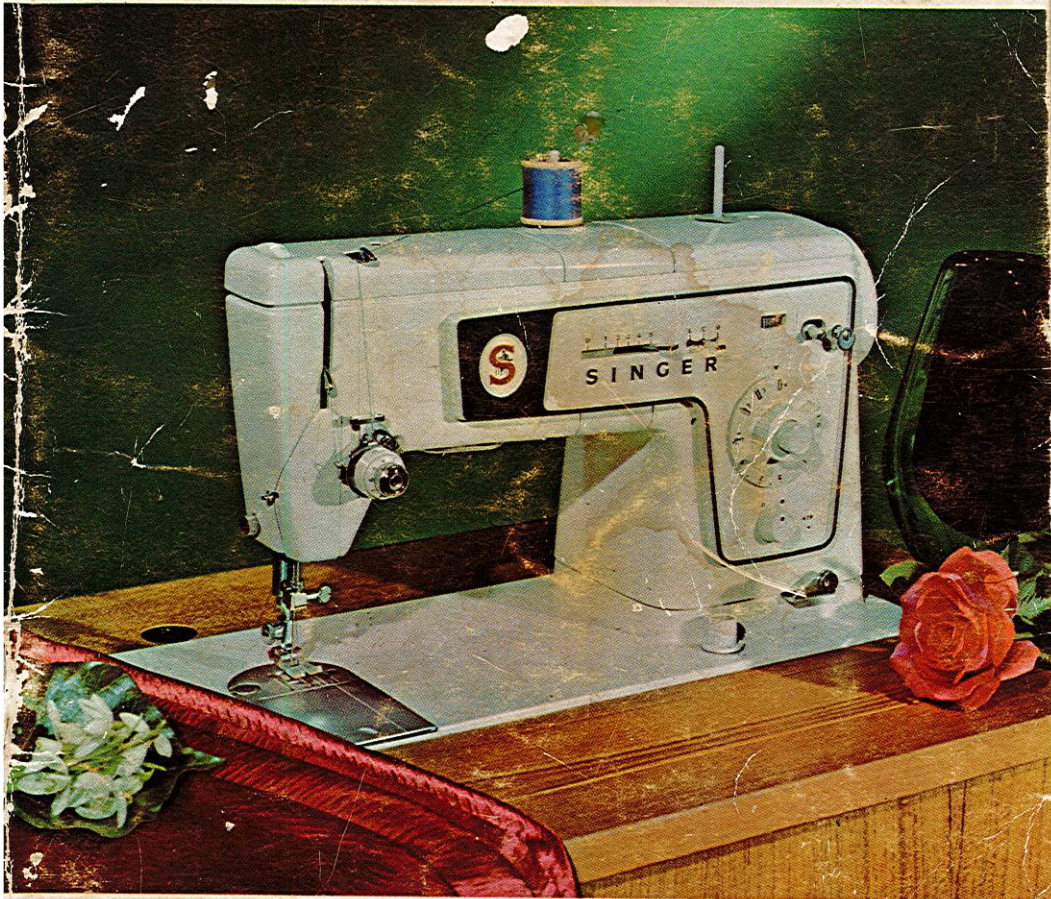


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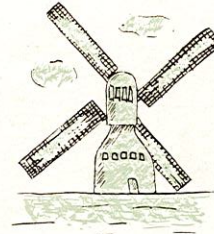
478



THE SINGER COMPANY



**With your new
SINGER* 478
you will have the
world of fashion
at your fingertips**



CONGRATULATIONS . . . on your choice of a top quality fully-featured SINGER Sewing Machine. With it you will be able to create beautifully tailored clothing for your entire family, as well as handsome decorative additions to your home. The advantages built into this fine precision machine can be fully enjoyed

and appreciated **only** if you completely understand how properly to operate both the machine and its versatile accessories. **BEFORE YOU SEW** please go through this instruction book, page by page while seated at your machine. Examine each section and perform each sewing operation in the sequence shown.



You can then proceed confidently with whatever fashion creation or other sewing project you may wish to accomplish.

Congratulations again on your wise choice of the SINGER Sewing machine that will prove to you for many years to come . . .

**WHAT'S NEW FOR TOMORROW
IS AT SINGER TODAY!**





SINGER* Service

Wherever you go you will find expert, dependable SINGER Service close at hand, SINGER will always assist you to keep your SINGER Sewing Machine properly functioning. For this reason you should always call your SINGER Sewing Centre or an Authorized SINGER Dealer's Shop if your sewing machine requires maintenance or repair. There you can obtain the services of a trained SINGER repair man, and warranted SINGER parts.

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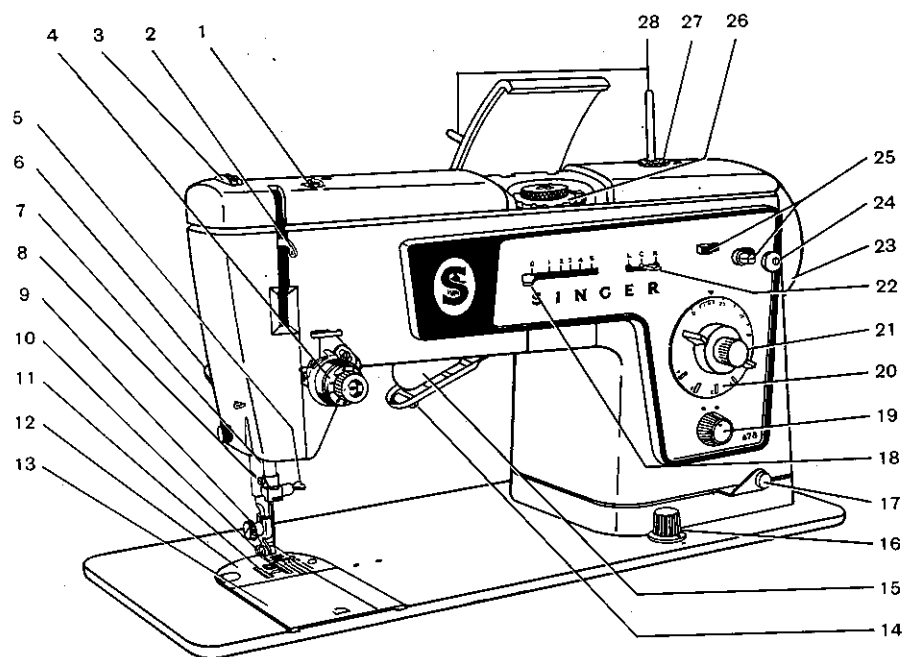
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I. Getting to know your sewing machine

PRINCIPAL PARTS



. . . And What They Do

- 1 Thread Guide**—Used for needle threading and bobbin winding.
- 2 Thread Take-up Lever**—Controls the needle thread.
- 3 Pressure Dial**—Regulates the degree of pressure exerted on the fabric by the presser foot. The numbers eliminate guesswork when duplicating settings.
- 4 Needle Thread Tension**—The numbers allow for exact, easy-to-duplicate tension settings.
- 5 Needle Clamp**—Holds the needle in position.
- 6 Presser Bar Lifter**—Raises and lowers the presser bar.
- 7 Presser Bar**—Carries the presser foot and must be lowered when sewing to engage the tension.
- 8 Thread Cutter**—Cuts the thread conveniently and safely.
- 9 Presser Foot Thumb Screw**—For assembling the presser foot to the presser bar.
- 10 Presser Foot**—Holds fabric against the feed dog.
- 11 Feed Dog**—Feeds the fabric as it is being stitched.
- 12 Throat Plate**—Numbered guide lines help you keep the seams straight.
- 13 Slide Plate**—Opens easily for removal and replacement of the bobbin.
- 14 Finger Grip**—Draws the light down for easy replacement of the bulb.
- 15 Light**—Concentrates light on the sewing area.

16 Feed Throw-out Knob—controls feed dog height—has three settings numbered 1, 2 and 3.

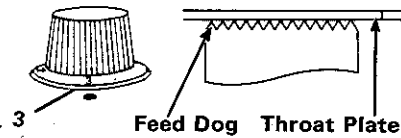
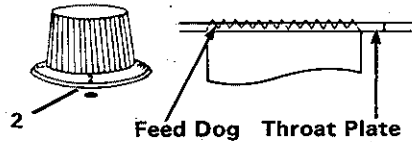
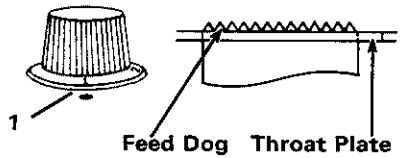
Raise presser bar before altering feed throw-out position.

Pressure adjustments to suit fabric should be made after setting the feed throw-out.

Number '1' setting positions the feed dog at its normal height above the throat plate (as illustrated), and is used for ordinary sewing on general types of fabric.

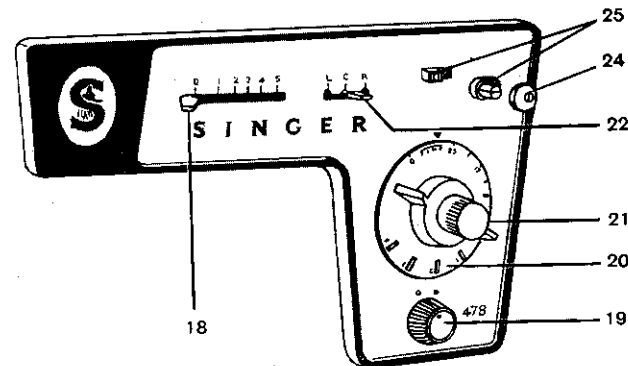
Number '2' setting positions the feed dog slightly lower than its normal height above the throat plate (as illustrated), and is used for sewing delicate and fine fabrics. This helps to prevent marring of smooth surfaces and pile fabrics.

Number '3' setting positions the feed dog below the throat plate (as illustrated) and is used for *free motion work, darning, embroidery and button sewing.*

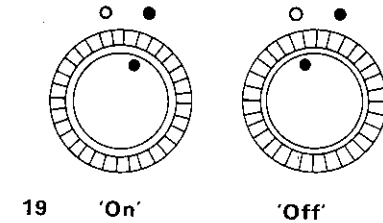


17 Bobbin Winder Tension—Regulates the thread tension for bobbin winding.

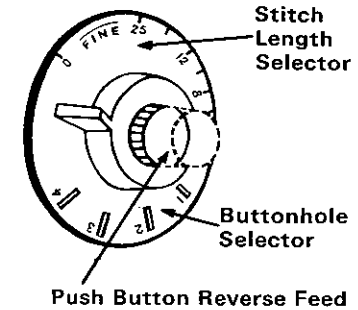
18 Stitch Width Selector—Settings 1 to 5 allow for a variety of zig-zag stitch widths, 0 setting is for straight stitching.



19 Rotary Light Switch—To switch on turn the switch to the right and to switch off turn the switch to the left so that the black dot on switch is positioned as illustrated.



20 Stitch Length and 4-step Buttonhole Selector—Stitch length numerals 6 to 25 indicate the number of stitches per inch; 'Fine' area is used for zig-zag satin stitching; buttonhole symbols (□ 1 to □ 4) indicate the four steps for automatic buttonholing.



21 Push Button Reverse Feed—Push the button in fully and hold in place for reverse stitching; release pressure on button to revert to forward sewing (the button can be pushed in while the machine is sewing).

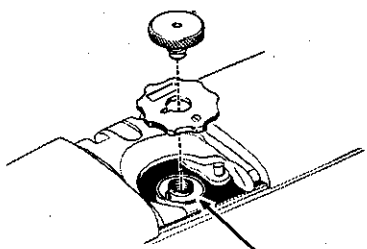
22 Needle Position Selector—Places needle in left, centre or right stitching position. 'Centre' position is used most often, 'Left' and 'Right' settings are for special stitch placement.

23 Hand Wheel—Controls movement of take-up lever and needle. Always turn it *towards you.*

24 Bobbin Winder Stop—Stops bobbin winding when bobbin is full (when fully wound the thread should be below the edges of the side of the bobbin).

25 Bobbin Winder Spindle and Engaging Lever—Lets you fill the bobbin with thread quickly and easily. Bobbin stops winding when full.

PRINCIPAL PARTS (Continued)



26 Fashion Disc Holder

26 **Fashion Disc Holder**—Holds any of the 12 distinctive stitch pattern discs that come with your machine. Disc No. 1, Plain Zig-zag, is in place on the holder. *Always keep a disc on the holder, even when you are straight stitching.*

27 **Spool Pin Washer**—Helps thread unwind smoothly.

28 **Spool Pin**—Holds thread spools of various sizes.

29 **Plug**—Before plugging in the machine, be sure that the voltage and number of cycles stamped on the plate under the hand wheel are within the range marked on your electric meter. To connect the machine push the machine terminal plug into the receptacle at the right end of the machine. Then connect the wall plug into an electrical outlet.

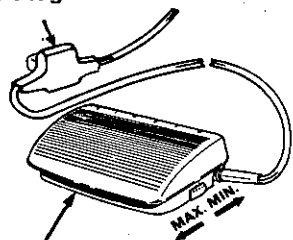
30 **Electrical Speed Controller**—Controls the speed of the machine by depressing the pedal: is fitted with a two-way switch which slides easily to the left for maximum speed (◀ MAX) or to the right for minimum speed (MIN ▶). When set at MIN ▶ gradual pressure on the pedal will increase the speed up to its new maximum of approximately half that of normal top speed. This alternative setting (MIN ▶) allows for better control when required for special work such as embroidery, darning, script lettering, etc.

31 **Transparent Bobbin**—Shows thread supply; is easily removed for bobbin winding.

32 **Bobbin-thread Tension Screw**—Seldom needs adjustment. A very slight turn produces a noticeable change in tension.

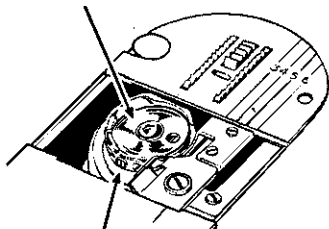
33 **Stop-motion Screw** — Directs power to the needle. Loosen the screw for bobbin winding.

29 Plug

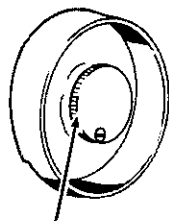


30 Electrical Speed Controller

31 Transparent Bobbin



32 Bobbin-thread Tension Screw



33 Stop-motion Screw

ACCESSORIES . . . And When To Use Them

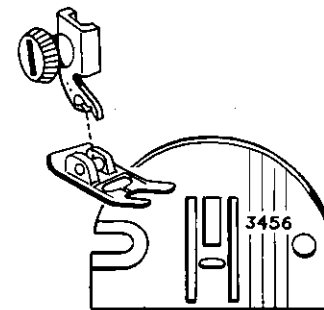
The accessories that come with your 478 sewing machine will help you to sew with ease and comfort. They are simple to use and place an almost limitless variety of sewing effects at your fingertips.

The General Purpose, Straight Stitch, Stretch Stitch and Buttonhole Presser Feet are *snap-on* type for easy interchangeability. With this type of foot the presser foot sole is detachable and is easily removed as instructed on the following page.

General Purpose Fittings

The General Purpose Presser Foot (snap-on type) and Throat Plate are in place on the machine and can be used for either straight or zig-zag stitching. These fittings *must* be used when:

- Alternating between straight and zig-zag stitching.
- Placing a line of stitching to the left or right of centre, or doing twin-needle stitching.

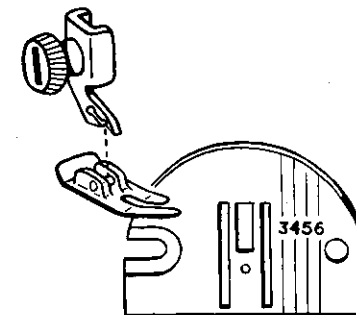


General Purpose Fittings

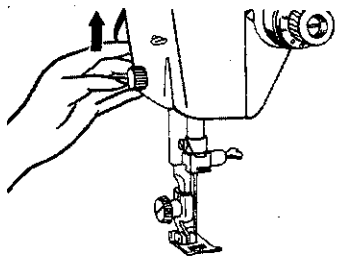
Straight Stitch Fittings

The Straight Stitch Presser Foot (snap-on type) and Throat Plate are used only with the Stitch Width Selector at 0 and the Needle Position Selector at C. Use these fittings for:

- Precision stitching of curved edges, top stitching, edge stitching, etc.
- Stitching on delicate fabrics, synthetics, and knits, particularly tricot.



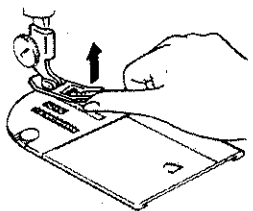
Straight Stitch Fittings



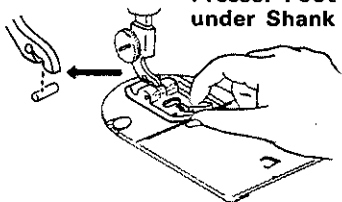
To Change the Snap-on Type Presser Foot

1. Turn hand wheel toward you until the needle is at its highest position.
2. Raise presser foot.

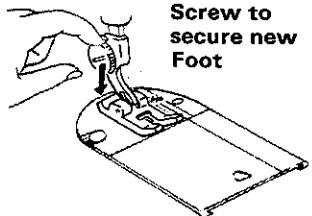
Press Toe upward for Removal



Centre Pin of new Presser Foot under Shank



Lower Presser Bar and press down on Presser Foot Screw to secure new Foot



3. Press the toe of the presser foot upward (as far as it will go) and then snap down to remove.

4. Centre the new presser foot under the shank.

5. Lower the presser bar so that the shank opening fits over the presser foot pin.

6. Press down on the presser foot screw until the foot snaps into place.

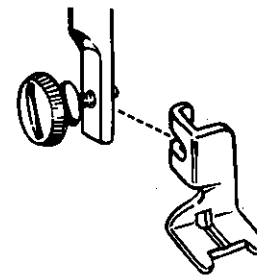
The snap-on presser foot shank is changed in the same way as one-piece presser feet.

