INSTRUCTIONS
for the use and maintenance of your sewing machine
SOME SAFETY RULES

1. Be careful when sewing that your fingers will not be injured by the needle.

2. Make sure you pull out the power cord plug whenever you want to change needle, sewing foot, bobbin or needle plate, when you clean and oil the machine, or when you have to interrupt sewing and leave the machine for a while.

3. Be sure to use only a 15-watt light bulb in the sewing lamp.
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EXTENSION PLATE

To attach extension plate, set extension plate around the free arm plate of machine from the left side.

- In case of setting the extension plate, you can use it for flat bed sewing machine.
- In case of removing the extension plate, you can use it for free arm sewing machine.

ACCESSORY BOX

Accessories for your sewing machine are located in the built-in accessory box on the right side of extension plate.
To open the accessory box, pull the right side of extension plate toward you.

HANDLE

Push the end of handle, and pick its up by another hand.
NEEDLES AND THREADS

The needle and thread you choose depends upon the fabric you are stitching. The correct needle size is important to avoid damaging the fibers of light weight or tightly woven fabrics, and to prevent needle breakage when stitching heavy or stiff fabrics.

<table>
<thead>
<tr>
<th>Needle size</th>
<th>Thread</th>
<th>Fabric</th>
</tr>
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<tbody>
<tr>
<td>9 fine</td>
<td>• polyester</td>
<td>tricot, lingerie fabrics, chiffon, net, voile, sheer lace, fine silk, organdy</td>
</tr>
<tr>
<td></td>
<td>• cotton covered polyester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• fine mercerized cotton (70-100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• silk A</td>
<td></td>
</tr>
<tr>
<td>11 light</td>
<td>• polyester</td>
<td>light weight knits, jerseys, silk, batiste, taffeta, satin, lace, crepe</td>
</tr>
<tr>
<td></td>
<td>• cotton covered polyester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• mercerized cotton (50-60)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• silk A</td>
<td></td>
</tr>
<tr>
<td>14 medium</td>
<td>• polyester</td>
<td>double knits, linen, poplin, gingham, pique, seersucker, fine corduroy, velveteen, light weight wools</td>
</tr>
<tr>
<td></td>
<td>• cotton covered polyester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• mercerized cotton (50)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• silk A</td>
<td></td>
</tr>
<tr>
<td>16 heavy</td>
<td>• polyester</td>
<td>heavy wools, corduroy, felt, terry cloth, canvas, upholstery and drapery fabrics</td>
</tr>
<tr>
<td></td>
<td>• cotton covered polyester</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• mercerized cotton (40-50)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• heavy duty mercerized (40)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• silk D (buttonhole twist for top-stitching)</td>
<td></td>
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</table>

Use only No. 15 x 1 (705) needles in this machine.

- Always use same type and size of thread in both needle and bobbin.
- Always use a sharp needle. A blunt point can cause skipped stitches or snag the fabric. Chemical finishes and man-made fibers blunt the needle faster.
- Never use a bent needle.
- If your machine is skipping stitches, replace the needle before looking for trouble elsewhere.

**Ball Point Needles** are designed to sew knits and stretch fabrics. The ball point tip can slip between the fabric threads, while the point of an ordinary needle may damage the fibers. Available in size 9, 11, 14, and 16.
CHANGING NEEDLE

Raise needle to its highest position by turning hand wheel toward you. Loosen needle clamp screw and remove needle.

Place new needle so its flat side faces back. Push up into needle clamp as far as possible. Tighten screw with a screwdriver.

Turn hand wheel toward you one complete rotation to be sure needle is correctly positioned.

CHANGING PRESSER FOOT

Snap-On Presser Foot
Snaps on and off a master shank for quick and easy changes.
Raise needle to its highest position by turning hand wheel toward you. Raise presser foot by lifting presser foot lever located on back of machine.

Press down on lever behind shank to release foot; lift foot off. Place new foot at base of shank. Press down on lever and push foot in place on shank; release lever.
THREADING MACHINE

WINDING BOBBIN
Place spool of thread on spool pin and thread as shown in illustration. Be sure thread goes under tension disc on bobbin thread guide and through slot. Put thread through one of the holes in empty bobbin from inside to outside. Push bobbin down firmly on bobbin spindle at top of machine with slot in bobbin fitting into spring on bobbin spindle. Push bobbin and spindle to the right.

Release sewing mechanism by holding hand wheel and turning stop motion knob toward you. Hold end of thread and press down on foot control as when sewing. Release end of thread as soon as winding starts. Run machine slowly to wind bobbin evenly.

