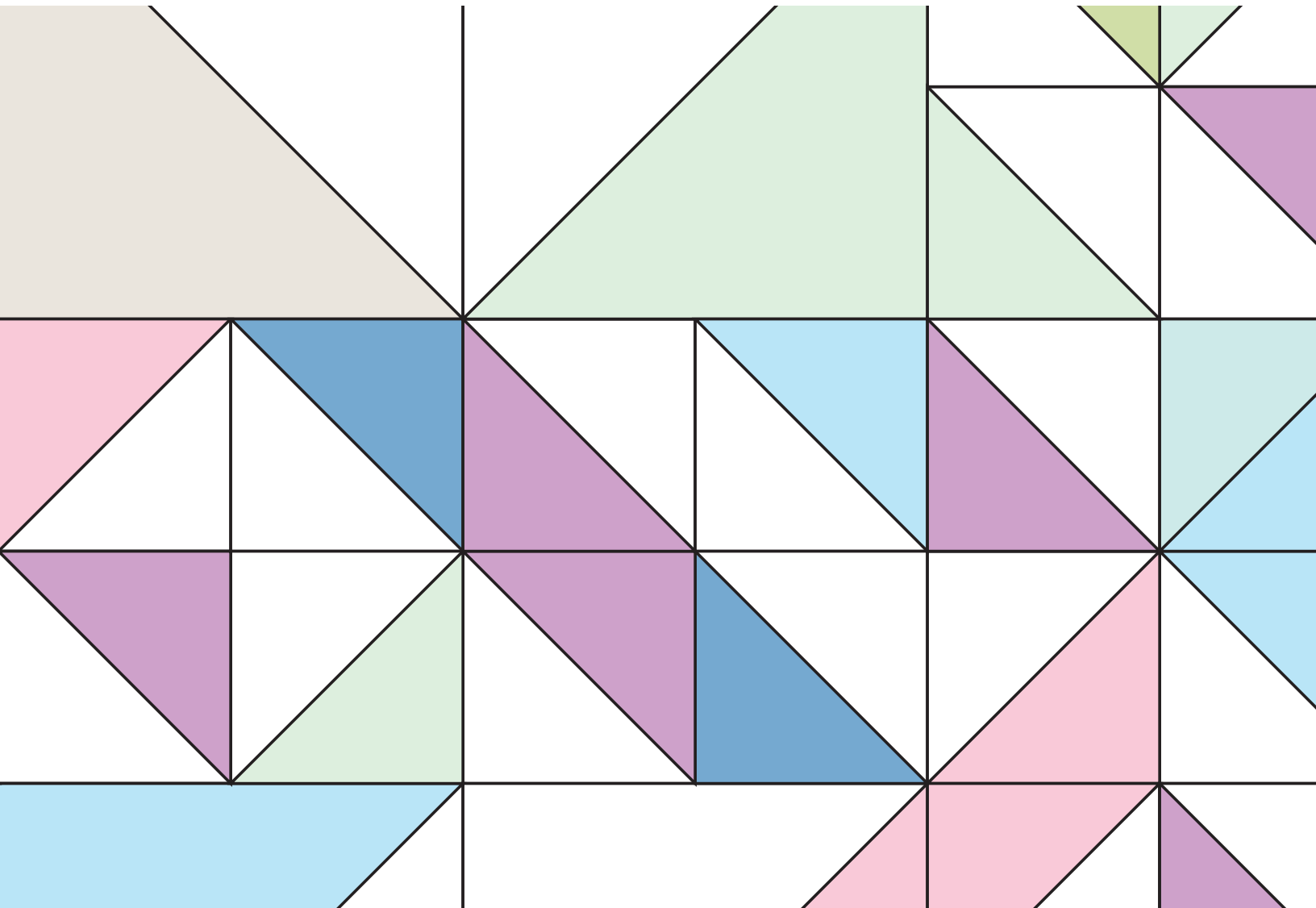


# *A Quilt in Motion Doesn't Stay in Motion (because you finished it)*

**CAUTION:** To SAFELY use QuiltMotion X for domestic machines, understand the steps in this booklet.



*Grace*  
COMPANY



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## WELCOME!

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Whether you're a life-long quilter who is new to automation or you're starting a new hobby today, Grace Company is here to guide you toward success.

**Read these instructions, refer to them often, and soon you'll be confident using QuiltMotion X with your domestic machine.**

Use the included fabric panel to become acquainted with your setup so you can master your new equipment worry-free.

Use the notes section in the back of the book to write down important insights. You can even write on the panel fabric—remember, this is practice!

**Now, go have fun!**

## INTRODUCTION TO AUTOMATED QUILTING

QuiltMotion X (QMX) is a quilting automation system. In automated quilting, you select a design, tell the software where you want it on the quilt, and then the system stitches it out for you.

A **pantograph**, also called an edge-to-edge design, is a design element that is repeated across a quilt. Automated edge-to-edge quilting allows a quilt sandwich to be quickly stitched together with professional-quality designs.

**Block designs** are smaller and typically placed within a block to accentuate it.



*Edge-to-Edge Design*

In QMX, you can quilt block designs and pantographs. In this booklet, you'll learn how. We'll also discuss how to choose a good design and which designs are not compatible with QMX for domestic machines.

### VOCAB REVIEW

**Pantograph:** A design is repeated across the quilt from one side to the other. It's also called an edge-to-edge design.

**Block Design:** A single design that is typically placed within a quilt block to accentuate it.

### WORKBOOK FOCUS QUESTIONS

- What is the frame space, and why is it critical to the safety of your equipment and quilt?
- Why are placement marks so important?
- Why must you always supervise QMX Foundations for Domestic when it's stitching?

## Before you start:

Set up your frame, machine, and QuiltMotion X.

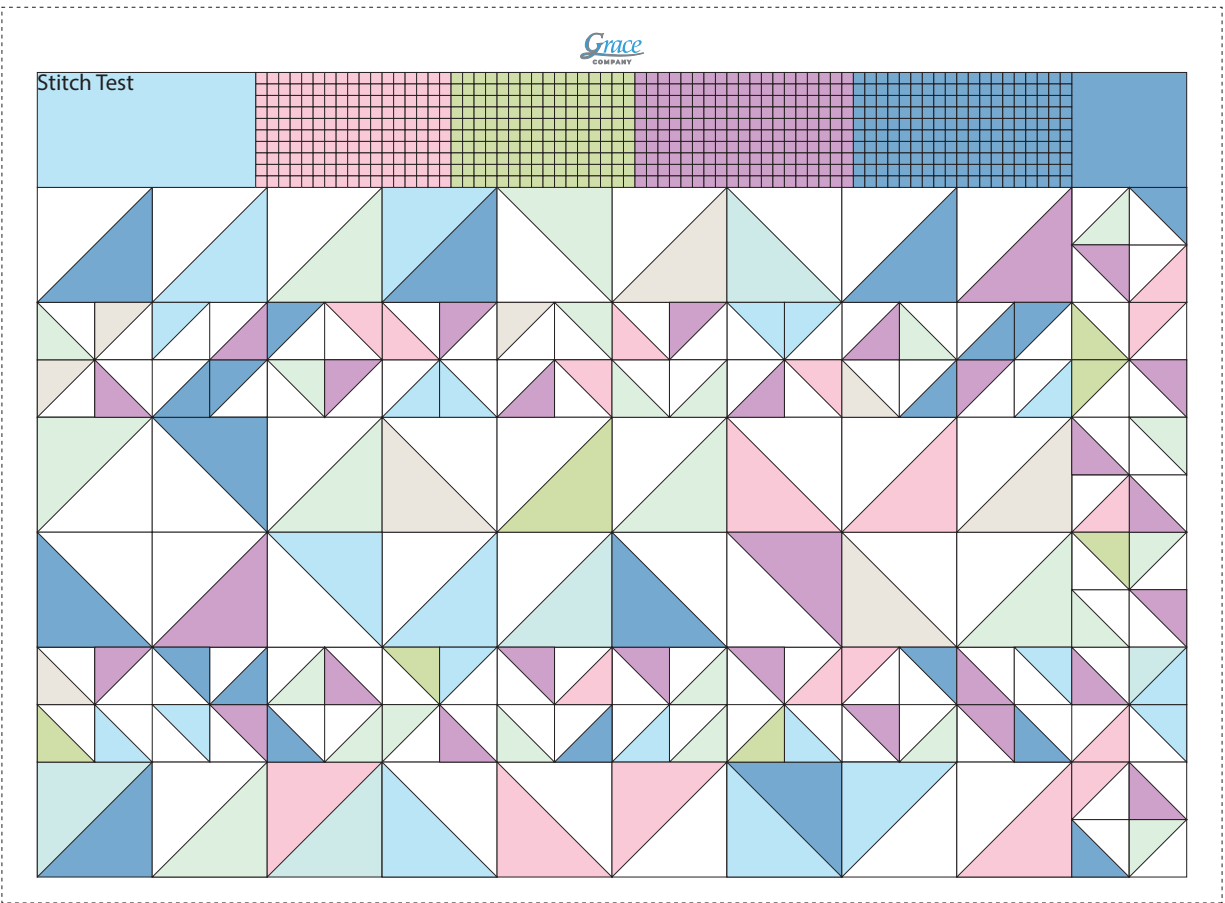
Complete the panel and instructions that came with the Cutie frame.

If you're using the Little Rebel machine, complete the panel and instructions that came with it.

## THE PANEL

---

QMX came with a fabric panel to use for practice. The panel is a stand-in for a quilt top so that you can get the hang of your new software without the pressure of stitching directly into your latest masterpiece. **Note:** The panel colors vary.



The steps in this booklet can be repeated as many times as you like with scrap fabric for additional practice and fun. The more you practice, the more your confidence will grow!

## THE SUPPLIES

---

- The fabric panel (shown above)
- The instruction manual for the Cutie Breeze
- The instruction manual for your machine
- Fabric for the quilt backing
- Batting
- Measuring tape or 12-inch ruler
- Scissors
- Fabric pen or other marking tool
- Pins
- Thread
- Rotary cutter and cutting mat (optional; scissors work)
- Thread snips (optional; scissors work)
- Extra bobbins (optional; you can technically suffer through refilling the same bobbin each time it runs out)

# 1

## Lesson One: Attach the Panel

### KEY CONCEPT

Install the quilt onto the frame so the left edge is 10 inches from the left side rail.

To prepare your panel, you need to make a quilt sandwich and install it onto your frame.

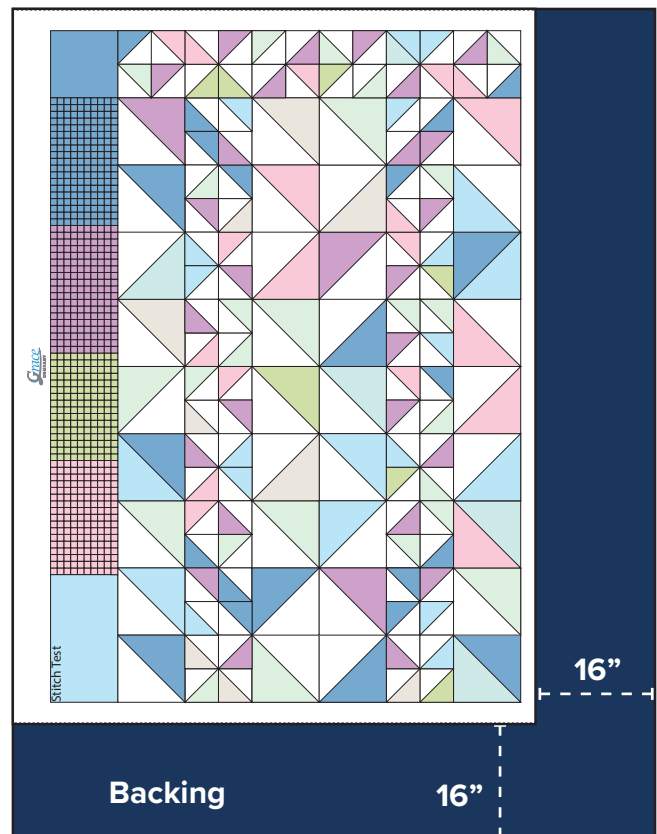
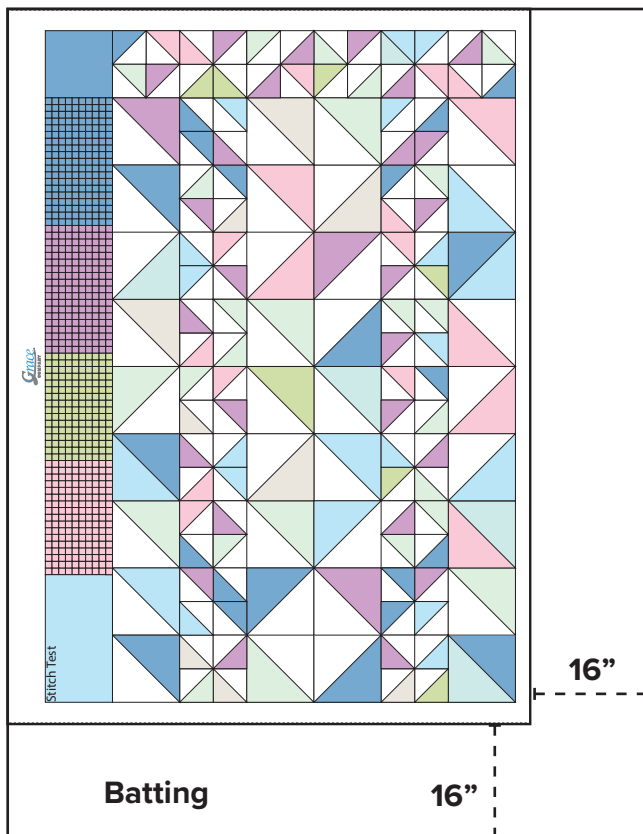
The positioning of the panel on the frame is very important. The left edge of the quilt top (or panel, in this case) must be placed 10 inches from the left side rail. This ensures the quilt top edges are within the frame space and your machine will be able to quilt on them. You will learn more about the frame space later. For now, just remember the left edge of the quilt must be 10 inches from the left rail.

## PRACTICE STEPS

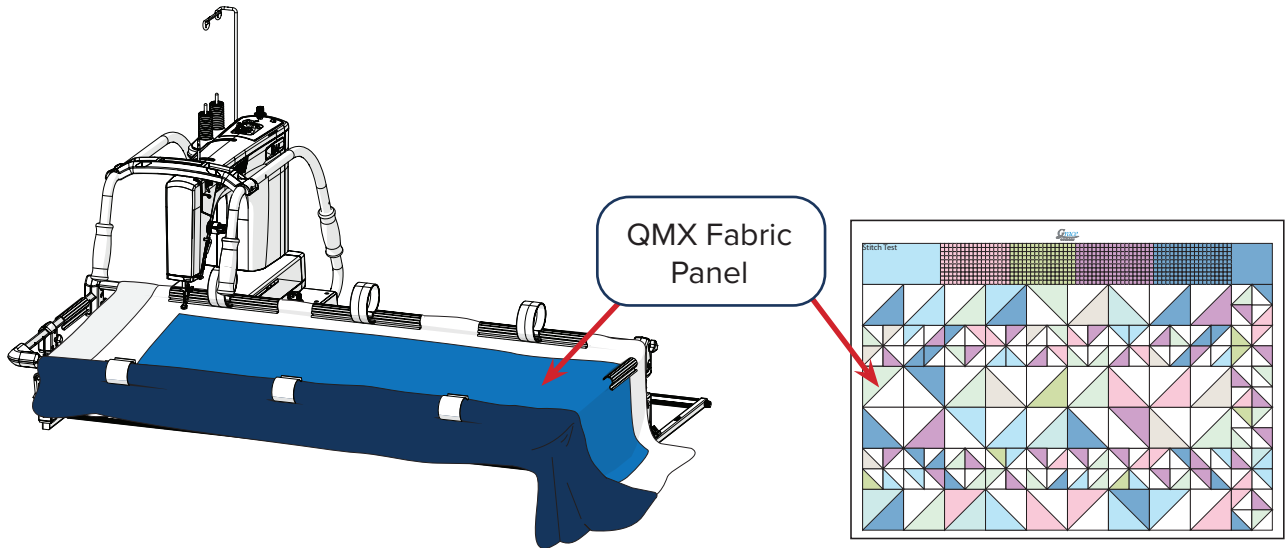
To prepare the panel for quilting, you will need:

- The instruction manual for the Cutie Breeze
- Supplies for installing a quilt sandwich (see your frame's instruction manual for the complete list)
- The fabric panel
- Fabric for the quilt backing
- Batting
- Rotary cutter and cutting mat (optional; scissors work)
- Measuring tape or 12-inch ruler

1 Cut your **backing** and **batting** so that it is 16 inches longer and wider than the fabric panel.

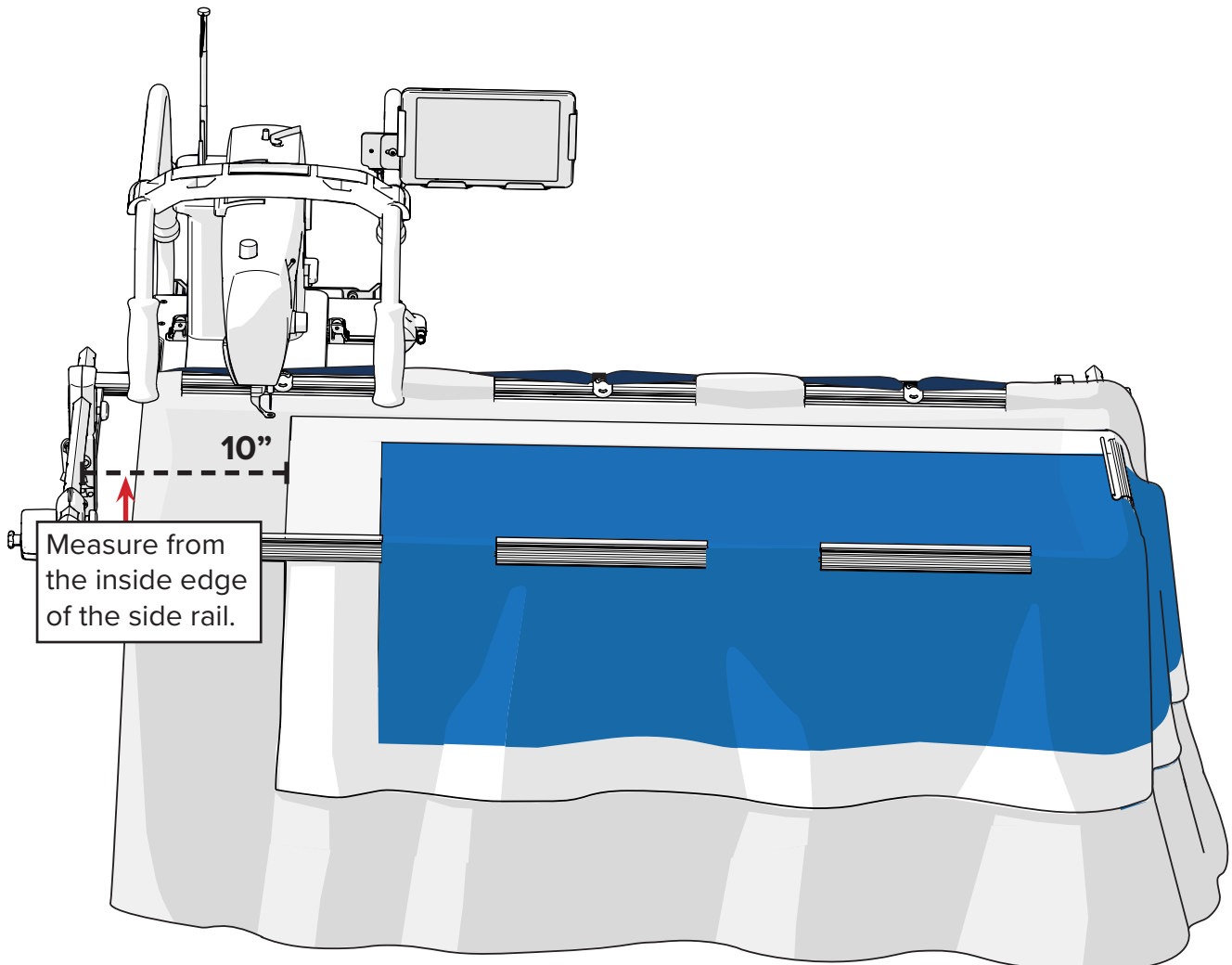


- 2 Follow the instructions in your Cutie manual to assemble your quilt sandwich, using the **panel** as your quilt top, and attach it to your frame.



**Note:** In the images in this booklet, the panel is represented with a medium blue color.

- 3 Measure **10 inches** from the inside of the left Cutie Breeze rail. It doesn't matter if the left side clamp is on or off when measuring. Shift the fabric so the panel's edge is 10 inches from the rail.



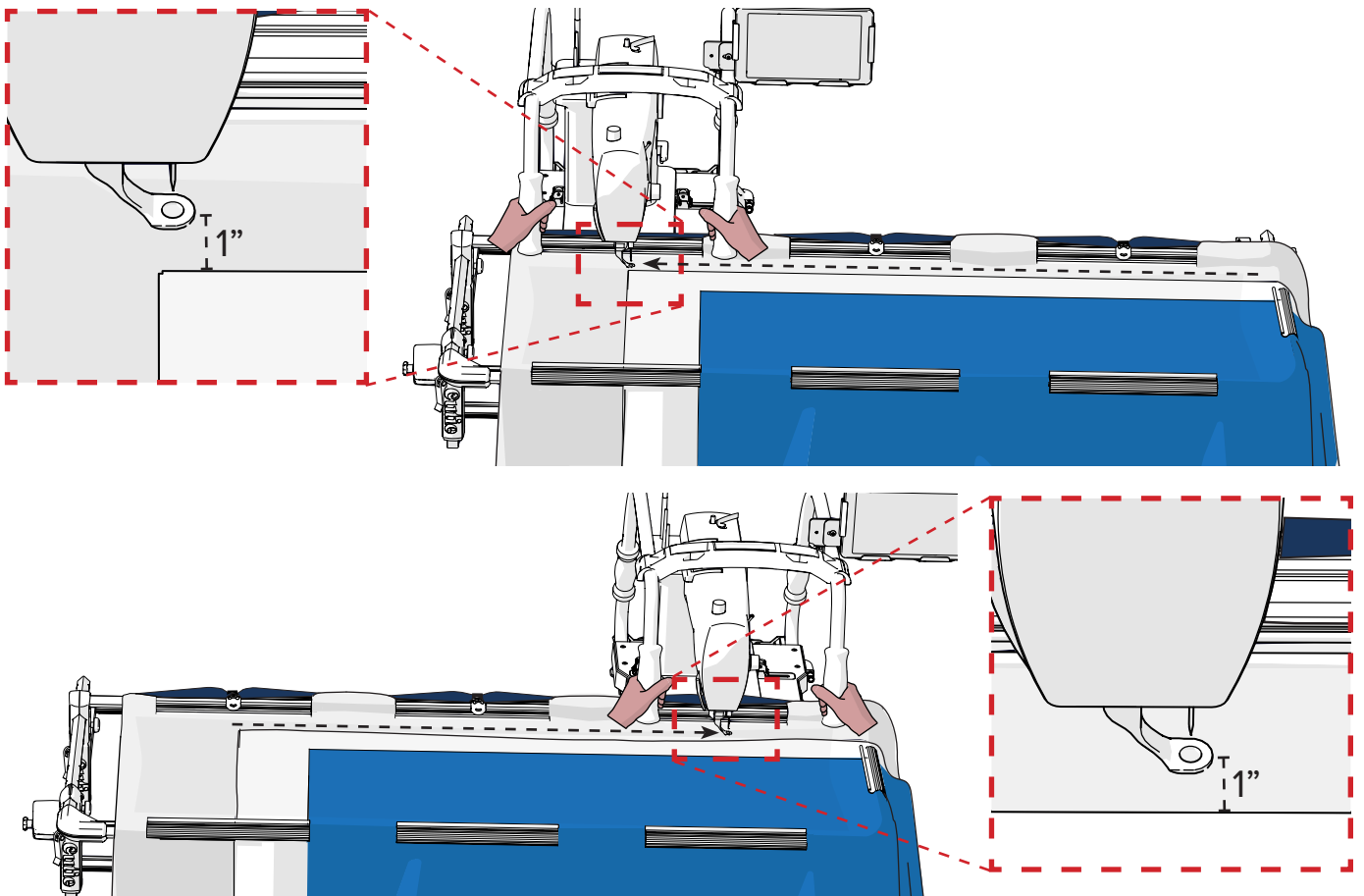
4 Thread your machine, wind a few spare bobbins, and load a bobbin into the bobbin case.

5 Give your setup a once-over. Check for the following:

- The belt clamps are closed.
- The tracks and table are cleared of debris.
- Your machine, automation hardware, and tablet are powered on.

## EXTRA CREDIT

Move your needle 1 inch above the panel's top edge. Slide the machine all the way across the frame, keeping the needle about that distance from the top edge.



If your machine does this without bumping into anything on the take-up rail, your fabric is positioned well on the frame.

## TROUBLESHOOTING

If the machine can't do this, try repositioning the fabric so the top edge of the quilt top is a little further from the take-up rail. It will make it less likely that you'll have problems with your placements later on. Don't forget to keep the left edge 10 inches from the left side rail.

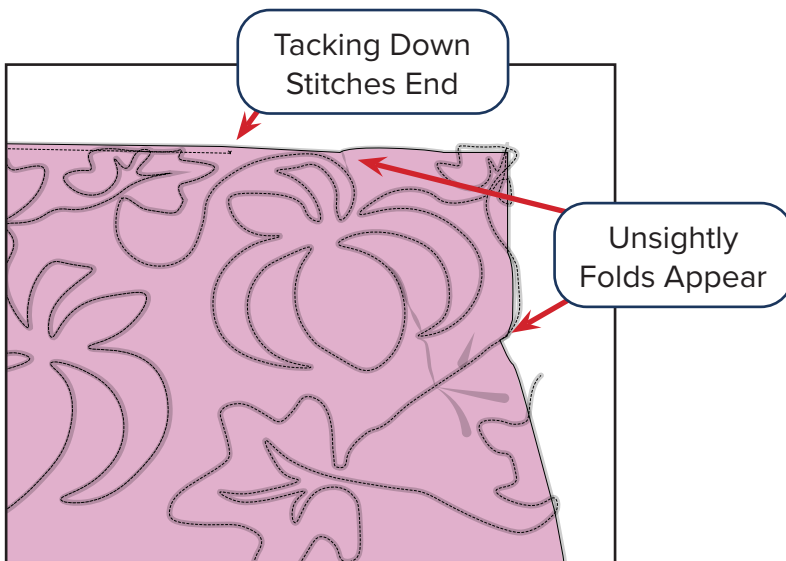
## 2

## Lesson Two: Tack Down Your Edges

### KEY CONCEPT

Tacking down your quilt-top edges prevents your quilt top edges from getting folded over and stitched down.

Sometimes the automation will move the machine off of your quilt top, onto the batting. Then when the automation attempts to move back onto the quilt top, the quilt top is caught on the foot of the machine. This creates unsightly folds at best, and at worst can damage your machine or quilt.



Tacking down the edges of your quilt prevents automation from folding it over and stitching it down.

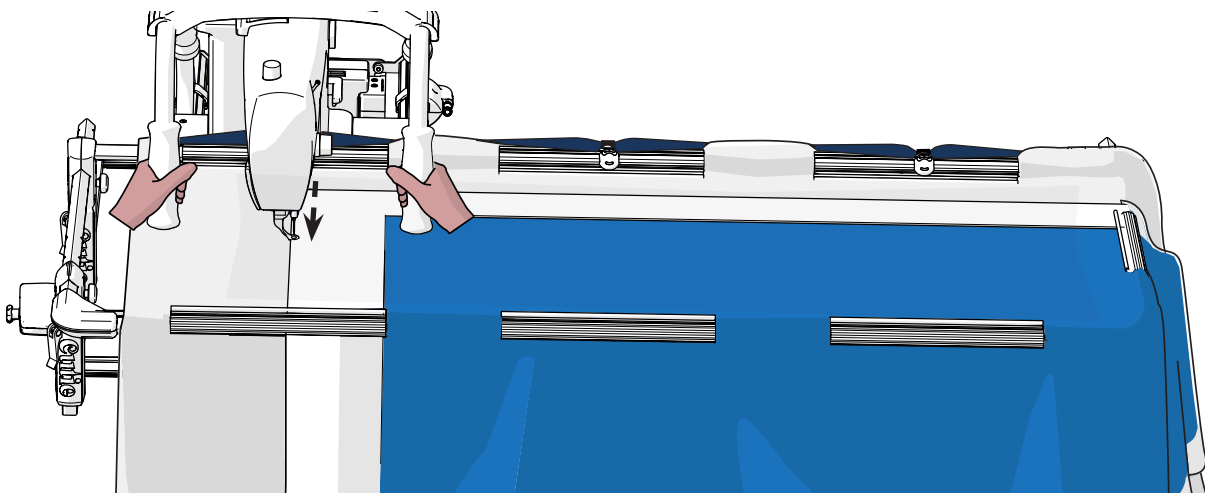
Tack down any edges every time you shift your fabrics—before you start quilting your next row of designs. Not only will this prevent problems like the one in the picture to the left, but tacking down your quilt-top edges also minimizes fabric shrinkage. As you fill up your quilt, the stitches will start to gather in the fabric and scrunch it up. If the edges are stitched down, they can't get pulled in as far.

## PRACTICE STEPS

You will need:

- Thread (installed in your machine)
- Wound bobbin (installed in your machine)
- Scissors or thread snips

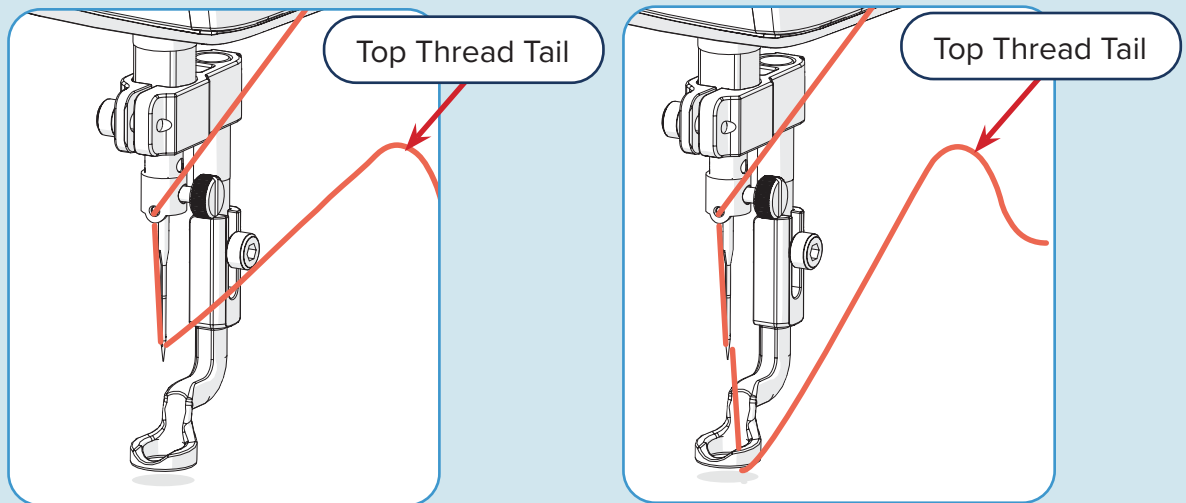
- 1 Position your machine's needle along the left edge of the panel, as far forward as your machine can go.



- 2 Choose a desired stitch length or speed on your machine. Large stitches and low stitching speed are ideal for tacking down.
- 3 Pull up your bobbin thread.

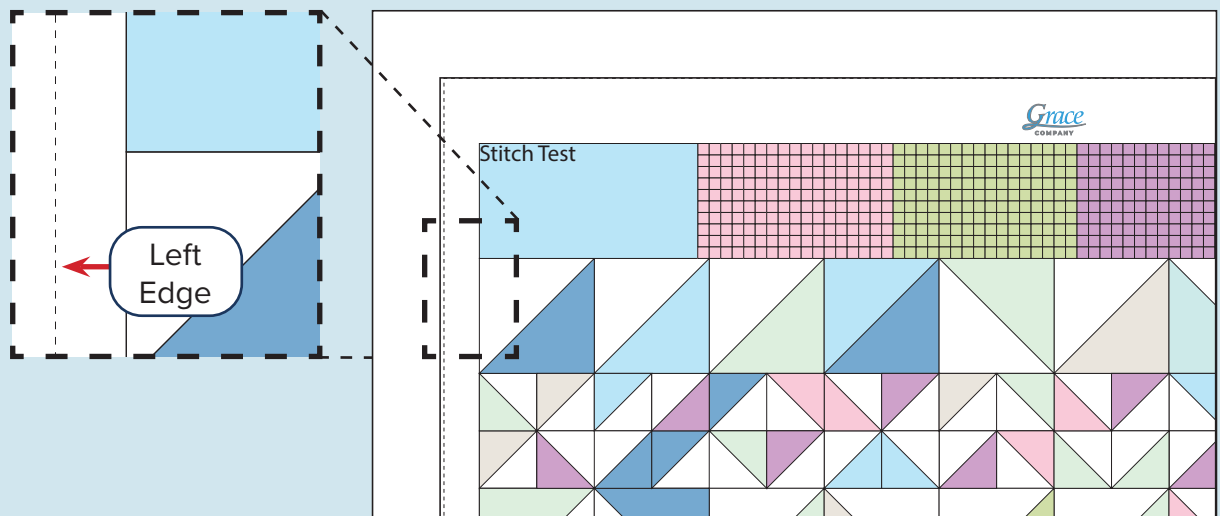
Every stitch made with a sewing machine has two threads: the top thread (from the cone or spool on the machine) and the bottom thread (from the machine's bobbin). When you first start stitching, the tail of the bobbin thread is underneath the quilt. Since you can't see it, it's easy to stitch over the tail and end up with an unsightly bunch of thread under the quilt. 'Pulling up the bobbin thread' is the strategy to bring the bobbin thread up to the top of the quilt so that it can be trimmed away with the top thread tail. This should be done at the start of every tie-on and the end of every tie-off, and at the start and end of a line of tacking stitches.

- a Pick up and hold the **top thread tail** that is threaded through the needle.

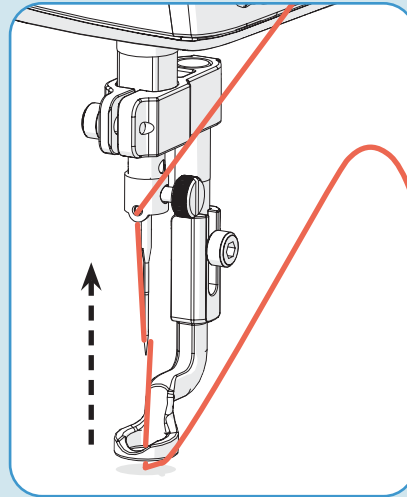
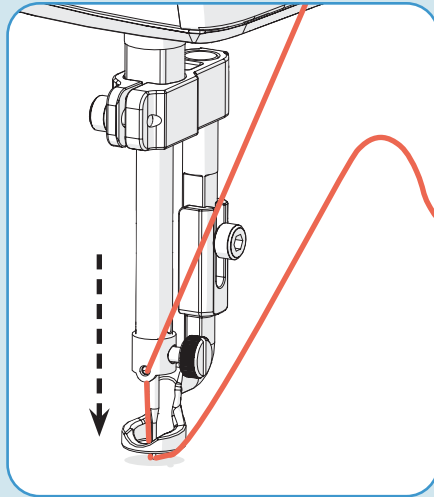


**Note:** It doesn't matter if the thread is under or over the foot for this process.

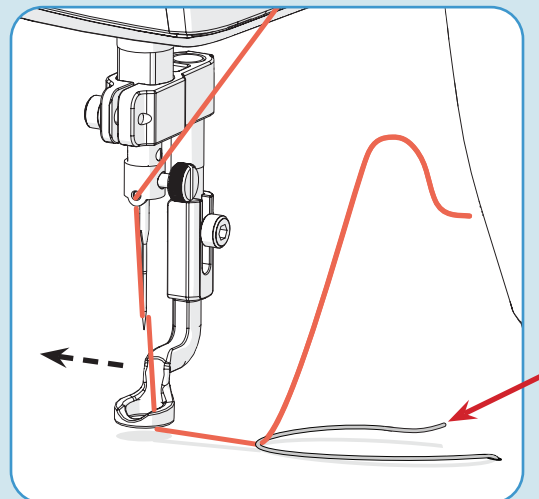
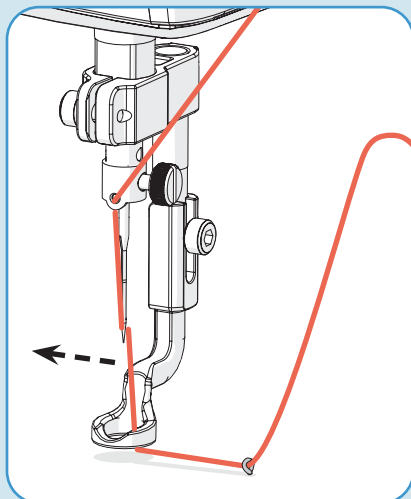
- b Make sure your needle is positioned as close to panel's **left edge** as possible.



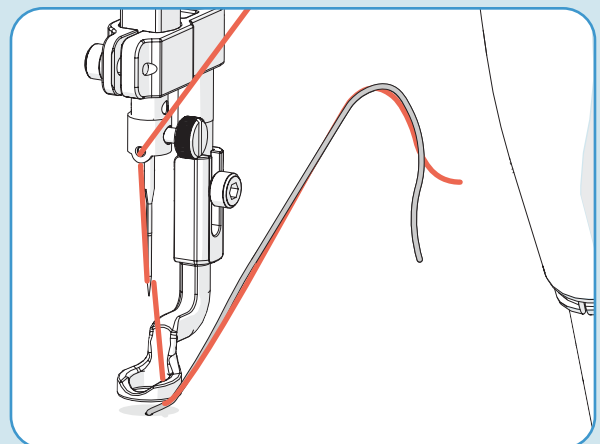
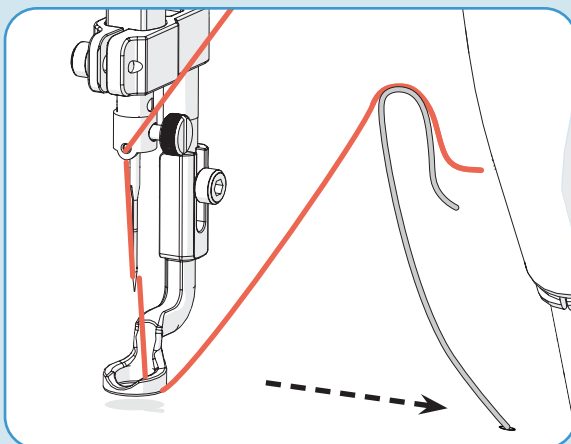
- c While still holding the thread tail, do a single stitch (needle down and back up).



