

INSTRUCTIONS

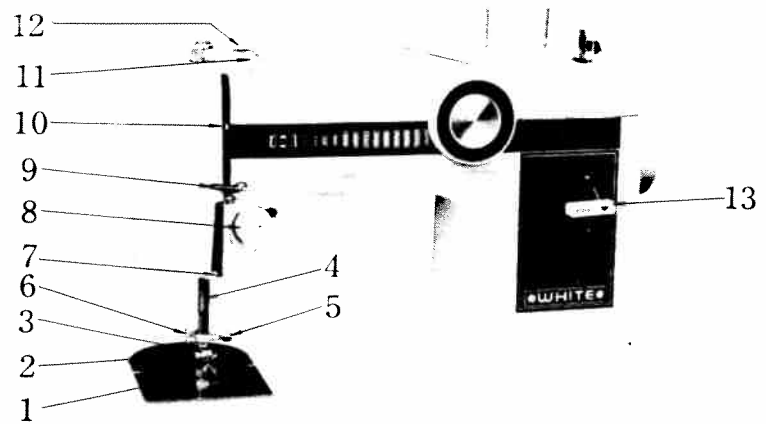
MODEL 3800/20 ZIG ZAG SEWING MACHINE



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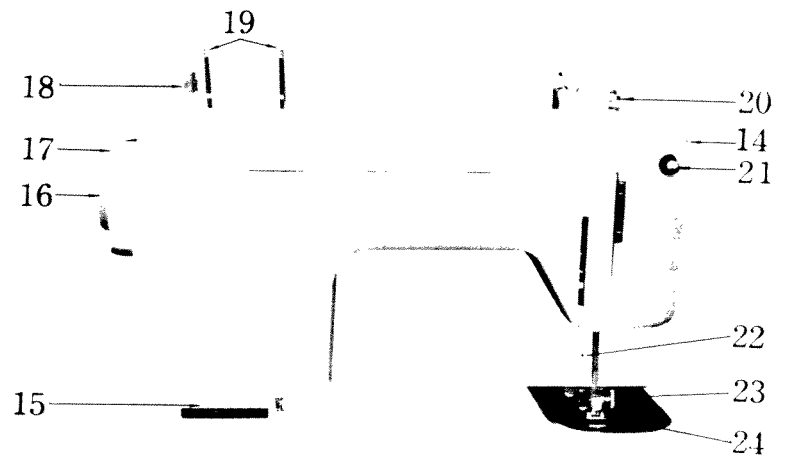
Knowing Your Sewing Machine

FRONT VIEW



- | | |
|----------------------------|-------------------------------|
| 1. Needle Plate | 8. Top Thread Tension Control |
| 2. Seam Guide Lines | 9. Front Thread Guide |
| 3. Feed Dog | 10. Thread Take Up Lever |
| 4. Thread Guide | 11. Top Thread Guide |
| 5. Needle Clamp Screw | 12. Stitch Selector |
| 6. Presser Foot Screw | 13. Reverse Stitch Control |
| 7. Face Cover Thread Guide | |

BACK VIEW

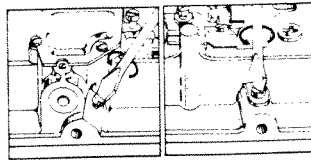


- 14. Light Switch
- 15. Nomenclature Plate
- 16. Clutch Knob
- 17. Hand Wheel
- 18. Bobbin Winder
- 19. Thread Spool Pins

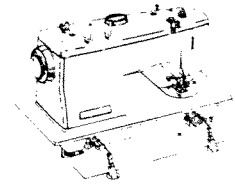
- 20. Pressure Regulator
- 21. Face Cover Plate
- 22. Presser Foot Lever
- 23. Thread Cutter
- 24. Presser Foot

INSTALLING MACHINE

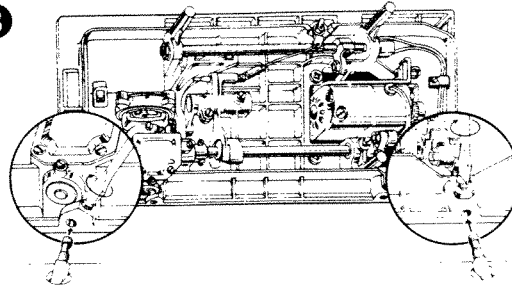
1



2

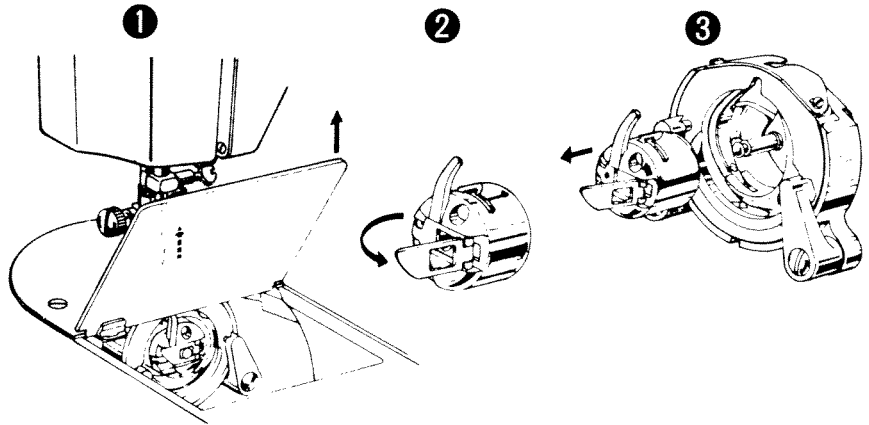


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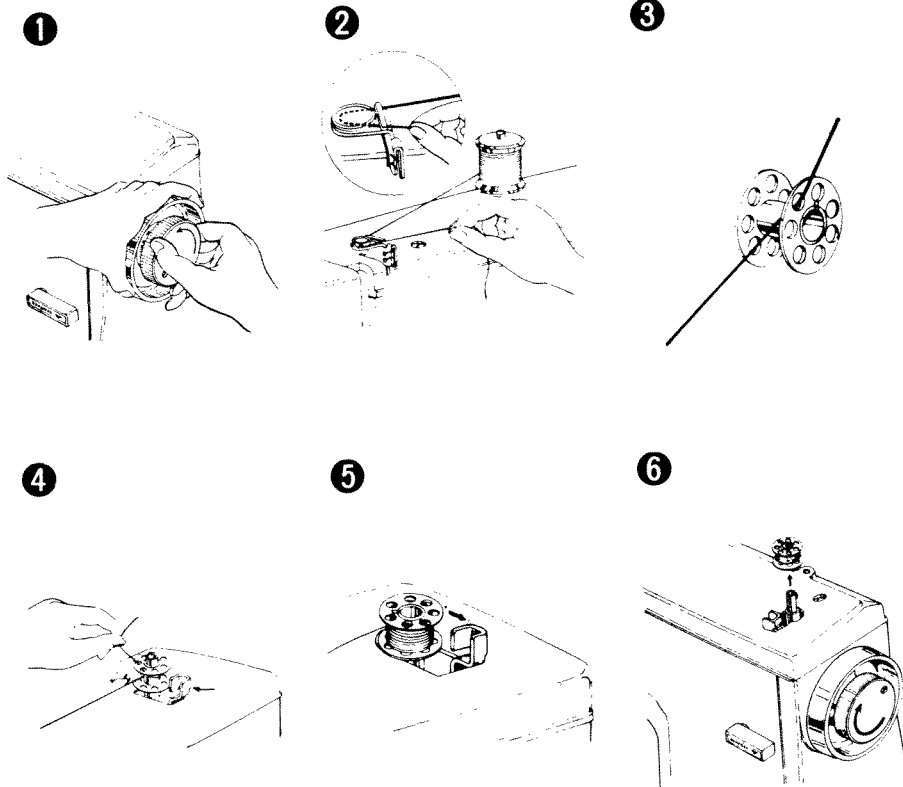
1. Loosen the two hinge screws under holes in the rear edge of the machine bed.
2. Raise hinge pins in the cabinet cutout
3. Slip machine head onto the pins and tighten hinge screws securely.

