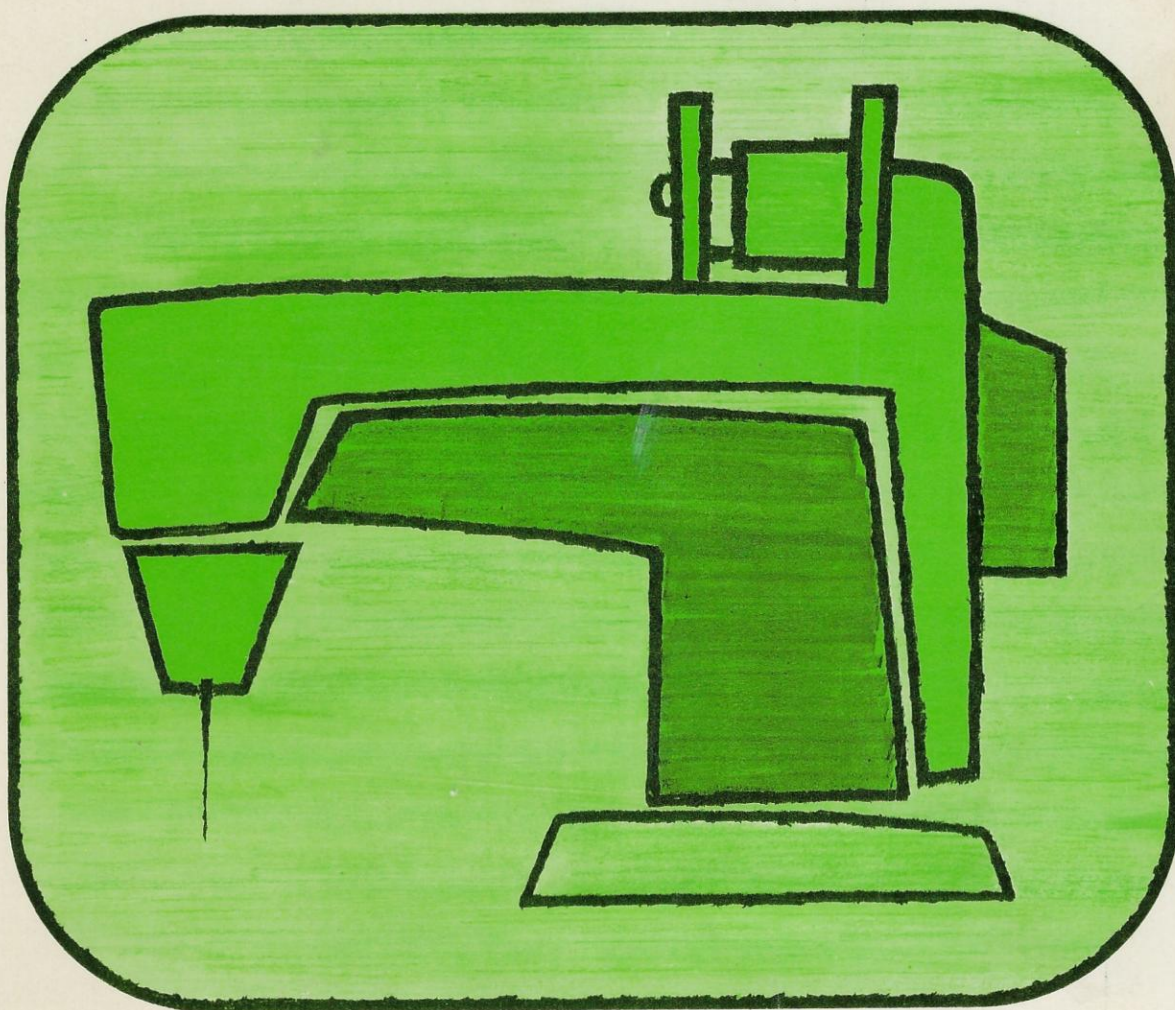


YOUR SEWING MACHINE



A MANUAL FOR  4-H LEADERS

This educational material has been prepared for 4-H Club use by representatives of the Federal Extension Service, National 4-H Service Committee and The Singer Company.

Special recognition is made of the contributions to this manual by:

Alice Linn, Federal Extension Service
Mrs. Fern Kelley, Federal Extension Service
Eleanor Wilson, Federal Extension Service
Mary Ann Dean, National 4-H Service Committee
Lois Korslund, formerly with National 4-H Service Committee
Jessie Hutton, The Singer Company

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Foreword

Your Role as a 4-H Leader
Your County Extension Agent
Your Student — the 4-H Member
The Manual and How to Use It
General Guidelines

Know Your Sewing Machine — Leader's Guide I

Objective of this Unit
Some Teaching Suggestions

Know Your Sewing Machine — Member's Book I

Message To Mother
Achievement Thermometer and Certificate
Step 1 — Sewing Properly
Step 2 — Stitching with Thread
Step 3 — Threading the Sewing Machine
Step 4 — Winding the Bobbin — Good Posture — Final Review

Regulate and Care for Your Sewing Machine — Leader's Guide II

Objective of this Unit
Some Teaching Suggestions

Regulate and Care for Your Sewing Machine — Member's Book II

Step 1 — Using Correct Needle and Thread
Step 2 — Regulating Stitch Length
Step 3 — Regulating Thread Tensions
 To Balance Thread Tensions
 To Regulate Needle Thread Tension
 To Regulate Bobbin Thread Tension
 To Know the Normal Bobbin Tension for Your Machine
 To Adjust Tension to Fabric
Step 4 — Regulating Presser Foot Pressure
Step 5 — Reviewing and Combining What You Have Learned
Step 6 — Handling Special Fabrics
Step 7 — Caring for Your Sewing Machine
 Every Week or So
 Every Few Months
 If the Machine Is to Be Stored
 A Word about Motors

Make the Most of Your Sewing Machine — Leader's Guide III

Objective of this Unit
Some Teaching Suggestions

Make the Most of Your Sewing Machine — Member's Book III

Zig-Zag Stitching: What You Need to Know
Practice Steps
Applications of Zig-Zag Sewing and Use of Attachments

"Your Sewing Machine" is planned for 4-H leaders who teach sewing. In it, you will find information about teaching methods as well as about the sewing machine. The Foreword contains notes on your role as a leader, the guidance and help you can expect from your county Extension agent, and the needs of the 4-H member that you will be teaching. The body of the manual contains copies of the three instruction booklets your 4-H members will use, together with notes for your guidance in teaching the material covered by the booklets. In short, this manual tells you *what* to teach and gives you suggestions on *how* to teach.

Your Role as a 4-H Leader

As a 4-H leader you are a teacher, and teaching young people is one of the most satisfying activities an adult can take part in. It is a challenge to your knowledge, your skill in expressing yourself clearly, and your ability to inspire and encourage.

Like most teachers, you will probably find that you learn at least as much as those you teach. Sometimes you will be baffled by questions to which you have no adequate answer. And you may encounter the frustration of having too many questions fired at you too quickly. As you gain experience in teaching, however, you will find that your understanding of the sewing machine and sewing techniques will grow rapidly. You will also gain skill in dealing with young people. You will learn to adjust to those who learn quickly and those who learn slowly, the awkward and the dextrous, the wide-awake and the uninterested.

Teaching a young girl to sew brings special satisfactions. For you will not simply be teaching her to use her sewing machine; you will be helping her to develop skills that will give her pleasure all her life. As she learns to use the sewing machine with ease, she will become increasingly free to express her own creative ideas in making her clothes and in decorating her home.

Most important, you will have the satisfaction of helping her to develop as a responsible and intelligent individual. Sewing requires far more than manual dexterity; it demands technical knowledge and the discipline to progress step by step toward a goal. To help your members develop these qualities, you will build into their experience guideposts for measuring achievement, techniques for retaining knowledge, and motivation to continue to more difficult steps.

Congratulations on assuming this responsible and exciting role of 4-H leadership!

Your County Extension Agent

Perhaps you are a new leader and are asking, "How do I begin?" Don't hesitate to turn to your county Extension agent for help. If, as is usually the case, your teaching of sewing machine skills is part of a 4-H clothing or home furnishings project, your Extension agent will provide you with the state 4-H books that outline each project. She will also suggest other teaching tools for your consideration.

For your use in teaching the material in this manual, your Extension agent will provide muslin strips for practice sewing and Member's Books (some booklets and fabric packages are free; others are available at a nominal charge).

Your Student — the 4-H Member

It is important to recognize that the 4-H members you teach will differ in many ways. Each child is unique in intellectual, social, and physical development.

Nevertheless, certain generalizations can be made about each age group:

The *9-to-12-year-old* member will need step-by-step help. She enjoys working with her hands and will want to follow definite directions. Her attention span may be short, and her ability to follow complicated directions may be limited. Plan short periods of activity toward a certain goal, but pause here and there with relaxation or a change of activity.

The *12-to-14-year-old* is expanding her interests. Doing things just right may be too tedious, especially if she is in the "awkward stage." She may have a flair for total effect but little interest in details. She may attempt projects that adults think are inappropriate or too difficult for her skills. Help and encourage this age group, letting each girl expand her horizons and experiment. She may learn as much from her mistakes as from her successes.

The *girl 14 or older* is maturing quickly. She is ready for leadership experience. At the same time she may once again be anxious to do things "just right" in order to make clothes that others will admire. Friends and their opinions are very important to her. This age group is idealistic. Capitalize on this interest in people and values. For example, their projects might include making clothes for the needy in a 4-H service project.

Above all, remember these are simply generalizations about age groups. You will find that every child has her own growing-up rate. Teach her gently — with patience and understanding. But also set standards. Help her dream of ideals and goals. Then provide the tools by which she can reach them.

KNOW YOUR ZIG-ZAG MACHINE

The Manual and How to Use It

The body of the manual has three sections, each of which contains a "Leader's Guide" and a "Member's Book." The three sections are as follows:

- I. "Know Your Sewing Machine" contains basic information on good sewing habits, how to thread the machine, how to wind the bobbin, and how to do simple straight stitching. *It is suggested that this be taught before a member begins any sewing.* The Member's Book is divided into four lessons designed for girls 9 to 11 years of age. If you are teaching older beginners, you may wish to combine more than one lesson in a single meeting.

Copies of this Member's Book and practice strips of muslin are available free of charge from your county Extension agent.

- II. "Regulate and Care for Your Sewing Machine" explains how to adjust the sewing machine for all types of fabrics and how to keep the machine in perfect working order.

The Member's Book is divided into seven lessons designed for girls 12 to 14 years of age who have already completed very simple garments. Again, depending on the advancement of the individual member, you may wish to combine more than one lesson in a single meeting. On the other hand, some younger girls may be ready for parts of this material in small doses.

Copies of the Member's Book and packages of practice fabric strips are available for a nominal charge. Or, you may choose to let your members use the copy in this manual and make up your own fabric package.

- III. "Make the Most of Your Sewing Machine" covers practical uses of the zig-zag sewing machine and the use of certain attachments. Many of the techniques covered are applicable to straight stitch as well as zig-zag machines.

In this case the Member's Book is not divided into lessons. Instead, it contains instructions for various steps in sewing a garment or in making home decorations — for example, seams of several kinds, darts, and buttonholes are explained. This booklet, therefore, will be most useful while a member is working on a sewing project. Then you can pick out the information she needs.

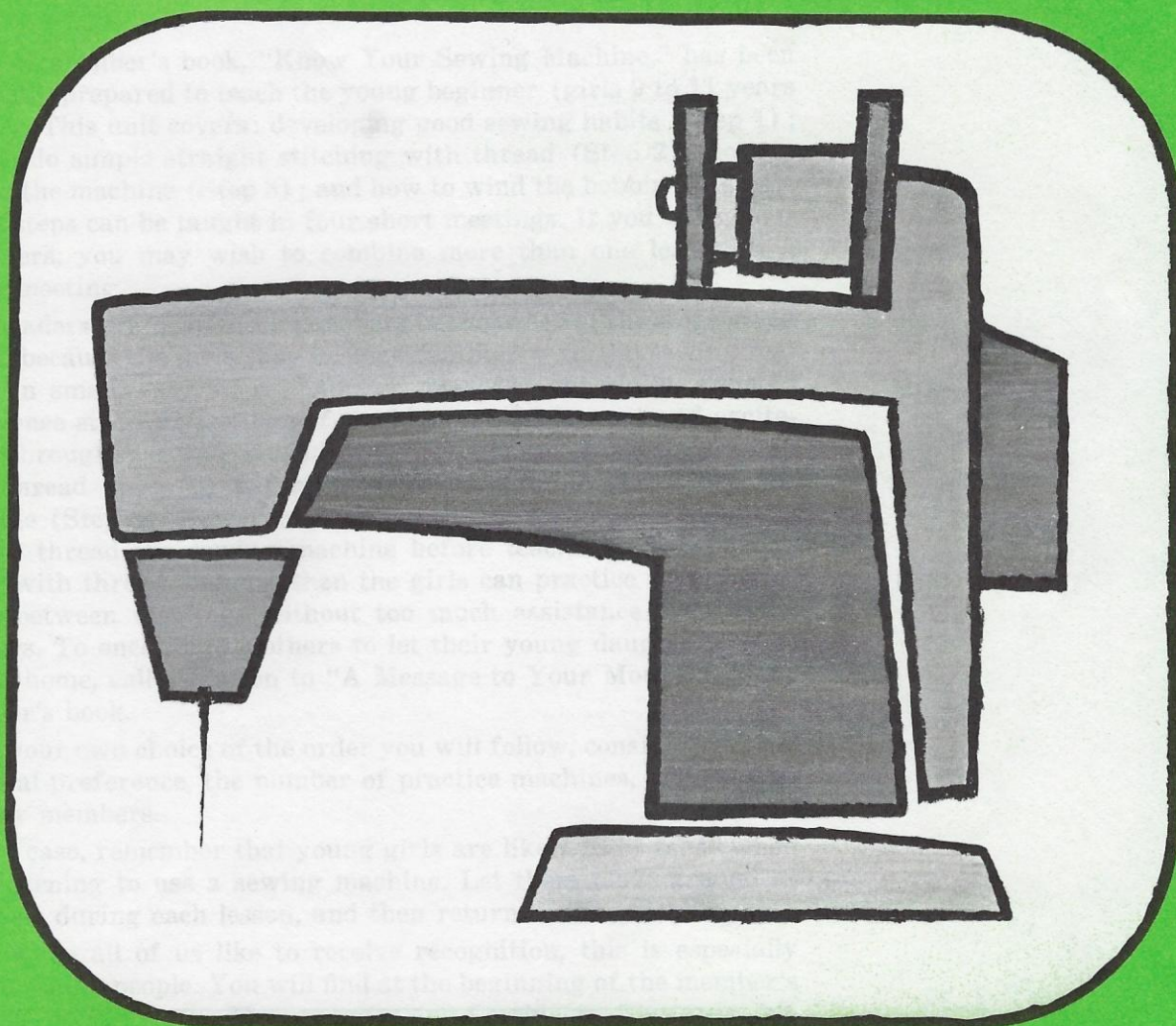
This Member's Book is not yet available as a separate unit. Let your members borrow your copy.

General Guidelines

The Leader's Guide to each section of this manual offers specific suggestions on how to teach the material in that unit. However, there are some basic guidelines to the overall job of teaching, and these are described below.

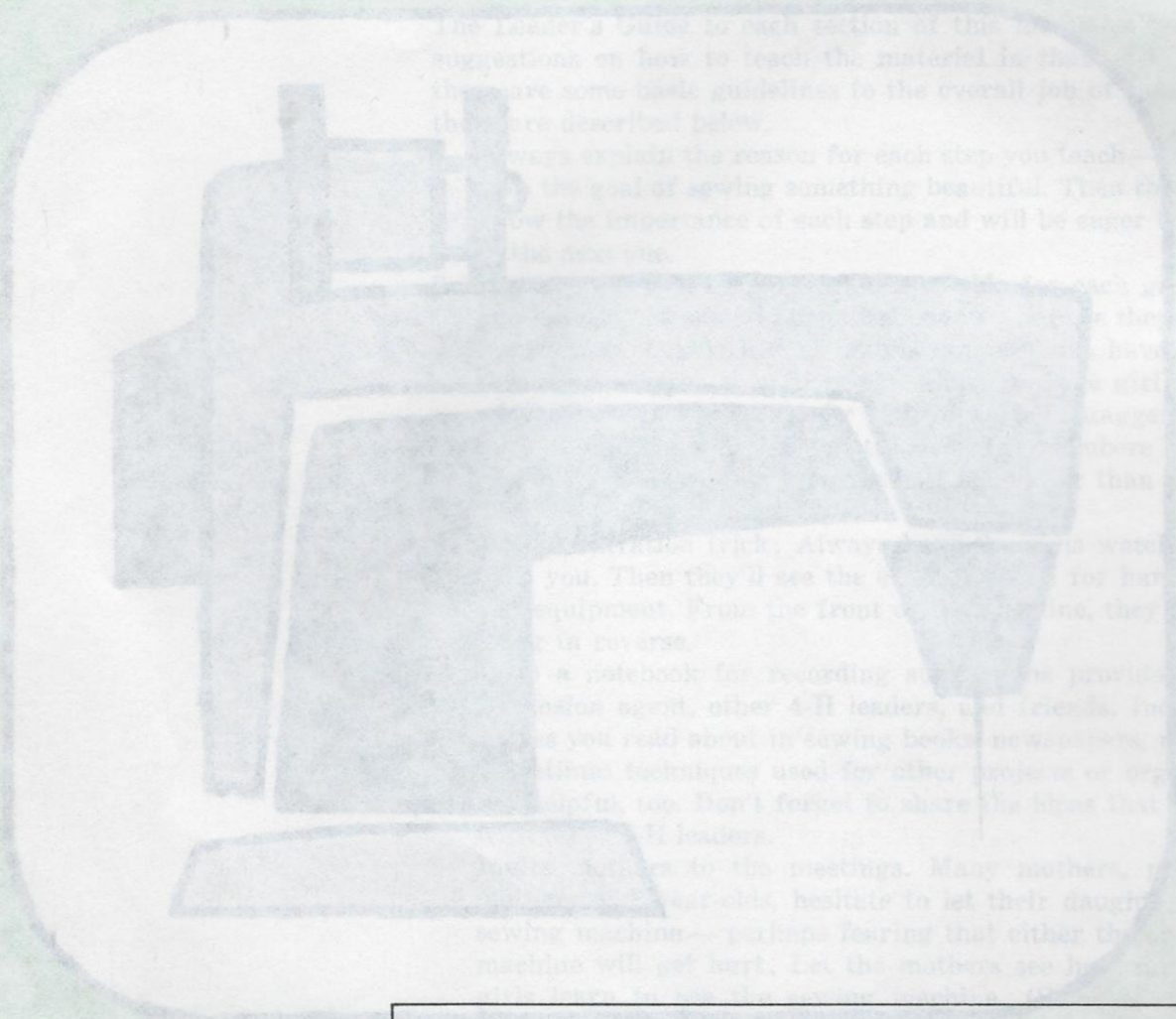
1. Always explain the reason for each step you teach — and relate it to the goal of sewing something beautiful. Then the girls will know the importance of each step and will be eager to progress to the next one.
2. Try to have a sewing machine available for each girl, even if you have to ask some to bring their own (be sure they bring the instruction books). But if that is not possible, have two girls share a machine; then they can alternate, one girl observing while the other practices. Or you might try “staggering” your meetings, arranging for one-third of the members to come a half hour early and one-third a half hour later than the second group.
3. A demonstration trick: Always have the girls watch from behind you. Then they'll see the exact position for hands, fabric, and equipment. From the front of the machine, they see everything in reverse.
4. Keep a notebook for recording suggestions provided by your Extension agent, other 4-H leaders, and friends. Include techniques you read about in sewing books, newspapers, magazines. Sometimes techniques used for other projects or organizations are helpful, too. Don't forget to share the ideas that work best with other 4-H leaders.
5. Invite mothers to the meetings. Many mothers, particularly mothers of 9-year-olds, hesitate to let their daughters use the sewing machine — perhaps fearing that either the child or the machine will get hurt. Let the mothers see how carefully the girls learn to use the sewing machine. (Some of them may become so interested that they'll offer to assist you in being a leader.)
6. Ask older members to act as junior leaders. They can learn leadership responsibilities as they teach beginners.
7. Use praise and encouragement as you go along. A smile lets a girl know she is doing things right. It also makes her more receptive if you have to correct her another time.
8. Do you have questions? Remember that you can always ask your county Extension agent. Or perhaps there is an experienced 4-H clothing or home furnishings leader in your community who will be glad to help.

KNOW YOUR SEWING MACHINE



LEADER'S GUIDE II

KNOW YOUR SEWING MACHINE



This educational material has been prepared for 4-H Club use by representatives of the Federal Extension Service, National 4-H Service Committee and The Singer Company.

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MATERIALS:

- 4 MUSLIN STRIPS (3" x 18") PER MEMBER
- 1 PAIR OF SCISSORS PER MACHINE
- 1 SPOOL OF THREAD PER MACHINE
- 1 WOUND BOBBIN PER MACHINE
- 1 EMPTY BOBBIN PER MACHINE

Objective of this Unit

The 4-H member's book, "Know Your Sewing Machine," has been especially prepared to teach the young beginner (girls 9 to 11 years of age). This unit covers: developing good sewing habits (Step 1); how to do simple straight stitching with thread (Step 2); how to thread the machine (Step 3); and how to wind the bobbin (Step 4). These steps can be taught in four short meetings. If you have older beginners, you may wish to combine more than one lesson in a single meeting.

Most leaders prefer to teach members in the order of the steps given above, because the girls then become familiar with the sewing machine in small, easy steps. Younger members, especially, seem to experience stronger feelings of confidence, achievement and excitement through the four steps when they are taught how to stitch with thread (Step 2) before they are taught how to thread the machine (Step 3). However, some leaders prefer to teach members how to thread the sewing machine before teaching them how to stitch with thread, because then the girls can practice stitching at home between meetings without too much assistance from their mothers. To encourage mothers to let their young daughters practice at home, call attention to "A Message to Your Mother" in the member's book.

Make your own choice of the order you will follow, considering your personal preference, the number of practice machines, and the age of your members.

In any case, remember that young girls are likely to be tense when first learning to use a sewing machine. Let them move around at intervals during each lesson, and then return to the machine.

Also, while all of us like to receive recognition, this is especially true of young people. You will find at the beginning of the member's book the Achievement Thermometer and Certificate. These are fun to use. There is space on the thermometer for the member to color each step as she completes it to your satisfaction. When she has learned all four steps, fill in the Certificate.

Some Teaching Suggestions

The member's book, "Know Your Sewing Machine," is written for each girl to use as she works at the sewing machine. The following suggestions and explanations are made to help you to teach. As you review these suggestions, refer to the member's book for a more complete description of each step.



STEP 1 SEWING PROPERLY

a) Preparing for Step 1: Each 4-H member will need two strips of muslin (3" x 18"). Have ready as many sewing machines as possible. To each machine, attach the seam guide, $\frac{5}{8}$ " from the needle, or attach a substitute seam guide such as a strip of masking tape. *Do not thread the sewing machine for any part of this step.*

When making preparations, consider the facilities available to your group and their best physical arrangement. For example, as you know, correct posture is essential, and is possible only when both the machine and chair heights are appropriate for the individual. The elbows, ideally, should be a little below table height and the feet should be flat on the floor. Avoid placing portable machines on tables that are too high, as well as using chairs that are too low in relation to the table. Extra cushions may be used to build up chair height. For short girls, an adjustable ironing board, instead of a table, may be helpful in getting the best relationship between the height of the sewing machine and chair.

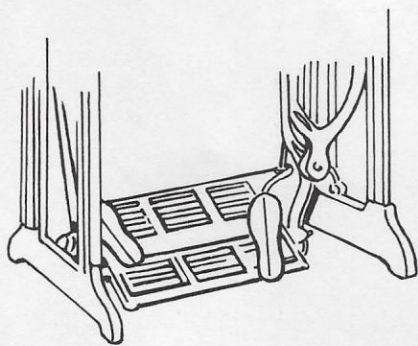
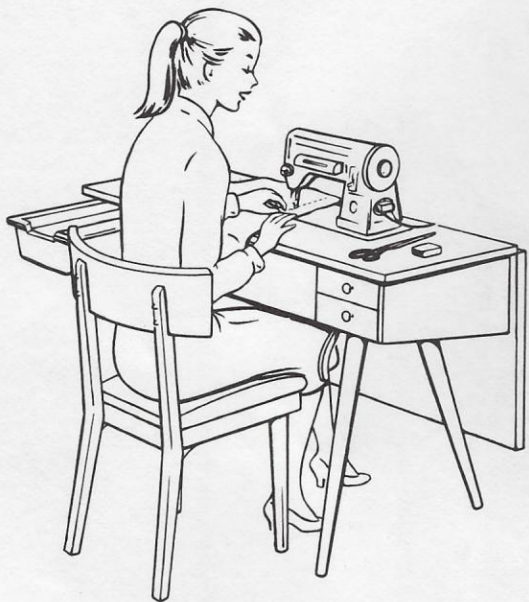
Principles of good posture should be called to the attention of the group, but should not be emphasized too much at the beginning. The girls will probably be impatient to get right to their machines, and this should be encouraged. You will note that part of the last step of this unit in the member's book is devoted to posture evaluation and correction. This is a better time to work on correct sitting position, because the girls are more familiar with their machines and are consequently more relaxed and will be receptive to the importance of good posture.

Here are some important things to point out to the girls the first time they sit at a sewing machine:

1. Sit back on the chair, squarely in front of the needle.
2. Do not lean against the chair back; instead bring your body forward slightly.
3. Place your feet flat on the floor with one foot forward. To use the knee controller, place the left foot forward. To use the foot controller, place the right foot forward. (To use a treadle, place the left foot forward and the right foot back. Press down with one foot, then with the other.)

b) Begin by teaching speed control: Make certain that each girl is seated properly, with her hands flat on the table. Then, let her run the machine *with the presser foot raised*. Why? Because the machine is more responsive to the controller when the presser foot is up than when the presser foot is down. As a result, the machine will start and stop readily without hand assists on the hand wheel. (A treadle machine is the exception. It must be started with a hand assist on the hand wheel.)

The goals of this step are to make each girl feel secure and comfortable at the machine, and to teach her to rely on the controller rather than on the use of her hand on the hand wheel for starting, for governing speed, and for stopping.



c) **Next, teach how to guide the fabric:** Each girl will use two muslin strips (3" x 18"). Ask them to stitch (without thread) through two layers for the full 18" length. These long strips will give the girls the new experience of guiding fabric. At the same time, they will be using their recently learned skills of starting, controlling speed, and stopping the machine.

This step is also important because it teaches the sequence of motions or actions that should be followed when positioning fabric for stitching. Instead of cautioning the girls about fingers under the needle (which may produce fear) take a positive and preventive approach by teaching hand positions. Have them place their hands as illustrated on the preceding page.

Observe the members as they work and make certain that they understand why each thing they do is meaningful. It is best to interrupt their practice immediately if you see they are having difficulties. Let them observe you while you do the step and then help them get started correctly.

d) **Now have the girls practice what they have learned:** This practice will give each girl time to develop coordination and it will give her a feeling of confidence. Habit will be the result of further practice. The formation of good sewing machine habits begins with attention to each motion and is achieved after repeated experiences. Be certain the correct habits are being formed.

Perhaps you will want to suggest additional practice at home on strips of fabric or paper. Lined note paper is convenient to use for practice in following straight lines. A sample practice stitching chart is illustrated in the reference section of this Guide on page 10. Charts like these can be drawn on soft, unglazed paper and will enable the girls to practice straight and curved stitching, as well as pivoting at corners.

STEP 2

STITCHING WITH THREAD

a) **Preparing for Step 2:** Each member will use the same two strips of muslin that she used in Step 1. To each machine, attach a seam guide, or substitute seam guide, $\frac{5}{8}$ " from the needle. Thread the machines and set the stitch regulator at 12. (See reference pages I-LG-11 through I-LG-18 for threading charts for eight different kinds of sewing machines, or refer to the individual sewing machine instruction book.) Scissors should be placed at each machine.

b) **Review Step 1.**

c) **Begin Step 2 by teaching how to stitch a plain seam:** The girls will use one strip of muslin folded in half.

Now that the machine is threaded, the take-up lever becomes important. While each girl holds the needle thread with her left hand and turns the hand wheel with her right hand, she will feel the pull

on the thread end that is caused by the upward movement of the take-up lever to its highest position. Feeling this pull will help her to understand why she is holding the thread end while turning the hand wheel — to prevent the needle from being unthreaded.

The needle thread is placed between the toes of the presser foot, and both needle and bobbin threads are drawn back and to the right across the feed. This action places the threads out of the way in preparation for positioning the fabric under the needle, and it places the threads across the feed where the threads will be held securely by the presser foot when the girl starts to stitch.

The needle is lowered into the fabric before the presser foot is lowered. This action will enable each girl to start her stitching at an exact point, and it will put the machine in a position where it will start with the least power. Hand assists on the hand wheel are seldom needed when starting to stitch with the needle down. It is also easier to start slowly and to sew with an even speed. Starting with the threads and needle in these positions will prevent the thread from pulling out of the needle, knots of thread on the underside of the seam, thread jams in the bobbin case parts, and fast, jerky, uncontrolled starts.

d) Teach how to fasten the threads at the end of a seam: The girls will use their second muslin strip folded to a 9" length.

Show each member where the stitch length selector lever is located on her machine and demonstrate how to move the lever to make the machine stitch backward. Reference pages I-LG-19 and I-LG-20 illustrate some different kinds of stitch selectors and tell how they are used. The sewing machine instruction book will help you, too. If some of the machines you are using do not stitch backward, there are other methods of fastening the threads at the ends of a seam. Thread ends may be left long enough to tie into a knot, or the fabric can be turned around at the end of the seam in order to make a few stitches in the opposite direction to reinforce the end of the seam.

It is wise to suggest that the girls practice at home, but impress on them the importance of practicing carefully and of following the methods you have taught. Incorrect practice will make relearning more difficult.