To Change from Snap-on Type to One-piece Presser Foot

One-piece Presser Feet:

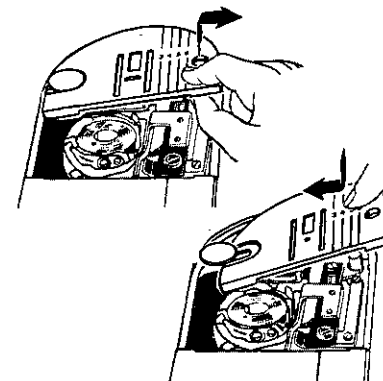
- Special Purpose
- Zipper
- Button Sewing
- Hemmer
- Darning and Embroidery

1. Turn hand wheel toward you until the needle is at its highest position.
2. Raise presser foot.
3. Loosen presser foot screw until the presser foot shank can be slipped from around the presser bar.
4. Hook new presser foot around bar.
5. Tighten presser foot screw.



To Change the Throat Plate

1. Turn hand wheel toward you until the needle is at its highest position.
2. Open slide plate.
3. Place thumb under right side of throat plate and lift up until throat plate snaps free.
4. Insert new throat plate under clamping pin, push gently to left, and press down until it snaps into place.



Accessories for Special Sewing Needs

Special Purpose Presser Foot

The Special Purpose Presser Foot, which is used with the General Purpose Throat Plate, is designed for zig-zag satin stitching, ornamental stitching and applique. This light, flexible foot has a raised centre section that allows closely spaced zig-zag stitches to feed evenly. The small eyelets at the front of the foot hold filler cord when desired.

Zipper Foot

This foot makes it easy to place stitching close to a raised edge. Thus, it is useful for corded seams (pages 47 and 48) as well as zipper insertions (pages 59-61). The hinged foot easily rides over pins, heavy layers of fabric, or cross seams.

Button Foot

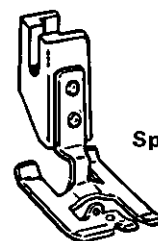
This short open foot holds any two-hole or four-hole button. The groove in the foot can be used to hold a needle, over which a thread shank can be formed. For instructions, see page 54.

Seam Guide

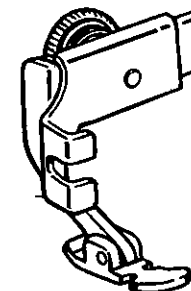
The Seam Guide helps keep seam width uniform when extra control is needed. To attach, simply place the screw in the hole to the right of the slide plate. Then line up the straight edge of the guide with the throat plate guide line for desired seam width, and tighten screw. The Seam Guide is especially useful for unusually wide or narrow seams, and is used as a guide for top stitching, edge stitching and blindstitch hemming.

Blindstitch Guide

The Blindstitch Guide positions the fold of the material in front of the needle for blindstitch hemming. To attach simply loosen presser foot screw and slip the guide between presser foot screw and presser foot shank. The guide is then positioned over the left toe of the foot. For blindstitch hemming instructions see page 50.



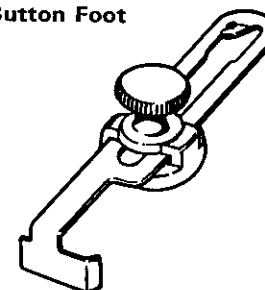
Special Purpose Presser Foot



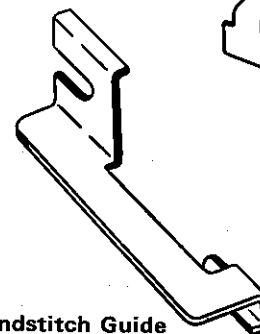
Zipper Foot



Button Foot



Seam Guide



Blindstitch Guide

Accessories for Special Sewing Needs

Hemmer Foot

The Hemmer Foot forms a perfectly turned narrow hem without basting or pressing, for hemming with lace, lace insertions, lingerie finishes, etc.

Overedge Foot (Snap-on type)

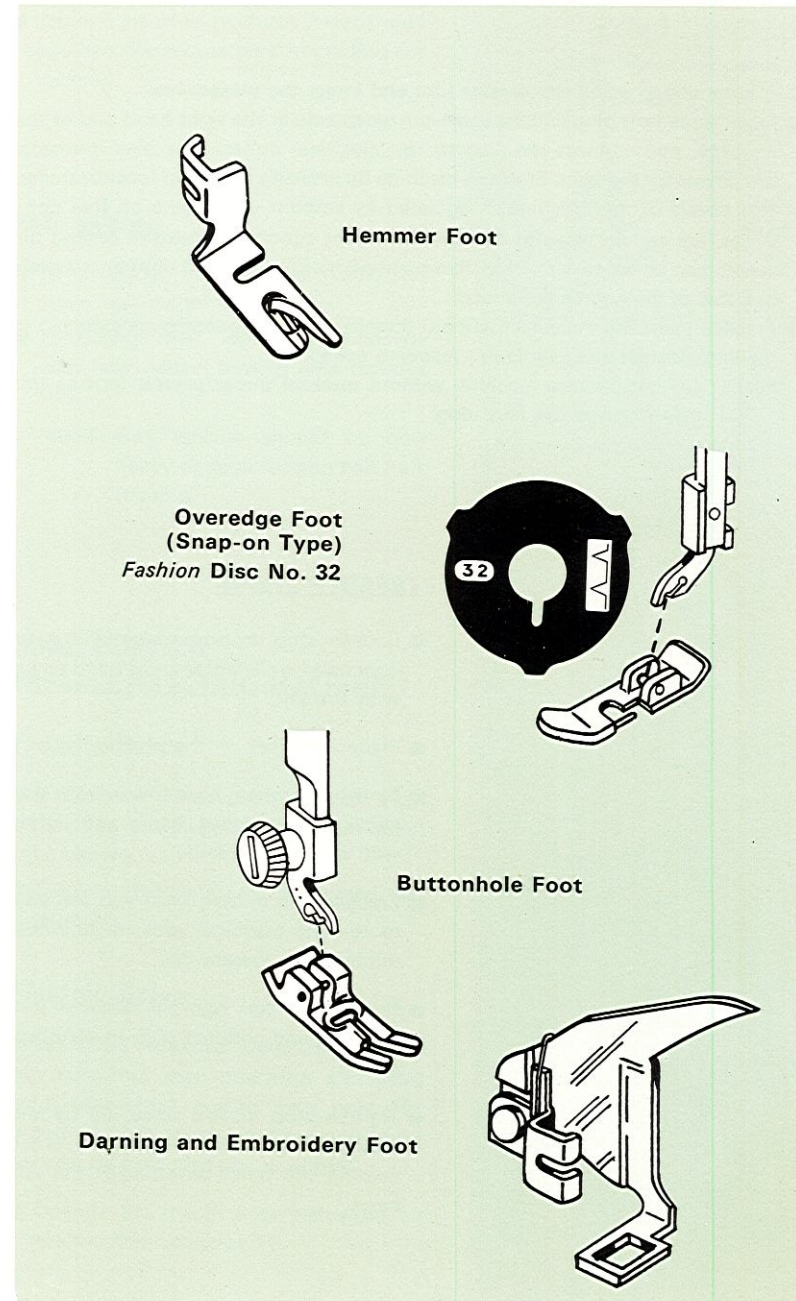
The Overedge Foot, used in conjunction with *Fashion Disc No. 32*, is used to produce flexible overedged seams and edge finishes. This facility is particularly useful in the construction of garments made of knit, stretch or elasticized fabric.

Buttonhole Foot (Snap-on type)

This transparent snap-on presser foot is used to make 4-step bar tack buttonholes. The channels on the underside allow closely spaced zig-zag stitches to feed freely and permit buttonholes to be double stitched when extra strength is needed. Guidelines on the foot simplify buttonhole placement and make it easy to gauge buttonhole length.

Darning and Embroidery Foot

Free motion darning and decorative work are accomplished with greater ease and more expert results when the Darning and Embroidery Foot is used. This specially designed foot holds the fabric firmly as the needle enters and rises out of the work, while fully revealing the line of the design to be followed.

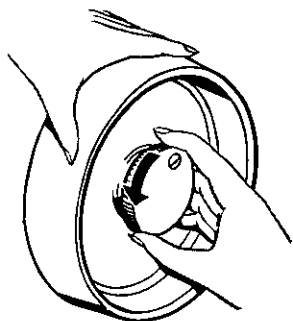


2. How to operate your sewing machine

ELECTRIC DRIVE

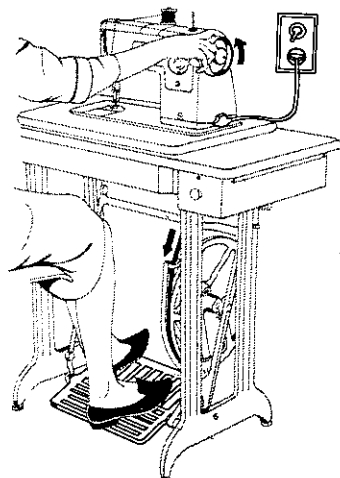
- Raise the presser foot.
- Place material under the presser foot and lower the presser bar.
- Insert three hole plug into the three-pin receptacle at the right hand end of the machine, and connect the plug to the electrical outlet. This also connects the power for the light. Start the machine by pressing down on foot controller. The speed of the machine is regulated by amount of pressure on foot controller. For certain types of work where better control of speed is desired the switch can be set to MIN▶ to obtain a new maximum speed of approximately half that of the normal top speed.
- Practice operating machine (without thread) until you become accustomed to guiding material and regulating machine speed.

NOTE: Do not operate machine without material under presser foot as this may damage the feed dog.



TREADLE DRIVE

- Loosen stop motion screw with your right hand while holding the hand wheel with the left.
- Place both feet on the treadle.
- Turn hand wheel over toward you and allow feet to move freely and lightly with motion of treadle.
- Practise this motion until you are able to re-start machine with hand wheel turning over toward you.
- For light, insert two-pin terminal into machine and connect plug to electrical outlet.
- Tighten stop motion screw by turning it away from you with right hand, while holding the hand wheel with the left hand.

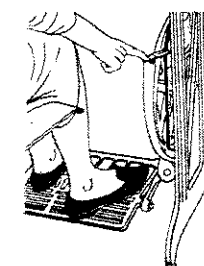
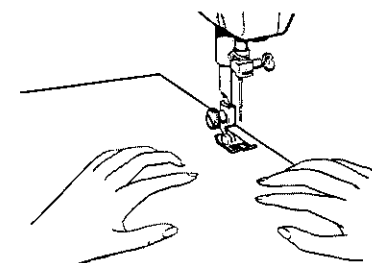


- Place material under presser foot and lower the presser bar.
- Operate machine (without thread) until you become accustomed to guiding the material.

Belt Shifter

- To disengage belt, operate treadle and move belt shifter as shown.
- To engage belt, work treadle slowly with hand wheel turning over towards you.

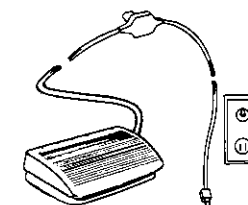
NOTE: Belt tension should be only heavy enough to keep belt from slipping.



DUAL PURPOSE TREADLE/ELECTRIC MACHINE

Treadle Drive

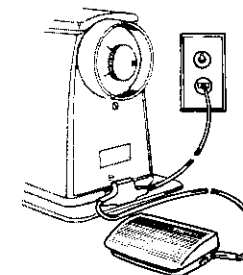
- Disconnect three-pin terminal from machine and plug from electrical outlet as shown.
- Operate machine as instructed on page 16.



Electric Drive

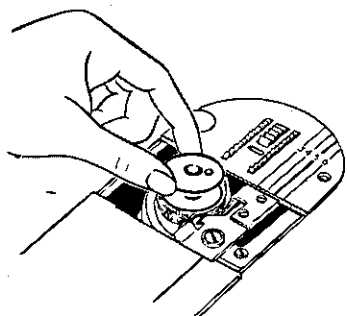
WARNING—Before inserting three-pin terminal into machine and plug into electrical outlet the belt for treadle drive must be disengaged by means of belt shifter as above.

- Operate the machine as instructed for electric drive on page 16.

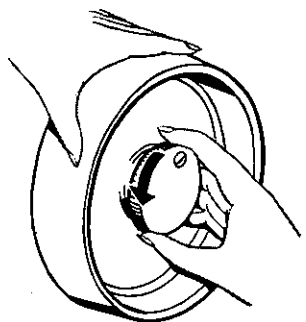


3. How to thread your sewing machine

Like all sewing machines that produce a lockstitch, your 478 sewing machine sews with two threads. The upper thread comes from the spool and is threaded through the eye of the needle. The lower thread comes from the transparent plastic bobbin in the bobbin case. The bobbin is wound using the machine and it is better to have it wound before threading the needle.



Removing Bobbin

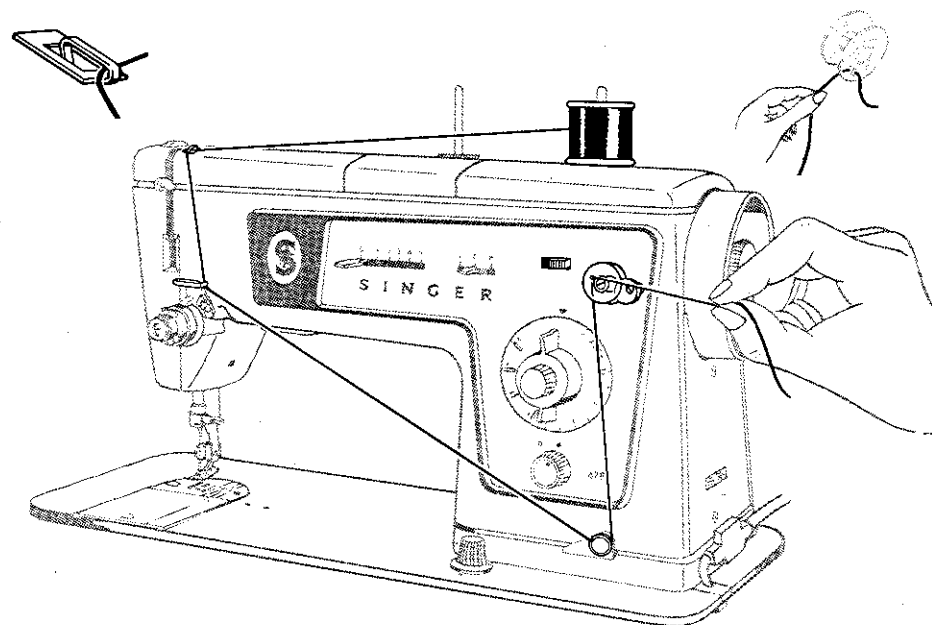


Loosening Stop Motion Screw

THE BOBBIN THREAD

To Wind the Bobbin

1. Turn hand wheel toward you until needle is at its highest position.
2. Open the slide plate and lift out bobbin.
3. Loosen the needle stop-motion screw with your right hand while holding the hand wheel with the left.
4. Place bobbin on spindle.

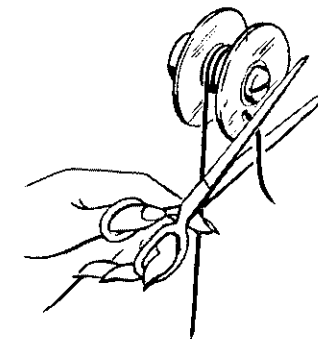


5. Place spool of thread on spool pin over the spool pin felt and lead thread through eyelet, down through tension thread guide and around bobbin winder tension.
6. Pass thread, from the inside, through hole in bobbin and place bobbin on spindle.
7. Move bobbin winder engaging lever to the right, hold thread end as shown and start the machine.
8. Cut off thread end after a few coils have been wound on the bobbin.
9. When required amount of thread has been wound (winding will stop when bobbin is full), move bobbin winder engaging lever to the left, and cut thread.
10. Tighten stop-motion screw by turning it away from you with right hand, while holding the hand wheel with the left hand.

