

WHITE CLASSMATE

MODEL 1570

TO OUR VALUED CUSTOMER...

You are now the owner of a new zig zag sewing machine, the most versatile type of its kind you can possess.

Buttonholes, monogramming, overcasting and creative embroidery are done with ease and speed.

To aid you in obtaining the greatest performance from your new sewing machine, this book on its care and use has been written for you. Read the instructions carefully, as a thorough understanding of your machine will reward you with many hours of trouble-free creative sewing.

This manual is divided into seven separate sections. Each section deals with one special portion of your sewing machine. For example:

1. "GETTING READY TO SEW" explains the basic functions of your machine; how to thread your machine, wind bobbins, etc.
2. "STRAIGHT AND ZIG ZAG" explains the uses of straight sewing, zig zag stitches and use of the built in utility stitches.
3. "TWIN NEEDLE SEWING" explains how to use a twin needle and the application of twin needle sewing.
4. "BUTTONHOLES" explains four different styles of buttonholes.
5. "STRETCH UTILITY STITCHES" explains the use of elastic triple stretch stitches.
6. "FEATURES AND PARTS" explains many parts and features of your machine.
7. "CARE OF YOUR MACHINE" explains maintenance, oiling, minor problems and solutions, alphabetical index.

Also included in the front portion of this manual is a table of contents and glossary of terms to further aid you to enjoy your sewing machine.

SEWING MACHINE

Record in space provided below the Serial No. and Model No. of this appliance.

The Serial No. is located Rear of arm.

The Model No. is located Rear of arm.

Serial No. _____

Model No. _____

Retain these numbers for future reference.

CONTENTS

	Cover page
Introduction/Contents	1-6
Glossary of sewing machine	1-6
GETTING READY TO SEW	
Using the foot control	7
To connect the foot control wires	7
To use the foot pedal	7
Converting to free-arm sewing	8
Winding the bobbin	9
Threading of top thread	10
Twin needle upper threading	11
Lower threading	12
Inserting bobbin	12
Picking-up lower bobbin thread	13
CONTROLS	
Top tension control	14
Checking tensions	15
Reverse stitch control	16
OTHER ADJUSTMENTS OF MACHINE IN SEWING	
Presser foot pressure regulator	17
Darning plate	17
Changing the needle	18
Fabric, thread and needle chart	19
Free-Arm sewing	20
Pattern setting	21
Presser feet	22
Changing foot	22
Starting to sew	23
STRAIGHT AND ZIGZAG	
APPLICATIONS OF THE STRAIGHT STITCH	
Seams	24
Basting/topstitching	24
Darning	24
Elastic thread shirring	25
Holding the fabric	25
Turning corners	25
Curved seams	25
Ending seam/removal of fabric	26
APPLICATIONS OF THE ZIGZAG STITCH	
Overcasting	26
Seaming knits	26
Sewing on buttons	27
Forming thread shank on button	28
Satin stitching	28
Tapering/creative embroidery	28
Manual embroidery designs	28
Free hand monogramming	29
Applique	29
Gathering over cord	30
APPLICATIONS OF THE MULTIPLE STITCH ZIGZAG	
Overcasting	30
Patching	30
Mending a tear or instant darning	31
Lace applications	31
Flutter hem	32
Elastic application	32
Understitching facings	33
Decorative effects	33
APPLICATIONS OF THE BLIND HEM STITCH	
Blind hemming	34
Shell tuck	35
Decorative effects	35
Topstitching effects	35
Shell tuck	36
APPLICATIONS OF THE INTERLOCK	
Lingerie seam	36
Inserting lace	36
TWIN NEEDLE SEWING	
Twin needle upper threading	37
Twin needle sewing effects	37
Decorative tucks or designs	38
Pin Tucks	38
BUTTONHOLES	
Buttonholes	39
Preparation	39
Built-in buttonholer	40
Turn-around buttonholes	41
Corded buttonholes	42
Stretch buttonholes	43
STRETCH UTILITY STITCHES	
APPLICATIONS OF THE STRAIGHT TRIPLE STRETCH STITCHES	
Seams	44
Topstitching (stretch stitches)	44
APPLICATION OF THE RICK-RACK	
Topstitching/Rick-rack	45
Tapering/Rick-rack	45
APPLICATION STRETCH OVERLOCK	46
APPLICATIONS SMOCKING STITCH	
Seaming smocking stitch	46
Elastic thread shirring	46
APPLICATIONS DOUBLE OVERLOCK STITCH	
Seaming double overlock stitch	47
Hemstitching effect	47
Topstitching double overlock	48
APPLICATIONS ULTRA STRETCH	
Seaming ultra stretch	49
FEATURES + PARTS + ACCESSORIES	
Accessories	50
KNOWING YOUR SEWING MACHINE	
Front view	51
Back view	52
The all purpose foot	53
The button sewing foot	53
The buttonhole foot	53
Changing foot	53
Buttonhole foot	54
Button sewing foot	55
Cloth guide	56
Zipper sewing foot	57
Insert cording	57
The Quilting guide	58
Buttonhole cutter	58
Straight stitch foot	58
CARE OF YOUR MACHINE	
Maintenance	59-60
Take out tangled thread in bobbin case	61
Trouble chart	62

GLOSSARY OF SEWING MACHINE TERMS

ACCESSORY BOX	For storage of extra feet, needles, bobbins and accessories.
BOBBIN CASE TENSION SPRING	Holds thread in bobbin case and balances upper and lower tension threads.
BOBBIN TENSION SCREW	To adjust the tension of bobbin thread
BOBBIN WINDING SPINDLE	For winding bobbin with thread.
BOBBIN WINDING STOP	For automatically stopping bobbin at full capacity.
CABINET	Used to mount sewing machine in furniture; also a storage area for machine.
FACE COVER	Snaps open for changing the bulb. Also provides easy access to needle and presser bar assembly for oiling.
FEED DOG	For feeding material through machine.
FOOT CONTROL	For activating power to the machine, amount of pressure exerted on the foot pedal controls the speed; attached wires plug into machine and wall socket.
HANDWHEEL	For turning mechanism by hand to bring needle and take up to high position. This wheel turns toward operator.
LIGHT SWITCH	On face cover, back portion; turn on or off.
NEEDLES	Used to form a lock stitch on your machine, variations are many; example: sharp, ball, leather, etc.
NEEDLE CLAMP	For attaching the needle to the lower end of the needle bar.
NEEDLE CLAMP THUMB SCREW	For fastening needle into needle clamp.
NEEDLE PLATE	For supporting material when sewing. This plate is marked for several hem sizes.

PORTABLE CASE	A receptacle to store a sewing machine when not in use.
PRESSER BAR	Controls the pressure exerted on various materials being sewn.
PRESSER FOOT	When lowered onto material it holds the material against the feed dog.
PRESSER FOOT LIFTER	For raising the lowering the presser bar and presser foot. When raised, the tension is released and when lowered, the tension is engaged.
PRESSER FOOT THUMB SCREW	For fastening presser foot and attachments to the presser bar.
RACE	Groove in which shuttle turns.
REVERSE STITCH BUTTON	For changing from forward to reverse direction, button must be held down for continuous reverse sewing.
SHUTTLE	For forming lock stitch.
SLIDE PLATE	Access to bobbin case and bobbin.
SOCKET	Located under the face cover to change the light bulb.
SPOOL PINS (RETRACTABLE)	One for sewing - one for winding bobbin, or both for sewing with two threads and twin needle.
STITCH LENGTH DIAL	For changing the length of stitch in either forward and reverse direction.
STOP MOTION KNOB	For disengaging the handwheel from mechanism when winding the bobbin without the needle moving up and down.
TAKE UP LEVER	For drawing up the top thread to form a tight stitch.
THREAD CUTTER	For cutting excess thread, located on the back and into the presser bar.
THREAD GUIDE FOR BOBBIN WINDING	Holds thread taut for even winding.
THREAD GUIDE FOR UPPER THREADING	Guides thread from spool pins to the tension.
TWIN NEEDLES	Two needles with one shank making it possible to sew with two top threads.
UPPER THREAD TENSION	Use separately for single or two thread sewing.
UPPER THREAD TENSION DIAL	Used to change upper tension numbered from "0" to "9".
ZIGZAG WIDTH CONTROL	For setting width of zigzag stitching.

GLOSSARY OF SEWING TERMS

APPLIQUE	Applying a material with a specific design onto another material by using a straight or zigzag stitch.
BASTING	To sew with a temporary stitch that can be removed with ease. This is possible by using the longest straight stitch, setting your top tension on "0" and sewing a line of stitches. The top stitch will be loose and the bottom stitch tight; this allows you to be able to remove the lower thread by pulling. It may be necessary to cut the lower thread at different points for easier removal.
BLIND HEM	A variation of the zigzag stitch used to finish a hem where you can control the holding stitch.
BUTTONHOLE	A means of strengthening the sides of a hole in cloth by a zigzag stitch to hold a button.
COUCHING	To fasten down another material, like a ribbon, lace, with a fine zigzag stitch.
DARNING	A method of repairing a rip or tear by stitching over the flaw.
EMBROIDERY	To decorate with stitching, using either a straight or zigzag stitch.
FACING	The addition of another piece of material to increase the body or edge of material.
GATHERING	Forming a zigzag stitch over cord, elastic, or any separate material. Another term for shirring.
HEM	A fold, sewn down an edge of cloth.
MONOGRAMMING	Using a straight stitch for tracery or zigzag stitching to form a design.
OVERCASTING	The use of a zigzag stitch to finish a seam or edge of cloth, or to prevent the ravelling of a loose weave cloth.
OVERLOCK (STRETCH)	A triple stretch pattern used to finish seams or stretch buttonholes.
PATCHING	Same as darning but covering the hole with a piece of cloth.
PICOT STITCH	A triple stretch pattern used similar to a tricot stretch giving a hand stitch effect.
QUILTING	Joining several cloths together to form a bulk cover for beds, furniture or clothing.
RICK RACK	A triple stretch pattern using a basic zigzag to give a RICK RACK effect.

SATIN STITCH	A solid line of zig zag stitching formed by a zigzag stitch sewn very close together.
SEAM	A line formed when sewing two pieces of material together.
SHELL TUCK	The use of the zigzag or variation of the zigzag stitch to give a shell effect to the edge of material.
SHIRRING	To gather cloth by drawing two or more threads together.
STRAIGHT STITCH	A forward or reverse single line of sewing which may vary from 6 to 8 stitches per inch to "0" stitches.
STRETCH BUTTONHOLE	A buttonhole made with a stretch stitch pattern to be used on double knits, sweaters, etc.
STRETCH STITCH	A combination of stitches formed by a forward and backward motion which allows the stitches to flex and not break, used on stretch materials, double knits, tricot, lingerie, etc.
TAPERING	A line of zigzag sewing varying from a narrow to a wide range.
THREAD SHANK	A space composed of thread between the button and cloth to engage button to buttonhole on bulky material.
TOPSTITCHING	A line or series of lines of straight or zigzag sewing which enhances a border giving the stitching a raised effect.
TRICOT STITCH	A triple stretch pattern used to finish delicate fabrics or lace.
TRIPLE STRETCH	A term used for stretch patterns, a pattern formed by a forward, sideward and backward combination of stitches.
ULTRA STRETCH	A triple stretch pattern which is excellent to make seams in bulk materials like sweater and swimwear.
UNDERSTITCHING	Using a variation of the zig zag stitch to finish a hem or seam that is hidden.
VARIEGATED THREAD	A single strand of thread with varying colors, used for a decorative effect.
ZIGZAG	A term which describes the side to side motion of the needle which creates width to straight sewing.

THIS INSTRUCTION MANUAL IS DESIGNED TO GIVE BASIC INFORMATION, TO UNDERSTAND THE FUNCTIONS OF A SEWING MACHINE, THREAD, AND NEEDLES.

For sewing a normal seam, the material must be fed regularly for the formation of each stitch. The feed dog does the conveying, together with the presser bar on which a presser foot has been fastened.

Feed Dog

The task of the feed dog is to move the cloth on for a certain distance after each stitch. This distance, called stitch length, can be accurately adjusted by means of a lever or a knob, which acts on the feed mechanism. The feed dog is equipped with small, sharp teeth. Fig. 1 shows the most common types of feed dogs.

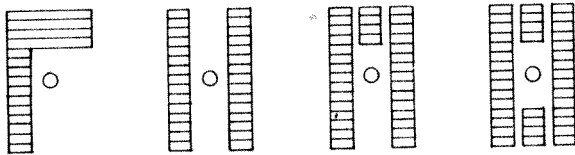


Fig. 1

- The "L" shaped feed dog is the oldest type and common to sewing machines with vibrating shuttles. It has the disadvantage that it does not feed all kinds of work, such as f.i.i. collar points, evenly.
- The "H" shaped feed dog, with a row of teeth on either side of the needle plate hole, is an improvement on the former, but does not feed narrow strips or hems well.
- The "M" and "O" shaped feed dogs guarantee the uniform feed of any kind of work or material.

Twist of the Thread

Depending on the kind of shuttle used, the twist of the thread is of a certain importance.

If thread with a right-hand twist is used, it will unravel slightly, when the stitch is formed, due to the direction of rotation of the shuttle. This naturally reduces the tensile strength of the thread. For sewing, the question, whether left- or right- hand twist is used, is of lesser importance. It is strongly recommended, however, to use left-twist thread for darning with fine thread.

The difference between the two kinds of twist is best determined in the following manner:



Fig. 2

- A thread is left-twist if, when held horizontally, the individual strands slant to the left from bottom to top.
- A thread is right-twist if, when held horizontally, the individual strands slant to the right from bottom to top.

A. Parts Necessary for Forming a Stitch – Stitch Formation.

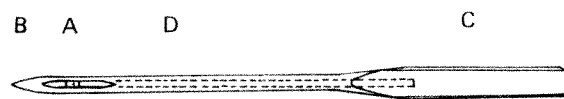
1. The Needle:

Aim: To become acquainted with the structure of the sewing machine needle in detail, so as later on to be able to understand better how the stitch is formed. Different systems and sizes.

As has already been mentioned, needles have existed since the most ancient times. They were made of thorns, horn, fish-bones, gold and ivory. The first steel needles were made in Germany.

The needle with the eye near the point became more widely used with the introduction of the lock-stitch sewing machine. At first, each manufacturer used a needle which could only be used on his own models. The different kinds of needles have since been standardized by an International Agreement.

Needle Systems – There exist approximately 2000 different types of needles, amongst which system 705 (U.S.A.: style 15 x 1) is the most frequently used for household sewing machines. This needle is also used for the ELNA/WHITE and is described below in detail:



F G

Fig. 3

- | | | |
|----------|----------|-----------------|
| A) eye | C) body | E) short groove |
| B) point | D) shaft | F) long groove |
| | | G) flat |

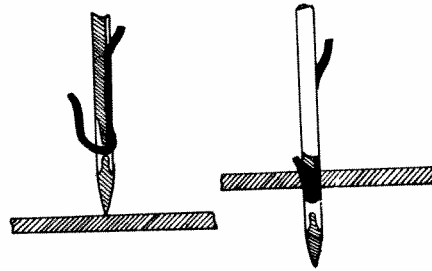
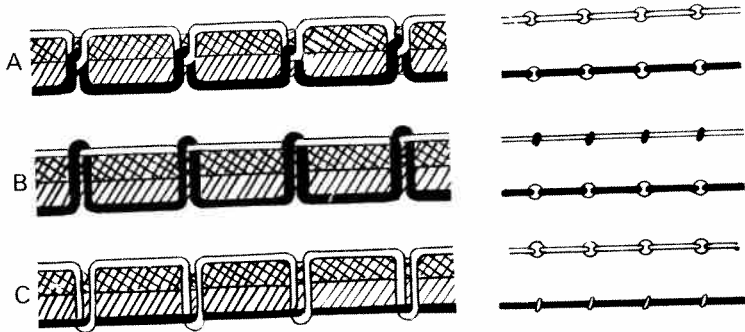


Fig. 6

THE TENSION

What happens now, if the upper tension is too weak?

At the moment the lower thread should be drawn from the bobbin to finish the stitch, its resistance becomes too strong in relation to the upper tension. Thus the upper thread in unwound before the lower thread is drawn into the material. The thread take-up lever no longer meets with enough resistance from the upper tension to enable the thread to cross in the material and the lower thread remains stretched (Fig. 4 C).

What happens, if the upper tension is too tight?

At the moment the lower thread should be drawn from the bobbin to finish the stitch, its resistance is too weak in relation to the upper tension. The lower thread thus unwinds too freely and does not offer enough resistance to the pull of the upper thread. The upper thread withdraws entirely from the material and remains stretched on top of it, whilst the lower thread crosses right through it (Fig. 4 B).

It is most important that the functioning of the upper tension and how it should be adjusted be explained in detail to the user.

When a threaded needle pierces the material, the thread will slip into the two grooves on the needle, in order thus to offer the least resistance when passing through the material. However, this resistance increases on the side of the short groove, as the latter disappears in the material, because the thread is now no longer in the needle and is jammed between the body of the needle and the material. Thus the thread remains stretched, until the needle reaches its lowest point (Fig. 6).

When the needle starts moving upwards again, the thread in the long groove (F) can slide without difficulty between the needle and the material (Fig. 7). As on the short-grooved side (E) the thread is jammed, it can not slide along with the needle and, therefore, forms a small loop on the same side.

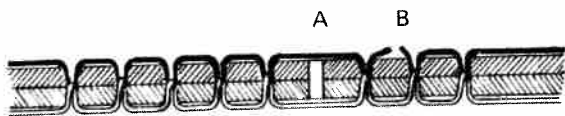


Fig. 5

Fig. 5 starts by showing a perfect seam, then a skipped stitch (A) and then a broken thread (B). Skipped stitches are caused when, for one reason or another, the point of the hook does not catch the loop of the upper thread. On all lock-stitch machines, regardless of what shuttle systems they may have, the upper thread has to form the loop explained in detail below.