Bobbin winder will stop itself when bobbin is full. Pull bobbin and spindle back to the left until a click is heard. Break off thread and remove bobbin.

Tighten stop motion knob.

Bobbin Winder Stop
For a fully wound bobbin, the knob should just slightly overlap edge of bobbin. If too far out, thread will extend beyond bobbin. Loosen screw at top of knob and adjust; tighten screw. Knob can also be adjusted to extend farther into bobbin for less amount of thread.

Winding Bobbin Evenly
If bobbin winds unevenly, adjust thread guide by loosening screw at base of guide:
- if more thread winds at top of bobbin, shift thread guide slightly downward.
- if more thread winds at bottom of bobbin, shift thread guide slightly upward.
Raise presser foot and needle to its highest position by turning hand wheel toward you. Place thread on spool pin, and pass thread through according to the numbers shown in the illustration.
REMOVING BOBBIN CASE

Raise needle to its highest position by turning hand wheel toward you. Pull out slide plate.

Lift open hinged latch of bobbin case and pull case straight out of machine.

Bobbin will remain in case as long as latch is open. To remove bobbin, hold bobbin case down, close latch, and bobbin will fall out.

THREADING BOBBIN CASE

Hold bobbin as shown in illustration so that thread goes over top of bobbin and away from you. Place bobbin in case without turning it around.

Slide thread into slot in edge of case and draw thread under tension spring.

Pull out thread to check that bobbin turns clockwise.
INSERTING BOBBIN CASE

Be sure that 15 cm of thread extends out of bobbin.

Hold bobbin case so long finger on case points up. Open latch.

Slip case over center pin in shuttle and press in place until long finger enters notch. Release latch, and press down.

Close slide plate.

BRINGING UP LOWER THREAD

Raise presser foot. Hold needle thread loosely with your left hand. Turn hand wheel toward you until needle moves down and then up again to its highest position, catching bobbin thread and bringing it up through hole in needle plate.

To prevent thread from slipping out of needle when you begin sewing, pull both threads out about 15 cm and place under presser foot toward rear of machine.
On the front of the machine, you will find the easy-to-use stitch pattern dial to select the different stitches. You can produce a variety of decorative and utility stitches, including stretch stitches.

NOTE: Before selecting one of the super zigzag stitches (underlined in Yellow on stitch indication panel), first turn reverse stitch dial (stitch length dial) to 5 (yellow mark).

**STITCH PATTERN**

Determine the desired stitch by checking the stitch indication panel, and then turning the stitch pattern dial to the selected stitch.

The stitch indication panel clearly illustrates the settings for straight stitch, zigzag, and 7 additional stretch and decorative stitches, plus a buttonhole.

Do not turn stitch pattern dial while stitching.

**STITCH WIDTH LEVER**

When sewing with the double needle, the stitch width lever should be set at the double needle symbol. When making buttonholes, set the stitch width lever according to the desired width of the stitch.

NOTE: When sewing decorative stitches, the stitch width lever can be set at any position. The setting at the extreme right is the widest width, and toward the left the setting becomes narrower gradually. The extreme right setting is the narrowest width.
STITCH LENGTH

Stitch length dial regulates the length of stitch. When you set stitch length dial at 0 position, machine does not feed fabrics. According to turning the stitch length dial to right-ward, the length of stitch is going to be longer. In case of setting the stitch length dial at 5 position (max), the length of stitch will be maximum. When you have a buttonhole sewing, the stitch length dial should be set near by the buttonhole symbol.

REVERSE STITCH

Press in center button of stitch length knob and hold for reverse stitching. Fabric will immediately start feeding backwards. Release button and machine will resume normal forward stitching.

Very useful for fastening ends of seams and darts without having to tie threads.
TENSION OF UPPER THREAD

Tension on the upper thread can be easily adjusted by turning dial on front of the tension discs.

Your machine has been set at the factory for even thread tension at 6 setting. However, you may have to adjust the tension when using different threads or sewing on fabrics of different thicknesses.

Loosen tension somewhat when zig-zag stitching. The wider the zig-zag, the less tension needed. Use 3 setting when sewing buttonholes, monogramming and embroidering.

Test tension before you sew by stitching on a scrap of the same fabric and through the same amount of layers.

Correct tension:
needle and bobbin threads are locked in center of seam.

Upper thread too loose:
increase tension by turning dial down-ward.

