Q'nique 19



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Version 1.3

MADE BY Grace

Important Safety Instructions

Please read all these safety instructions before using this machine.

DANGER - To reduce the risk of electric shock, do not leave the machine unattended when plugged in. Always unplug this machine from the electric outlet immediately after using and before cleaning.

WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons:

- Do not allow this machine to be used as a toy. Pay close attention when this machine is used by or near children.
- Use this machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained within this manual.
- Never operate this machine if it has a damaged cord or plug, it is not working properly, or it has been dropped, damaged, or dropped into water. Return the machine to the nearest authorized dealer or service center for examination, repair, or electrical or mechanical adjustment.
- Never operate the machine with any air openings blocked. Keep ventilation openings of the quilting machine free from the accumulation of lint, dust, and loose cloth.
- Never drop or insert any object into any opening.
- Do not use outdoors.
- Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
- To disconnect, turn all controls to the off position, then remove the plug from the outlet by grasping the plug. Do not pull on cord.
- Keep fingers away from all moving parts. Special care is required around the quilting machine needle.
- Always use the proper needle plate. The wrong plate can cause the needle to break.
- Do not use bent or damaged needles.
- Do not pull or push fabric while stitching. It may deflect the needle, causing it to break.
- Switch the quilting machine off when making any adjustments in the needle area, such as threading the needle, changing the needle, or changing the presser foot, etc.
- Always unplug the quilting machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.

If using this machine in an area with inconsistent input power, it is recommended the surge protector is connected to a backup battery supply.

Connect this machine to a properly grounded outlet only. See "Grounding Instructions" (next page).

SAVE THESE INSTRUCTIONS

Do not discard box or packaging

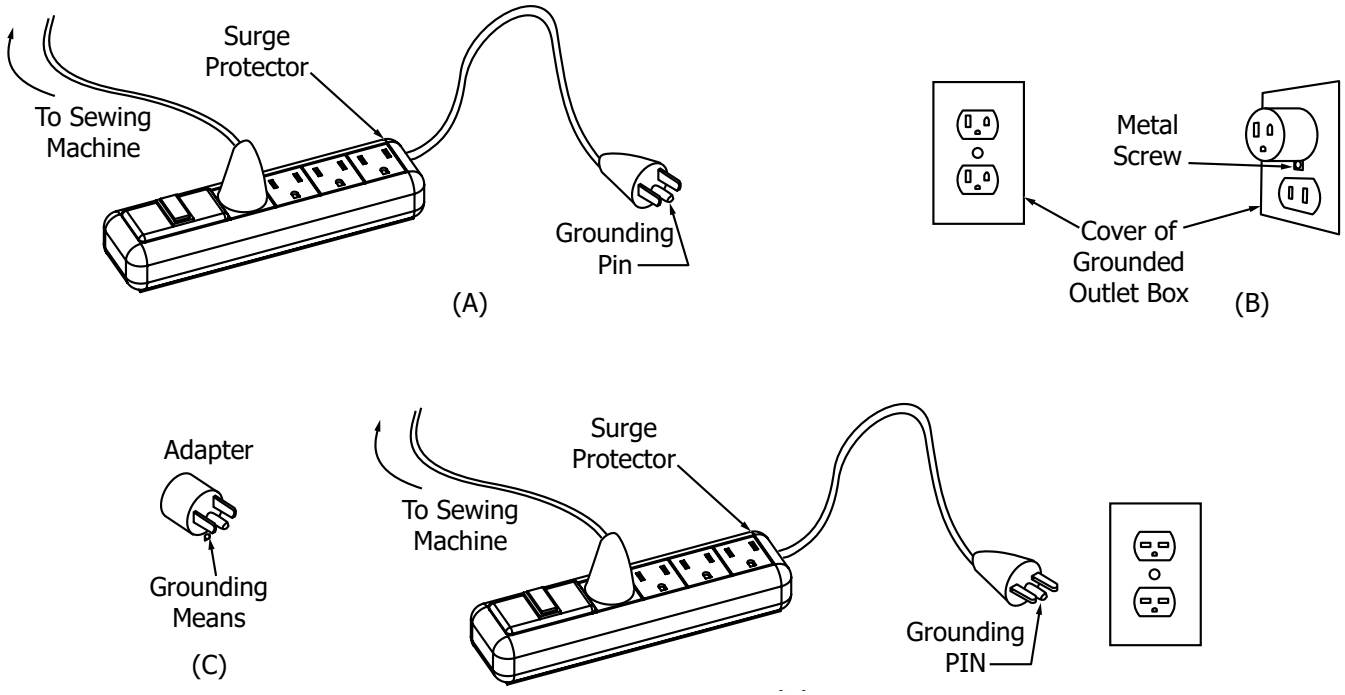
GROUNDING INSTRUCTIONS

This product must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord that has an equipment-grounding conductor and a grounding plug. Plug the cord from the quilting machine into a surge protector. The surge protector must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER - Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green, with or without yellow stripes, is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded.

Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

Grounding Methods



This product is for use on a nominal 120 V circuit, and has a grounding pin as illustrated above (A). A temporary adapter, shown in (B) and (C), may be used to connect this plug to a 2-pole receptacle (B) if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by the metal screw.

A qualified electrician should be consulted if there is any doubt as to whether an outlet box is properly grounded.

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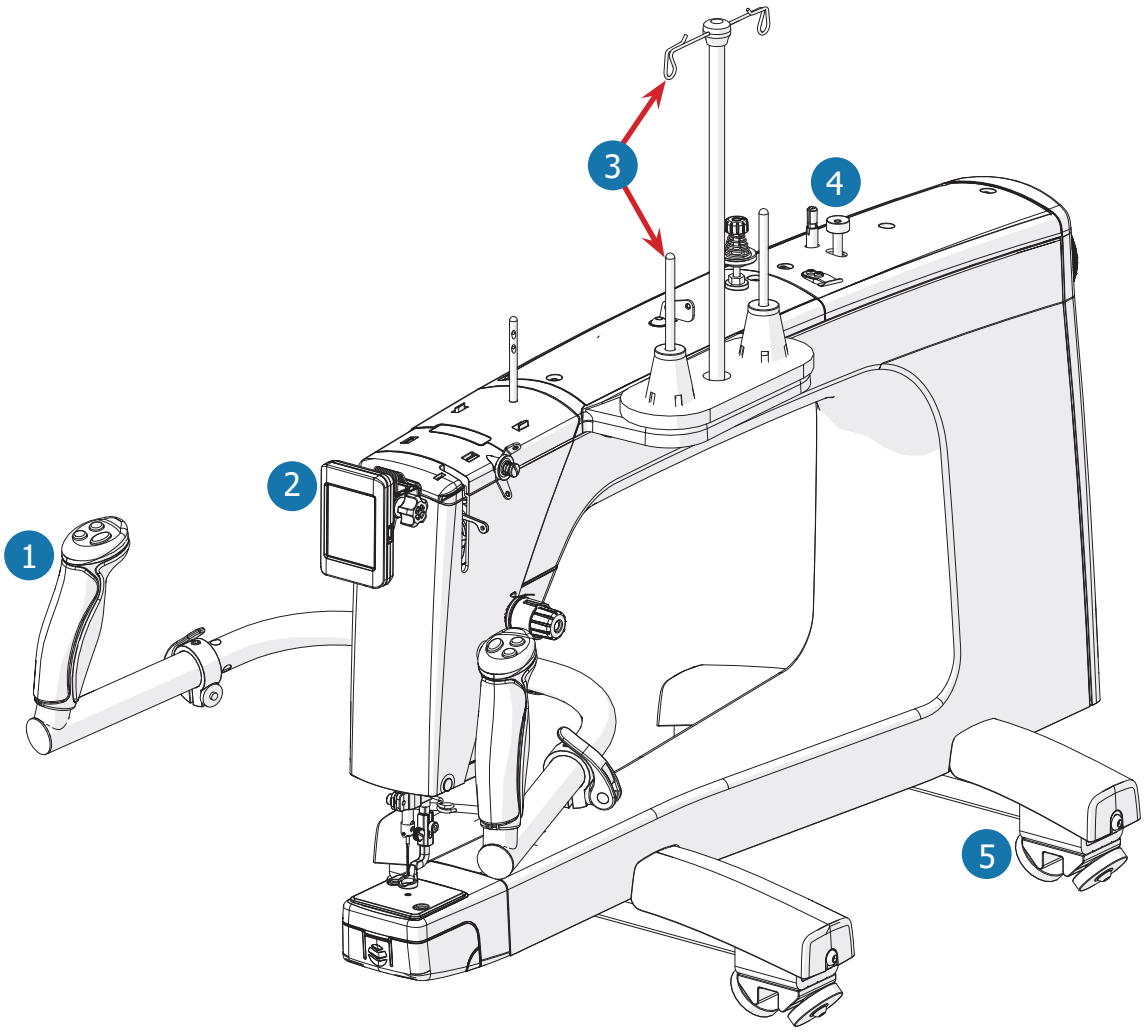
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Machine Specifications



Product Dimensions

Body:

- Height: 680.2 mm, or 26.8 inches
- Width: 395.4 mm, or 15.6 inches
- Length: 831.9 mm, or 32.8 inches
- Weight: 15.9 kg, or 35 lbs

Quilting Arm:

- Height: 224.8 mm, or 8.9 inches
- Width: 482.6 mm, or 19 inches

Electrical

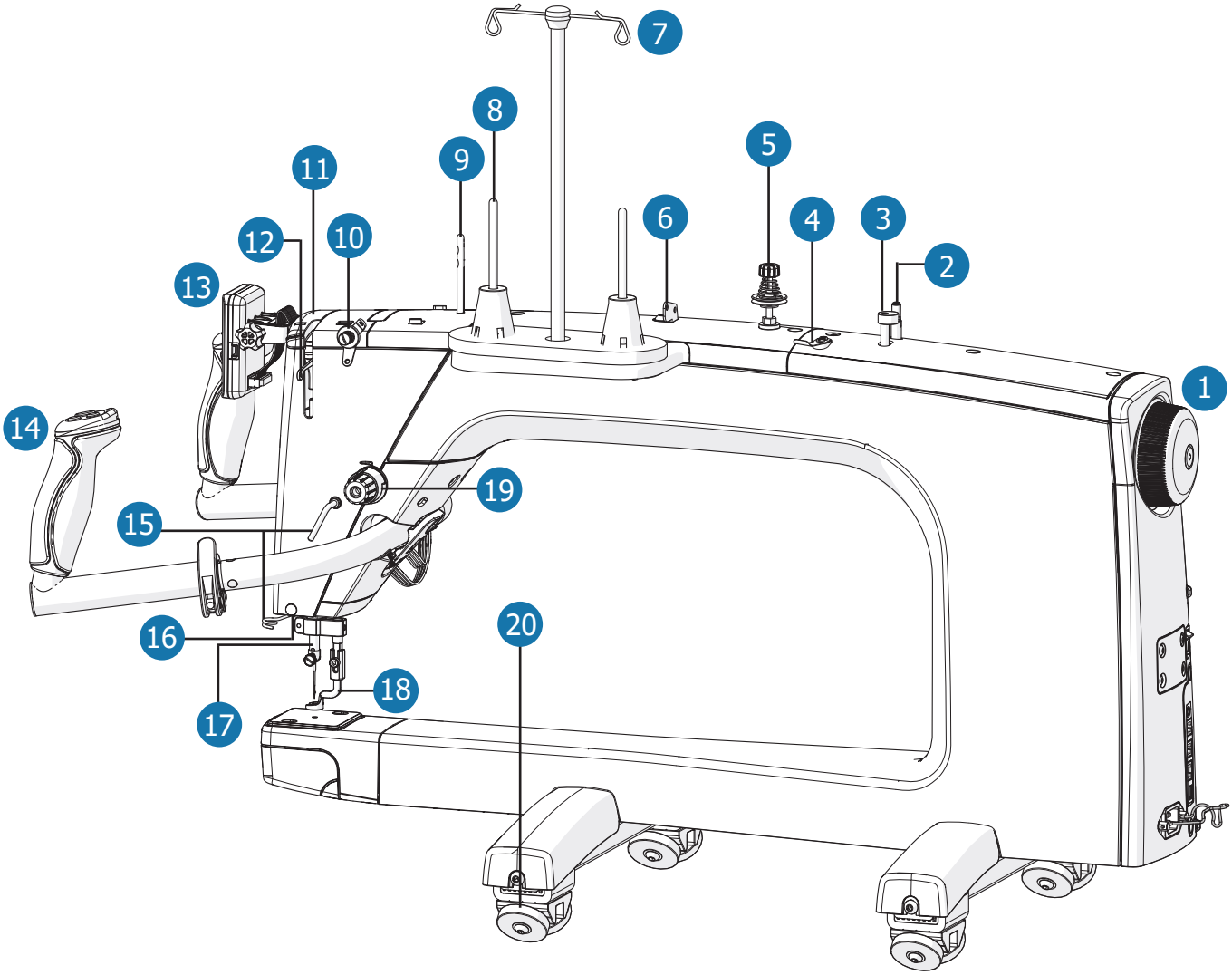
- Input Voltage: 110-220 VAC
- Peak Power Consumption: 300 W

Features

1. Adjustable handles for efficient, extended use (page 17)
2. 2.4” Touch Display (page 19)
3. Dual thread mast and stands for quilting and winding bobbin at the same time
4. Built-in bobbin winder (page 30)
5. Dual wheels for stability (page 13)
- Stitcher per minute (SPM) range of 90 to 2000 stitches
- Regulated stitching

Machine Layout

Quilting Machine (Side View)



1 **Hand Wheel**
Raises and lowers the needle bar.

2 **Bobbin Stand** (page 30)
Holds the bobbin for winding.

3 **Bobbin Cam** (page 30)
Starts and stops bobbin winding.

4 **Bobbin Thread Cutter** (page 30)
Cuts wound bobbin thread.

5 **Bobbin Thread Tensioner** (page 30)
Tensions thread when winding a bobbin.

6 **Bobbin Thread Guide** (page 30)
Positions thread for winding a bobbin.

7 **Thread Mast** (page 20)
Guides thread when quilting.

8 **Thread Stand** (page 35)
Holds a cone of thread.

9 **Thread Guide Rod** (page 35)
Positions thread when quilting.

10 **Small Thread Tensioner** (page 35)
Tensions thread when quilting.

11 **Display Port Cover** (page 19)
Accesses display ports.

12 **Take-Up Lever** (page 35)
Tensions thread when quilting.

13 **Display**
Provides access to quilting options.

14 **Handlebar Controls**
Controls machine functions.

15 **Thread Guides** (page 35)
Positions thread when quilting.

16 **Lamp** (page 28)
Lights up needle area when machine is on.

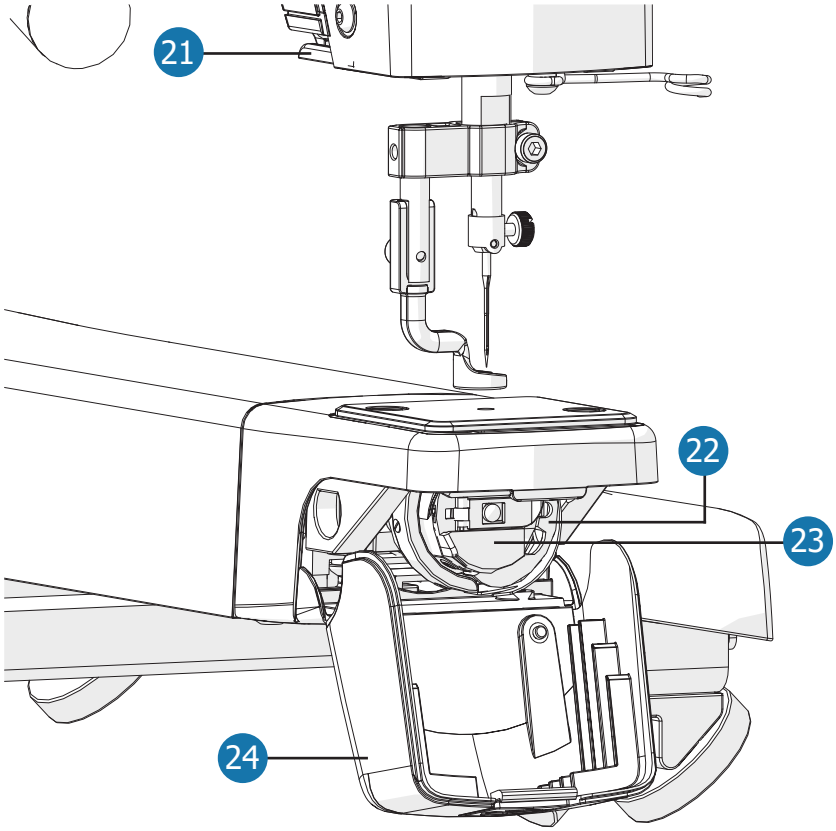
17 **Needle Bar** (page 58)
Holds the needle when quilting.

18 **Hopping Foot** (page 61)
Presses fabric down when quilting.

19 **Large Thread Tensioner** (page 35)
Tensions thread as adjusted when quilting.

20 **Machine Wheels** (page 13)
Shuttles the machine up and down the bottom carriage.

Hook Assembly (Front View)



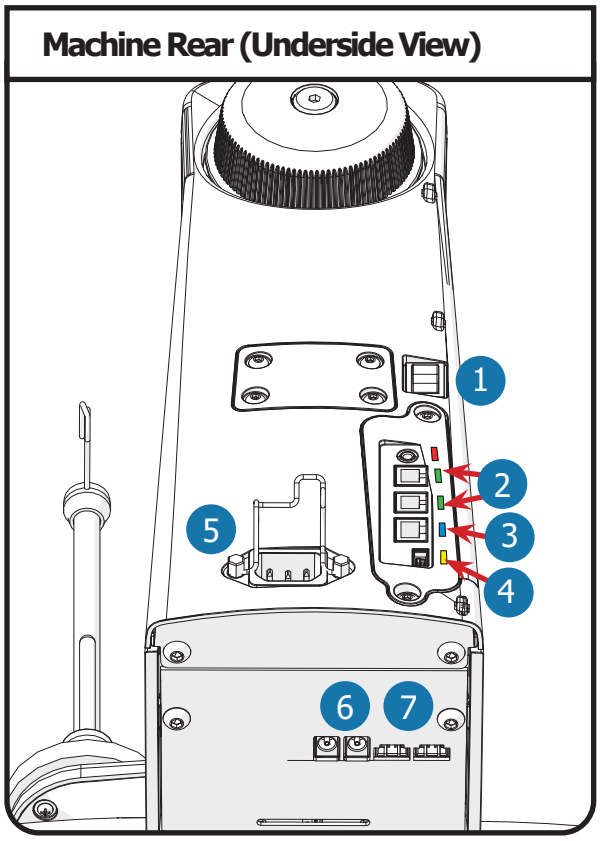
21 **Thread Cutter** (page 32)
Cuts excess thread from threading machine.