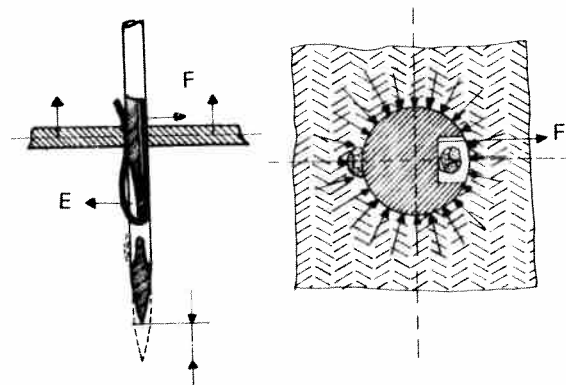
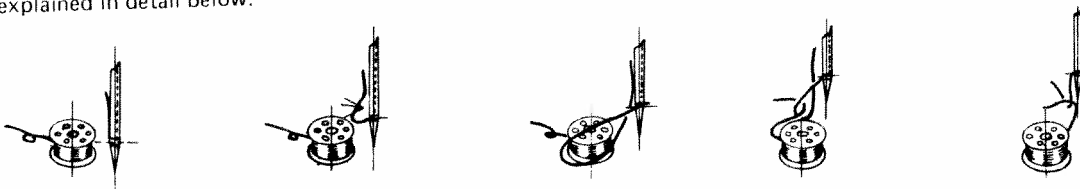
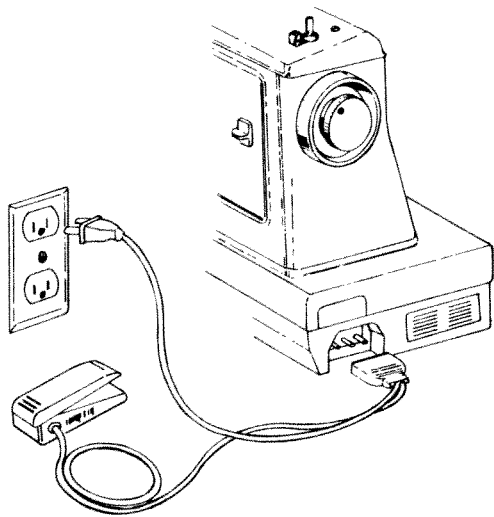


Fig. 7

Now the different shuttle systems come into play. They all have the same task, which is to pass the bobbin with the lower thread through the loop. This is what is called stitch formation.

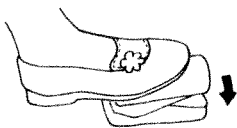


USING THE FOOT CONTROL



TO CONNECT THE FOOT CONTROL WIRES:

- * Connect special plug to block on machine as shown in diagram above.
- * Connect outlet plug to electrical outlet.
- * When sewing, keep children's hands away from foot control and wiring.
- * After sewing, disconnect plug from electrical outlet.
- * Your sewing machine is equipped with a grounded foot control, the outlet plug will have a third round prong which acts as ground. Your electrical outlet must have a matching receptacle.



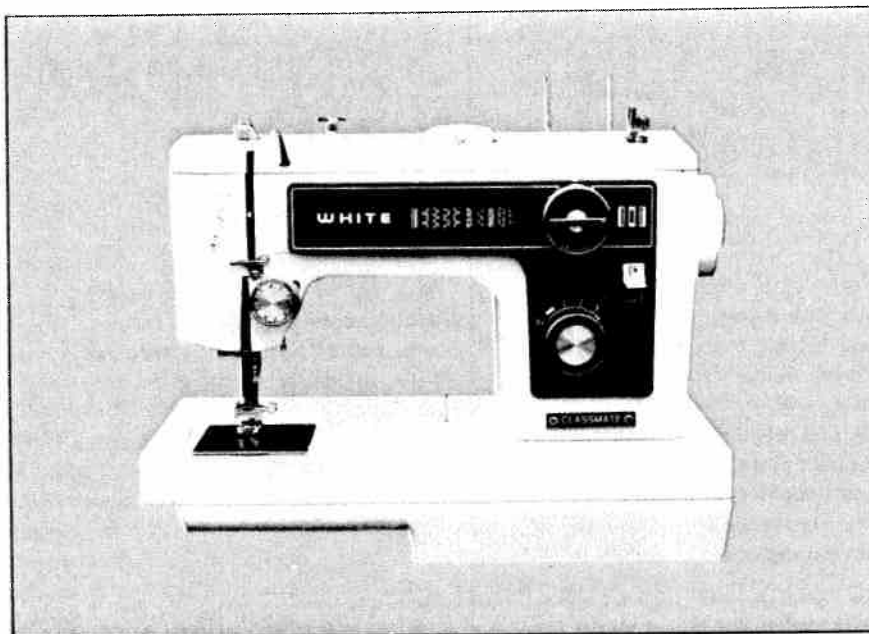
TO USE THE FOOT PEDAL:

- * Begin sewing by turning the hand wheel toward you and apply gradually increasing pressure to foot pedal.
- * Sewing at a constant speed will give best results.

CONVERTING TO FREE-ARM SEWING



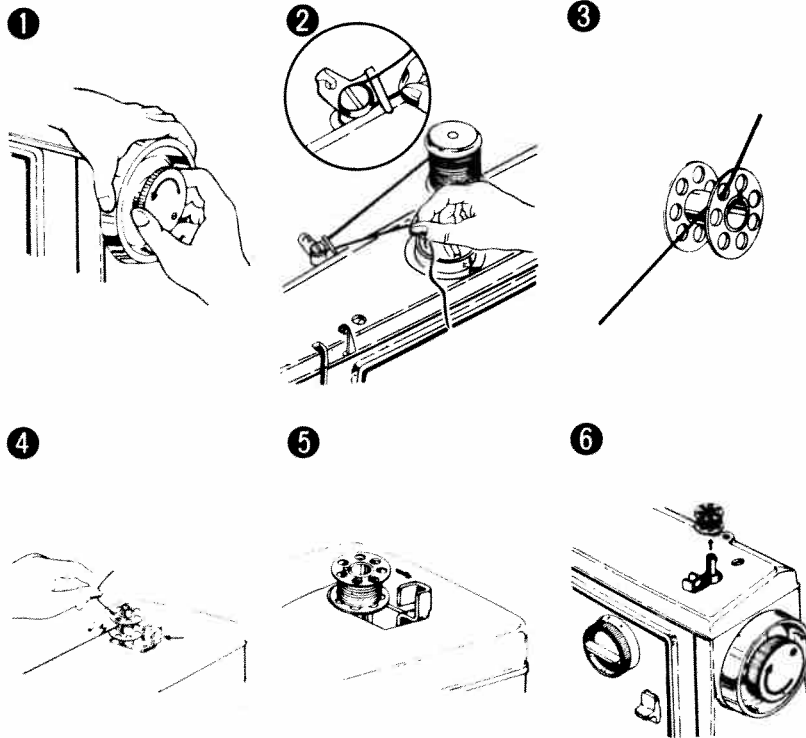
(Fig. 1)



(Fig. 2)

1. Remove the table from the machine by pulling the base to the left. (Fig. 1,2)
2. To replace the table, simply slide it along the free arm to its original position. (Fig. 1)

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.
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 OF TOP THREAD

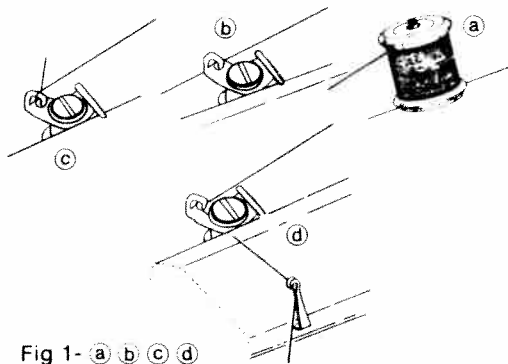


Fig 1- a b c d

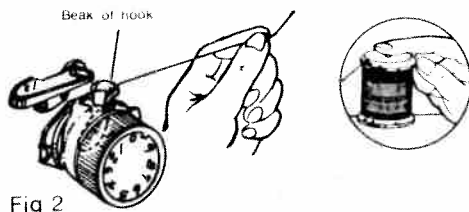


Fig 2

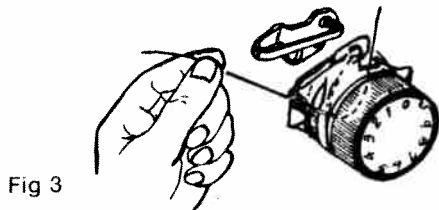


Fig 3

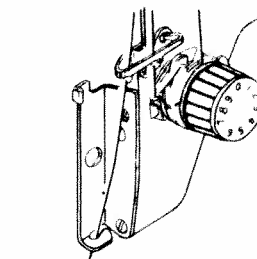
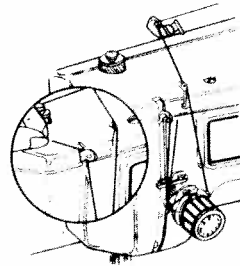
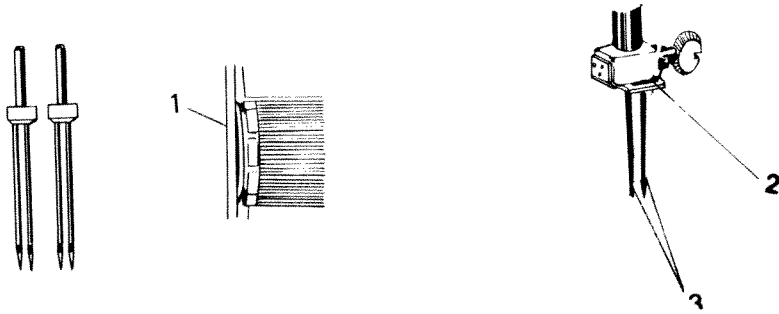


Fig 5

1. Place thread on spool pin as shown, with the thread coming from the back of the spool (Fig. 1-a). Draw thread through the top thread guide (Fig 1-b & c). Pass thread through top thread guide (Fig. 1-d)
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 beyond the beak of the hook. Fig. 2.
3. After the thread has slipped into the hook, allow the spring wire to return to position by releasing the thread spool. Fig. 3.
4. Continue threading through the front thread guide, take-up lever, and down through path shown in Fig. 4 and 5.
5. Always thread needle in direction as shown in Fig. 5.

Twin Needle Upper Threading

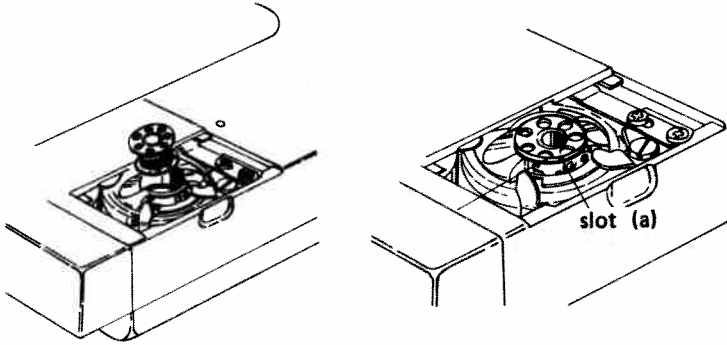


- * Follow threading instruction for single needle with these exceptions.
- * Place thread, matching or contrasting in color, on both spool pins.
- * Draw threads through the thread guides as normal, but separate the threads at the position. 1
- * Pass one thread through the left disc and one thread through the right disc. Tension is divided in center by a larger disc.
- * Now treat both threads as one until you reach the thread guides on the needle clamp.
- * At needle clamp 2, pass both of the threads on needle guide.
- * ZIGZAG WIDTH CONTROL: Set at desired width between "0" and "2", if you set the control higher than 2, the needle will hit the needle plate and break.
- * STITCH LENGTH: Set at desired stitch length.

LOWER THREADING

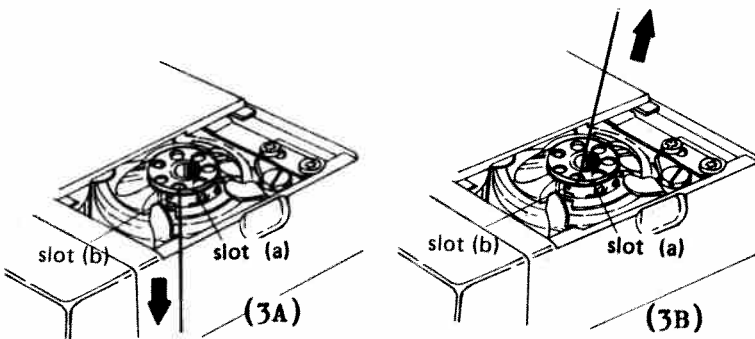
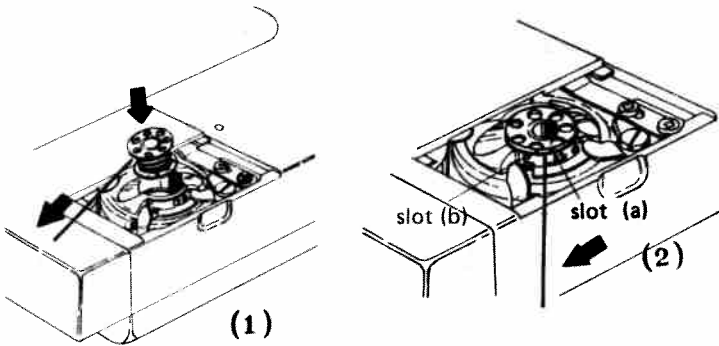
Removing the Bobbin

Pick the metal plate upward towards you and remove the bobbin with your finger, as shown, or you may use the opposite end of your button hole cutter to extract the bobbin.

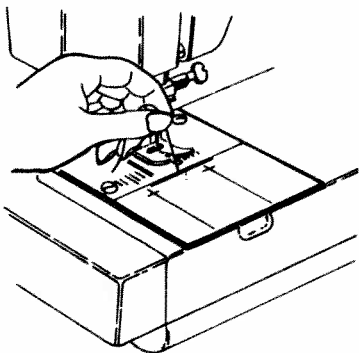


INSERTING BOBBIN

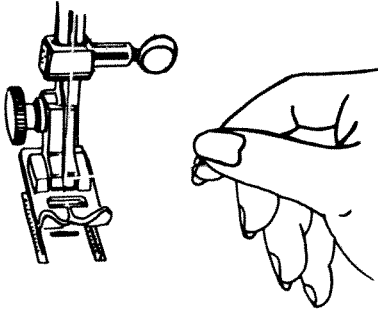
- (1) Insert the bobbin into the shuttle with the thread end in direction of the arrow. Bobbin should rotate clockwise.
- (2) Grasp thread, pass the thread around the front, from right to left and through the slot (a).
- (3) Change direction and continue pulling the thread from left to right across the front 3A until it engages into slot (b) 3B



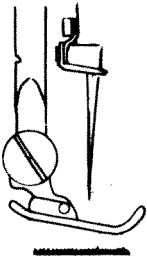
- (4) Pull the thread towards the needle and back for about six (6) inches, release the thread and close the metal plate.



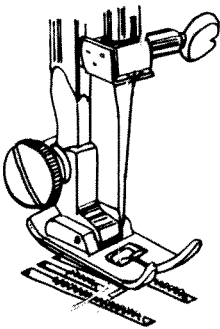
Picking-Up Lower Bobbin Thread



Hold end of upper thread with left hand.
Turn handwheel slowly towards you until needle moves down and up again.

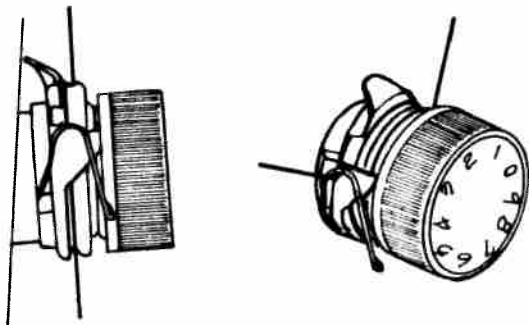


Pull upper thread slowly and lower thread will be brought up in a loop.



Pull out both threads to about 15cm (6") and place them together under
presser foot and to the left.

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:

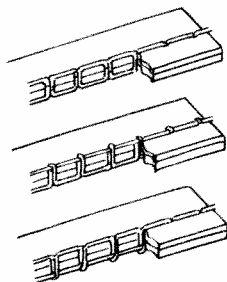
Normal tension sewing will be in the range of 4-5-6,

Decreasing Tension:

Turn thread tension dial towards "0"- this is normal for basting.

Increasing Tension:

Turn thread tension dial towards "9"- this is used for rolled hem, shell tuck, etc.



CORRECT

INCORRECT
 TOP TENSION TIGHT
 BOTTOM TENSION LOOSE

INCORRECT
 TOP TENSION LOOSE
 BOTTOM TENSION TIGHT

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



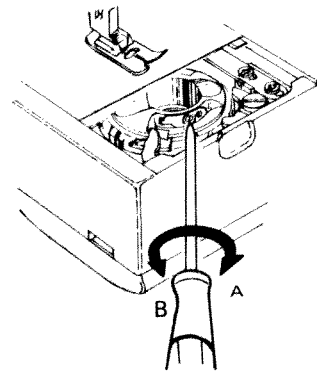
Lower Tension

Correct Tension:

Pull end of lower thread backwards away from plate. You should feel a slight steady pressure.

Adjustment:

Note sketch showing correct tensions. Remove cover plate and insert small screwdriver into shuttle area C and locate adjusting screw. Turn adjusting screw clockwise A if lower thread is too loose and counterclockwise B if lower thread is too tight.



REVERSE STITCH CONTROL

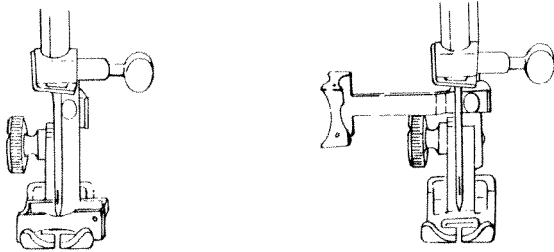
It is best to begin and end seams with a few stitches taken in reverse. This is called back tacking. Back tacking fastens the end of the seams firmly and prevents raveling. When reverse stitching is needed, simply press and hold the control down during sewing. The fabric will immediately start feeding backward and seam will be fastened.



Reverse Stitch Control

NEEDLE GUARD

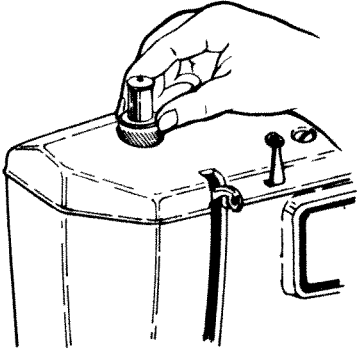
Your machine is equipped with a finger guard that is mounted on the presser bar. This guard can be swung to the left making it accessible to thread the needle.



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.

