

baby lock®

PRO LINE™

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Instruction Book
Model BL4-838D

CONGRATULATIONS!

You are now entering an exciting new era in sewing. As an owner of the Baby Lock you have become a part of the serger sewing revolution, opening the door to new adventures and possibilities in your sewing creativity.

Professional Appearance: Your serger gives the quality finish to your garments as seen in even the most expensive ready – to – wear.

Decreased Sewing Time: Because of your sergers high speed capability – up to 1,500 stitches per minute – and its ability to seam, overcast and trim, all in one operation, you will be completing more garments in less time.

Increased Sewing Ability: Difficult fabrics and handling techniques will no longer pose a challenge. The Baby Lock handles all types of fabrics with equal ease.

Your Baby Lock serger is a high quality, dependable performance machine, and with proper care and maintenance will give you many years of sewing pleasure. We suggest that you follow your instruction manual as a step – by – step guide in acquainting you with serger sewing. Later, as you become more confident, the manual will become a handy reference for expanding your abilities.

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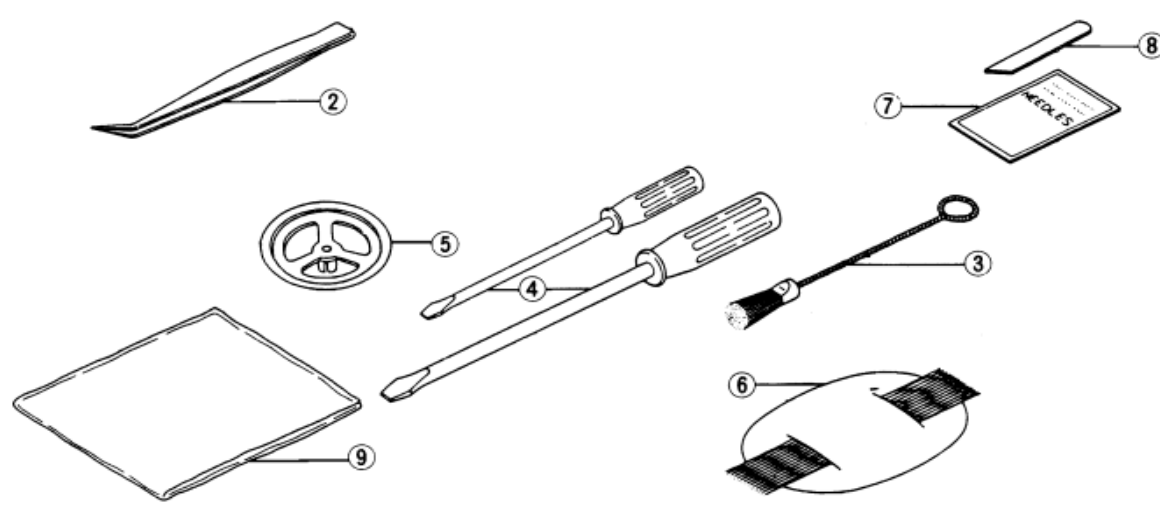
1 HOW YOUR SERGER OPERATES

A serger sewing machine (or Overlock, as it is sometimes called) is quite different from any conventional machine you have used.

Awareness of its simple operation will permit you to become more proficient in its use. The Baby Lock operates with two needles, but no bobbin. Also involved in stitching are two loopers each carrying a thread, and two parallel stitch fingers which are the foundation for stitch formation. When the needle enters the needle plate, the upper looper moves above the plate and behind the needle. At the same time, the lower looper passes below the plate and in front of the needle. The threads carried by the needle and the loopers are then knitted together over the stitch fingers, thus creating the stitch chain. When fabric travels through the machine the threads then become “locked” over the fabric. As the fabric is fed into the feed dogs, two cutting knives perform in a scissor – like action to trim the edge prior to stitching. After setting up your machine for the first time, take a few moments to learn how it sews. Turn the handwheel (toward you) and watch the movement and operation of the various parts. Don’t bother about fabric right now. It does not hurt your Baby Lock serger to stitch without fabric under the presser foot.

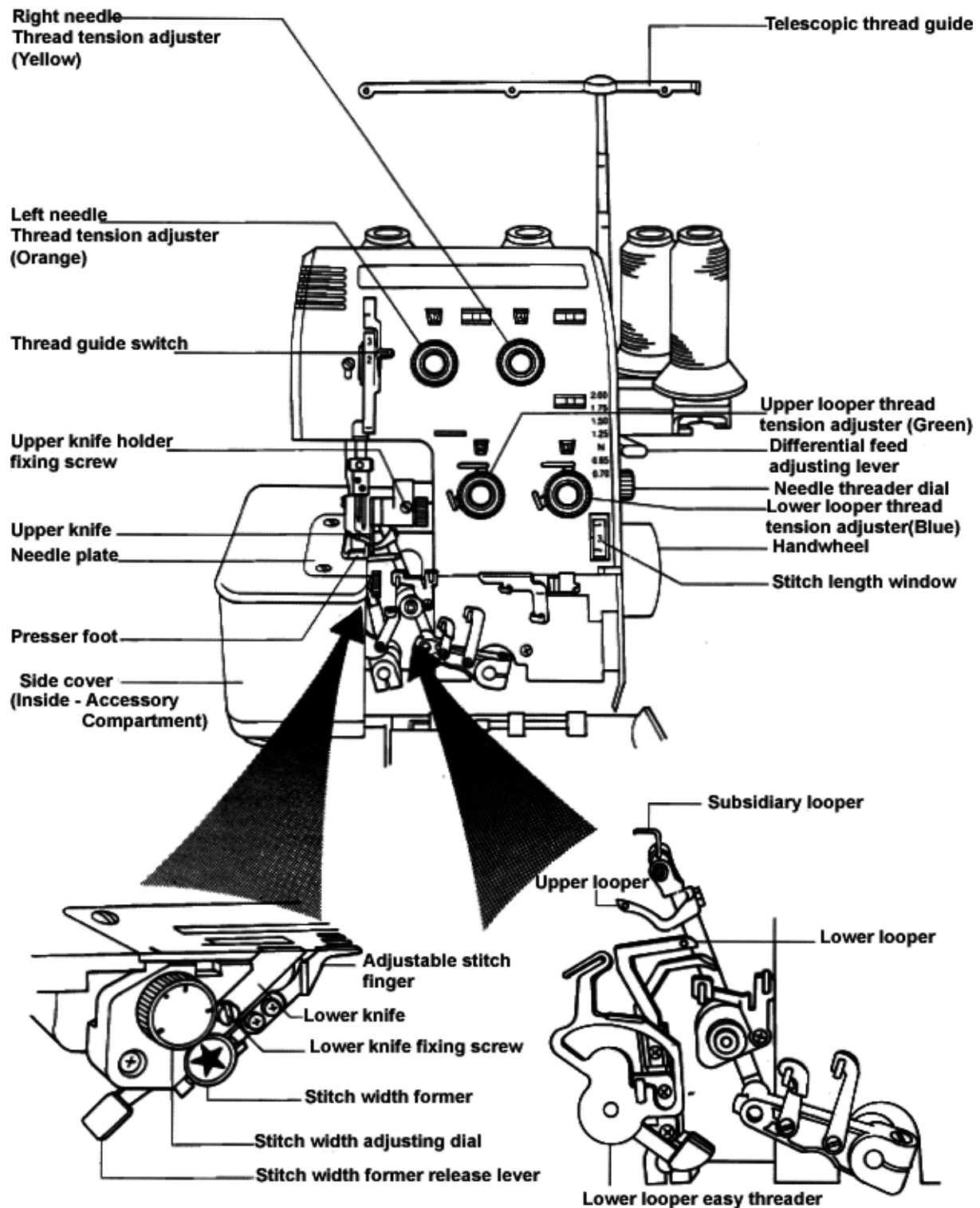
1 –1 Accessories

Accessory	Number included	Located in
① Instruction manual	1	
② Curved tweezers	1	Accessory compartment
③ Lint brush	1	Accessory compartment
④ Screwdrivers	2	1/ Accessory compartment 1/ Accessory packet
⑤ Spool caps	4	Accessory packet
⑥ Thread nets	4	Accessory packet
⑦ Needles	5	Accessory compartment
⑧ Lower knife replacement blade	1	Accessory packet
⑨ Machine cover	1	Accessory packet



The illustrations show the following items: ① Instruction manual (a booklet), ② Curved tweezers, ③ Lint brush (a small brush with a handle), ④ Two screwdrivers (one with a flat head, one with a Phillips head), ⑤ Four spool caps (small circular pieces), ⑥ Four thread nets (small bags for thread), ⑦ Five needles (in a small box labeled 'NEEDLES'), ⑧ Lower knife replacement blade (a long, thin blade), and ⑨ Machine cover (a large, flat, rectangular cover).

1 – 2 Parts of the machine

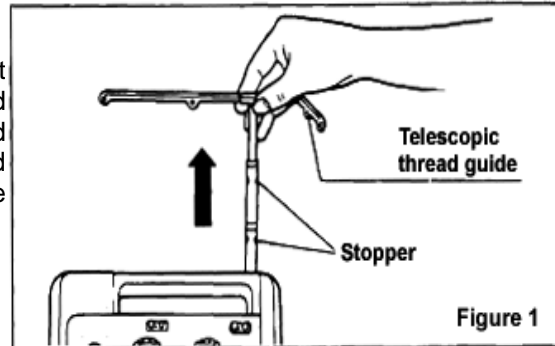


2 GETTING READY TO SEW

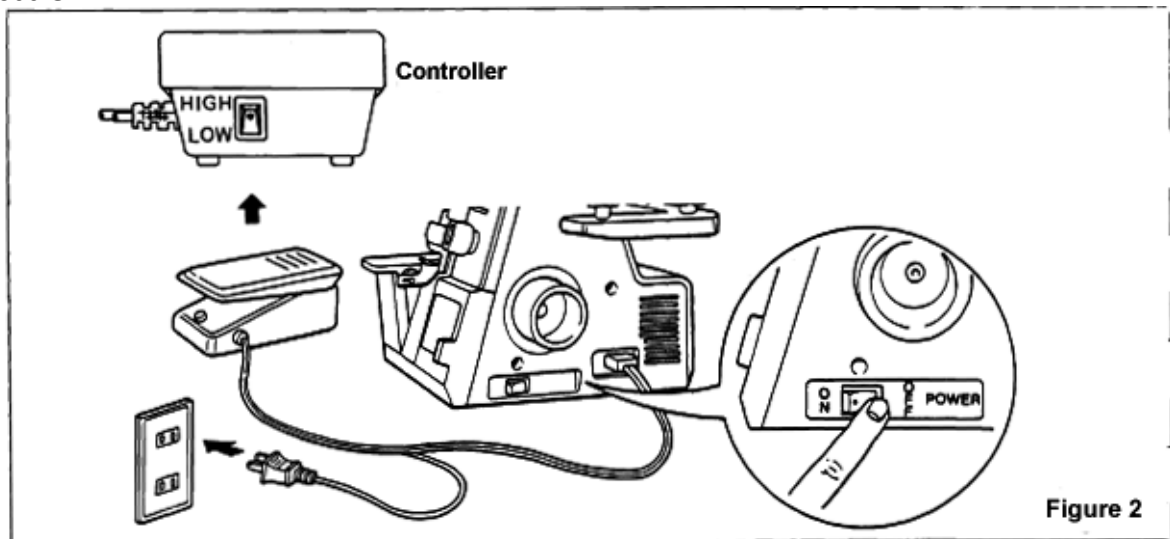
2 – 1 Setting up your machine

After removing Styrofoam packing materials from the box, gently lift your Baby Lock serger by grasping the handle provided on the top of the machine. Place on a serger sewing table or any level surface providing ample work area to the left of the machine. Please protect fine furniture surface to avoid scratches or stains.

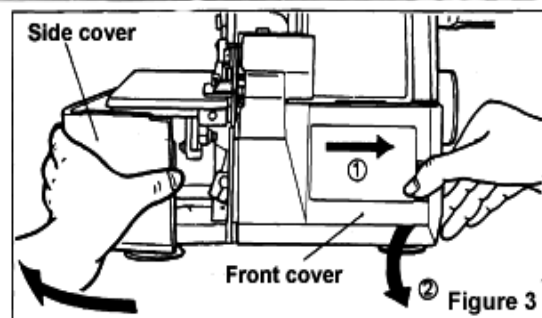
- Raise the telescopic thread guide to its highest position. You will find that the shaft may be rotated left and right. Continue raising the telescopic thread guide until each section “clicks” into a locked position. Place foot pedal under the sewing table (may be held in place with an optional pedal stay).



- First plug terminal into machine, then insert plug into wall outlet. The On/Off switch is located on the lower right side of the machine. Make sure power is always off when machine is not in use. Your machine is equipped with a two – step electronic foot control. This control will allow you to control maximum speed at which you can sew depending on where the switch is set. When the switch, located on the front of the controller, is set on HIGH, the machine will sew at maximum of 1,500 S.P.M. When the switch is set at LOW, the machine will sew at a maximum speed of about 800 S.P.M.



- To open the front cover, place your thumb against the tab, and slide the cover to the right. A slight pull forward will allow the cover to swing down, providing access to the loopers, knives, and thread guides. The side cover is opened by gently pushing the front of it to the left. It is hinged in back and will swing open for easy cleaning.



2 – 2 Needle

Your Baby Lock serger is set up with a size 14 industrial sewing machine needle (Organ DCx1F) which is suitable for all light and medium and heavy weight fabrics. For very light weight fabrics you will want to a size 11 needle. (See page 30). The semi – ballpoint design of the industrial needle allows you to use the same needle for knits as well as wovens. Its quality and strength are specifically designed for high speed sewing. An industrial needle will give perfect stitch formation through many hours of sewing. It is recommended that the needles be replaced every third project.

2 – 3 Thread

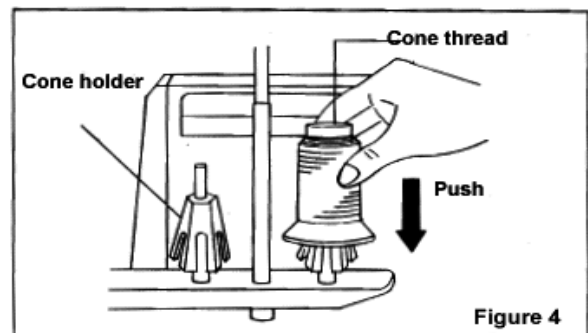
All types of thread may be used on your Baby Lock, but you will find that 100% long – staple polyester thread, cross wound on a cone will consistently provide the best stitch performance. Because the threads pass through many thread guides at a fast pace it is important that the thread be of uniform thickness, high strength, and allow a minimum amount of linting.

Good quality cotton or cotton – covered polyester thread sew well, though they do produce more lint and create the need to clean the machine more frequently. They work well for Overedging and seaming. For narrow rolled edging, this thread may be too weak or too fuzzy for the desired effect. Poor grades of these threads can result in frequent fraying and breaking.

Threads of other fiber content and weight may be used as well. Keep in mind, though, their strength and thickness, as these factors determine the ease with which thread passes through the thread guides, tension discs, needle and loopers. Specialty threads often require tension adjustment to be made. For more information on specialty threads (See pages 27 ~ 28).