REMOVING BOBBIN CASE FROM SHUTTLE



1. Turn hand wheel to raise needle to its highest position. Lift hand hole cover plate.
2. Pull open latch of bobbin case.
3. Pull bobbin case straight out of shuttle.
To thread the bobbin case, see page 7.

WINDING THE BOBBIN



1. Release clutch by turning clutch knob toward you.
2. Draw thread from spool through bobbin winder tension discs as shown.
3. Pull end of thread through hole in bobbin as shown.
4. Place bobbin onto bobbin winder shaft with end of thread coming from the top of the bobbin.

Push bobbin winder latch against bobbin until it clicks. Holding onto end of thread, start machine. When bobbin is slightly filled, snip off end of thread.

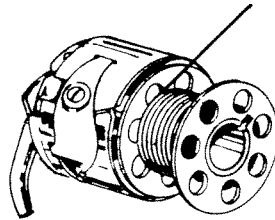
5. Start machine. Wind thread until bobbin winder latch releases.
6. Tighten clutch knob and remove bobbin.

Two spool pins have been included with this machine to aid in bobbin winding. By placing a spool of thread on the second spool pin, you may wind your bobbin without unthreading the machine.

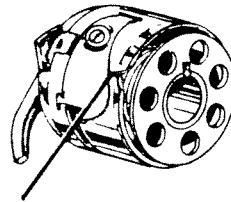
THREADING THE BOBBIN CASE

INSERTING BOBBIN INTO BOBBIN CASE CASE INTO SHUTTLE

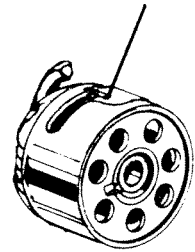
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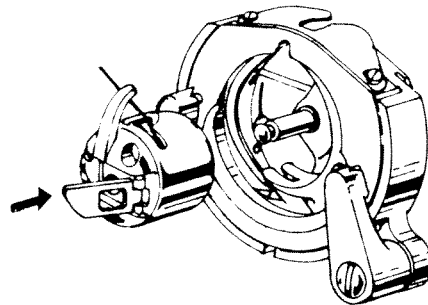
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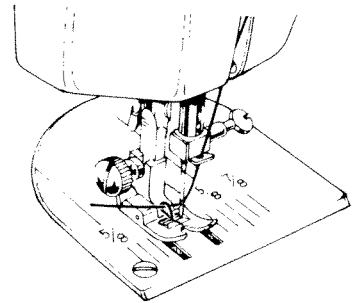
③



④



⑤



1. Insert bobbin into bobbin case making sure thread is coming from bobbin as shown.
2. Pull thread through slot of case as shown.
3. Pull thread under tension spring.

4. Turn hand wheel to raise needle to its highest position. Holding latch open, position case into shuttle, and release latch. Case should lock into place when latch is released.
5. Hold needle thread loosely in left hand and rotate hand wheel toward you one complete turn. Bring bobbin thread up by pulling upper thread.

THREADING OF TOP THREAD

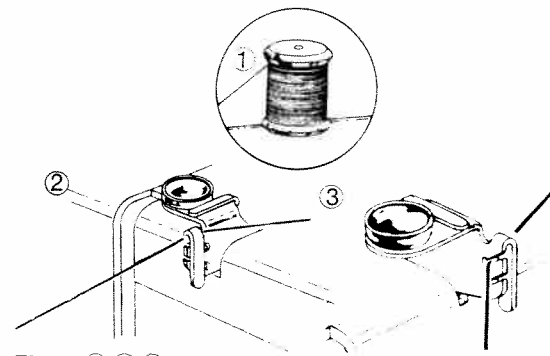


Fig 1-① ② ③

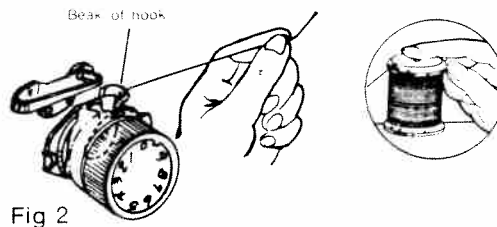


Fig 2

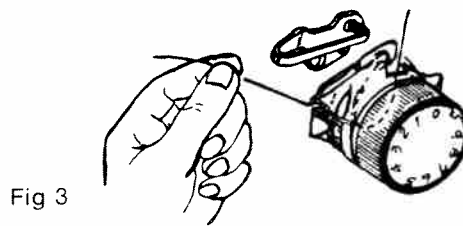


Fig 3

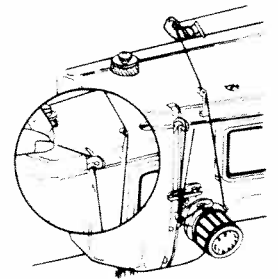


Fig 4

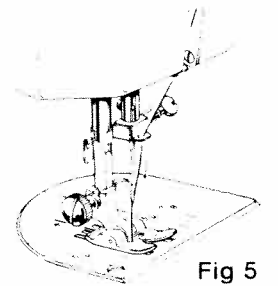
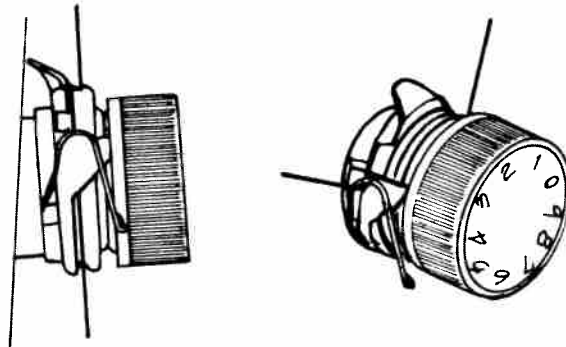


Fig 5

1. Place thread on spool pin as shown, with the thread coming from the back of the spool (Fig 1-1). Draw thread through the top thread guide (Fig 1-2 & 3).
2. Holding the spool with the right hand, pull the thread through the tension discs. The spring wire loop should be pulled up until the thread passes

CONTROLS

TOP TENSION CONTROL



Probably the most important control on your machine is this one that regulates your top thread tension. It consists of discs between which the thread passes. The pressure on these discs is regulated by turning the dial on the front of the control. The higher the number, the tighter the tension.