STEP 3

THREADING THE SEWING MACHINE

a) **Preparing for Step 3:** Each member will use one muslin strip. For each sewing machine you will need a spool of thread, a wound bobbin placed in the machine, and scissors.

b) **Begin Step 3 by identifying the upper threading points:** The sewing machine instruction book and the threading charts on reference pages I-LG-11 to I-LG-18 will help you to identify the upper threading points on each machine you are using. Point out to the girls the names of the threading points in the same order that they should be threaded: spool pin, first thread guide, needle-thread tension unit, next thread guides, take-up lever, remaining thread guides, and needle. When you have several different models of machines at your meeting, the small differences in threading points should be pointed out but emphasis should be placed on the common principles of threading.

c) **Teach upper threading:** All machines must be threaded correctly in order to stitch well. The common sequence for threading is outlined in the member's book but the specifics of threading each machine are important. Be sure to refer to the sewing machine instruction book that comes with each machine. The eight threading charts on reference pages I-LG-11 to I-LG-18 may help you follow the threading points on each different machine.

d) **Review upper threading points:** Tension, take-up lever, and needle are the threading points that seem to give the girls the most trouble. "Show and tell" would be a good teaching method to use here. When the girls tell about these threading points and show how they work, they will remember them better and machine threading will take on more interest for them.

e) **Test accuracy of threading:** Have each girl stitch on a muslin strip. This step will develop confidence and independence. It offers a reward for learning.

f) **Show how to remove the bobbin, replace the bobbin, and thread the bobbin case:** These steps are easiest to learn when one is shown how to do them. Encourage the girls to refer to their sewing machine instruction book when using their machine at home. Familiarizing the girls with the bobbin at this point alerts them to the fact that the sewing machine stitch is made up of two threads — lower as well as upper — and prepares them for the final stage of getting ready to sew.

g) **Teach how to raise bobbin thread:** This also makes a good subject for "show and tell." Be sure to point out that if the needle thread is drawn too tightly while the hand wheel is being turned, the bobbin thread will not be picked up.

Encourage members to practice threading their machines at home. Suggest that they refer to the threading diagrams in their sewing machine instruction book and that they ask their mothers' advice. Practice at home will help them remember what they have learned.

STEP 4

WINDING THE BOBBIN GOOD POSTURE—FINAL REVIEW

a) Preparing for Step 4: Each member will use one muslin strip. For each sewing machine you will need a spool of thread, an empty bobbin and a pair of scissors.

It is wise to examine a bobbin before using it. The bobbin should fit easily into the bobbin case without binding. A bent, rusted or rough bobbin will cause what may appear to be a tension problem, but one that cannot be corrected by changing the tension settings. Actually, the defective bobbin is not turning freely in the bobbin case and the bobbin thread is alternately tight and loose.

It is both neat and time saving to wind only one color thread on a bobbin. Neat, because the thread end can be started through the eyelet in the bobbin assuring a tightly wound bobbin with no loose thread ends to snarl. Time saving, because it prevents stitching the concealed, previously wound thread into a seam that must be ripped out later.

b) Begin by showing how to prepare the machine for bobbin winding: This covers how to use the stop-motion screw, how to put the bobbin winder into winding position, and how to place the bobbin on the bobbin winder spindle. (The order of these last two steps will be different on some machines.) Show the girls how to lower the presser foot. This added force of the foot against the feed helps to stop the motion of the needle. Press the controller to show how the bobbin turns, but the needle does not move up and down.

c) Now teach how to thread the sewing machine for bobbin winding: The eight threading charts on reference pages I-LG-11 to I-LG-18 will be helpful, or you can refer to the sewing machine instruction books.

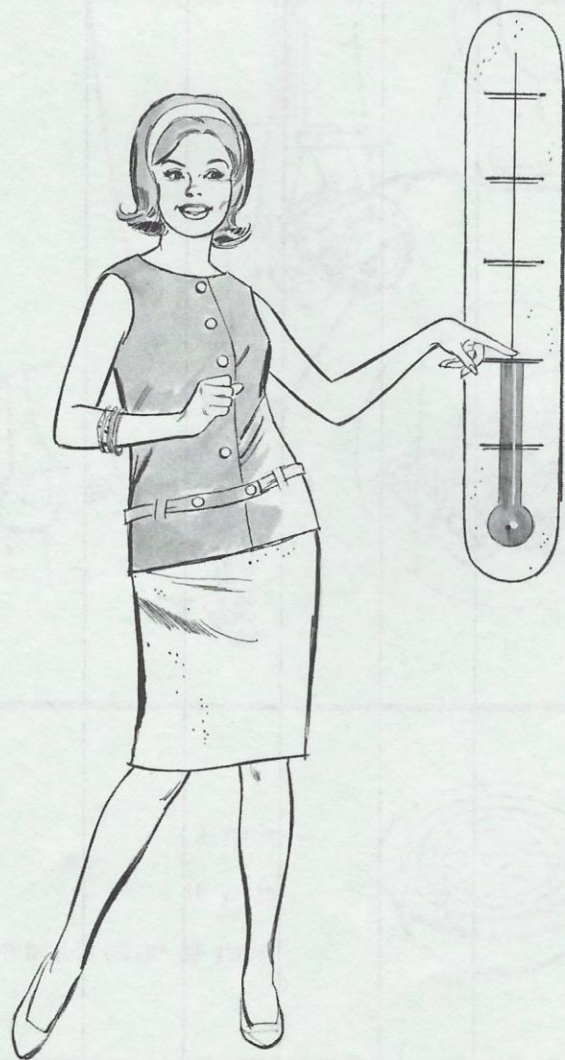
Some new sewing machines wind the bobbin while it is in the bobbin case, with thread directly from the needle. These machines have no bobbin winder. If any of the members will be using this kind of machine, refer to the chart on page I-LG-11 or to the sewing machine instruction book.

d) Review good posture at the machine: Be constructive in your corrective efforts and be certain that the equipment is comfortable for the member. Show and say, "If you will sit tall, with your back straight, and lean slightly forward, like this, you will be more comfortable."

e) Finish this unit with a review of all four steps: Sewing properly, stitching with thread, threading the machine, and winding the bobbin. This will be a test for accurate threading and a reinforcement of all that you have taught in "Know Your Sewing Machine." You can also evaluate the progress each member has made. When the 4-H'er asks how well she has done and accepts and benefits from suggestions for improvement, she shows character growth.

This is an excellent time to play "show and tell." The members, by this time, will be well informed and eager to make use of what they have accomplished. They can show each other, and you can observe. They can also show their parents or other family members. The review of the names of the sewing machine parts can be made into a quiz game, or it can be incorporated into "show and tell."

The Achievement Thermometer and Certificate may be completed, which will add to the joys of achievement.

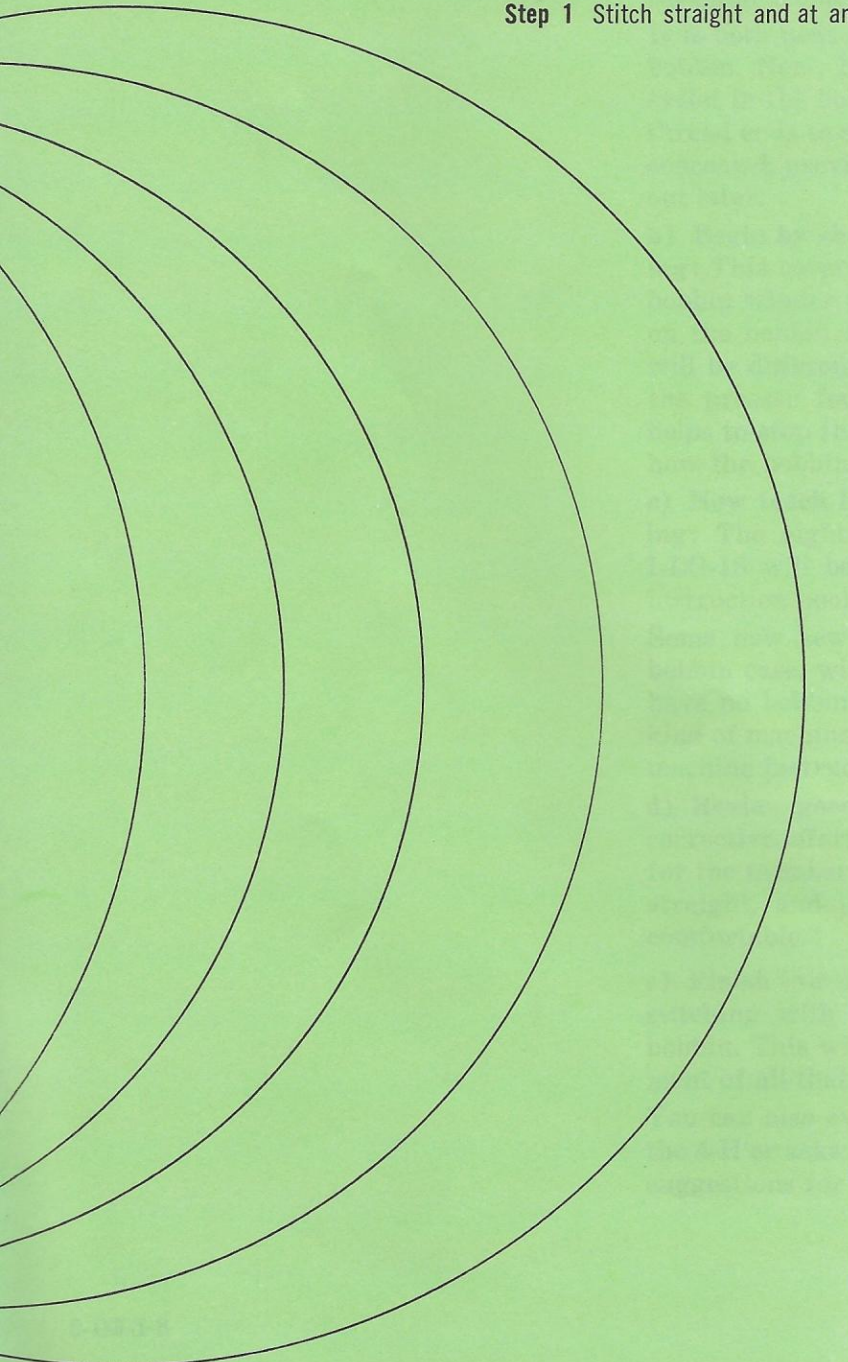


PRACTICE STITCHING CHART

Use without thread to learn to run the machine at an even speed to guide stitching straight to turn square corners to guide curved stitching to use different stitch lengths

Step 2 Turn square corners Stitch length — 15

Step 1 Stitch straight and at an even speed Stitch length — 12

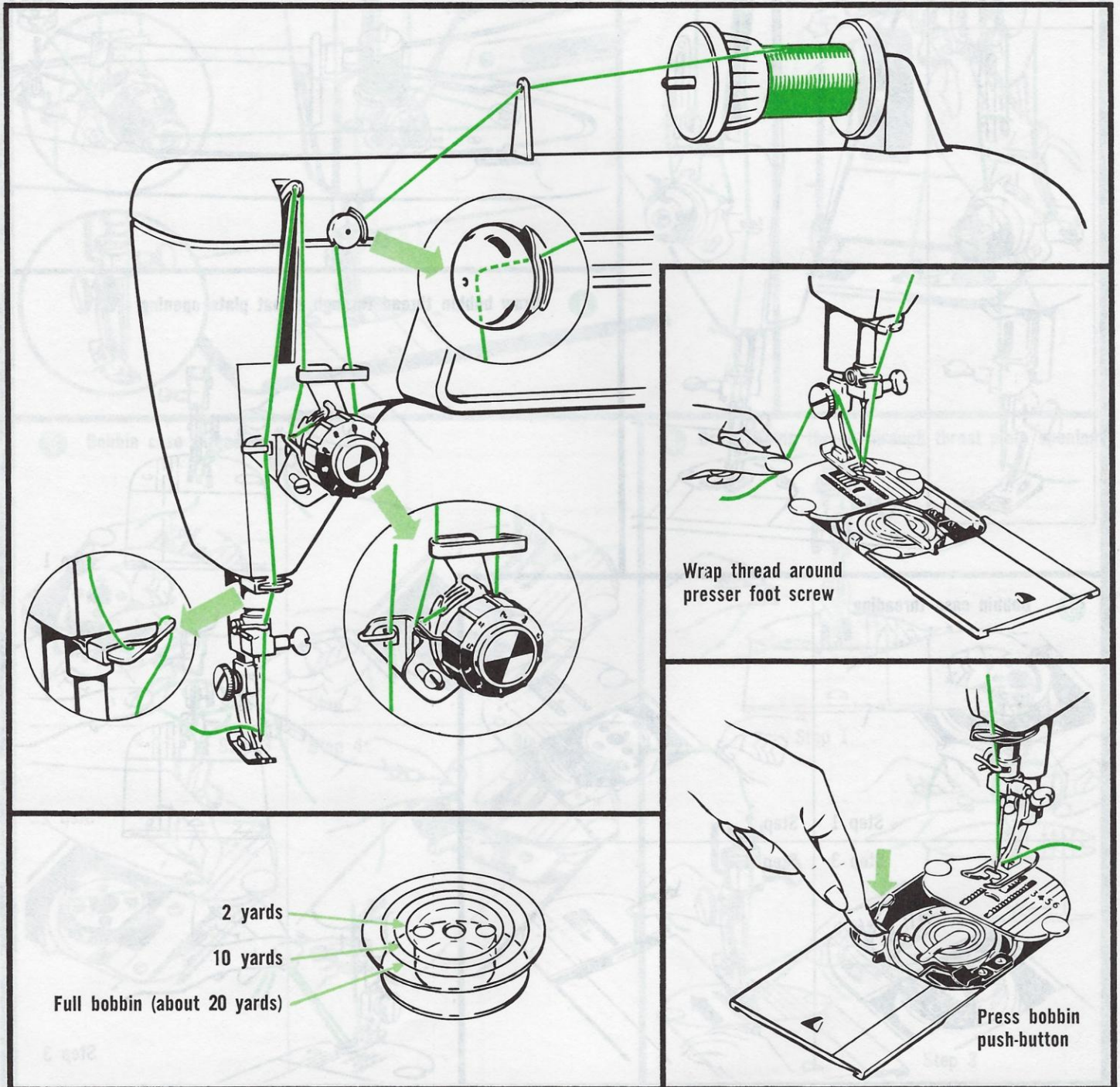


Step 3 Guide curved stitching Stitch length — 15

THREADING CHART 1

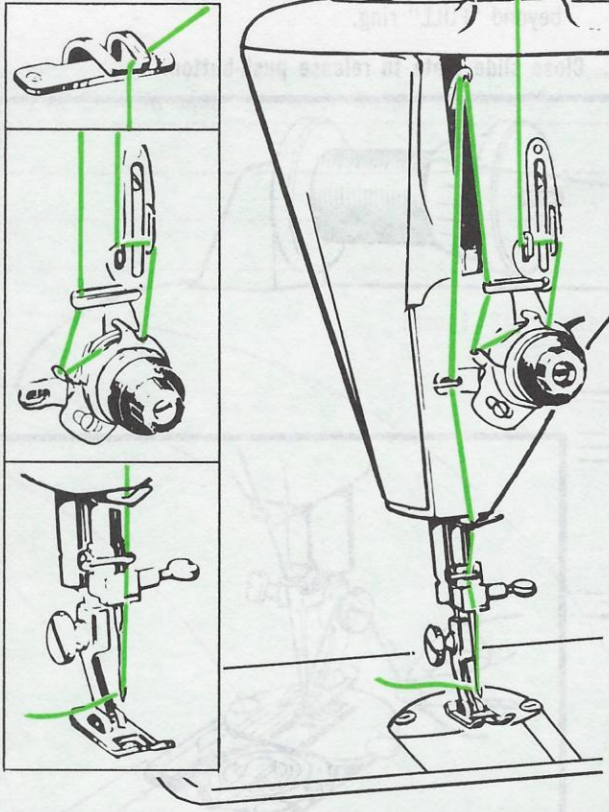
Before winding bobbin empty it completely — Set zig-zag machines for straight stitching

1. Thread machine.
2. Raise presser foot.
3. Open slide plate.
4. Press bobbin push-button. (See illustration)
5. Wrap thread around presser foot screw, and hold end of thread firmly. (See illustration)
6. Start the machine.
Run the machine at a moderate speed.
Pull thread end away after a few coils have been wound.
Keep your eye on the bobbin. Do not allow thread to wind beyond "FULL" ring.
7. Close slide plate to release push-button.

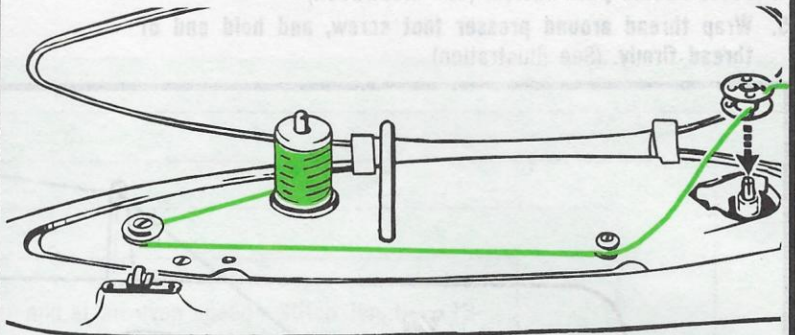


THREADING CHART 2

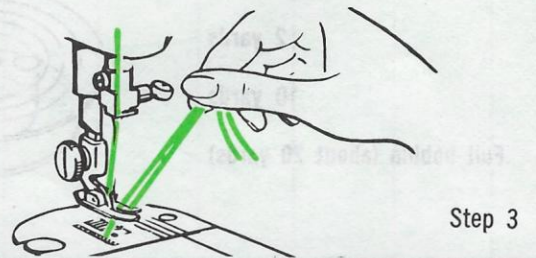
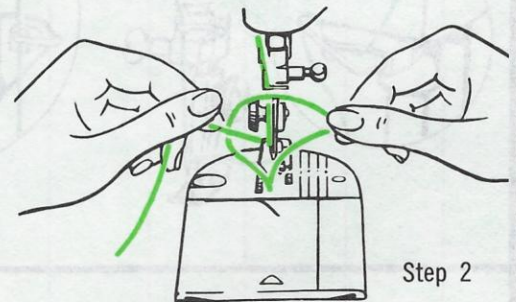
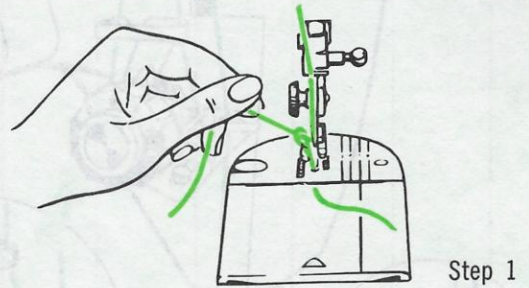
1 Upper threading



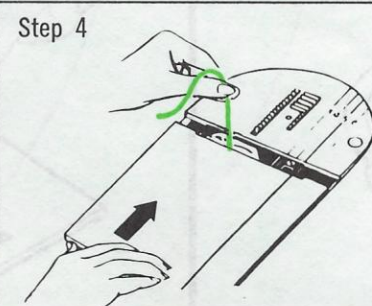
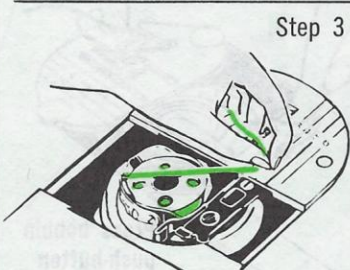
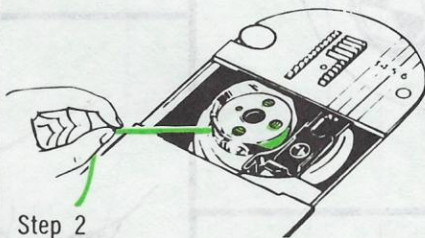
2 Bobbin winder threading



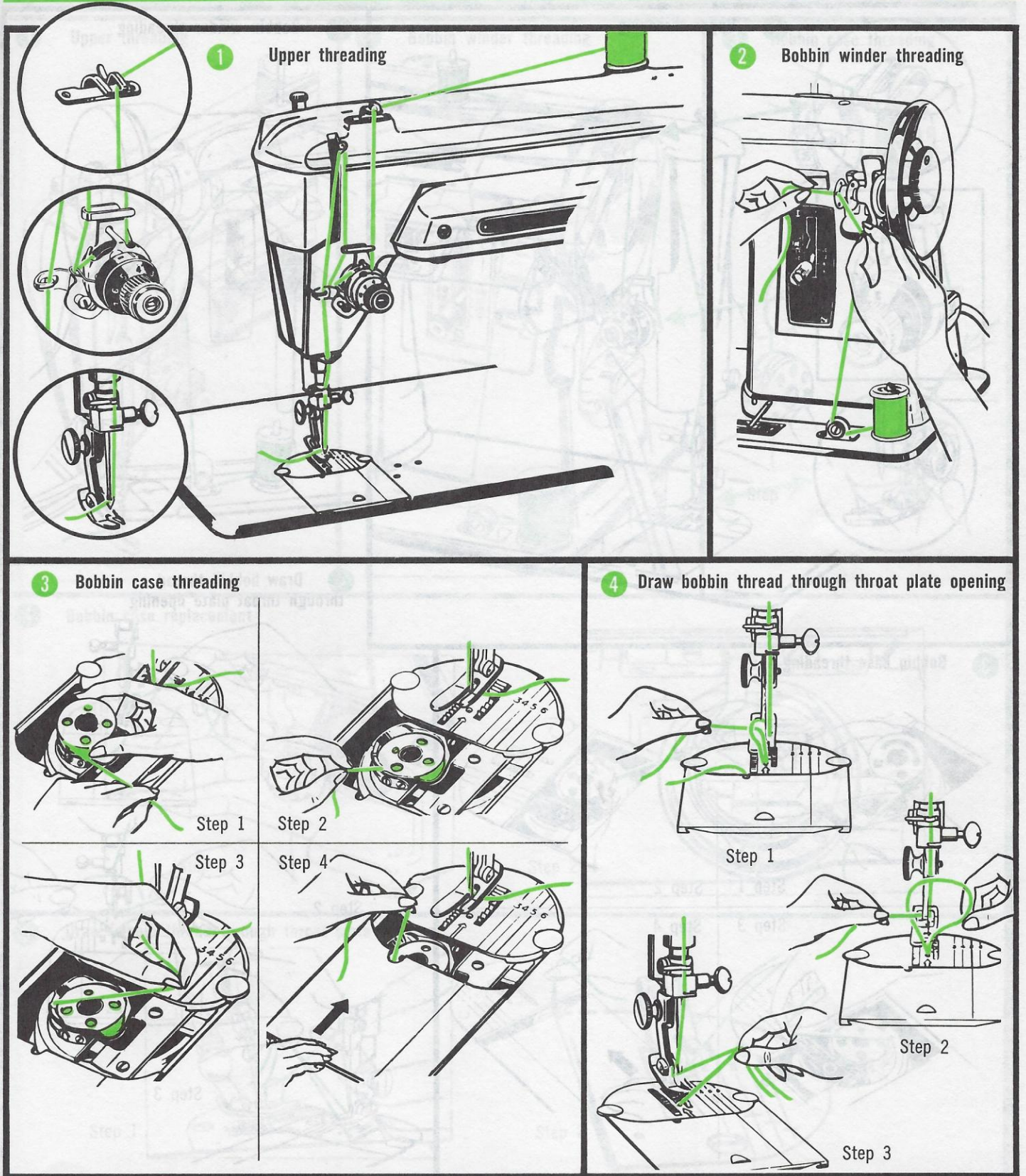
4 Draw bobbin thread through throat plate opening



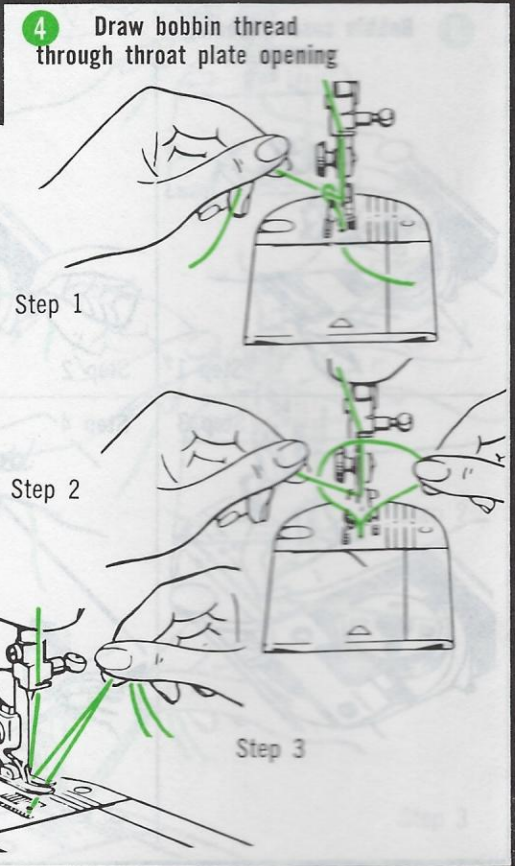
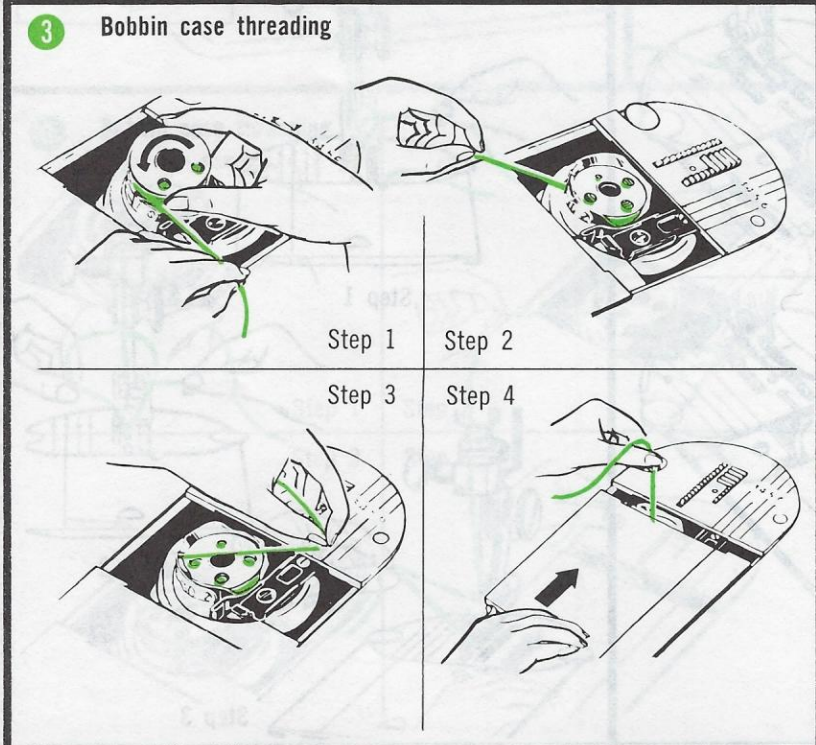
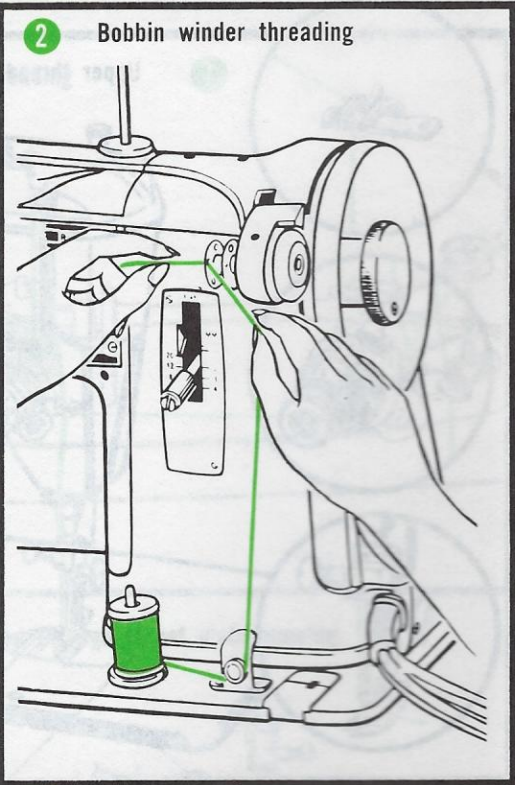
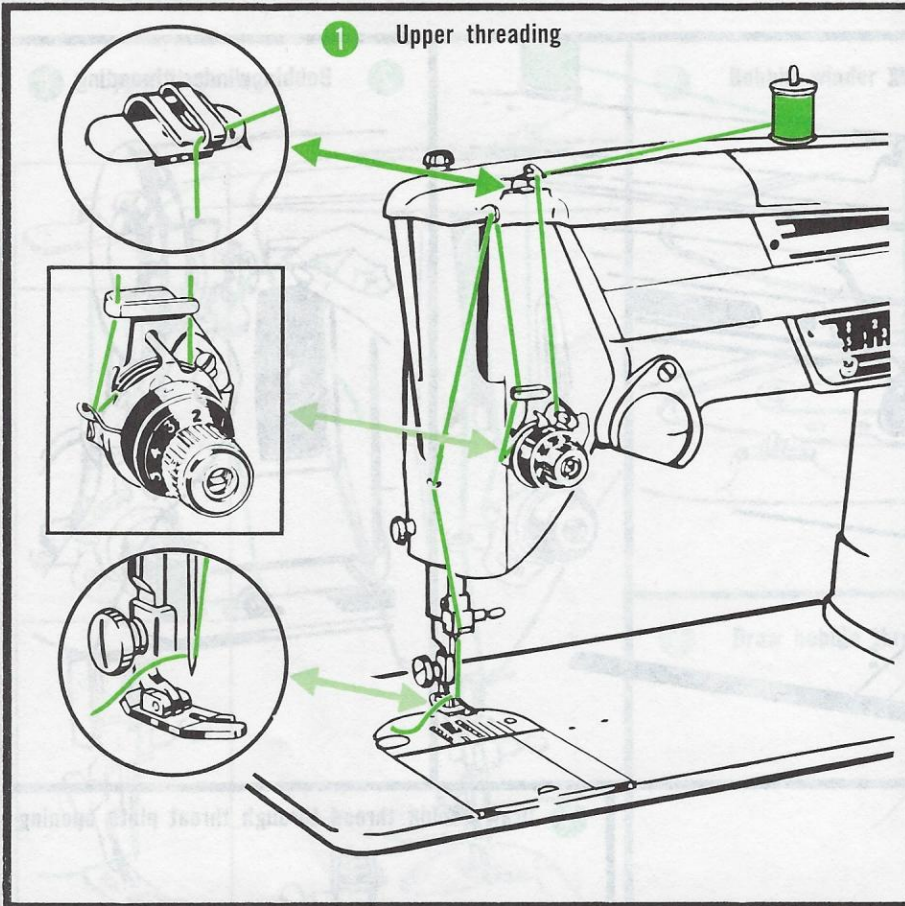
3 Bobbin case threading