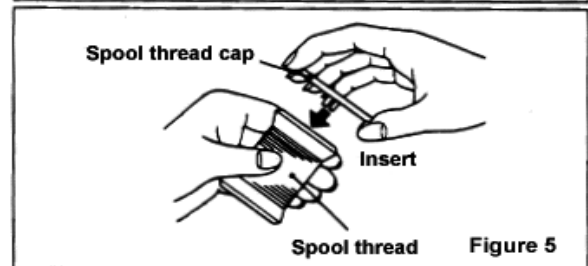
- Cone thread

When using cone thread, place each cone securely over the cone holders furnished on your machine. It may be necessary to place one hand under the thread stand while positioning the cone, in order to avoid bending the stand. These cone holders prevent the cone from spinning, thus allowing the thread to feed off evenly. (It is not necessary to remove the cone holders when using spool thread).



- Spool thread

The spool thread caps are provided for use with spool thread. Since most spools have serrated edges that snag the thread when sewing, these caps provide a smooth surface for even feed. Snap a spool cap into the spool of thread. Be sure the notched edge of the spool is down, and set the thread on the spindle. The cap may cause the spindle to be suspended on the spindle. (Do not attempt to fit the cap on the spindle itself).



- Thread nets

The nets may be placed over cones or spools when using thread that has a tendency to “drop off” its holder while sewing. For most thread they are not necessary, but are frequently used with nylon, rayon or silk threads.



2 – 4 Threading Method I – Tying on

The fastest and easiest way to thread your Baby Lock is to cut off the unwanted thread and tie its end to the beginning of the new thread, as follows:

1. Clip the existing thread just above its cone/ spool.
2. Change threads and make a square knot to tie each old thread to its corresponding new thread (Figure 7).

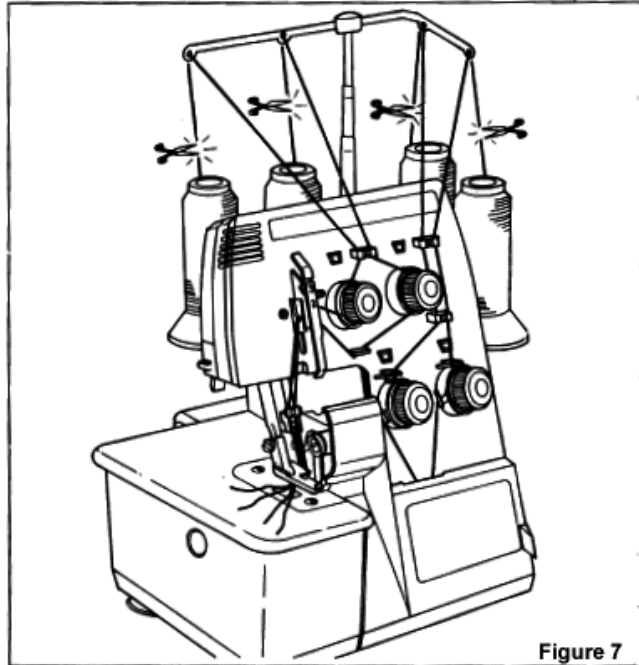


Figure 7

3. Clip the needle threads directly in front of the eye of the needle. (It is not advisable to attempt to pull the knot through the eye. This may bend or break the needle). Figure 8
4. Separate the thread chain, (discarding needle thread tail) and gently pull the looper threads – individually – until each knot passes completely through the machine. Hint: As you pull the tension disc rings forward slightly, making it easier for the knot to pass through.

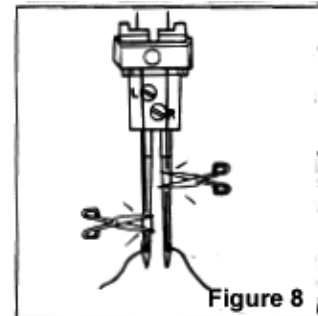


Figure 8

5. Pull the needle threads through in the same manner, and use the needle threader (see page 10) to rethread the needles.
6. Place all threads under and to the left of the presser foot: lower presser foot and sew a few stitches to start the chain.

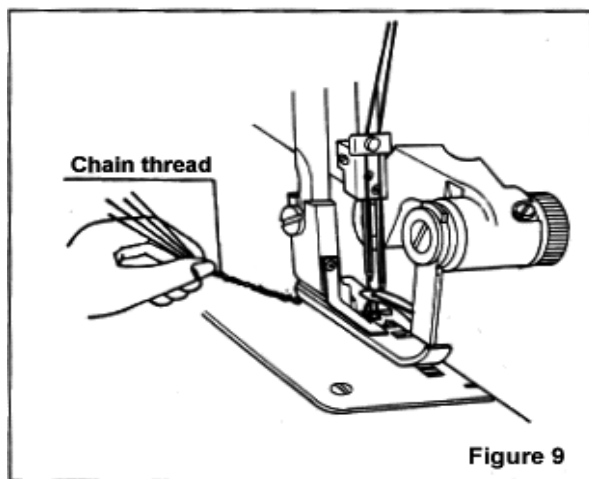
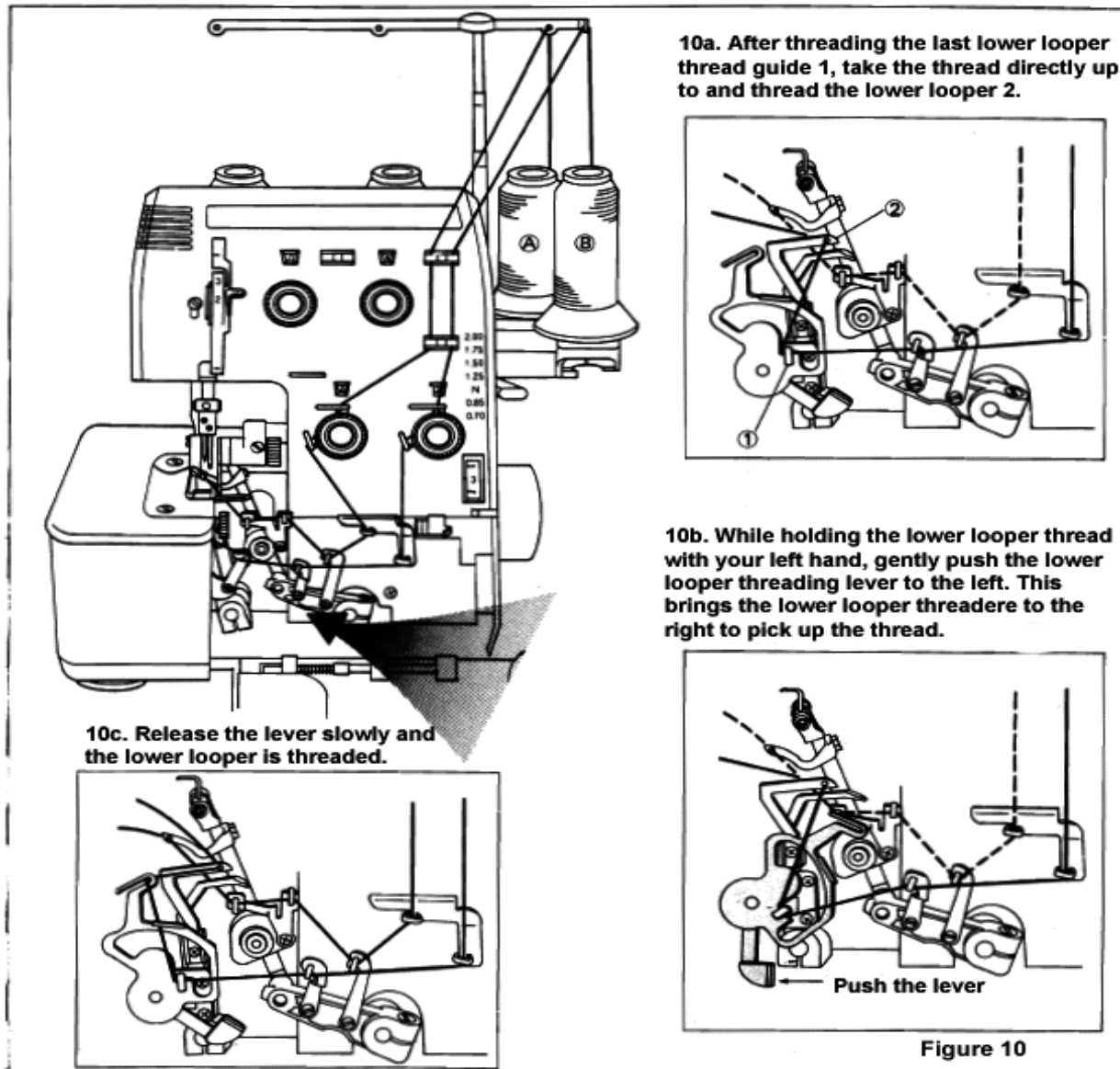


Figure 9

2 – 5 Threading Method II – Manual

If thread breaks or is allowed to run out, it will be necessary to rethread manually. A threading diagram is conveniently located on the inside of the front cover of the machine. It is important that manual threading be done in the following sequence:

- A. Upper looper
 - Place the first thread on the third spindle of the thread holder. Beginning with its corresponding “eye” on the telescopic thread guide, thread all green color – coded thread guides, including the tension disc, and end with the upper looper.
- B. Lower looper
 - Place the next thread on the far –right spindle and thread in the same manner following the blue color – coded path and end with the lower looper. When threading the lower looper, please refer to figures 10a through 10c below.



C. Right needle

Place thread on the second (yellow) spindle and follow the yellow color – coded path, ending with the right needle.

D. Left needle

Place thread on the far – left (orange) spindle and follow the orange color – coded path, ending with the left needle.

- When threading the eye of the needles, use the needle threader, see page 10.

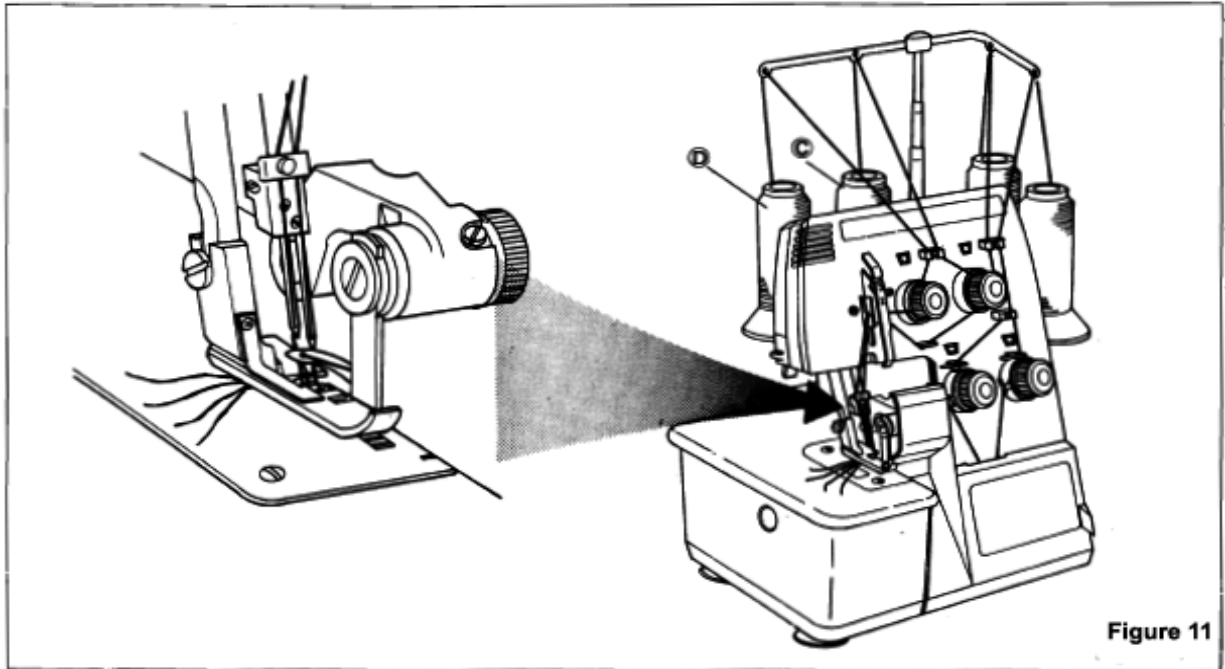


Figure 11

E. Place all threads under and to the left of the presser foot and make a few stitches to begin the chain. (Figure 13)

IMPORTANT: If a looper thread breaks or runs out, while the other threads remain intact, it is necessary to follow this rethreading sequence:

1. Unthread the eyes of the needles.
2. Rethread the looper.
3. Rethread needle eyes.

If you forget to unthread/rethread the needle eye, thread will be wrapped around the lower looper out of sequence and, when you begin to sew, the looper thread will break. The needles must always be threaded last.

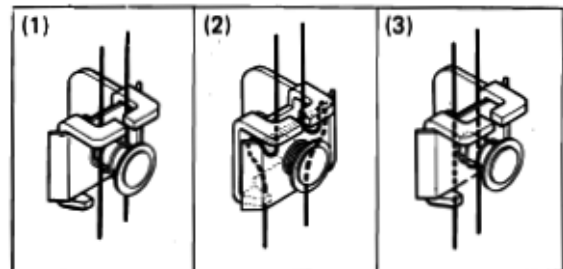


Figure 12

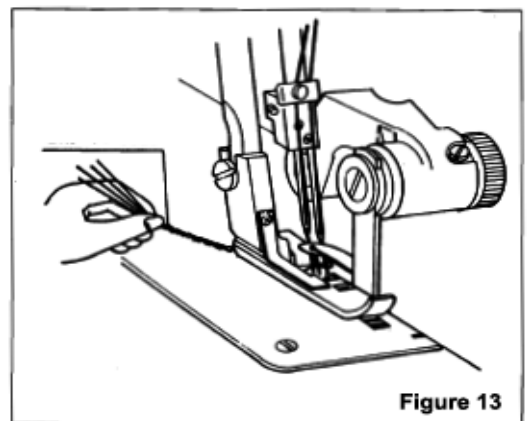
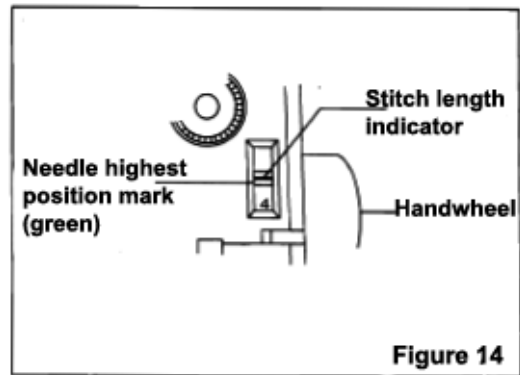


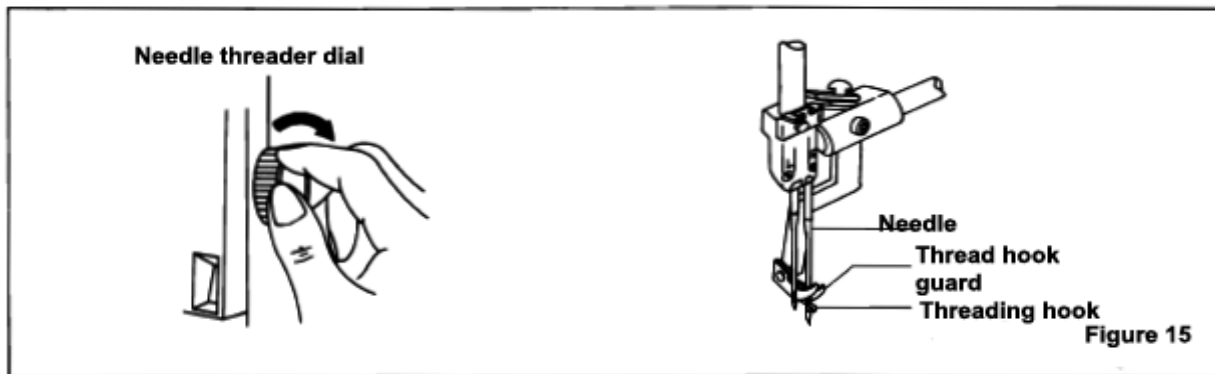
Figure 13

2 – 6 How to use the needle threader

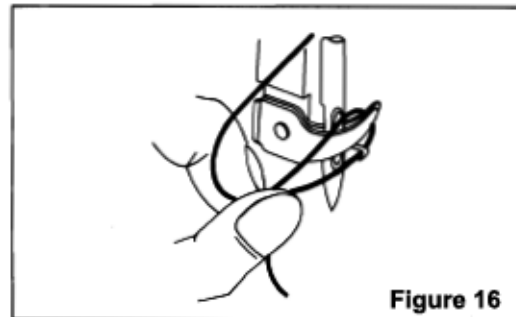
1. Rotate the handwheel and bring the needles to their highest position. (You can find this position through the stitch length indicator window, see page 12).



