

Serger Basics

Level 1

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Sergers revolutionized home sewing, making many projects easier and faster. However, the serger is not suitable for all sewing tasks. Before starting a project, carefully think through the necessary steps to decide whether to use a serger, a conventional sewing machine, or a combination of the two (Table 1).

Just as conventional sewing machine models offer different features, sergers can come in 2-through 10-thread models. You must read and rely on your instruction manual for the specifics of your serger. This publication is designed to provide general, supplemental information to help you use, understand, and enjoy your serger.

Table 1. Conventional sewing machines versus sergers/overlock machines.

Conventional Sewing Machine	Serger/Overlock Machine
Typically uses one spool of thread	May use 2 to 10 spools of thread
Requires a bobbin that contains a lower thread	Has no bobbin; one or more spool threads feed the loopers
Requires manual trimming	Has one or more knife blades that trim the fabric as you sew (cutters)
Forms a lockstitch through spool thread and bobbin thread that meet	Creates a knitlike chaining process through needle thread(s) that penetrate fabric and connect with looper thread(s)
Can backstitch to secure threads	Cannot backstitch

Serging Seams

Use the serger to sew seams when:

- The pattern fits or when fit is not a consideration
- Seam allowances do not need to be pressed open
- A stretch seam is needed, such as on a knit fabric
- A smooth seam is difficult to accomplish with a conventional sewing machine

Serger Sewing Tips

The following tips will help you get the most out of your serger.

- Fit before you sew.
- Because fabric notches are cut off when stitching, use an alternative marking method.
- Change pin placement when pinning fabric for sewing. (You cannot sew over pins.)
- Match the color of the left needle or single needle threads to the fabric; other threads may match or blend.
- Raise the telescoping thread guide to the highest position before threading.
- Leave the presser foot lowered when starting and stopping the serger.
- In most situations, trim at least a “hair’s width” of the fabric when stitching.
- When changing threads, clip the thread near the spools and tie on the new thread using an over-hand knot.
- Make a mark on the front of the presser foot indicating the needle line.
- Check for proper threading before adjusting tension.
- Sew at a steady, medium speed.

Understanding Your Serger

There are many models of sergers available, and they include similar features. The following descriptions are for a 3- to 4-thread machine. (Figure 1).

Cutting system (knives). Trim the fabric as it is being stitched.

- Upper blade—movable or adjustable blade.
- Lower blade—part of the dual blade cutting system that remains stationary. May be adjusted on some machines to change stitch width.

Differential feed. Not available on all machines. Helps to prevent puckered or stretched seams. Can be used to gather fabric.

Flywheel. Manually raises and lowers the needle(s).

Loopers. Parts of the machine that help to form the stitch.

- Upper (right) looper—second thread spool from the right. Thread lies on top of the fabric when using a balanced stitch.
- Lower (left) looper—first thread spool on the right. Thread lies on bottom of the fabric when using a balanced stitch.

Needle(s). Carry the thread through the fabric connecting with the looper threads. All 3-thread machines will have one needle; 4-thread machines can have two needles.

Presser foot. Holds the fabric in sewing position to stitch. The feed dog, the needle plate, and the presser foot work together to move the fabric to the cutting system and on to the needle.

Stitch finger (stitch former). Located in conjunction with the presser foot and/or needle plate. Stitches form around/over the finger and fabric edge at the same time. Completed stitch is fed off the back of the finger (Figure 2).

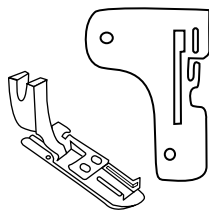


Figure 2.

Telescoping thread guides. Devices that guide the thread from the spool(s) to the tension discs. Thread guides collapse for storage.