THREADING CHART 3

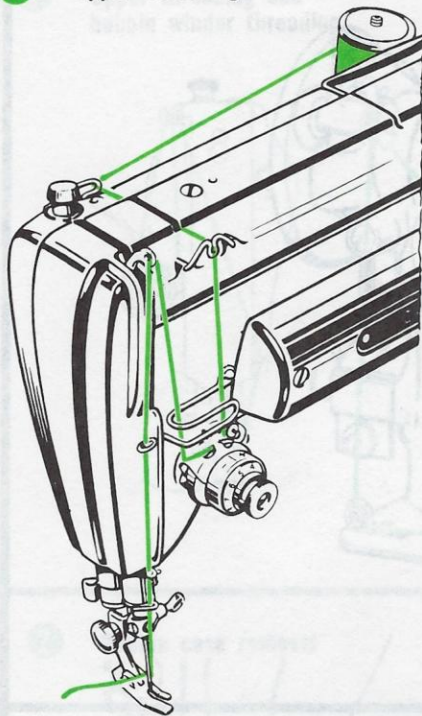


THREADING CHART 4

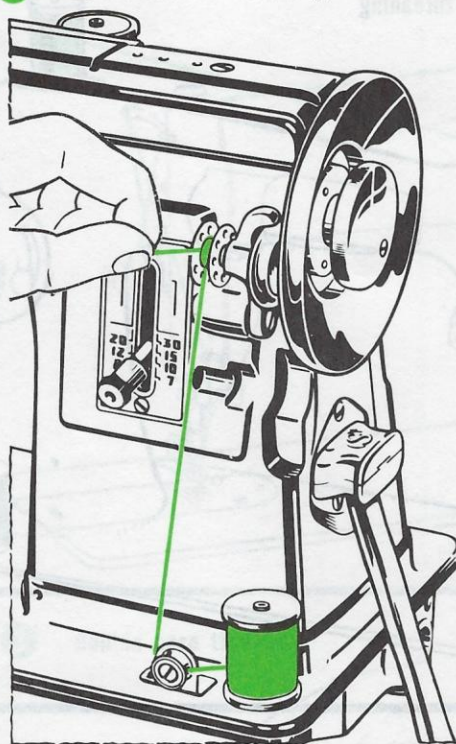


THREADING CHART 5

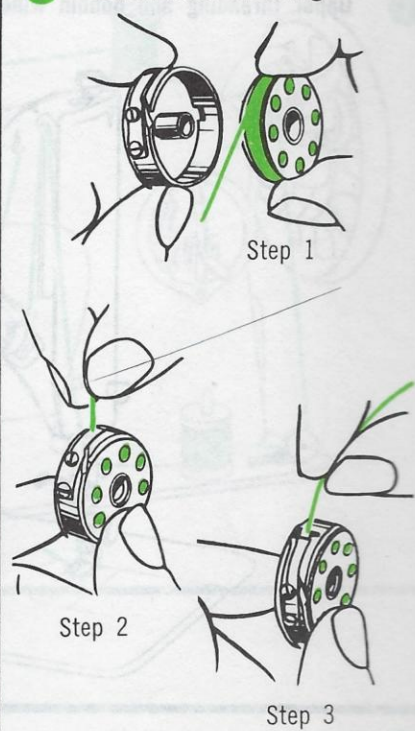
1 Upper threading



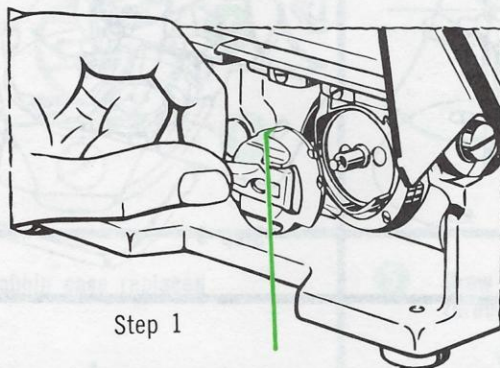
2 Bobbin winder threading



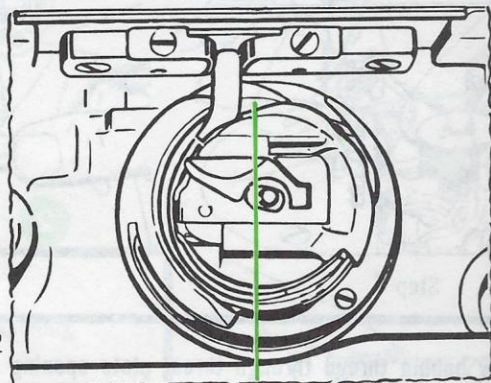
3 Bobbin case threading



4 Bobbin case replacement

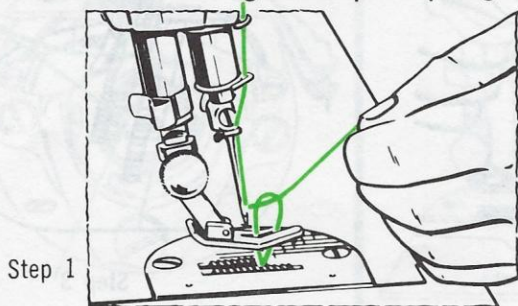


Step 1

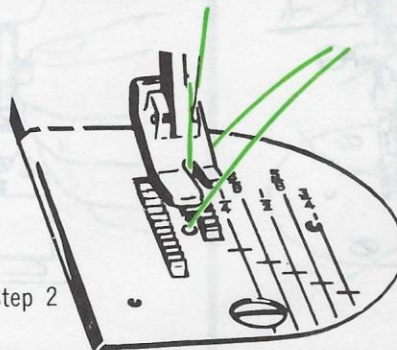


Step 2

5 Draw bobbin thread through throat plate opening



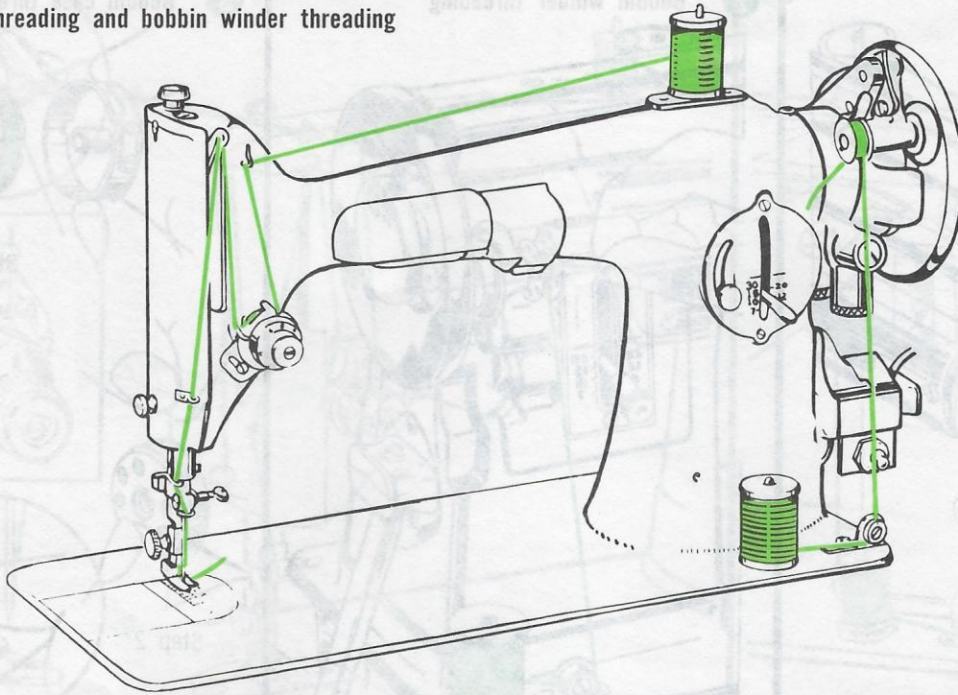
Step 1



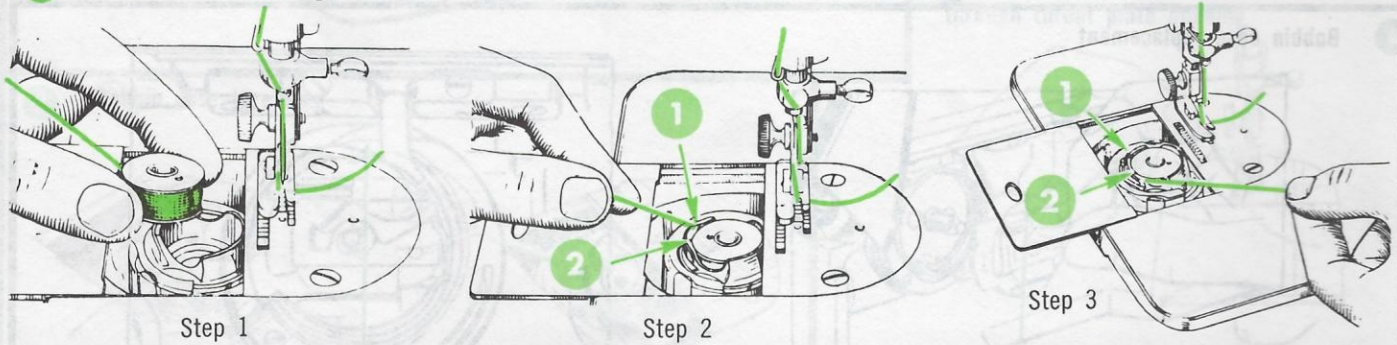
Step 2

THREADING CHART 6

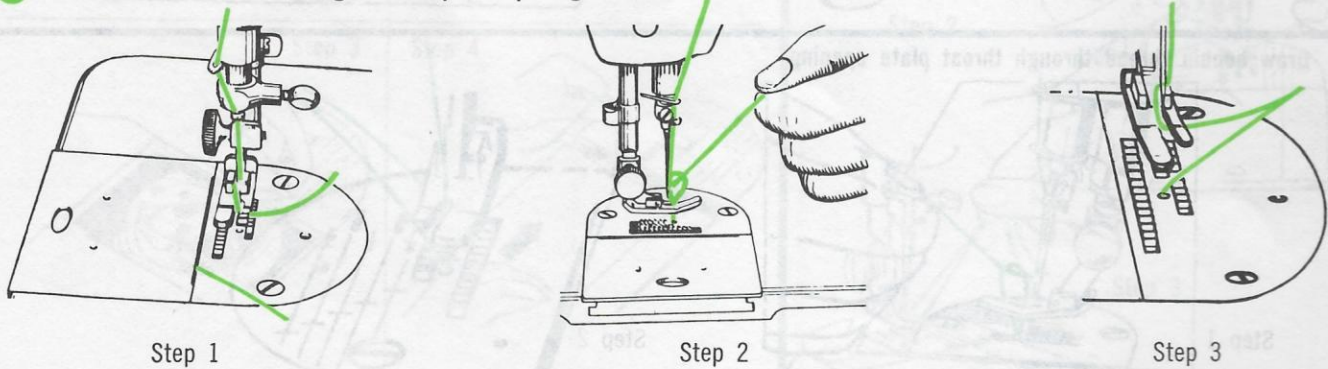
1 Upper threading and bobbin winder threading



2 Bobbin case threading

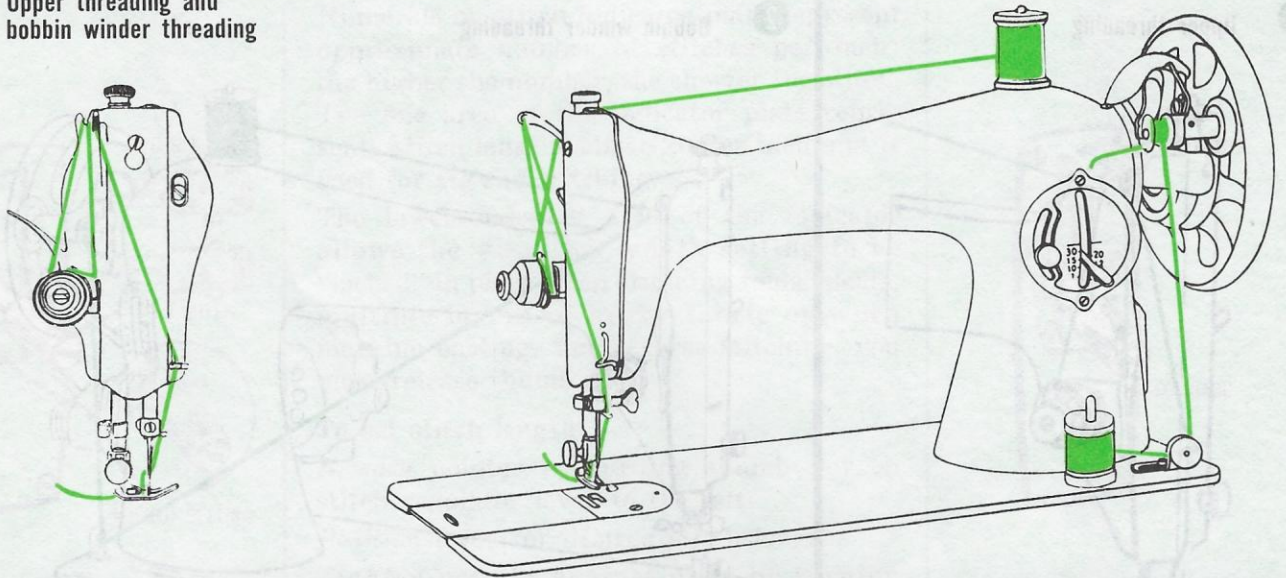


3 Draw bobbin thread through throat plate opening

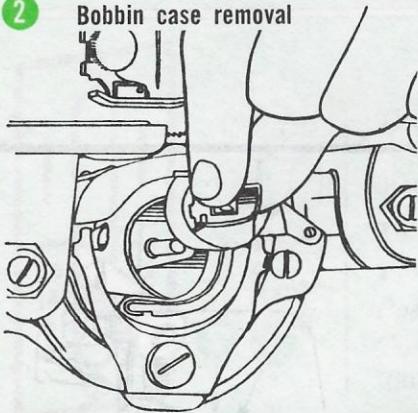


REGULAR LENGTH THREADING CHART 7

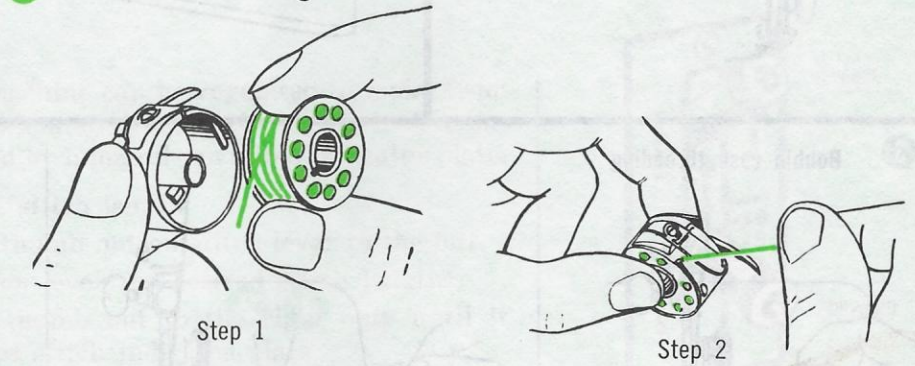
1 Upper threading and bobbin winder threading



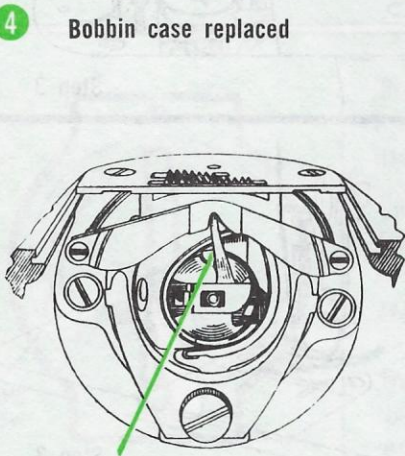
2 Bobbin case removal



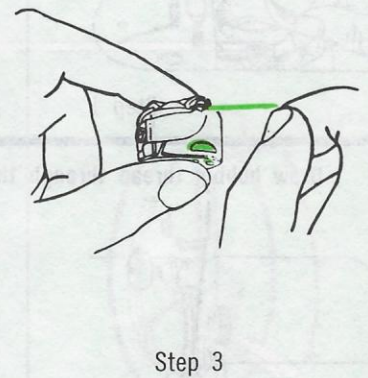
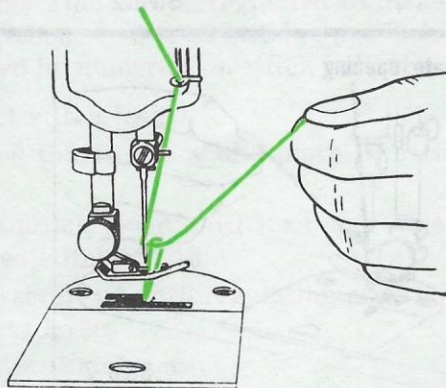
3 Bobbin case threading



4 Bobbin case replaced

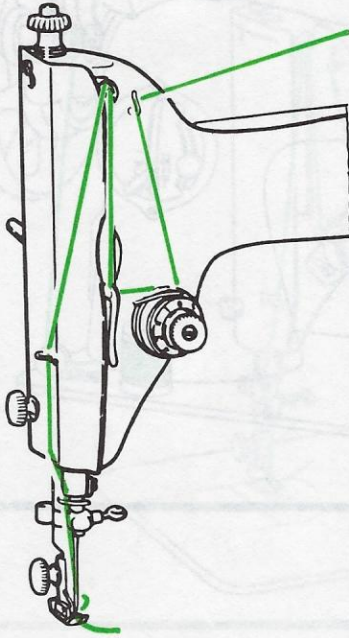


5 Draw bobbin thread through throat plate opening

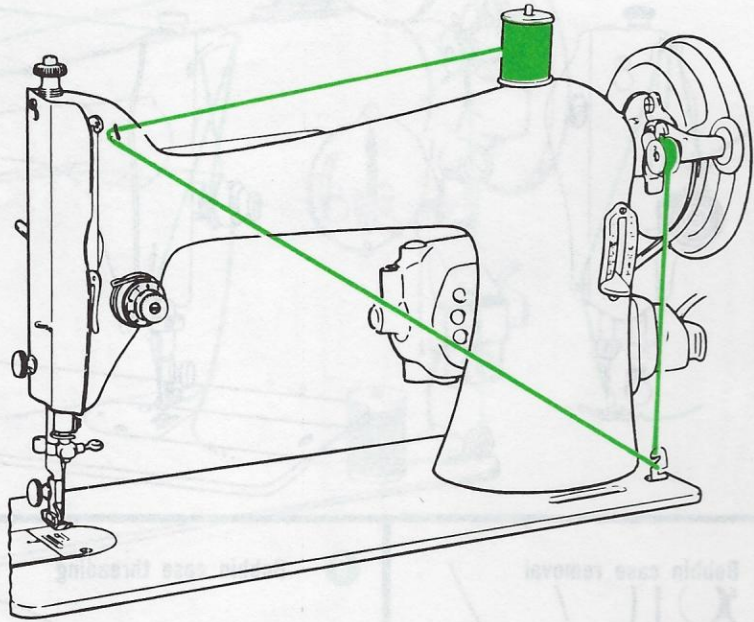


THREADING CHART 8

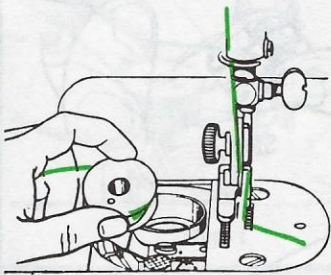
1 Upper threading



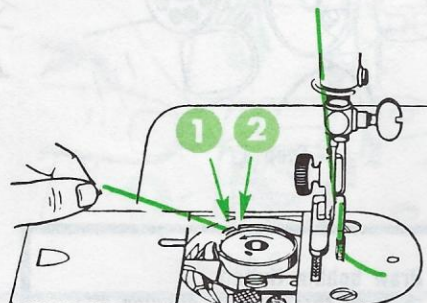
2 Bobbin winder threading



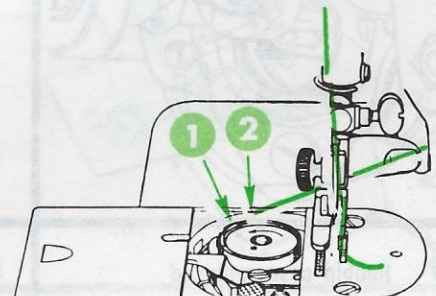
3 Bobbin case threading



Step 1

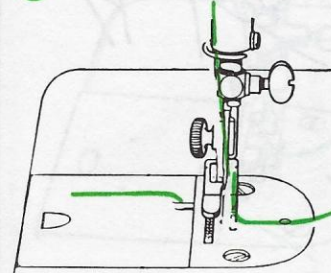


Step 2

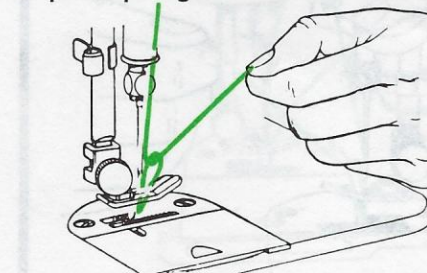


Step 3

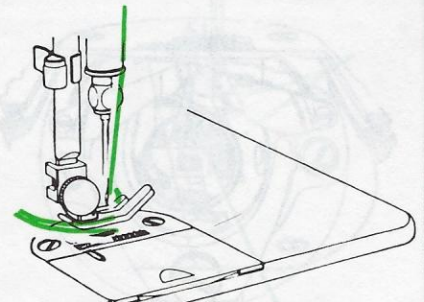
4 Draw bobbin thread through throat plate opening



Step 1

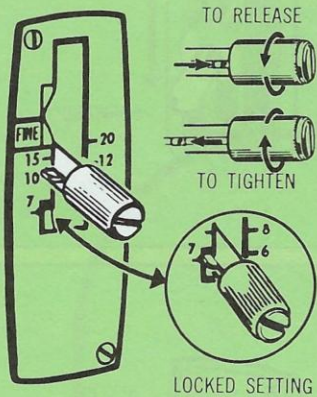


Step 2



Step 3

REGULATING THE STITCH LENGTH



Numerals on stitch indicator plate represent approximate number of stitches per inch: the higher the number, the shorter the stitch. The fine area of the indicator plate represents stitch lengths above 20 per inch and is used for zig-zag stitching.

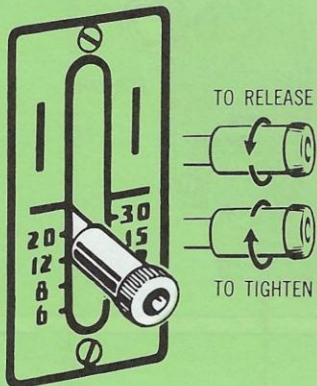
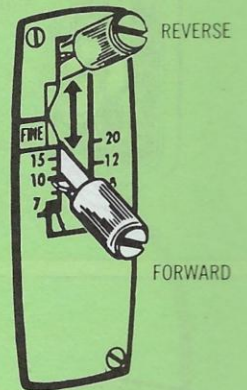
The lower indented area of the indicator allows the #6 stitch length setting to be "locked" in place when stitching folds, pleats, multiple layers of heavy fabric or when machine basting. For reverse stitching, you must release thumb nut.

To set stitch length

Release pointer by turning thumb nut on stitch regulator lever to the left.

Position lever for desired stitch length.

Tighten pointer against plate by turning thumb nut to the right.



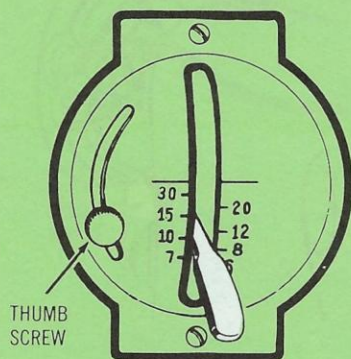
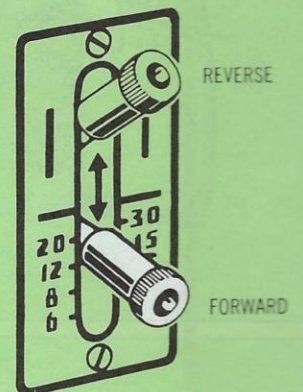
The machine can be regulated to make from approximately 6 to 30 stitches per inch as indicated by numerals on stitch indicator plate.

To set stitch length

Turn thumb nut on stitch lever to the left.

Position lever for desired stitch length.

Turn thumb nut to the right *only* until it touches stitch indicator plate.



The machine can be regulated to make from approximately 6 to 30 stitches per inch as indicated by numerals on stitch indicator plate.

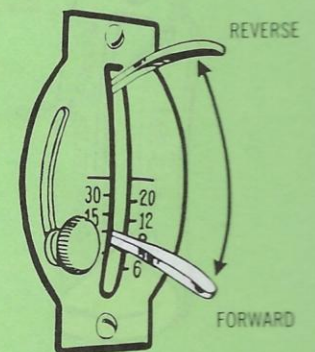
To set stitch length

Loosen thumb screw and move to bottom of slot.

Move stitch lever until its upper side is at desired stitch length.

Move screw up until regulating plate (inside) touches lever.

Tighten thumb screw.

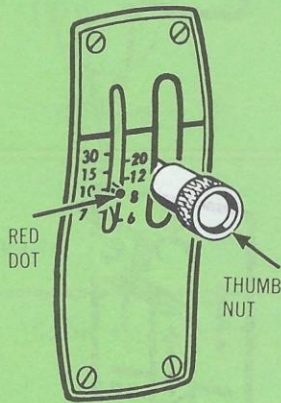
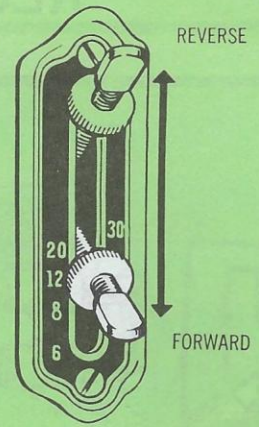




The machine can be regulated to make from approximately 6 to 30 stitches per inch as indicated by numerals on stitch indicator plate.

To set stitch length

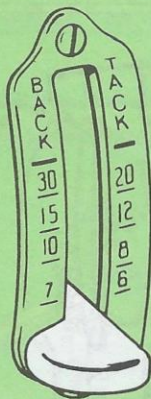
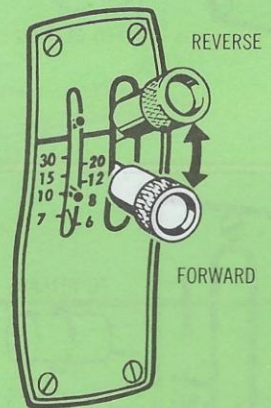
Turn thumb nut on stitch lever to the left.
Position lever for desired stitch length.
Turn thumb nut to the right until it rests against indicator plate.



The machine can be regulated to make from approximately 6 to 30 stitches per inch as indicated by numerals on stitch indicator plate. The "red dot" indicates the stitch setting.

To set stitch length

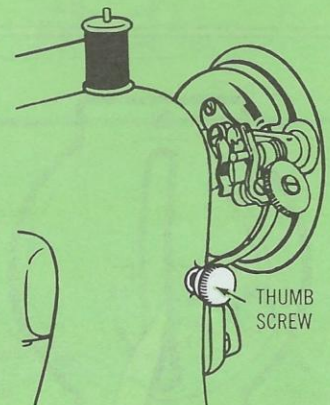
Turn thumb nut on stitch lever to the left.
Move lever until "red dot" is at desired stitch setting.
Turn thumb nut to the right until it rests against indicator plate.



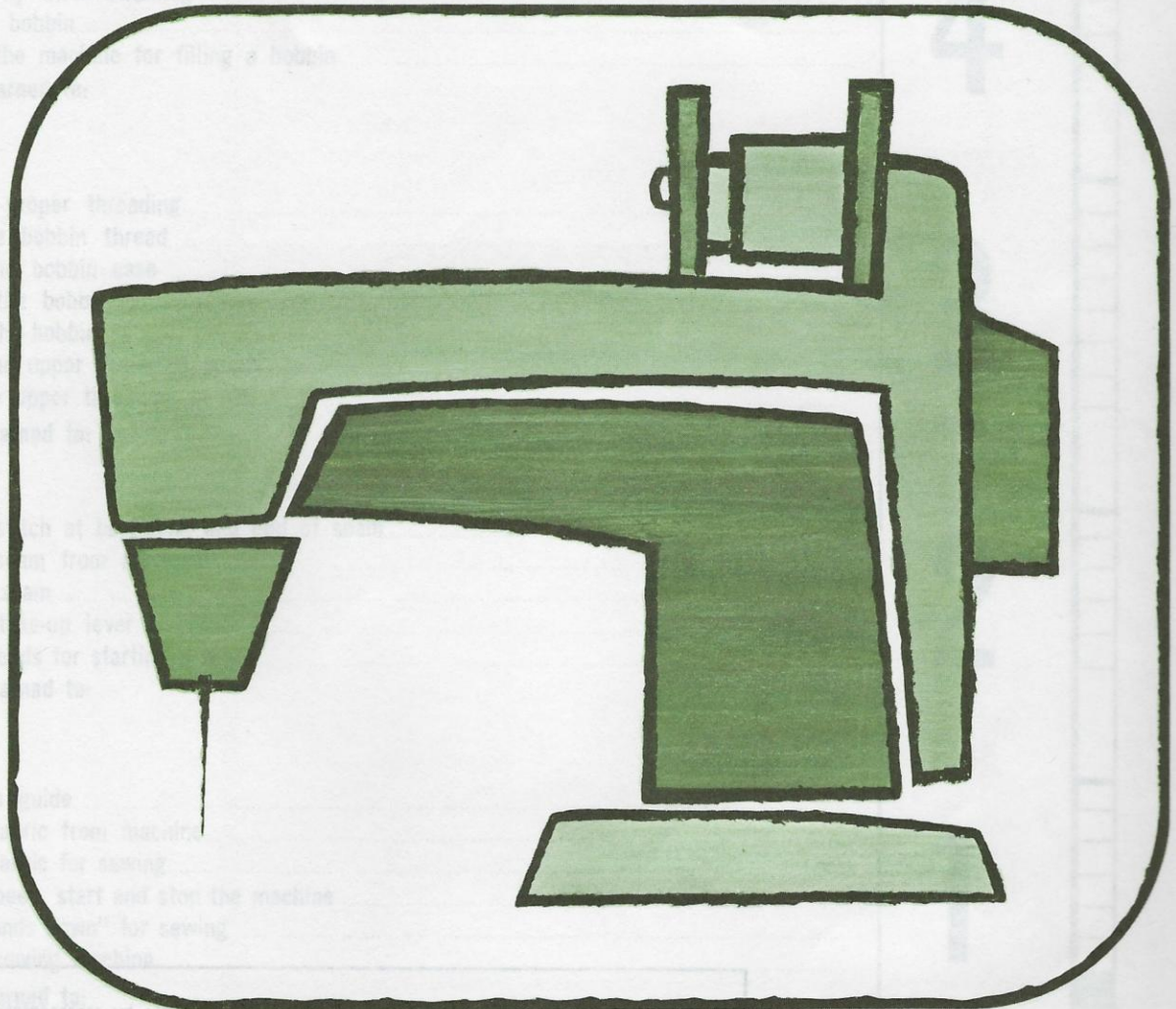
The machine can be regulated to make from approximately 6 to 25 or more stitches per inch, as indicated by the numerals on stitch indicator plate.