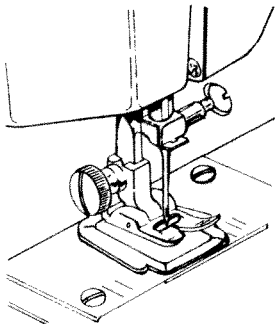
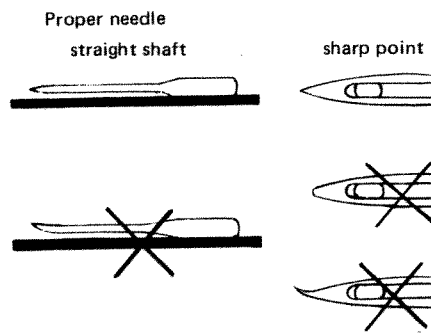


Fig. 1

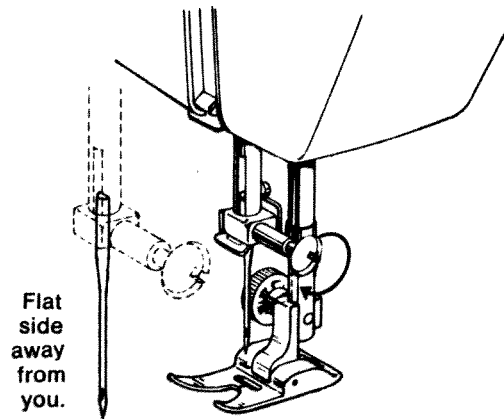
DARNING PLATE

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.

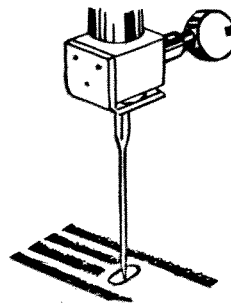
Changing The Needle



- * Always make sure needle is straight.
- * To check straightness of needle, lay needle on a flat surface and see that needle is straight and parallel as shown in above diagram.



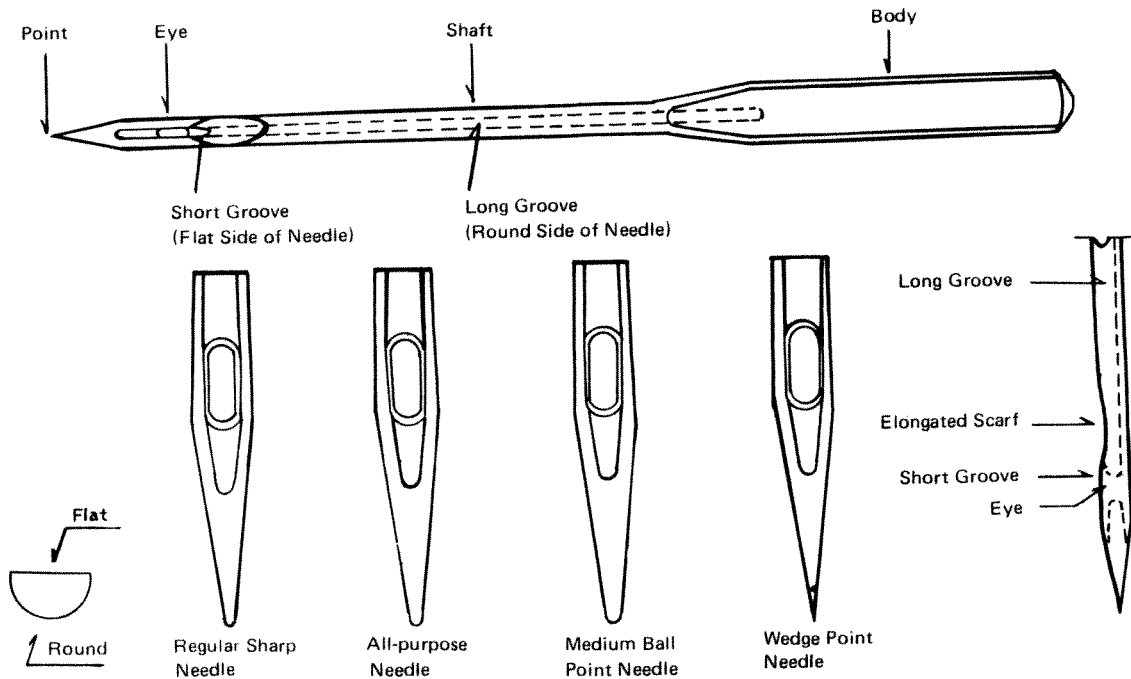
- * Turn hand wheel toward you to raise needle bar to its highest position.
- * Loosen needle clamp screw and insert needle upward as far as it will go, making sure flat side of needle is towards back of machine as shown in the above diagram.
- * Tighten needle clamp screw with screwdriver.
- * Follow the same procedure for insertion of twin needle.



- * To make sure that needle has been inserted correctly, turn hand wheel toward you and see that needle comes down through the center of the needle hole in the needle plate as shown in the above diagram.
- * Stitch selector dial must be set in straight stitch needle position when checking needle alignment.
- * If skipped stitches occur, needle may be incorrectly inserted.

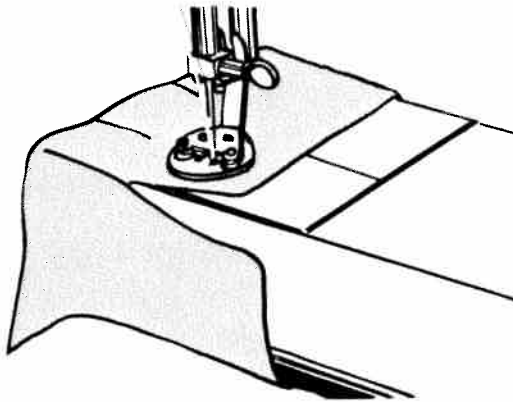
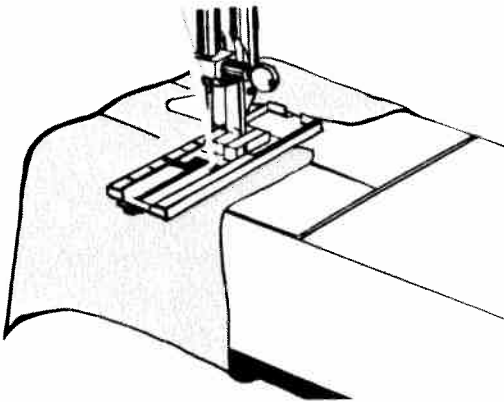
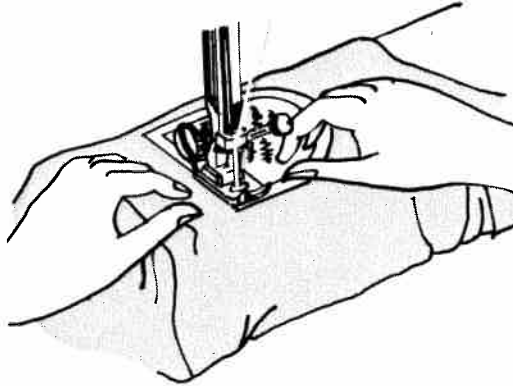
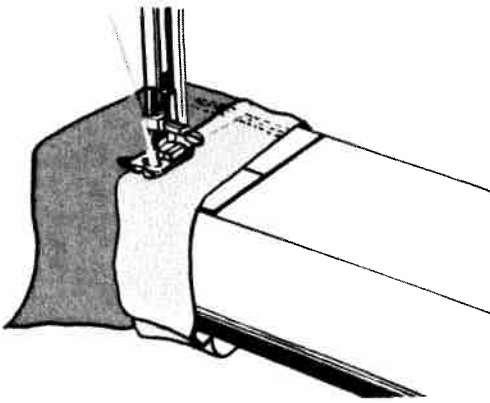
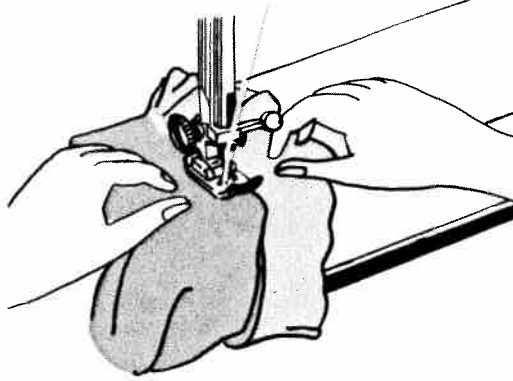
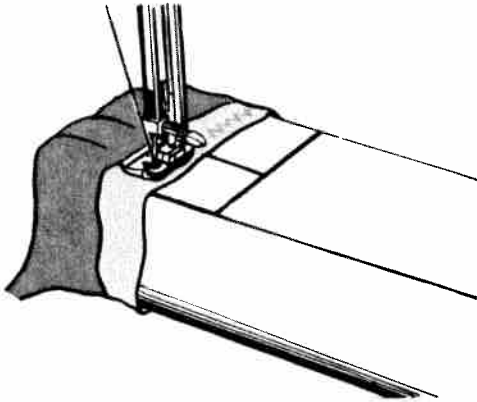
Fabric, Thread And Needle Chart

FABRIC	NEEDLE (Long Scarf) HA x 1 130/705H European	THREAD	STITCH LENGTH SETTING
DELICATE—tulle, chiffon, voile, fine lace, organdy, lawn, crepe, taffeta	3 70	Fine mercerized 60 European 50—70 "A" Silk Fine Synthetics	1-1/4—1-3/4
KNITS—sheer tricot	light ball point		
LIGHTWEIGHT—batiste, organdy, voile, taffeta, silk, crepe, chiffon, velvet	11 80	Fine mercerized 60 European 50—70 Fine Synthetics "A" Silk	1-3/4—2
KNITS—tricot, brushed tricot, jerseys, synthetic leathers, power net	light ball point		
LEATHERS—plastic film, vinyls	Wedge point		2-1/2—3
MEDIUM WEIGHT—gingham, percale, linen, chintz, faille, satin, corduroy, velvet, suitings, wools, pique, terry	14 90	Mercerized 50 European 30 "A" Silk Synthetic	1-3/4—2
KNITS—jersey, double knit power net, bathing suits	light or medium ball point		
LEATHERS—vinyls, plastic film	Wedge point		2-1/2—3
MEDIUM HEAVY—gabardine, tweed sailcloth, denim, duck, coatings, wools, drapery	16 100	Mercerized 50 Heavy Duty Mercerized European 30 "A" Silk Synthetic	2—2-1/2
KNITS—double knit, power net	heavy ball point		
LEATHER—vinyl, rubber backed drapery fabric	Wedge point		2-1/2—3
HEAVY—overcoatings, canvas, upholstery, awning	18 110	Heavy Duty Mercerized European 30 Synthetic	2-1/2—4
KNITS—fake furs, velours, sweater	heavy ball point		
LEATHERS—vinyls, plastics	Wedge point		

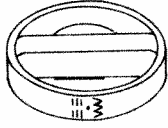
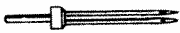
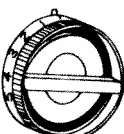






























Free-Arm Sewing

For sewing tubular and hard-to-reach areas, use your machine as a free-arm. Stitching buttonholes or sewing buttons on a cuff or neckband; topstitching a sleeve; edge finishes on sleeves, pantlegs and waistlines; darning and patching knees, elbows; and other areas of wear on children's clothing become as easy as sewing a common seam when you have the free-arm at your fingertips. Illustrations show some examples of sewing with the free-arm.

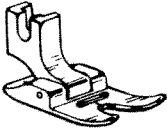


PATTERN SETTING

 PATTERN SELECTOR	 TWIN NEEDLE	PATTERN NAME	COLOR CODE	 ZIGZAG WIDTH DIAL	 STITCH LENGTH DIAL
		BUTTONHOLE	GREEN		4
		STRAIGHT	BLUE	0	1.5-4
		ZIG ZAG	BLUE	1-5	0.3-4
		STRAIGHT STRETCH	RED	0	4
		RICK RACK	RED	2-5	4
		REVERSE BLIND HEM	BLUE	1-5	1-2
		BLIND HEM	BLUE	1.5-5	1-2
		INTERLOCK	BLUE	1.5-5	1-3
		MULTIPLE ZIG ZAG	BLUE	2-5	0.5-1
		SMOCKING	RED	2-5	4
		DOUBLE OVERLOCK	RED	2-5	4
		OVERLOCK	RED	2-5	4
		ULTRA STRETCH	RED	2-5	4

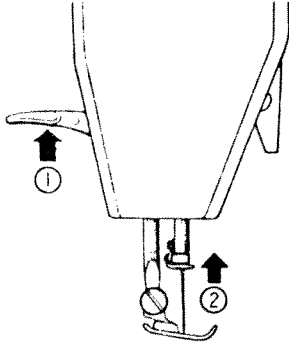
PRESS FEET

The Various presser feet that come with your Sewing Machine are designed to help you to do every kind of sewing easily and perfectly.



THE ALL PURPOSE FOOT

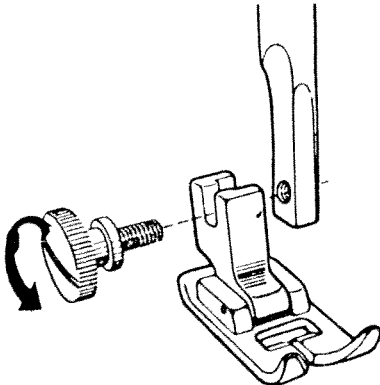
This foot is flat on the bottom and has a wide hole to accommodate wide stitches. This foot should be used for all normal sewing.



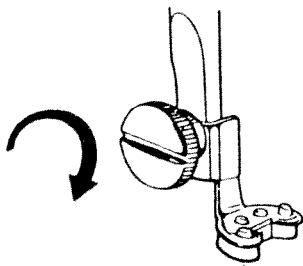
Changing Foot

Raise presser foot lifter 1

Set needle in the highest position by turning handwheel towards you 2



Remove foot by loosening screw with screw driver.



Replace new foot and tighten screw.

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 thickness. 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.

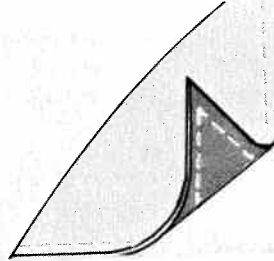
APPLICATIONS OF THE STRAIGHT STITCH

SEAMS

The normal stitch length for most fabrics is 3, but the length chosen should depend on the fabric and area of usage. Usually, heavier fabrics require longer stitches, and lighter weight fabrics require shorter stitches.

For curved seams and bias cut areas use a shorter stitch length to add strength and elasticity to the seam.

Pattern:.....
Length: 2-4
Width: 0
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose



BASTING/TOPSTITCHING

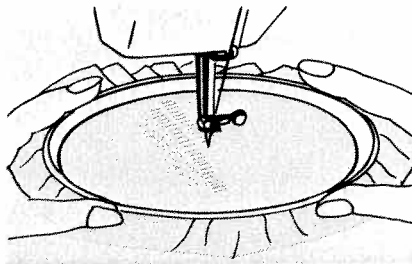
Sewing a seam with a longer stitch is useful for temporary seams prior to fitting. Basting stitches also may be done very effectively with the long straight stitch. For a bolder stitch, two threads of the same type can be threaded through one needle (size 14 or 16). A heavier thread such as buttonhole twist may be used for topstitching, but be sure to use a larger needle (size 16 or 18). Left needle position may be used for more support of fabric.

Pattern:.....
Length: 4
Width: 0
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

DARNING

Worn spots or small holes can be darned very easily. Use of an embroidery hoop is optional depending on the fabric. A fine thread is recommended so that the fabric and thread will blend together invisibly. Trim the ragged edges from the area to be darned. Hold the threads to start, then move the fabric slowly back and forth while running the machine very fast to fill the area. More professional results will be attained by moving the fabric in a figure eight pattern while sewing. After filling in the area lengthwise, reweave with crosswise stitches in the same manner.

Pattern:.....
Length: 0
Width: 0
Special stitch selector Utility stitch upward
Pressure: Darn
Foot: None or All Purpose

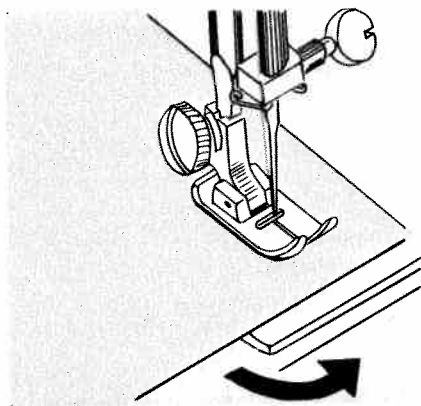


ELASTIC THREAD SHIRRING

Wind elastic thread onto bobbin, as shown, letting the thread pass through your fingers. The thread should be wound smoothly without stretching. Place bobbin in place as usual, being sure that the elastic is drawn through the tension. Use regular thread on the top of the machine. Do a trial run on the chosen fabric to test length of stitch. Lay a piece of paper under the fabric to keep it from gathering up as you sew: This will enable you to sew many parallel rows of stitching without difficulty. Afterwards tear out the paper and the fabric will be gathered.



Pattern:.....
Length: 3-4
Width: 0
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose



* HOLDING THE FABRIC

For most fabrics, it is not necessary to hold the fabric in both front and back. Merely guide the fabric with one hand from the front.

For the fine delicate fabrics, such as chiffon, georgette, and tricot, the best results will be attained by holding the fabric in front and back of the needle without pulling on it.

* TURNING CORNERS

To pivot at a corner, leave the needle in the fabric while on the upswing so that the stitch is almost completed, thus preventing the possibility of skipped stitches in the corner. Lift the presser foot and pivot the fabric. Then, lower the presser foot and continue sewing.

* CURVED SEAMS

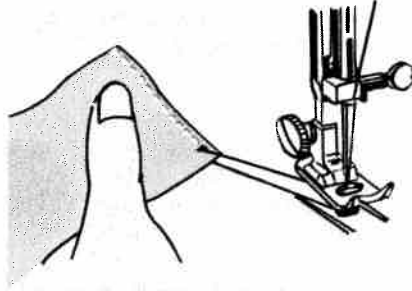
On a curved seam use a slightly shorter stitch length than you are using for the rest of the seams. For example, if length 2 is being used for the seams, a 1-1/2 stitch length would be preferred for curves. A smaller stitch length will add strength and elasticity to the seam.

When guiding the fabric, keep your fabric edge on the etched seam guide line directly across from the needle rather than on the forward part of the line. The seam guide may be used on an angle as shown.

* ENDING SEAM/REMOVAL OF FABRIC

Stitch to the edge of the fabric, then press the reverse stitch button and backstitch for a few stitches to reinforce the end of the seam.


