



Forever In Stitches, LLC

Your INNOVA Dealer
 Home of *Raggedy Ruth Designs*™,
The Perfect Corner Ruler™, &
 Award Winning Longarming Center™

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Longarm Quilting Considerations

Contents

- Contents 1
- Purpose..... 1
- Forever In Stitches' Capabilities 1
- Typical Sewing Machine & Longarm..... 1
- Longarm Pictorial Definition..... 2
- Quilting Characteristics..... 2
 - Hand Quilting..... 2
 - Quilting With Machines..... 3
 - Machine Quilting 4
 - Free-Hand Longarm Quilting..... 4
 - Automated..... 4
- What You Should Consider 5
 - Preparing For Longarming..... 5
 - Being Involved In The Design Of The Quilting ... 6
 - Normal Approach: Let Them Do It..... 6
 - Our Approach: Be Involved..... 6
- Pricing Implications 7
- Summary..... 7

Purpose

This document is to explain the capabilities, design considerations, and pricing implications of longarm quilting services, in general.

Forever In Stitches' Capabilities

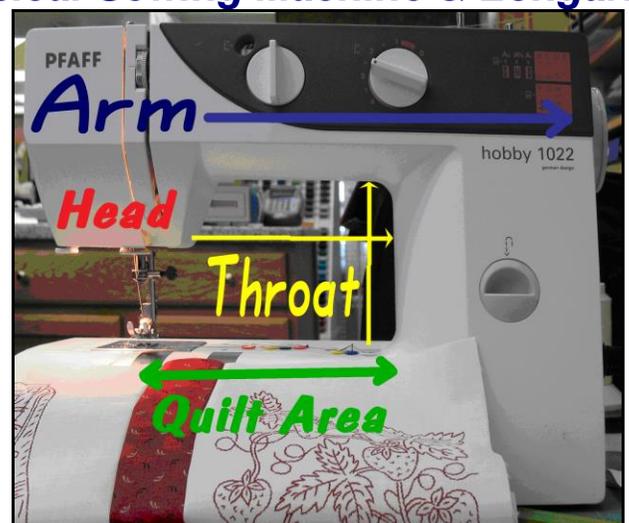
We have two longarm machines. Both are automated Innova AutoPilot Mach 3's™. They are in a special area to facilitate customer viewing.

The machines have a 14 and 12 foot frames. We can handle quilts up to 147" wide [12' 3"] and 15. We quilt about 600 items a year. We can satisfy stitching needs from a table runner to a cushioned King bed-spread, drapes, valences, and other decorator items.



Our equipment gives us the ability to produce the maximum flexibility for your quilting needs with either manual or regulated free-motion stitching as well as automated stitching. However, we focus on automated stitching to assure uniformity, top quality and reputation. Due to the design capabilities of the Mach 3 we do not perform free-motion quilting.

Typical Sewing Machine & Longarm



The Pfaff Hobby shown, is an example of a ¾ sized

sewing machine. Normal sewing machines, whether full-sized or $\frac{3}{4}$ sized, can be referred to as a “short-arm” machine.

The Gammill shown is an example of a longarm due to the length of the arm and the corresponding wider throat and larger quilt area.



Longarm Pictorial Definition

The arm on a sewing machine is really how far the sewing head is from the back support of the machine. In comparing the short-arm with the longarm it is obvious that the longarm has a longer arm.

The length of the arm is the dimension usually referred to in describing the size of the throat, even though the height is also key in the determination of the throat size. The size of the throat determines the amount of fabric that can be ‘rolled’ up in it, and thus the size of top you can quilt.

One factor often overlooked is that as you quilt down the fabric, the finished quilt [top, batting, and backing] starts filling up the throat. With a short-arm, the throat is used up very quickly, resulting in the maximum pattern size of 4 inches or less.

On the Gammill shown, as the quilt is rolled, the usable throat length is limited to the size of the roll until the maximum size drops down to about 18 inches from 26 inches. This will become a problem if one has a large quilt and requires a design that is over 18” in size.

Quilting Characteristics

During the following discussion will divide quilting into the following groups. There are many more divisions that individual companies and tools have created, but

these are the main dividing lines.

1. Hand Quilting
2. Machine Quilting
3. Longarm Quilting
4. Automated Quilting

Hand Quilting

Some insist that the only real quilting is hand quilting. However, if you talk to enough people, you will find that what is “real quilting” varies by person and can also include the length of the stitch among other characteristics.