To set stitch length

Move stitch lever until its upper side is at desired stitch length.
On certain earlier types of machines, stitch length is regulated (as shown at right) by turning the thumb screw to the right to lengthen stitch and to the left to shorten it.



KNOW YOUR SEWING MACHINE



MEMBER'S BOOK II



This educational material has been prepared for 4-H Club use by representatives of the Federal Extension Service, National 4-H Service Committee and The Singer Company.

Special recognition is made of the contributions to this manual by:

Alice Linn, Federal Extension Service
Mrs. Fern Kelley, Federal Extension Service
Eleanor Wilson, Federal Extension Service
Mary Ann Dean, National 4-H Service Committee
Lois Korslund, formerly with National 4-H Service Committee
Jessie Hutton, The Singer Company

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Achievement Thermometer

- Practice good sewing habits.....
- Sit properly when stitching.....
- Wind the bobbin.....
- Prepare the machine for filling a bobbin.....

I have learned to:

- Test for proper threading.....
- Raise the bobbin thread.....
- Thread the bobbin case.....
- Replace the bobbin.....
- Remove the bobbin.....
- Thread the upper threading points.....
- Name the upper threading points.....

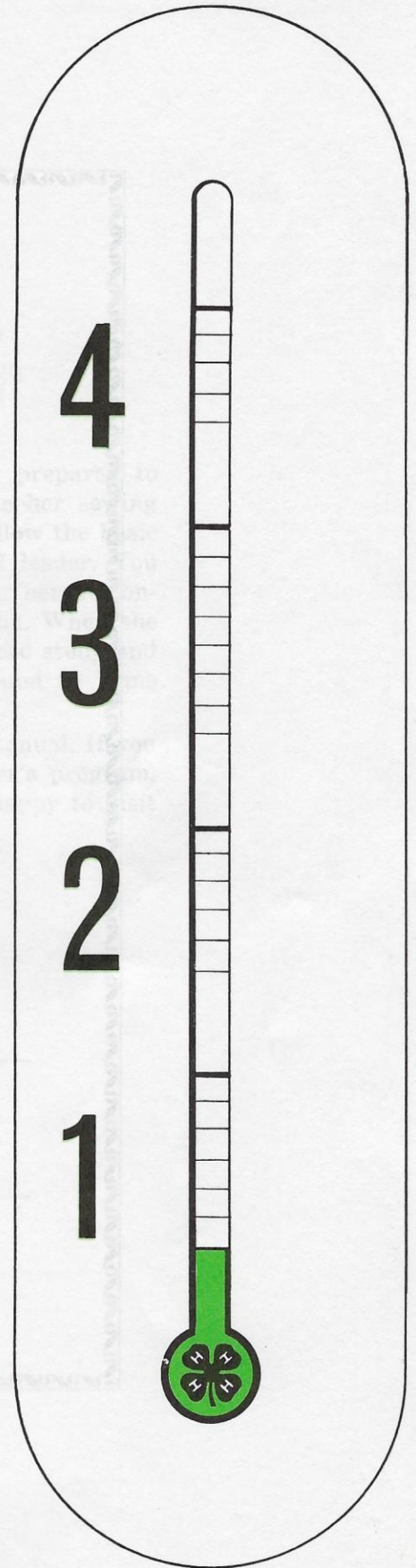
I have learned to:

- Reverse stitch at beginning and end of seam.....
- Remove seam from machine.....
- Stitch a seam.....
- Position take-up lever.....
- Place threads for starting a seam.....

I have learned to:

- Use seam guide.....
- Remove fabric from machine.....
- Position fabric for sewing.....
- Control speed, start and stop the machine.....
- Place "hands down" for sewing.....
- Run the sewing machine.....

I have learned to:



Color in each part of the Achievement Thermometer as you master each step



This is to Certify that

has completed

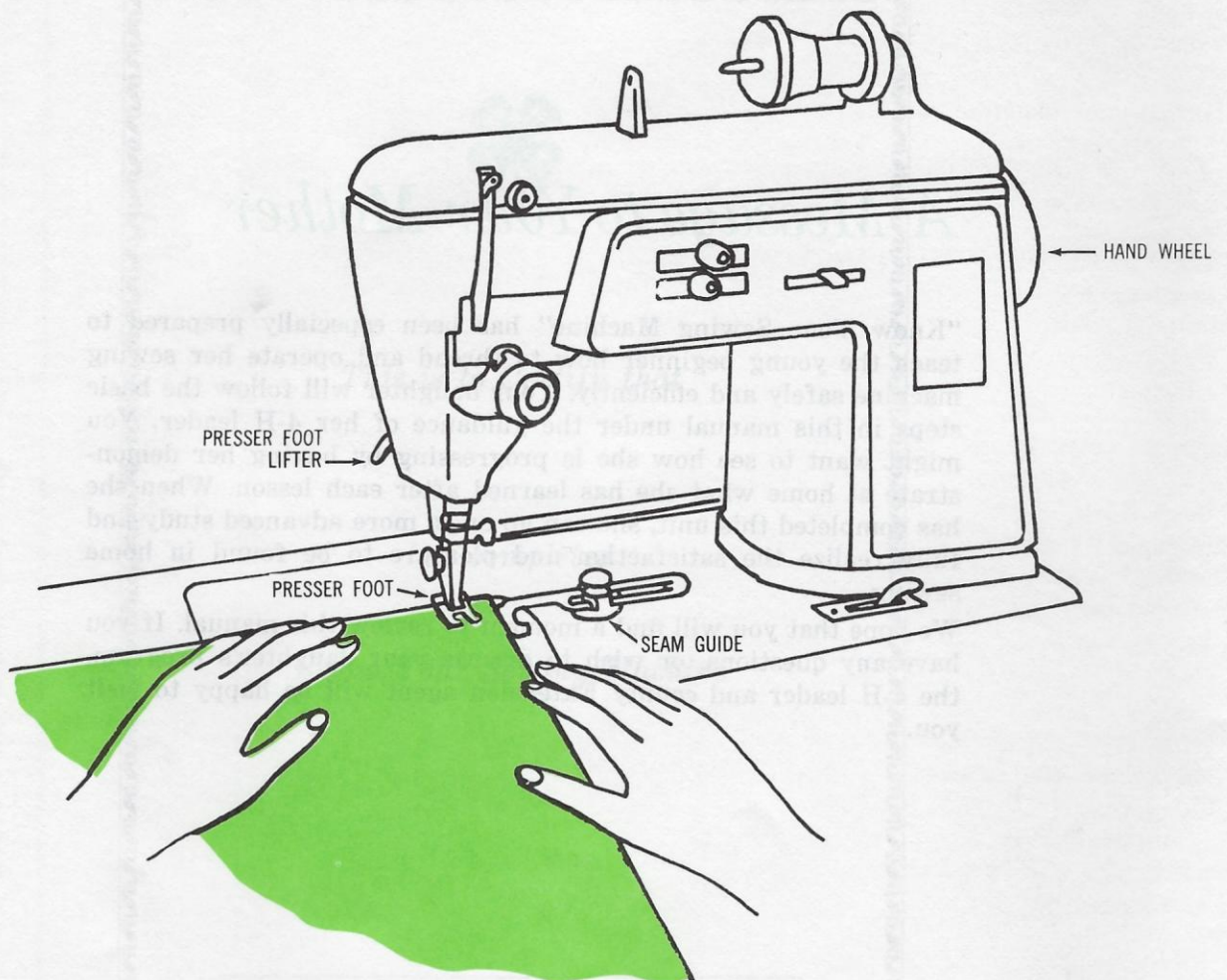
Know Your Sewing Machine

4-H Leader

Date

STEP 1

SEWING PROPERLY



MATERIALS:
2 MUSLIN STRIPS (3" x 18")

Today is one you will long remember. *You are going to learn to use the sewing machine!* This knowledge will bring you pleasure and confidence and will enable you to sew things to wear and pretty accessories for your room. 4-H girls everywhere find that sewing is fun.

a) **Learn to control the speed of your sewing machine.** Sit directly in front of the machine with both hands flat on the table. Press your foot or knee against the controller and the machine will run. Press lightly to make the machine run slowly. Press harder and the machine will run faster. See how slowly you can make the needle go up and down. Keep an even rhythm. Stop pressing the controller and the machine will stop.

You have now learned about the controller and how to use it.

b) **Learn to guide fabric under the presser foot and against a seam guide as if you were stitching a seam.** Your leader will point out to you the *seam guide*, the *presser foot* (how to raise and lower it) and the *hand wheel* (how to turn it toward you on almost all machines, in order to bring the needle up and to position it in the fabric).

1. Raise the presser foot and the needle.
2. Place two strips of muslin under the needle. Allow the edges to extend to your right of the needle and against the seam guide.
3. Turn hand wheel to lower the needle into the fabric.
4. Lower the presser foot.
5. Learn the correct position for hands while sewing. Place your left hand lightly on top of the fabric. The left hand controls the mass of fabric. Place your right hand 3 or 4 inches in front of the needle so that your fingers can guide the edges.
6. Start the machine slowly. Keep your eyes on the edge of the fabric where it touches the seam guide. Guide the fabric gently and do not push or pull.
7. Slow down when you approach the end of the seam and stop pressing the controller.
8. Turn the hand wheel to bring the needle up.
9. Raise the presser foot and remove the fabric by moving it to the back and left.

You have been sewing! Wasn't it fun? This is only the first of many sewing thrills that will always be yours.

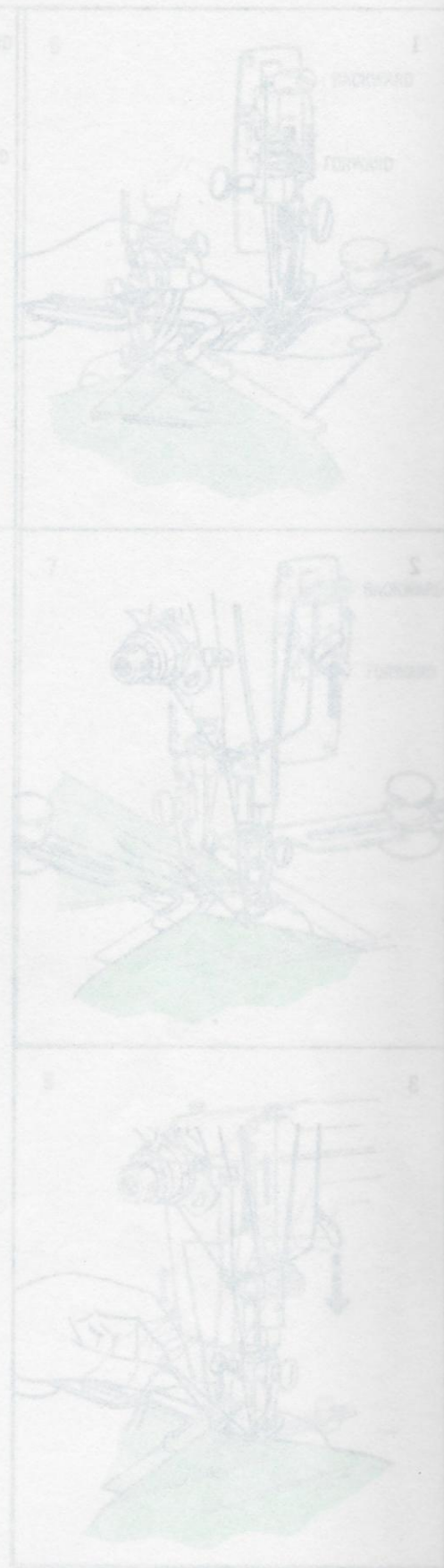
c) **Practice the steps you have just learned.** Perhaps at first you will feel that the machine does not always run at the speed you want or that it may not stop when it should. Practice until you have overcome these feelings. Learn to sew slowly at first; then to sew faster. Learn to stop without running off the end of the fabric.

In this step you have been developing your ability to use your hands, your eyes, and your foot or knee, all at the same time. This is called coordination.

d) **Practice again the steps you have learned.** This time you will be more confident of the speed and the feel of your machine. Now give your attention to the steps you have learned and to the order in which you do them. Repeat the actions: Place fabric, lower needle, lower presser foot, place hands, start machine, guide and sew, stop, bring up needle, and raise presser foot. Do these steps until you can do them without thinking, or until you know them as well as you know 1 plus 1 equals 2.

In this step you have formed a habit. A habit is something you do without thinking. Without thinking you know that you are using your sewing machine correctly.

Congratulations! You have completed the first step in learning to sew.



STEP 2

STITCHING WITH THREAD

MATERIALS:
2 MUSLIN STRIPS (3" x 18")

If it has been a few days or more since you completed Step 1, repeat everything that you learned in Step 1. Then you will be ready to go on to this step — *Stitching with Thread*.

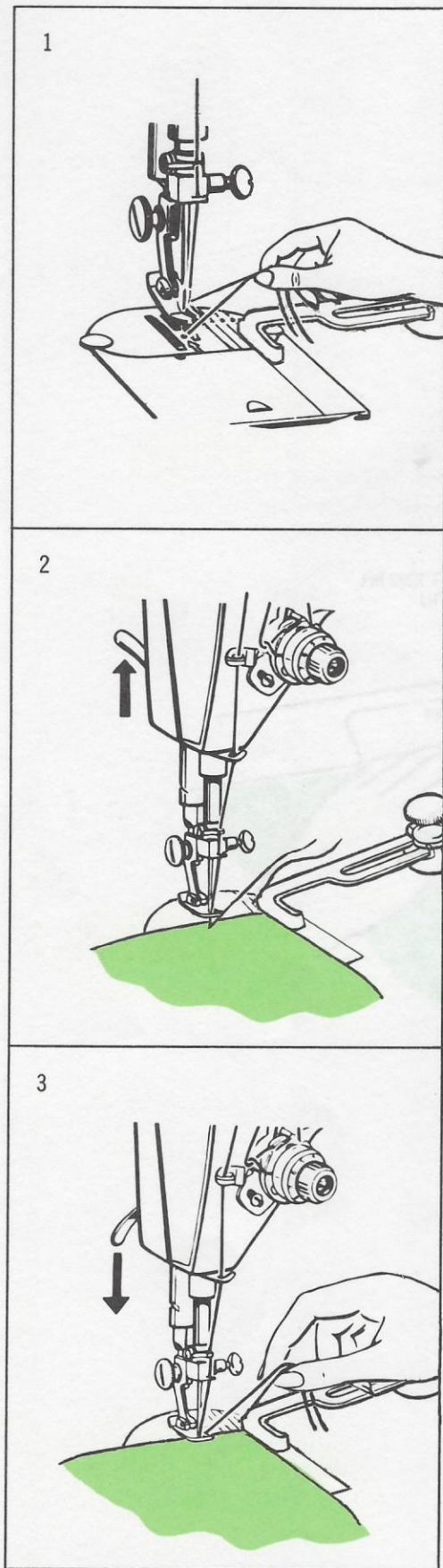
a) **Learn to stitch a plain seam.** Use one 18" muslin strip folded to a 9" length.

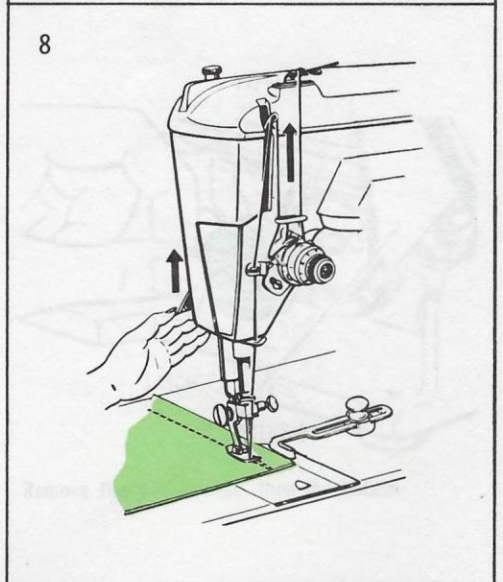
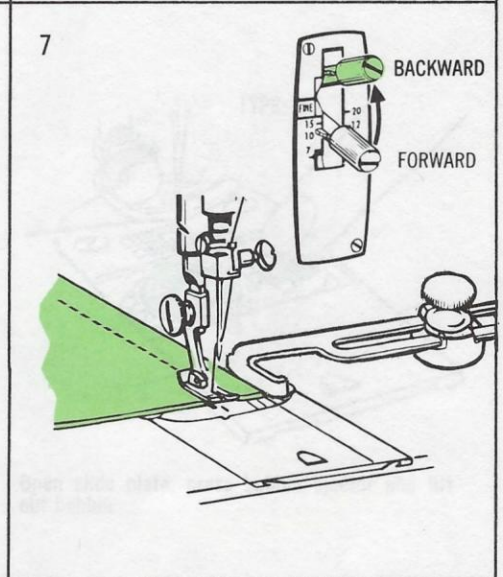
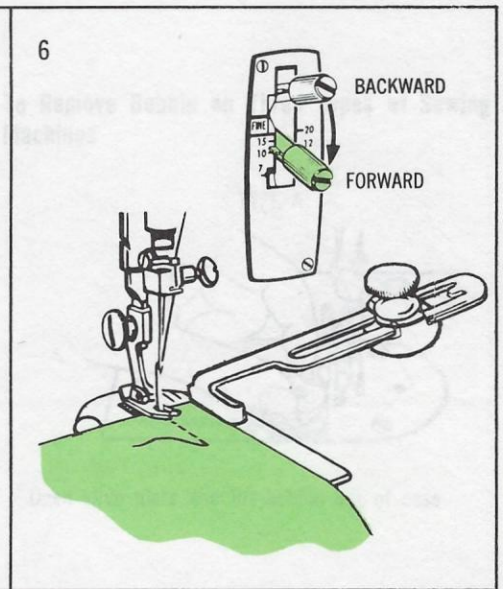
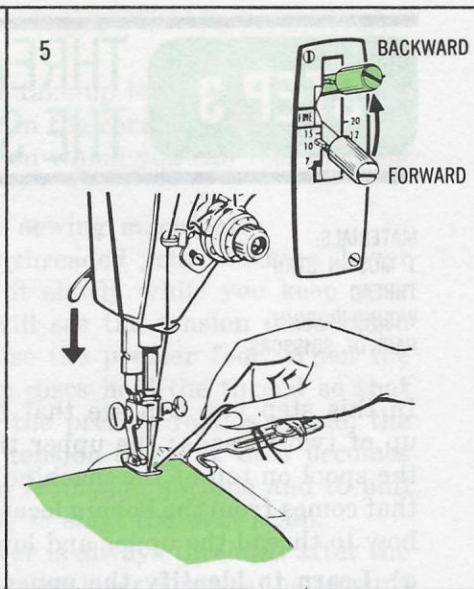
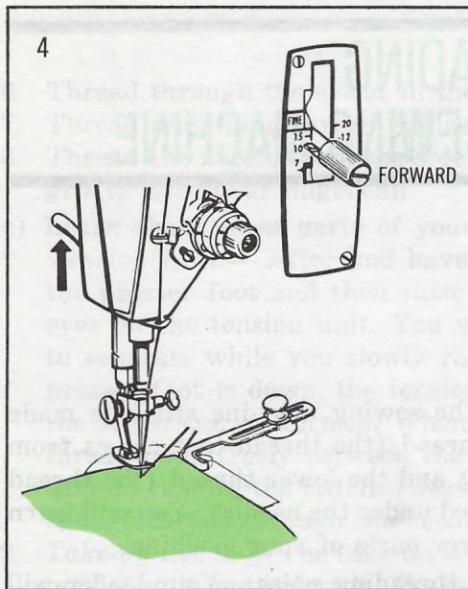
1. Hold the needle thread in your left hand and turn the hand wheel until the *take-up lever* moves to its highest position. Your leader will point out to you the *take-up lever*.
2. Place the needle thread between the toes of the presser foot and draw both the needle and bobbin threads toward the back and to the right (as you see in the first picture). Thread ends should be about 3" long.
3. Position the muslin strip under the needle with seam edges against the seam guide, and lower the needle so that it enters near the starting end of the seam (see second picture).
4. Lower the presser foot and then hold the thread ends with your right fingers (as shown in the third picture).
5. Start the machine slowly and then move your right hand into the proper position, which you learned in Step 1.
6. Slow down and stop when you reach the end of the seam.
7. Turn the hand wheel to bring the needle up and the take-up lever to its highest position.
8. Raise the presser foot and then,
9. Remove the seam by moving the fabric back and to your left. The needle thread must be between the toes of the presser foot to prevent bending the needle or breaking the thread at the eye of the needle.
10. Cut threads about 3" from the back of the presser foot with scissors.

Do this step several times until you become confident.

You now have learned how to avoid tangled threads at the start of a seam and how to keep the take-up lever of your machine in the correct position for starting the next seam.

b) **Learn to fasten the threads to keep the stitching at the seam ends from coming out.** Fastening the threads makes your sewing more durable. Use the second muslin strip folded to a 9" length. Almost all modern sewing machines will sew backward as well as forward. You will learn to sew backward to fasten the threads at both ends of the seam by using the *stitch lever*. Your leader will show you where the stitch lever is on the sewing machine you are using, and she will tell you how to move it to make the machine stitch backward.





1. Look at the take-up lever and the position of both bobbin and needle threads. They must be in the correct positions that you have learned.
2. Place the seam under the needle. This time make the needle enter about $\frac{1}{2}$ " from end of the seam as you see in picture 4. This will allow space for stitching backward.
3. Lower the presser foot (picture 5).
4. Move the stitch lever to make the machine stitch backward (picture 5).
5. Stitch backward to the starting end of the seam and then lower the stitch lever (picture 6).
6. Stitch forward to the end of the seam and stop (picture 7).
7. Raise stitch lever (picture 7).
8. Stitch backward about $\frac{1}{2}$ " (picture 8).
9. Remove the seam from the machine and cut threads near the fabric at both ends of the seam to keep your sewing neat.

You have learned how to sew a durable seam, a process that will be used on almost everything you sew.

Do this step several times. If you need more practice than your muslin strips now allow, ask your leader to show you how to remove the seam guide and then stitch as many rows as you wish through the center of the muslin strips. The edge of the presser foot may be guided near the previous line of stitching. Do not watch the needle. Keep your eyes on the edge of the presser foot for a guide.

Congratulations! You have reached the halfway point in learning to know your sewing machine.

STEP 3

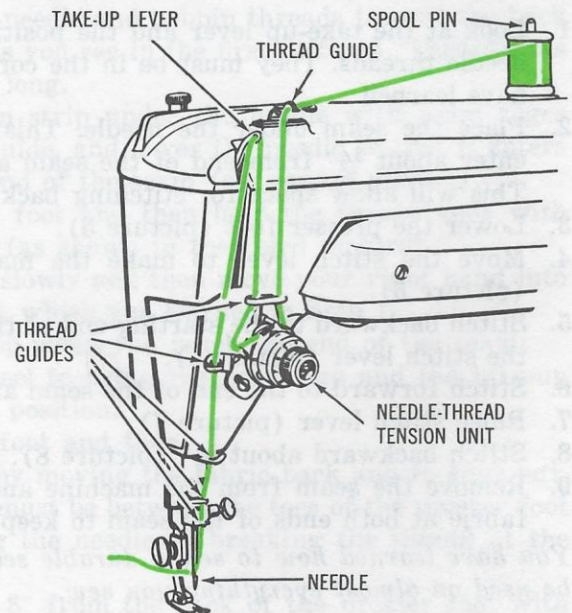
THREADING THE SEWING MACHINE

MATERIALS:
1 MUSLIN STRIP
THREAD
WOUND BOBBIN
PAIR OF SCISSORS

In this step you will see that the sewing machine stitch is made up of two threads: the upper thread (the thread that comes from the spool on top of the machine) and the lower thread (the thread that comes from the bobbin located under the needle). You will learn how to thread the upper and lower parts of your machine.

a) **Learn to identify the upper threading points.** Your leader will show you:

Spool pin
First thread guide
Needle-thread tension unit
Thread guides between tension and take-up lever
Take-up lever
Thread guides between take-up lever and needle
Needle



Sewing machines may differ in appearance, but the threading steps are almost the same for every brand or model. Each sewing machine must be threaded exactly as your sewing machine instruction book states or it will not stitch properly. Now you are ready to thread your machine.

b) **Learn to thread the upper threading points of your sewing machine.** Your leader will guide you.

1. Raise the take-up lever to its highest point.
2. Place the spool of thread on the spool pin.
3. Lead thread from spool to first thread guide.
4. Place thread between tension discs.
5. Draw up thread into the thread guide on the tension unit and under the next thread guide.

6. Thread through the eyelet in the take-up lever.
7. Thread remaining thread guides in the correct order.
8. Thread the needle from the side on which you can feel the long groove with your fingernail.

c) Learn about these parts of your sewing machine:

1. *Tension Unit* — After you have threaded your machine, lower the presser foot and then raise it slowly while you keep your eyes on the tension unit. You will see the tension discs begin to separate while you slowly raise the presser foot. When the presser foot is down, the tension discs hold the thread so that the stitch can be formed. When the presser foot is raised, the thread pulls freely between the tension discs. It then becomes easy to remove the stitched seam from the machine and to pull enough thread through the needle to start the next seam.
2. *Take-up Lever* — The take-up lever is always threaded after the tension unit, not before it. The take-up lever controls the amount of thread needed while the stitch is being formed and set. The tension discs, at the same time, hold the supply end of the thread tightly so that not too much thread is taken from the spool during these motions.
3. *Needle* — Some sewing machines thread from front to back, while others thread from right to left, and still others thread from left to right. This is not as confusing as it may seem. Learn the rule of the long groove of the needle. One side of the needle has a long groove from the top to below the needle eye. You can feel it with your fingernail. All sewing machine needles thread from the long groove side. If you should thread in the incorrect direction, your upper thread will break or tangle so that the machine will not form a stitch.

d) Stitch on a muslin strip (folded to a 9" length) to test the accuracy of threading. Make use of the skills and correct habits you have developed during Steps 1 and 2. If your machine stitches well, you have threaded it correctly; if not, repeat the threading and test again. To learn proper threading so thoroughly that you will not forget it, thread the machine several times. After each threading, test the stitching.

e) Learn to remove the bobbin from the machine (the accompanying pictures will guide you).

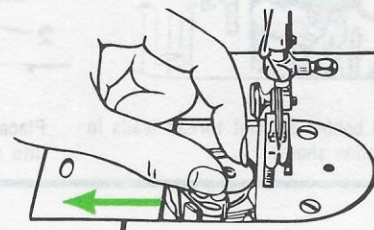
1. Raise the *take-up lever* to its highest point.
2. Open the *slide plate* to expose the bobbin and bobbin case.
3. Remove the bobbin. Some sewing machines have an easy-to-remove bobbin, which can be lifted out of the bobbin case while the bobbin case remains in the machine (Types A and B). Others have a removable bobbin case, which must be taken out of the machine before the bobbin can be removed (Type C). Your leader will show you how to do this.

f) Learn to place the bobbin in the machine and to thread the bobbin case. (Find your bobbin among the pictures on the next page, and they will help to guide you.)

1. Observe the slanted thread opening in the bobbin case. The direction of this thread opening tells you how to place the

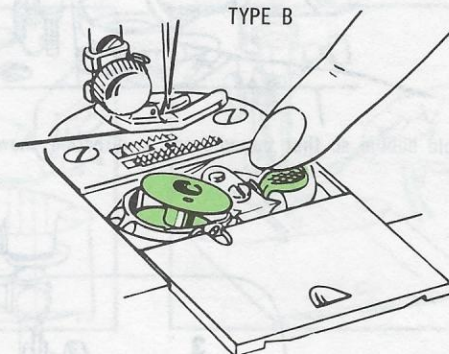
To Remove Bobbin on Three Types of Sewing Machines

TYPE A



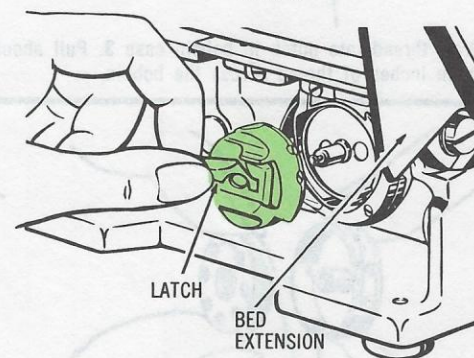
Open slide plate and lift bobbin out of case

TYPE B



Open slide plate, press bobbin ejector and lift out bobbin

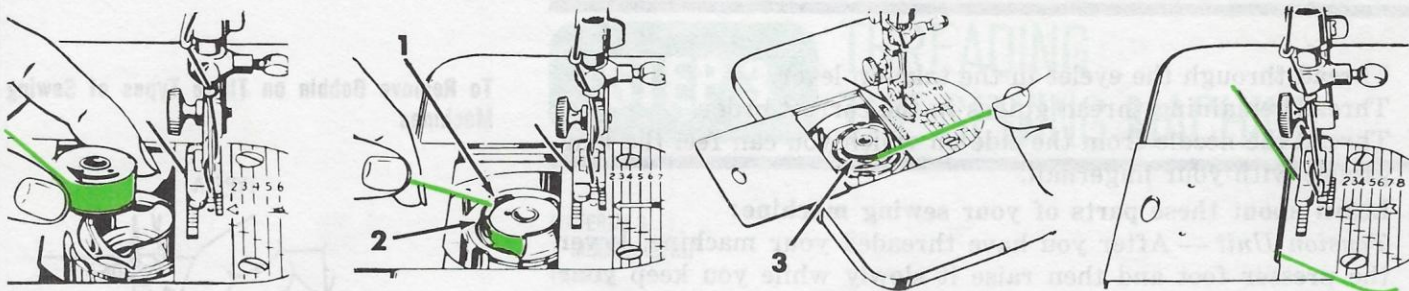
TYPE C



Remove the bobbin case, then the bobbin.

To Thread the Bobbin Case on Three Types of Sewing Machines

TYPE A



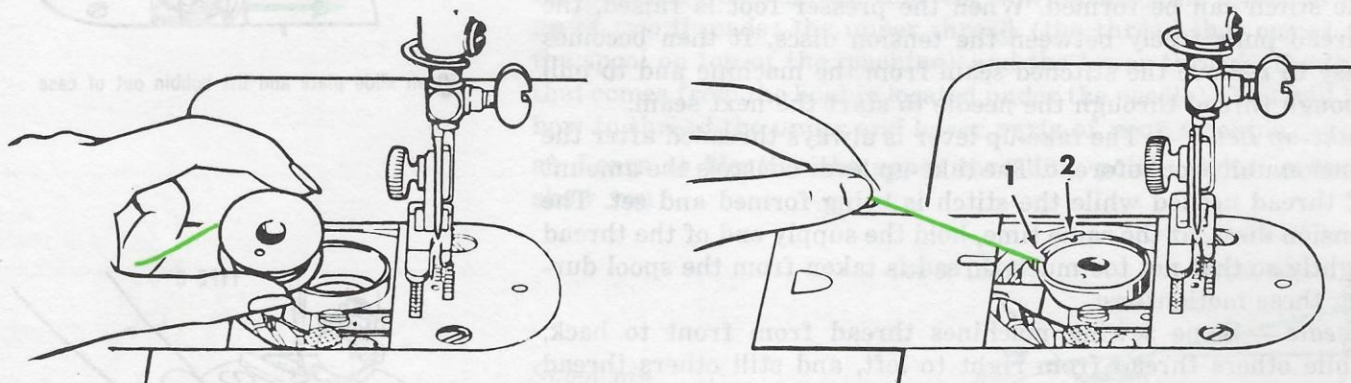
Hold bobbin so that thread leads in direction shown.