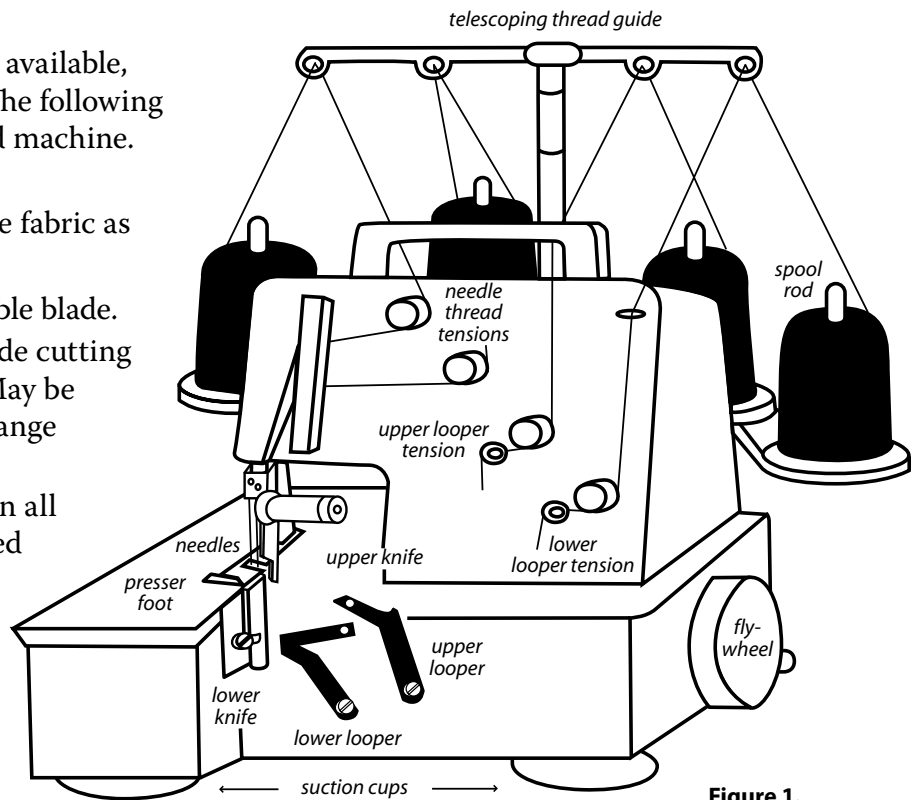


Figure 1.

Tension dial. Located on the front, or face, of the machine. Can be a vertical, built-in adjustable dial or a knob dial. Adjusts the looseness or tightness of thread (Figures 3a and 3b). Electronic models may have adjustments on an LCD touch screen.

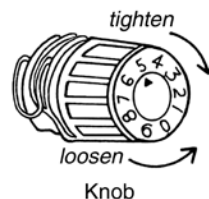


Figure 3a.

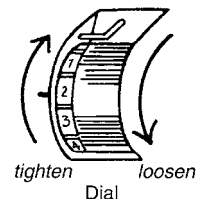


Figure 3b.

Your serger performs best when it is clean!

After each use of the serger, open the serger cover (the one that covers the looper threading area). Using a canned air product designed to clean sewing machines and sergers, blow all lint out of the machine. Apply a drop or two of sewing machine oil on all accessible moving parts. To help determine which parts to oil, turn the handwheel toward you. Apply oil to any part that moves.

Threading the Serger

The recommended sequence for threading is:

1. Upper looper
2. Lower looper
3. Right needle
4. Left needle

Most machines are threaded in this order. However, it is important to follow the threading procedure recommended for your machine so that the threads are correctly aligned. On most sergers, if one or more of the loopers become unthreaded, remove the thread from the eye(s) of the needle(s) before re-threading the looper(s). Threading procedures may vary with machine brand and/or model. *Always check your manual before you begin.*

After threading the machine, gently guide the threads behind and below the presser foot. Lower the presser foot and run the machine without any

fabric, creating a chain of stitches at least 4 to 5 inches long (Figure 4). This is called “chaining off.”

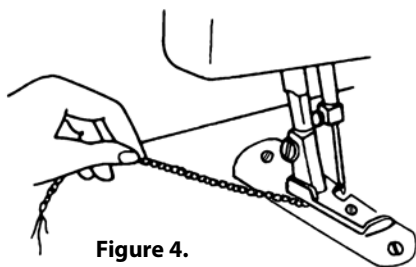


Figure 4.

Changing Serger Threads

If the serger was properly threaded originally, a shortcut can be used to change thread without entirely unthreading the machine. Pull extra thread from each of the spools. Clip each thread near the spool at the back of the machine (Figure 5). Replace the old spools of thread with new ones. With corresponding old and new thread ends held together, tie with an overhand knot, as it will not slip or come untied (Figure 6).

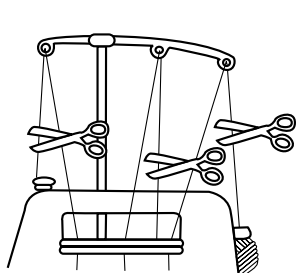


Figure 5.

