

sure stitch

Elite

Instructions

Dear Quilting Friend,

Thank you for purchasing SureStitch stitch regulator! We are thrilled to enhance your sewing experience. Carefully follow the **Assembly and Setup** manual before using this booklet as a guide to create more even and consistent stitches.

Please keep this manual as a reference.

Thank you!

The Grace Company

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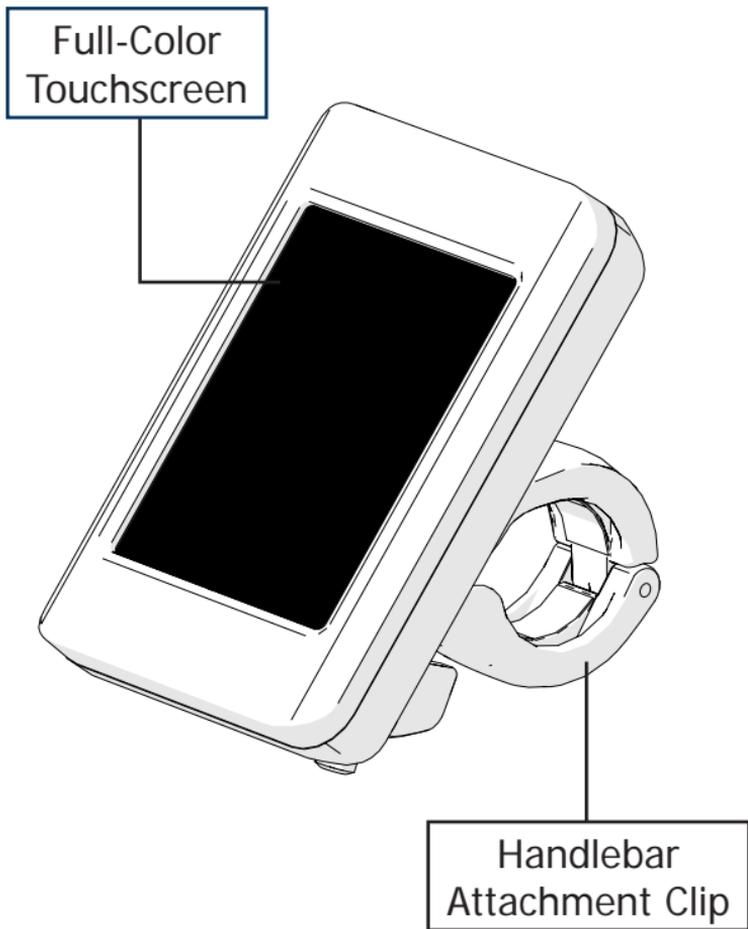
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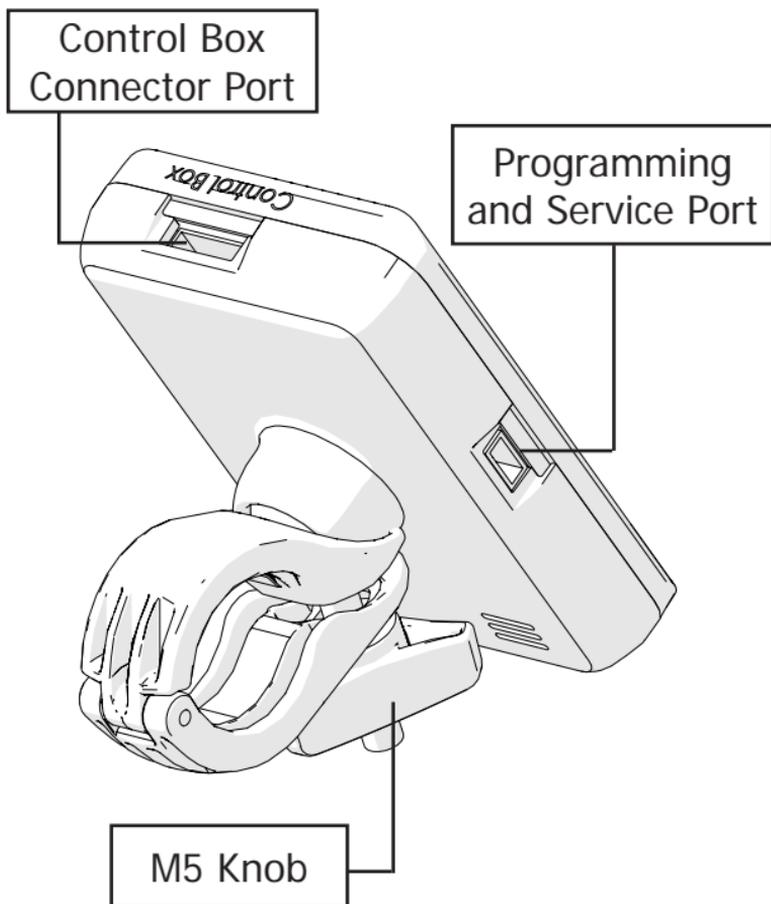
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Hardware Specifications

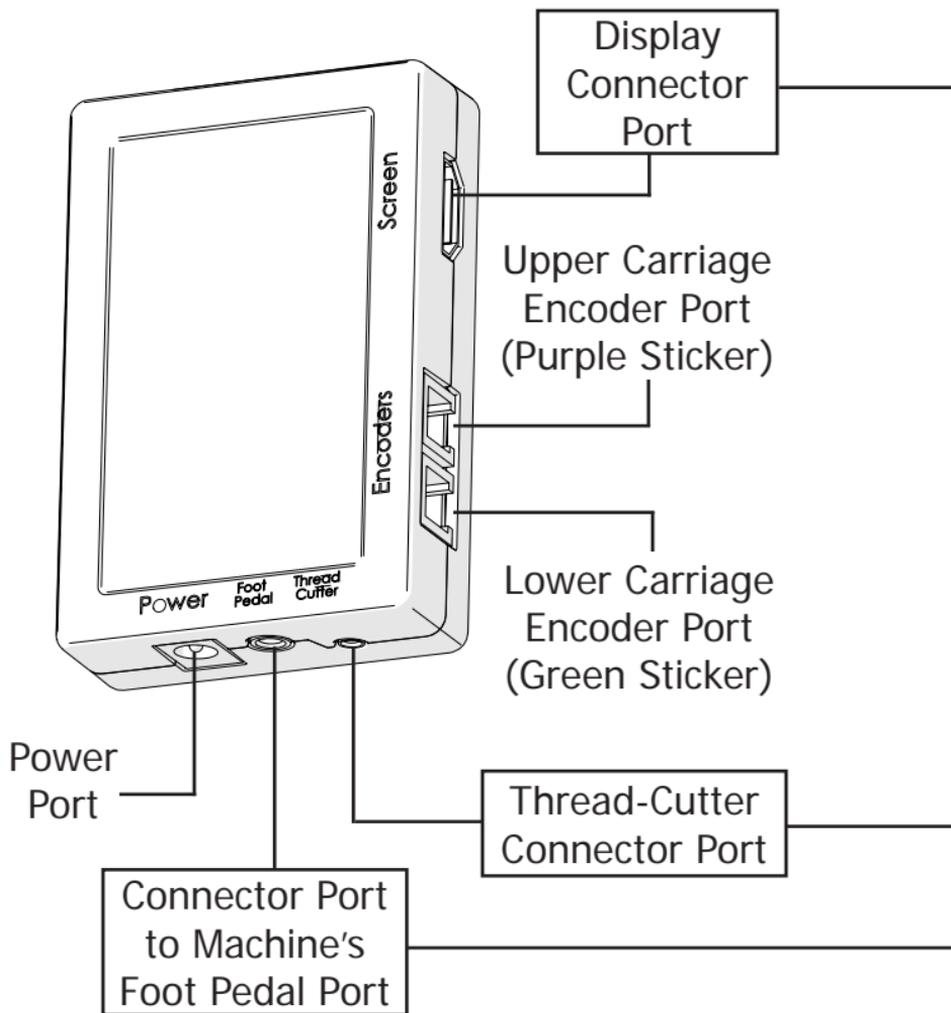
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SureStitch Elite Screen





SureStitch Elite Control Box



The **Control Box** uses signals from the encoders to track the location of your sewing machine over the frame. It communicates with your machine to adjust the stitching rate so that each stitch is consistent in size.

Connect the display to the control box using the **screen cable** (SSE-02-14992).

Connect the thread cutter port on your machine (if applicable) to the control box with the **thread cutter cable** (SSE-02-14988). Enables thread cutter screen button.

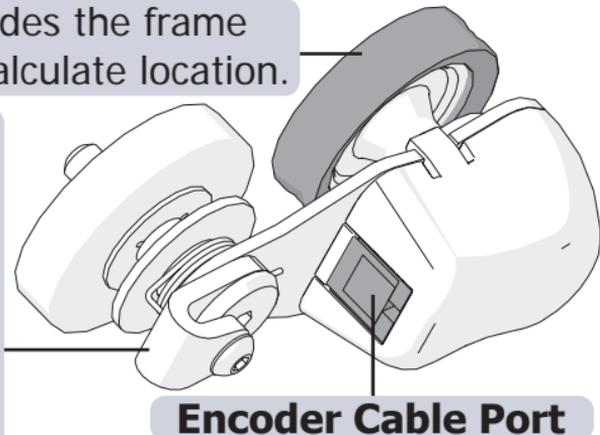
Do not plug a foot pedal into the foot pedal port. Connect the foot pedal port on your sewing machine to the control box with one of the **foot pedal cables** in your kit.