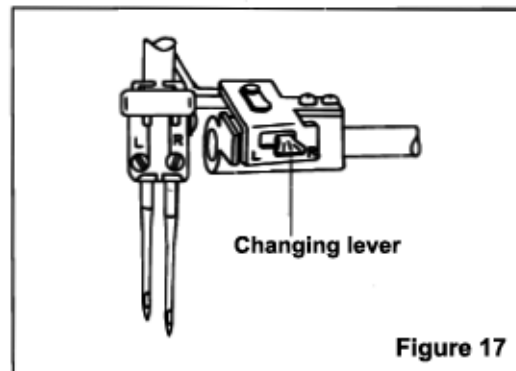
2. Turn the needle threader dial clockwise until the threading hook comes through the eye of the needle.



3. Form a loop of thread and place the loop around the threader hook guide. Slowly, release the threading dial and the thread simultaneously to thread the eye of the needle.

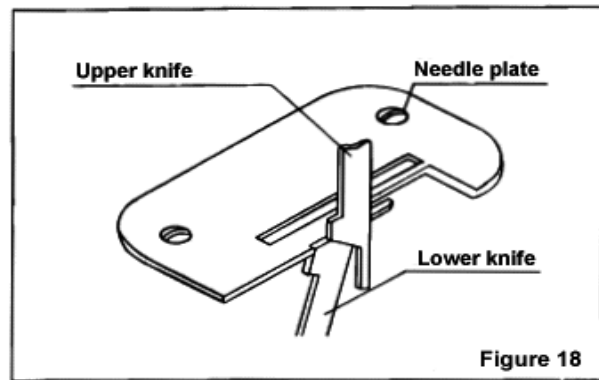


4. After threading the right needle, set the changing lever to L. Thread the left needle in same manner as the right needle.



2 – 7 Knives

The two devices used to perform cutting are referred to as knives – the upper knife and lower knife – located at the right edge of the needle plate. Unlike household knives, they are approximately 1/16" thick, and pose no danger in handling. They cut like scissors, and their sharpness is derived from the angle of the precision ground edges.

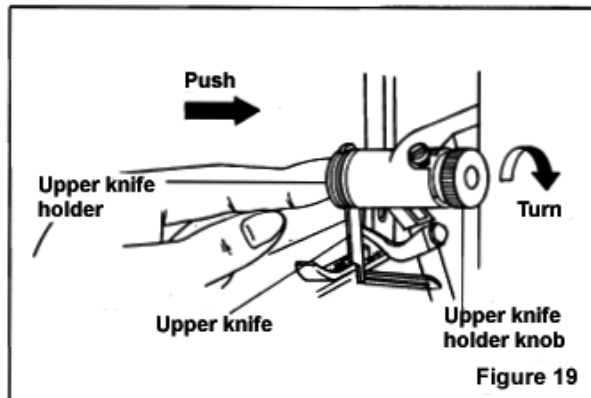


Never sew over pins with your serger. This will cause damage to both knife blades, making replacement necessary.

The upper knife is made of an especially hard steel and should remain sharp for a long time, probably many years. The lower knife is made of a softer steel and will require periodic replacement. The frequency of replacement is determined by how often you sew, how clean you keep your serger, and the types of fabrics you sew. Synthetic, metallic, and hard finish fibers cause more wear to the knife blades than do softer, natural fibers. When you notice the fabric not feeding readily or the edges of the fabric are not cleanly cut, replace the lower knife. To replace either knife refer to "Care & Maintenance" (Page 31).

The upper knife may be moved out of cutting position when no trimming is desired. The lower knife is in a fixed position and remains that way, even when cutting is not desired.

- Disengaging the upper knife
1. Open the front cover.
 2. With the left hand, firmly push the upper knife holder to the right; then rotate the knife holder knob clockwise with your right hand until the knife is raised to its highest position. You will feel it "snap" into a locked position.
 3. Close the front cover.



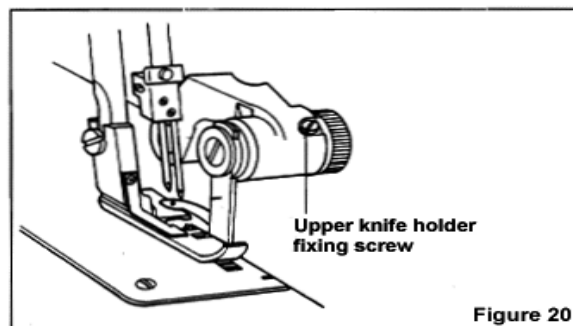
As you sew with the upper knife disengaged, be sure to align fabric with the right edge of the needle plate as it is fed into the feed dogs. Failure to do so will cause the fabric to catch in the loopers. Should a "fabric jam" occur, stop sewing immediately. Raise the needle and presser foot, and use the tweezers to free fabric from loopers. If necessary, remove presser foot for better access.

To return upper knife to cutting position, push upper knife holder to the right, and rotate counter – clockwise until the knife is completely down and resting firmly against lower blade.

- Locking the upper knife to sew extra heavy fabrics

When sewing extra heavy fabrics like denim or canvas etc., tighten the upper knife holder fixing screw.

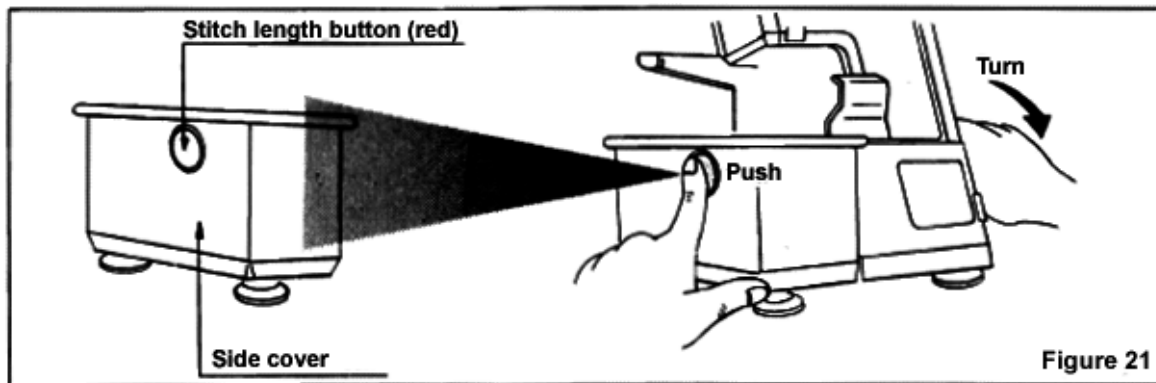
Note: When sewing normal fabrics, loosen the screw to unlock the upper knife.



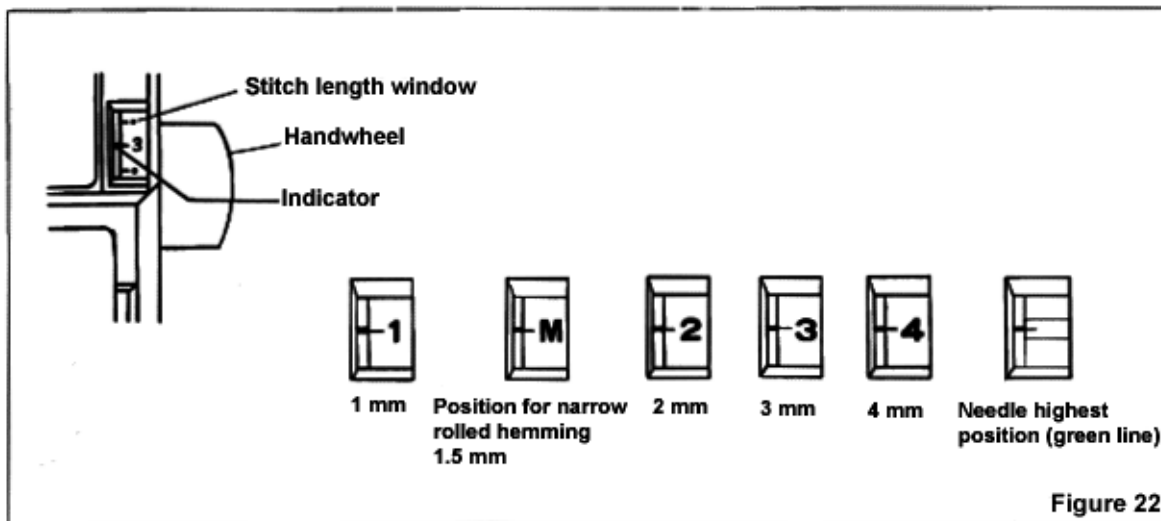
3 STITCH LENGTH ADJUSTMENT

The serger is pre – set for a stitch length of 3 mm. This equals about 10 stitches per inch which is ideal for seaming and Overedging most fabrics. For narrow rolled edging, overedging or seaming very light weight fabrics you may prefer a shorter length. Heavier fabrics and operations such as gathering may require lengthening the stitch. The stitch length indicator is located on the right side of the machine, just above front cover. The number 1 represents the shortest stitch, number 4 is the longest stitch. (The “M” symbol is used for setting the rolled edge).

1. Raise the presser foot.
2. With your left forefinger, push in the red stitch length button firmly and rotate the handwheel counter – clockwise until the button fits the groove of the stitch dial – you will feel “snap” into place.



3. Continuing to hold the red button in, turn the handwheel in either direction necessary to get the desired stitch length number to line up with the marker in the window.



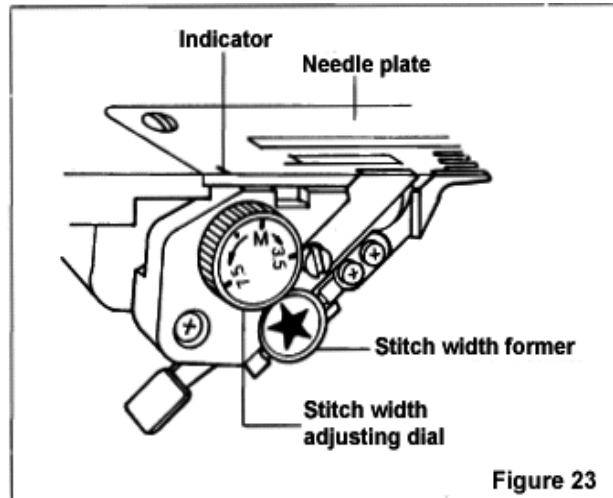
4. Release the red button and lower presser foot.

4 STITCH WIDTH ADJUSTMENT

The machine is pre – set for stitch width of 3.5 mm (5.7 mm). Stitch width can be widened by moving the stitch fingers apart, or narrowed by moving them closer together, within a range from 3.5 mm – 7.5 mm. Adjust the width according to the type of fabric used and the finished stitch appearance desired. Loosely woven fabrics require a wide stitch, while you may prefer a narrow stitch on knitted, tightly woven or sheer fabrics.

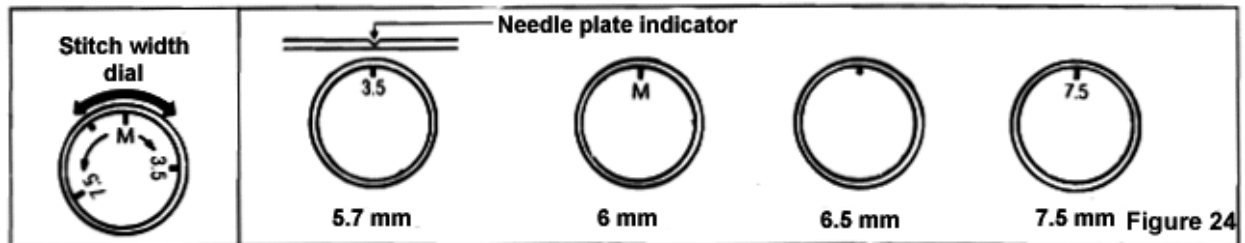
4 – 1 To increase stitch width

1. Open the front cover, raise the needle bar and presser foot.
2. Use your finger or tweezers to pull a small amount of slack in the needle thread just above the eye of the needle. Gently pull back on the thread chain until the threads clear the stitch fingers. (See page 15).
3. Rotate the upper knife to its highest position. (See page 11).
4. Turn the red stitch width dial away from you until the desired stitch width number is aligned with the indicator on the needle plate. (Figure 23).
5. Lower the presser foot, upper knife and close the front cover.

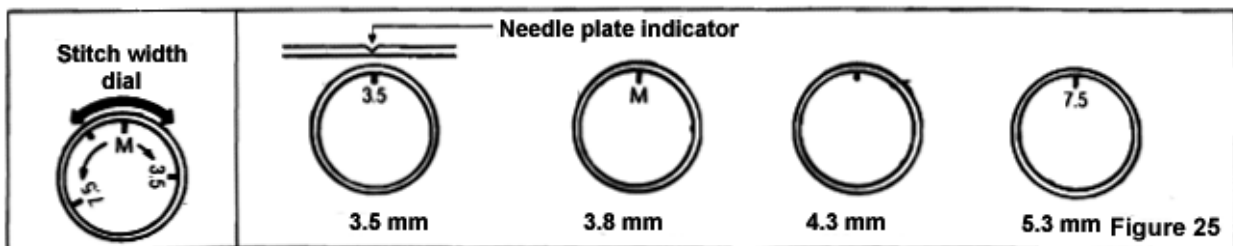


4 – 2 To decrease stitch width

Simply turn the stitch width dial toward you until the desired stitch width number aligns with the indicator on the needle plate. (Figure 24).

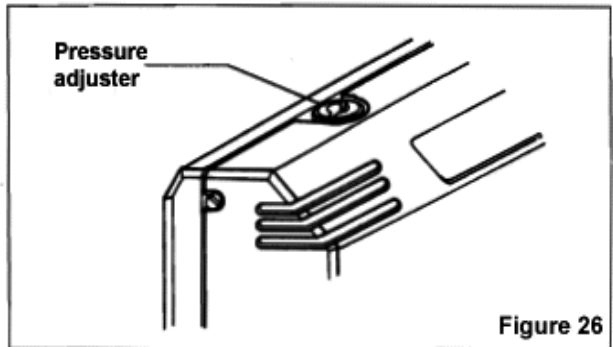


Note: Stitch width can be further reduced by removing the left – hand needle from the machine. The machine will form a 3 – thread stitch that is 2.2 mm narrower than the size indicated by the number on the stitch width dial.