Upper thread too tight:
reduce tension by turning dial up-ward.
TENSION OF LOWER THREAD

If you are unable to balance the stitch by adjusting tension on the upper thread, you may have to make a slight adjustment in the bobbin tension.

Take out bobbin case, remove bobbin and clean out any dust or lint which has collected around the case.

Turn screw on bobbin case slightly in either direction using the small screwdriver:

To increase tension — turn screw slightly to the right.

To decrease tension — turn screw slightly to the left.

If stitch is satisfactory but the seam is puckered, it may be necessary to loosen tension on both top and bottom threads.

PRESSURE

With setting the lever at 0 position, the amount of pressure is completely released.

With setting the lever at 2 position, the amount of pressure is applied.

Set the lever at 2 position when sewing heavy fabrics. Set the lever at 1 position when sewing lighter weight fabrics. Adjust the pressure regulator according to sewing materials. Release pressure completely for embroidering, darning and sewing buttons.
**FABRIC FEED**

The fabric feed or feed dog moves fabric forward or backward under the presser foot. It can be raised or lowered by depressing the fabric feed plate located at the right of the shuttle.

For ordinary straight or zigzag stitching, depress plate (▼) down. This raises fabric feed to its highest position.

For darning, embroidering and sewing on buttons, depress plate (▼) down to lower the fabric feed so fabric can be moved freely by hand.

**TO START SEWING**

Your machine has a main switch on the right side of the machine. Before operation, first turn the main switch on by pushing it. And after operation, turn the main switch off by pushing it again.

**SEWING LIGHT**

The sewing light is located directly over the needle so as to better illuminate the stitching area. When the main switch is on, the light is automatically turned on.
### CHART FOR MAKING DIFFERENT TYPES OF STITCHES

<table>
<thead>
<tr>
<th>Stitch pattern</th>
<th>Stitch width lever</th>
<th>Stitch length dial</th>
<th>Fabric feed</th>
</tr>
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<tbody>
<tr>
<td>Straight stitching</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Zig-zag stitching</td>
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<tr>
<td>Full zig-zag stitching</td>
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<tr>
<td>Super zig-zag stitching</td>
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<tr>
<td>Buttonhole sewing</td>
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<td></td>
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<tr>
<td>Double needle sewing</td>
<td></td>
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<td></td>
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<tr>
<td>Embroidering and darning</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### NOTE:
Before selecting one of the super zigzag stitches (underlined in Yellow on stitch indication panel), first turn reverse stitch dial (stitch length dial) to 5 (yellow mark).

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OPERATION OF THE MACHINE

Raise the presser foot (33) by lifting the presser foot lifter (30). Place the fabric to be sewn under the presser foot and lower presser foot onto the fabric. Turn the hand wheel (23) toward you until the needle enters the fabric and you are ready to sew. The fabric will be fed forward with the movement of the feed dog. Do not try to help the feeding of the fabric by pulling it with your hand, as this may bend the needle and cause it to become blunt or break. Just guide the fabric gently by hand in the direction you want to sew.

TO REMOVE THE WORK

Stop stitching. Turn the hand wheel (23) toward you by hand to raise the take-up lever (4) to its highest point. Raise the presser foot lifter (30). Draw the sewn fabric back and to the left about 15 cm and pull the threads over the thread cutter (A). Press down to cut threads. The thread cutter is at the back of the presser bar (B).
USING THE CLOTH GUIDE AND THUMB SCREW

This is an attachment, which you will find in the accessory box, designed as a guide for straight stitching when making wide hems, pin tucks or when seam widths are wider than the presser foot allows. Fasten the cloth guide to the bed of the machine by means of the thumb screw, inserting the thumb screw into a hole in the bed of the machine. Adjust the cloth guide to the required distance from the needle and tighten thumb screw.

USING THE QUILTING ATTACHMENT

This attachment helps you to sew parallel lines on padded fabric without marking the fabric. Take the quilter from the accessory box.

Loosen the presser foot thumb screw and insert the prongs of the guide between the thumb screw and the presser foot.

Slide the width guide of the quilter to the distance you wish to maintain the rows of stitching. Lower the presser foot. Stitch first row. Place the guide on the first row of stitching so that the second ow will have the desired distance from the first. Continue stitching rows in same manner.
STRAIGHT STITCHING

<table>
<thead>
<tr>
<th>Presser foot</th>
<th>Stitch pattern</th>
<th>Limit lever</th>
<th>Stitch length</th>
<th>Fabric feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight stitch foot or zig-zag foot</td>
<td></td>
<td>Free</td>
<td>0 to 5</td>
<td></td>
</tr>
</tbody>
</table>

This is the most usual type of stitching.