Encoders

Upper Encoder V5

O-Ring Rides the frame tracks to calculate location.

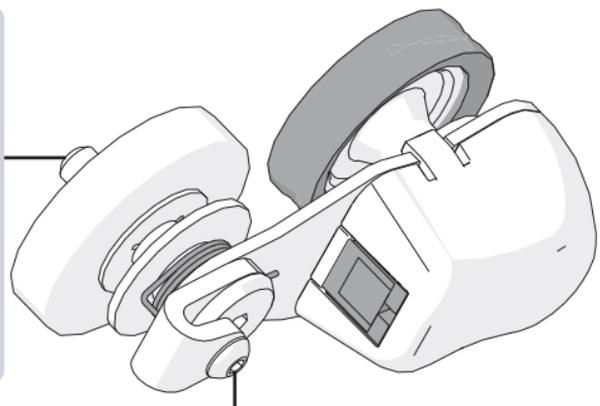
Lock Collar
Tensions the encoder on the track.



Encoder Cable Port

Lower Encoder V5

Encoder Screw
Attaches encoder to carriage (4 mm Allen wrench).



Lock Collar Screw (2.5 mm Allen wrench)

PART: SSE-09-20026 (silver spring)

The upper encoder (silver spring) is installed on the top carriage and tracks the front-and-back movement of the machine.

Contact between the O-ring and the tracks is critical for movement tracking. The encoder must be well-tensioned according to the instructions and installed in the proper place.

PART: SMP-09-15700 (black spring)

The lower encoder (black spring) is installed on the bottom carriage and tracks the side-to-side movement of the machine.

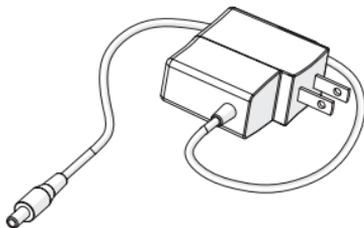
Contact between the O-ring and the tracks is critical for movement tracking. The encoder must be well-tensioned according to the instructions and installed in the proper place.

Cables

Power Adapter

SSE-02-11395

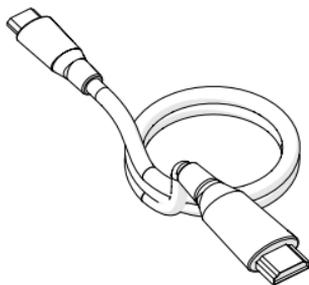
Connects SureStitch to a power outlet.



Screen Cable

SSE-02-14992

Connects the display to the control box.

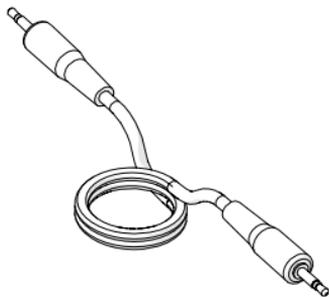


Cables (Continued)

Thread Cutter Cable

SSE-02-14988

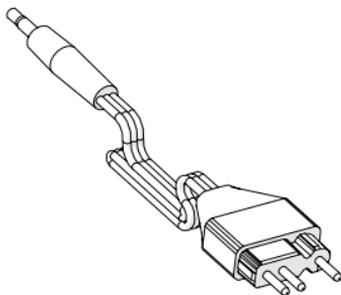
Connects SureStitch to your machine's thread cutter port (not available on all machines).



Foot Pedal Cable "A"

SSE-02-14994

Connects SureStitch to the foot pedal port on some sewing machine models.

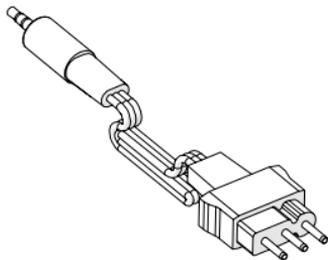


Cables (Continued)

Foot Pedal Cable "B"

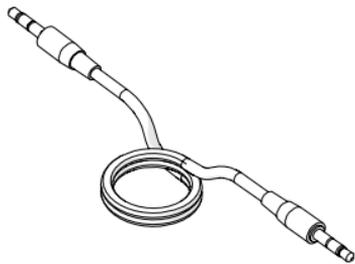
SSE-02-14995

Connects SureStitch to the foot pedal port on some sewing machine models.

**Foot Pedal Cable "C"**

SSE-02-14989

Connects SureStitch to the foot pedal port on some sewing machine models.



Cables (Continued)

Foot Pedal Cable "D"

SSE-02-14990

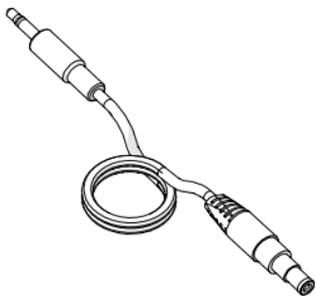
Connects SureStitch to the foot pedal port on some sewing machine models.



Foot Pedal Cable "E"

SSE-02-14991

Connects SureStitch to the foot pedal port on some sewing machine models.



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Sewing Modes

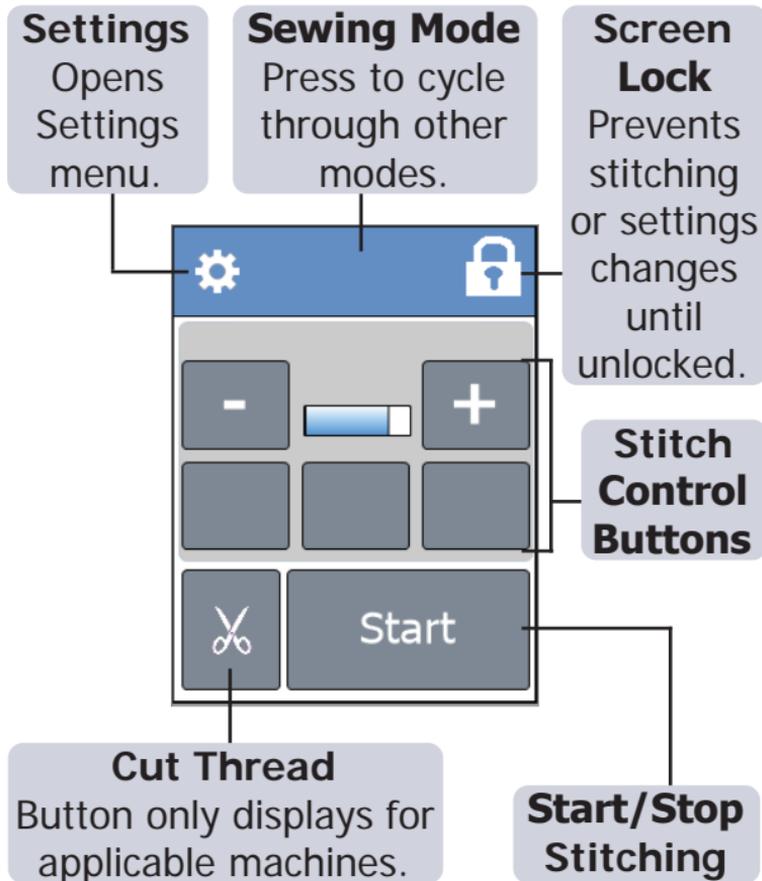
The sewing mode screens control sewing functions. There are two sewing modes:

- **Regulated:** Stitch at a chosen stitch length.
- **Manual:** Stitch at a chosen speed (stitch length is managed by changing the rate that you move the machine over the project).



Sewing Mode Screens

The following options are available from both Regulated and Manual sewing modes:



Regulated Screen

SureStitch boots up in Regulated sewing mode, where the stitch length correlates with a size value of your choice.

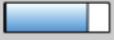
Stitch Length
Set stitch length from 1 to 10.

⚙️ Regulated >
🔒

Stitch Length

-

8



+

4

7

10

✂️

Start

Stitch Length Presets
Press to quickly set length to the number indicated.

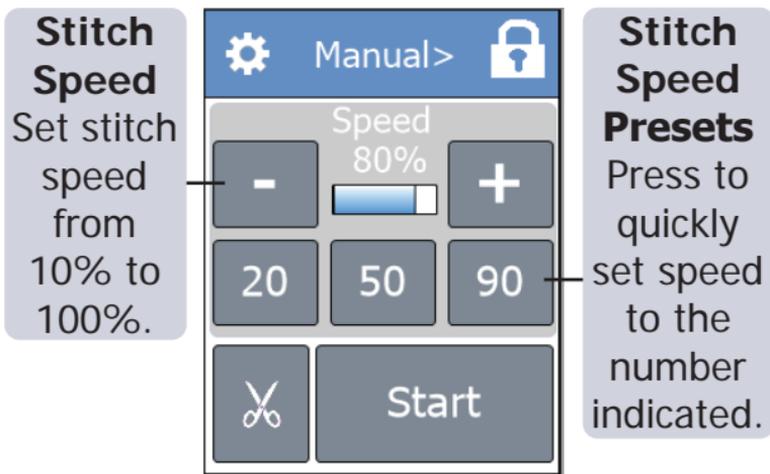
To customize presets:

1. Set desired stitch length.
2. Press and hold one of the three preset buttons.

Note: For information on other buttons, see “Sewing Mode Screens” on page 18.