Place bobbin in case. Lead thread into slot 1 and under spring 2.

Draw thread into notch in bobbin case 3. Pull about 3 inches of thread across bobbin.

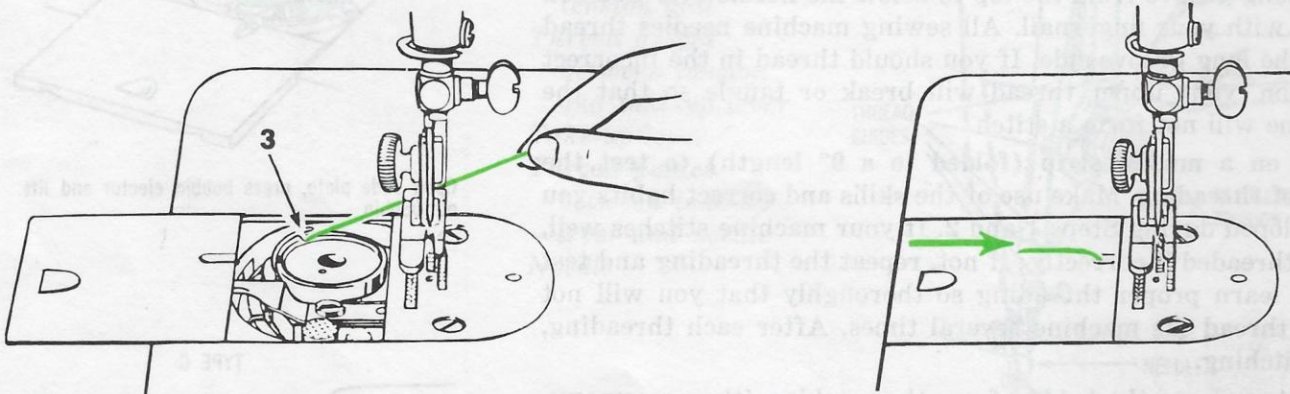
Close slide plate allowing thread to enter long notch.

TYPE B



Hold bobbin so that thread leads in direction shown.

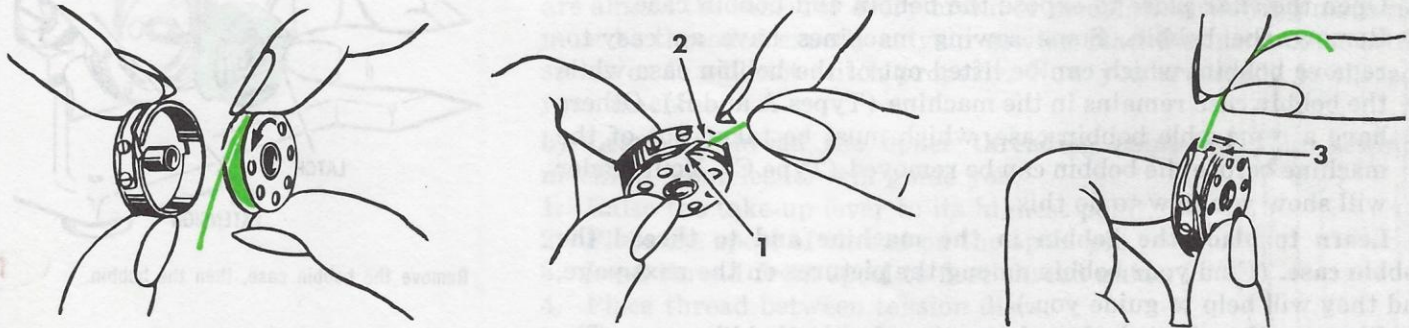
Place bobbin in bobbin case. Lead thread into slot 1 and under spring 2.



Draw thread into notch in bobbin case 3. Pull about three inches of thread across the bobbin.

Close slide plate allowing thread to enter notch.

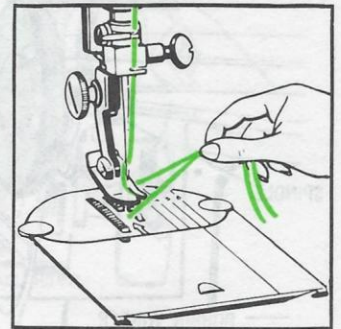
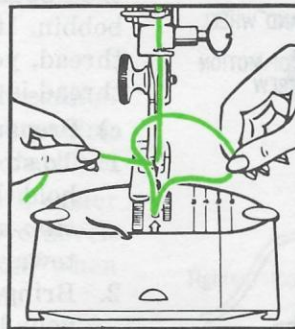
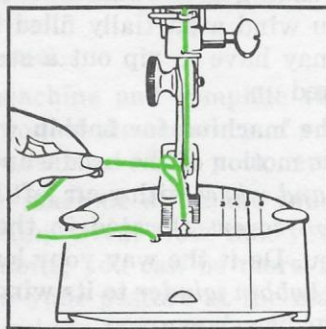
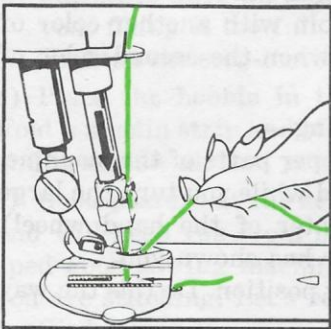
TYPE C



bobbin. All bobbins are placed so that the thread turns back into the slot and forms a "V." If the bobbin is placed with the wrong side down, the thread will lead into this slot in a continuous curve and you will not get your "V."

2. Hold the bobbin firmly in place in the bobbin case with one hand and pull the thread end back through the slot with the other hand. The thread will be drawn into its proper place under the *bobbin tension spring*. This spring controls the bobbin thread in the same way the tension discs control the upper thread when the stitch is being made.
3. Place the bobbin case in the machine if the bobbin case on your machine is a removable one. Your leader will show you how.
4. Close the slide plate, but have the thread extend upward and into the thread groove on the slide plate. If the machine you are using does not have a thread groove in the slide plate, it is probably one with a removable bobbin case. On these machines, the bobbin thread should hang down on the inside instead of being brought up alongside the slide plate.

To raise bobbin thread



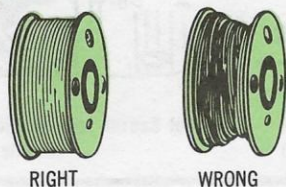
g) Learn how to raise the bobbin thread.

1. Hold the needle thread lightly with your left hand.
2. Turn hand wheel until the needle goes down and up again and the take-up lever returns to its highest point.
3. Pull the needle thread, and the bobbin thread will come up through the needle hole in the throat plate.
4. Pull the loop of the bobbin thread until the end comes through.
5. Place both needle and bobbin threads diagonally to the right under the presser foot and you are ready to stitch.
6. Again, stitch to prove correct threading.

Congratulations! You have taken another big step in knowing your sewing machine. You have also become more independent and responsible in the operation of your sewing machine.

STEP 4

WINDING THE BOBBIN GOOD POSTURE—FINAL REVIEW



MATERIALS:
1 MUSLIN STRIP
THREAD
EMPTY BOBBIN
PAIR OF SCISSORS

You have learned about the bobbin and how to place it in the machine. Now you will learn more about the bobbin and how to wind it.

a) Before you fill the bobbin, be certain it is the right one for the machine and that it has not been bent from careless storage or mishandling. A bobbin of incorrect size, or one that is bent or has rusted or rough, sharp edges, will not allow the bobbin thread to unwind freely and this will cause poor stitching.

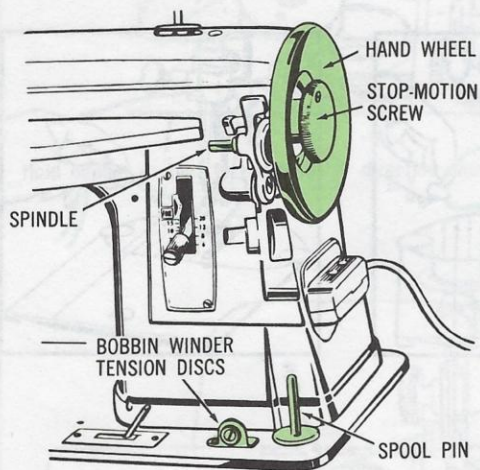
b) Select thread of the same kind and size for the bobbin and for the upper threading of the machine. Always start with an unfilled bobbin. If you wind a partially filled bobbin with another color of thread, you may have to rip out a seam when the second color of thread is picked up.

c) Prepare the machine for bobbin winding —

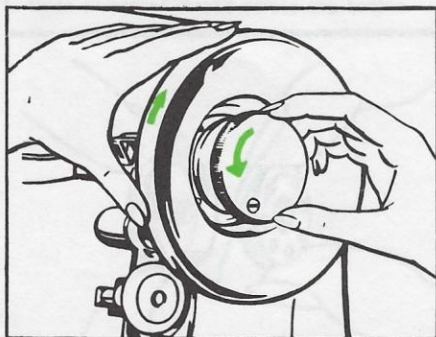
1. To stop the motion of the needle and upper parts of the machine, hold the *hand wheel* with your left hand while you turn the large *stop-motion screw* (located in the center of the hand wheel) toward you. Do it the way your leader has shown you.
2. Bring the *bobbin winder* to its winding position. Do this the way your leader has shown you.
3. Place the empty bobbin on the *bobbin winder spindle*. Some bobbins are held tightly by a spring, others must fit over a pin.
4. Lower the presser foot.
5. Press the foot or knee controller. The bobbin should turn but the needle should not move up and down.

You have learned the names and location of some new parts of the machine: the *stop-motion screw*, the *bobbin winder* and its *spindle*. You have also learned how to stop the motion of the needle and place the bobbin winder in winding position.

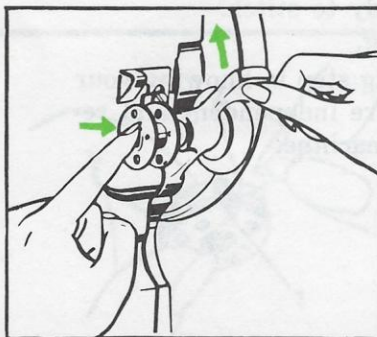
The principal parts for winding a bobbin



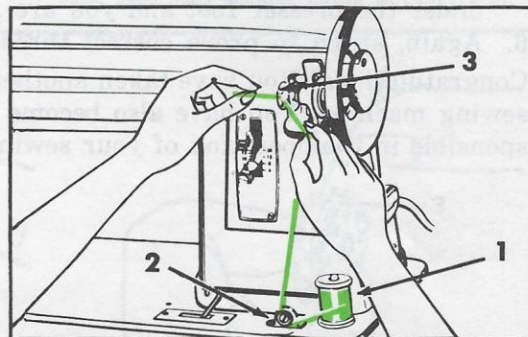
To wind the bobbin



Loosen stop-motion screw by turning it over toward you as illustrated.



Raise bobbin winder and position bobbin on spindle. Press winder against the hand wheel.



Place thread on spool pin and lead between bobbin winder tension discs. Thread through hole in left side of bobbin as shown.

d) Thread the sewing machine for winding the bobbin —

1. Place thread spool on the second spool pin (or if your machine has only one spool pin, use it).
2. Lead the thread into the first thread guide. Many machines require this, but some do not — does yours? (Refer to your sewing machine instruction book or ask your mother or leader.)
3. Thread under the bobbin winder tension or thread guide.
4. Pass the thread end through the hole in the bobbin from the inside to the outside.
5. Hold thread end.
6. Start the machine and run it at moderate speed.
7. Snap off the thread end with a quick pull. (Nylon threads must be cut.)
8. Stop the machine when the bobbin is almost full. Do not fill it beyond the edges or it will not fit freely in the bobbin case. Some machines have an automatic stop on the bobbin winder to prevent filling it too full.
9. Tighten the stop-motion screw.

e) Place the bobbin in the machine and complete the threading. Fold a muslin strip and stitch to test the accuracy of your threading and to review all that you have learned about your sewing machine.

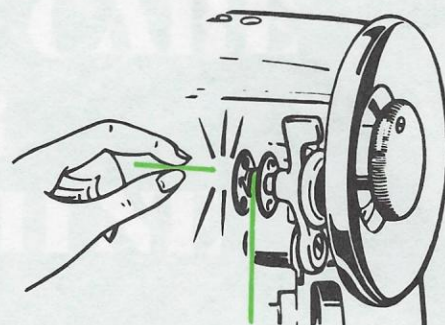
f) Good posture at the sewing machine will make your work easier and will keep you from becoming tired. Now that you have developed good sewing machine habits, you can be more relaxed when you are stitching. Let's review your posture at the machine.

1. Sit back on the chair, squarely in front of the needle.
2. Do not lean against the chair back; instead bring your body forward slightly.
3. Place your feet flat on the floor with one foot forward. To use the knee controller, place the left foot forward. To use the foot controller, place the right foot forward.

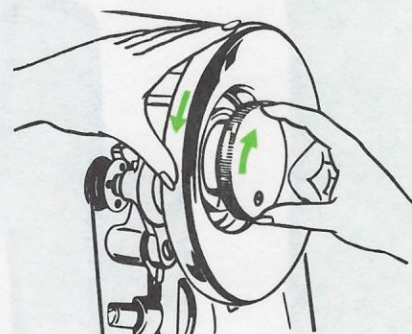
g) Final Review — Ask your leader and fellow 4-H members to observe your posture at the sewing machine while you are stitching. Ask them to offer suggestions that will improve your posture. They can be better judges of your posture than you. At the same time, ask them to observe your stitching habits. Then point out the location and names of all the sewing machine parts you have learned: the controller, presser foot, seam guide, hand wheel, needle, take-up lever, stitch length regulator, spool pin, thread guides, tension unit, slide plate, bobbin, bobbin case, bobbin tension spring, and throat plate.

Congratulations! You "Know Your Sewing Machine." Your Achievement Thermometer may be completed. Now you are ready to enter into the most rewarding part of sewing, the creative and artistic part. Whether your first interest is in home furnishings or clothing projects, you can begin with the confidence that your stitching will be easy to do and will be well done.

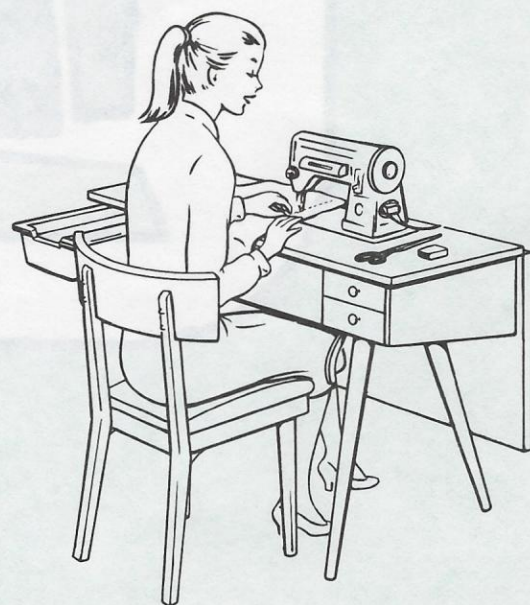
Best wishes and good sewing!



Hold thread end and start the machine.



Tighten stop-motion screw.



REGULATE AND CARE FOR YOUR SEWING MACHINE



LEADER'S GUIDE III

Materials:

Needles

Sizes 11, 14, 16, and 18 per machine

Thread

1 spool of each per machine:

50 Mercerized cotton (pastel color)

50 Mercerized cotton (white)

Synthetic — Taslan, Nymo, Nylex

Heavy-duty Mercerized cotton

Silk

Size 36, six cord cotton

A few sheets of soft-surface note paper or newspaper per member

Fabrics

Steps 1 and 2 — per member:

2 strips yellow muslin (3" x 18")

Step 3 — per member:

5 strips white muslin (3" x 18")

3 strips white muslin (4" x 8")

1 strip resin-finished fabric (4" x 8")

Steps 4 and 5 — per member:

2 strips yellow muslin (4" x 12")

2 strips crisp sheer (4" x 12")

2 strips soft voile (4" x 12")

2 strips heavy denim (4" x 12")

2 strips spongy wool (4" x 12")

Step 6 — per member:

2 strips corduroy (4" x 12")

2 strips double knit (4" x 12")

2 strips stretch fabric (4" x 12")

Lint brush

Soft cleaning cloth

Lubricant and sewing machine oil

Preparation:

Sewing machines, as many as possible, threaded with size 50 Mercerized white thread. For each sewing machine, one extra bobbin filled with a pastel thread and extra bobbins filled with the different kinds and sizes of thread listed above.

This educational material has been prepared for 4-H Club use by representatives of the Federal Extension Service, National 4-H Service Committee and The Singer Company.

Special recognition is made of the contributions to this manual by:

Alice Linn, Federal Extension Service

Mrs. Fern Kelley, Federal Extension Service

Eleanor Wilson, Federal Extension Service

Mary Ann Dean, National 4-H Service Committee

Lois Korslund, formerly with National 4-H Service Committee

Jessie Hutton, The Singer Company

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Objective of this Unit

Once your 4-H member feels confident with the straight stitching of simple items in her first project, she will want to know more about the sewing machine. "Regulate and Care for Your Sewing Machine" provides the information to take her into the next phase of learning to use her machine. (The instructions in this unit apply to both zig-zag and straight stitch machines. However, girls with zig-zag machines will use only the straight stitch application.) Completing this unit will enable her to use her machine in a versatile fashion and to be even more responsible for its care. She will learn how to adjust the sewing machine for all types of fabrics and how to keep the machine in perfect working condition. Usually girls from 12 to 14 years of age are ready for this unit. Use your discretion in deciding if a girl is ready earlier or should wait longer.

There are seven steps in this unit:

Step 1 — Using correct needle and thread

Step 2 — Regulating stitch length

Step 3 — Regulating thread tensions

Step 4 — Regulating presser foot pressure

Step 5 — Reviewing and combining what you have learned

Step 6 — Handling special fabrics

Step 7 — Caring for your sewing machine

Some Teaching Suggestions

The first five steps can easily be grouped into four meetings, or more, depending of course on the learning pace of your group. Steps 6 and 7, however, should probably be taught at separate meetings since they are rather inclusive. In any case, it is recommended that the order of steps as given in the member's booklet be followed. You will discover that each step represents a logical progression in the development of these skills.

Accompanying each step is a definition of the principle involved. For example, in Step 3 thread tensions are explained in terms of their purpose, importance, and operating theory. Help the member to understand each principle and properly apply it to her own sewing machine. Have her practice each step.

Remember that 12-14 years is a time when some girls are "all thumbs," while others have a short attention span. Do not be concerned if your girls vary greatly in skills and interest. Let each girl grow at her own speed. Reinforce good sewing habits and encourage learning by having *them tell you* why certain techniques are the better way.

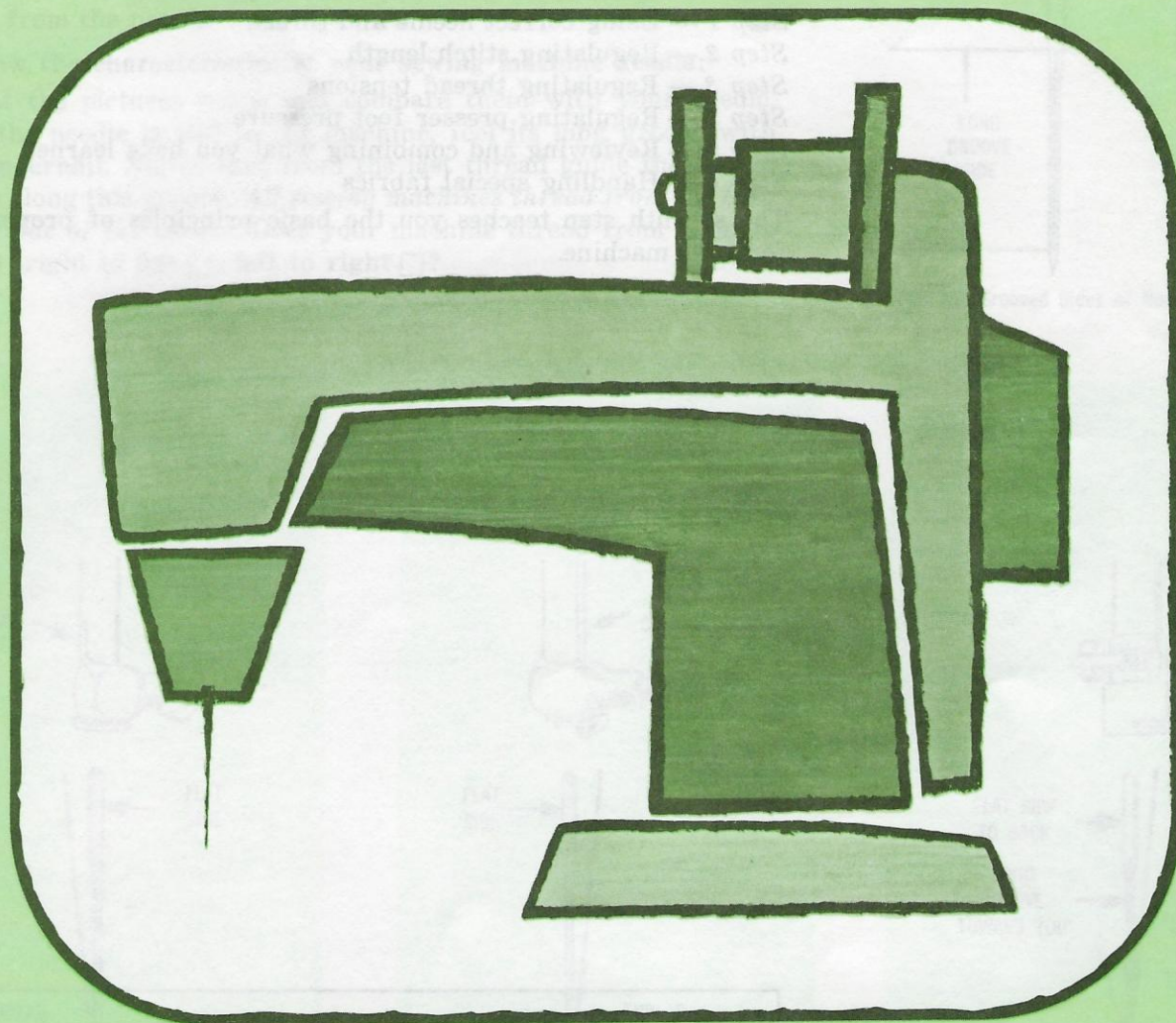
There are a number of ways to hold the girls' interest in this unit. You undoubtedly will discover others, but listed below are some examples of proven methods that may help you.

1. Pay a group visit to a nearby sewing center to get an idea of the many different sewing machines and accessories, as well as interesting sewing notions, that are available.
2. Take the group on a tour of fabric departments to expose them to the great variety of exciting fabrics and fibers now available to the home sewer.

3. When you teach the section on handling special fabrics, choose those that are of immediate interest to the girls because of the latest fashion (e.g., stretch fabrics) or because of the season (e.g., corduroy for fall). They can practice on other fabrics at another time. (However, if you prefer to have a variety of fabrics to work with, you might obtain them from the girls' scrap bags or by having them ask neighbors who sew for appropriate remnants.)
4. Find opportunities for your girls to "show and tell" what they have learned to groups outside of the Club. You might uncover these opportunities by consulting your county Extension agent or other 4-H leaders.

Whatever specific techniques you find successful, perhaps the most important part of your approach to this unit is to decide when to do direct teaching and when to assume a guidance role — i.e., letting your members work on their own or with others in the group.

REGULATE AND CARE FOR YOUR SEWING MACHINE



MEMBER'S BOOK II

Introduction

Now that you have worked on a sewing project yourself, you have begun to learn the importance of good workmanship. For example, seams should be even and pleasing to the eye. There should not be any unsightly puckers to detract from the beauty of the fabric or the styling or fit of the garment. You can achieve such desired results by knowing how to adjust your sewing machine for different fabrics, and the lessons in this unit will teach you how to do so. In addition, included in this unit is instruction in caring for your machine. This is very important because the machine's operating condition can seriously affect the quality of your work. You will learn to regulate your machine in six steps:

Step 1 — Using correct needle and thread

Step 2 — Regulating stitch length

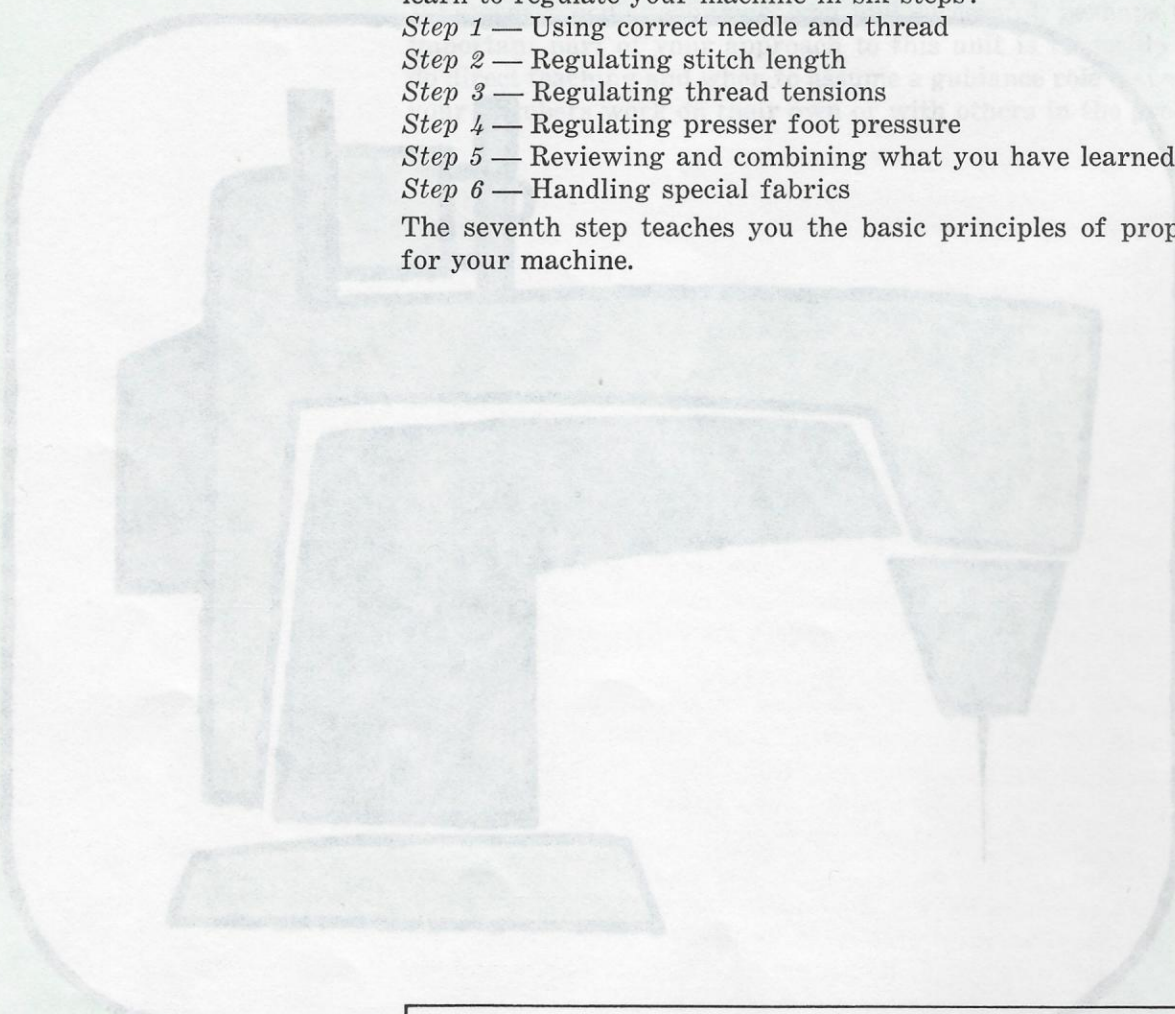
Step 3 — Regulating thread tensions

Step 4 — Regulating presser foot pressure

Step 5 — Reviewing and combining what you have learned

Step 6 — Handling special fabrics

The seventh step teaches you the basic principles of proper care for your machine.



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STEP 1

USING CORRECT NEEDLE AND THREAD

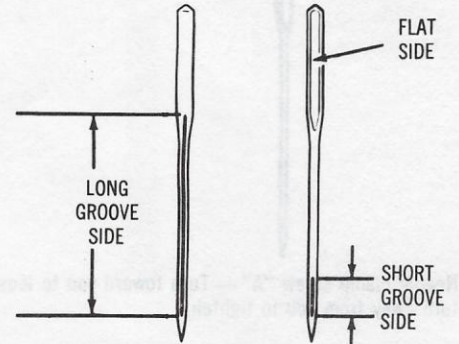
MATERIALS:

1 STRIP YELLOW MUSLIN (3" x 18")

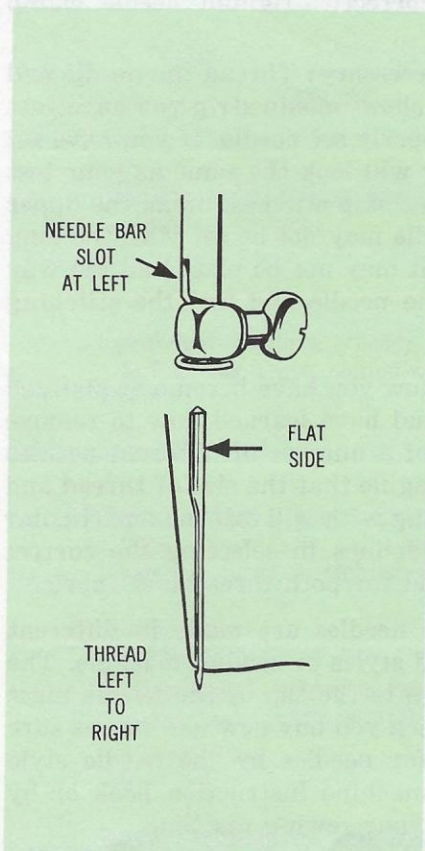
Thread your machine and, using the yellow muslin strip folded to a 9" length, size 50 Mercerized thread, size 14 needle, and a 12 stitch length, stitch just enough to test the stitch. Do not remove the thread from the needle.

a) Know the characteristics of your sewing machine needle:

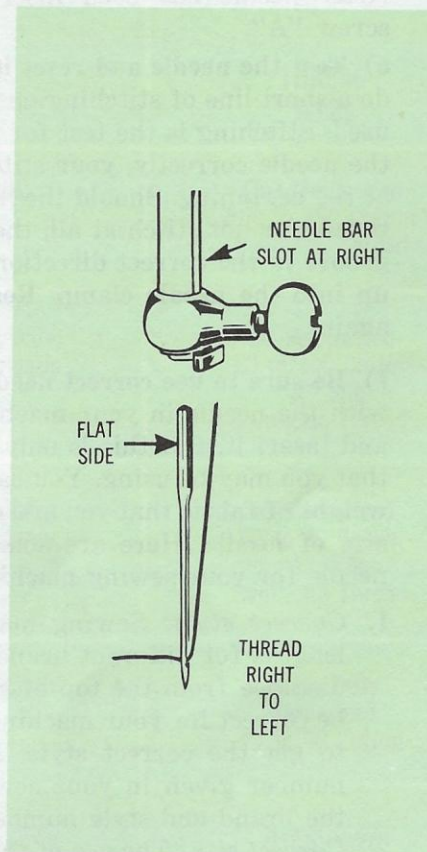
Look at the pictures below and compare them with your needle. While the needle is still in the machine, feel its long groove with your fingernail. Notice that from the last thread guide the thread follows along this groove. *All sewing machines thread from the long groove side of the needle.* Does your machine thread from front to back right to left left to right ?



