

Secrets of Free Motion Stitching, Revealed!

For the Baby Lock Altair and similar machines

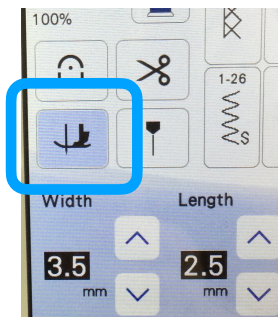
Free Motion Quilting is a type of quilting where the feed dogs are lowered and the quilter moves the fabric instead of the machine moving the fabric. The machine is set up with a “darning” or “free motion” foot that releases pressure on the quilt in between stitches. The advantage of free stitching is that the quilter can go anywhere on the quilt and create any type of design without turning the quilt.

Successful free motion stitching involves developing coordination of your movement to create a design and making consistent size stitches. The key is controlling the speed of the machine in relation to how fast we are moving the fabric to create consistent stitch length. Integration of the two tasks comes with some practice. Fortunately, the machine has features to help us achieve our goals.

Set Yourself Up for Success by setting up your machine and **gathering materials** (look for materials **in bold type**) for free motion stitching practice:

- Install a free motion foot on your machine. I recommend starting out with the **clear echo quilting foot** because it can also be used for sewing with the feed dogs up.
- Expand your sewing area by using an **extension table** for the bed of the machine.
- Set the machine up for sewing comfort. You will want to be able to have your hands flat on the quilt to move it effectively. You can also use an optional **overlay on the extension table** or cabinet surface to make it slicker. Ideally your arms will be at a right angle at the elbow. Choose a **comfortable chair** and adjust it to position your body. A chair without arms is a good choice because arms can get in the way of moving a larger quilt.
- To help move the quilt, **gripping gloves** will give your hand traction.
- Make at least two practice quilt “sandwiches”. For each practice piece layer two pieces of fabric with a low loft cotton batting in the middle. Choose a solid or near solid fabric to better see your stitches. I make my practice pieces with a folded **1/2 yard of fabric and a 18” by 22” piece of batting** in the middle.
- Baste the layers together with the basting stitch or use safety pins. **Wash away thread** is ideal for basting because it quickly dissolves away with water.
- Insert a size **80 or 90 quilting or top stitch needle** into the machine.

- Thread the machine top and bobbin with a **30 or 40 weight 100% cotton quilting thread**. Choose a color that contrasts with the fabric so your stitches are easier to see.
- Select a straight stitch with the needle in center position such as stitch 1-03 (standard settings for this stitch are needle width 3.5 mm and a stitch length of 2.5 mm).
- Select the pivot feature highlighted in the blue box to automatically lower the needle and raise the foot between stitching.
- Install the **single needle hole plate** that comes with the machine.

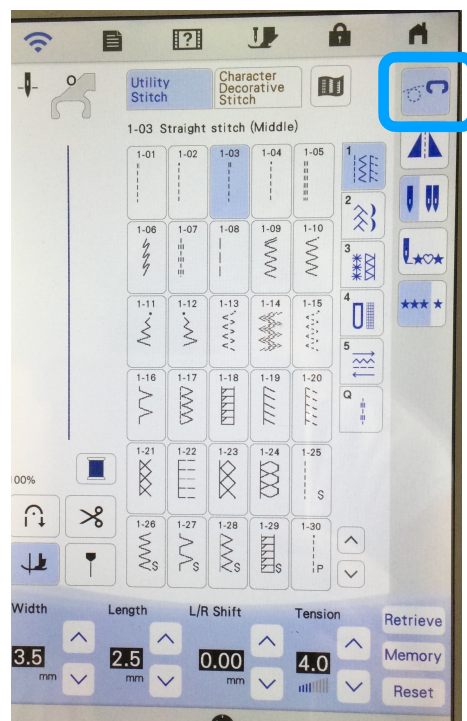


Let's start stitching!

Notice we haven't lowered the feed dogs yet in the machine setup. First we are going to find the speed you want to stitch by using the feed dogs to tell us how fast to move the quilt sandwich. You can adjust the top speed of your Altair with the speed control slider on the machine. The goal here is to limit the top speed of the machine to a level that is comfortable for you. On the Altair, set the speed bar about $\frac{3}{4}$ of the way to the right. Put fabric under the foot and sew by pressing the foot control all the way down. The slider will keep the at a constant speed and the feed dogs will move the fabric with the echo quilting foot on. Watch the fabric moving under the needle and imagine you are moving the fabric yourself without the feed dogs. Is that a good speed for you? Keep moving the slider and stitching with the foot control pressed all the way down until you find your happy place. Stitch some more and try to get a feel for the speed the quilt needs to move.



