Athena

TOUCH-TRONIC sewing machine • model 1060

SINGER

Athena* 1060

TOUCH-TRONIC* Sewing Machine by SINGER

Congratulations . . .

You are about to discover the wonderful pleasure of sewing with your new *Touch-Tronic* sewing machine. Model 1060 sewing machine has the *Flip & Sew** panel for free arm sewing. And you will also enjoy:

- the *simplicity* of a pattern selector button which allows you to program your machine for the pattern you wish to sew
- the *versatility* of sewing capacity that produces stitches that stretch, and stitches that *don't* stretch . . . stitches that decorate, embroider, and mend
- and, of course, the ease of the push-button bobbin winding, and much more!

Among the many Singer engineering and design features that ensure these sewing pleasures are —

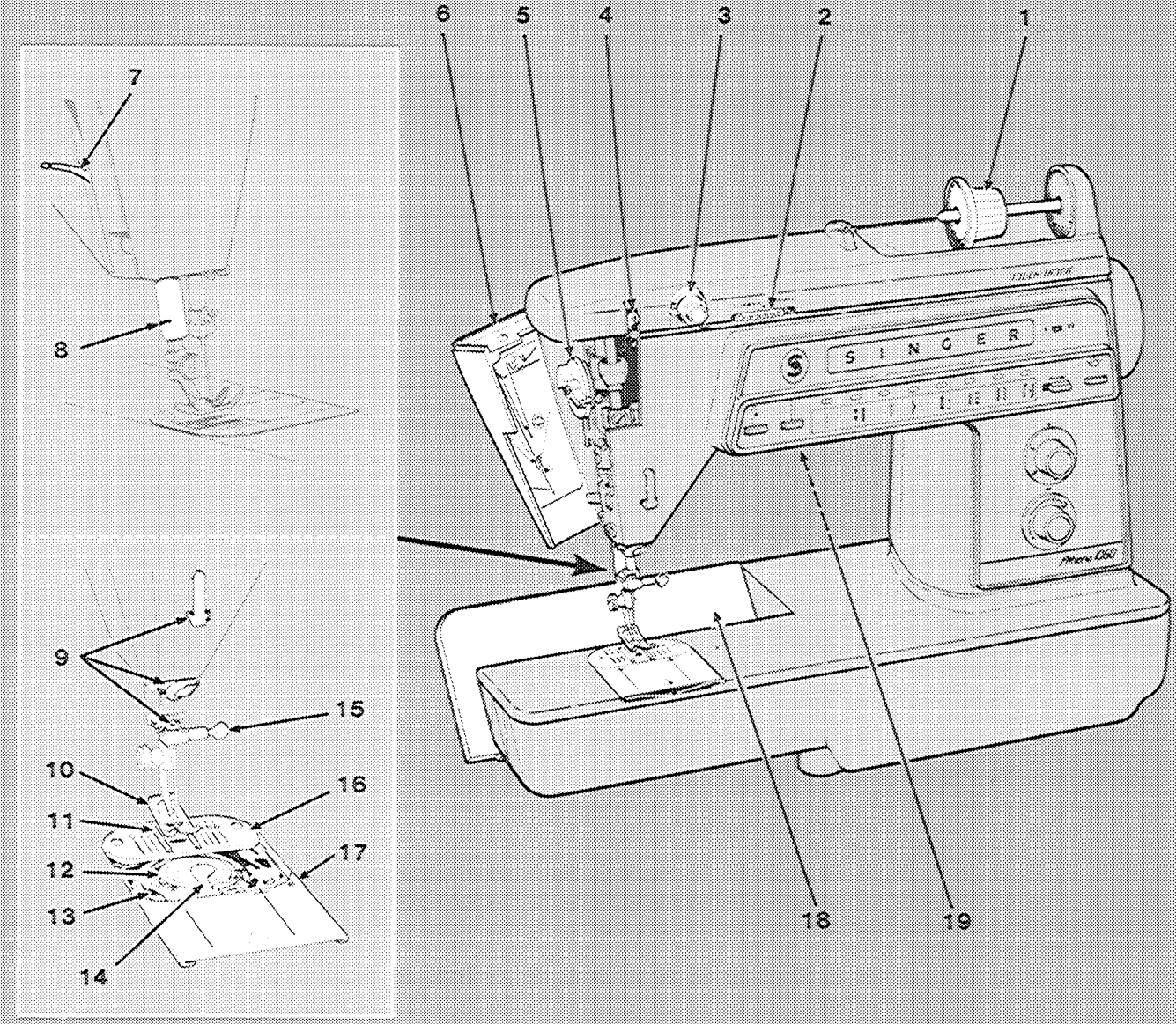
- ***Fashion** stitches*, which can produce a variety of practical and decorative stitch patterns
- ***Flexi-Stitch** patterns* that produce stretchable stitches for knits and other stretch fabrics as well as intricate stitch designs
- *soft-touch fabric feed* that protects even the most delicate fabrics
- *one-way needle clamp* that makes it impossible to put the needle in backwards
- *snap-on presser feet* that are quickly removed and easily replaced
- *easy-to-change needle plates* secured by magnets

As you go through this book, you will discover how these and many other features give you the ultimate in simplicity of operation and beautiful results.

Enjoy sewing!

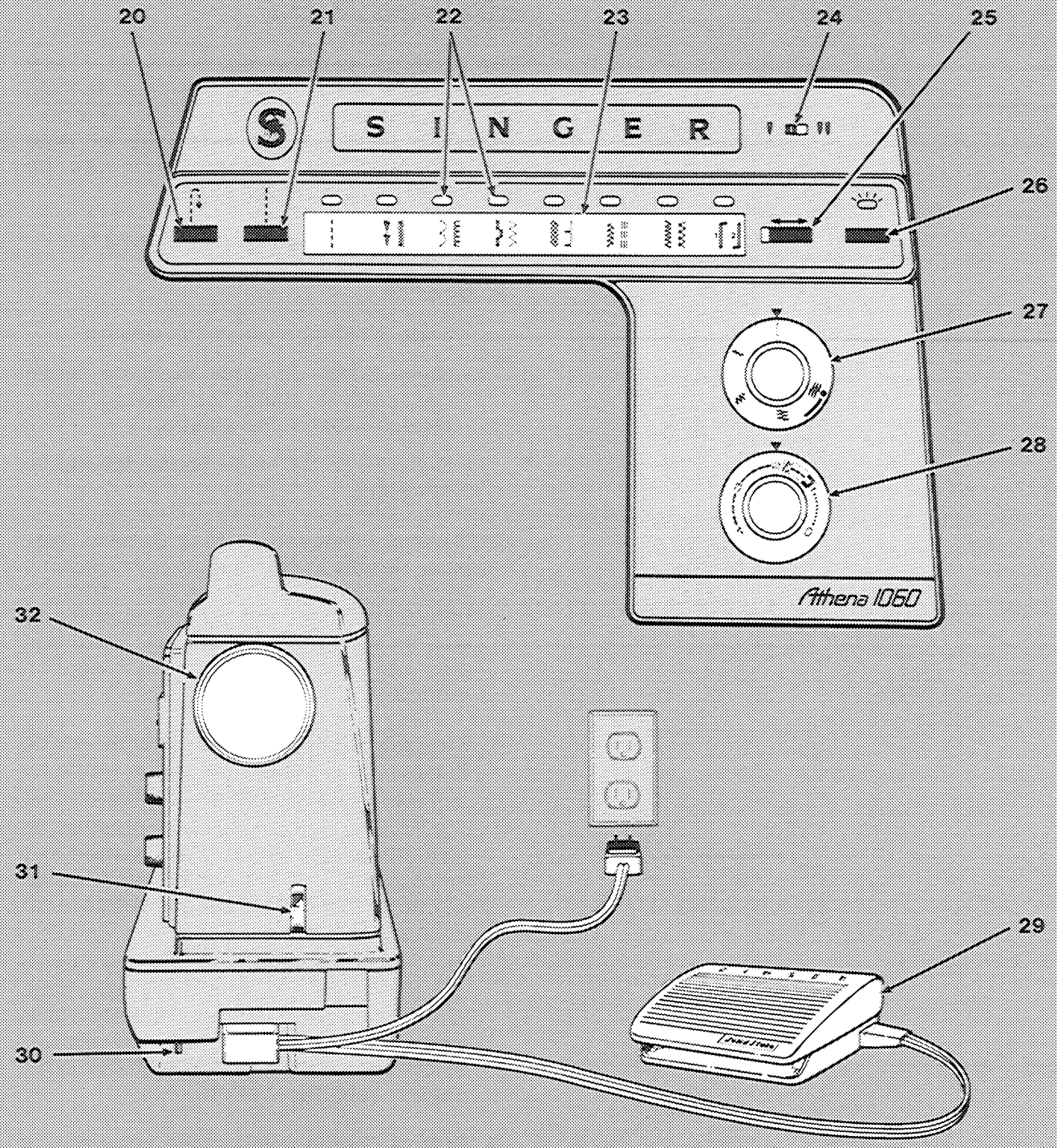
Contents

1. GETTING TO KNOW YOUR MACHINE

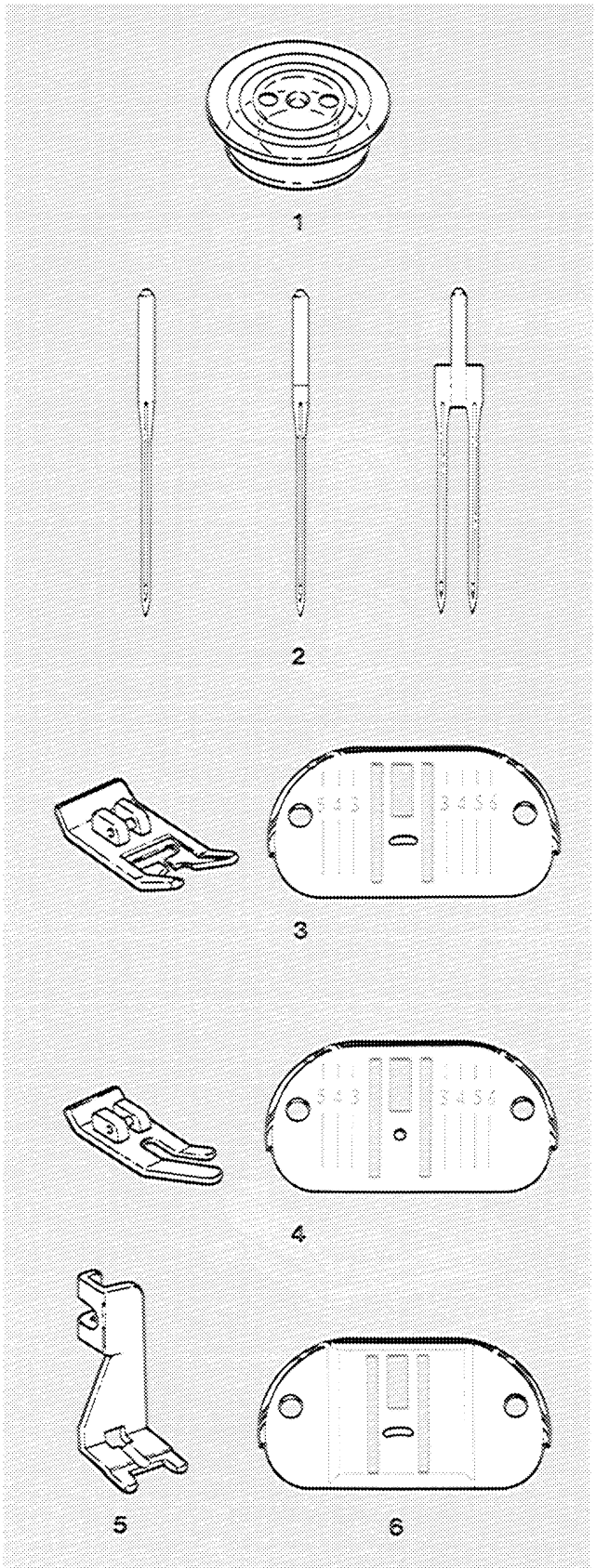


principal parts

1. Spool Holder
2. Tension Dial
3. Needle-Thread Tension
4. Take-up Lever
5. Pressure Dial
6. Face Plate
7. Presser Foot Lifter
8. Thread Cutter
9. Thread Guides
10. Presser Foot
11. Soft-Touch Feed
12. Bobbin
13. Bobbin Push Button
14. Bobbin Latch
15. Needle Clamp
16. Needle Plate
17. Slide Plate
18. *Flip & Sew*® Panel
19. Sewing Light



20. Reverse Stitch Button
21. Straight Stitch Button
22. Stitch Selection Indicator Lights
23. Stitch Panel
24. Twin Needle Safety Switch
25. Pattern Group Selector
26. Pattern Selector Button
27. Stitch Width Dial
28. Stitch Length Dial
29. Speed Controller
30. Circuit Breaker
31. Power and Light Switch
32. Hand Wheel



accessories

The accessories provided with your Model 1060 sewing machine are designed to help you do many kinds of sewing easily and perfectly. To increase the versatility of your machine, additional accessories can be purchased at your Singer store.

1. **Transparent Bobbins** (No. 163131)

2. **Needles . . .**
   - Style 2020 for all-purpose sewing.
   - Style 2045 on your machine when delivered is used for sewing knits, stretch fabrics and elastic.
   - Style 2025 for twin-needle decorative stitching.

3. **General-Purpose Foot** and **General Purpose Needle Plate†** are on your machine when delivered. Use them for alternating between straight and zig-zag stitching as well as utility zig-zag sewing. They can also be used for straight-stitching firm fabrics.

4. **Straight-stitch Foot** and **Straight-stitch Plate†.** Use these when your fabric or sewing procedure requires close control.

   These accessories, recommended for all straight-stitch sewing, are especially helpful for edge stitching and collar pointing, or for stitching delicate or spongy fabrics.

   The following additional and exclusive safety feature is built into your machine: When the straight stitch needle plate is inserted, your machine will sew straight stitch only, even if you press any other pattern selection button.

5. **Button Foot** holds buttons securely for stitching.

6. **Feed Cover Plate** for button sewing and free-motion work.

† Numbers on plate indicate distance from needle in eighths of an inch.

7. **Special-purpose Foot.** Use this for all kinds of decorative zig-zag stitching.

8. **Overedge Foot** used with overedge stretch stitch for seams in stretch fabrics.

9. **Two-step Buttonhole Foot** for buttonholes of *any* length in two easy steps.

10. **Zipper Foot** for inserting zippers and stitching corded seams.

11. **Seam Guide** helps you keep seam allowances perfectly even.

12. **Blindstitch Hem Guide.** Use this with the zig-zag foot to position the hem for blindstitch hemming.

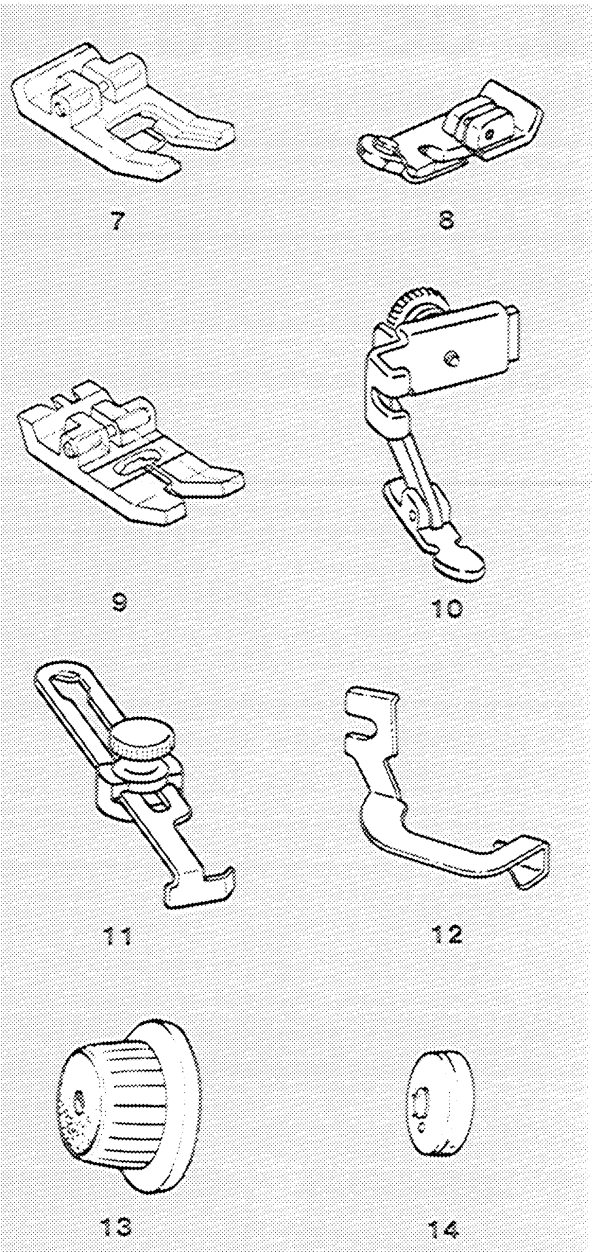
13. **Large Spool Holder** on your machine when delivered. For use with medium and large spools of thread.

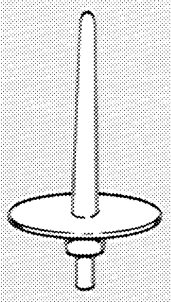
14. **Small Spool Holder** for use with small diameter tubes of thread.

15. **Detachable Spool Pin** holds a second spool of thread for decorative twin-needle stitching and two-thread topstitching.

16. **Buttonhole Gauge** has slots for marking buttonhole guidelines.

17. **Screwdriver** for regulating bobbin case tension.

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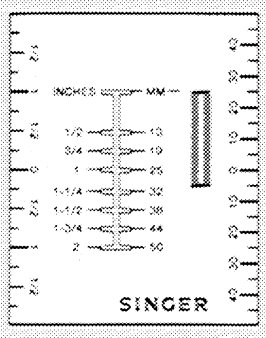

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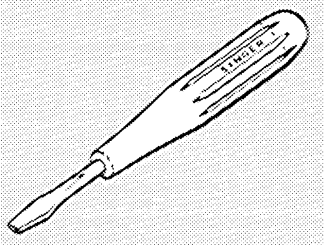
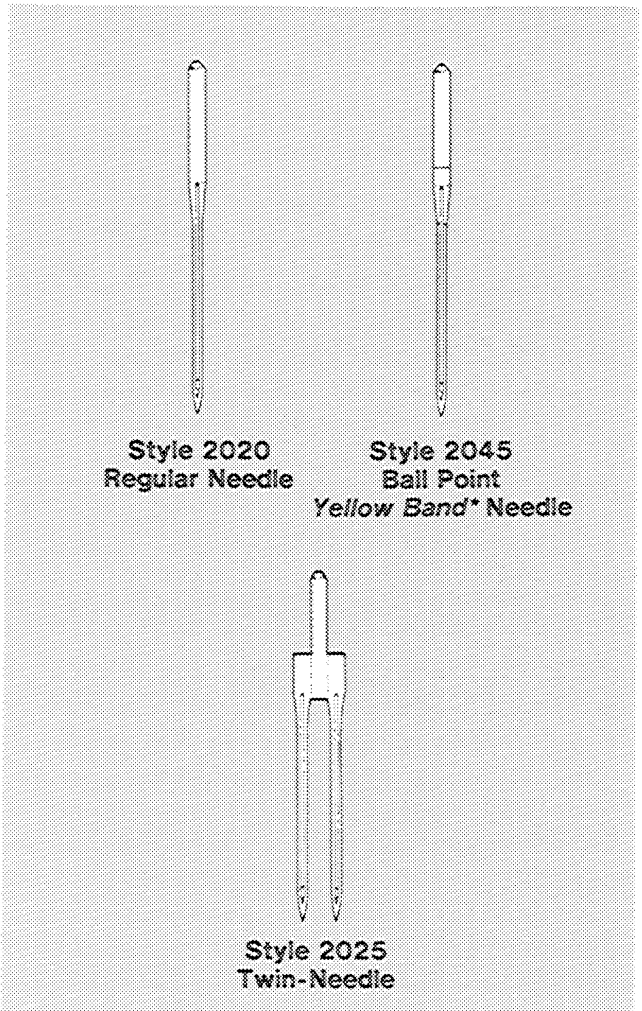
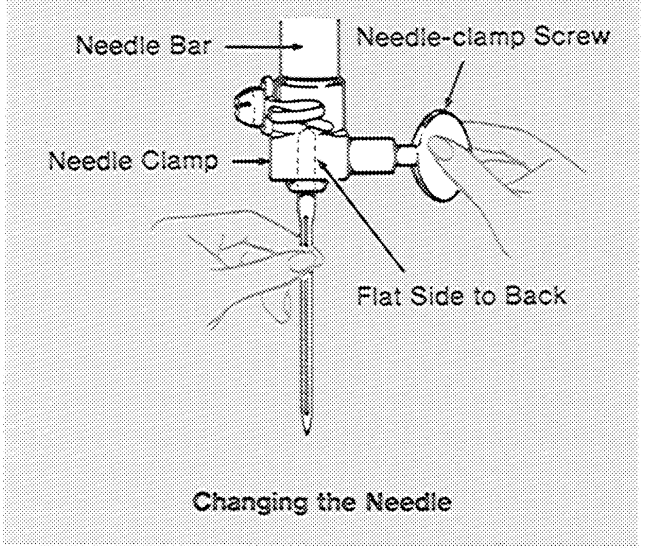

17

2. GETTING READY TO SEW





Changing the Needle

choosing needles

The needles you use should be straight to ensure perfect stitch formation. The needle should also be fine enough to prevent the fabric from being marred with large punctures, yet heavy enough to pierce the fabric without being bent or deflected.

Remember too, that the eye of the needle must be large enough for the thread to pass through freely; too fine a needle will cause the thread to fray. See Fabric, Thread and Needle Table, page 12.

For general-purpose sewing in a wide range of fabrics, the Style 2020 needle, in sizes 9 through 18, will give you excellent results.

For best results when sewing on knits, woven stretch fabrics, bonded vinyls, and elastic use Style 2045 ball point *Yellow Band** needle, available in sizes 11, 14, and 16.

For decorative stitching on light and medium-weight woven fabrics, use the twin needle, Style 2025.

For sewing leathers, real and simulated, the Style 2032 needle, available for purchase at your Singer Sewing Center, is recommended.

IMPORTANT: Your SINGER sewing machine has been designed to obtain best results with SINGER* needles. You should follow the recommendations in this instruction book and on the needle package for correct style and size of needle for different types and weights of fabric.

Changing the Needle

- Raise needle to its highest point by turning the hand wheel *toward you*. Loosen needle-clamp screw, and remove the needle.
- Insert new needle up into clamp as far as it will go, with the flat side of the needle to the back.
- Tighten needle-clamp screw.

choosing and changing accessories

CHANGING PRESSER FEET

Snap-on Presser Feet

Most of the presser feet furnished with your machine snap on and off a common shank.

- Raise needle and take-up lever to highest position by turning the hand wheel *toward you.*
- Raise presser foot.

1a. Press toe of presser foot upward (as far as it will go) and then

b. snap down to remove.

2. Center the new presser foot under the shank and lower the presser-foot lifter so that the shank fits over the presser-foot pin.

3. Press presser-foot screw down firmly until foot snaps into place.

To remove and replace the shank of snap-on presser feet, follow instructions below for one-piece presser feet.

One-piece Presser Feet

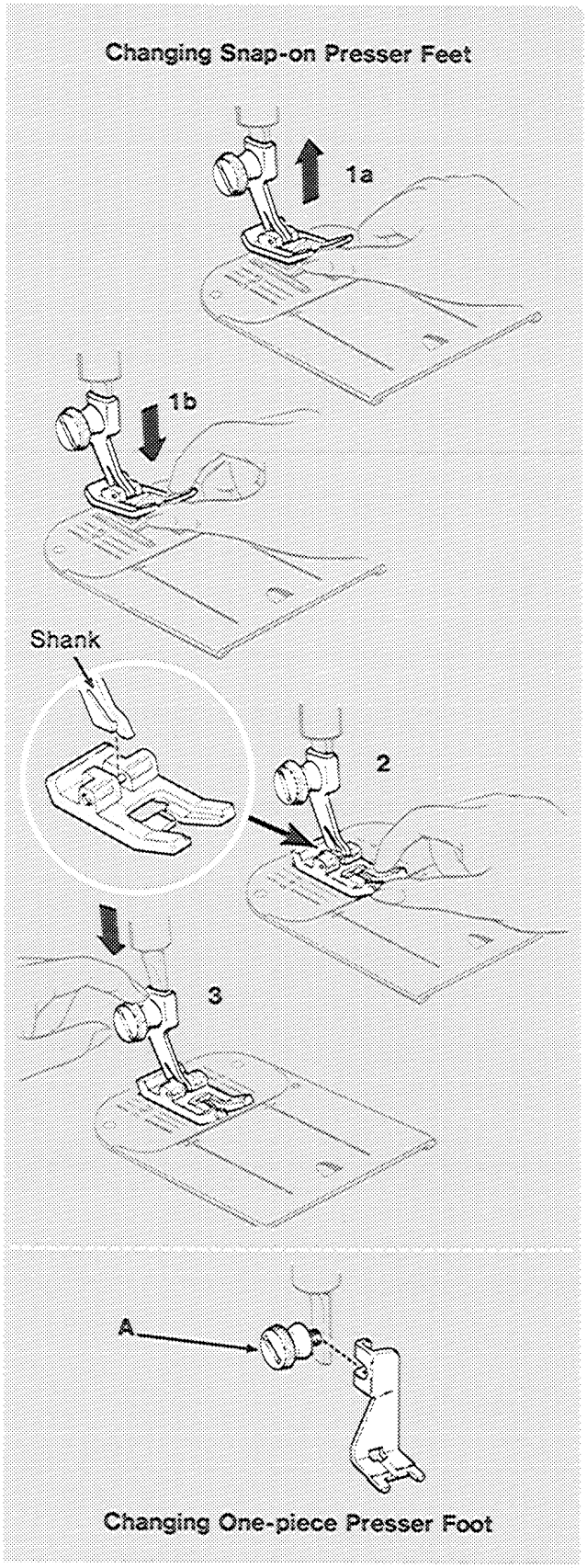
(Button Foot and Zipper Foot)

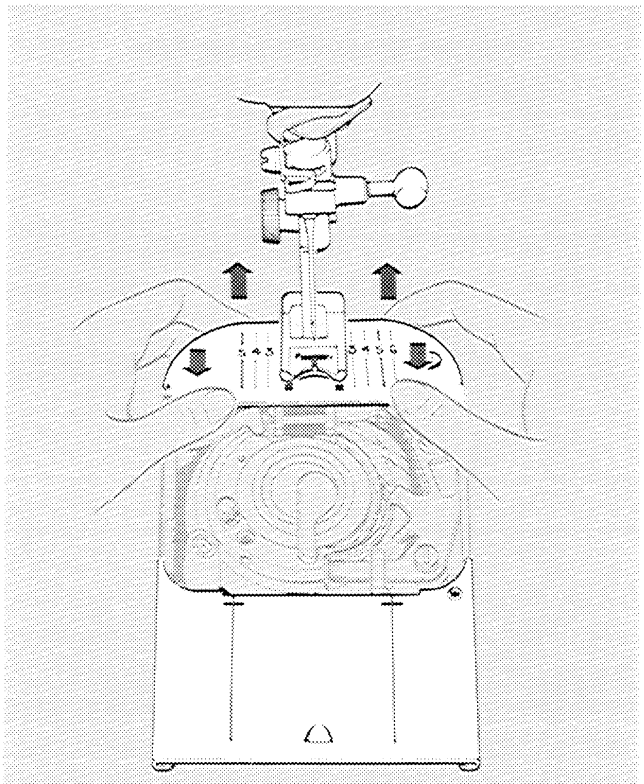
- Raise needle and take-up lever to highest position by turning the hand wheel *toward you.*
- Raise presser foot.
- Loosen presser foot screw **A** and remove the foot, guiding it to the right.

To Replace One-piece Feet

- Hook one-piece foot around the presser bar and tighten presser-foot screw.

Note: Insert the edge of a coin in the slot of the presser-foot screw to loosen it and to tighten it securely.



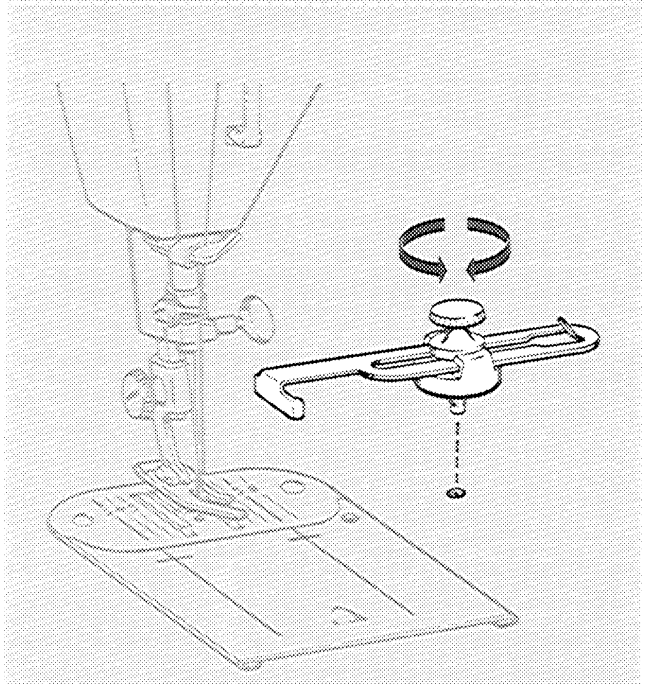


Changing Plates

CHANGING NEEDLE PLATES

Note: Remove bobbin if it contains thread in order to prevent thread being caught when plate is replaced.

1. Raise needle and take-up lever to highest position by turning the hand wheel *toward you.*
2. Raise presser foot.
3. Open slide plate. Press down on front edge of needle plate and lift up and out.
4. Position new plate over pins and release. Plate is drawn into position by magnets.
5. Close slide plate.



Attaching the Seam Guide

ATTACHING THE SEAM GUIDE

Place screw in hole to the right of the slide plate; line up straight edge of guide with the needle plate guideline for desired seam width, and tighten screw.

operating machine

CONNECTING MACHINE

Before plugging in your machine, be sure that the voltage and number of cycles indicated at the right end of the machine, conform to your electrical power supply.

- Push the machine plug into the machine socket.
- Connect the power-line plug to your electrical outlet.