Use either the straight stitch foot for greater control or the zig-zag foot. When using the straight stitch foot, be sure stitch pattern knob is in the straight stitch position to prevent needle from hitting presser foot.

Adjust stitch length according to your fabric. Lengthen stitch for heavier fabrics, multiple layers, and thicker seams.

Turning a Corner


Reinforcing Ends of Seam

Reinforce the beginning and end of seams by backstitching to secure the threads. Begin 10mm from fabric edge and stitch in reverse to edge, then sew forward to end of seam, then backstitch again about 10mm. Reinforce point of dart in same manner.
**Basting**

Machine basting is very useful for joining seams for trial fittings, marking construction guidelines, and basting pleats and hems.

Use longest stitch possible, setting stitch length at 5. Loosen tension on upper thread. Choose thread color to contrast with your fabric so it can be easily seen.

Basting stitches can be removed easily by clipping upper thread, then pulling out lower thread.

**Staystitching**

Staystitching prevents stretching and acts as a guideline for clipping and joining curved edges. Staystitch any edge that might stretch during handling before the final stitching.

Staystitch on a single layer of fabric; always stitching in the direction of the grain. Place stitching 3mm away from seamline in the seam allowance.
ZIG-ZAG STITCHING

Machine Setting:

<table>
<thead>
<tr>
<th>Presser foot</th>
<th>Stitch pattern</th>
<th>Limit lever</th>
<th>Stitch length</th>
<th>Fabric feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zig-zag foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Be sure to use zig-zag foot.
You can make any number of combinations by adjusting zig-zag width and stitch length. Both knobs can be turned while machine is running. However, if machine is not running, turn hand wheel toward you to raise needle to its highest position before adjusting stitch pattern knob.

Tension on upper thread usually needs to be loosened. The wider the zig-zag, the looser the tension. Stitches should lie flat against fabric without any puckering.

Zig-zag stitch has many uses:
- Seam finishing
  Overcast seam edges to prevent raveling during wear and washing. (See page 32).
- Edge finishing
  Use to finish hem and facing edges, to prevent raveling, and to eliminate the bulk of turned-in edges. For firm fabrics, stitch along edge of hem or facing.
  For loosely woven or soft fabrics, stitch about 10mm from edge, trim fabric close to stitching.
- Interfacing darts
  To reduce bulk when stitching a dart in interfacing fabrics, cut down center of dart to point. Overlap cut edges, matching dart lines. Zig-zag along dart line. Trim both raw edges close to stitching.
- Mending
  Tears and patches can be repaired quickly and easily. (See page 38)
Shell Stitch Edging

A decorative edge treatment for lingerie and other soft fabrics can be made with the blindstitch.

Fold under edge of fabric. Set stitch length between 2 and 4. Tighten upper thread tension so stitches will pull in fabric, forming a scalloped edge. Place edge of folded fabric under presser foot from the right, so folded edge is on the left. Stitch along folded edge.

Bartacks

Use to reinforce points of strain such as corners of pockets, belt loops, zipper openings, and lingerie straps.

Set limit lever at double needle symbol or wider, and stitch length under 1. Zig-zag bartack to length desired.

Satin Stitch

Closely spaced zig-zag stitches which form a smooth, satin-like surface are called satin stitches. Use for monograms, appliques and embroidery. (See pages 29 – 30)

Move stitch length knob under 1 stitches are closely spaced. If too close to 0, machine will not feed but will continue sewing in one spot.

Loosen tension of top thread. The wider the stitch, the looser the tension.
When sewing knitted or stretch fabrics, choose one of the stretch stitches which allows the seam to stretch with the fabric without breaking the thread. Select polyester or cotton covered polyester thread which has an extra amount of give and is designed for knits and stretch fabrics. Use a ball point needle, especially on lightweight knits, and the stretch stitch foot.

### STRETCH STRAIGHT STITCH

**Machine Setting** — 

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Stretch straight stitch is a triple lock stitch, combining stretchability and strength. Use for stitching regular seams in knits and stretch fabrics.

Use for stitching seams in woven fabrics that receive a lot of strain when worn, such as side seams, crotch seams, and armholes in sportswear and children’s clothes.

Also use for topstitching when you want a heavier row of stitching without using buttonhole twist.

Guide fabric gently allowing machine to make the back-and-forth stitches that give stretch to the seam.

