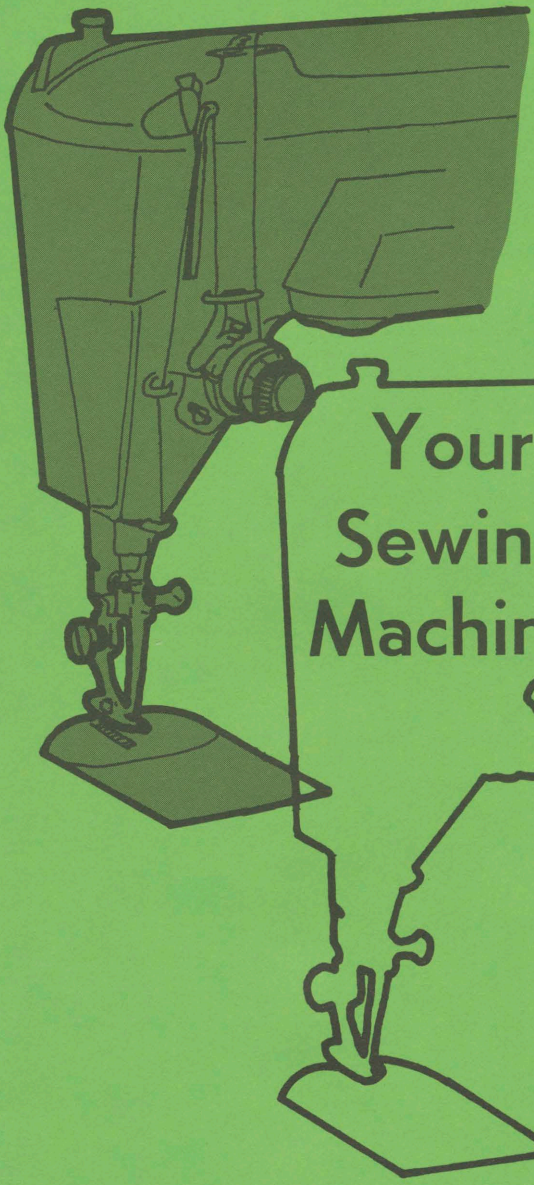
1977

Your Sewing Machine

Elizabeth K. Easton

FS 260



Your Sewing Machine

COOPERATIVE EXTENSION SERVICE
SOUTH DAKOTA STATE UNIVERSITY
U. S. DEPARTMENT OF AGRICULTURE

Your Sewing Machine

FS 260

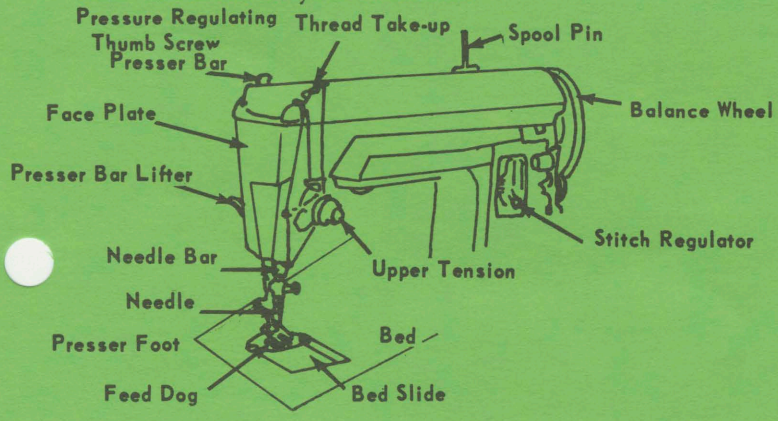
By Elizabeth K. Easton, Extension clothing specialist

Pleasure and satisfaction in home sewing come more easily when the sewing machine runs smoothly. Understanding how the sewing machine operates and knowing how to clean and care for it will add to your satisfaction.

The age of the machine and the care it has had will determine the cleaning and adjustment needed. Use the manual that came with your machine as you follow this fact sheet. If you do not have an operating manual, write to the manufacturer, stating the make and serial number of your machine.

Learn The Parts

All sewing machines have similar working parts, although they may be located differently. The drawing shows the most important parts to learn. Check their locations on your machine.



Electric machines have a motor, but may be either belt or gear driven. Treadle machines have a treadle and a belt. Most newer machines have some of the mechanism inside the arm.

Cleaning Your Machine

Many fabrics drop lint and particles of filler as they are stitched. These, along with dust and moisture, create a film that must be removed from time to time. Too much oil, poor quality oil, infrequent cleaning, or a machine left open to collect dirt and grease will add to cleaning problems.

Equipment Needed

lint brush, pastry type brush or small paint brush
soft lint-free cloths
screwdrivers
newspapers
old tooth brush
pliers
hammer
old crochet hook, darning needle or tweezers
small oil can for solvent
deep pie tin
solvent
good quality oil in oil can
flashlight
firmly woven light-weight fabric and thread

Steps in Cleaning

1. Remove needle, presser foot, throat plate, bobbin case and face plate. Notice which screws are with each part. Place all parts in pie tin. Taping parts to the tin keeps them in order and assures against loss.