Manual Screen

The Manual screen controls stitching based upon a set speed (instead of length).



To customize presets:

1. Set desired stitching speed.
2. Press and hold one of the three preset buttons.

Note: For information on other buttons, see "Sewing Mode Screens" on page 18.

Menus

Menus provide access to options, features, and tools.

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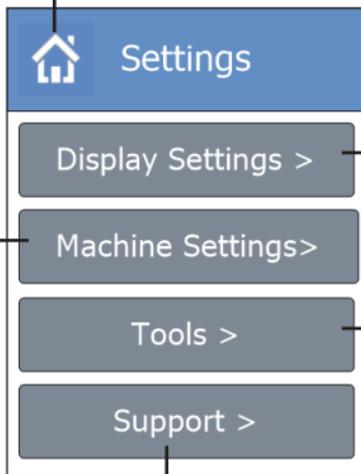
Settings Menu

The **Settings menu** is accessed by pressing the gear icon (⚙️) at the top left of any sewing screen. It provides the following options:

Home

Returns to sewing screen.

Access machine menu, idle speed and over-speed settings. See page 24.



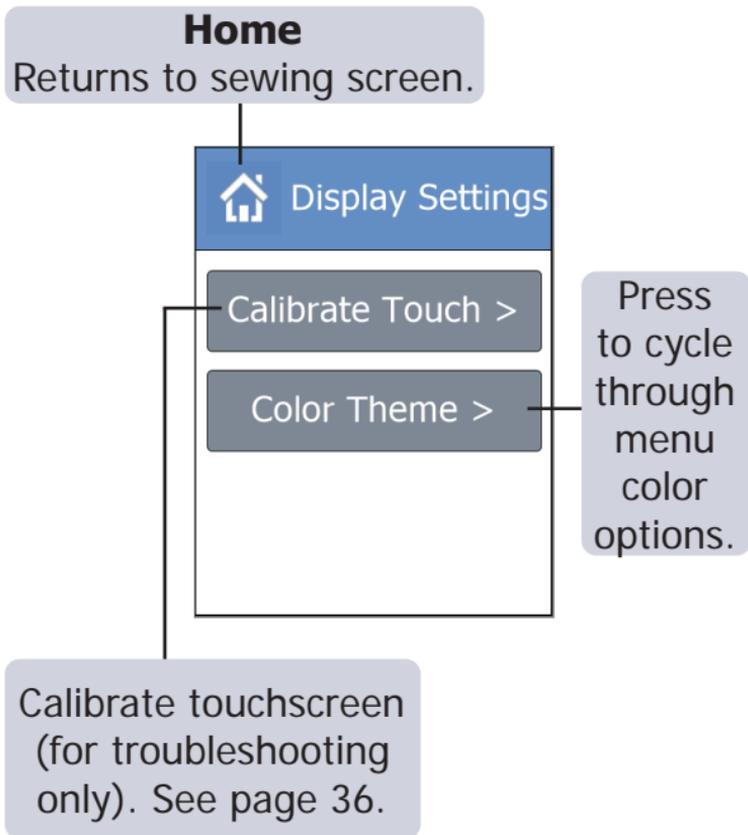
Choose a color theme and calibrate the display. See page 23.

Access measure tool, calculator, and edge warning. See page 25.

View our technical support contact information and SureStitch firmware version information.

Display Settings Menu

Press “Display Settings” in the Settings menu to open the **Display Settings menu**. It provides the following options:



Machine Settings Menu

The **Machine Settings Menu** is accessed by pressing “Machine Settings” from the Settings menu. The following options display:

Home

Returns to sewing screen.



Machine Settings

Select Sewing Machine >

Idle Speed >

Overspeed Sound



On

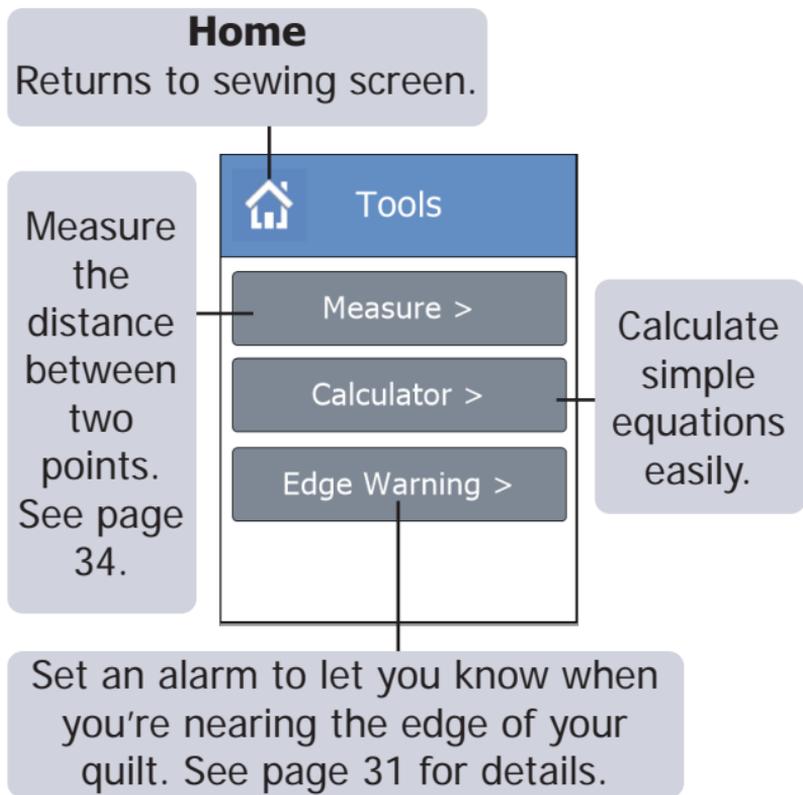
Open the Machine Menu to select your machine. See page 26.

Choose idle speed settings. See page 28.

Sounds an alarm when the machine is being moved too quickly for stitch regulation. See page 30 for details.

Tools Menu

The **Tools menu** is reached by selecting “Tools” from the Settings menu. It provides the following options:

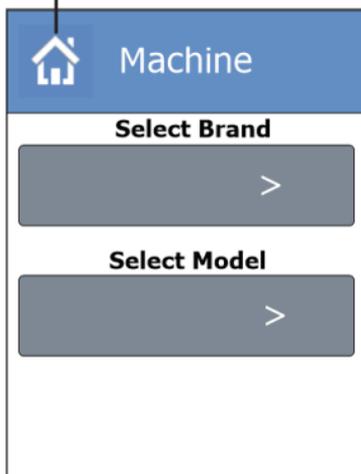


Machine Menu

To reach the **Machine Menu**, press the Settings icon. Open “Machine Settings,” and then choose “Select Sewing Machine.”

Home

Returns to sewing screen.



Here you can select your sewing machine. Make sure your sewing machine is off (or that SureStitch is NOT plugged in) before setting your machine. See “Selecting Your Machine” on page 41.

Tools, Options, and Features

SureStitch provides many tools to assist with quilting your masterpiece.

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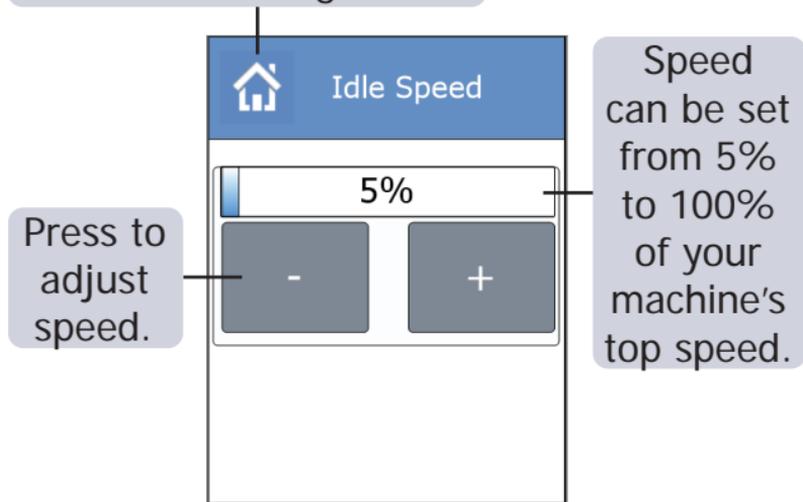
Idle Speed

The **Idle Speed** settings are accessed in the Machine Settings menu. Press the Settings Icon (⚙️) and choose "Machine Settings."

"Idle speed" is the speed that your machine will stitch at while you're not actively moving your machine around in regulated stitching.

Home

Returns to sewing screen.



Idle Speed (Continued)

All sewing machines are a little different, and performance may vary:

- Some machines may not idle (stitch in place in regulated mode) unless the idle speed percentage is up higher.
- Other machine features, like “tortoise” and “rabbit,” may alter how your settings work.