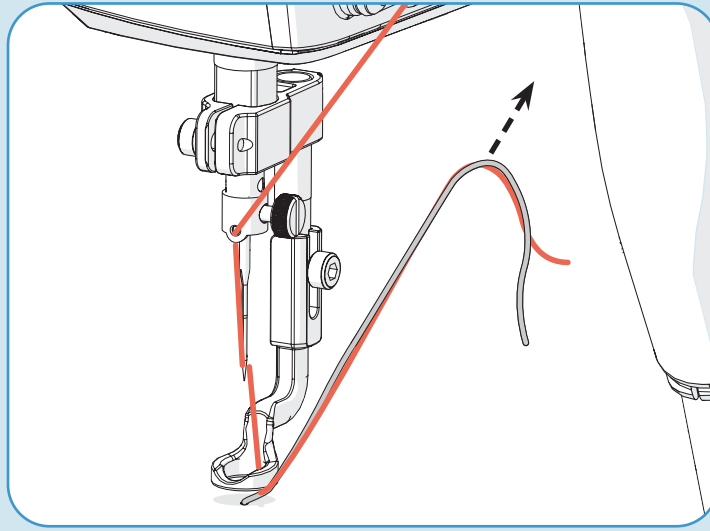
- d Continue holding the thread tail and move the machine away from the stitch. A loop of bobbin thread will be pulled up to the surface. Keep pulling until the bobbin tail completely pops out.



- e Gather up both thread tails and move the machine back to the first stitch.



**Important:** When you move your machine back to the original stitch, slack bobbin thread builds up right under the fabric. Pull on bobbin thread tail until the resistance slightly increases.

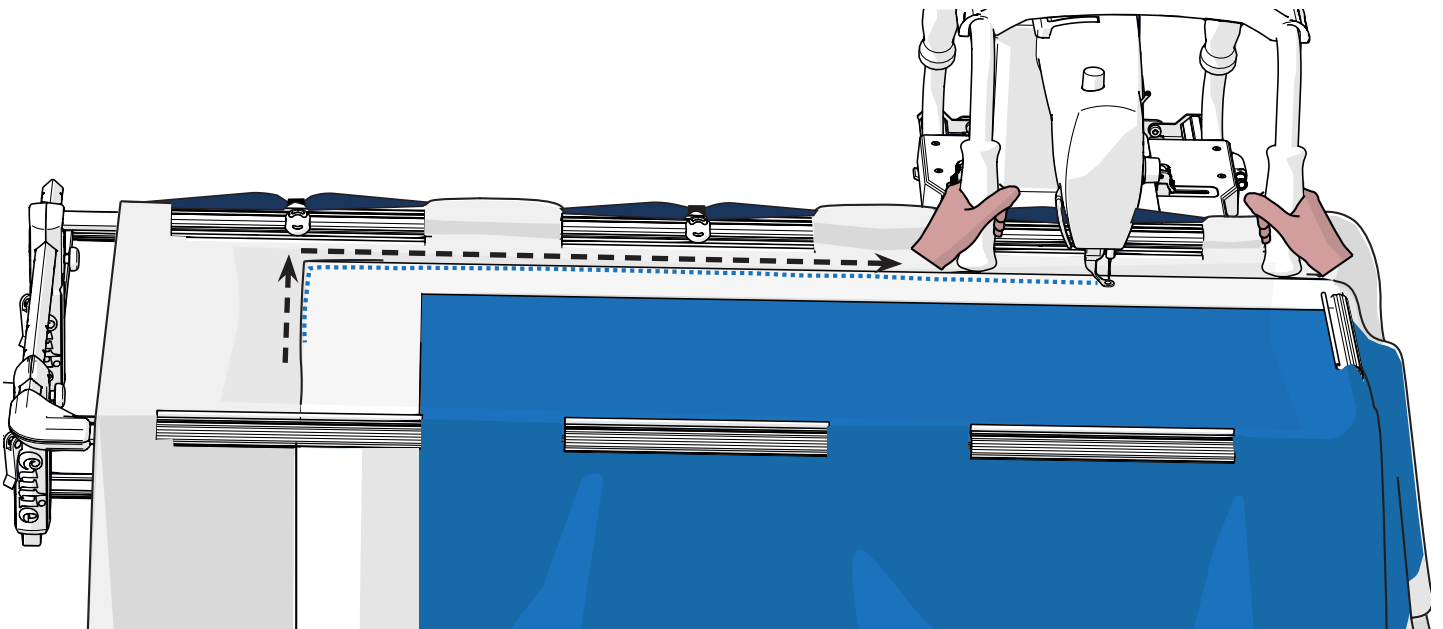


## TROUBLESHOOTING

If you have trouble pulling up your bobbin thread, the bobbin tail might be too short. Remove the bobbin case from the machine and pull on the bobbin tail until there is about 4 inches of thread dangling from the case. Reinstall the case and try again.

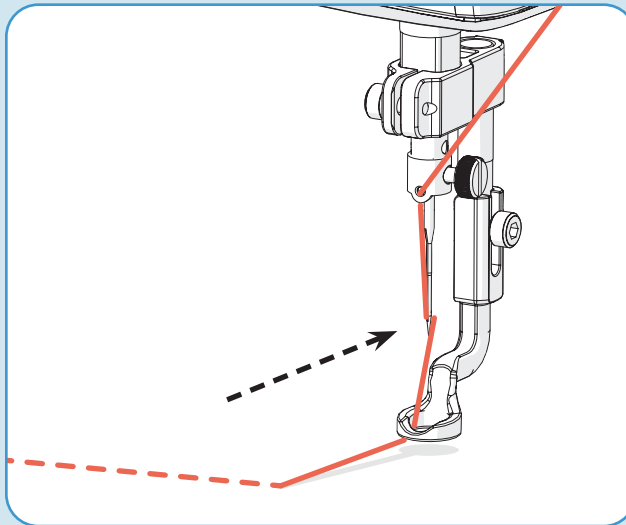
- 4 Stitch up along the left edge of your panel. When you reach the top corner, continue to stitch along the top toward the right as far as the machine can go.

**Tip:** Stop frequently and check your stitch tension. This is your best opportunity to set your tension because these stitches will be hidden in your finished quilt.

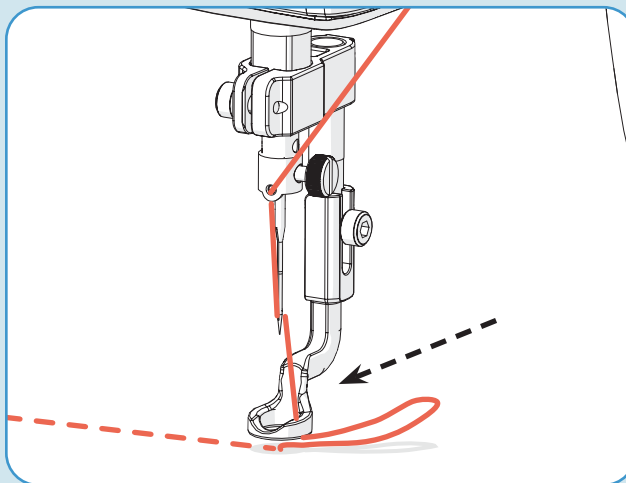


5 The bobbin thread must be pulled up at the end of a line of stitching as well.

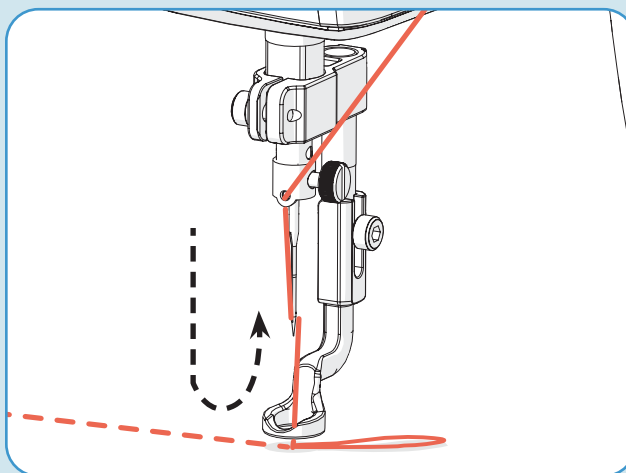
a Move the machine away from the last stitch.



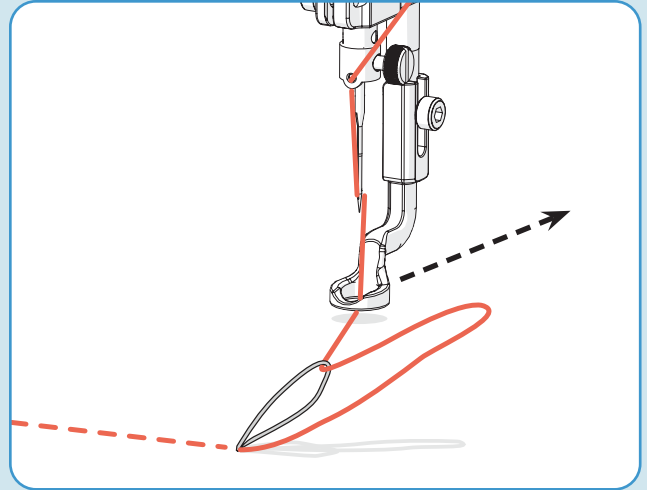
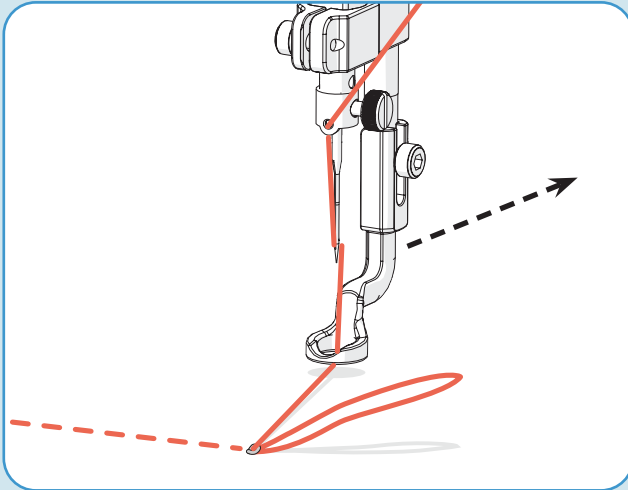
b Hold the top thread to make a loop and return the needle to the last stitch.



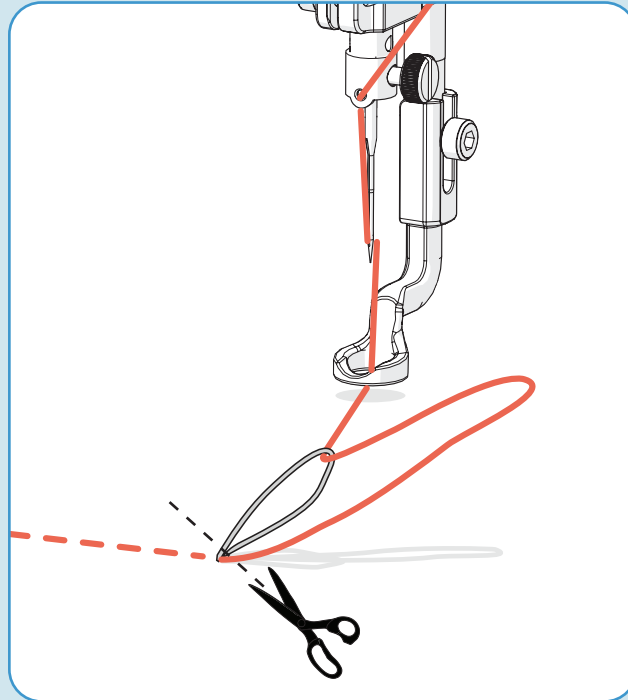
c Still holding the loop, make a single stitch directly over the last stitch.



- d Still holding the loop, move the machine away from the last stitch.



- e Trim away all the threads, close to the tie off or last stitch.



- 6 Now that you've tacked down the edges of your quilt, it's time to open the software.

### 3

## Lesson Three: Open the Software

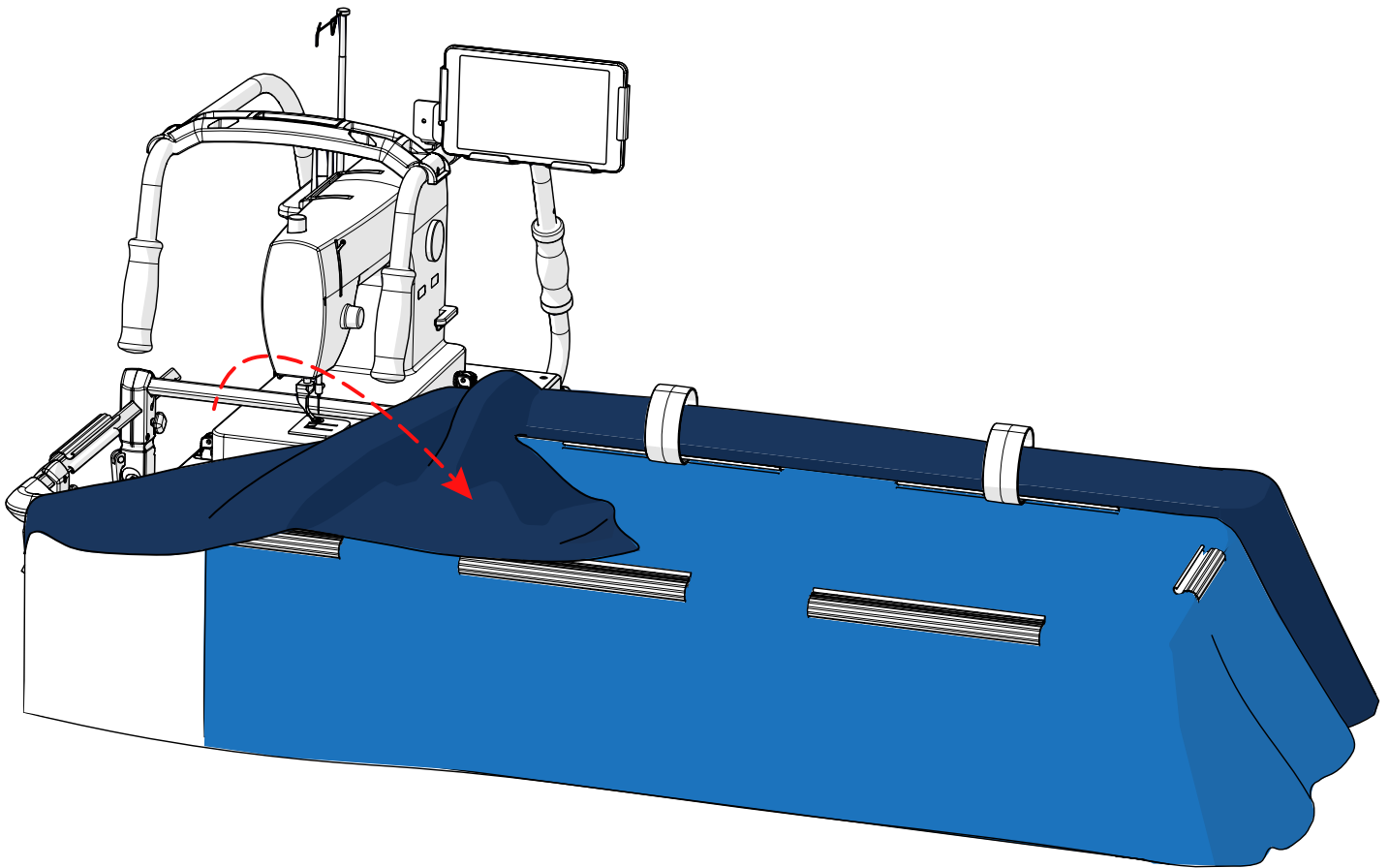
### KEY CONCEPT

Memorize the home position on your machine so that you always home the machine correctly. This prevents accidents later on.

You opened the software to home the machine and set your frame space during assembly, but you must also home the machine every time you open the software. Homing the machine allows the software to apply the boundaries of your frame space to the real world, so the software can position the machine's needle within the frame, knowing where it is at all times.

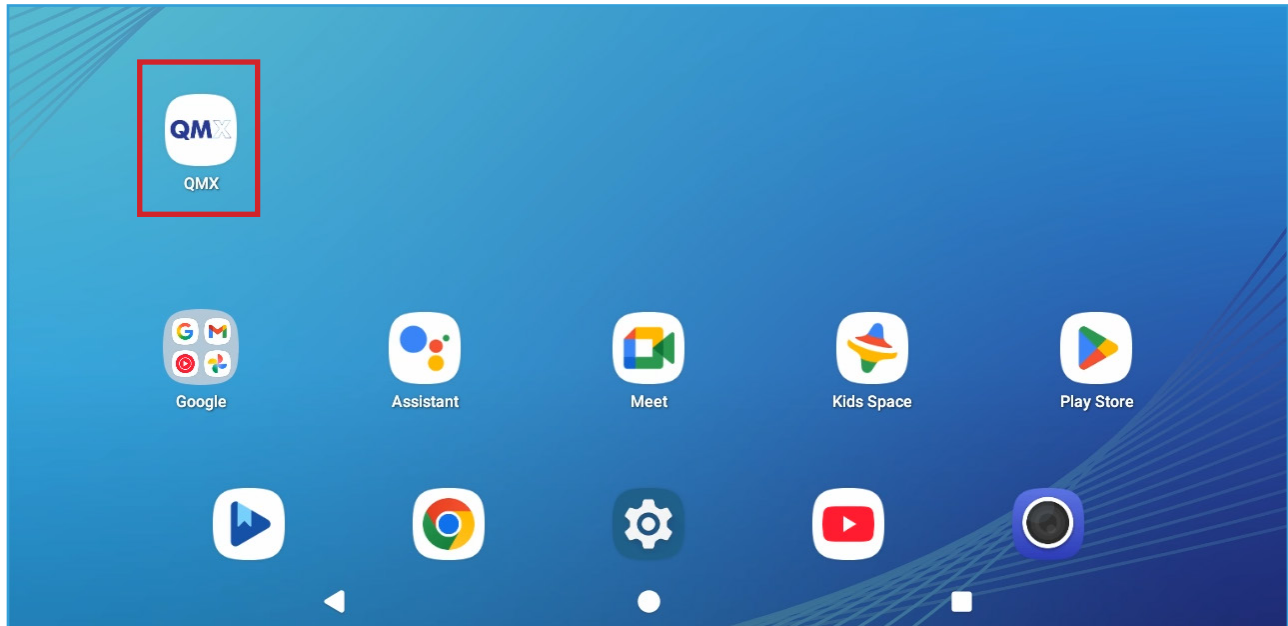
You must position the needle in the same spot within the frame every time to home properly. Otherwise when the software draws the boundary box around where it believes the frame is, the box will not align correctly with the frame's rails. Your machine could end up crashing against the rails, and it will be much more difficult to place designs.

Move your fabric out of the top-left corner of your frame for homing so that your machine is always in the same position. Fabric, clamps, and clips can all interfere with the needle's position, so be sure to move these out of the way, too.

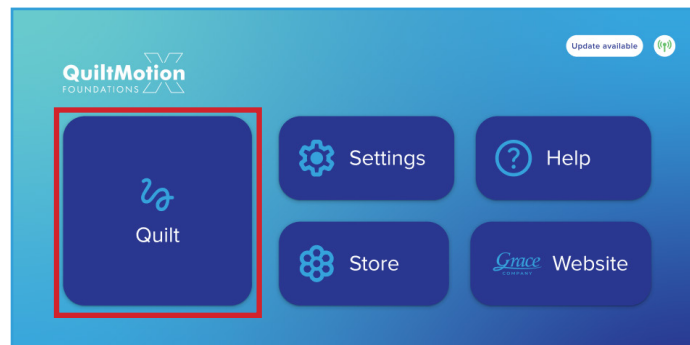


## PRACTICE STEPS

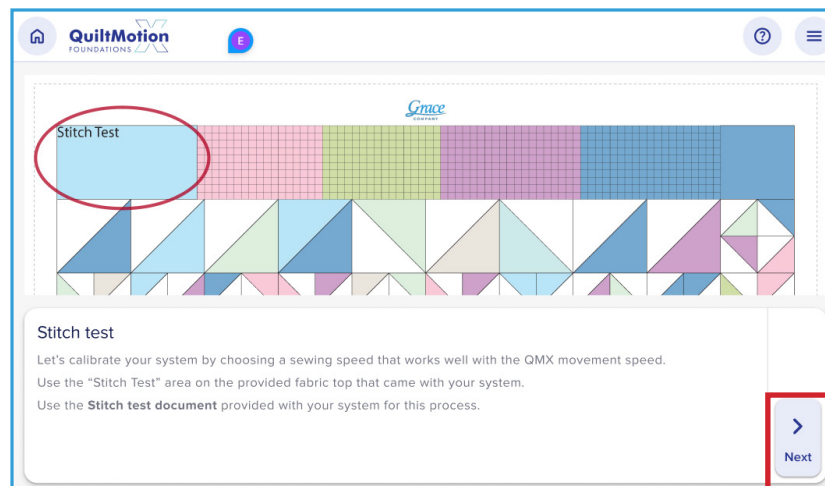
- 1 Open the software.



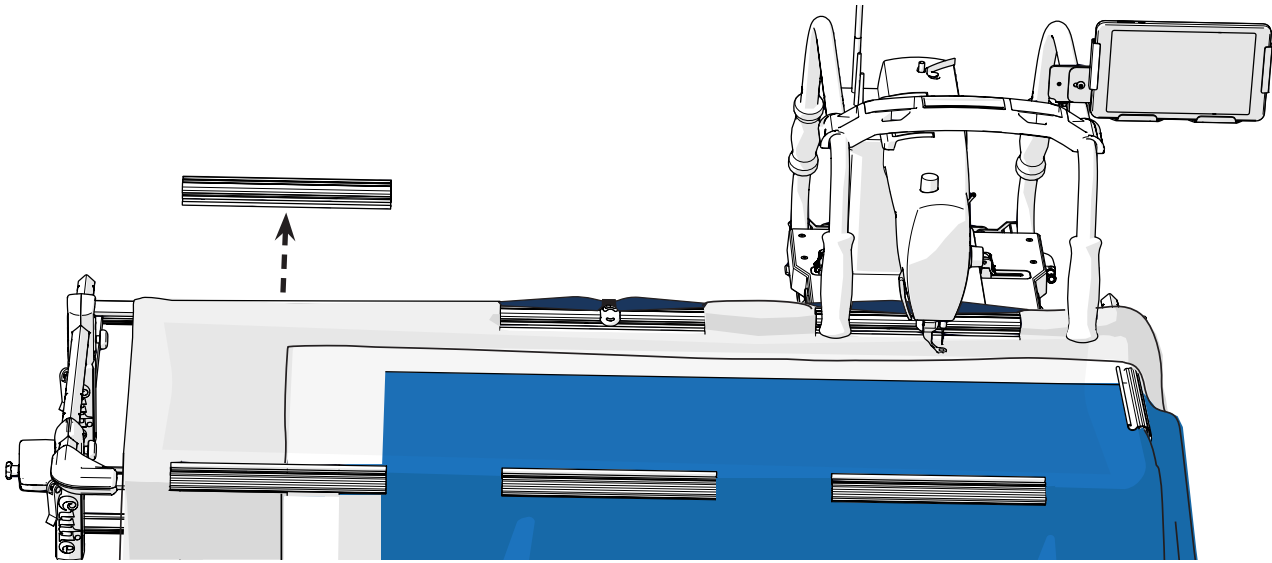
- 2 Tap **Quilt**.



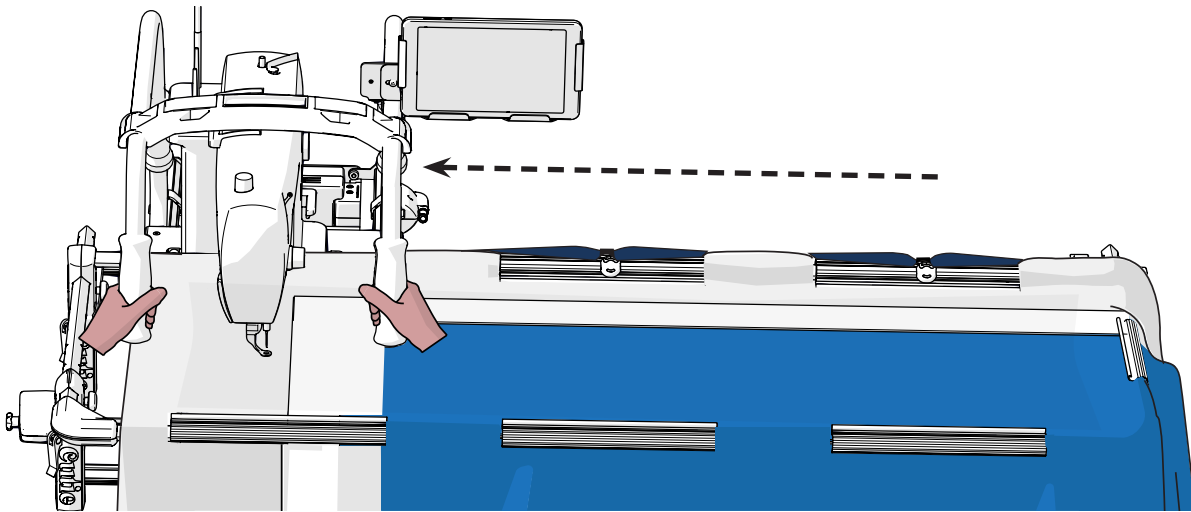
- 3 Depending on whether or not you've opened the software before, the Stitch test screen might open. If it does, read it carefully and tap **Next**.



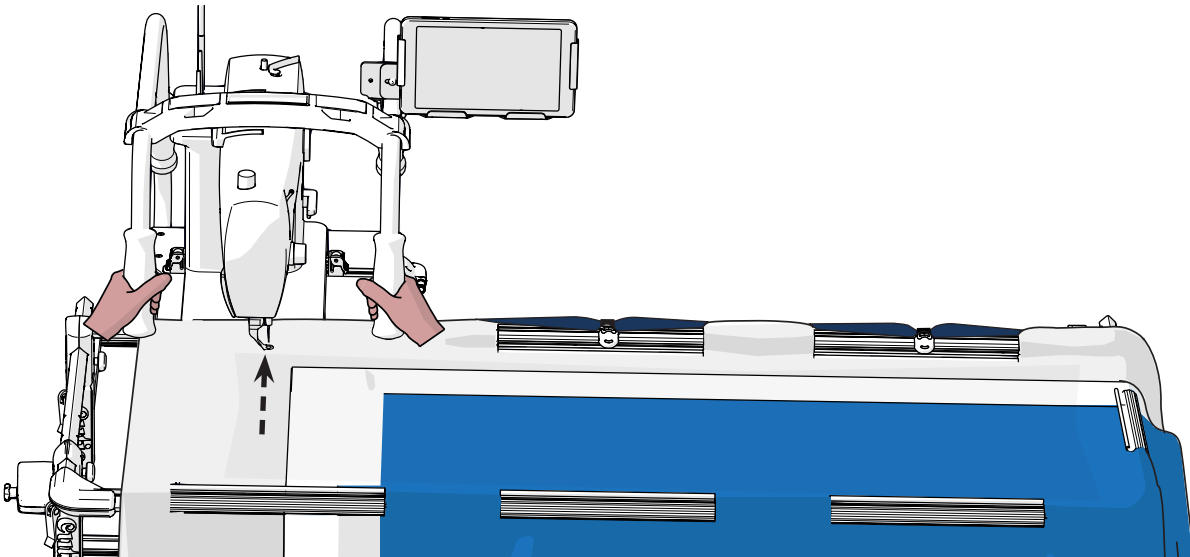
- 4 Remove the back-left clamp (and the side rail clamp if it is clamping down on any fabric).



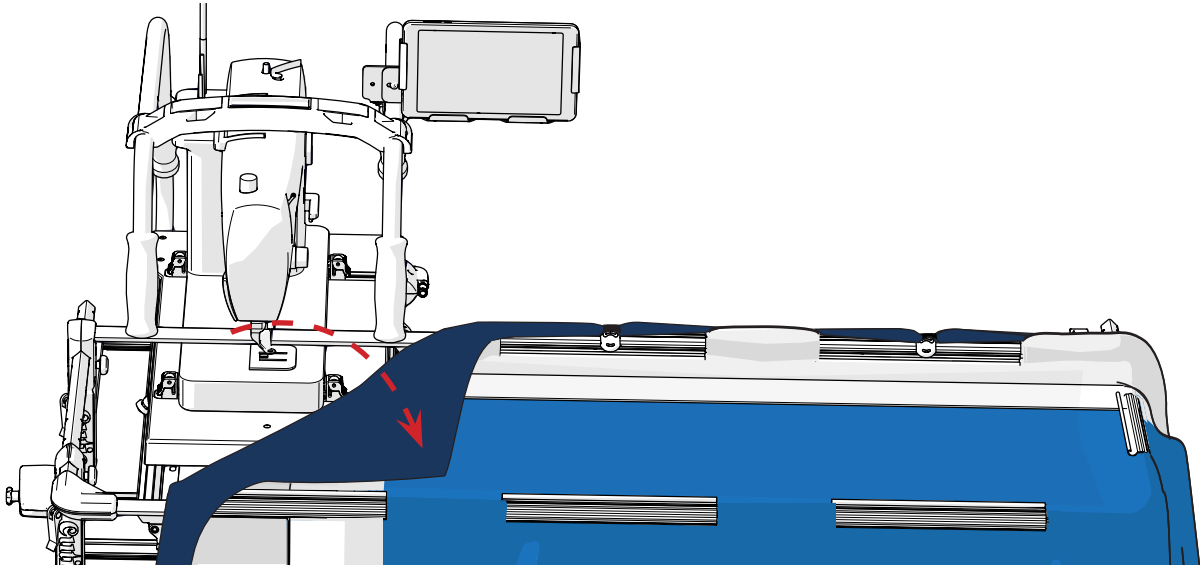
- 5 After the software connects to the hardware, you're prompted to home your machine. Move your machine as far to the left as it will go.



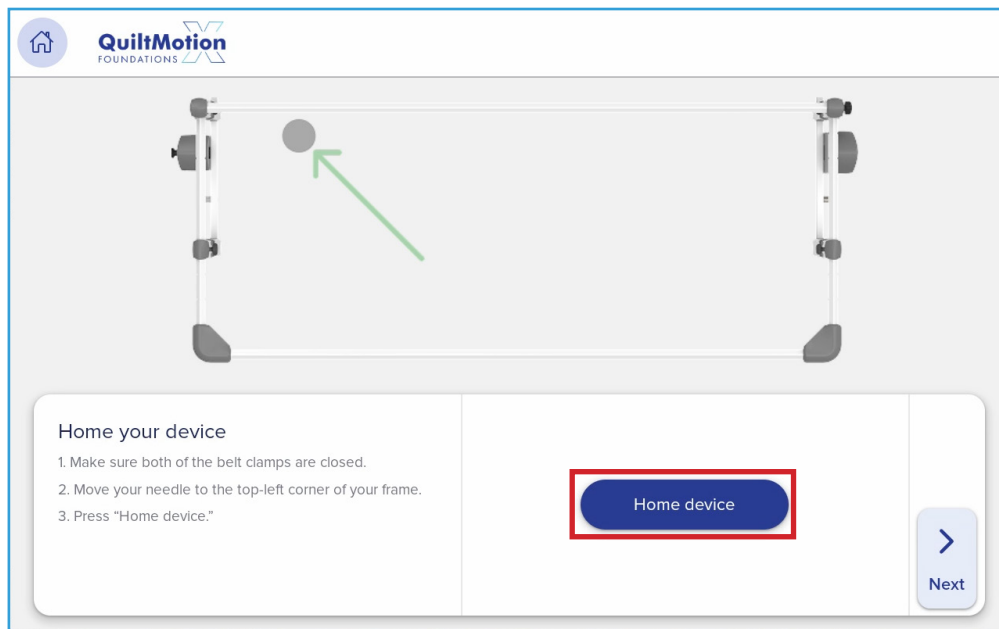
- 6 Move your machine as far back as it will go.



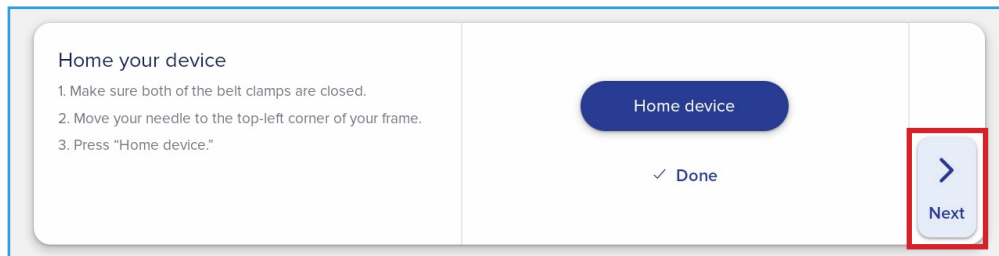
- 7 Move the fabric out from underneath the machine foot.



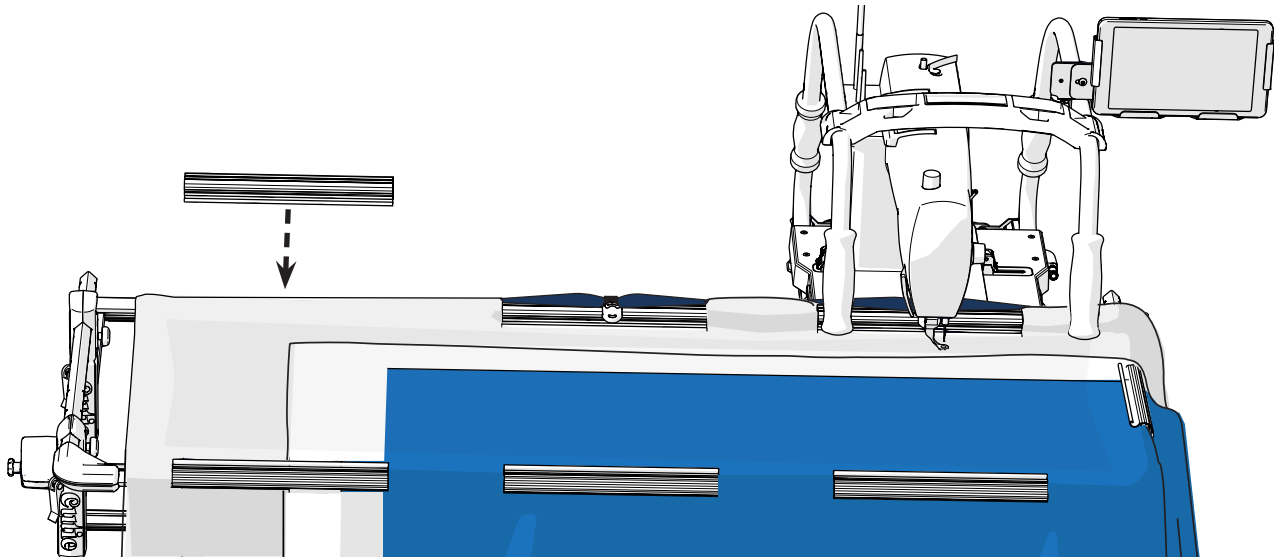
- 8 Make sure your machine is still as far back and to the left as it will go. This is the *home position*. Memorize this position! The more consistent you are with using the same spot when you home, the better your quilting experience will be. On the screen, tap **Home device**.



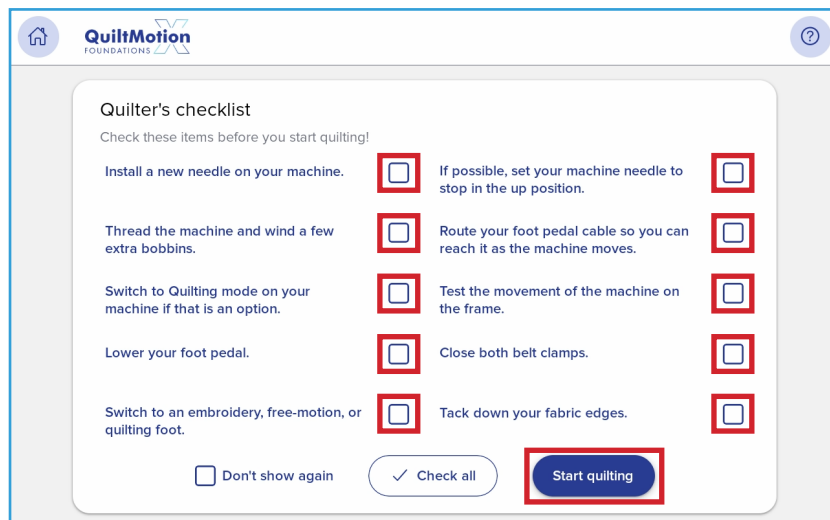
- 9 Tap **Next**.



- 10 Replace the fabric clamps and elastic clip.



- 11 Check your tablet screen. If the Quilter's checklist is on screen, read it carefully and check the boxes for each item. If the Quilter's checklist is not on screen, it was turned off at some point. You can turn it back on in the Settings menu if desired.



## 4

## Lesson Four: Place a Line

### KEY CONCEPT

Use your needle to point to where on your quilt that you want to stitch out the design.