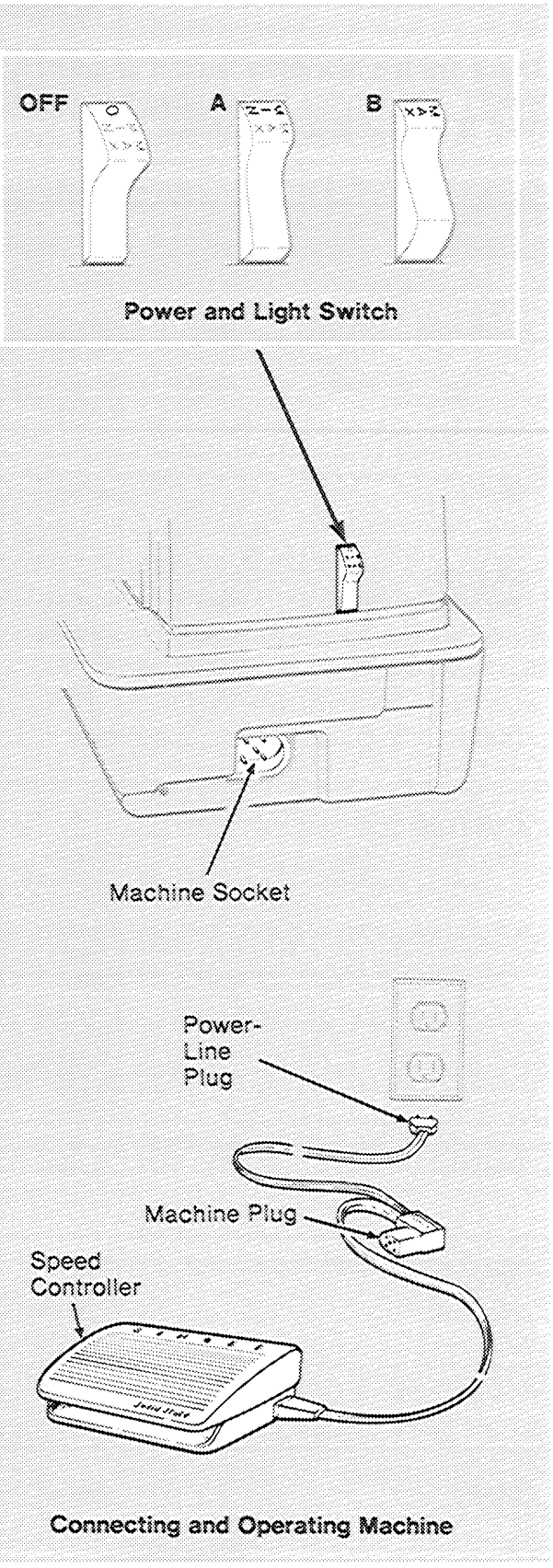
To turn on the machine and set speed range, push the power and light switch to desired speed. This will also turn on the sewing light.

- The **MIN** (minimum) setting **A** (switch pressed in halfway) allows for greater control. Use this setting for special jobs such as button sewing and buttonhole making, decorative patterns, bobbin winding, and where intricate details require close control.
- The **MAX** (maximum) setting **B** (switch pressed in all the way) allows for full speed capacity of the machine. It is best for long, straight seams, easy-to-handle fabrics, and general sewing where a variety of speeds is needed.

CAUTION: *We recommend that you turn off the power and light switch before changing needles, presser feet or plates and when leaving the machine unattended. This eliminates the possibility of starting the machine by accidentally pressing the speed controller.*

To run the machine, press the foot or knee speed controller. The *harder* you press, the faster the machine will sew within the selected speed range. The *lighter* you press, the slower the machine will sew within the selected speed range.

Note: If machine does not operate, after making electrical connections and turning on switch, the circuit breaker may require activation. See page 57 for instructions regarding circuit breaker.



Connecting and Operating Machine

FABRIC WEIGHT TABLE

There are thousands of fabrics around the world; each manufactured with a specific fiber and weight. The fabrics below have been classified according to weight to give a small sample of what is available for purchase.

TYPE & FIBER	FILMY	SHEER	LIGHT	MEDIUM	HEAVY	VERY HEAVY
SILK						
(Woven)	Chiffon Organza Tulle	Net Lace Ninon	Velvet Crepe deChine Shantung Faille	Velvet Crepe deChine Shantung Suiting Brocade		
(Knit)			Jersey			
RAYON						
(Woven)	Tulle	Net Lace	Velvet Taffeta Satin	Velvet Taffeta Satin Crepe	Brocade Taffeta Satin Crepe	
(Knit)			Ciré			
COTTON						
(Woven)	Voile Tulle	Net Lace	Challis Organdy Muslin Batiste Dimity Lawn Percale Eyelet Gingham Piqué Poplin	Velveteen Corduroy Velvet Fleece Velour Terry Chintz	Corduroy Denim Ticking Canvas Linen Drapery Fabric Burlap	Denim Duck Canvas Sailcloth Upholstery Fabric
(Knit)			Jersey	Stretch Velours † Stretch Terry †		
WOOL						
(Woven)			Cashmere Flannel Mohair Felt Crepé	Suiting Flannel Gabardine Felt Serge Mohair	Suiting Tweed Duffel	Coating Blanketing
(Knit)			Jersey	Jersey		

† Usually contain some synthetic fibers also.

FABRIC WEIGHT TABLE (cont.)

TYPE & FIBER	FILMY	SHEER	LIGHT	MEDIUM	HEAVY	VERY HEAVY
SYNTHETIC (Woven)	Chiffon Organza Tulle	Net Lace Ninon Crepe deChine	Crepe Velvet Taffeta Satin	Velvet Crepe Taffeta Satin Gabardine		
(Knit)			Raschel Single Knit Sweater Knit Bonded Knit Tricot Ciré	Jacquard Double Knit Sweater Knit Bonded Knit Tricot Spandex Stretch Terry Stretch Velour Deep Pile Fake Furs	Double Knit Helenca Fake Furs	
SYNTHETIC BLENDS (Woven)		Voile	Broadcloth Batiste Eyelet Gingham Poplin	Linen Type Poplin Corduroy Gabardine	Denim Gabardine Drapery Fabric	
(Knit)			Single Knit	Terry Knit	Double Knit	
LEATHER			Kidskin Patent Chamois Imitation-Leathers & Suedes Leather Suede	Patent Imitation-Leathers & Suedes Leather Suede Reptile	Buckskin Calfskin Suede Reptile	Upholstery Leather
PLASTIC		Plastic Film	Plastic Film			
VINYLS				Bonded Vinyl (Knit Back) Patent Embossed Printed	Upholstery Vinyl	Upholstery Vinyl

FABRIC, THREAD AND NEEDLE TABLE

Choosing the correct needle and thread for your fabric is of utmost importance. Correct choice will make the difference in the wear and appearance of your new garment. The Fabric Weight Table on the previous page; and the Fabric, Thread and Needle Table below are practical guides to needle and thread selection. Refer to them before starting a sewing project. Be sure to use the same size and type of thread in both needle and bobbin.

To select the correct needle and thread for your fabric, first refer to the Fabric Weight Table to determine the weight and type of the material you are using.

Next refer to the Fabric, Thread and Needle Table.

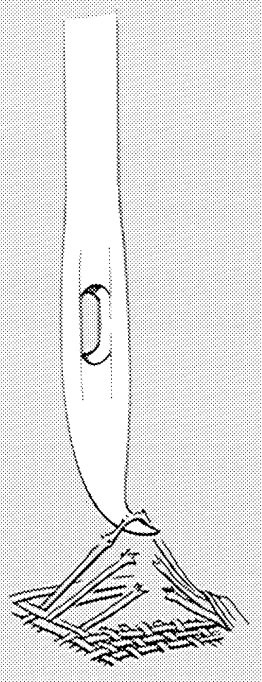
TYPE OF FABRIC	FILMY		SHEER		LIGHT	
	THREAD	NEEDLES	THREAD	NEEDLES	THREAD	NEEDLES
SILK	Fine Silk Fine Mercerized	2020-9 †	Fine Silk Fine Mercerized	2020-9 †	Fine Silk Fine Mercerized	2020-11
RAYON	Fine Silk Fine Mercerized	2020-9 †	Fine Silk Fine Mercerized	2020-9 †	Fine Silk Fine Mercerized	2020-11
COTTON	Fine Cotton Fine Mercerized	2020-9 †	Fine Cotton Fine Mercerized	2020-9 †	Medium Cotton Medium Mercerized	2020-11
WOOL			Fine Silk Fine Mercerized	2020-11	Fine Silk Fine Mercerized	2020-11
SYNTHETIC	Fine Synthetic	2020-9 †	Fine Synthetic	2020-9 †	Fine Synthetic	2045-11
SYNTHETIC BLENDS	Fine Synthetic	2020-9 †	Fine Synthetic	2020-9 †	Fine Synthetic	2045-11
LEATHER					Medium Mercerized Medium Synthetic	2032-11
PLASTIC					Fine Mercerized Fine Synthetic	2020-11
VINYLS					Fine Mercerized Fine Synthetic	2020-11

† Size 9 needle is recommended for sewing only. For bobbin winding, use larger size needle.

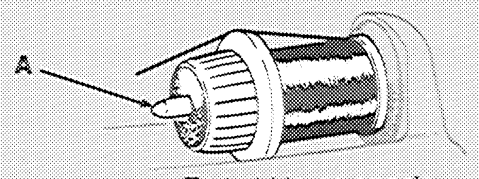
Find the fabric you are using in Type of Fabric column at left. (Silk, rayon, etc.) Then locate the fabric weight column (filmy, sheer, etc.) for your fabric at top of table. Read across from Type of Fabric column to correct weight of fabric column. There, the correct thread and needle choice for your fabric will be found.

Example: If you are sewing a medium weight wool, find wool in Type of Fabric column. Read across to Medium (weight) column and you will see that a medium silk or mercerized thread and a size 2020-14 needle are to be used.

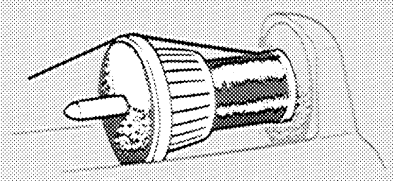
MEDIUM		HEAVY		VERY HEAVY	
THREAD	NEEDLES	THREAD	NEEDLES	THREAD	NEEDLES
Medium Silk Medium Mercerized	2020-11	Heavy Silk Heavy Mercerized	2020-14	Heavy Silk	2020-14
Medium Synthetic Medium Mercerized	2020-11	Heavy Synthetic Heavy Mercerized	2020-14	Heavy Synthetic Heavy Mercerized	2020-14
Medium Cotton Medium Mercerized	2020-14	Heavy Cotton Heavy Mercerized	2020-16	Heavy Cotton Heavy Mercerized	2020-18
Medium Silk Medium Mercerized	2020-14	Heavy Mercerized	2020-16	Heavy Mercerized	2020-16
Medium Synthetic	2045-14	Heavy Synthetic	2045-16	Heavy Synthetic	2020-16 or 18
Medium Synthetic	2045-14	Heavy Synthetic	2045-16	Heavy Synthetic	2020-16 or 18
Medium Mercerized Medium Synthetic	2032-14	Heavy Mercerized Heavy Synthetic	2032-16	Heavy Mercerized Heavy Synthetic	2032-18
Medium Mercerized Medium Synthetic	2020-11	Medium Mercerized Medium Synthetic	2020-14	Heavy Mercerized Heavy Synthetic	2020-16
Medium Mercerized Medium Synthetic	2020-11	Medium Mercerized Medium Synthetic	2020-14	Heavy Mercerized Heavy Synthetic	2020-16



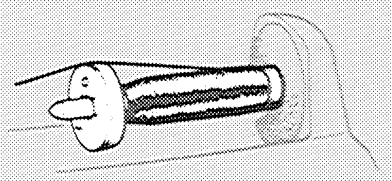
Result of Using a Bent Needle



To hold large spools



To hold small spools



To hold small tubes

Needle-Fabric Combinations

Correct needle selection is closely related to stitch quality and appearance. Damaged fabric between stitches is almost always caused by a needle that is bent, burred, or that is an inappropriate style for the fabric and thread you are using.

The three types of needles most commonly used by sewers are the regular, ball point, and wedge. To obtain good results, the correct size and type of needle for the fabric and thread you are using, must be chosen.

The regular needle which is called a set-point type needle is for stitching woven fabrics, such as denim, gabardine, and drapery coating.

Ball point needles are appropriate for stitching most knits, lingerie, lace, mesh, stretch fabrics, and elastic materials. The special rounded tip of the ball point needle insures gentle separation of the fabric yarns.

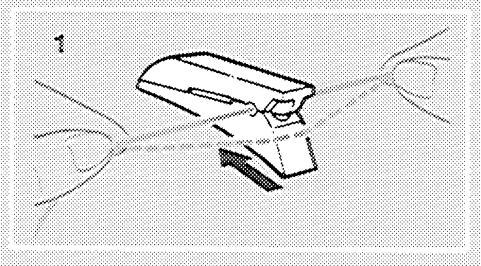
The wedge needle is best for stitching leather, vinyl, and dense materials. It is designed to cut through with a minimum of friction and also shape the punctures to insure a desired appearance.

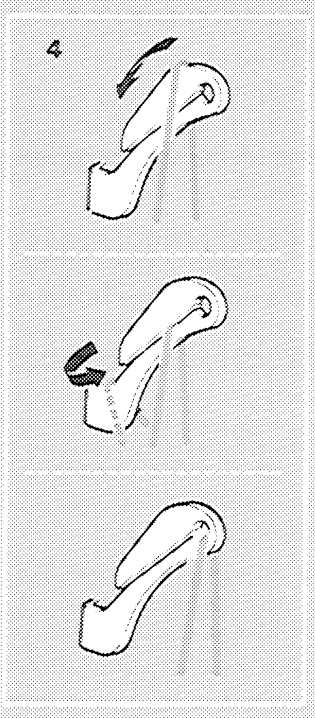
Be sure to check the Fabric, Thread, and Needle Table on page 12 before you begin to sew. The importance of selecting the correct size, as well as the correct type needle for the fabric and thread you are using, cannot be emphasized too greatly.

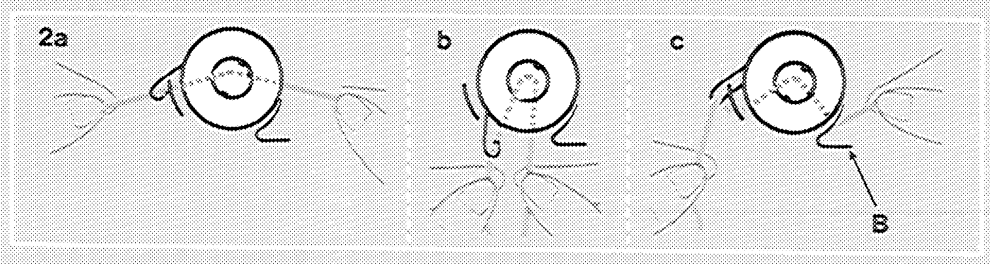
Choosing a Spool Holder

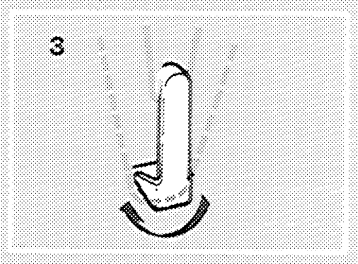
- Place spool or tube of thread on horizontal spool pin **A**. If spool being used has a thread retaining slit, this should be placed against the spool cushion to the right.
- Select correct spool holder according to type and diameter of spool being used. The diameter of the end of the spool holder should always be larger than that of the spool itself.
- Press spool holder **firmly** against spool.

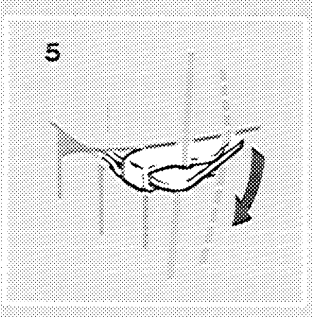
threading the machine

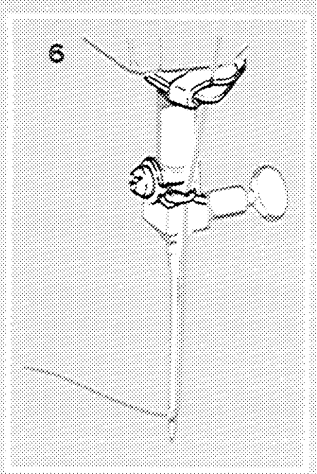


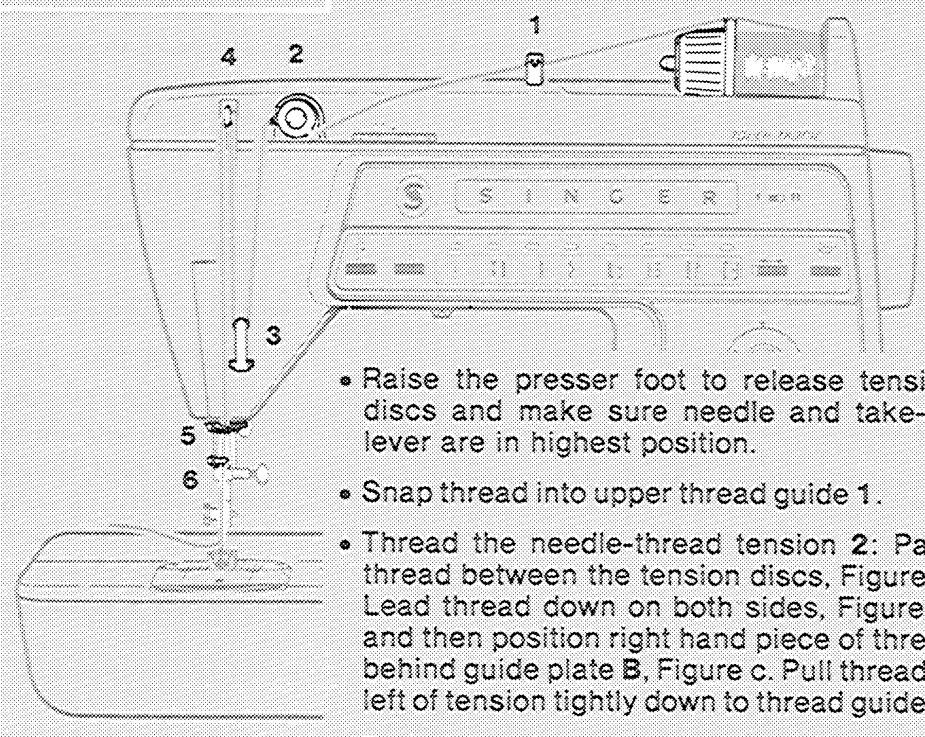








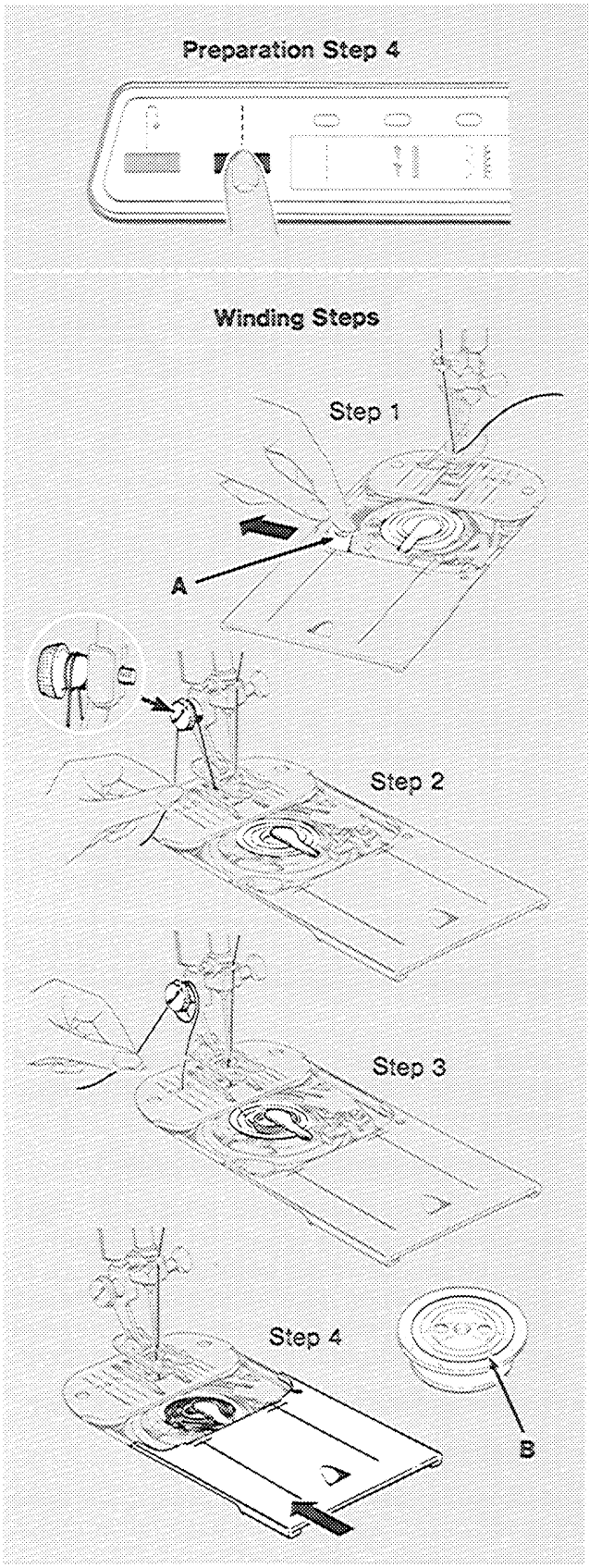




- Raise the presser foot to release tension discs and make sure needle and take-up lever are in highest position.
- Snap thread into upper thread guide **1**.
- Thread the needle-thread tension **2**: Pass thread between the tension discs, Figure a. Lead thread down on both sides, Figure b, and then position right hand piece of thread behind guide plate **B**, Figure c. Pull thread at left of tension tightly down to thread guide **3**.
- Pass thread through points **3** to **6** as shown.
- Thread needle from front to back.

The threading chart in the face plate of the sewing machine will serve you as a useful reminder.

Note: Dotted lines in illustrations represent thread path hidden by machine.



the bobbin

WINDING THE BOBBIN

The push-button bobbin will make your sewing go faster than ever before — whether you are using a lot of one kind of thread or small quantities of different threads.

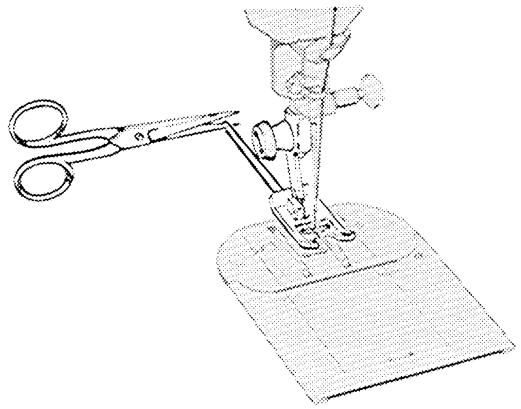
You will find a bobbin in place under the slide plate of your machine. To open slide plate, simply pull it gently toward you. If the bobbin runs out of thread while you are sewing, you can rewind it without removing it from the machine.

Preparation Steps

1. Use general purpose, special purpose, or straight stitch presser foot.
2. Raise presser foot to release tension on thread, and raise the needle and take-up lever to highest position by turning hand wheel *toward you.* (Make sure your needle is larger than a size 9.)
3. Open slide plate and make sure bobbin is empty. For removal of bobbin and thread, see pages 17 and 18.
4. Set machine for straight stitching by pressing button under stitch symbol on stitch panel. For additional information on pattern selection, see page 19.

Winding Steps

1. Press bobbin push button (**A**) to the extreme left to engage it in winding position.
2. Draw needle-thread back between toes of presser foot, under left side of presser foot and then up and around presser foot screw. Hold end of thread firmly.
3. Start the machine.
   - Run the machine at a moderate speed.
   - Pull thread end away after a few coils have been wound.
   - Watch the bobbin as it fills. *Do not allow thread to wind beyond the outside* FULL *ring* (**B**).
4. Close slide plate to release push button to sewing position.



Cutting Continuous Thread

To start sewing, pull thread back under presser foot and cut. Place threads diagonally under foot to left side, position needle in fabric where desired, lower presser foot, and start machine.

Removing and Changing the Bobbin

If there is a full bobbin in the machine and you wish to change it:

1. Raise needle and take-up lever to highest position by turning hand wheel *toward you.* Open slide plate. Raise bobbin latch by inserting finger under end of latch at center of bobbin.

2. Insert finger under rim of bobbin immediately to right of latch and remove bobbin.

3. Check empty bobbin first to *ensure that both halves are tightened securely* as described on page 18,Removing Thread from Bobbin. With latch raised, slide bobbin with circle side up into bobbin case.

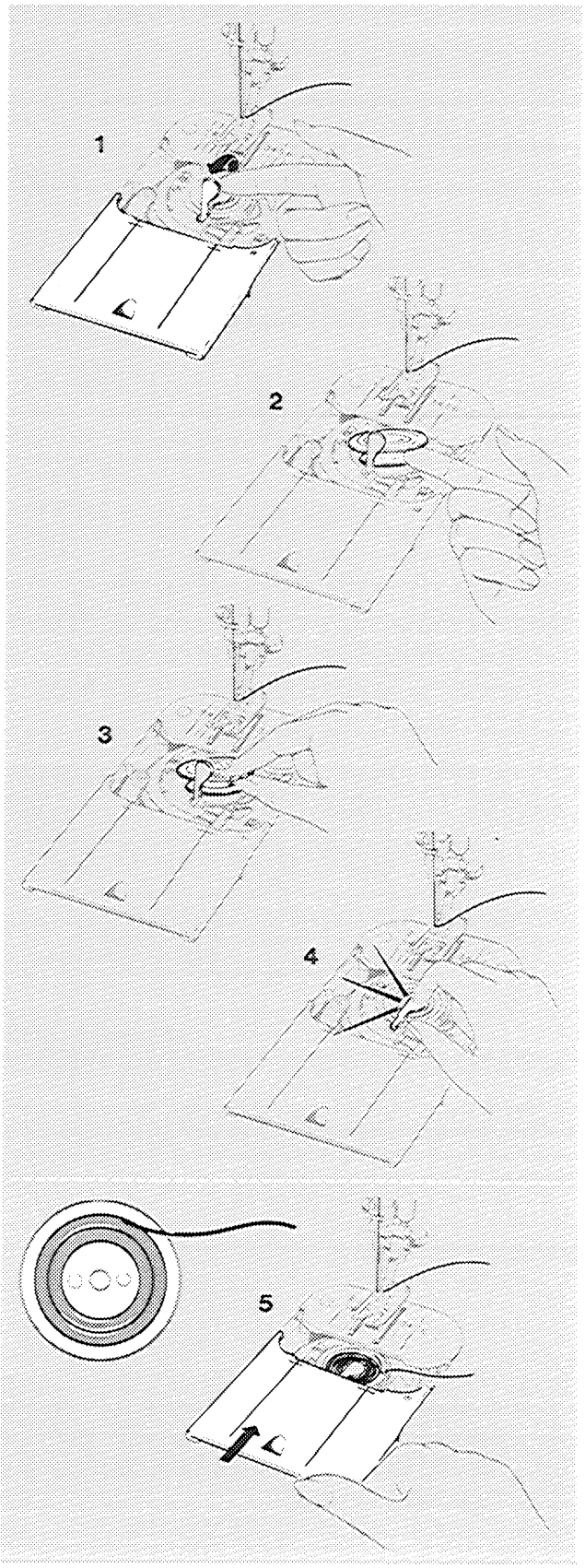
4. Snap latch down to secure bobbin.

• Wind the bobbin. See page 16.

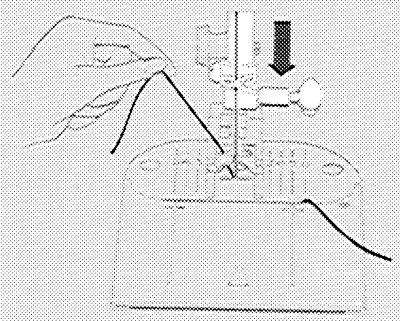
Using Previously Wound Bobbin

A full bobbin is inserted in the same manner as an empty one.

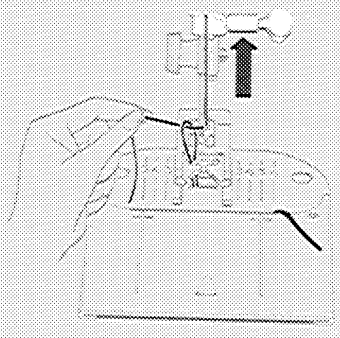
5. Place bobbin into case with at least 4 inches (10cm) of thread leading off to right side of latch. Allow the thread to lay in the slot in the slide plate when closed.



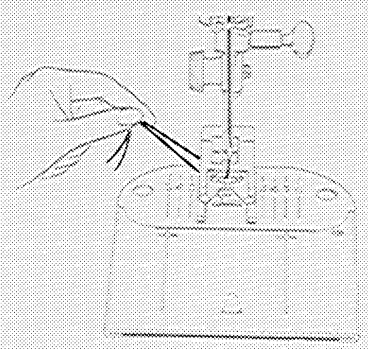
Raising the Bobbin Thread



1. Hold needle thread lightly with left hand and turn hand wheel slowly *toward you* so the needle enters plate.

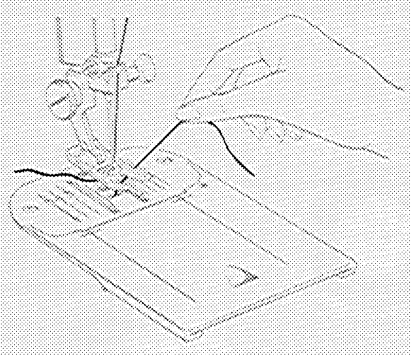


2. Continue turning hand wheel and holding needle thread until needle rises. Tighten your hold on the needle thread and bring up bobbin thread in a loop.

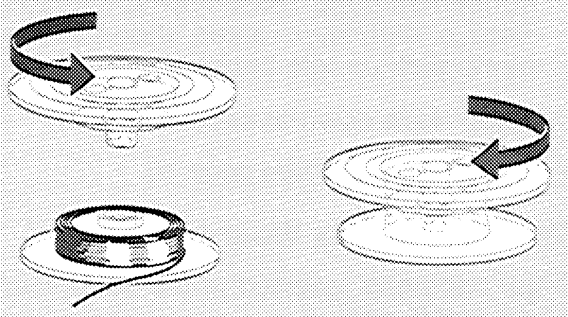


3. Open the loop with your fingers, draw approximately 4 inches (10cm) of both needle and bobbin threads under the presser foot and place them diagonally to left.