Hand quilting has a several beneficial characteristics:

- One begins quilting from the center and works outward. This makes working with excess fullness easier.
- When working with a frame the pull on the fabric is usually in two directions, up and down. This makes it easier to accommodate quilts that are not square, problems with the borders being “eased in”, and backs requiring centering. When quilts are pulled in all directions, as in a hoop, the quilter is working with a very small area, again making it easier to accommodate the quilting problems mentioned above.
- Needles are generally smaller and the holes they make in the fabric are smaller.
- Patterns do not have to be continuous. Stopping and starting is much easier. Thus, outlining things, such as windows on houses, can be easily done.
- Threads can vary more as they do not have to withstand the speed, and resulting heat, of machines.
- The stitching is interrupted [with alternating gaps on the top and backing] so that the quilting is less marked by the thread. Whether this looks “good” or “bad” is a matter of personal preference.
- It is easy to change thread color.
- There is no issue of thread tension.
- Batting with inconsistent density or thin is easier to work with. Thick and deluxe battings are harder to stitch.

Being the first type listed, we will also list the prob-

lems with hand quilting:

- Quilters today do not feel they have the time to finish a quilt.
- Today's quilting stitches that are generally much longer than in prior decades.
- Often quilters have problems with uniform stitch length. Using Tiger Tape or other mechanisms to maintain stitch uniformity slows down the process.
- Repetitive designs vary and are not uniform.
- The work becomes very hard on the fingers and shoulders.
- The cost for hired hand quilting is very high for a good job.
- The time invested can significantly diminish the number of items created.

Quilting With Machines

This comes in two flavors: machine ["short-arm"] quilting and longarm quilting.

This type of quilting distinguishes itself from hand quilting in the following ways:

- The thread on the top and back is always present between the needle holes whereas in hand stitching the thread alternates between the top and backing between the needle wholes.
- Quilting usually starts at an outside edge and proceeds to the other.
- Centering of designs or piecing of the backing is theoretically impossible.. This is because the shrinkage of a quilt from the quilting is a bit over 2%, depending upon the density of the stitching [e.g. micro-stippling v large open patterns approaching 3" between stitching]. The shrinkage of the top with its multitude of piecing [being restrained by sewing for the piecing] is entirely different than the back, which has only a few seams. Thus, starting at the top left edge and continuing rightward will make it impossible to get a center seam in the center, let alone the right border of equal width with the left border. The only solution is basting the quilt before stitching, which will result in the bunching of the fabric, if not actual tucks. Do NOT piece designs in the backing that need to be centered

- It has a need for tension balance between the needle and bobbin thread. Tension is set in unidirectional stitching. Straight lines, curves and sharp turns cause different tension dynamics and often appears unpleasantly on backs of the quilt. This is execrated by the pressure exerted by the quilter when machine quilting. A test portion of the actual top fabric, batting, and backing should be used to test the tension. The Innova systems have overcome these problems.
- Stitching with improper tension can lead to bunching, spider-webs, and the like on the bottom of the quilt as well as chicken feet on the top curves.
- Batting effects the tension, according to its density and thickness. A thick dense batting allows an interior with large depth to accommodate the knot. A thin, light-weight batting has little room for the knot and thus changes in tension [as having corners, points, curves, and straight paths] can make the knots visible on one side or the other. Batting that is of a uniform density [whether puffy or regular], such as Quilters' Dream™, will be far superior in stitching to irregularly dense batting, such as Mountain Mist™. Also, there is a plethora of batting that will separate when being stitched, resulting in puffs of white on the backing which is very difficult to remove.
- Stitching has the possibility of having different color threads on the top as opposed to the bobbin. However, if the tension is incorrect the other color of thread will appear in the top or back. This situation may appear spotty or abundant. This situation does not have the pleasing appearance of using variegated thread.
- The stitching does not need to have the quilt marked with the pattern with the subsequent cleaning of the finished quilt to remove the lines.
- Stitching can be done relatively quickly.
- The stitching requires a single line design [a continuous progression from start to finish] in order to take advantage of its speed and not have a multitude of tie-offs.
- Tie-offs differ immensely from hand quilting in that the latter is tied with the ends brought to the interior, whereas the machine has back stitching before the tie-off with the ends brought to the interior.