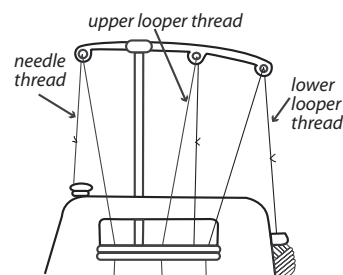


Figure 6.

When using the shortcut of tying on threads, cut needle thread(s) at the needle (Figure 7) and gently hold and guide the threads from the needle(s) and then the looper(s) until the thread knot is through the loopers. If the knot(s) on the thread(s) will not go through the tension discs, you may need to release/loosen the tension(s) or remove the thread(s) from the tension(s) and pull the threads through the machine. When the knot gets to the needle(s), cut the knot off and re-thread with new thread(s). Chain off 4 to 5 inches before beginning to sew.

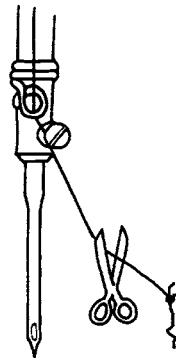


Figure 7.

Sewing

Place the fabric next to the front of the presser foot and gently feed. (The presser foot does not have to be lifted unless the fabric does not want to feed.) The stitching line forms where the leftmost needle enters the fabric, not where the knife cuts. When stitching a $\frac{5}{8}$ -inch seam allowance using the left needle and standard width (6 mm), the knife cuts off $\frac{3}{8}$ inch, and a $\frac{1}{4}$ -inch seam allowance remains.

Look for a seam allowance guide close to the presser foot or on the front cover. If the machine does not have any type of seam allowance guide, measure and mark one with tape or some type of permanent marking (paint, nail polish, etc.).

Pins may be used to hold fabric pieces together as you sew. However, pins must be removed prior to reaching the cutting blade(s). Another alternative is to place the pins parallel and to the left of the stitching line (Figure 8). Position pins far enough away that they do not come in contact with the presser foot.

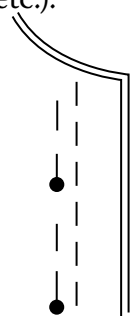


Figure 8.

When sewing, adjust the fabric so that at least a “hair’s width” will be cut off by the cutting blades (Figure 9). Guide the fabric gently through to the needle(s) to control the seam width. Sew at a steady, medium speed.

In a balanced 3-thread serger stitch operation, the needle thread penetrates the fabric, catching both looper threads. The upper looper thread lies

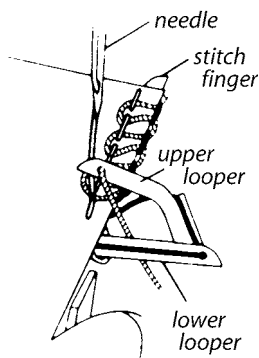


Figure 9.

on top of the fabric, and the lower looper thread lies on the bottom of the fabric, with the two looper threads knitted together at the edge (Figure 9). In a 4-thread serger operation, a second needle thread forms a second row of stitching.

When completing a line of stitching, chain (stitch) off approximately 5 inches. Cut the threads, leaving 2 inches of chain on the fabric and 3 inches on the needle.

Understanding Tension

Just as tension is important when using a conventional sewing machine, it is also important when sewing with a serger. To attain the tension for the desired stitch, you must be able to identify each thread's origin. An easy way to do this is to thread the machine with a different color thread for each thread path. This makes it easier to identify each thread. If the tension is not correct, check for proper threading before adjusting the tension dial(s) (Table 2).

Hints

- Move only one dial at a time in small increments. Sew a sample to check adjustment.
- For sergers with a tension knob, adjust by turning the knob right or left. (Remember, "Righty tighty, lefty loosey.")
- For sergers with a vertical, built-in dial, move up (+) to tighten; move down (-) to loosen. (Remember, "Up tight to tighten.")
- The higher the number, the tighter the tension.
- When it comes to adjusting serger tension, patience and practice make perfect. Some machines have automatic tension that is set depending upon the selected stitch.

Balanced Tension 3-thread Stitch

Looper threads will lock along the edge of the fabric. The needle thread will appear as regular stitching on the top side of the fabric and as a dot of thread on the underside (Figure 10).