2. If bobbin winder is gummed and works hard, remove and soak in solvent. Clean, wipe dry, and oil. NOTE: Remove rubber rings and belt—cleaning fluids and oil soften rubber.

3. With brush or soft cloth remove all lint and grease from all working parts—including areas of balance wheel, bobbin winder, shuttle and bed (underside). Treadle type machines need to be dusted around the axle of the large wheel and at the two points where the treadle and cross bar are joined.

4. Using a crochet hook, darning needle or tweezers, remove lint from foot feed area.

5. Turn balance wheel as you put a drop of cleaning fluid in each oil hole and wherever metal works against metal. Run machine fast to force cleaning fluid to all moving parts. This dissolves grease and gummed oil and forces it, along with dirt, outside. CAUTION: Do not let cleaning fluids get into electric motors.

6. Wipe machine thoroughly with a soft, dry cloth. For heavily gummed machines, repeat steps 5 and 6. A careful wiping of all cleaning fluid is important, as fluid can cut grease but can't oil working parts. Parts may even rust if fluid remains.

7. Oil machine with a high grade of sewing machine oil. This is important in guarding against gumming. Place a drop of oil wherever two pieces of metal meet and move. Reach difficult places with a drop of oil on the tip of a small screwdriver. Oil unexposed areas of the machine through oil holes or cups. Sparingly oil threads

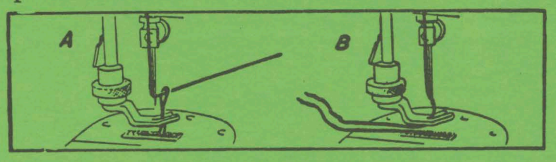
of all adjustable thumb screws. Be sure to use a lubricating oil rather than a penetrating oil.

8. Gears and unsealed motors require good quality lubricant. Never apply oil to gears, grease tubes or grease cups. Use lubricant sparingly at points where gears mesh and in the places provided on electric motors. Grease tubes usually need refilling every six months, and grease cups once each year. Many electric motors are sealed and require no lubrication.

9. After machine is oiled and lubricated, change stitch length back and forth (short and long), operating the machine between each stitch length change. This is an important step in caring for your machine.

10. Remove excess oil with soft, dry cloth.

11. Re-assemble machine parts and test the stitch, using the same fabric and thread as in original test. Check threading of machine and starting position of threads.



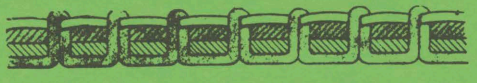
A. Bring lower thread up. B. Threads ready for stitching.

Adjusting The Thread Handling Parts

Tension Adjustments

Check test sample for evenly locked stitch. If loops formed on the top side, the top tension may be too tight or the lower tension too loose. If loops formed on the lower side, the top tension may be too loose or the lower tension too tight.

With today's fabrics, tensions often are adjusted too tightly. By keeping both upper and lower tensions on the loose side, the minor changes needed for various fabrics and threads are made quickly and easily.

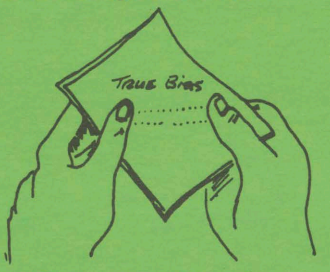


Upper tension too tight

Upper tension too loose

Perfectly locked stitch

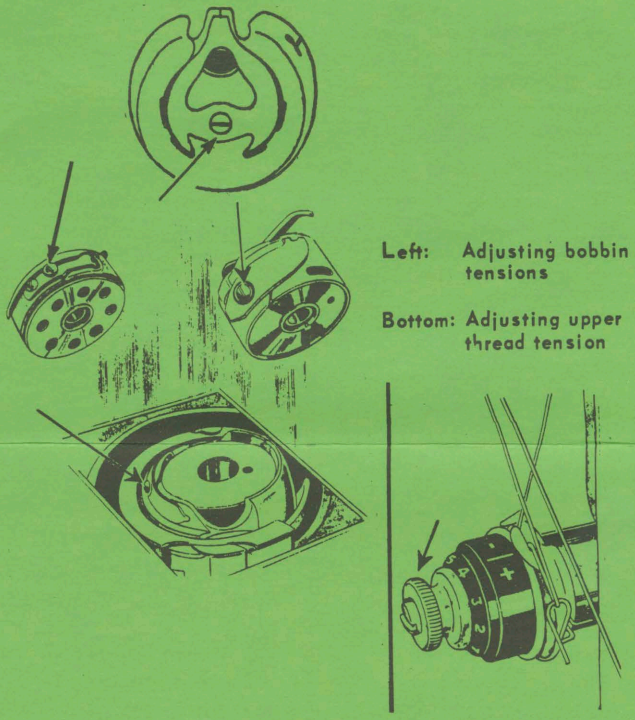
Test and Regulate Tension



Using two thicknesses of light-weight woven fabric, stitch across on the bias. Grip ends of the bias stitching and pull.

