactory Condition	Cause	Remedy
The Upper Thread Breaks	<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. The thread take-up spring is broken. 6. The needle is not set correctly. 7. The needle plate, the hook, or the pressure 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>
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. The pressure of the prasser bar is not sufficient. 4. The wrong needle is used. 	<p>Attach it properly.</p> <p>Replace it.</p> <p>Tighten 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 operator. 5. The needle is of inferior quality. 	<p>Replace it.</p> <p>Attach it correctly.</p> <p>Use proper needle.</p> <p>Don't pull on the cloth.</p> <p>Replace it with proper needle.</p>
Stitching Forms Loops	<ol style="list-style-type: none"> 1. The thread tension is not properly adjusted. 2. The needle is not threaded correctly and/or the bobbin is not wound properly. 3. The weight or thickness of the material and the size of the needle are not in accord. 4. The thread take-up spring does not work well. 	<p>See instructions for adjustment of upper and lower thread tensions.</p> <p>Thread and/or rewind properly.</p> <p>See instructions covering the use of proper needles and threads with varying materials.</p> <p>Replace it.</p>
Seams Pucker	<ol style="list-style-type: none"> 1. The thread tension is too tight. 2. The pressure of the presser foot is too strong. 3. The position of the feed dog is too high. 4. Use straight sewing foot. 	<p>See instructions for adjustment of upper and lower thread tensions.</p> <p>See instructions for proper pressure on cloth.</p> <p>See instructions covering adjustment of the feed dog.</p>
Irregular Stitching	<ol style="list-style-type: none"> 1. The upper and lower threads are of inferior quality. 2. The pressure on the presser foot is inadequate. 3. The thread is incorrectly wound around the bobbin. 4. The position of the feed dog is too low. 	<p>Use thread of good quality.</p> <p>See instructions for proper pressure on cloth.</p> <p>Rewind it.</p> <p>See instructions covering adjustment of the height of the feed dog.</p>
The machine does not work smoothly and is noisy	<ol style="list-style-type: none"> 1. The machine is in need of oil. 2. Dust and waste thread have collected in the hook mechanism. 3. Oil of inferior quality is used and has coagulated. 4. The tension on the belt is too tight. 	<p>Apply oil as per instructions.</p> <p>See instructions on cleaning of the race and hook.</p> <p>Clean thoroughly and oil again with proper sewing machine oil of best quality.</p> <p>Loosen it.</p>

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