- Flanges and folded borders may be inadvertently sewn over. This is an absolute with automated stitching, but also possible with free-hand or machine quilting. Remember that ripping out stitching is inherently dangerous to a quilt top as subsequent stitching may create other holes leaving the prior holes marking the problem area.
- Embellishments, buttons, pins, or extremely thick fabric or seams may result in the breakage of a needle, which, in turn, can seriously damage the quilt top.

Machine Quilting

Machine quilting is done with a sewing machine. Often there are accessories to improve the quilter's ability given the limitations of the machine design. Basically, the machine does not control the movement of the fabric with the 'feet dogs' and the fabric is moved by hand over the entire 360° horizontal plane.

The benefits of doing machine quilting are:

- It is much faster than hand quilting.
- It is well oriented to doing block sized work with detail such as micro-stippling.
- The stitch does not appear as a broken line, as it does with hand quilting.

Problems with this are:

- Uniformity is in stitch length difficult.
- Reasonably exact repeatability of a design is difficult
- There is a long learning curve.
- Working with large quilts is problematic due to the throat size of the sewing machine along with the use of a frame. This creates the need to use arm and shoulder strength to move the fabrics.
- Controlling tension is difficult.
- Uniformity of the pressure applied by the quilter for direction changes with the direction and curvature of the motion can affect stitch quality.
- If the blocks are quilted before the quilt is assembled, it takes a lot of work to make the entire quilt look good, especially the back.
- Stitch length uniformity is exceedingly difficult. Although 'stitch regulation' is available on some sew-

ing machines, it often can not detect the difference between forward motion and rotation of the material, resulting in some varying length.

Free-Hand Longarm Quilting

Longarm quilting is characterized by holding the quilt stationary and move the sewing machine over the fabric. Longarm quilting comes in basically two types: free-hand and automated. Free-hand quilting can be done non-automated as well as on automated longarms [by disconnecting the pulleys]. Additionally, free-hand quilting can be stitch-regulated or not [manual mode].

Longarm quilting machines are characterized by the large throat allowing the quilting of both large items as well as using large patterns.

Manual Mode

This is also referred to as constant speed mode. In this quilting mode the motor powering the needle goes at a constant speed. Thus, the stitch length varies according to the speed that the sewing head is passed over the quilt by the quilter. This is distinguished by uneven stitching where the quilter slows motion during points and sharp curves.

This mode can be particularly useful with micro-stippling.

Regulated Mode

Regulated stitching produces a constant stitch length, regardless of the design, curves, or points. As the quilter moves the sewing head, you can hear the motors change speed to allow for that constant stitch length.

This mode is excellent for echoing, stitch-in-a-ditch on curves, as well as many other techniques that follow the pattern of the quilt top.

Automated

Automated stitching is done with added systems such as the Innova Auto Pilot Mach 3™. This is so exact that one of the design techniques is for the sewing to double back on itself without it being noticeable that there are two different lines of stitching!

This mode is excellent for pantographs, boarder-to-boarder designs, individually stitched objects, dual

needle effects, whole quilt designs needing prior approval, and situations where the quilter wants a stay within the top stitching of their quilt.

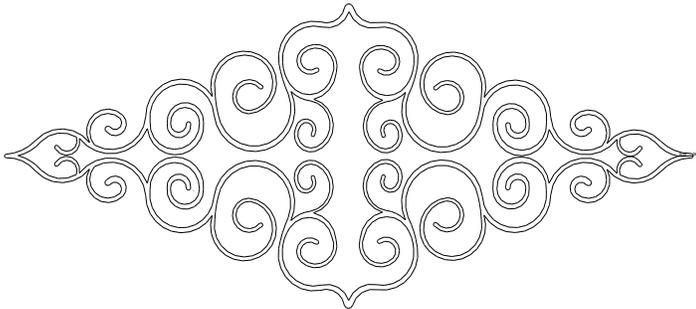
Repeatable Quality

The automated mode also excels in its ability to produce constant, quality products. The end result is more dependant upon the planning and choices of the designs and not on the individual artistic talent of the person operating the longarm at any given moment.