There are many reasons for having to reset your tension. The best tension for one fabric may not be correct for another. The required tension depends upon the stiffness of the fabric, thickness of the fabric, numbers of layers of fabric being sewn, as well as the type of stitch you are making.



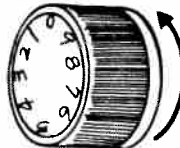

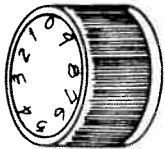
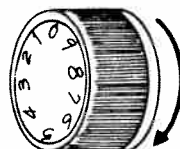
It is best to test the stitching on a scrap of the fabric you are using before starting to make a garment. To adjust for the correct stitch, see next page.

ADJUSTING TOP TENSION

A perfect stitch will have threads locked between the two layers of fabric with no loops on top or bottom.

1



PROBLEM	REMEDY
<p>Upper thread too tight</p> <p>2</p>  	<p>Decrease Tension</p> 
<p>Upper thread too loose</p> <p>3</p>  	<p>Increase Tension</p> 

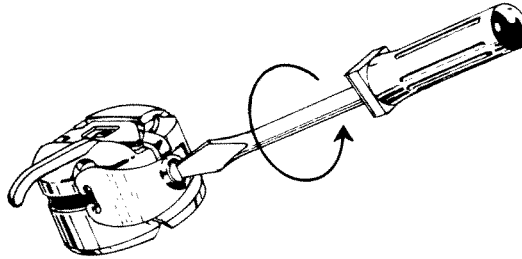
ADJUSTING BOBBIN TENSIONS

Bobbin tension requires adjusting less frequently than the upper thread tension.

If the stitch is satisfactory but the seam is puckered, it may be necessary to loosen the tension on both the top and bottom threads. Be sure to balance them as indicated on Page 10.

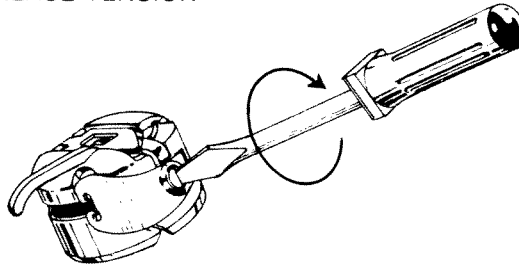
When adjusting the tension on the bobbin case, make slight adjustments with a screwdriver.

DECREASE TENSION



Turn Counter Clockwise

INCREASE TENSION



Turn Clockwise

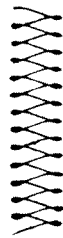
CHECKING TENSIONS

The easiest way to check tensions is to sew a medium zigzag stitch on the fabric you will be using. Use the appropriate type of thread and needle. Use different colors of thread on the bobbin and upper spool.

Sew a line of zigzag stitches. The bobbin thread should not show on the top of the fabric.

Adjust the top tension if necessary to achieve the stitch balance mentioned above.

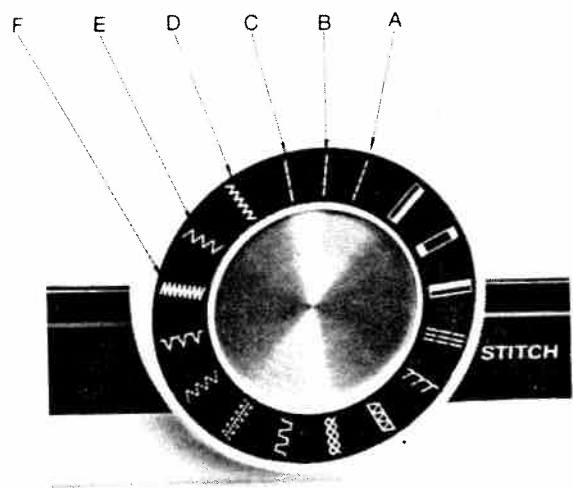
UNBALANCED



BALANCED



STITCH SELECTOR



All functions of stitch length, stitch width, buttonholing, utility and stretch stitches together are accumulated on this Stitch Selector.

The markings (a), (b) and (c) show three-range of the straight stitch length; short (a) - medium (b) - long (c).

The stitch setting you use will be determined by the thickness of the fabric you are sewing. A long stitch setting (c) should be used for thicker fabric or more layers of fabric.

The medium stitch length (b) is the most commonly used.

A basting stitch is made by using the (c) setting to make the longest possible stitch.

The markings (d), (e) and (f) show three-range of the zigzag stitch; medium (d) - maximum (e) - satin (f).

You may vary your zigzag stitch by setting this selector to the markings of (d), (e) and (f).

Other patterns are easily obtained by setting the markings on the selector you desire.

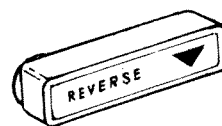
Important:

Before turning the selector, make sure needle is above fabric.

REVERSE STITCH CONTROL

It is best to begin and end seams with a few stitches taken in reverse. This is called back tacking. Back tacking fastens the end of the seams firmly and prevents raveling.

When reverse stitching is needed, simply press and hold the control down during sewing. The fabric will immediately start feeding backward and seam will be fastened.

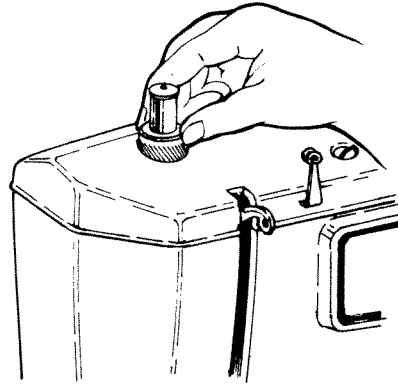


Reverse Stitch Control

OTHER ADJUSTMENTS OF MACHINE IN SEWING

In addition to the obvious controls of your machine there are other small regulators and controls to aid you in using your sewing machine.

PRESSER FOOT PRESSURE REGULATOR



Push down outer ring of presser foot pressure regulator (See above illustration). This will release pressure of presser foot. To increase pressure, push down inner pin until suitable pressure is obtained. For ordinary sewing, the inner pin should be all the way down.

Insufficient pressure may cause poor feeding of the fabric, skipped stitches, or difficulty in guiding the fabric.

When sewing multiple thickness or heavy fabric reduce the pressure. Increase pressure when sewing lighter weight fabrics. If feed dog or presser foot marks appear on the fabric, reduce the pressure.

DARNING PLATE

When you need to feed the fabric by hand as in darning, or sewing on buttons, attach the darning plate over the needle plate as shown in Fig. 1. Be sure you have the needle raised to its highest position when doing this.

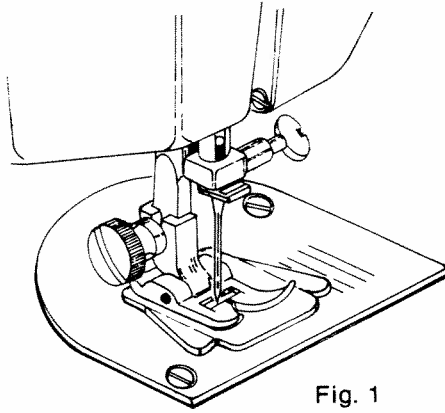


Fig. 1

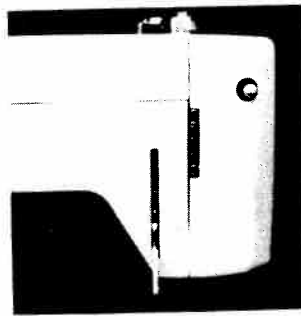


Fig. 2

SEWING LIGHT

The light switch shown in Fig. 2 Provides the electric current for the light. To turn on or off the light, depress the switch.