Removing Thread from Bobbin



1. If there is not much thread left on the bobbin in the machine, simply pull the thread end through the needle plate until bobbin is empty.



2. If there is a lot of thread on the bobbin, remove bobbin, unscrew the two halves of the bobbin and remove all the thread. Then tighten bobbin halves securely.

3. ELECTRONIC SEWING

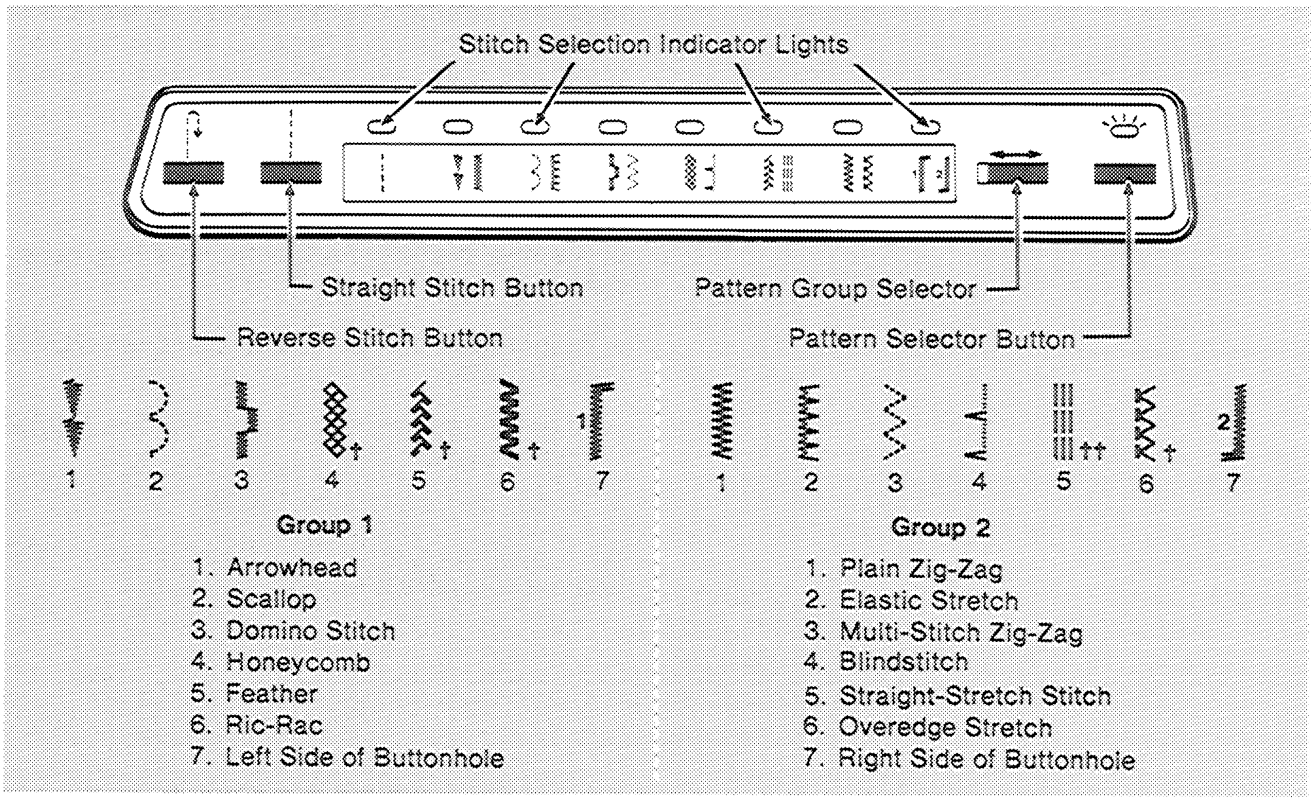
selecting a stitch

Procedure

- Turn machine on.
  (Note slight movement of needle each time power switch is activated.)
- When machine is turned on, it will automatically be programmed to produce a straight stitch as indicated by the red light which will appear above the straight-stitch symbol (⋮).
- To select a particular stitch pattern, press pattern selector button (🫖) until the red light appears above the pair of stitches in which desired stitch is contained.

  Each press of the button advances the indicator light one pair of patterns to the right.
- If necessary, slide pattern group selector to position desired stitch under light. Machine is ready to sew desired pattern when red light appears above it.
- The two red patterns at the end of the panel represent the buttonhole. For additional information on buttonhole, see page 32.
- Press straight-stitch selector button if you want to return to straight stitching after pattern stitching.
- For reverse stitching, press and hold in reverse stitch selector button while sewing.

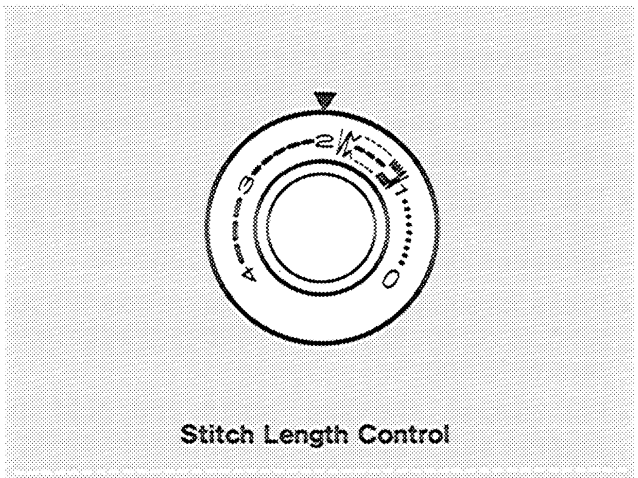
  Note: The machine will only reverse in straight stitch.



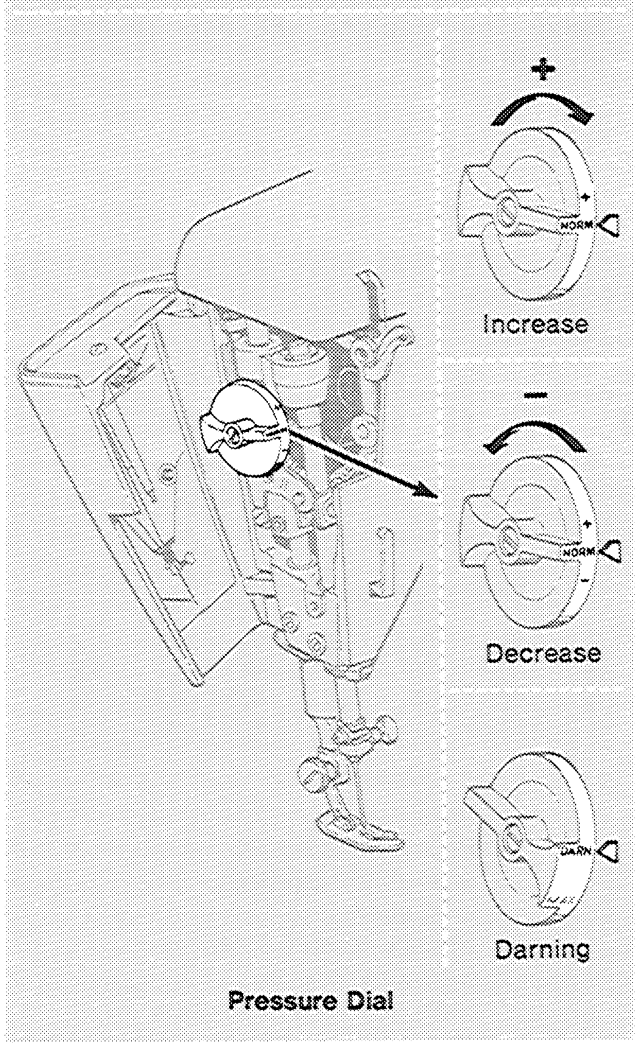
†*Flexi-Stitch* Patterns
††Straight-Stretch Stitch

4. STRAIGHT STITCHING

adjusting machine to your fabric



Stitch Length Control



Pressure Dial

ADJUSTING STITCH LENGTH †

Before starting to sew, adjust the stitch length of your pattern on a scrap of fabric.

Turning the stitch length control toward **4** increases the length of your stitch, and turning the control toward **0** decreases the length. Turn the control until desired length is obtained.

Note: When sewing *Flexi-Stitch* patterns, adjust stitch length control within yellow *Flexi-Stitch* area (**---2**).

REGULATING PRESSER FOOT PRESSURE

Correct pressure is important to feed fabrics smoothly and evenly. The **NORM** (normal) setting is an all-purpose setting that can be used for sewing a wide variety of fabrics of different weight and texture. Alternative settings (**+**) and (**—**) above and below **NORM** (normal) are also provided.

Lower the presser foot before setting pressure.

- To increase pressure, turn dial from **NORM** toward **MAX**.
- To decrease pressure, turn dial from **NORM** toward **DARN**.
- For darning, set dial on **DARN**.

As a general rule the heavier the fabric, the heavier the pressure, and vice versa.

† For information concerning appropriate stitch length, see chart on page 21.

Choosing the correct stitch length is of utmost importance. The correct choice will make the difference in the wear and appearance of your new garment. The table below is a practical guide to stitch length selection. Refer to it before starting a sewing project. *Remember to make a test sample on a scrap piece of the fabric you will be using.*

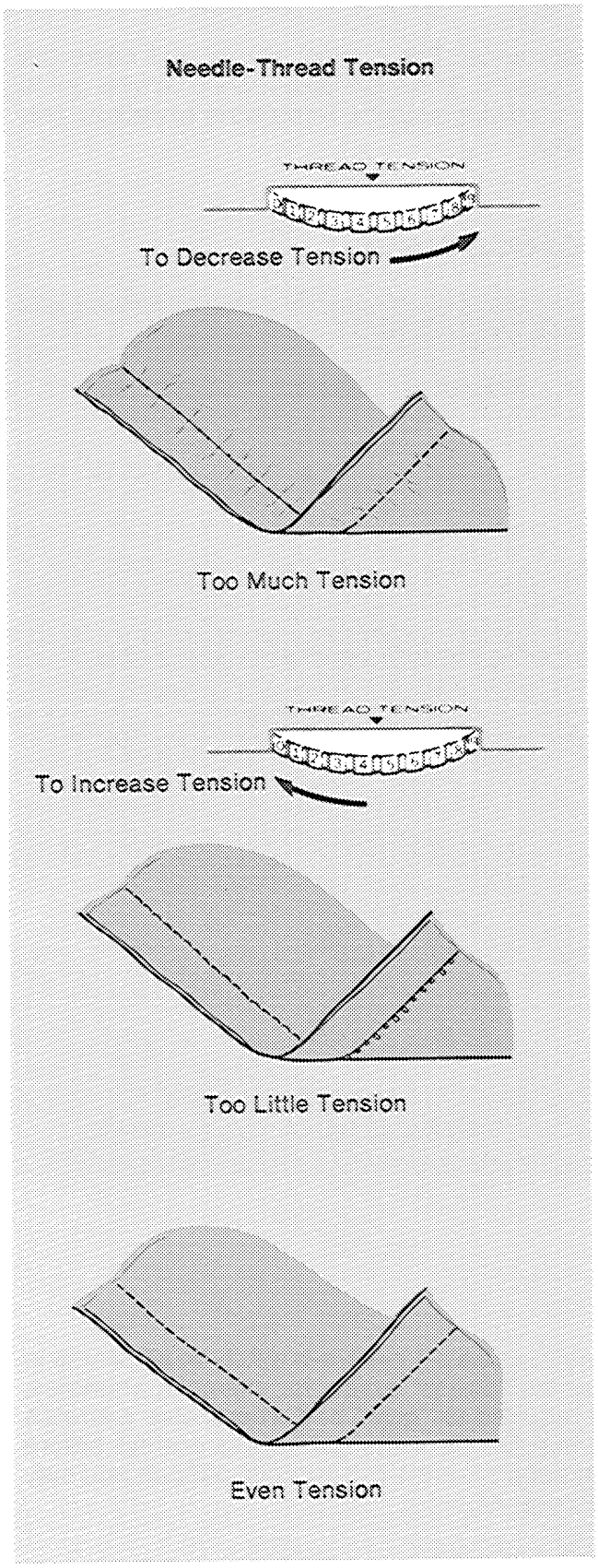
STITCH LENGTH GUIDANCE TABLE

PART OF ARTICLE OR GARMENT	WEIGHT OF FABRICS					
	FILMY	SHEER	LIGHT	MEDIUM	HEAVY	VERY HEAVY
STRAIGHT MAIN SEAMS	1.5 - 2	1.5 - 2	2 - 2.5	2 - 2.5	2.5	2.5 - 3
CURVED MAIN SEAMS	1.5 - 2	1.5 - 2	1.5 - 2	2 - 2.5	2 - 2.5	2.5
NECKLINE † & ARMHOLES	1.5 - 2	1.5 - 2	1.5 - 2	2 - 2.5	2 - 2.5	2 - 2.5
STAY STITCHING†	1.5 - 2	1.5 - 2	1.5 - 2	1.5 - 2	2 - 2.5	2 - 2.5
GATHERING	3 - 4	3 - 4	3 - 4	4	4	4
ZIPPERS†	1.5 - 2	1.5 - 2	2 - 2.5	2 - 2.5	2.5	2.5
TOP STITCHING†	3	3	3 - 4	3 - 4	4	4
STRESS AREAS OR SEAMS	1.5 - 2	1.5 - 2	1.5 - 2	1.5 - 2	1.5 - 2	1.5 - 2

†Slow to moderate speed.

Stress Areas in Knit or Stretch Fabrics

Contrary to common belief it is not always necessary to use a s-t-r-e-t-c-h stitch on all seams in garments made from these fabrics. Always consider the "stress" areas, for example; armholes, crotch seams, also how much the garment will be required to "give" and where. Use a stretch stitch where needed. Moreover, always ascertain that the fit of the garment is correct before sewing any seam with a s-t-r-e-t-c-h stitch. Ripping out a s-t-r-e-t-c-h stitch is difficult and may damage fabric. For sewing on stretch fabrics, see page 41.



NEEDLE-THREAD TENSION

Having selected the correct needle and thread combination for the fabric being used, it may be necessary to adjust the tension of the sewing machine to ensure a well balanced stitch.

A stitch is well balanced when the top and under thread appear the same on the fabric.

Your new machine has an adjustable tension control system. This control exerts tension on the top and under thread as they pass through the machine to form a stitch.

- **Too much tension** will produce a tight stitch which will cause puckered seams.

- **Too little tension** will produce a loose stitch.

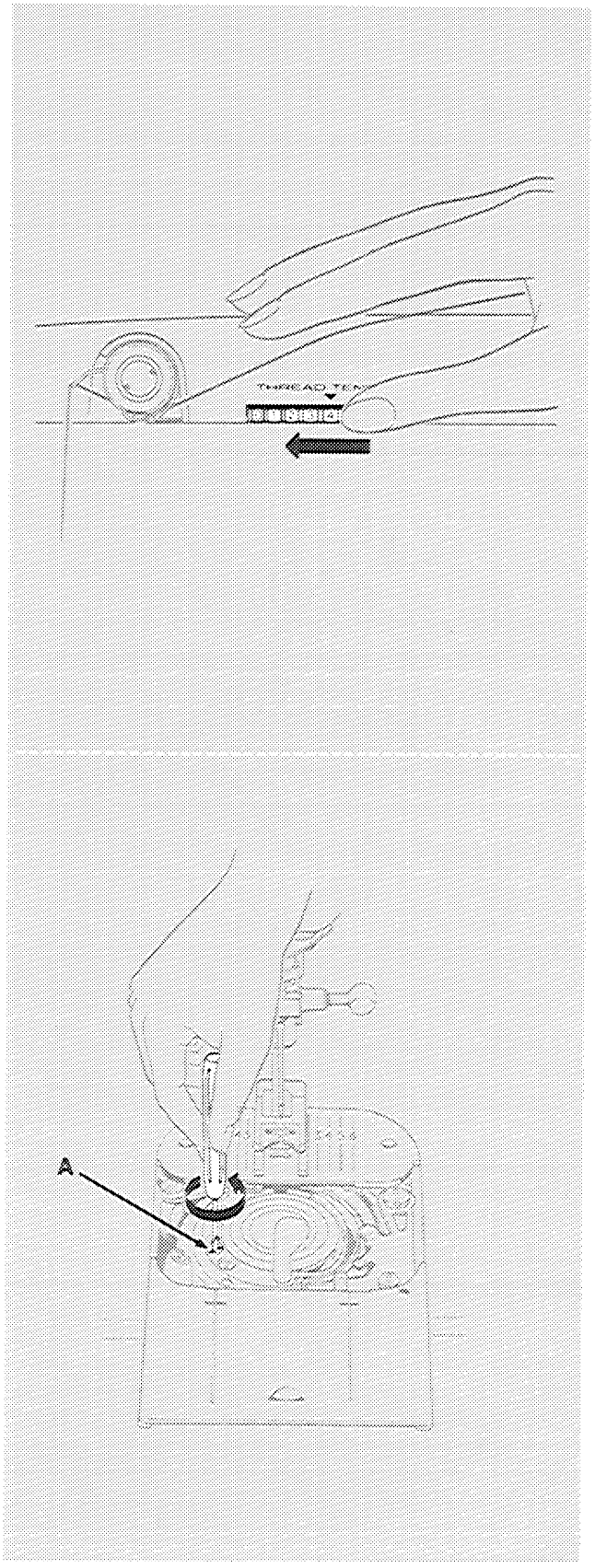
When an even amount of tension is exerted on both threads, a smooth even stitch known as a balanced stitch, is produced.

Tension Test

To help understand the effect of tension on fabric and thread, try this simple test:

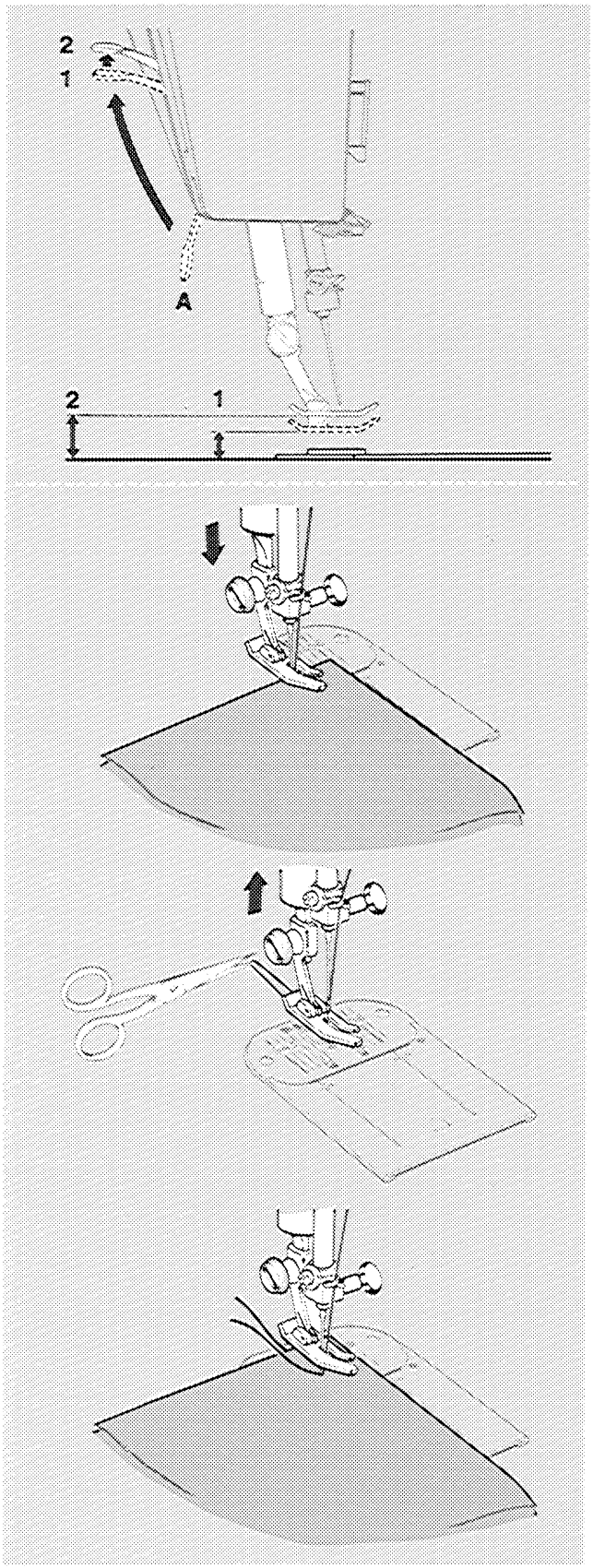
- Take two pieces of a medium weight woven fabric in a solid light color about six inches long.
- Place a 2020 size 14 needle in the machine.
- Thread the top of your machine with a polyester or mercerized dark color thread and use a lighter color thread of the same fiber and size in the bobbin.
- Select a medium stitch length.
- Seam the two pieces of fabric together starting with the top tension control at "**0**". Then as you sew, slowly turn the tension control from "**0**" through to its highest setting.
- Sew another row turning the dial back to "**0**". You should have a balanced stitch on each row mid-way between the start and finish in each case.
- The different colored threads will help you to see the effect that the tension has on the top and bottom threads.

Now that you have observed the effects of tension, we suggest that you perform a similar test on a scrap of the fabric you plan to use, being sure to duplicate the number of thicknesses of your garment.



Bobbin Thread Tension

The bobbin thread tension has been set at the factory for most types of stitching. However, for *fine* fabrics, we recommend reducing bobbin thread tension by turning screw **A** counterclockwise as far as possible, using the small screwdriver from accessories. When stitching is completed, be sure to turn screw **A** clockwise back to its position for regular sewing.



sewing a seam

PREPARATION

- Stitch: straight stitch ¦
- Stitch length: to suit fabric
- Straight stitch needle plate or general purpose plate
- Straight stitch foot or general purpose foot

Thread machine in the usual way.

PLACE FABRIC UNDER FOOT

Most fabrics can be placed under the foot by raising the presser foot lifter (**A**) to its normal up position (**1**), where it locks. When using bulky fabric, multiple fabric layers, or an embroidery hoop, raise the presser foot lifter to the high rise position (**2**), thus increasing the space between foot and needle plate. Hold presser foot lifter in position while placing fabric under the presser foot.

- Lower presser foot lifter all the way down and start to sew.

SEWING WITH A NEWLY WOUND BOBBIN

When starting to stitch at the fabric edge:

- Position needle in very edge of fabric, by turning the hand wheel *toward you.*
- Lower the presser foot and stitch. Thread will lock over fabric edge.

OR

When starting to stitch away from fabric edge:

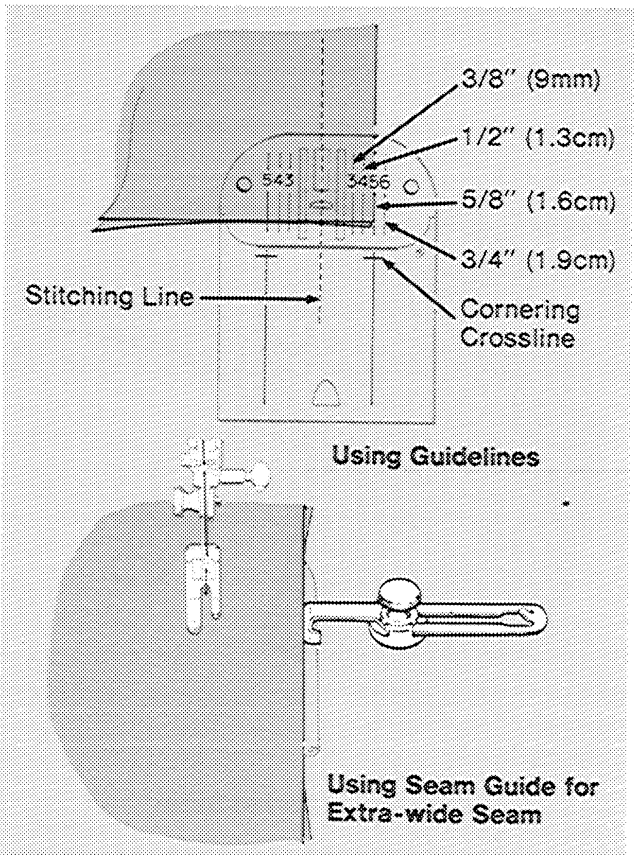
- Leave presser foot in its upper position.
- Pull thread back under presser foot and cut.
- Position needle in from fabric edge, then lower the presser foot and stitch.

KEEPING SEAMS STRAIGHT

To keep the seam straight, use one of the numbered guidelines on the plate. The numbers indicate distance, in eighths of an inch, from the needle. If you want a 5/8-inch (1.6cm) seam, for example, line up your fabric with the number 5 guideline. Note that both number 5 guidelines (the most commonly used) are extended on the slide plate for your convenience; the crosslines serve as guides when stitching a square corner.

For extra help in keeping the seam straight, you may wish to use the seam guide. Because it allows you to guide stitches evenly between 1/8-inch (3mm) and 1-1/4 inches (3cm) from the fabric edge, it is particularly useful for very narrow or very wide seams.

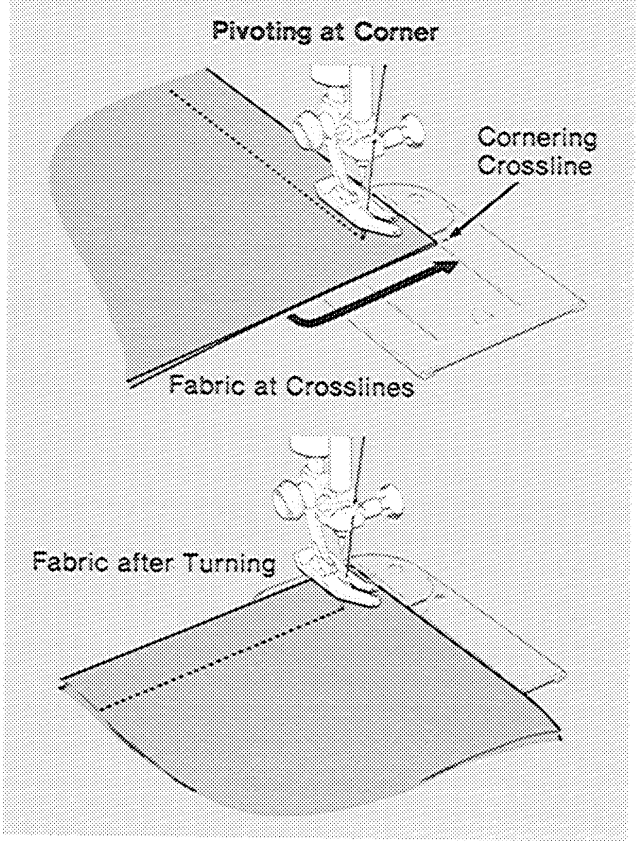
To fasten seam guide to machine see page 8.

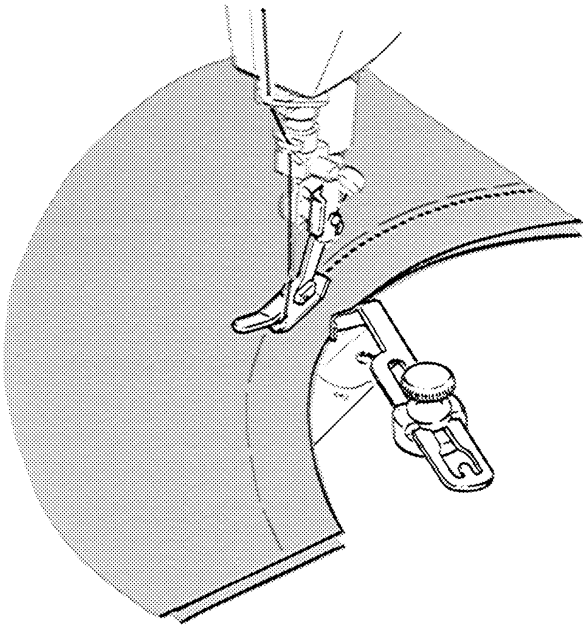


TURNING SQUARE CORNERS

To turn a square corner 5/8-inch (1.6cm) from the fabric edge, you need not measure or mark the seam. Simply use the crosslines on the slide plate.

- Line up your fabric with right or left guideline 5 on the plate. Stitch seam, slowing speed as you approach corner.
- Stop stitching, *with the needle down,* when the bottom edge of the fabric reaches the cornering crosslines on the slide plate.
- Raise presser foot *slightly* and turn fabric on needle, bringing bottom edge of fabric in line with guideline 5.
- Lower the presser foot and stitch in new direction.





Stitching a Curved Seam

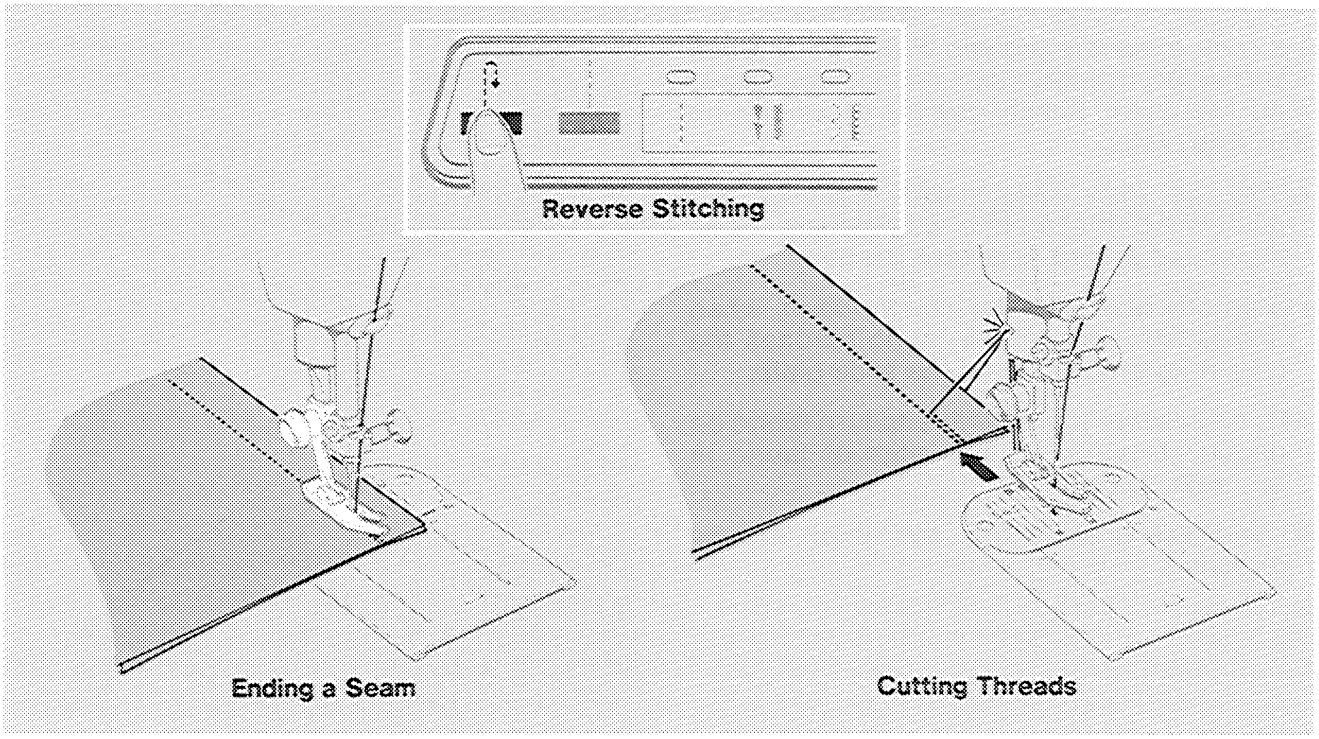
CURVED SEAMS

Use a short stitch for elasticity and strength.