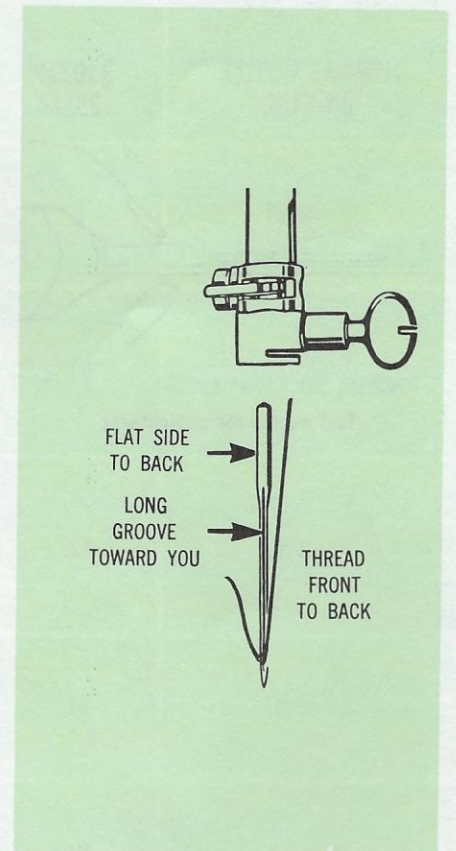
Flat and Grooved Sides of Needle (Enlarged)



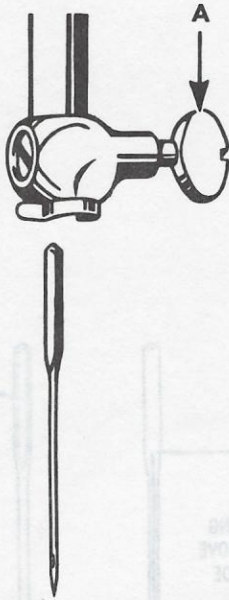
On all machines having the needle bar slot at the left, the flat side of needle must face the right and needle must be threaded from left to right (from long groove side).



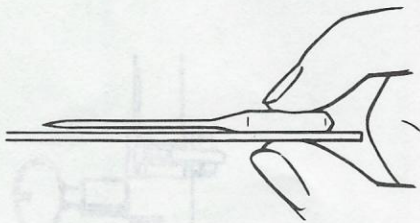
On all machines having the needle bar slot at the right, the flat side of needle must face the left and needle must be threaded from right to left (from long groove side).



On other machines the flat side of the needle must face the back with long groove side toward you. The needle must be threaded from front to back (from long groove side).



Needle clamp screw "A" — Turn toward you to loosen; turn away from you to tighten.



Test needle for straightness

b) Remove the needle: Unthread the needle, loosen the needle clamp (see picture), and remove the needle.

c) Test the needle for straightness (see picture) and feel the point to see if the needle is blunt: A needle that is slightly bent is likely to strike the throat plate and break. A bent needle will also make it difficult for you to guide a seam straight. A blunt needle will damage your fabric.

A straight needle can be determined by placing the flat side of the needle on the slide plate of the machine or any other perfectly flat solid surface. Hold the needle flat against the plate and hold the plate up to the light as shown. A straight needle will show an even amount of light under it and the point will be in line with the shank, while the point of a crooked or bent needle will be closer to or farther from the plate.

d) Replace the needle in needle clamp:

Raise the take-up lever to its highest point by turning the hand wheel over toward you.

Loosen needle clamp screw "A".

Insert needle upward into needle clamp as far as it will go.

The needle must be properly seated.

After needle has been inserted correctly, tighten needle clamp screw "A".

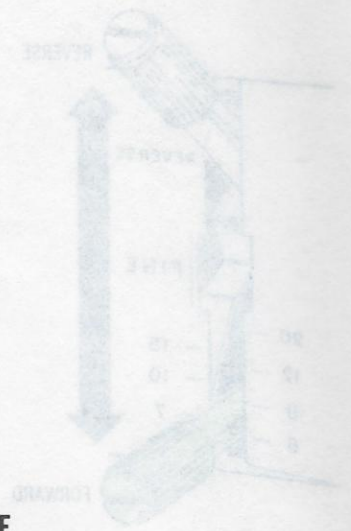
e) Test the needle and reset it if necessary: Thread the needle and do a short line of stitching on the yellow muslin strip you have just used. Stitching is the test for a properly set needle. If you have set the needle correctly, your stitching will look the same as your test at the beginning. Should the machine skip stitches, break the upper thread, or not stitch at all, the needle may not be set with the long groove in the correct direction, or it may not be placed all the way up into the needle clamp. Reset the needle and test the stitching again.

f) Be sure to use correct needle: Now you have become acquainted with the needle in your machine and have learned how to remove and insert it. But this is only one of a number of different needles that you may be using. You can imagine that the size of thread and weight of fabric that you are working with will call for a particular size of needle. Here are some guidelines in selecting the correct needle for your sewing machine and for both thread and fabric.

1. *Correct style:* Sewing machine needles are made in different lengths for different brands and styles of sewing machine. The distance from the top of the eye to the top of the needle must be correct for your machine. When you buy new needles, be sure to get the correct style. Ask for needles by the needle style number given in your sewing machine instruction book or by the brand and style number of your sewing machine.
2. *Correct size:* The eye of the needle must be large enough for the thread to pass through it freely. If the needle eye is too small, the thread will fray and break, and the needle may bend or break. (The needle must be strong enough so that it does not bend when it goes through the fabric, especially when stitching

across seams.) If the needle is too coarse for the fabric, it will snag the fabric or break the weave. It will also make holes in the fabric that are too large for the thread to fill.

The table below will help you to determine the correct size number for your particular sewing project, as well as the correct thread and stitch length to use. (You will learn about stitch length setting next.)

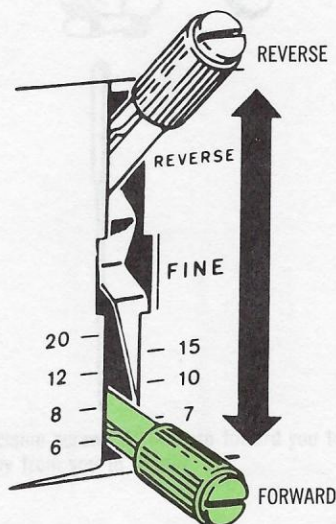


FABRIC, THREAD, NEEDLE, AND STITCH LENGTH TABLE

FABRICS	THREAD SIZES	NEEDLE SIZES	STITCH LENGTH SETTING
Delicate — tulle, chiffon, fine lace, silk, organdy, fine tricot	Fine Mercerized 100 to 150 Cotton Synthetic Thread	9	15 to 20
Lightweight — batiste, organdy, jersey, voile, taffeta, silk, crepe, chiffon velvet, plastic film	50 Mercerized 80 to 100 Cotton "A" Silk Synthetic Thread	11	12 to 15 (8 to 10 for plastic)
Medium Weight — gingham, percale, pique, linen, chintz, faille, satin, fine corduroy, velvet, suitings, stretch fabric	50 Mercerized 60 to 80 Cotton "A" Silk Synthetic Thread	14	12 to 15
Medium Heavy — gabardine, tweed, sailcloth, denim, coatings, drapery fabrics	Heavy Duty Mercerized 40 to 60 Cotton	16	10 to 12
Heavy — overcoatings, dungaree, upholstery fabrics, canvas	Heavy Duty Mercerized 20 to 40 Cotton	18	6 to 10

STEP 2

REGULATING STITCH LENGTH



MATERIALS:

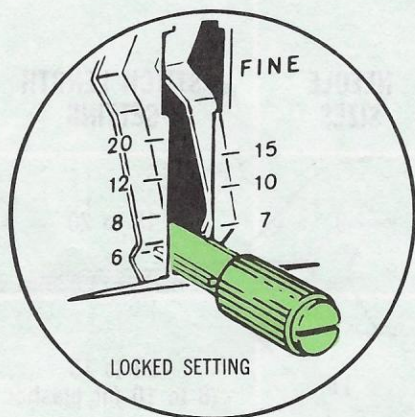
1 STRIP YELLOW MUSLIN (3" x 18")

The Stitch Length Selector performs two jobs: It controls the number of stitches per inch and lets you sew either forward or in reverse. There are, typically, two kinds of stitch length controls: a lever or a thumb screw.

a) Stitch Length Lever: The numbers on either side of the lever represent the number of stitches per inch: *the higher the number, the shorter the stitch*. Generally, shorter stitches are best for light-weight fabric; longer ones for heavy fabric (see table on preceding page for stitch length settings according to fabric).

To set stitch length

Loosen thumb nut by turning to left, position lever for desired stitch length and tighten thumb nut by turning to right.



TO LOOSEN



TO TIGHTEN

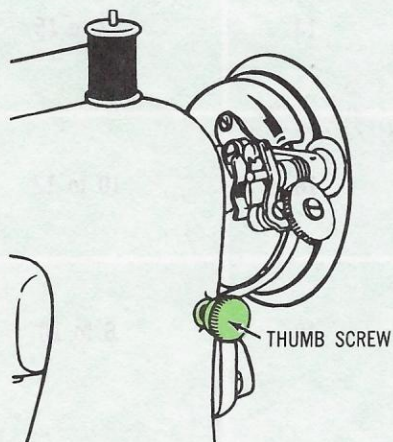
For reverse stitching

Raise lever as far as it will go. Do not loosen the thumb nut to reverse unless you are using the No. 6 setting, in the very bottom position.

b) Stitch Length Thumb Screw: The stitch length is changed by turning the thumb screw to the right to lengthen the stitch and to the left to shorten it. On this control there are no numbers to guide you. Therefore, to know the stitch length, you will have to count the number of stitches in one inch of stitching. (If your sewing machine is different from the two illustrated, refer to your sewing machine instruction book or ask your leader or your mother for advice.)

c) Now, practice setting different stitch lengths (use an 18" yellow muslin strip folded to a 9" length) :

1. Set stitch length for 12 stitches to the inch and stitch a short distance through a double thickness of fabric. Then set stitch length for 15 and stitch again. These are the stitch lengths you will use the most.
2. Set stitch length for 6 stitches per inch and stitch again. This is usually the longest stitch a home sewing machine will make and it is used for sewing heavy fabrics, plastic, and for machine basting.
3. Set stitch length for 20 stitches per inch and stitch. This length is used for reinforcement at corners and slashes, and for stitching delicate fabrics.



STEP 3

REGULATING THREAD TENSIONS

MATERIALS:

5 STRIPS MUSLIN (3" x 18")

3 STRIPS MUSLIN (4" x 8")

1 STRIP RESIN-FINISHED FABRIC (4" x 8")

a) What is tension? To understand tension, you should first know what a sewing machine stitch really looks like and how it is formed.

1. Thread your machine with two different colors of size 50 Mercerized thread. Use one color for the needle thread and the second color in the bobbin. Use a size 14 needle and a 10 stitch length.
2. Stitch through a single sheet of note paper or newspaper. Remove the "fabric" from the machine and cut thread ends.
3. Examine the stitching, noting the needle thread on top (the color of the thread on your spool) and the bobbin thread on the underside (your second color).
4. Tear the stitch out of the paper by pulling the thread ends. Now examine the intertwined threads. You will see that, without the paper to hold the stitches apart, the two threads are merely wrapped around each other and there are no knots. The stitch-forming parts have carried the needle thread around the bobbin thread.

To see how tension affects the interlocking of these threads:

■ Stitch diagonally on two layers of soft muslin using a 4" x 8" muslin strip folded to 4" x 4".

■ Examine the stitch from the top and from the underside. If thread tensions are in correct balance, you will see only a hint of the bobbin thread separating the stitches on the top and an equal amount of the needle thread separating the stitches on the underside. Compare this stitching with that shown in the stitch diagrams at the right and rate your tension adjustment. *Both tensions correct* *Loose upper tension* *Tight upper tension*

■ Make the break test: hold the stitch tightly at each end between the thumb and finger (see picture) and pull with an even and gradual force until one thread breaks. The broken thread is always the one with the tighter tension. When the tensions are balanced, both threads break and require more pull to break.

You can see now that tension is necessary to control the threads that interlock to form the sewing machine stitch. A perfectly locked stitch, then, is one in which the two threads are drawn into the fabric to the same degree. To do this, there are two tensions, upper and lower. The upper tension controls the needle thread while the lower tension controls the thread from the bobbin.

STITCH DIAGRAMS



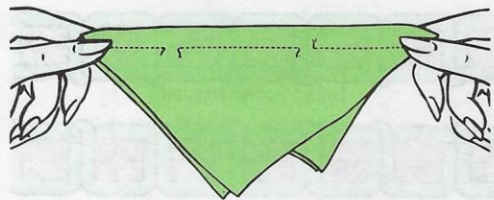
Both tensions correct



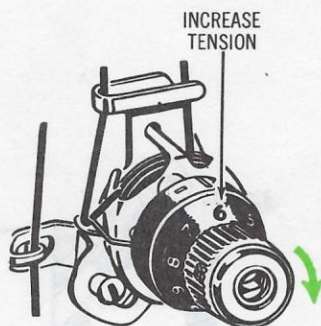
Loose upper tension



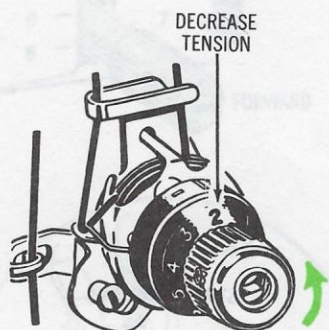
Tight upper tension



BREAK TEST



To increase tension, turn the thumb nut to the right (clockwise) until required tension is obtained. The higher the number, the higher the tension.



To decrease tension, turn the thumb nut to the left (counter-clockwise) until the required tension is obtained. The lower the number, the lower the tension.

STITCH DIAGRAMS



Both tensions correct



Loose upper tension



Tight upper tension

b) **To Balance Thread Tensions:** Usually, you will find that you can bring the tensions into proper balance simply by regulating the needle thread tension. The instructions immediately following tell you how to do this.

1. To Regulate Needle Thread Tension

The tension on the needle thread can be tested only when the presser foot is down. The upper or needle thread tension is exerted by the closely fitted discs between which the upper thread passes. The numerals "0 to 9" on the dial indicate degrees of tension.

■ Now look again at the break test you made, what does it show? Remember, if only the needle thread broke, the upper tension is tighter than the bobbin tension. To balance the stitch, loosen the upper tension not more than one point at first. If only the bobbin thread broke, the upper tension is looser than the bobbin tension. To balance the stitch, tighten the upper tension. Continue to change the upper tension setting and make the break test until both threads break. You have then balanced the needle thread tension with the bobbin thread tension.

■ Shorten the stitch length to 12, and then 15, making straight-grain stitching tests for appearance (using 3" x 18" muslin strip folded to a 9" length) and diagonal stitching tests for breaking (using a 4" x 8" muslin strip folded to 4" x 4"). (Straight-grain stitching means that you follow the lengthwise thread of the fabric.) If tensions are properly set for a 10 stitch length as in step a) 1, they should be correct for both 12 and 15 stitch lengths. Evaluate for pucker a straight-grain seam made with the 12 stitch length. If there is no pucker, make no further tension changes and proceed to adjust tension to fabric weight and thread size (see page II-MB-5). If the seam puckers, it is possible that both the needle thread tension and the bobbin thread tension are too tight and that both tensions should be loosened slightly.

Occasionally, it will be necessary to regulate the bobbin thread tension. Thus, if you do not have a perfectly locked stitch after completing the instructions under "To Regulate Needle Thread Tension," you should go on to the sections entitled "To Regulate Bobbin Thread Tension" and "To Know the Normal Bobbin Tension for Your Machine." Then you will be able to set the bobbin tension at a constant level so that in the future you will only need to adjust the needle thread tension.

2. To Regulate Bobbin Thread Tension

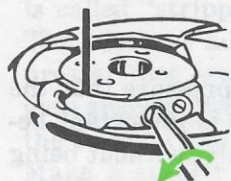
The tension on the bobbin thread is regulated by the small screw on the bobbin case or shuttle (see pictures). A slight turn on the bobbin tension screw will make a big tension change. Make bobbin tension changes the same way you would move one hand of a clock from 1 to 2 o'clock.

Some models of new sewing machines (those whose bobbins are filled while in the machine) do not require bobbin tension adjustment. On such models, the bobbin thread is not drawn under a bobbin tension spring; instead, tension is placed on the bobbin itself.

To regulate tension on different types of bobbin



To increase tension, turn screw to right



To decrease tension, turn screw to left

3. *To Know the Normal Bobbin Tension for Your Machine*

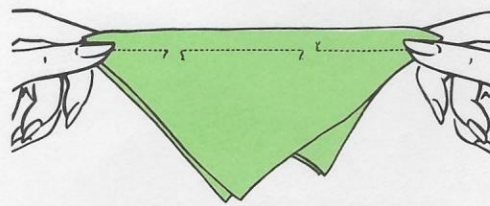
The bobbin tension level that will give you the most flexibility varies from machine to machine. Here is a good guideline to follow: normal bobbin tension is the one at which your machine will stitch at a 12 stitch length, with size 50 Mercerized thread, on two layers of muslin without puckers, and without thread loops or breaks on the underside. If you are not achieving this effect, then you will have to adjust your bobbin tension. Loosen the bobbin tension slightly and make the break test. Loosen the needle thread tension to match the bobbin tension and this time test by stitching fast on an 18" strip of muslin folded lengthwise. If you have too little tension, the needle thread will snarl in the bobbin area when you stitch fast. To remedy this, tighten the bobbin thread tension a little, then the needle thread tension, and test again. Do this until the trouble disappears. When you have your machine set at its normal bobbin tension, write down the upper tension number for future reference. Remember, each machine will have its own reading.

c) **To Adjust Tension to Fabric:** Provided your sewing machine is set for normal bobbin tension, you should achieve good stitching on a wide range of fabrics, and with different threads, with only needle thread tension changes.

1. You will need to increase needle thread tension when working with heavy or tightly woven fabrics or resin-finished fabrics, as well as with heavy thread.
2. You will need to decrease needle thread tension when working with lightweight fabrics or synthetic threads.

Test stitching on a resin-finished fabric (4" x 8" folded to 4" x 4") with size 50 Mercerized thread. Then test stitching with different sizes and kinds of threads and needles on two strips of 3" x 18" muslin to prove this to yourself. (Remember to use the same kind and size of thread in both the needle and bobbin.)

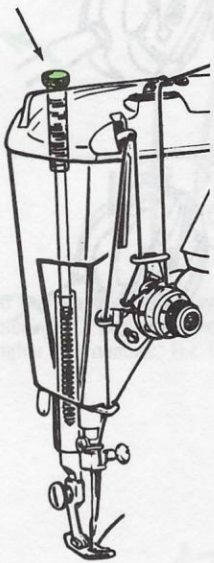
Before going on to Step 4, review what you have learned about tension. Do you know how to do all these things? *Increase and decrease needle thread tension* *Make the "break test"* *If necessary, increase and decrease bobbin thread tension* *Regulate needle thread tension for different threads and fabrics* .



BREAK TEST

STEP 4

REGULATING PRESSER FOOT PRESSURE



THUMB SCREW



To increase pressure, turn thumb screw to the right (clockwise).



To decrease pressure, turn thumb screw to the left (counter-clockwise).

MATERIALS:

- 2 STRIPS YELLOW MUSLIN (4" x 12")
- 2 STRIPS CRISP SHEER (4" x 12")
- 2 STRIPS SOFT VOILE (4" x 12")
- 2 STRIPS SPONGY WOOL (4" x 12")
- 2 STRIPS HEAVY DENIM

The Pressure Dial or Thumb Screw regulates the pressure that the presser foot exerts on the fabric. Correct pressure is important because it means that the fabric feeds smoothly, evenly, without being marred. Generally, heavy fabric requires a high number setting; lightweight fabric, a low number setting. But fabric texture must also be considered. Soft fabrics, for example, require less pressure than crisp fabrics in order to feed smoothly. If the fabric is spongy or has a pile (velvet, for example), use a fairly low number setting to prevent crushing.

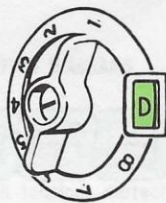
PRESSURE DIAL



INCREASE

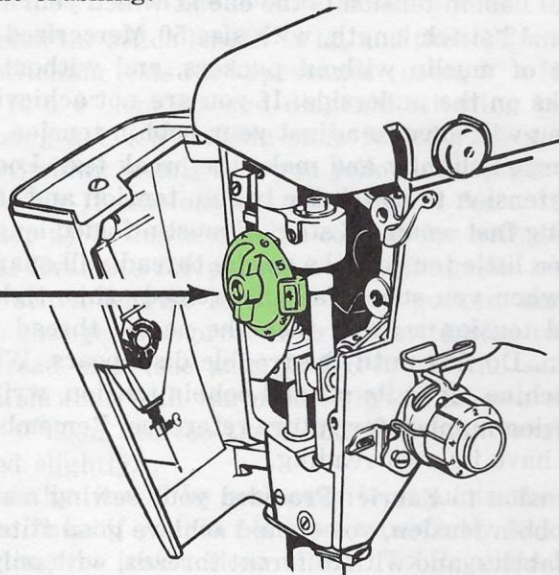


DECREASE



DARNING

Lower the presser foot before turning dial. To increase pressure, turn dial to higher number. To decrease pressure, turn dial to lower number. For darning, turn dial to D, which releases pressure and permits darning without an embroidery hoop.



a) Now test for correct pressure adjustment on different fabric weights. Remove the threads from both the needle and bobbin. (Stitching without thread will show you more clearly the effects of presser foot pressure.)

1. Set the stitch length at 12 and use a size 14 needle. On two layers of muslin (12" long), stitch with a very light pressure setting (pressure screw up, or dial adjustment at a low number). Repeat this test, increasing the pressure until you reach a good pressure setting where the fabric moves smoothly, the seam edges and ends are fed evenly, and no feed marks show on the underside of the fabric. This pressure setting is a good one for medium-weight fabrics.
2. Make a similar test on two sheer fabrics, but use a size 11 needle and a 15 stitch length. A crisp sheer fabric will require slightly less pressure than muslin. A soft sheer fabric will require even less pressure than a crisp sheer.

3. Make a similar test on a heavy, dense fabric, such as denim, but use a size 16 needle and a 10 stitch length. Make folds to simulate crossing a seam. The best pressure setting will fall within the heavy range. If the pressure is too light when stitching heavy, dense fabrics, the presser foot will be lifted slightly by the force of the needle as it is being withdrawn from the fabric. This results in a shorter and poorly set stitch. The presser foot holds down the fabric while the needle is being withdrawn. This is called "stripping the needle."

The pressure adjustment enables you to increase the force the presser foot exerts. When you lighten the pressure, you do not gain space between the presser foot and feed; instead you reduce the force of the presser foot on the fabric.

4. Make a similar test with a soft, bulky wool, using a size 14 needle and a 10 stitch length. Start with the same pressure you used for the heavy, dense fabric. You will see that the top layer is stretched toward you and the ends of the fabric do not come out even. Lighten the pressure until the two ends come out nearly even. Hand baste the two pieces together along the seam and test again. Hand basting will improve the seaming of fabrics that tend to feed unevenly.

b) Check yourself on presser foot pressure:

1. Be sure you know how to increase or decrease pressure.
2. Know the basic rules of pressure adjustment for different fabrics:

Soft, sheer fabrics require light pressure

Crisp, sheer fabrics require a little more pressure than soft ones

Heavy, dense fabrics require heavy pressure

Spongy, thick fabrics require less pressure than heavy, dense ones

3. Remember that hand basting will help to make seam layers come out even at seam ends.
4. Be sure you know how to test any fabric for the best pressure setting.

STEP 5

REVIEWING & COMBINING WHAT YOU HAVE LEARNED

MATERIALS:

SAME FABRICS AS STEP 4

THREADS OF DIFFERENT KINDS AND SIZES

NEEDLE SIZES TO ACCOMMODATE THREAD KINDS AND SIZES

So far you have learned to select the correct needle and thread and regulate your sewing machine for stitch length, tension, and pressure. Now would be a good time to put all these techniques to work at the same time. Thread your sewing machine (use the same color and size of thread for both the needle and the bobbin). Stitch on the five kinds of fabrics you have just used for testing pressure, changing the needles and threads and making all the required adjustments for each sample. Practice as much as you can. Show your fellow members your samples and compare your work with theirs. How did you do? What could you have done better?

STEP 6

HANDLING SPECIAL FABRICS

MATERIALS:

- 2 STRIPS CORDUROY (4" x 12")
- 2 STRIPS DOUBLE KNIT (4" x 12")
- 2 STRIPS STRETCH FABRIC (4" x 12")

In addition to adjusting your sewing machine for different kinds of fabrics, you must also be aware of some special techniques in handling certain materials. Here are some hints that can help you with some of the more frequently used fabrics.

1. *Corduroy, velveteen, velvet, and napped wool.* Take your 2 strips of corduroy and feel the pile with your finger. Corduroy, like velveteen, velvet, and napped wool, should be stitched in the direction in which the nap or pile lies. Make certain both strips go in the same direction and test-stitch a project of corduroy. Make use of what you have learned about pressure.
2. *Filmy sheers, knits, tricots, and stretch fabrics.* Most fabrics need to be guided in front of the presser foot only, as shown in the first picture. Some fabrics, however, require support while being stitched, as shown in the second picture.

■ For filmy sheers, knits, tricot, etc., apply *gentle tension* by holding seam in front and back of the presser foot.

■ For stretch fabrics, apply *firm tension* front and back when stitching in the same direction as the stretch. For seams not on the stretch direction stitch in conventional manner, guiding fabric in front of presser foot.

Sheer fabrics and tricot should be stitched with a fine needle and thread. Seams in knit and stretch fabrics are more durable when they are sewn with synthetic threads such as Nymo, Nylex or Taslan. Stitch seams in your samples of knit or stretch fabric using proper thread and needle. If yours is a zig-zag machine, use the straight stitch presser foot and the straight stitch throat plate when making seams. These fittings give better support to the fabric because they hold it very close to the needle. This support prevents skipped stitches.

After you have completed Steps 1 through 6, you will know how to regulate your sewing machine for many fabrics. Remember that your fabric always determines your choice of thread, needle size, stitch length, thread tension setting, presser foot pressure, and how to guide or support the fabric.

STEP 7

CARING FOR YOUR SEWING MACHINE

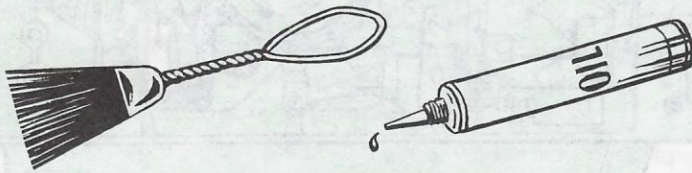
Your sewing machine is a fine yet sturdy precision instrument, and it will serve you perfectly for many years if you take a few simple steps to keep it in good working condition.

The tools you will need to do this properly are:

Soft cleaning cloth

Lint brush (this usually comes with the machine)

Sewing machine oil and lubricant (Always use oil and lubricant distributed by your sewing machine manufacturer. Other household oils are too heavy for a sewing machine and will leave a wax-like deposit on the moving parts.)



How often you will need to clean, oil, and lubricate the machine will depend on how much 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 your 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. Refer to the instruction book accompanying your machine for specific care information.

a) Every week or so:

1. Remove lint and fluff from exposed parts. You will be able to see lint and fluff gathering, and it is recommended that you remove them as they accumulate. Remove the bobbin and needle thread from the machine. With a soft cloth, clean —

Tension discs

Take-up lever and thread guides

Bobbin case

Machine surface

If necessary, dampen the cloth to clean the machine surface, but *do not use detergents*.

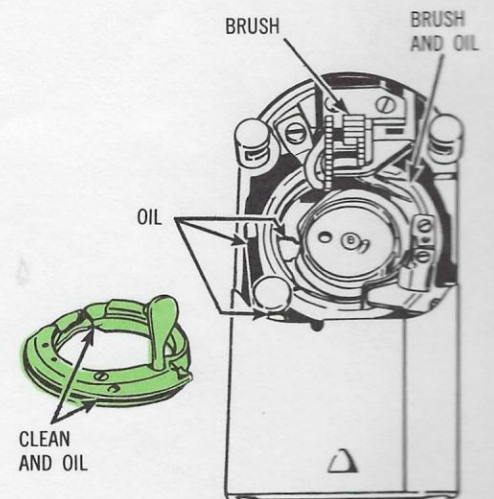
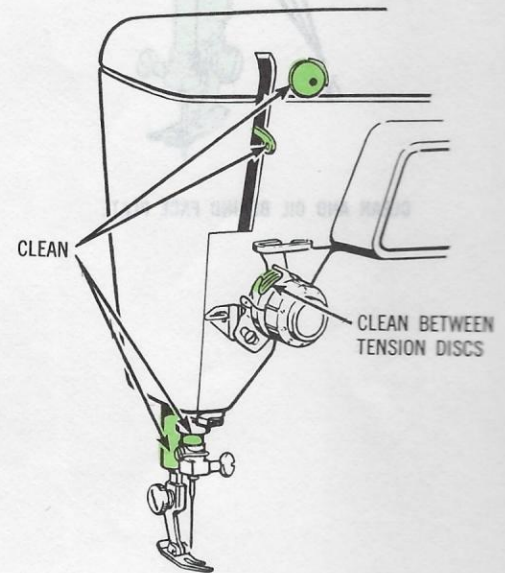
2. With a lint brush, clean —

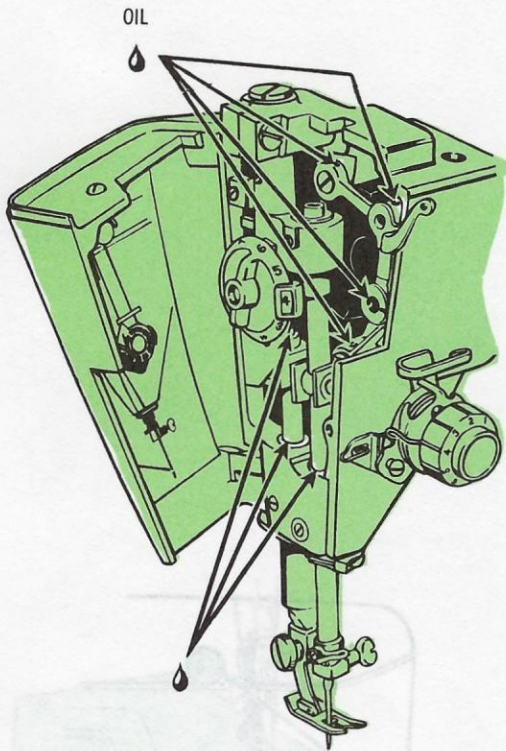
Feed dog

Hook or thread-handling areas under the throat plate and slide plate. If your machine is one with a removable bobbin case, do this with bobbin case removed (see illustration).