The sewing light is located inside the face cover plate as shown in Fig. 3 To replace the bulb, swing the face cover plate open. Remove the bulb by turning bulb counter-clockwise. Remove bulb from socket and replace with new bulb, turn clockwise until bulb fits snug. Do not exert strong pressure on bulb or the glass may break causing injury.

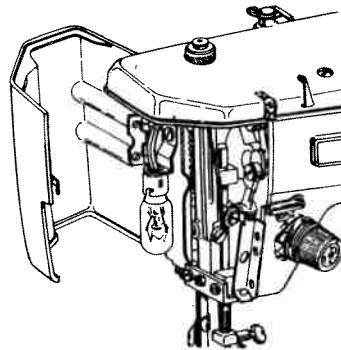


Fig. 3

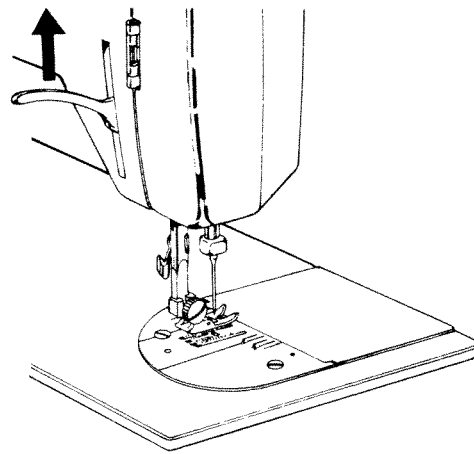
SEAM GUIDES

Seam Guides are marked on either side of the needle plate to aid you in guiding your fabric.

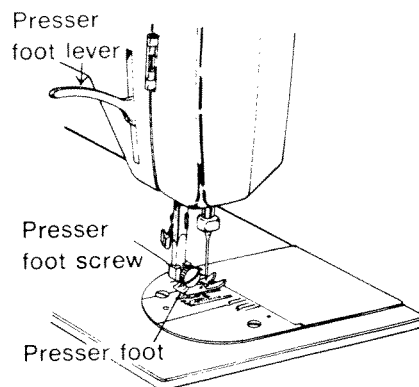
PRESSER FOOT LEVER

To aid you in the placement of heavy fabrics under the presser foot, the presser foot lever can raise the foot beyond the normal **raised position**.

This is also an aid in changing your presser feet.



ACCESSORIES

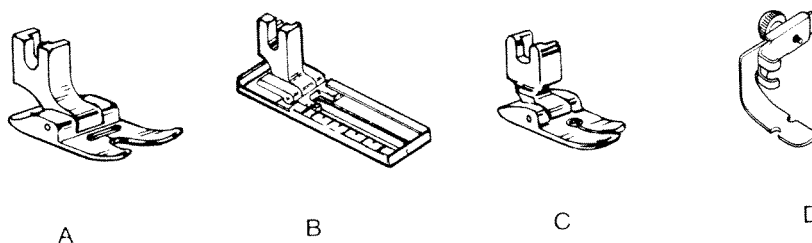


PRESSER FEET

The various presser feet that come with your Sewing Machine are designed to assist you with certain sewing functions.

To change the presser foot:

1. Raise the needle to its highest position by turning hand wheel towards you.
2. Raise the presser bar to its highest position by lifting the presser foot lever.
3. Loosen the presser foot screw. (You do not need to remove the screw)
4. Choose the required foot. Insert from the front.
5. Tighten the screw using the large screwdriver to make certain the foot is secure.



You have been given a variety of presser feet:

- A. Zigzag Stitch Foot
- B. Buttonhole Foot
- C. Straight Stitch Foot
- D. Zipper Foot

NEEDLES

The size of the needle should conform with the size of the thread and both should be suitable to the fabric (See next page).

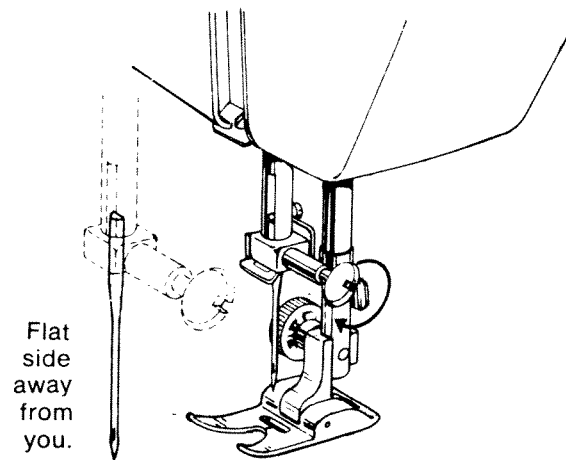


Fig. 1

Never use a bent or blunt needle. Fig. 1 shows you the exact length of your needle. Be sure you use standard length needles.

You will find amongst your accessories a stretch needle with blue shank. This special needle is to be used when sewing certain knits and certain difficult synthetic fabrics. If you experience skipped stitches, replace your needle according to needle chart. (Page 20)

PLACEMENT OF NEEDLE



Raise needle bar to its highest position by turning the hand wheel toward you. Loosen the needle clamp screw. Holding the needle with the flat side away from you, slip the needle into the needle bar. When it is in as far as it will go, tighten the needle clamp screw with a screwdriver.

NEEDLE, THREAD, AND FABRIC CHART

THREAD SIZE	NEEDLE SIZE	FABRIC
Cotton 80-100 Synthetic Silk A	7-9	Chiffon, Fine Silks, Nylon Tricot, Power net
Cotton 80-100 Synthetic Silk A	10-11	Batiste, Organdy, Light weight Velvet and Taffeta, Fine Lace, Light weight Knits, Satin.
Cotton 60-80 Synthetic Mercerized 50-60	12-14	Cotton, Cotton Blends, Poplin, Gingham, Velveteen, Double Knits, Light weight Wool, Linen, Leather, Fake Furs, Vinyls.
Cotton 40-60 Mercerized 50 Mercerized heavy duty	14-16	Heavy Cotton such as Corduroy, Denim, Decorated Fabrics, Wool Coating and Suiting.
Cotton 30-50 Mercerized heavy duty	18	Heavy Twills, Denims, Coatings.

Starting to Sew

Now that you are familiar with the controls on your machine and with the accessories provided for the machine, you are ready to start to sew.