OFF ← → ON



Bobbin Winder Engaging Lever



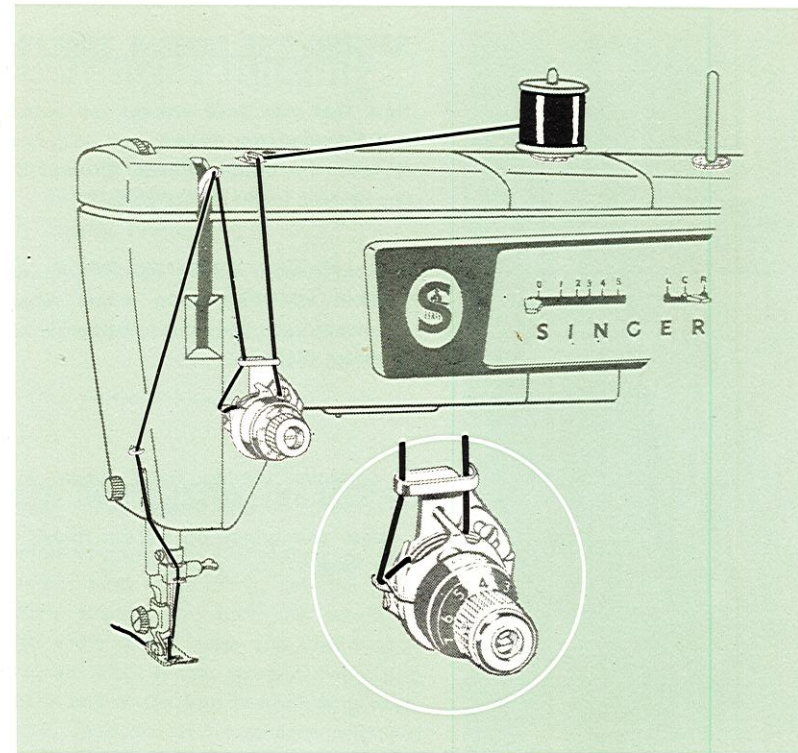
To Thread the Bobbin Case

1. Hold bobbin so that thread unwinds in direction shown, and insert bobbin in bobbin case.

2. Pull thread into notch, draw it under tension spring, and into slot.

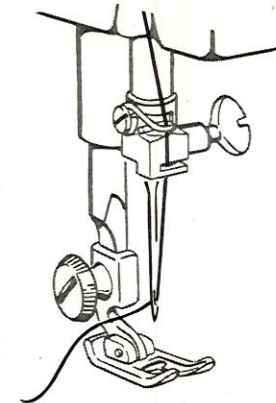
3. Draw about 3 inches of thread diagonally across the bobbin.

4. Close slide plate with the thread in slot between the throat plate and slide plate.



THE NEEDLE THREAD

1. Turn hand wheel toward you to raise needle to its highest position.
2. Make sure spool pin felt is around spool pin at top of machine.
3. Place spool of thread on spool pin and lead thread through threading points shown. Thread the needle from front to back.
4. Draw about 3 inches of thread through eye of needle.

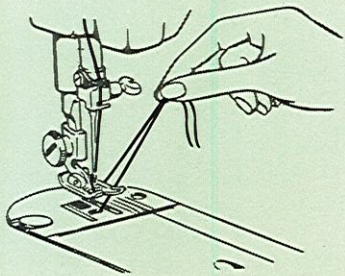
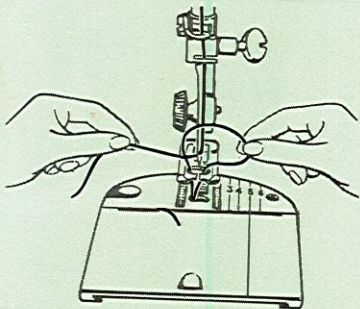
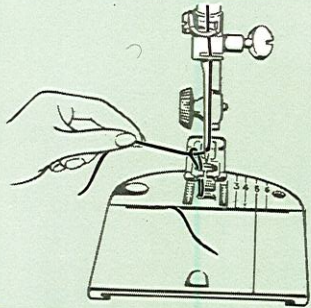
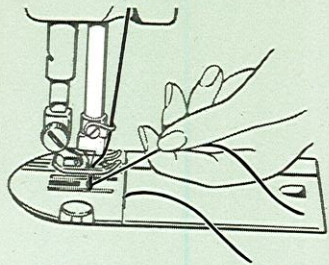


RAISING THE BOBBIN THREAD

Now that you have wound the bobbin and threaded the needle, you will need to raise the bobbin thread through the needle hole in the throat plate.

1. Hold needle thread lightly with left hand and turn hand wheel slowly toward you so that needle enters throat plate.
2. Continue turning hand wheel and holding needle thread until needle rises and brings up bobbin thread in a loop.
3. Undo the loop with your finger.
4. Place both needle and bobbin threads under presser foot, and lay them diagonally across the feed dog.

... You are now ready to sew



4. Straight stitching

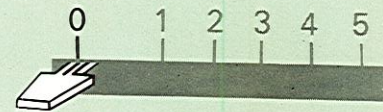
- Stitch Width: 0
- Needle Position: C
- Presser Foot: Straight Stitch or General Purpose
- Throat Plate: Straight Stitch or General Purpose

HOW TO POSITION THE NEEDLE

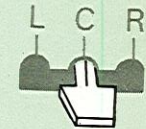
Before you set your 478 sewing machine for any kind of stitching, turn the hand wheel toward you until the needle is above the throat plate and also ensure that the stitch length selector dial is **not** set at any of the four buttonholing positions. Then, to set for straight stitching, simply move the Stitch Width Selector to 0 position and the Needle Position Selector to centre (C) position. These settings locate your needle and control its movement so that it stitches straight up and down in the centre of the needle hole with no sidewise movement as in zig-zag stitching.

FITTINGS

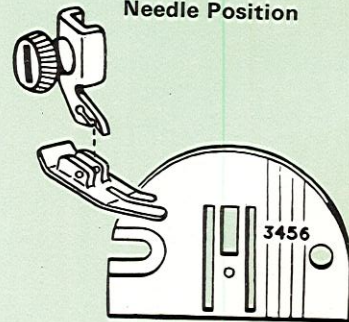
Best sewing results will be obtained if you use the Straight Stitch Presser Foot and Throat Plate. However, the General Purpose Presser Foot and Throat Plate may also be used.



Stitch Width



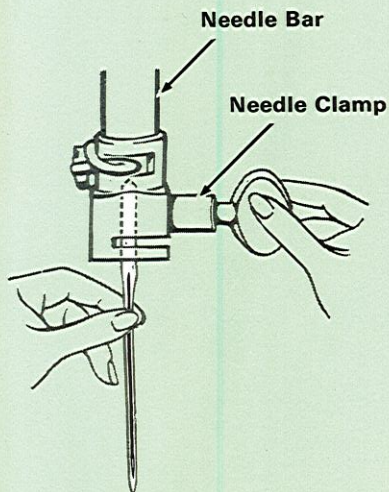
Needle Position



Straight Stitch Fittings

HOW TO ADJUST FOR YOUR FABRIC

As you get ready to sew, take advantage of the flexibility of your sewing machine. With a choice of needle sizes and four easy-to-use selectors for stitch length, pressure, feed dog height and needle-thread tension, you can adjust the machine to sew perfectly on a wide variety of fabrics. The table on page 25 will guide you in selecting the correct thread and needle sizes and stitch length according to the weight of your fabric.



Changing the Needle

1. Turn hand wheel over toward you until needle is at highest position.
2. Loosen needle-clamp screw and remove needle.
3. Insert new needle in clamp with the *flat side of the needle to the back*, and push it up as far as it will go.
4. Tighten needle clamp screw.

This machine uses needle Catalogue 2020 (15x1), available in sizes 9, 11, 14, 16 and 18.

FABRIC, NEEDLE, THREAD, AND STITCH LENGTH CHART

FABRICS	THREAD SIZES	NEEDLE SIZES	MACHINE STITCHES PER INCH STRAIGHT STITCHING
DELICATE —tulle, chiffon, fine lace, silk, organdy, fine tricot	60 Mercerized, 100 Cotton, Fine Synthetic Thread	9	15 to 20
LIGHTWEIGHT — batiste, organdy, jersey, voile, taffeta, silk, crepe, plastic	50 Mercerized, 80 to 100 Cotton, Pure Silk, Synthetic Thread	11	12 to 15 (8 to 10 for plastic)
MEDIUM WEIGHT —Gingham, man-made fabric, pique, linen, chintz, faille, satin, fine corduroy, suitings, cotton backed plastic	50 Mercerized, 60 to 80 cotton, Pure Silk, Synthetic Thread	14	12 to 15
MEDIUM HEAVY — gabardine, tweed, sailcloth, denim, coatings, furnishing fabrics	40 Mercerized, 40 to 60 Cotton	16	10 to 12
HEAVY — overcoatings, twill, upholstery fabrics, canvas	36 Mercerized, 24 to 40 Cotton	18	8 to 10

Adjusting Stitch Length

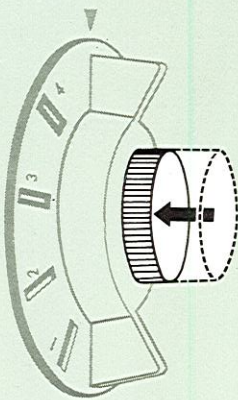
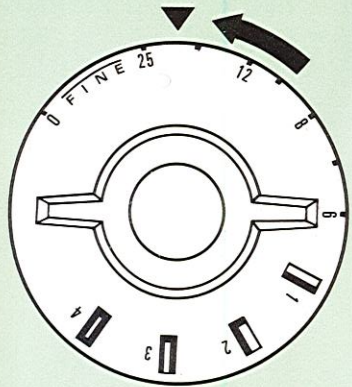
The Stitch Length Selector does two jobs, it controls the number of stitches per inch and sets the machine for Buttonholing. Reverse sewing is obtained by depressing the push button in the centre of the selector.

The stitch markings are in steps from 6 - 25 stitches per inch and 'O', with a 'Fine' stitch area defined for satin stitching: *the higher the number the shorter the stitch*. As the stitch selector is turned **clockwise** in the 'Fine' area, stitch length diminishes to 'Zero'. The 'FINE' area is used for zig-zag satin stitching **only**. Generally, shorter stitches are best for lightweight fabric; longer ones for heavy fabric.

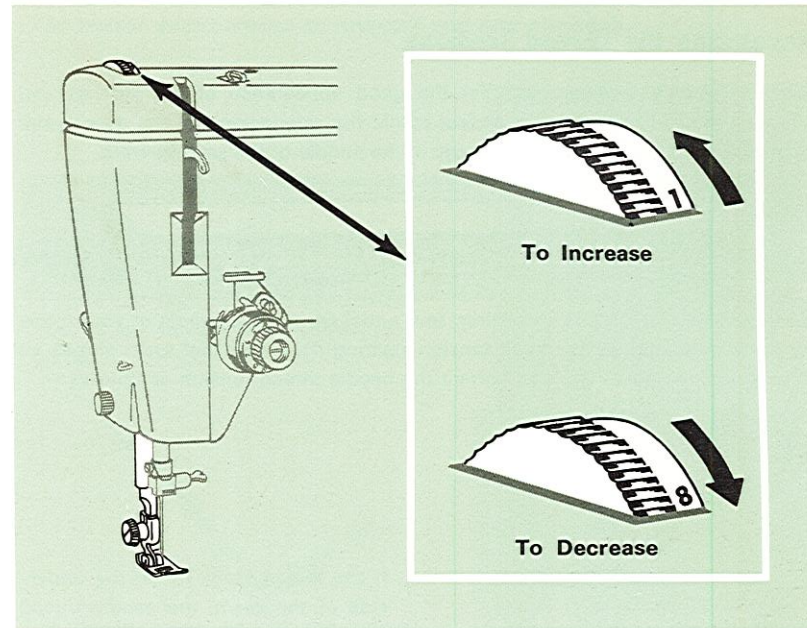
To Set Stitch Length

Turn dial so that desired stitch length is positioned at the triangle ▼ indicator on the control panel.

For Reverse Stitching. Press the reverse stitch push button in fully and hold in place (the button can be pushed in while the machine is sewing). Release pressure on the button to revert to forward sewing.



Adjusting Pressure



The Pressure Dial regulates the pressure that the presser foot exerts on the fabric. Correct pressure is important because it enables the fabric to feed smoothly and evenly, without being marred. Generally heavier fabrics require a high number setting (heavier pressure); lightweight fabrics, a lower setting (lighter pressure), but fabric texture must also be considered. Soft fabrics, for example, require less pressure than crisp fabrics.

Pressure adjustment for *fine fabrics* should be made after setting the feed throw-out knob at '2', as instructed on page 6.

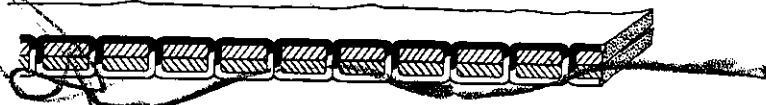
Dial markings are **D** and **1** to **8**.

When the desired pressure is obtained the pressure setting can be noted for future reference for similar fabrics.

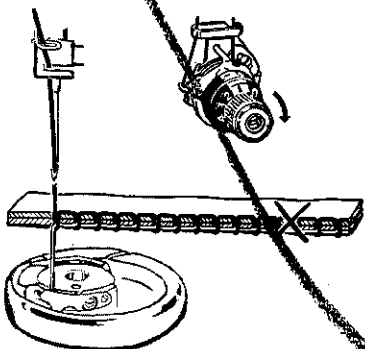
- The presser foot **must** be lowered before altering the setting.
- To increase pressure, turn dial to higher number (max. 8).
- To decrease pressure, turn dial to lower number.
- For darning, further decrease pressure by turning dial from **1** to **D**, which releases pressure and permits darning without an embroidery hoop. (See page 73 for special darning instructions).

Regulating the Thread Tensions

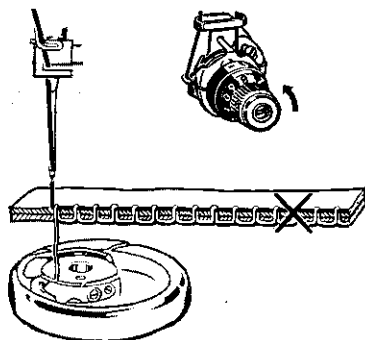
Correct tensions are important for the good appearance of the stitches and strength of seam. To obtain a perfect stitch, the interlocking of the needle and bobbin threads must take place exactly in the middle of the sewing work.



To determine correct tension setting, sew a trial seam on a sample of your fabric by using medium needle thread tension (setting 4). If this trial seam shows an improper appearance, you can correct the needle thread tension as follows:—



If the thread loops lie on the underside of the seam, the needle thread tension is too loose. Correct by turning the tension dial to higher number.

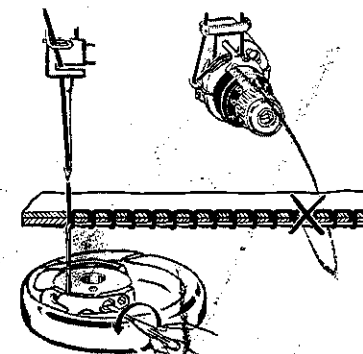


If thread loops lie on the upper surface of the seam, the needle thread tension is too tight. Correct by turning the tension dial to lower number.

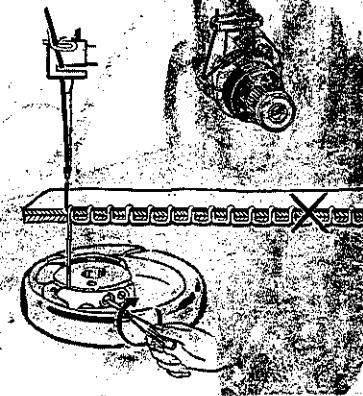
If a balance cannot be made by adjusting the needle thread tension, the bobbin thread tension should be adjusted (see page 29).

Set needle thread tension to setting 4 and sew trial seam.

If thread loops lie on the underside of the seam, the bobbin thread tension is too tight. Correct by turning the screw in direction shown by arrow.



If thread loops lie on the upper surface of the seam, the bobbin thread tension is too loose. Correct by turning the screw in direction shown by arrow.



NOTE:—As all machines are correctly adjusted before leaving the factory it is seldom necessary to alter the bobbin thread tension.

To End a Seam

1. Stitch to the fabric edge. Depress fully reverse push button and hold in place. Backstitch approximately $\frac{1}{2}$ inch to reinforce end of seam. Release push button.

2. Turn hand wheel to bring needle to its highest point.

3. Raise presser foot and remove fabric, by drawing straight back.

4. Cut threads on thread cutter at rear of presser bar.

5. Zig-Zag Stitching

Fashion Disc: Desired Pattern
 Stitch Width: 1 - 5
 Needle Position: C
 Presser Foot: General Purpose
 Throat Plate: General Purpose



HOW TO USE *FASHION DISCS*

The twelve removable *Fashion Discs* that come with your machine are zig-zag pattern discs. Each produces an individual design that will add a personal touch to all your sewing. Some discs are purely decorative while others are used for practical purposes as well.

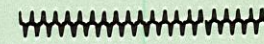
The following interchangeable *Fashion Discs* are included with your machine. Disc No. 1, Plain Zig-Zag, is in place on the *Fashion Disc* holder when you receive your machine.



1 Zig-Zag



5 Arrowhead



27 Fagoting



2 Multi-Stitch



6 Domino



28 Comb



3 Blind Stitch



12 Walls of Troy



31 Crescent



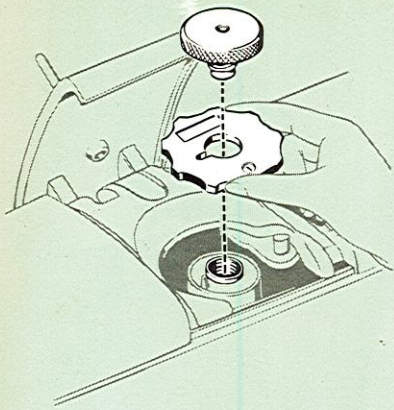
4 Scallop



13 Diamond



32 Stretch Stitch



To Remove and Replace Fashion Discs

Ensure that the stitch length selector dial is not set at any of the four buttonholing positions.