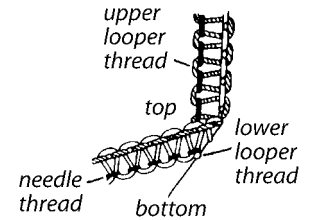
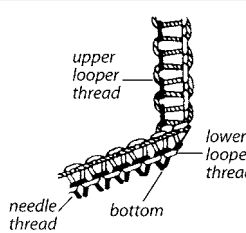
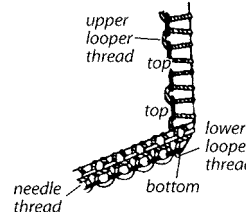
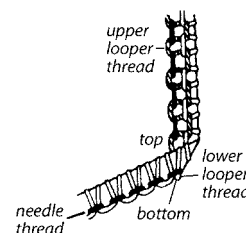
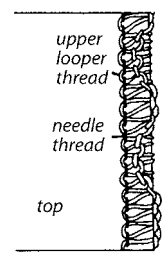


Figure 10.

Stitch Width

It is sometimes necessary to adjust the serger's stitch width. On most machines, the width is changed by moving the cutting knife. For narrow-

Table 2. Tension-related solutions.

Situation		Solution
Too much needle thread on the underside (Figure 11)		Tighten the needle thread tension or loosen the lower looper thread tension.
Upper looper thread is pulled to the underside rather than along the edge of the fabric (Figure 12)		Loosen the lower looper tension or tighten the upper looper tension.
Lower looper thread is pulled to the top side of the fabric rather than along the edge (Figure 13)		Loosen the upper looper tension or tighten the lower looper tension. Sew at a slower yet steady pace. Check for thread caught in a thread guide. Re-thread.
Hiccups (stitch width is not consistent along the seam, Figure 14)		Check for thread catching on the spool and not reeling off freely. Re-thread if necessary. Remove the net cover on the spool, as it may hinder the thread flow.

er stitches, move the stationary knife blade (lower) in toward the needle. For wider stitches, move the blade out or away from the needle. On some older sergers, the width is adjusted by using the left needle for wide stitches and the right needle for narrow stitches (Figure 15).

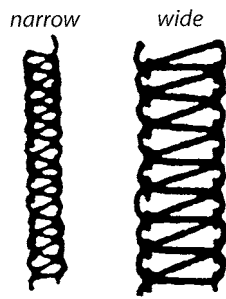


Figure 15.

Hints

- Use a wider stitch on heavier fabrics, loosely woven fabrics, or fabrics that ravel. Use narrower width on finer fabrics.
- More looper thread is needed for wider stitches. You may need to loosen the looper tensions to avoid “pokeys,” which are whisker-like fabric threads protruding from the stitching (Figure 16).
- Less looper thread is needed for more narrow stitching. You may need to tighten the looper tension(s) to correct.

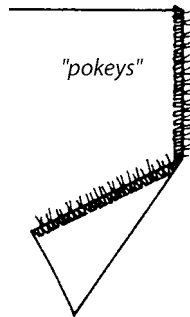


Figure 16.

Stitch Length

You must also adjust the stitch length according to the type of fabric, the type of thread, and the serging situation. Stitch length refers to how close the stitches are to one another along the stitching line (Figure 17).

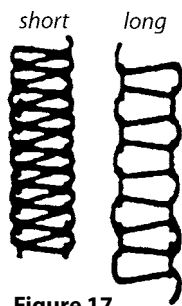


Figure 17.

Hints

- The finer the fabric, the shorter the stitch length.
- A longer stitch length requires more looper thread; thus, the looper tensions may need to be loosened to avoid a tight-looking stitch.
- A shorter stitch length requires less looper thread; thus, the looper tension(s) may need to be tightened to avoid a loose-looking stitch.

Securing Loose Thread Ends

Unlike the conventional sewing machine, the serger will not backstitch. Although the serger loops the threads together, they can become loose and the stitching can pull apart or unravel. Following are two common techniques to secure thread ends.

- **Hiding.** Hide the chain by threading it on a large-eye or tapestry needle. Slide the needle back at least one-half inch into the previous stitching (Figure 18). Clip any remaining thread ends.

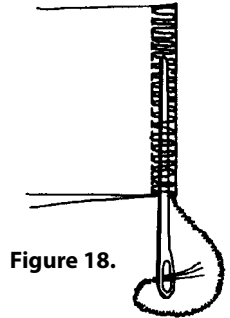


Figure 18.

- **Knotting.** Tie a loose knot so that a straight pin can be slipped through the center of the loop (Figure 19). Gently use the pin to work the knot down the thread until it lies against the stitching at the edge of the fabric. Pull the knot tight around the pin and slip the pin out of the knot (Figure 20). Place a drop of seam sealant such as Fray Check® or Seam Saver® on the knot (Figure 21). Clip any remaining thread ends.