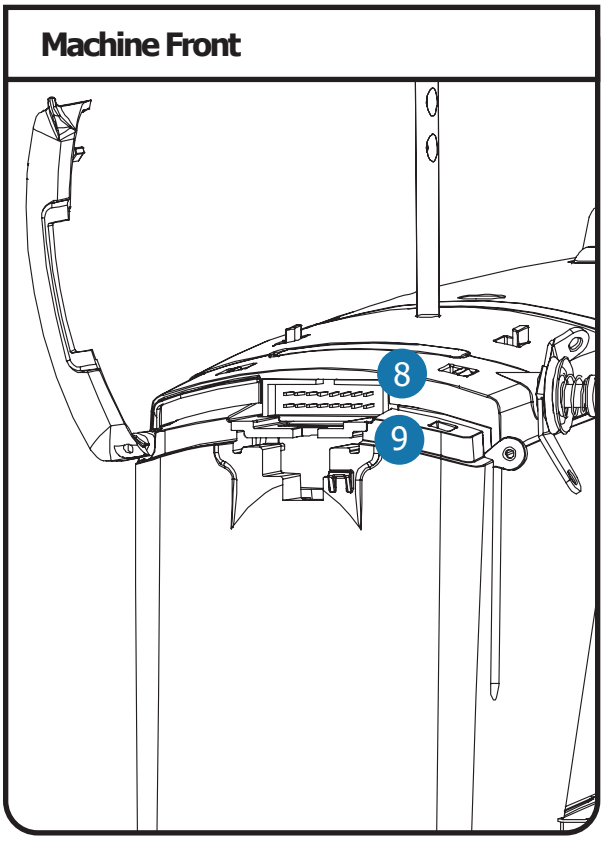
22 **Hook Assembly** (page 32)
Holds the bobbin case and hooks the top thread to create stitches.

23 **Bobbin Case** (page 32)
Holds M class bobbin and controls bottom thread tension.

24 **Hook Assembly Cover** (page 32)
Covers the hook assembly area.

Ports and Plug-Ins



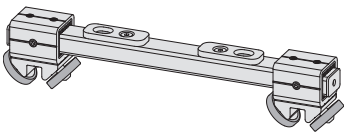


1. **Power On/Off Switch** (page 26)
   Turns machine on and off.
2. **Encoder Ports** (page 21)
   Connects encoders to machine.
3. **Quilt Motion Tablet Port**
   For optional automation accessory.
4. **USB Connector Port**
   For updating only.
5. **Power Port with Retainer** (page 26)
   Connects and holds power cable to the machine.
6. **Accessory Ports**
   For accessories.
7. **Back Handle Ports**
   For back handle accessory.
8. **Display Cable Port** (page 19)
   Connects display cable to machine.
9. **Display Clip Port** (page 19)
   Connects and holds display.

Included Parts & Tools

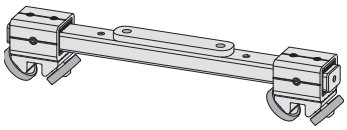
Please make sure all pieces are included in your kit.

Back Wheel Base Assembly



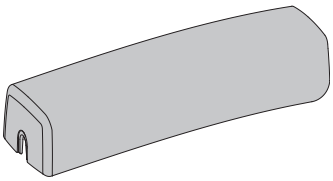
SMP-09-14099
See page 13

Front Wheel Base Assembly



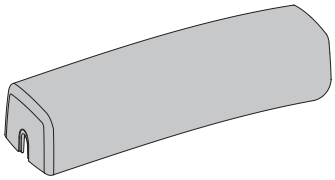
SMP-09-14098 See page 13

Front Left Wheel Base Cover



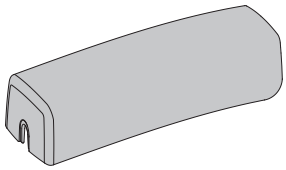
SMP-05-12166
See page 16

Front Right Wheel Base Cover



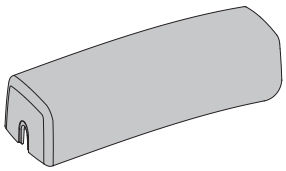
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See page 16

Back Left Wheel Base Cover



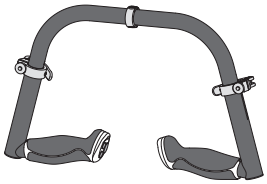
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See page 16

Back Right Wheel Base Cover



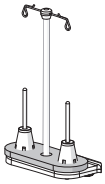
SMP-05-12165
See page 16

Handlebar Assembly



SMP-09-13176
See page 17

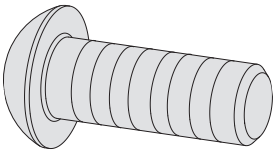
Thread Stand Assembly



SMP-09-14104
See page 20

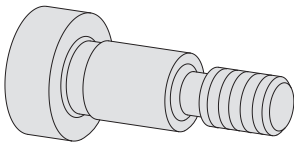
Box 1

SBHCS Screw M6 x 20 mm (x2)



HDW-03-10088
See page 13

Shoulder Bolt M6 (x2)



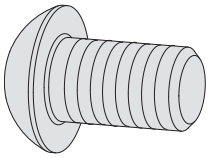
HDW-03-12206
See page 13

2.4 Inch Touch Display



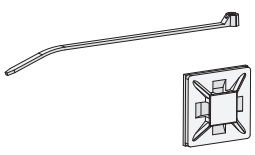
SMP-09-12911
See page 19

SBHCS Screw M4 x 8 mm (x2)



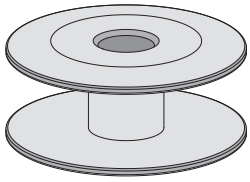
HDW-03-10012
See page 20

Zip Tie (x2)
Zip Tie Mount (x2)



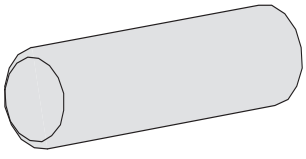
MIS-08-10805
See page 23

M Class Bobbin (x3)
(two pre-installed)



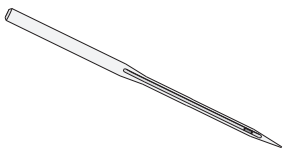
SMP-08-10070
See page 30

Needle Magnet



SMP-09-13837
See page 58

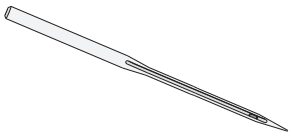
Needle Size 16 (x10)



ACC-01-11024
See page 58

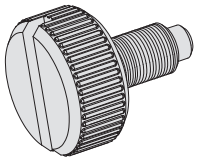
Box 1 (Continued)

Needle Size 18 (x11)
(one pre-installed)



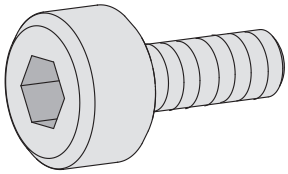
ACC-01-11025
See page 58

Thumb Screw M3
(needle bar spare)



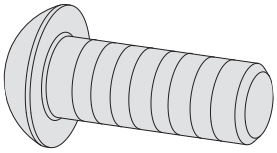
HDW-03-11736
See page 58

Hopping Foot Screw



HDW-03-10966
See page 61

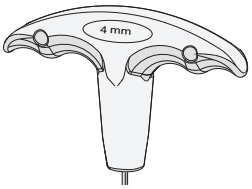
SBHCS Screw M6 x 16 mm (x4)



HDW-03-10974
See page 16

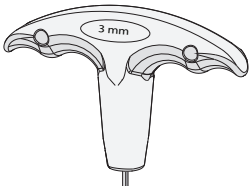
Box 2

T-handle Allen Wrench 4 mm



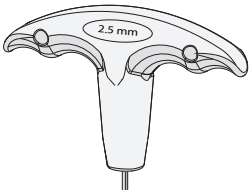
HDW-03-13114

T-handle Allen Wrench 3 mm



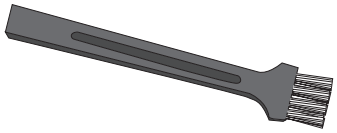
HDW-03-13115

T-handle Allen Wrench 2.5 mm



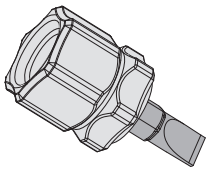
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Lint Brush



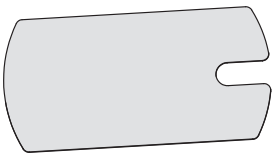
SMP-03-10170
See page 55

Flat-head Screwdriver



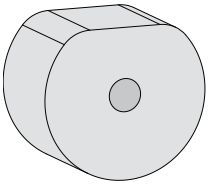
SMP-03-10169
See page 66

Hopping Foot Height Tool



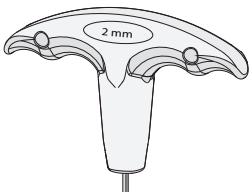
SMP-03-12171
See page 61

Timing Spacer



SMP-03-11320
See page 77

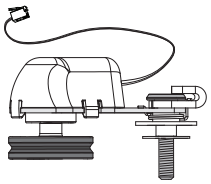
T-handle Allen Wrench 2 mm



HDW-03-13117

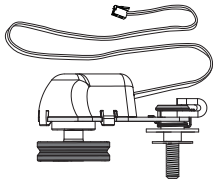
Box 3

Upper Encoder
(silver spring)



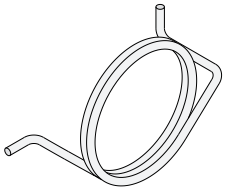
SMP-09-10668
See page 21

Lower Encoder
(black spring)



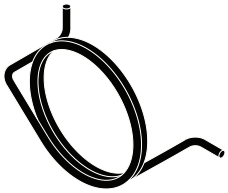
SMP-09-13427
See page 23

Upper Encoder Spring (silver)



HDW-03-10216
See page 71

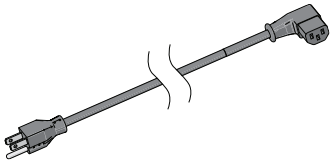
Lower Encoder Spring (black)



HDW-03-10671
See page 71

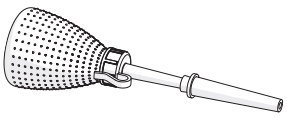
Box 4

Power Cord



SMP-02-14466
See page 26

Oil Bottle



SMP-09-13888
See page 55

Out-of-the-Box Assembly

These steps are for assembling the machine when it is first removed from the packaging materials. Your quilting frame should be set up prior to machine assembly.

Installing the Wheels ..... **page 13**

Installing the Wheel Covers ..... **page 16**

Assembling the Handlebars ..... **page 17**

Connecting the Display ..... **page 19**

Attaching the Thread Mast ..... **page 20**

Installing the Upper Encoder ..... **page 21**

Installing the Lower Encoder ..... **page 23**

Turning the Machine On/Off ..... **page 26**

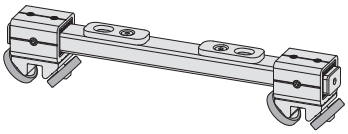
Tip: For additional help, scan the QR code below with the camera on your iphone to visit our online support videos!

https://www.graceframe.com/en/resources/support/videos

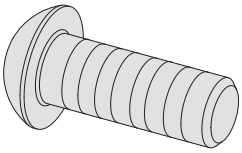
Installing the Wheels

Set up the frame before assembling the machine.

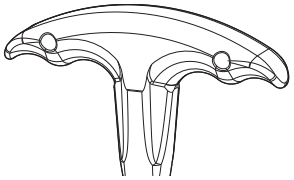
Parts & Tools Needed:



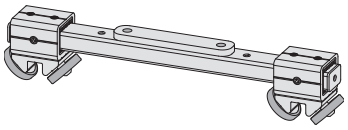
Back Wheel Base Assembly



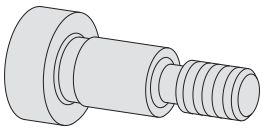
SBHCS Screw M6 x 20 mm (x2)



T-handle Allen Wrench 4 mm



Front Wheel Base Assembly



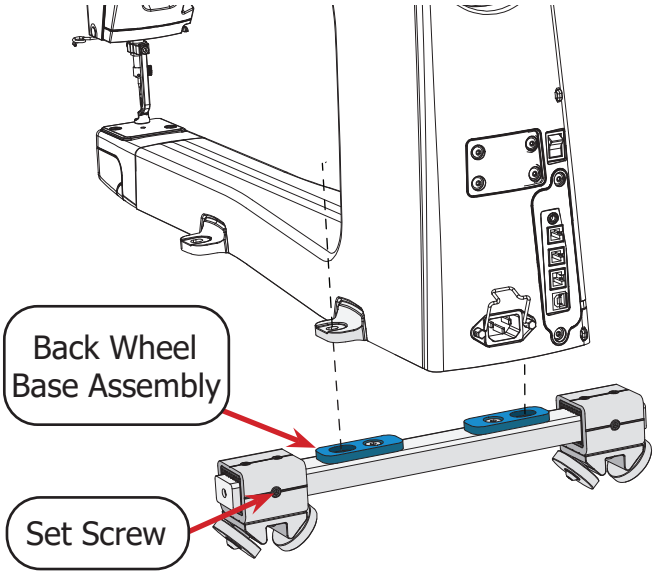
Shoulder Bolt M6 (x2)

- Tape Measure (not included)

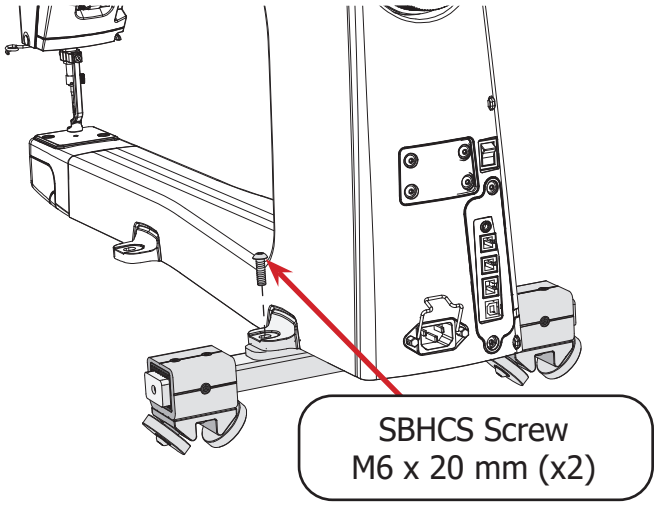
Instructions

The machine wheels move the machine across the bottom carriage. To install the machine wheels:

1. Place the **back wheel base assembly** under the rear of the machine with the **set screws** facing the rear.

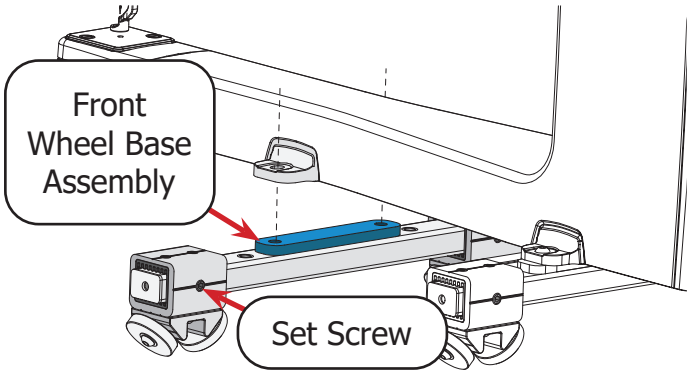


2. Screw in place with two **SBHCS M6 x 20 mm screws** and the 4 mm Allen wrench.

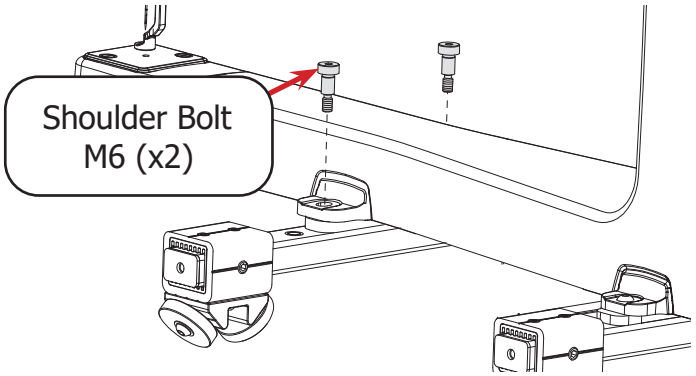


Installing the Wheels (Continued)

3 Place the **front wheel base assembly** under the front of the machine with the **set screws** facing the rear.

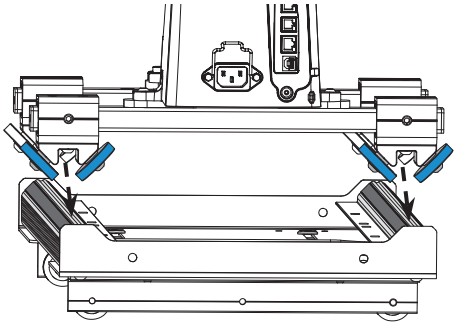


4 Use the 4 mm Allen wrench to screw in the **shoulder bolts**.

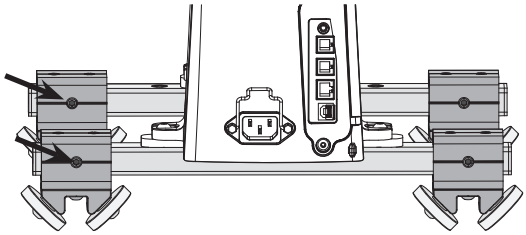


5 Place the machine onto the bottom carriage, aligning the wheels with the tracks.

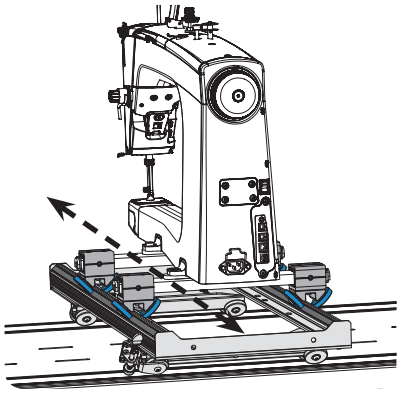
Tip: See your frame manual for bottom carriage orientation.