1. Position Stitch Width Selector at 0.
2. Raise Fashion Disc Cover and remove the thumb screw.
3. Press disc down at front to tilt for easy removal.
4. Position new disc on holder and tighten thumb screw securely.

Always keep a Fashion Disc on the holder even when you are straight stitching.

HOW TO SET STITCH WIDTH AND NEEDLE POSITION

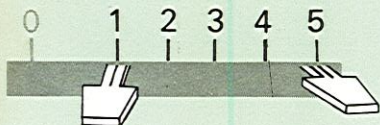
To produce a zig-zag stitch, the Stitch Width Selector must be moved from its straight stitch position 0, to any setting between 1 and 5. The higher the number you select, the wider your stitch will be.

Be sure to raise the needle above the throat plate and fabric before changing the stitch width.

Most of your zig-zag stitching will be done at centre needle position; left and right settings are used for special stitch placement, such as twin-needle work, buttonhole making and button sewing.

FITTINGS

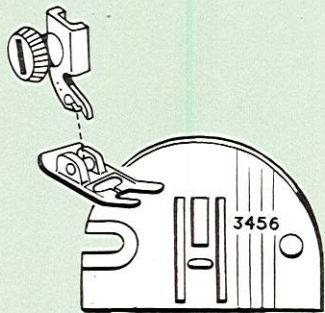
For instructions on how to insert General Purpose Presser Foot and Throat Plate, see pages 10 and 11.



Stitch Width



Needle Position



General Purpose Fittings

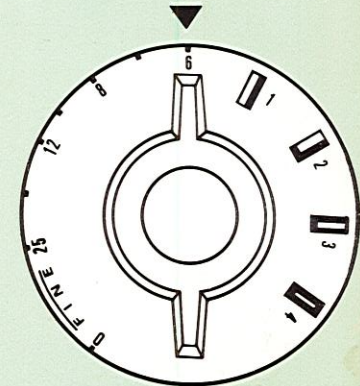
HOW TO SET STITCH LENGTH AND NEEDLE-THREAD TENSION

When you are preparing to do zig-zag stitching, make a test sample with the fabric and thread you plan to use so that you can adjust your stitch length and needle-thread tension properly. If you need to adjust pressure, see page 27.

Stitch Length

Any stitch length setting from 6 to the beginning of the FINE area will give you an open zig-zag stitch of whatever pattern you select. The lower the number, the more open, or farther apart, your stitches will be.

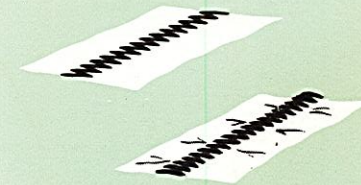
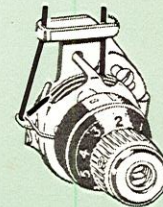
The FINE area of the Stitch Length Selector is used for the adjustment of closed zig-zag, or satin stitching, and is explained on page 36.

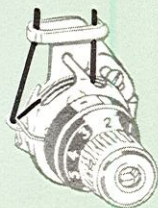
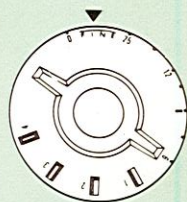
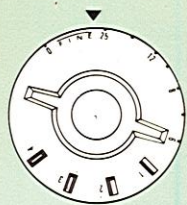


Needle-thread Tension

Zig-zag stitching requires less tension than straight stitching. Notice the stitching on your test sample. The stitches should lie flat against the fabric without being too taut or without causing the fabric to pucker.

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





Correct



Incorrect

HOW TO DO SATIN STITCHING

Satin stitching, a series of closely spaced zig-zag stitches, is accomplished by sewing a zig-zag stitch with the Stitch Length Selector in the FINE area. For best results the Special Purpose Presser Foot should be used.

Soft fabrics may require a backing such as crisp organdy or lawn to ensure firm satin stitching.

- Stitch Width: 1 - 5
- Needle Position: C
- Presser Foot: Special Purpose
- Throat Plate: General Purpose
- Stitch Length: FINE

Stitch Length

1. Turn Stitch Length Selector to beginning of FINE area.
2. Run the machine at a slow speed.
3. Turn stitch length selector slowly in clockwise direction until stitches are closely spaced and form a smooth surface.

Tension Adjustment

Satin stitching generally requires even less tension than open zig-zag stitching. Furthermore, the wider the satin stitch, the lighter the tension must be. Thus, a stitch width setting of 5 requires the least tension. Make a test sample and lower the tension on your needle thread as required.

6. Twin-needle stitching

By using the twin-needle you can produce two parallel, closely spaced, decorative lines of stitching simultaneously. You can use either one or two colours of thread; and you can choose either a straight stitch setting or any of the disc patterns supplied with your machine.

HOW TO SET THE MACHINE

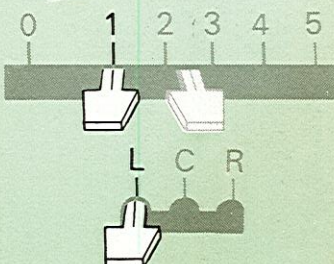
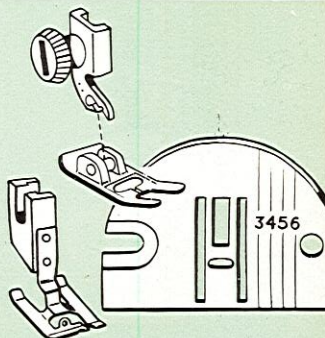
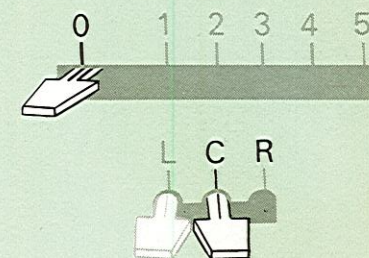
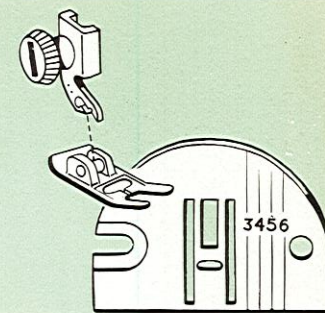
The General Purpose Throat Plate must be used for all twin-needle sewing. The General Purpose Presser Foot is used for twin-needle straight stitching and zig-zag stitching of open patterns. The Special Purpose Presser Foot is used for decorative satin stitching.

Straight Stitching with Twin-needles

- Stitch Width: 0
- Needle Position: C or L only
- Presser Foot: General Purpose
- Throat Plate: General Purpose

Zig-Zag Stitching with Twin-needles

- Fashion Disc: Desired Pattern
- Stitch Width: 1-2½ maximum
- Needle Position: L only
- Presser Foot: General Purpose (open patterns)
Special Purpose (satin stitch)
- Throat Plate: General Purpose



This machine uses twin-needle catalogue 2028, size No. 14.

HOW TO INSERT TWIN-NEEDLE

Before inserting the twin-needle ensure that needle position is set at L and stitch width selector at $2\frac{1}{2}$ or less to prevent needles from fouling the throat plate or presser foot. The needle clamp is constructed so that the needle can only be inserted in the correct manner, *i.e.*, with flat side of the shank to back.

1. Turn hand wheel over toward you until the needle is at highest position.
2. Loosen needle-clamp screw and remove single needle.
3. Insert twin-needle in clamp with the flat side of the shank to the back; push it up as far as it will go.
4. Tighten needle clamp screw.

HOW TO THREAD FOR TWIN-NEEDLE STITCHING

For best results, use No. 50 Mercerized cotton thread.

Thread the machine in the same manner as for single-needle stitching except:

1. Be sure that threads are separated by centre tension disc as they pass around assembly.
2. Carry only one thread through the last thread guide before the needle.

7. Clothes and home decorations

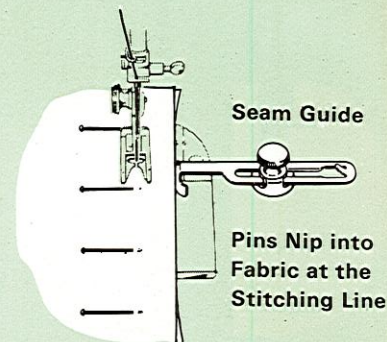
SEAMS

Pin Basting

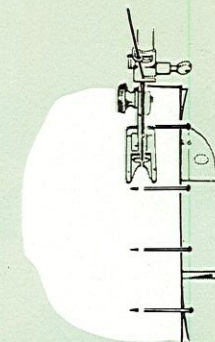
Pin basting is a time saver and can be used in place of hand basting when you are straight stitching seams in easy-to-handle fabrics. The Straight Stitch Presser Foot is recommended, but the General Purpose Presser Foot may also be used. When sewing over pins with either foot, it is important to use fine pins and to place them correctly in reference to the stitching line.

Place pins so that:

- They are at right angles to the stitching line.
- They just nip into the fabric at the stitching line.
- There is minimum pin extension beyond the stitching line. Pins should not extend under both sides of the presser foot, and should never be placed on the underside of the fabric in contact with the feed dog.



Pin Placement when Seam Guide is used



Pin Placement when Seam Guide is NOT used

Straight Seams

Stitch Width: 0
 Needle Position: C
 Presser Foot: Straight Stitch
 Throat Plate: Straight Stitch
 Stitch Length: 6-20, depending on fabric
 Seam Guide: (Optional, for extra control)

1. Pin seam edges together and baste if necessary. If you pin baste, place pins as instructed so that the hinged presser foot will ride freely over the points.
2. Attach Seam Guide and align edge with presser foot. Guide the fabric edges lightly against the guide while stitching.

Curved Seams

Follow the same steps as for straight seams *except*:

1. Use a short stitch length for elasticity and strength. For example, if you use 12 stitches per inch for straight seams, select 15 to 20 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 closer to the needle acts as a guide.

Lingerie Seams

Fashion Disc: 1 (Plain Zig-Zag)
 Stitch Width: 1½ - 2
 Needle Position: C
 Presser Foot: General Purpose
 Throat Plate: General Purpose
 Stitch Length: 15-20, depending on fabric

To make a lingerie seam both durable and flexible, use a zig-zag stitch. This treatment is particularly suitable for bias seams.

1. Straight-stitch the seam (with Stitch Width at 0) on wrong side.
2. Press both seam allowances in the same direction.
3. From the right side, top-stitch with zig-zag pattern (with Stitch Width at 1½), letting the needle alternately enter the seam line and seam thickness.

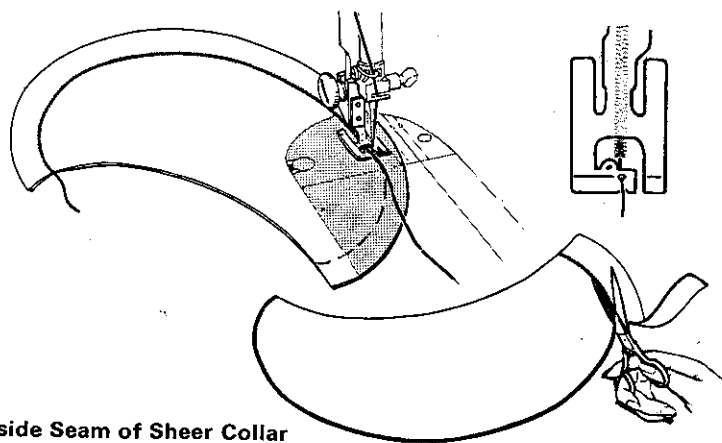
Lingerie Seam

Inside Seams of Sheer Collars, Facings and Cuffs

Fashion Disc: 1 (Plain Zig-Zag)
 Stitch Width: 1
 Needle Position: C
 Presser Foot: Special Purpose
 Throat Plate: General Purpose
 Stitch Length: FINE (above 20)

With a delicate hairline finish, seam allowances that ordinarily show through can be eliminated. If you wish to use a filler cord to give body to the seam, thread as shown, being sure to use the centre hole in the presser foot.

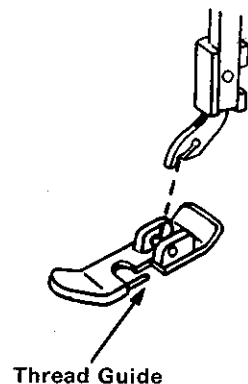
1. Stitch along seam outline (covering cord if used).
2. Trim seam allowance close to line of stitching.
3. Turn and press.



Inside Seam of Sheer Collar

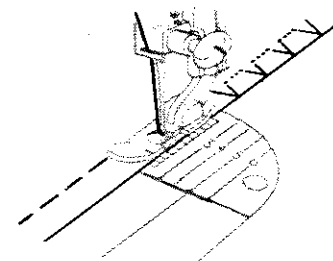
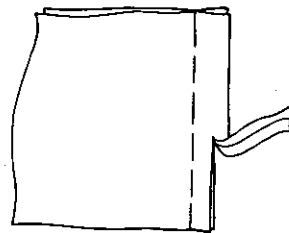
Overedged Seams (Stretch Stitch)

Stitch Width: 4-5
 Needle Position: C
 Presser Foot: Overedge (snap-on type)
 Stitch Length: About 20
 Presser Foot Pressure: Light
Fashion Disc: No. 32
 Throat Plate: General Purpose



The overedged seam is particularly appropriate for use in construction of garments made of knit, stretch or elasticized fabric. When using *Fashion* Disc No. 32 with the Overedge presser foot, seams that stretch with the fabric can be joined and finished in one operation.

1. Make a test sample first to determine the suitability of an overedged seam in the construction of your garment. Be sure to duplicate the grain of your garment in your test.
2. Adjust stitch length, pressure and thread tension accordingly. Cut and fit garment in the regular way, using a seam allowance of 5/8 inch.
3. Baste fitted seam line.
4. Trim seam edges evenly to 1/4 inch from seam line basting. Place trimmed seam under the presser foot so that the bulk of the work falls to the left and the seam edge to the right *under* the presser foot thread guide (see illustration).
5. Stitch, guiding fabric up to the inside edge of the thread guide so that the straight stitches fall on the seam line and the zig-zag stitches over the seam edge.



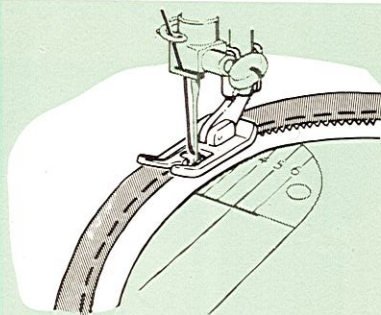
Seams in Knit Fabrics

Fashion Disc: 1 (Plain Zig-Zag)
Stitch Width: 2
Needle Position: C
Presser Foot: General Purpose
(snap-on type)
Throat Plate: General Purpose
Stitch Length: About 20

A fine Zig-Zag stitch is ideal for seaming knit fabrics. It is particularly desirable for underarm seams where elasticity and give are needed.

However, where a stay is needed to prevent undue stretching at neckline and waistline seams, this same stitch can be used to apply seam tape. For a flat, smooth stayed finish:

1. If seam is curved, pre-shape tape to fit by steam pressing.
2. Baste tape in place.
3. Stitch, allowing needle to enter seam tape and seam allowance alternately.



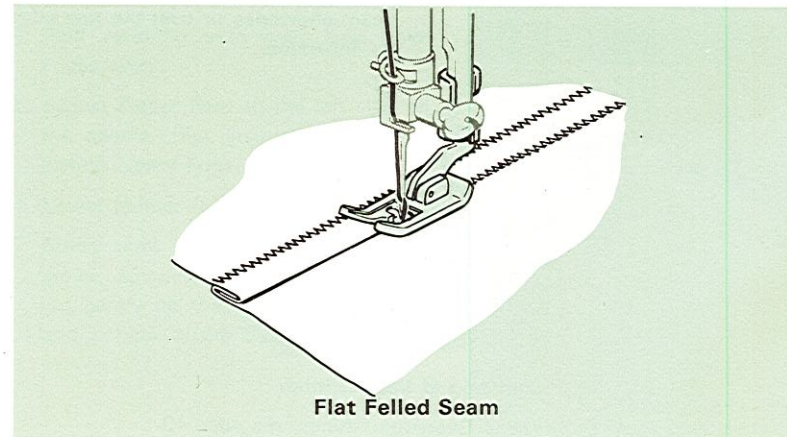
Curved Seam with Tape Stay

Flat Felled Seams

Fashion Disc: 1
Stitch Width: 1½
Needle Position: C
Presser Foot: General Purpose
(snap-on type)
Throat Plate: General Purpose
Stitch Length: 15-20, depending
on fabric

Zig-zag stitching gives strength and durability to flat felled seams.

1. Stitch the seam on the right side of the fabric, taking full seam allowance.
2. Press the seam allowance to one side, keeping the right side of the stitch on top.
3. Trim the under seam allowance to one-half its width.
4. Turn the upper seam allowance edge evenly over the trimmed edge, and top-stitch.