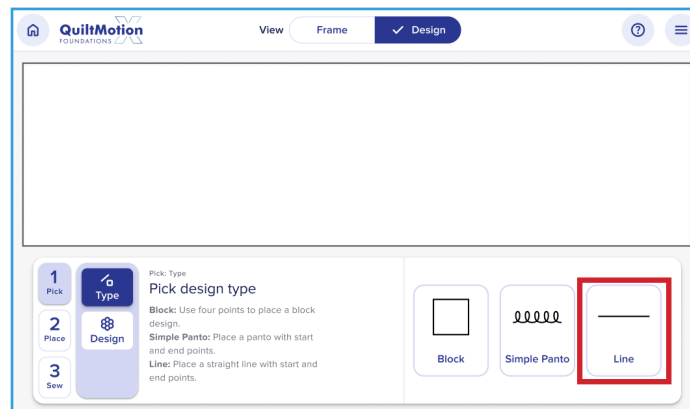
**Placing** is the process of telling the software the location on the quilt that you want to stitch out a design. In this lesson, you'll learn to place a line by using your needle as a pointer to tell the software the location on the quilt to stitch. The software tracks the location of the needle over the frame, and then you tap buttons on the screen to set the start and end point for the line of stitches.

### VOCAB REVIEW

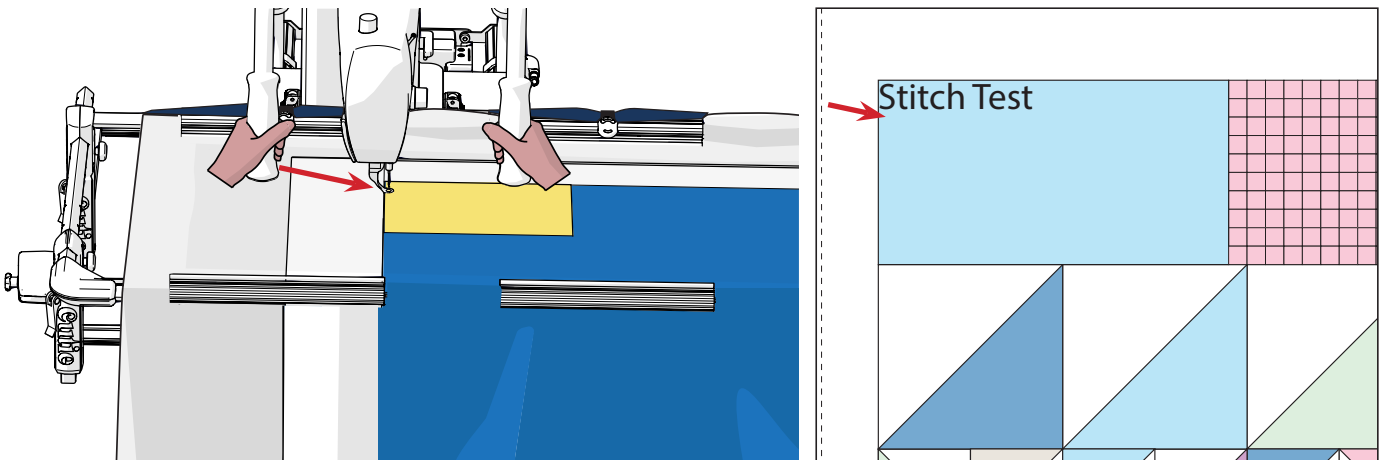
**Place (Placing):** The process of telling the software the location on the quilt to stitch out a design.

### PRACTICE STEPS

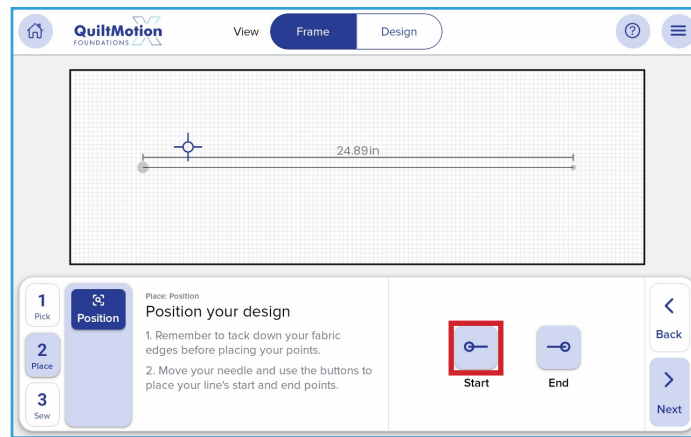
- 1 In the *Pick: Type* screen, press **Line**.



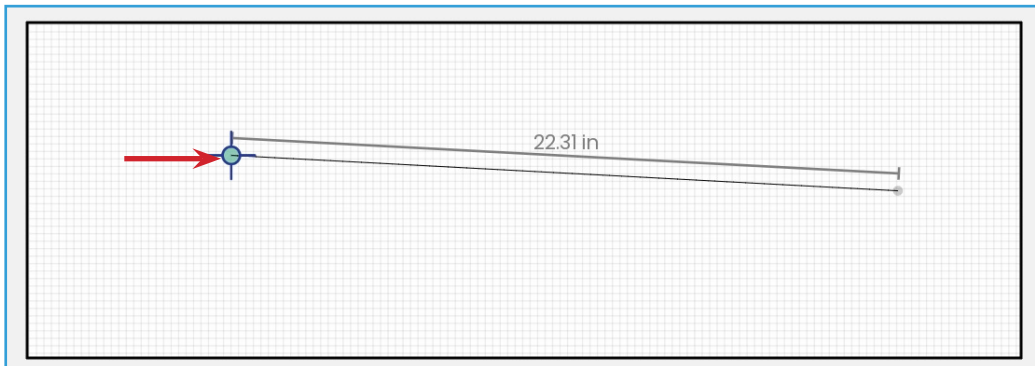
- 2 Position your machine's needle directly over the place you want to designate as the starting point for the line of stitching. In this case, move the machine a quarter inch or so under the S in *Stitch*. **Tip:** For precise placement, use your hand wheel on your machine to drop the needle close to the fabric.



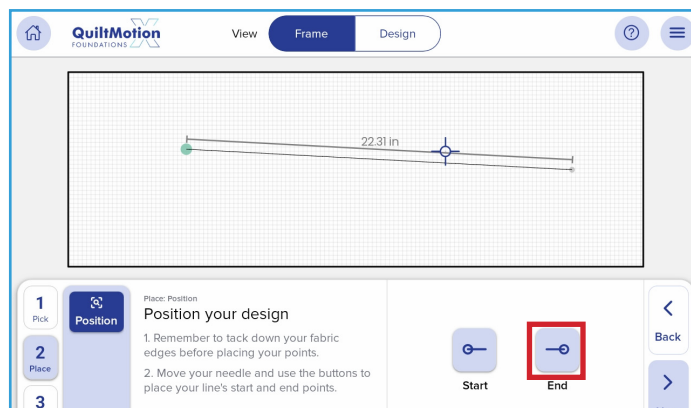
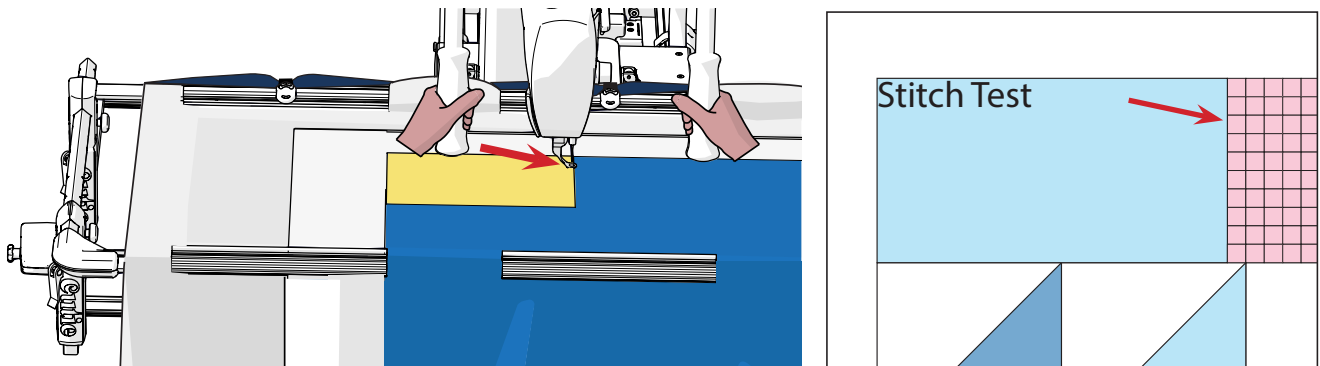
- 3 On the screen, tap **Start** to set the line's start point where your needle is.



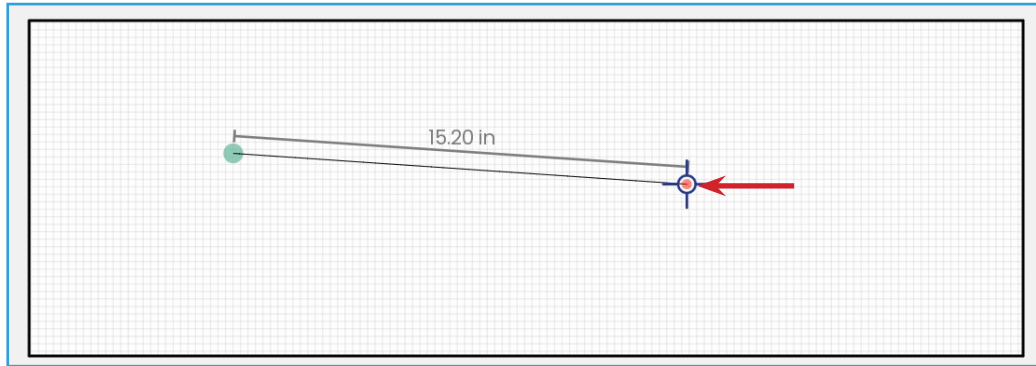
Note that the circle at the start of the line turns green when the start point is placed. Start points in designs are designated with green circles.



- 4 Move the needle to the other side of the stitch test box where you'd like the line to stop. Then tap **End**.

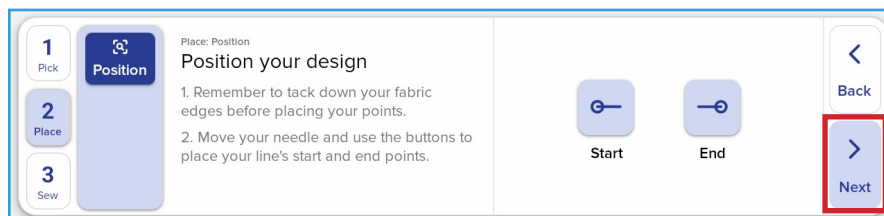


Note that the circle at the end of the line turns red when the start point is placed. End points in designs are designated with red circles.

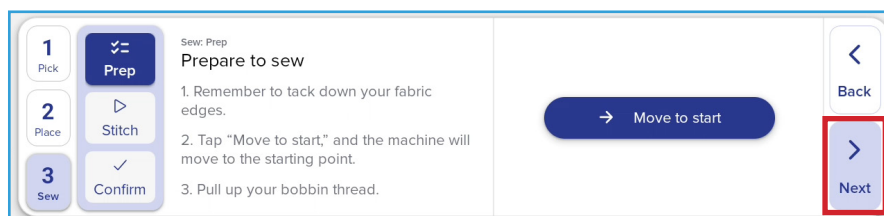


**Note:** You might notice that the line on your screen isn't totally straight. This is expected. When placing the fabric on the frame, it's very difficult to get the fabric perfectly square with the frame. Any tilt of the fabric on the frame will show up as a tilt in your placement on the screen, which is good; it means that when the machine stitches it out, it will be exactly where you want it to be on the quilt.

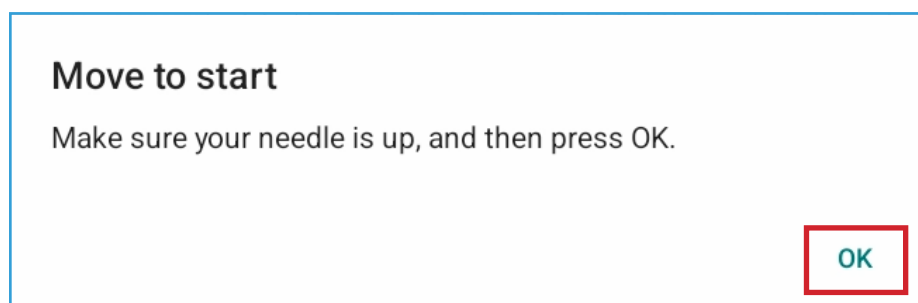
5 Press **Next**.



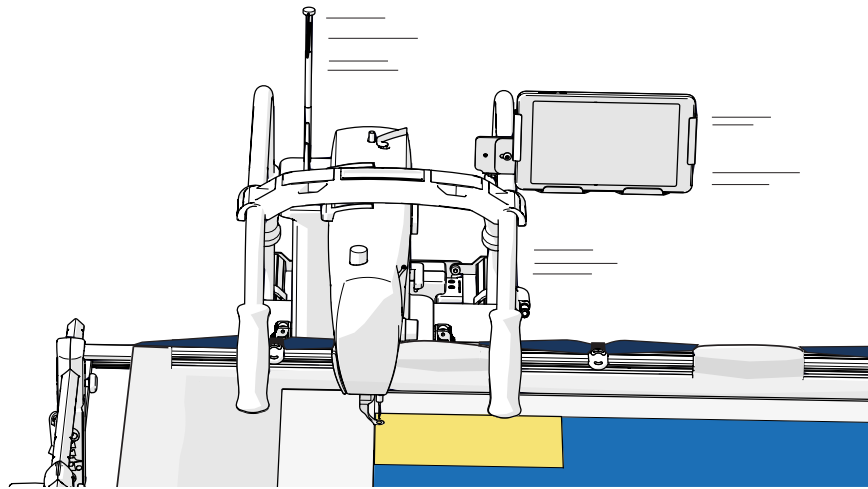
6 The Sew: Prep screen opens. Tap **Next**.



7 A message pops up to let you know that your needle must be up. QMX is about to move your machine, and you do not want the needle down in the fabric when the machine moves. Make sure your needle is up and press **OK**.



QMX moves your machine to the starting point for your line and locks it in place.



### WHAT WAS THE POINT OF THAT SCREEN?

The Sew: Prep screen is there to help you pull up your bobbin thread before you start stitching. However, in the next lesson you'll be asked to unthread your machine so you can perform the stitching speed test. It would be wasted effort to pull up your bobbin thread now just to unthread your machine in the next lesson.

5

## Lesson Five: Find your Stitching Speed

### KEY CONCEPT

You must match your stitching speed to the software's movements. Try out different speeds to determine the best speed to use with QMX.

When QMX moves your machine, it always moves at the same speed. However, every machine has its own stitching speed settings, so the needle moves up and down at different rates on different machines. This changes the length of the stitches. To ensure that your stitches are an appropriate length, you must test the software while using different stitching speeds to determine which is best.

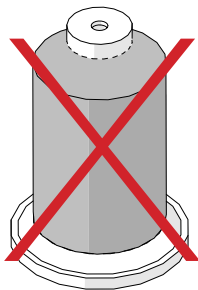
### WHAT ABOUT STITCH REGULATION?

Some fancy machines regulate stitching size so that stitches are always consistent. It's totally okay to use regulated stitching with QMX Foundations, but because of how QMX is programmed to move the machine at a steady rate, it's not necessary to use regulation in order to get consistent stitch length. Therefore, we strongly recommend trying both a stitching speed and a regulated stitching size with QMX to discover which works best for you.

**CAUTION:** When first attempting different speeds, your machine might stitch so quickly that thread knots up under the panel, which can damage your machine. Remove both the top and bottom thread before proceeding with the stitch test.

## PRACTICE STEPS

- 1 Unthread your machine's needle.



- 2 Remove your bobbin from the bobbin case.



**CAUTION:** Some of the following steps can cause damage to your machine or quilt if performed with the needle threaded or with thread in the bobbin case!

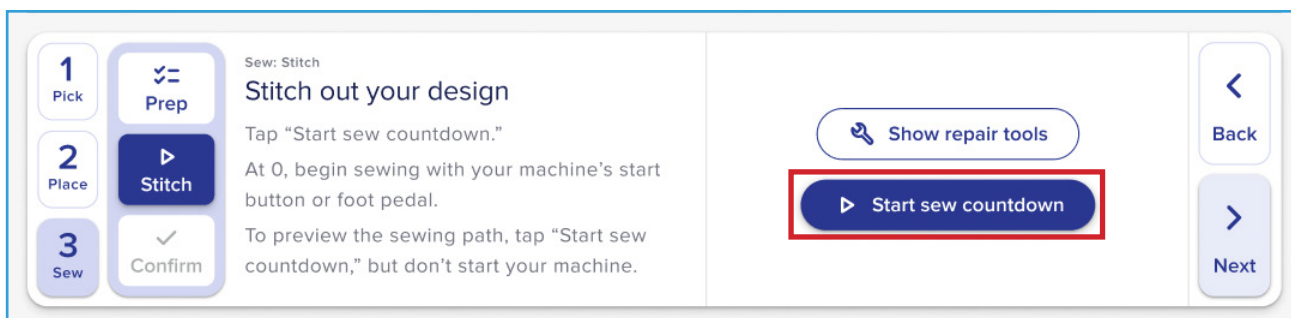
- 3 Set your machine to medium speed.



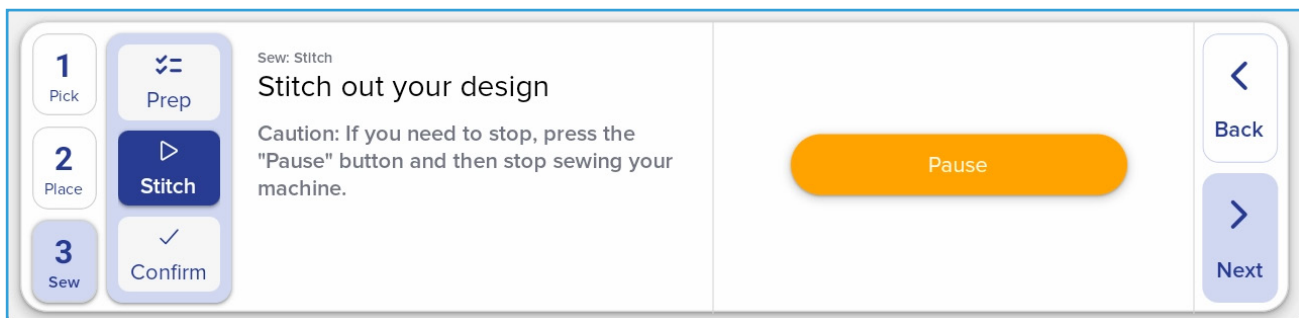
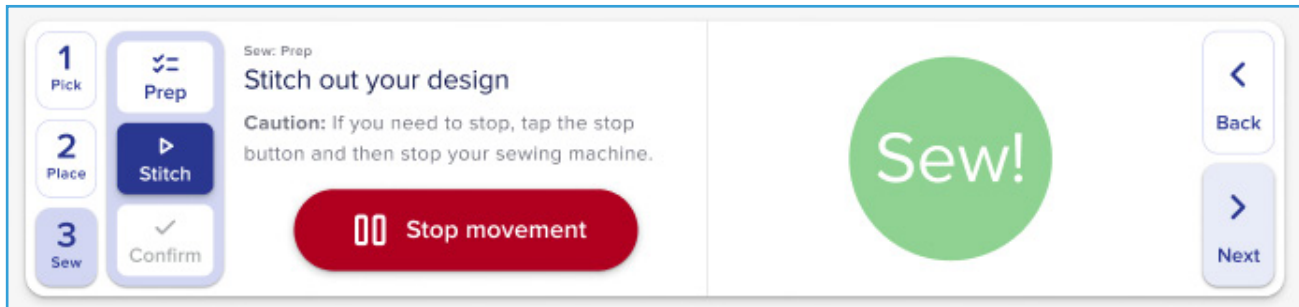
- 4 Get ready to press the start sewing button (or the foot pedal) on your machine.

- 5 **IMPORTANT:** Fully read steps 6–9 before continuing.

- 6 Tap **Start sew countdown**. At 0 (when it says *Sew!*), press the button to start sewing on your machine or activate your foot pedal. QuiltMotion moves your machine across the frame where you placed your line and your needle pokes holes in the fabric.

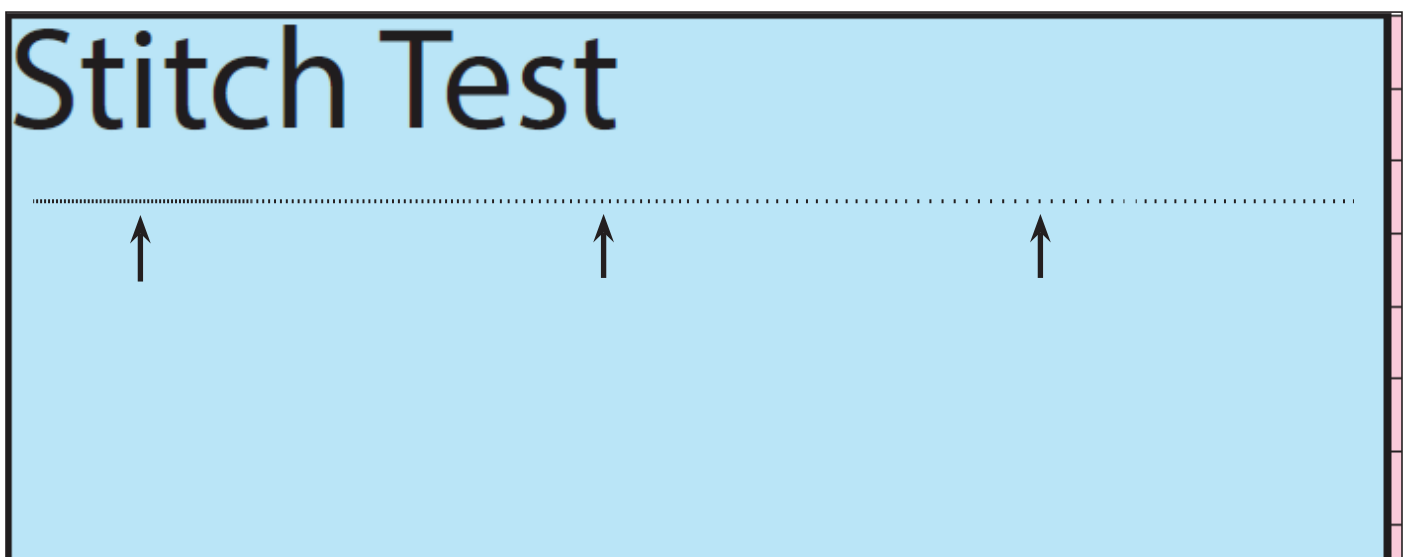


**IMPORTANT:** When QuiltMotion X is moving your machine, the emergency *Stop movement button* appears first, and then the *Pause button* appears. Both buttons halt the machine's progress across the frame, but you must manually stop the stitching on your machine. If you must stop stitching, press the stop or pause button on screen first and then immediately stop your machine.

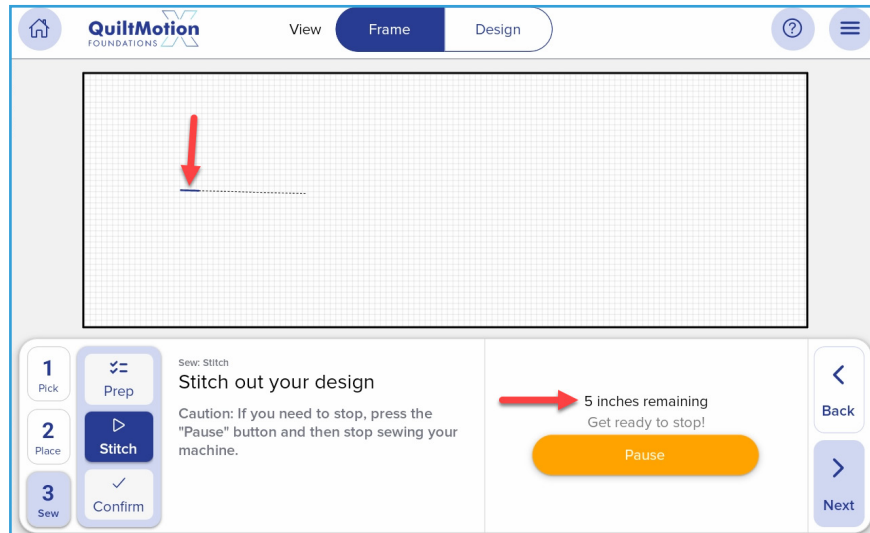


Some machines stop stitching with the needle down in the fabric, so if you stop your stitching first, you might cause QMX to keep moving your machine while the needle is down, pulling on the fabric.

- 7 As you are stitching, look at the holes created by the needle. Adjust your stitching speed, trying different settings until the holes are about where you would expect them to be for an ideal stitch size.



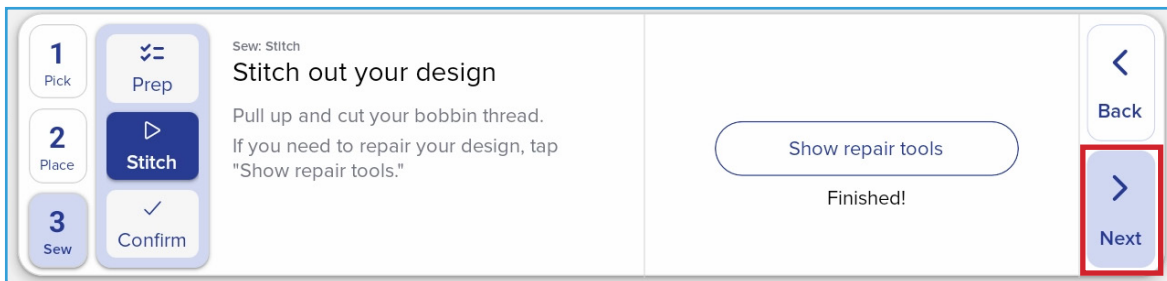
- 8 Track your progress through a design by watching the design in the preview window as it slowly turns dark blue. Additionally, when there are 5 inches remaining for a given design, an inch countdown appears above the pause button to let you know the design will end soon. There is also a beeping sound at around 2 or so inches to grab your attention, so always be listening for the sound.



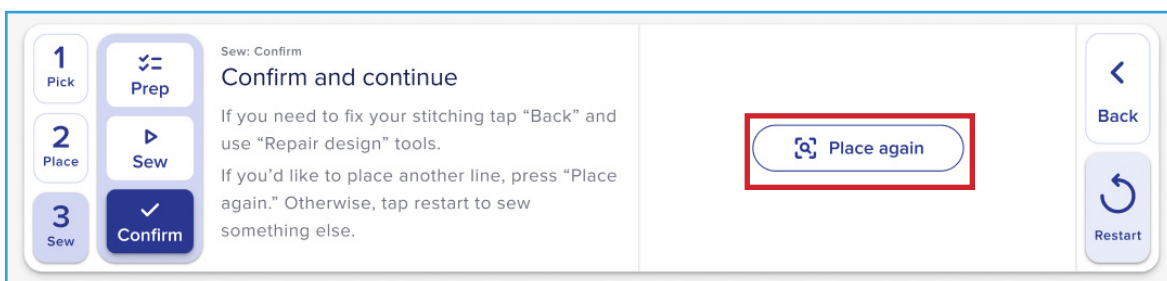
- 9 As the machine reaches the end, prepare to stop the stitching on your machine. Stop stitching as soon as the design ends. When your machine is threaded, allowing the machine to stitch in place for too long can damage the machine and your quilt.

- 10 Make a note of the speed that gave you the stitch length you think looked best.

- 11 Tap **Next**.



- 12 Tap **Place again**.



- 13 Repeat the steps for placing a line (see Lesson 4 if needed) and stitching it out without thread until you are satisfied that you've found a speed that you'd like to try out using thread. **Note:** If you have a machine with a shorter throat, you might need to shift your fabric back on the frame to reach the lower portions of the stitch test box.

## 6 Lesson Six: Stitch Out a Line

**IMPORTANT:** These instructions must only be attempted after determining the correct stitch size for your machine by completing Lesson 5. If you have not completed Lesson 5, do not attempt this one.

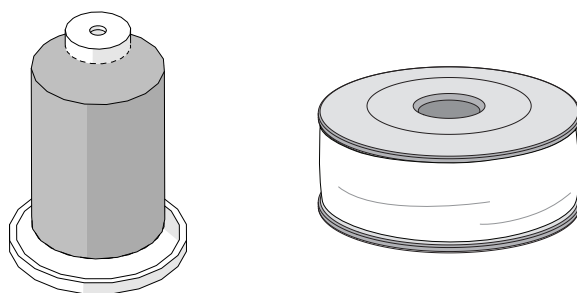
In this lesson, you'll re-install the thread on the machine and see how your stitches come out. Be cautious as you proceed. Eventually these steps will be second-nature to you and you'll feel confident stitching out whatever design you like, but since this is a new process for your machine, it's best to take things slowly and carefully at first.

### PRACTICE STEPS

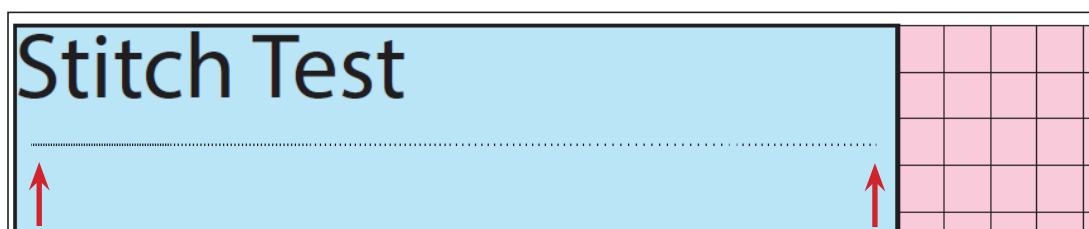
You will need:

- Thread
- Wound bobbin
- Scissors or thread snips

- 1 Thread your machine and re-install the bobbin.

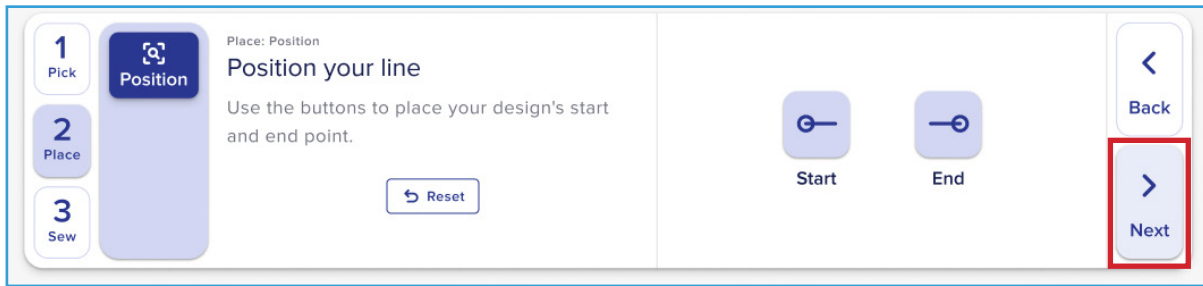


- 2 Set your machine to the stitching speed that looked right in the previous lesson.
- 3 Place a new line (see Lesson 4 if needed) below the line of holes you created.

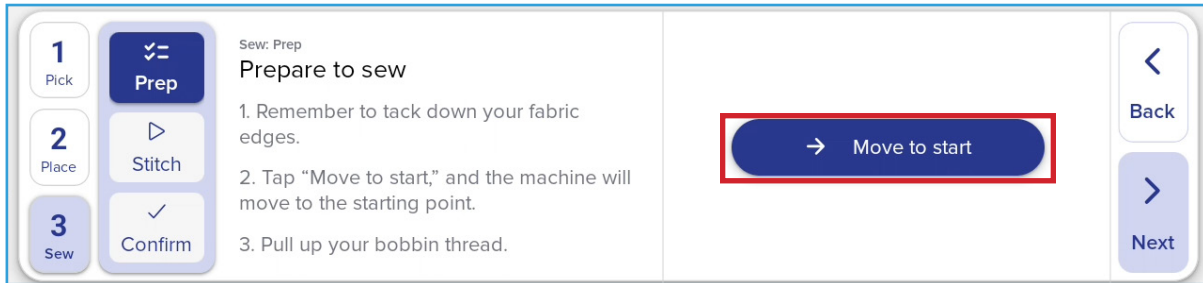


**Note:** If you have a machine with a shorter throat, you might need to shift your fabric back on the frame to reach the lower portions of the stitch test box.

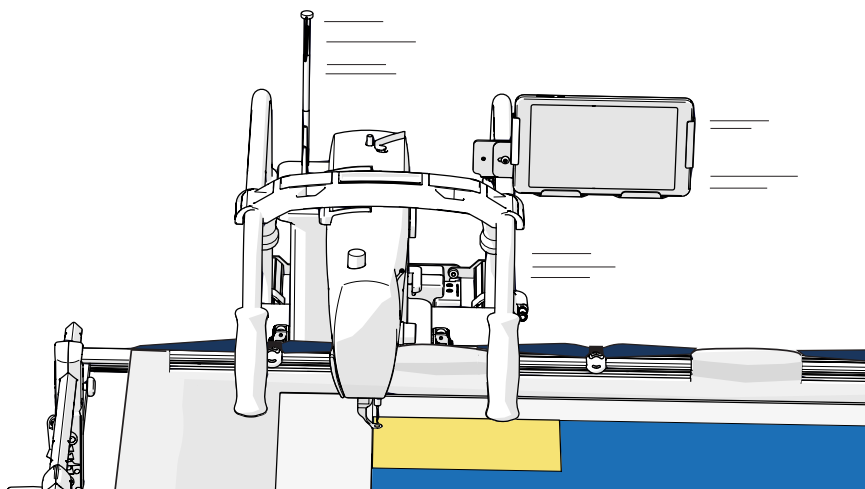
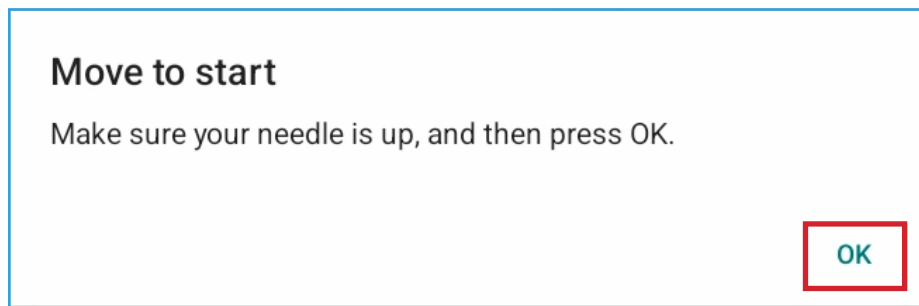
- 4 Tap **Next** to get to the Sew: Prep screen.



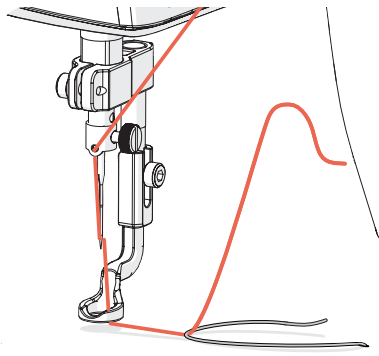
- 5 On the Sew: Prep screen, press **Move to start**.



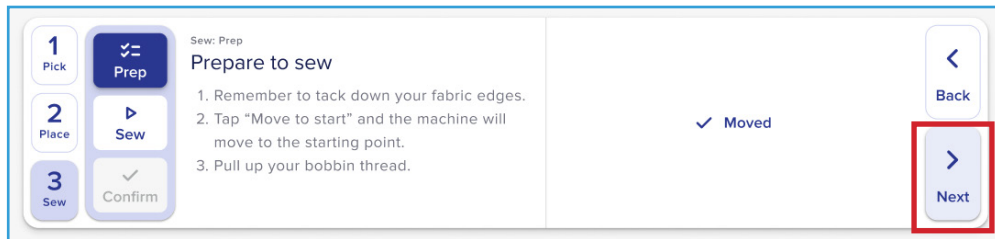
- 6 You're prompted to make sure your needle is up. Do so and tap **OK**. The machine is shuttled to the starting point of the line you placed.



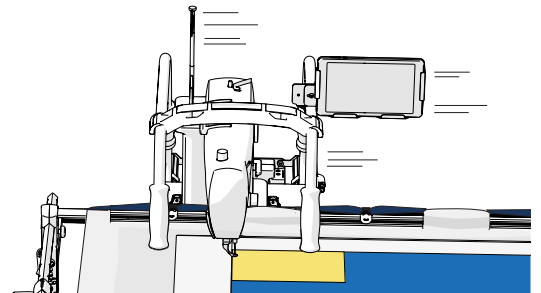
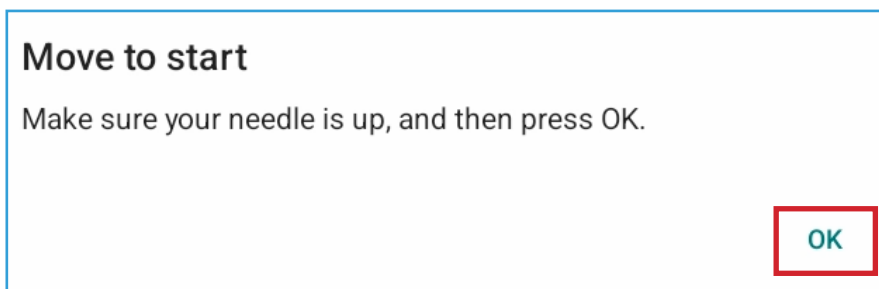
- 7 Pull up your bobbin thread using the steps in Lesson 2, step 3.



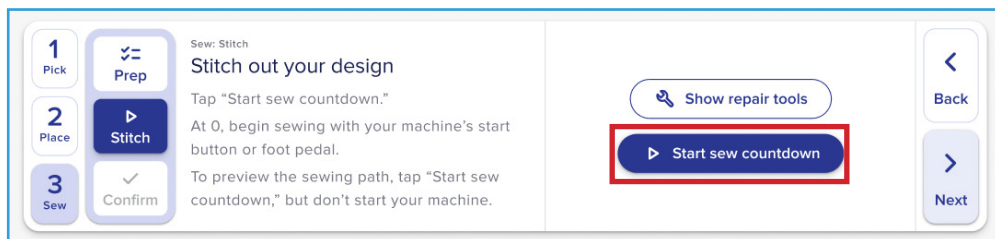
- 8 Tap **Next**.



- 9 You're prompted again to make sure your needle is up. Do so and tap **OK**. The machine is shuttled to the starting point of the line and locked in place.