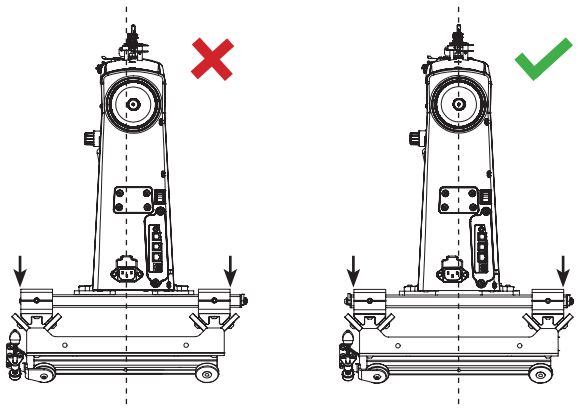
6 Loosen two set screws on one side of the machine (either the right side or left side) with the 4 mm Allen wrench



7 Slide the machine up and down the bottom carriage tracks. The machine should move smoothly.

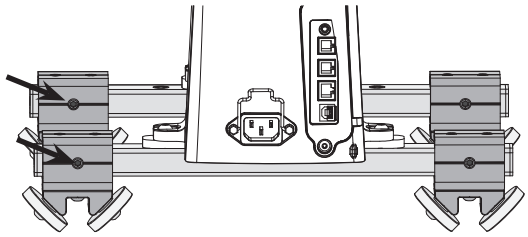


8 Check that the machine is centered over the wheels. If needed, shift the machine from side to side.



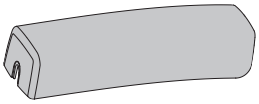
Installing the Wheels (Continued)

9 Re-tighten the wheel block set screws with the 4 mm Allen wrench.

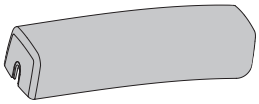


Installing the Wheel Covers

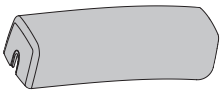
Parts & Tools Needed:



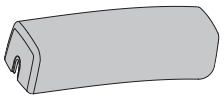
Front Left Wheel Base Cover



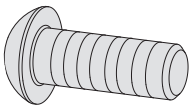
Front Right Wheel Base Cover



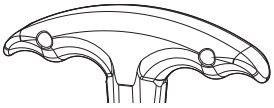
Back Left Wheel Base Cover



Back Right Wheel Base Cover



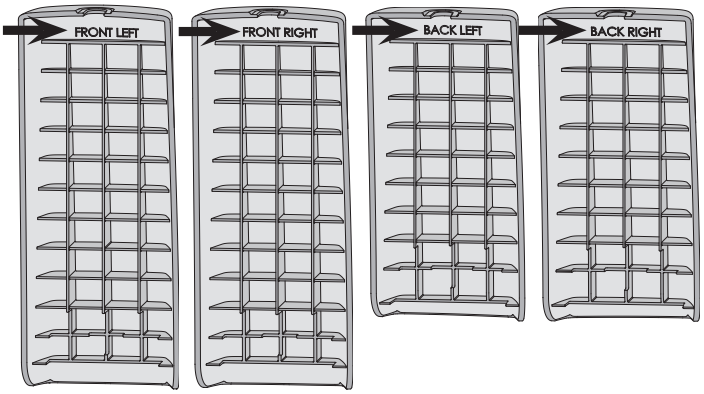
SBHCS Screw M6 x 16 mm (x4)



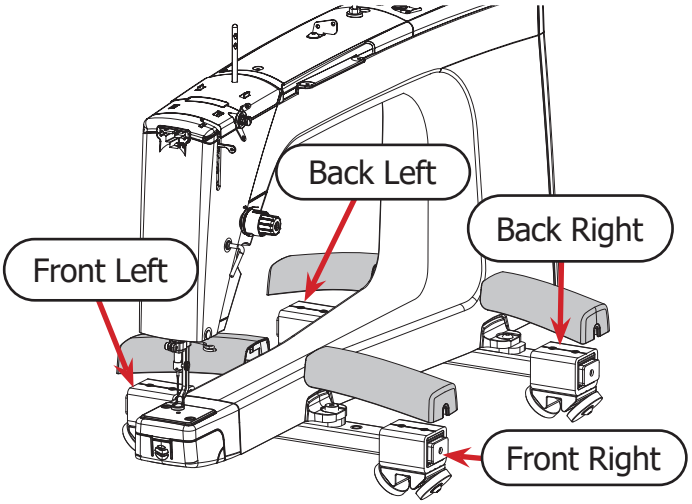
T-handle Allen Wrench 4 mm

Instructions

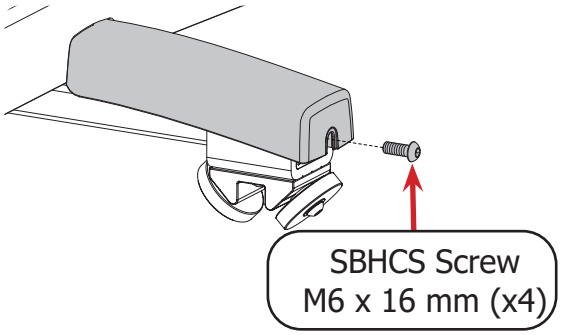
1. Locate the label on the inside of each wheel cover.



2. Slide the covers onto the associated leg.



3. Screw each cover into place using an **SBHCS M6 x 16 mm screw** and the 4 mm Allen wrench. Tighten until snug.

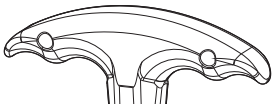


Assembling the Handlebars

Parts & Tools Needed:



Handlebar Assembly

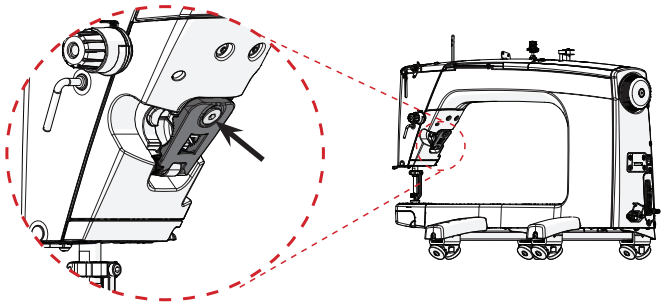


T-handle Allen Wrench 4 mm

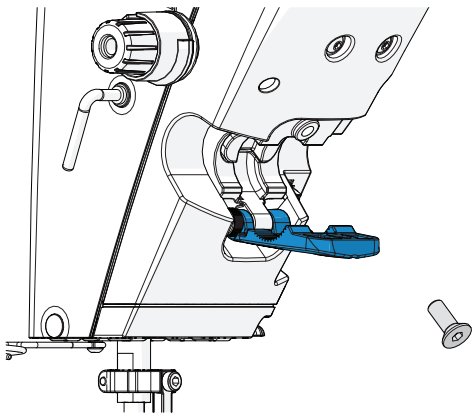
Instructions

Take the following steps to install and adjust the handlebars:

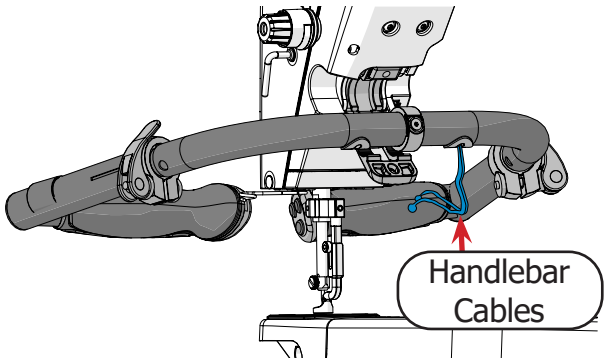
1. With the 4 mm T-handle Allen wrench, remove the **handlebar cover screw**.



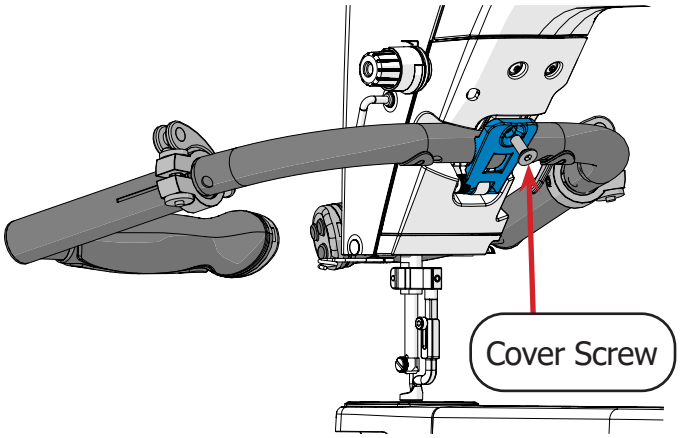
The **handlebar cover** (shown in blue) opens.



2. Slide the handlebars into the slot so that the **handlebar cables** are on the bottom.

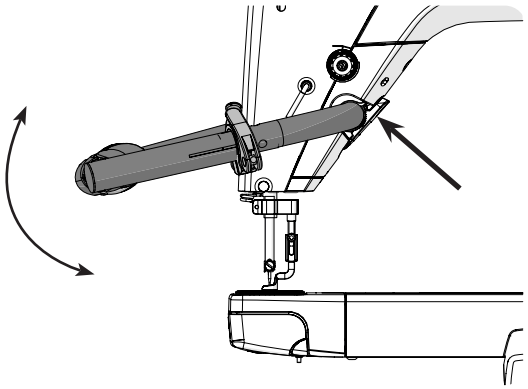


3. Press the cover closed and loosely screw in the **cover screw**. **Note:** The cover will not close fully until tightened.

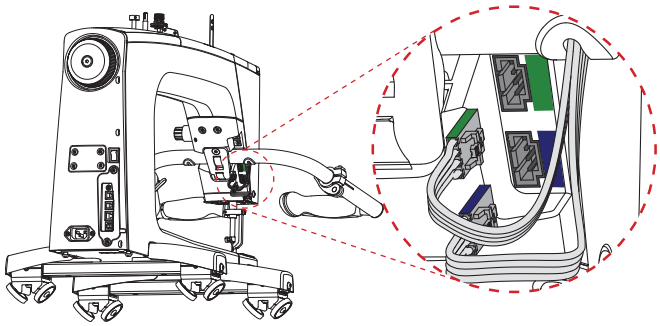


Assembling the Handlebars (Continued)

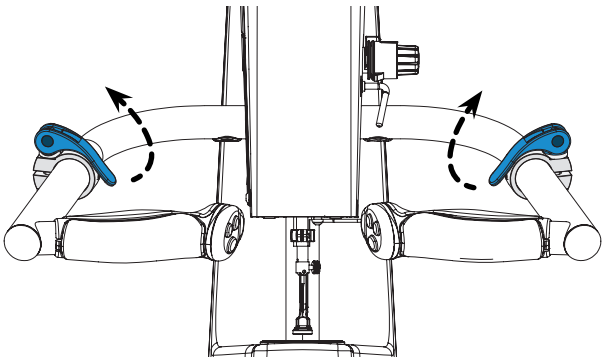
4 Hold the **handlebars** at the desired angle and tighten the **cover screw**.



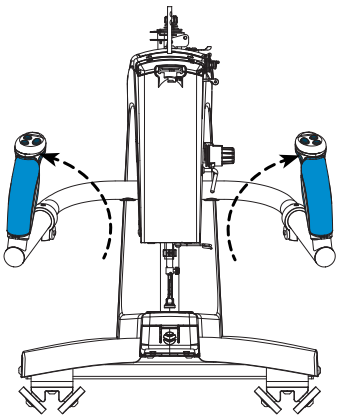
5 Plug the **color-coded cables** from the handlebars into the machine.



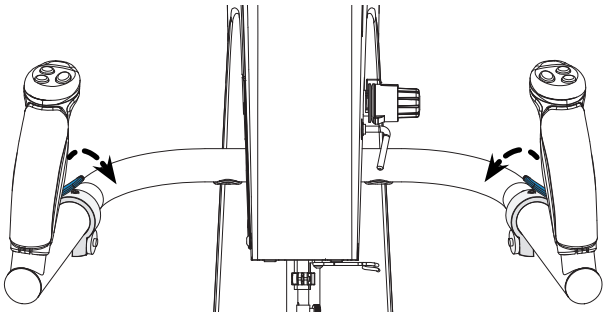
6 Open the **handlebar levers**.



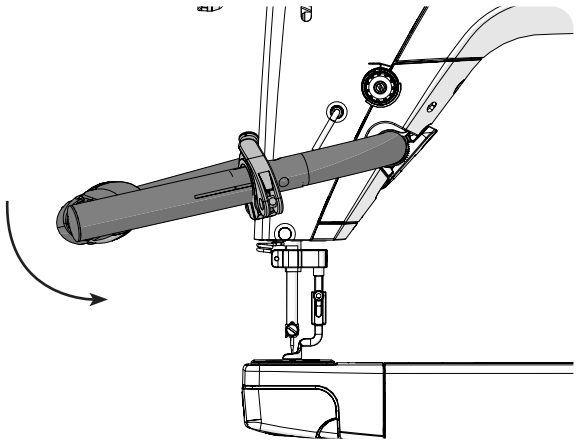
7 Twist the **controls** vertically until they are comfortable to hold and operate.



8 Close the **handlebar levers**.



Tip: For micro-stippling, angle the handlebars down toward the fabric in step 4, and leave the controls horizontal in step 7.



Connecting the Display

Parts & Tools Needed:

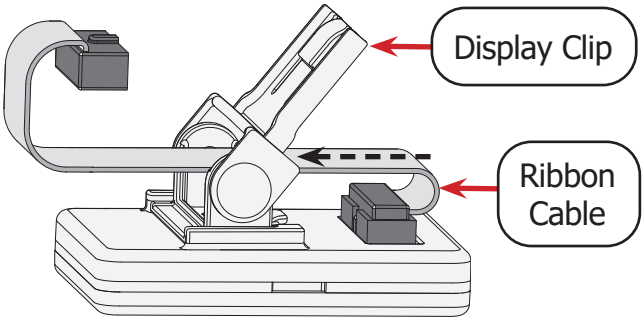


2.4 Inch Touch Display

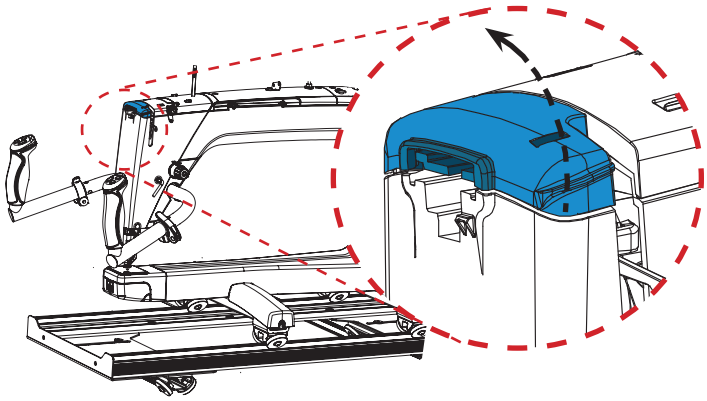
Instructions

Take the following steps to install the display:

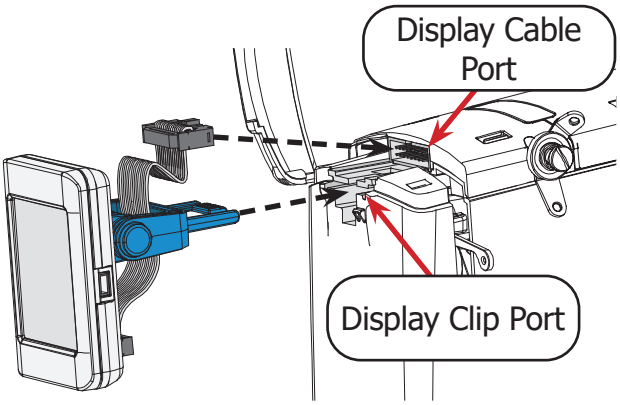
1. If not already done, plug one end of the **ribbon cable** into the display. Weave the cable through the **display clip**.



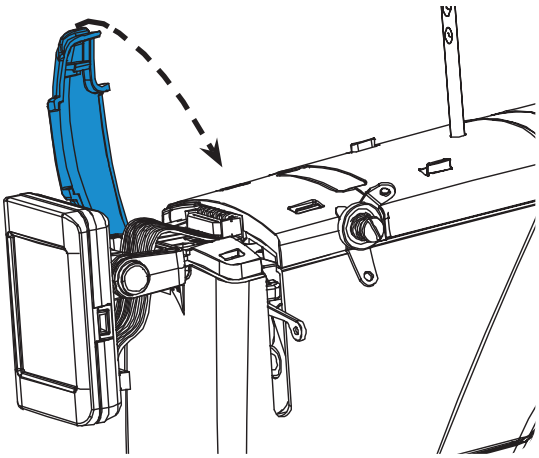
2. Lift the **display cover** on the machine.



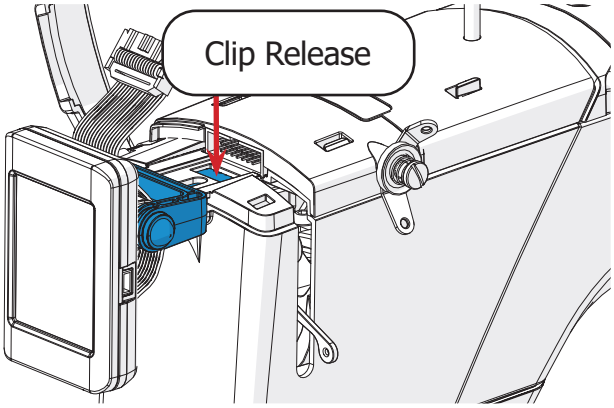
3. Slide the display clip into the **display clip port**, and plug the display cable into the **display cable port**.



4. Close the **display cover**.

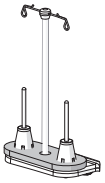


Note: To remove the display, turn off the machine. Then unplug the display ribbon cable. Press down on the **clip release** and pull out the display.