Flat Felled Seam

Seam Finishes

Fashion Disc: 1 (Plain Zig-Zag)
3 (Blindstitch)
2 (Multi-Stitch)

Stitch Width: To suit fabric

Needle Position: C

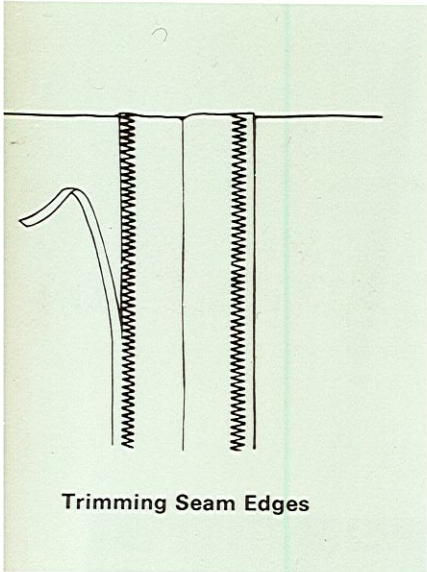
Presser Foot: General Purpose
(snap-on type)

Throat Plate: General Purpose

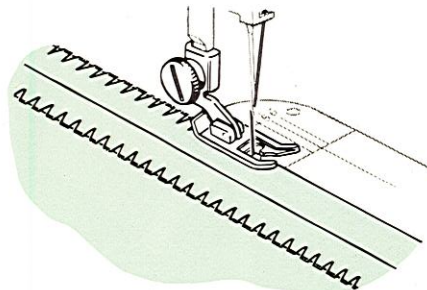
Stitch Length: 8-20, depending on
choice of stitch
and fabric

Seam edges support the garment and should be given a durable finish if the fabric is likely to ravel.

1. Make a test sample first to determine whether zig-zag stitch (1), blindstitch (3), or multi-stitch zig-zag (2) best suits your fabric. Also adjust stitch length and stitch width to suit fabric. Choose the settings that will give you the most "open" stitch that will secure the fabric edges; avoid harsh, over-stitched edges.
2. Trim seam edges evenly.
3. Place stitching *near* the edge of the seam allowance or over the raw edge as illustrated.



Trimming Seam Edges



Overedged Seam Finish

For overedged seam finish using Overedge Fittings, see page 43.

Corded Seams

Stitch Width: 0

Needle Position: C

Presser Foot: Zipper Foot

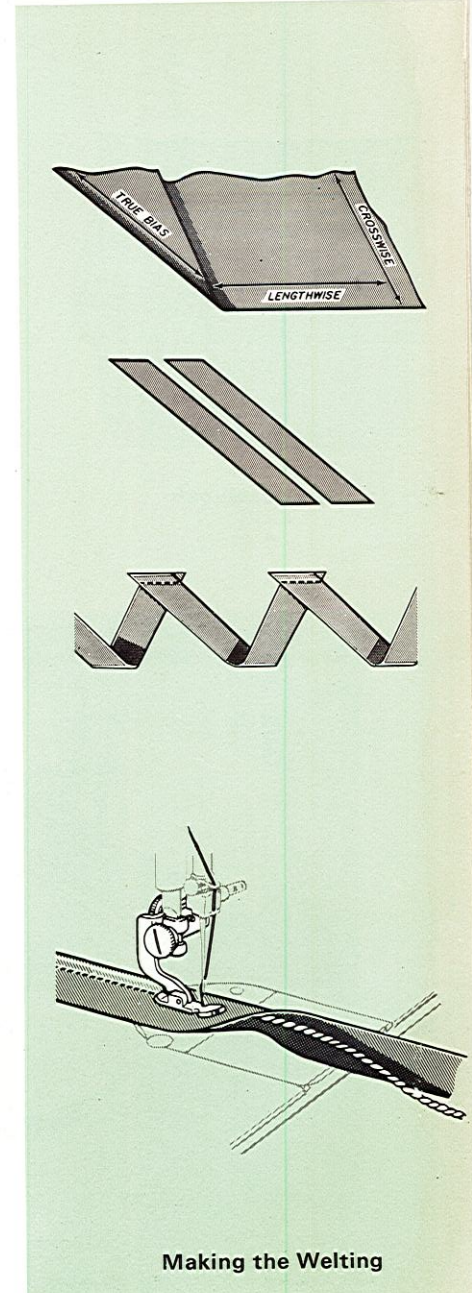
Throat Plate: General Purpose or
Straight Stitch

Stitch Length: Slightly longer than
for regular seaming

The corded seam is a professional treatment for slipcovers, children's clothes, blouses and lingerie. To make a corded seam, make the welting first, then stitch it into the seam. For both steps, use the above settings and accessories.

To make the welting:

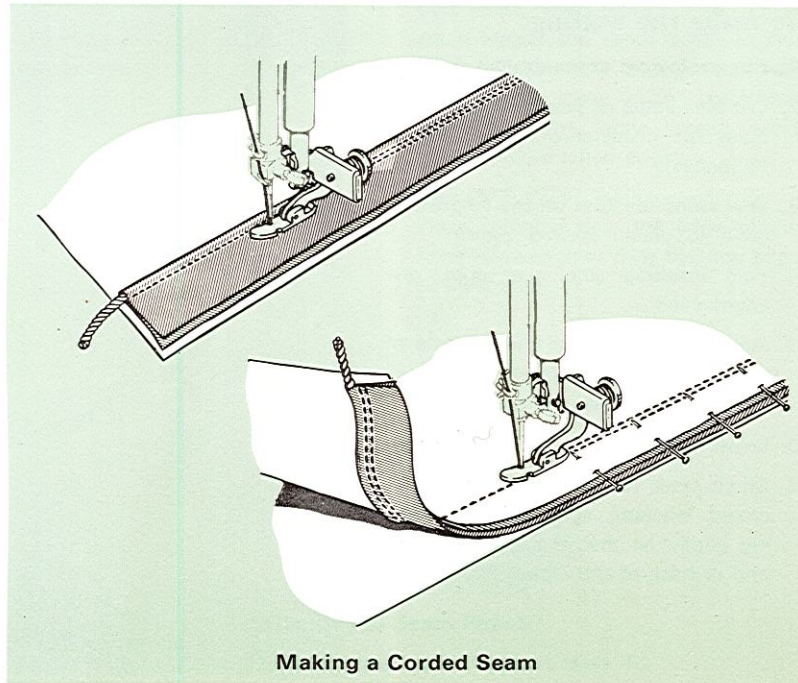
1. Buy cable cord of the desired size.
2. Cut bias strips of fabric (width: three times the diameter of the cord plus $1\frac{1}{4}$ inches).
3. Sew strips together on the lengthwise grain to obtain desired length.
4. Fold resulting strip over cord, raw edges even.
5. Adjust Zipper Foot to the left side of the needle. (For instructions on adjusting Zipper Foot, see page 63).
6. Lower presser foot.
7. Stitch close to the cord (but do not crowd stitching against cord), pulling gently on the strip, both in front and in back of the Zipper Foot.



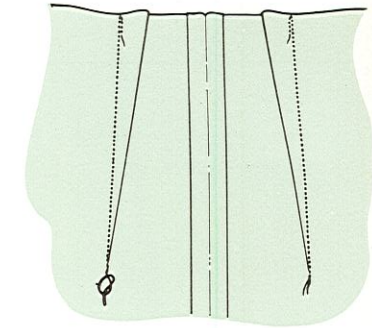
Making the Welting

To stitch welting into seams:

1. Adjust Zipper Foot to the right of the needle so that the bulk of the fabric will fall to the left.
2. Stitch welting to the right side of a single seam edge; guide the edge of the foot next to the cord but do not crowd.
3. Place the attached welting over the second seam edge, and pin or baste together.
4. Place the work under the needle, with the first stitching on top so that you can use it as a guide.
5. Stitch, this time crowding the foot against the cord.

**DARTS****Regular Darts**

Stitch Width: 0
 Needle Position: C
 Presser Foot: General Purpose
 (snap-on type)
 Throat Plate: General Purpose
 Stitch Length: About 12 or to
 suit fabric

**Regular Darts**

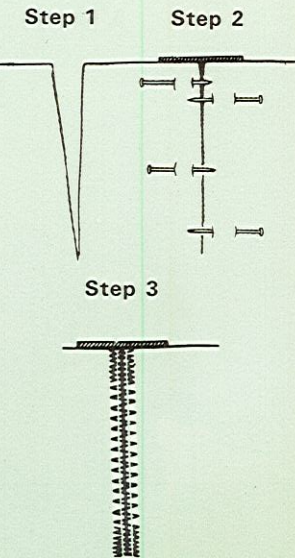
1. Stitch from the seam edge, tapering gradually to the point.
2. Stitch beyond the fabric to form a thread chain 1/2 to 3/4 inch long.
3. Tie the thread ends into a single knot close to the stitching.

Darts in Interfacing

Fashion Disc: 1 (Plain Zig-Zag)
 2 (Multi-Stitch)
 Stitch Width: 5
 Needle Position: C
 Presser Foot: General Purpose
 (snap-on type)
 Throat Plate: General Purpose

With zig-zag stitching, interfacings can be shaped without bulk.

1. Cut out the dart allowance on the stitching line
2. Bring raw edges together and pin over a muslin stay.
3. Stitch, backstitching at both ends.

**Steps in Making a Dart in Interfacing**

HEMS

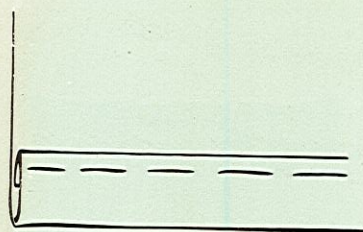
Blindstitch Hems

Fashion Disc: 3 (Blindstitch)
Stitch Width: 2-5
Needle Position: C
Presser Foot: General Purpose
(snap-on type)
Throat Plate: General Purpose
Stitch Length: 10-15
Blindstitch Guide

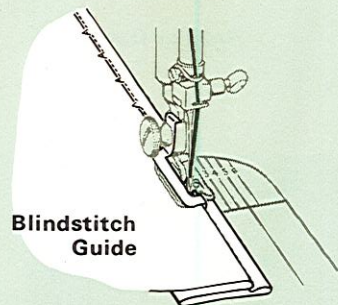
Blindstitching provides a durable hem finish that is virtually invisible and is comparable to hand sewing. It is best suited to straight and slightly curved hems. Taped, bound, turned or unfinished hem edges can be blindstitched with equal ease.

1. Raise presser foot.
2. Loosen presser foot screw.
3. Slip blindstitch guide between presser foot screw and shank so that it rests over the left toe of the foot.
4. Tighten presser foot screw.
5. Mark, turn, and press hem.
6. Baste a guideline 1/4 inch from the top of the hem edge.
7. Place hem edge over the feed of the machine, turning bulk of fabric to the left and thus creating a soft fold which rests against the edge of the guide as illustrated.
8. Stitch so that straight stitches fall on hem edge and sideward stitches pierce the soft fold. While stitching, feed the fold against the edge of the guide.
9. When stitching is completed, raise presser foot.
10. When the material is turned right side out, the hem will be neatly and securely tacked once every six stitches and will lie perfectly flat when pressed.

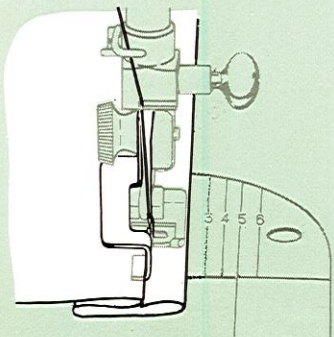
A test sample should be made to determine stitch width and stitch length for weight and texture of fabric used.



Basted Guideline



Blindstitch Guide



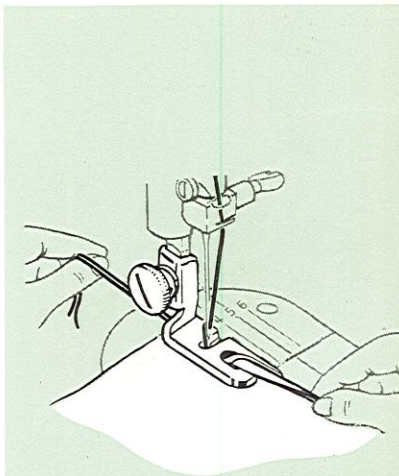
Blindstitch Hem

NARROW HEMS FOR FINE FABRICS

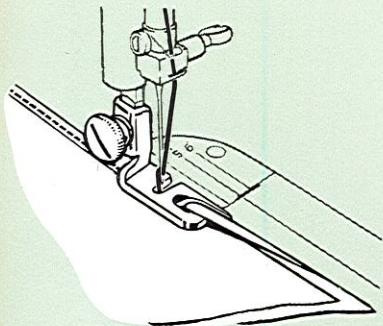
Stitch Width: 0
Needle Position: C
Presser Foot: Hemmer Foot
Throat Plate: Straight Stitch
Stitch Length: 10-15

You can turn and stitch a narrow hem in a single operation if you use the Hemmer Foot. Thus, you can eliminate basting or pinning whenever you are making ruffle edges, lingerie finishes, and the like.

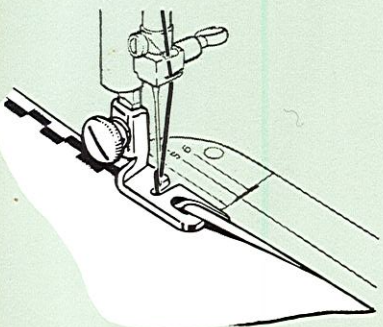
1. Draw the bobbin and needle threads under the Hemmer Foot.
2. Crease a double 1/8 inch fold for about 2 inches along the edge of the fabric.
3. Place the creased fold under the Hemmer Foot.
4. Lower the foot and start the hem by taking two or three stitches through the double fold.
5. Hold the thread ends with the left hand and guide the raw fabric edge in front of the hemmer into the scroll.
6. Sew slowly, guiding raw edge into the front of Hemmer Foot. Hold threads until hem is well started. Even feeding is essential, so keep the same width of fabric in the scroll of the hemmer at all times.



Guiding Fabric Edge into Scroll of Foot



Hemmed Seam



Decorative Narrow Hem

HEMMED SEAMS

Where a fine narrow seam is appropriate, sew a hemmed seam.

1. Use same settings and accessories as for plain narrow hems.
2. With right sides of fabric together, allow a scant 1/4 inch seam allowance and place upper layer 1/8 inch to left of lower layer.
3. Insert two fabric edges into Hemmer Foot and proceed as for plain hem.

DECORATIVE NARROW HEMS

Fashion Disc: Desired Pattern
Stitch Width: 1-4
Needle Position: C or L
Presser Foot: Hemmer Foot
Throat Plate: General Purpose

If you use the Hemmer Foot and choose a zig-zag stitch pattern, you can *turn and decorate* a narrow hem in a single operation.

Follow the same steps as for plain hems.

HEMMING WITH LACE

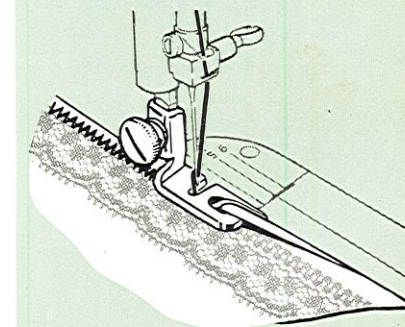
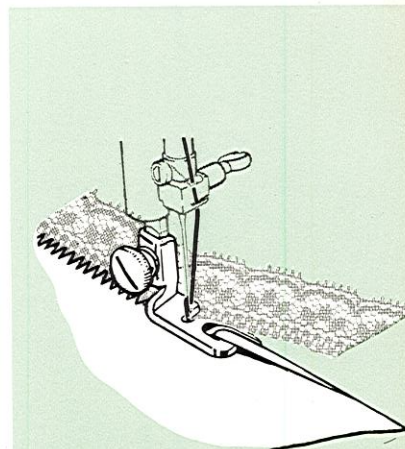
Fashion Disc: 1 (Plain Zig-Zag)
Stitch Width: 3
Throat Plate: General Purpose
Needle Position: C or L
Presser Foot: Hemmer Foot

Lace applied over hem

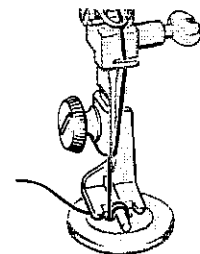
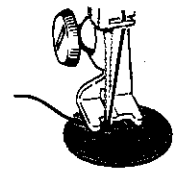
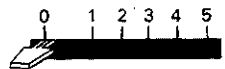
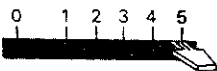
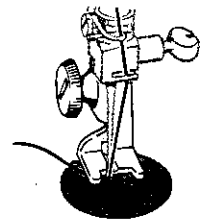
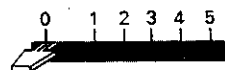
1. Fold and start the hem in the usual way. Starting about 1 inch down from the end of the lace, place the selvage under the needle and lower needle to hold lace firmly.
2. Raise the foot slightly and slip the lace under the back portion of the foot, without disturbing the position of the fabric.
3. Stitch slowly, guiding the fabric with the right hand, the lace with the left. Take care not to stretch the lace.

Lace applied under hem

When using lace underneath the fold of a hem, the procedure is the same as when making a hemmed seam. Slip the lace in from the left as you would the second piece of fabric. This method is used where a neat finish is desired on both sides of material.



BUTTONS



Fashion Disc: 1

Stitch Width: 0 to 5

Needle Position: L

Presser Foot: Button Sewing Foot

Throat Plate: General Purpose

Feed throw-out: 3

The space between the holes in the button determines stitch width settings. 0 setting must always be used to position button and fasten stitching. For buttons with standard hole spacing, settings 0 and 5 are usually satisfactory. For buttons with narrow hole spacing, use setting 0 and decrease width setting 5 as necessary.