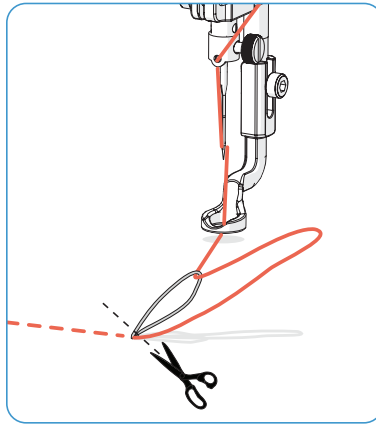
- 10 In the Sew: Stitch screen, get ready to start stitching on your machine and then tap **Start sew countdown** to stitch out your next line. Start stitching at 0.



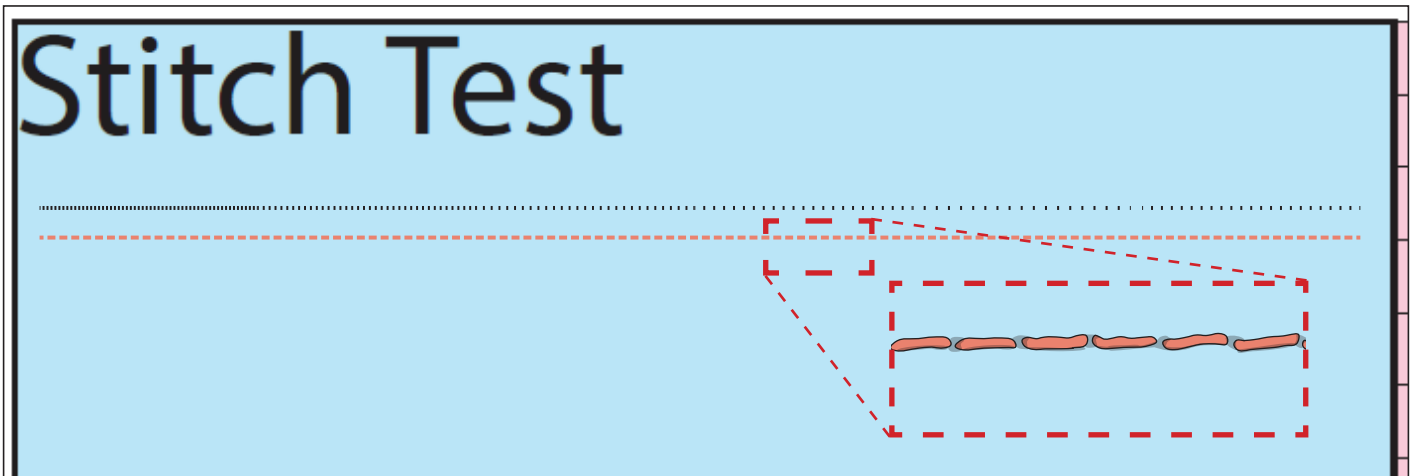
- 11 Stop your machine's stitching at the end of the design.

- 12 Create a securing stitch by making three stitches close to or on top of each other. **Note:** This might not be needed if your machine stitched in place a few times at the end of the line before you stopped it.

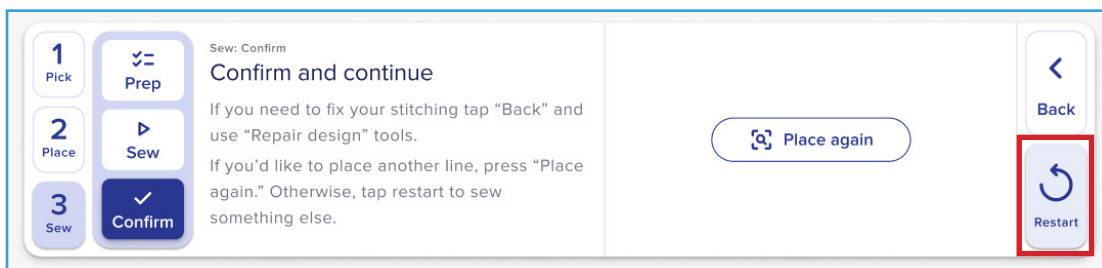
- 13 Pull up your bobbin thread as described in Lesson 2, step 5.



- 14 Check your stitch size. Does it look good? If desired, tap **Place** again and try this lesson again with different stitch settings.



- 15 When you are satisfied with the look of your stitches and you're done stitching out lines, tap **Restart**. This takes you back to the Pick: Type screen, where you can choose to quilt a new type of design.



# 7

## Lesson Seven: Select a Pantograph

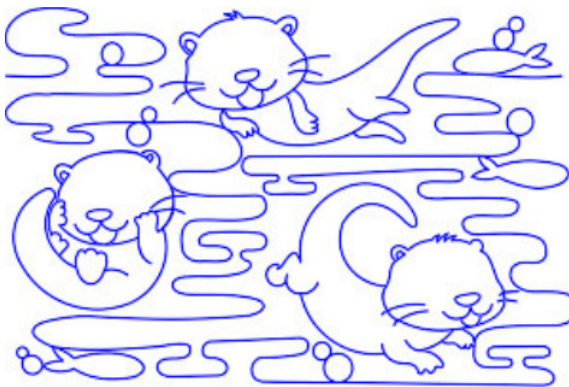
Choosing a design is one of the fun parts of quilting! While there is no right or wrong way to choose an edge-to-edge design (as long as you choose a design that is an edge-to-edge design and not, say, a block design), it can be helpful to consider some things about your setup before purchasing new designs.

Designs are available on the Grace Company website's Design Store. Any designs purchased there through your account will automatically link to your QMX tablet. In fact, your QMX purchase came with 10 free credits to use as you please on any design from our website.

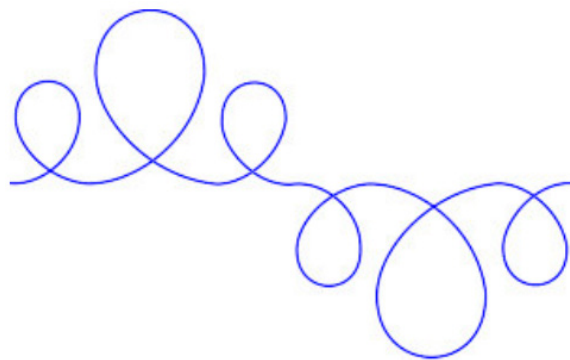
When choosing a design for QMX, consider your machine's throat length. Smaller machines have a smaller quilting space to work with, so some designs might not come out as well as you'd hope. Designs with lots of details will have to be squeezed into a smaller space, and this can lead to the details getting squashed beyond recognition. Choosing simple designs with minimal details improves the chances that your design will look its best when it's quilted out.

### KEY CONCEPT

When selecting your edge-to-edge designs, consider the complexity of the design and the length of your machine's throat. Highly complex designs don't look good when squeezed into a small space.



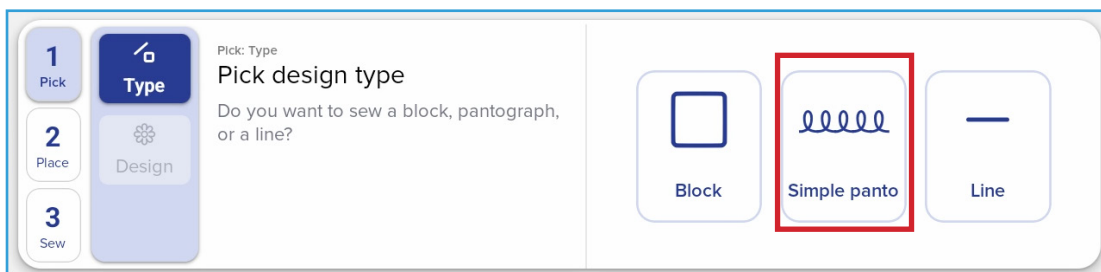
*Complex design with lots of details.*



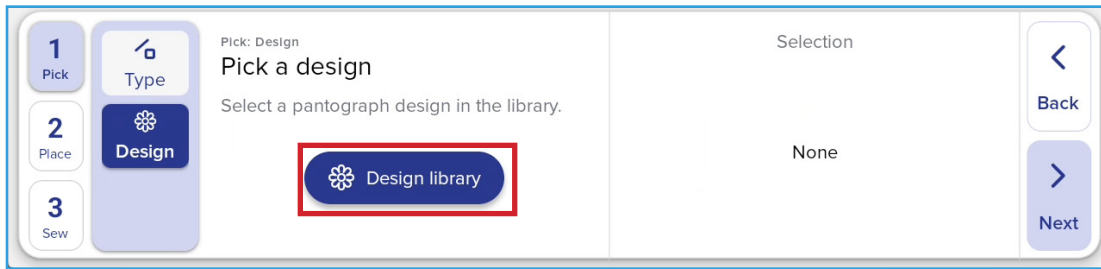
*Simple design.*

## PRACTICE STEPS

- 1 Now you're back in the Pick: Type screen. Select **Simple panto**.

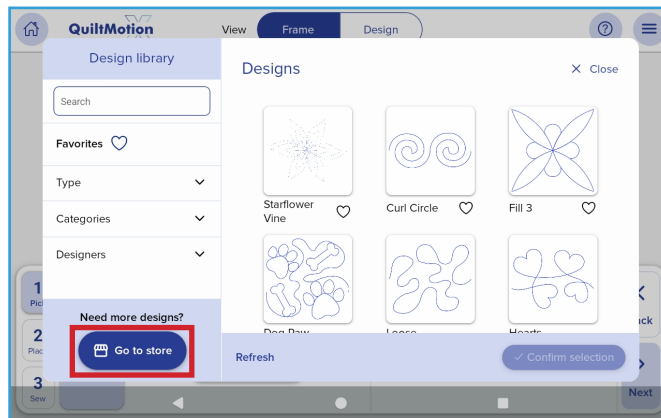


2 Open the **Design library**.

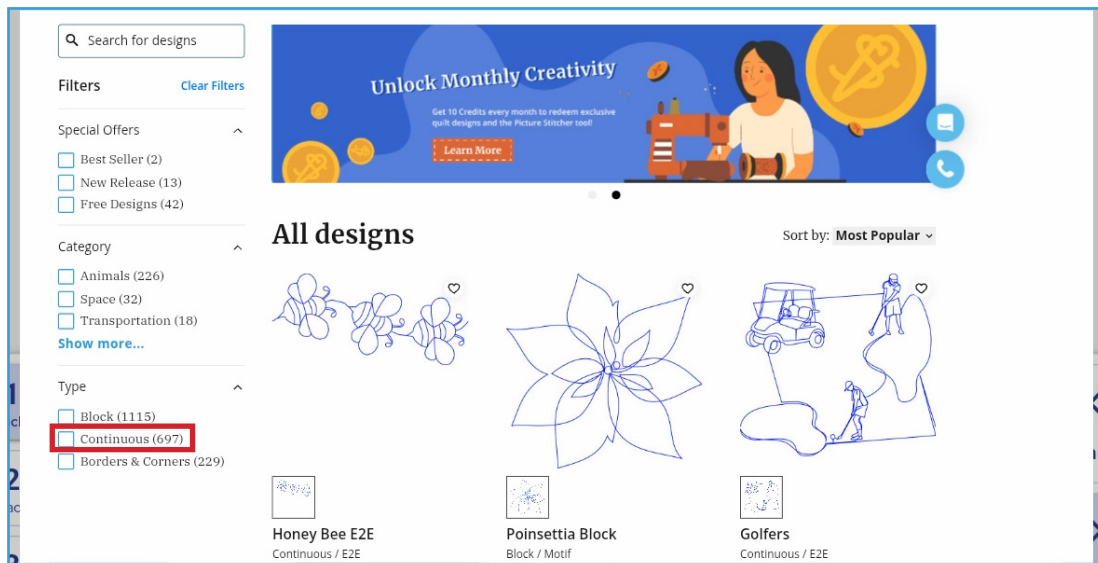


3 Choose a design from the Design Store and purchase it with one of your 10 free credits. If you've already used your credits (or if you don't feel like shopping right now), go to step 4. Otherwise, do the following:

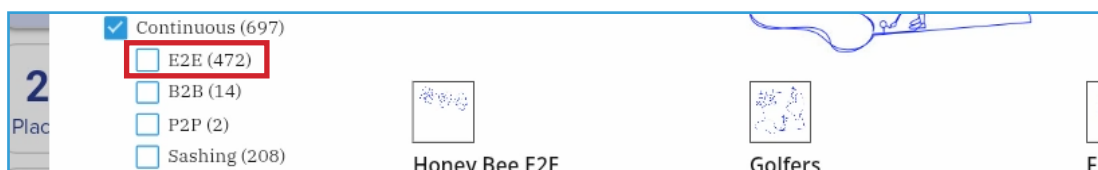
a Tap **Go to store**.



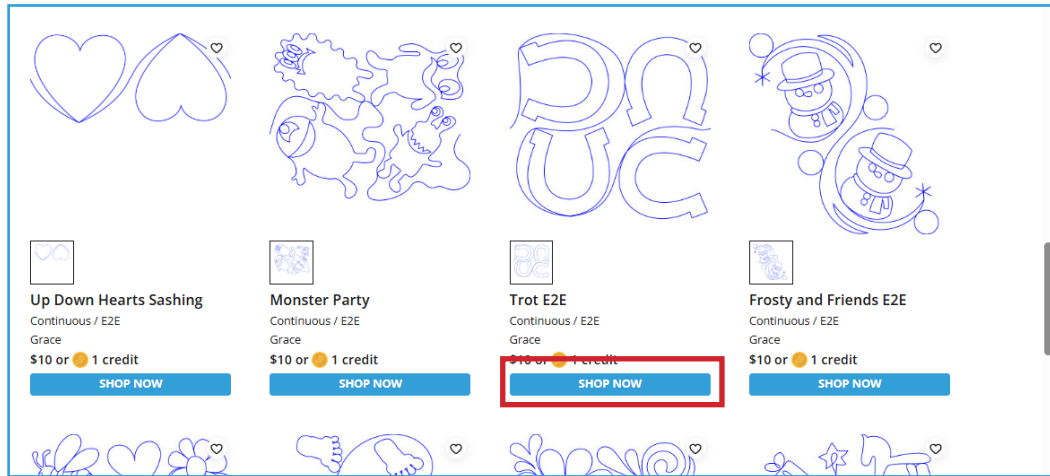
b In the sidebar, under Type, apply the filter for **Continuous**.



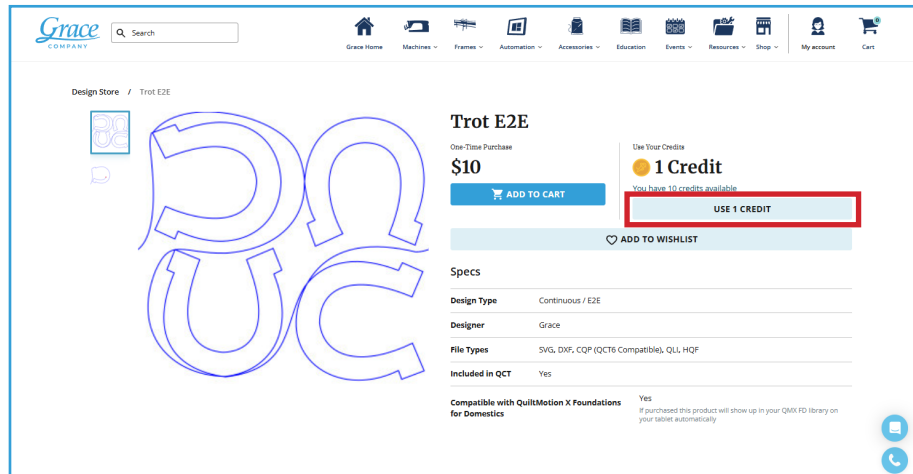
c Choose **E2E**, which stands for "Edge to Edge."



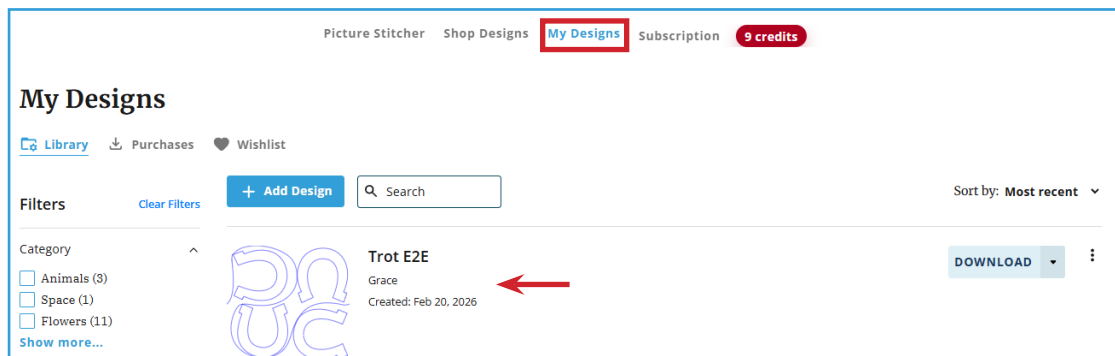
- d Scroll through the designs and select one you like. **Note:** Designs that have "Sashing" in the name don't stack well and might not look ideal across an entire quilt. However, it's your project, so you decide! Tap **Shop Now** under your chosen design.



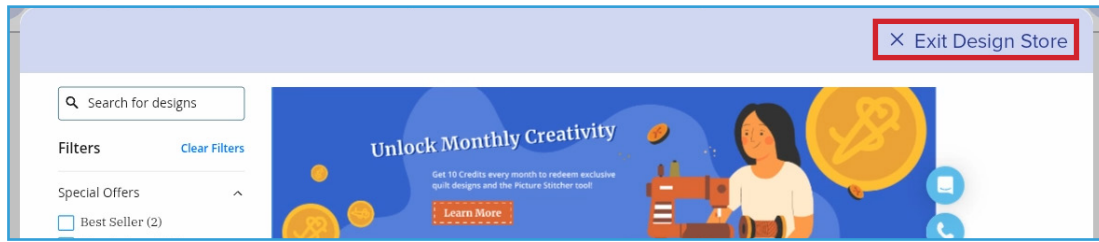
- e In the product screen for your design, press **Use 1 Credit** to purchase the design with one of your 10 free credits.



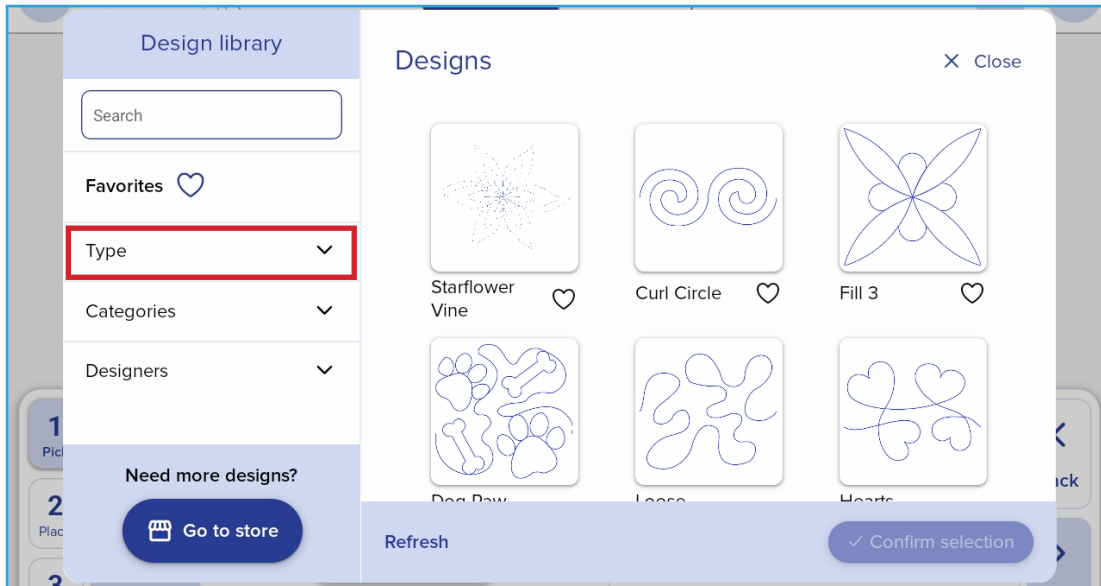
- f Your design is now listed under My Designs. Designs you purchase on your account are synced automatically with your tablet as long as your tablet is connected to the internet, so you don't need to do anything else to get quilting!



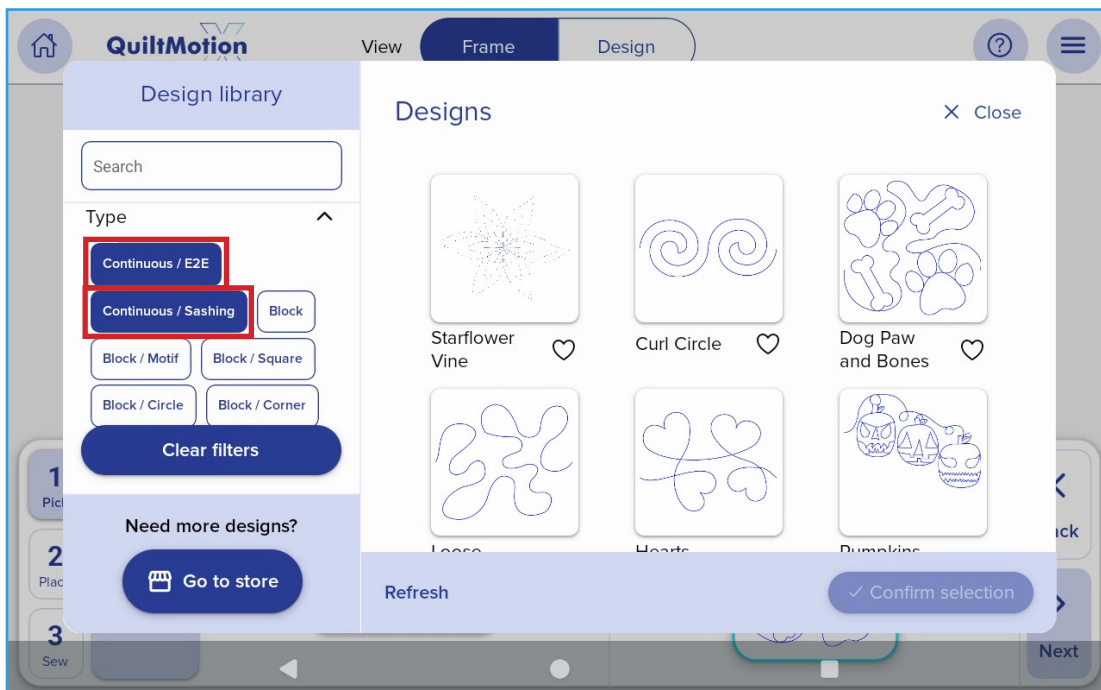
- g Close the Design Store.



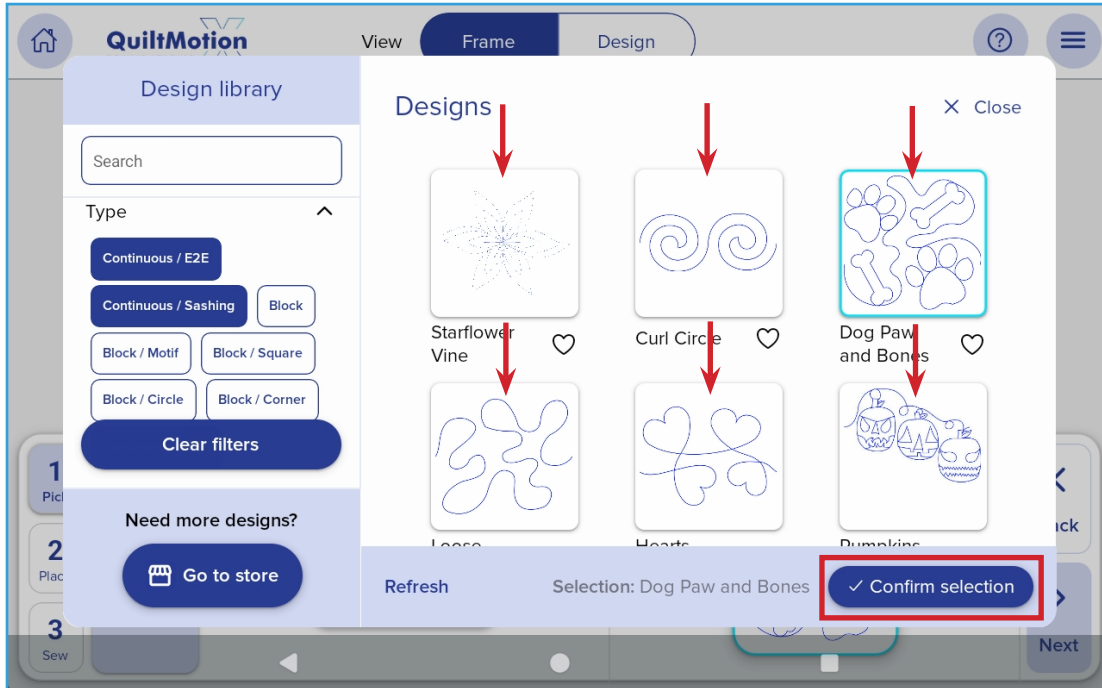
- 4 Back in the Design library, press **Type**.



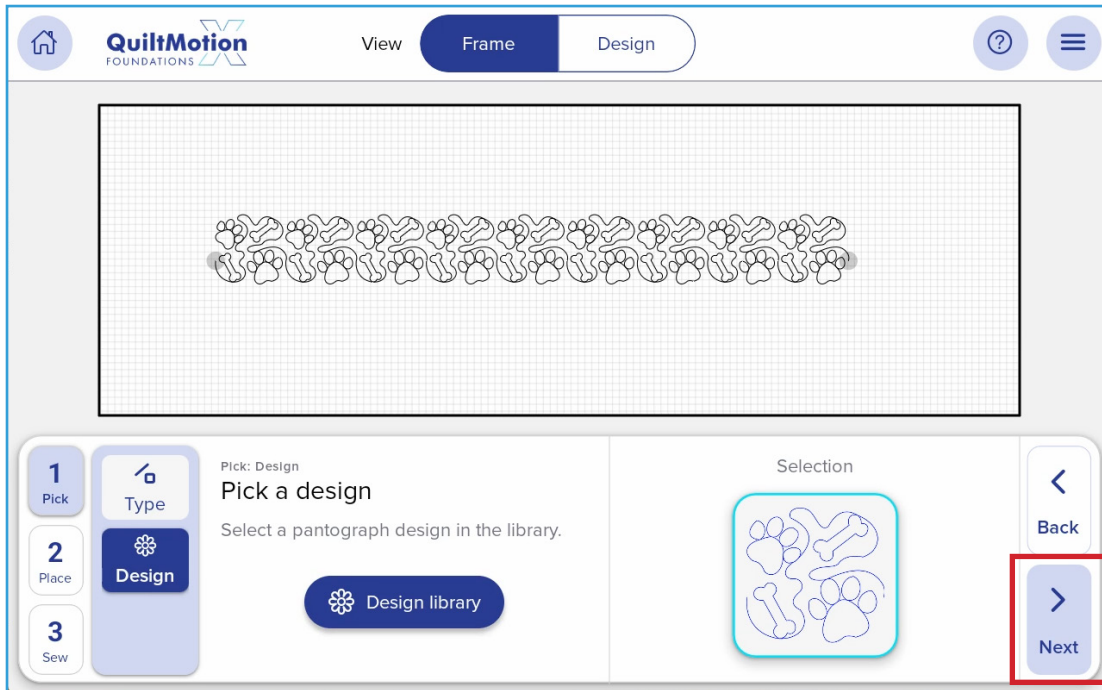
- 5 Filter for the edge-to-edge designs by selecting all the design types that are related to Edge-to-Edge. For Example, Continuous / E2E, Continuous / Sashing, and Continuous / B2B.



- 6 Scroll through your designs and pick one that you would like to try. Tap that design, then press **Confirm selection**.



- 7 Back on the Pick: Design screen, tap **Next**.



## 8

## Lesson Eight: Size Your Pantograph

### KEY CONCEPT

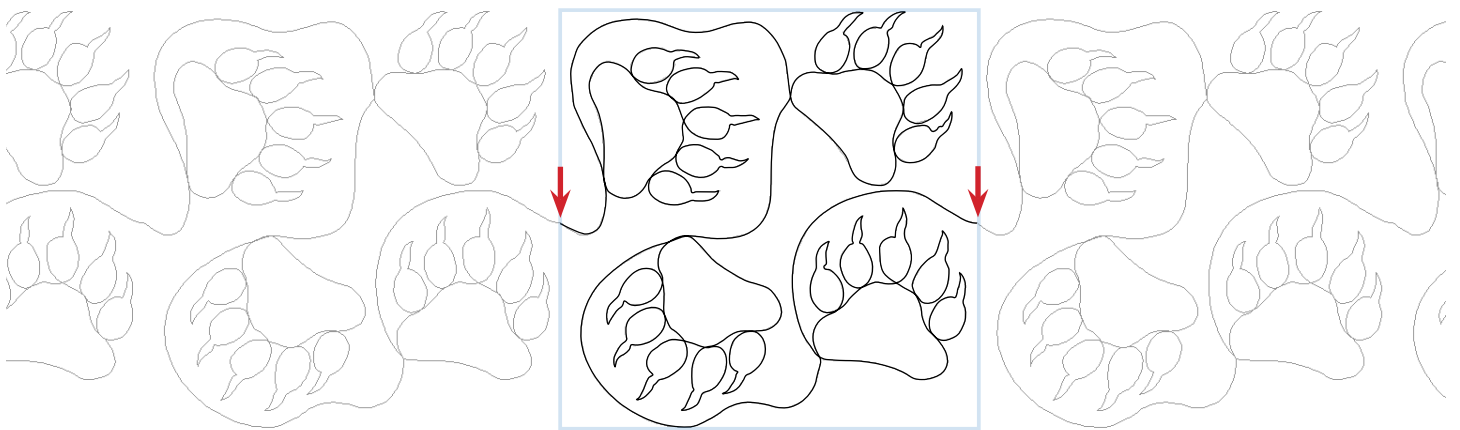
Edge-to-edge designs are placed using the starting and ending points, just like a line. However, because pantographs aren't flat, you must consider where the start and end points are positioned relative to the rest of the design when placing it.

The next portion of the panel is intended to help you understand how to size your pantograph designs. Pantographs are designs where an element is repeated over and over across the face of the quilt. Pantographs allow you to quickly fill an entire quilt with a single design, giving your quilt a tidy, uniform appearance, where the eye is drawn to the piecing of your quilt, not necessarily the design.

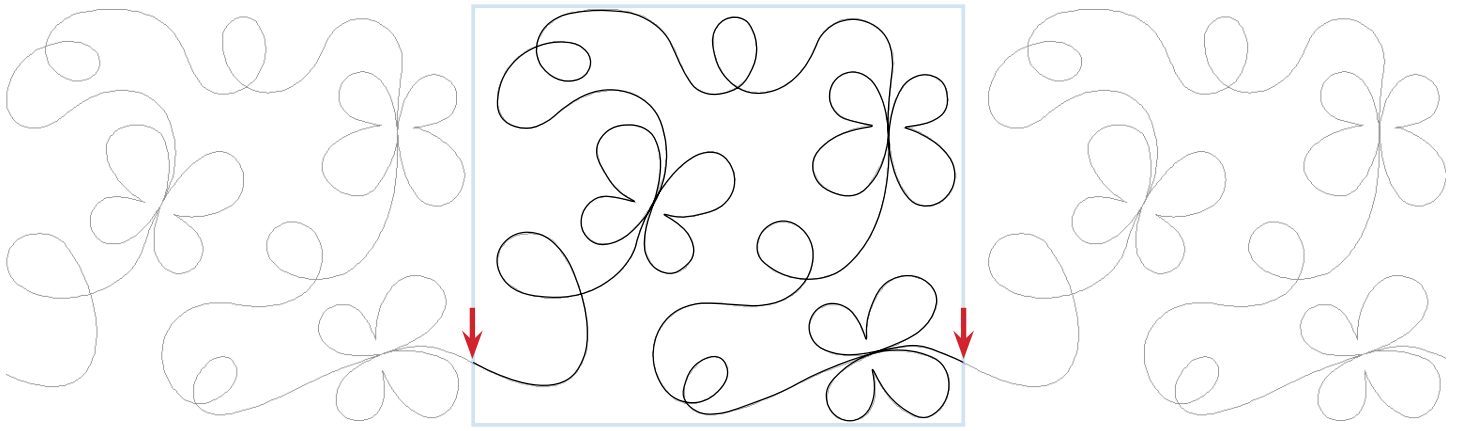
Pantographs, or edge-to-edge designs, are placed in QMX Foundations using the start and end points, just like a line. However, it's trickier to place a pantograph because, pantographs aren't flat. The bulk of the design can fall in many places relative to the start and ending points.



*The starting point and ending point for each repetition of the design are at the top relative to the rest of the design.*



*The starting point and ending point for each repetition of the design are at the center relative to the rest of the design.*



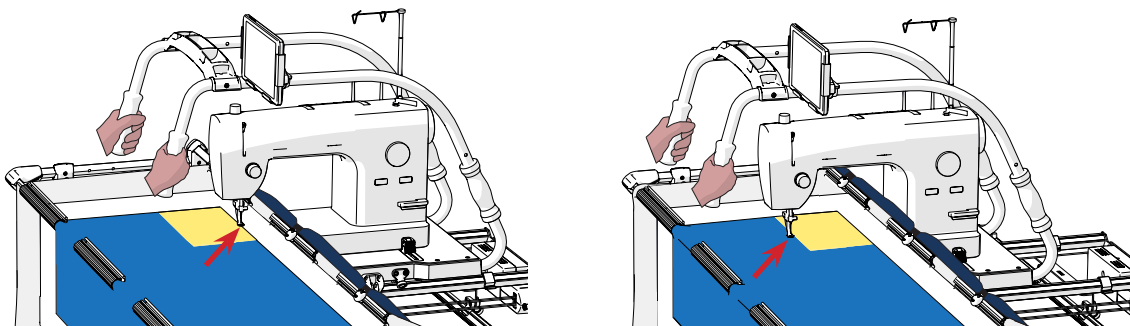
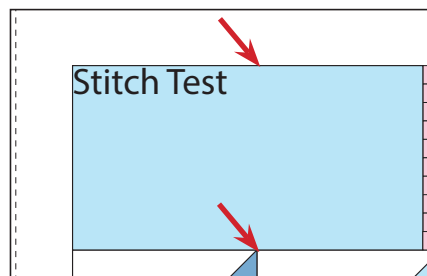
*The starting point and ending point for each repetition of the design are at the bottom relative to the rest of the design.*

It matters where the start and end points are relative to the rest of the designs for a couple of reasons. First, if you're placing the start and end points at the bottom of a design, but you place them too close to the take-up rail (back rail) on your frame, your design won't fit. QMX will advise you to place again so that your design fits within the frame space.

You'll also learn, in this lesson, how the size of your design and its start and end points affect where you place the design in order to get it to fit into a specific space on your quilt, like a sashing or border.

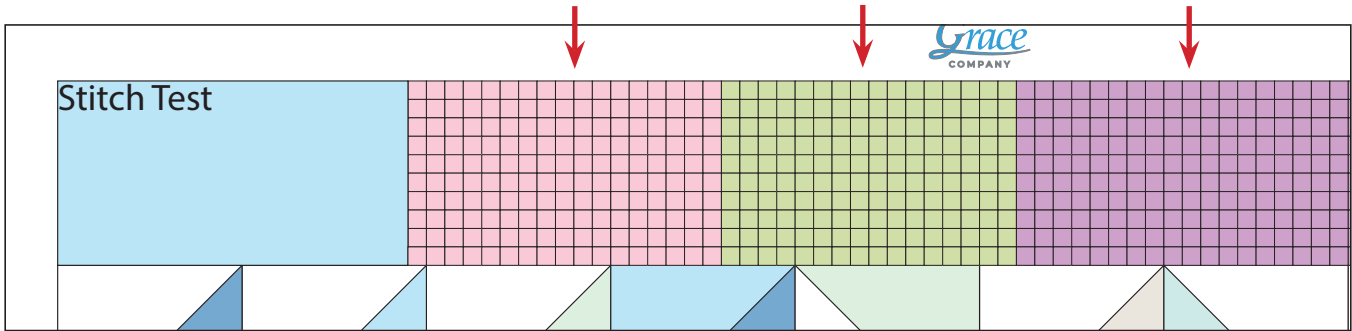
## PRACTICE STEPS

- 1 Test the reach of your machine over your panel. Can you move the needle of your machine from the top of the Stitch Test box to the bottom of the box?



- If your needle reaches all the way, continue to step 2.
- If your needle doesn't reach all the way, try shifting your fabric so the top of the Stitch Test box is closer to the take-up rail (the back rail), but still at least an inch away from it.

- 2 Look along the top of your panel, to the right of the Stitch Test. There are a few different colored squares with a 1/2 by 1/2-inch grid. This row has a height of 5 inches. Consider what size you would choose for your design if you wanted to fill this space. It might seem obvious you would choose 5 inches, but sometimes it's nice to have a margin of space around your designs, especially if you plan to attach binding to the quilt later.

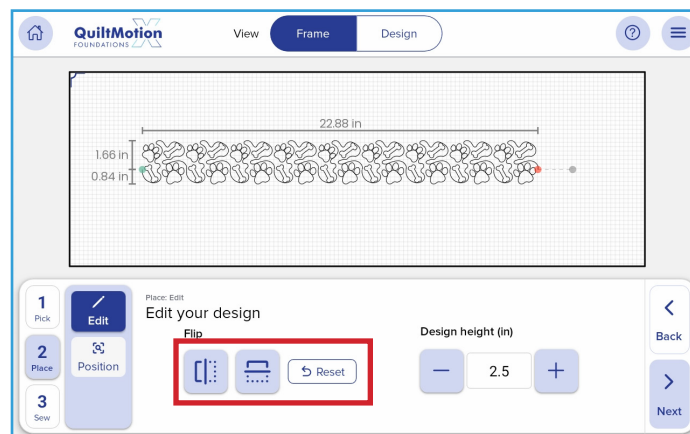


- 3 To keep our lesson simple, set your Design height to **5 inches**. Either tap the [-] and [+] buttons until your size is correct, or tap the white box displaying the current height and enter the number directly.