Overspeed

The **Overspeed** sound can be turned on or off from the Machine Settings Menu. Press the Settings Icon (⚙️) and select "Machine Settings."

Press to turn sound on or off.



If you move the machine too quickly across the frame, the machine motor won't be able to stitch quickly enough to maintain stitch regulation. The overspeed sound lets you know that you are moving too fast.

Edge Warning

The **Edge Warning tool** can be reached by pressing “Tools” from the Settings Menu (⚙️), and choosing “Edge Warning”.

Home

Returns to sewing screen.



The edge warning can be set to go off within a half inch or inch of the quilt edge.

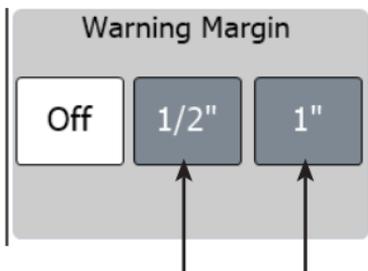
The edge warning emits an alarm when your machine is reaching the boundaries you've inputted. This can help remind you when you're about to bump into the frame's

Edge Warning (Continued)

rails. You can also set different boundaries, such as around a particular block or section of the quilt.

To set the boundaries for the edge warning alarm, take the following steps:

- 1 Choose whether you want the alarm to sound when you're within an inch or half an inch of the boundary.



Edge Warning (Continued)

- 2 Move your machine to the upper right boundary of your quilt. Press "Upper Left."



- 3 Slide the machine across the frame to the bottom right corner of your quilt. Press "Lower Right."



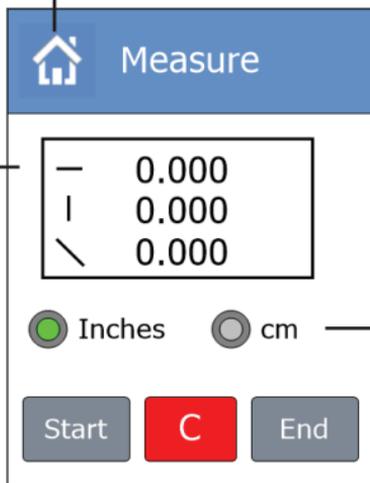
Measure Tool

Use SureStitch to measure the distance between two points. The **Measure tool** is accessed by pressing "Tools" from the Settings Menu (⚙️) and choosing "Measure."

Home

Returns to sewing screen.

Displays the horizontal, vertical, and diagonal measurements between two points.



Press to display the measurement results in inches or centimeters.

Measure Tool (Continued)

To use the measuring tool, take the following steps:

- 1 Choose whether you want the result to display in inches or centimeters.



- 2 Move your machine to the point from which you wish to measure. Press "Start."



Note: If you hit "Start" in the wrong spot, hit "C" to clear your start point.

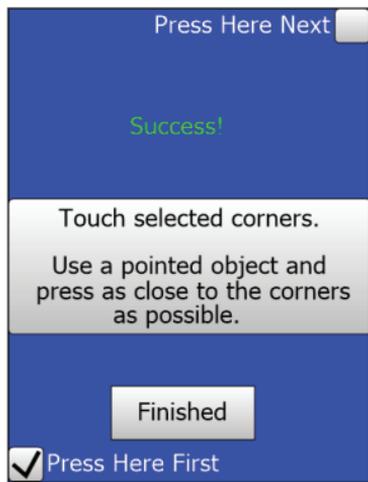
- 3 Go to the end of the place you wish to measure and press "End." Your results will display.



Screen Calibration

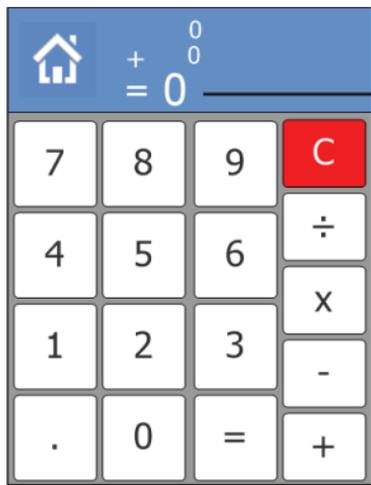
To access Screen Calibration, select “Display Settings” from the Settings menu (⚙️). Then choose “Calibrate Touch.”

This syncs up touch sensors with on-screen images. If buttons are offset or are difficult to press, follow the directions on the screen.



Calculator

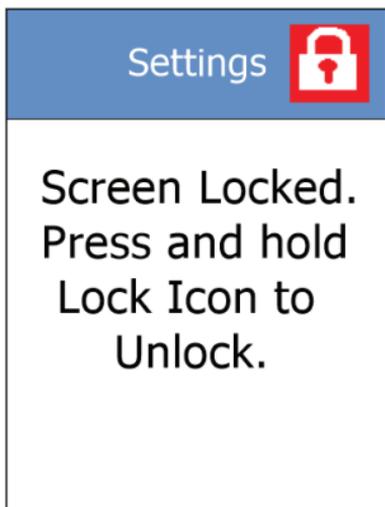
To access the **Calculator**, select “Tools” from the Settings menu (⚙️), and choose “Calculator.”



Result displays here.

Lock Screen

The Lock Screen is accessed by pressing the lock icon at the top right of sewing mode screen.



While in this screen, it is not possible to sew or modify settings.

Support

This screen provides the Grace Company support email and phone number, as well as SureStitch firmware information.



Please send us an email or give us a call with any questions or concerns about your product.

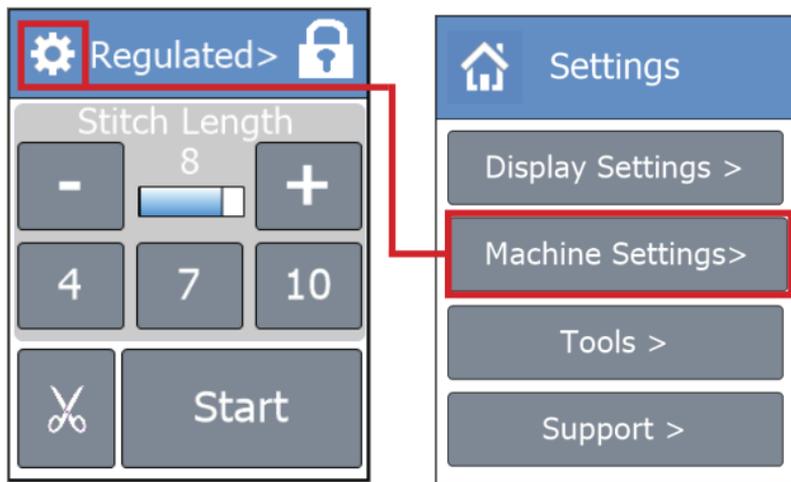
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Selecting Your Machine

Warning: Power off your sewing machine before taking these steps.

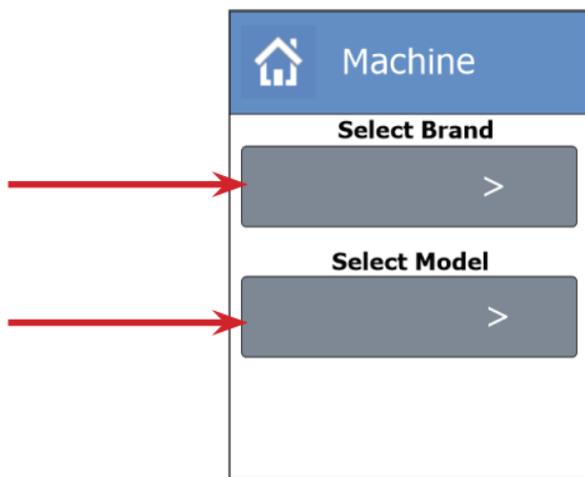
- 1 Press the **Settings** icon and choose **Machine Settings** from the **Settings** menu.



The Machine menu will display.

Selecting Your Machine (Continued)

- 2 Choose the brand of your machine, and then select the model from the model drop-down.



- 3 When finished, press the **Home icon** at the top to close out of the Machine menu.

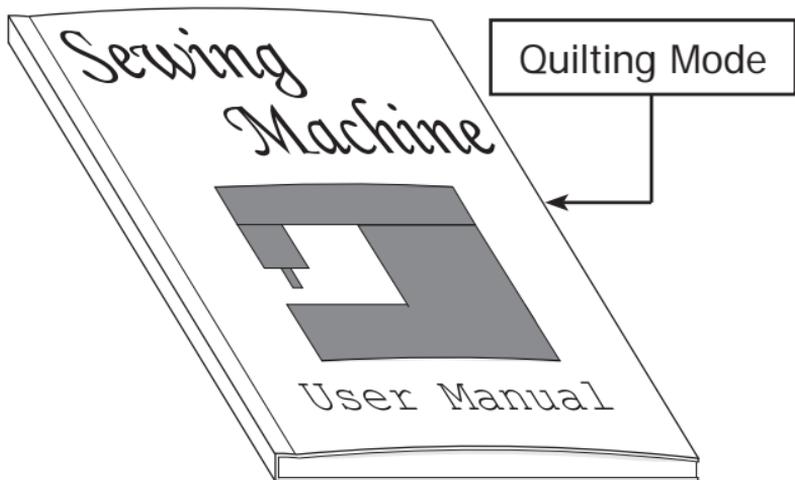


Step 1 - Preparing your Machine

Take the following steps every time you're about to begin sewing with SureStitch.