### 3-STEP STRETCH ZIG-ZAG STITCH

**Machine Setting** — 

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3-Step stretch zig-zag stitch gives added flexibility to the stitch.
Use to overcast edges of seams, facings and hems to prevent raveling and to keep lightweight knits from rolling. Besides knits, use for edges of thin, easily frayed fabrics which have a tendency to pucker when overcast with ordinary zig-zag. Also suitable for overcasting heavy fabrics such as woolens and terry cloth.

Use for attaching elastic. Mark elastic and garment waistline in fourths. Place elastic over fabric and pin together at the markings. Take a few stitches to anchor elastic to fabric, then stretch elastic between pins as you sew.

Mend tears and patches on knits and lightweight fabrics with stretch zig-zag rather than regular zig-zag. (See page 38).

**RICKRACK STITCH**

Rickrack stitch can be used as a heavy-duty all-purpose stretch stitch. Each zig-zag stitch consists of three threads or stitches, giving strength and permanence. (See page 26).

**SLANT OVERLOCK STITCH**

Slant overlock stitch is used for finishing seam edges in fabrics that stretch. Also can be used to replace both straight stitching and zig-zag overcasting in knitted sportswear, lingerie, and hand-knitted garments. Makes a thin, flexible seam that stretches. (See page 32).

**FEATHER STITCH**

Feather stitch can be used for joining two pieces of fabric together; especially for lingerie and swim suit seams, and for attaching stretch lace and binding. (See page 25).
A great variety of decorative stitching can be created by using one or more rows of a special stitch pattern, by combining different stitches, and by using a double needle – even monograming, appliqueing and embroidering.

**TOP STITCHING**
You can accent lines of a garment with one or more rows of topstitching along collars, lapels, yokes, facing edges, pockets, cuffs, seams and hems.
For a tailored look, use regular straight stitch, sewing with buttonhole twist for added emphasis. Or use straight stretch stitch for a heavier row of stitching.
For decorative interest, use one of the special decorative stitches or any of the other stitches designed primarily for garment construction. All the stitches can be varied in width for special effects.

**FEATHER STITCH**

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Joining two pieces of fabric together with an open, lacy stitch is called fagoting. Use for decorative stretch seams in lingerie and bathing suits, and for joining together narrow strips of fabric to make a section of a blouse, dress or baby clothes.
Turn under raw edges of fabric and press. Guide the two fabric edges 3mm apart under the center of the presser foot while stitching. Allow needle to alternately make a stitch in each fabric edge and two stitches in center of opening.
Also use for topstitching patchwork quilts and clothing. Prepare patches, turning under 10mm seam allowance. Butt edges together and stitch in lengthwise and crosswise rows. For quilted effect, use fabric backing and padding.
RICKRACK STITCH

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Rickrack stitch is a triple stitched zig-zag that resembles rickrack trim. It is reversible, looking the same on both the right and wrong sides.

ADJUSTING STITCH BALANCE

Your machine has a stitch balance adjuster for regulating the uniformity of the forward and reverse stitching of all the super zig-zag stitch patterns. The adjuster is located on the top of machine body plate and can be turned with a screwdriver.

If both sides of the stitching are not even, stitch slowly and move the adjuster as you sew:

- if reverse stitches are too widely spread, turn adjuster slightly clockwise.
- if reverse stitches are too close together, turn adjuster slightly counterclockwise.

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Incorrect | Adjustment | Correct
---|---|---
[stitch pattern] | [adjuster clockwise] | [stitch pattern]
Incorrect | Adjustment | Correct
[stitch pattern] | [adjuster counterclockwise] | [stitch pattern]
MONOGRAMS

Many decorative stitches can be used to add a personal touch by monogramming a dress or blouse, writing a name on children's clothes, or initialing household linens.

Very simple straight-line monograms can be made with the straight stretch stitch. Use the satin stitch for script or block letters, either alone or in combination with other decorative stitches. Try varying needle position and zig-zag width to obtain special effects. (See page 30 for machine setting).

If stitching on very soft fabric, use a backing of tissue paper or interfacing to eliminate puckering and to prevent bobbin thread from showing on right side of fabric. Trim away excess backing after stitching.

APPLIQUES

Appliques are cut-out designs of one fabric stitched to another.

Use a close zig-zag stitch or fine satin stitch. Or try using other decorative stitch patterns. However, never allow stitch to be too wide.