Turn the hand wheel until the take-up lever is in its highest position so that the stitch is completed and the threads will pull freely. Lift the presser foot and remove the fabric by drawing the threads to the left and back, keeping them under the foot so as not to bend the needle. Cut the threads with the thread cutter on the back of the presser bar. Leave the thread ends three to four inches long.

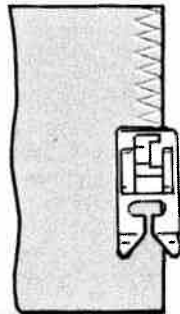


APPLICATIONS OF THE ZIGZAG STITCH

OVERCASTING


Place the edge of the material underneath the opening of the sewing foot and guide raw edge along the center groove of the foot, allowing stitch to form half on and half off the fabric. The multiple stitch zigzag is a wiser choice for most fabrics.

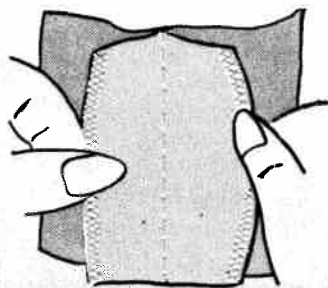
Pattern: 
Length: 2-4
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose



SEAMING KNITS

The narrow zigzag can be used in seams of firm knits for added strength. After sewing, open seam and press flat. Tiny zigzag stitches can hardly be seen and the seam will give when stretched.

Pattern: 
Length: 2
Width: 1-2
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose




SEWING ON BUTTONS

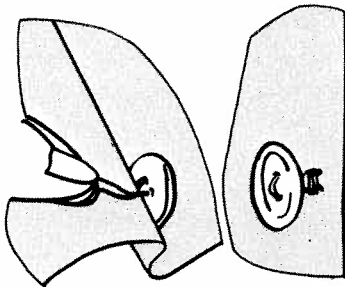
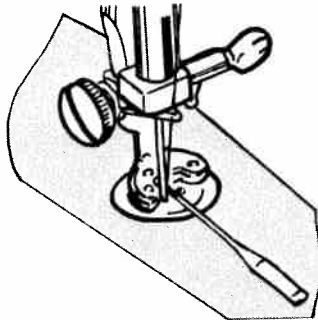
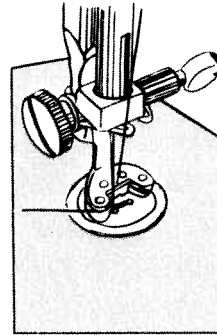
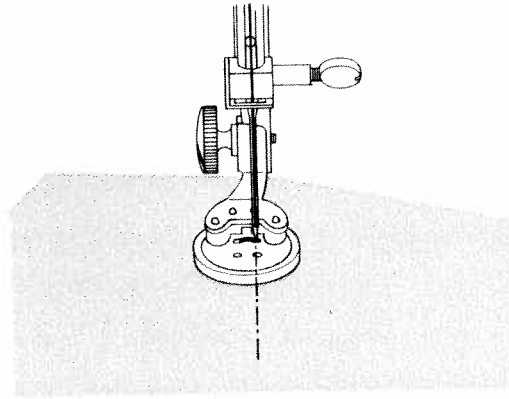
Zigzag stitching is a very easy and convenient method of sewing a button without a shank. Place the button so its left hole comes directly under the needle, then gently lower the button sewing foot. Take a stitch in the hole.

Raise the needle and move zigzag width dial to the right until the needle comes down exactly over the right hole in the button.

Note: Be sure the needle clears the holes of the button by moving the hand wheel by hand before running the machine fast.

Usually 6 to 8 stitches are adequate for securing a button in place. Stop with the needle in the left hole. To lock the threads, set the stitch width at 0, and take a few stitches in the left hand hole.

Pattern: 
Length: 0
Width: 2-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: Button Foot



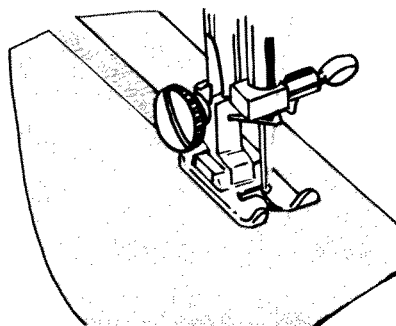
FORMING THREAD SHANK ON BUTTON


Buttons sewn on coats or jackets should have a thread shank to make them stand away from the fabric. To form a thread shank, sew over a pin or rounded toothpick which can be inserted directly into the button sewing foot.

After stitching the button to the fabric, remove work from under the presser foot leaving threads about six inches from fabric. Remove pin or toothpick. Pull the threads to back of button and form a shank between button and fabric by winding threads tightly around the attaching stitches. Pull threads to back of the fabric and then tie thread ends securely.

SATIN STITCHING

This is useful for decoration such as tapering, manual designed embroidery, monogramming, and applique. The satin stitch, which is a very close zigzag stitch, is obtained by setting the stitch length as near to "0" as possible without stopping the feeding action. The setting will vary for different fabrics. It may be desirable to loosen the upper tension slightly to cause the threads to lock underneath, in order to make the top surface look especially smooth. For lightweight fabrics, place paper underneath the fabric while sewing for best results.



Pattern: 

Length: 1/4 - 1/3

Width: 1-5

Special stitch selector Utility stitch upward

Pressure: Normal


Foot: All Purpose

TAPERING/CREATIVE EMBROIDERY

Tapering is done by gradually increasing and decreasing the stitch width while sewing. By this method, tapered monograms and other interesting designs can be created. For tapered monograms run the machine fast while turning the width dial slowly from narrow to wide and back.

First, learn this stroke by letting the fabric guide straight. Then, learn to pivot the fabric as you are tapering by holding the fabric at one point. Various strokes can be combined to form letters and designs. Variegated thread can give attractive results.



Pattern: 

Length: 1/2 - 1/3

Width: 0-5


Special stitch selector Utility stitch upward

Pressure: Normal

Foot: All Purpose

MANUAL EMBROIDERY DESIGNS

Different designs can be made by turning the stitch width dial between 0 and 5. By running the machine at a constant speed and turning the dial in a definite rhythm, various designs can be created.

Pattern: 

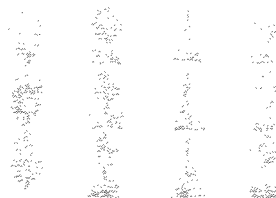
Length: 1/2 - 1/3

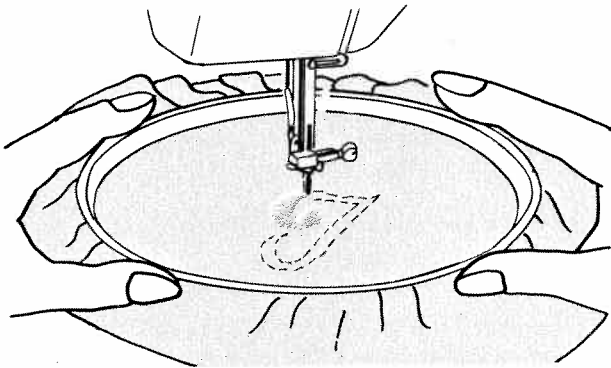
Width: 0-5


Special stitch selector Utility stitch upward

Pressure: Normal

Foot: All Purpose




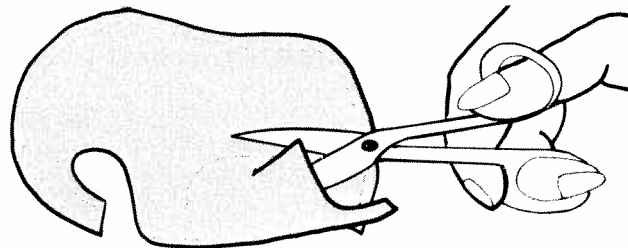



Pattern: 
 Length: 0
 Width: 1-5
 Special stitch selector Utility stitch upward
 Pressure: Darn
 Foot: None

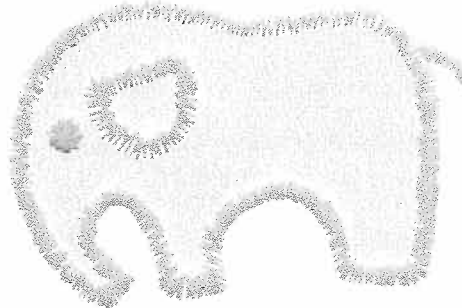
FREE HAND MONOGRAMMING

For giving garments and linens a personalized touch, first transfer the design to the right side of the fabric. An embroidery hoop is recommended especially for soft fabrics and toweling. In order to monogram, you must move the fabric slowly and run the machine rapidly. Monogramming is like writing by moving the paper under a stationary pen. Guide the fabric slowly so that the zigzag falls close together like a satin stitch, but be careful that the stitches do not pile up. When guiding from side to side, move fabric slightly faster to avoid a heavy area. Practice by forming loops. Once this is accomplished any letter is easy. Sometimes the use of paper or non-woven interfacing under the fabric may make guiding the fabric easier. The paper or interfacing may be torn or cut away at the completion of the monogram. When monogramming towels, cellophane placed on the top will help cover loops and make the monogram smooth. Pull or cut away remaining cellophane when finished.

Step 1
 Pattern: 
 Length: 1
 Width: 0-1
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose



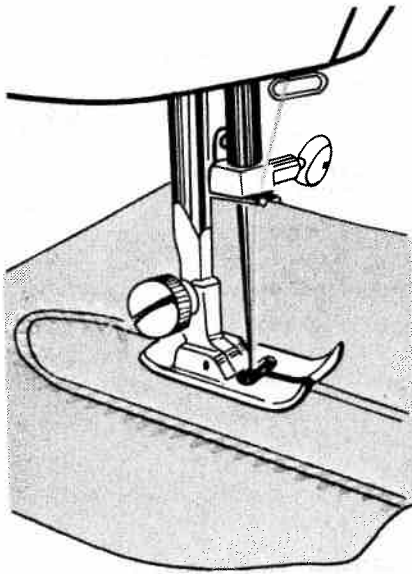
Step 2
 Pattern: 
 Length: 1/4", 1/3"
 Width: 2-4
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose



APPLIQUE


Applying decorative shapes of fabric scraps to household articles and clothing is a very interesting way of trimming an otherwise plain article. First, trace the design on fabric to be appliqued, then pin or baste it securely in place on garment. With a small straight stitch or narrow zigzag, sew around the transferred design. After excess fabric is trimmed away, sew around the applique with a satin stitch. For a smooth curve, stop frequently at the inside edge of the curve to pivot the fabric slightly. Corners look much better when the point is stitched by pivoting rather than just turned.

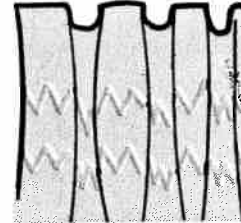
As with all decorative stitches, paper may be used to give more body to the fabric when stitching and can be torn away when the applique is completed.



GATHERING OVER CORD

Ordinary gathering with a basting stitch often breaks while pulling in fullness. A small zigzag across a cord such as crochet thread or carpet thread, gives a much stronger cord for gathering fullness into fabrics. Once the gathers have been stitched in place, the cord can be pulled out in order to eliminate bulk.

Pattern: 
 Length: 2
 Width: 3
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose

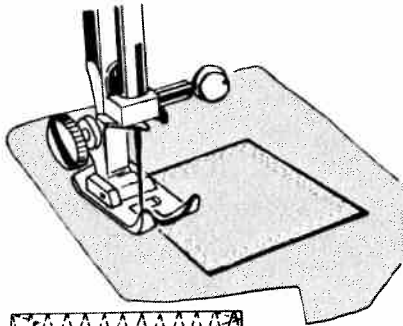



APPLICATIONS OF THE MULTIPLE STITCH ZIGZAG

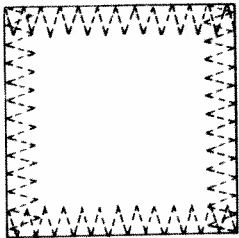
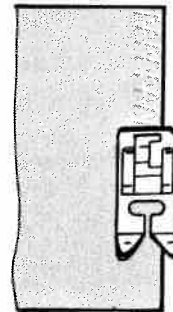
OVERCASTING

The multiple stitch zigzag is an excellent choice for overcasting. It keeps the fabric flat and prevents raveling. For most fabrics, this stitch is better than the zigzag stitch for overcasting.

The stitch should fall right at the raw edge of the fabric. Feed the fabric under the presser foot by guiding the raw edge along the right hand side of the hole in the presser foot.




Pattern: 
 Length: 1/2 - 1 1/2
 Width: 4-5
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose

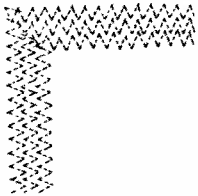
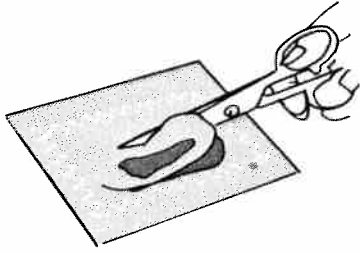


PATCHING

The multiple stitch zigzag is an excellent stitch for patching. It is stronger than the zigzag and the tiny stitches bury into the fabric to make an almost invisible stitch when using matching thread. Place the patch over the right side of the worn or damaged area. Sew around the patch with the multiple stitch zigzag letting the last stitch to the right overcast the edge of the patch. When turning corners leave the needle in the fabric at the corner. Usually this will be the furthest stitch to the right or left. In this way, the corners are doubly stitched and very strong. When the patch is stitched in place, trim away the excess worn fabric on the wrong side of the patch.

Note: Try Smocking Stitch for knits.

Pattern: 
 Length: 1/2-1
 Width: 4-5
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose




MENDING A TEAR OR INSTANT DARNING

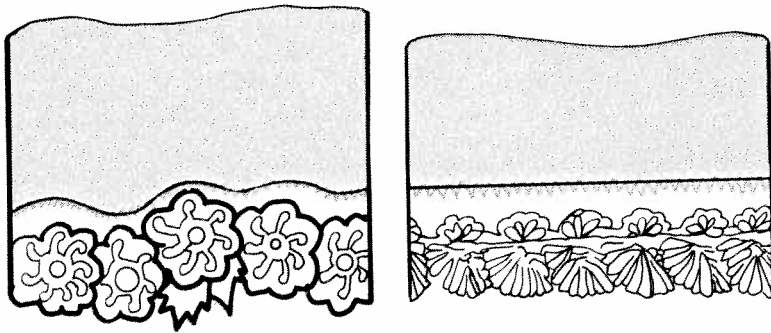
The multiple stitch zigzag provides a strong and easy repair for torn garments. It gives an almost invisible mend, especially when a fine darning thread is used.

To mend a tear, hold the torn edges close together and stitch down the middle.

If the tear is guided under the slot in the middle of the presser foot, stitching will be equal on both sides. If necessary, sew again on either side of the first row of stitching making sure the needle catches the stitch in the center. With very worn or frayed fabric in the center, place a piece of light-weight interfacing or cotton batiste under the tear for reinforcement.

Note: Try Smocking Stitch for knits.


Pattern: 
 Length: Near 0-½
 Width: 4-5
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose

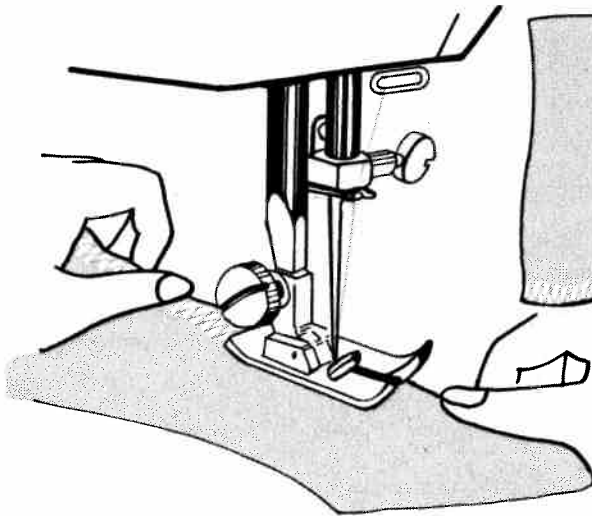



LACE APPLICATIONS

Attaching laces or trims adds a special touch to lingerie, dresses, or linens. Pin or baste laces in place easing or mitering corners where necessary. A straight edged lace of braid has a convenient line to follow when sewing. When using a scalloped edged lace follow the design of the lace for an almost invisible application.

Note: Try Multiple Stitch Zigzag, Overlock, Elastic Edge Stitch, Smocking stitch, Stretch Overlock or Rick-Rack for different effects.

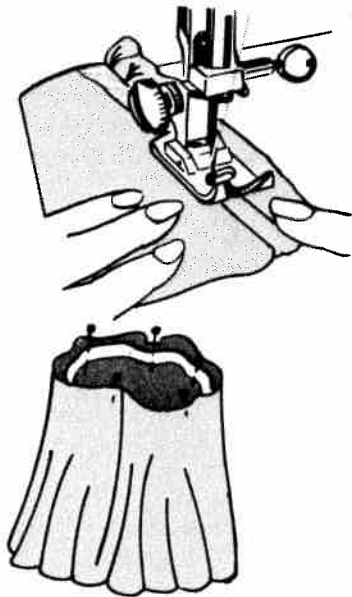
Pattern: 
 Length: 1
 Width: 1-2
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose



Pattern: 
 Length: 1/2
 Width: 4-5
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: All Purpose

FLUTTER HEM

An unusual way of hemming or finishing edges of tricot or soft knits is by a flutter edge. Hemming in this manner is just like overcasting an edge, but the fabric is stretched in back and in front of the needle as you sew. For best results, pull the fabric equally, making sure the needle goes over the edge. When you stop to reposition your hands, keep the needle in the fabric.



Pattern: 
 Length: 3/4-1 1/4
 Width: 4-5
 Special stitch selector
 Utility stitch upward
 Pressure: Normal
 Foot: All Purpose

ELASTIC APPLICATION

Applying elastic to lingerie or soft knit fabrics is easy when using the multiple stitch zigzag. Cut the elastic 2 inches smaller than your waist measurement. Overlap the raw ends to form a circle and stitch with a tiny zigzag to form a box as shown. Fold the elastic into quarters of eighths and mark with pins. Do the same with the waistline of the garment. Place the elastic about 1/2 inch from the top edge of the fabric, matching the pins. Place under the presser foot and begin stitching. As you stitch, place the forefinger of each hand on the fabric at either side of the presser foot. Pull the fabric out exactly at the point where the needle is sewing over the elastic and the fabric. This will ease your fabric and elastic together as you sew. The amount of ease is dependent on how much you ease the fabric. In this way you never need to stretch the elastic, which can be damaged and stretched out of shape. Trim off excess fabric above elastic near the stitches.