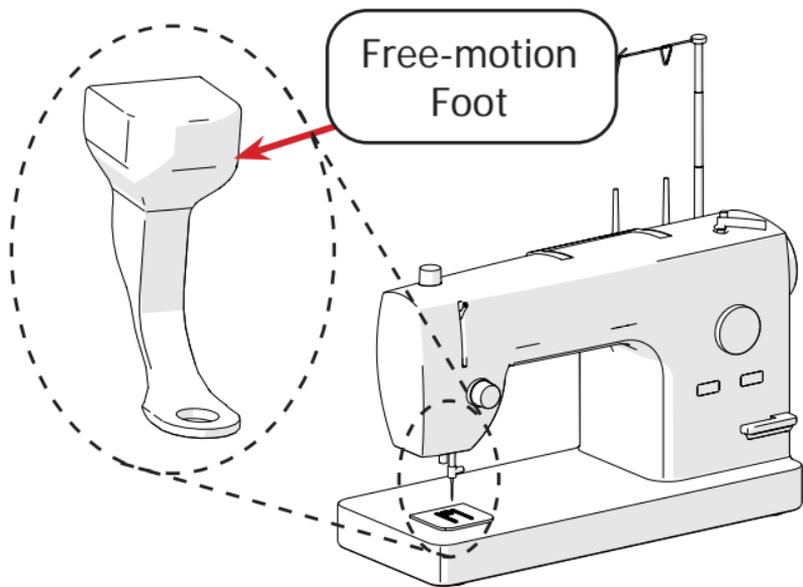
- 1 Switch to **quilting mode** if available on your machine. For instructions on switching between machine modes, see your **sewing machine user manual**.

Note: Not all sewing machines will have this mode, but must be used if available.



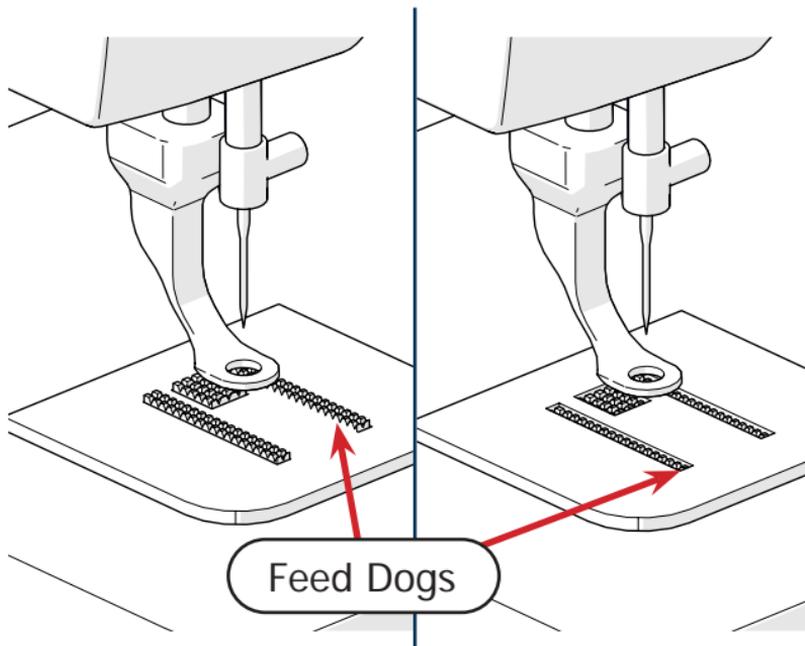
Step 1 - Preparing Your Machine (Continued)

- 2 Swap out your presser foot for a **free-motion** or **embroidery presser foot**.



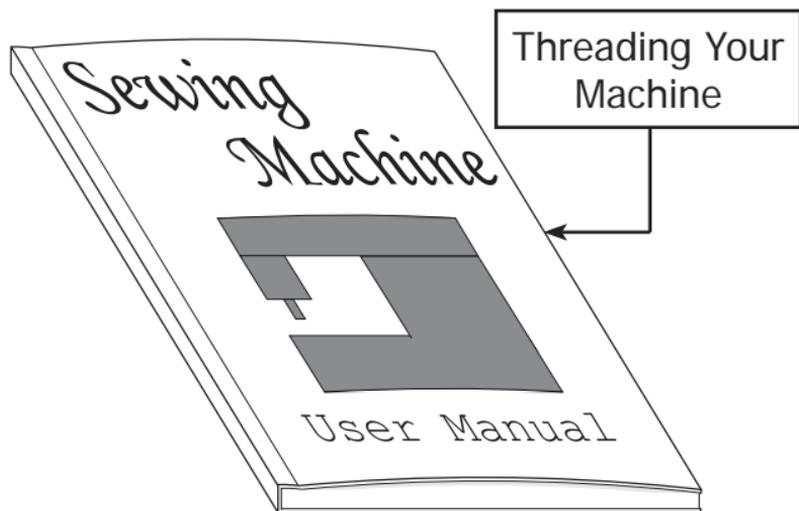
Step 1 - Preparing Your Machine (Continued)

- 3 Lower your machine's **feed dogs** so they don't catch on the quilt backing.



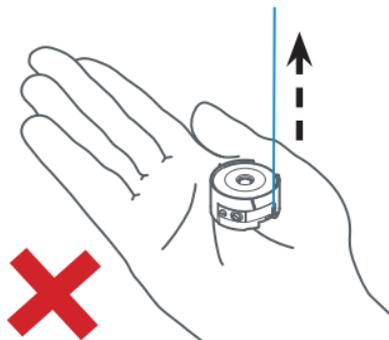
Step 1 - Preparing Your Machine (Continued)

- 4 Thread your sewing machine (see your machine's manual for details).



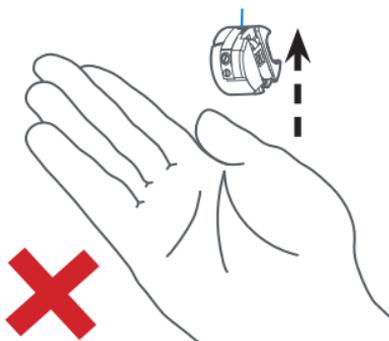
- 5 Test your bobbin's thread tension:
 - a. Place the bobbin case on your palm, on it side.
 - b. Pull up on the thread.
 - c. If the tension is correct, the bobbin case will stand up but not lift up out of your palm.

Step 1 - Preparing Your Machine (Continued)



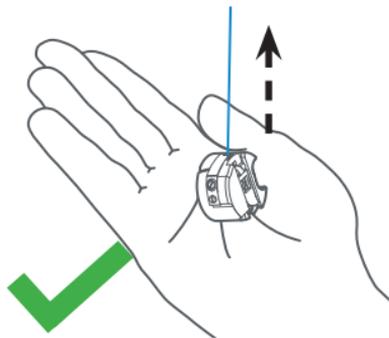
Too Little Tension

- Thread runs freely from bobbin case.
- Case remains in palm, on its side.



Too Much Tension

- Thread unwinds slowly.
- Case lifts out of palm

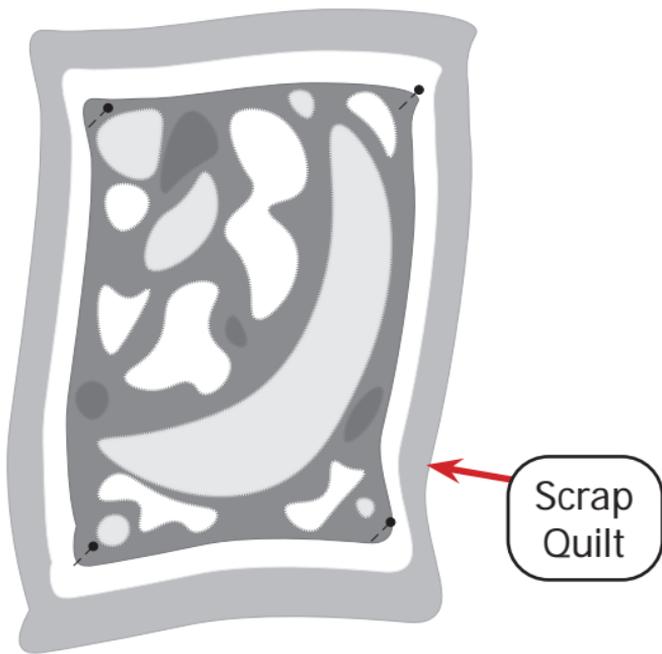


Correct Tension

- Thread runs freely from bobbin case.
- Case remains in palm but lifts to vertical position.