Stitch sample first to decide which method is best for your fabric:

- Baste applique design to fabric. Stitch around entire edge of design, then trim away any excess fabric around outer edge with embroidery scissors.
- Baste applique design to fabric. Stitch around entire design with straight stitching; trim edges close to stitching. Then overstitch edge of design with applique stitch.
EMBROIDERY

Machine Setting— or 

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Free-motion embroidery allows you to move the fabric in any direction under the needle in order to create your design. Use either a straight stitch or a plain zig-zag stitch.

Trace design on right side of fabric. For best results, place fabric in an embroidery hoop.

Remove all pressure from fabric—
- turn fabric feed to ( )
- press down on outer ring of pressure regulator to release pressure completely

Place hoop under needle. Run machine at medium speed, guiding hoop carefully so needle moves along pattern lines.

Use straight stitch for outlining and zig-zag stitch for filling in design. Vary length of stitch simply by moving hoop faster or slower under needle. Place stitches close together for a smooth, satiny surface. Overlap stitches for an irregular surface.
FINISHES

Many of the finishing touches in a garment can be done by your machine — overcasting seams, hemming, making buttonholes, sewing on buttons, and inserting zippers.

SEAM EDGES

Seam edges in fabrics that fray must be stitched or “overcast” to prevent raveling during wear and washing. Press seam open and stitch each side separately.

- Choose pattern stitch best suited for your fabric.
- Adjust stitch length and stitch width to suit fabric.
  Choose setting that will give you the most open stitch and still secure the fabric edges. Avoid harsh, over-stitched edges which become stiff and show a ridge on right side of fabric.
- Use one of two methods:

1. Trim seam edges evenly and place stitching over raw edge — best for firmly woven fabrics.

2. Place stitching near edge of seam allowance and trim away excess fabric after stitching — best for fabrics which fray easily, lightweight fabrics, and knits which roll.

OVERLOCK STITCH

Machine Setting — 

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Overlock stitch combines a zig-zag stitch between two rows of straight stitches. It binds edge of fabric very well.

When using Method 1, place stitches so outer row of straight stitches falls over edge of fabric.

- 31 -
SLANT OVERLOCK STITCH

Machine Setting –

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Slant overlock stitch is more flexible than the overlock stitch. Use for knits and stretch fabrics. When using Method 1, (see page 31) place stitches so slanted zig-zag stitches fall over edge of fabric.

ZIG-ZAG STITCH

Zig-zag stitch can be used for overcasting in more firmly woven fabrics. Trim edges first, then stitch so needle catches outer edge of fabric. (See page 21)

3-STEP STRETCH ZIG-ZAG STITCH

3-step stretch zig-zag can be used for overcasting knits, thin easily frayed fabrics which pucker when overcast with ordinary zig-zag, and heavy fabrics. For very loosely woven fabrics, sew two rows of stitching to fasten all the threads. (See pages 23-24)

Combining Straight Stitching and Overcasting

Overlock and slant overlock stitches can be used to sew narrow seams in garments, replacing both straight stitching and overcasting. Use for sportswear, bathing suits, and hand-knitted garments.

Use overlock stitch for firmly woven fabrics, and slant overlock stitch for a more elastic seam in knits and stretch fabrics.

- For double knits and firmly woven fabrics, trim seam edges to 5mm from seam line. Place fabric under presser foot so straight stitches fall on seamline and zig-zag stitches fall over seam edge.
- For bulky knits, lightweight knits that curl, and fabrics that fray easily—stitch seam first, then trim away excess fabric to produce a narrow seam edge.
H E M – Hem can be made quickly and easily with no hand sewing by using the blindstitch.

**BLINDSTITCH**

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**Blindstitch** consists of four straight stitches and one zig-zag or blind stitch. It provides a durable hem that is almost invisible when using thread the same color as the fabric. Only the blind stitches will show on right side of garment. Best suited for straight or slightly curved hems.

Turn up hem the desired width and press. Turn raw edge in 10mm and press or baste in place. Fold hem back against right side of garment with top edge of hem extending about 5mm to right of garment fold. Place garment under presser foot so that straight stitches will fall on hem edge and zig-zag stitch just catches one thread of the folded edge. Guide fabric evenly while stitching or use cloth guide as an aid. For better control, use low speed setting. Press hem.

For a less bulky hem in heavy fabrics—finish raw edge of hem with tape or lace to eliminate turning in raw edge. Fold fabric so straight stitches will fall on tape or lace.
You can sew both two and four hole buttons with your machine.

Change presser foot to the button sewing foot and be sure to lower fabric feed by turning knob to (ⅢⅢⅢ).

Place button under button sewing foot. Set stitch pattern knob the same width as the hole in the button. Turn hand wheel toward you and test carefully that the needle goes through the center of first one hole and then the other.