Below are some good habits to follow each time you sit down to sew:

1. Test the needle - it should be straight, properly set and sharp on the point. It should be the correct size for the fabric and thread being used. Do not be afraid to change your needle frequently. Many of the new fabrics made of synthetic blends tend to dull the needles more easily than fabrics made of natural fibers.
2. Before placing the material on the machine, see that the ends of the threads have been drawn about 4 inches to the rear of the machine. Hold on to threads during the sewing of the first 3 or 4 stitches of the seam.
3. Test the machine stitch on a scrap of fabric you plan to use. The fabric should be double. Adjust the machine for the length of stitch and tension suitable to your fabric.
4. Fabric should be placed under the presser foot with the bulk of the material to the left of the needle and the right edge of the material placed on the 5/8" seam marking on the needle plate when making a simple seam.
5. Run the machine at a slow even speed. The more pressure you put on the speed control, the faster the machine will sew.
6. Fasten each seam by back tacking at the beginning and end of the seam.
7. Always finish sewing each seam with the needle at its highest point.
8. Guide the fabric gently with your hand in front of the needle. Never pull or hold the fabric in such a way that the normal feeding is altered.
9. When turning the hand wheel manually, always turn it toward you.

GARMENT CONSTRUCTION STITCHES

STRAIGHT STITCHING (3 range)

SETTINGS:

Stitch Selector - (a) : (short)
 - (b) : (medium)
 - (c) : (long)

Straight Stitch Foot

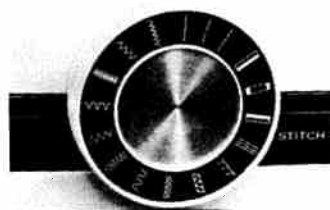
Set your machine just as shown in the illustrations (a, b or c) in order to straight stitch. Before setting turn hand wheel toward you, so that needle is above fabric.



(a) short



(b) medium



(c) long

You will find in garment construction that you are doing two types of sewing temporary and permanent.

1. Temporary stitching-Usually the longest stitch (c) possible and often done on a single layer of fabric. The various types of temporary stitching are:

Basting
Stay stitching
Guide line marking

2. **Permanent stitching**—This is the actual stitching that holds the garment together. Much of this stitching is visible on the outside of the garment and therefore must look good.

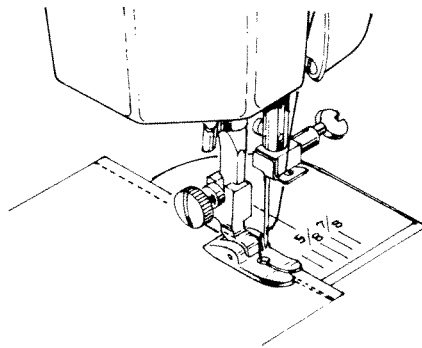
The best stitch length to use for medium weight fabrics is medium (b). This is the middle range stitch length.

You must remember to use long stitch (c) for heavier fabrics, multiple layers of fabric and thicker seams. Some of these seams are:

- Common two layer seams
- Curved two layer seams
- Top stitched three layer seams
- Top stitched four layer seams

When you have two seams crossing each other with considerable thickness, sew slowly and carefully to ensure a strong seam in that area.




FASTENING A SEAM (Backtacking)



Be sure both threads are drawn back under the presser foot. Lower needle into fabric about 1/2 inch (1 cm) from beginning of seam. Depress reverse stitch control and stitch in reverse until needle reaches beginning of seam. Release reverse stitch control and complete seam. When you reach the end, depress reverse stitch control and sew back over 1/2 inch (1 cm) of completed seam.

ZIGZAG STITCHING (3 range)

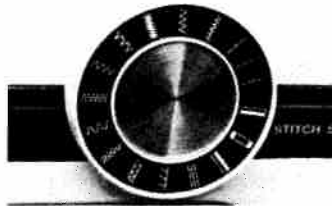
SETTINGS:

- Stitch Selector - (a)  (medium)
- (b)  (maximum)
- (c)  (satin)

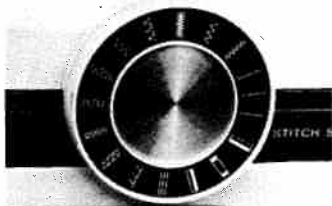
Zigzag Stitch Foot



(a) medium



(b) maximum



(c) satin

This type of stitching greatly expands the use of your machine. This is the feature that enables you to overcast seams, applique and monogram.

Simply use the setting indicated in the illustrations (a or b) for zigzag.

Follow directions given below and in the following pages for more specific uses including satin stitch (c).

OVERCASTING

This is one of the more frequently used zigzag stitches in garment construction. You may want to overcast along the raw edge of each seam allowance or fold the raw edge toward the garment and stitch.

Fig. 1 shows the raw edge finished. Fig. 2 illustrates the folded edge stitched.

Stitch so the needle pierces the fabric just short of the outside edge. Raw or worn edges of older garments can be overcast to prevent further raveling, or fraying.

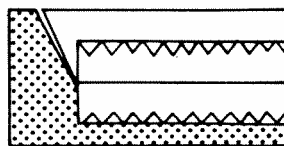


Fig. 1

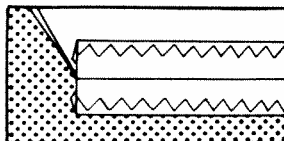
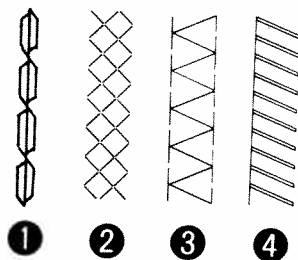


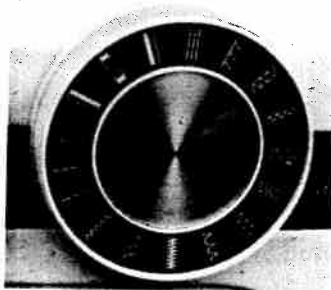
Fig. 2

STRETCH STITCHING

The stitches shown below are all for use with stretch and knit fabrics. These are special stitches built in to the machine for your quick selection.



1. Straight Stretch
2. Smocking Stretch
3. Elastic Stretch
4. Serging or Pine Leaf Stretch

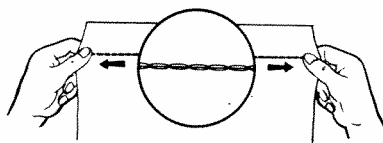


STRAIGHT STRETCH STITCHING

SETTINGS:

Stitch Selector- IIII
Straight Stitch Foot

Straight Stitch Foot



Use this special stretch stitch with knitted fabrics and other fabrics that stretch. Sew as you do a regular straight stitch seam. The machine will make triple lock stitches back and forth which gives the stretch to the seam.
See illustration.


This stitch enables you to press open your seam as with any straight stitched seam. The seam will stretch with the fabric without breaking the thread.

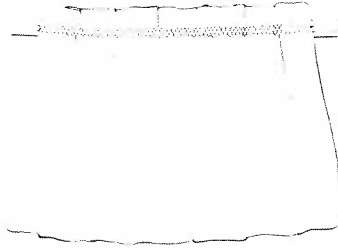
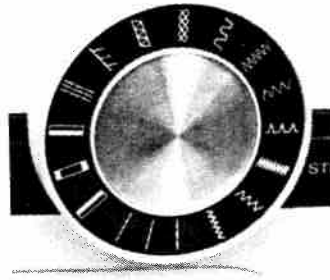
This is also a good stitch to use on curved seams that will receive a great deal of strain when worn, such as in children's shorts and slacks as well as adult sport clothes.