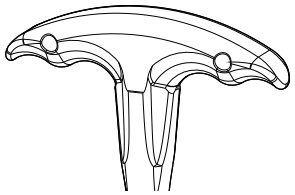


Attaching the Thread Mast

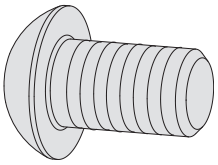
Parts & Tools Needed:



Thread Stand Assembly



T-handle Allen Wrench 2.5 mm

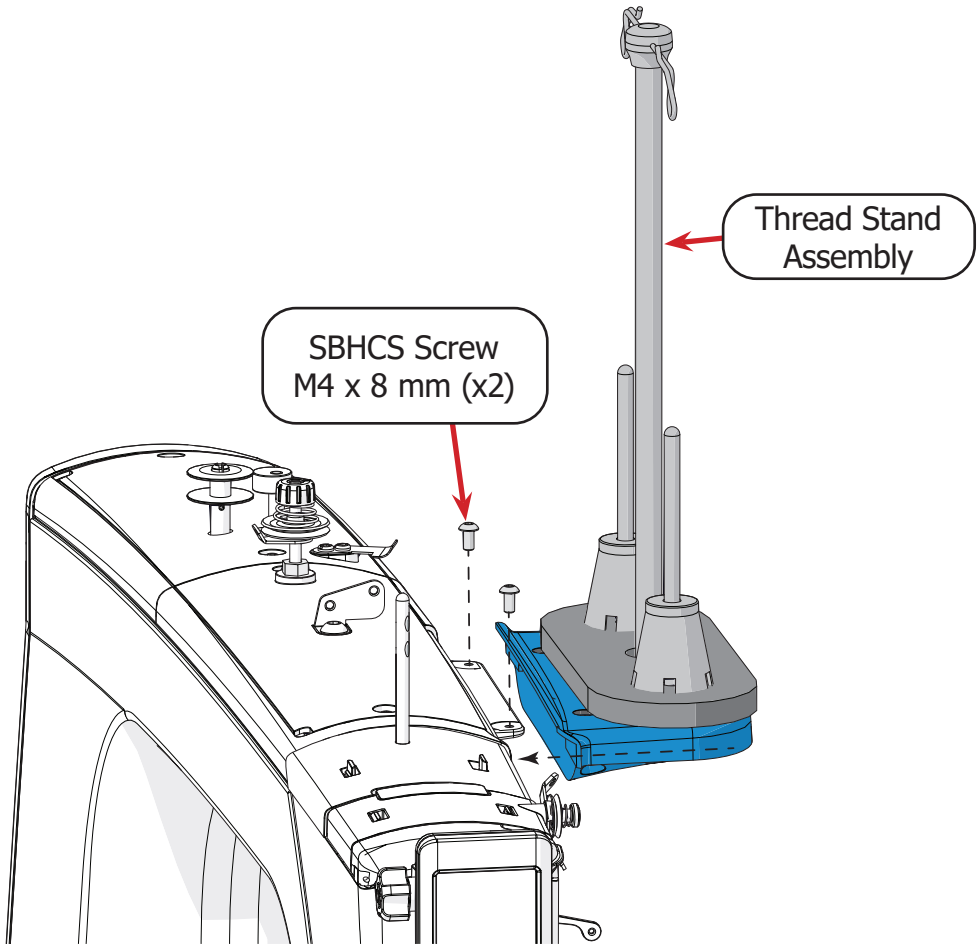


SBHCS Screw M4 x 8 mm (x2)

Instructions

The thread stand assembly is installed onto the top of the right side of the machine. Take the following steps:

1. Slide the **thread stand assembly** over the screw holes on the machine.

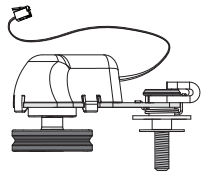


2. Use the 2.5 mm Allen wrench to screw in two **SBHCS M4 x 8 mm screws**.

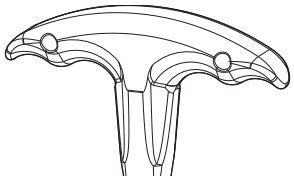
   Note: It may be necessary to push back the foam on the thread stand for this step.

Installing the Upper Encoder

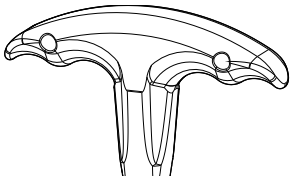
Parts & Tools Needed:



Upper Encoder
(silver spring)



T-handle Allen
Wrench 4 mm

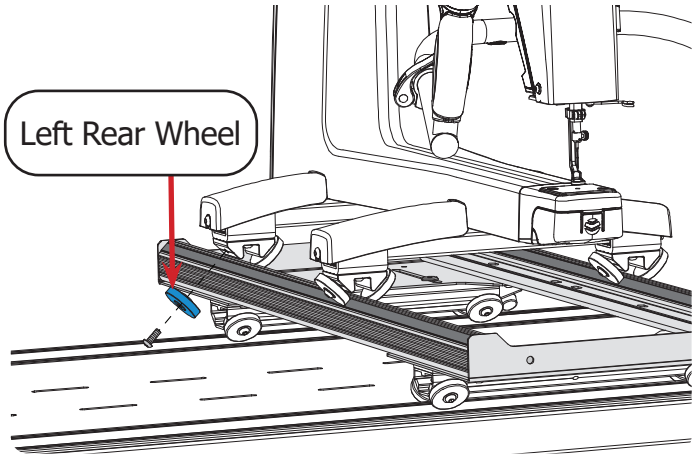


T-handle Allen
Wrench 2.5 mm

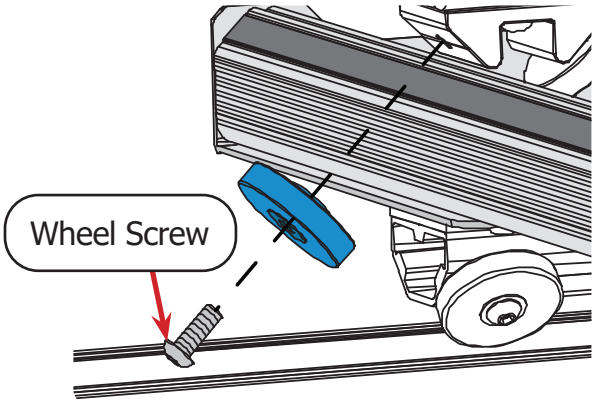
Instructions

The encoders monitor the position of the machine over the frame, allowing for regulated stitching. The upper encoder is installed on the outward-facing, left-rear wheel of the machine. Please take the following steps:

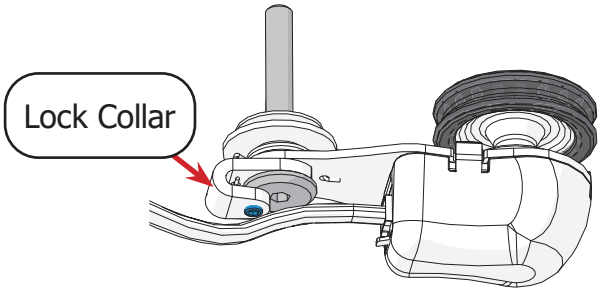
1. Use the 4 mm Allen wrench to remove the **left rear wheel** from the machine.



The **wheel screw** will not be needed again, and can be stored with the packaging materials.

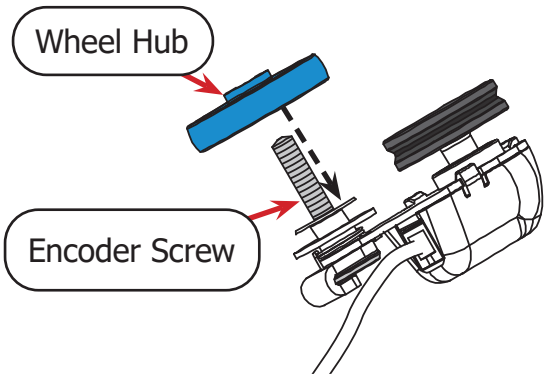


2. Loosen the **lock collar screw** (shown in blue) on the upper encoder with the 2.5 mm Allen wrench until the **lock collar** turns freely.



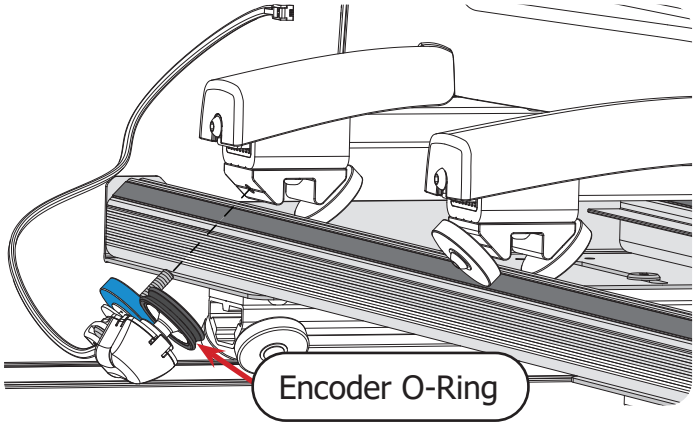
Note: Depending on the encoder, this step may require the 2.0 mm Allen wrench.

3. Slide the wheel onto the upper **encoder screw** so that the **wheel hub** faces away from the encoder.

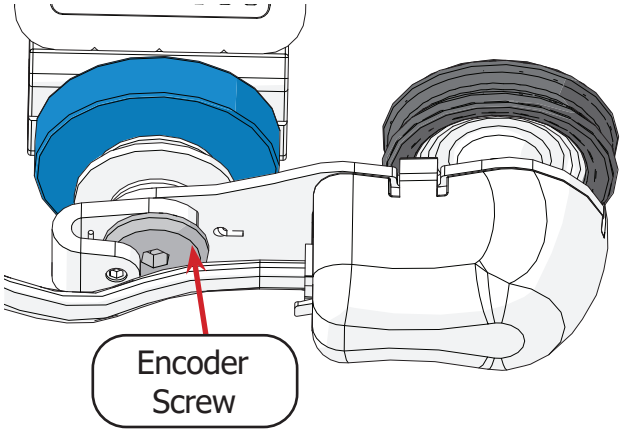


Installing the Upper Encoder (Continued)

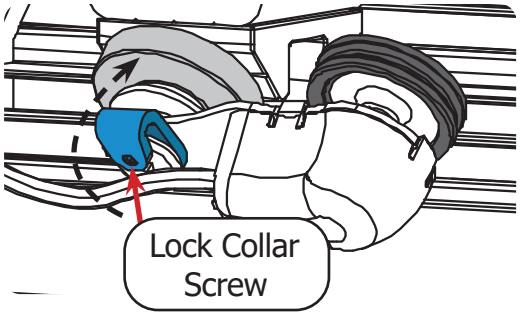
4 Place the encoder screw into the left rear wheel hole so the **encoder O-Ring** is between the two left machine wheels.



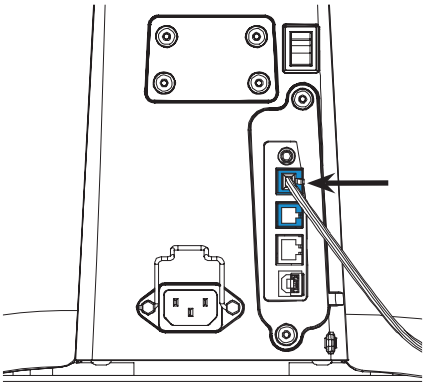
5 Tighten the **encoder screw** with the 4 mm Allen wrench.



6 Turn the **encoder lock collar** (shown in blue) to point up and tighten the **lock collar screw** with the 2.5 mm Allen wrench. **Note:** Depending on the encoder model, this step may require the 2.0 mm Allen wrench.

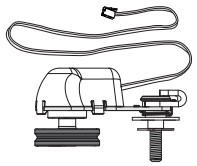


7 Plug the encoder cable into one of the **encoder ports** (shown in blue) on the back of the machine.

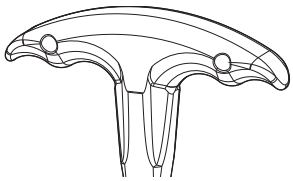


Installing the Lower Encoder

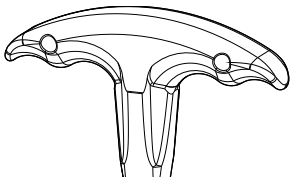
Parts & Tools Needed:



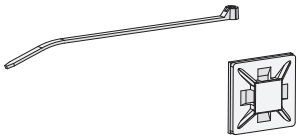
Lower Encoder
(black spring)



T-handle Allen
Wrench 4 mm



T-handle Allen
Wrench 2.5 mm

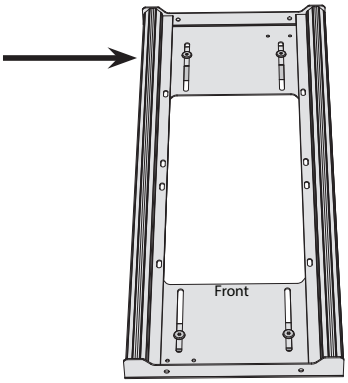


Zip Tie (x2)
Zip Tie Mount (x2)

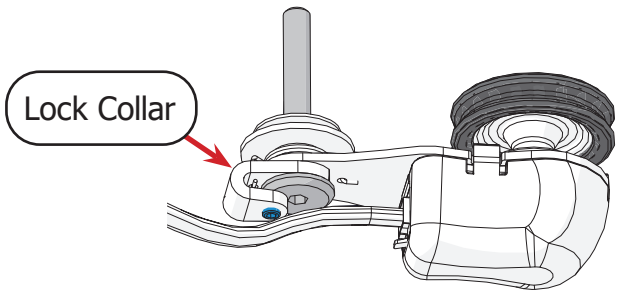
Instructions

The encoders monitor the position of the machine over the frame, allowing for regulated stitching. The lower encoder is installed on the left-rear wheel of the bottom carriage. Please take the following steps to install the encoder onto the bottom carriage:

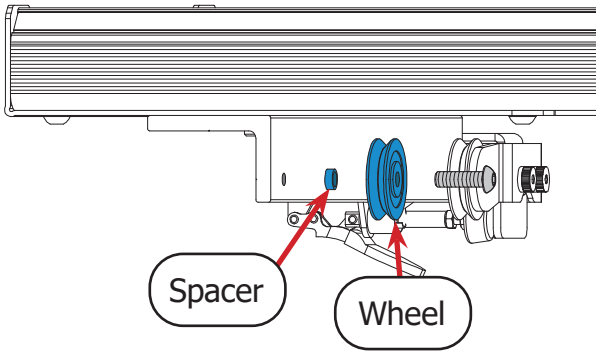
1. Locate the left rear wheel of your bottom carriage. **Note:** If needed, review your frame assembly manual to determine the front of the bottom carriage.



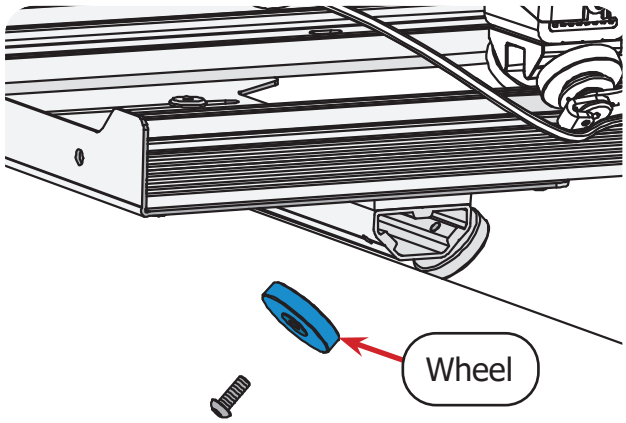
2. Loosen the **lock collar screw** (shown in blue) on the lower encoder with the 2.5 mm Allen wrench until the **lock collar** turns freely. **Note:** Depending on the encoder model, this step may require the 2.0 mm Allen wrench.



3. Use the 4 mm Allen wrench to remove the left rear **wheel** from the bottom carriage.

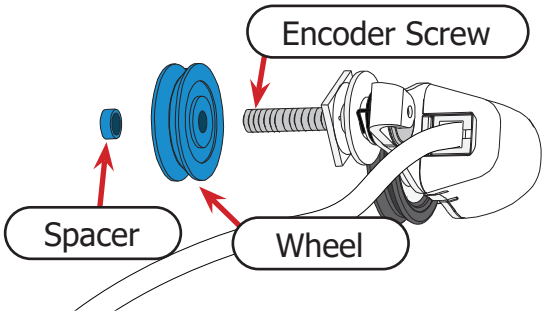


On dual-wheel carriages, remove the outward-facing **wheel**.

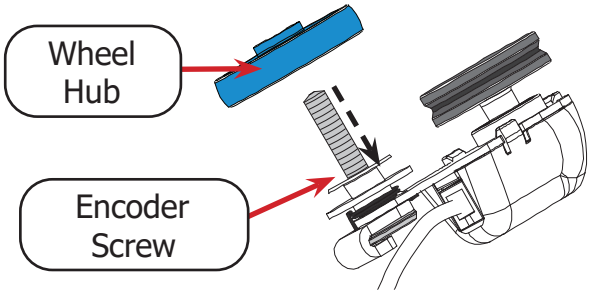


Installing the Lower Encoder (Continued)

4 Slide the **wheel** onto the **encoder screw**, followed by the **wheel spacer**.

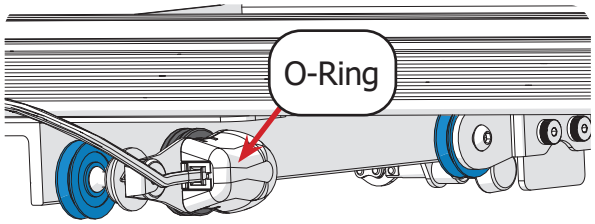


For dual-wheel carriages, slide the wheel onto the **encoder screw** with the **wheel hub** facing away from the encoder.

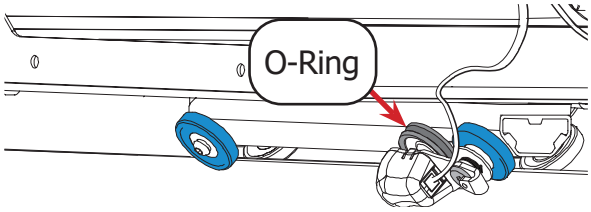


5 Place the encoder screw into the left rear wheel hole on the carriage so the **O-ring** is between the rear wheels.

Single-Wheel Carriage

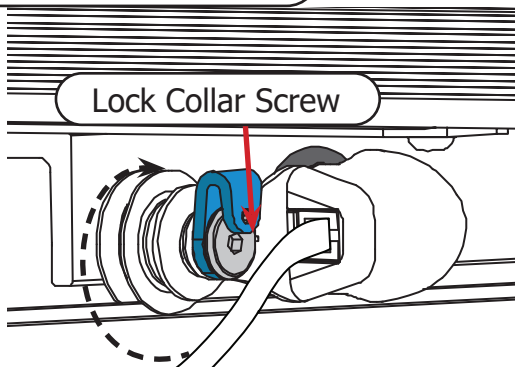


Dual-Wheel Carriage

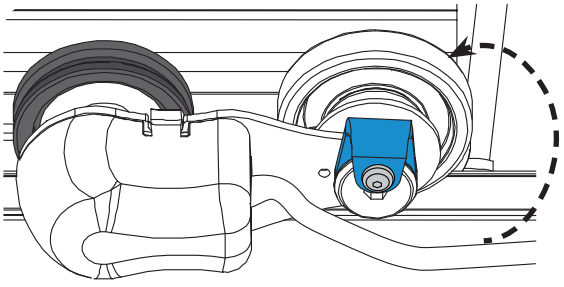


6 Turn the encoder **lock collar** (shown in blue) to point up. Then tighten the **lock collar screw** with the 2.5 mm Allen wrench. **Note:** Depending on the encoder model, this step may require the 2.0 mm Allen wrench.