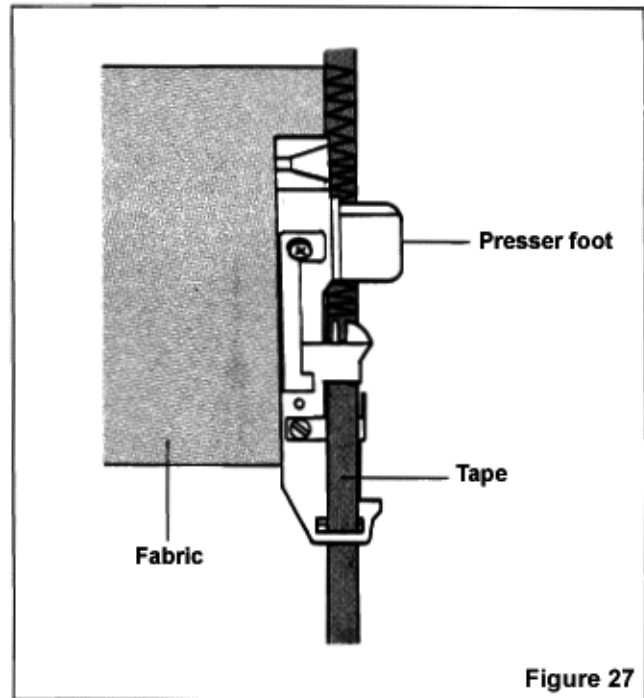
5 PRESSER FOOT ADJUSTMENT

The pressure on your Baby Lock presser foot has been pre – adjusted at the factory and rarely needs adjustment. For very thick fabrics you might find it necessary to decrease the pressure on the presser foot in order for it to accommodate the thickness of the fabric and feed through smoothly. To release the pressure, with a coin, turn the presser adjuster screw counterclockwise. To return the pressure on the presser foot to its normal setting, turn the presser adjuster screw clockwise.



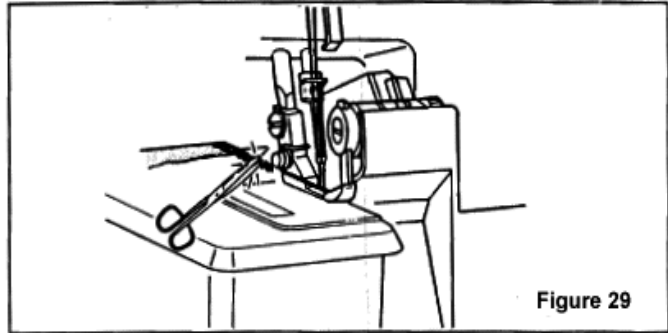
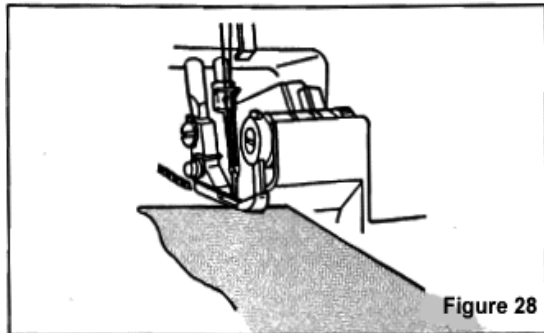
5 – 1 Tape guide slot in presser foot

The tape guide slot in the presser foot is designed to guide a stabilizing tape or a narrow elastic into the stitching. Insert the tape or elastic through the slot and under the back of the foot. Adjust the stitch width to match the width of the tape. Insert the fabric and stitch.



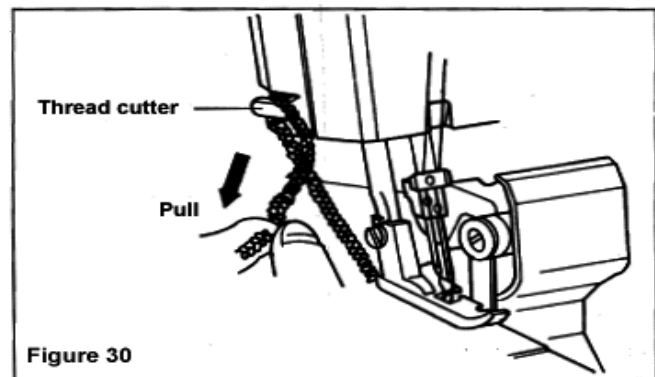
6 START SERGING

When sewing on your serger you may leave the presser foot in the “down” position for most sewing applications. Begin by placing under the tip of the presser foot. As you step on the pedal, the feed dogs will move the fabric into the needle. When you complete the sewing line do not raise the presser foot. Continue sewing until a 3” chain is made off the fabric, and clip. You should only need to raise and lower the presser foot when working with thick, spongy, or lofty fabrics, or when precise positioning is required.



6 – 1 Thread cutter

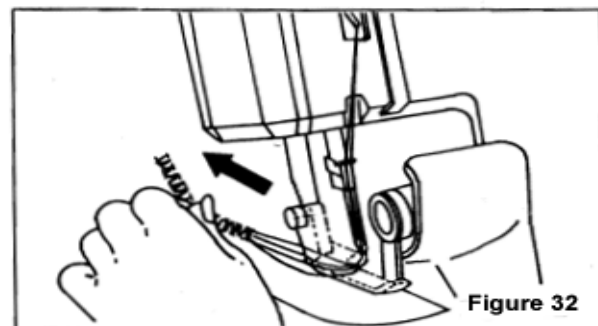
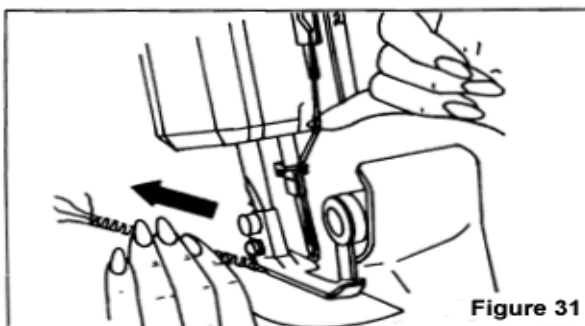
Your serger's thread cutter is on the lamp cover. After finishing the seam, cut the thread with thread cutter.



As you sew, you will quickly discover that maneuvering your fabric is a little different from conventional sewing. This is caused by the stitch fingers holding the threads. Learn to clear the threads from the stitch fingers and it will simplify serger sewing.

6 – 2 To clear stitch fingers

1. Raise the presser foot and the needle to the highest position.
2. Pull a little slack in the needle threads just above the needle thread guide. (Figure 31).
3. Gently pull thread chain from behind presser foot until threads slip off the stitch fingers. (Figure 32)



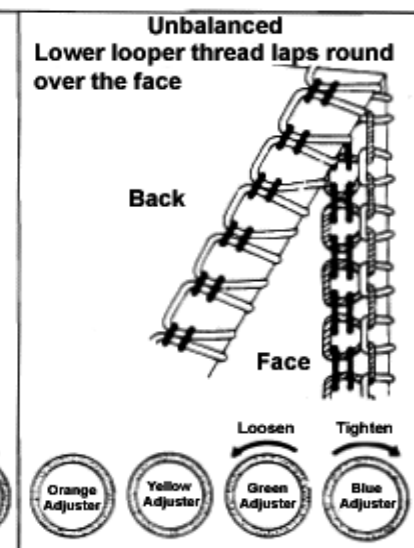
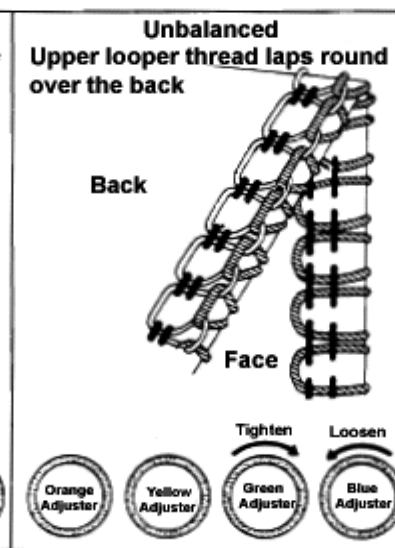
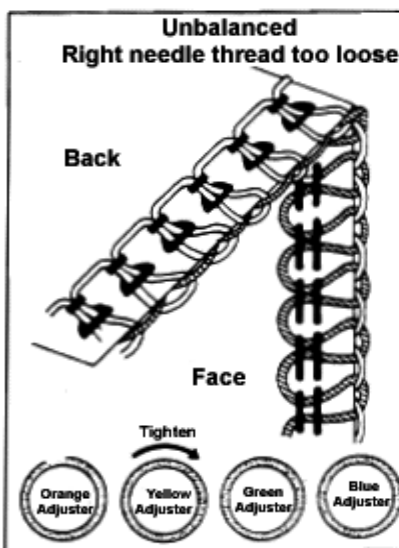
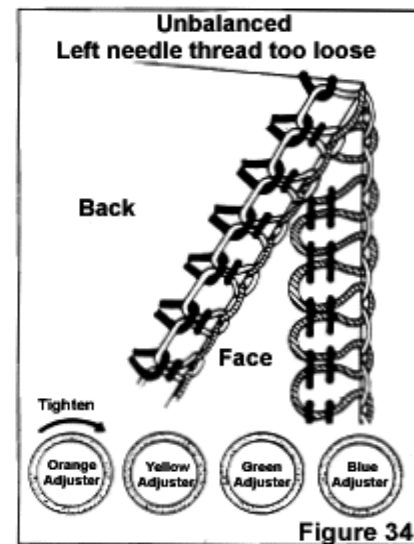
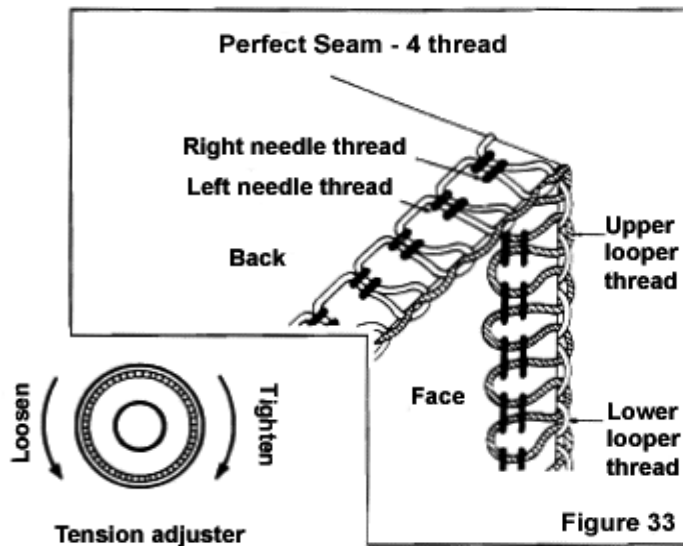
7 FOUR – THREAD SERGING

Your serger is pre – set for four – thread serging, the most common mode of serger sewing. It provides a very durable yet fully stretchable seam or overedge on all types of fabric. With tensions properly set, the lower looper thread forms a flat, non – rolling pattern of overcasting stitches on the underside of the fabric. The upper looper thread forms a similar pattern on the top side and these two threads lock together evenly over the cut edge.

The left needle thread interlocks with two looper threads at the stitching line to create the seam. The right needle thread, visible from the top side of the seam, interlocks with both loopers to add durability. (Figure 33)

The tension on each thread is controlled by its color – coded tension dial. Turn the dial to the right (clockwise) to tighten or increase the tension; turn it to the left (counterclockwise) to loosen or decrease tension. The chart on page 35 indicates the suggested number ranges for four – thread stitching. Note on this chart specific settings for your own machine.

Always keep in mind that various threads and individual preferences may require slight adjustment to the needle thread tension. Always sew a sample stitch on the fabric to determine if the desired result is achieved.



7 – 1 Overedging (Overcasting)

When making a garment with 5/8" pressed open seams, you will find the most efficient method for finishing seam allowance is to serge all cut edges of each pattern piece prior to construction. Since notches will be cut away during serging, use a water soluble pen/pencil to mark location of any matching points. Then, sew seams on your conventional machine, and press open as usual.

1. Place fabric in front of the presser foot, aligned with right edge of the needle plate.
2. Begin stitching, continuing to guide the fabric along the right edge of the needle plate.

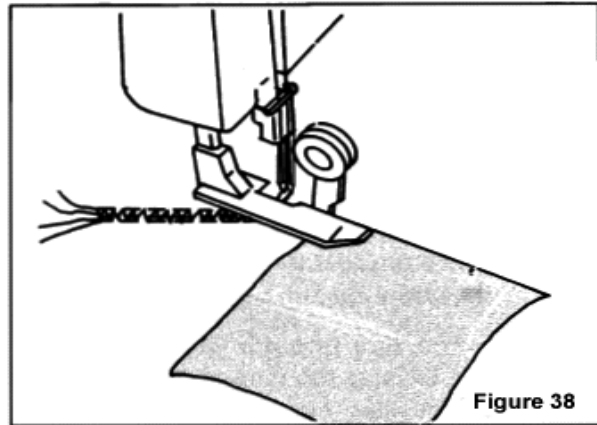


Figure 38

If you have left the upper knife in cutting position, the edge of the fabric should be "shaved" clean, but not cut.

7 – 2 Turning an inside corner

1. If a seam allowance is to be trimmed away, clip along each cut line for 1 – 2", as shown. (Otherwise, pre – trim the edge with scissors).
2. Sew along one edge until you reach the corner. Make one stitch off the edge of the fabric.
3. Clear the stitch fingers, and rotate the fabric to reposition the needle just below the previous row of stitching. Gently pull up on all threads to remove slack and resume stitching.

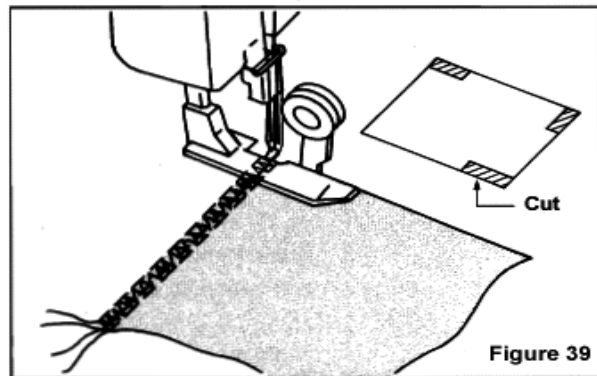


Figure 39

Note: If you find a loose thread loop at the corner it is due to too much slack in the needle thread when cleaning stitch fingers. Try again... turning corners takes a little practice.

7 – 3 Turning an inside corner

1. Mark the cutting line to within 1" of the corner, both directions. (Reinforce loosely woven fabric with stay stitching on conventional machine).
2. Clip to corner.
3. Align fabric for required seam allowance, and stitch until the knife reaches the corner (don't cut into corner).
4. Raise the presser foot and straighten out the fabric, forming a pleat.
5. Continue stitching the straightened edge. When done correctly, the pleat will disappear after stitching.