SMOCKING STRETCH STITCHING

SETTINGS:

Step 1. Make a straight line of gathers across the fabric that you wish to smock.

Step 2. Stitch Selector- 
Zigzag Stitch Foot




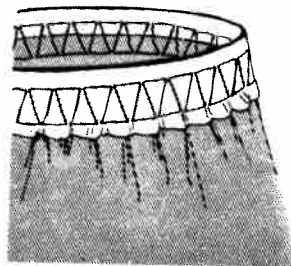
With a narrow strip of fabric directly under the line of gathering, stitch over the gathers. The design will be a series of small diamonds. Make the design more interesting by using two different colors of thread and the double needle.

When smocking a garment, the stitching should be done before the piece is sewn into the garment.

ELASTIC STRETCH STITCHING

SETTINGS:


Stitch Selector- 
Zigzag Stitch Foot

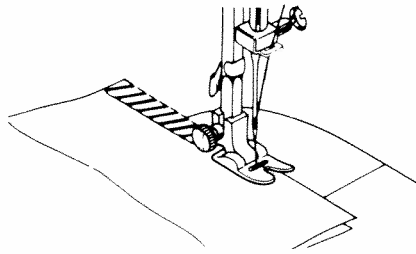
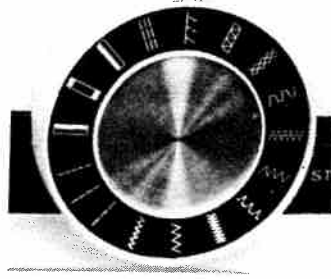


This is a good stitch to use in making or repairing lingerie. The stitch is decorative as well as useful. Simply stitch the elastic into place around the waist of the garment, making sure that the elastic is evenly spaced. To do this mark the correct length piece into quarters and match these markings with center front and back of the garment as well as side seams.

SERGING OR PINE LEAF STRETCH STITCHING

SETTINGS:

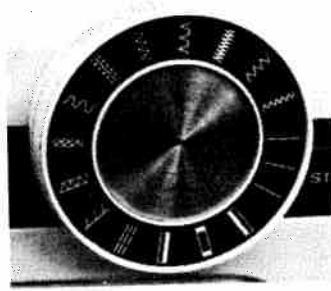
Stitch Selector- 
Zigzag Stitch Foot




The serging or pine leaf stretch stitch is equally useful with woven and knitted fabrics. This stitch can be used in making elastic swimwear, as well as overcasting a neat edge on the seams.

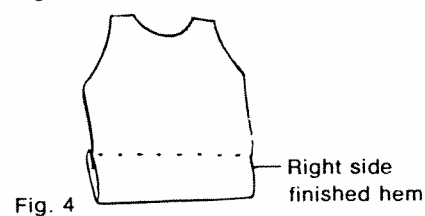
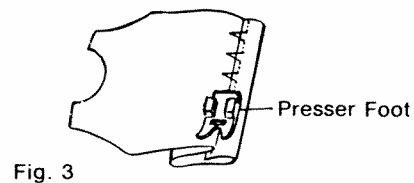
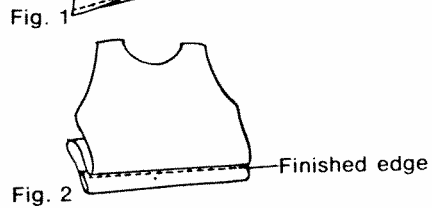
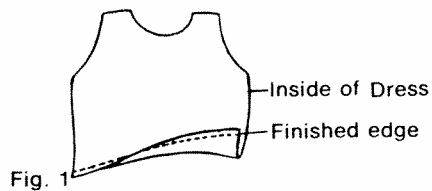
SPECIAL FINISH STITCHES

BLIND HEMMING



SETTINGS:

Stitch Selector- 
Zigzag Stitch Foot



1. Finish edge of hem anyway you desire. Turn up hem appropriate width. Fig. 1

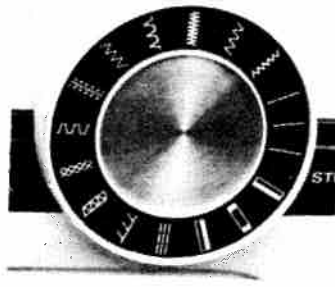
2. Fold garment away from hem leaving 1/8" of hem edge extending. Fig. 2


3. Place garment under presser foot in such a manner that straight stitches will be sewn on extended edge. The zigzag stitch should just catch the fold of the garment. Fig. 3

4. Press both sides of the finished hem. The right side of the garment will show only the blind stitches. Fig. 4

SATIN STITCHING

SETTINGS:

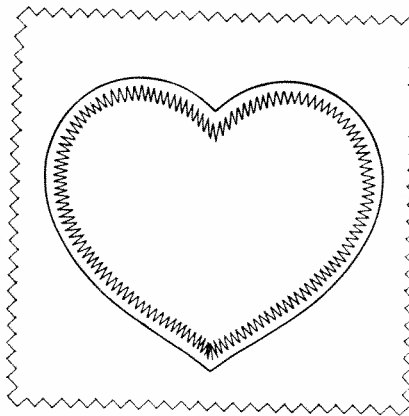


Stitch Selector- 
Zigzag Stitch Foot

Closely spaced zigzag stitches are called satin stitches. This is an attractive stitch used for appliqueing, monogramming, and bartacking. Whenever you are using this stitch, it is well to remember to loosen the tension of the top thread slightly. The wider stitch you make, the looser the tension should be.

If you are stitching on a very soft fabric, it is well to use a backing of tissue paper or interfacing for a well formed stitch. Puckering of the material will be eliminated and the bobbin thread will not be visible on the right side of the fabric.

As with all special stitches, it is best to make a sample on your fabric before starting the design on the garment.



APPLIQUEING


SETTINGS:

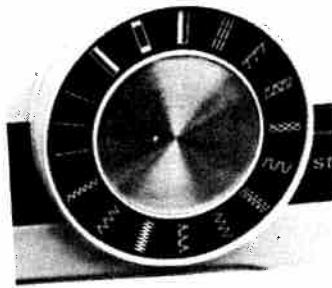
Same as with Satin Stitching

Select an applique design to be applied to your garment and baste it in place. Satin stitch around the raw edge of the applique completely covering the edge. You may want to do this with a contrasting color of thread or self color.

BUTTONHOLING

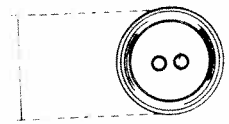
SETTINGS

Stitch Selector- 
Buttonhole Foot
Buttonhole Foot

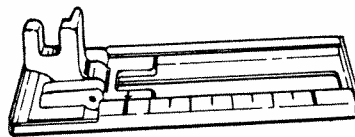


Before you sew buttonholes, make a practice buttonhole on a scrap of the fabric and repeat training until you get its technique correct.