1. If top thread breaks—upper tension tighter than lower.
2. If lower thread breaks—lower tension tighter than upper.
3. If both threads break—tensions balanced, but if fabric puckers, both too tight.
4. If neither breaks—tensions balanced, but may be too loose.

To adjust upper tension, turn thumb nut left for loosening or right for tightening. Bobbin tension is regulated by the small screw on the bobbin case or shuttle. An eighth of a turn makes a noticeable difference. Upper tension needs adjusting more often than lower. Always adjust upper first. If it does not correct, adjust lower.



Left: Adjusting bobbin tensions

Bottom: Adjusting upper thread tension

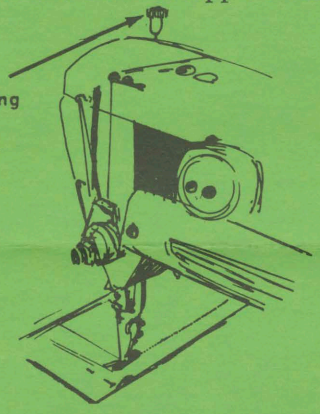
Adjusting The Fabric Handling Parts

Pressure Adjustments

The presser foot puts pressure on the fabric during stitching. The fabric determines the amount of pressure needed. Pressure needs to be heavy enough to control the line of stitching and light enough not to mark the fabric.

Test and Regulate Pressure

Cut two 6 x 8-inch strips of woven fabric, the longer side on lengthwise grain. Match lengthwise edges and place a pin at beginning and end of strips. Stitch between pins. If bubble forms near the end pin (as shown) pressure is too heavy. Decrease pressure by giving a slight counter clockwise turn of the pressure regulating thumb screw. Cut away test seam and repeat test and adjustment until no ripple forms.



Stitch Length Adjustments

Fabric and thread need to be considered in regulating length of stitch. An acceptable length for most fabrics is 12-15 stitches per inch. For machines without numbered dials, sew on a double thickness of muslin, measure off one inch with a ruler and count the stitches.

Tests and adjustments for tension, pressure and stitch length need to be made for each fabric used. Stitch on the lengthwise grain of a scrap from the fabric. On two strips of the same width and length, adjustments will be right when there is no slipping or bubbling, no puckering, and the stitches lock perfectly.

SIMPLE PROBLEMS AND POSSIBLE CAUSES

Stitches uneven in length or fabric doesn't feed through properly.	Incorrect pressure on presser foot. Feed dog needs adjustment or replacement if badly worn. Stitch-length regulator turned too far.
Machine runs hard.	Lack of oil. Gummed oil or dirt in bearings. Thread wound around wheel and treadle bearings. Belt too tight. Bobbin winder against wheel or belt during stitching.
Upper thread breaks.	Threaded incorrectly (especially needle). Needle set wrong side out. Needle set too high or too low. Needle bent. Needle too fine for thread. Rough or sharp places on shuttle, needle, or needle hole in throat plate. Upper tension much too tight. Poor quality or rotten thread. Thread wrapped itself around spool pin.
Lower thread breaks.	Bobbin case or shuttle threaded incorrectly. Lower tension much too tight. Rough or sharp edges on throat plate. Bobbin wound unevenly, too tightly or loosely, or is too full. Dirt or lint in shuttle cavity so bobbin can't turn freely. Poor quality or rotten thread.
Needle breaks.	Needle too long or set too low. Presser foot or throat plate not securely attached. Pulling on fabric while stitching. Needle too fine for fabric. Needle held too loosely in needle bar. Sewing over pins. Failure to raise needle before removing fabric. Failure to remove fabric with threads between toes of presser foot.

Skipped stitches.	Needle too long or too short or set too high or too low. Needle too small for thread. Needle bent. Needle set wrong side out. Needle threaded incorrectly. Oil on needle or too much in shuttle race. Shuttle point blunt or worn. Needle hole in throat plate too large. Too little pressure on presser foot. If zipper foot is used, not close enough to needle. Thread take-up (check spring) on upper tension or loop taker on lower tension not properly adjusted.
Looped stitches (top or bottom).	See section on adjusting tensions.
Staggered stitches.	Too little pressure on presser foot. Weak, broken or missing take-up spring. Take-up spring needs adjustment. Too loose upper tension.
Clutch not releasing balance.	Balance wheel bearings gummed or parts worn. Clutch bound with thread, dirt or gummed oil. Incorrect assembling.
Doesn't stitch over heavy seams.	Too fast sewing. May need to release pressure on presser foot.
Stitches knot for first inch or more.	Failure to pull lower thread up though needle hole in throat plate after threading machine and before stitching. Both threads should be under presser foot and to the back.

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