Step 1 - Preparing Your Machine (Continued)

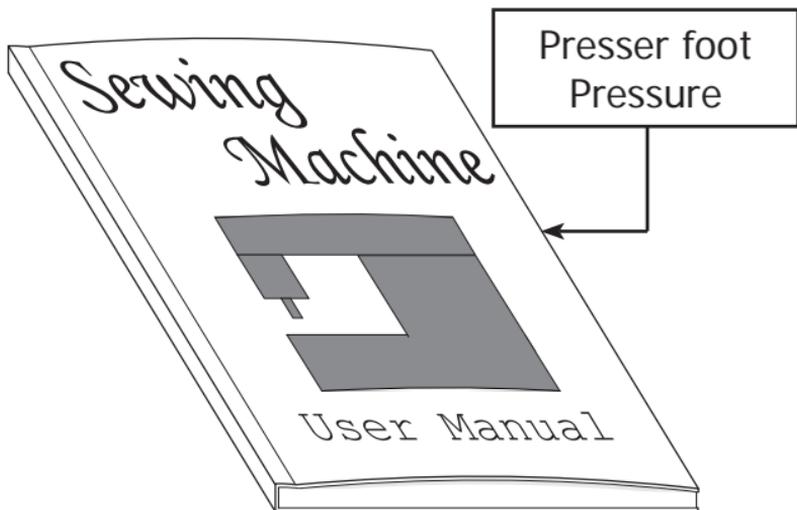
- 6 Follow the instructions in your frame manual to install scrap material onto the frame for practice.



Note: Electronic copies of Grace Company instruction manuals can be found at www.graceframe.com.

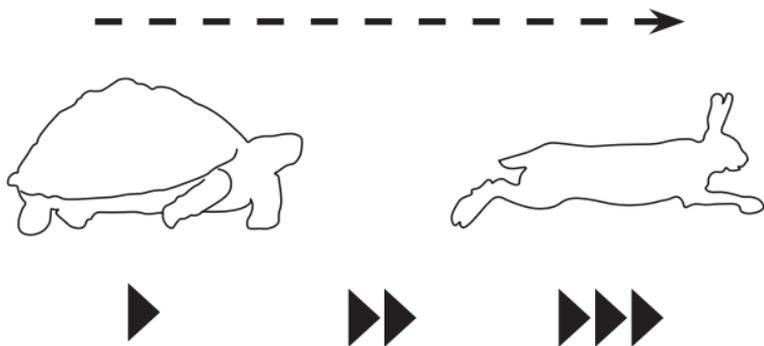
Step 1 - Preparing Your Machine (Continued)

- 7 Check with your machine manual to set the presser foot pressure to match the thickness of the fabric you're working with.



Step 1 - Preparing Your Machine (Continued)

- 8 If your machine has a tortoise (low speed) and rabbit (high speed) mode, switch to rabbit mode.



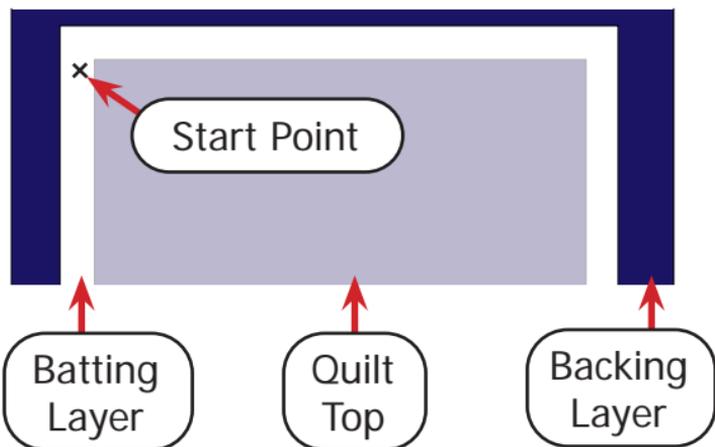
- 9 Clean your work area:

- Check over quilting area and clear the space of stray objects.
- Wipe down top and bottom carriage wheels with a lint-free cloth to reduce debris.
- Wipe down the bottom carriage and frame track with lint-free cloth.

Step 2 - Basting

It'll take some time to get used to regulated stitching. Practice the remaining "Get Started" steps on a scrap quilt before trying them out on your work-in-progress.

- 1 Position your machine over the top left corner of your scrap quilt, over the **batting layer**.



- 2 Practice a baste stitch across the top of the scrap quilt. This can be done in Regulated or Manual sewing modes.

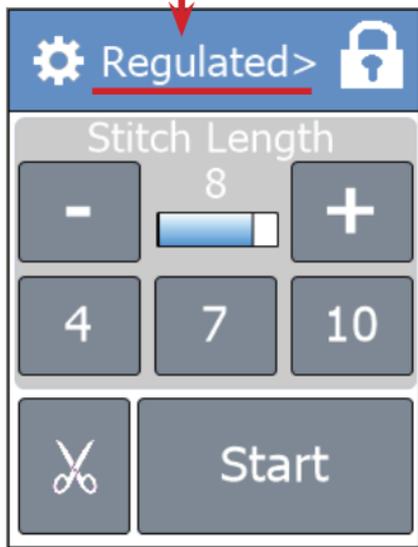
Step 2 - Basting (Continued)

Basting in Regulated Mode

SureStitch boots up in Regulated sewing mode automatically. In this mode, SureStitch tracks the movement of the sewing machine and “regulates” the length of each stitch.

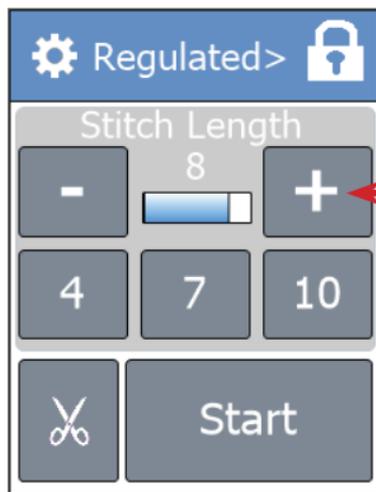
Sewing Mode:

Displays at the top of the screen.



Step 2 - Basting (Continued)

- a Press [+] to increase the stitch length. Larger baste stitches will be easier to pick out later.



**Stitch
Length**

Getting Started

- b Press [Start] to begin stitching! Steadily move your machine across the top of the quilt, where you want the baste line to be.

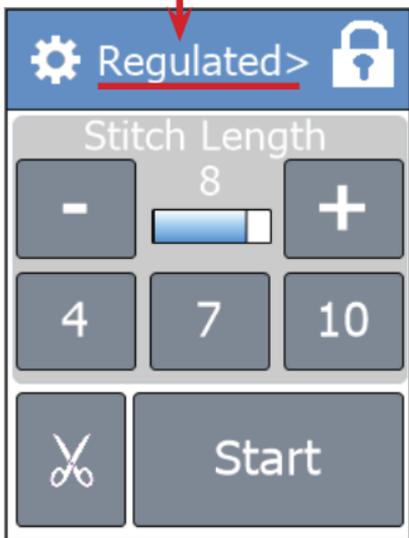
Step 2 - Basting (Continued)

Basting in Manual Mode

SureStitch boots up in Regulated sewing mode automatically. Press the **Sewing Mode** to cycle to Manual Mode.

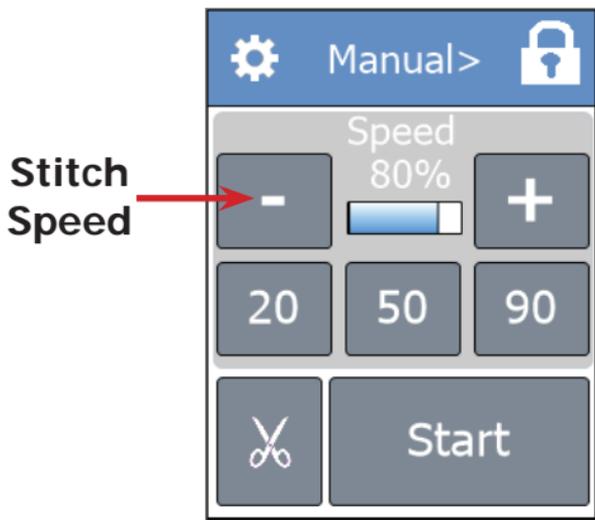
Sewing Mode:

Displays at the top of the screen. Press to cycle to other modes.



Step 2 - Basting (Continued)

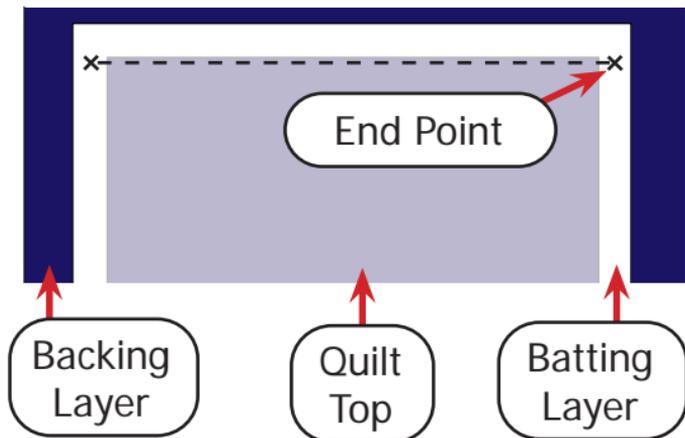
- a Press [-] to decrease the **stitch speed**. It is easier to create large basting stitches on a slow stitch speed.