Note: Try Overlock stitch or Smocking stitch for girdles.

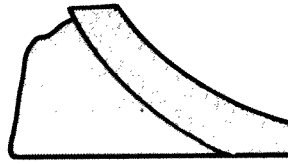
UNDERSTITCHING FACINGS

The multiple stitch zigzag is an excellent choice for understitching and eliminating bulk in facing seam allowances.

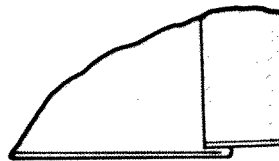
After attaching the facing to the garment, trim and clip the seam allowance as usual. Press the seam allowances toward the facing and use the multiple stitch zigzag close to the seam, stitching through the facing and the seam allowances. Using a matching thread, the stitch will blend in to the fabric and prevent excess bulk. This is much more successful than a straight stitch for understitching. It really helps to keep the facings from rolling.

Note: Try Smocking Stitch for knits.

Pattern: 
Length: 1-2
Width: 4-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose.




Step 1



Step 2



Pattern: 
Length: 1-2½
Width: 3-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

DECORATIVE EFFECTS

As with the blind hem stitch, the multiple stitch zigzag can be used for many decorative combinations. If the stitch is pivoted when the needle reaches the far left or right of its swing, and the points are carefully matched, a tracery diamond shape results.

On the other hand, if rows of the multiple stitch zigzag are sewn with the points falling directly under each other, a wavy pattern is produced. Flowers may also be produced. Start in center; pivot at points shown. Add four more petals if desired.

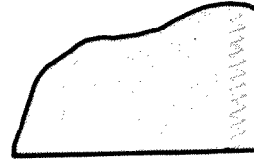
APPLICATIONS OF THE BLIND HEM STITCH

BLIND HEMMING

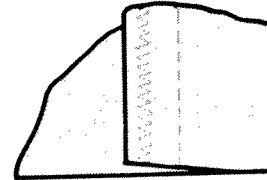
The blind hem stitch provides a durable hem finish that is almost invisible on garments, drapes, and curtains. It is done easily with straight or slightly curved hems. With a little practice it will be a very quick and easy hem application and the hem will never need repairing.

Procedure:

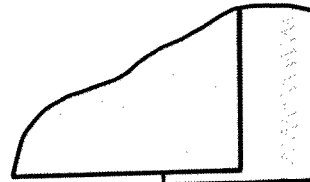
- * Prepare raw edge of hem in desired manner, such as overcast, 1/4 inch stitched under, pinked, hem tape, or just plain. (Step 1)
- * Fold hem up desired length. Baste or pin 1/2 inch from upper edge. Press in place. (Step 2)
- * Fold hem back toward right side of fabric leaving about 1/4 inch extended. (Step 3)
- * Adjust your stitch width and needle position so that the zigzag bite of the stitch just slightly catches the fold of the fabric. The straight stitches should be formed on the single thickness of fabric, and the zigzag bite should catch just barely into the fold of the fabric at the left.
- * When stitching is completed, remove fabric from machine and turn to right side. Press completed hem.



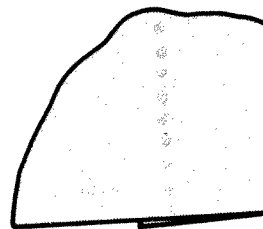
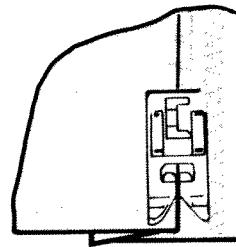
Step 1




Step 2



Step 3



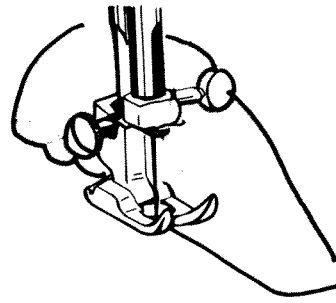
When hemming an A-line skirt, place a machine basting stitch along the raw edge of the hem. At an ironing board, fold up the hem, matching the seams. Ease in the excess fabric by pulling on basting thread. Press with steam, then apply hem tape. Baste or pin hem 1/2 inch from taped edge, then continue into step 3.


Pattern: 
Length: 1-2
Width: 3-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

SHELL TUCK

The blind hem stitch gives a very effective and easy way to make a shell tuck for lingerie, pillowcases, and decorative finishes. This works well on knits or on the bias of soft, woven fabrics. A single folded bias tape may be tucked in this manner, and then applied under a fold for a decorative hem on pillowcases or applied with the facings at the neckline or armhole for a decorative finish.

Set the upper tension dial to a little bit tighter position than normal. Fold under the edge where the shell tuck is to be created. Place the bulk of the fabric to the right of the needle with the folded edge to the left. Place the fabric so that the folded edge will be guiding into the center cut of the foot. The straight stitches will form on the fabric, and the zigzag bite will swing to the left off of the folded edge. The shell edge is created as the needle swings back onto the fabric. The size of the "shell" can be varied by changing the stitch length.




Pattern: 
Length: 1½-2½
Width: 4-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

DECORATIVE EFFECTS

By sewing two adjacent rows of blind hem stitching on lace or ribbon attractive decorations are created. The stitch may be pivoted when the zigzag bite swings to the left and the points matched in the second row.


Another variation alternates the zigzag bites in the center of the straight stitched segment. The stitch may also be pivoted after two straight stitches to form a snowflake-like pattern.

Pattern: 
Length: 1-2
Width: 4-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose



TOPSTITCHING EFFECTS


A new kind of topstitching effect can be produced by couching a strand or two of pearl cotton embroidery floss, or yarn with the blind hem stitch. Simply guide the cord through the left groove of the embroidery foot so that the blind hem stitch sews over the cord and not through it. The straight stitches of the blind hem stitch will bury themselves along the right side of the cord. The sewing thread should match as closely as possible to blend into the fabric.

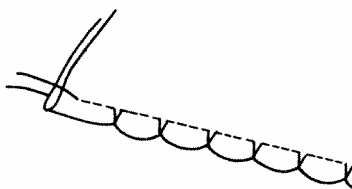
Pattern: 
Length: 1-2
Width: 2-4
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

SHELL TUCK

The reverse blind stitch gives a very effective and easy way to make a shell tuck for lingerie, pillowcases, and decorative finishes. This works well on knits or on the bias of soft, woven fabrics. A single folded bias tape may be tucked in this manner, and then applied under a fold for a decorative hem on pillowcases or applied with the facings at the neckline or armhole for a decorative finish.

Set the upper tension dial to a little bit tighter position than normal. Fold under the edge where the shell tuck is to be created. Place the bulk of the fabric to the left of the needle with the folded edge to the right. Place the fabric so that the folded edge will be guiding into the center cut of the foot. The straight stitches will form on the fabric, and the zigzag bite will swing to the right off of the folded edge. The shell edge is created as the needle swings back onto the fabric. The size of the "shell" can be varied by changing the stitch length.

Pattern: 
Length: 2-3
Width: 5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose




APPLICATIONS OF THE INTERLOCK

LINGERIE SEAM

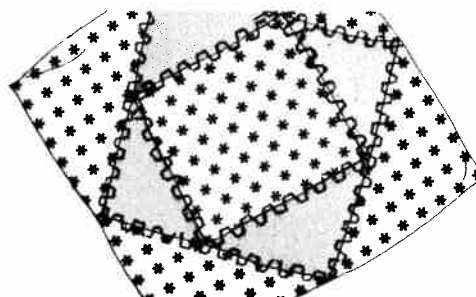
For a very fine, delicate seam in nylon tricot or jersey, the interlock is used. Lingerie or tricot seams should only be about 1/8 inch in finished width.


If your pattern has wide seams, trim them down to 1/4 inch while cutting out the pattern. Guide the raw edges of the fabric into the center slot of the presser foot. On the right, the needle will stitch over the edge resulting in a finished 1/8 inch.

Pattern: 
Length: 1-1½
Width: 4-5
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

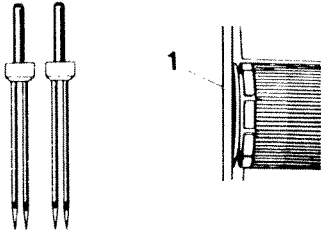
INSERTING LACE

A very fine lace insertion can be made with the interlock. As in applying lace with the zigzag stitch, follow the straight line or the design of the lace. Sew so that the straight stitch of the interlock is on the fabric and the small zigzag catches into the lace.

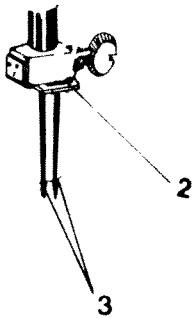


Pattern: 
Length: 1-1½
Width: 2
Special stitch selector Utility stitch upward
Pressure: Normal
Foot: All Purpose

Twin Needle Upper Threading



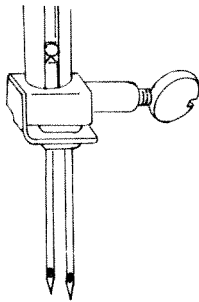
- * Follow threading instruction for single needle with these exceptions.
- * Place thread, matching or contrasting in color, on both spool pins.
- * Draw threads through thread guides as normal, but separate the threads at the position 1.
- * Pass one thread through the left disc and one thread through the right disc.
Tension is divided in center by a larger disc.
- * Now treat both threads as one until you reach the thread guides on the needle clamp.
- * At needle clamp 2, pass both threads on needle clamp guide.
- * At the needle points 3, separate threads from needle clamp guide to right needle eye and left needle eye.
- * ZIGZAG WIDTH CONTROL: Set at desired width between "0" and "2", if you set the control higher than 2, the needle will hit the needle plate and break.
- * STITCH LENGTH: Set at desired stitch length.



Twin Needle Sewing Effects

To use twin needle in the machine, remove the single needle, and insert the twin needle into clamp with the flat side to the back. Threading of the machine when using a twin needle is the same as normal with these exceptions:

1. Place threads, matching or contrasting in color, on each spool pin.
2. Hold both threads together as you follow through thread guides as normal, but separate the threads at the tension. Pass on thread through the left disc and one thread through the right disc. Tension is divided in center by a larger disc.
3. Then pass threads through arm thread guide. When using a twin needle, set the stitch width control at 2 or less to prevent needle breakage with a wide stitch.



Pattern: Any
Length: 1/2-5
Width: 0-2

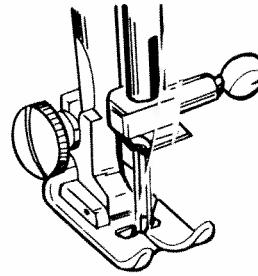
Foot: All Purpose

Decorative Tucks Or Designs

Any stitch can be used with the twin needle for decorative effects.

Most attractive are the multiple stitch zigzag and blind hem stitch for fancy tucks. The satin stitch or tapered zigzag designs in two colors are effective for creative trims.

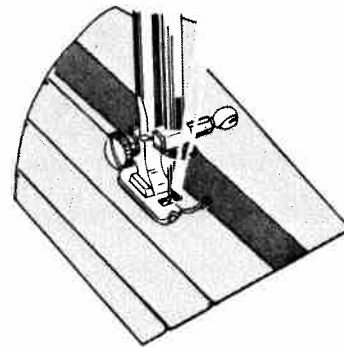
Caution: Remember to use no more than a 2 zigzag width for twin needle sewing.




Pin Tucks

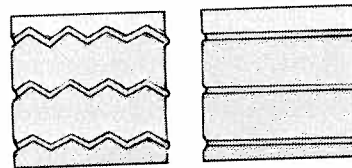
Narrow tucks, sewn with thread that matches the fabric, produce subtle decoration on plain fabric. Using the twin needle, sew straight lines on the fabric guiding the edge of the presser foot along each successive tuck to make parallel rows. Soft fabrics will be pulled to form a soft crease. To achieve a tuck on a fabric, increase the lower tension slightly. Heavier fabrics will produce two lines of straight stitching. Attractive pin tucks are made with the multiple stitch zigzag as well as with a straight stitch.

NOTE: Transparent tape makes straight lines easy to sew. Just sew with the presser foot guiding along the edge of the tape. When sewing is completed peel off tape.



Pattern: 
Length: 2.4
Width: 0.2

Foot: All Purpose

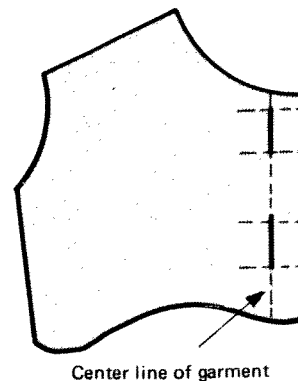
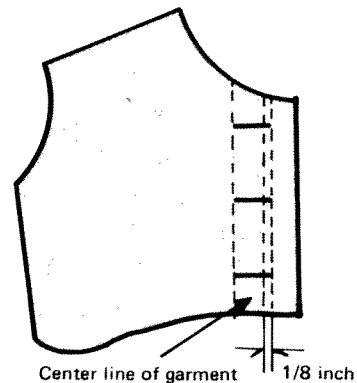
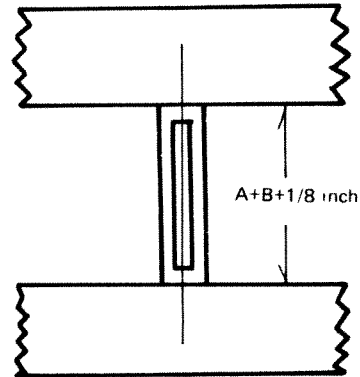
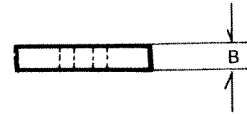
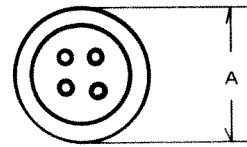


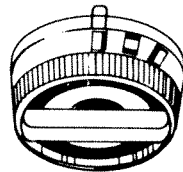
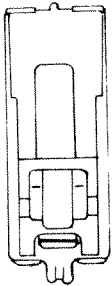
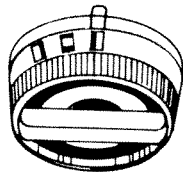
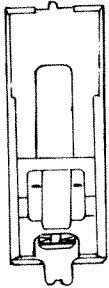
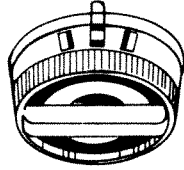
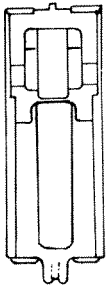
BUTTONHOLES


Various fabrics require various methods of sewing buttonholes. Four different methods are given below, with suggested uses. If you are in doubt as to which method is best for your fabric, test the methods in question and choose the best according to the finished appearance.

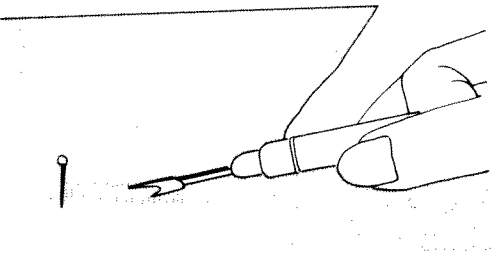
PREPARATION

For the best results, a good quality mercerized cotton thread should be used. Polyester threads often result in puckered or heavy unattractive buttonholes. The finer your fabric is, the finer your cotton thread should be. An interfacing should be used under the buttonholes to give body, to strengthen, and to help them withstand wear. To establish the correct length of the buttonhole, add the diameter of the button (A), plus the thickness of the button (B), plus 1/8 inch for the bartacks. The length may be marked on the garment with a basting stitch, tailors chalk, or transparent tape, as shown. Another way to make sure that all buttonholes will be the same size is to cut a piece of cardboard as wide as the buttonhole foot and long enough to make the distance between the toe of the white slide and the cardboard the size buttonhole needed. This method works for buttonholes up to 1-1/8 inches long. Horizontal buttonholes should extend 1/8 inch beyond the center line of the garment. Vertical buttonholes are placed so that the cutting space of the buttonhole is directly on the center line. Always make a practice buttonhole on a scrap of the garment fabric before making any buttonholes on your garment. On your test sample, duplicate the thickness found in the garment and be sure to include the interfacing. The test sample should help determine the length needed for the button to pass through easily, and the stitch length for the particular fabric. As with the satin stitch, the stitches should be close together, but not so close that they pile up. Be sure to use the buttonhole foot.










Pattern: WW
 Length: Around 4 (green symbol area)
 Special stitch selector Utility stitch upward
 Pressur: Normal
 Foot: Buttonhole
 Zigzag width control dial 




BUILT-IN BUTTONHOLER

This buttonhole eliminates the need for pivoting the fabric. It is used most often on light and medium woven fabrics.

1. Set the buttonhole control dial at the () buttonhole picture. Lower the needle into the mark at the top end of the buttonhole. Lower the presser foot. A few stitches will be made for the bartack, , turn to  than the stitching will sew the left side in forward. Stop when the stitching reaches the bottom end of marked buttonhole. At this position the machine will be sewing in forward.
2. With the needle up, select the () buttonhole picture. A few bartack stitches will be made, turn to  than the stitching will sew the right side in reverse.

If using cardboard the white nylon slide will run into the cardboard to prevent sewing into the bartack.

3. To lock the stitch, make sure the needle is out of the fabric. Make sure the pattern control dial is at straight stitch and take a few stitches.
4. Score the buttonhole with the back edge of the seam ripper several times. To prevent cutting through the bartack, insert a straight pin through the bartack. Cut buttonhole open with the seam ripper.

Note: Pattern selector should always be at  while sewing this buttonhole.

Utility stitch on special stitch variegator should be always on upper position

Adjustment of stitch density:

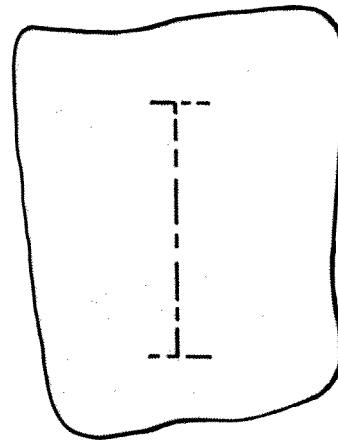
Check the stitch density on a scrap of fabric. If density is too open or too close, re-adjust by turning stitch length dial.