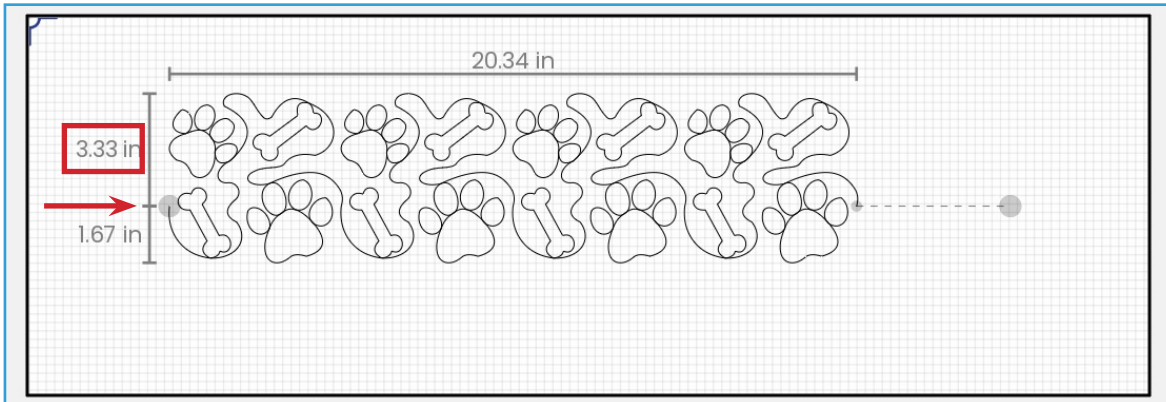


**Note:** If your machine's throat is under 9 inches long, choose a smaller height for your design, such as 3. You don't want to go too small because many designs start to appear distorted, like a low-resolution photograph, when stitched out too small (the same is also true for too large, but it's rare for that to be a concern on QMX Foundations for domestics).

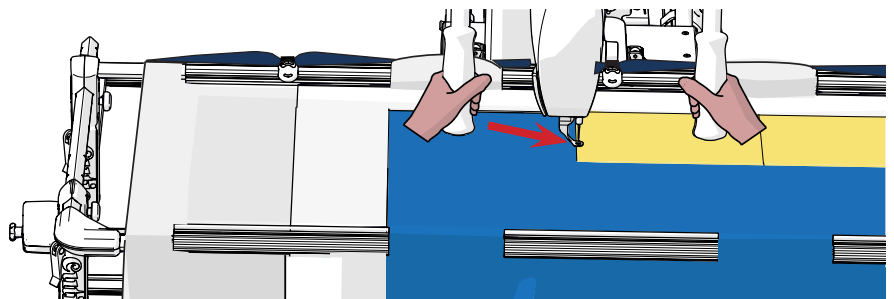
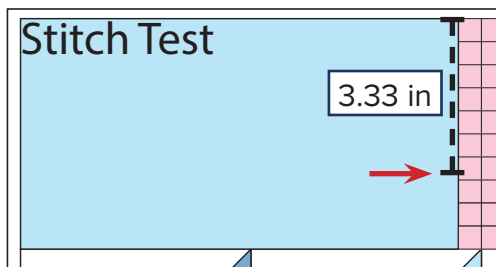
- 4 If desired, flip your pantograph design using either Flip button.



- 5 Tap **Next** to go to the Place: Position screen, where you can place the start and end point of your row of designs.
- 6 Look at your design in the preview window. The preview window shows the distance from the starting point and the top of the design as well as between the starting point and bottom of the design. This information can help you determine where to set the starting point on your quilt. Consider this example.



The start point of the design is 3.33 inches from the top of the design. So, starting from the top of the grid, measure down 3.33 inches and that's your start point for this design. **Tip:** Each of the small boxes in the grid is 1/2 inch.



It can be tricky to exactly measure out some numbers. In this case, the start point is at 3 and one-third of an inch down. There is not a mark for one-third of an inch on a ruler, so in some situations you must make your best guess. Here is a list showing the decimal values for common inch measurements.

**.0625** = 1/16 inch

**.375** = 3/8 inch

**.6875** = 11/16 inch

**.125** = 1/8 inch

**.4375** = 7/16 inch

**.75** = 3/4 inch

**.1875** = 3/16 inch

**.5** = 1/2 inch

**.8125** = 13/16 inch

**.25** = 1/4 inch

**.5625** = 9/16 inch

**.875** = 7/8 inch

**.3125** = 5/16 inch

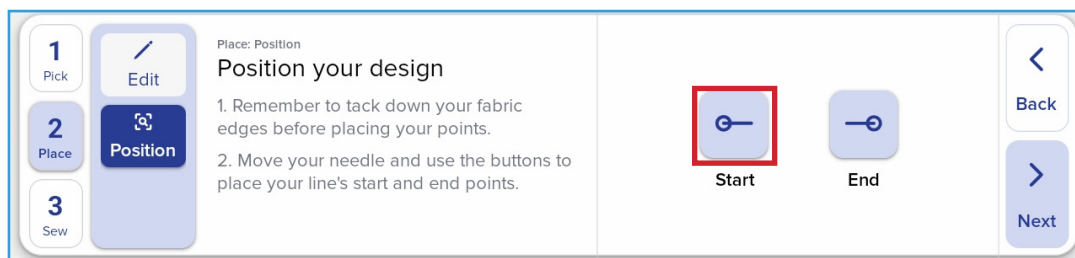
**.625** = 5/8 inch

**.9375** = 15/16 inch

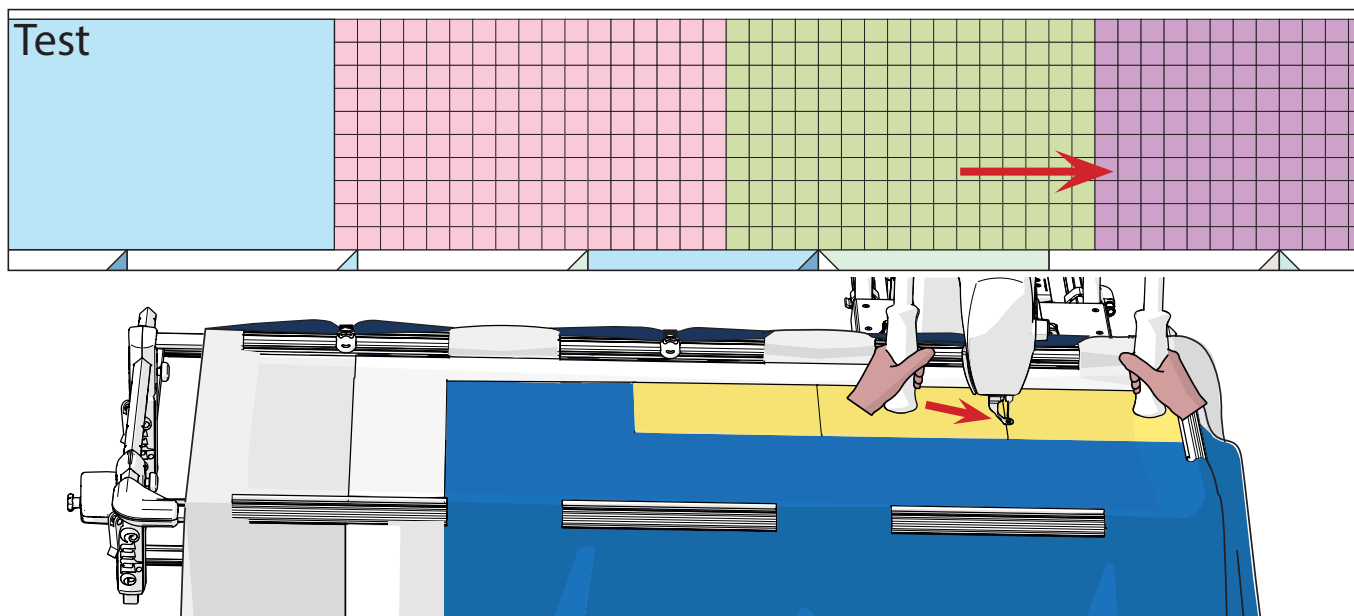
In this case, .33 inches is somewhere between 5/16 inches and 3/8ths inches, so placing the start point between those two points is a pretty good estimate.

Now try it with the design you chose. Find the start point on your grid using the measurement on screen.

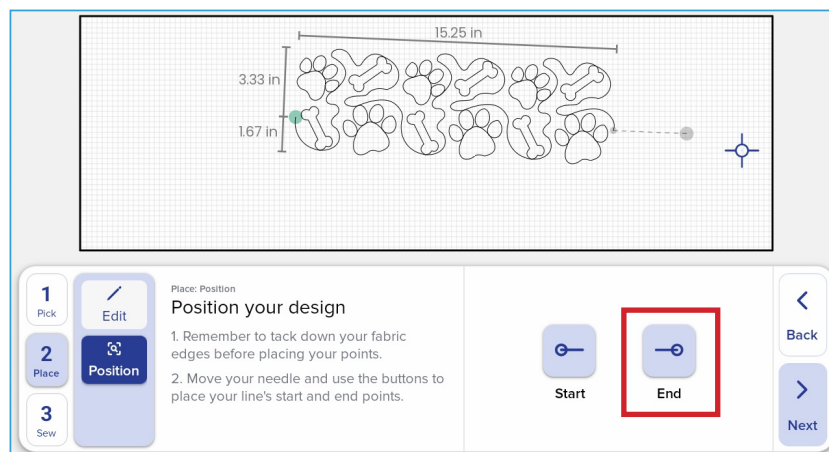
- 7 Move your needle over the start point you chose. Then tap **Start** on screen. **Tip:** For precise placement, use your hand wheel on your machine to drop the needle close to the fabric.



- 8 Place the end point of your design the same way. Place the end point as far to the right as you can go without leaving your frame space (this is about 10 inches from the right side rail). The grid makes it easy to place the end point level with the start point even if your fabric is a little crooked on the frame.

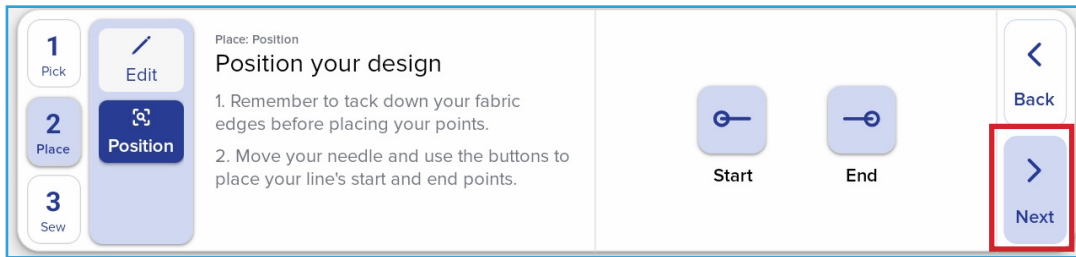


As when you placed your line, your design might not appear square on the screen. This is because your fabric was installed at an angle on your quilt, and you do not need to worry about it unless it seems more extreme than you'd expect based on how the panel looks on the frame.



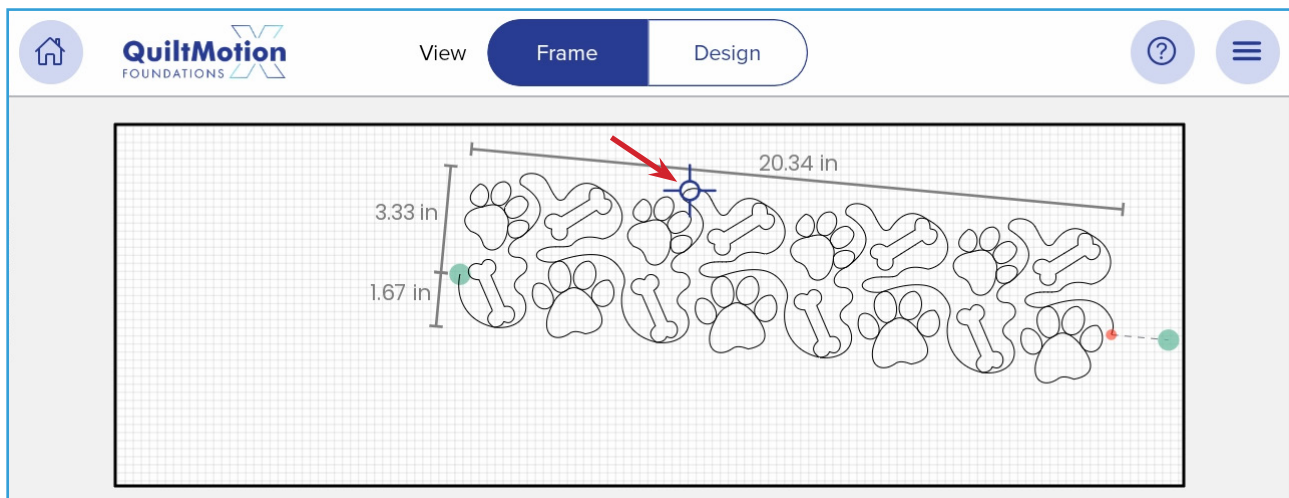
**Tip:** Even small variations in how the fabric is clamped to the take-up rail impacts design placement. Try to make sure none of the clamps are tugging or stretching the fabric unevenly.

- 9 When your design is placed, tap **Next**.



## EXTRA CREDIT

- 1 The crosshair on screen follows the movement of your needle across the frame. Move your machine so that the crosshair aligns with the top of your quilting design.



- 2 Look down onto your quilt. Is your needle still over the grid portion of the panel? What about if you align the crosshair with the bottom of the design? If you're ever uncertain of your pantograph's placement, use the crosshairs to check. This can help you with sizing, placing, and with the spacing between rows.

In this case, you might have found that either the top or bottom of your design fell slightly outside of the grid. This is because we set the height of the design to exactly the height of the grid. Your placement of the start and end points would need to be extremely precise to get the design to fit perfectly within the grid.

If you're attempting to fit a row of edge-to-edge designs in a specific space like this, such as a border or a sashing, size your design so it is a quarter-inch or so smaller than the height of the space you're quilting in so you have more wiggle room for placement.

# 9

## Lesson Nine: Stitch Out Your Pantograph

### KEY CONCEPT

Only start stitching out a design when you are ready to supervise the machine. Do not leave your machine unattended while it is stitching. Prepare to stop your machine's stitching at a moment's notice.

**IMPORTANT:** These instructions must only be attempted after you have determined the correct stitch size for your machine by stitching out lines in Lessons 5 and 6. If you have not completed those lessons, do not attempt this one.

Stitching out your pantograph is the same as stitching out a line. The difference between stitching out a line and a design is that designs take more time. When you stitch out your design, make sure you're ready to stop QMX and the machine's stitching if necessary. Do not leave the machine stitching unattended or your design might reach the end and your machine will stitch in place and cause a bird's nest, damage fabric, break needles, and possibly damage your machine in more serious ways.

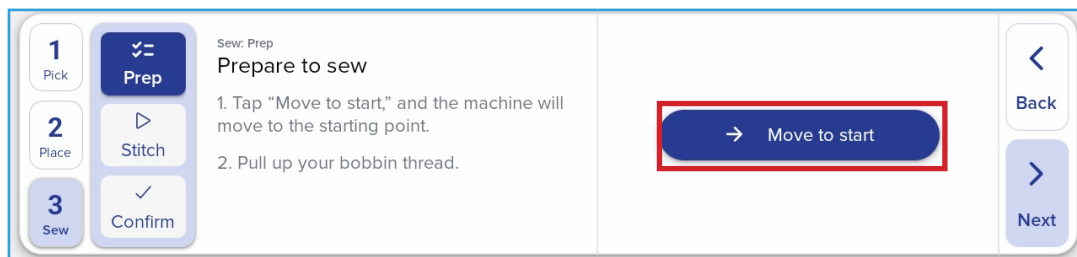
If you'd like, you can also start the design without stitching on your machine and watch the path of the needle. This can help if you want to make sure your design won't stitch over something you don't want it to, such as an applique. You can also manually trace over your design with the crosshair on screen.

## PRACTICE STEPS

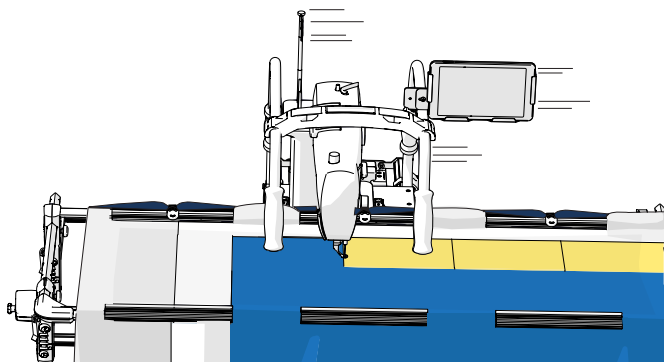
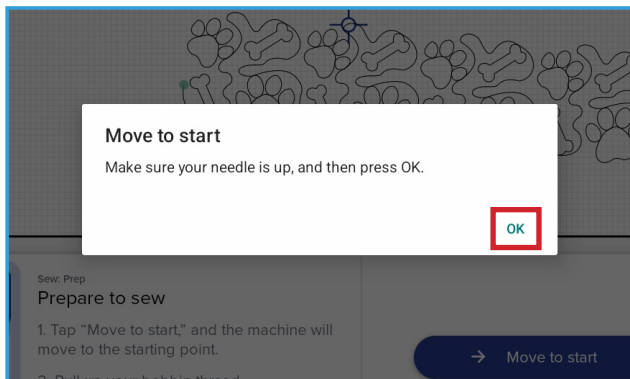
You will need:

- Scissors or thread snips

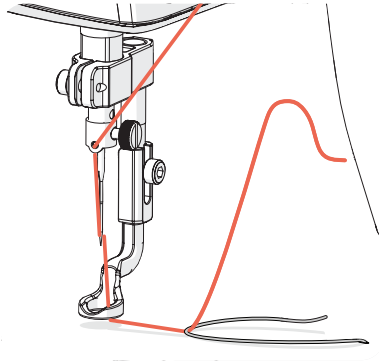
### 1 Tap **Move to start**.



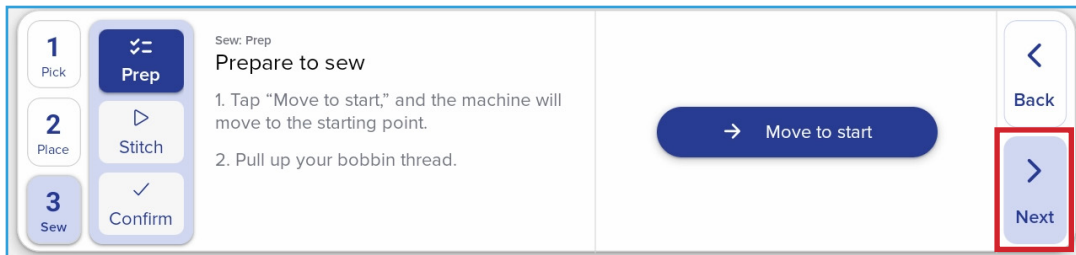
### 2 A message pops up telling you to make sure your needle is up. Do so and then press **OK**. QMX moves your machine's needle to the starting point you set for your design.



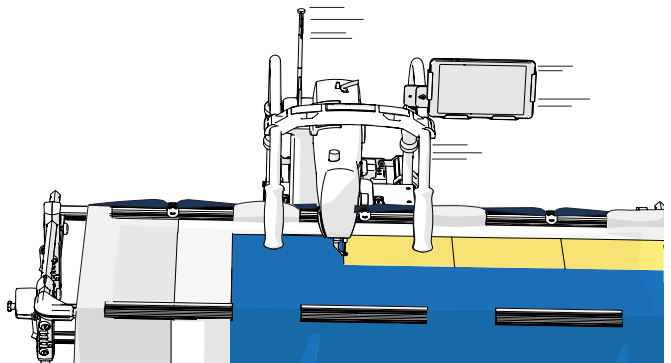
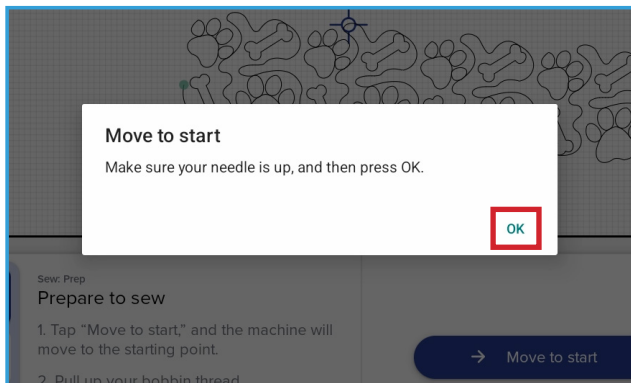
- 3 Pull up your bobbin like you did in Lesson 2.



- 4 Tap **Next**.

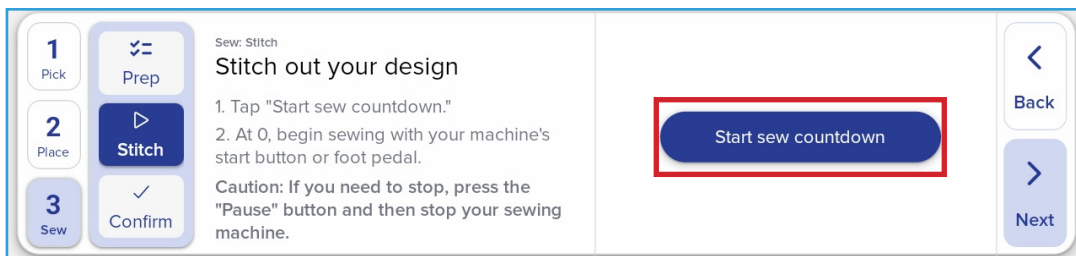


- 5 You're prompted to make sure your needle is up. Do so and press **OK**. QMX moves your machine to the starting point for your design and locks it in place.

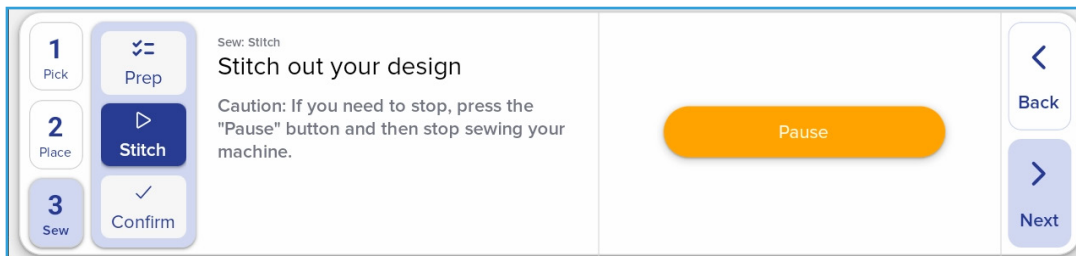
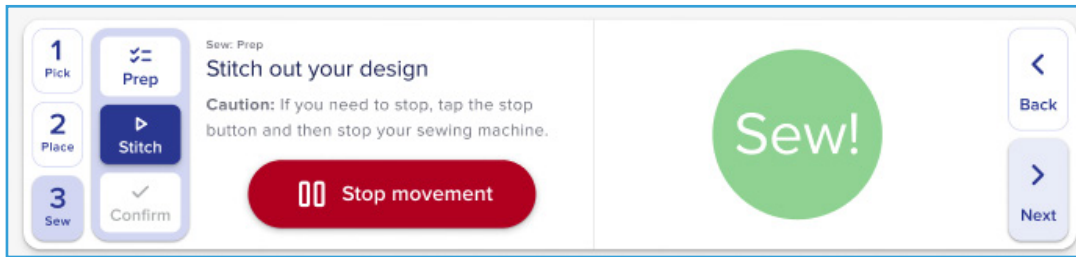


- 6 **IMPORTANT:** Fully read steps 7–9 before continuing.

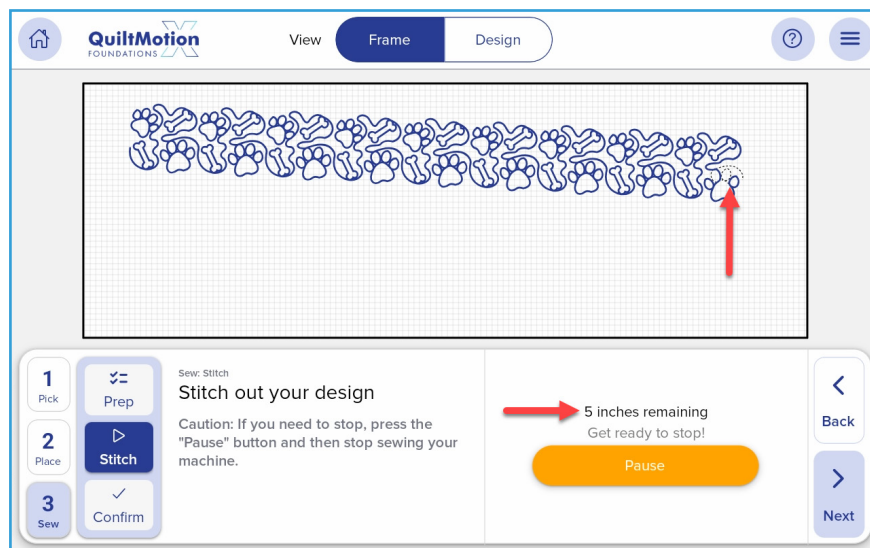
- 7 Tap **Start sew countdown**. At 0 (when it says Sew!), press the button to start sewing on your machine or activate your foot pedal.



**IMPORTANT:** When QuiltMotion X is moving your machine, the emergency *Stop movement button* appears first, and then the *Pause button* appears. Both buttons halt the machine’s progress across the frame, but you must manually stop the stitching on your machine. If you must stop stitching, press the stop or pause button on screen first and then immediately stop your machine.

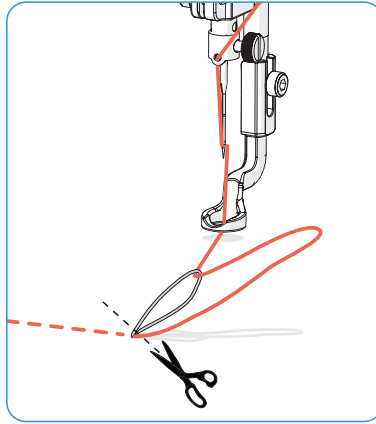


- 8 Track your progress through a design by watching the design in the preview window as it slowly turns dark blue. Additionally, when there are 5 inches remaining for a given design, an inch countdown appears above the pause button to let you know the design will end soon. There is also a beeping sound at around 2 or so inches to grab your attention, so always be listening for the sound.

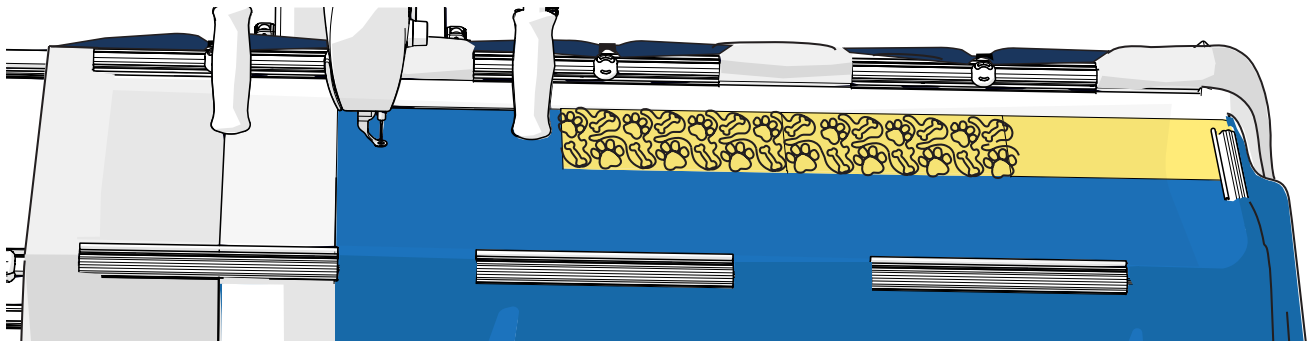


- 9 As the machine reaches the end, prepare to stop the stitching on your machine. Stop stitching as soon as the design ends. The machine stitching in place for too long can damage the machine and your quilt.

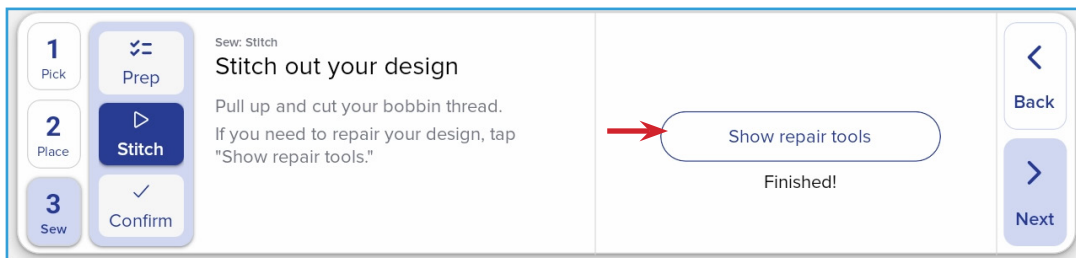
- 10 Pull up your bobbin thread, like you learned in Lesson 2.



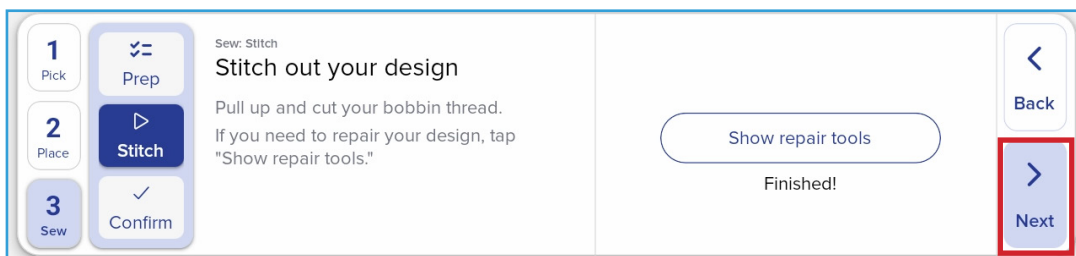
- 11 Look over your design. Did it stitch out fully within the grid space, or did it drift in places outside the lines? How does that design look stitched out at that size? How has the design affected the texture of the panel?



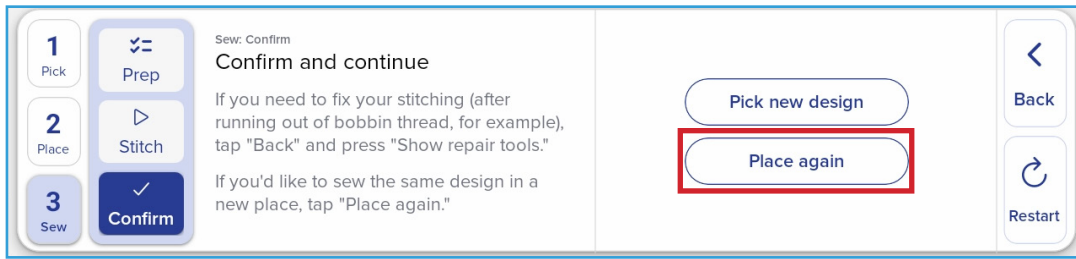
**Note:** If you found that something went wrong with your design, such as your bobbin running out of thread, use the **Show repair tools** button to repair your design. This is covered in Lesson 16.



- 12 On the screen, tap **Next**.



### 13 Choose **Place again**.



## 10 Lesson Ten: Connect Your Pantographs

### KEY CONCEPT

It's typical to quilt from left to right and to shift your fabric so that portions that were on the right side are quilted first before moving to lower rows of designs. In order to ensure your pantograph looks continuous all the way across the quilt after shifting the fabric, you must place your design so the start point of this portion aligns with the end point of the previous portion.

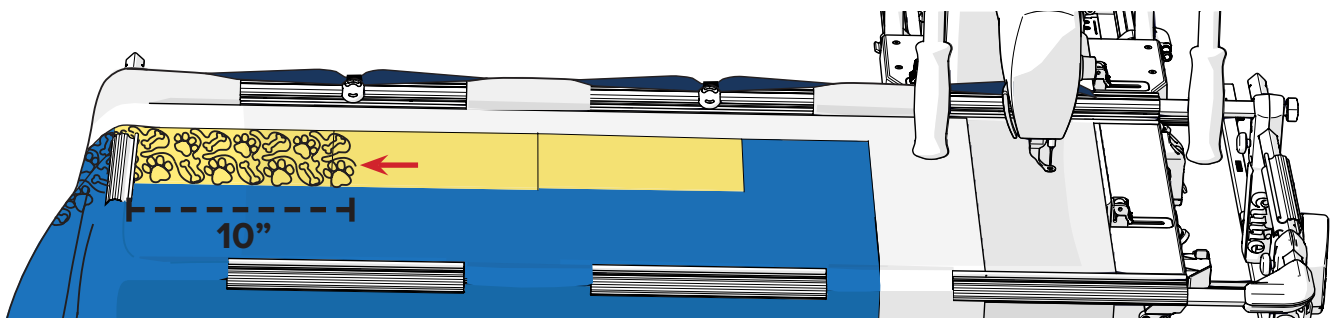
Set the start point of your continuing pantograph over the end point of your previous pantograph.

### PRACTICE STEPS

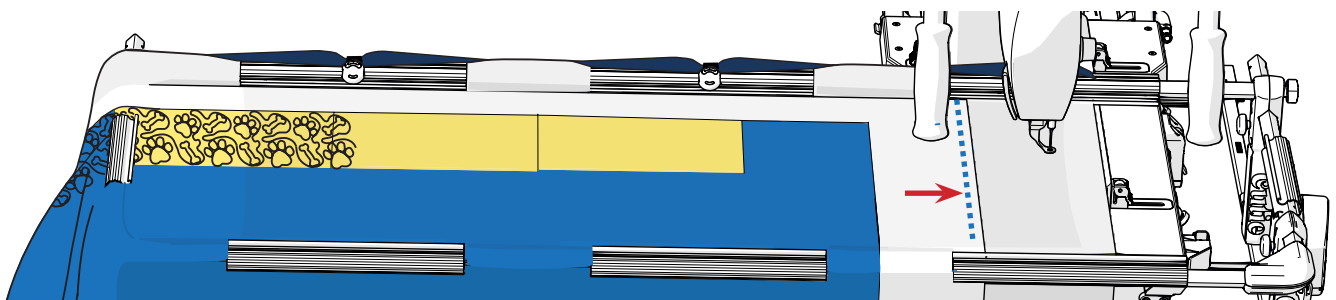
You will need:

- Scissors or thread snips

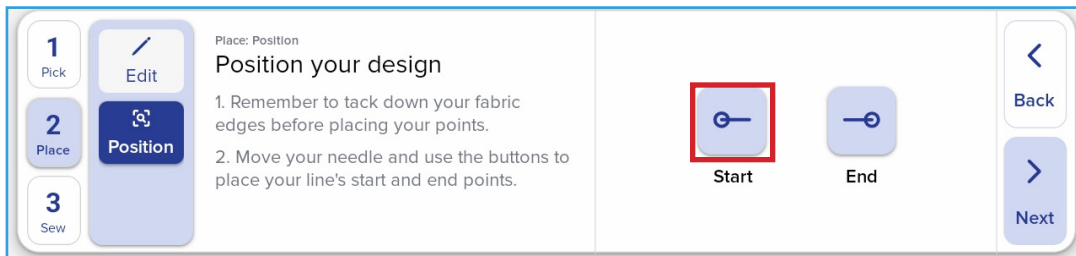
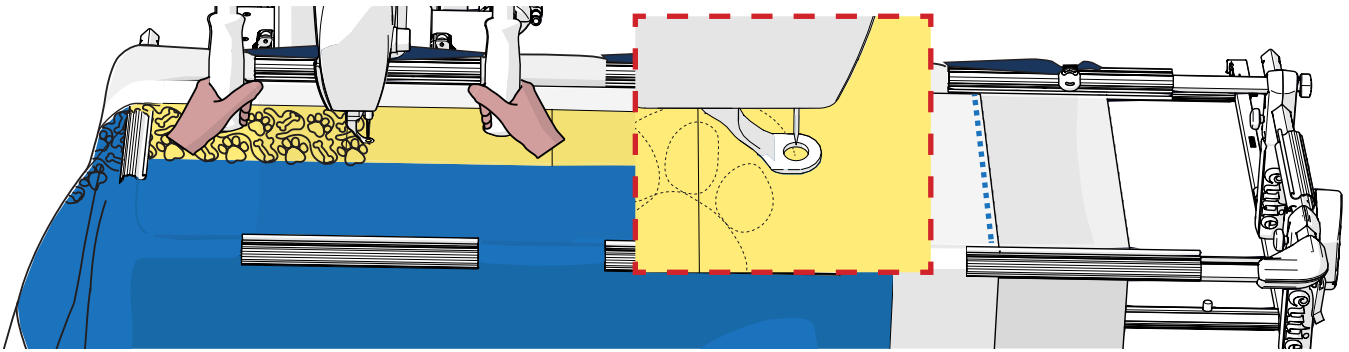
- 1 Shift your fabric on your frame so that the end of your last design is about **10 inches** from the left side rail of your frame.