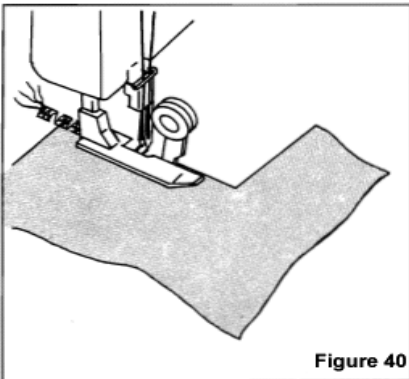


Figure 40

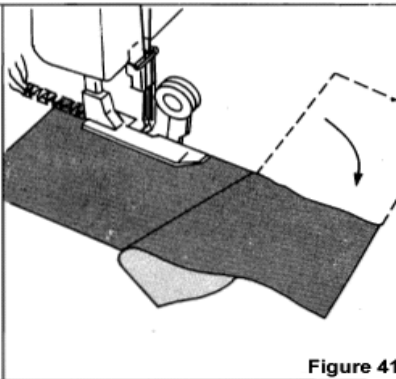


Figure 41

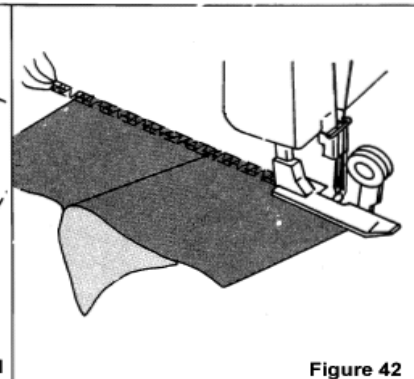


Figure 42

7 – 4 Serging curves

To serge around inside or outside curves, handle fabric as you do in conventional sewing, but guide your fabric into the knife, not the needle. Remember, cutting takes place before sewing. Also, since the long serger presser foot holds the fabric more securely, you may need to raise and lower the presser foot several times to work.

7 – 5 Seaming

You will find that it is not necessary to finish most garments with 5/8" pressed open seams. Instead, seam with your serger, and press to one side. The four – thread seam is strong, yet provides "give" or flexibility according to the needs of the fabric.

1. Use the marks on the front of the serger to align your fabric for the desired seam width (the red mark indicates 5/8" from the left needle).
2. Keep your eye on the fabric to make sure it feeds in aligned with the appropriate mark. Do not watch the needle. If the fabric feeds, in accurately, the needle will automatically seam in the right place.

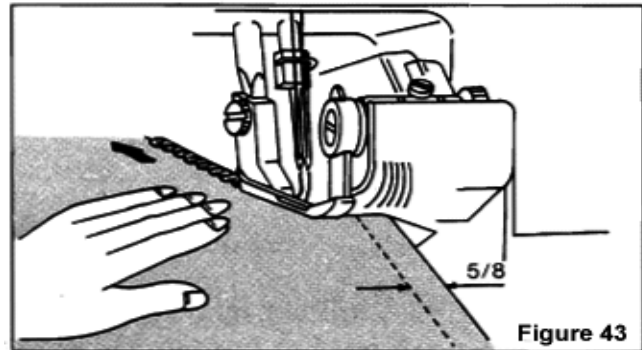
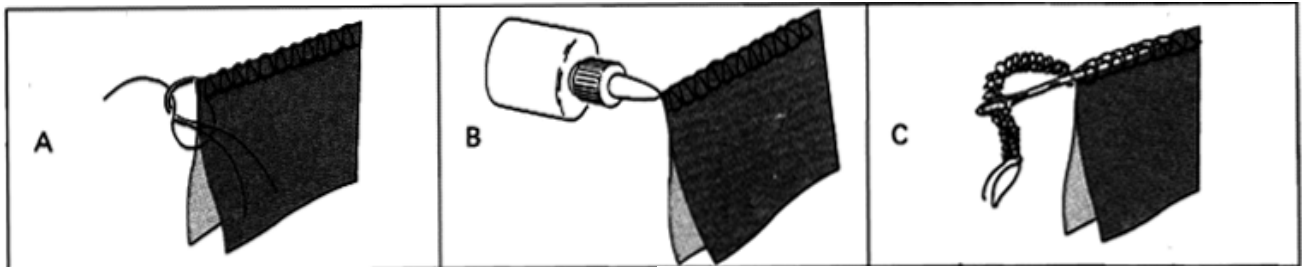


Figure 43

7 – 6 Locking ends

The stitch will not readily unravel, and in most instances you will find it necessary to secure ends. When you do, though, select one of these methods:

- A. Leaving a 3" chain, separate threads and tie a knot.
- B. Apply a dot of seam sealant (Fray check™) on the threads at the edge of the fabric. Allow to dry and cut off excess thread.
- C. Leave a 3 – 4" chain and use a large eyed needle or crochet hook to weave chain under the serger stitches.



- D. Sew over previous stitches (similar to back stitching).

* At the beginning of the seam

1. Sew 2 – 3 stitches (about 1/8") and stop.
2. Raise presser foot and needle.
3. Smooth out the chain with your fingers, then bring the chain around and under the pressure foot, so that it aligns with the edge of the fabric.
4. Lower presser foot, and continue sewing, catching the thread chain for about 1" in the stitches. Let knives cut off any remaining chain.

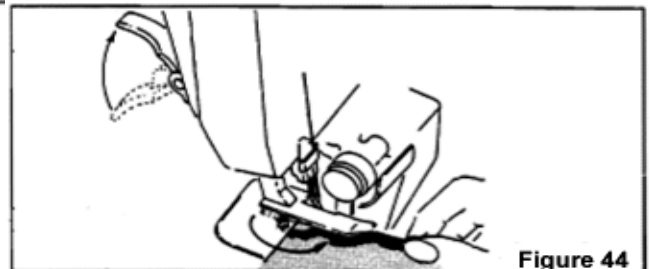


Figure 44

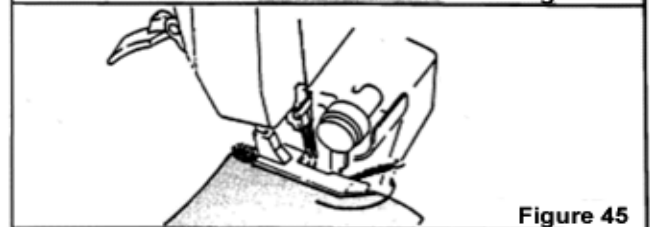
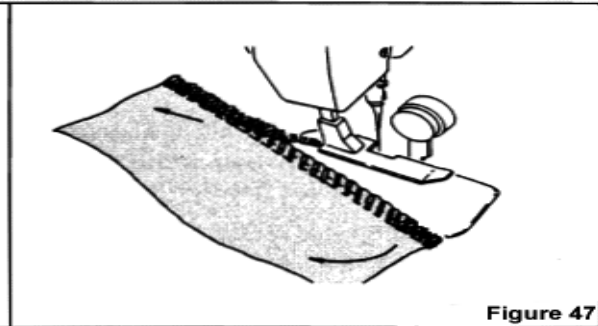


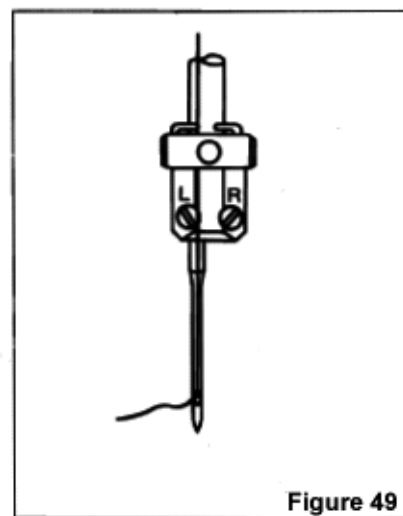
Figure 45

1. Stitch 1 stitch off the end of the seam.
2. Clear the stitch fingers (See page 15).
3. Turn fabric over and reposition under the presser foot with the needle at the seam edge.
4. Sew 5 – 6 stitches over the previous stitches, being careful not to cut previous stitches, then chain off the fabric.



Three – thread serger stitching is ideal for seaming and overcasting on fabric when raveling is not a problem – knits and firm wovens for example.

NOTE: Please tighten the right – hand needle clamp screw slightly to prevent the screw from vibrating out.



To convert your serger to narrow three – thread stitching (3.5 mm – 5.3 mm) snip the left – hand needle thread just above the eye. Remove the thread from the orange color – coded thread guides and remove the left needle. (Figure 50 ~ 51).

NOTE: Please tighten the left – hand needle clamp screw slightly to prevent the screw from vibrating out.

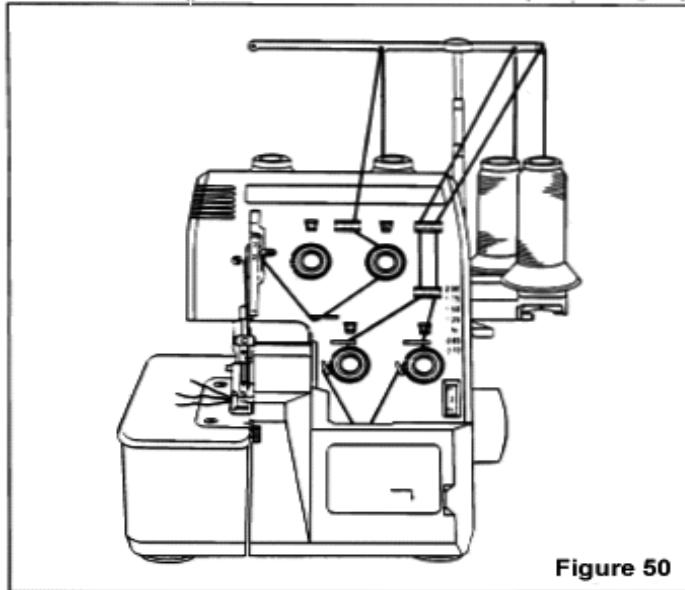


Figure 50

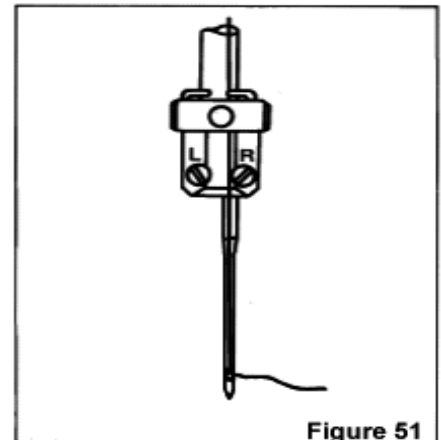


Figure 51

The tension on each thread is controlled by its color – coded tension dial. Turn the dial to the right (clockwise) to tighten or increase tension. Turn the dial to the left (counter – clockwise) to loosen or decrease tension. The chart on page 35 indicates suggested range of tension number ranges for three – thread stitching. Note on this chart the specific setting for your own machine.

The pictures below illustrate some incorrect thread tension for three – thread stitching and the necessary adjustments to correct them.

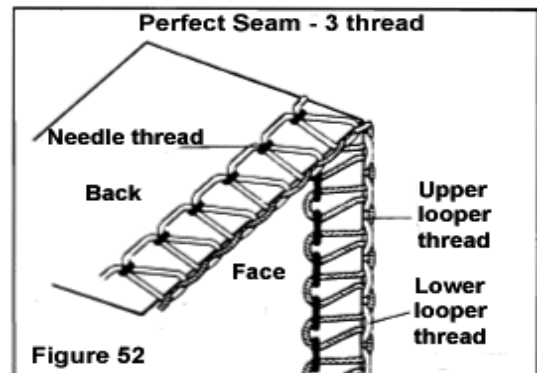


Figure 52

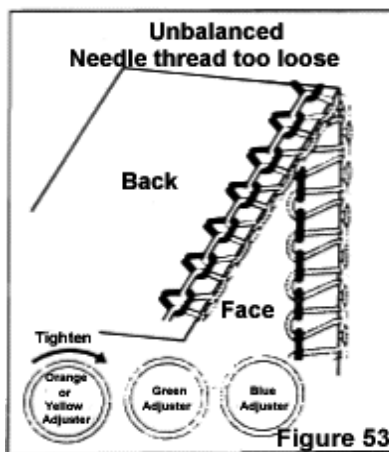


Figure 53

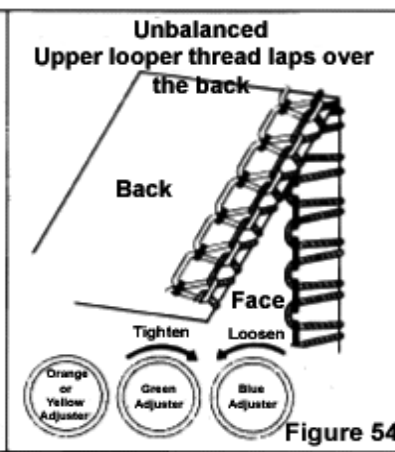


Figure 54

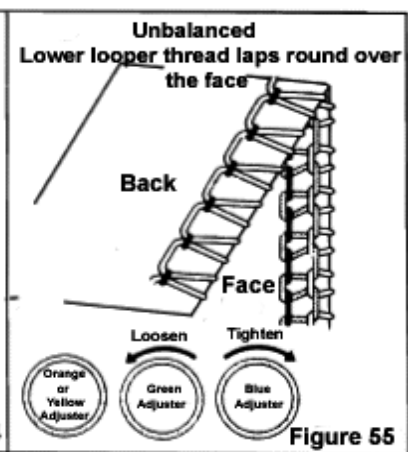


Figure 55

9 TWO – THREAD SERGING

Two – thread serging provides a decorative, but functional seam, known as the flatlock seam. On garments ranging from lingerie to fake – fur coats it produces flat, non – bulk seam. Use it to seam fake – fur fabrics, and you will find that the stitches “disappear” in the nap. When seaming active wear the decorative appearance or flatlock can be enhanced with the use of metallic or variegated thread.

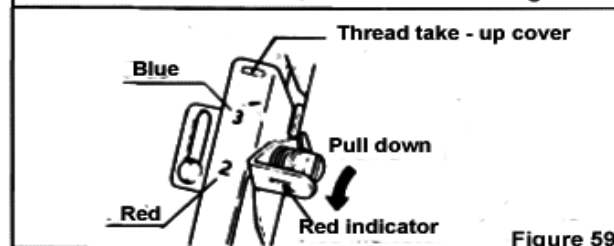
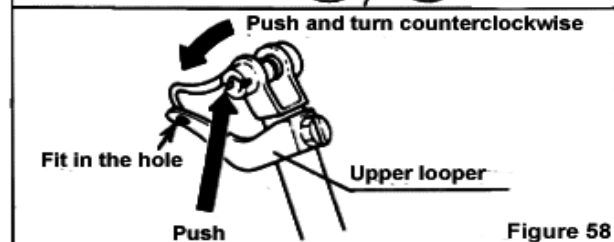
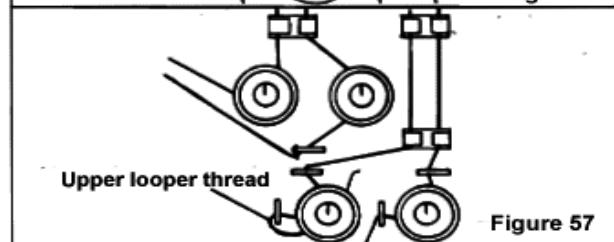
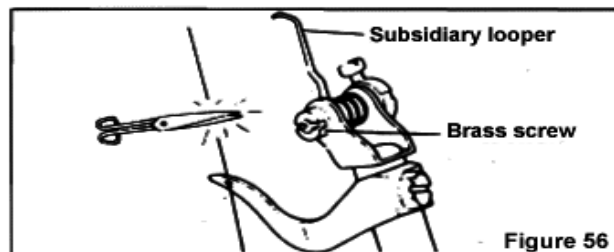
Besides flatlock seaming, two – thread serging provides an economical, yet sturdy means of overedging all fabrics. When combined with specialty threads, two – thread stitching makes decorative edges for ruffles, hemlines, borders and accessories.

Two – thread sewing is accomplished through the elimination of two threads (upper looper, green color – coded path and either needle thread), and slight machine adjustments.