TURN-AROUND BUTTONHOLES

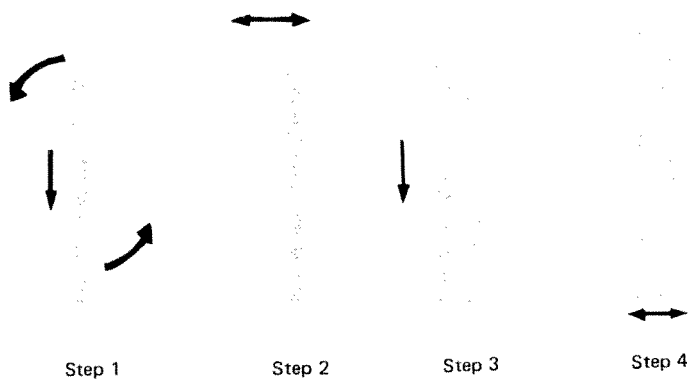
It is possible to make small and dainty buttonholes if you desire or repair damaged buttonholes. This entails a slight shifting of the cloth but with some practice, good buttonholes can be achieved.

1. Mark the length of the buttonhole on the cloth as shown in figure.
2. Set the needle position to the left and your stitch length dial near "1/4" or the density you desire.
3. Choose the desired width of your buttonhole.
Example: if you want a buttonhole with a width of # 3 setting on the stitch width dial, divide this setting in half, or 1 1/2
4. Start at your marked position, sew down on the left side of buttonhole to the other end of marking. Leave the needle in the cloth at the right side of stitches and rotate your cloth. Lift the presser foot and slide the bottom of the foot back to the front.
5. Lower the foot and raise the needle. Reset your stitch width dial to bartack, in this case the # 3 setting.
sew several stitches.
6. Raise the needle, reset the zigzag width to the initial setting, in this case 1-1/2 and sew the other side of buttonhole to your mark, then repeat your bartack (5).
7. Lock thread by stitching a few stitches at 0 width. Cut buttonhole as indicated previously.

When using this method over a buttonhole which has already been slit or damaged, be sure to hold the buttonhole open and allow the needle to go off the edge of the fabric. Step 4 is all that may be needed to repair damaged buttonholes.



Pattern: WW
 Length: 0 - 1
 Width: 2 1/2 - 5 - 2 1/2 - 5 - 0
 Special stitch selector: Stretch stitch upward
 Pressure: Normal
 Foot: Buttonhole

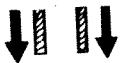
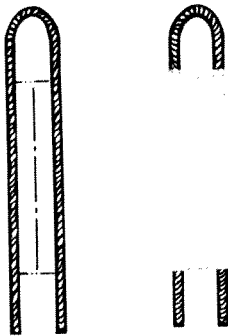
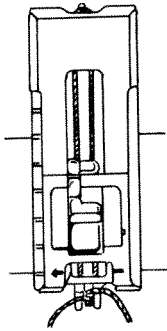


CORDED BUTTONHOLES

Cording gives a reinforced raised buttonhole. It is excellent for use on bulky, woven fabric, or knits in which the stitching often gets buried and makes cutting difficult. On knits, a corded buttonhole will help keep the fabric from stretching out shape.

Choose a heavy cotton crochet thread or buttonhole twist to use for the cording. Proceed as for either built-in buttonhole or the turnaround buttonhole. Having the cord under the presser foot in such a way that the zigzag stitch covers the cord. When pivoting the buttonhole, also swing the cord around to follow under the second side.

At the completion of the buttonhole snip the excess cord close to the bartack on woven fabrics. For knitted garments, always pull the cords to the wrong side by using a darning needle or needle threader, and knot the cord ends before clipping.




Built-in Buttonhole:


Pattern: \overline{W}
 Length: Around 4 (green symble area)
 Width:
 Special stitch selector Utility stitch upward
 Pressure: Normal
 Foot: Buttonhole
 Pattern Selector:


Turn-around Buttonhole:

Pattern: \overline{W}
 Length: 0-1
 Special stitch selector Stretch stitch upward
 Pressure: Normal
 Foot: Buttonhole

STRETCH BUTTONHOLES

This buttonhole is used on knit fabrics when it is desirable to omit interfacing or cording. This buttonhole will stretch and return to shape unlike an ordinary zigzag buttonhole. The  pattern of the stitch makes the buttonholes nearly invisible when using matching thread. It is excellent to use on jerseys, double knits, and sweater fabrics.

1. Mark the length of the buttonhole on the cloth as shown in.
2. Select the overlock stitch .
3. Set the needle to the left and the stitch length dial to 4.
4. The width should be set at 2-1/2.
5. Start at the marked position, sew down the left side of the buttonhole to the other end of the marking. Leave the needle in the cloth at the right side of the stitches and rotate your cloth. Lift the presser foot and slide the bottom of the foot back.
6. Lower the presser foot and raise the needle. Reset your stitch width to make a bartack at width 5.
7. Raise the needle, reset the width to 2-1/2 and sew second side of the buttonhole, to the end of the buttonhole mark, reset the width to 5, and sew a few stitches for the second bartack.
8. Lock threads by stitching a few stitches at 0 width. Cut the buttonhole as indicated previously.

Pattern: 

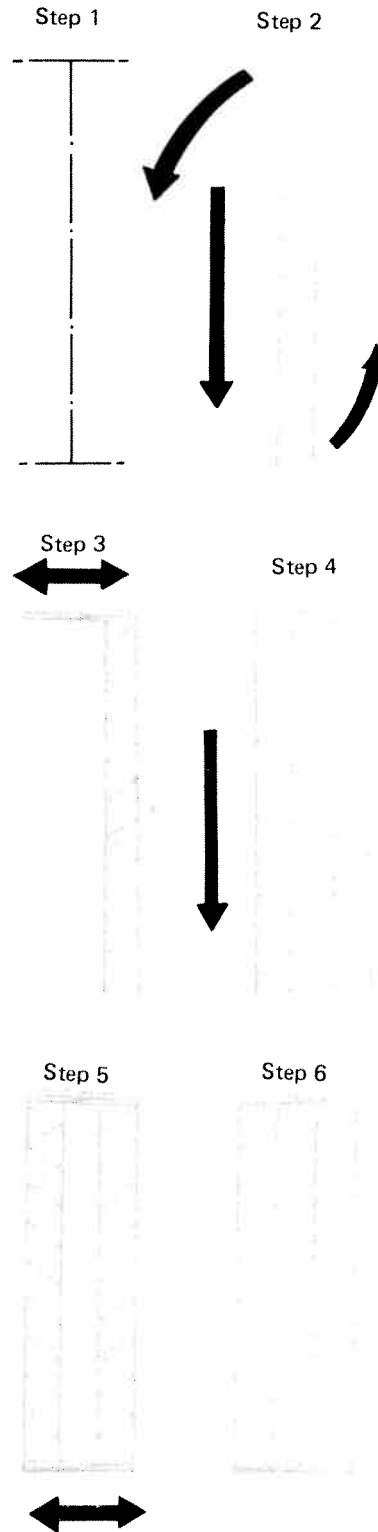
Length: 4

Width: 2½-5-2½-5-0

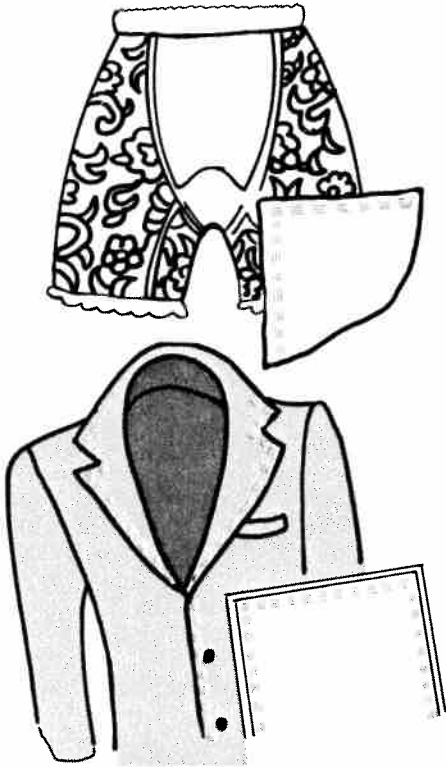
Special stitch selector Stretch stitch upward.

Pressure Normal

Foot: Buttonhole




APPLICATIONS OF THE STRAIGHT TRIPLE STRETCH STITCH



Seams

This stitch may be used on knits and woven fabrics, in areas of stress as a reinforcement stitch. It is excellent for curved seams such as armholes and crotch seams. For active wear such as ski pants and girdle fabrics which endure a lot of stress in bending and stretching, this stitch may be used for seaming throughout the garment.

Caution: It is difficult to remove this stitch from fabric. Pre-fit garment before using this stitch.

Pattern: 

Length: 4

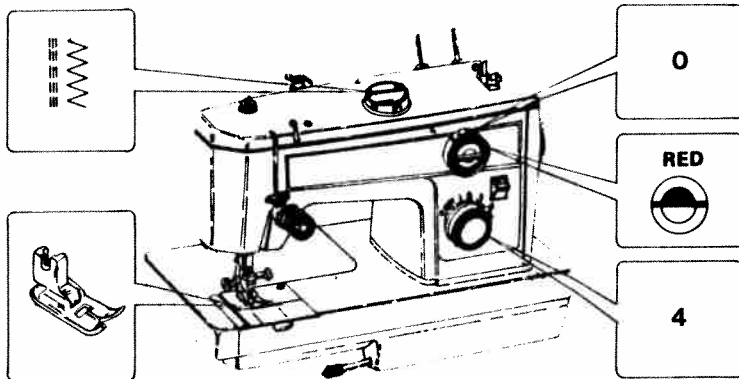
Width: 0

Special stitch selector Stretch stitch upward

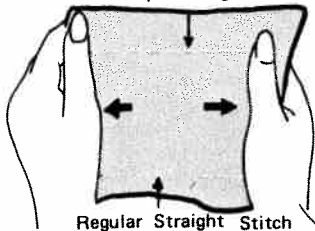
Foot: All Purpose

Topstitching (Stretch Stitches)

Because this stitch is heavier than an ordinary straight stitch, it is ideal for topstitching, particularly on knits.



Elastic Triple Straight Stitch



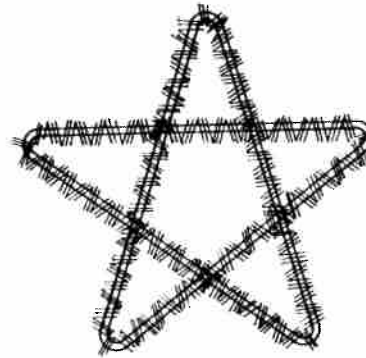
PROCEDURE:


- * The elastic triple straight stitch is used when a straight line of stitching is desired so that seams may be pressed open (slacks for example).
- * This stitch is especially useful where the tiny zigzag seam will not hold its shape and the straight stitch will break.
- * Apply this stitch to areas of stress on both wovens and knits (crotch seam and under arm for example).
- * Use this stitch for rightly fitted garments that need a lot of stretch, such as ski pants, girdles and bathing suits.

APPLICATION OF THE PICK-RACK

Topstitching/Rick-Rack

A decorative topstitch can be produced with the rick-rack stitch. Stitch around the structural lines of the garment for a special effect. Topstitch braid or a decorative inset to add an additional creative flair.




Pattern: 

Length: 4

Special stitch selector Stretch stitch upward

Foot: All Purpose

Pattern: 

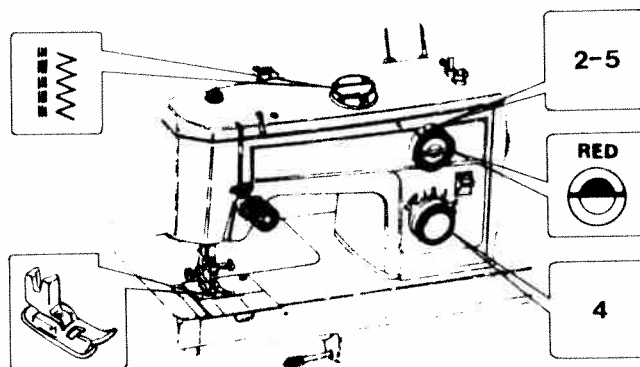
Length: 4

Special stitch selector Stretch stitch upward

Foot: All Purpose

Tapering/Rick-Rack

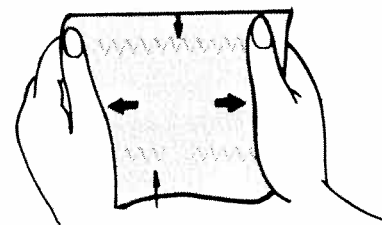
The rick-rack stitch may be tapered to form creative stems and petals of flowers, embroidered pictures and wall hangings. As in tapering the zigzag, see page 25, slowly turn the stitch width control from 0 to 5 and back to 0. A group of these tapered rick-rack stitch will form a bouquet-like effect.



PROCEDURE:

- * The elastic rick-rack stitch is a zigzag line of stitching that is desired so that seams may be pressed open.
- * Apply this stitch to areas of stress on both wovens and knits.
- * Use narrow width of zigzag as a heavy duty triple stitch for seams.
- * Use medium and wide widths of zigzag for overcasting edges of seams, facings and hems of heavier weight fabrics such as terrycloth, and for attaching elastic. Use also for decorative stitching.
- * Guide your fabric from the front. Do not pull or push as it will cause poor stitching.


Elastic Triple Zigzag Stitch

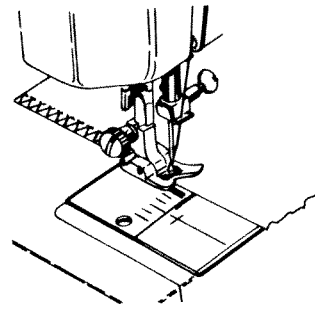


Regular Zigzag Stitch

APPLICATION STRETCH OVERLOCK

On fabrics that are bulkier or heavier, the stretch overlock is a better choice than the overlock. In all methods proceed as you would for the double overlock, except feed the fabric with the bulk to the right. The stitch is less dense and will prevent from rippling. soft stretchy knits

Pattern: 
 Length: 4
 Width: 4-5
 Special stitch selector Stretch stitch upward
 Pressure: Normal
 Foot: All Purpose

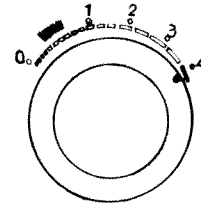
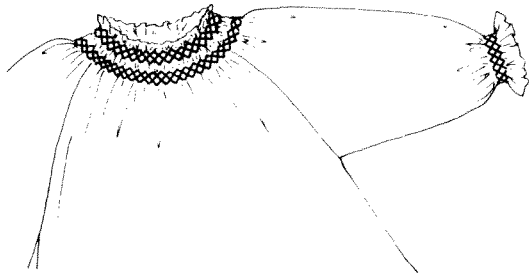



APPLICATIONS SMOCKING STITCH

This stitch is very versatile and can be corded or used as a topstitch as other reverse stitch patterns.

SEAMING SMOCKING STITCH

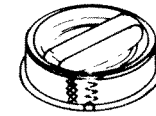
The smocking stitch can be used to seam fine gauze type fabrics or bulky sweater knits, this results in less bulk for a finished 1/4 inch seam. Follow the directions for double overlock seam



Pattern: 
 Length: 4
 Width: 4-5
 Special stitch selector Stretch stitch upward
 Pressure: Normal
 Foot: All Purpose

ELASTIC THREAD SHIRRING

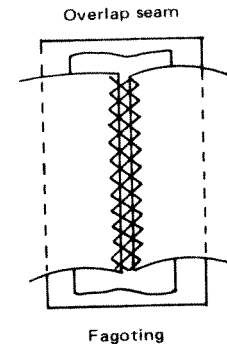
Cuffs and bodices of little girls dresses can be shirred easily with the smocking stitch. Place the right side of the garment down on the bed of the machine. Place two strands of elastic thread under the foot. Stretch the elastic thread while sewing with the smocking stitch to gather cuffs or bodice for a feminine effect.



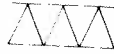
pattern Selector

PROCEDURE:

- * The smocking stitch is a very useful special ultra-stretch stitch.
- * Lingerie or tricot seams should only be about 1/8 inch finished width.
- * Fagoting can be achieved by joining the folded edge of two piece of fabric together with a gap between them. Use a sheer flesh colored piece of fabric underneath to make the fagoting much stronger and prettier.
- * Do the fagoting with a piece of paper underneath and remove the paper by hand washing.



APPLICATIONS DOUBLE OVERLOCK STITCH



SEAMING DOUBLE OVERLOCK STITCH

This stitch gives a finished 1/4 inch seam in one step. For knits, it gives strength and elasticity to the seams and prevents the curling of the fabric that often occurs with 5/8 inch opened seams. It is most applicable to soft, thin knits such as nylon or acetate knits, but may be used on other fabrics as well. Always make test seams with this stitch.

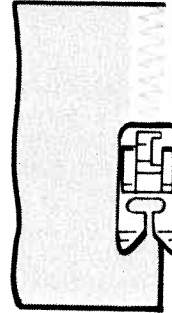
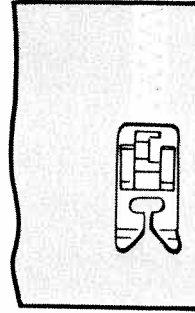
For woven fabric, the double overlock stitch gives strength and prevents raveling. It can be used on woven goods to replace flat or French seams.

For patterns with 1/4 inch seams. Place the raw edge of the fabric under the presser foot so that as the needle swings to the right, it comes down at the raw edge. This will result in an enclosed seam allowance.

For patterns with 5/8 inch seams:

The seam allowances may be trimmed to 1/4 inch either before or after sewing. If trimming before sewing, proceed as above. Otherwise, sew the seam with the raw edge of the fabric on the etched guide line "1/2". (Any time you use the full width of a particular stitch, you should readjust the raw edge of the fabric 1/8 inch to the left.) Afterward, trim the excess fabric near the stitching. This method is actually easier than the overedge method for fabrics that curl.

Note: On soft, loose knits, the fabric may seem to wave or ripple. If this occurs, reduce the pressure.