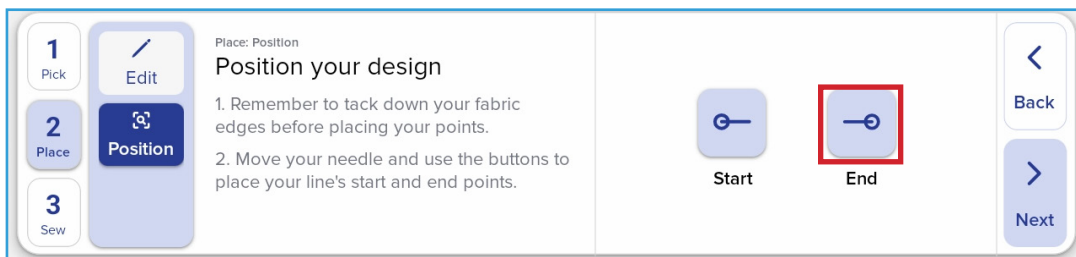
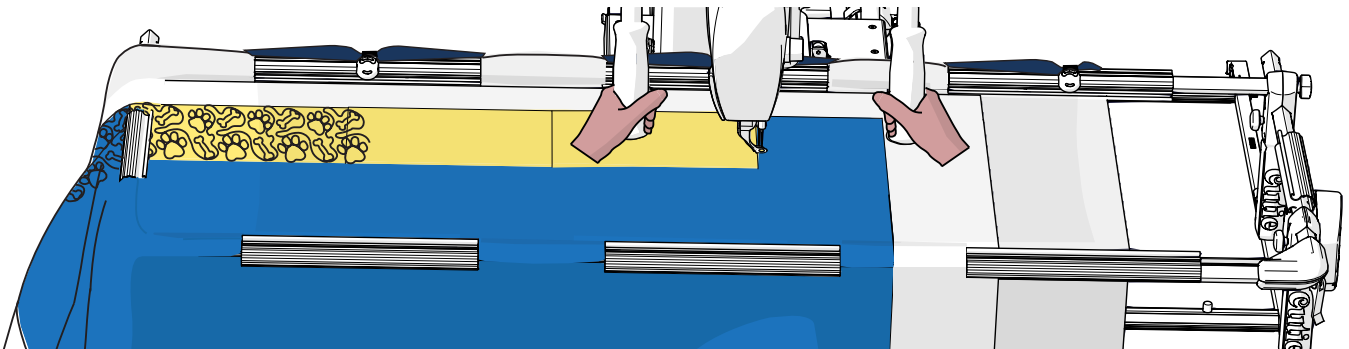
- 2 If your machine's needle can reach the edges of the fabric, baste down those edges.



- 3 Position your needle over the last stitch on your previous design. Tap **Start** on the screen. **Tip:** For precise placement, use your hand wheel on your machine to drop the needle close to the fabric.



- 4 Place your end point at the end of the grid blocks, before the solid colored square block at the end. As before, use the grid or a ruler to measure to the correct position to keep your design square with the quilt.



**Note:** You might find that your design doesn't quite reach all the way across the grid, depending on the ratio of the width and height of each repetition of your design. If you intend to quilt to a specific space in the future, you will want to take into account how wide each repetition is at a given height. For example, if you want to fill a space that is 5 inches tall and 20 inches long, a design that is 2 x 3 inches might not work for that space.

- 5 Stitch out your design as before. Look through previous lessons for reminders on pulling up the bobbin thread and stitching out the design if necessary. **Tip:** If something goes wrong when stitching out your design, see Lesson 16 at the end of the booklet to learn what to do.

## 11

## Lesson Eleven: Place a Block

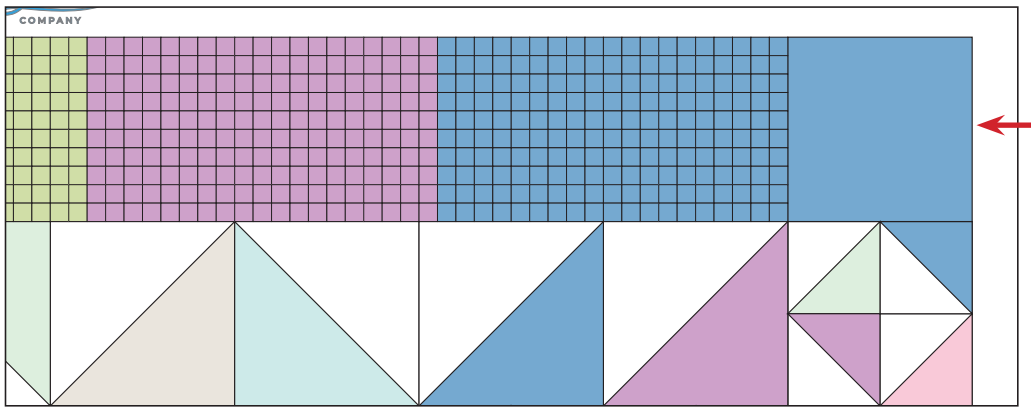
### KEY CONCEPT

Set the corners of a quilt block in the software to fill it with a design.

Block designs are placed by using your machine's needle to show the software the location of the four corners of your block on your quilt. While your design might not have visible corners, an invisible box is drawn around the design in the software for placement purposes. The block design is centered within these four corners. **Note:** The box outline shown in the preview window is not stitched out.

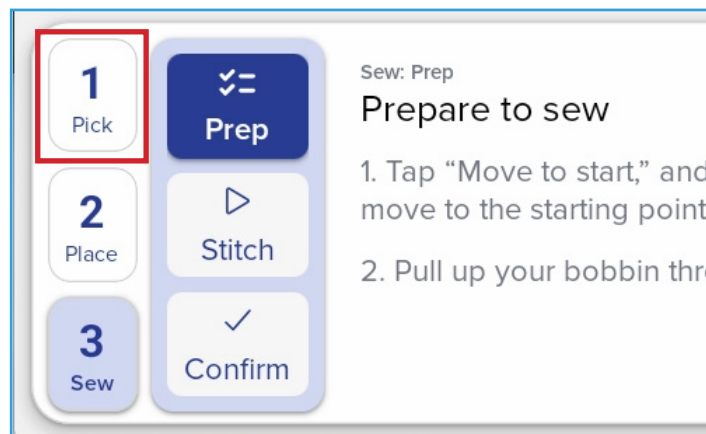
## PRACTICE STEPS

- 1 Test the reach of your machine over your panel. Can you move the needle of your machine all the way to the right side of the solid block at the end of your row of pantographs?

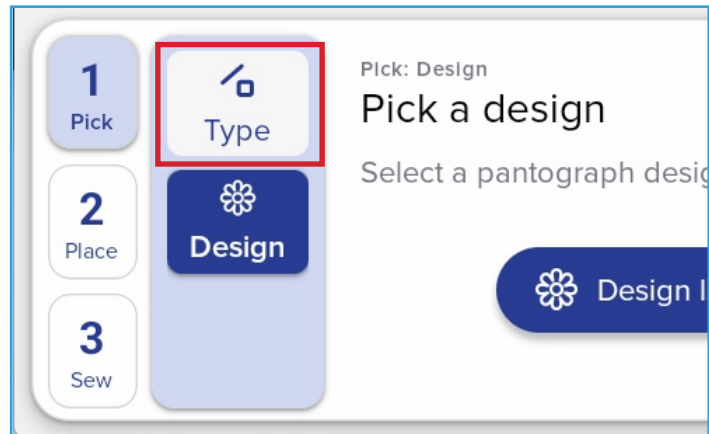


- If your needle can reach, continue to step 2.
- If your needle cannot reach, shift your fabric horizontally so that the needle can reach. Make sure the needle can also reach from the top to the bottom of the box.

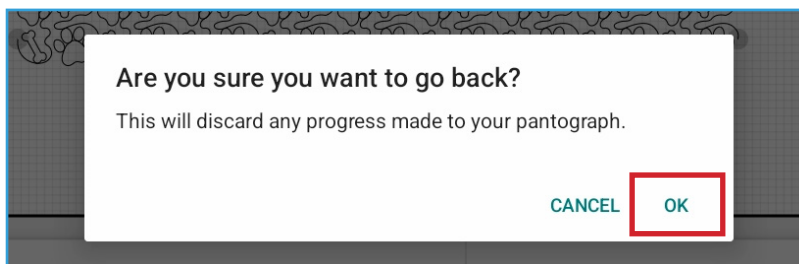
- 2 On the left side of the screen, tap **1 Pick**. This is a shortcut to the Pick: Design screen.



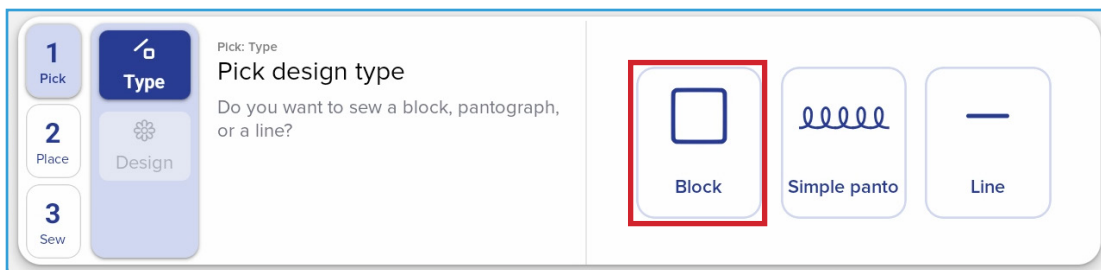
- 3 Press **Type** to go to the Pick: Type screen.



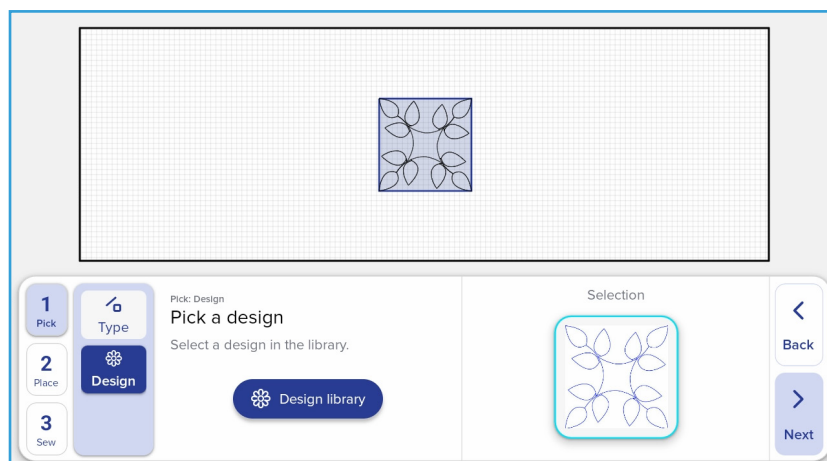
- 4 A message pops up to ask if you are sure you want to go back. Tap **OK**.



- 5 From the Pick: Type screen, choose **Block**.

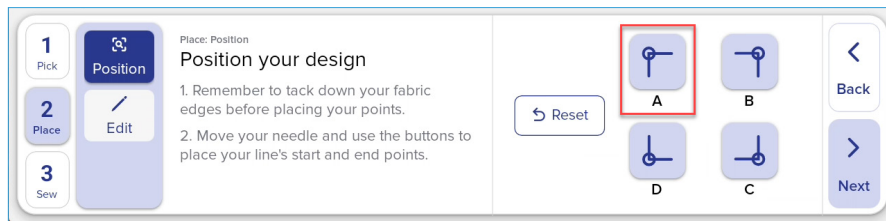
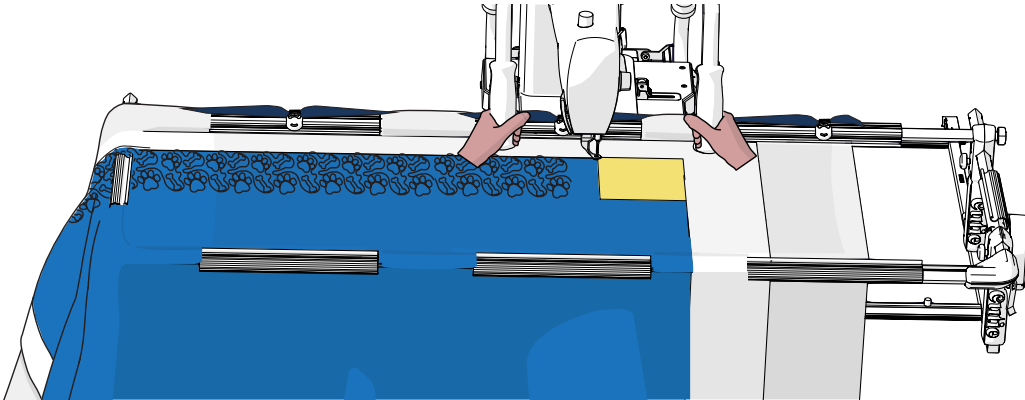


- 6 Use the steps you learned in Lesson 7 for picking a pantograph, but this time filter for block designs. **Note:** If you purchase a block design from the Design Store, choose either a square, circle, or motif block. Triangle and corner blocks are not recommended for QMX Foundations.

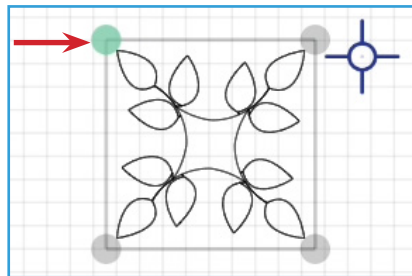


- 7 After confirming your design, tap **Next** to proceed to the Place: Position screen.

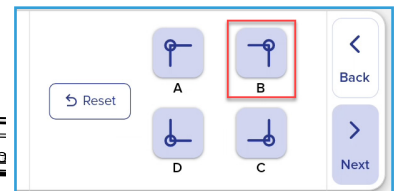
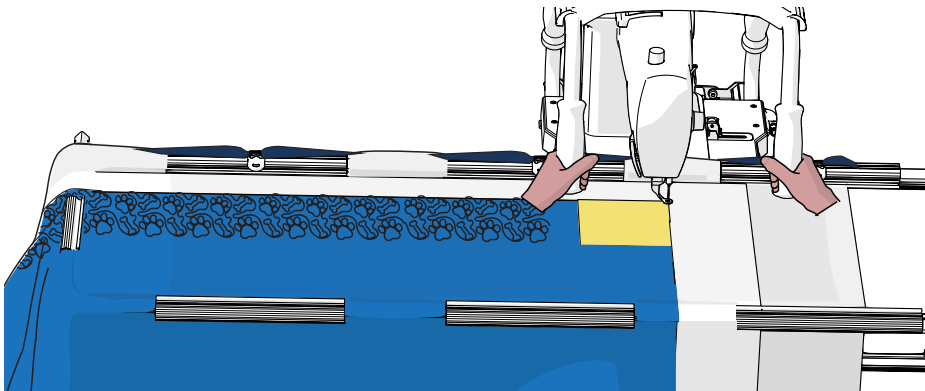
- 8 Move your machine's needle directly over the spot on the quilt that you want to set as the top-left corner of your design. If your block doesn't have a top-left corner (for example, if it is diamond shaped) that is okay. Just pick a corner of the block to start with. With your needle positioned, tap the **A** button.



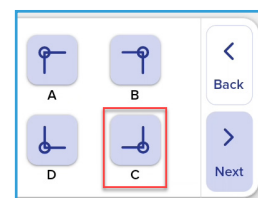
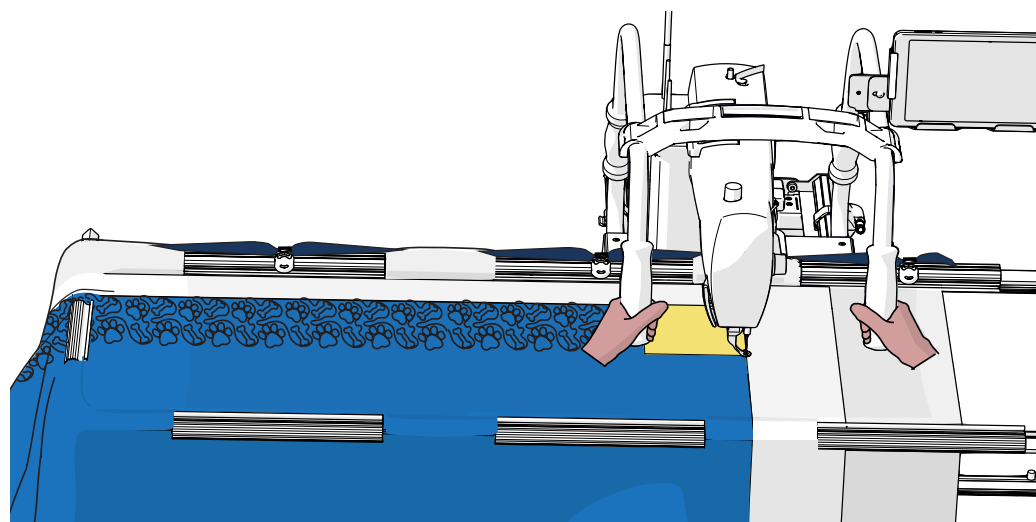
After you place a corner, notice that it turns green on the screen.



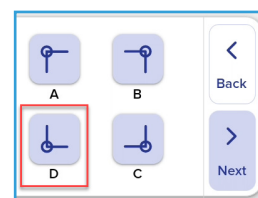
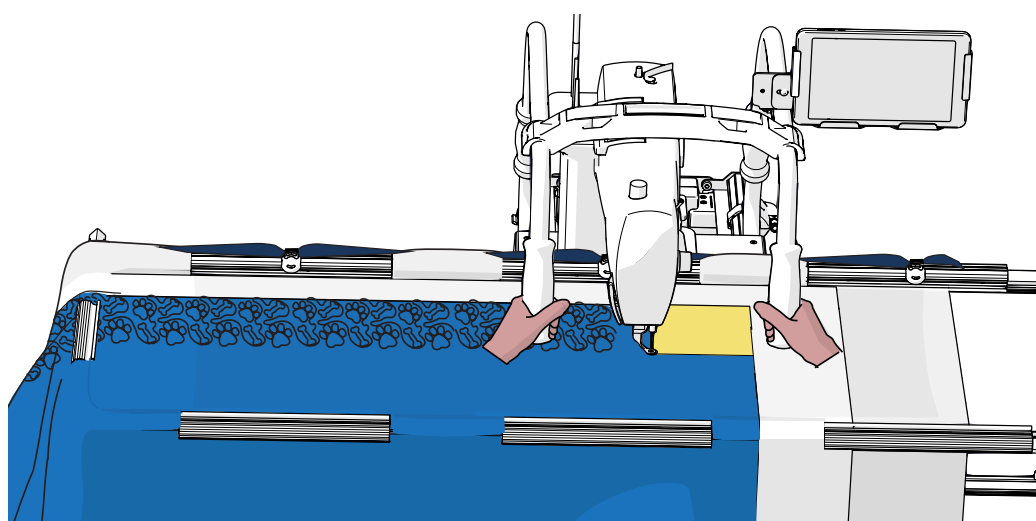
- 9 Move your machine's needle directly over the spot on the quilt that you want to set as the top-right corner of the design. Tap the **B** button.



- 10 Move your machine's needle directly over the spot that you want to set as the bottom-right corner and press the **C** button.



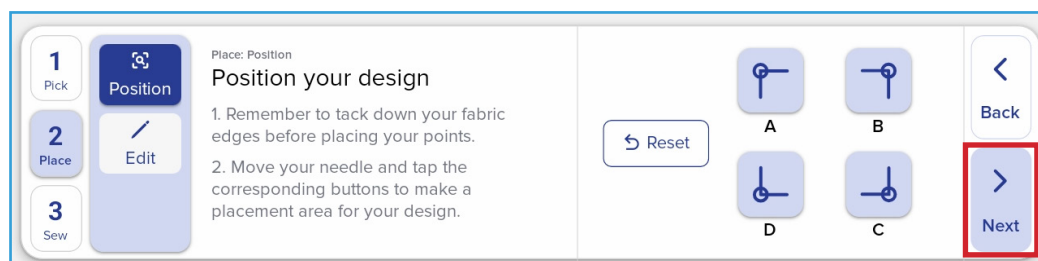
- 11 Move your machine's needle directly over the spot that you want to set as the bottom-left corner and press the **D** button.



- 12 If you'd like to start over at any point, tap **Reset**.

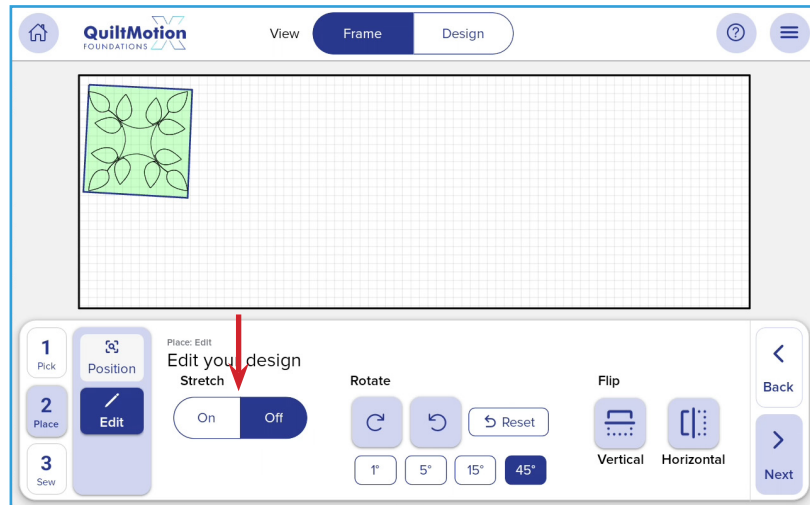


- 13 When your block is placed, tap **Next**.



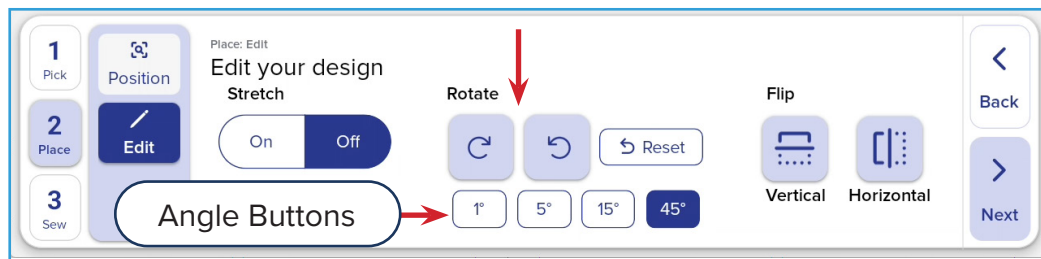
14 If desired, do the following to customize your design's appearance:

- a Toggle between Stretch **On** and **Off**. When Stretch is On, your design stretches to fill the block space.

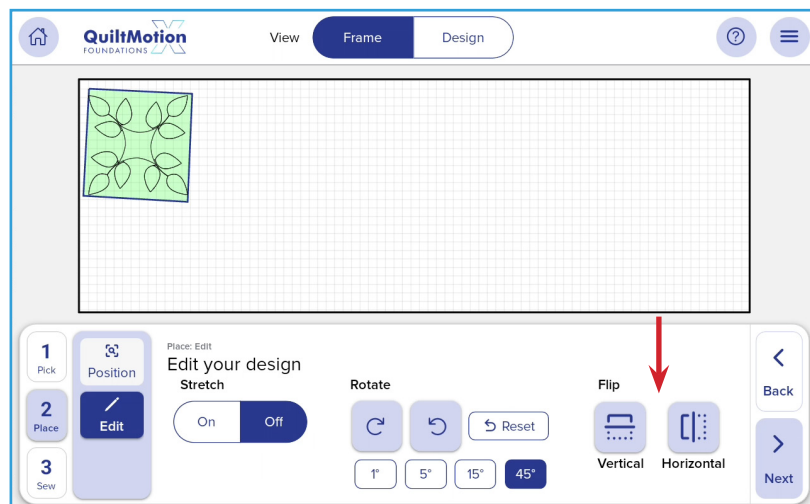


- b If desired, tap the **Rotate** buttons to rotate your design according to the current selected angle:

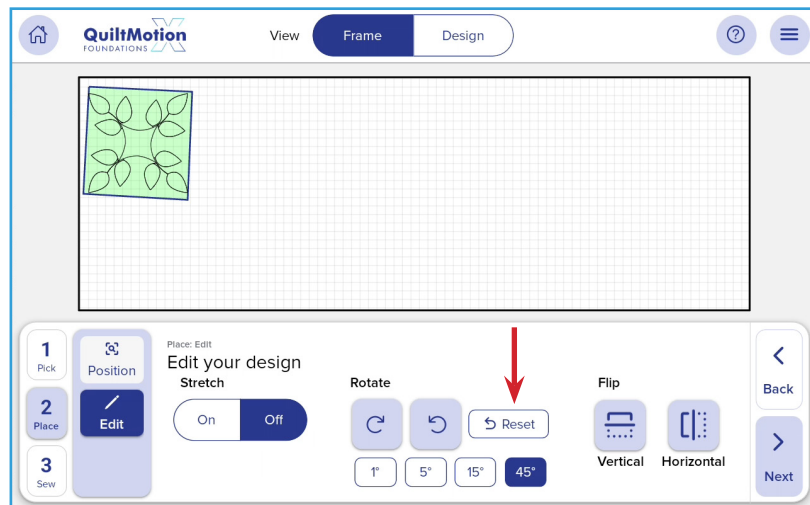
- **Rotate:** Rotates the design at the selected angle.
- **Angle buttons:** Set the degree of the rotation to 1, 5, 15, or 45.



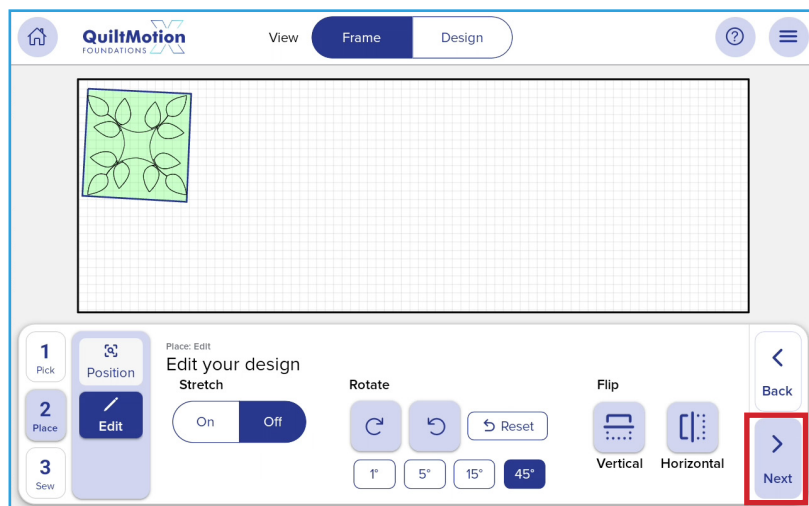
- c Tap the **Horizontal** or **Vertical** buttons to flip your design.



- d If you don't like your rotations or flips, tap **Reset**.



- 11 When satisfied with your design's appearance, tap **Next**.

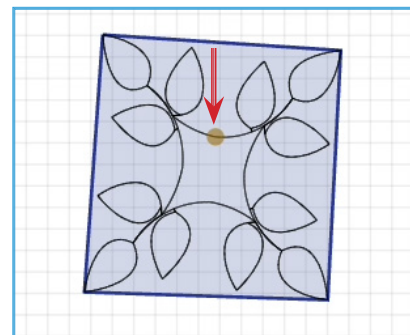


## 12 Lesson Twelve: Stitch Out a Block Design

Stitching out a block design is very similar to stitching out a pantograph. However, many block designs start and end in the same place. You'll want to be careful to start and stop stitching at the right time to prevent excessive stitching inside your block design.

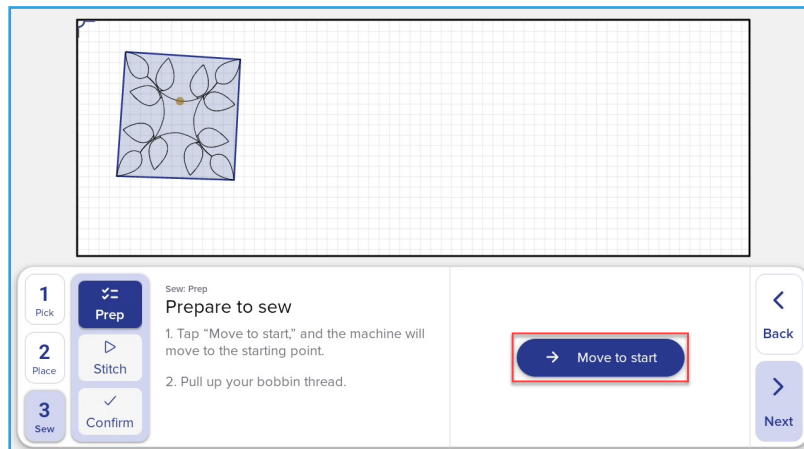
In the software, when the start and end point of a design are in the same place, there is a yellow circle instead of a green or red circle.

**Tip:** If something goes wrong while stitching out your design, see Lesson 16 at the end of this booklet to learn what to do.

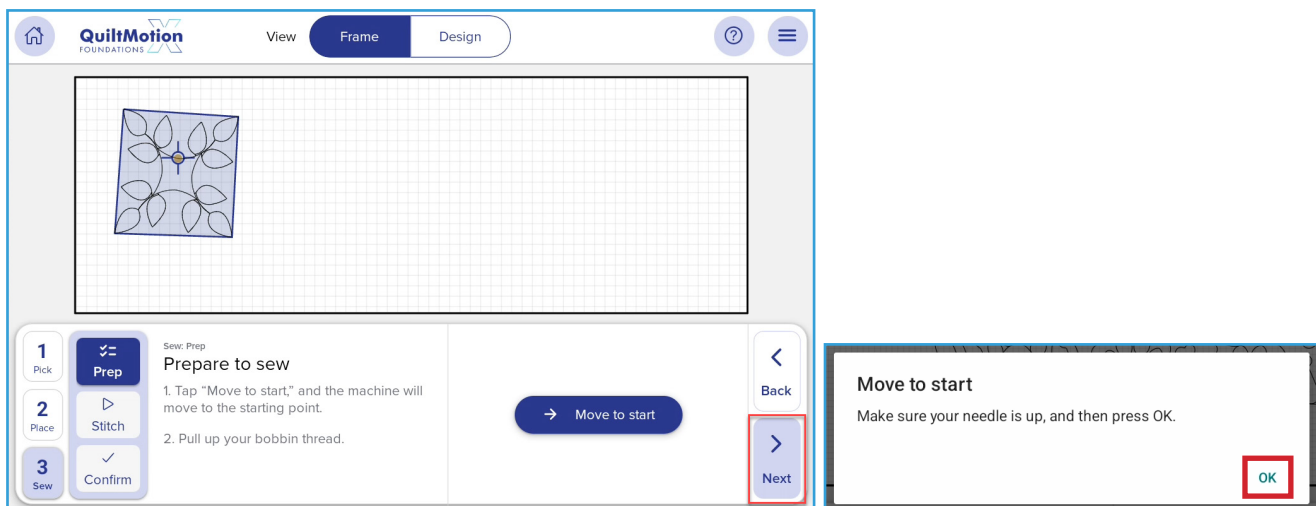


## PRACTICE STEPS

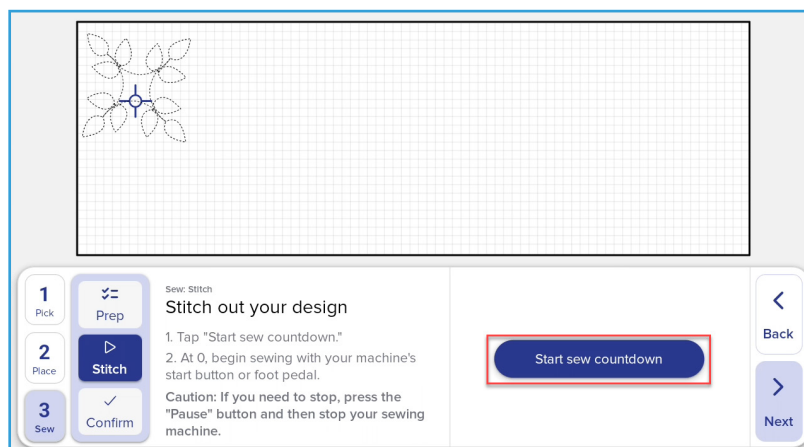
- 1 The Sew: Prep screen opens. Make sure your needle is up and tap **Move to start**.



- 2 Pull up your bobbin like you did when tacking down the fabric in Lesson 2.
- 3 Make sure your needle is up and tap **Next**. A message pops up to remind you to make sure your needle is up. Tap **OK**.



- 4 Make sure your machine is set to the correct stitching speed you determined in Lesson 5. Stitch out your design.



## 13

## Lesson Thirteen: Planning a Full Quilt of Pantos

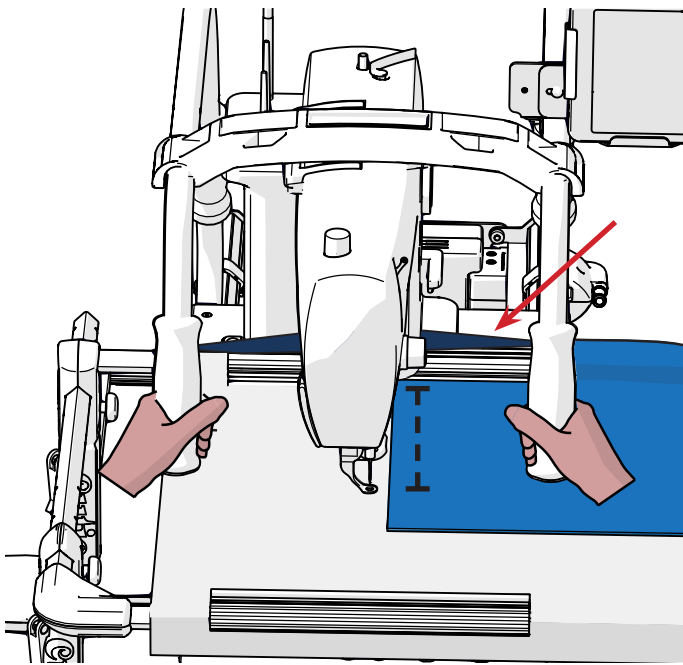
### KEY CONCEPT

Plan ahead when edge-to-edge quilting. Choose a design height that your machine can handle across an entire quilt.

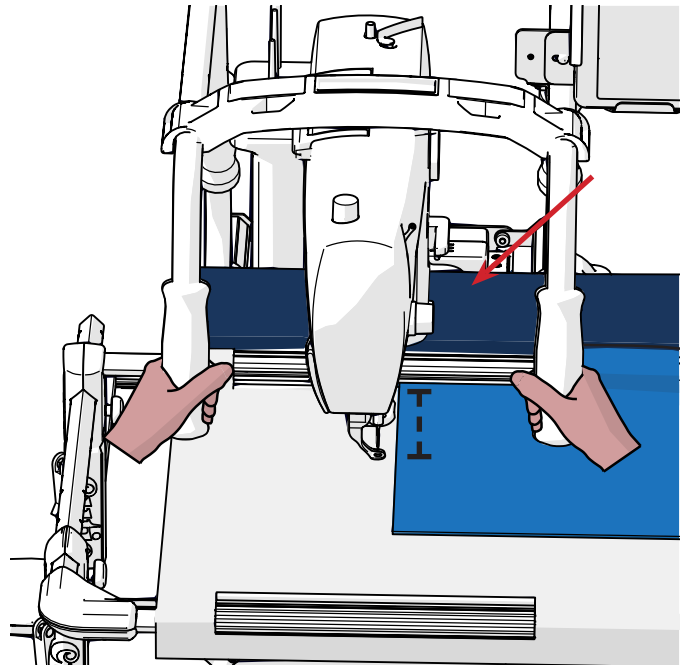
In Lessons 7–10, you learned how to stitch out a row of pantographs and connect rows together as you shift your fabric on the frame. But you still have more to learn if you would like to completely fill a quilt with pantograph designs.

Consider the throat size of your machine. In previous lessons, you probably had to shift your quilt to make sure that the section you wanted to stitch was within your machine's reach. This limits the size of a pantograph that you can quilt. If your machine throat is 9 inches, it's tricky to stitch out a design that is close to that size because then you have to position the fabric perfectly on the frame or the needle won't reach.

Additionally, your machine's reach is restricted as your quilt top roll builds up on the take-up rail. The bigger the fabric roll, the more it prevents your machine from moving. This means it's possible to choose a size for a pantograph at the start of your quilt only to find out halfway through that your machine can no longer accommodate that design size.



*The machine's reach is not restricted much because there is no quilt roll in the throat.*



*The machine's reach is restricted by a large quilt roll in the machine throat.*

Over time, you'll learn to estimate how much throat space you'll lose by the end of a quilt, but this is not easy to do as a beginner. A good rule of thumb is to always choose a design height that is at least 3 inches smaller than your machine's throat size.

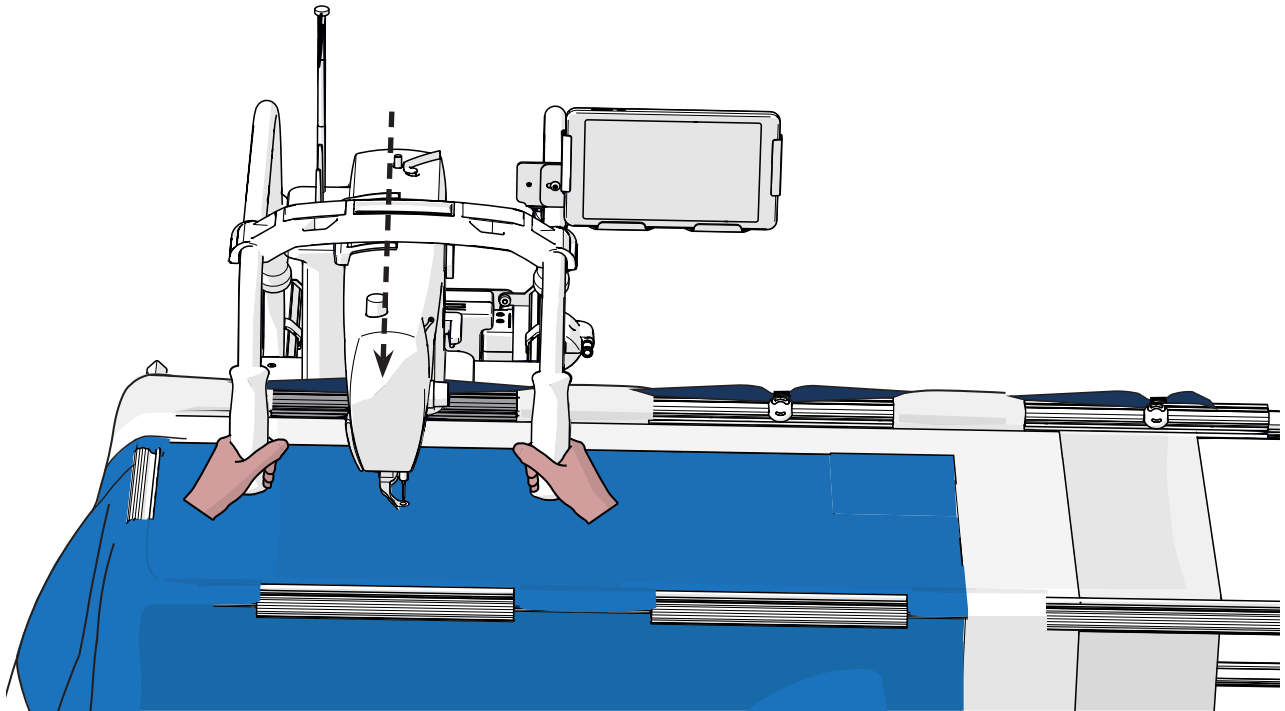
In this lesson, you'll practice selecting a reasonable pantograph design and size for your machine.