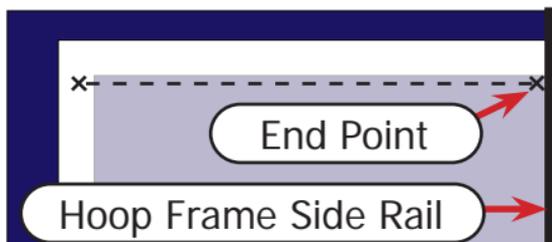
- b Press [Start] to begin stitching! Steadily move your machine across the top of the quilt, where you want the baste line to be. The faster you move the machine, the longer the stitches become.

Step 2 - Basting (Continued)

- 3 Baste across the top of your quilt to the other side of the batting.



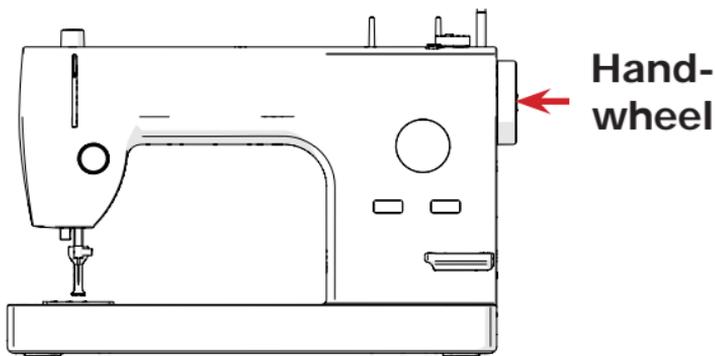
Note: On hoop frames the right side of your quilt may drape off the end of the frame. Just baste as far to the right as you are able.



Step 3 - Tie-offs and Starts

Tie-offs and starting knots are essential to the long-term durability of your quilt. A traditional tie-off (or starting knot) is created by stitching in place 3 times.

- If your machine has a single-stitch button, press it three times to create a tie-off.
- If your machine has a half-stitch (needle down/needle up) button, press it 6 times to create a tie-off.
- You can also use your machine's handwheel to cycle the needle down and up three times.



Step 4 - Pull Up Bobbin Thread

After cutting the thread from a tie-off, there will be a tail on top of the quilt and underneath the quilt (from where you cut the bobbin thread).

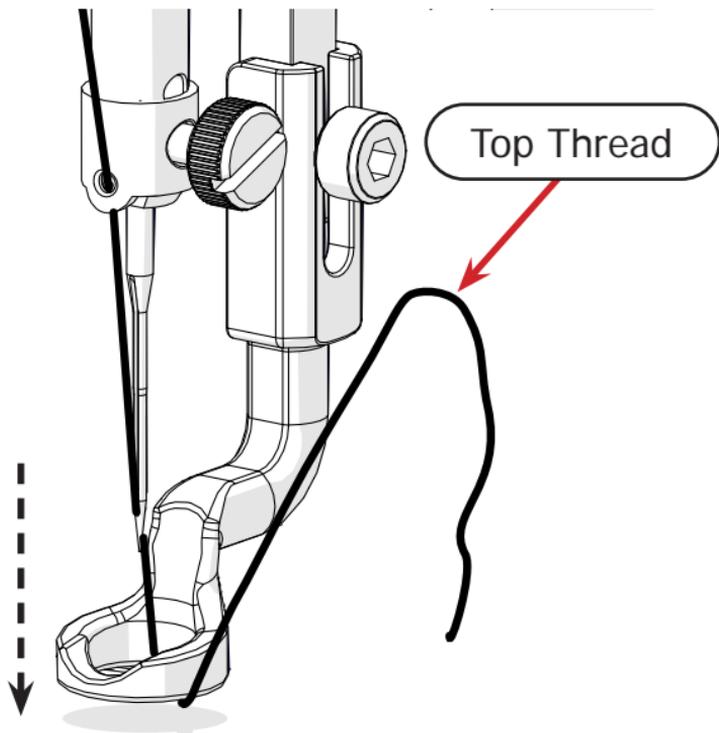
It can be tedious to keep up with trimming down the tails from the bobbin thread on the underside of the quilt. Pulling the bobbin thread up to the surface of the quilt when starting out or tying off can make thread tails much more manageable.

Take the following steps to pull up your bobbin thread. These steps can be done at the start of stitching.

- 1 Position your needle over the quilt where you wish to start or end your stitches.

Step 4 - Pull Up Bobbin Thread (Continued)

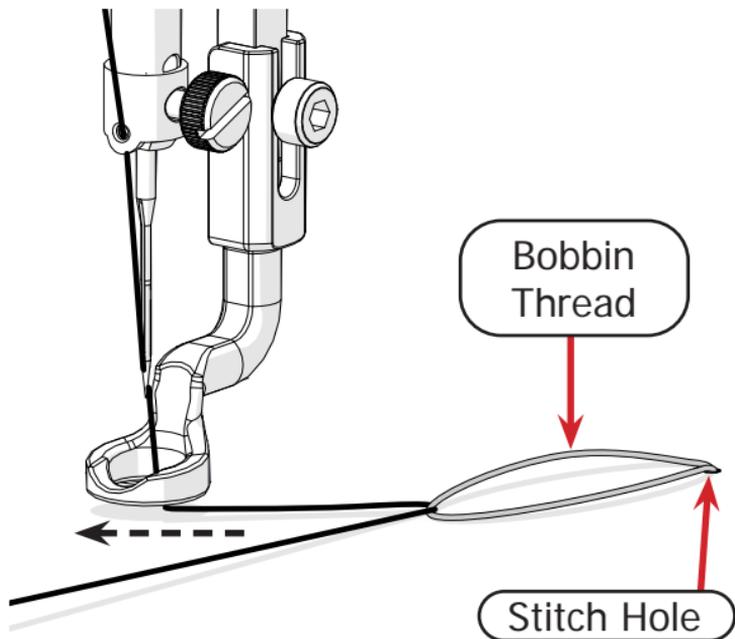
- 2 Hold the tail of the top thread up, away from the fabric. Jog the needle down and up once.



Note: Appearance of needle area will vary by machine model.

Step 4 - Pull Up Bobbin Thread (Continued)

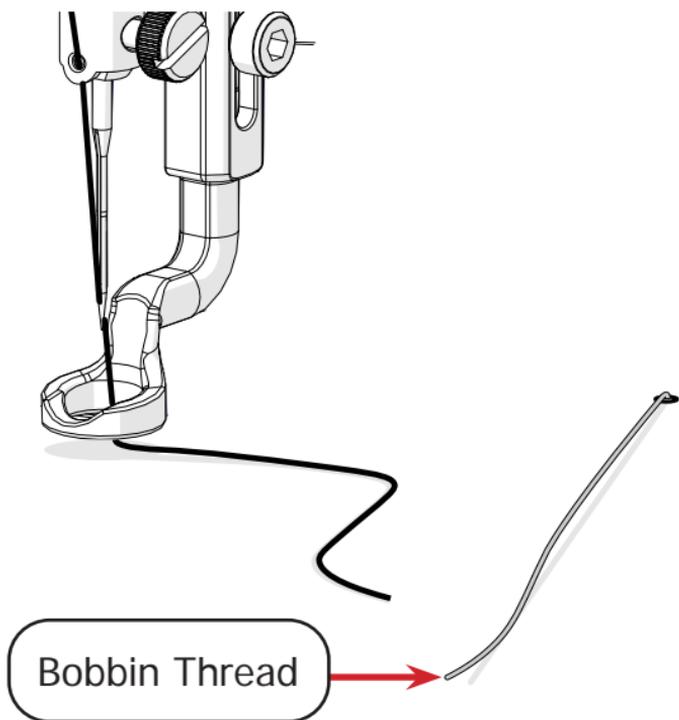
- 3 Continue to hold the top thread tail, and move the machine away from the stitch you made.



The top thread will pop out of the **stitch hole**, pulling up a loop of the **bobbin thread**.

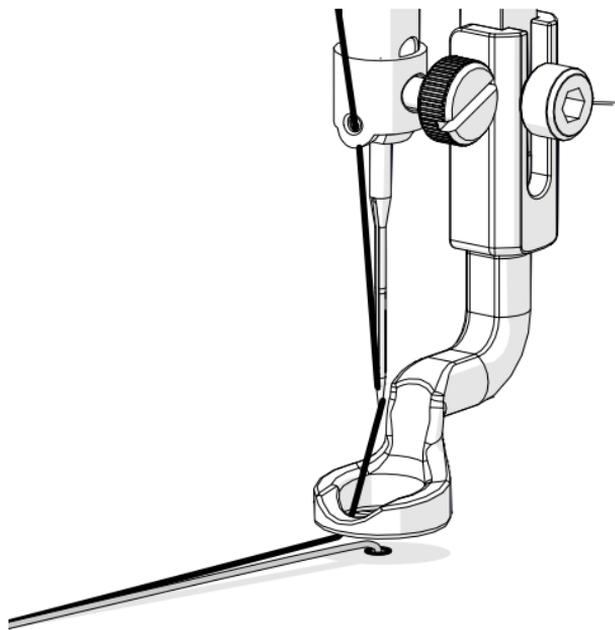
Step 4 - Pull Up Bobbin Thread (Continued)

- 4 Use your finger to pull on the loop of **bobbin thread** until the tail comes up from underneath the fabric.