Pattern:

Length: 4

Width: 4-5

Special stitch selector Stretch stitch upward

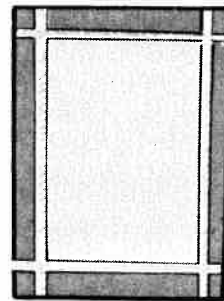
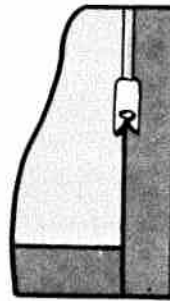
Pressure: Normal

Foot: All Purpose

HEMSTITCHING EFFECT

By using a very large needle and a fine thread an openwork effect can be attained which is beautiful for sewing the hems into tablecloths, napkins, placemats, handkerchiefs, etc. Use a large needle, size 18 or 20, and a fine cotton thread. Tighten the upper tension slightly, until the stitch looks better on the underside than on top. (You will be sewing with your fabric face side down.)

Turn up 1 inch then turn up 1 inch again to form a hem of a double thickness of fabric. The bulk in corners can be eliminated by trimming away the excess, as shown, after having folded the fabric on all sides. Stitch from the wrong side, so that the straight stitch forms on the single layer and the zigzag bites on the double layer. Stitch all the way to the edge of the fabric along all sides.



Pattern:

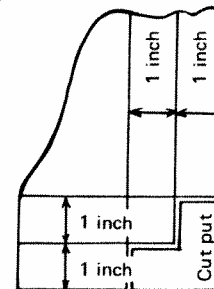
Length: 4

Width: 3-5

Special stitch selector Stretch stitch upward

Pressure: Normal

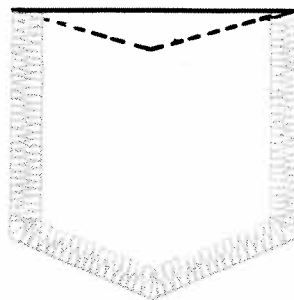
Foot: All Purpose




TOPSTITCHING DOUBLE OVERLOCK

The double overlock stitch can be used to topstitch nonraveling fabrics such as felt or leather into place for appliques or pockets.

Stitch so that the straight part of the stitch is formed over the edge of the leather, and only the zigzag part holds it in place.



Pattern: 

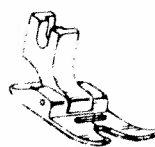
Length: 4

Width: 3-5

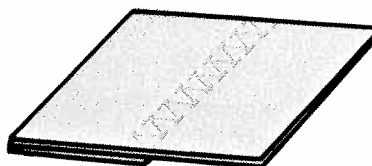
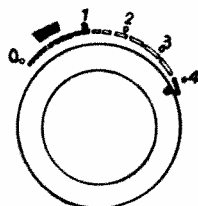
Special stitch selector Stretch stitch upward

Pressure: Normal

Foot: All Purpose



Zigzag Foot



PROCEDURE:

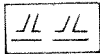
* Double overlock stitching is used for sewing overlapping seams, decorative hems, binding and edges on woven and elastic fabrics.

* To sew an overlapping seam, place one piece of fabric 1 cm over the other piece and sew the flatlock stitch over the fabric edge on the right side.

* You can produce a decorative hem by folding a single hem on the wrong side and sewing the flatlock from the right side.

* Use knit trim or bias binding when binding curved edges, like round necks and armholes.

APPLICATIONS ULTRA STRETCH



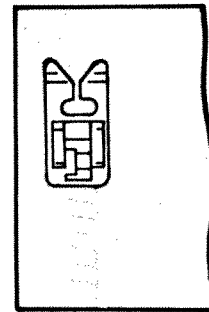
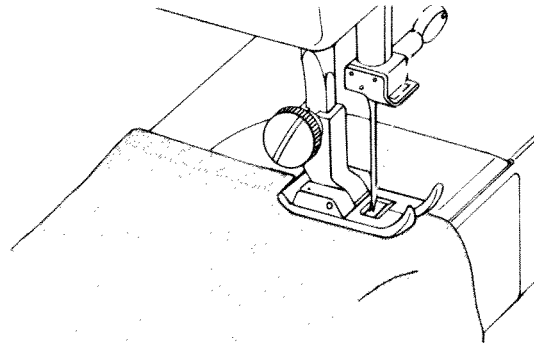
SEAMING ULTRA STRETCH

On most knits, a 1/4 inch finished seam, such as ultra stretch or the double overlock stitch, is more desirable than a 5/8 inch opened seam allowance. These stitches can create a neater, more professional finish, eliminate bulky seams, prevent curling, permit the garment to "give" under stress, and at the same time they cut down on the amount of work involved in making a garment. If ever in doubt as to which of the two stitches to use, test both on the particular fabric in question and choose according to their performance.

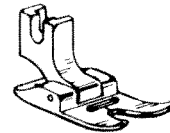
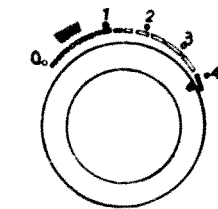
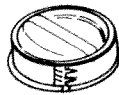
The stretch stitch and overcast stitch is excellent for stretch fabrics such as sweater knits, bathing suit knits, and cotton knits. It has the greatest strength and elasticity of all.

For patterns with 1/4 inch seam allowances: Feed the fabric such that the needle goes over the raw edge of the fabric when it swings to the right.
For patterns with 5/8 inch seam allowances: Feed the raw edge of the fabric along the etched guide line "1/2", then trim away the excess fabric close to the stitching.

Pattern:
Length: 4
Width: 4-5
Special stitch selector Stretch stitch upward
Pressure: Normal
Foot: All Purpose



Pattern Selector and
Zigzag Width Control Dial

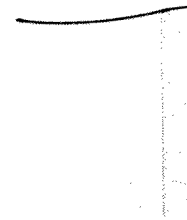


Zigzag Foot

PROCEDURE:

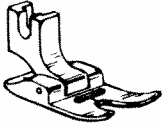
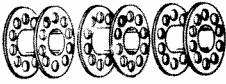
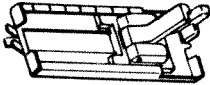
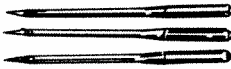



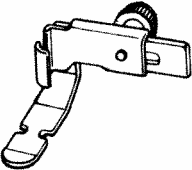
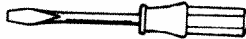
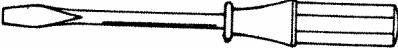
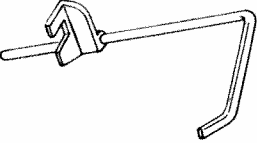

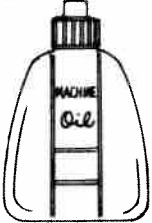



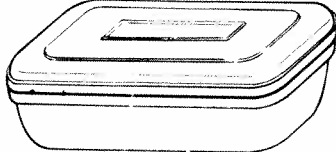
* Overlock stitching is used for seaming and finishing the cut edge of knit fabrics, all in one operation.

* This overlock stitch is especially good for stretch fabrics such as double knit and jersey and will give a firm, neat edge finish.

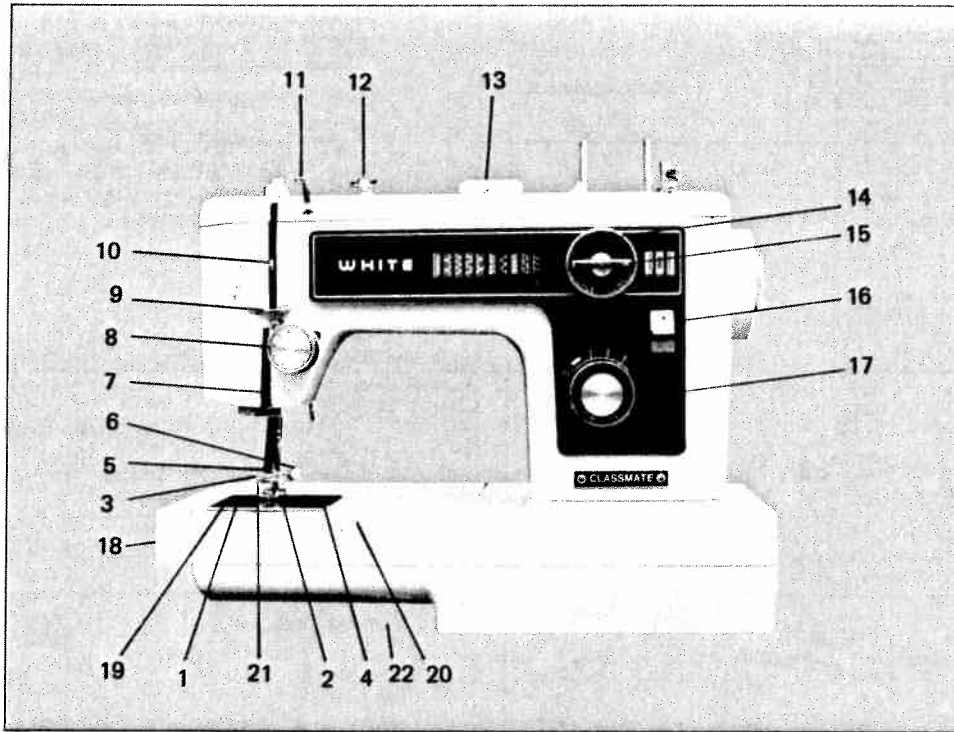


Overcasting

Accessories

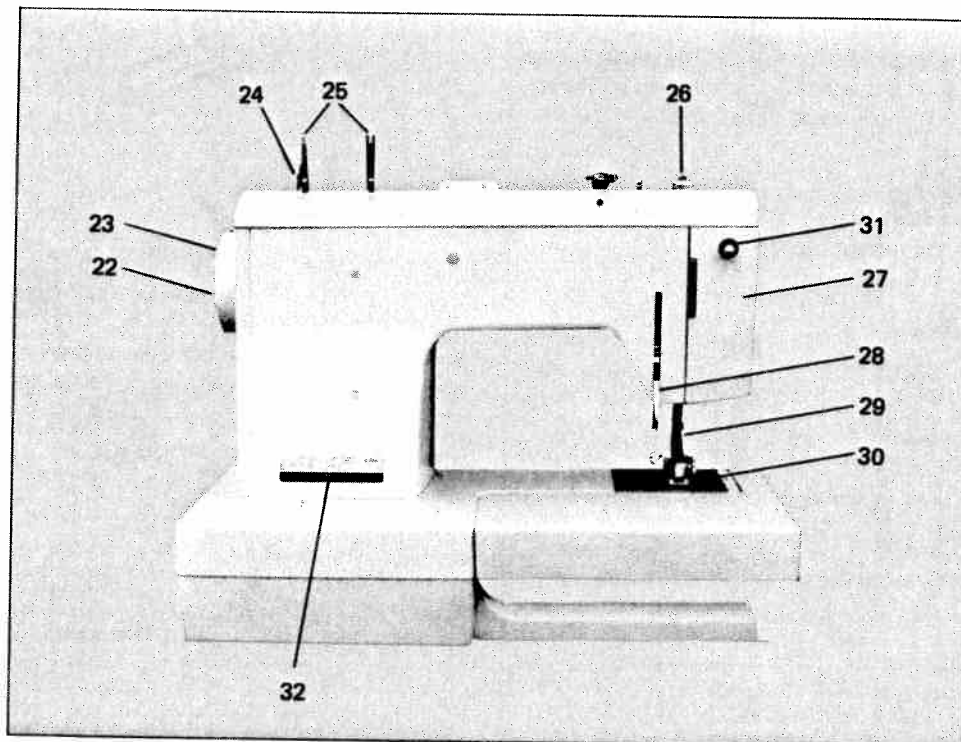
 <p>Zigzag foot (on machine)</p>	 <p>Bobbins (3 pcs.)</p>
 <p>Buttonhole foot</p>	<p>Needles # 14 Ordinary needles (3 pcs.)</p>  <p>Ball point needle (1 pc.)</p>  <p>Twin needle (1 pc.)</p> 
 <p>Button sewing foot</p>	
 <p>Zipper foot</p>	<p>Screw drivers (small)</p>  <p>(large)</p> 
 <p>Quilting guide</p>	<p>Darning plate</p>  <p>Oiler</p> 
 <p>Cloth guide</p>	<p>Ripper</p> 
 <p>Straight stitch foot</p>	<p>Accessory box</p> 

KNOWING YOUR SEWING MACHINE



- | | |
|-------------------------------|-----------------------------|
| 1. Needle plate | 12. Bear thread guide |
| 2. Feed dogs | 13. Stitch selector |
| 3. Presser foot screw | 14. Stitch width control |
| 4. Seam guide lines | 15. Special stitch selector |
| 5. Thread guide | 16. Reverse stitch control |
| 6. Needle clamp screw | 17. Stitch length control |
| 7. Face cover thread guide | 18. Extension table |
| 8. Top thread tension control | 19. Shuttle cover |
| 9. Front thread guide | 20. Free arm |
| 10. Thread take-up lever | 21. Finger guard |
| 11. Top thread guide | 22. Leg |

BACK VIEW



- 22. Clutch knob
- 23. Hand wheel
- 24. Bobbin winder
- 25. Thread spool pins
- 26. Presser regulator
- 27. Face cover plate

- 28. Presser foot lever
- 29. Thread cutter
- 30. Presser foot
- 31. Light switch
- 32. Nomenclature plate

The all purpose foot

This foot is flat on the bottom and has a wide hole to accommodate wide stitches. This foot should be used for all normal sewing.

The button sewing foot

This foot has a piece of plastic inserted on the bottom to hold buttons securely.

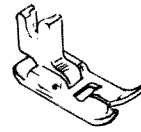
The buttonhole foot

This foot has a frame which holds the fabric taut enough to produce a good buttonhole. The markings on the side allow exact buttonhole length to be made.

Changing Foot

Raise presser foot lifter (1).

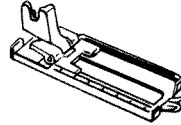
Set needle in the highest position by turning handwheel towards you (2)



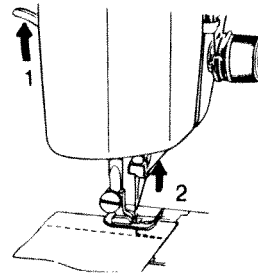
Zigzag foot
(on machine)



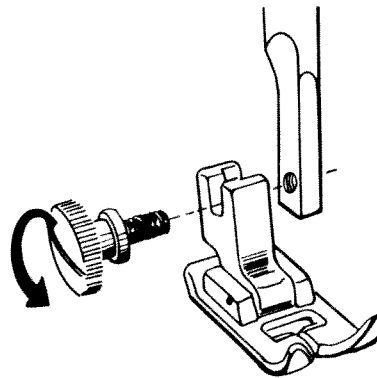
Button sewing
foot



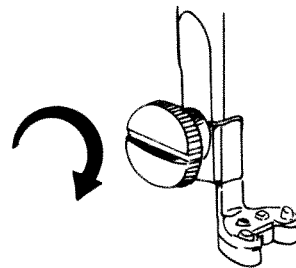
Buttonhole foot



Remove foot by loosening screw with screwdriver.

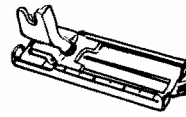


Replace new foot and tighten screw.




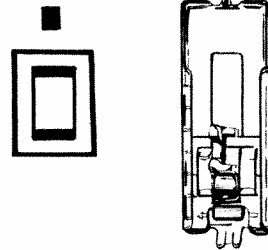
Buttonhole Foot


This foot has a frame which holds the fabric taut enough to produce a good buttonhole. The markings on the side allow exact buttonhole length to be made.



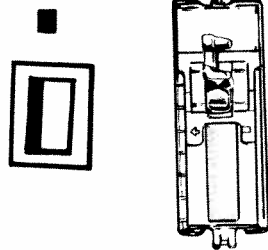
Buttonhole foot


Bar tacking: Set pattern selection dial to  and sew 5-6 stitches.

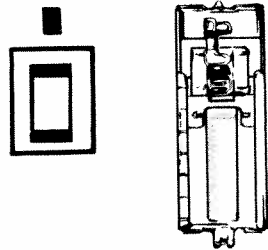



Left side: Change pattern to  Sew left side from front to back until it reaches end line.

Remember the point where arrow shows so that it is not necessary to mark end lines for all buttonholes.

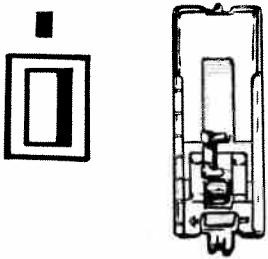


Bar tacking: Change pattern to  and sew 5-6 stitches.

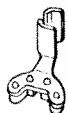


Right side: Change pattern to  and sew right side until it catches first bar tack.

Quick finish: To prevent unstitching, set zigzag width at 0 and sew a few stitches.



Button Sewing Foot

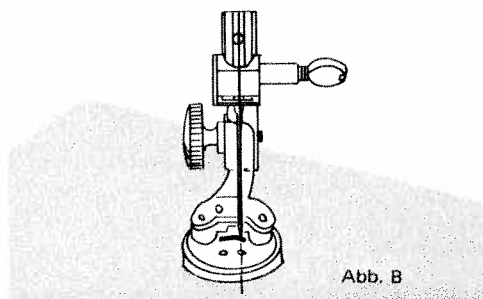
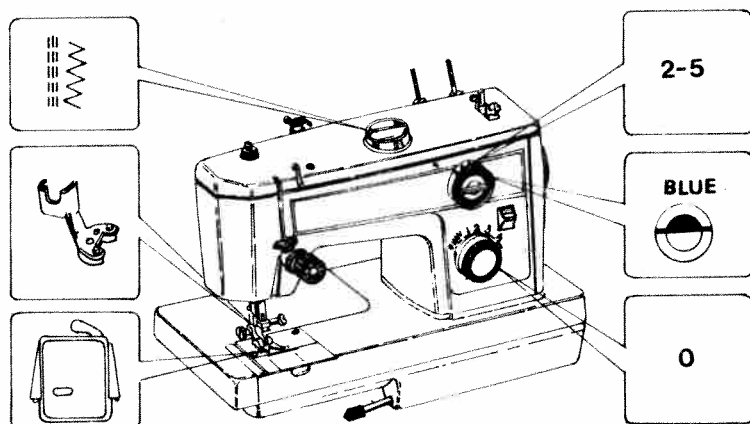


Button sewing foot

THE BUTTON SEWING FOOT

This foot has a piece of plastic inserted on the bottom to hold buttons securely.

Set machine as shown.



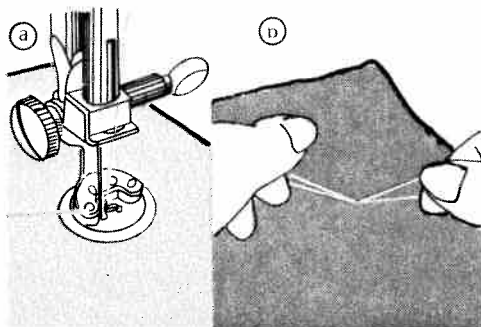
Position a button and material under foot. When needle comes to left side of stitch, lower foot. Raise needle and adjust zigzag width so that needle comes to right hole of button. Run machine at medium speed and sew 5-6 zigzag stitches.