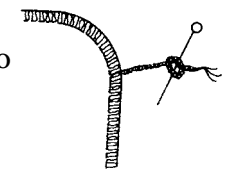


Figure 19.

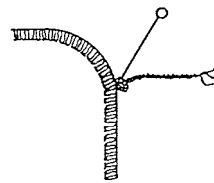


Figure 20.

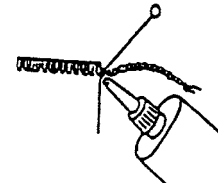


Figure 21.

Basic Serger Techniques

Corners

Sewing or serging consists of more than just straight stitching. With practice, obstacles such as corners, curves, and circles can be negotiated with ease and confidence.

Outside corners. Try one of the following two methods.

- **Chaining off.** When reaching the end of the line of stitching, continue sewing off the fabric, leaving at least 5 inches of chain (2 inches on

the fabric and 3 inches on the needle, Figure 22).

To finish, select one of the methods mentioned previously to secure the thread ends.

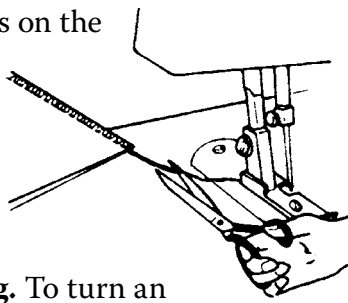


Figure 22.

- **Continuous stitching.** To turn an outside corner, stitch one stitch past the edge of the fabric. Raise the needle and the presser foot. Pull a small amount of slack in the needle thread (Figure 23). Slip stitches off the stitch finger and pivot the fabric. Position the needle at the top edge of the fabric the same distance in from the unstitched edge as the previous stitching. Lower the presser foot. Turn the handwheel (flywheel) until the needle is ready to touch and go into the fabric.

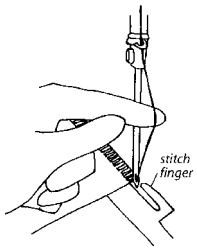


Figure 23.

Hints

- Before starting to stitch, observe where the needle is positioned and where it will go when the next stitch is taken. To do this, position yourself so that you can see the needle and fabric from the left side of the machine. Because the needle and presser foot mechanisms are slanted, the needle may not actually be positioned at the top edge of the fabric. If necessary, adjust the fabric so that the needle is at the top edge as the next stitch is taken.
- If you observe a small loop of thread adjacent to the eye of the needle, too much slack was pulled. To correct, gently pull the needle thread above the tension dial until the loop is eliminated.

Inside corners. Many people find these corners easier to make than outside corners. If you are sewing a $\frac{5}{8}$ -inch seam, use a washable marking pen and mark the machine cutting line (area where the blades will cut) 1 inch on either side of the corner. Make a diagonal slash into the corner but not through the markings (Figure 24). Stitch until the front edge of the knife touches the corner. Stop, or you will cut the fabric (Figure 25).

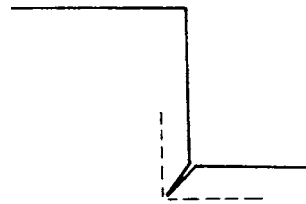


Figure 24.

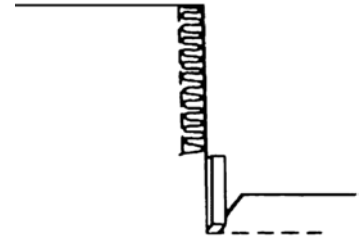


Figure 25.

Straighten the corner by pulling the fabric to the left. This will create a V-like fold in the fabric; the stitching edge will be straight. Complete the line of stitching (Figure 26).

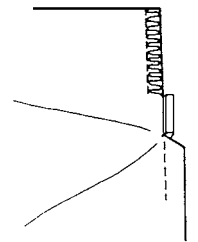


Figure 26.

Curves

Not all seams involve straight sewing. Curves are not difficult to handle with a serger when you know the proper techniques.

- **Outside.** Sew slowly. As the fabric approaches the curved area, gently shift the fabric into and toward the right edge of the presser foot to keep the stitching line straight (Figure 27). If the curve is sharp or tight, stop stitching and shift the fabric. Resume stitching, continuing the process until the area is complete.
- **Inside.** Sew slowly. As the fabric approaches the presser foot, straighten the curve of the fabric by moving it gently toward the left. Be careful not to pull the fabric out of shape.