1. For example, if the stitch length control on your machine is set on **2** the machine will sew approximately 12 stitches to the inch for straight seams. Adjust the control between **1.5** to **2** or 15 to 20 stitches per inch to stitch curved seams in the same fabric.
2. If you use the seam guide, attach it at an angle so that the edge that is closer to the needle acts as a guide.

REINFORCING END OF SEAM

1. Stitch to the edge of the fabric. (Do not sew beyond edge of fabric)
2. Press reverse stitch button and hold in place. Backstitch approximately 1/2-inch (1.3cm) to reinforce end of seam. Release reverse stitch button.
3. Raise needle to its highest position by turning hand wheel *toward you* and raise presser foot. Remove the fabric by drawing it to the back and left.
4. Cut threads on thread cutter at rear of presser bar.



Reverse Stitching

Ending a Seam

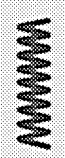
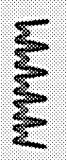
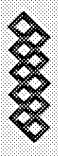
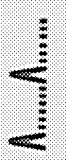
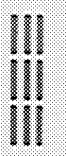
Cutting Threads

5. ALL ABOUT ZIG-ZAG STITCHING

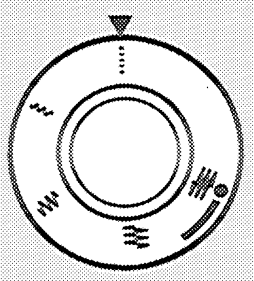
how stitches are produced

In addition to the straight stitch, your machine can produce a variety of stitch patterns. *Fashion** Stitch patterns (*white* on panel) are produced by the side-to-side movement of the needle. *Flexi-Stitch** patterns (*yellow* on panel) are produced by both the side-to-side movement of the needle and the back-and-forth movement of the feed.

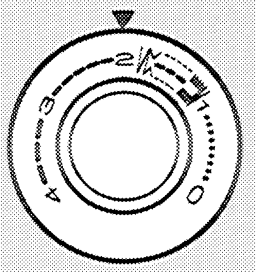
ZIG-ZAG STITCH CHART

Selector moved to right		Selector moved to left	
	**Arrowhead Stitch** — Combines beauty and utility. Individual pattern units reinforce points of strain. Use them on pocket corners in place of bar tacks.		**Plain Zig-Zag Stitch** — Used for general-purpose stretch sewing, bar tacks and appliqué.
	**Scallop Stitch** — Makes perfectly formed, evenly spaced scallops for edgings and tucks.		**Elastic Stretch Stitch** — Ideal for plain and overedged seams in knit and stretch fabrics and for attaching elastic.
	**Domino Stitch** — An interesting pattern for decorative stitching.		**Multi-stitch Zig-Zag** — Lets you mend, join and reinforce without bulk. Ideal for bar tacking.
	**Honeycomb Stitch** — Ideal for smocking and useful for mending, overcasting and attaching elastic and stretch lace.		**Blindstitch** — For finishing hems.
	**Featherstitch** — Extremely versatile. Use it for fagoting, embroidering, quilting and lattice seams.		**Straight Stretch Stitch** — Ideal for plain seams that stretch and for repairing and reinforcing seams.
	**Ric-Rac Stitch** — For heavy-duty general-purpose stretch sewing. Also reversible topstitching.		**Overedge Stretch Stitch** — Used for joining and overedging seams in woven, knit and stretch fabrics in one operation.

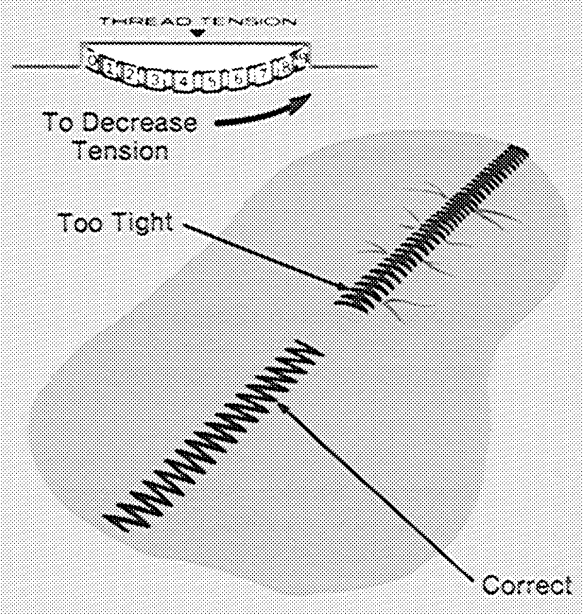
adjusting machine to your fabric



Stitch Width Control



Stitch Length Control



- Stitch: zig-zag
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

ADJUSTING STITCH WIDTH

Before starting to sew, adjust the stitch width of your pattern on a scrap of fabric.

Turning the stitch width control toward the largest zig-zag symbol increases the width of your stitch, and turning the control toward the straight-stitch symbol decreases the width. Turn the control until the desired width is obtained.

Note: When sewing *Flexi-Stitch* patterns, set stitch width control on yellow *Flexi-Stitch* dot (•).

ADJUSTING STITCH LENGTH

Before starting to sew, adjust the stitch length of your pattern on a scrap of fabric.

Turning the stitch length control toward **4** increases the length of your stitch, and turning the control toward **0** decreases the length. Turn the control until desired length is obtained.

Note: When sewing *Flexi-Stitch* patterns, adjust stitch length control within yellow *Flexi-Stitch* area (**---2**).

ADJUSTING NEEDLE-THREAD TENSION

Zig-Zag stitching usually requires less needle-thread tension than straight stitching. Be sure your machine is threaded correctly and make a test sample with the fabric and thread you plan to use so that you can adjust tension to suit the stitch pattern you have chosen. The stitches should lie flat against the fabric without causing the fabric to pucker.

If the stitches are not flat and the fabric is puckered, lower the needle-thread tension by turning the dial to a lower number.

BOBBIN THREAD TENSION

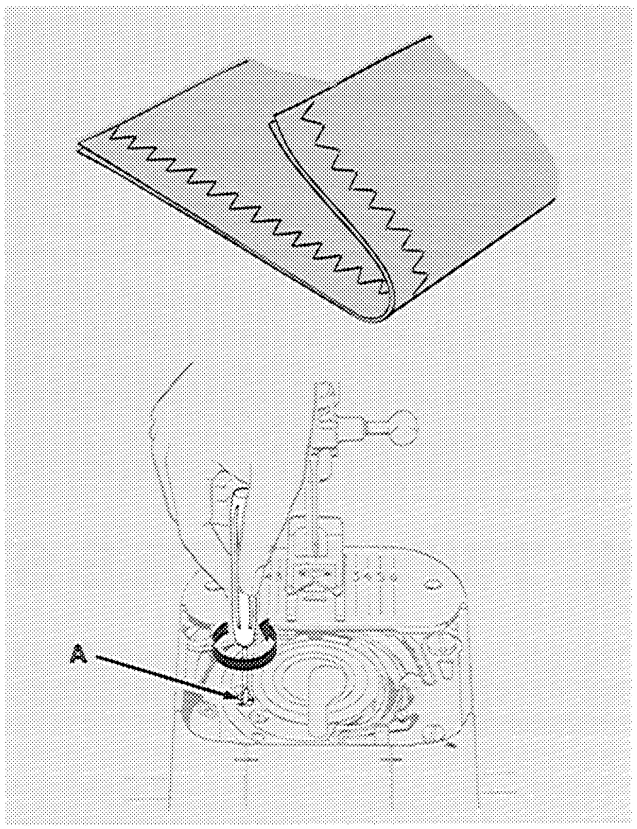
Bobbin thread tension has been set at the factory for most types of stitching.

Adjusting Bobbin Thread Tension for Balanced Open Zig-Zag Stitching

A balanced open zig-zag stitch where both bobbin and needle threads lock at the corner of each stitch in the fabric as shown, can be achieved by turning screw **A** to the left (counterclockwise) as far as it will go, using the small screwdriver in your accessory box.

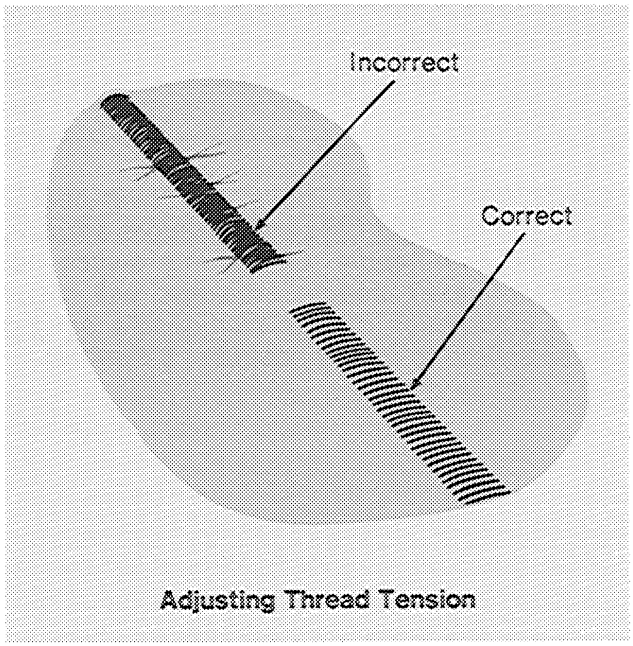
- Set needle thread tension dial on **1**.
- Using two layers of scrap fabric, sew slowly stitch by stitch, gradually rotating tension dial to higher number until the needle and bobbin threads lock at the corner of each stitch and the stitch formation is the same on both sides of the fabric.

When stitching is completed, return screw **A** to position for regular sewing by turning to right (clockwise) as far as it will go.



SATIN STITCHING

Satin stitching, a series of closely spaced zig-zag stitches that form a smooth, satin-like surface, is useful for both practical and decorative work. Zig-zag *Fashion* Stitch patterns can be sewn at satin-stitch length.



Adjusting Thread Tension

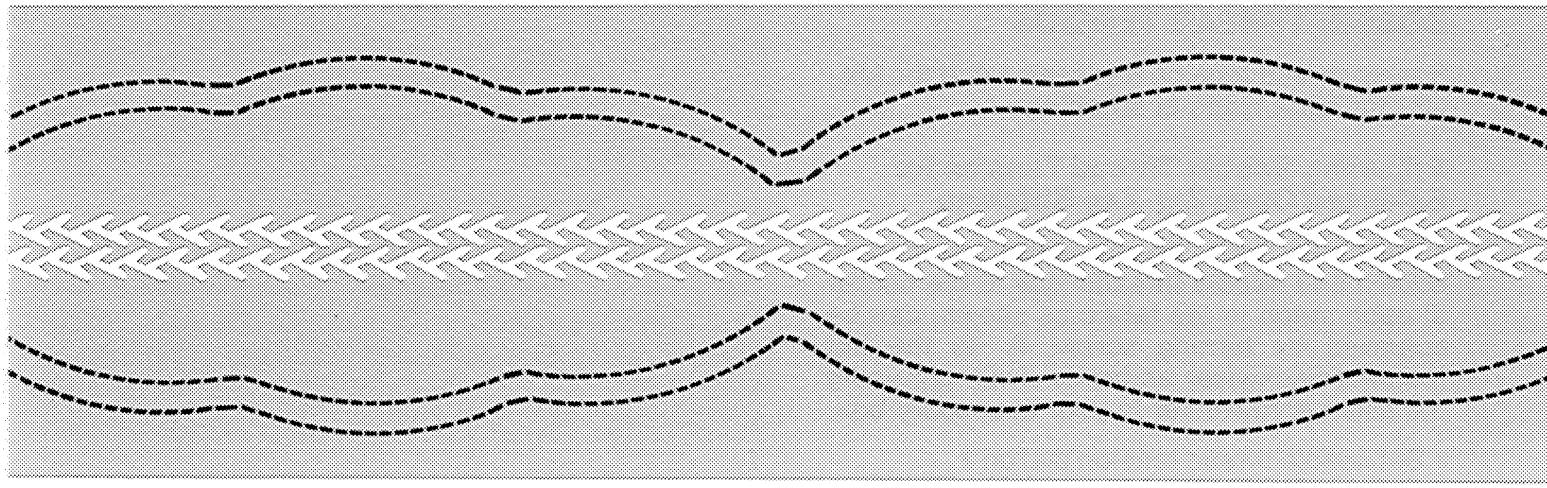
Set your machine for desired zig-zag *Fashion* Stitch. Adjust stitch length for satin-stitching (see below); stitch width in narrow to medium range. Use general-purpose plate and special purpose foot.

Adjusting Stitch Length

- Set machine for a medium length stitch.
- Run machine at slow speed.
- Gradually adjust stitch length from **1** toward **0** until stitches are closely spaced and form a smooth surface.

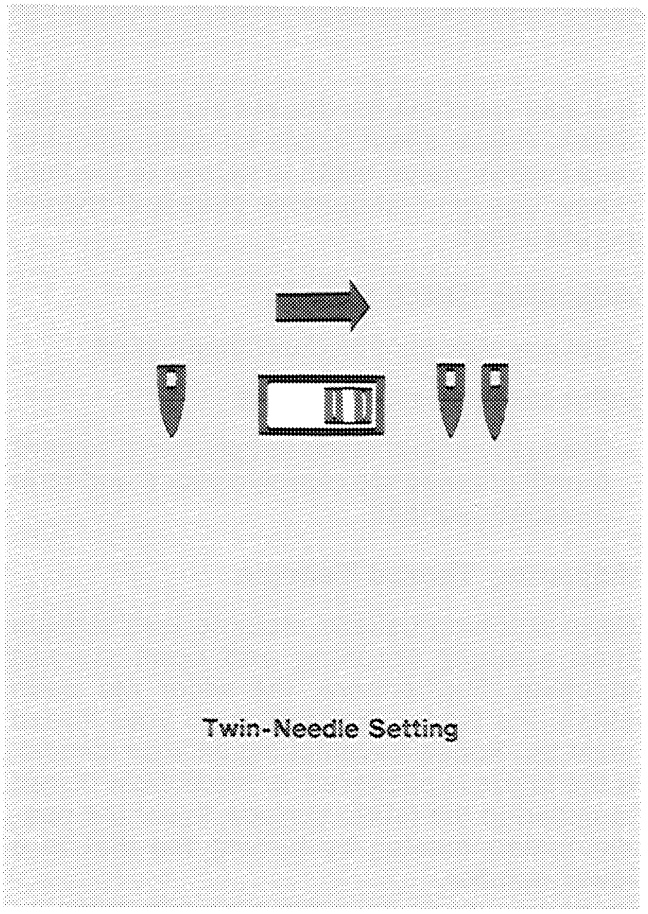
Adjusting Thread Tension

Satin stitching usually requires less tension than straight stitching and open zig-zag stitching. Furthermore, the wider the satin stitch, the lighter the tension on your thread must be. Notice the stitching on your sample. If the fabric is puckered, or the bobbin thread is pulled to the fabric surface, lower the needle thread tension by turning the dial to a lower number.



6. TWIN-NEEDLE STITCHING

The twin-needle simultaneously produces two parallel, closely spaced lines of decorative stitching. You can stitch with either one or two colors of thread. One of the attractive designs you can create is shown on this page.



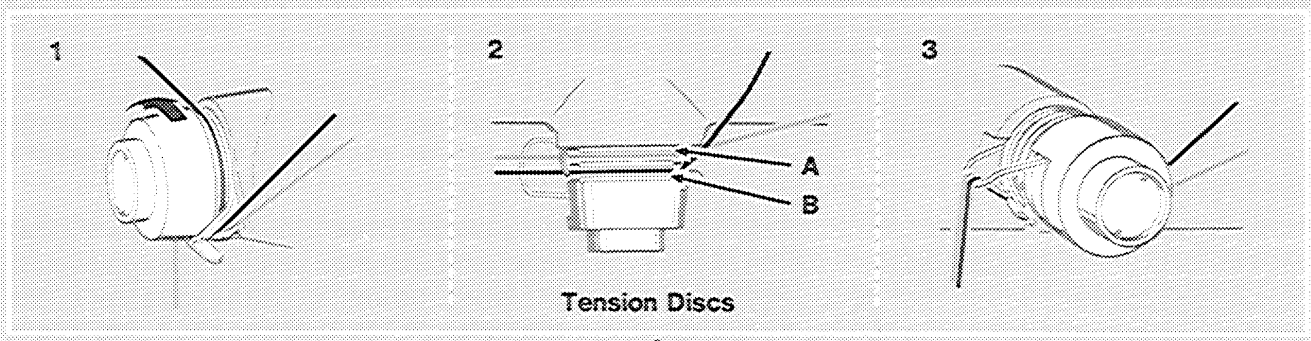
Twin-Needle Setting

- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose foot
- General purpose needle plate

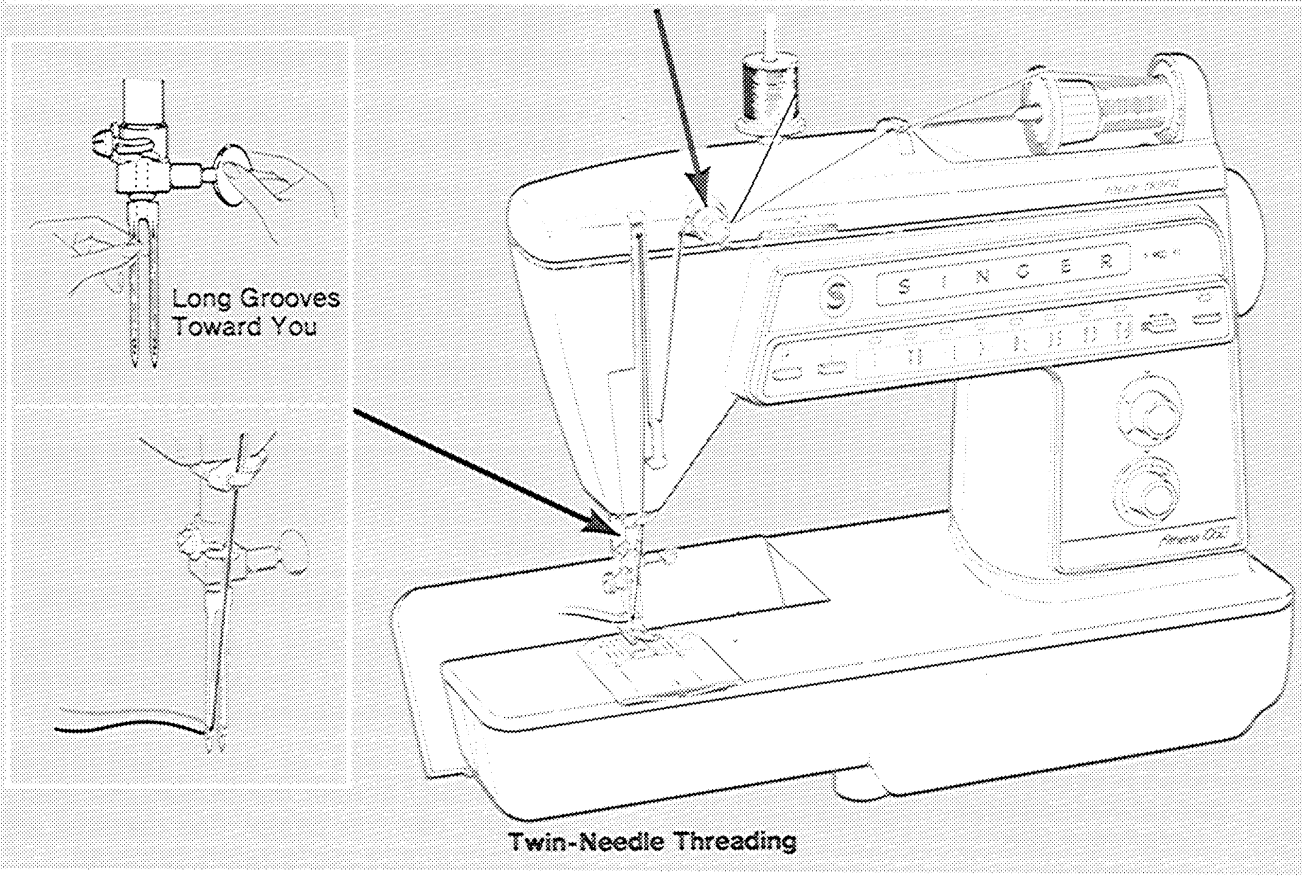
CAUTION: *Always move the twin-needle switch to the right (symbol) before stitching with the twin-needle. Unless this switch has been activated, needle breakage will result. Upon completion of your twin-needle sewing, return switch to its left position (symbol).*

Procedure

- Wind as many bobbins as you will need with a regular needle in place. You cannot wind a bobbin using a twin-needle.
- Attach general-purpose needle plate and foot.
- Insert twin-needle.
- Thread as for single-needle stitching, *except* pass thread between *center* and *back* tension discs **A**, and through right eye of needle.
- Attach detachable spool pin, with felt, in hole on top cover.
- Place spool of thread on detachable spool pin and pass thread from second spool between *center* and *front* tension discs **B**, as shown.
- Thread through remaining points, making certain to *omit the thread guide above the needle* and pass thread through *left* eye of needle.

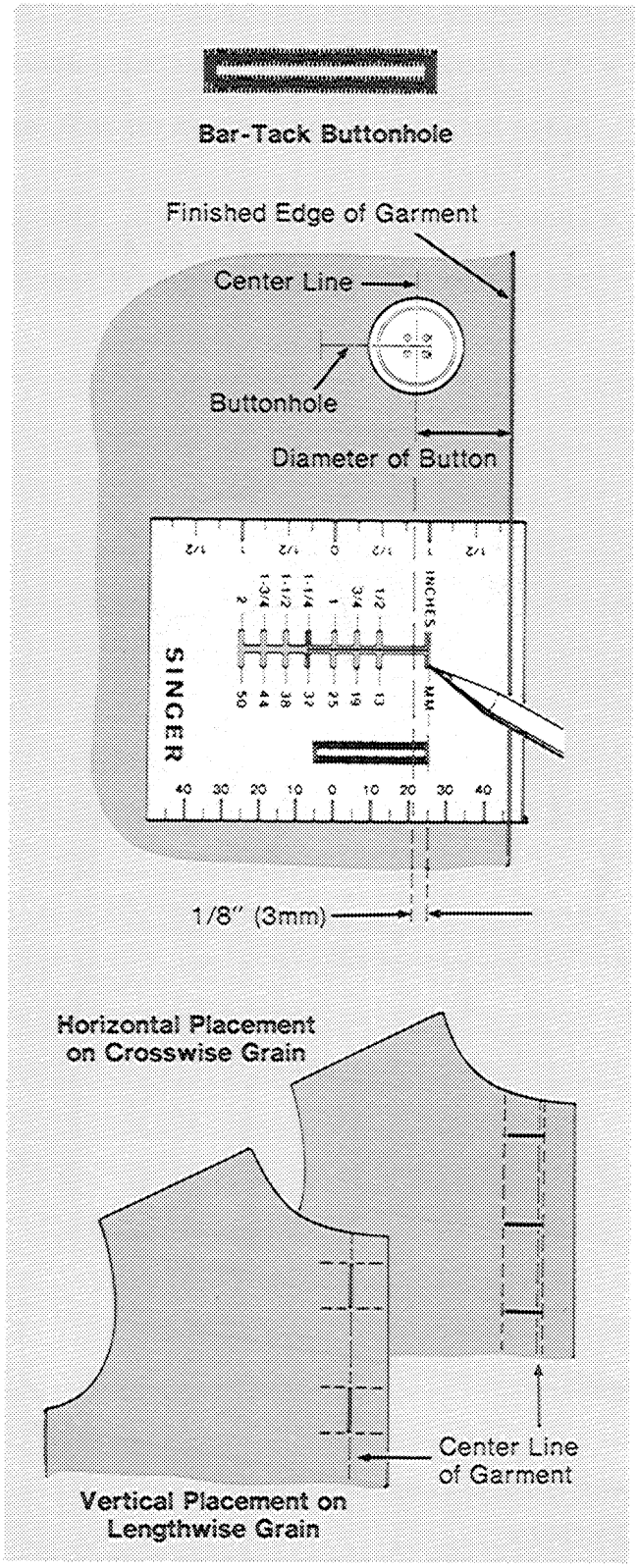


Tension Discs



Twin-Needle Threading

7. BUTTONHOLES AND BUTTONS



buttonholes

Your new machine comes complete with a built-in two step buttonhole system. Before sewing on your garment always make a test buttonhole duplicating the number of thicknesses of fabric and interfacing if appropriate.

BUTTONHOLE POSITION

Accurate guidelines are essential to keep buttonholes at a uniform distance from the edge of the garment, evenly spaced, and on the grain of the material.

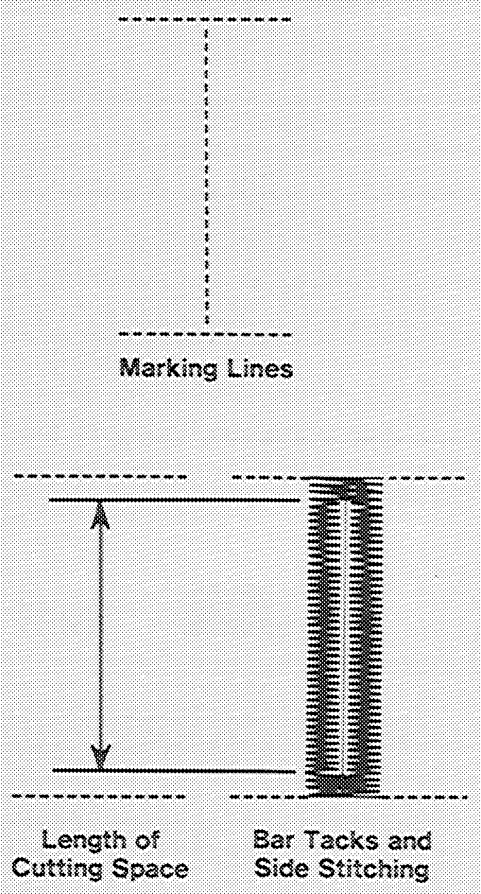
1. Mark the center line of the garment using hand basting, or with the buttonhole gauge found in the accessory box, and tailor's chalk.
   - Be sure that the space from the center line to the finished edge of the garment is at least equal to three-quarters the diameter of the button. (With this spacing, the button will not extend beyond the edge when the garment is buttoned.)
   - Make sure that the center line marking follows a lengthwise fabric thread.
2. Mark a position guideline for each buttonhole.
   - **Horizontal** buttonholes are placed to extend 1/8-inch (3mm) beyond the center line of the garment, as shown, so that the buttons will be in the center of the figure when the garment is fastened.
   - Horizontal buttonhole guidelines should follow a crosswise fabric thread and be longer than the finished length of the buttonhole.
   - Mark ends of each buttonhole vertically.
   - **Vertical** buttonholes are placed so that the center line of the garment is in the center of the buttonhole, as shown.
   - Mark the ends of each buttonhole horizontally across the center line basting and use the center line marking as the buttonhole guide when stitching.

BUTTONHOLE LENGTH

A buttonhole length should be just long enough to allow the button to slip through the opening without stretching it.

- Estimate the proper buttonhole length by measuring the width plus the thickness of the button.
- To make sure the measurement is correct, cut a slit in a scrap of fabric equal to the diameter of the button you intend to use.
- Increase length of opening until button slips through easily.

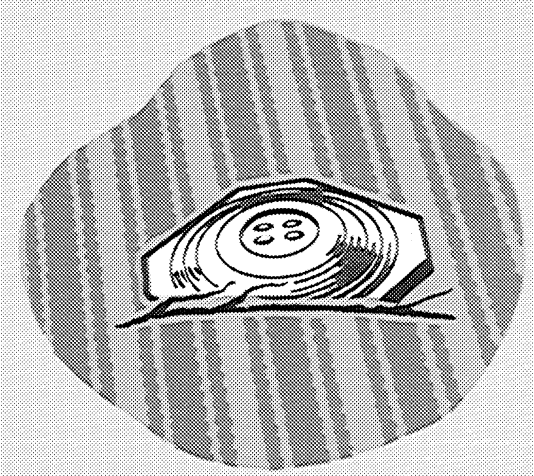
This test is particularly advisable for buttons of unusual shape or thickness.



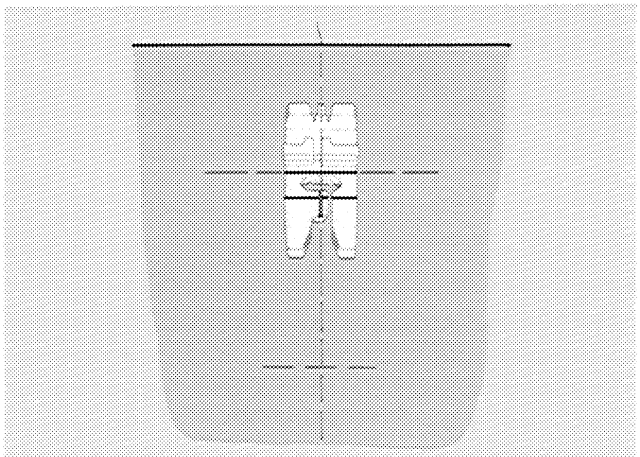
BUTTONHOLE INTERFACING

It is almost always advisable to use an interfacing in the buttonhole area. An interfacing holds the fabric firmly so that a neat buttonhole may be stitched and keeps the finished buttonhole in shape. Interfacing is essential when the fabric is loosely woven or is a crepe or knit that stretches easily.