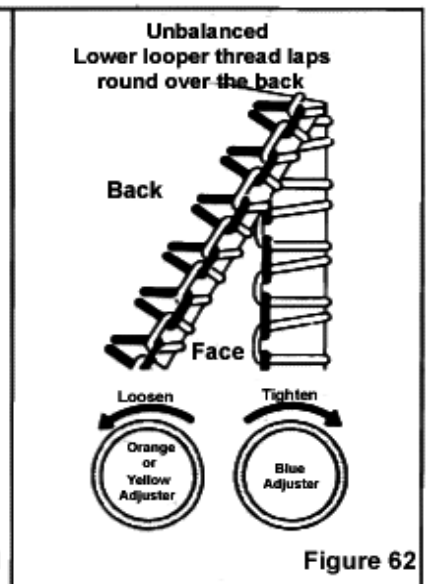
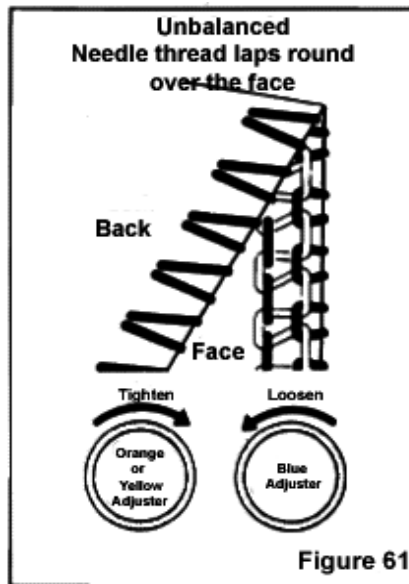
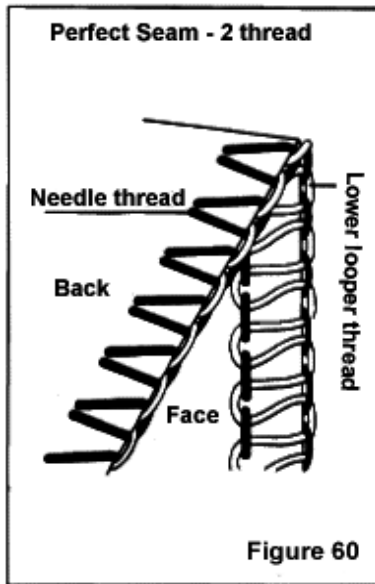
The stitch pattern for two – thread sewing has a slightly different appearance from that of three – thread sewing. If tension is properly set, the needle thread forms a flat overedge loops on the underneath side of the fabric, while the lower looper thread creates similar stitches on the top side of the fabric. Both threads lock together at the cut edge as well as at the needle stitching line. (See Figure 60).

9 – 1 To convert from three – thread to two – thread sewing

1. Open the front cover and rotate the handwheel to bring the upper looper to its lowest position.
2. Cut upper looper thread just behind the eye of the looper, and without unthreading all the thread guides, bring the loose thread up and over its own tension disc (green). This keeps it out of the way, and eliminates the need for complete rethreading later.
3. Push on the subsidiary looper screw (brass) with your finger or small screwdriver, and rotate it to the left until the tip of the subsidiary looper fits securely in the eye of the upper looper, thus disengaging the looper.
4. Move the thread guide switch from the blue “3” to the red “2”. Be careful not to move the switch lower than necessary.
5. Adjust tension. (See page 35).

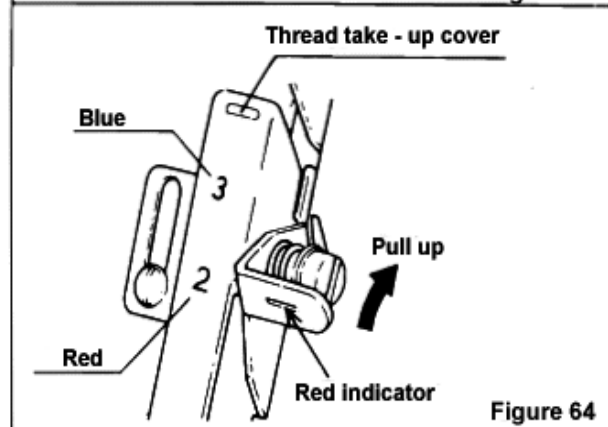
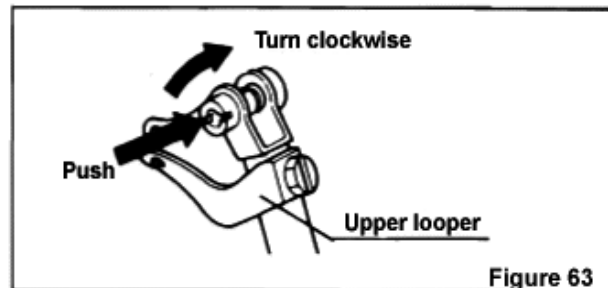


When you are doing two – thread serging for the first time, use a medium weight fabric to sew a test sample for determining correct tension setting. Begin by setting needle tension to “1.5” and lower looper tension to “4”. Sew the sample. If threads are not balanced make adjustments according to illustrations. Record correct tension on chart, page 35.



9 – 2 To return from two – thread to three – thread or four – thread sewing

1. Open the front cover and rotate the handwheel to bring the upper looper to its lowest position.
2. With your finger or small screwdriver, push in the brass screw and rotate clockwise to bring the subsidiary looper to the “up” position.
3. Place upper looper thread back in any thread guides which may have come undone and back through the eye of the looper.
4. For four – thread sewing, replace the second needle and its corresponding thread.
5. Move the thread guide switch from the red “2” to the blue “3”.
6. Balance tension for three – thread or four – thread sewing (refer to chart, page 35).



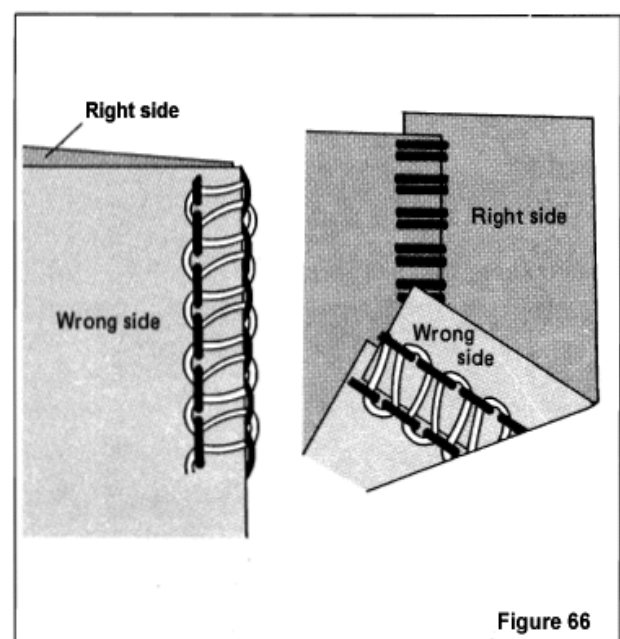
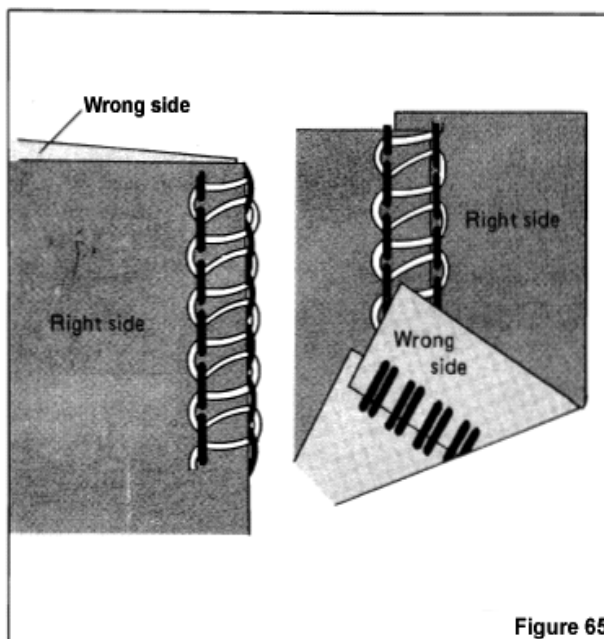
9 – 3 Flatlock seams

Flatlock seams are ideal for many fabrics, including interlock, spandex, tricot, sweatshirt fleece, fake – fur and synthetic suede. Flatlock seaming may be used on many woven fabrics, as well, but be sure to make a test seam first to determine whether it will have the necessary strength. In any instance, the seam should be considered “decorative” because the thread pattern will show on the outside as well as the inside of the garment.

Flatlock seams are sewn in the same manner as three – thread seams; however, after sewing, the two fabric layers are pulled until the seam lays flat, and the two – threads form a pattern between them. Before sewing, you must decide which stitch pattern you want to have on the outside of the garment.

If you wish to have the loop pattern showing, place fabric wrong sides together before sewing seam. (Figure 65).

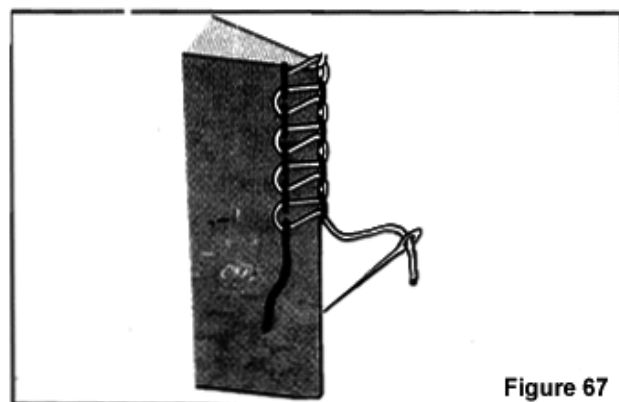
If the ladder effect is desired on the outside, the fabric is placed right sides together. (Figure 66).



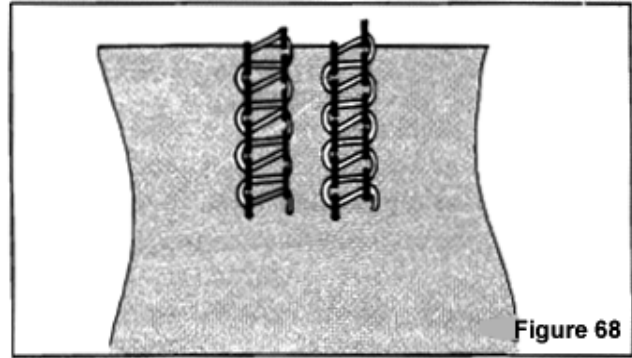
9 – 4 Flatlock tucks

Decorative tucks may be created on blouses, dresses, childrens and infants wear, etc., with the use of the flatlock stitch. Either follow placement lines on your pattern or design your own tucks by stitching fabric prior to laying out pattern pieces.

1. Set the machine for two – thread sewing with stitch length and width as desired for finished look.
2. Disengage the upper knife.
3. Fold fabric – right side out – along tuck placement lines.
4. Position fabric under the presser foot with fold aligned with the right edge of the needle plate, and stitch the tuck to desired ending point.



5. Clear the stitch fingers, and chain off the fabric.
6. Clip threads, leaving a 3 – 4" chain on fabric.
7. Gently pull the fabric to flatten the stitches.
8. Thread the chain through a large – eyed needle, sew to back side of fabric and secure.

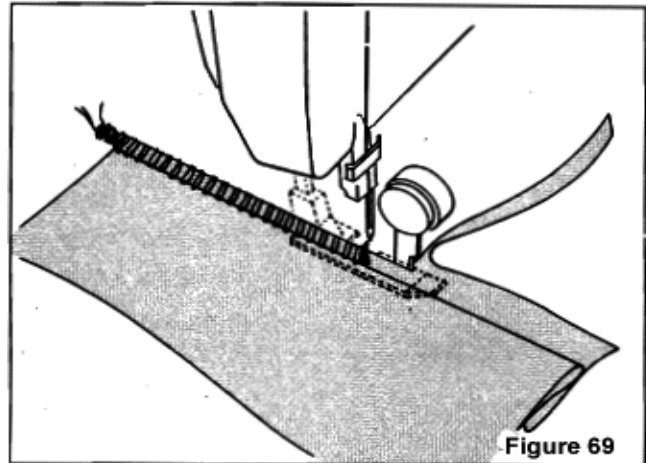


NOTE: If you find the fabric does not pull completely flat under the stitches, move the fold edge of the fabric slightly back from the edge of the needle plate. This will allow threads to loop slightly off the edge of the fabric and let the fabric pull completely flat.

9 – 5 Blind Hemming

It is possible to create a type of blindhem on your Baby Lock serger which will provide a sturdy finish for sportswear, childrens wear and home decorator items.

1. Set the machine for two – thread sewing, stitch width "5", stitch length "4".
2. Fold the fabric up along hemline and press in place. Then fold back against the right side of the garment to create a soft fold about 1/4" from the top edge of the hem.
3. Align hem under the presser foot and stitch, allowing the needle to catch only a thread or two of the soft fold; the knife will trim the top edge of the hem.
4. Open the soft fold and press flat.



NOTE: Remove the left needle when Blindhem sewing.

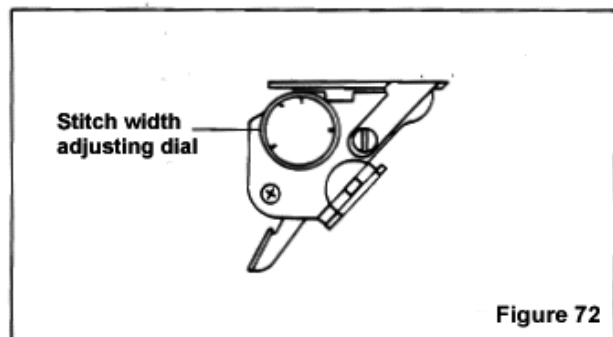
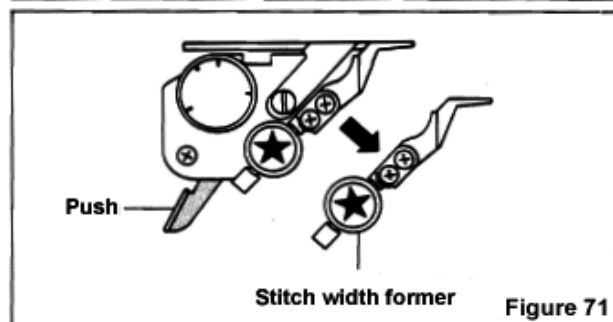
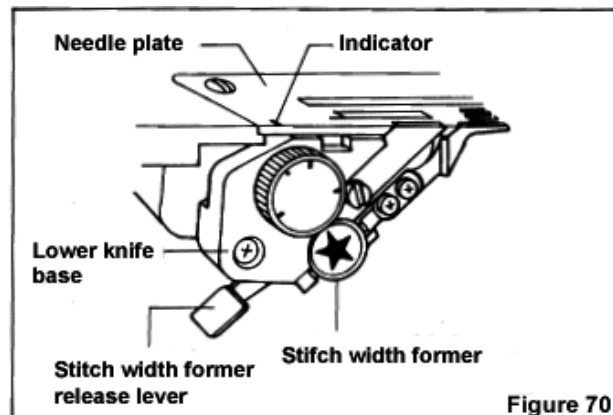
An optional blindhemming foot is available through your Baby Lock dealer.

10 NARROW ROLLED EDGING

The narrow rolled edge setting is used to achieve the narrowest (1.5 mm) stitch possible on your Baby Lock serger. It is used for seaming sheer and light weight fabrics, as well as edging and hemming all but heaviest fabrics. This narrow edge is accomplished by removing the "Stitch Width Former" from the lower knife base. Stitches are then formed on the one tiny remaining stitch finger.