## PRACTICE STEPS

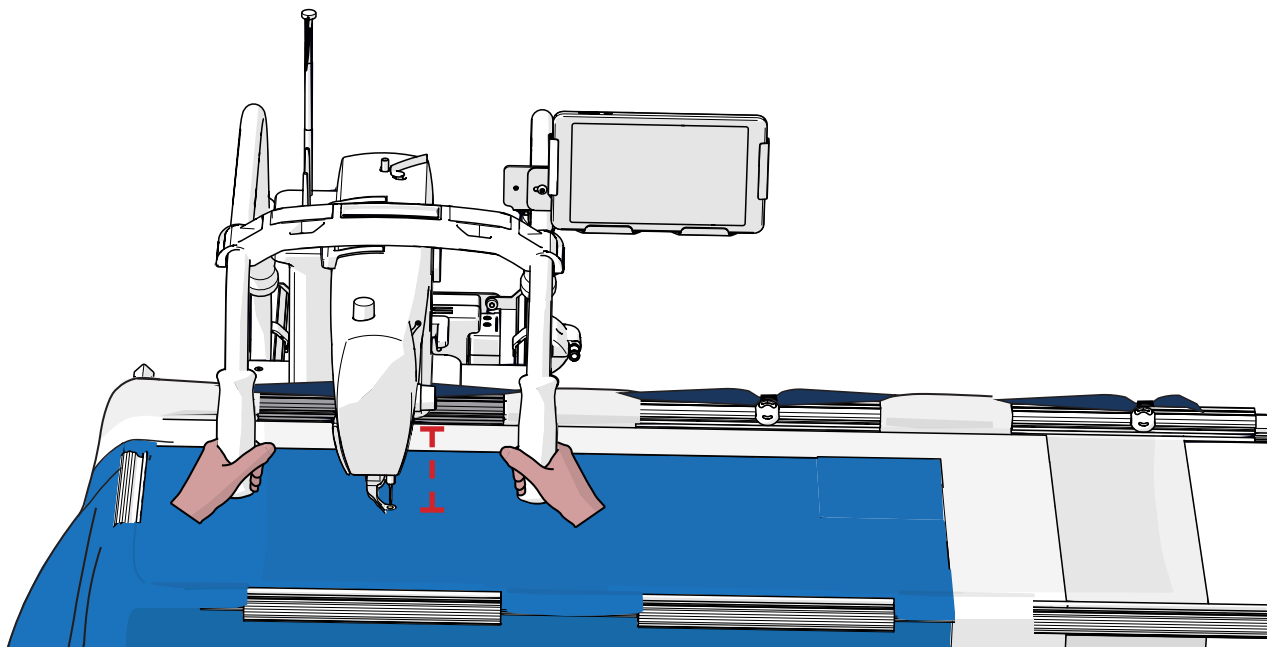
You will need:

- Measuring tape or 12-inch ruler

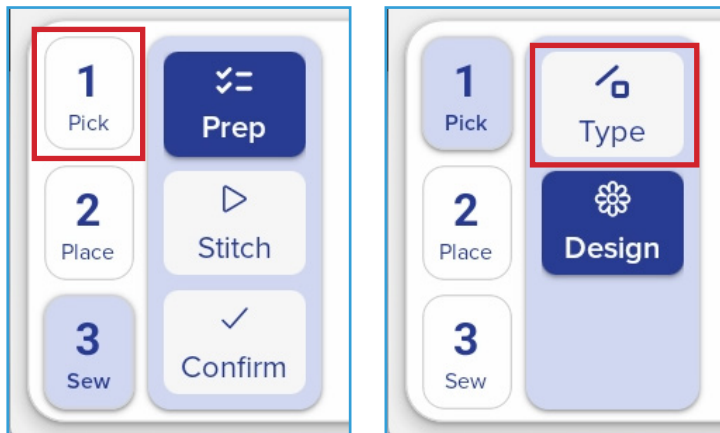
- 1 Align your machine with one of the fabric clamps on the take-up rail. Then move your machine as far forward as it can go on your frame.



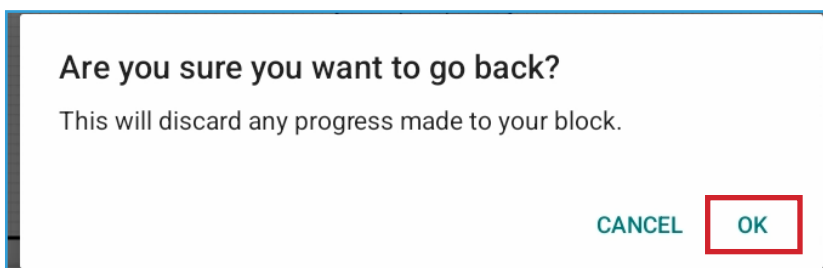
- 2 Using your measuring tape or ruler, measure from the outermost edge of the fabric clamp and your machine's needle.



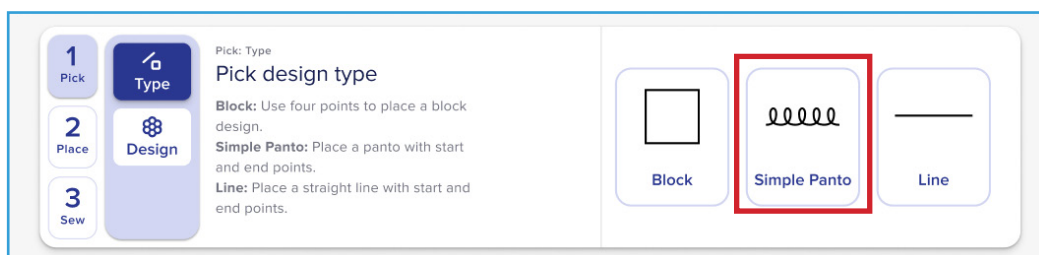
- Subtract 2 inches from the length you measured. This is the maximum design height to use until you become more familiar with automated quilting. For example, if you measured 7.5 inches, use design heights that are under 5.5 inches.
- Tap **Pick** in the bottom-left corner and then choose **Type**.



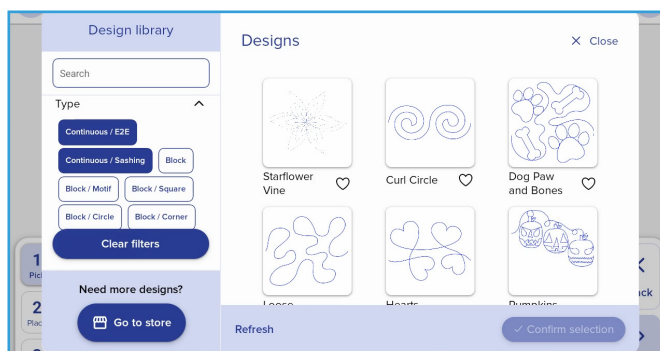
- You'll be prompted to confirm if you'd like to go back. Tap **OK**.



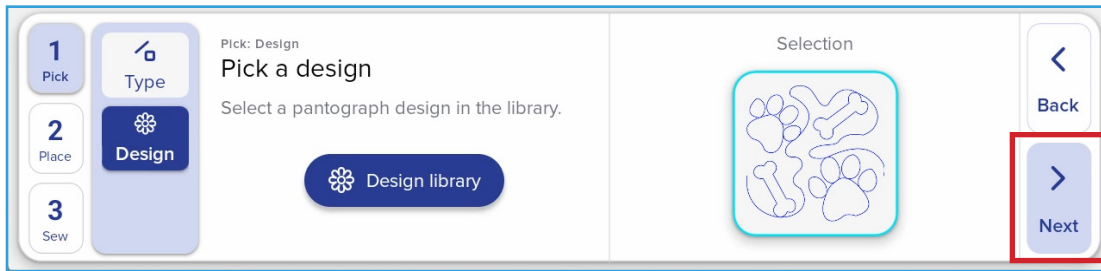
- Open **Simple panto**.



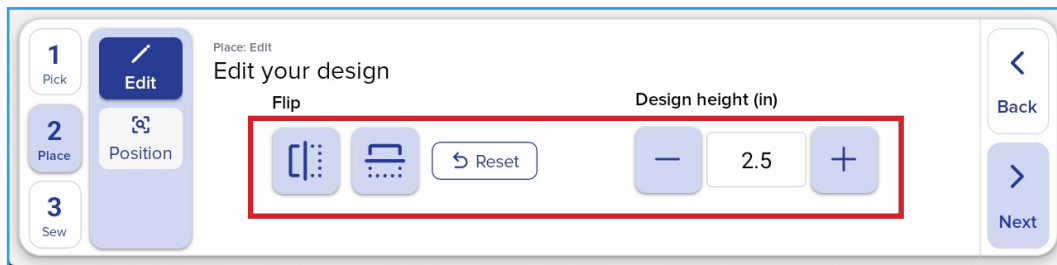
- Open the Design library and select a pantograph design you like. When picking your pantograph, consider the height that you have to play with. Remember, highly complex designs don't look as good when quilted in a smaller space.



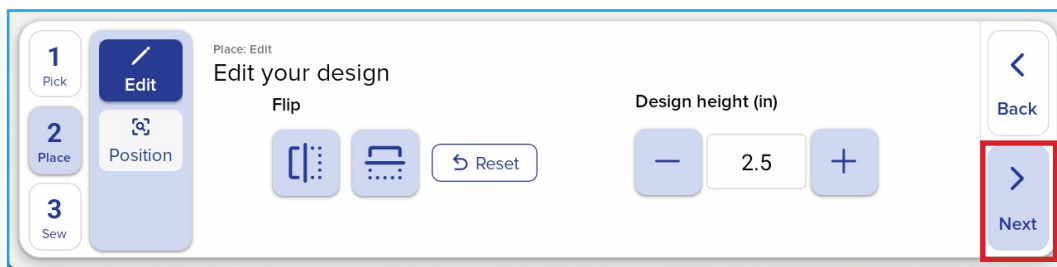
8 After confirming your design, press **Next**.



9 Choose a height for your design and apply any flips you'd like. Record the name of your design, the size, and any flips you applied somewhere you can find later. This might not come in handy now because the panel is a small project, but on a larger project it can be a life-saver.



10 Tap **Next** to go to the Place: Position screen.



## ADVANCED PANTO HEIGHT TECHNIQUES

If you really want to be sure a height will work for an entire quilt, install your quilt onto your frame so that the last zone is within the quilting space and the rest of the quilt is rolled up in the machine throat. Then measure how far your machine can freely reach.

You can also minimize the amount of throat space you lose if you stitch out the top half of the quilt, then flip the quilt upside down to quilt the next row. This ensures that you only have half of the bulk of the quilt in the throat at a time. Be careful, though! You must remember to flip your design both vertically and horizontally if you use this technique, otherwise your designs will face the wrong way starting halfway down your quilt.

Combine both of these strategies for maximum effect! Just remember to test a middle zone of your quilt rather than the bottom if you're going to do both.

## 14

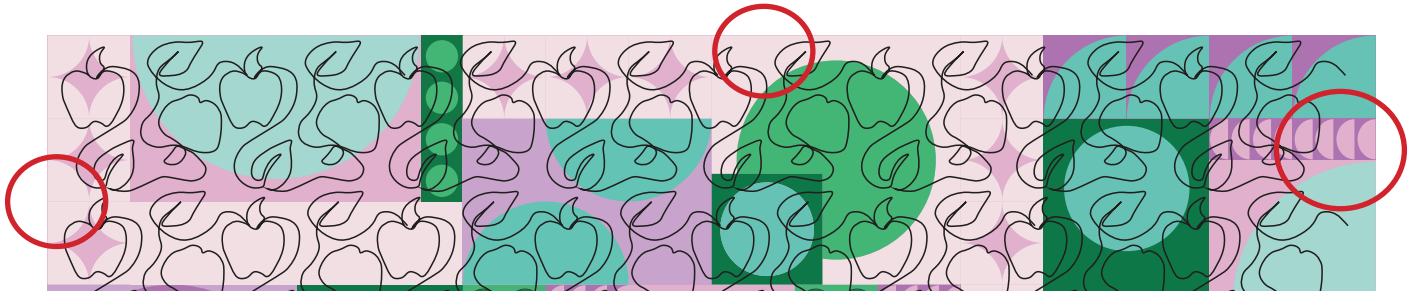
## Lesson Fourteen: Quilt Off the Edges

### KEY CONCEPT

Quilt off the quilt top's edges to ensure your quilt is evenly covered with designs from top to bottom.

Now that you've chosen a sustainable height for your pantograph, it's time to learn how to position your pantographs so that you quilt off the edges of the quilt top, onto the batting.

Quilting off the edges prevents odd gaps in the quilting that could have been filled with more design lines. This is great for any quilt except perhaps one where you want to stitch out a border design.



*Poorly placed designs leave odd gaps around the edges of a quilt.*



*Designs placed off the quilt top edges evenly cover the entire quilt.*

While it's easy to place the start and end points off the *sides* of your quilt, placing them so that the design will quilt onto the batting on the *top* edge of the quilt is trickier. That's what we'll practice in this lesson.

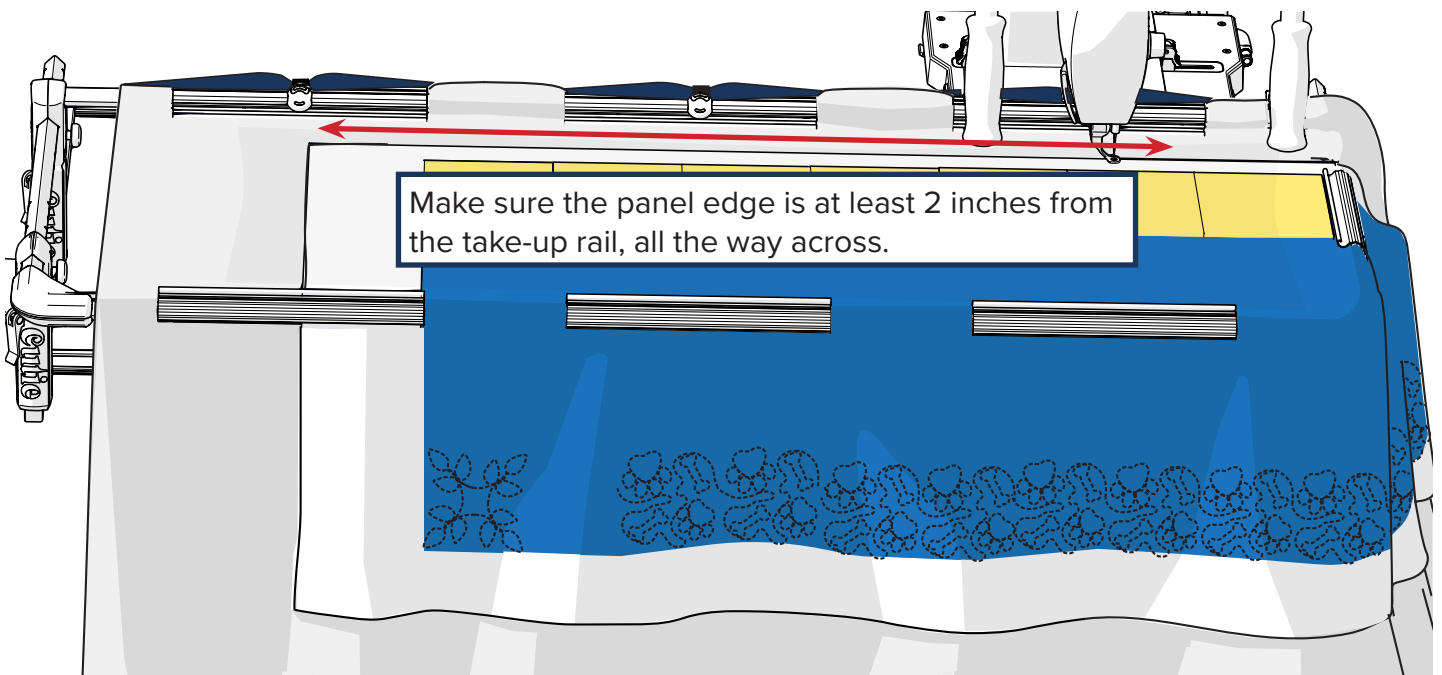
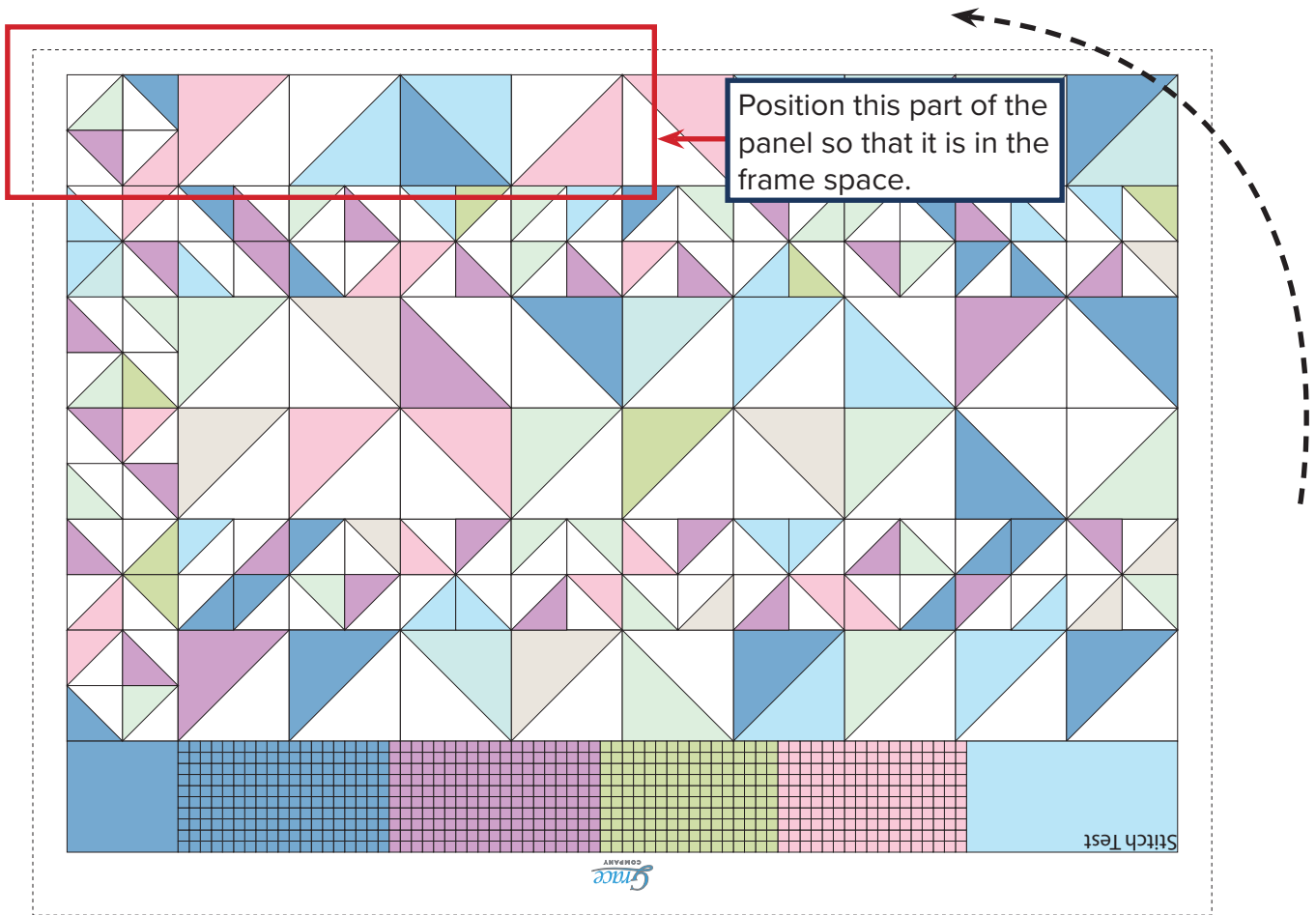
Another important thing to consider when planning to cover a quilt with pantographs is the size of the design you want to use.

### PRACTICE STEPS

You will need:

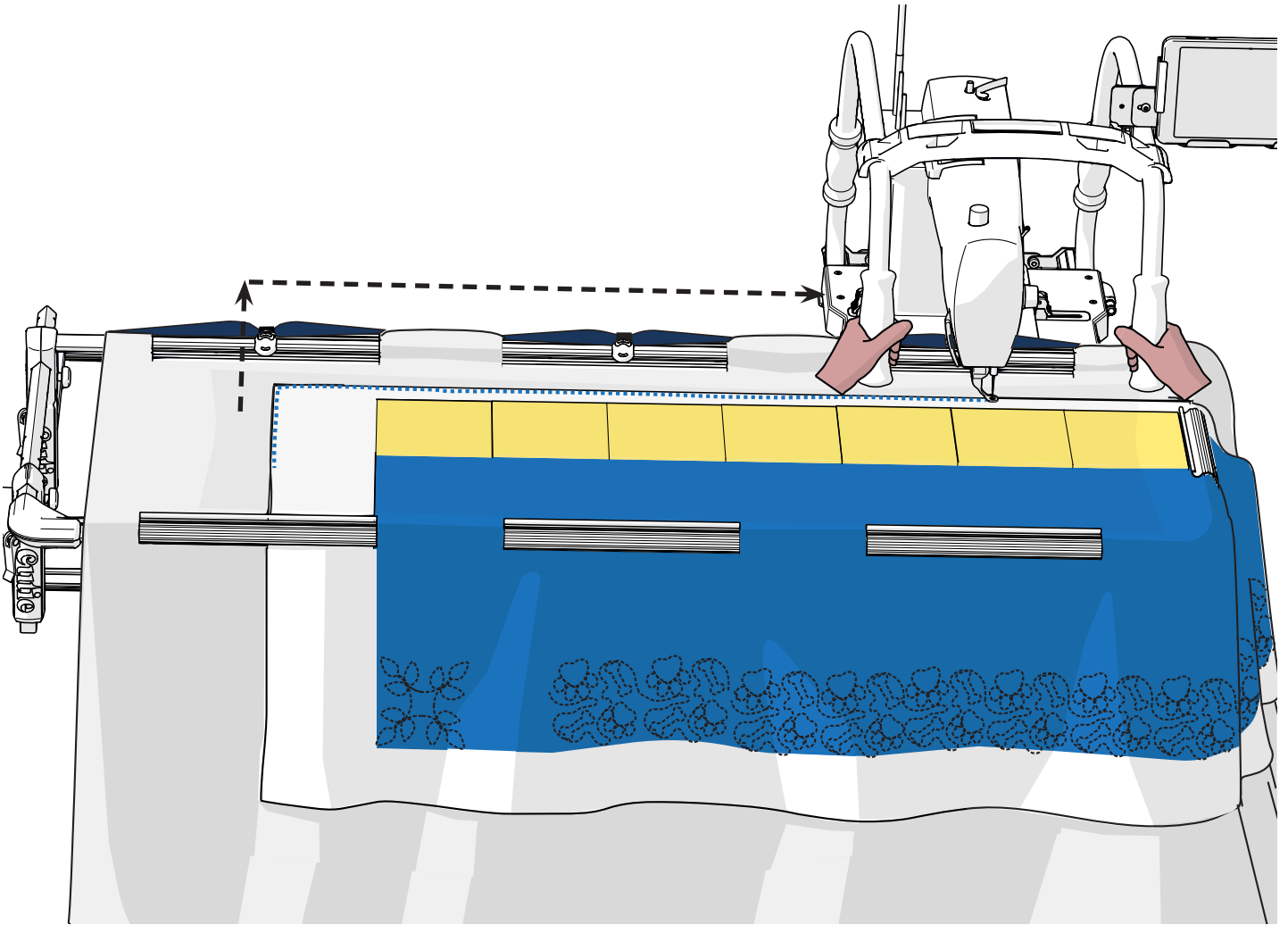
- Measuring tape or 12-inch ruler
- Fabric Pen or other marking tool

- 1 Remove your panel from the frame, flip it 180 degrees, and then re-install it so the part that used to be at the bottom is now at the top. Position the panel so the edge of the white border is at least 2 inches from the take-up rail all the way across.



**Note:** Up to this point, we've ignored the white border going around the edge of the panel. In this style of quilting, we're going to treat the entire panel as though it is the quilt top, including this white border, and we're going to stitch over it.

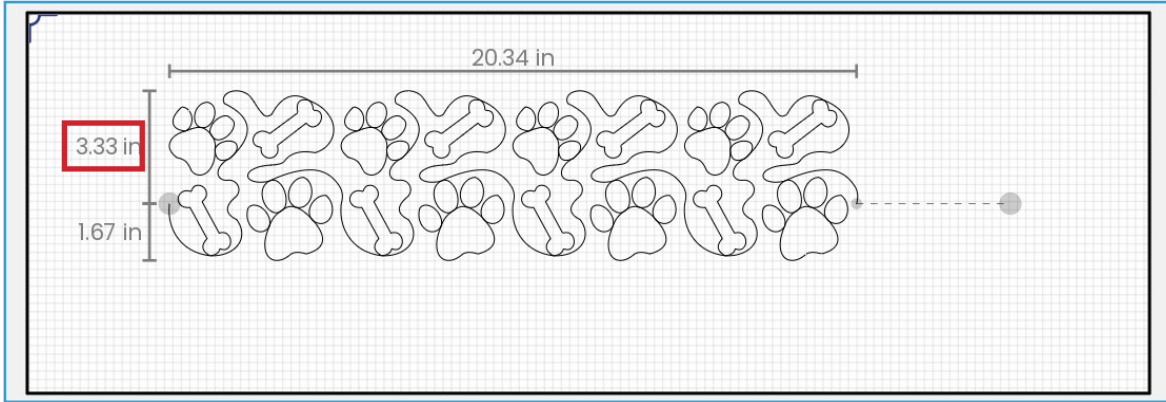
- 2 As you learned in Lesson 2, you must tack down the edges of the new zone. Do so now.



- 3 It's time to position your first row of pantographs. Our goal is to position the pantograph so that part of the design stitches 1 inch over the top edge of the panel, onto the batting.



- 4 Take the measurement for the top part of your design and convert the decimal into a number that is easier to measure using the chart.



**.0625** = 1/16 inch

**.375** = 3/8 inch

**.6875** = 11/16 inch

**.125** = 1/8 inch

**.4375** = 7/16 inch

**.75** = 3/4 inch

**.1875** = 3/16 inch

**.5** = 1/2 inch

**.8125** = 13/16 inch

**.25** = 1/4 inch

**.5625** = 9/16 inch

**.875** = 7/8 inch

**.3125** = 5/16 inch

**.625** = 5/8 inch

**.9375** = 15/16 inch

For example: 3.33 becomes 3 and 5/16 inch.

- 5 Subtract 1 inch from the measurement. For example, 3 5/16 inch - 1 inch = 2 5/16 inch.

- 6 If the result is a negative number, measure up from the top-left corner of your quilt that distance.

If the number is positive, measure down from the top-left corner of your quilt that distance.



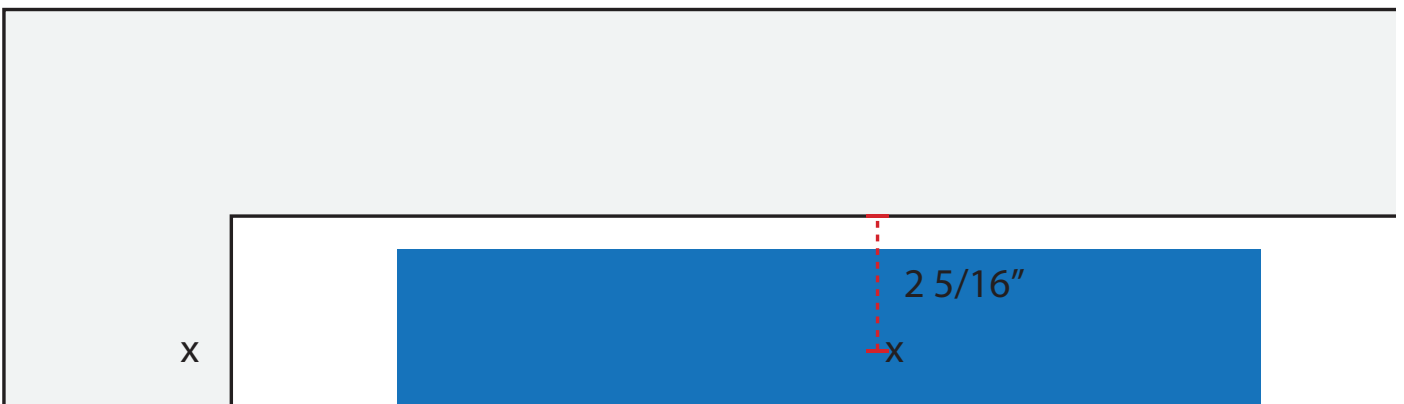
For example,  $2 \frac{5}{16}$  is positive, so the quilter would measure down  $2 \frac{5}{16}$  inches from the top-left corner.



- 7 Now, starting from the spot you measured to, measure 1 inch to the left of that spot and make a mark with your marking tool. This is the starting point for your pantograph.

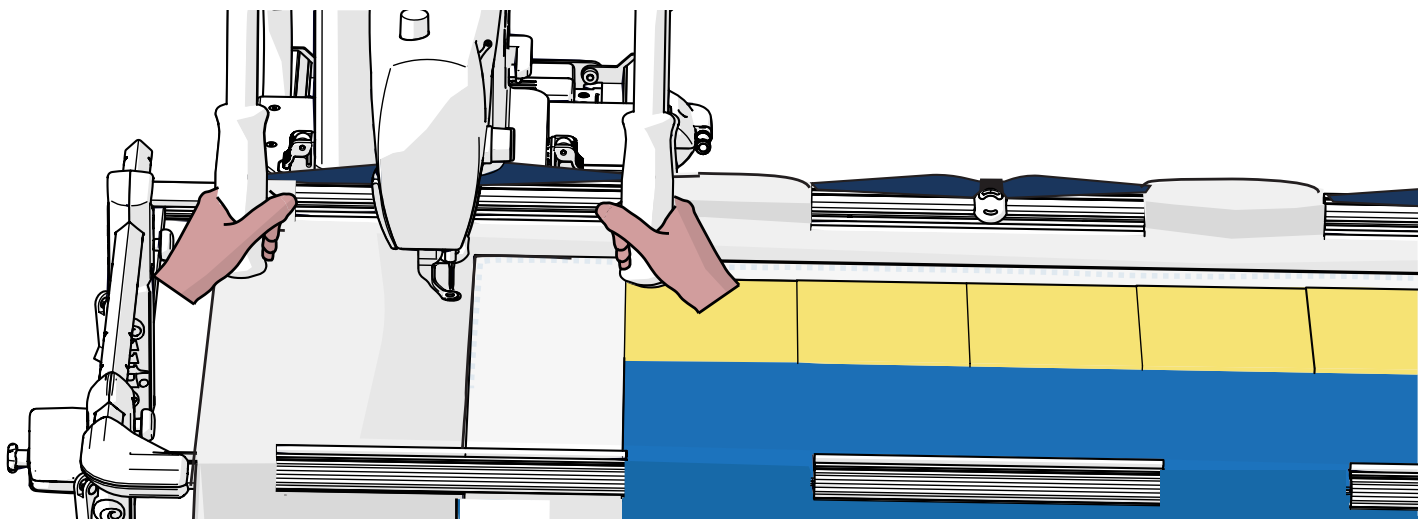


- 8 To keep your design square with the surface of your quilt, you must also measure from the top edge of your quilt top to place your end point.

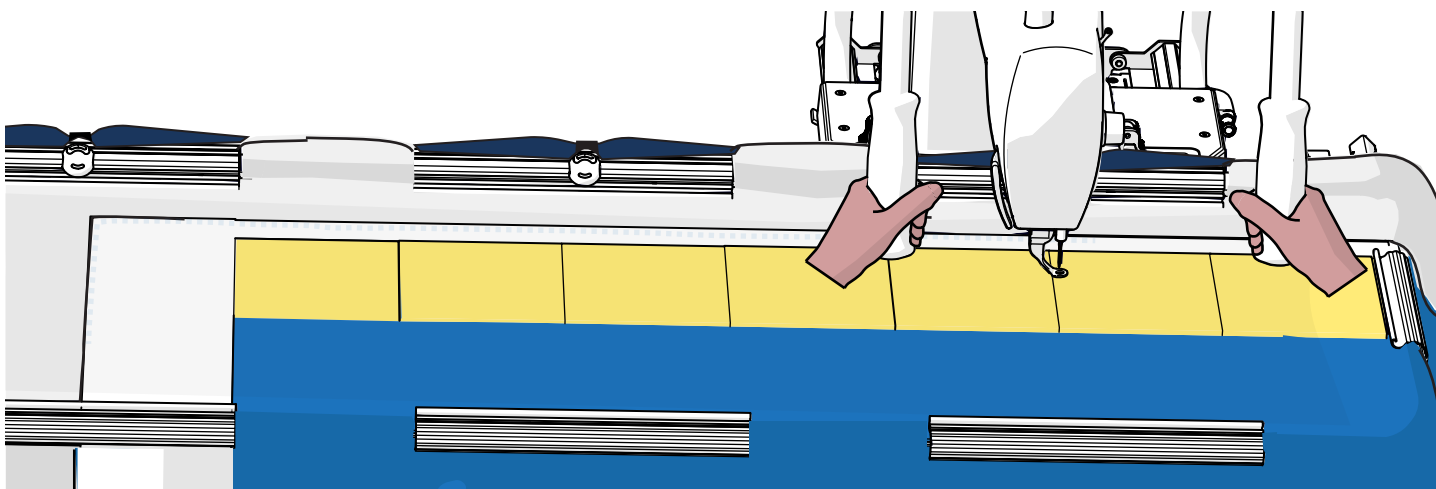


Mark the location you've chosen and place your design's end point on that spot. **Note:** This mark's location is important for placing later rows, so make sure the mark will still be easy to see even after stitching and moving the fabric.

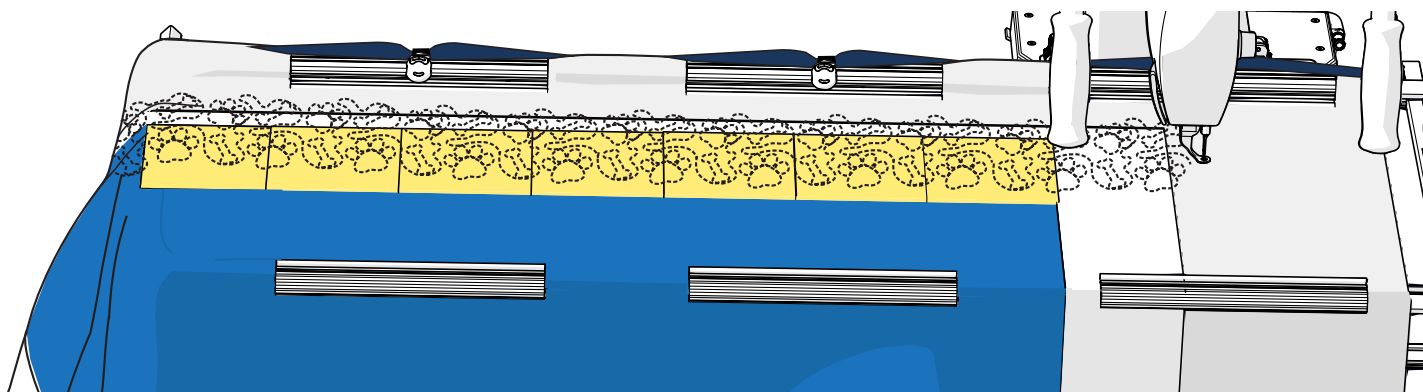
- 9 Place your design's starting point directly over the mark you made on the batting.



- 10 Place your design's end point over the mark you made on the right side of your frame.



- 11 Quilt out a full row of your pantograph design across the top of the panel. Take down your edges and clearly mark your end points as you go. When you reach the last zone for your row, make sure you quilt off the quilt-top edge, onto the batting.



**Tip:** If something went wrong while stitching out your design (such as thread breakage or the bobbin running out halfway through), see Lesson 16 to learn what to do.

Were you successful at quilting off the quilt top edges? How about keeping the design square across the quilt? Be patient with your mistakes! Quilting takes practice.

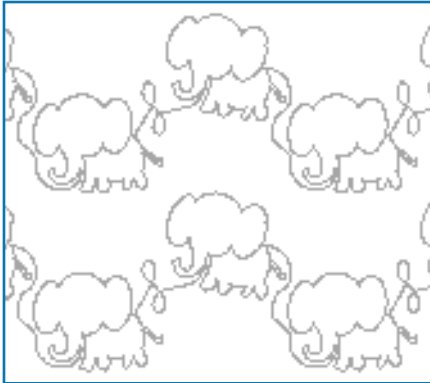
## 15

## Lesson Fifteen: Quilt Your Second Row

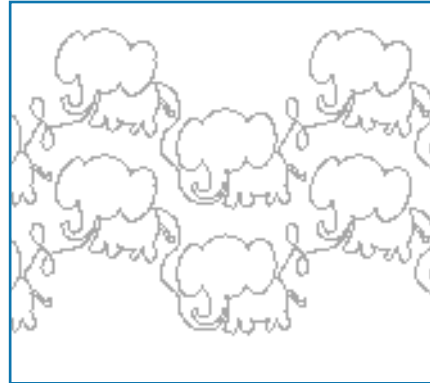
### KEY CONCEPT

Measure down and mark from the start and end points of a row of designs to place the next row.

The final key lesson to filling out an entire quilt with pantographs is row spacing. When you stack pantograph rows on top of each other, you often want to control the amount of spacing between rows in order to control the overall look of the quilt. Sometimes you'll want to nest design rows into each other, like with a chevron style design.