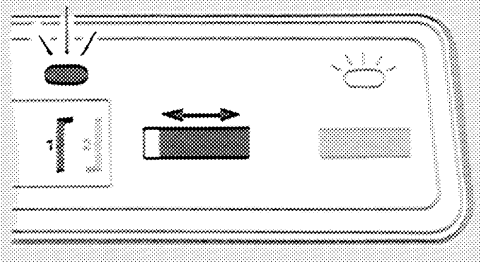
When planning your garment, remember that bar-tack buttonholes are stitched through three thicknesses of fabric — garment, interfacing and facing — after the facing has been attached.



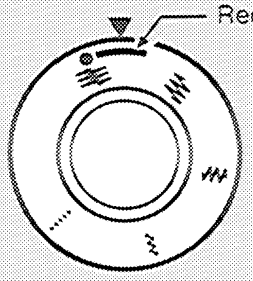
Testing Buttonhole Length



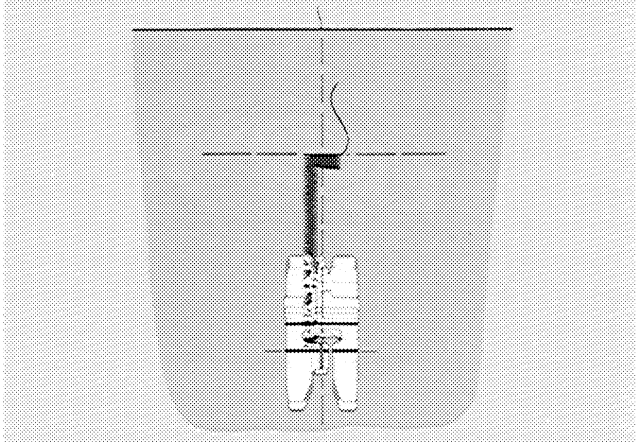
Buttonhole-foot Position at Start



Select Left Side of Buttonhole



Stitch Width Control



Buttonhole-foot Position at End of Side 1

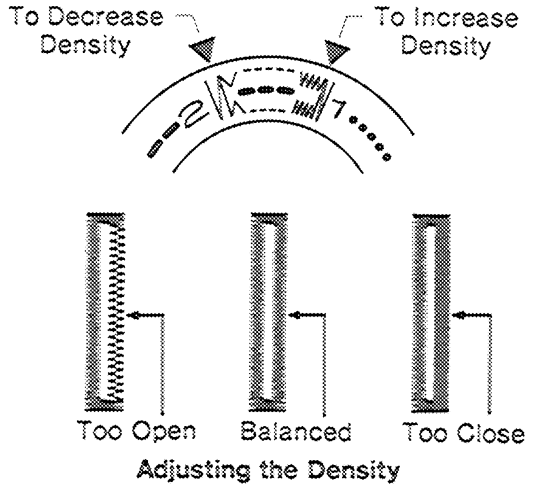
TWO-STEP BUTTONHOLING

Make a test buttonhole on a sample of your fabric, with interfacing if being used, before working on your garment.

- Stitch: buttonhole
- Stitch width: red buttonhole area
- Stitch length: within red buttonhole area
- Two-step buttonhole foot
- General purpose needle plate

- Determine length of buttonhole and mark start and end line of buttonhole on fabric.
- Draw needle and bobbin threads under foot towards back of machine.
- Place fabric under foot so that buttonhole start line is aligned with the back gauge line on foot. Lower foot.
- Select left side of buttonhole. To do this, slide pattern group selector to right, then push pattern selector button until light appears over the symbol.
- Set stitch width control within the red buttonhole area.
- Select **MIN** (minimum) speed and start machine. Adjust the stitch width control within red buttonhole area in order to obtain the desired width of starting bar tack.
- Complete left side of buttonhole.
- Stop machine when front gauge line on buttonhole foot reaches the buttonhole end line of the fabric.

- Select right side of buttonhole by sliding pattern selector button to the left. (This side must always be stitched last.)
- Set the stitch length control within red buttonhole area.
- Start machine and if needed, adjust density of this side of buttonhole to match left side within the red buttonhole area of stitch length control.

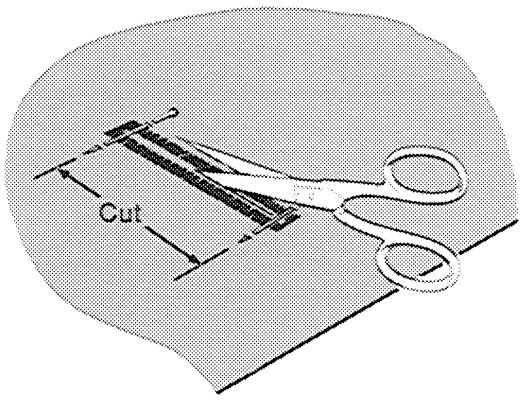


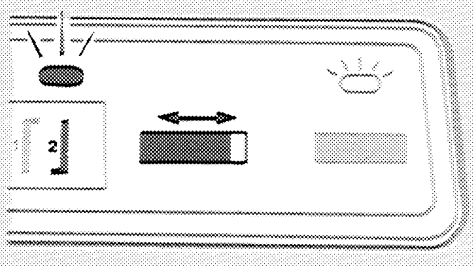
Adjusting the Density

- Stop sewing when stitching reaches the starting bar tack.

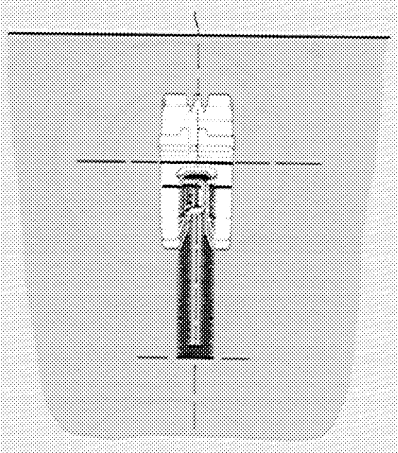
CUTTING BUTTON OPENING

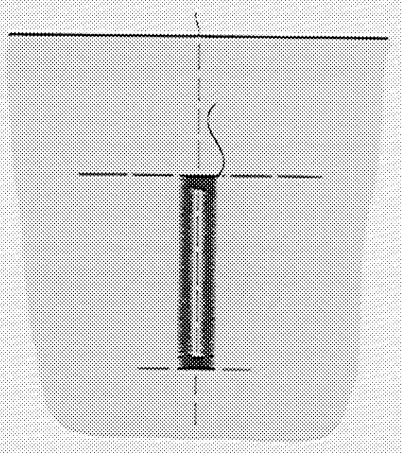
- Place a pin across the cutting space at each end of the buttonhole to protect bar tacks.
- Use a pair of small, sharp scissors to cut the button opening.
- Insert blade in center of the buttonhole cutting space and cut from this point in either direction.





Select Right Side of Buttonhole


Buttonhole-foot Position at End of Side 2


Finished Buttonhole

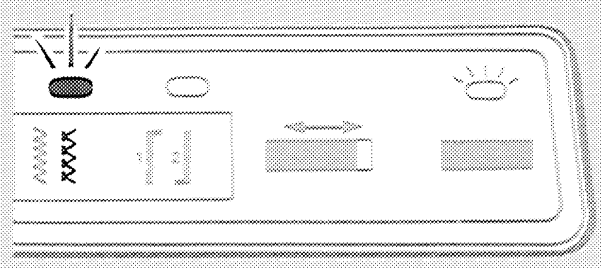
buttons

- Stitch: overedge stretch stitch
- Stitch width: to suit button
- Stitch length: 0
- Button foot
- Feed cover plate

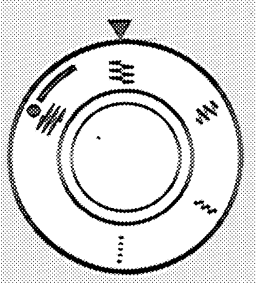
ATTACHING A BUTTON

- Attach button foot and feed cover plate to machine and turn on machine.
- Select overedge stretch stitch .
- Turn hand wheel *toward you* until needle moves to left side.
- Place garment under foot, then position button on garment.
- Turn hand wheel again to lower needle into left hole of button, and lower foot.
- Turn hand wheel again carefully until needle is just above right hole. Adjust stitch width, if required, so that needle will enter right hole of button. For information on stitch width control, see page 28.
- Run machine slowly. Allow at least three groups of crossover stitches to enter right hole of button. Finish sewing on left side taking two or three tying stitches.
- Remove work from machine leaving 4 inches (10cm) of thread, pull thread ends through to inside of garment, and knot them close to fabric to form a secure finish.

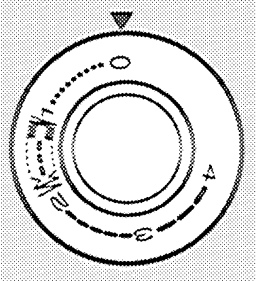
Attaching a Button



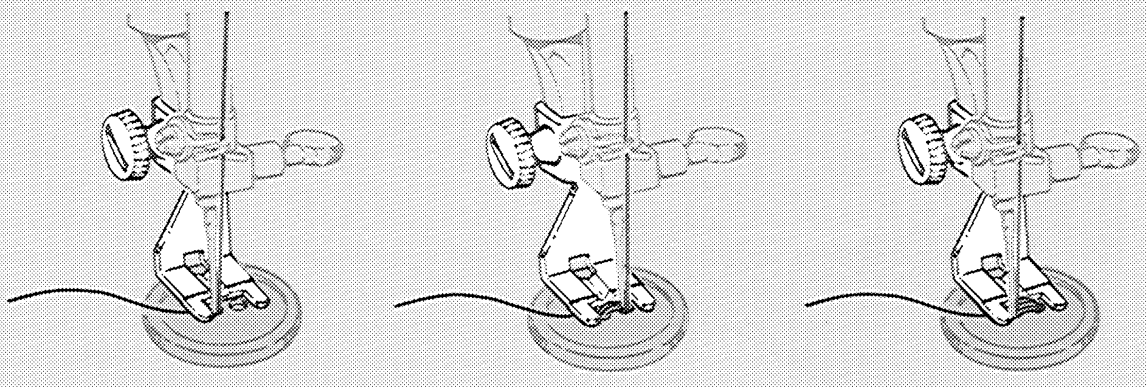
Select Overedge Stretch Stitch



Stitch Width



Stitch Length

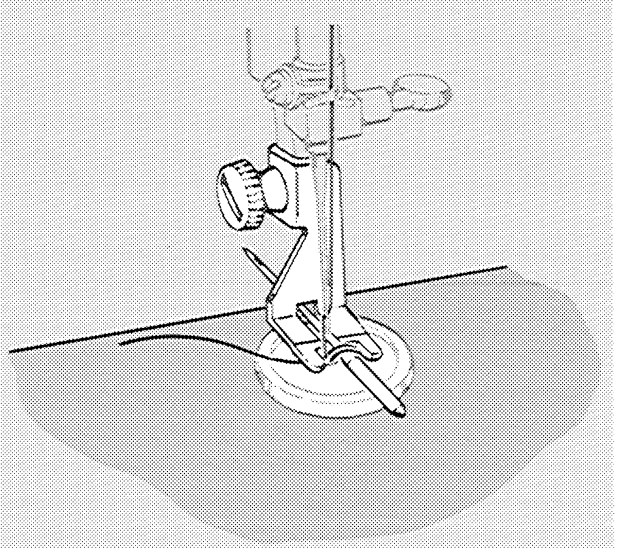


FORMING A THREAD SHANK

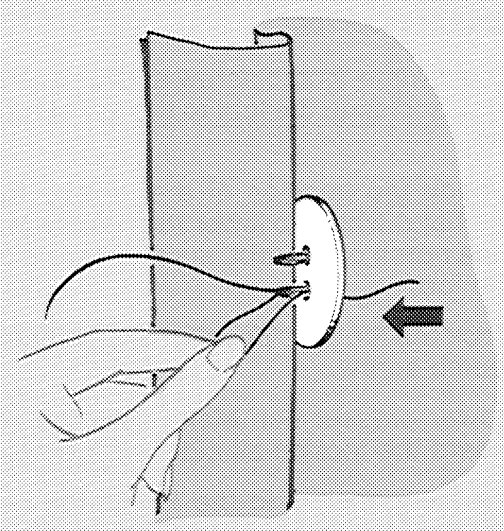
Buttons sewn on coats and jackets should have a thread shank to make them stand away from the fabric. A thread shank is formed by sewing over the blade of a regular machine needle.

- Position needle, garment and button as described on page 36.
- Place needle in groove of foot so that point enters hole in foot first, as shown. The further in you push needle, the longer the shank will be.
- After stitching, remove needle from groove of button foot, remove work from machine, and cut threads about 6 inches (15cm) from fabric.
- Pull thread ends to back of button, form a firm shank between button and fabric by winding threads tightly around attaching stitches, and tie thread ends securely.

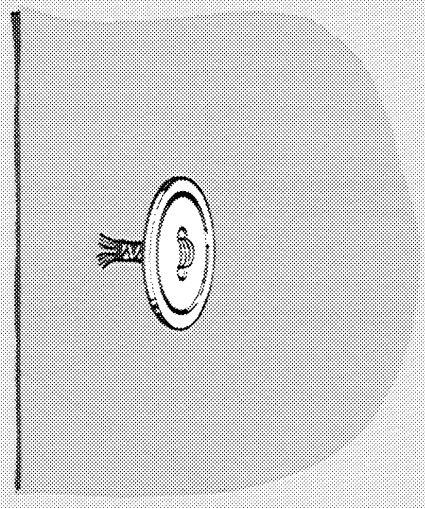
Forming Thread Shank



Needle in Groove of Button Foot

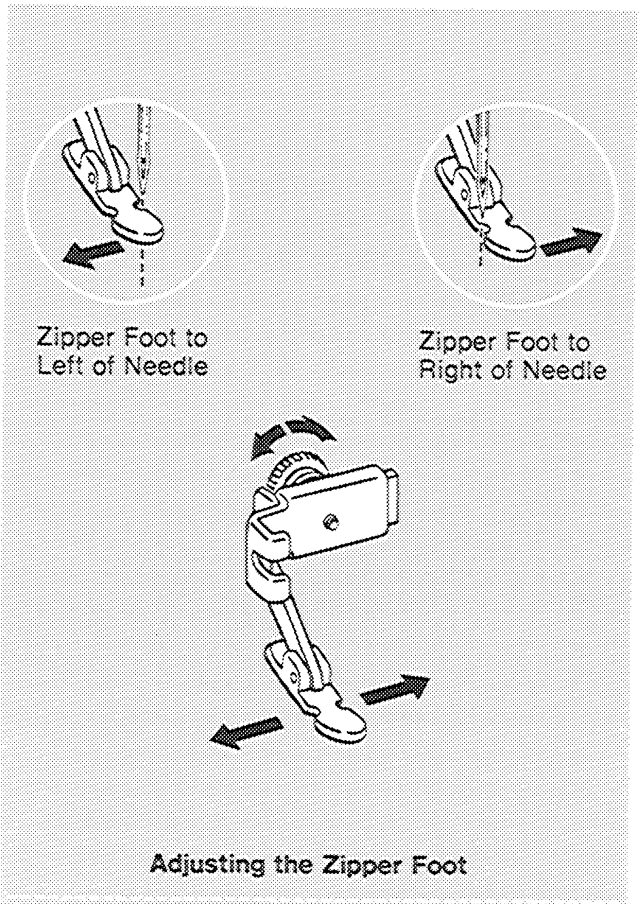


Pull Thread Ends to Back of Button

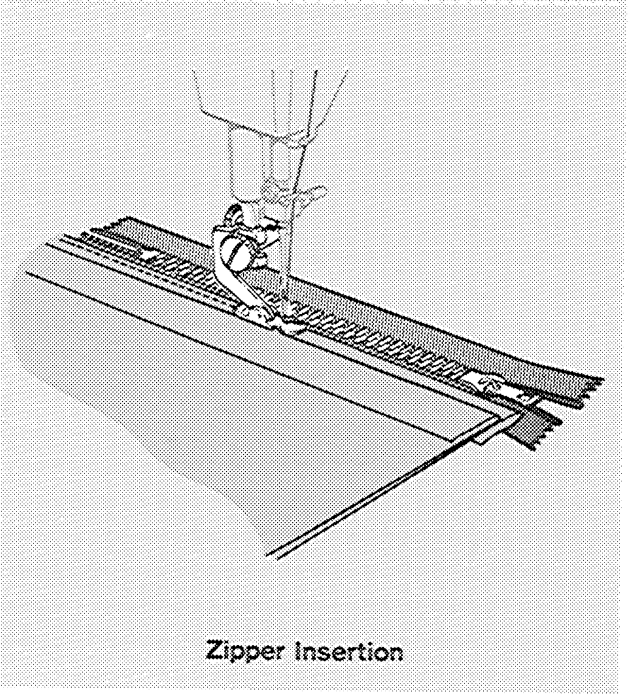


Thread Shank Completed

8. SEWING THE PROFESSIONAL WAY



Adjusting the Zipper Foot



Zipper Insertion

construction details

ZIPPERS

Zipper Insertion

How the zipper is inserted will depend on the type of the garment and the location of the zipper. With the adjustable zipper foot, you will find it easy to sew an even line of stitching close to the zipper. For inserting zipper foot on machine, see page 7.

- Stitch: straight stitch ¦
- Stitch length: to suit fabric
- Straight stitch needle plate
- Zipper foot

The zipper foot can be used either to the left or right of the needle — depending on where the bulk of the garment is placed.

Adjusting the Zipper Foot

When the zipper is to the *right* of the needle:

- Raise needle and take-up lever to highest position by turning hand wheel *toward you.*
- Raise presser foot.

1. Loosen the thumb screw at the back of the foot, and slide the foot to the *left* of the needle.
2. Check the position of the foot by turning the hand wheel to lower the needle into the side notch of the foot, making sure it clears the foot.
3. Lock the foot into position by tightening the thumb screw.
4. Lower presser bar. Make sure the needle clears the foot on all sides of the notch.

When the zipper is to the *left* of the needle, adjust the foot to the *right* of the needle in the same way.

CORDED SEAMS

The zipper foot is also particularly suitable for the construction and insertion of corded seams. The corded seam is a decorative seam finish for slipcovers, children's clothes, blouses and lingerie.

- Stitch: straight stitch
- Stitch length: to suit fabric
- Straight stitch plate
- Zipper foot

Making the Welting

- Adjust zipper foot to the left of the needle as described on page 38.
- Fold a strip of fabric cut on the true bias over a cord of the desired length, with raw edges even. Lower zipper foot. Stitch close to the cord, pulling *gently* on the strip, both in front and in back of the zipper foot.

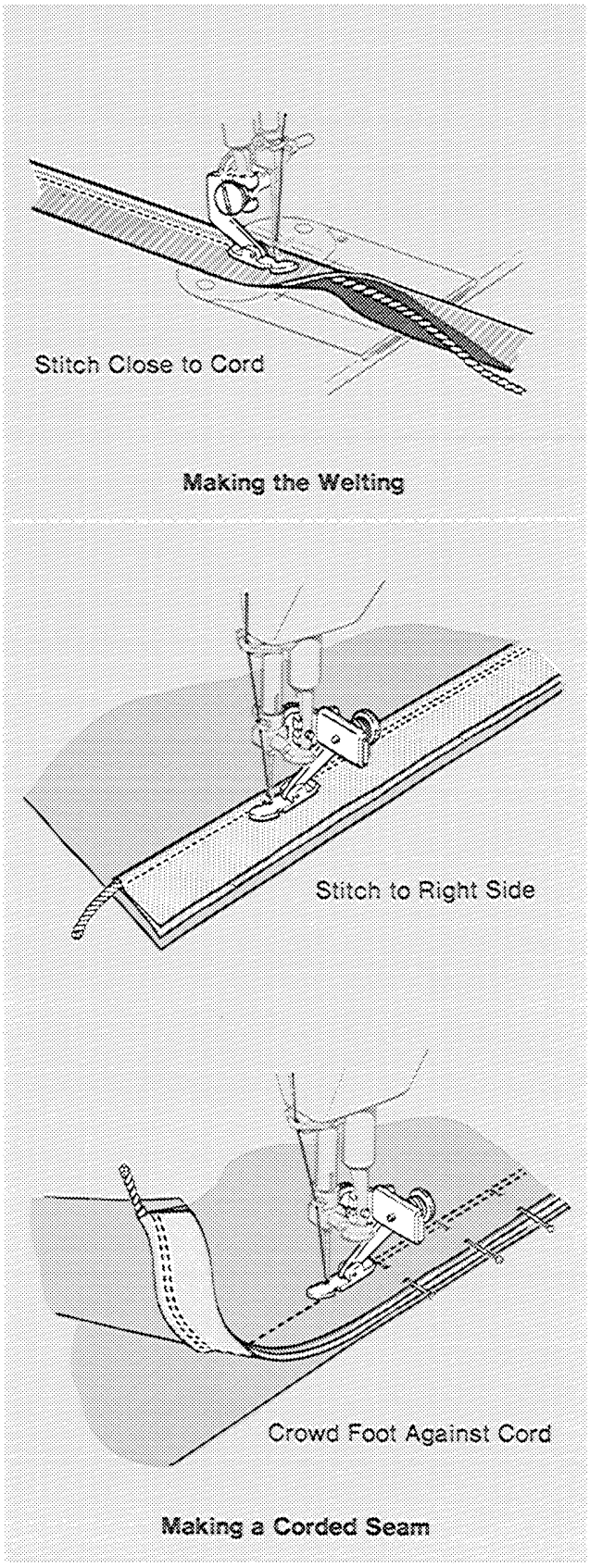
CAUTION: *Do not pull the fabric while you are stitching as this may deflect the needle, causing it to break.*

Stitching Welting into Seam

- Adjust zipper foot to the right of the needle so that the bulk of the fabric will fall to the left.

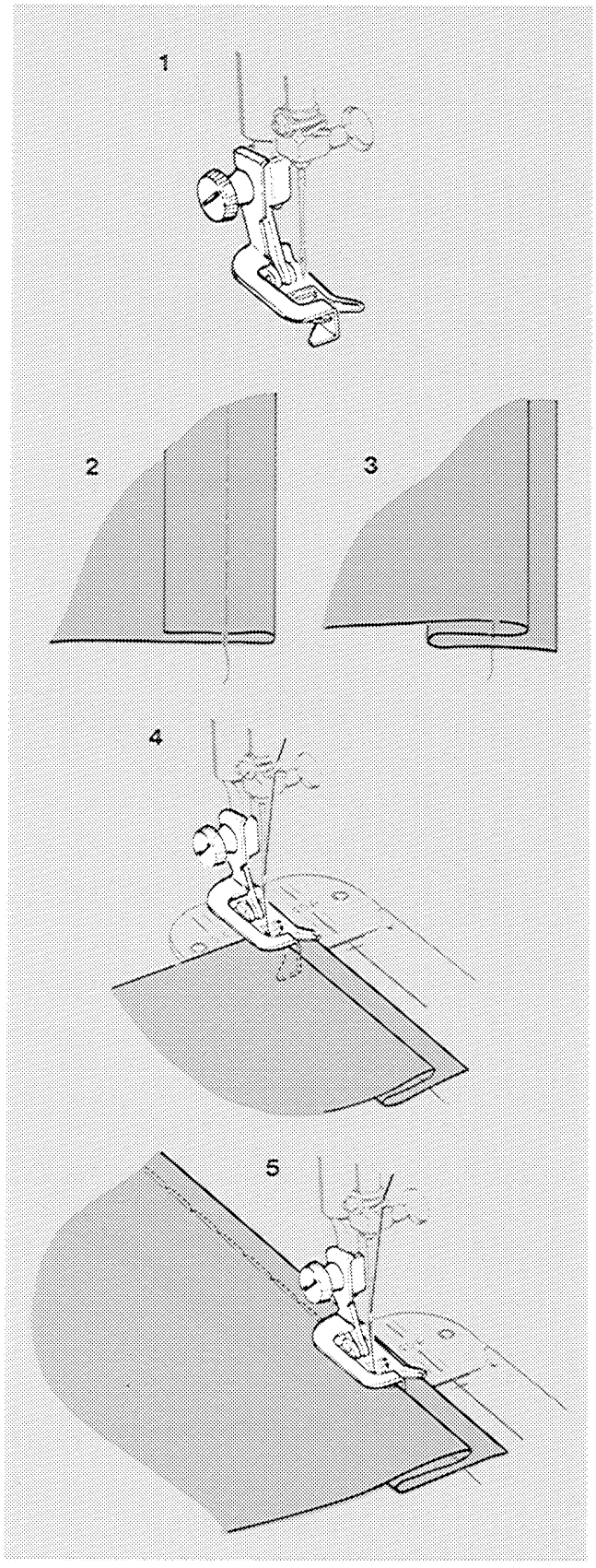
Stitch welting to the right side of a single seam edge; guide the edge of the foot next to the cord but not too close.

- Place the attached welting over the second seam edge, and pin or baste together. Place the work under the foot, with the first stitching on top so that you can use it as a guide. Stitch, this time, with the foot as close as possible to the cord.



Making the Welting

Making a Corded Seam



BLINDSTITCH

Blindstitch Hems

Blindstitching provides a durable hem finish that is almost invisible. It is best suited to straight or slightly curved seams. Taped, bound, or turned hem edges can also be blindstitched with equal ease.

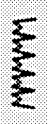
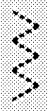
- Stitch: blindstitch
- Stitch width: to suit fabric
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

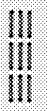
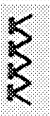
1. Raise foot, loosen screw, and slip blindstitch hem guide between the screw and the shank of the foot. Make sure the underside of the guide clears the slide plate and the front of the foot. Tighten screw with coin.
2. Prepare hem in the usual way. It is advisable to baste the hem. Place the basting at least 1/2-inch (1.3cm) below the edge of the hem allowance to avoid catching the flange of the guide as you stitch.
3. With the wrong side of the work uppermost, turn the hem under, creating a soft fold from the top edge of the hem.
4. Position the hem under the foot with the soft fold resting against the wall of the guide. Make sure the flange of the guide is between the soft fold and top of hem, as shown.
5. Lower the foot, stitch so that the straight stitches fall on the hem allowance and the zig-zag stitches pierce the soft fold of the work. Adjust stitch width if necessary. While stitching, guide the hem edge in a straight line and feed the soft fold evenly against the wall of the guide.

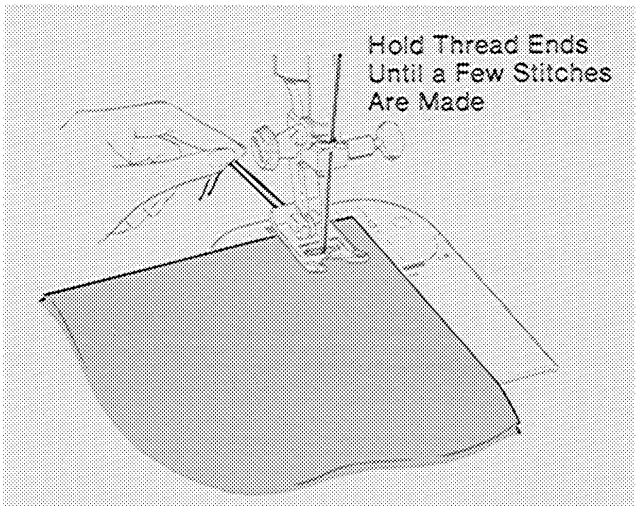
sewing knit and stretch fabric

When you sew stretch fabrics, double knits, tricot, jersey and elastic, choose one of the stitch patterns that build stretch into the seam. A wide variety of stitches are available. See table below. *Remember to use a Style 2045 ballpoint Yellow Band* needle, available in sizes 11, 14 and 16, in the machine when you attach elastic or sew knit or stretch fabric.*

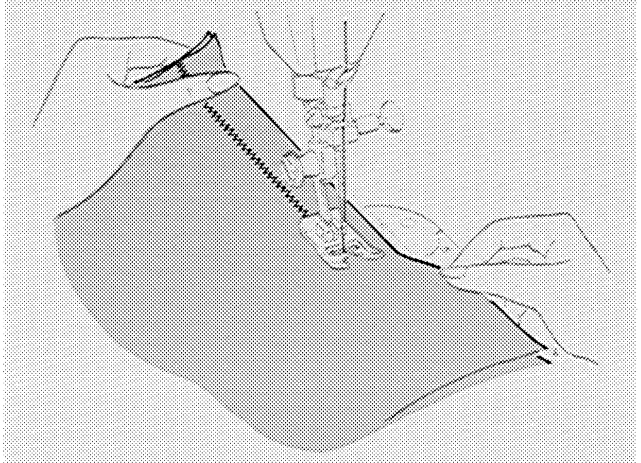
STRETCH STITCH CHART

Pattern	White Patterns (*Fashion*)	Where to Use
	Plain Zig-Zag	General-purpose stretch sewing — Lingerie seams — Attaching stay tape — Seam finishing — Edge finishing — Attaching stretch lace.
	Elastic Stretch Stitch	Plain and overedged seams that s-t-r-e-t-c-h — Construction seams in stretch fabric — Knitted fabric and garments.
	Multi-Stitch Zig-Zag	Attaching elastic and stretch lace — Lingerie and swimsuit construction — Girdle seams — Seam finishes — Casings and waistband finishes.
	Blindstitch	Blindstitch hemming — Overcast seam finishing — Shell hems in lingerie.