10 – 1 To adjust the needle plate for narrow rolled edging

1. Remove the left needle and corresponding thread.
2. Open both the front and side covers.
3. Raise the presser foot and the upper knife to the highest position.
4. Clear the stitch fingers.
5. Push the stitch width former release lever and remove the stitch width former from the lower knife base. (Figure 71). Place the stitch width former in the side door accessories compartment.
6. Turn the stitch width adjusting dial (red dial) until the marked "M" on the dial matches the red indicator on the needle plate. (Figure 72).
7. Set the stitch length to "M".
8. Lower the presser foot and the upper knife.



Setting the machine in the above manner will provide a narrow edge, but not a rolled edge. It creates an attractive edge or seam for many fabrics, and is especially, suitable for edging firm fabrics.

Narrow rolled edging can be accomplished with either the three – thread or two – thread mode of operation, and its appearance can be varied by tension adjustment and the use of specialty threads. You will usually let the weight and characteristics of the fabric determine whether you use three or two – threads and how the tensions should be set. See page 26 for instructions on "Narrow Rolled Edging".

10 – 2 Three – thread narrow rolled edge

Use three – thread rolled edging to provide a secure seam or decorative edge on light to medium weight fabrics.

1. Remove the stitch finger. (See steps 3 ~ 5, page 25).
2. Remove left needle; use right needle only.
3. Adjust tension by rotating lower looper tension knob about 3 numbers higher than it is normally set for three – thread sewing.

The tension adjustment tightens the lower looper thread, causing the edge of the fabric to roll around the stitch finger. The upper looper thread then wraps the fabric edge. Sew a test sample first to determine if edge of fabric is sufficiently rolled. If not, continue to tighten until desired effect is achieved. Record tension setting on chart (page 35).

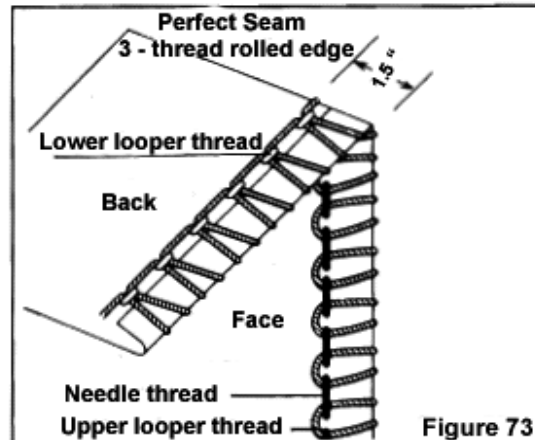


Figure 73

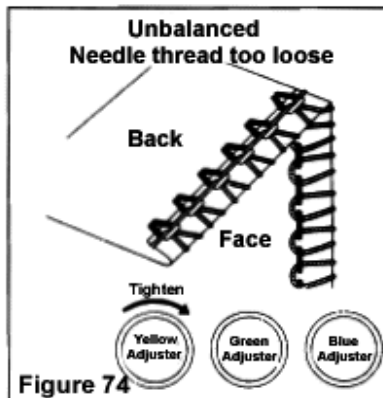


Figure 74

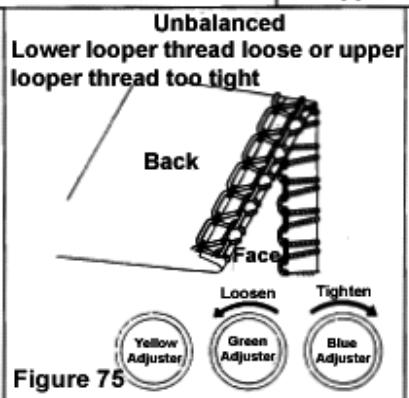


Figure 75

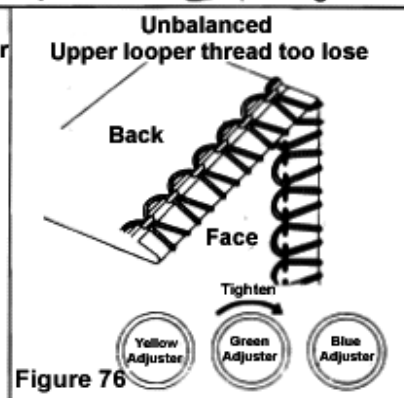


Figure 76

10 – 3 Two – thread narrow rolled edge

A two – thread narrow rolled edge is often preferred for hemming very soft fabrics which may otherwise develop undesired stiffness with three – threads. It can also produce interesting “picot – like” effects on tricot and stretch knit fabrics if the stitch is lengthened to “4”.

1. Remove the stitch finger. (See steps 3 ~ 5, page 25).
2. Remove left needle; use right needle only.
3. Set the machine for two – thread sewing (page 21).
4. Adjust the needle tension by rotating knob to “6”.

This tension adjustment tightens the needle thread and causes the lower looper thread to roll around the stitch finger, wrapping the fabric edge. If “6” does not create a tight enough roll, turn to a higher number. If it is too tight, or the thread breaks, turn to a lower number. Sew a test sample, and record tension settings on chart. (Page 35)

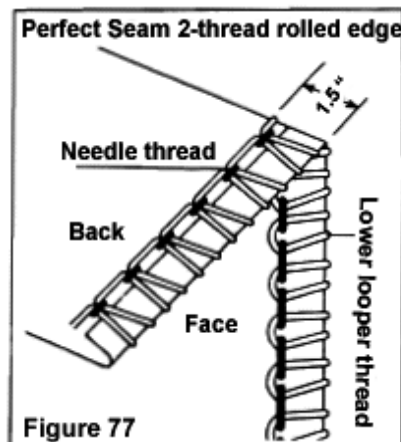


Figure 77

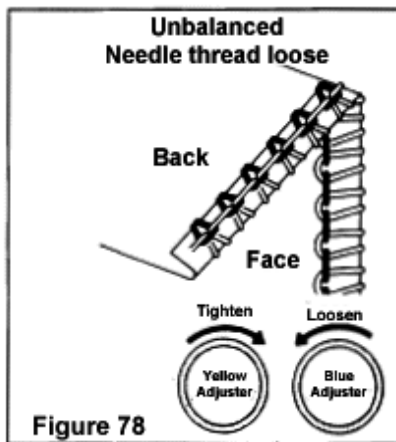


Figure 78

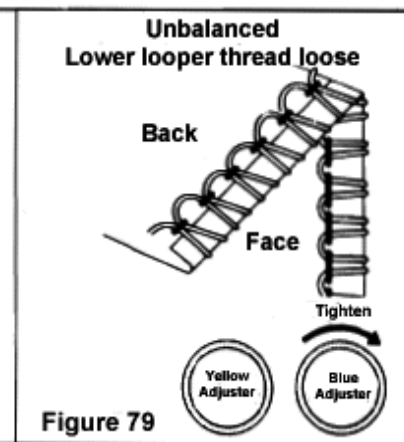


Figure 79

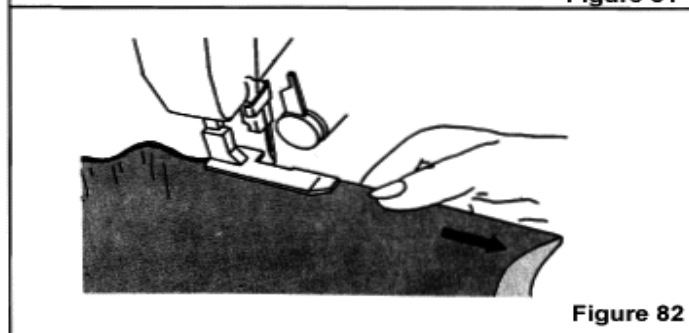
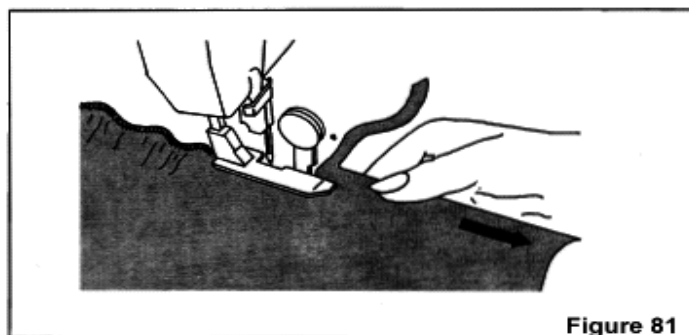
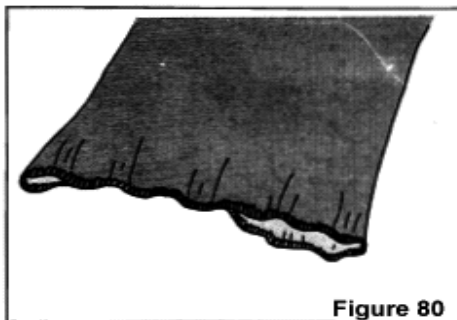
10 – 4 Seaming sheers with rolled edge

Use the three – thread narrow edge setting when sewing sheer fabrics which would normally require French seam finishing. The stitch length should be set at “2” and tension may be adjusted for a rolled or non – rolled finish, according to your preference. Then, simply sew seams, aligning fabric with seam marks, and trimming away excess fabric.

10 – 5 Lettuce edge

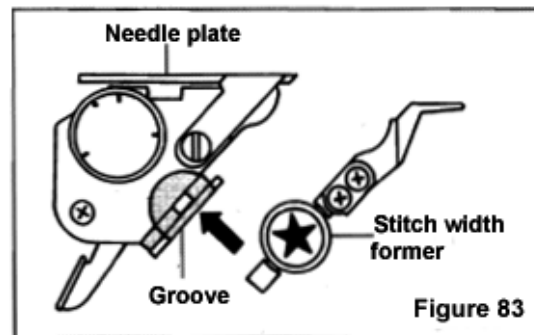
A fluted, or “lettuce” edge can be created on most light and medium weight stretch fabrics, including interlock, jersey and ribbing, and it can also be done along the bias edge of soft, woven fabrics. It is appropriate on sportswear, childrens wear, and accessories, but can also be very effective on eveningwear.

Set the machine for two – thread or three – thread rolled edging (rolled or unrolled), stitch width “M”. Edge the fabric in the direction of greatest stretch, usually the crossgrain, or in the case of wovens, along the bias. More “lettucing” can be developed by either slightly stretching fabric in front of presser foot as you sew, or stretching edge after it has been sewn.



10 – 6 Resetting from narrow rolled edge to four – thread serging

1. Open both the front and side cover.
2. Raise the needle to the highest position.
3. Replace the stitch width former into groove of the lower knife base until it snaps by pushing position lower knife base by aligning the red indicator on the lower knife base. Push the stitch width former back into position until it snaps.



NOTE: Before installing the Stitch Width Former, remove any lint or dust from the channel with your lint brush or a compressed air product.

11 DIFFERENTIAL FEED ADJUSTMENT

The differential feed system is applicable when sewing either woven or stretch fabrics. The differential feed adjusting lever is located on the upper right of the face plate. You may adjust the ratio of differential feed setting with the range of 2.00 – 0.70 according to the fabric and desired results.

Differential feed adjustment

N : Both feed dogs are feeding equally.

N – 0.70 : The front feed dog will take shorter strokes than the back feed dog, causing the fabric to be slightly stretched as it is sewn. This adjustment causes the fabric to pull taut as it enters the needle, preventing puckers on lightweight fabrics. This setting can also be used to create a fluted edge or to add additional stretch in active wear and swim wear.

N – 2.00 : The front feed dog will move farther than the back feed dog, causing the fabric to be compressed or ruffled. This increased motion causes the fabric to feed into the needle more rapidly than it feeds out, in effect easing the fabric. This will eliminate wavy seams in stretch fabrics or in bias grain – line areas. Also use these settings to automatically ease areas where additional fullness is required, such setting in a sleeve. At the maximum setting of 2.00 the differential feed can actually gather a lightweight fabric to nearly double fullness. It is recommended that the longest stitch length setting be used to maximize the gathering effects.

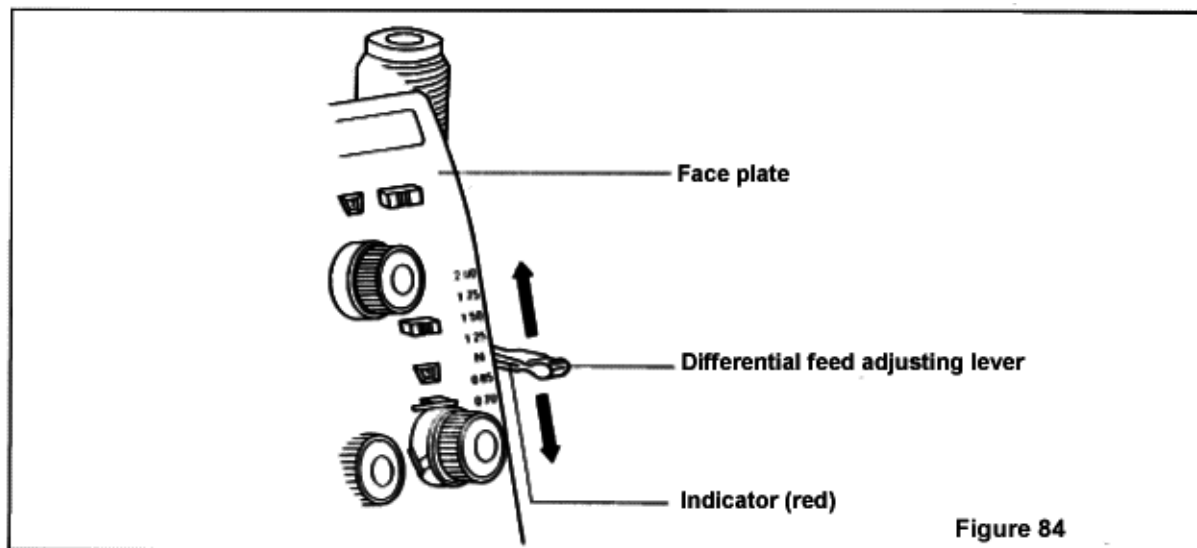


Figure 84

12 SPECIALTY THREADS

There are a growing number of specialty threads available today which will sew well on your Baby Lock serger. They can be used to enhance appearance, add strength or elasticity, or create special effects, depending on the characteristics of the thread you choose.

Keep in mind that quality and characteristics of a thread will vary greatly from one manufacturer to another. Some specialty threads work well through the needle and loopers, while others may be too heavy to be threaded through the needle and are for looper use only. Due to the thickness or coarseness of most of these threads, it is usually necessary to loosen the tension disc that the specialty thread passes through.

Use the following chart as a guide in the use of specialty threads. As you become more confident with serger sewing, experiment with additional threads and serging ideas.

13 SPECIALTY THREAD GUIDE

	Synthetic Topstitch/ Buttonhole Twist	Soft, Stretchy Nylon	Metallic
APPLICATION	Edging or flatlock seaming all type sportswear, home decorator items	Excellent for providing soft elastic seams on lingerie, swimwear, activewear, silky, rolled edge.	Highly decorative edge for sportswear, evening wear, holiday gifts and home décor.
4-thread seaming	Yes	Yes	Yes, for outside exposed seam only
3-thread seaming	Yes	Yes	Yes, for outside exposed seam only
2-thread flatlock	Yes	Yes	Yes
4-thread edging	Yes	Yes	Yes
3-thread edging	Yes	Yes	Yes
2-thread edging	Yes	Yes	Yes
3-thread narrow rolled edging	Use in upper looper only	Yes	Yes
2-thread narrow rolled edging	Use in lower looper only	Yes	Yes
COMMENTS	May work satisfactorily in size 14 needle; not in size 11.	May be used through needle. Tensions may need to be adjusted.	Vary greatly according to manufacturer. Avoid those with coarse, metal fibers. Experiment to find which works best.