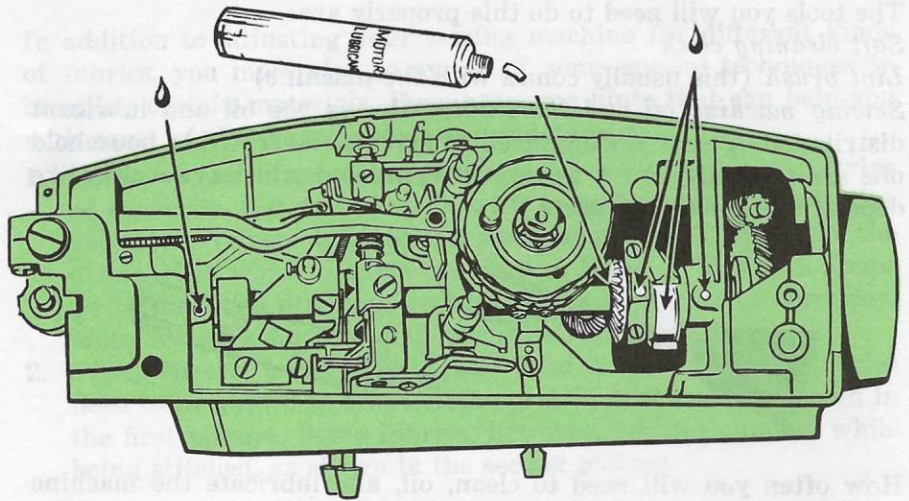
3. After each cleaning, apply a drop of *sewing machine oil* to motion areas under the throat plate and slide plate. Please refer to your sewing machine instruction book for specific oiling points.

4. After oiling, always sew a few lines of stitching on a scrap of material to remove excess oil.





CLEAN AND OIL BEHIND FACE PLATE

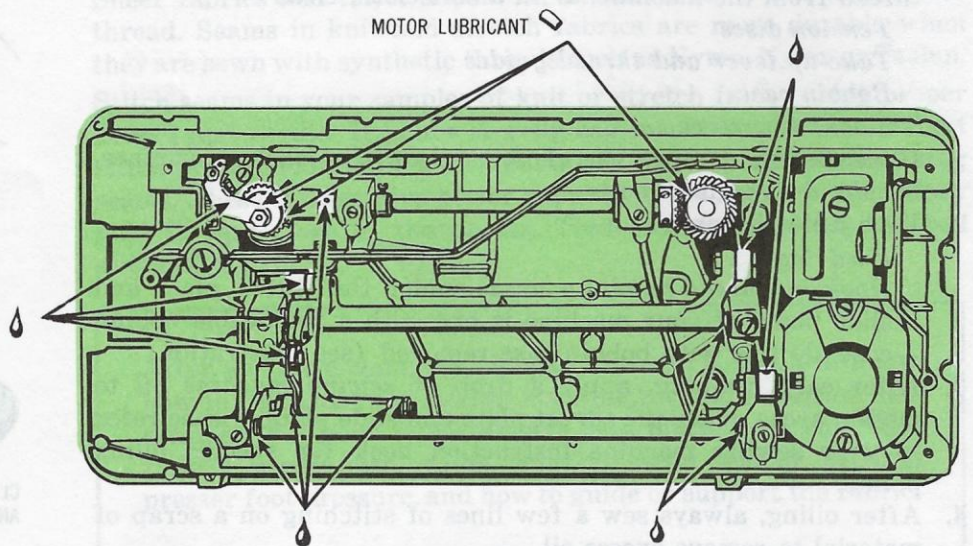


OIL AND LUBRICATE TOP OF MACHINE

b) Every few months:

1. *Clean and oil the area behind the face plate.* Some face plates swing open, others lift off after loosening or removing the screw that secures them. Your sewing machine instruction book will tell you how to open the face plate. The general rule is to remove lint first, and then apply a drop of sewing machine oil to each point of motion. Turn the hand wheel and you will see quickly where metal moves against metal. These points require oil.

2. *Oil and lubricate the top of the machine.* Some machines have oil holes in the top of the machine, others have a top cover that is removed to reveal the oiling points. See your sewing machine book for instructions on how to remove the top cover and what parts to oil or lubricate. Lubricant is more often recommended for gears, or points of greatest contact of metal on metal, because it is heavier and longer lasting than oil. On the other hand, lubricant can be too heavy for other points. Therefore, be sure to follow the manufacturer's instructions exactly.



OIL AND LUBRICATE BOTTOM OF MACHINE

3. *Oil and lubricate the bottom of the machine.* Disconnect the plug from the electrical outlet and tilt the machine back. Some machines have a bottom cover that must be removed to expose the mechanism. Refer to your sewing machine instruction book for specific oiling and lubricating points. When you have finished applying oil and lubricant, replace bottom cover and bring machine to an upright position.
4. *After oiling, always run the machine with a scrap of fabric under the presser foot to distribute the oil and lubricant to all moving areas and to remove any excess oil.* Wipe with a clean cloth, especially in the areas shown in the illustration. To remove any remaining excess oil from the thread path, thread the machine and stitch on a scrap of fabric until the thread is clean.

c) If the machine is to be stored:

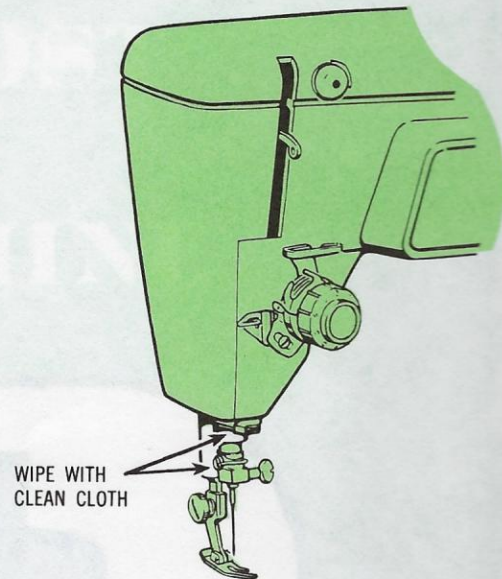
Clean all exposed parts and areas behind the face plate. Swab all exposed metal parts and parts behind the face plate with a lint brush saturated with sewing machine oil. In addition, do all the cleaning and oiling described under 2. above. These precautions will protect metal parts from rust. Rust damage is more likely to occur when the machine is stored in a closet where air is not circulating, than when the machine is kept open.

It is wise to keep a small piece of fabric under the presser foot with the needle down through it when the machine is not in use for a long period. The fabric protects the foot and feed from damage. When the presser foot is down, the pressure spring is relaxed and its life is prolonged. Also, excess oil will be carried into the fabric by the needle rather than accumulating on the needle.

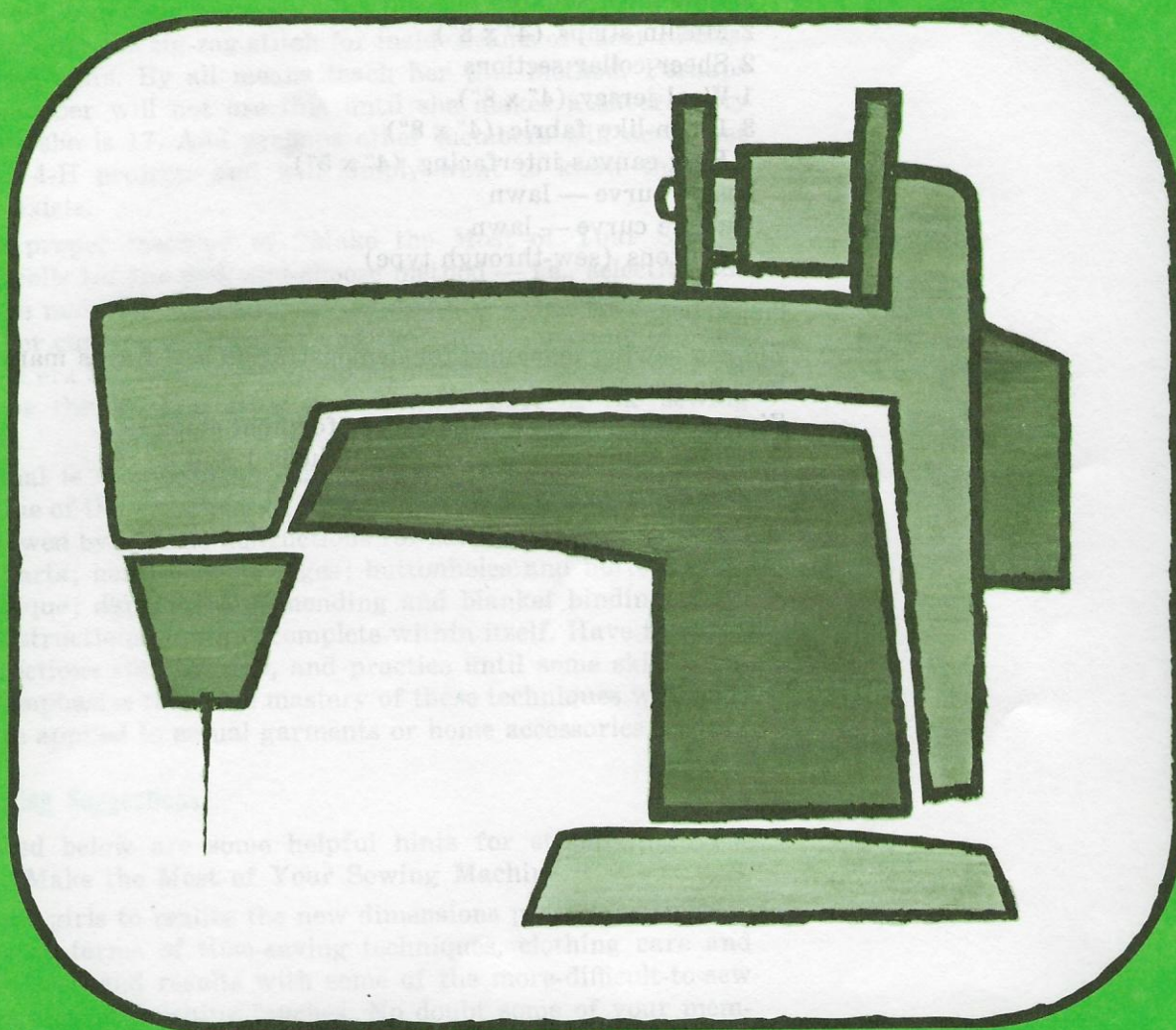
d) A word about motors:

Many new sewing machines are equipped with sealed motors and require no lubrication. Some sewing machines have enclosed motors with grease cups or tubes that require motor lubricant. Grease cups should be filled once a year and tubes twice a year. Few sewing machine motors (only the open type) will tolerate oil. Follow the rule of *no oil on the motor* unless the instruction book specifically states that it should be oiled. Always follow the sewing machine instruction book for motor care.

Your sewing machine will give you the greatest service and pleasure if it is given the simple, periodic attention described. Good care will make servicing and heavy cleaning jobs unnecessary for a good many years. However, should your machine not function properly after you have carefully regulated and cleaned and oiled it, do not hesitate to request service from a reliable sewing center or dealer.



MAKE THE MOST OF YOUR SEWING MACHINE



LEADER'S GUIDE IIII

Materials:

Size 50 Mercerized thread
#5 Bias binding
Blanket binding
Blanket-like fabric (8" square)
Nylon tricot (8" x 10")
Elastic, 1/2" width
Woven-edge seam binding
Cable cord, #9
Fabric Package (you can assemble these fabrics yourself)
8 Blue lawn squares
2 Muslin strips (4" x 8")
2 Sheer collar sections
1 Wool jersey (4" x 8")
3 Linen-like fabric (4" x 8")
1 Hair canvas interfacing (4" x 5")
Inside curve — lawn
Outside curve — lawn
2 Buttons (sew-through type)

Preparation:

Zig-zag sewing machines for demonstration and for as many members as possible.

Zipper insertion completed except for final step.

Appliqué samples prepared for Methods 1 and 2.

This educational material has been prepared for 4-H Club use by representatives of the Federal Extension Service, National 4-H Service Committee and The Singer Company.

Special recognition is made of the contributions to this manual by:

Alice Linn, Federal Extension Service
Mrs. Fern Kelley, Federal Extension Service
Eleanor Wilson, Federal Extension Service
Mary Ann Dean, National 4-H Service Committee
Lois Korslund, formerly with National 4-H Service Committee
Jessie Hutton, The Singer Company

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Objective of this Unit

“Make the Most of Your Sewing Machine” teaches the use of the zig-zag sewing machine and selected attachments, and basic finishes. Practical uses of the zig-zag machine and principles applicable to all machines are covered, but for specific operating details, the 4-H'er must use the sewing machine instruction book provided by the manufacturer of her machine.

When is the 4-H member ready for this information? Usually you might think of the 14-year-old. But a girl may be ready for the information on the zipper and buttonholes much earlier. Or perhaps a 12-year-old is making a sheer collar for a dress. Then you would want to consider the zig-zag stitch for inside seams of sheer collars, facings, and cuffs. By all means teach her this method. Perhaps another member will not use this until she makes a sheer party dress when she is 17. And perhaps other members will never use it in their 4-H projects and will simply want to know that the technique exists.

Therefore proper teaching of “Make the Most of Your Sewing Machine” calls for the pick-and-choose method — i.e., selecting the appropriate material according to the age and experience of each member, her current 4-H project and the kind of machine she has. Not all 4-H'ers learning to sew need all parts of this unit, and yet this can be the most exciting and creative part of the sewing experience.

This manual is set up in an easy-to-follow fashion, with a brief basic outline of the principles of zig-zag stitching and some practice steps, followed by specific instructions for several techniques: seam finishes; darts; hems; bound edges; buttonholes and buttons; zippers; applique; darning; and mending and blanket binding. Each of these instructional units is complete within itself. Have the girls follow directions step by step, and practice until some skill is developed. Emphasize that true mastery of these techniques will come as they are applied to actual garments or home accessories.

Some Teaching Suggestions

Summarized below are some helpful hints for stimulating your group to “Make the Most of Your Sewing Machine.”

1. Help the girls to realize the new dimensions possible with their sewing in terms of time-saving techniques, clothing care and repair, good end results with some of the more-difficult-to-sew fabrics and on finishing touches. No doubt some of your members will think of the application of the zig-zag machine only for its decorative effects. This can be important, but by no means is it most important. Practical versatility in sewing is exciting. In fact, this capacity accounts for the increasing ownership of multi-purpose or zig-zag sewing machines.
2. Help the 4-H member to develop her own designs, applying what she has learned through studying and practicing principles of color, design, and texture. Creative stitchery can be unusually challenging, but you will need to provide special guidance. Encourage simplicity and good taste.

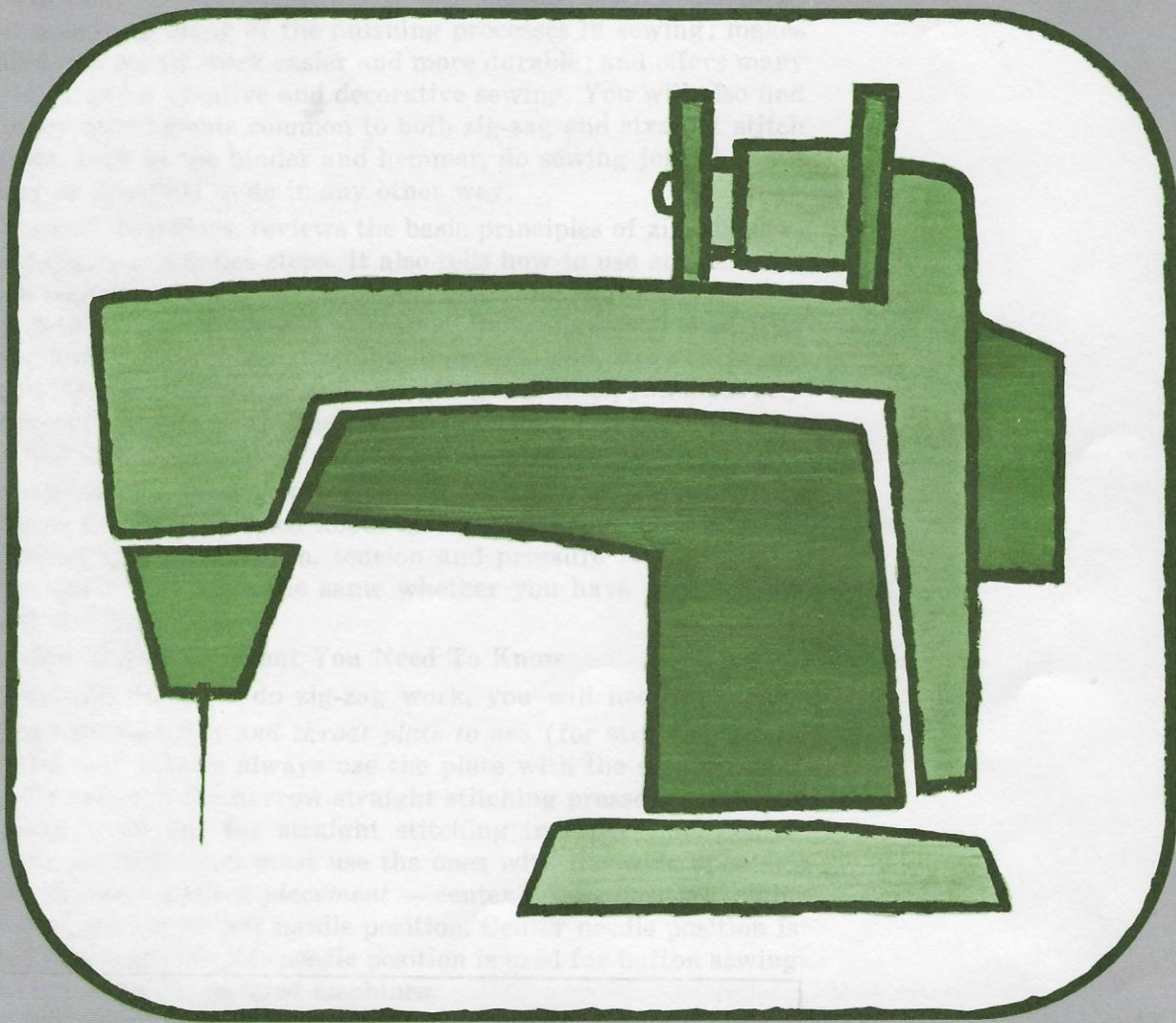
3. Stimulate experimentation. As the member progresses, the product should become more original, more complex, and more satisfying. She should begin to see new uses for what she has learned on clothing or home accessories and furnishings.

For some background, the girls may want to read some good references on art and design obtainable from the local library, or seek out ideas in department stores, museums, and art galleries. Possibly a girl's inspiration will come from designs in nature or in architecture. Or perhaps she will discover ways of applying historical techniques and designs with the modern sewing machine. Don't hesitate to ask appropriate people in the community to help with this part of the work. For example, art and home economics teachers, librarians, craftsmen, Extension agents, museum staffs. You may find others who are qualified once you make your interest known.

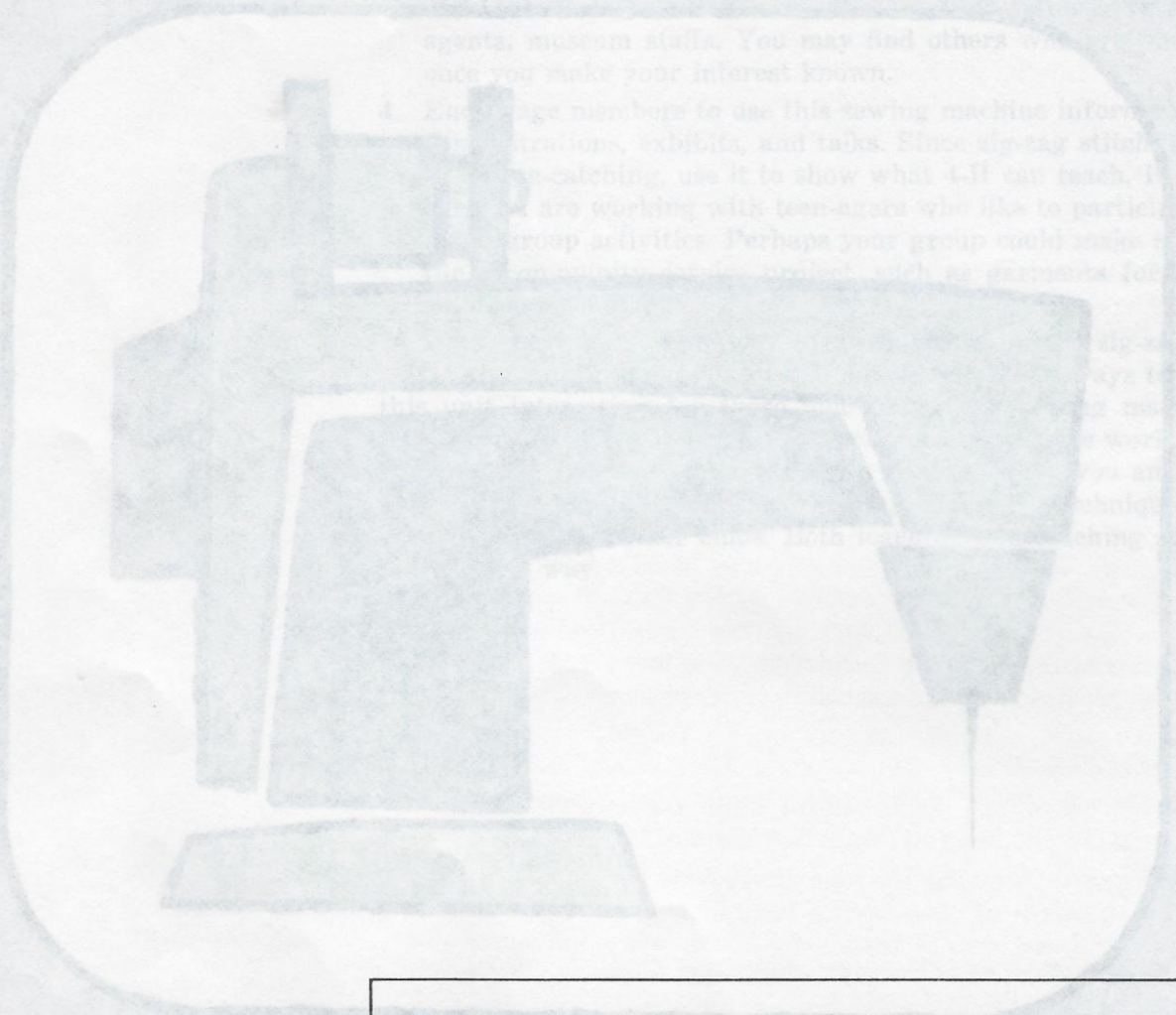
4. Encourage members to use this sewing machine information in demonstrations, exhibits, and talks. Since zig-zag stitching can be so eye-catching, use it to show what 4-H can teach. Remember, you are working with teen-agers who like to participate in many group activities. Perhaps your group could make articles for a community service project, such as garments for needy children or shut-ins.

Once you have gained your group's confidence on the zig-zag machine, you will probably discover a multitude of new ways to make this unit interesting for those who have such sewing machines. Again, remember to note teaching techniques that have worked for your county Extension agent or other leaders. When you and your girls do something unusually interesting, share the technique with other leaders and other clubs. Both learning and teaching are enjoyable this way.

MAKE THE MOST OF YOUR SEWING MACHINE



MEMBER'S BOOK IIII



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Mrs. Fern Kelley, Federal Extension Service
Eleanor Wilson, Federal Extension Service
Mary Ann Dean, National 4-H Service Committee
Lois Korslund, formerly with National 4-H Service Committee
Jessie Hutton, The Singer Company

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Introduction

This manual, "Make the Most of Your Sewing Machine," will suggest to you some of the creative as well as practical aspects of modern sewing. Once you have become acquainted with the principles of using zig-zag sewing machines and the attachments for both zig-zag and straight stitch machines, there is no end to the ways in which you can apply them. Combine these equipment advantages with the innovations in fabrics, and the world of sewing becomes an exciting challenge to the creative person and a wonderful timesaver to the practical user.

You will discover the versatility of the zig-zag sewing machine: how it speeds up many of the finishing processes in sewing; makes mending and repair work easier and more durable; and offers many opportunities for creative and decorative sewing. You will also find that many attachments common to both zig-zag and straight stitch machines, such as the binder and hemmer, do sewing jobs that are not easy or practical to do in any other way.

This manual, therefore, reviews the basic principles of zig-zag sewing and outlines practice steps. It also tells how to use attachments on both zig-zag and straight stitch machines and shows some interesting applications of zig-zag stitching. Remember, however, that this manual covers zig-zag stitching in general and, since there are many differences in controls among zig-zag machines, you must rely for operating details on the instruction book that accompanies your own machine.

When you use a zig-zag machine for straight stitching, all of the things you have learned about straight stitch sewing will apply. Threading, stitch length, tension and pressure regulation for straight stitch work are the same whether you have a zig-zag or straight stitch machine.

a) Zig-Zag Stitching: What You Need To Know

When getting ready to do zig-zag work, you will need to know:

1. *Which presser foot and throat plate to use* (for straight stitching on soft fabrics always use the plate with the small, round needle hole and the narrow straight stitching presser foot). For zig-zag work (or for straight stitching in other than center needle position) you must use the ones with the wide opening.
2. *How to control stitch placement* — center needle position, right needle position, or left needle position. Center needle position is used generally, but left needle position is used for button sewing and buttonholing on most machines.
3. *How to select stitch width* — this control may be a lever or a dial and is usually numbered from 1 to 5; 1 for straight stitching and 5 for the widest stitch.
4. *How to change from the plain zig-zag stitch to other zig-zag stitch patterns.*
5. *What stitch length to use* — zig-zag stitching differs from straight stitching in length requirements, and very short stitch lengths are used for solid zig-zag work.
6. *What the needle thread tension requirements are* — for solid zig-zag stitching, the needle thread tension is set much lower than for straight stitching.

b) Practice Steps

Thread the sewing machine and use the general purpose presser foot and general purpose throat plate (wide needle hole). Remember that the needle must be out of the fabric while making stitch width or stitch placement settings. Use a 9" square of crisp lawn, folded.

1. Set your needle for center needle position. Do a line of straight stitching for about 2"; then change to right needle position and continue to stitch for about another 2"; change to left needle position and finish the line. Remove fabric and cut thread ends. Return the needle to center position. Examine your stitching so as to get a clear idea of the three different stitch placements. You will realize that center needle position is best for most straight stitching.
2. Set your machine for zig-zag, stitch length at 20, and stitch width at 2 or 3. Make a line of zig-zag stitching for about 2", then continue at a setting of 4 and finish with a setting of 5. This will show you how easy it is to change the stitch width. (You can also set stitch widths half-way between any two numbers.)
3. Combine Steps 1 and 2 — using a medium (3) stitch width setting, do some zig-zag stitching in center, left, and right needle positions. Note the differing relation of the needle in each case to the opening in the presser foot.
4. Keep your stitch width at 3 and return your needle to center position. Do a line of stitching, gradually shortening the stitch length as you stitch. You will be able to make the stitches very close together. This is called *satin stitching*.
5. Using a wide stitch width (5), gradually loosen the needle thread tension, but do not set below 1. You will see how this wide satin stitch flattens out when a lighter needle thread tension is used.
6. Make several rows of additional stitch patterns at a 5 stitch width setting. Refer to your sewing machine instruction book to learn how to change patterns.

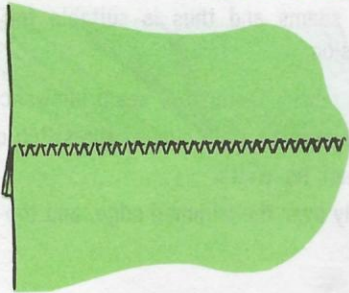
c) Applications Of Zig-Zag Sewing and Use Of Attachments

The following pages suggest many practical uses for zig-zag sewing and for the most frequently used attachments. It is a good idea to practice each of these projects. You will see how much the machine really does for you and how easy each operation is. Many other uses for zig-zag sewing and for other attachments are suggested in your sewing machine instruction book. Follow the methods in the instruction book and practice until they become easy.

Now you can really make the most of your sewing machine!

SEAMS

Lingerie Seam



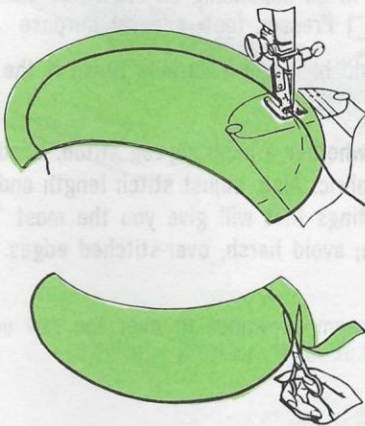
Lingerie Seams

Pattern selectors: plain zig-zag Stitch width selector: $2\frac{1}{2}$ Stitch length: 15 to 20 depending on fabric Throat plate: general purpose Presser foot: general purpose

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

1. Straight stitch the seam on wrong side.
2. Press both seam allowances in the same direction.
3. From the right side, top-stitch with zig-zag setting, at width $2\frac{1}{2}$, letting the needle alternately enter the seam line and seam thickness.