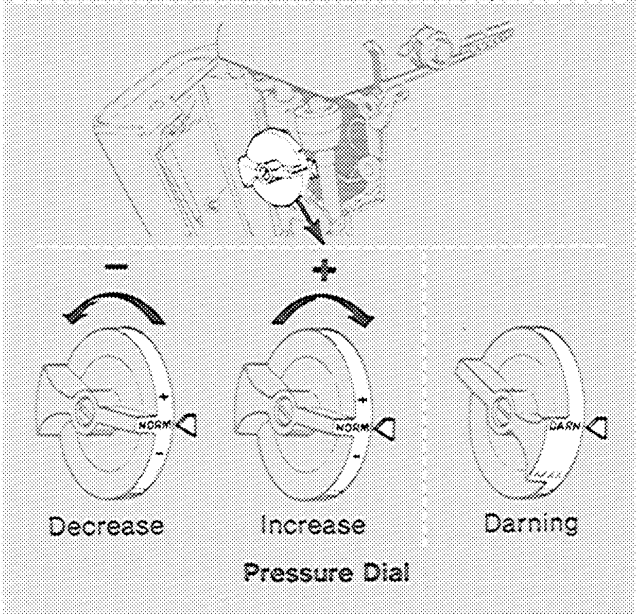
Pattern	Yellow Patterns (*Flexi-Stitch*)	Where to Use
	Honeycomb Stitch	Attaching elastic and stretch lace — Lingerie and girdle repair — Swimsuit construction — Edge finishes for seams, hems and facings.
	Feather Stitch	Swimsuit seams — Attaching stretch lace — Lingerie and girdle seams.
	Straight Stretch Stitch	Heavy-duty construction seams — Seam reinforcement — Ski-suit and snow-suit construction — Dungaree seams — Crotch seams.
	Ric-Rac	Heavy-duty, general-purpose stretch sewing — Reversible topstitching.
	Overedge Stretch Stitch	Overedged seams that stretch — Crotch seams — Waist band and seam finishes in shorts and slacks — Ski-suit, snow-suit and swimsuit construction.



Starting to Sew Using a *Flexi-Stitch* Pattern



Applying Gentle Tension to Tricot



Pressure Dial

STARTING TO SEW USING A *FLEXI-STITCH* PATTERN

When using a *Flexi-Stitch* pattern, the forward-reverse stitching direction is controlled by the machine. For this reason, *Flexi-Stitch* patterns cannot be sewn in reverse.

To start sewing with a *Flexi-Stitch* pattern, draw needle and bobbin threads under foot to back of machine. Hold thread ends and position needle in fabric by turning hand wheel *toward you.* Lower presser foot and hold thread ends at back of foot as you start to stitch. This will prevent the threads being drawn down into the needle hole. The *Flexi-Stitch* pattern itself will reinforce the ends of your seam.

GUIDING AND SUPPORTING FABRIC

Most stretch and knit fabrics need only to be guided in front of the presser foot when you use one of the stretch stitches. Simply let the machine move the fabric to make stitches that give s-t-r-e-t-c-h to seams.

Some fabrics, however, require support while being stitched.

- For nylon tricot and similar synthetic knits, apply *gentle* tension by holding seam in front and back of the presser foot as you sew.

CAUTION: *Do not pull the fabric while you are stitching as this may deflect the needle, causing it to break.*

ADJUSTING PRESSURE WHEN SEWING KNIT AND STRETCH FABRIC

Some knit and stretch fabrics, because of their structure, require either more or less than normal **(NORM)** presser-bar pressure to feed smoothly and evenly.

- For thick, soft or very stretchy knits, decrease pressure by turning dial from **NORM** (normal) toward **DARN.**
- For nylon tricot, ciré and similar hard surface synthetic knits, increase pressure by turning dial from **NORM** (normal) toward **MAX** (maximum).

Overedged Seams

Seams in knit and stretch fabric can be joined and finished in one operation when the overedge stretch stitch is used. Best for firm, medium-weight fabrics, this finish is particularly suitable for seaming natural and synthetic doubleknits used for sports wear and swimsuits.

- Stitch: overedge stretch stitch
- Stitch width: **5** only†
- Stitch length: to suit fabric
- General purpose needle plate
- Overedge foot
- Speed range: **MIN**

Method 1

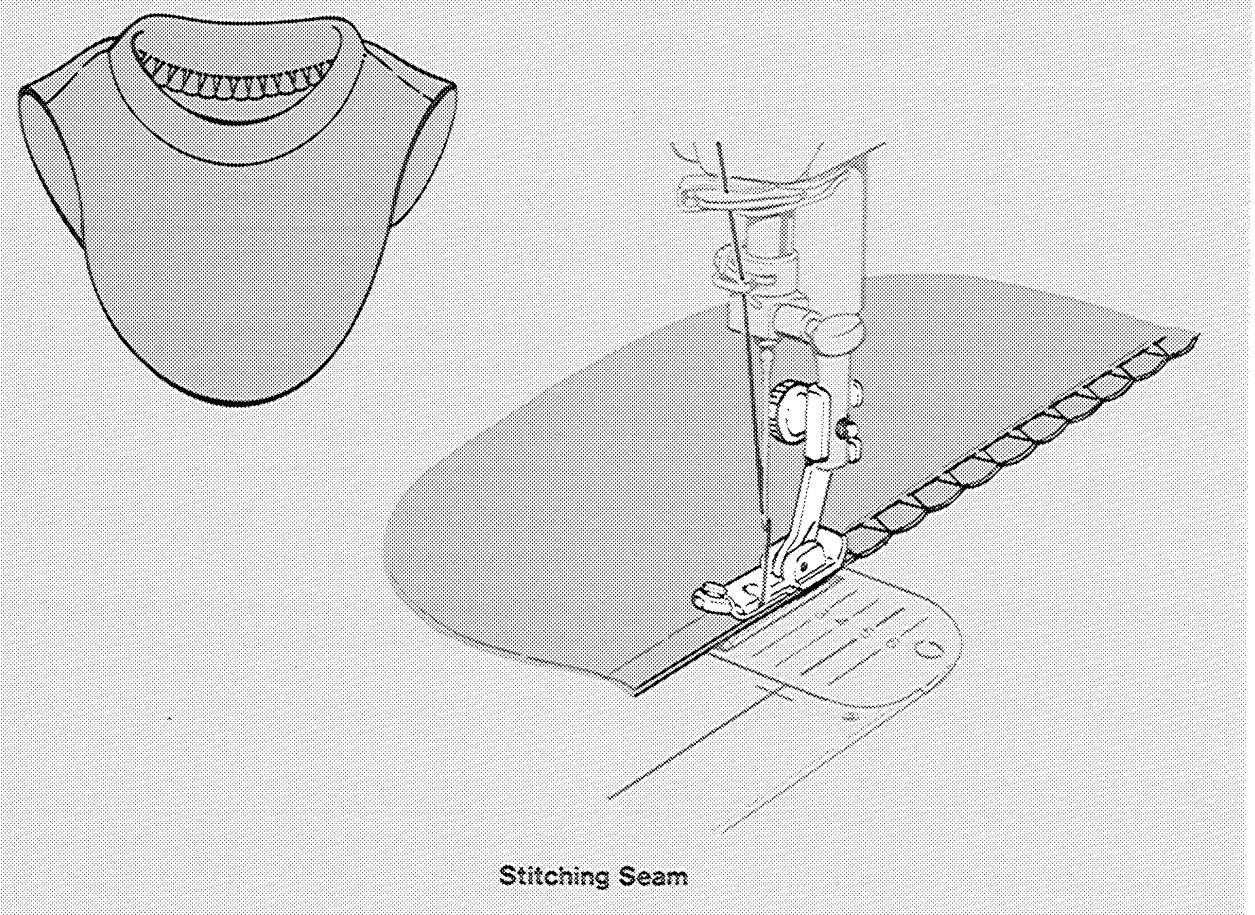
Make a test sample to determine the suitability of an overedge seam finish for your garment. Duplicate the grain of your garment seam. Adjust thread tension to suit fabric. Use an appropriate *Yellow Band** needle in the machine for a synthetic knit. (See Fabric, Thread, and Needle table on page 12.

Baste the garment together on the seam line allowing for 5/8-inch (1.5cm) seam allowance and fit in the usual way.

After making any necessary adjustments, trim seam edge evenly to a scant 1/4-inch (5mm) from seam-line basting.

Place trimmed seam under the foot so that the straight stitches fall on the basted seam line and zig-zag stitches fall over the seam edge.

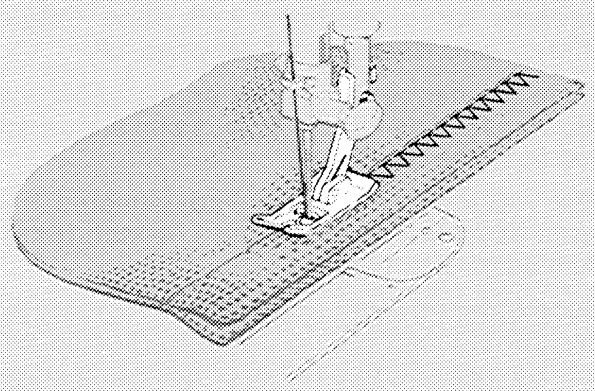
Method 1



Stitching Seam

†If a narrower stitch width is desired, as for seam finishing of fine fabrics, use the general purpose foot in place of the overedge foot.

Method 2



Mock Overedging

Mock Overedge

This finish is appropriate for bulky knits, fine tricots and fabrics that curl or fray.

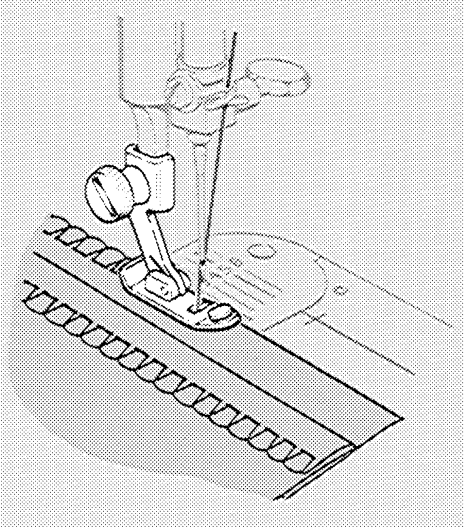
Method 2

Make a test sample.

Baste the garment together on the seam line and fit in the usual way.

After making any necessary adjustments, suggested in Method 1, place seam under foot. Stitch so that the stitches on the left side of the pattern penetrate the basted seam line.

Press after stitching and trim away excess fabric to produce a narrow seam edge. When the seam supports the garment, omit the trimming step and press seam open in the usual way.



Overedged Seam Finish

Overedged Seam Finish

- Stitch: overedge stretch stitch
- Stitch width: **5** only†
- Stitch length: to suit fabric and effect
- General purpose needle plate
- Overedge foot
- Speed range: **MIN**

Adjust stitch length to suit your fabric.

Trim seam edges evenly.

Place stitching over the trimmed edge of the seam allowance as illustrated.

†If a narrower stitch width is desired, as for overedging fine fabrics, use the general purpose foot in place of the overedge foot.

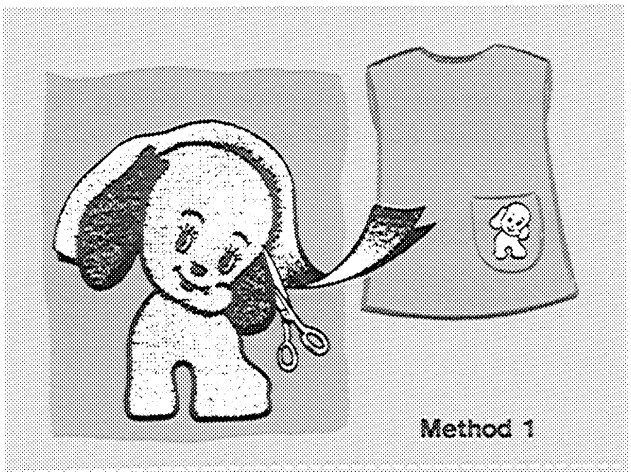
handling special fabrics

Many fabrics, because of their construction or finish, demand special attention in sewing. Techniques used in stitching and handling, and choice of machine accessories, will vary with the fabric. Let the table below guide your selection.

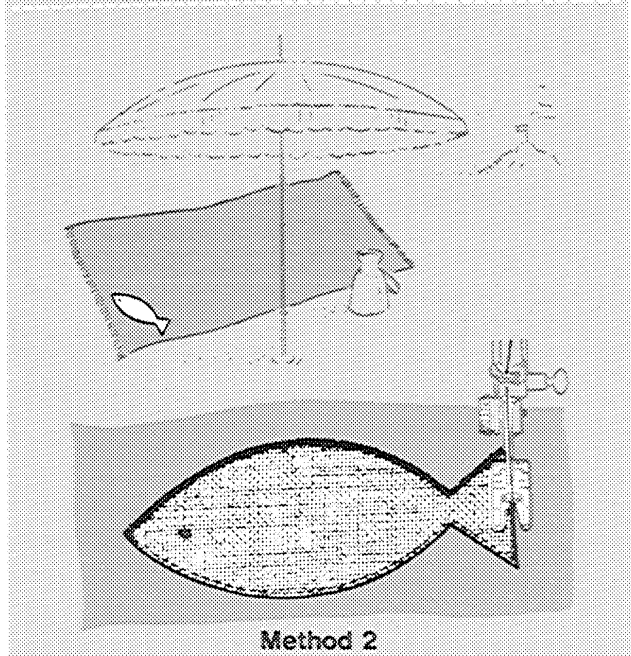
FABRIC-HANDLING TABLE

FABRIC	SPECIAL HANDLING	STITCH Length-Type	NEEDLE Style-Size	MACHINE ACCESSORIES
VINYL — leather-look patent, suede, reptile	Use transparent tape as a substitute for pins or basting — Topstitch to hold seams and edges flat — Avoid worked (machine) buttonholes. Use bound buttonholes.	Long Straight Stitch	Style 2020 Size 14 or 16 for woven backing Style 2045 Size 14 or 16 for knit backing	General Purpose Foot† General Purpose Needle Plate
PILE — velvet, velveteen, corduroy	Stitch in direction of nap — Use plain seams — Zig-Zag or bind seam edges to prevent fraying — Press over a self-fabric cloth.	Medium Straight Stitch for seams Medium Zig-Zag or Honeycomb Stitch for overcasting	Style 2020 Size 14 Style 2045 Size 14 or 16 for panne velvet	General Purpose Foot† (General Purpose Foot *only* for overcasting) General Purpose Needle Plate
DEEP PILE — fake fur	Pin rather than baste seams — Stitch in direction of nap — Use plain seams for short-hair furs; narrow overedged seams for shaggy, bulky furs — Shear pile from seam allowances to reduce bulk.	Long Straight Stitch for plain seams Medium to Short Zig-Zag Stitch for overedged seams	Style 2020 Size 16	General Purpose Foot† General Purpose Needle Plate
PERMANENT PRESS — percale, broadcloth, shirting	Control seam tension manually by holding fabric taut as it passes under the presser foot. Sew at moderate speed.	Medium Straight Stitch	Style 2020 Size 11 or 14	Straight-Stitch Foot and Needle Plate
FINE KNITS — tricot, jersey	Use narrow overedged, double stitched, or French seams — Hold thread ends securely for a few stitches at start of seam — Support seams while stitching. See page 20 to increase presser-foot pressure.	Medium Straight Stitch Medium to Short Narrow Zig-Zag or Narrow Overedge	Style 2045 Size 11 or 14	Straight-Stitch Foot and Needle Plate (for straight stitching) General Purpose Foot and Needle Plate (for zig-zag stitching)
BLANKET BINDING — satin face	Hand-baste binding to blanket (pin marks show) — Miter corners.	Long Straight Stitch Medium to Long Zig-Zag Stitch or Decorative Stitch	Style 2020 Size 11 or 14	General Purpose Foot† General Purpose Needle Plate
SOFT SHEER — chiffon, voile, China silk	Use French seams, double stitched — Hold ends of needle and bobbin thread when you begin to stitch — Support fabric while stitching.	Medium to Short Straight Stitch	Style 2020 Size 9 or 11	Straight-Stitch Foot and Needle Plate
NAPPED FABRIC — cashmere, mohair, camel hair	Cut with nap running down — Sew in direction of nap — Topstitch to hold seams and edges flat.	Medium to Long Straight Stitch	Style 2020 Size 11 or 14	General Purpose Foot† General Purpose Needle Plate

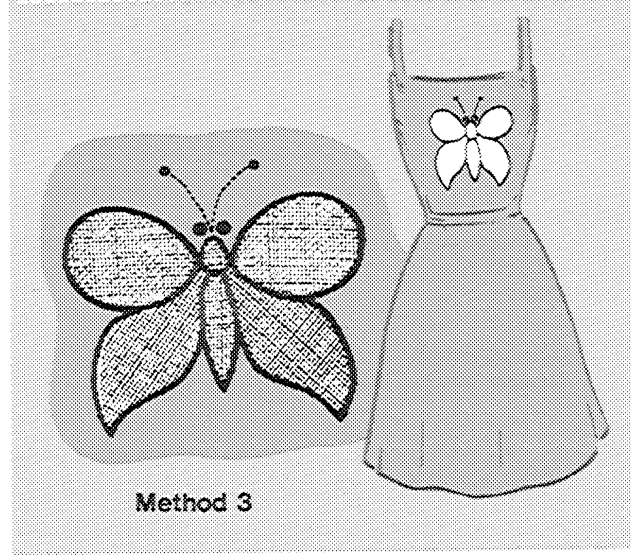
† For best results when sewing this fabric, we recommend use of the Even Feed Foot, available at your Singer Sewing Center.



Method 1



Method 2



Method 3

creative crafts

APPLIQUÉ

The stitch most commonly used in appliqué is a plain zig-zag, closely spaced to form a satin stitch. The width of this stitch can be varied to accommodate fabrics of different weaves and textures. *Fashion* stitch patterns (white) and *Flexi-Stitch* patterns (yellow) can also be used.

Preparation

Make a test sample to decide which of the following methods is the most appropriate for your fabric and design. Mark design on piece of fabric to be appliquéd. Cut out design leaving about 3/4-inch (2cm) margin all around.
Position the design.
Baste it to the fabric.

Method 1

- Set pattern selector and stitch-width dial for desired appliqué stitch. Adjust stitch length to a fine setting, between 1 and 0.
- Follow the outer edge of the design with a decorative stitch.
- Trim away the excess fabric on the outer edges of the stitching.

Method 2

- Select straight stitching.
- Outline the entire design with a short stitch.
- Trim raw edges to the stitching and remove basting.
- Select stitch pattern and stitch width desired, and set stitch length on a satin stitch setting for a closely spaced stitch, between 1 and 0.
- Stitch, following the straight stitch outline. This method will produce a smooth over-edged finish, with no raw edges to be trimmed after stitching.

Method 3

- Purchased motifs can be appliquéd quickly and easily by using either a straight or decorative stitch.

FREE-MOTION STITCHING

In free-motion stitching, you sew without a presser foot and control fabric movement by means of an embroidery hoop. Either a straight or a plain zig-zag stitch can be used. Because you can move the hoop in any direction — forward or backward, from side to side, or even diagonally — free-motion stitching is extremely useful for embroidery designs. On the other hand, it is equally useful for darning.

If you are **embroidering,** you can vary the length of stitches simply by moving the hoop faster or slower under the needle. The faster you move the hoop, the longer the stitches will be. You can also vary the width of zig-zag stitches from wide to narrow by controlling the angle at which the hoop is placed and moved under the needle.

For **darning,** the embroidery hoop used in free-motion stitching enables you to hold the fabric taut — a real advantage when your fabric is lightweight or soft and thus likely to pucker. See page 49 for directions.

FLOWER EMBROIDERY

- Stitch: zig-zag
- Stitch width: to suit fabric
- Feed cover plate
- No presser foot

Preparation

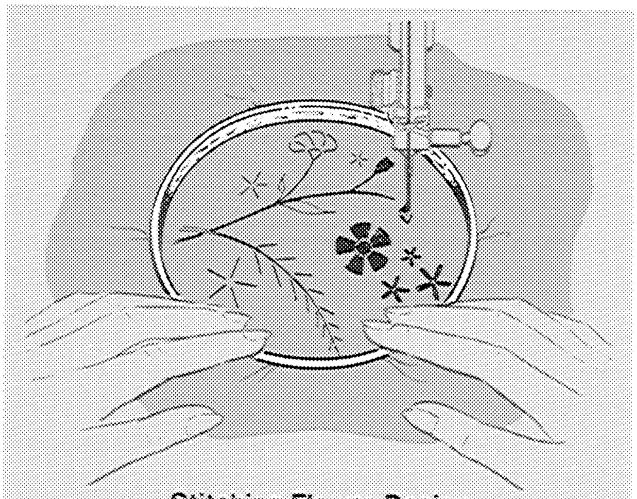
Trace design on right side of fabric. Prepare the area to be embroidered using an underlay if the fabric is soft. Place the work in an embroidery hoop approximately 7 inches (18cm) in diameter. If the design to be embroidered covers a large area, it will be necessary to reposition the work in the hoop as each section is completed.

The darning and embroidery foot may be used to assist fabric control.

Procedure

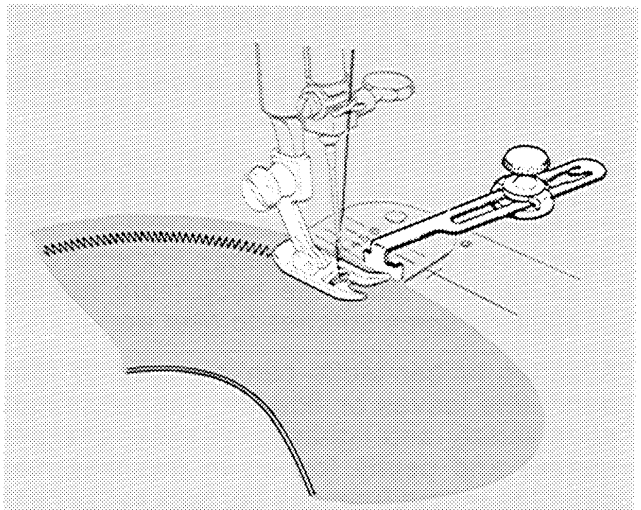
1. Position work under needle and *lower presser bar to engage tension.*
2. Hold needle thread loosely and turn hand wheel *toward you* to bring bobbin thread up through fabric. Hold both thread ends and lower needle into fabric.
3. Stitch, outlining or filling in design with zig-zag stitches. For a smooth, satiny surface, place parallel stitches close together, moving hoop slowly and steadily. For an irregular texture, move the hoop more rapidly, allowing some stitches to overlap.

A series of bar-tacks can be used to form spray-like leaves or flowers. This technique adds variety and lightness to many designs. Leaves and petals formed in this way may carry the thread from one bar tack to the next. This carrying thread eliminates tying of the thread ends.

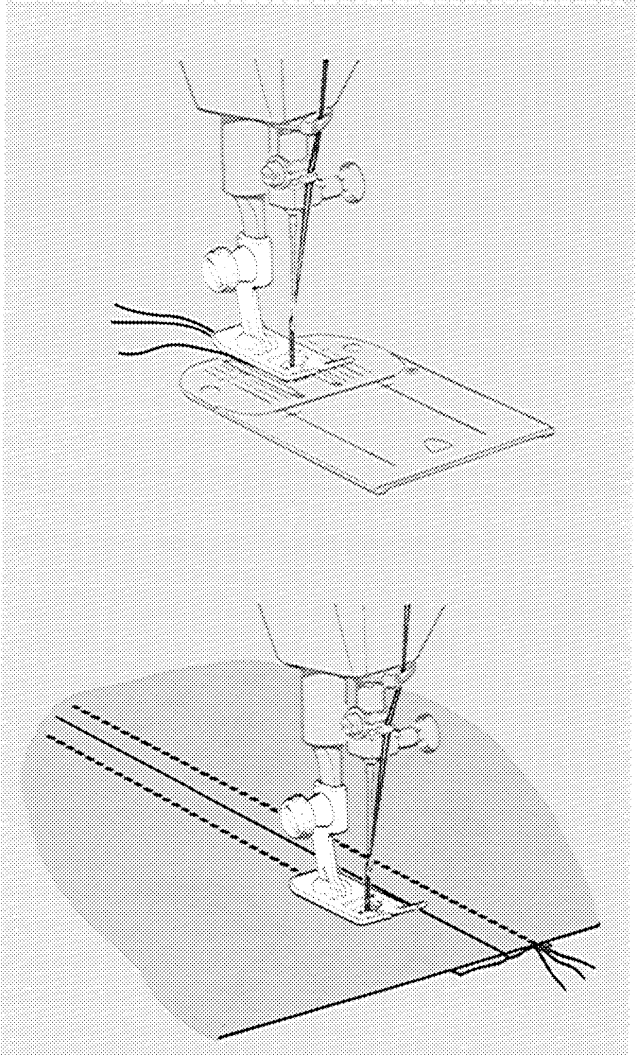


Stitching Flower Design

Completed Flower Design



Topstitching with Zig-Zag Stitch



Two-thread Topstitching

TOPSTITCHING

A practical, simple way to accent the lines of a dress or coat is to place one or more rows of stitching along collars, lapels, facing edges, hems, pockets, seams, etc. For a tailored look, use lines of regular straight stitching; sew them with buttonhole twist (or double strands of regular thread) for added emphasis. For decorative interest, use a zig-zag stitch. The even feed foot, available for separate purchase at your local *SINGER* store, will help you place stitching evenly and accurately. To keep stitching at an even distance from the fabric edge, use the seam guide.

Two-thread Topstitching

Bold, well-defined topstitching is produced by using two strands of regular thread in the needle instead of a single strand. Ideal for summer knits, linens, cottons, denims, and vinyls, two-thread topstitching is economical and particularly appropriate for use when a non-lustrous, washable finish is required.

- Select a size 16, Style 2020 needle for woven fabric and use a size 14, Style 2045 *Yellow Band* needle for knits. Refer to Fabric, Thread and Needle Chart on page 12.
- Select straight stitching.
- Attach detachable spool pin in hole on top cover of machine.
- Using the two threads, thread the machine in the regular way for single-needle stitching. For best results, use size 50 mercerized cotton thread or cotton-wrapped polyester thread.
- Pass threads together into tension discs and threading points above the needle.
- Cut thread ends diagonally and draw both through the eye of the needle.
- Make a stitching test to determine the best stitch length and needle-thread tension. A long stitch, **2.5** to **4** on your stitch length dial, is usually best.
- Sew at moderate speed.

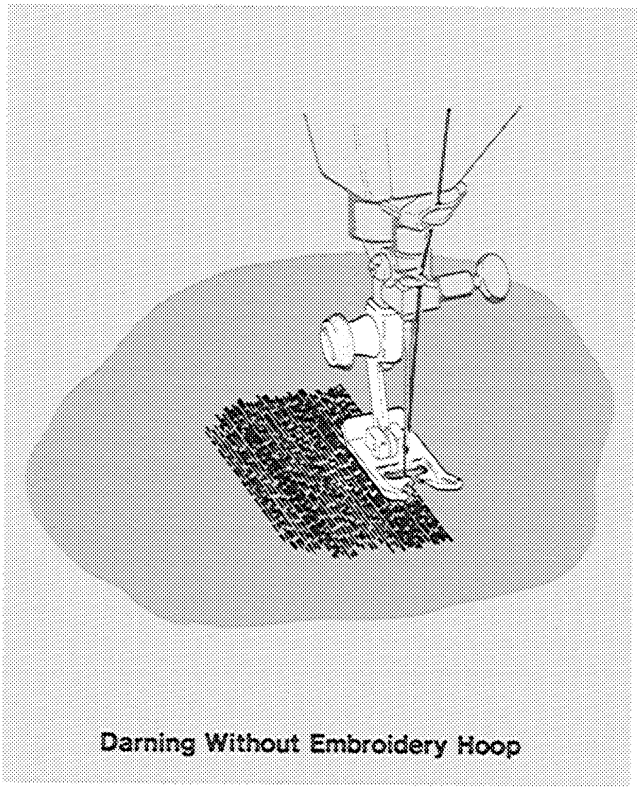
keeping up appearances

DARNING

Without Embroidery Hoop

- Stitch: straight stitch ¦
- Stitch length: between 1 and 1.5
- General purpose needle plate
- Special purpose foot or general purpose foot
- Pressure setting: **DARN**

1. Select straight stitch.
2. If area to be darned is open, baste an underlay in place.
3. Place area to be darned under presser foot; lower presser foot and start stitching, alternately drawing fabric *toward you* and pulling it *gently away from you.*
4. Continue this forward and backward motion as you fill the area with parallel lines of stitching. For additional strength, cover area with crosswise lines of stitching.

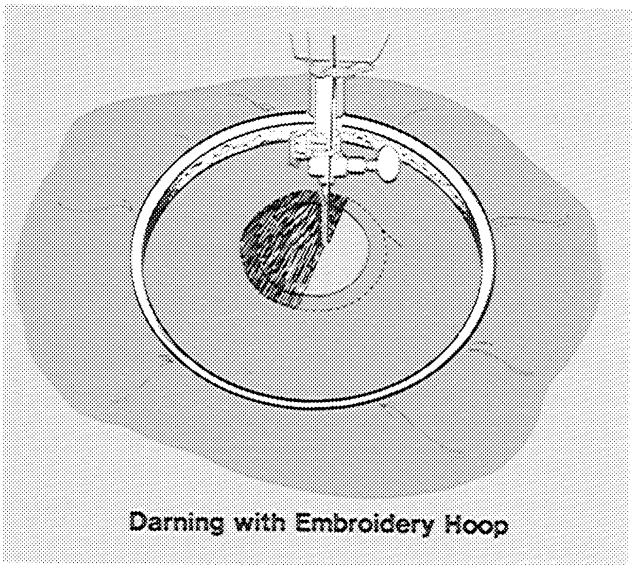


Darning Without Embroidery Hoop

With Embroidery Hoop†

- Stitch: straight stitch ¦
- Stitch length: 0
- Feed cover plate
- No presser foot
- Embroidery hoop

1. Trim ragged edges from area to be darned and center worn section in embroidery hoop.
2. Select straight stitch.
3. Position work in hoop and place hoop under foot, *then lower the presser bar to engage tension.*
4. Hold needle thread loosely with left hand, turn hand wheel *toward you,* and draw bobbin thread up through fabric. Hold both thread ends and lower needle into fabric. Snip off after a few stitches.
5. Outline area to be darned with running stitches for reinforcement as illustrated.
6. Stitch across opening, moving hoop back and forth under foot. Keep lines of stitching closely spaced and even in length.
7. When opening is filled, cover area with crosswise lines of stitching.



Darning with Embroidery Hoop

†For best results, *Flip & Sew* panel should be up when darning with embroidery hoop.