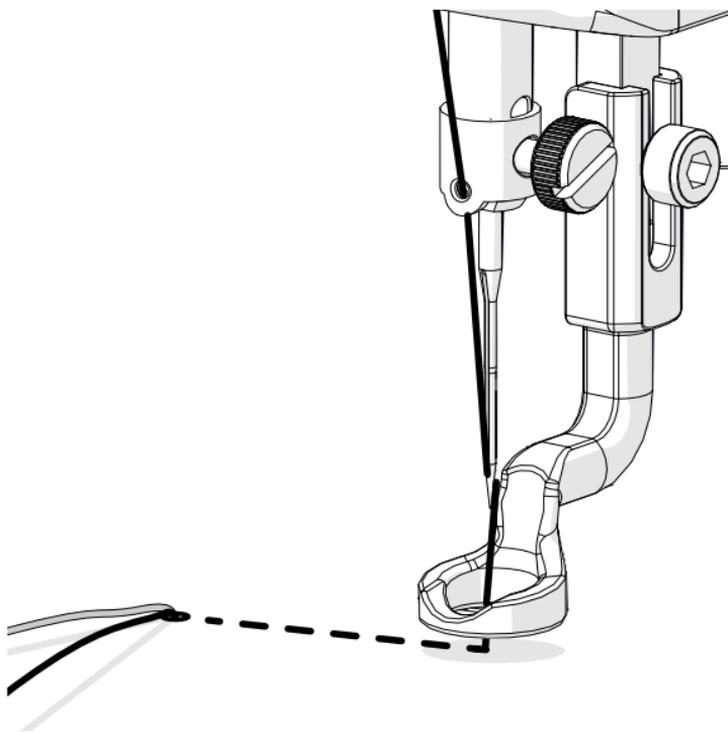
Step 4 - Pull Up Bobbin Thread (Continued)

- 5 Now hold both thread tails, and reposition the machine back to the starting point.



Step 4 - Pull Up Bobbin Thread (Continued)

- 6 Start stitching from this point. Both the bobbin and top thread tail are at the top of the quilt, where they can be easily trimmed away.



Step 5 - Using Manual Mode

In manual sewing mode, stitching occurs at a speed of your choosing. Instead of controlling stitching speed with a foot pedal, select the speed you want to work in on the display. For details on the screen options, see “Manual Screen” on page 20.

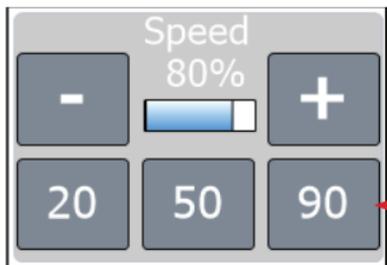


Manual stitching has a smoother, less choppy feel than regulated stitching. This is helpful for making sweeping curves.

Step 5 - Using Manual Mode (Continued)

It's also useful for areas that require irregular stitch length or stippling.

- 1 Stitch a simple pattern into the practice quilt, such as your name in cursive.
- 2 Remember, in this mode the length of your stitches changes based on the speed the machine moves across the frame. Try moving more quickly and more slowly and compare your stitches.
- 3 Play around with the speed setting. Over time, you will grow more familiar working in a few specific speeds. You can set presets to these speeds rather than using [-] and [+] to reach them.



**See page
20 for
instructions
on setting
presets.**

Step 5 - Using Manual Mode (Continued)

- 4 Until you get the hang of stitching in Manual mode, your stitch length will probably vary significantly. Be patient with yourself, and don't forget to have fun!

Step 6 - Using Regulated Mode

In Regulated mode, the speed of stitching is adapted to your movements so that every stitch is the desired size. For details on the screen options, see “Regulated Screen” on page 19.



While regulated stitching can be used for both curves and straight lines, it excels at corners and angular shapes.

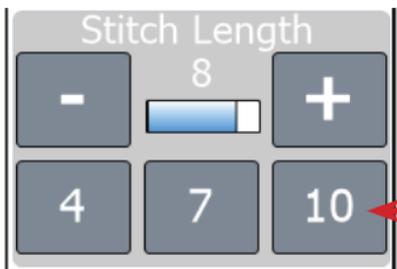
Step 6 - Using Regulated Mode (Continued)

- 1 Stitch out your name or a simple pattern.
- 2 Try out different stitch lengths. Every sewing machine is a little different, so test out different lengths to see what looks best to you.



← **Stitch Length**

- 3 Over time, you will grow more familiar working in a few specific lengths. You can set presets to these lengths rather than using [-] and [+] to reach them.



**See page
19 for
instructions
on setting
presets.**

Troubleshooting

Troubleshooting Directory	70
General Troubleshooting Steps	74
Encoder Troubleshooting Steps.....	76

Troubleshooting Directory

Concern	Cause
SureStitch won't turn on.	Loose display or power cables.
Screen buttons not working.	Screen is not calibrated.
Some of my stitches are long.	Encoder issue.
My machine won't start sewing or the stitch regulation isn't working.	Machine requirements not met or machine settings are not adjusted to work with SureStitch.

Troubleshooting Directory (Continued)

Correction

- Check that the display cable is firmly plugged in to the display and the control box.
- Check that the power cable is firmly plugged into the control box and into a functional power outlet.
- Calibrate the screen. See page 36 for details.
- Follow the guide for troubleshooting encoders on page 76.
- Check your sewing machine display for error messages.
- Check your sewing machine manual for information on sewing modes.
- Use the correct foot (page 44).
- Additional help: https://www.graceframe.com/en/accessories/surestitch_elite/compatibility

Troubleshooting Directory (Continued)

Concern	Cause
Quilt backing is snagging or getting roughed up.	Feed dogs are up.
Machine is stitching slowly.	<ul style="list-style-type: none">• Idle speed is set too low.• Machine is set to "tortoise" mode.
My machine isn't listed in "Choose Your Machine."	Machine is not compatible with Sure Stitch.

Troubleshooting Directory (Continued)

Correction

- Follow your machine's instruction manual on lowering the feed dogs.
- Increase the idle speed in the idle speed screen (see page 28).
- Check your machine speed settings, including setting it to high speed mode if that is an option.

General Troubleshooting Steps

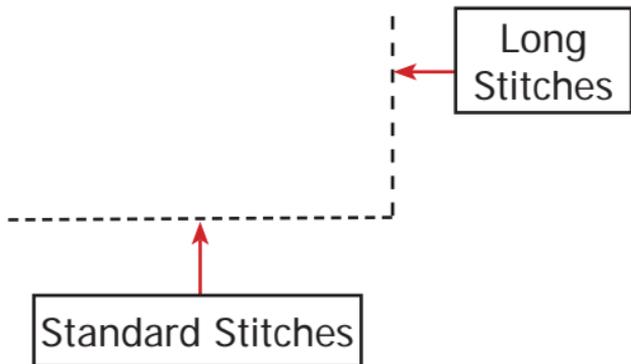
- 1 Take detailed notes the problem and include pictures whenever possible. Pay special attention to error messages displayed on your machine. This will help technical support determine what has gone wrong if you end up needing to call in.
- 2 If the problem is with the electronic equipment (the screen, for example), turn the equipment off and then back on.

General Troubleshooting Steps (Continued)

- 3 For stitch quality problems that aren't listed in the troubleshooting directory on page 70, take the following steps:
- Check your frame's rail alignment.
 - Check your machine's presser foot height.
 - Check your needle for bends or burrs.
 - Check your bobbin thread tension.
 - Check your top thread tension.
 - Confirm your needle size is correct for the thread and fabric that you are using.
 - Confirm that your quilting area is clear of debris.
 - Wipe down your frame tracks and carriage wheels with a lint-free cloth.

Encoder Troubleshooting Steps

Encoder issues manifest in problems regulating stitch size. Most often, stitches going in one direction (either side-to-side or front-to-back) will be longer than they should.



Causes:

- Encoder came unplugged.
- Encoder is off the track.
- Encoder not tensioned properly.
- Encoder mis-assembled or spring is broken.

Encoder Troubleshooting Steps (Continued)

Correction

- 1 Check that both encoder cables are fully plugged into SureStitch and an encoder.
- 2 Make sure the O-rings on both encoders are on the track. When the top and bottom carriages are moved, the O-ring should ride the track like a wheel.
- 3 Check that the lock collars on both encoders point upward. If they do not, twist the lock collars to point up and use a 2.5 mm Allen wrench to tighten the lock collars in place.
- 4 Gently lift the O-ring off the track a couple centimeters. It should resist being picked up. If it does not, the encoder may not be assembled correctly, or the spring may be broken. Call (800) 264-0644 to speak to a Grace Company technical support representative for assistance.

The Grace Company
Phone: 1-800-264-0644
www.graceframe.com