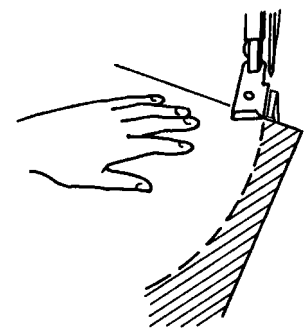


Figure 27.

Sewing in the Round

This process is not only used for sewing a piece of fabric shaped like a circle. It refers to any occasion when a line of stitching begins and ends at the same point. These techniques can also be used when repairing a break in the line of stitching (edge finish or seam).

• **Edge of fabric.** Use the following steps.

1. Pull some slack in the needle thread and raise the presser foot. Slip the stitches off the stitch finger. Grasp all threads with your left hand (Figure 28).

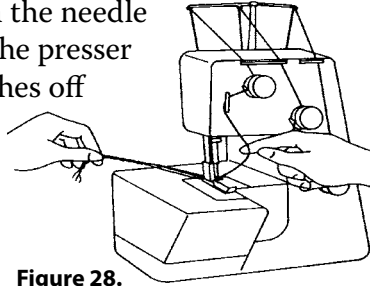


Figure 28.

2. With your right hand, rock the handwheel (flywheel) back and forth while pulling the threads with your left hand. This will release the threads individually rather than in a traditional chain formation. Pull 3 to 4 inches of unchained threads.
3. Place the fabric under the presser foot with the fabric resting against the knife blade. Position the thread on the bottom of the fabric and to the left of the presser foot. Lower the presser foot and begin sewing, trimming just a very small amount (a “hair”) of the fabric. Stop serging just before the knife reaches the beginning stitches (Figure 29).

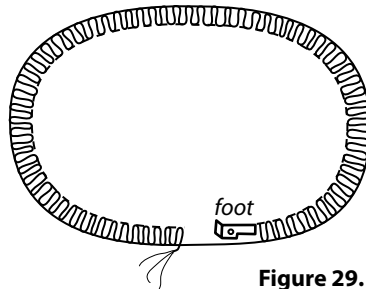


Figure 29.

Hint: The presser foot does not allow you to see where the stitching started and is going to end. Place a pin in the fabric and to the left of the presser foot, perpendicular to the stitching line and two or three stitches below where the stitching began.

4. Raise the upper knife on your machine, or position the fabric so that you do not trim the beginning stitches. Continue to stitch until

you reach the pin or sew two or three stitches over the beginning stitches (Figure 30).

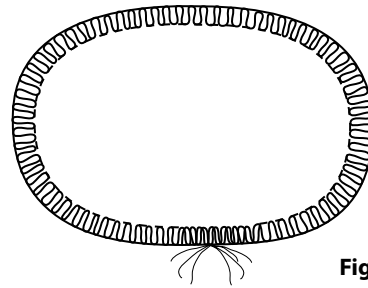


Figure 30.

5. Raise the needle and the presser foot. Pull a small amount of slack in the needle thread (Figure 28). Slip stitches off the stitch finger. Grip the threads and the fabric as close to the stitching line as possible with your left hand while rocking the handwheel (flywheel) back and forth until you have pulled approximately 5 inches of thread (unchained). Cut the thread, leaving at least 2 inches on the fabric and 3 inches on the needle. If possible, pull the threads to the underside; tie knots in each of the two thread tails and hide them at least ½ inch under stitching. Clip excess threads.

• **Notch out.** Use this method when a seam allowance needs to be cut off.

1. Cut a 2 inch long notch along the straight edge to be stitched. The depth of the notch should be the same as the intended seam allowance to be removed by the cutting blade (Figure 31).

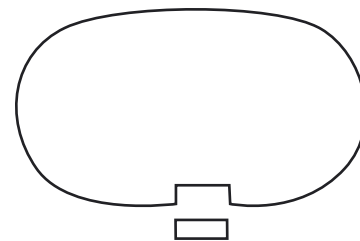


Figure 31.

2. Place the fabric under the presser foot in the notched-out area with the knife blade resting at the bottom of the notched-out edge. Position the threads on the bottom of the fabric and to the left of the presser foot. Lower the presser foot and begin stitching. Stop serging when the knife reaches the beginning stitches.
3. Follow steps 4 and 5 of “Edge of Fabric” section above.

References and More Information

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