Single-Wheel Carriage

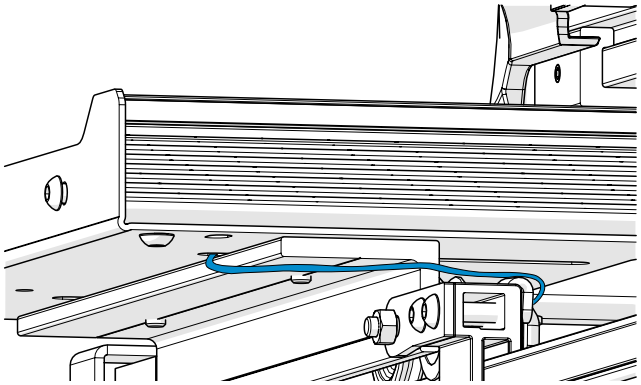


Dual-Wheel Carriage

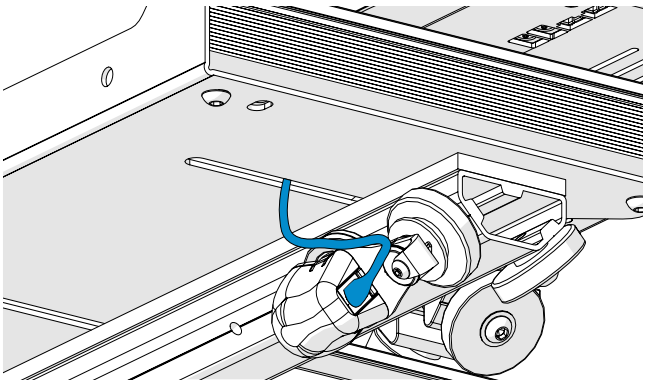


7 Take the free end of encoder cable (shown in blue) and pull it through the open slit in the bottom carriage behind the wheels

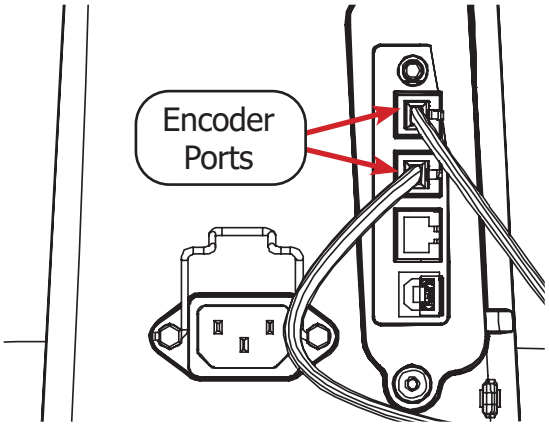
Single-Wheel Carriage



Dual-Wheel Carriage

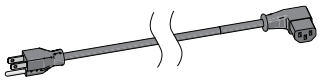


8 Plug the encoder cable into one of the **encoder ports** on the back of the machine.



Turning the Machine On/Off

Parts & Tools Needed:

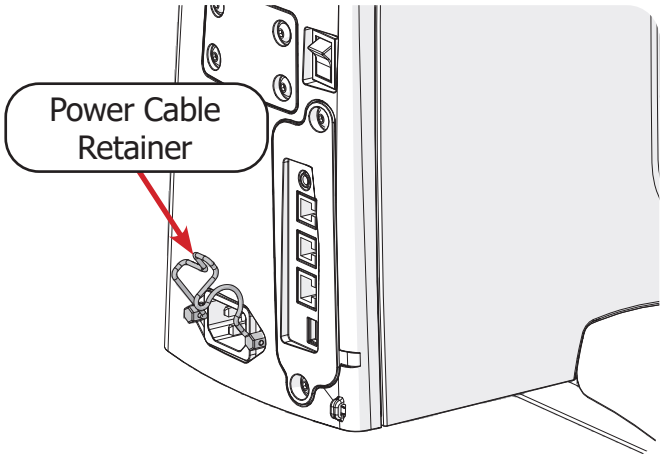


Power Cord

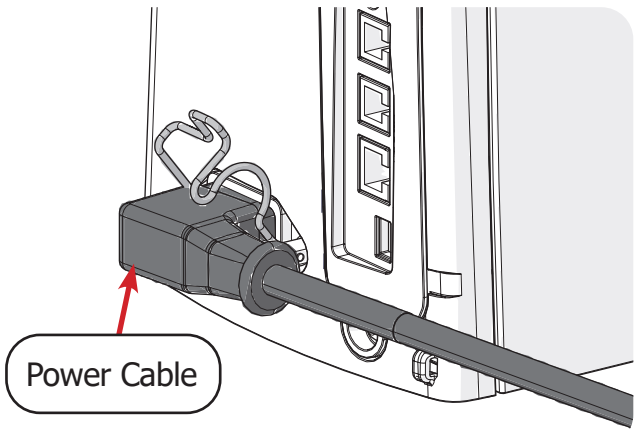
Instructions

The **power cable port** and **power switch** are located on the back of the machine. To power on the machine, take the following steps:

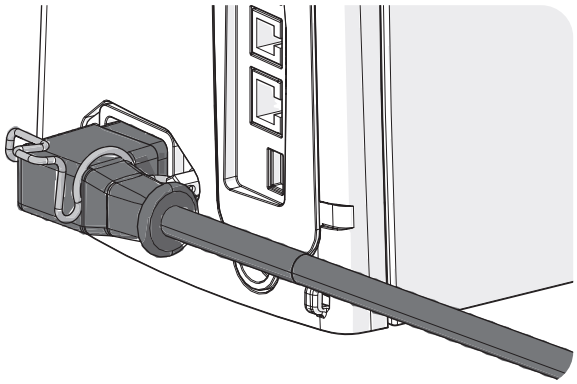
1. Lift up the **power cable retainer**.



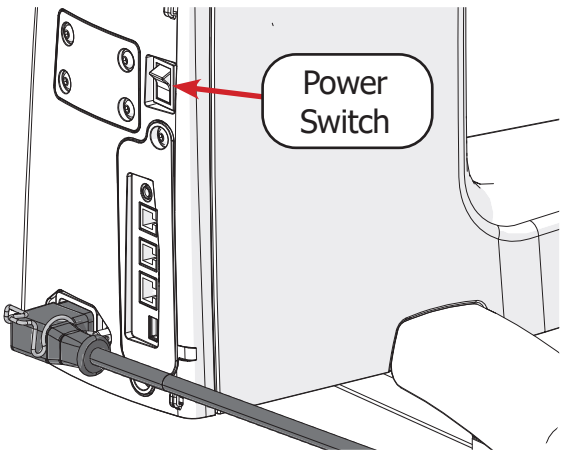
2. Plug the **power cable** into the machine.



3. Press the **power cable retainer** down firmly until it grasps the power cable.



4. Press the **power switch** up to turn the machine on.



Preparing to Quilt

Before quilting, choose the settings for your machine, load the bobbin, and thread the machine.

Choosing Machine Settings ..... **page 28**

Winding a Bobbin ..... **page 30**

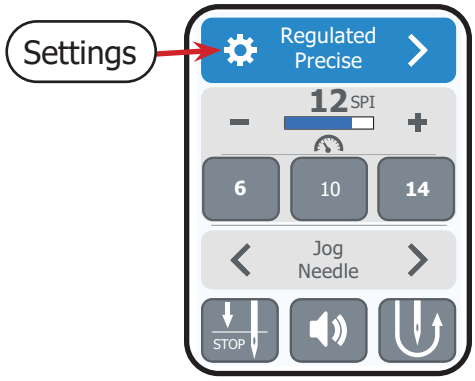
Loading the Bobbin Case ..... **page 32**

Threading the Machine ..... **page 35**

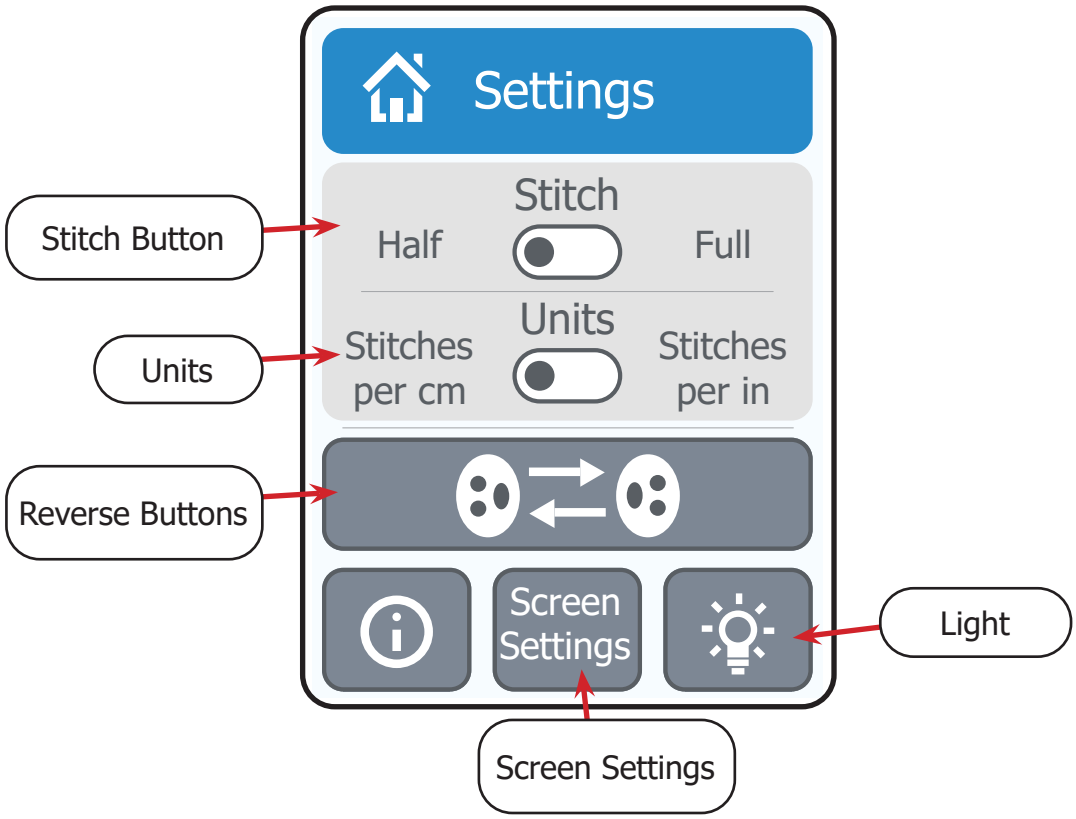
Choosing Machine Settings

To customize the settings for the handlebar controls, screen buttons, or display appearance, take the following steps:

1. Press the **Settings** icon at the top of the touch display.

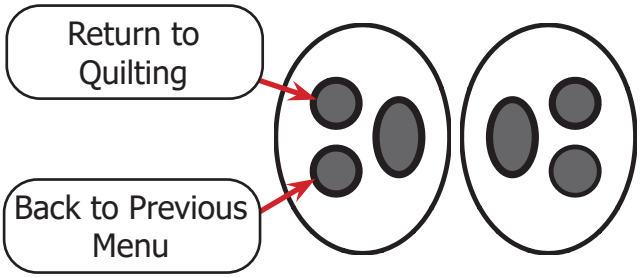


The Settings menu opens.



Choosing Machine Settings (Continued)

Note: While in the Settings menu, the System Information screen, or the Screen Settings menu, only two of the handlebar buttons have a function:



2 Choose desired settings:

- **Stitch Button:** Choose whether the stitch button on the quilting mode screens will create a half-stitch or full stitch when pressed.
  - If "Half" is selected, pressing on a quilting mode screen (precise, cruise, manual, or baste) will create a half-stitch.
  - If "Full" is selected, pressing on a quilting mode screen (precise, cruise, manual, or baste) will create a single full stitch.
- **Units:** Choose to display machine stitch length in stitches per centimeter (cm) or stitches per inch (in).
- **Reverse Buttons:** Select between handlebar controls for right or left-handed quilters.
- **Screen Settings:** Press to go to the Screen Settings page, where you can choose a color theme for the display by tapping to cycle through the colors.



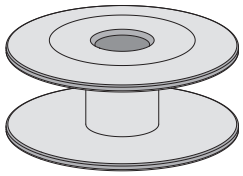
3 From the settings menu, you can also press the **System Information** icon to access the System Information screen. This displays the machine's firmware versions (see page 70) as well as the stitch count and run-time (see page 52).

4 To return to quilting, press the **Home** icon or the Return to Quilting button on the handlebar controls.

Winding a Bobbin

For information on adjusting the bobbin fill levels, see page 60.

Parts & Tools Needed:



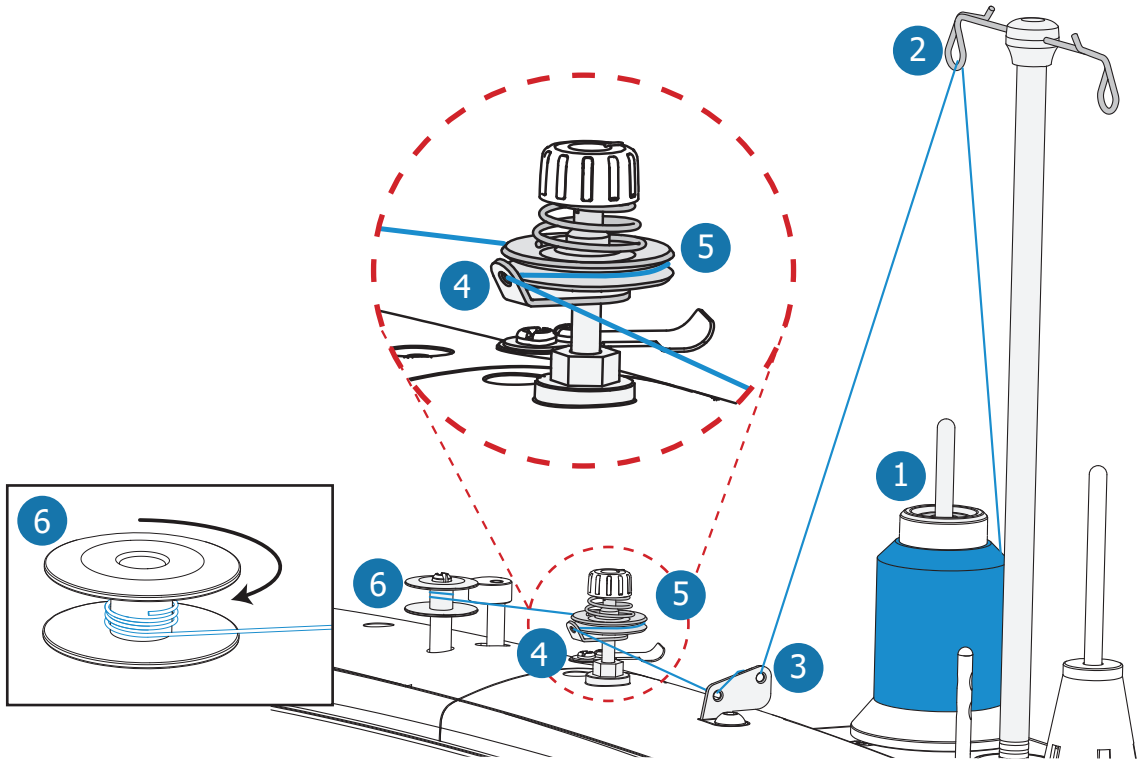
Bobbin
(Class M Large)

Instructions

Your machine comes with two bobbins pre-wound with 50 weight cotton thread. An empty M-class bobbin has also been provided. It's important to choose bobbin thread that is similar in type and quality as the top thread. For more information on choosing thread, see "Choosing Your Thread" on page 84.

Note: This machine uses cone-style thread. Unless you have the spool accessory, please use only thread cones for this machine.

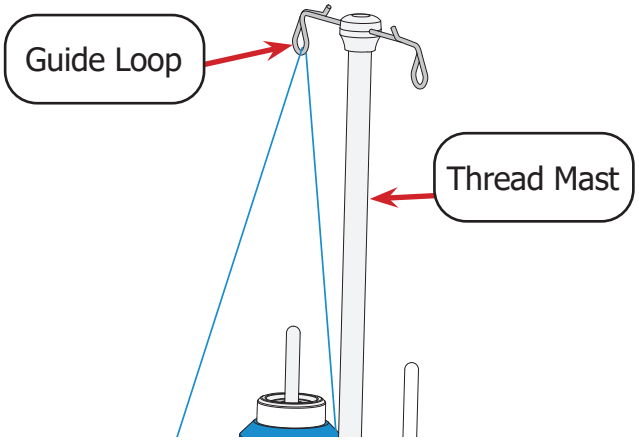
The following diagram outlines the path the thread (shown in blue) must take to wind the bobbin.



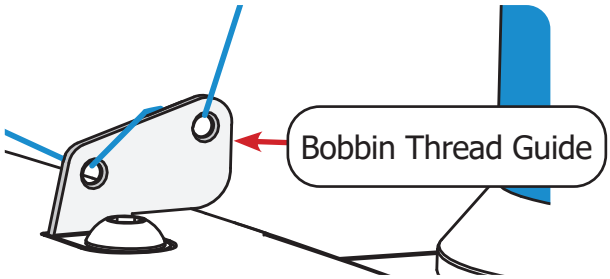
1. Thread Stand
2. Guide Loops
3. Bobbin Thread Guide
4. Bobbin Tensioner Guide
5. Bobbin Thread Tensioner
6. Bobbin Stand with Bobbin

Winding a Bobbin (Continued)

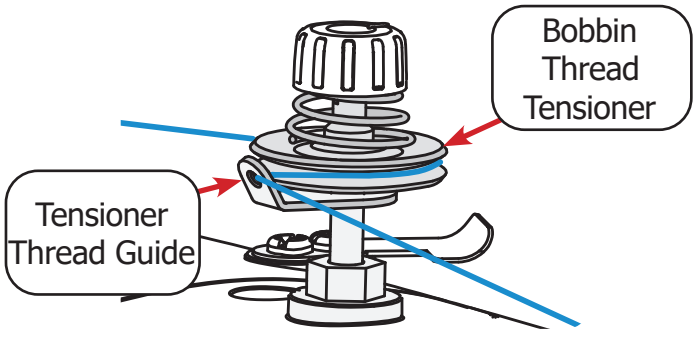
1 Run the thread through the **thread mast guide loop** directly above the thread cone.



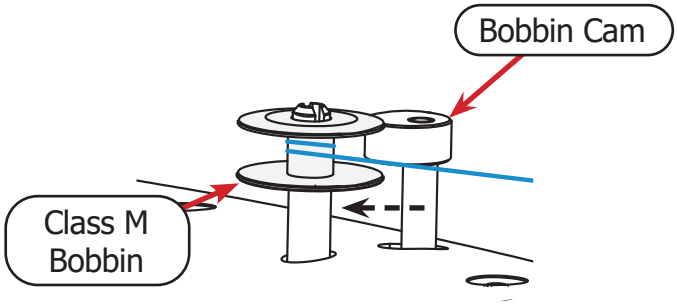
2 Feed the thread through the back of the hole closest to the thread cone on the **bobbin thread guide**. Then wrap it back over and through the back of the second hole.



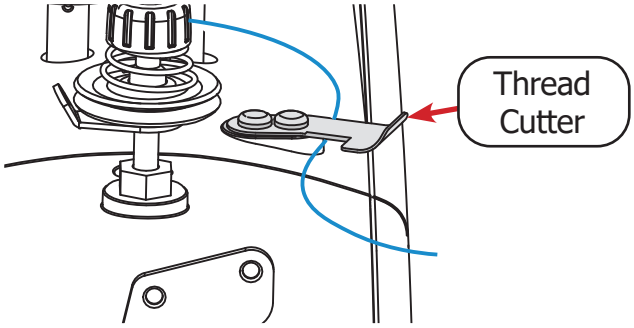
3 Pull the thread through the hole in the **tensioner thread guide.** Wrap the thread around the back of the **bobbin thread tensioner**, between the two discs.