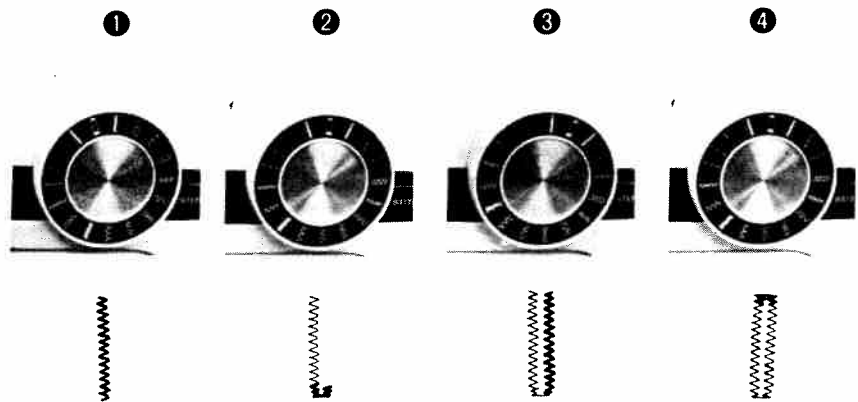
Mark buttonhole length
on your garment.



The markings on the left side of the buttonhole foot will enable you to make buttonholes of identical size when sewing a series. Markings are $1/8$ " apart, with the maximum length of $1-1/8$ ".



Slide the foot so that red arrow points to the first mark on left side of foot at start of each buttonhole.





1. Set the Stitch Width-Buttonhole Control at marking "■" as pictured in Fig. 1 above and let the needle pierce the fabric at the marked top end of the buttonhole.
Slide presser foot so arrow points to desired length (1-1/8" buttonhole is set in illustration of foot above).
Lower the buttonhole presser foot and start sewing the first side of buttonhole.
2. Stitch forward until you reach the marked end of the buttonhole. Raise needle above fabric and turn the Stitch Width-Buttonhole Control to marking "■" as shown in Fig. 2 above.
Sew a few stitches to make bar tack.
3. With the needle above, turn the Stitch Width-Buttonhole Control to marking "■" and sew in reverse forming the second side of the buttonhole. (See Fig. 3)
4. After sewing back to the beginning of the buttonhole, raise needle and turn the Stitch Width-Buttonhole Control to marking "■" again. Take a few stitches making the bar tack to close the buttonhole. (See Fig. 4)
5. Carefully cut a slot in center of the buttonhole with a seam ripper so as not to break the thread.

Note: Fine buttonholes on sheer or velvety fabric should be made with an interfacing of tissue paper or interfacing fabric between layers of garment.

Be sure Stitch Width-Buttonhole Control is firmly positioned in either marking "■", "■" or "■" and always make a practice buttonhole on a scrap of the fabric you are sewing.

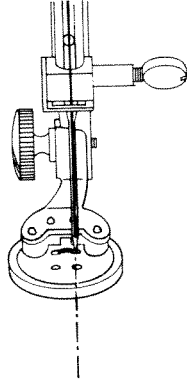
BUTTON SEWING

SETTINGS:

Stitch Selector —  (maximum) or  (medium)

Darning Plate


Zigzag Stitch Foot



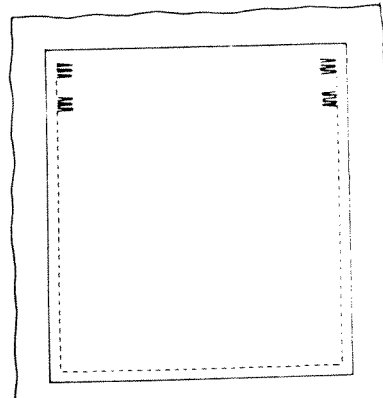
1. Align two holes of button evenly with slot of presser foot and lower foot to hold the button securely.
2. Turn hand wheel manually until needle point is just above button.
3. Adjust stitch width control so needle will enter one hole of the button.
4. Turn hand wheel again by hand so needle enters second hole. Readjust stitch width if necessary. Stitch a number of times.
5. Finish sewing with an extra two inches of thread remaining. Draw these threads to reverse side of garment and tie.

BAR TACKING

SETTINGS:

Stitch Selector -  (satin)

Zigzag Stitch Foot



This stitch is similar to a very short satin stitch and is used to reinforce points of strain such as corners of pockets and straps on lingerie. Sew 4 to 6 zigzag stitches.

MENDING

SETTINGS:

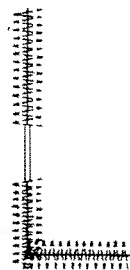
Stitch Selector — (long)
— (short)

Zigzag Stitch Foot

To repair a straight or three-cornered tear, position the tear under the needle in such a way that the stitching catches both sides of the tear.

When mending a three-cornered tear, stitch from each end to the center.

It is well to use a piece of fabric under the tear for reinforcement.



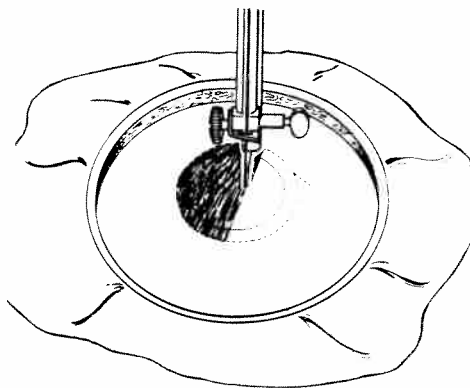
DARNING

SETTINGS:

Stitch Selector — (long),
— (medium)
— (short)

Darning Plate

No Presser Foot



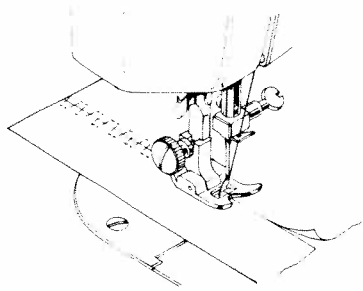
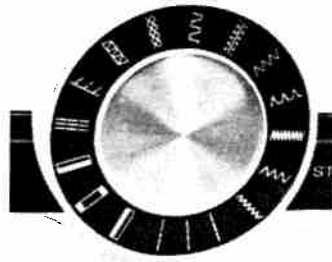
Remove presser foot, stretch fabric between embroidery hoops with hole centered. Draw the bobbin thread up through the fabric by holding the top thread and taking one stitch at the spot where you wish to start darning. Lower the presser bar. Start sewing at a slow to medium speed. Move the fabric back and forth with a steady rhythm to cover the darning area.

When it is covered, turn the fabric and sew another layer of stitching across the first layer of stitching.

BOX STITCHING

SETTINGS:

Stitch Selector — 
Zigzag Stitch Foot



This is a good stitch to use in attaching or binding elastic fabrics and stretch lace, lingerie stretch knit.

The stitch is decorative as well as useful.

ZIPPER APPLICATION

SETTINGS:

Stitch Selector — (medium)
Zipper Foot

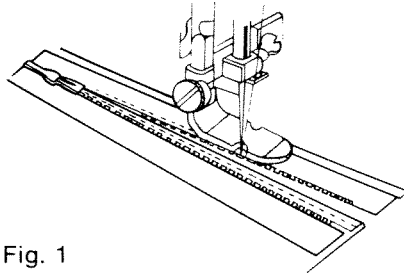


Fig. 1

REGULAR ZIPPER

The foot is adjustable for use on the right or left side of the needle when sewing the regular type of zipper. Adjust the foot so the needle clears the side notch on the foot. See Fig. 1. Carefully follow directions given on the zipper package.