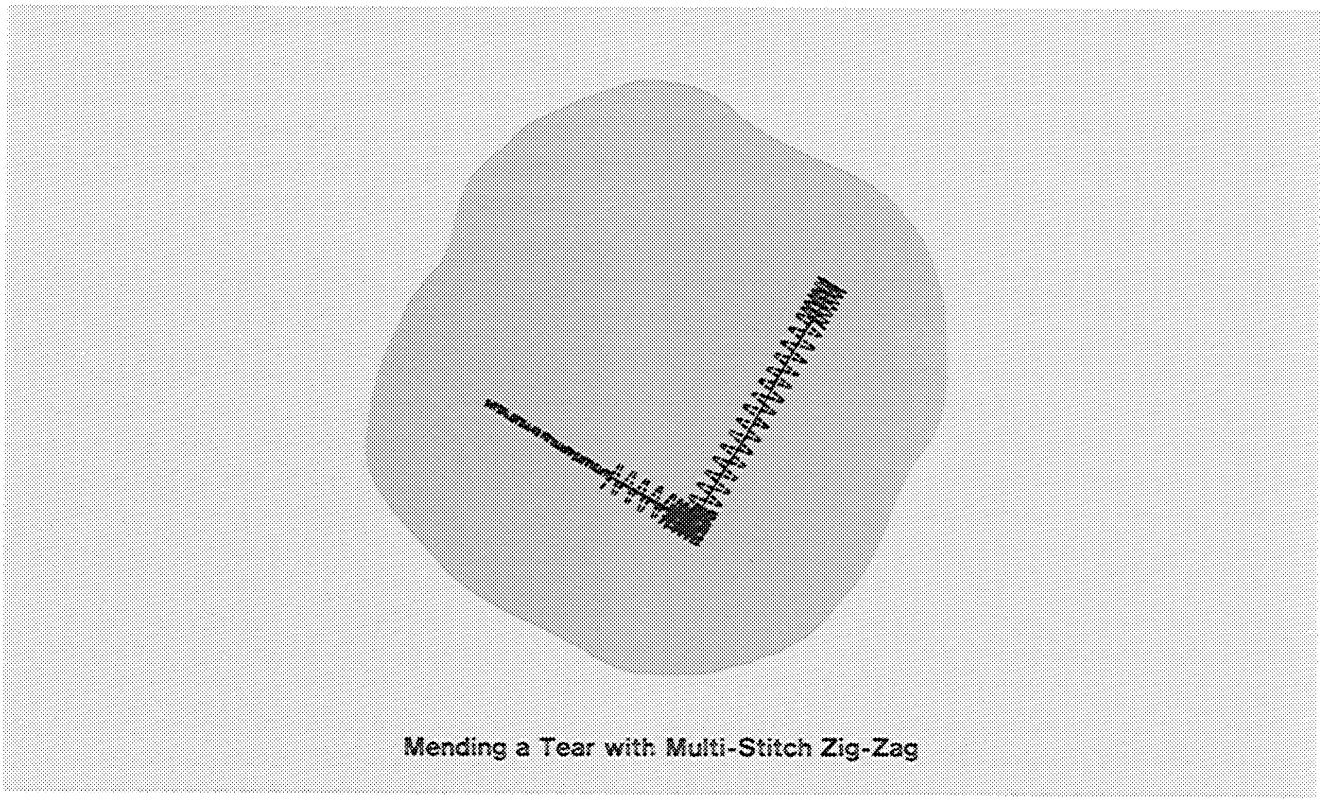
MENDING

Many of the patterns in your machine are just as useful for mending as they are for creative sewing. The multi-stitch zig-zag forms a firm, flexible bond that is ideal for repairing tears and replacing elastic. Stretchable straight stitches for the repair and reinforcement of press-open seams are produced when the straight stretch stitch is used. Bartacks to reinforce points of strain are made with the plain zig-zag stitch.

Mending a Tear

- Stitch: multi-stitch zig-zag
- Stitch width: **2** to **5**
- Stitch length: to suit fabric
- General purpose needle plate
- General purpose foot

1. Trim ragged edges.
2. Place underlay on the wrong side of tear for reinforcement. (Do not baste or pin the underlay, since you will be bringing the edges together in the next step.)
3. Stitch on the right side, bringing the edges of the tear together. Shorten stitch length at ends and corners to give extra strength.
4. Trim underlay.



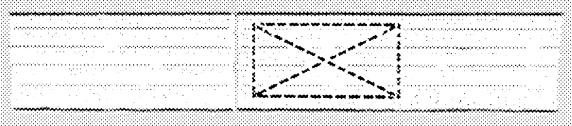
Mending a Tear with Multi-Stitch Zig-Zag

Replacing Lingerie Elastic

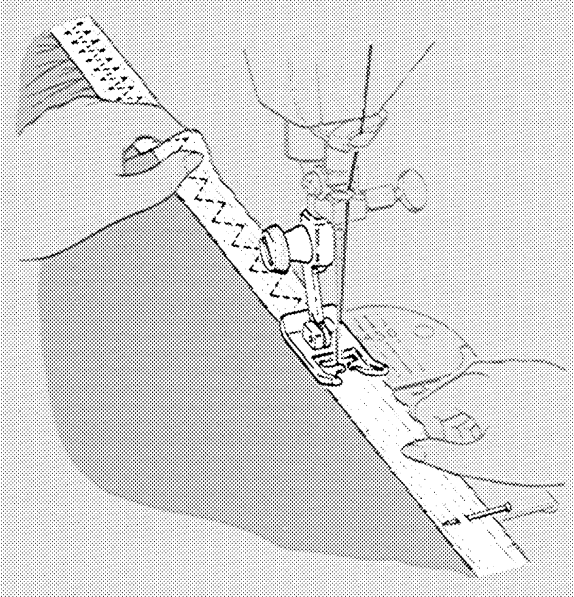
- Stitch: multi-stitch zig-zag
- Stitch width: **2** to **5**
- Stitch length: **1.5**
- General purpose needle plate
- General purpose foot

1. Fit elastic for desired snugness at waistline, allowing one inch (2.5cm) for joining. Lap ends and stitch together as shown using a ball point needle.
2. Divide elastic band into four equal segments and mark with pins. Do the same to the garment. Then pin together at corresponding points, pinning elastic over right side of fabric, top edges even.
3. Select multi-stitch zig-zag. Plain zig-zag, elastic stretch stitch, honeycomb or featherstitch are also effective for replacing lingerie elastic.
4. Take a few stitches to anchor elastic to fabric. Then hold elastic and garment edge taut as you stitch so that it will remain stretchable after stitching is completed.

Caution: *Do not pull the fabric while you are stitching as this may deflect the needle, causing it to break.*



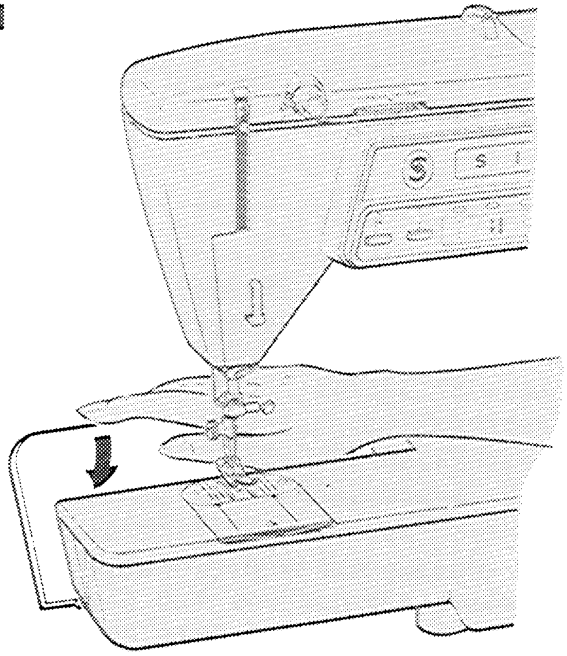
Joining Elastic



Replacing Lingerie Elastic

9. FREE-ARM SEWING

Fabric handling, when sewing tubular and hard to reach garment areas, is simplified when you convert your sewing machine to free-arm sewing. A few of the sewing jobs for which you will find the free arm particularly useful are shown on pages 52 through 55. You will discover many more for yourself. The following simple step tells you how to convert your machine for free-arm sewing.

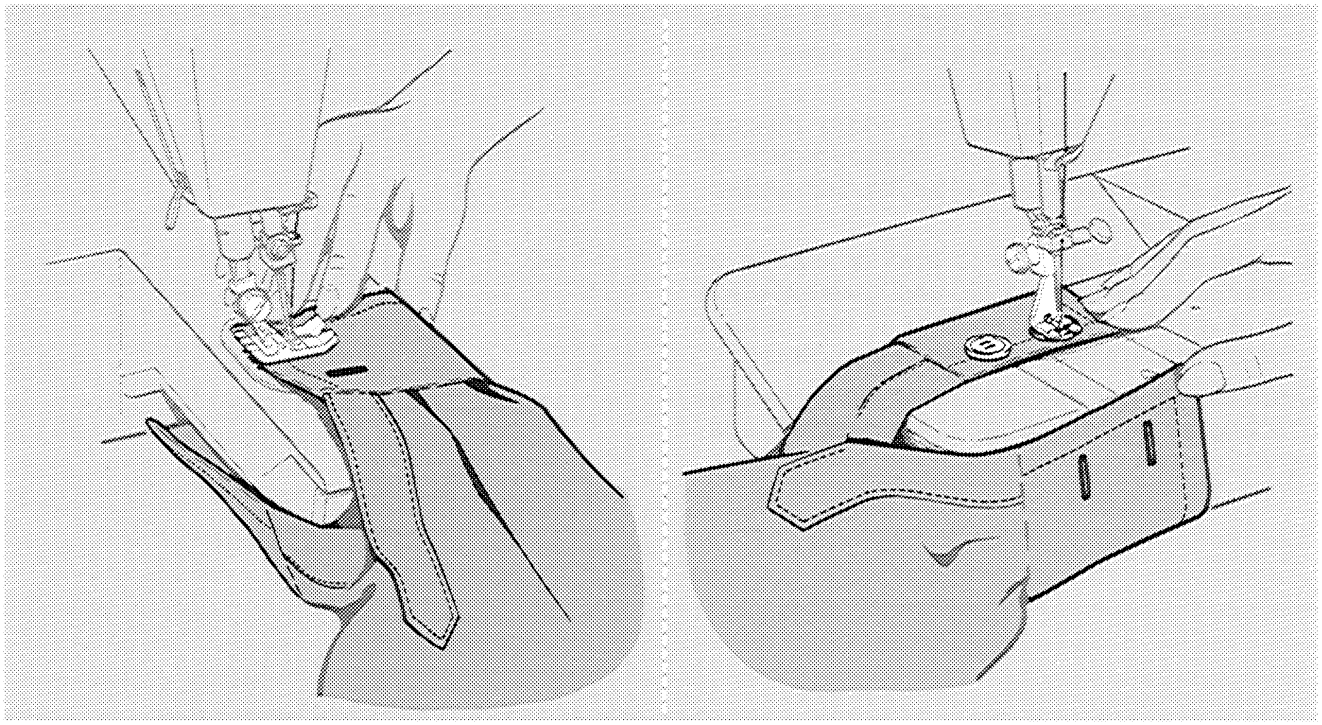


preparation

To convert to free-arm sewing, simply press down on corner of *Flip & Sew* panel on sewing machine.

applications

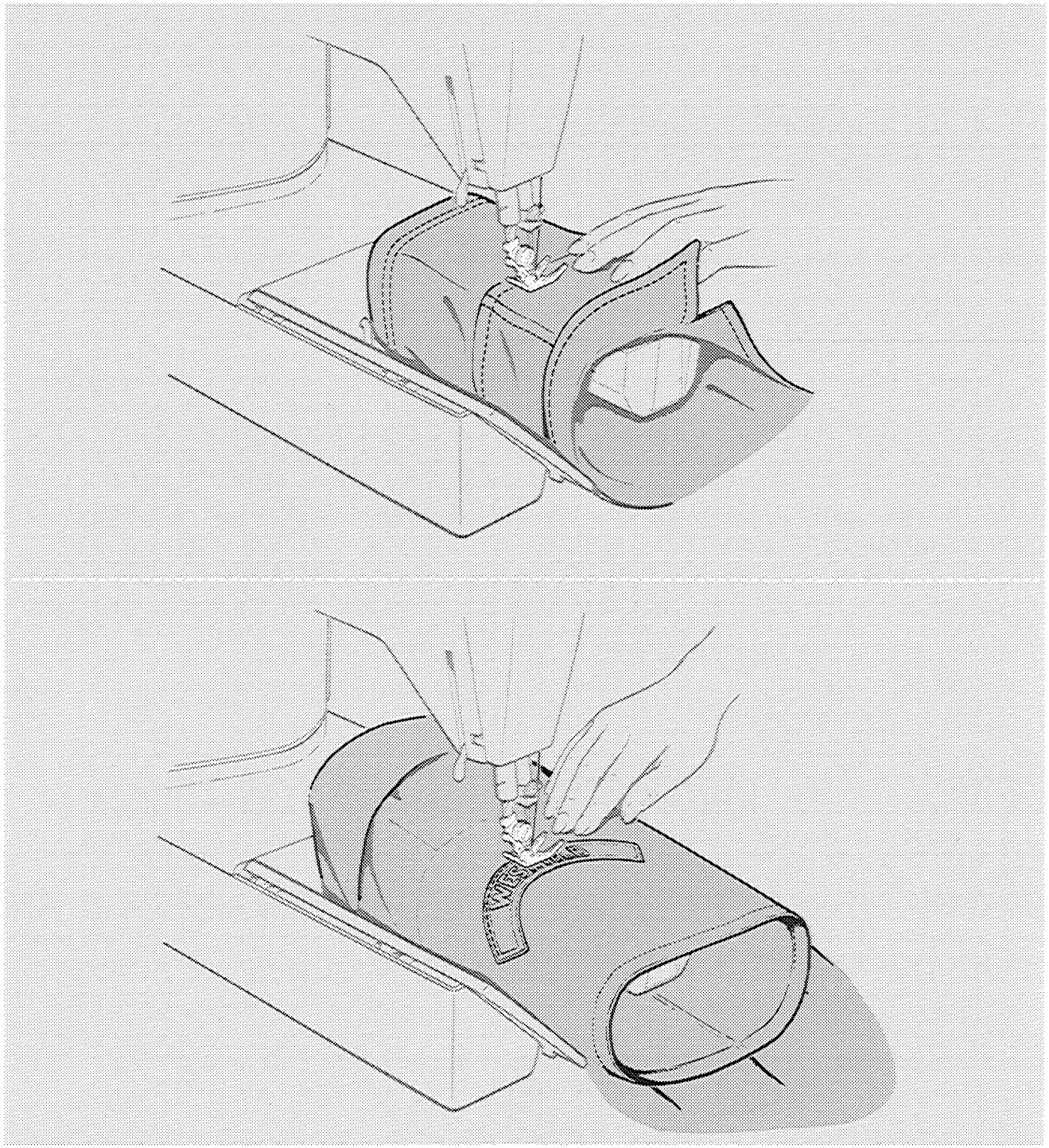
BUTTONHOLES AND BUTTONS



Stitching buttonholes or sewing buttons on a cuff or neckband is no longer a task when the free-arm surface is used. Cuffs slip around the sewing surface without being pulled out of shape, so you can see and handle the stitching area easily.

For buttonholing, follow the instructions for two-step buttonholes that start on page 34. Button-sewing instruction is given on page 36.

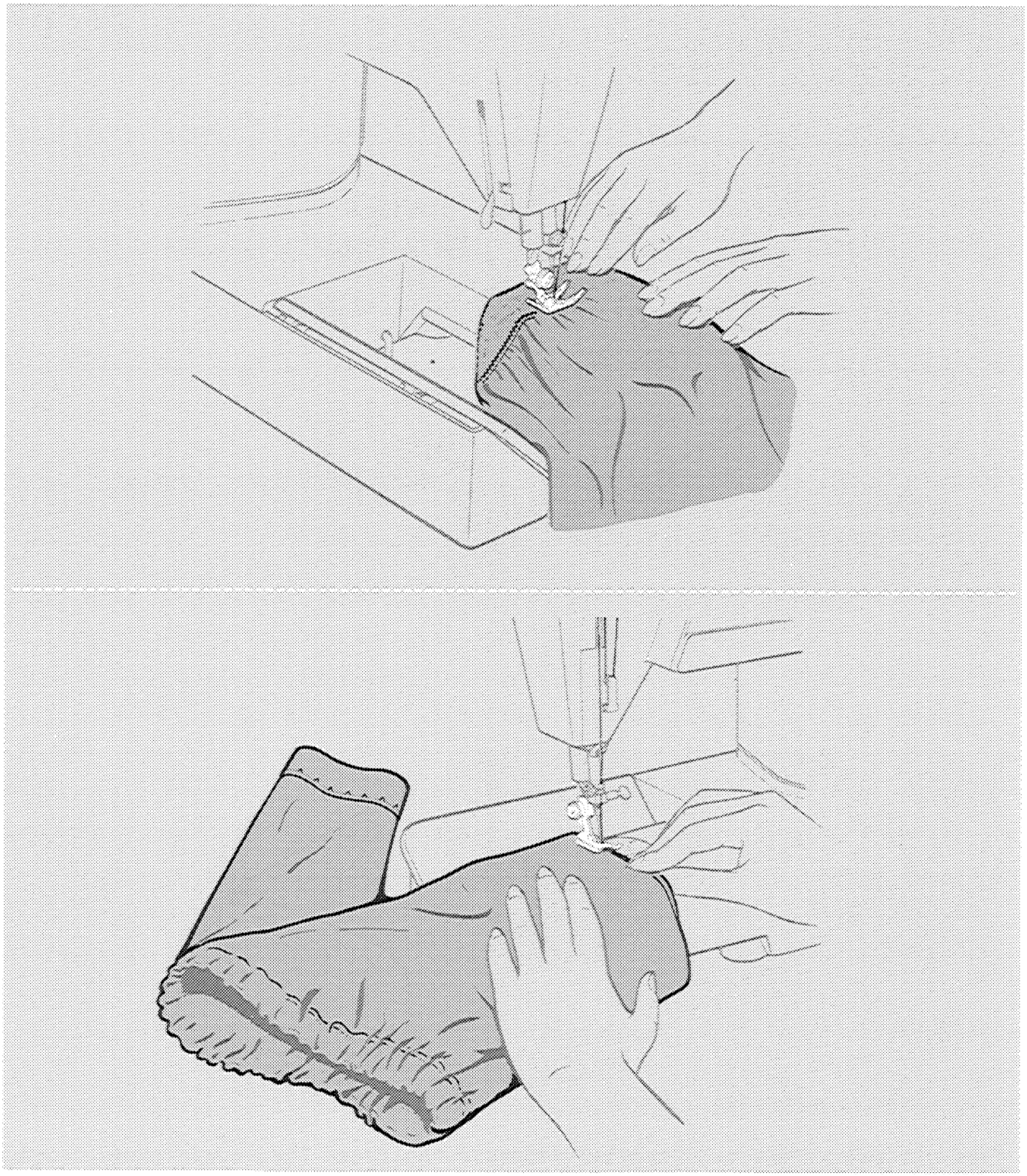
SLEEVES



Free-arm sewing takes the difficulty out of topstitching a sleeve. The armhole rotates smoothly under the needle so that you can place stitching accurately. The extra control afforded by the free arm is especially helpful for topstitching flat-fell seams.

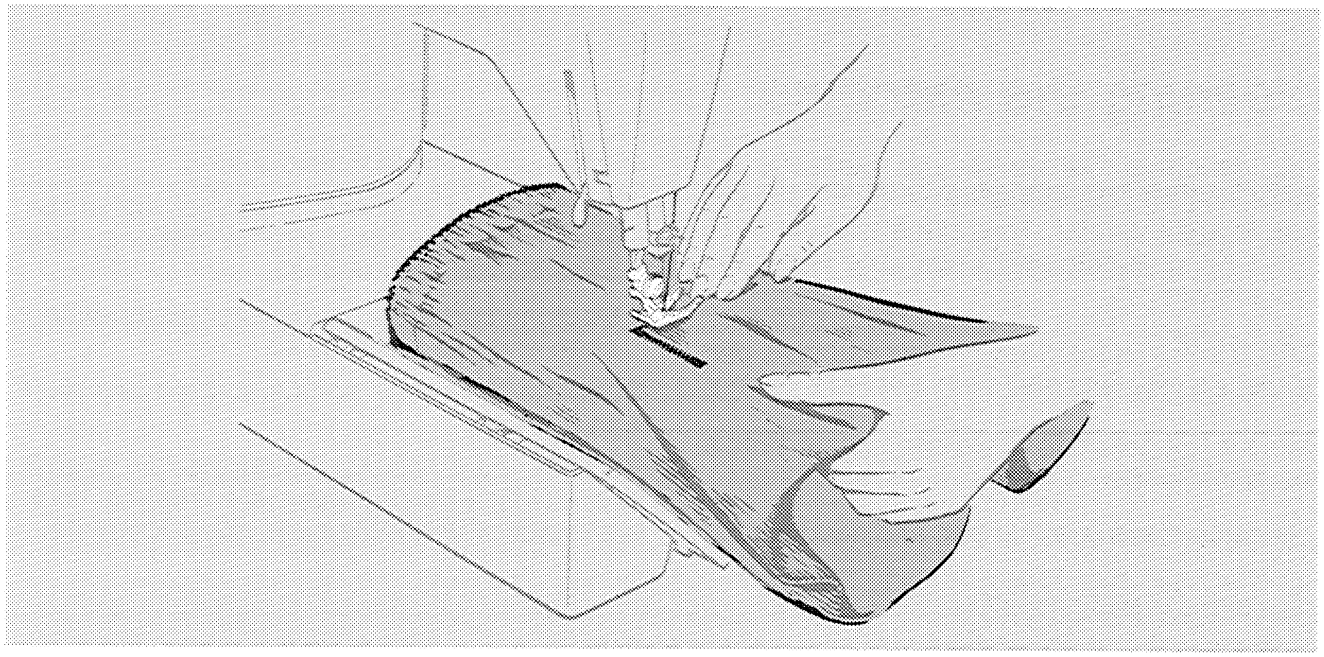
Badges, emblems and insignia of all sizes and shapes can be quickly attached to shirts and uniforms by slipping sleeve or hard-to-reach area over the sewing surface.

EDGE FINISHES



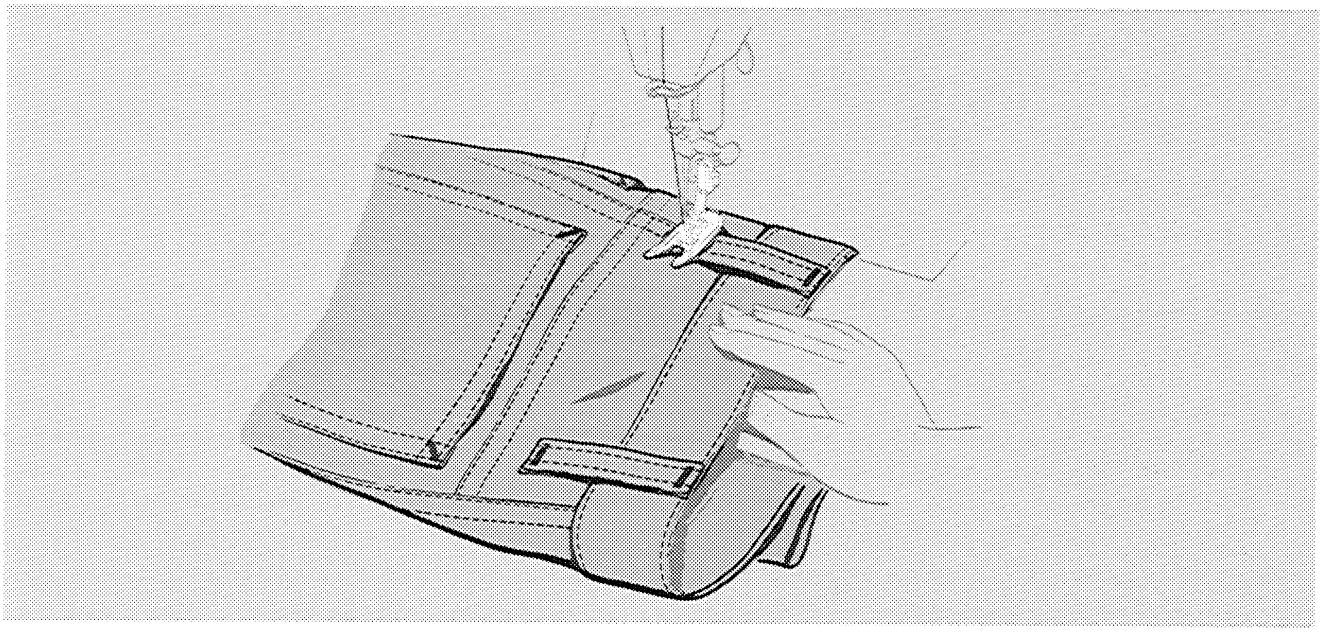
The free-arm surface makes it easy to finish sleeves, pant legs and waistlines. These circular garment areas rotate smoothly around the sewing surface, giving you full visibility and control as you blindstitch hems, attach elastic, or topstitch cuffs.

DARNING AND MENDING



Knees, elbows and other areas of wear in children's clothes, sweaters, jackets and shorts become readily accessible for darning, mending or patching when the free-arm surface is used. The sewing surface fits inside the enclosed sleeve and leg areas, making it unnecessary to open seams or roll the garment. For darning, follow the instructions on page 49 and refer to page 50 for mending information.

BAR TACKS



Bar tacks reinforce areas of strain and can be applied to ready-made garments, as well as to those sewn at home. Use the free-arm surface to avoid fabric bulk around the needle when you apply this detail to pockets, plackets, and waistlines.

10. CARING FOR YOUR MACHINE

cleaning the machine

Your machine will serve you perfectly for many years if you take a few moments of your time to keep it clean. How often you will need to clean the machine will depend on how often you use it.

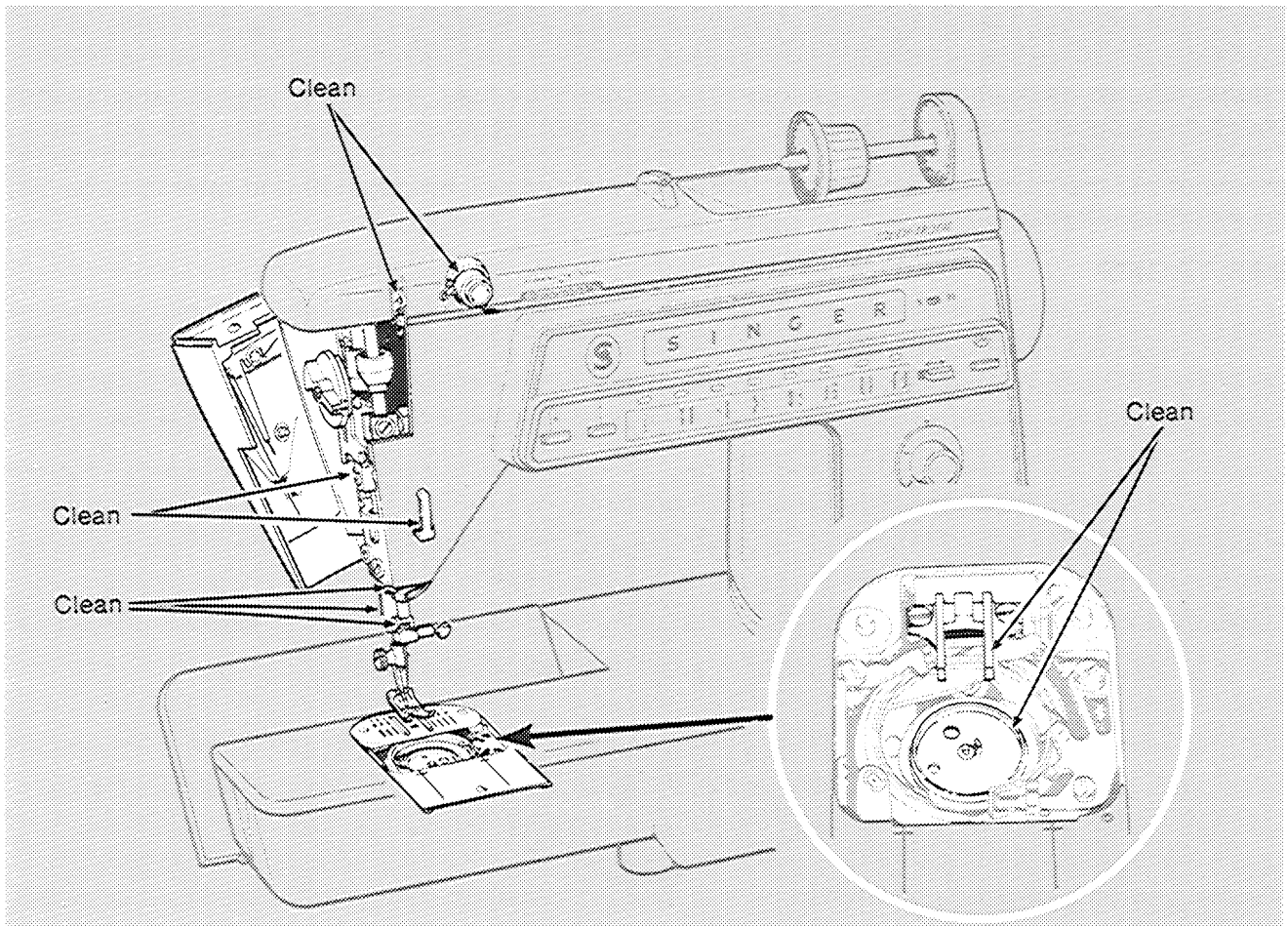
CAUTION: *Before cleaning your machine, disconnect power-line plug from electrical supply.*

Remove lint or fluff from exposed parts. With a soft cloth, clean:

- Tension discs, presser bar, and needle bar.
- Take-up lever and thread guides.
- Bobbin case (If there is a lot of lint in the area, remove bobbin case for cleaning. See page 58 for instructions.)
- Machine surface (If necessary, dampen the cloth and use a mild soap.)

Open the face plate and clean area behind it with a brush.