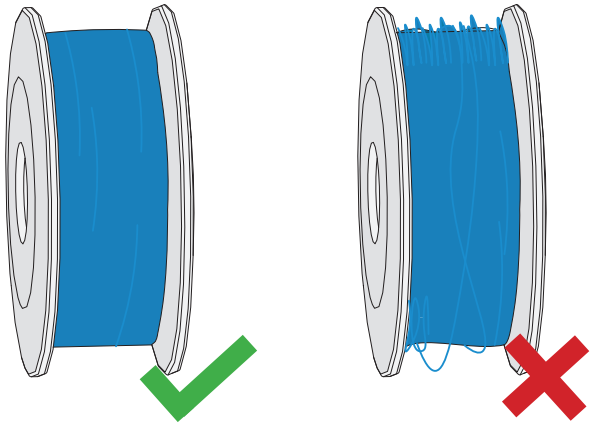
4 Tightly wrap the thread clockwise around the **bobbin** a few times to hold the thread in place. Push the **bobbin cam** toward the **bobbin** to start winding.



5 Winding stops automatically when the bobbin is full. Cut the thread with the **thread cutter** near the bobbin cam.



The bobbin thread should appear neat and smooth.

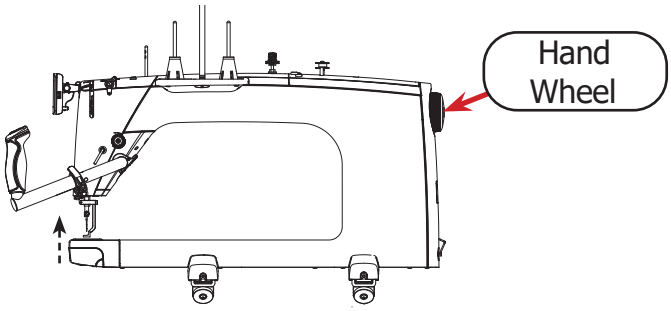


Note: Bobbin fill levels can be adjusted (see page 60).

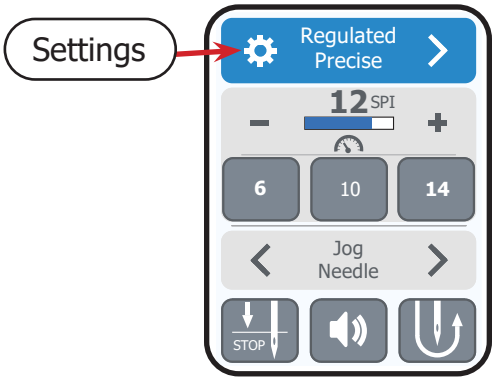
Loading the Bobbin Case

Take the following steps to insert the wound bobbin into the bobbin case and place it in the machine:

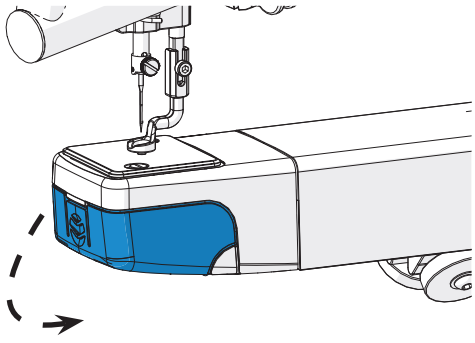
1. Check that the needle is up. If needed, rotate the **hand wheel** or press and hold "Jog Needle" on the display to raise the needle.



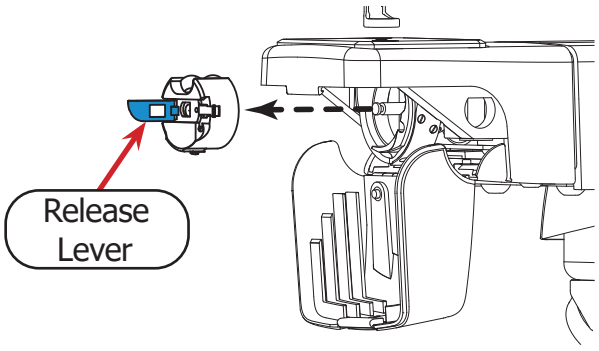
2. To disable stitching, press the Settings icon on the display to go to the Settings menu.



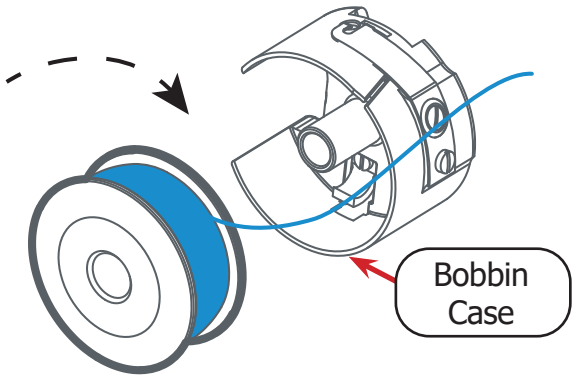
3. Push in and down on the **hook assembly cover** to open it.



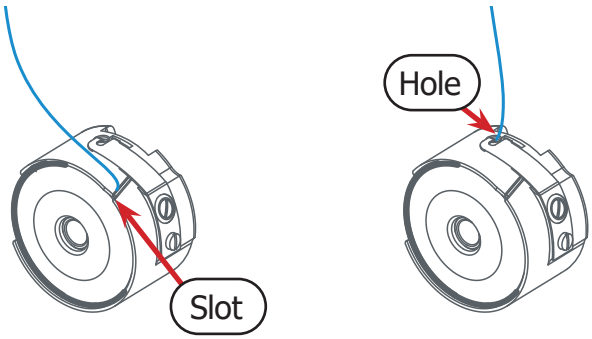
4. Pull on the bobbin case **release lever** to remove the bobbin case from the hook assembly.



5. Place the wound bobbin into the **bobbin case**. Note the direction that the thread is coming off the bobbin in relation to the case.

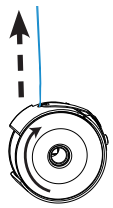


6. Slip a few inches of thread through the **slot** and out of the **hole**.



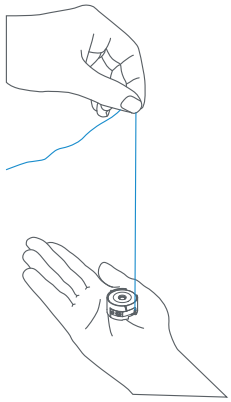
Loading the Bobbin Case (Continued)

Note: If the bobbin is installed correctly, it turns clockwise when the thread is pulled.

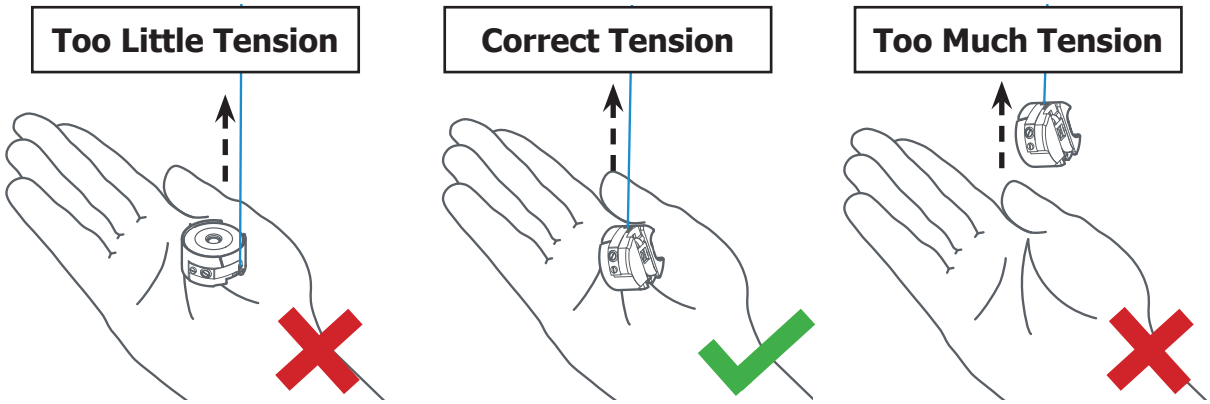


7. Test the tension of the bobbin case every time bobbin thread is changed; bobbin tension is the foundation for correct thread tension.

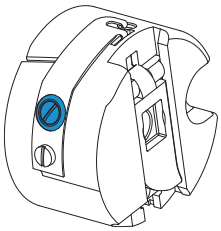
   a. Place the bobbin case on its side, on your palm.



   b. Pull up on the thread. The thread should run freely and the bobbin should rise into a vertical position without lifting off your hand.

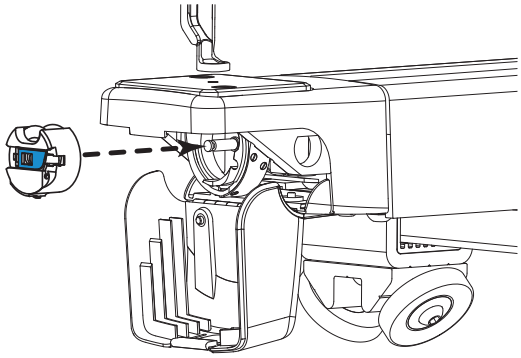


- If the bobbin case remains on its side, there is too little tension. Turn the **large screw** (shown below in blue) clockwise.
- If the case lifts into the air, there is too much tension. Turn the **large screw** (shown below in blue) counter-clockwise.

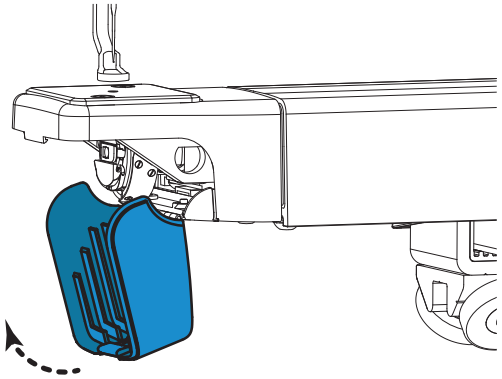


Loading the Bobbin Case (Continued)

8 Place the bobbin case inside the quilting machine with the **release lever** (shown in blue) at the 3 o'clock position. It should click into place. Do not pull on the lever while inserting the bobbin case.



9 Close the hook assembly cover.



Threading the Machine

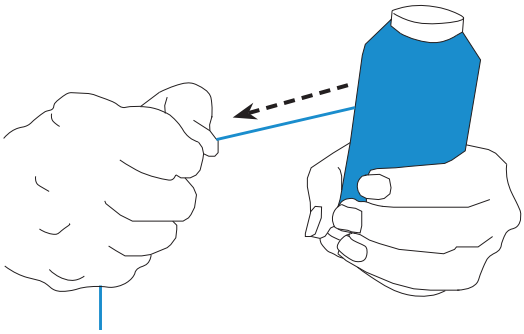
Before threading the machine, make sure you've selected quality thread for your project. Choosing the right thread for the machine can prevent the thread from breaking or tangling up under the needle plate. Note the following:

- This machine uses cone-style thread, not thread from a spool. Do not use spool thread unless the spool accessory has been installed.

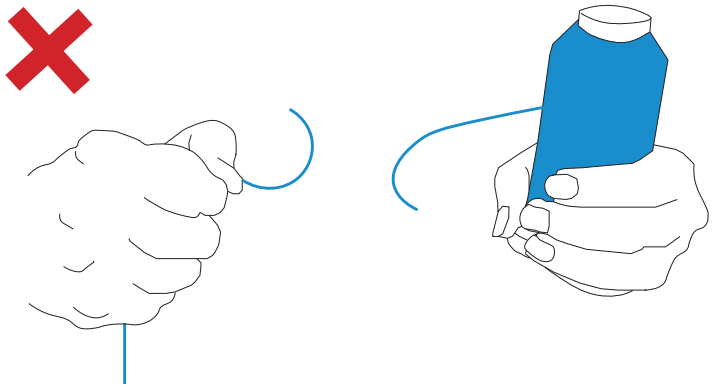


- Choose thread that is strong enough to pass the yank test, and re-test thread as it ages. Thread strength can diminish over time.

a. Hold the cone in one hand and the end of thread in the other.

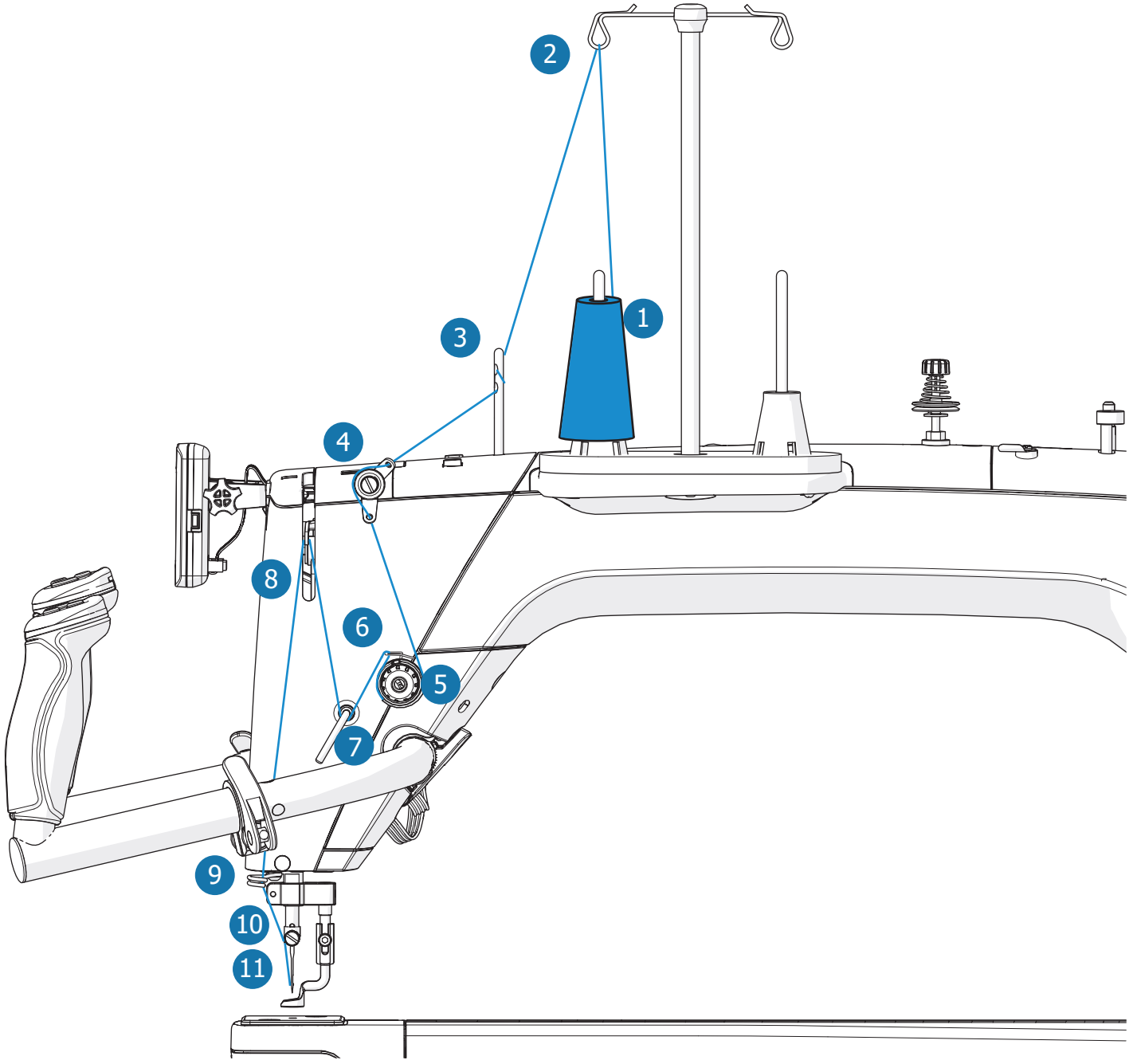


b. Tug on the thread. If the thread snaps easily, it may be too brittle to use for quilting.



Threading the Machine (Continued)

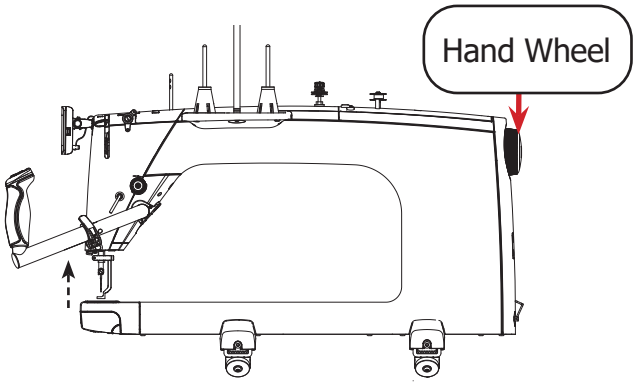
The following diagram outlines the path the thread (shown in blue) must take through the machine.



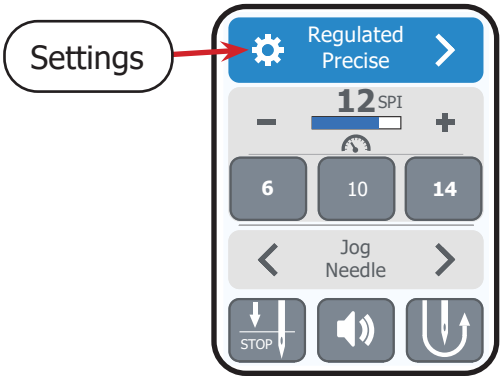
1. Thread Cone
2. Thread Mast Guide Loop
3. Thread Guide Rod
4. Small Thread Tensioner
5. Large Thread Tensioner
6. Check Spring
7. Thread Guide
8. Take-up Lever
9. Bottom Thread Guide
10. Eyelet of Needle Bar
11. Eye of Needle

Threading the Machine (Continued)

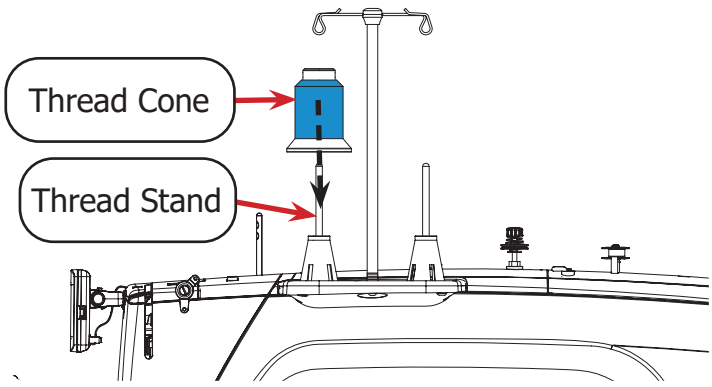
1 Rotate the **hand wheel** or press and hold "Jog Needle" on the display to raise the needle to the top position.