Got it? Now the fun begins and you get to move the quilt. Lower the feed dogs by choosing the button in the top right that looks like a sideways "C" with a curly tail highlighted in blue. Now the feed dogs are lowered and if you don't move the quilt it won't move. Press the foot control all



the way down and try to move the quilt at the same speed the machine did. Just go in a straight line for now. Make lots of straight lines in lots of directions. Keep asking yourself, am I moving the fabric at the same speed the machine moved it? Periodically, raise the feed dogs by pressing the free motion button and watch the correct speed.

Are you starting to feel comfortable with moving the quilt? Place your hands on either side of the needle and **without** stitching and **without** twisting the fabric, move the fabric in a 5" or 6" circle as shown in the video. Still without stitching, move the sandwich clockwise about fifty times and then switch and move counter clockwise. Concentrate on moving around and around and not twisting the fabric as you create an imaginary circle. Try to move as consistently at that speed as you can. (I imagine the visual cue of moving about as fast as a second hand moves around a clock or watch face.) Close your eyes and feel the movement. When you feel like you are comfortably making a circle at the right speed and shape without stitching then start to stitch the circles for real. Hopefully you are getting fairly good at circles and your practice sandwich is looking crazy stitched up. If one area is getting filled up with stitches, move to another area or get a new practice piece. Periodically stop and check your work. Are the stitches too small? If they are then move your hands faster or make the machine stitch slower. Are they too large? If they are then move your hands slower or make the machine stitch faster. Completely forgot how fast to move the quilt. Raise the feed dogs and have the machine show you. Remember, move the quilt and don't twist the quilt.

It Takes Practice (Sorry, but it really does):

- Gather all your materials and set up your area before you start. Relax and let go any previous attempts.
- Keep the machine speed consistent. By adjusting the speed regulation slider on the machine and always pressing the foot
- Dedicate a machine to free motion stitching for an entire month of practice *if you can*. The idea is that if the machine is set up and ready to go, it will make it easier to sit down for a short practice session every day. A machine that is ready to go shuts down procrastination.
- You can still follow the program with a single machine. After using your single machine for any other purpose, switch it back to free motion stitching before you leave it so it is ready for free motion practice the next day.

- The goal is to sit down and play every day for just a little while. The practice can be as short as five minutes.
- Pull up a comfortable chair of the correct height. Is it comfortable for you to move the quilt around? Are you hunched over or reaching too high to freely move the quilt? Try to create a situation where you are as comfortable as possible. Can you easily see the quilt? Do you have enough light? Ask yourself, could I sit this way for up to an hour?
- We started with the echo quilting foot because it can be used with the feed dogs up to get a feel for our speed, but the Altair comes with two additional free motion feet. Trade out and try the different ones as you practice.
- Is your machine due for a service? If it's been a while, now would be a great time to get that machine in tip top shape before you and your machine start this adventure together.
- Make lots of practice quilt sandwiches. Your practice pieces should be as close to a real quilt as possible. This is a great time to use up those fabrics that you have no idea of why you adopted the in the first place. I use two "fat quarter size" (18" by 22") fabrics and some low loft cotton or cotton/poly blend batting for each sandwich. The exact size really doesn't matter, but make at least a dozen for the month. Layer the pieces together so they are smooth and flat. You may have to iron the fabrics and starching them a little is not a bad idea. They probably will stick together, but basting them with the basting stitch is a good idea.
- Fabrics with designs are fun to play with and quilt around the designs. Solid or semi-solid fabrics make seeing your stitches easier. Have some of both.
- Choose a good quality thread in a color that will show up on one of your practice sandwiches to start. If you are having trouble with thread breakage, a polyester thread is more forgiving than a cotton thread in the beginning. Wind a matching bobbin.
- Try different threads during the month as you practice to see if you have preferences. Now is the time to explore your options. Go through your threads and choose a few that look interesting, but wait on metallic or tinsel threads that are more challenging to handle at first. If a thread is not cooperating and routinely breaking, stop using it and move on. You can revisit it later.
- Put a new needle on your machine. A quilting or topstitch type needle works best. Change the needle after eight hours of stitching. The size of the needle depends on the size of the thread. Keep some nearby in case you break one.
- Our smooth hands can slide on the smooth surface of the quilt. To overcome this we just press down harder on the surface of the quilt and that can create fatigue in our upper body. To overcome sliding hands, use quilting gloves or a gripper ring to help you push the fabric around. Gloves give your hands traction on the fabric surface. A gripper ring has the added benefit of weight to press down on the fabric so you don't have to.

- A large, smooth flat surface is very important for efficient free motion quilting. If the machine isn't lowered into a sewing studio, then an extension table large enough to accommodate a hand on either side of the needle works well. Make the quilt easier to move by reducing the surface tension of the bed of the machine. Sliders stick to the bed of the machine with a reusable, low grip sticky surface on their underside. This does not leave a residue on the machine.