Ensure that stitch length selector dial is NOT set at any of the four buttonholing positions.

1. Turn feed throw-out knob to position 3.
2. Set stitch width at 0 and needle position selector at L. Position button under foot and lower the needle into the centre of the left hole. Lower the foot. Turn hand wheel toward you until needle rises out of button and is above the foot.
3. Move stitch width lever until needle is over the other hole in the button. Then, when you begin to stitch, the needle should enter into the *right* hole of the button. Take six or more zig-zag stitches at this setting. End on left side.
4. To fasten stitching, adjust stitch width to 0 and take about three stitches.

Thread Shank:

In order to form a thread shank, stitch over the blade of a regular machine needle. Position button and lower the button sewing foot. Place needle in groove of the foot so the point enters the hole. (To form a long shank, stitch over the heavy end of the needle).

After stitching, pull needle thread ends through to back of button. Form a firm shank or stem between the button and the fabric by winding the thread ends tightly around the attaching stitches. Then tie ends securely.

BUTTONHOLES

Fashion Disc: 1 (Plain Zig-Zag)

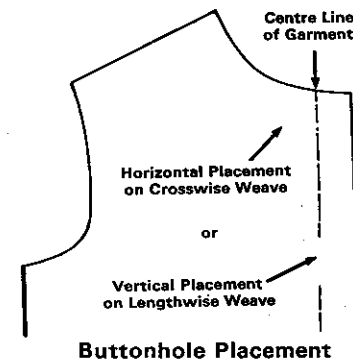
Presser Foot: Transparent Buttonhole Foot (snap-on type).

Throat Plate: General Purpose.

1. Always make a test buttonhole on a sample of your fabric. Be sure to duplicate the thickness of the garment and include interfacing if appropriate. An interfacing is essential, however, if the fabric is loosely woven or is a crepe or knit that stretches easily. Interfacing holds such fabrics firmly so that a neat buttonhole may be made, and it also keeps the finished buttonhole in shape.
2. Use 50 or finer mercerized cotton or embroidery thread, reduce needle thread tension to slightly less than normal.
3. Use needle size No. 11 for embroidery thread and size no. 14 for cotton thread.
4. Accurate guide lines are essential to keep buttonholes at a uniform distance from the edge of the garment and evenly spaced, and on the weave of the material.
5. Mark centre line of garment. This guideline can be made with machine basting if the fabric does not retain needle holes, or by hand basting. The space from centre line to finished edge of garment must be from 3/4 to once the diameter of the button. With this spacing, the button will not extend beyond the edge when the garment is buttoned. Make sure that centre line marking follows a lengthwise fabric thread.
6. Mark a position guideline with hand basting for each buttonhole.

Horizontal buttonholes are placed to extend 1/8 inch beyond the centre line of garment, as illustrated, so that buttons will be in the centre of the fabric when the garment is fastened. Horizontal buttonhole guide lines should follow a crosswise fabric thread and be longer than the finished length of buttonhole.

Vertical buttonholes are placed on centre line of garment, as illustrated. Mark the ends of each buttonhole horizontally across the centre line basting.

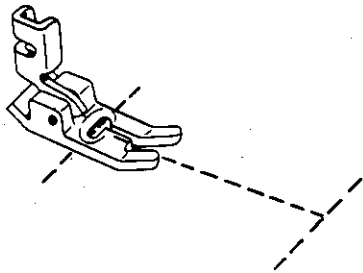


Spaces between buttonholes should be equal. When a line of buttonholes cross the waistline (as on a coat or jacket) be sure that one button will fall exactly on the waistline. Then measure the other buttonhole markings from that point.

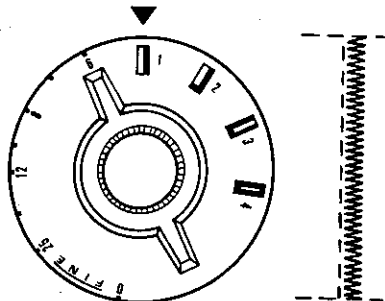
Remember to place buttonholes in women's and girls' clothes on right hand side of garments; in men's and boys' wear on left hand side.

7. Estimate buttonhole length.

The buttonhole should be just long enough to allow the button to slip through the opening without stretching the fabric. You can estimate the proper length by measuring the width plus thickness of the button. The cutting length can now be marked on the guide lines on the fabric.

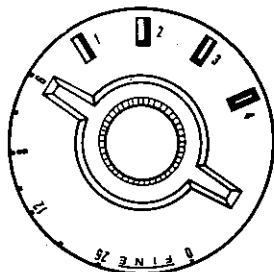


8. Raise presser foot and with needle out of fabric align buttonhole marking on garment with red centre line on presser foot so that needle penetrates material at beginning of cutting space. Drop presser foot.



9. Turn the stitch selector dial clockwise to buttonhole symbol No. 1 and sew length of buttonhole wanted (note that the machine sews the first column (right hand side) in the forward position).

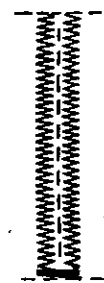
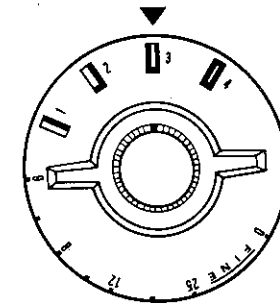
10. Stop machine and raise needle to clear fabric.



11. Turn the stitch selector dial counter-clockwise to buttonhole symbol No. 2 and sew up to five bartack stitches.

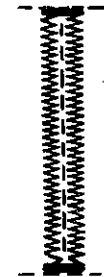
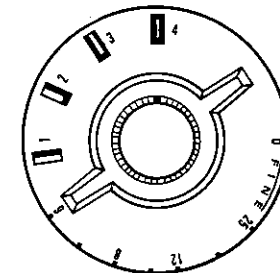
12. Stop machine and raise needle to clear fabric.

13. Turn the stitch selector dial counter-clockwise to buttonhole symbol No. 3. This is the second column of the buttonhole, sew until this column meets the beginning of the first column.

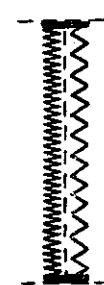
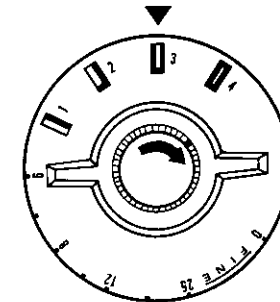


14. Stop machine and raise needle to clear fabric.

15. Turn the stitch selector dial counter-clockwise to buttonhole symbol No. 4, sew up to five bartack stitches.

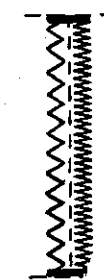
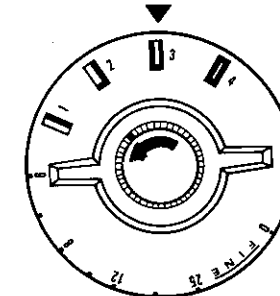


16. Check for density of stitches in both columns of the buttonhole. If you wish to increase density of stitches in right hand column turn reverse stitch push button clockwise from its neutral position. To increase density of stitches in left hand column turn reverse stitch push button counter-clockwise from neutral position. See following page for guide to neutral position.



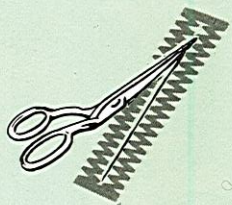
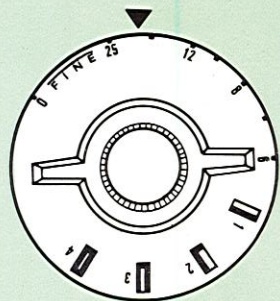
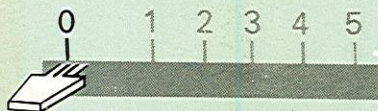
Make another buttonhole and check to be sure that the density of the stitch is the same in both columns of the buttonhole.

The machine is now set to make any number of buttonholes by repeating steps 9 to 15.





Neutral Position



Further variations of buttonholes and an alternative method of buttonholing can be obtained without using the 4-Step Buttonholer as instructed on the following pages for manual buttonholing.

16 (Continued)

If the stitching of the finished buttonhole is not close enough the stitching can be given a denser appearance and the buttonhole greater strength by repeating the procedure and sewing over the original stitching.

Neutral Position

The reverse push button is in the neutral position when the indicator line on the push button is situated directly below the triangle indicator on the control panel.

To Revert to Straight Stitching

To revert to straight stitching turn stitch selector dial counter-clockwise to stitch length wanted, set stitch width selector at zero, and turn reverse push button back to its neutral position if it has been altered.

Buttonhole opening

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

BUTTONHOLES (MANUAL)

Fashion Disc: 1 (Plain Zig-Zag)
 Stitch Width: as required
 Needle Position: L
 Presser Foot: Buttonhole Foot (snap-on type)
 Throat Plate: General Purpose
 Stitch Length: FINE

Always make a test buttonhole on a sample of your fabric. Be sure to duplicate the thickness of the garment and include interfacing if appropriate.

Stitch Width Settings:

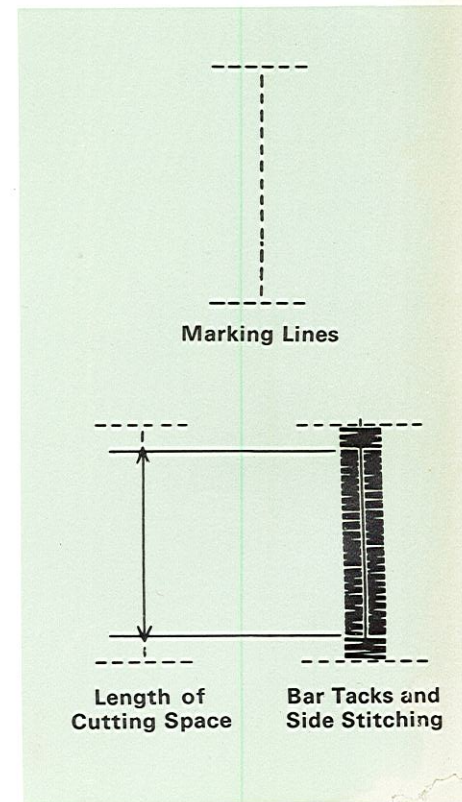
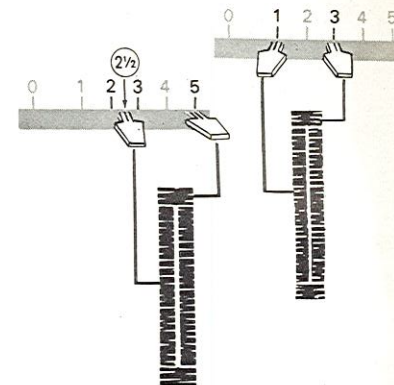
You will use two stitch width settings: one for side stitching and one for the bar tacks (the closings at each end of the buttonhole). These stitch widths may vary according to the size of the buttonhole required as illustrated in the drawings above.

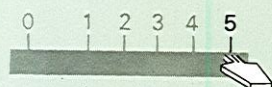
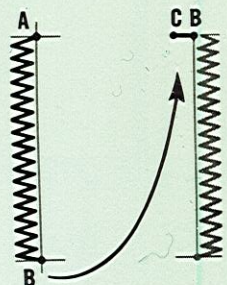
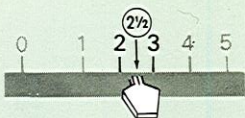
Buttonhole Length:

How long the opening needs to be will depend on the diameter and thickness of the button. To find the right length:

1. Cut a small hole in a scrap of your fabric and gradually enlarge it until the button slips through easily.
2. Add at least 1/8 inch (1/16 inch for each bar tack), and mark the fabric as shown.

This bar-tack measurement is approximate; on some buttonholes, you may need to increase it to arrive at pleasing proportions.





Procedure:

Set Needle Position Selector at L and Stitch Width Selector at 2½. Place work under needle, aligning centre marking of buttonhole with the red centre line on Buttonhole Foot.

Side Stitching:

Position needle in fabric at point A. Lower foot and stitch to end of marking. Leave needle in fabric at point B. Raise foot and pivot work on needle. Lower foot. Take one stitch without changing width setting, bringing work to point C.

Bar Tack:

Adjust Stitch Width Selector for bar tacks and take at least six stitches. Stop at point D.

Side Stitching:

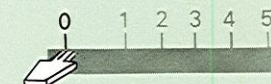
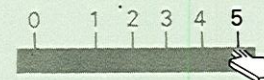
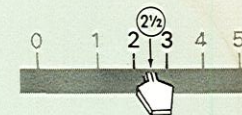
Readjust Stitch Width Selector for side stitching. Complete work to point E. Leave needle in fabric.

Final Bar Tack:

Adjust Stitch Width Selector for bar tacks, and take at least six stitches ending at point F.

Fastening Stitch:

To secure stitching, move Selector to 0 and take three stitches. Remove work, draw threads to underside, fasten and trim. Cut opening for button with sharp scissors.

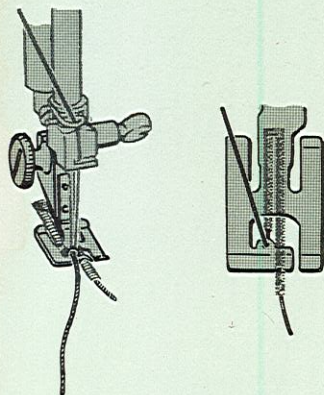


CORDED BUTTONHOLES

Fashion Disc: 1 (Plain Zig-Zag)
 Stitch Width: as required
 Needle Position: L
 Presser Foot: Special Purpose
 Throat Plate: General Purpose
 Stitch Length: FINE

Soft threads used for embroidery and crocheting make suitable filler cords for raised buttonholes. A fine pearl cotton (size No. 8) or silk buttonhole twist is generally used.

1. Place the spool of filler cord on the table, floor, or in your lap and unwind a sufficient amount to avoid tension or strain on the cord.
2. Lead the end of the cord through the raised eyelet on the Special Purpose Foot. Draw the cord under and in back of the foot.
3. Proceed with stitching as for Manual Buttonholes.
4. Just before making the final bar tack, cut the filler cord close to the eyelet guide. Complete the bar tack and fasten buttonhole stitching as usual.
5. Carefully trim cord ends.



ZIPPERS

STRAIGHT STITCH ZIPPER INSERTION

Stitch Width: 0
 Needle Position: C
 Presser Foot: Zipper Foot
 Throat Plate: General Purpose or
 Straight Stitch
 Stitch Length: To suit fabric

Many different types of zippers are available for everything you sew. There are several satisfactory methods for insertion. Detailed sewing instructions are included in the zipper package. For any method used, the zipper foot enables you to form an even line of stitching close to the zipper.

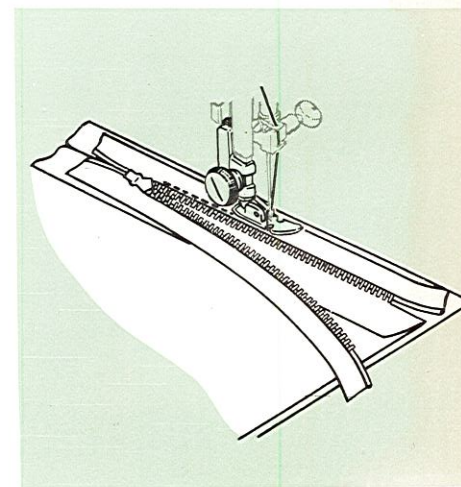
Secure the zipper foot to the presser bar. Adjustment to the right or left of the needle is made by loosening the thumb screw at the back of the foot. Check the position of the foot by lowering the needle into the side notch of the foot, making sure it clears the foot. Lock into position by tightening the thumb screw.

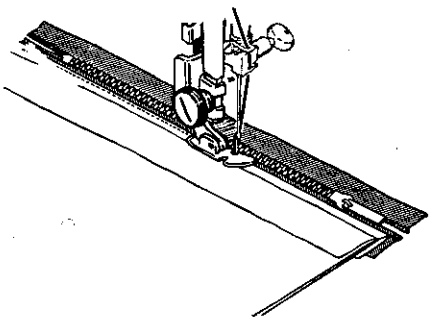
When the zipper is to the right of the needle, adjust the zipper foot to the left of the needle.

When the zipper is to the left of the needle, adjust the zipper foot to the right of the needle.

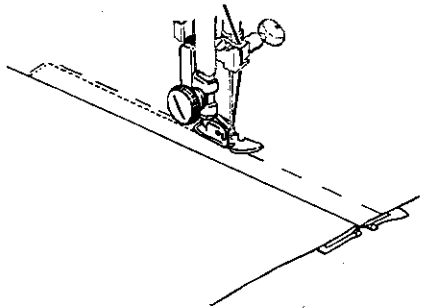
Procedure for Inserting a Zipper into a Skirt

1. Machine baste the placket opening of the skirt and press this seam open.
2. Attach the zipper foot to the machine and position it to the right of the needle.
3. Open the zipper.
4. Place the zipper face down on the seam allowance with the edge of the teeth of the seam line.
5. Turn the back seam allowance away from the body of the skirt.
6. Stitch the zipper tape to the seam allowance.





7. Adjust the foot to the left of the needle.
8. Close the zipper and turn it face up.
9. Smooth back the seam allowance at the edge of the zipper.
10. Top stitch it to the tape close to the folded edge.