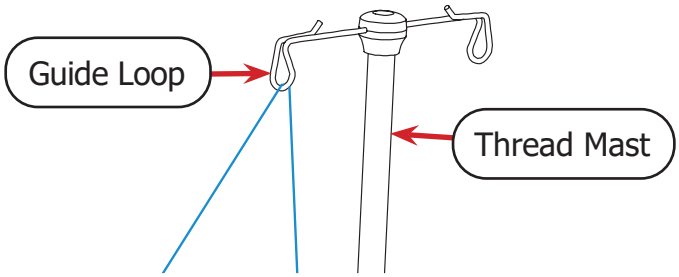
2 To disable stitching and prevent needle movement, press the Settings icon on the display to go to the Settings menu.



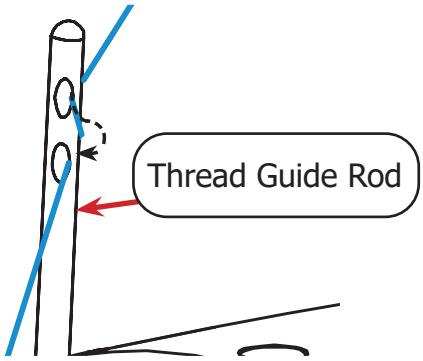
3 Place the **thread cone** on one of the cone-style **thread stands**.



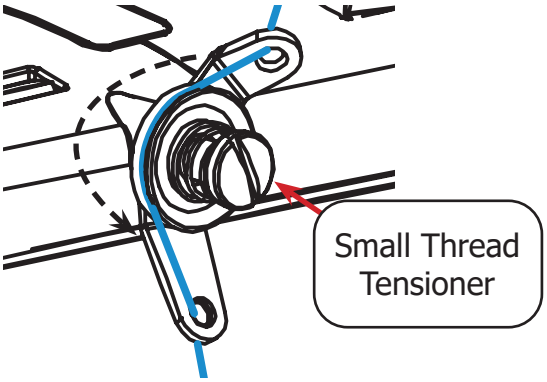
4 Pull the thread straight up, through the **thread mast guide loop** above the thread stand.



5 Feed the thread through the top hole of the **thread guide rod**. Wrap the thread around to the back of the guide and insert through the bottom hole.

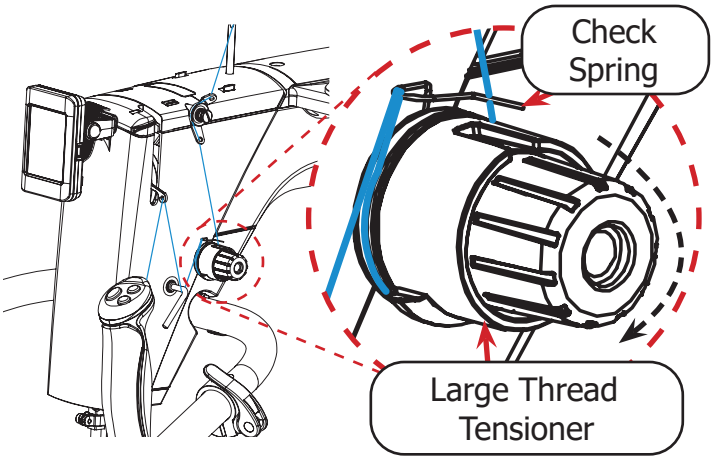


6 Run the thread through the top hole on the **small thread tensioner**. Then slip the thread between the two discs, and through the bottom hole of the **small thread tensioner**.

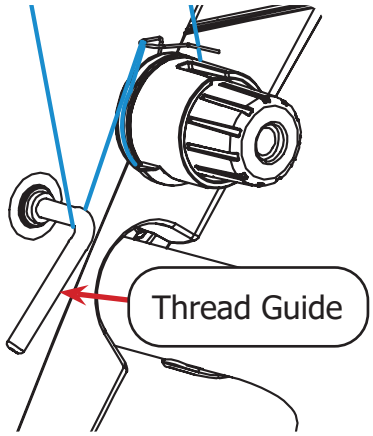


Threading the Machine (Continued)

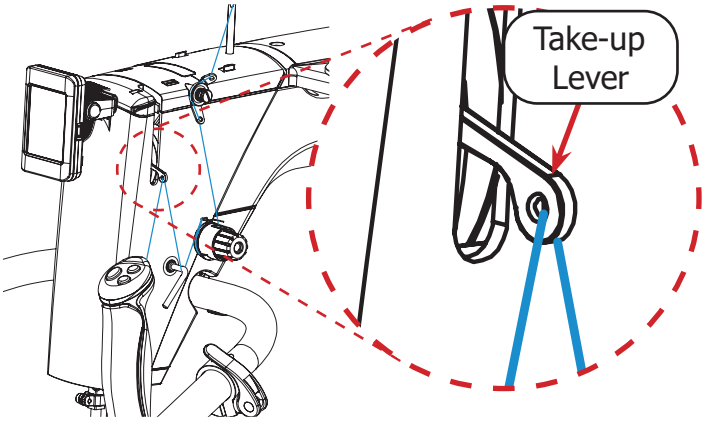
7 Pull the thread around the **large thread tensioner,** between the tension discs. Wrap the thread over the **check spring**.



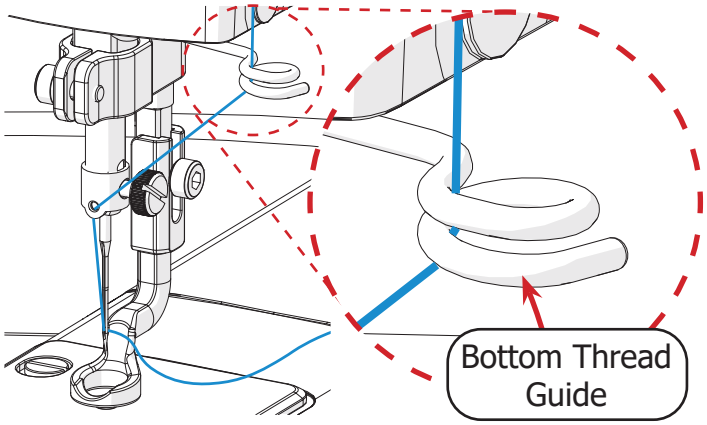
8 Next, run the thread under the **thread guide** next to the large thread tensioner.



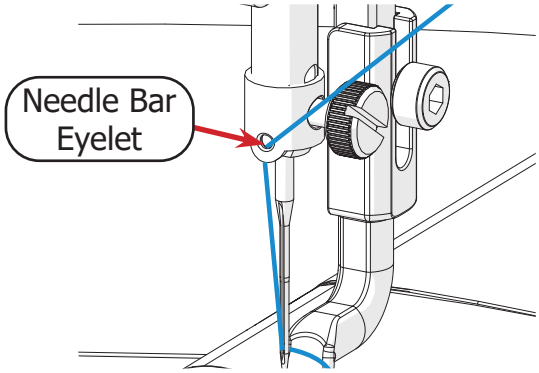
9 Pull the thread through the hole in the **take-up lever**.



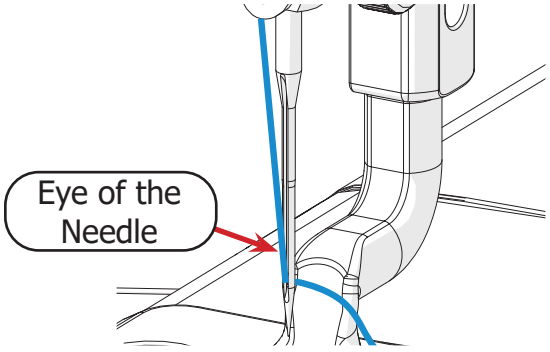
10 Pass the thread down through the **bottom thread guide** on the way to the needle.



11 Now pass the thread through the front of the **needle bar eyelet**, located above the needle.

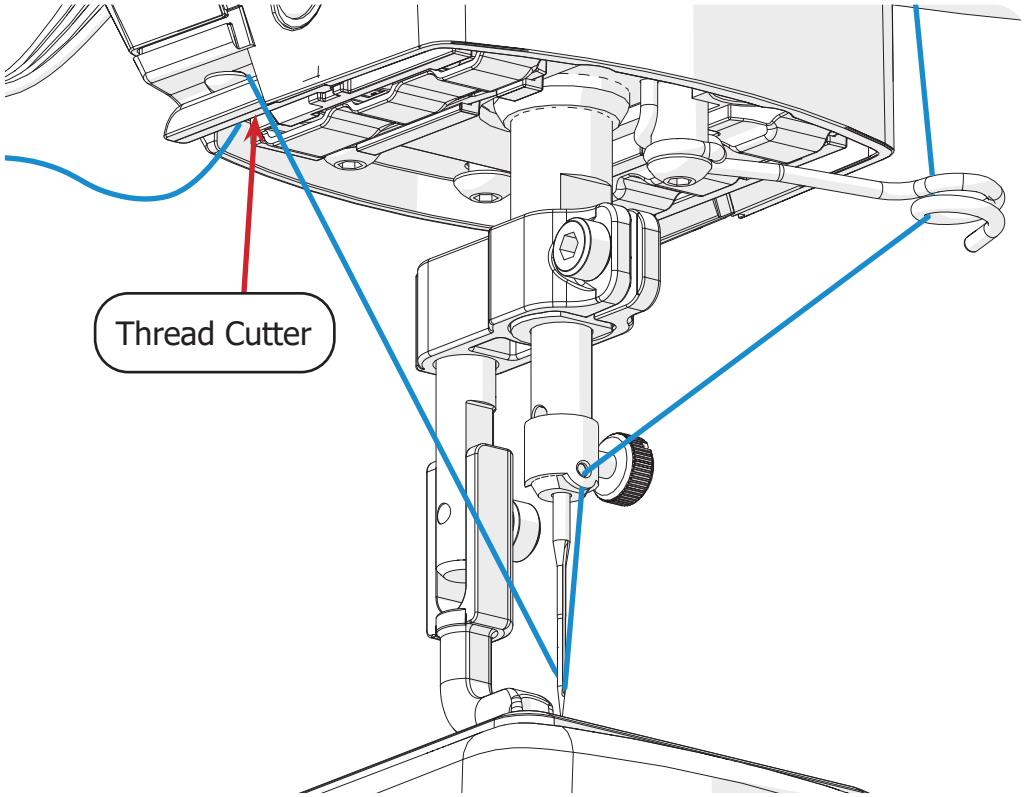


12 Thread through the **eye of the needle**.



Threading the Machine (Continued)

13 Loop excess thread over the **thread cutter** to cut the thread.



Quilting

Now that the machine is set up, it's time to start quilting! This section of the manual describes handlebar control, using the four quilting modes, and tensioning the thread.

Using the Handlebar Controls ..... page 41

Using the Precise Quilting Mode ..... page 42

Using the Cruise Quilting Mode ..... page 44

Using the Basting Mode ..... page 46

Using the Manual Quilting Mode ..... page 48

Adjusting Thread Tension ..... page 50

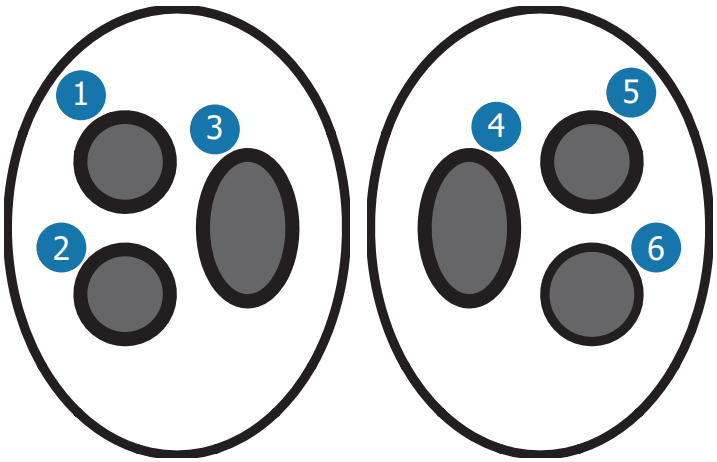
Tracking Stitch Count and Run Time ..... page 52

Tip: While familiarizing yourself with the controls and display of your quilting machine, it's a good time to test out new quilting materials and practice stitching. Test your thread tension while using the different quilting modes available on the machine.

Using the Handlebar Controls

When first turned on, the machine starts in regulated precise quilting mode and can start quilting right away. Please take a moment to review the handlebar controls used when quilting. While in the Settings menu, System Information screen, or Screen Settings menu, some buttons have a different purpose or do not function (see page 28 for details).

Note: Left-handed quilters may prefer to reverse these buttons. This can be done in the Settings menu (see page 28).

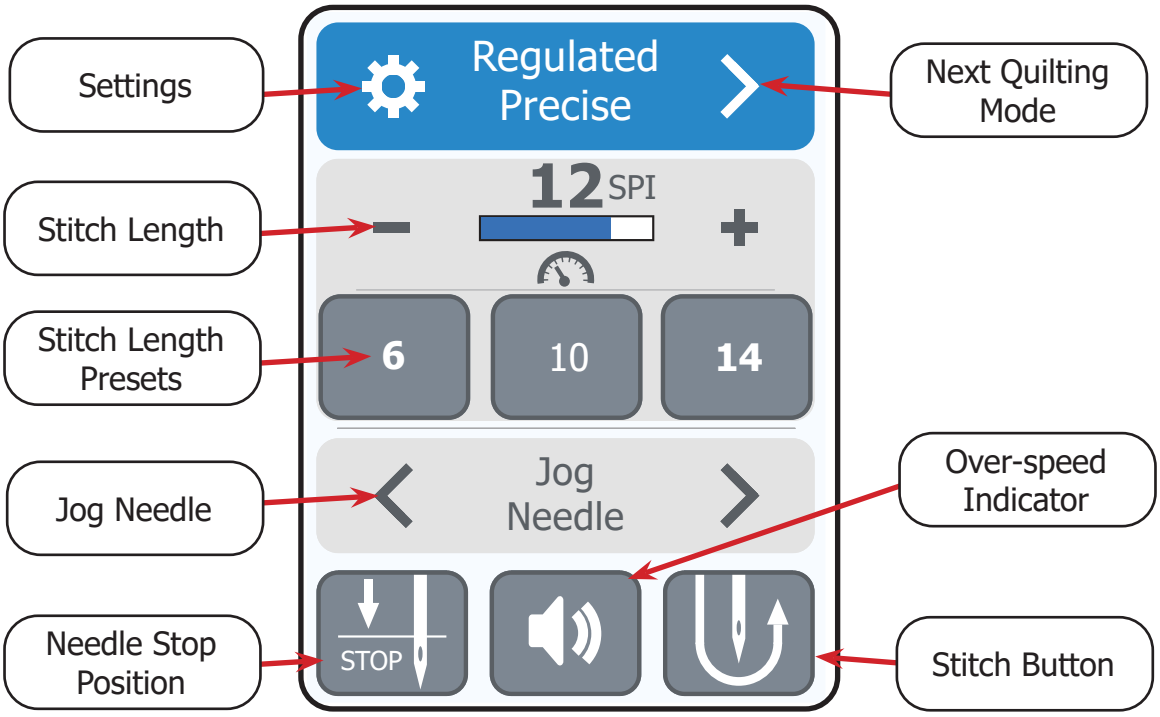


1. **Change Quilting mode:** Press to cycle through the quilting modes: regulated precise, regulated cruise, baste, and manual.
2. **Settings:** This button opens the Settings menu.
3. **Single Full Stitch or Half-stitch**
   - Press to create a single full stitch or a half-stitch, based upon settings (see page 28).
4. **Start/Stop Quilting:** Press to start or stop stitching.
5. **Increase:** This button increases the number, size, or speed of the stitching, depending upon the quilting mode. For example, in precise quilting mode, this button increases the number of stitches the machine makes per inch (SPI) or per centimeter (SPC).
6. **Decrease:** This button will decrease the number, size, or speed of the stitching depending upon the quilting mode.

Using the Precise Quilting Mode

The machine defaults to the precise quilting mode when turned on. In this regulated quilting mode, the machine maintains the length of the stitch despite the speed and direction of the quilter's movements. If the quilter stops moving, the machine stops stitching.

To switch to a different quilting mode, press the **next quilting mode** icon .



To quilt in the regulated precise quilting mode, take the following steps:

1. Confirm that the **stitch length**, measured in stitches per inch (SPI), is the desired length.
   Note: To switch to stitches per centimeter (SPC), go to the **Settings** menu (see page 28).

   Press to reduce the number of stitches per inch and increases stitch length.

   Press to increase the number of stitches per inch, which decreases stitch length.

2. Check the **needle stop position** indicator to see if the needle will stop in the "Up" or "Down" position when stitching is inactive. Pressing the icon will change the stop position.

   Needle stops in the "Down" position.

   Needle stops in the "Up" position.

Using the Precise Quilting Mode (Continued)

3. Check the **stitch button** icon. When stitching is inactive, pressing this button or the stitch button on the handlebars will create a single full stitch or a half-stitch, depending on the icon displayed. To switch the type of stitch created, go to the Settings menu (see page 28).


Press to create a full stitch.


Press to create a half-stitch.

4. Position the quilting machine over the quilt. If needed, use the **needle jog** buttons to move the needle closer or further from the fabric in small increments to help place your first stitch.


Press to move the needle up or down in small increments.

5. Press the start/stop quilting button on the handlebar to begin (activate) stitching. Move the machine across the quilt to place stitches. Keep the pace slow and even; moving too quickly can prevent stitch regulation. If this happens, a beeping alarm will sound and the **over-speed indicator** on the display will turn red. Pressing the icon mutes the alarm.

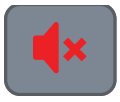

Stitching is not active and alarm is not muted.


Stitching is not active and alarm is muted.


Stitching is active and alarm is not muted.


Stitching is active and alarm is muted.


Machine moving too quickly for stitching and alarm is not muted.


Machine moving too quickly for stitching and alarm is muted.

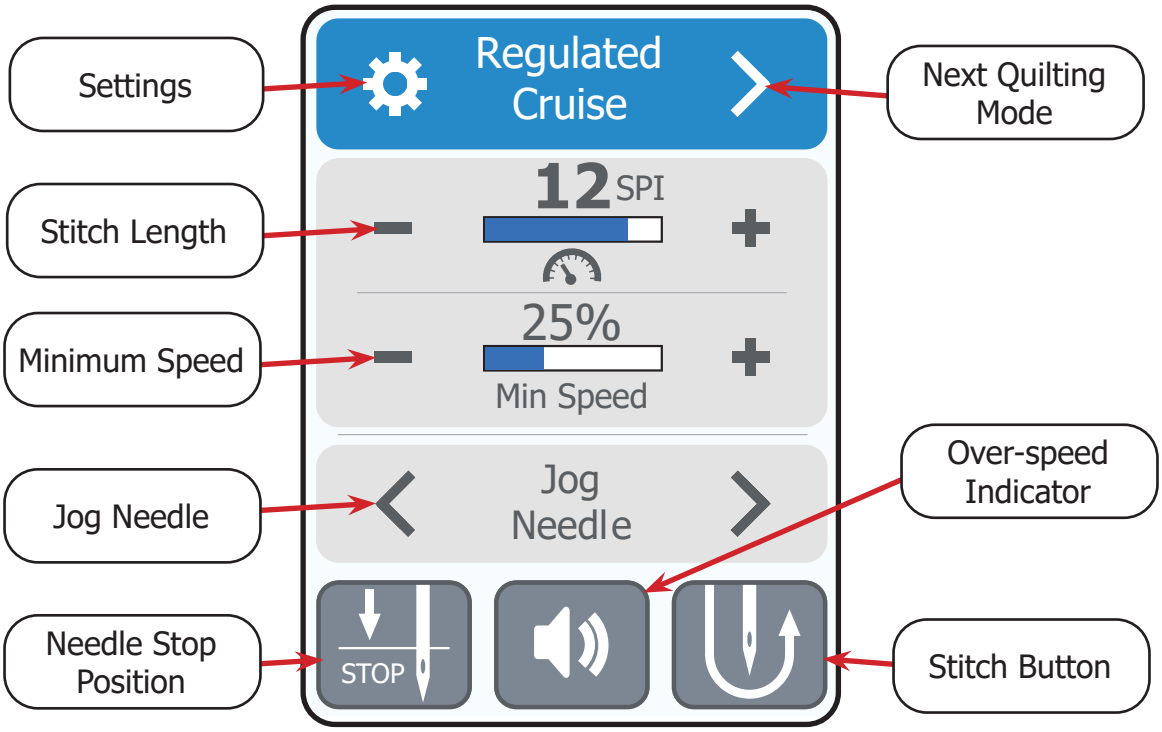
Note: While stitching is active, the **stitch button** on both the display and handlebar controls are disabled.