Then turn stitch pattern knob to and sew 5 to 6 stitches.

Then turn zig-zag width knob to straight stitching and take about 3 stitches to lock the thread.

**Thread Shank**

Sew-through buttons on coats and jackets should have a thread shank to make them stand away from the fabric.

Place a straight pin or sewing machine needle on top of button between the holes, and sew over the pin or needle.

Pull thread to back of button and wind around stitches to form a firm shank. Tie thread ends securely.
BUTTONHOLES

Your machine has a built-in buttonholer — just dial the stitch pattern knob for the four steps in stitching a buttonhole.

- Mark position and length of buttonhole on fabric. Length of the hole is determined by the width plus thickness of the button. The finished buttonhole should be 3mm longer than this measurement to allow for bar tacks at each end.

- Attach buttonhole foot which is designed to ride easily over the buttonhole stitching.

- Loosen upper tension.

- When sewing buttonholes on knits or loosely woven fabrics, use a piece of interfacing between fabric and facing so buttonhole will retain its shape.

- Guide fabric carefully so lines of stitching will be straight and close together, but not touching.

- Cut buttonhole open using embroidery scissors or seam ripper, being careful not to cut stitching on either side. Place a pin across each end of buttonhole to protect end stitching.

- Always make a sample buttonhole using the same fabric before stitching on your garment. Try slipping the button you will use through the buttonhole to check the correct length of the hole.
Stitching Buttonhole

STEP 1—Turn stitch pattern knob to #1. Place fabric under buttonhole foot so needle enters fabric on the mark at end nearest you. Machine stitches first row in reverse. Stitch right side of buttonhole the desired length. Raise needle to its highest position.

STEP 2—Turn stitch pattern knob to #2. Make 5 or 6 stitches for first bartack. Raise needle to its highest position.

STEP 3—Turn stitch pattern knob to #3. Stitch left side of buttonhole the same length as first row. Raise needle to its highest position.

STEP 4—Turn stitch pattern knob to #4. Make 5 or 6 stitches for second bartack to complete buttonhole.

Set stitch length knob to 0 so machine does not feed, and turn stitch pattern knob to straight stitch symbol. Make 2 or 3 stitches to securely fasten stitches. Draw upper thread through to under side.
## ZIPPERs

### Machine Setting

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Zipper foot allows you to stitch right next to a raised area such as a zipper or cording. The foot is adjustable so it can be moved to the left or right side of the needle without having to turn the fabric.

Raise needle to its highest position, attach zipper foot, and set dials for straight stitching.

To adjust foot for left side of needle: loosen screw at back of foot and slide foot to the left so that needle passes through notch on right side of foot. Lower needle slowly to be sure it will not hit zipper foot, and tighten thumb screw.

For right side of needle, slide foot to the right.

Zipper package will contain easy to follow instructions for stitching.

### Corded Seam

Cording gives a professional finish to slipcovers, pillows, children’s clothes and lingerie.

First, make welting by covering cording with bias fabric and stitching close to the cord with zipper foot.

Then stitch welting into seam using zipper foot.
MENDING AND DARNING

MENDING

Machine Setting – \( \frac{2}{3} \) or \( \frac{1}{3} \)

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Tears and patches can be stitched easily and quickly with zig-zag or 3-step stretch zig-zag stitch.

**Tears**

Trim ragged edges. Position tear under needle and stitch along tear catching both sides of material.

When mending a three-cornered tear, stitch from each end to center. For large tears, place piece of fabric under tear for reinforcement.

**Patches**

Stitch patch into place around edge of hole or worn area. Trim raw edges close to stitching.
Machine Setting

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Worn spots on clothing and household linens can be darned easily with your machine.

Completely release pressure on fabric by turning fabric feed knob to \( \text{Free} \), and by pressing down on outer ring of pressure regulator until center button pops up.

For greater control, especially when darning larger areas, place fabric in embroidery hoop. For large holes, baste a piece of mending material underneath hole to use as a base for stitching.

Place fabric under needle. Move fabric back and forth with an even motion to cover darning area with closely spaced rows of stitching. Then turn fabric and sew another layer of stitching across first layer of stitching.
CARING FOR YOUR MACHINE

CLEANING

Your machine will always work well if you take a few moments to keep it clean. If lint and bits of thread accumulate under needle plate, around fabric feed and in the shuttle, this will interfere with the operation of your machine. Check occasionally and clean whenever necessary.