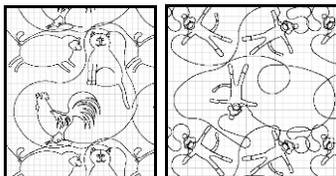
Availability of Designs

We have 5,000 different patterns ready for your quilt. We have designing tools to make special patterns that you may require. We also design our own patterns to fit individual needs. Reasons for this have been:

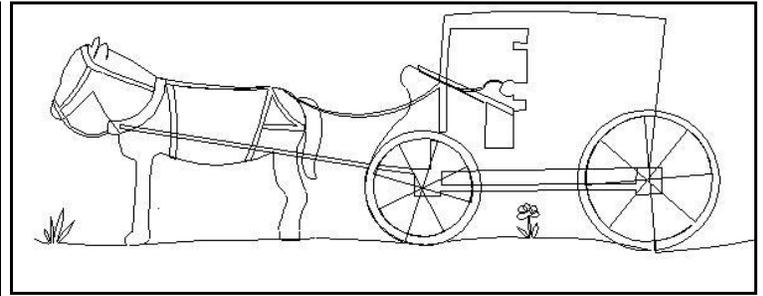
- A need to compliment particular quilt designs with patterns. This is the case with Raggedy Ruth Designs™ ‘Striated Star’ [similar to the ‘Lone Star’ and Forever In Stitches’ corresponding ‘Wrought Iron’ stitch. Notice this particular design has differing horizontal and vertical sides.



- A desire to have the same stitching design as the theme of the material led us to design stitching for Moda’s “Funky Monkey” and “At Home” themes. Notice the design on the left is directional [overall stitching] whereas the one the right does not [meander stitching].

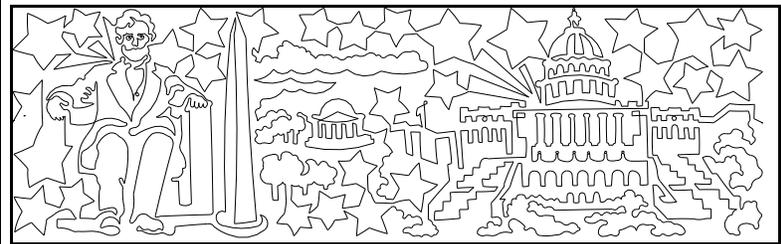


- The theme of a quilt lends itself to a specific fabric or quilt design, such as Amish wagons. Notice the design is directional in nature.



- A customer desires a particular design as in a Celtic pretzel or knot.
- There are also times when we must modify another design to fit the quilt in.

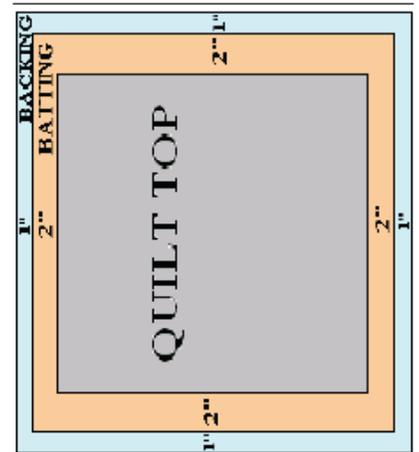
There are also hundreds of additional patterns available from other designers that we can get for you ranging from the simple to the theme as in this patriotic pattern.



What You Should Consider

Preparing For Longarming

1. Allow for a border around the top where the batting is larger and the backing larger still. This should be a minimum of 4” [2” on each of the four sides] from the batting as compared to the top and 2” [1” on each of the four sides] from the batting to the edge of the backing. [Note: this was originally written in 2005 Since then we have increased our requirements to 10” extra for the top {or 5” all around} and 5” for the batting {or 2.5” all around}.



This is necessary for:

- a. Mounting

- b. Clamping
- c. Testing the tension in accordance with the size of the pattern
- d. Starting edge to edge and off-set patterns off the edge of the top.
- e. The need to square the back [a method of eliminating fabric's inherent tension from fabrication and rolling]

Not doing this will result in the less than expected appearance of the stitching and the resulting quality of the quilt, in general.