Stop machine when needle is in upper position. a Set zigzag width control to 0 and sew 3-4 stitches to prevent unstitching.

OR

b Draw out work and cut off threads.

Draw thread ends through to wrong side and tie a knot.



Cloth Guide

Use cloth guide when sewing a long seam of regular distance from edge of material.

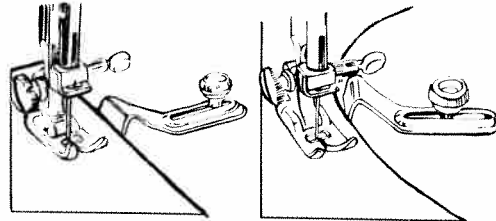
Set guide in hole on arm, at right of needle plate, and adjust distance.

Run machine with edge of fabric touching guide.

Position cloth guide at an angle to sew a curved seam.

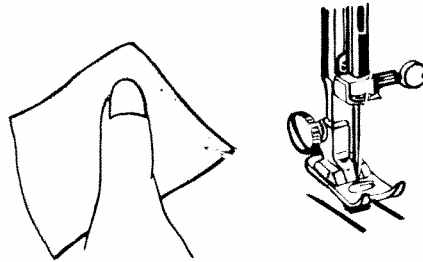


Cloth guide

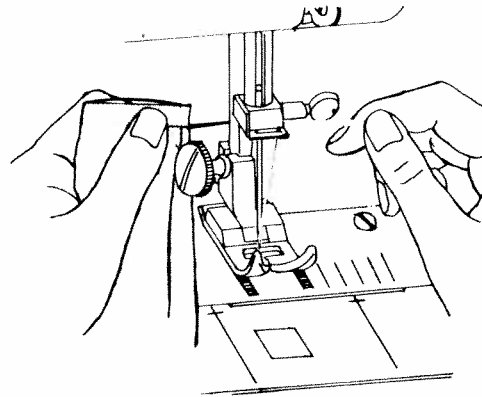


Sew reverse stitches for reinforcement at end of seam.

Draw fabric to left when sewing is finished.



Cut threads with thread cutter behind presser bar.

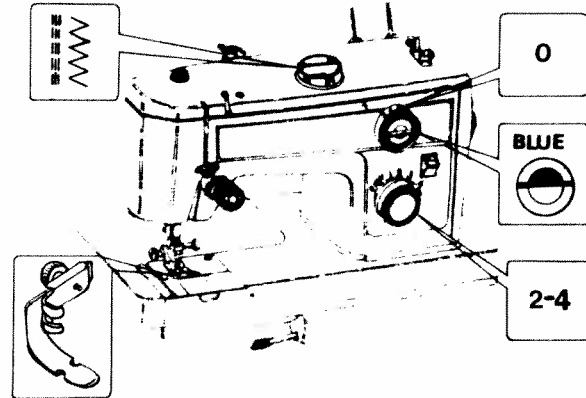


Zipper Sewing Foot



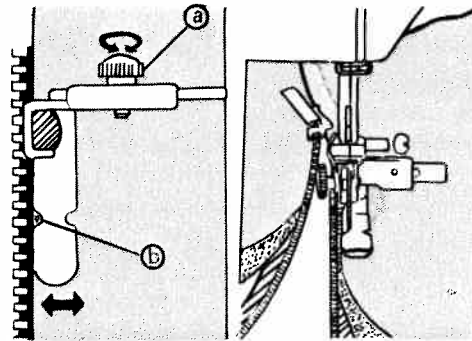
Set machine as shown.

By using special zipper foot with sliding adjuster, zipper sewing can be easily done without turning fabric.

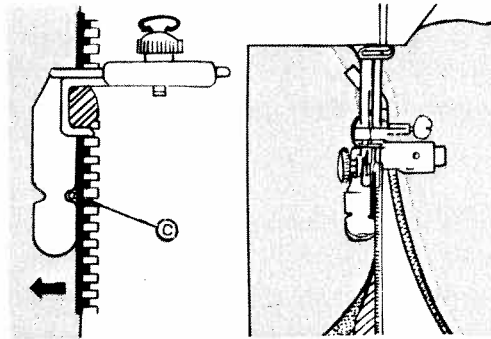


Loosen screw **a** and set foot so that needle comes into position **b**. Tighten screw.

Sew right side of zipper guiding fabric carefully so that right side teeth of zipper are parallel with left edge of foot.



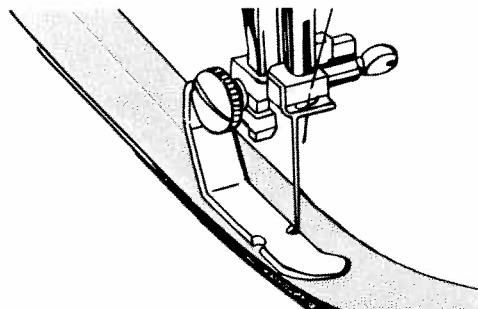
Re-set foot so that needle comes into position **c**. Sew left side of zipper in the same way.



Insert Cording

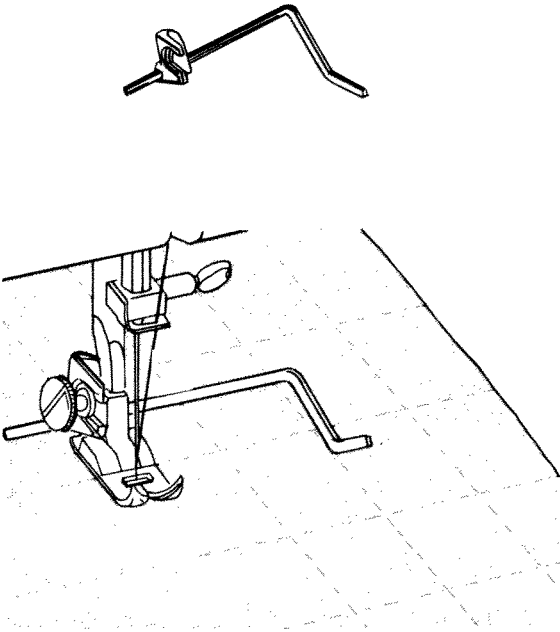
(A) Fold bias strip of fabric over cord. Loosen the adjusting screw on the back of cording zipper foot and set the foot to the left of needle.

(B) Sandwich the welting between two layers of fabric with right sides together. Stitch a second time with cording/zipper foot to the right of needle so that the needle stitches close to the cord through all thicknesses.



The Quilting Guide

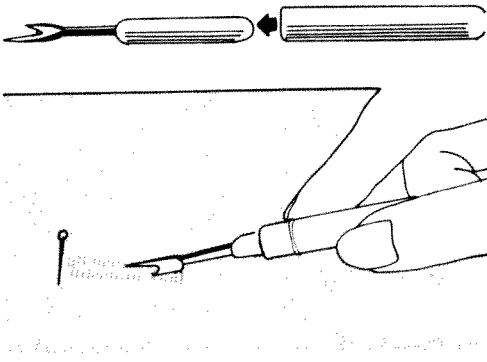
Parallel straight lines are easy to sew with the quilting guide. To attach the guide, loosen thumb screw and slip the U-shaped holder of the guide between presser foot and thumb screw. Tighten the thumb screw securely. Adjust the curved bar to the desired distance from the needle. Sew the first line of stitching as desired, then, for the succeeding rows let the guide follow along the previous stitch line. A straight stitch, zigzag, or any other stitch may be used.



Buttonhole Cutter

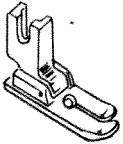
Stick a needle through bar tacks to prevent over-cutting.

Cut buttonhole along center with buttonhole cutter.



Straight Stitch Foot

This has only a narrow hole to accommodate only straight stitching. It may be used on sheer or soft fabrics for more control. When using this foot, the Stitch Width should be "0" to avoid hitting the foot and breaking the needle.



MAINTENANCE

Your new machine requires regular cleaning and oiling for satisfactory performance.

A machine which is used for a few hours a day needs to be cleaned and oiled once a month.

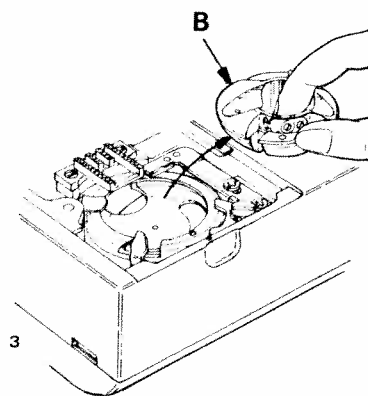
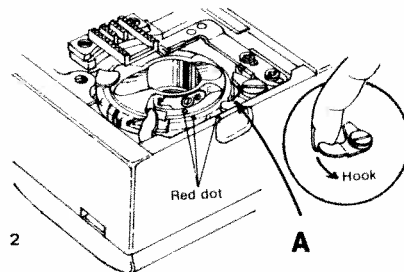
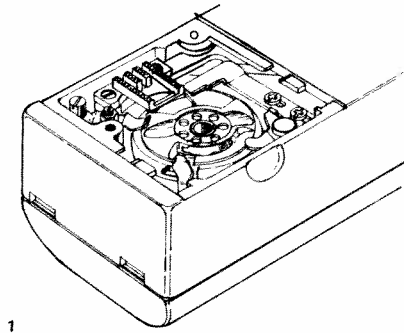
Unplug machine before cleaning or oiling.

A. Disassembling Shuttle (for cleaning)

Turn hand wheel toward you to raise needle to highest position.

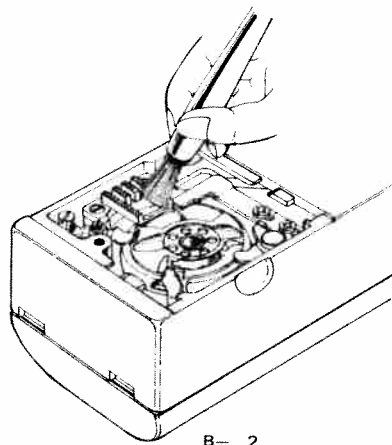
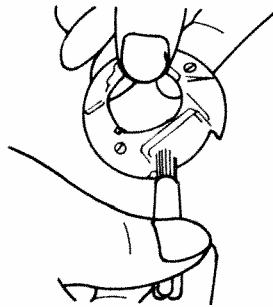
Remove bobbin cover plate-Lift up bobbin cover plate and slips it out

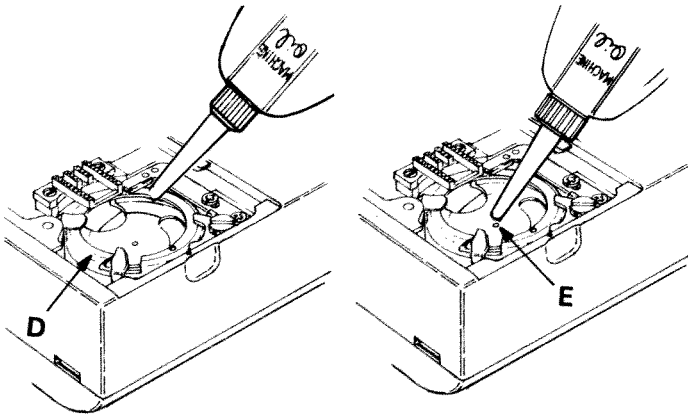
1. Detach needle plate using large screwdriver and take out bobbin.
2. Turning hand wheel toward you, align three red dots in line. push stopper (A) to left as far as it will to go.
3. Lift upper part of shuttle (B) and remove it.



B. Cleaning

1. Brush off lint and dust from shuttle and wipe with a piece of cloth.
2. Brush off lint and dust on feed dog towards you.
3. Clean hook C and wipe with a piece of cloth.



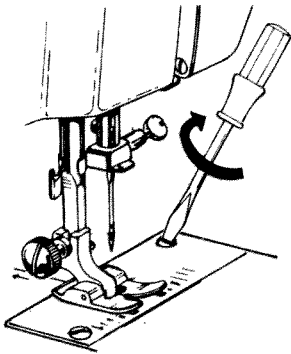
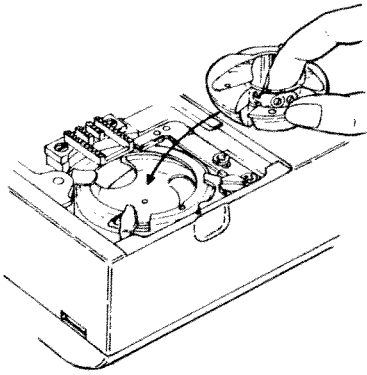


C. Oiling

Apply a few drops of oil around face D of hook and to center hole E after oiling, wipe with a piece of cloth.

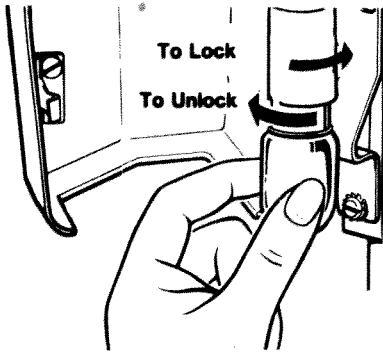
D. Assembling Shuttle

Reverse procedure used for disassembling shuttle.



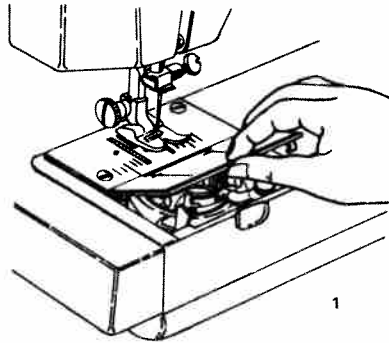
E. Changing Light Bulb

Unplug machine. Open face cover plate. Unscrew bulb counterclockwise to remove it. Install new bulb. Plug in machine.

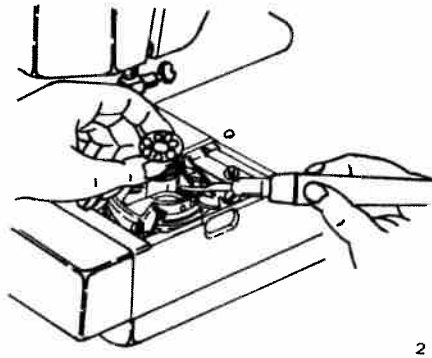


TAKE OUT TANGLED THREAD IN BOBBIN CASE

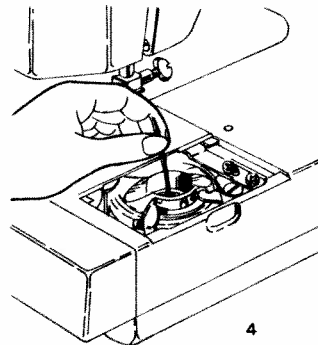
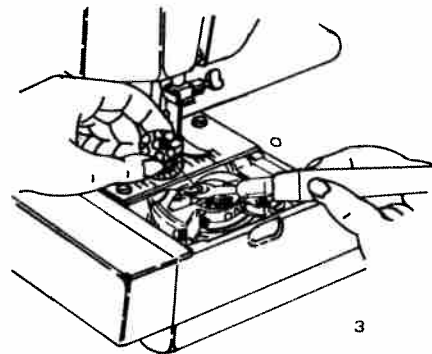
- 1 Remove bobbin cover plate A
Insert the cleaning brush end into
bobbin B and lift it up.
2. Cut tangled upper thread C with
Buttonhole Cutter.



- 3 Take out bobbin from bobbin case
D and cut lower thread with
Buttonhole Cutter.



- 4 Take off pieces of waste threads on
bobbin case.



TROUBLE CHART

Trouble	Probable Cause	Correct Operation
<p>Machine does not sew</p> <p>Bobbin winder</p>	<p>Not plugged in properly.</p> <p>Power supply switch is not on.</p> <p>Thread is stuck in the hook groove.</p> <p>Spindle is pushed to the right.</p>	<p>See Page 7-9-12-59</p>
<p>Making noise</p> <p>Running slowly</p>	<p>Lack of oil.</p> <p>Lint or thread stuck in rotary hook.</p> <p>Lint stuck in feed dog.</p> <p>Machine kept in a very cold or very hot place.</p>	<p>See Page 12-59</p> <p>Leave machine in a normally warm room for a few hours before use.</p>
<p>Breaking upper thread</p>	<p>Improper upper threading.</p> <p>Upper thread tension too tight.</p> <p>Bent or blunt needle.</p> <p>Improper needle setting</p> <p>Removing fabric when take-up lever is not in the highest position.</p> <p>Upper thread too thick or too thin for needle used.</p> <p>Needle hole on needle plate damaged.</p>	<p>See Page 9-10-12-18</p>
<p>Breaking lower thread</p>	<p>Thread not wound evenly on bobbin or not drawn up correctly.</p> <p>Lower thread tension too tight.</p> <p>Lint stuck in bobbin case and inside tension spring.</p> <p>Improper lower threading.</p>	<p>See Page 9-14</p>
<p>Skipping stitches</p>	<p>Improper needle setting</p> <p>Bent needle.</p> <p>Improper needle and/or thread for fabric.</p>	<p>See Page 18-19</p>

	<p>Improper upper threading. Not using a ball point needle for elastic and thin fabric. Improper tension. Sewing foot not suitable for the work.</p>	<p>See Page 9-10-15</p>
<p>Stitches not locked</p>	<p>Upper thread tension too loose. Improper tension of lower thread. Improper needle for thread.</p>	<p>See Page 10</p>
<p>Wrinkled fabrics</p>	<p>Upper or lower thread tension too tight. Improper threading of upper or lower thread. Needle too thick for fabric. Stitch length too long for fabric.</p>	<p>See Page 11</p>
<p>Fabric not moving</p>	<p>Lint jamming on feed dog. Feed dog is lowered. Stitches too close. Pressure regulator too light.</p>	<p>See Page 59</p>
<p>Breaking needle</p>	<p>Improper needle setting Needle bent. Needle clamp screw too loose. Upper thread tension too tight. Needle too thin for fabric or/and thread. Changing pattern or width of stitch when needle is down in fabric. Setting stitch width more than 3.5 when sewing with twin needle. Presser foot attached improperly.</p>	<p>Bring needle to highest position.</p>
<p>Light going out</p>	<p>Not plugged in properly. Power supply switch is not on. Light bulb burnt out.</p>	<p>See Page 7</p>

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