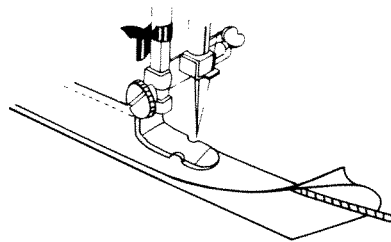








Fig. 2

CORDING

Foot can also be used to make cording for slipcovers etc. Cover a cord with a strip of bias fabric and sew as shown in Fig. 3.

GUIDANCE For Your Selection of the Best Kind of Stitch For Your Stretch Fabrics.

Specially for Stretch	
 STRAIGHT STRETCH	U S E Use on stretch knit fabrics. Use to repair knit ready made garments where seams need give. Use to seam areas of stress in childrens and adults sportswear—crotch seams, armholes, etc. Sew center seam of men's neck ties. Sew any seam that is on the bias and must give.
 SMOCKING	Use on children's wear, baby clothes and lingerie.
 ELASTIC STRETCH	Use to apply elastic.
 SERGING OR PINE LEAF	Use for overcasting fabrics that ravel extensively.

Useful Stitches with Stretch Applications	
 PLAIN ZIGZAG	U S E Use for all-purpose stretch sewing, seam finishing, edge finishing, or attaching stretch laces.
 BLIND STITCH	Overcast seam finishing on all types of stretch fabrics. Flexible blind hemming.
 MENDING	To repair a straight or three-cornered tear.

Fabric	Special Stitches to Use	Special Notions to Use
Nylon Tricot.	Shallow zig zag Short straight stitch Serging or Pine leaf stretch Blind Hem	Sharp new needle. Size 9 or 11. Polyester, nylon or dacron core thread.
Stretch Terry Cloth	Straight stretch Serging or Pine leaf stretch Zig zag	Mercerized thread Polyester, nylon or dacron core thread. Size 14 needle.
Leather	Straight or simple zig zag	Mercerized or silk thread Size 14 needle 1/2 pressure on presser foot
Stretch knit for Swimwear. Skiwear. Girdles	Straight stretch Serging or Pine leaf stretch Blind hem Scallop stitch Mending Stitch	Polyester, Nylon or dacron core thread. Sharp new needle Size 9 or 11. Lace Seam tape. Pre-shrunk zippers.

New fabrics are coming on the market all the time. Remember that soft fabrics may need to be stabilized a little. This is especially true when buttonholing or satin stitching as the stitches are so close together. A backing of tissue paper or interfacing may assist you in your sewing. The paper may be torn away and the interfacing cut away after sewing. Check your fabric by making practice samples on a scrap of fabric before sewing on your garment.

Checking Performance Problems WHAT TO DO

PROBLEM	PROBABLE CAUSE	CORRECTION
Irregular Stitches	Incorrect size needle. Improper threading. Loose upper thread tension. Pulling fabric. Light pressure on presser foot. Loose presser foot. Unevenly wound bobbin. Nicks or burrs on shuttle. Nicks or burrs at hole of needle plate.	Choose correct size needle for thread and fabric. Rethread machine. Tighten upper thread tension. Do not pull fabric; guide it gently. Increase pressure on presser foot. Reset presser foot. Rewind bobbin. Replace shuttle, or polish off burrs completely. Replace needle plate, or polish off burrs completely.
Breaking Needle	Pulling fabric. Incorrect size needle. Incorrect setting of needle. Loose presser foot.	Do not pull fabric; guide it gently. Choose correct size needle for thread and fabric. Reset needle. Reset presser foot.
Bunching of Thread	Upper and lower threads not drawn back under presser foot before starting seam.	Draw both threads back under presser foot and hold for first few stitches
Puckering	Incorrect thread tension(s). Light pressure on presser foot. Using two different sizes or kinds of thread. Bent or blunt needle. Loose presser foot. Fabric too sheer or too soft.	Reset thread tension(s). Increase pressure on presser foot. Upper thread and bobbin thread should be same size and kind. Insert new needle. Reset presser foot. Use underlay of tissue paper.

PROBLEM	PROBABLE CAUSE	CORRECTION
Skipping Stitches	Incorrect size needle. Bent or blunt needle. Incorrect setting of needle. Tight upper thread tension. Light pressure on presser foot.	Choose correct size needle for thread and fabric. Insert new needle. Reset needle. Loosen upper thread tension. Increase pressure on presser foot.
Breaking Upper Thread	Starting to stitch too fast. Improper threading. Tight upper thread tension. Incorrect size needle. Sharp eye in needle. Nicks or burrs on shuttle. Nicks or burrs at hole of needle plate.	Start to stitch at a medium speed. Rethread machine. Loosen upper thread tension. Choose correct size needle for thread and fabric. Insert new needle. Replace shuttle, or polish off burrs completely. Replace needle plate, or polish off burrs completely.
Breaking Bobbin Thread	Improper bobbin case threading. Tight bobbin thread tension. Lint in bobbin case or shuttle.	Check bobbin case threading. Loosen bobbin thread tension. Clean bobbin case and shuttle.
Fabric not Moving	Feed dog down. Light pressure on presser foot. Threads knotted under fabric.	Raise feed dog. Increase pressure on presser foot. Place both threads back under presser foot before beginning to stitch.
Machine Jamming Knocking Noise	Thread caught in shuttle.	Disassemble and clean shuttle.

Caring for the Machine

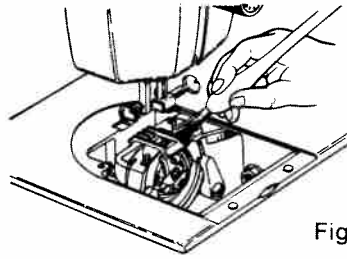
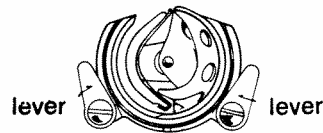


Fig. 1

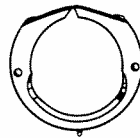
CLEANING AND OILING

Fig. 1 Cleaning the feed dogs with a brush.

To insure the best possible operation of your machine, it is necessary to keep the essential parts clean at all times. Using a small brush, remove the lint that accumulates in the shuttle area and around the feed dogs.



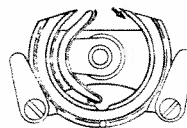
Shuttle Assembly



Shuttle Race Cover



Shuttle



Shuttle Race

Fig. 2 Parts of the Shuttle Assembly.

To Clean the Shuttle Area:

1. This area must be kept free of dust, lint and occasional tangled thread. Raise the needle bar to its highest point and remove the bobbin case.
2. Push levers of shuttle race aside and lift shuttle race cover and shuttle out.
3. Clean the shuttle race with small brush.
4. Put a drop of oil on the center pin of the shuttle and shuttle race. (see arrows)

To Replace Shuttle Assembly:

1. Position shuttle race as illustrated so that race is forming half moon on the left side of the machine.
2. Hold shuttle by center pin and position shuttle so as to form a half moon on the right side. Pointed hook will be on the bottom.
3. Place shuttle race cover into place over shuttle assembly.

OILING IN FACE COVER PLATE

Swing hinged face cover plate open and oil points indicated.