Inside Seam of Sheer Collar



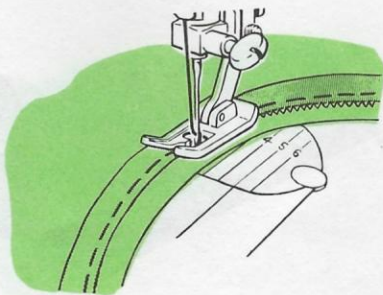
Inside Seams of Sheer Collars, Facings, and Cuffs

Pattern selectors: plain zig-zag, left needle position Stitch width selector: 2 Stitch length: FINE (above 20) Throat plate: general purpose Presser foot: special purpose

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, see "Corded Buttonholes," page III-MB-13, for threading instructions.

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

Curved Seam with Tape Stay



Seams in Knit Fabrics

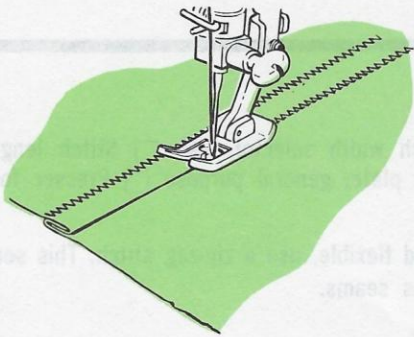
Pattern selectors: plain zig-zag Stitch width selector: 2 Stitch length: about 20 Throat plate: general purpose Presser foot: general purpose

This fine zig-zag stitch is ideal for seaming knit fabrics. It is particularly desirable for underarm seams where elasticity and give are needed.

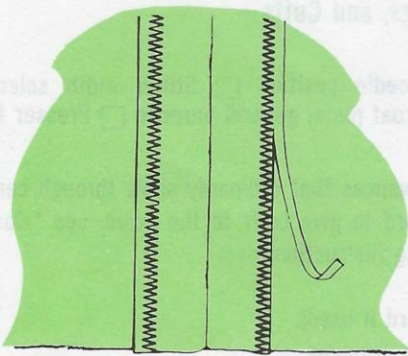
For neckline and waistline seams, where a stay is needed to prevent undue stretching, this same stitch can be used to apply seam tape. For a flat, smooth finish:

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.

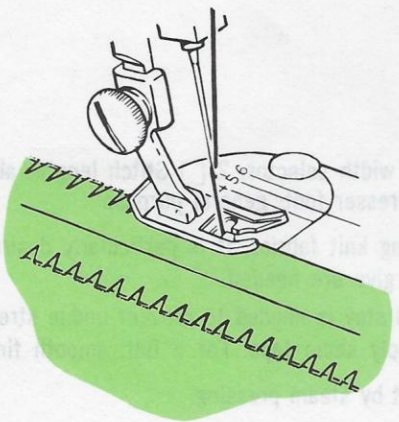
Flat Felled Seam



Trimming Seam



Overedged Seam



Flat Felled Seams

Pattern selectors: plain zig-zag Stitch width selector: 3 Stitch length: 15 to 20 depending on fabric Throat plate: general purpose Presser foot: general purpose

Flat felled seams are usually made with straight stitching. However, zig-zag stitching gives strength and durability to flat felled seams and thus is suitable for heavy fabrics that will be subjected to pull or tension.

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.

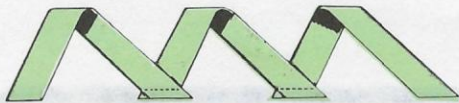
Seam Finishes

Pattern selectors: plain zig-zag, blindstitch, or multiple-stitch zig-zag Stitch width selector: 4 or 5 Stitch length: 8 to 20 depending on choice of stitch and fabric Throat plate: general purpose Presser foot: general purpose

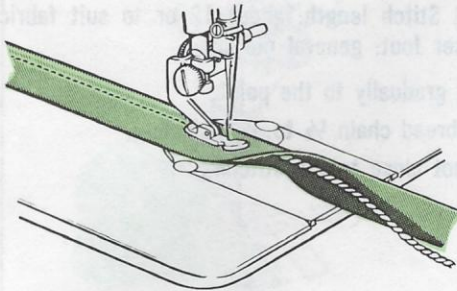
Seam edges support the garment and should be given a durable finish if the fabric is likely to ravel.

1. Make a test sample first to determine whether a plain zig-zag stitch, blindstitch, or multi-stitch zig-zag best suits your fabric. Also, adjust stitch length and width settings 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.

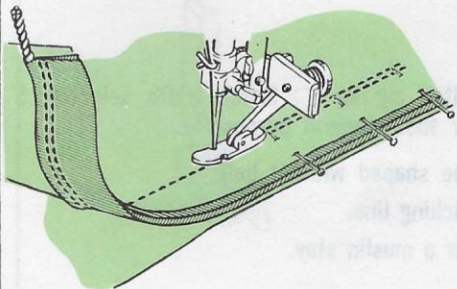
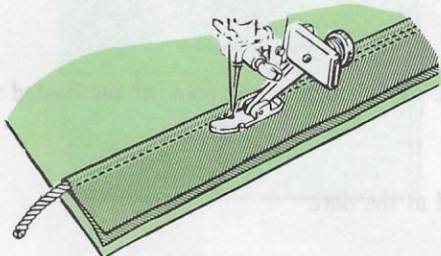
Corded Seam



Making the Welting



Stitching Welting into Seam



Corded Seams

Pattern selectors: straight stitching Stitch length: slightly longer than for regular seaming Throat plate: general purpose or straight stitch Presser foot: zipper foot

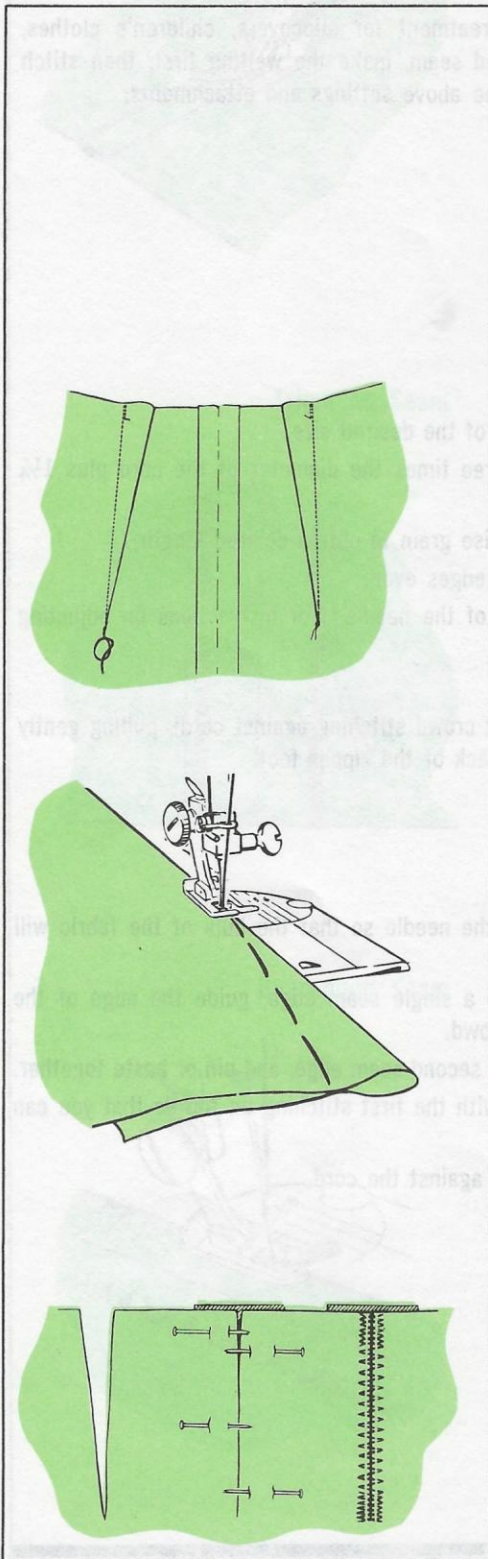
The corded seam is a professional treatment for slipcovers, children's clothes, blouses, and lingerie. To make a corded seam, make the welting first, then stitch it into the seam. For both steps, use the above settings and attachments:

To Make the Welting:

1. Buy cable cord (at notions counter) of the desired size.
2. Cut bias strips of fabric (width: three times the diameter of the cord plus 1¼ 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 III-MB-14.)
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.

To Stitch Welting into Seam:

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 can, of course, be made in the usual way on your sewing machine. That is, you can begin stitching at the wide end of the dart, stitch to the point, and then fasten the two thread ends. However, if you have a push-button bobbin machine, you can avoid the problem of fastening the thread ends by making a "continuous-thread" dart. In this case, you stitch in the opposite direction. This method is particularly useful for darts in sheer fabrics, where transparency requires a neat, clean finish. It is also useful for darts made on the right side of a garment as a style detail.

Pattern selectors: straight stitching Stitch length: about 12 or to suit fabric
Throat plate: general purpose Presser foot: general purpose

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

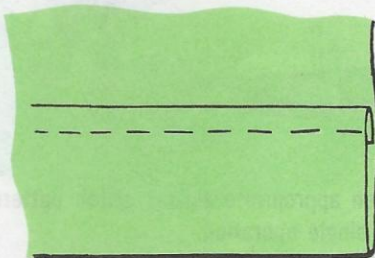
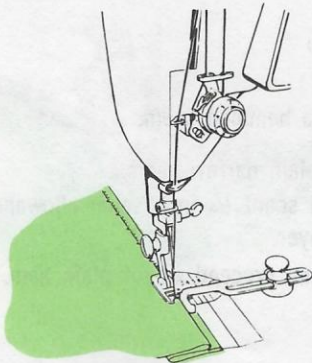
For machines with push-button bobbin Pattern selectors: straight stitching
Stitch width selector: 3 Throat plate: general purpose Presser foot: general purpose

1. Wind an empty bobbin with enough thread to make a single dart (usually less than 1 yard).
2. Close slide plate.
3. Position the needle in the very edge of the fold, at the point of the basted or pinned dart.
4. Lower the presser foot.
5. Stitch carefully toward the wide end of the dart.

Pattern selectors: zig-zag or multiple-stitch zig-zag Stitch width selector: 5
Throat plate: general purpose Presser foot: 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.



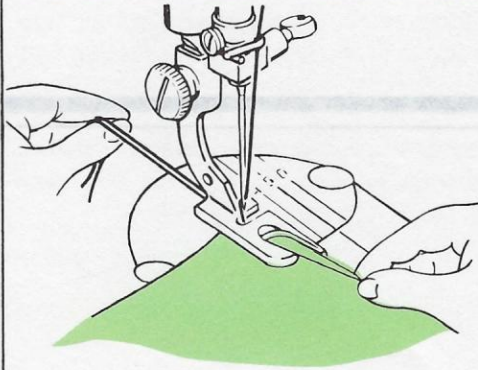
Pattern selectors: blindstitch Stitch width selector: 2-5 Stitch length: 10-20
 Throat plate: general purpose Presser foot: general purpose Seam guide

Blindstitching provides a durable hem finish that is almost invisible. It is best suited to straight and slightly curved hems. Taped, bound, turned, or unfinished hem edges can be blindstitched with equal ease. Blindstitching takes a little practice, however, so make a test sample first.

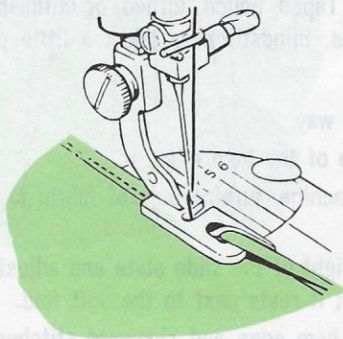
1. Mark, turn, and press hem in the usual way.
2. Baste a guide line $\frac{1}{4}$ inch from the top of the hem edge.
3. Place hem edge over the feed of the machine, turning bulk of fabric to the left and thus creating a soft fold.
4. Screw seam guide into the hole at the right of the slide plate and adjust it over the right toe of the presser foot so that it rests next to the soft fold.
5. 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.
6. When stitching is completed, swing the seam guide out of position before raising presser foot.

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.

Guiding Fabric Edge into Scroll of Foot



Hemmed Seam



Decorative Narrow Hem



Plain Narrow Hems

Pattern selectors: straight stitching Stitch length: 10-20 Throat plate: straight stitch Presser foot: hemmer foot

1. Draw the bobbin and needle threads under the hemmer foot.
2. Crease a double $\frac{1}{8}$ 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 in 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.

Hemmed Seams

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

1. Use same settings and attachments as for plain narrow hems.
2. With right sides of fabric together, allow a scant $\frac{1}{4}$ inch seam allowance and place upper layer $\frac{1}{8}$ inch to left of lower layer.
3. Insert two fabric edges into hemmer foot and proceed as for plain hem.

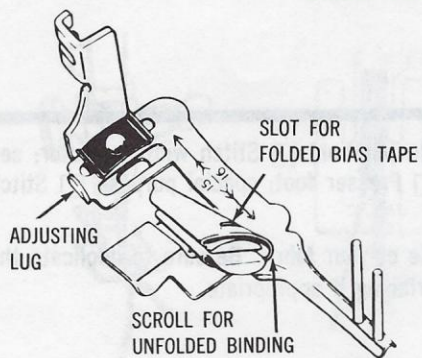
Decorative Narrow Hems

If you use the hemmer foot and choose an appropriate zig-zag stitch pattern, you can turn and decorate a narrow hem in a single operation.

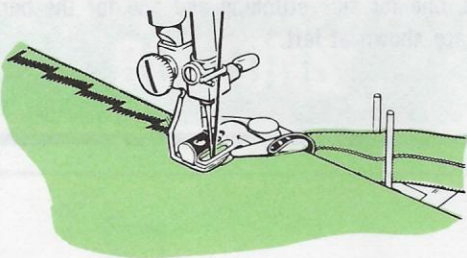
Stitch width selector: 2-4 Throat plate: general purpose Presser foot: hemmer foot

Follow same steps as for plain hems.

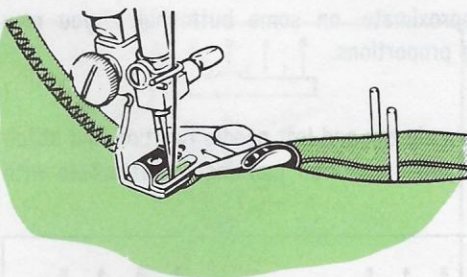
Binder Foot



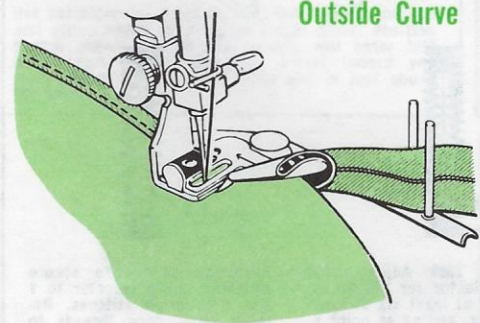
Bias Binding with Decorative Stitch



Inside Curve



Outside Curve



Bound Edges

With the binder foot, you can apply bias binding to an unfinished edge in a single operation. Straight stitch, plain zig-zag, or decorative zig-zag settings can be used. The illustration shows the banner stitch.

If you use ready-made bias tape, buy No. 5, which will be $\frac{1}{8}$ of an inch wide and will come already folded. If you make the binding yourself, be sure to cut it $\frac{1}{8}$ of an inch wide on the bias.

Pattern selectors: for straight, zig-zag, or pattern stitching Stitch width selector: 2-5 Throat plate: general purpose Presser foot: binder foot

1. Cut end of binding diagonally (as you would cut the end of a ribbon) and insert in scroll. If tape is already folded, insert it (from the outside of the scroll) in the slot near the end of the scroll. If tape is not folded, insert it in the wide end of the scroll.
2. Pull binding through scroll until evenly folded edges are under the needle. Let free length of binding fall between guide pins.
3. Insert edge of fabric to be bound into center of scroll.
4. Position stitching by moving scroll portion of binder foot to right or left by means of adjusting lug.

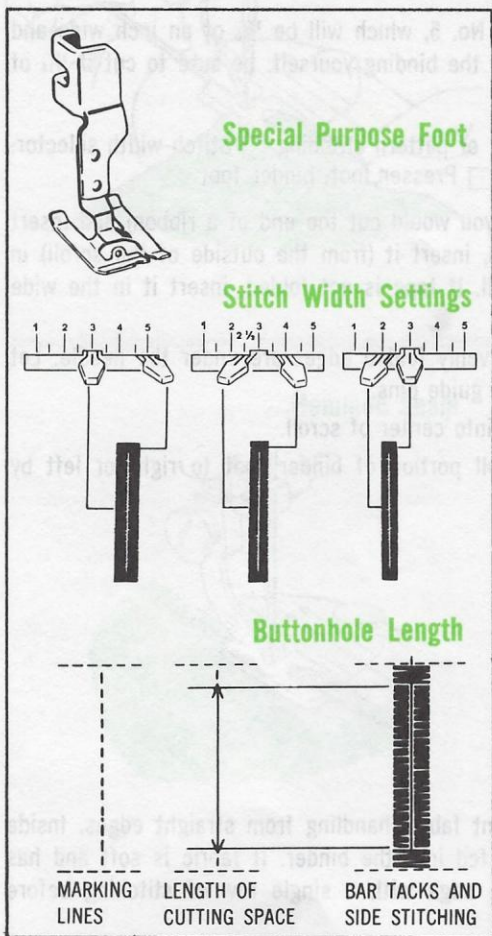
Inside Curves

Curved edges require slightly different fabric handling from straight edges. Inside curves are straightened as they are fed into the binder. If fabric is soft and has a tendency to stretch, reinforce the edge with a single row of stitching before binding.

Outside Curves

Outside curves tend to lead away from the center slot of the scroll and should be guided so that a full seam width is taken at the needle point. Do not attempt to pull or straighten fabric into the full length of the scroll.

BUTTONHOLES



Pattern selectors: plain zig-zag (left needle position) Stitch width selector: see below Throat plate: general purpose Presser foot: special purpose Stitch length: FINE (above 20)

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.

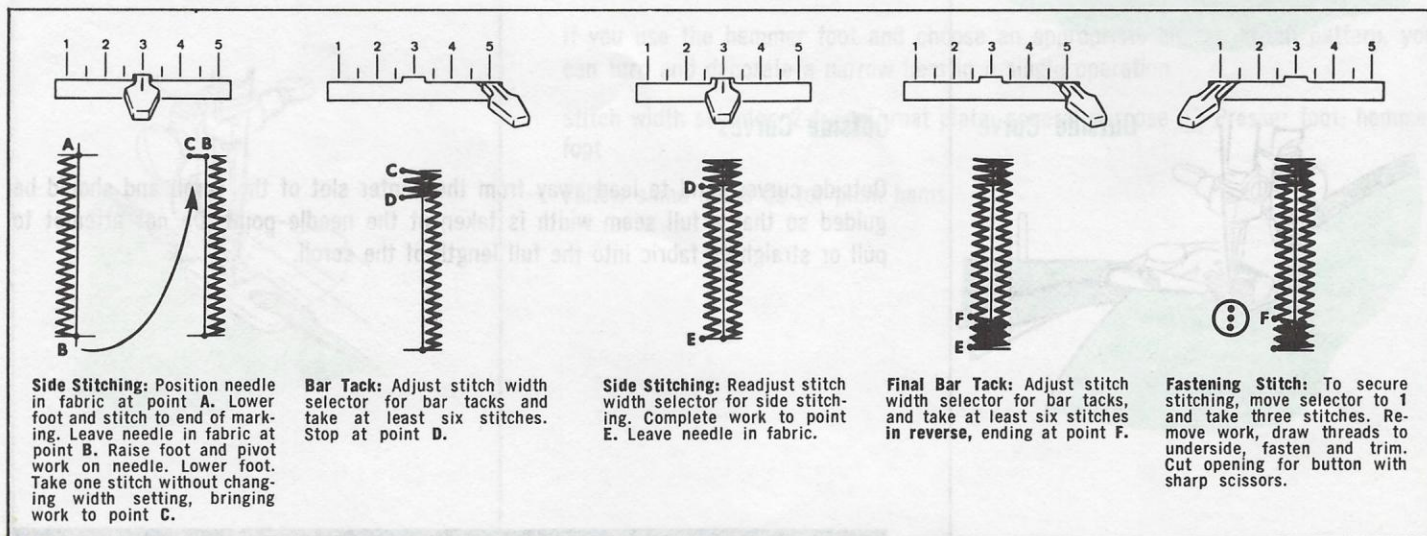
Stitch Width Settings

You will need two stitch width settings, one for side stitching and one for the bar tacks. The three possible combinations are shown at left.

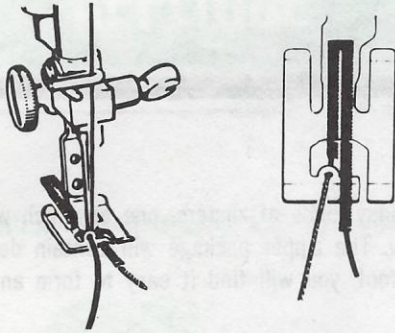
Buttonhole Length

First, decide how long the opening needs to be. This will depend on the diameter and thickness of the button. To find the right length, cut a small hole in a scrap of your fabric and gradually enlarge it until the button slips through easily. Then add at least $\frac{1}{8}$ inch ($\frac{1}{16}$ inch for each bar tack), and mark the fabric as shown at left. This bar-tack measurement is approximate; on some buttonholes, you may need to increase it to arrive at pleasing proportions.

Procedure: Set pattern selectors for plain zig-zag and left needle position and stitch width selector on setting desired for side stitching of buttonhole. Place work under needle, aligning center marking of buttonhole with center score line of special purpose foot, and proceed as shown below.



Corded Buttonholes



Corded Buttonholes

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.

Place the spool of filler cord on the table, floor, or in your lap. Unwind a sufficient amount to avoid tension or strain on the cord. 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. Proceed with stitching as for regular buttonholes.

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. Carefully trim cord ends.

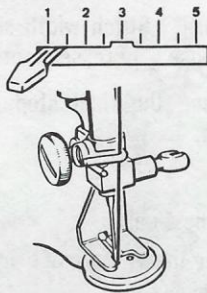
BUTTONS



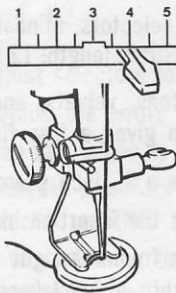
Button Sewing Foot

Pattern selectors: plain zig-zag (left needle position) Stitch width selector: 1 and 4 Throat plate: general purpose (raised) Presser foot: button sewing foot

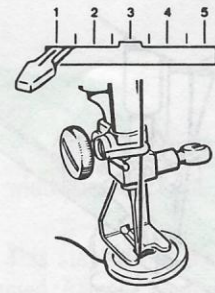
The space between the holes in the button determines the stitch width settings. The number 1 setting must always be used to position the needle and fasten stitching. For buttons with standard hole spacing, use settings 1 and 4. For buttons with unusual hole spacing, use setting 1 and increase or decrease the width setting (4) as necessary.



Set selectors for plain zig-zag, left needle position and stitch width at 1. Raise throat plate. Position button under foot so that needle will enter left hole. Lower foot. Turn hand wheel toward you until needle rises out of fabric and is just above the foot.



Set stitch width at 4. The needle should then enter into the right hole of the button. Take approximately six zig-zag stitches in this position. End on the left side.



To fasten stitching, adjust to number 1 stitch width setting and take approximately three stitches.



Thread Shank

Thread Shank

In order to form a shank, stitch over a regular machine needle. Position button and lower button sewing foot. Place needle in the groove of the foot so the point enters the hole.

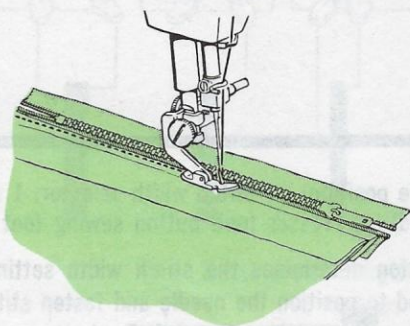
To form a long shank, stitch over the heavy end of the needle.

ZIPPERS

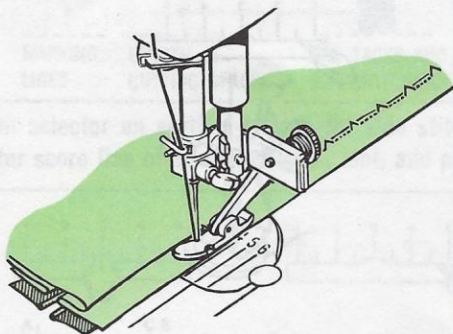


Zipper Foot

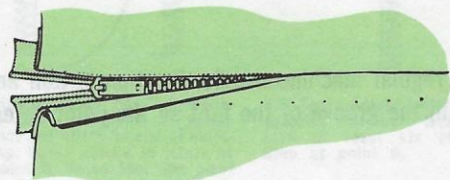
Zipper Insertion



Final Step of Blindstitch Zipper Insertion



Completed Blindstitch Zipper Insertion



At your notions counter, you will find many kinds of zippers, one of which will be just right for whatever you wish to sew. The zipper package will contain detailed instructions. And if you use the zipper foot, you will find it easy to form an even line of stitching close to the zipper.

Straight Stitch Zipper Insertion

Pattern selectors: straight stitching Stitch length: 10-15 Throat plate: general purpose or straight stitch Presser foot: zipper foot

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

1. Loosen the thumb screw at the back of the foot, and slide the foot to the **left** of the needle.
2. Check the position of the foot by lowering the needle into the side notch of the foot, making sure it clears the foot.
3. Lock the foot into position by tightening the thumb screw.

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

Blindstitch Zipper Insertion

Pattern selectors: blindstitch (center needle position) 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 above under "Straight Stitch Zipper Insertion."
6. Turn garment inside out.
7. Place zipper tape over fold and turn back the front section of the garment to the line of basting, creating a soft fold.
8. Adjust 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. Remove basting and press.

APPLIQUE

Method #1—Trimming after Stitching



Method #2—Stitching after Trimming



Applique adds beauty and interest to clothes and household linens. Either contrasting or self fabric can be used effectively.

The stitch most commonly used in applique is the plain zig-zag, closely spaced to form a satin stitch. The width of this and other basic patterns can be varied to accommodate fabrics of different weaves and textures. Combination patterns and variations can also be used to applique with decorative stitching.

To prepare for appliqueing, make a sample to help you decide which of the following two methods is the more appropriate for your fabric and design.

1. Position the design.
2. Baste it to the fabric.
3. Attach special purpose presser foot (and general purpose throat plate).

Method #1

1. Set stitch pattern and stitch width selectors for desired applique stitch. Set stitch length selector 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 #2

1. Adjust selectors for straight stitching.
2. Outline the entire design with a short stitch.
3. Trim raw edges to the stitching.
4. Readjust selectors for stitch pattern and width desired, and set stitch length selector on FINE.
5. Stitch, following the straight-stitch outline. This step will produce a smooth over-edged finish, with no raw edges to be trimmed. Remove basting.

MENDING

APPLIQUE

A Tear Mended with Multiple-stitch Zig-Zag

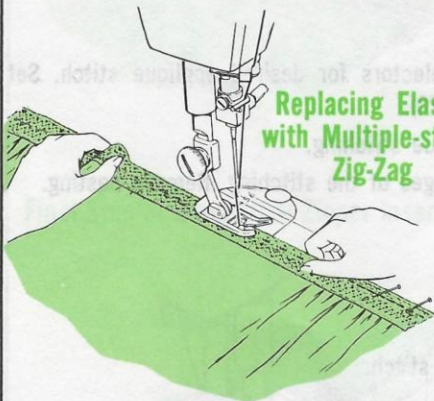


Tears

Pattern selectors: multiple-stitch zig-zag Stitch width selector: 2-5 Throat plate: general purpose Presser foot: general purpose

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

Replacing Elastic with Multiple-stitch Zig-Zag



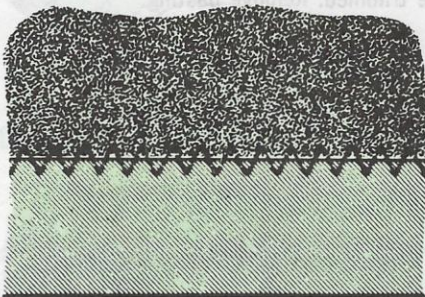
Elastic

1. Use same settings and attachments as for "Tears," above.
2. Hold the elastic taut as you stitch so that it will remain stretchable after stitching is completed.

Bar Tacks

Use plain zig-zag satin stitch to bar-tack garters, pockets, zippers, shoulder straps, etc.

Blanket Binding



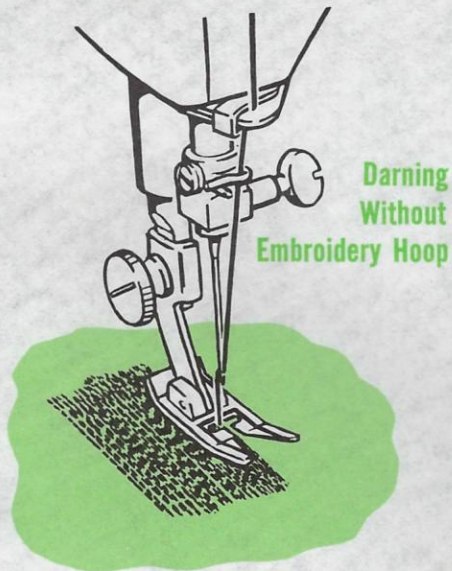
Blanket Binding

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

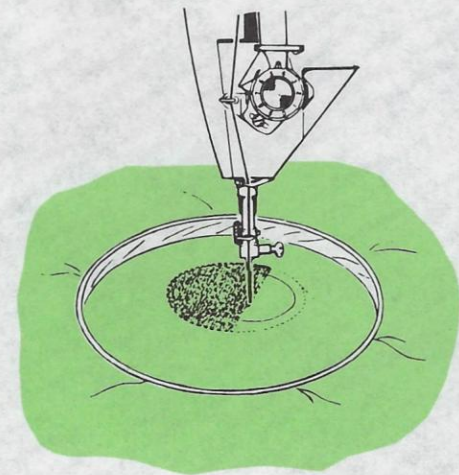
Pattern selectors: multiple-stitch zig-zag Stitch width selector: 5 Throat plate: general purpose Presser foot: general purpose

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

DARNING



Darning With Embroidery Hoop



Worn or torn spots on children's clothes, knits and household linens can be darned effortlessly and quickly with little practice. You may choose to darn either with or without an embroidery hoop. When greater control is needed, free-motion stitching, with an embroidery hoop, is usually best.

Darning Without Embroidery Hoop

Pattern selectors: straight stitching Stitch length: 10-15 Throat plate: general purpose Presser foot: general purpose Pressure dial: D

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

Pattern selectors: straight stitching Stitch length: FINE (above 20) Throat plate: straight stitch (raised) Presser foot: none

1. Trim ragged edges from area to be darned.
2. Center worn section in embroidery hoop.
3. Position work under needle and lower presser bar 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.