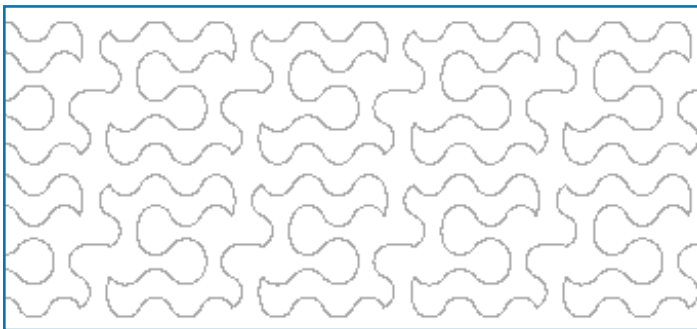


*Rows are not nested*

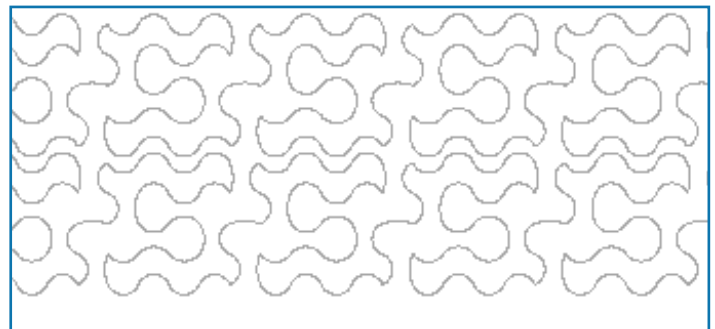


*Rows are nested*

Sometimes you'll want to space designs a little farther apart to keep a similar sense of distance between lines as the design has. Imagine a nice stipple design, with good half-inch spacing between lines, only to have the rows of pantographs a mere quarter inch apart.



*Balanced spacing between rows*



*Imbalanced spacing between rows*

You apply your spacing when you place subsequent rows of pantographs. If you place your next row down exactly the distance of the design height, you will have rows that are stacked on top of each other without any spacing. That might be the look you want, but be careful! Any tilt in your placement or any inconsistency with how the fabric scrunches or stretches during stitching can cause your rows to overlap across the quilt (think about how easy it was to stitch outside the grid row in lesson 9).

If you place your next row less than the design height, your rows will begin to nest. If you place your rows at a greater distance than the design height, you add spacing between rows. This is a useful cushion that can help keep your rows from crossing into each other, and it can also create the balanced spacing look demonstrated above.

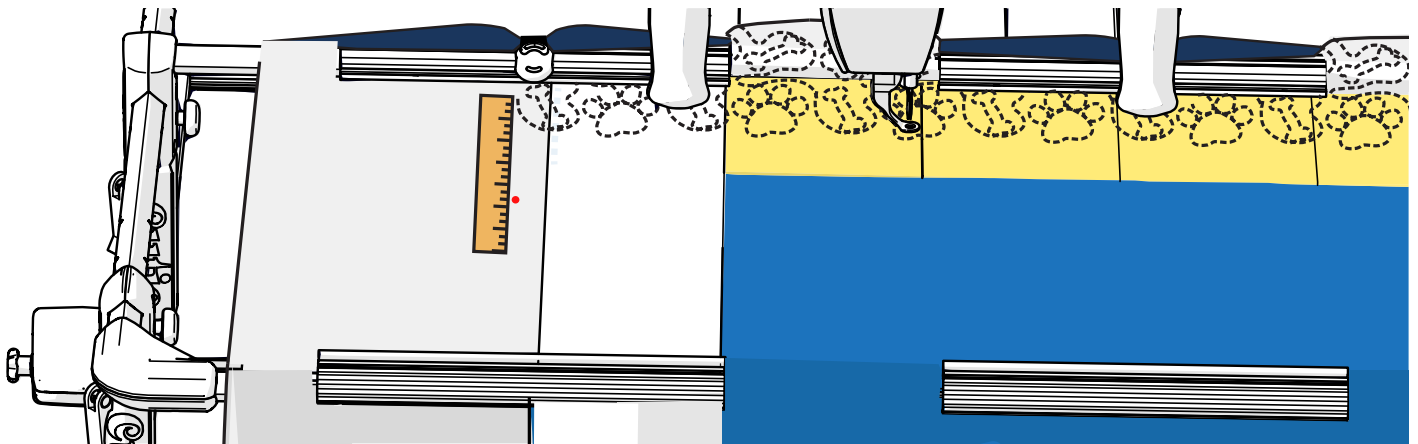
The hardest part of row spacing with QMX Foundations is determining what measurement to use to mark and place your next row. A foolproof (though perhaps tedious) method is to stitch out your design at its current height on scrap fabric and experiment with different measurements between rows. This lets you perfect the spacing for your main project. Follow the steps in this lesson to practice stitching out rows with different spacing values to see what looks good for your design.

## PRACTICE STEPS

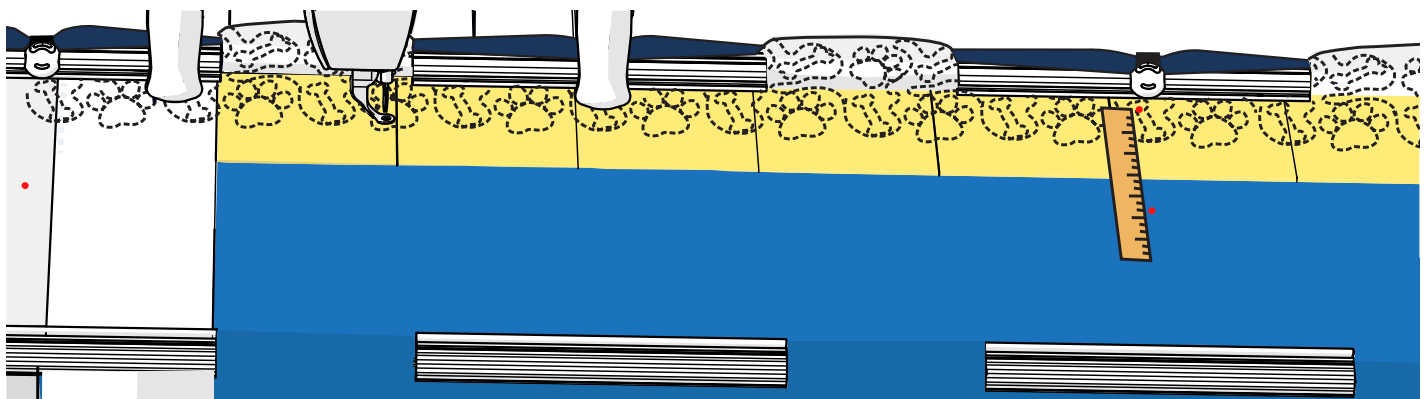
You will need:

- Measuring tape or 12-inch ruler
- Fabric pen or other marking tool
- Paper or notepad
- Writing pen or pencil

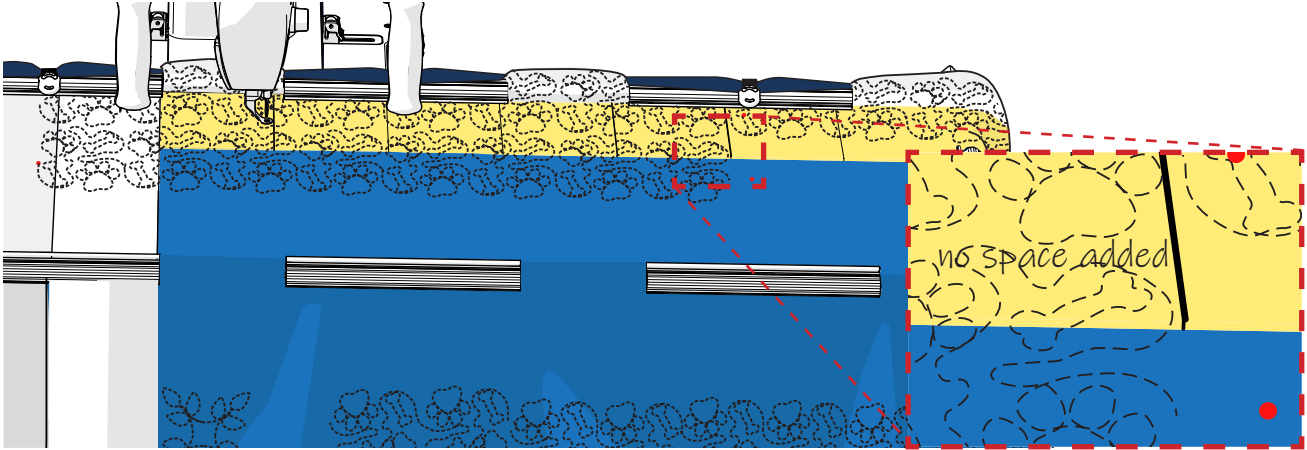
- 1 First, let's see how the design you chose looks with no extra spacing between rows. From the start point of your previous row, measure down the height of your design. Mark this point with your marking tool.



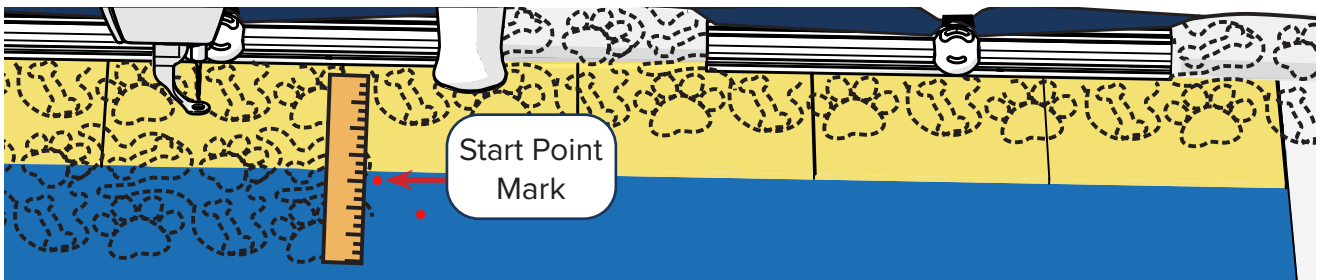
- 2 Locate the end point you marked for your previous row. Remember, the end point you marked and the last stitch for that row are probably not identical. If you can't find your mark, you can use the last stitch of a previous row, but sometimes this is tricky to find in a pantograph. Measure down the height of your design from the end point that you *marked* for your first row. Mark this point with your marking tool.



- 3 Stitch out your design. Remember, if something goes wrong, such as if you run out of bobbin thread, Lesson 16 covers what to do.
- 4 On the panel above or next to your row, write: “no spacing added.” If you prefer, you can write on your paper instead: “Second row down, first zone across: no spacing added.” This will help you keep track of which measurements you tested out when you’re not just being told which measurements to try by this booklet.

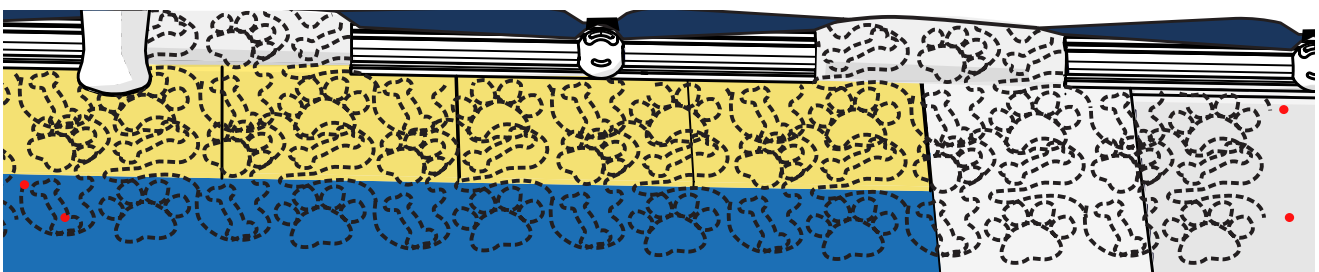


- 5 Shift your fabric to the next zone. Tack down any exposed fabric edges.
- 6 Normally you would set your design start point on the last stitch of the previous zone (like you learned in lesson 10), but since we’re trying to find the best spacing, now we’ll try nesting the designs. So this time, we’re going to measure down from the previous row like we did in step 1.
  - a Find the start point of the design above.
  - b Subtract 1 inch from your design height to get your new measurement. Measure down from that start point the amount of the new measurement. **Mark** the new **starting point**.

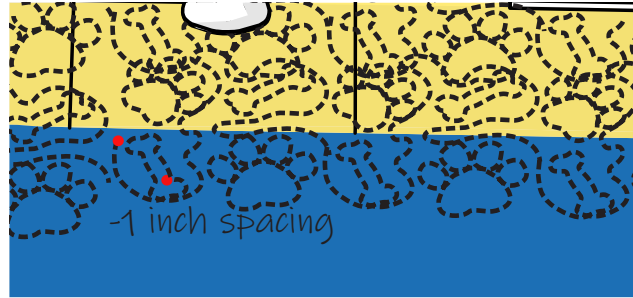


- c Measure down from the end point of the previous zone the amount of the new measurement. Mark the new ending point.

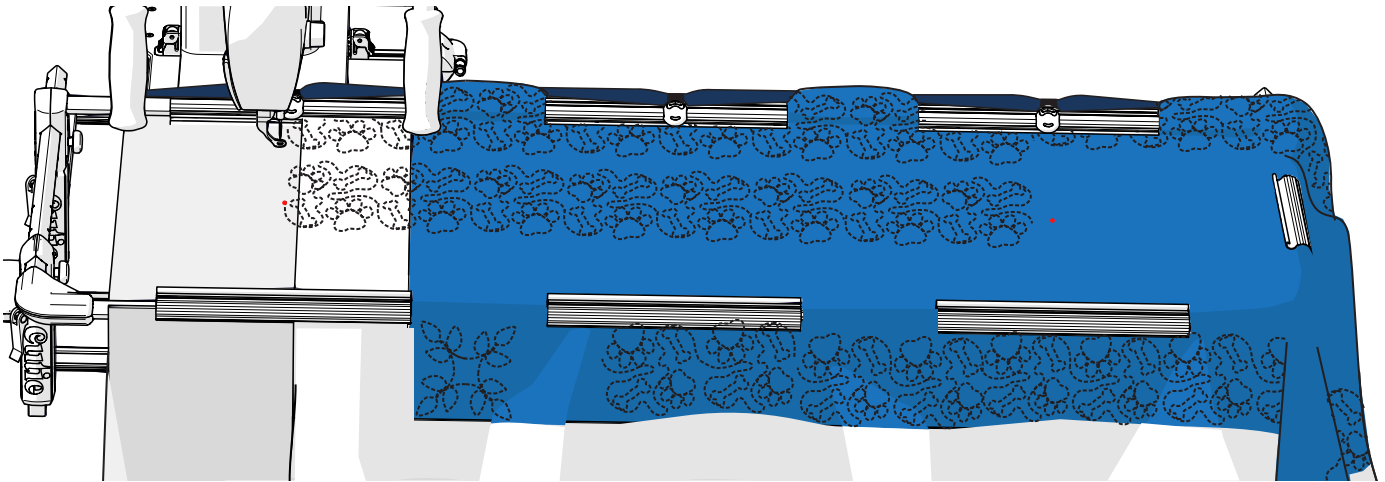
- 7 Place and sew your design.



- 8 Unless you were using a design that was good for nesting, you probably have a lot of overlap between the two design rows. As before, write either on the panel or on paper: -1 inch spacing.



- 9 Shift your fabric again, and repeat this process but add an inch to the height measurement. Stitch out your design. Write: +1 inch spacing.



If you have a limited throat length, you might have noticed that stitching out your design with an inch of spacing was difficult to do. Perhaps you had to shift your fabric more after finding your new start and end point. When planning your quilt (like in Lesson 13), it's helpful to keep your throat space in mind when choosing both the design height and design spacing.

- 10 Compare the difference in the rows you stitched out. Which spacing looks closest to being the best for your design? If you like the way one of the spacing values looks, you can run with it for the rest of the panel. But if it doesn't look quite right, make adjustments to the measurement and try again until you find the spacing you like. Remember, if you want your rows closer together or to nest, subtract more from the measurement. If you want your rows farther apart, add to the measurement.

Keep going until you like your spacing, but make sure you follow the steps in Lesson 16 sometime before finishing your panel. Lesson 16 covers how to respond to your bobbin running out midway through a design, a situation that will probably come up at some point. It can also help if your thread breaks or you need to redo part of a design because of thread tension issues.

## 16

## Lesson Sixteen: Repair Tools

### KEY CONCEPT

Use the Repair tools to tell the software the location to continue stitching from in an incomplete design.

Eventually, something is going to go wrong in the middle of a design. You'll run out of bobbin thread halfway through a row of designs, or your power will go out on the whole system. Repair design is a tool that allows you to come back strong from any disaster. You can find detailed instructions on using this tool in the QMX help files, but we'll learn the basics here.

When the thread runs out in the middle of a row, the machine continues happily stitching away, unaware that all it is doing is poking holes through your quilt. It's up to you to notice when the stitching has stopped working, refill the bobbin, and then guide the automation software back to the correct place to continue sewing.

That's what the Repair tools are for. The Repair tools help the software understand where the problem in the design occurred so that stitching can continue from just before that point.

**Note:** There are many reasons you might need to repair a design, such as if your thread breaks. This lesson isn't about what causes breaking thread or other issues—it's only about what to do after you've resolved any mechanical issues that caused your problem and are ready to continue stitching.

## PRACTICE STEPS

You will need:

- Scissors or thread snips

1 If you've come to this lesson because you had an issue stitching out one of the lessons in this book, resolve that issue and then proceed to step 2. If you came here to practice but haven't had an issue, you can simulate running out of bobbin thread for practice by doing the following:

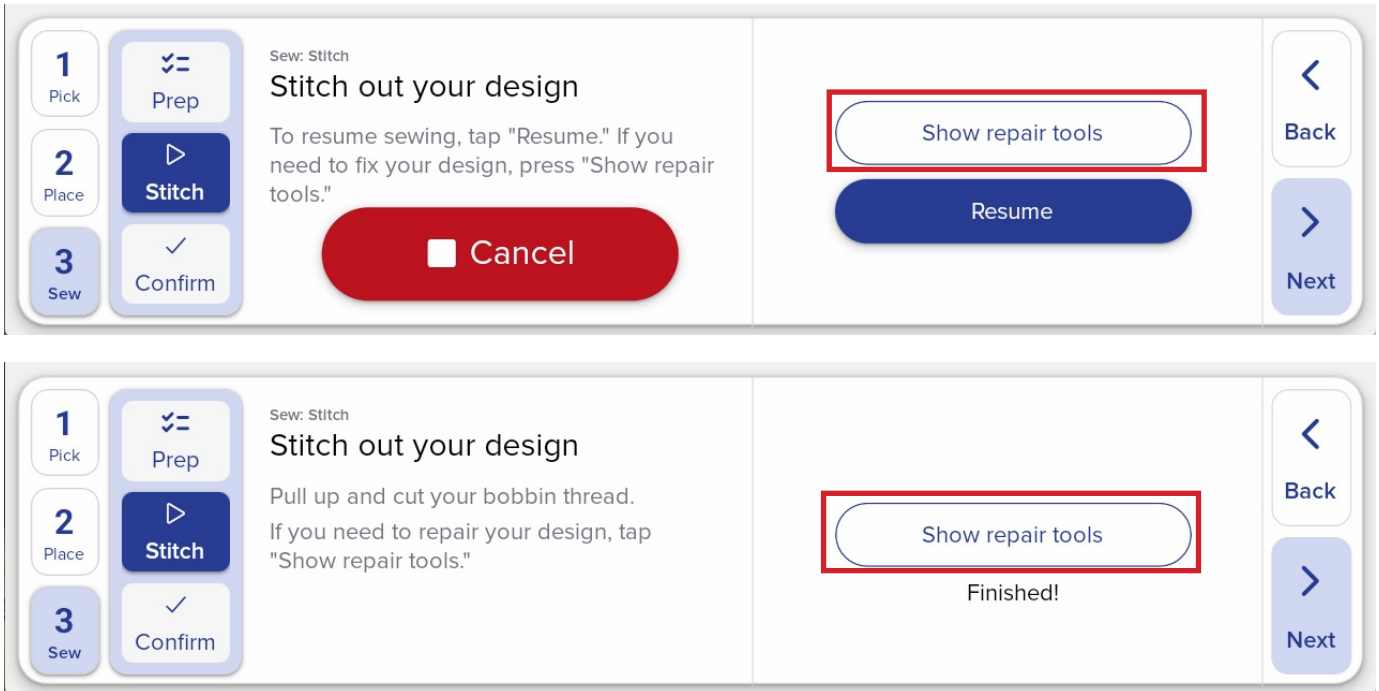
- a Some time in the middle of sewing a row, press **Pause** on the screen and immediately stop your machine's stitching.
- b Underneath the quilt, remove the bobbin case from the machine and cut the bobbin thread with scissors.

**Caution:** Do not run the machine with the needle threaded when there is no bobbin case in the machine.

- c Unthread the needle.
- d Back on the screen, tap **Start sew countdown**. Start your machine's stitching as usual. You are now simulating the machine stitching without bobbin thread.
- e Let the machine stitch for 5 seconds or so, and then pretend that you just realized your machine has run out of bobbin thread. Press **Pause** on the screen and stop the stitching on the machine.

- f Reload the bobbin case with a threaded bobbin. Follow your machine's instruction manual for details.

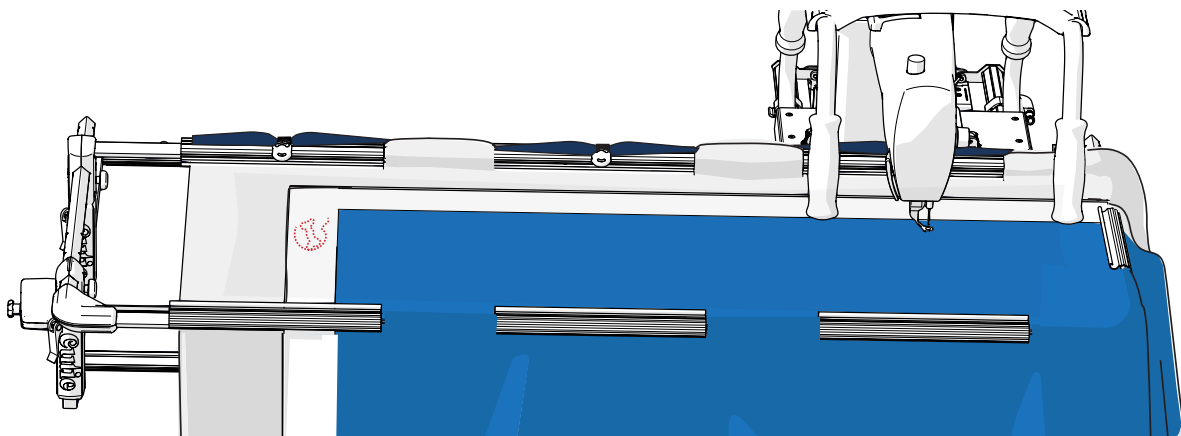
2 Tap **Show repair tools**.



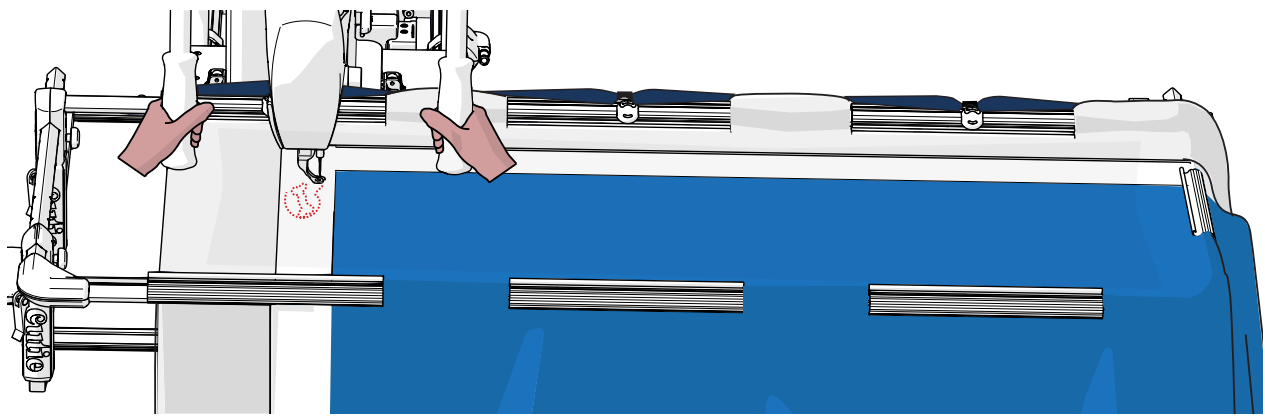
## TROUBLESHOOTING - DON'T SEE SHOW REPAIR TOOLS?

If you're on the Sew: Confirm screen, you went a little too far and the option to Show repair tools is gone. Press **Back** to return to the Sew: Stitch screen. Then press **Start sew countdown**, but don't start your machine's stitching. When the **Pause** button appears, tap it. This brings up the option to **Show repair tools**.

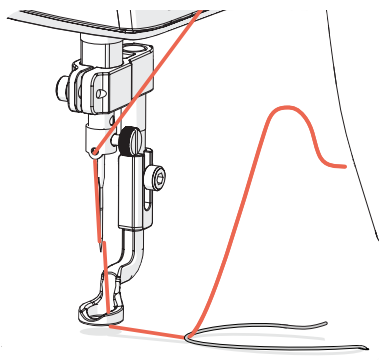
- 3 Examine your quilt and determine the point in your design where you'd like to continue quilting from. Typically, this is one of the last stitches your machine successfully made. Make sure to check that the stitch was completed underneath the quilt as well as on the top. Sometimes a stitch can look right from the top but is not actually a completed stitch underneath.



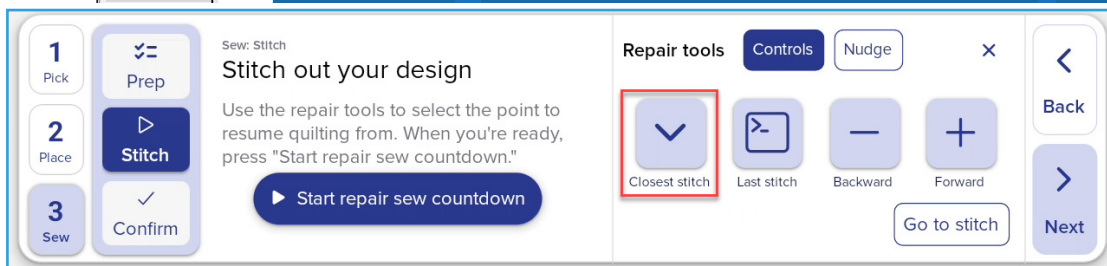
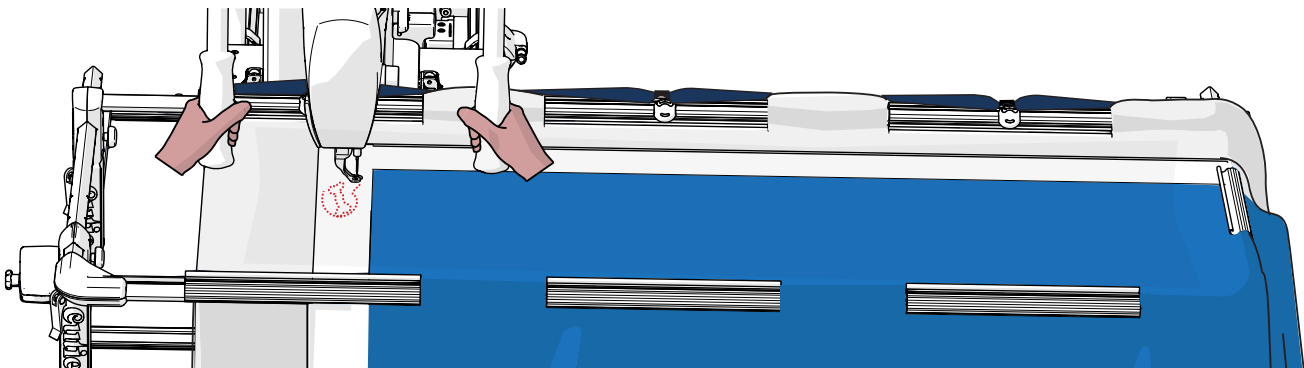
Move your machine so your needle is positioned over that point.



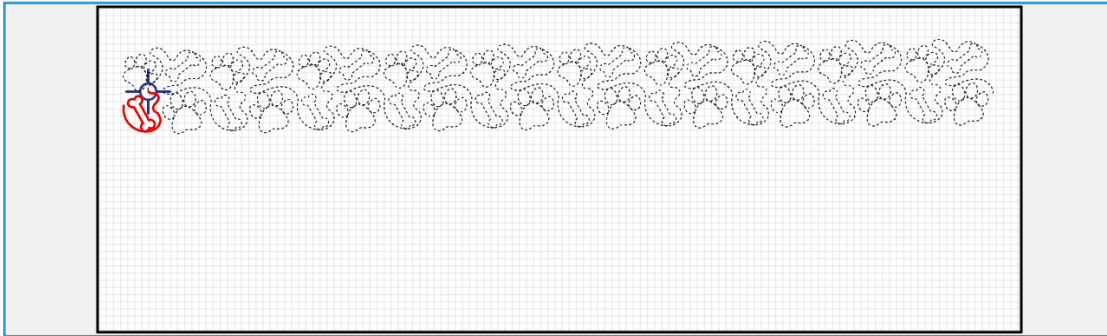
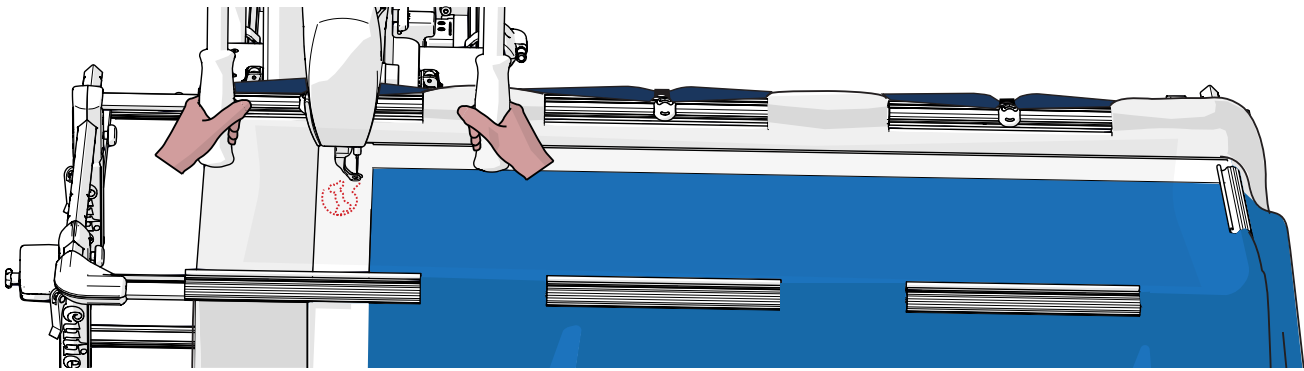
- 4 Pull up your bobbin thread right at this location.



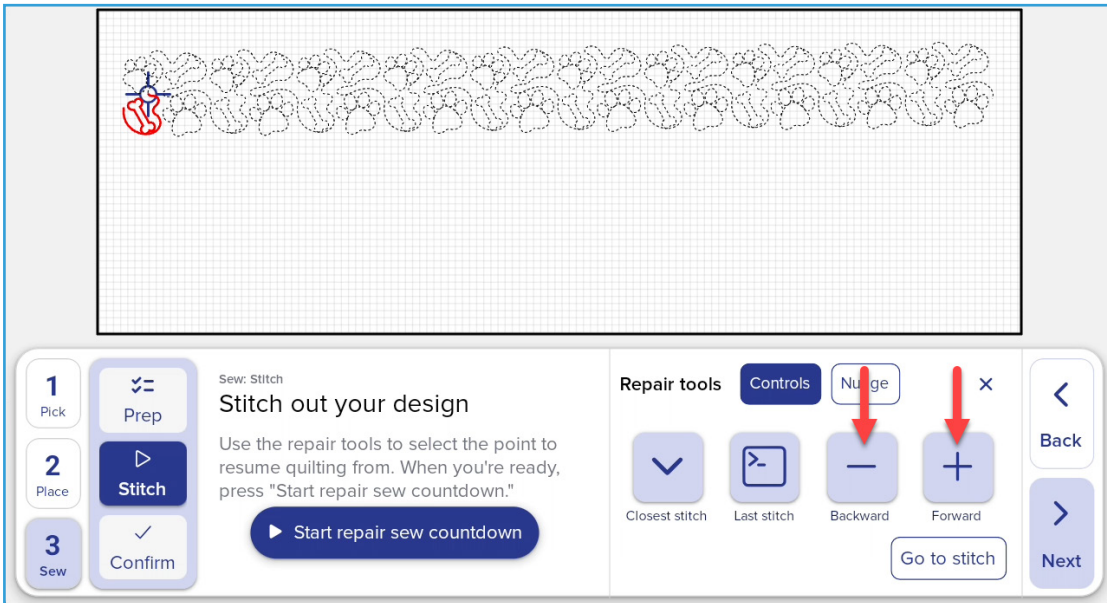
- 5 Return the needle to that stitching point and tap **Closest stitch**. This tells the machine where you are in your design. QMX locks the needle's location, and sets the stitching path back (or forward) to the point you selected.



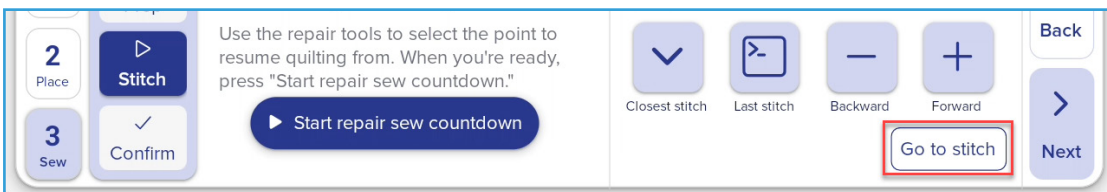
6 Compare the screen with your quilt.



7 If the design portion on the screen seems farther along (or not as far along) as the quilted portion on the quilt, press - **Backward** or + **Forward** to travel through the design's progress. You might need to press several times to see a change on screen.



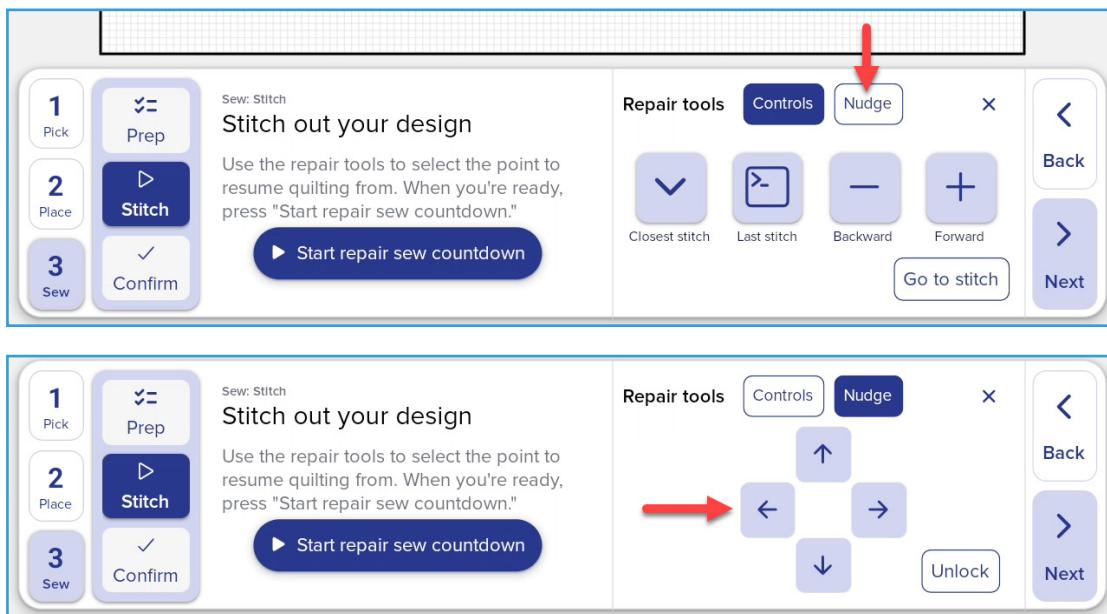
If you used - **Backward** or + **Forward**, tap **Go to stitch**. This moves the machine needle to the point on the quilt so the software and your machine are in alignment.



## TROUBLESHOOTING

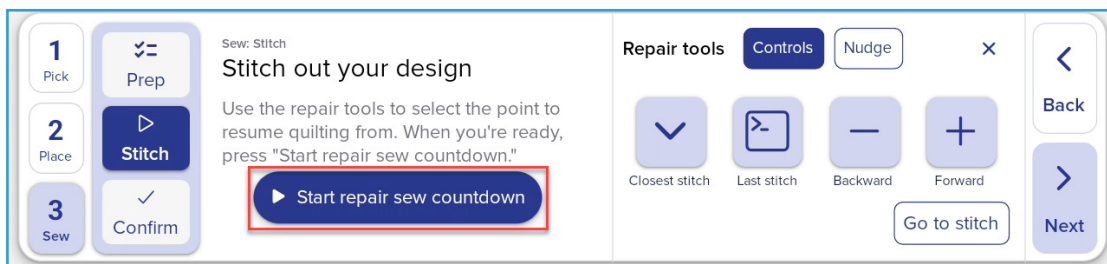
The stitched out portion on your quilt should be a close match to what is on the preview window on the screen. If it is not (and you followed the previous steps correctly), the software's knowledge of where the design is supposed to be is incorrect. This can happen when, after the design is placed, the quilt is shifted or the belt clamps are opened and the machine is moved. Make sure your belt clamps are closed and re-home if they were not. Go back and place the design again, using the same points as the first time you placed it. Proceed to the sew screen and press **Start sew countdown**, but do not start your machine. Press **Pause** when it appears. This allows you to open the Repair tools.

- 8 If your needle isn't *quite* over the stitch, open the **nudge** buttons to adjust the needle's location.



**Note:** When using the Nudge buttons, the software engages the motors and prevents you from manually moving your machine. If you need to move your machine again, tap **Unlock**.

- 9 When your needle is directly over the place you'd like to sew from and the design on the screen matches the portion that you still need to stitch out, it is time to quilt. Press **Start repair countdown** to continue your design from this spot.



## NOTES

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## NOTES

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