2. Use a uniform batting, such as Quilters Dream™, regardless of whether you desire puffy, light-weight, heavy-weight, cotton, polyester, wool, bamboo,....
3. Back-tack, or tie-off, all of the stitching used in piecing, front and back. This is true especially at the edges of the quilt. Failure to do this will result in your piecing unraveling during quilting or use.
4. Lay your quilt top out to assure it is square and not "full". The area in which it is laid out must be larger than the quilt. This must be done even though each block has been "squared up". Having a full top or bottom [including puffy areas of the top, lettuce leaf edges, and the like] may result in puffy areas of the quilt or tucks in the fabric during quilting.
5. Make sure your corners are 90°.
6. Remove all pins, buttons and/or embellishments.
7. Trim your quilt top to the finished size you want. Do not have irregular, ragged, or uneven edges to your top.
8. Trim your backing to remove anything you do not want to show on the finished quilt.
9. Remove all excess and/or loose threads.
10. Press your top and backing. This includes all seams. Pressing the top will help catch unstitched seams.
11. Do not attach the top, batting, and backing to each other, regardless of the technique used.
12. Do not attach the binding to anything.
13. Make sure you notify the quilter of your intent to use a binding method other than the standard,

"French" method [which uses a folded 2½" strip that is attached to the front edge, the quilt being trimmed leaving ¼", and the edge of the binding then attached to the back].

14. Make sure you notify the quilter of the top of the quilt whether by design [e.g. a heart block or because of the use of any directional fabric], or anything else that might conflict with the design of the stitching [e.g. some stitching is directional]. The quilter needs to know where the top of the quilt is from **your** point of view.
15. Make sure you notify the quilter of directional backing [i.e. what you determine is the top].
16. Make sure to notify the quilter if you want to tie-off all threads or if they are.

Being Involved In The Design Of The Quilting

When having longarming done, there are basically two approaches:

1. Be involved in the longarm design process or
2. Leave it with a highly competent longarmer and leave the all of the decisions to them. Of course, there is a gradient of alternatives between these two extremes.

At the outset, Forever In Stitches we want the involvement of the creator of the top. The quilt is the vision of the piecer, and it should be in alignment with their thoughts. Also, often the quilt becomes a gift of their creativity to others.

Normal Approach: Let Them Do It

Make sure you have seen the longarmer's work. You want to specifically see what they can do using the techniques and designs that you want them to use. This is especially true if you want a stitching like that in a book or on the pattern.

Make sure the examples you have seen and are basing your decision on are in your price range. If you have seen a quilt with 100 hours in the stitching, you will be unhappy with the results of placing a \$75 budget on the longarming. Likewise, if your \$200 estimate comes in at \$500, you are bound to be disappointed, even if the quilt wins at the fair [a true story].

Our Approach: Be Involved

There are as many considerations for quilting as there

are tops and quilters. For example, with a basic block quilt with sashing and borders, consider the following by looking at your top before you take it to your quilter:

1. Know your preferences in quilting. For example, one person's perfection is another's 'over-quilted, stiff as a board' quilt.
2. Do you want the piecing design or the quilting to predominantly stand out?
3. If your fabric or piecing is intricate, do you want subdued stitching or accentuating stitching?
4. Do you want a single edge-to-edge design?
5. Should the edge-to-edge design have a theme similar to the design and/or fabric of the quilt?
6. Should each block have a similar design?
7. Should the entire quilt top have a theme?
8. If you have sashing, how do you want the patterns to appear where the sashing crosses, or should there be quilted cornerstones?
9. How many borders do you have? Should the stitching treat any of the multiple borders as though they were one?
10. What color of thread will 'bind' the top design, fabric, and stitching design? You may want it to stand out or be subdued.
11. Are there any techniques you want? E.g. echoing, stitch in a ditch, micro-stippling, feathers, dual needle, something you have seen the quilter do before, These preferences may determine what type of quilting is done [e.g. hand, machine, free-hand, automated] as well as who will quilt it.

Then again, after this exercise you may say "I sure am glad that I have someone else to make these decisions!" Some of our customers do just that!

Pricing Implications

The Longarm Quilting Services tri-fold brochure lists the prices for the various services. After the descriptions, above, there are several implications:

1. Using multiple thread colors requires changing and managing multiple colors of thread and bobbins. This requires moving the sewing head from the quilting area and, thus, the interruption any workflow.

2. The pricing for pantograph is only for edge-to-edge sewing. Anything more requires measuring and the consideration of position with other pattern elements.
3. Designs for quilt elements [e.g. blocks] that require some half and quarter blocks. This may mean a design of a half or quarter or using the existing block with many resulting tie-offs.

Summary

Longarm automated stitching allows us to put different designs on different places to accent the design of your quilt. When combined with our large choice of thread, we can achieve many different effects, including incredible stitching that does not detract from your quilt, while adding another dimension to it.

Talk to one of us about how you can take advantage of this service. We work with you in choosing design, stitching, thread, and accent. Ask for a tri-fold brochure to explain the pricing of this service in detail.