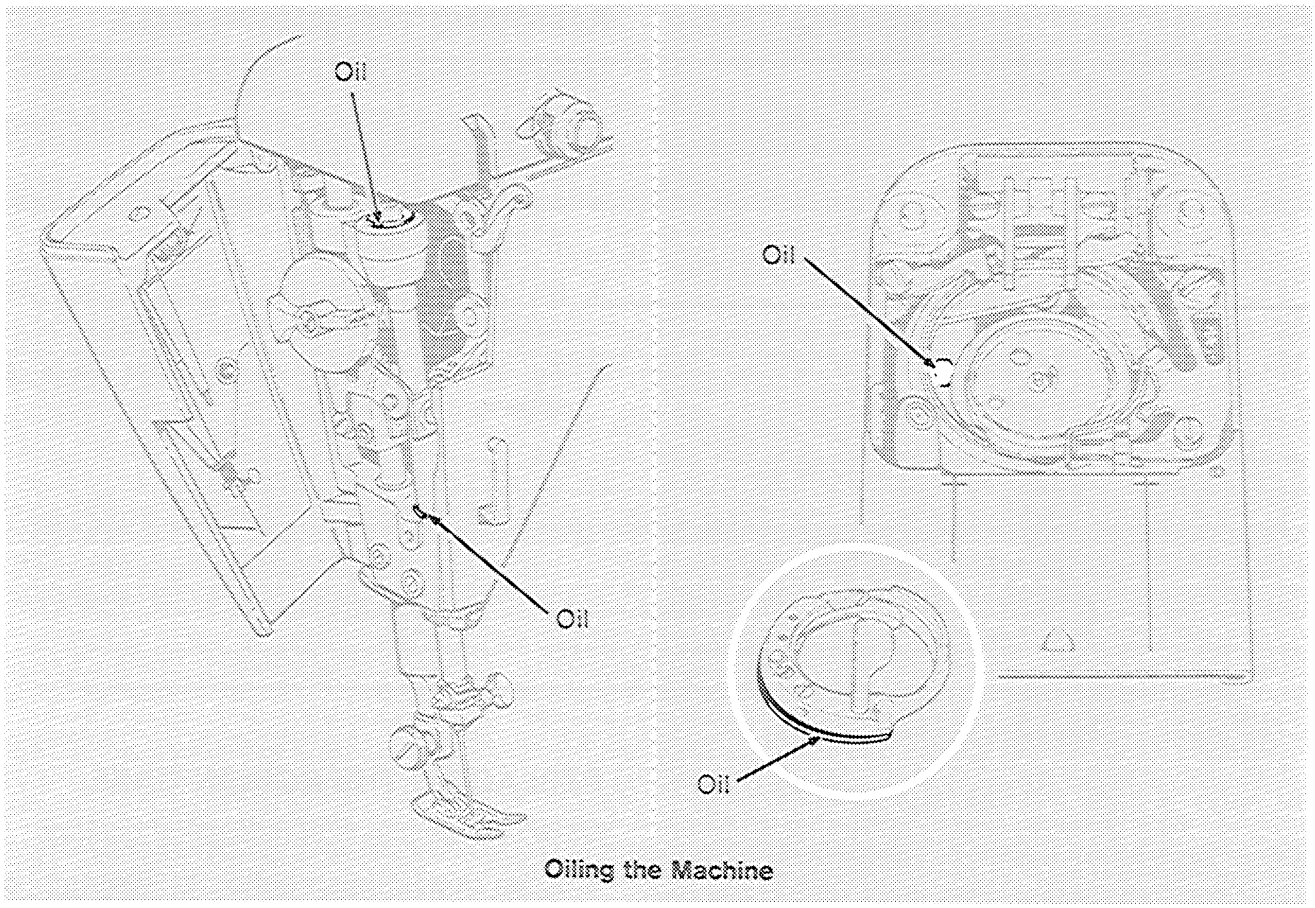
Remove needle plate as instructed on page 8 and, using a brush, clean the rotating hook area under the needle plate and slide plate.



Cleaning the Machine

OILING THE MACHINE

After cleaning, apply only SINGER* oil at points indicated below. SINGER oil is specially prepared and does not contain harmful deposits that can interfere with the smooth action of precision parts.

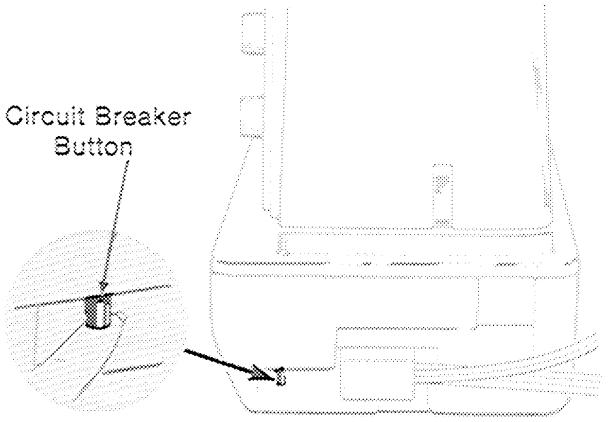


Oiling the Machine

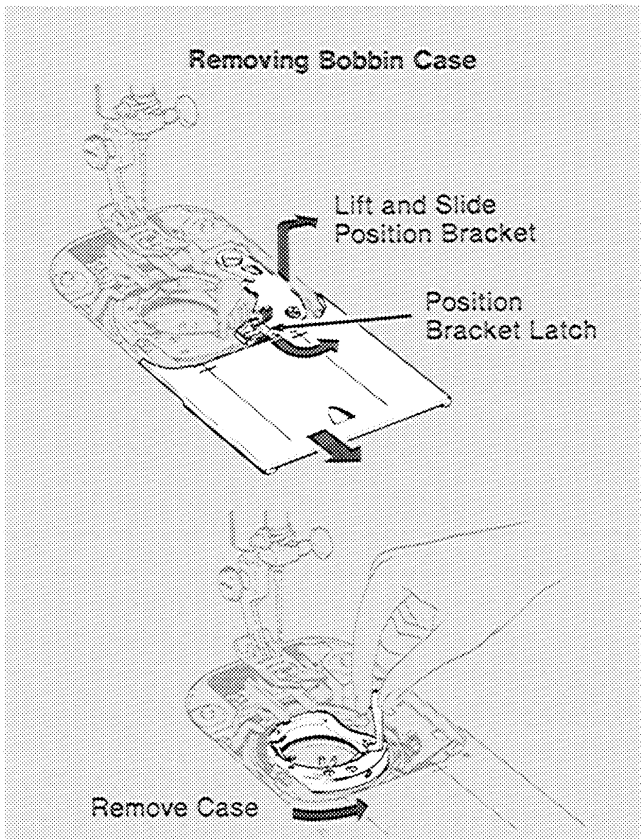
CIRCUIT BREAKER

The electronic system of your machine is protected by a circuit breaker. If the sewing light goes on and the needle moves up and down, but you do not obtain the pattern selected, push the circuit breaker button, to reactivate the machine. Reach under the right side of machine, as illustrated, and push in the red button. Re-select desired pattern.

Note: If button continues to disengage, contact your Singer representative or Approved Dealer.



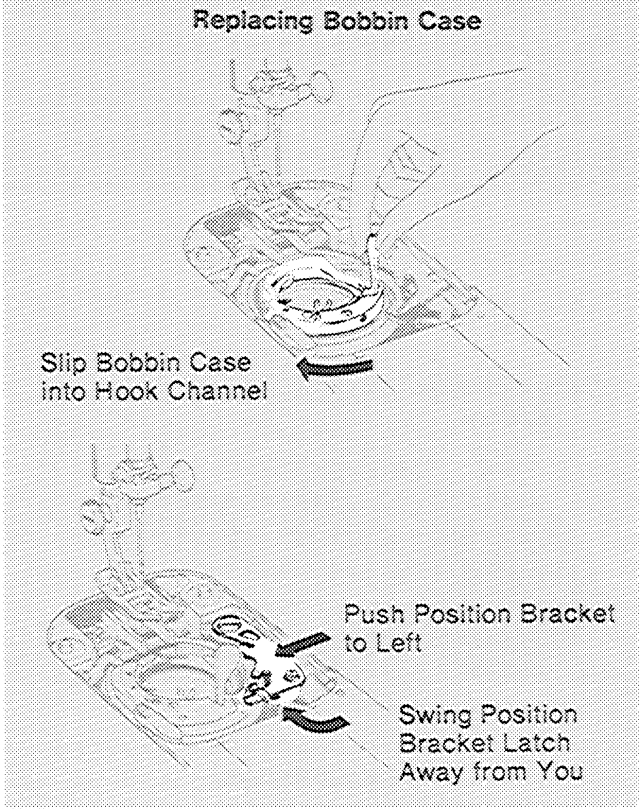
Circuit Breaker



REMOVING THE BOBBIN CASE

Make sure needle is at its highest position.

1. Open slide plate and remove needle plate (see page 8 for instructions).
2. Remove bobbin. Keep bobbin push button in sewing position.
3. Swing position bracket latch *toward you.* Lift bracket and slide it to the right.
4. To remove bobbin case, twist case as shown, and lift out.



REPLACING THE BOBBIN CASE

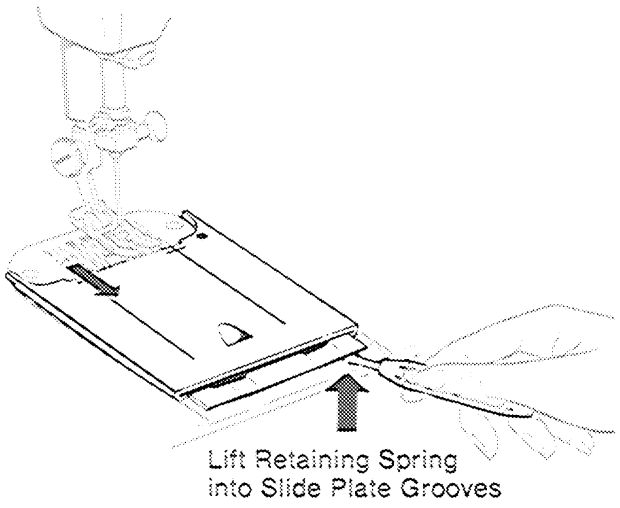
Make sure needle is at its highest position.

1. Keep bobbin push button in sewing position. Hold bobbin case by latch and, with latch to right of needle, slip case in position so that the groove of the bobbin case engages hook channel.
2. Twist bobbin case as shown, until latch is in center.
3. Push position bracket to left until it snaps down, locking bobbin case in place.
4. Swing position bracket latch *away* from you to lock bracket in place.
5. Replace bobbin and snap latch down.
6. Replace needle plate and close slide plate.

REPLACING THE SLIDE PLATE

You will not have any occasion to remove the slide plate. However, if it should accidentally become disengaged from the machine, it is easily replaced.

- Raise the presser foot and make sure needle is in its highest position.
- Place slide plate in slide way with the front edge close to, but not covering, the retaining spring (as shown).
- With a small screwdriver, lift each end of the spring into each of the side grooves on the underside of the plate.
- Draw the plate gently toward you and fully engage the spring.
- Close slide plate.



Replacing the Slide Plate

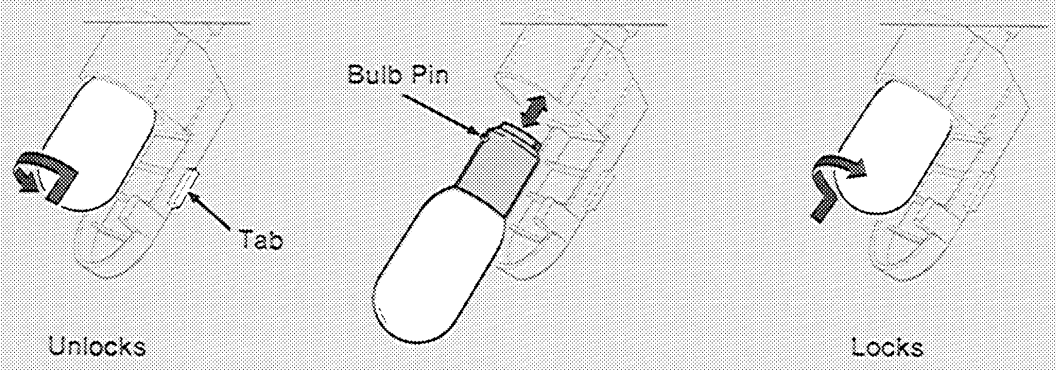
CHANGING THE LIGHT BULB

CAUTION: *Before changing light bulb make sure you have disconnected power-line plug from electrical outlet.*

Removing Bulb. With thumb of right hand, push in and down on tab of light lens and lower the light bracket. *Do not attempt to unscrew the bulb.* Press it up into the socket and at the same time turn bulb over in direction shown to unlock the bulb pin.

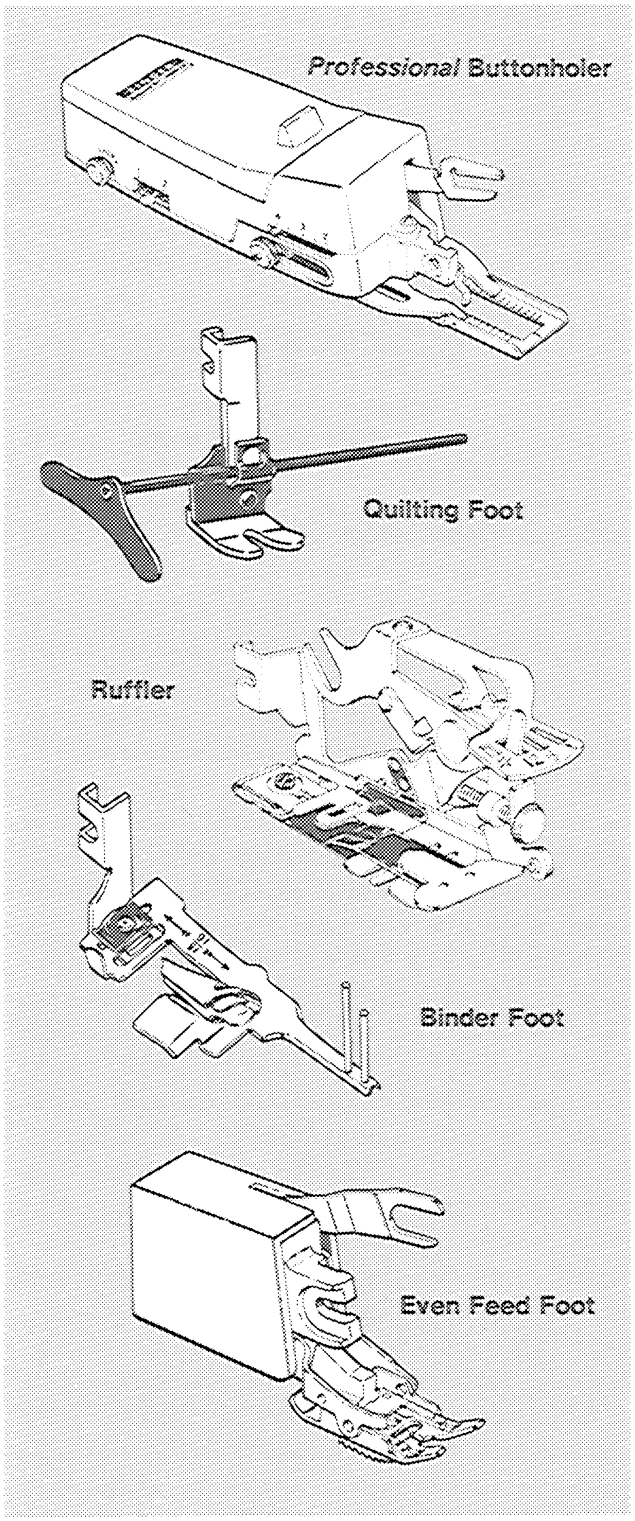
CAUTION: *Be sure to use a 15 watt bulb* ***only.***

Replacing Bulb. Press new bulb into socket, with bulb pin entering slot of socket, and turn it over in direction shown to lock bulb in position. Push entire assembly up until it snaps in position.



11. SEWING AIDS

special accessories for special jobs



Sewing Aids have been designed to increase the versatility of your sewing machine and enable you to give your sewing that extra professional touch. The ones described below are just a few of the complete selection available at your local SINGER store.

*Professional** Buttonholer No. 381116

The *Professional* Buttonholer sews six kinds of buttonholes, plus eyelets, on a wide variety of fabrics. You choose the style and length and make perfect buttonholes every time.

Quilting Foot No. 160691

The quilting foot is especially well adapted to stitching lightly padded fabrics. It is excellent for the placement of straight stitching in block, floral, or scroll designs. This short, open foot permits following curved lines with ease and accuracy.

Ruffler No. 161561

This accessory offers a simple, effective way to make gathered and pleated ruffles. The ruffler is used for straight stitching only.

Binder Foot No. 81200

The binder foot is used to apply ready-made bias tape or unfolded bias binding to an unfinished edge. It can also be useful for binding seam edges that might ravel.

The Even Feed Foot No. 506415

The even feed foot is a perfect aid for stitching difficult-to-match fabrics such as plaids and stripes, and difficult-to-feed fabrics that have a pile, nap or a shiny surface. All these fabrics can be sewn without puckering and slipping.

your personal measurements

This chart will enable you to keep a record of your measurements. You will need the assistance of someone to help you to take the measurements carefully with an accurate tape measure.

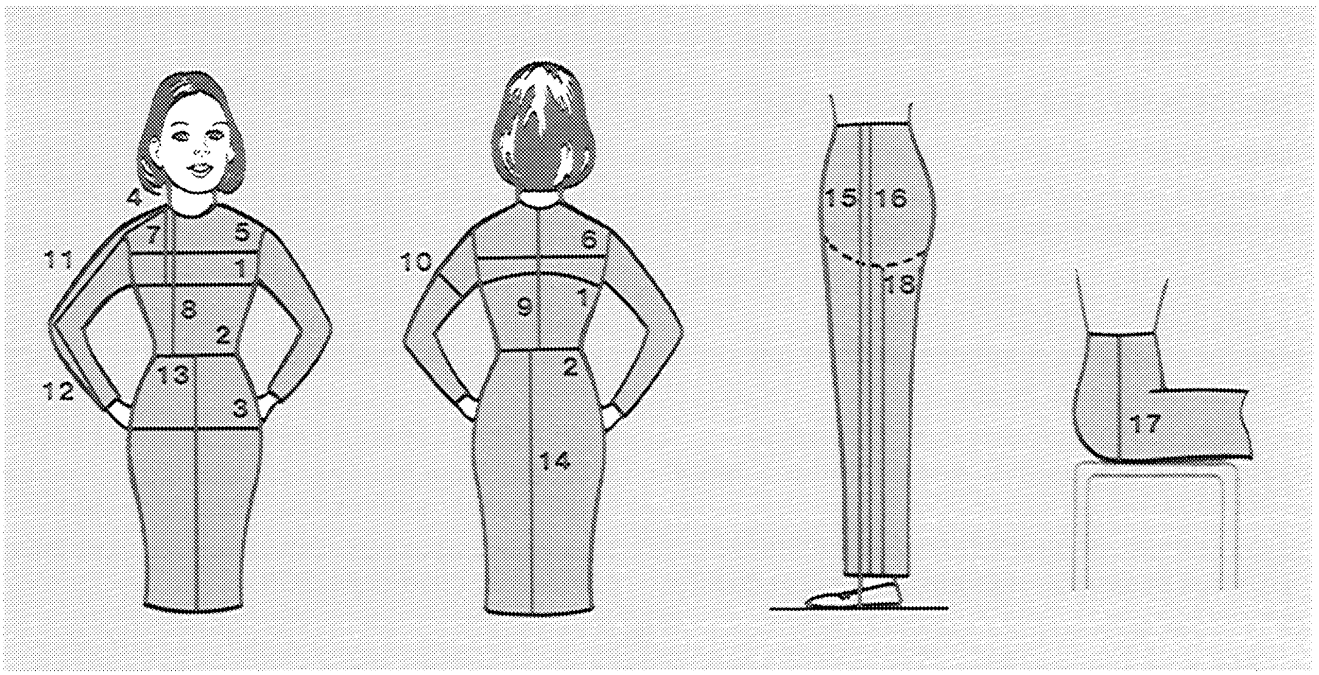
The figures in these illustrations show where the tape measure should be placed when taking each measurement.

inches (cm)

1. **Bust** — Fullest part — slightly higher in back _____
2. **Waist** — Around natural waist line _____
3. **Hip** — .....inches (cm) below natural waist line (fullest part) _____
4. **Shoulder** — From base of neck to top of arm _____
5. **Front Bodice Width** — From arm hole to arm hole 5 inches (13cm) down from center shoulder _____
6. **Back Bodice Width** — From arm hole to arm hole 4 inches (10cm) down from center shoulder _____
7. **Shoulder to Bust** — From neck base at shoulder to point of bust _____
8. **Front Waist Length** — From neck base at shoulder over fullest part of bust to waist line _____
9. **Back Waist Length** — From the prominent bone at base of neck to natural waist line _____
10. **Sleeve Width** — Around arm at upper edge of underarm seam _____
11. **Sleeve Length** — Shoulder to elbow _____
12. **Sleeve Elbow to Wrist** _____
13. **Front Skirt Length** — Down center from waist line to hem _____
14. **Back Skirt Length** — Down center from waist line to hem _____

PANTS MEASUREMENT CHART

15. **Full Length** — Waist to floor at side seam _____
16. **Pant Length** — Waist to ankle _____
17. **Crotch Depth (seated)** — Waist to chair at side seam _____
18. **Crotch Seam (standing)** — Crotch depth 17 to be deducted from pant length 16 _____



12. PERFORMANCE CHECKLIST

Whenever sewing difficulty is encountered, review the sections of the instruction book that explain the operation you are performing to make sure you are using the machine correctly. If the problem still exists, the following checklist may help you to correct it.

MACHINE DOES NOT SEW

Needle bar does not move.

Make sure . . .

- Power and light switch is on.
- Motor is connected to electrical supply.

Turn to page 9 for additional information.

Needle moves but stitch is not formed.

Make sure . . .

- Needle is straight and sharp.
- Needle style is correct for machine.
- Needle size is correct for thread being used.
- Machine is correctly threaded.

Turn to page 6 for additional information.

- Bobbin contains thread.
- Bobbin push-button is in SEW position.
- Bobbin case area is free of lint and loose threads.

Turn to page 16 for additional information.

- Circuit breaker is depressed. (See page 57.)

Needle breaks.

Make sure . . .

- Needle is straight and sharp, correct style for machine, and proper size for thread being used.
- Needle is fully inserted into needle clamp.

Turn to page 6 for additional information.

- Presser foot or accessory is securely fastened to presser bar. (See page 7.)
- Fabric is not being pulled to one side as work is removed from machine.
- Fabric being guided or supported behind the needle is not being pulled too hard or too fast.

Turn to page 42 for additional information.

- When doing twin-needle sewing, twin-needle switch is activated. (See page 30.)
- Bobbin case area is free of lint and loose threads. (See page 58.)

BOBBIN WINDING DIFFICULTIES

Turn to page 16 for bobbin winding information.

Needle thread breaks while winding bobbin.

Make sure . . .

- Presser bar is raised.
- Thread is unwinding freely from spool.
- Thread spool is secured by correct spool holder.
- Machine is correctly threaded. (See page 15.)
- Thread is not being pulled too tightly when starting to wind bobbin.

Thread does not wind onto bobbin.

Make sure . . .

- Bobbin push-button is in winding position.
- Thread end is secure at start of wind.
- Bobbin halves are securely tightened.

Bobbin displaced during winding.

Make sure . . .

- Bobbin is being wound at **MIN** (minimum) speed range.
- Bobbin is properly seated and secured by the latch in the bobbin case.

Thread breaks on sewing starts after winding bobbin.

Make sure . . .

- Bobbin has not been wound too full (beyond the **FULL** ring). Turn hand wheel away from operator to free overwound bobbin. (See page 16.)
- Bobbin case area is free of lint and loose threads. (See page 58.)

Fabric does not lie flat after stitching.

Make sure . . .

- Needle-thread tension is light enough. (See page 22.)
- There is sufficient presser foot pressure to hold fabric. (See page 20.)
- Stitch length is short enough for fabric. (See page 20 and 28.)
- Correct presser foot is being used.
- Machine is correctly threaded. (See page 15.)

FEEDING DIFFICULTIES

Fabric does not move properly under presser foot.

Make sure . . .

- Presser bar pressure is correct for fabric being stitched. (See page 20.)
- Presser foot or accessory is correctly attached to machine. (See page 7.)
- Stitch length selector is set correctly.
- Lint has not accumulated around feed.

Machine produces straight stitching when programmed for zig-zag patterns.

Make sure . . .

- General-purpose needle plate is being used instead of straight-stitch needle plate.

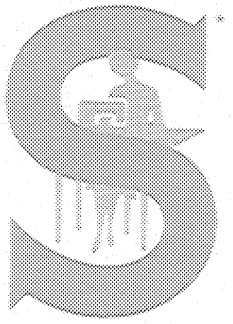
SLUGGISH OR NOISY MACHINE

Hand wheel difficult to turn over manually or increase in operating noise level.

Make sure . . .

- Bobbin case and feed area are free of lint and loose threads.

Index



Here, there, everywhere . . . **SINGER**

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If you have any questions, please write to:
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Consumer Affairs Department
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Elizabeth, N.J. 07207

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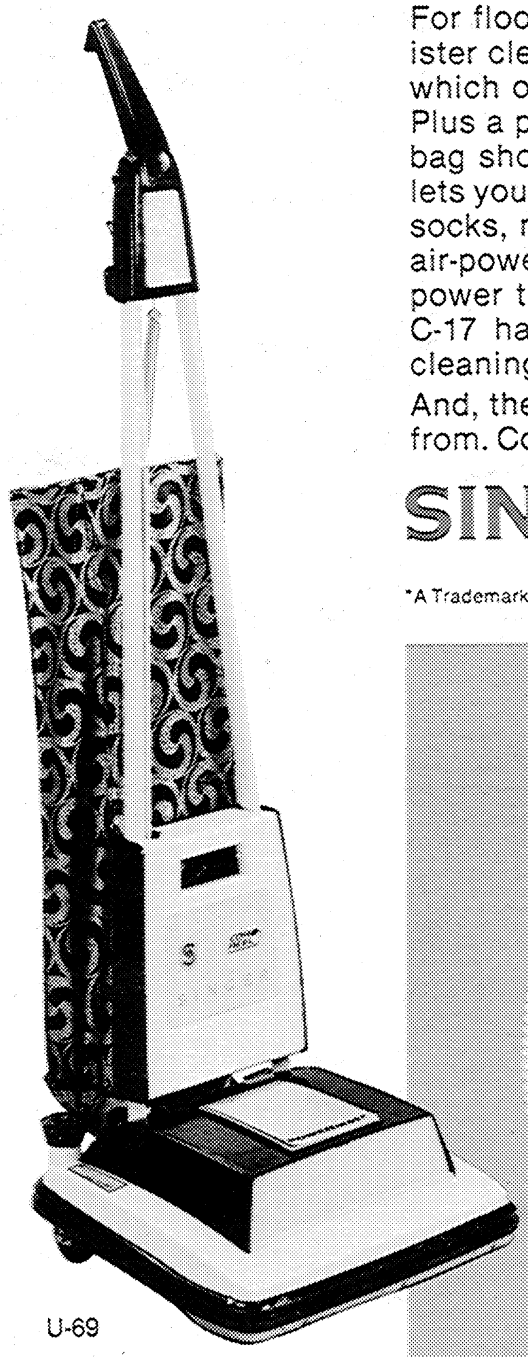

U-69

For floors and above-the-floor jobs, we have powerful canister cleaners...like our *Golden Glide** canister Model C-17... which offers a two stage motor with 3.3 peak horsepower! Plus a pair of "pop-up" indicators. One tells you when your bag should be changed; the other (an exclusive to Singer) lets you know if you've accidently clogged your cleaner with socks, matchbooks, etc...That's fail-safe cleaning! Plus an air-power control console that lets you adjust the suction power to 6 different cleaning jobs...including carpets. The C-17 has a separate motor-driven powerhead (for carpet cleaning) which adjusts to 4 different carpet pile heights!

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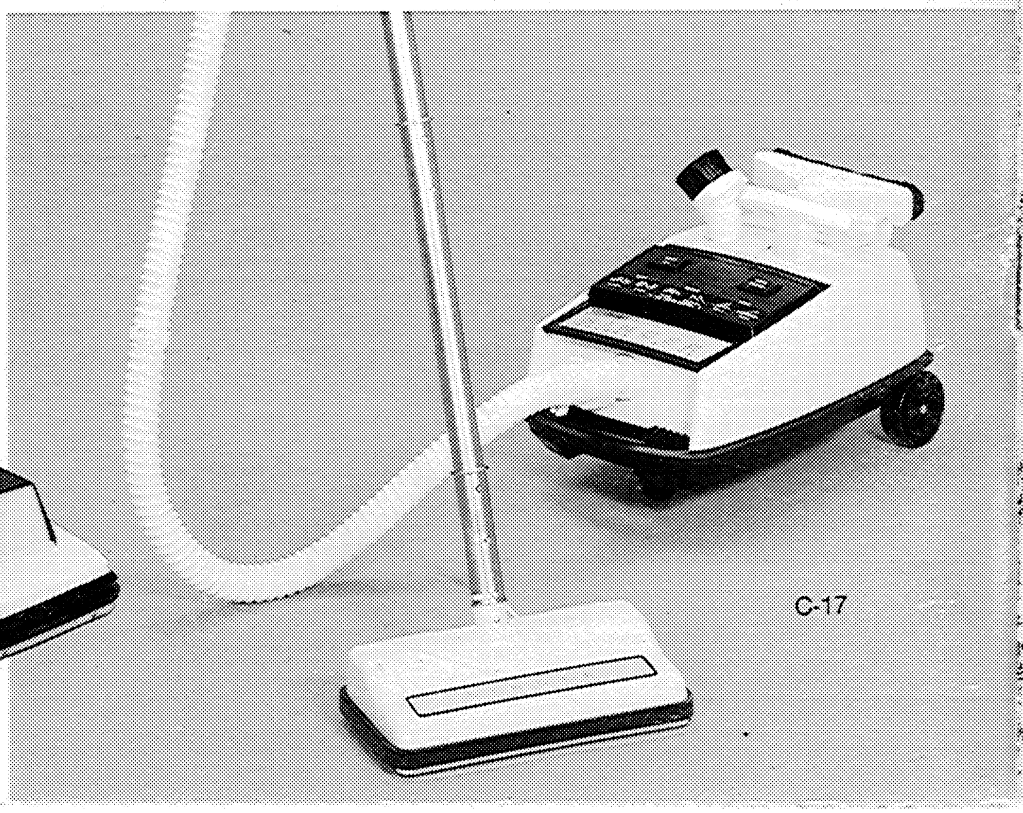

C-17