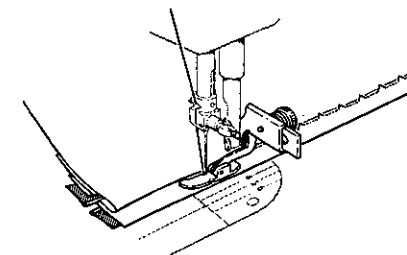
11. Turn zipper face down.
12. Turn work to right side and pin in place.
13. Adjust the foot to the right of the needle.
14. Stitch across the lower end of the zipper and up to the waist line.
15. Remove basting.

Blindstitch Zipper Insertion

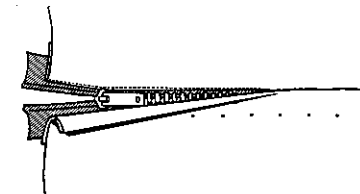
Fashion Disc: 3 (Blindstitch)
Needle Position: C
Stitch Width Selector: 2½ or 3
Stitch Length: 12
Throat Plate: General Purpose
Presser Foot: Zipper Foot

On chiffons, velvets, and sheer fabrics, blindstitching the final step of a zipper insertion gives a fine finish that is almost invisible.

1. Allow a 7/8-inch seam allowance.
2. Start the insertion in the regular way, but omit the final step.
3. Work from the right side of the garment and pin the zipper tape into position. Pin through all layers. Smooth the fabric as you pin.
4. Baste a line about 3/8 inch from the seam line to provide a guide for blindstitching. Remove pins.
5. Adjust zipper foot to proper side as described on page 63 under "Straight Stitch Zipper Insertion".
6. Turn garment inside out.
7. Place zipper tape over feed and turn back the front section of the garment to the line of basting, creating a soft fold.
8. Set stitch width selector and position work so that the straight stitches go through the seam allowance and zipper tape, and the sideward stitches pierce a few threads of the fold.
9. Lower zipper foot and stitch slowly.
10. Remove basting and press.



Final Step of Blindstitch Zipper Insertion

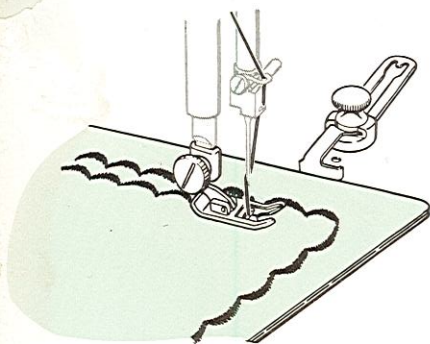


Completed Blindstitch Zipper Insertion

8. Finishing Touches

TOP STITCHING

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, pockets, sleeves, etc. For a tailored look, use lines of straight stitching. For decorative interest, use a *Fashion Disc* pattern. The Seam Guide will help you place the rows accurately.



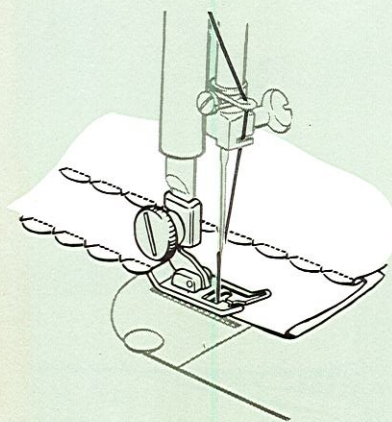
Top Stitching

SHELL EDGING

Fashion Disc: 3 (Blindstitch)
 Stitch Width: To suit fabric
 Needle Position: C
 Presser Foot: General Purpose (snap-on type)
 Throat Plate: General Purpose
 Stitch Length: To suit fabric

On soft, fine fabrics, shell edging makes an attractive finish for narrow hems or bias folds.

1. Make a test on a sample of your fabric to find the right thread tension, stitch length, and stitch width.
2. Place folded hem (basted, if necessary) or bias fold under presser foot, with hem or fold toward the left.
3. Stitch slowly, guiding fabric by hand so that the sideward stitches do not pierce the folded edge.



Shell Edging

MONOGRAMS AND MOTIFS

Many of the decorative stitch patterns can be used for monograms or motifs—for adding a personal touch to a blouse or collar, for example, or for initialing household linens. You can buy designs—or create them yourself.

Fashion Disc: 1 for zig-zag satin stitching. See page 33 for decorative stitches.

Stitch Width: To suit pattern
 Needle Position: C
 Presser Foot: Special Purpose
 Throat Plate: General Purpose
 Stitch Length: FINE (above 20)

To Stitch a Monogram or Motif:

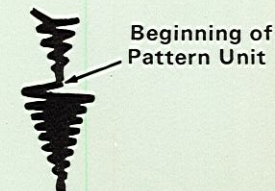
1. Make a sample first, to determine suitability of stitch pattern and find the right stitch length and width, thread tension and pressure.
2. Transfer the design (by tracing, usually) to the right side of the fabric.
3. If the fabric is soft or loosely woven, baste a backing of lawn or organdy on to the wrong side.
4. After stitching, trim the backing close to the stitching.

To Find the Beginning of Pattern Unit

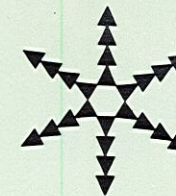
1. On a scrap of material, stitch until you come to the end of a complete pattern unit—for example, the Diamond, Arrowhead, or whatever pattern you are using. Now you are ready to start stitching at the beginning of the next unit.
2. Raise presser foot and remove scrap.
3. Position motif under needle; lower presser foot; and stitch.



Monogram in Zig-Zag (1)
and Arrowhead (5)



Arrowhead (5)



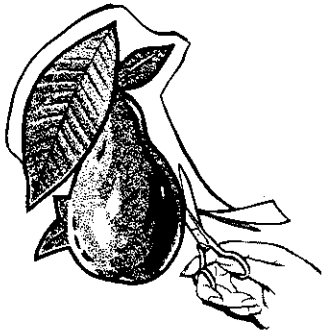
Arrowheads (5) in Star Motif

APPLIQUE

The stitch most commonly used in appliqueing is a plain zig-zag stitch (*Fashion* Disc: 1), closely spaced to form a satin stitch. The width of this stitch can be varied to accommodate fabrics of different weaves and textures. Many of the other *Fashion* Disc patterns can also be used to applique with decorative stitching.

There are two methods of appliqueing: trimming after stitching or stitching after trimming. To decide which method you wish to use, make a sample to see which is most appropriate for your fabric and design:

- Position the design.
- Baste it to the fabric.
- Attach Special Purpose Presser Foot and General Purpose Throat Plate.



Method No. 1—
Trimming after Stitching

Method No. 1

1. Insert *Fashion* Disc for the desired applique stitch. Set stitch width at desired setting, and set stitch length on FINE (above 20).
2. Stitch, outlining the design with applique stitching.
3. Trim any excess fabric on the outer edges of the stitching. Remove basting.

Method No. 2

Fashion Disc: Desired Pattern
Stitch Width Selector: 0
Needle Position Selector: C

1. Outline the entire design with a short straight stitch.
2. Trim raw edges to the stitching.
3. Adjust Stitch Width Selector to desired width setting for applique pattern. Set Stitch Length Selector on FINE.
4. Stitch, following and covering the straight-stitch outline. This step will produce a smooth overedged finish, with no raw edges to be trimmed. Remove basting.



Method No. 2 Stitching
after Trimming

Corded applique, which gives a raised, three-dimensional effect, is a particularly attractive finish for lace applique.

Follow either Method No. 1 or No. 2, but first insert a cord of gimp, crochet thread, or buttonhole twist into the centre eyelet on the Special Purpose Presser Foot. (See "Corded Seams", page 47, for threading instructions).



Corded Lace Applique

EMBROIDERY

Needle Position: **C**
Presser Foot: Darning and Embroidery Foot or None
Throat Plate: General Purpose
Feed Throw-out: Position '3'
Pressure Dial: Position 'D'

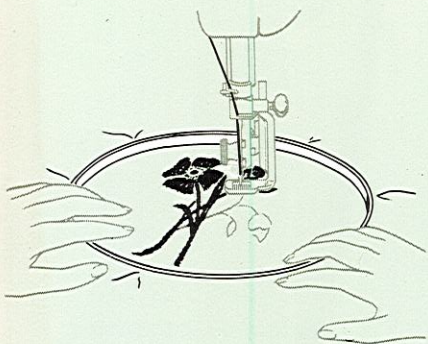
A Word About Free-Motion Work

Decorative designs of all kinds can be effectively accomplished with zig-zag stitching when the free-motion principle is used:

The design is placed in an embroidery hoop to hold the fabric taut; the hoop is moved slowly so that the needle follows the outline of the design.

Stitches can be shaded from wide to narrow by controlling the angle at which the work is placed and moved under the needle. For all free-motion work be sure to set feed throw-out knob at '3', as instructed on page 6.

The application of free-motion work to script lettering is given on the following page. Free-motion stitching is also extremely useful for darning (see page 73 for instructions on free-motion darning).



Free Motion Stitching with Darning and Embroidery Foot



Free Motion Stitching without Darning and Embroidery Foot

SCRIPT LETTERING

If you wish to embroider a whole name
—on a child's dress or shirt, for example
—you can do so by free-motion stitching.

Fashion Disc: 1 (Plain Zig-Zag)

Stitch Width: **2-5**

Needle Position: **C**

Presser Foot: None or Darning and Embroidery Foot

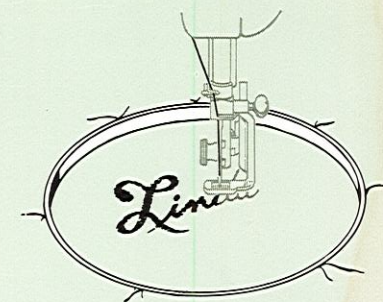
Throat Plate: General Purpose

Feed Throw-out: Position '3'

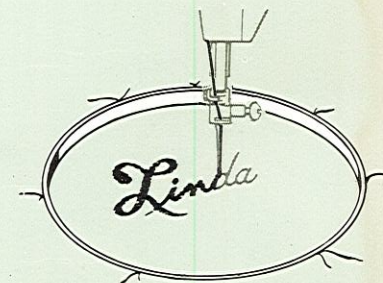
Stitch Length: **FINE** (above 20)

1. Always make a sample first, to find the right stitch settings and spacing.
2. Trace or mark lettering on right side of fabric.
3. If the fabric is soft or loosely woven, add an underlay of crisp lawn or organdy.
4. Place work in embroidery hoop large enough to encompass the entire design. Be sure fabric is held taut.
5. Position work under needle and lower presser bar to engage tension.
6. Turn hand wheel toward you to bring bobbin thread up through fabric at start of design and hold both threads to start stitching.
7. Stitch, following outline of lettering. Maintain an even rate of speed so that stitches are uniformly spaced.

To produce a close satin stitch, move hoop slowly; to produce an open stitch, move hoop more rapidly.



Script Lettering with Darning and Embroidery Foot



Script Lettering without Darning and Embroidery Foot

9. Keeping up appearances

MENDING

Many of the zig-zag stitch patterns are just as useful for mending as they are for creative sewing. *Fashion Disc (2)*, which is a multi-stitch zig-zag, forms a firm, flexible bond for repairing tears and for reinforcing elastic. *Fashion Disc (1)*, which is plain zig-zag, is useful for making bar tacks to repair lingerie.

Tears

Fashion Disc: 2 (Multi-stitch Zig-Zag)

Stitch Width: 2-5

Needle Position: C

Presser Foot: General Purpose (snap-on type)

Throat Plate: General Purpose

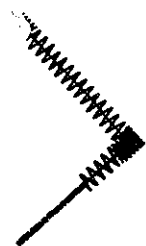
1. Trim ragged edges.
2. Place underlay on wrong side of tear for reinforcement. Do not baste.
3. Stitch on right side, bringing edges of the tear together.
4. Shorten stitch length at ends and corners to give extra strength.
5. Trim underlay.

Elastic

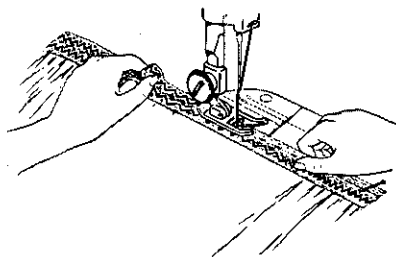
1. Use the same settings as for "Tears", above.
2. Elastic must be stretched as it is applied to ensure fullness required in the garment.

Bar Tacks

Use *Fashion Disc 1* at satin-stitch length to bar-tack garters, pockets, zippers, shoulder straps, etc.



A Tear Mended with Multi-Stitch Zig-Zag



Replacing Elastic with Multi-Stitch Zig-Zag

BLANKET BINDING

Fashion Disc: 2 (Multi-stitch Zig-Zag)

Stitch Width: 5

Needle Position: C

Presser Foot: General Purpose (snap-on type)

Throat Plate: General Purpose

Stitch Length: 12-15

Often you can make an old blanket look almost new by replacing the binding.

1. Remove worn binding.
2. Baste new binding securely.
3. Reduce pressure and increase stitch length if necessary, so that blanket feeds freely.
4. Stitch, and remove basting.

DARNING

You may choose to darn either with or without an embroidery hoop. When greater control is needed, free-motion stitching with an embroidery hoop and the darning and embroidery foot is usually best.

Darning Without Embroidery Hoop

Stitch Width: 0

Needle Position: C

Presser Foot: General Purpose (snap-on type)

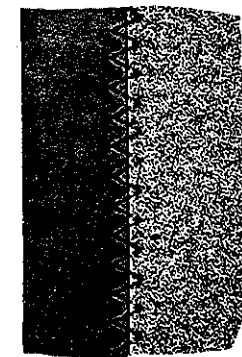
Throat Plate: Straight Stitch

Feed Throw-out: Position '3'

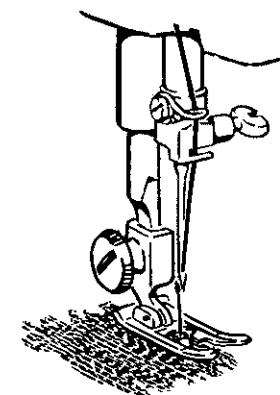
Stitch Length: FINE (above 20)

Pressure Dial: Position 'D'

1. If area to be darned is open, baste an underlay in place.
2. Place area to be darned under presser foot.



Blanket Binding



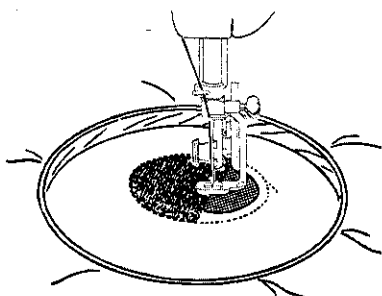
Darning Without Embroidery Hoop

3. 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.
5. For additional strength, cover area with crosswise lines of stitching.

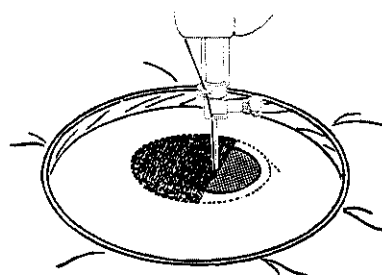
Darning With Embroidery Hoop

Stitch Width: 0
 Needle Position: C
 Presser Foot: Darning and Embroidery Foot or None
 Throat Plate: General Purpose
 Feed Throw-out: Position '3'
 Stitch Length: FINE (above 20)
 Pressure Dial: Position 'D'

1. Trim ragged edges from area to be darned.
2. Centre worn section in embroidery hoop.
3. Position work under needle and lower presser foot, or if darning and embroidery foot is not being used the presser bar must still be lowered to engage tension.
4. Hold needle thread loosely with left hand, turn hand wheel over and draw bobbin thread up through fabric. Hold both thread ends and lower needle into fabric.
5. Outline area to be darned with running stitches for reinforcement.
6. Stitch across opening, moving hoop under needle at a slight angle from lower left to upper right. 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 and Darning and Embroidery Foot



Darning with Embroidery Hoop and without Darning and Embroidery Foot

10. Caring for your sewing machine

Your sewing machine is a fine yet sturdy precision instrument, and it will serve you perfectly for many years if you take a few simple steps to keep it in good condition. How often you will need to clean, oil and lubricate the machine will depend on how often you use it and where you keep it. The following general guidelines assume that you will be sewing two or three times a week. But if you use the machine continuously, clean and oil it daily. Or, if you keep it in a very warm or damp place, oil and lubricate it more frequently than the guidelines suggest. SINGER* lubricant, as well as SINGER* oil, is available for purchase at your SINGER CENTRE.

Disconnect machine from electricity supply before removing arm top cover or bed cover plate.

EVERY WEEK OR SO

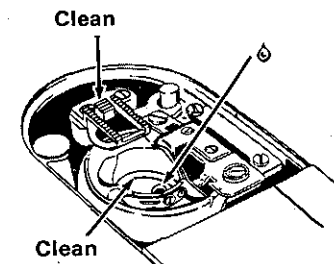
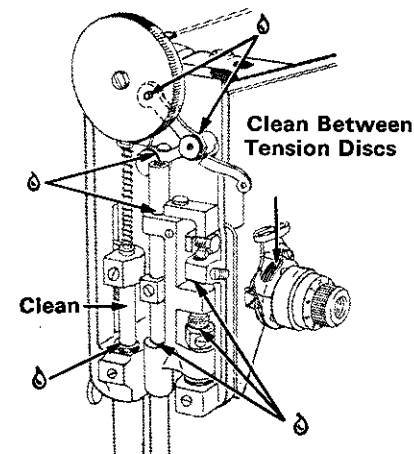
Remove lint and fluff from exposed parts. (As a matter of fact, you will be able to see the lint and fluff gathering on these parts, and we recommend that you remove them as they accumulate.)