Monofilament Nylon (Transparent)	Lingerie/ Machine Embroidery	Silk or Rayon Topstitch	Pearl Cotton Crochet Cotton 2-ply Baby Yarn 1/16" Ribbon (Silk, Rayon)
Fashion accessories, home decorator items requiring strong seams, thread invisibility	Lingerie, lightweight fabrics where stress is not a factor, edging soft fabrics.	High luster edging or flatlock seaming for elegant fashion garments and accessories	Edging or flatlock, seaming of garments, accessories, home decorator and nursery items.
Yes	Yes	Yes	Not appropriate
Yes	Yes	Yes	Not appropriate
Yes	Not appropriate	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes – Soft, lightweight monofilament only	Use in needle and upper looper. May break in lower looper.	Use in upper looper only	Not appropriate
Yes – Soft, lightweight monofilament only	Lower looper only.	Use in upper looper only	Not appropriate
Some brands are too heavy and wiry to loop well. Look for lightweight, supple selection.			Require testing and experimentation to achieve tension balance. It may be necessary to by – pass tension disc altogether. Use in loopers only.

14 REPLACING NEEDLES

1. Raise needle to highest position by turning handwheel toward you.
2. Loosen black needle clamp screw (use small screwdriver) and remove needle.
3. Insert new needle with flat side of the needle to the back and tighten needle clamp screw.

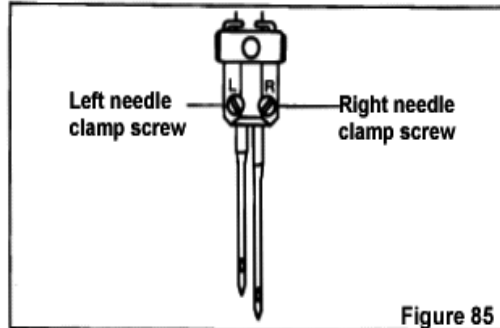


Figure 85

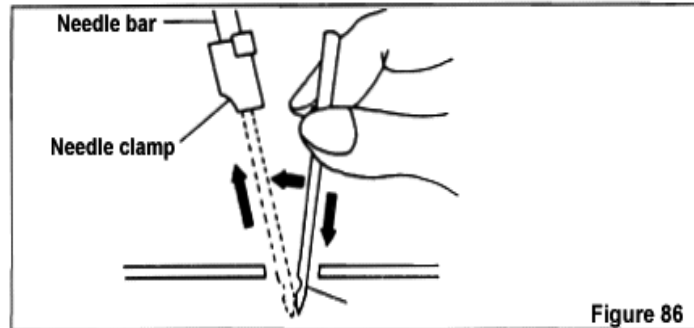


Figure 86

Note: You will find it easier to hold the needle with the long tweezers rather than between your fingers.

15 REPLACING KNIVES

The upper knife is made of special long – lasting steel and does not require frequent replacement. The lower knife is made of softer steel and will need to be replaced periodically. A spare lower knife is in the accessory kit.

* Replacing the lower knife.

1. Open the front cover.
2. Move the upper knife to the “up” position.
3. Remove the lower knife clamp screw and the lower knife.
4. Insert the new knife into the groove and move it up until the upper edge is flush with the top of the needle plate.
5. Tighten the lower knife clamp screw.
6. Close the front cover.

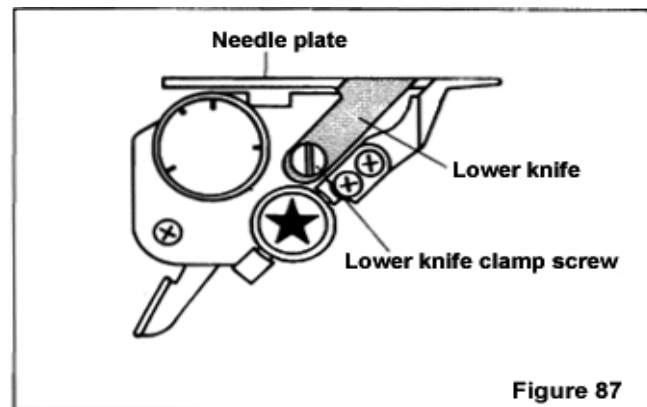


Figure 87

* Replacing the upper knife.

1. Open the front cover and rotate handwheel to bring the upper knife to its lowest position.
2. Remove the upper knife clamp screw, washer and knife. (Figure 88).
3. Insert a new knife with longer point to the rear.
4. Align the top of the knife with the top of the front cover and tighten the screw temporarily.
5. Align the upper knife so that its lower front edge overlaps the lower knife by 1 mm. Tighten the screw firmly.

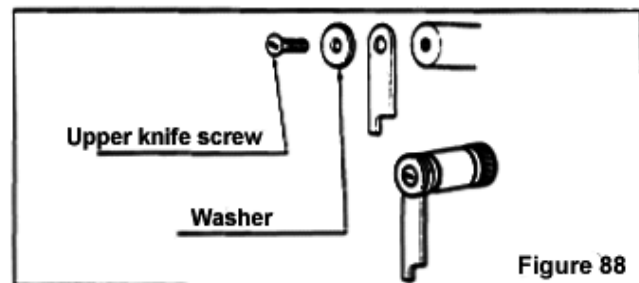
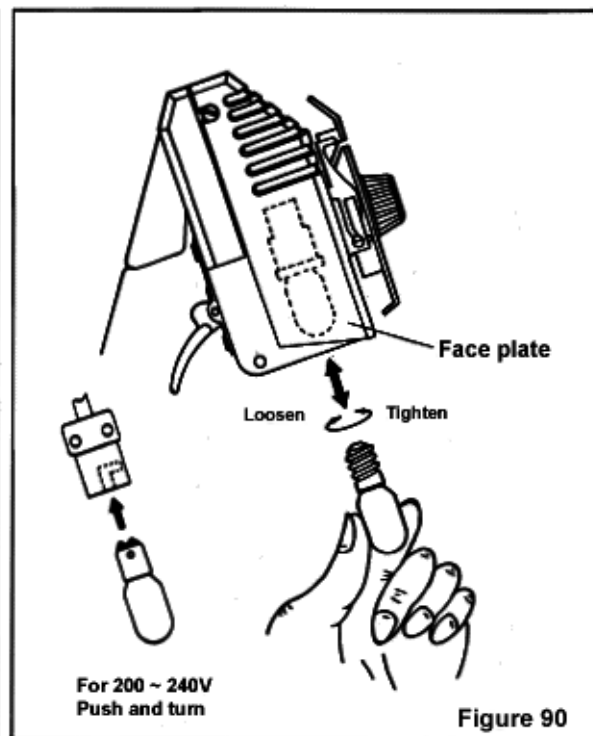
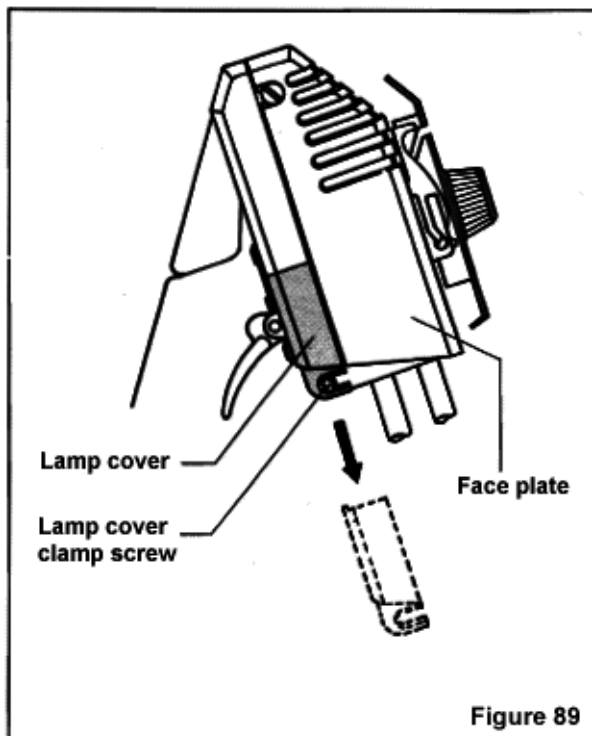


Figure 88

16 REPLACING A LIGHT BULB

1. Turn the power "off" and do not attempt to change the bulb until it is cool.
2. Loosen the lamp cover clamp screw and remove the lamp cover. (Figure 89)
3. Remove old bulb with your left hand and insert new one (10 ~ 15W/110V, over 200 voltage country 10 ~ 15W/240V) as shown in Figure 90.
4. Replace lamp cover and tighten screw.



17 CLEANING

Your Baby Lock serger will operate at best performance for many years if kept clean at all times. The cutting action of the serger creates much more lint than you will find on conventional sewing machine. This lint impedes the efficiency of the serger and also acts as a sponge to draw oil from it.

Your serger needs no oiling for many years because the major moving parts are made from oil – impregnated metal. Use the cleaning brush often during garment construction to keep lint off the knives, needle and feed dogs. We also recommend an aerosol lint remover such as Lint B Gone TM.

18 TROUBLE SHOOTING GUIDE

Before taking your machine in for service, check the following:

* Machine fails to start ...

1. Are electrical plugs properly connected?
2. Is the power switch turned on?
3. Check household circuit breaker or fuse.

* Thread breaks...

1. Is machine threaded correctly? Check each thread guide, all tension discs.
2. Did you unthread the needles before rethreading the lower looper?
3. Is the needle inserted correctly?
4. Is the needle blunt?
5. Is tension adjusted too tightly?
6. Is tension adjusted to accommodate thickness of thread being used?
7. Are you using inferior quality thread?
8. Is thread feeding off spool/cone freely?
9. Is the needle size correct for the type fabric being used?

* Fabric will not feed into machine...

1. Is the presser foot down?
2. Are the knife blades sharp?
3. Are the knife blades clean of lint?
4. Is the presser foot properly adjusted?
5. Are the feed dogs and presser foot free of lint?
6. Are the knives properly set and is the upper knife against the lower knife?
7. Is stitch length set properly?

* Seam unbalanced...

1. Is the serger threaded correctly?
2. Is the needle tension too loose for type fabric being used?
3. Are the looper tensions properly adjusted?
4. Is the thread in the tension disc?
5. Have you changed to specialty threads are not made tension adjustments to accommodate thread thickness variation?

19 SPECIFICATION

Item	Specification
Stitch width (standard)	3.5 ~ 7.5 mm
Stitch width (narrow rolled edging)	1.5 mm (M)
Stitch length	1 ~ 4 mm
Number of threads	4, 3 or 2 thread
Needle	DC x 1F #11 or # 14
Maximum sewing speed	1500 rpm
Machine weight	7.5 kg (with motor)
Lamp	15W/110V 10W/240V (over 200 voltage country)

20 DO'S AND DON'TS

1. Always be aware of the up – and – down movement of the needle and do not turn your attention from the machine while it is running.
2. When changing the needle, the presser foot, or any other parts, always disconnect the machine by turning the power switch to “off”.
3. Do not place anything on the speed controller, otherwise the machine will start inadvertently, or the controller or motor may burn out.
4. The maximum permissible power for the sewing lamp bulb 10 ~ 15 watts 110 volts or 15 watts 240 volts (over 200 voltage country).
5. When using your serger for the first time, place a piece of waste fabric under the presser foot and run the machine without thread for a few minutes. Wipe away any oil which may have appeared.
6. Do not pull fabric from rear of machine, this may damage looper mechanism.
7. To prevent possible injury, always avoid body contact with any moving parts and machine mechanism.

Special Caution: Unplug the power cord from the power source when the machine is not in use.

21 CHART FOR TENSION ADJUSTMENT

FABRIC	NEEDLE SIZE	THREAD	STITCH TYPE	STITCH LENGTH	STITCH WIDTH	TENSIONS			
						ORANGE L Needle	YELLOW R Needle	GREEN Upper looper	BLUE Lower looper
<u>LIGHTWEIGHT /DELICATE</u> Chiffon, Organdy, Silk voile, Tricot, Jersey, Crepe, Taffeta, Crepe de chine.	11	Long staple polyester	4-thread seaming or overcasting	2 ~ 3	5.7 ~ 7.5	5 ~ 8	4 ~ 6	2 ~ 4	2 ~ 4
			3-thread seaming or overcasting	2 ~ 3	3.5 ~ 7.5	N/A	5 ~ 7 N/A	2 ~ 4	2 ~ 4
		Fine mercerized cotton	2-thread flatlock or overcasting	2 ~ 3	3.5 ~ 7.5	N/A	0.5 ~ 1.5 N/A	N/A	2 ~ 4
			3-thread narrow rolled edge	M (1.5)	M	N/A	2 ~ 4	2 ~ 4	8 ~ 9
		Silk	2-thread narrow rolled edge	M (1.5)	M	N/A	3 ~ 5	N/A	3 ~ 5
			4-thread seaming or overcasting	3	5.7 ~ 7.5	5 ~ 7	4 ~ 6	2 ~ 4	2 ~ 4
<u>MEDIUM WEIGHT</u> Cotton broadcloth, Cotton – polyester blends, Chintz, Sheeting, Gingham, Linen, Satin, Poplin Wool, Corduroy, Suede, Cloth, Gabardine, Double Knit, Velour, Fleece, Spandex	11 ~ 14	Long staple polyester	3-thread seaming or overcasting	3	3.5 ~ 7.5	N/A 5 ~ 7	5 ~ 7 N/A	2 ~ 4	2 ~ 4
			2-thread flatlock or overcasting	3	3.5 ~ 7.5	N/A 0.5 ~ 2	0.5 ~ 2 N/A	2 ~ 4	2 ~ 4
		Size 50 mercerized cotton	3-thread narrow rolled edge	M (1.5)	M	N/A	3 ~ 5	2 ~ 5	8 ~ 9
			2-thread narrow rolled edge	M (1.5)	M	N/A	4 ~ 6	N/A	3 ~ 5
			4-thread seaming or overcasting	3 ~ 4	5.7 ~ 7.5	6 ~ 8	5 ~ 7	2 ~ 4	2 ~ 4
			3-thread seaming or overcasting	3 ~ 4	5.7 ~ 7.5	N/A 3 ~ 5	3 ~ 5 N/A	1 ~ 3	2 ~ 4
<u>HEAVY WEIGHT</u> Denim, Wool coating, Canvas, Upholstery, Fake fur	14	Long staple polyester	2-thread seaming or overcasting	3 ~ 1	5.7 ~ 7.5	N/A 0.5 ~ 1.5	0.5 ~ 2 N/A	N/A	5 ~ 7
			3-thread narrow rolled edge	NOT SUITABLE					
		Size 40 ~ 50 mercerized cotton	2-thread narrow rolled edge	NOT SUITABLE					
			4-thread seaming or overcasting	3 ~ 4	5.7 ~ 7.5	6 ~ 8	5 ~ 7	2 ~ 4	2 ~ 4
			3-thread seaming or overcasting	3 ~ 4	5.7 ~ 7.5	N/A 3 ~ 5	3 ~ 5 N/A	1 ~ 3	2 ~ 4
			2-thread seaming or overcasting	3 ~ 1	5.7 ~ 7.5	N/A 0.5 ~ 1.5	0.5 ~ 2 N/A	N/A	5 ~ 7

Chart indicates the suggested range of tension numbers for each stitch category.
As you determine the specific settings for your machine, note them on the chart.