- Before cleaning, disconnect cord from outlet.
- Remove needle plate and slide plate.
- To remove shuttle: raise needle to its highest position and remove bobbin case. Turn levers away from shuttle and lift out retaining ring and shuttle, by grasping center pin.
- Thoroughly clean under fabric feed with a small brush. Remove lint and thread from all parts of shuttle and wipe with a lightly oiled cloth.
- To reassemble: hold shuttle by center pin and fit carefully back into shuttle race, forming perfect circle with driver. Replace retaining ring, polished side out, making sure the bottom pin fits into notch. Lock retaining ring by turning levers back into position. Replace bobbin and case.

Shuttle Cleaner

This machine is fitted with a shuttle cleaner which removes accumulated lint and thread from the shuttle race to help keep it clean and prevent jamming.

If thread gets caught in shuttle by turning hand wheel backwards or stitching without fabric in the machine, the thread will break and be swept out of the shuttle. The machine will not jam. If machine becomes stiff for a moment, turn hand wheel toward you to free it.

Should the shuttle cleaner jump out from the race, insert cleaner in space A, with the protrusion B fitting in slot C, forming a perfect circle with the driver D.
Inside Face Plate – swing face plate open and oil all moving parts at friction points.

Inside of Machine Body Plate and Bed cover

Remove the machine body plate by loosing six screws and bed cover by loosing two screws, then oil all moving parts as shown illustration.

OILING

Your machine needs to be oiled once every week if used frequently and every day if machine is in continual use. If machine has not been used for a period of time, oil before you start sewing.

Place a drop of best quality sewing machine oil at each of the points shown in the pictures:

It is important that you do not give the machine too much oil which will only run out and spot your fabric. After oiling machine, sew a few rows of stitches on a scrap of material to be sure that machine sews cleanly. Also wipe off any excess oil from top of machine.

Do not oil the motor. Lubrication is not required as motor has been permanently oiled.
PROBLEMS — and PROBABLE CAUSES

In most cases, poor sewing results are due to a damaged needle. Always examine needle first before checking other items.

1. SKIPPING STITCHES
   - bent or blunt needle
   - wrong size needle
   - needle inserted incorrectly
   - upper thread tension too tight
   - pressure on presser foot too light

2. UNEVEN STITCHES
   - bent or blunt needle
   - wrong size needle
   - incorrect threading
   - pulling fabric while sewing
   - upper thread tension too loose
   - pressure on presser foot too light
   - loose presser foot
   - bobbin wound unevenly
   - bobbin inserted incorrectly in case

3. NEEDLE BREAKS
   - bent needle touches needle plate or presser foot
   - needle inserted incorrectly
   - pulling fabric while sewing
   - loose presser foot touches needle
   - needle too fine for fabric
   - turning stitch pattern dial or needle position dial with needle in fabric

4. UPPER THREAD BREAKS
   - bent or blunt needle
   - incorrect threading
   - upper tension too tight
   - needle inserted incorrectly
   - needle touches presser foot
   - needle eye has sharp edges
   - poor quality thread
   - knots in thread
   - starting to stitch too fast
5. LOWER THREAD BREAKS
   - bobbin case threaded incorrectly
   - bobbin case inserted incorrectly in machine
   - bobbin wound unevenly
   - bobbin wound too full
   - bobbin tension too tight
   - needle plate hole has sharp edges
   - bent bobbin
   - poor quality thread

6. FABRIC PUCKERS
   - bent or blunt needle
   - upper thread tension too tight
   - both upper and lower tensions too tight
   - using two different sizes or kinds of thread
   - fabric too sheer or soft (use tissue paper underlay)

7. MACHINE DOES NOT FEED FABRIC
   - stitch length knob set at 0
   - fabric feed on (or)
   - presser foot not down completely
   - thread knotted under fabric

8. BUNCHING OF THREAD UNDER FABRIC
   - upper and lower threads not drawn back under presser foot
   - fabric feed on (or)

9. BOBBIN DOES NOT WIND PROPERLY
   - incorrect threading for winding
   - thread guide not properly adjusted
   - bobbin spindle not positioned correctly
   - bobbin winder stop not positioned correctly

10. MACHINE RUNS SLUGGISHLY
    - dirt or lint between teeth of fabric feed
    - dirt or lint in shuttle
    - machine needs oiling
    - stop motion knob not tightened

11. MACHINE WILL NOT SEW
    - cord not plugged into outlet
    - cord not plugged into "Motor" socket in cabinet or case
    - stop motion knob not tightened
    - motor belt too loose or broken