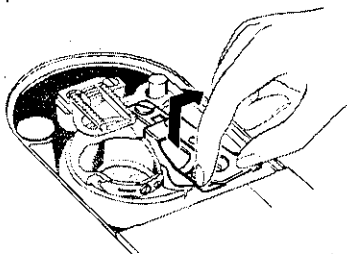
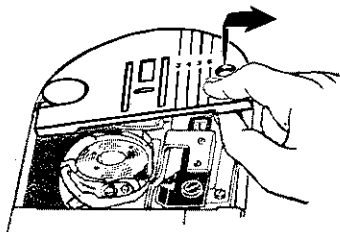
With a soft cloth, clean:

- Tension discs.
- Take-up lever and thread guides.
- Presser bar and needle bar. (For instructions on removing and replacing arm top cover, see page 77).
- Machine surface (arm and bed).
 If necessary, a mild solution of detergent in water may be used to remove stubborn stains on face plate; *never use strong solutions or abrasives.*

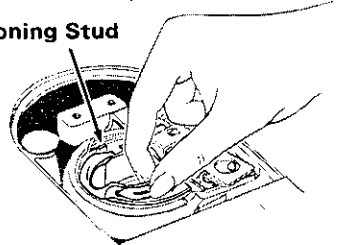
With a lint brush, clean:

- Behind face plate.
- Bobbin area.
 (For instructions on removing and replacing face plate and bobbin case, see page 76).
 After each cleaning apply a drop (but no more than a drop) of SINGER oil to the areas shown. Then sew a few lines of stitching on a scrap of material to remove excess oil.





Positioning Stud



Arm Top Cover

Face Plate



Thumb Screw

To Remove and Replace Bobbin Case

- Open slide plate, raise needle, place thumb under right side of throat plate and lift up to remove throat plate.
- Lift and push holder to right, as shown, and remove bobbin case.
- Remove all lint and fluff.
- Replace bobbin case—groove under tension spring fits on hook raceway and fork of case straddles positioning stud under feed dog.
- Push holder to left until it snaps into position.
- Replace throat plate under clamping pin, push to left, and press down until it snaps into place.

To Remove Face Plate

- Loosen and remove thumb screw and remove face plate by sliding it downward.

To Replace Face Plate

- Slide face plate up so that rim is engaged under edge of arm top cover.
- Align screw hole at lower edge of plate with screw hole in machine and replace and tighten thumb screw.

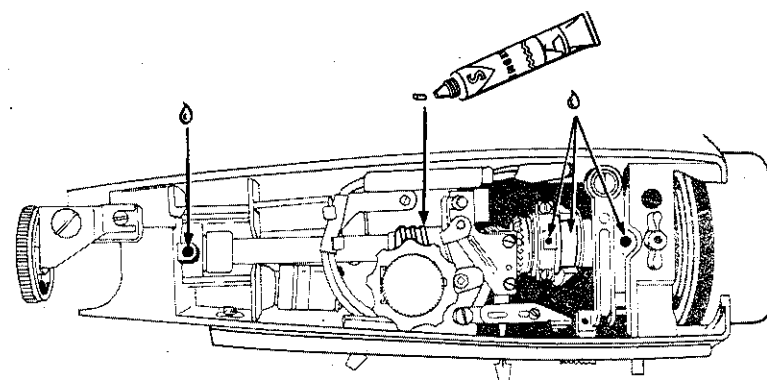
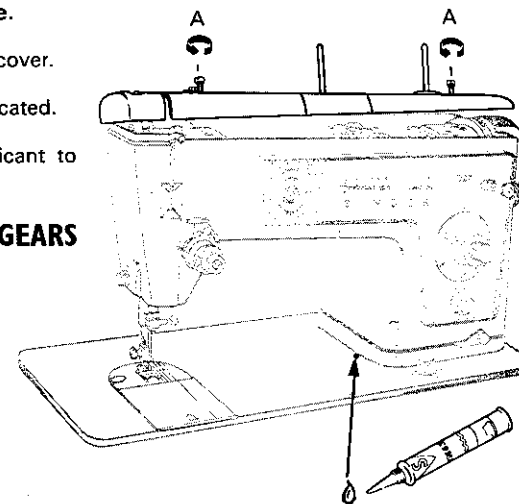
EVERY FEW MONTHS

Lubricate parts under the arm cover.

- Disconnect machine from electricity supply before removing arm top cover or bed cover plate.
- Remove screws A, lift off arm cover.
- Apply a drop of oil where indicated.
- Apply a small amount of lubricant to gears as shown.

NEVER APPLY OIL TO GEARS

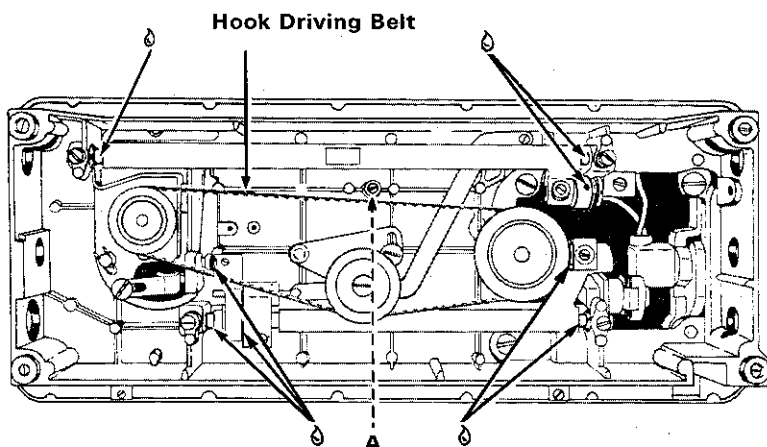
- Replace arm cover.



Lubricate parts on under side of machine.

- Be sure machine is disconnected from electrical supply.
- Remove bed cover plate (as instructed below).
- Oil each of the places indicated by arrows. Avoid getting oil on any part of the motor or hook driving belt.
- Replace bed cover plate (as instructed below).

Motor Requires No Lubrication



To Remove and Replace Bed Cover Plate

- Tilt machine back and remove retaining nut from threaded stud **A**, being careful not to lose felt washer, and remove cover from underside of machine.
- Replace bottom cover, felt washer and retaining nut. Tighten retaining nut with screwdriver.

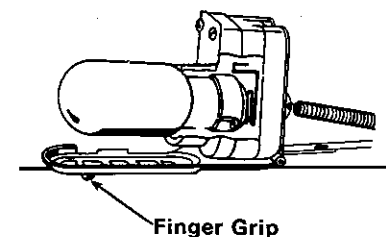
IF THE MACHINE IS TO BE STORED

It is necessary to protect the machine from rust damage. Before storing, give the machine a thorough brush-cleaning to remove all traces of lint and fluff. Follow by swabbing all exposed parts with a lint brush saturated with SINGER oil.

TO CHANGE THE LIGHT BULB

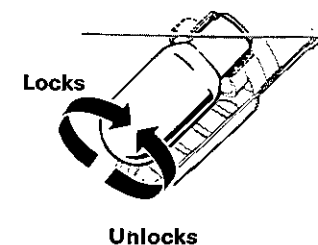
The light is turned 'on' or 'off' by the light switch located on the control panel under the stitch length selector.

- Switch light 'off'.
- Disconnect plug from electric outlet before removing old bulb.
- Pull light down by finger grip and hold in down position.



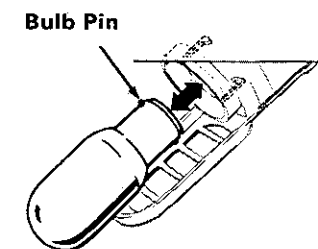
To Remove Bulb:

Do not attempt to unscrew bulb. Press it up into socket and turn it in 'unlock' direction, as shown, and withdraw.



To Replace Bulb:

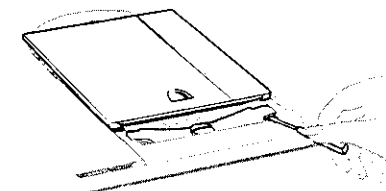
Press new bulb into socket, with bulb pin entering slot of socket, and turn it over in 'lock' direction: shown to lock bulb in position. Release bracket and entire assembly will snap back into recess.



TO REPLACE 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 the needle.
- Place slide plate in slide way with the front edge close to, but not covering the retaining spring (as shown).
- With a 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.



Hints for Home Service

Whenever sewing difficulties are encountered, review the sections of the instruction book that pertain to the operation that you are performing, to assure you are using the machine properly. If the problem still exists, the following hints will help you to correct it:

WARNING — be sure that a **FASHION Disc** is always in place on the disc holder in the machine even for straight stitching.

Fault—Stitch Width Selector Lever difficult to move

Symptom	Remedy
Stitch Width Selector Lever difficult to move.	1. Check that Stitch Length Selector Dial is set for normal sewing (see page 26).

Fault—Machine does not sew.

Symptom	Remedy
a. Needle bar does not move.	<ol style="list-style-type: none"> 1. Make sure that motor is connected to electrical supply or treadle belt is engaged. 2. Make sure that clamp stop motion is tightened (see pages 18 and 19).
b. Needle bar moves but machine does not stitch.	<ol style="list-style-type: none"> 1. Replace needle. Make sure proper needle class and size is used (see page 25); make sure the needle is properly inserted (see pages 24 and 38) and check to see if machine is threaded properly (see pages 21, 22 and 38). 2. Make sure that bobbin case and bobbin are properly placed in machine (see pages 20 and 76). 3. Make sure that bobbin case area is clean of lint.
c. Needle bar moves and stitches but fabric does not move.	<ol style="list-style-type: none"> 1. Make sure feed regulator is set to desired stitch length (see pages 26 and 36). 2. If feed throw-out has been used, make sure it has been re-set properly (see page 6). 3. Make sure there is sufficient presser bar pressure to hold material (see page 27). 4. Remove throat plate and clean all lint from around feed dog (see page 75).
d. Needle breaks.	<ol style="list-style-type: none"> 1. Replace needle, making sure it is the proper class and size and make sure it is properly inserted (see pages 24, 25 and 38). Turn handwheel over by hand several times to make sure needle does not foul throat plate, presser foot or attachment. 2. If material is being guided behind the needle (see page 31), make sure that it is not being pulled too quickly. 3. Make sure that presser foot or attachment is securely fastened to presser bar. 4. Do not pull the material to one side when taking it from the machine. The needle may become bent and strike the throat plate or presser foot (see page 32). 5. Make sure the needle position lever and bight control lever are properly positioned (see pages 23 and 34).

Fault—Thread breaks.

Symptom	Remedy
a. Needle thread failures.	<ol style="list-style-type: none"> 1. Needle might be bent. Replace needle making sure it is the proper class and size (see page 25) and make sure it is properly inserted (see pages 24 and 38). 2. Make sure the machine is properly threaded (see pages 21, 22 and 38). 3. If the needle thread tension is too tight it should be made lighter (see page 28). 4. Check needle hole in throat plate and presser foot to ensure that they have not been damaged. 5. Make sure bobbin and bobbin case are properly inserted in machine (see pages 20 and 76). 6. Make sure that threads are properly placed under presser foot when starting to sew (see page 30).
b. Bobbin thread failures.	<ol style="list-style-type: none"> 1. Make sure bobbin is wound properly (see pages 18 and 19). 2. Make sure bobbin case is threaded and inserted properly (see pages 20 and 76). 3. Check to make sure bobbin or bobbin case have not been damaged.

Fault—Skipped Stitches.

Symptom	Remedy
Failure to consistently make stitches.	<ol style="list-style-type: none"> 1. Needle might be bent. Replace needle, making sure it is the proper class and size (see page 25) and make sure it is properly inserted (see pages 24 and 38). 2. Make sure that machine is threaded properly (see pages 21, 22 and 38). 3. Make sure that material is held down firmly (particularly when doing darning or embroidery).

Fault—Looped Stitches.

Symptom	Remedy
Loose stitches occurring on underside of fabric.	<ol style="list-style-type: none"> 1. Needle might be burred. Replace needle, ensuring that it is the proper class and size (see page 25) and make sure it is properly inserted (see pages 24 and 38). 2. If needle thread tension is too loose, it should be tightened (see page 28). 3. Make sure bobbin case area is free of lint. 4. Make sure the bobbin is not wound too full (the thread should be below the edge of the sides).

Fault—Gathering or puckering of material.

Symptom	Remedy
Material does not lie flat after sewing.	<ol style="list-style-type: none"> 1. Needle might be bent. Replace needle, making sure it is the proper class and size (see page 25) and make sure it is properly inserted (see pages 24 and 38). 2. If needle thread tension is too tight it should be made lighter (see page 28). 3. If bobbin thread tension is too tight it should be made lighter (see page 28). <p>NOTE—As all machines are correctly adjusted before leaving the factory it is seldom necessary to alter the bobbin thread tension.</p> <ol style="list-style-type: none"> 4. Make sure there is sufficient presser bar pressure to hold material (see page 27). 5. Stitch length may be too long for material (particularly fine materials). 6. Make sure proper presser foot is being used.

Fault—Incorrect Feeding.

Symptom	Remedy
a. Material does not move properly under presser foot.	<ol style="list-style-type: none"> 1. Presser bar pressure may be too light (see page 27). 2. Presser foot or attachment may not have been properly re-assembled to presser bar. 3. Feed regulator may not be set to proper stitch length (see pages 26 and 36). 4. Remove throat plate and make sure lint has not accumulated on feed dog.
b. Material does not move properly when set to make buttonholes.	<ol style="list-style-type: none"> 1. Make sure that Special Buttonhole Foot is used. 2. Make sure that Stitch Length Selector Dial is set at the correct Buttonhole Symbol (see pages 55 to 58).
c. Medium and heavy fabrics do not feed properly.	<ol style="list-style-type: none"> 1. Check that Feed Throw-out Knob is set to '1'. 2. Make sure that pressure is adequate on Presser Bar Regulator (see page 27).

Fault—Sluggish and/or noisy machine.

Symptom	Remedy
Handwheel difficult to turn over manually and/or machine noise level has increased.	<ol style="list-style-type: none"> 1. All lint should be cleaned from machine, particularly in area of bobbin case. 2. Machine should be lubricated periodically (see pages 75 to 78). SINGER* oil and SINGER* lubricant should be used.

If the suggestions offered here do not correct your sewing problems, call your local SINGER Sewing Centre or authorised SINGER Dealer.

FASHION* AIDS AVAILABLE FOR PURCHASE

Those *Fashion Aids* which are not furnished with your machine are available for purchase at your local Singer Sewing Centre.

Among the many *Fashion Aids* that will fit your 478 sewing machine are those described below. These aids will increase the versatility of your machine and enable you to give your sewing that extra professional designer touch.

The Edge Stitcher . . . This attachment provides a series of slotted guides which regulate the placement of stitching in relation to a fabric edge.

Among many decorative and practical applications are the joining and insertion of lace, tucking from pin width to 1/4 inch, French seaming, piping, facing and seam finishing.

Tucker . . . Since the beauty of tucking lies in its explicit accuracy, use of the Tucker will contribute greatly to the attractiveness of the work.

With this time saving attachment, tucks up to one inch may be stitched and marked in one operation.

Two adjustable scales are provided to gauge tuck width and spacing.

The Ruffler . . . For gathered and pleated ruffles. Ruffles may be made separately or made and applied in one operation.

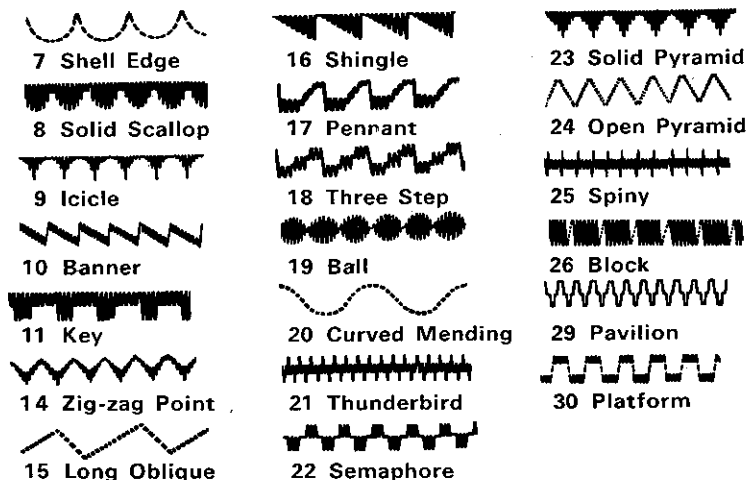
The Binder . . . For the application of commercial and self fabric bias binding.

The Gathering Foot . . . Ensures evenly spaced shirring with "locked-in" fullness.

The Auto-Pilot Buttonholer . . . For worked buttonholes in straight and eyelet-end styles and perfectly aligned rectangles of straight stitching for bound buttonholes; these are produced automatically by this attachment in a fraction of the time required by other methods.

ADDITIONAL FASHION DISCS

The following additional *FASHION* Discs are available for separate purchase at your local Singer Centre.



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