6. To inactivate stitching, press the start/stop quilting button on the handlebars. The needle will move into the **needle stop position** indicated on the display.

Using the Cruise Quilting Mode

In cruise mode, the quilting machine maintains the length of the stitch despite the speed and direction of the quilter's movements. However, the machine will continue to stitch in place (at the minimum speed) if the quilter stops moving the machine.

To switch to a different quilting mode, press the **next quilting mode** icon .



To quilt in the regulated cruise quilting mode, take the following steps:

1. Confirm that the **stitch length**, measured in stitches per inch (SPI), is the desired length.
   Note: To switch to stitches per centimeter (SPC), go to the **Settings** menu (see page 28).

   Press to reduce the number of stitches per inch and increases stitch length.

   Press to increase the number of stitches per inch, which decreases stitch length.

2. Determine the **minimum speed** the machine will stitch at when stitching is active but the machine is not being moved. This can be set from 5% to 25% of the machine's top speed.

   Decreases the minimum speed.

   Increases the minimum speed.

Using the Cruise Quilting Mode (Continued)

3. Check the **needle stop position indicator** to see if the needle will stop in the "Up" or "Down" position when stitching is inactive. Pressing the icon will change the stop position.



Needle stops in the "Down" position.



Needle stops in the "Up" position.

4. Check the **stitch button** icon. When stitching is inactive, pressing this button or the stitch button on the handlebars will create a single full stitch or a half-stitch, depending on the icon displayed. To change the type of stitch, go to the Settings menu (see page 28).



Press to create a full stitch.



Press to create a half-stitch.

5. Position the quilting machine over the quilt. If needed, use the **needle jog** buttons to move the needle closer or further from the fabric in small increments to help place your first stitch.



Press to move the needle up or down in small increments.

6. Press the start/stop quilting button on the handlebar to activate stitching. Move the machine across the quilt to place stitches. Keep the pace slow and even; moving too quickly can stop proper stitch regulation. If this happens, a beeping alarm will sound and the **over-speed indicator** on the display will turn red. Pressing the icon mutes the alarm. **Note:** While stitching is active, the stitch button on both the display and handlebar controls are disabled.



Stitching is not active and alarm is not muted.



Stitching is not active and alarm is muted.



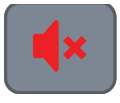
Stitching is active and alarm is not muted.



Stitching is active and alarm is muted.



Machine moving too quickly for stitching and alarm is not muted.



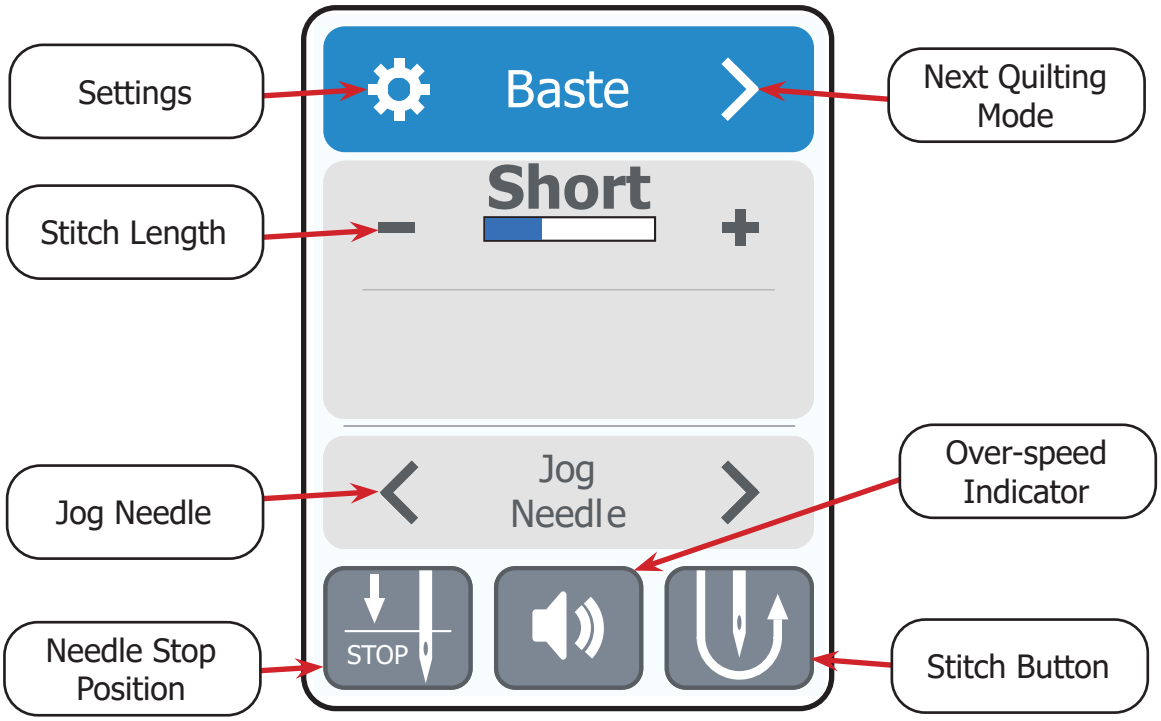
Machine moving too quickly for stitching and alarm is muted.

7. To inactivate stitching, press the start/stop quilting button on the handlebars. The needle will move into the needle stop position indicated on the display.

Using the Basting Mode

Use the basting mode to create loose, temporary stitches to hold layers of fabric together while quilting.

To switch to a different quilting mode, press the **next quilting mode** icon .



To quilt in the regulated cruise quilting mode, take the following steps:

1. Confirm that the **stitch length** is the desired length (small, medium, or large).

   Press to reduce stitch length.

   Press to increase stitch length.

2. Check the **needle stop position indicator** to see if the needle will stop in the "Up" or "Down" position when stitching is inactive. Pressing the icon will change the stop position.

   Needle stops in the "Down" position.

   Needle stops in the "Up" position.

3. Check the **stitch button** icon. When stitching is inactive, pressing this button or the stitch button on the handlebars will create a single full stitch or a half-stitch, depending on the icon displayed. To change the type of stitch, go to the **Settings** menu (see page 28).


Press to create a full stitch.


Press to create a half-stitch.

4. Position the quilting machine over the quilt. If needed, use the **needle jog** buttons to move the needle closer or further from the fabric in small increments to help place your first stitch.


Press to move the needle up or down in small increments.

5. Press the start/stop quilting button on the handlebar to begin (activate) stitching. Move the machine across the quilt to place stitches. Keep the pace slow and even; moving too quickly can stop proper stitch regulation. If this happens, a beeping alarm will sound and the **over-speed indicator** on the display will turn red. You can press the icon to mute the alarm.

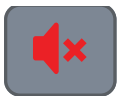

Stitching is not active and alarm is not muted.


Stitching is not active and alarm is muted.


Stitching is active and alarm is not muted.


Stitching is active and alarm is muted.


Machine moving too quickly for stitching and alarm is not muted.


Machine moving too quickly for stitching and alarm is muted.

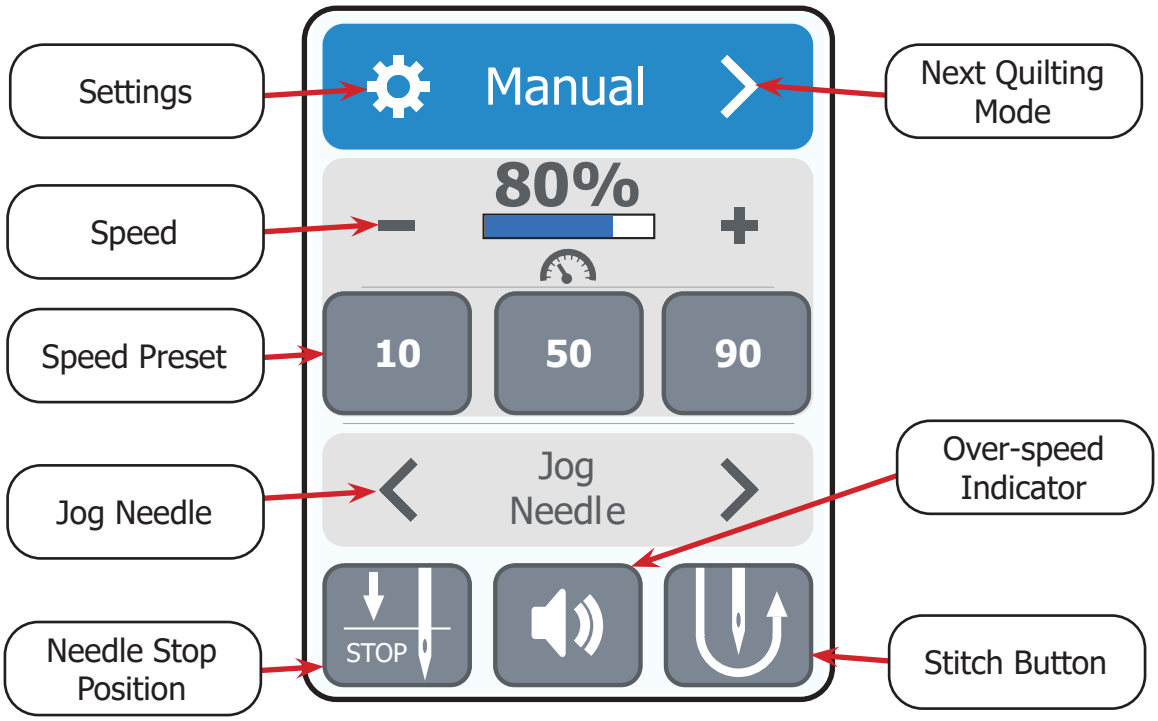
Note: While stitching is active, the **stitch button** on both the display and handlebars are disabled.

6. To inactivate stitching, press the start/stop quilting button on the handlebars. The needle will move into the **needle stop position** indicated on the display.

Using the Manual Quilting Mode

In this quilting mode, the machine produces stitches at a constant speed. It's up to the quilter to move the machine the distance needed to get the desired stitch length. This mode is useful for small, continuous stippling patterns.

To switch to a different quilting mode, press the **next quilting mode** icon .



To quilt in the regulated cruise quilting mode, take the following steps:

1. Confirm that the **stitch speed** is the desired speed. The stitching speed is displayed as a percentage of the maximum machine speed of 2000 stitches-per-minute.

   Press to reduce stitching speed.

   Press to increase stitching speed.

2. Establish your **speed presets**. Selecting a preset adjusts the machine's speed to the percent indicated. To customize a preset, first set the machine to the desired speed. Then press and hold the preset you'd like to change for three seconds. It will update to the new speed.

   Example: In the display shown above, holding down the "10" preset button for three seconds would update that button to "80," the current stitching speed.

Using the Manual Quilting Mode (Continued)

3. Check the **needle stop position indicator** to see if the needle will stop in the "Up" or "Down" position when stitching is inactive. Pressing the icon will change the stop position.



Needle stops in the "Down" position.



Needle stops in the "Up" position.

4. Check the **stitch button** icon. When stitching is inactive, pressing this button or the stitch button on the handlebars will create a single full stitch or a half-stitch, depending on the icon displayed. To change the type of stitch, go to the **Settings** menu (see page 28).



Press to create a full stitch.



Press to create a half-stitch.

5. Position the quilting machine over the quilt where you want to stitch. If needed, use the **needle jog** buttons to move the needle closer or further from the fabric in small increments to help place your first stitch.



Press to move the needle up or down in small increments.

6. The **over-speed indicator** shows whether stitching is active or not. Press the start/stop quilting button on the handlebar to activate stitching. Move the machine across the quilt to place stitches. Change the speed of your movements to match the stitching speed of the machine in order to create stitches of the desired length. Moving quickly will create longer stitches, while moving slowly will create shorter stitches.



Stitching is not active.



Stitching is not active.



Stitching is active.



Stitching is active.

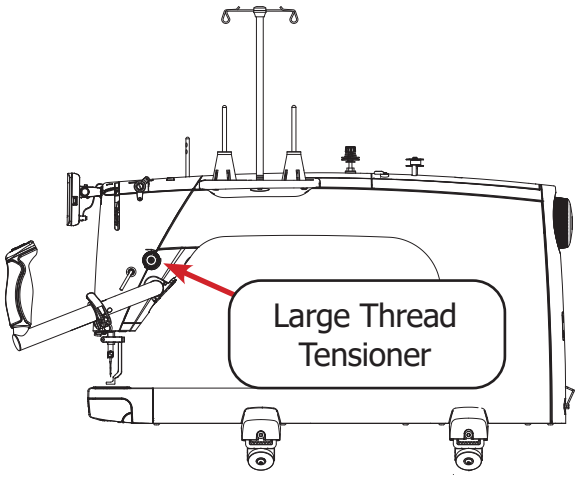
Note: While stitching is active, the **stitch button** on both the display and handlebar controls are disabled.

7. To inactivate stitching, press the start/stop quilting button on the handlebars. The needle will move into the **needle stop position** indicated on the display.

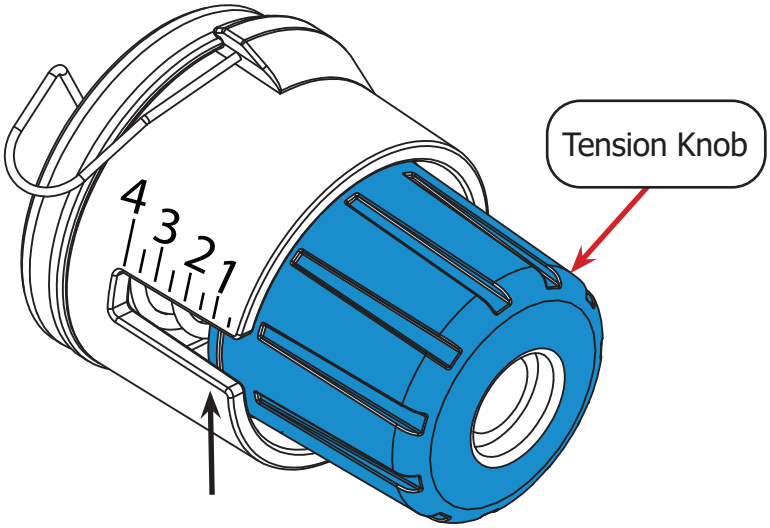
Adjusting Thread Tension

Proper thread tension prevents unwanted puckering, poorly-formed stitches, and malfunctions that can damage the fabric. Test your thread tension on extra materials before sewing on a project.

Tip: Bottom thread tension is the foundation for proper thread tension. It is addressed in "Loading the Bobbin Case" on page 32.



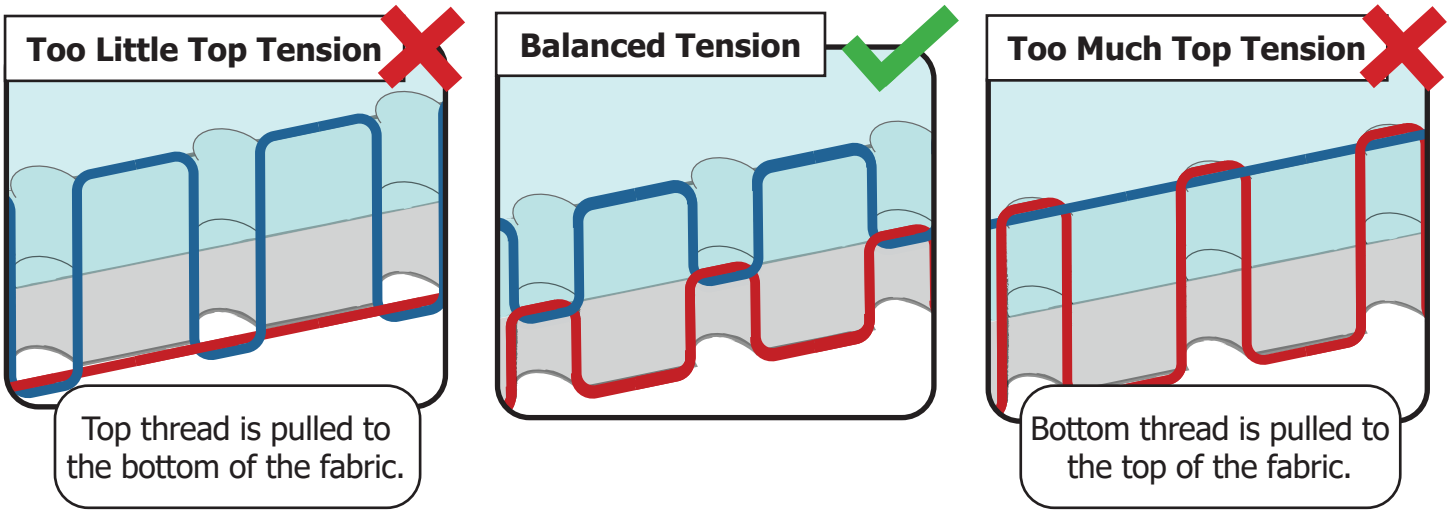
1. Loosen the **tension knob** on the large thread tensioner to set the tension to "1." The bottom of the tension knob lines up with the number that the tension is set to.



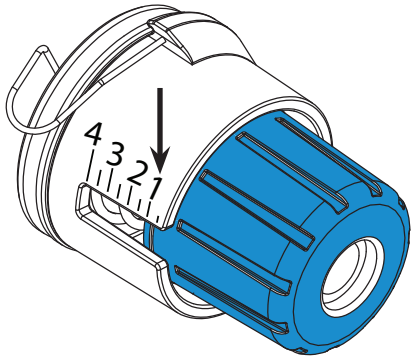
Note: Setting "1" is the lowest tension for the machine. This is an ideal starting place to find the correct top thread tension.

Adjusting Thread Tension (Continued)

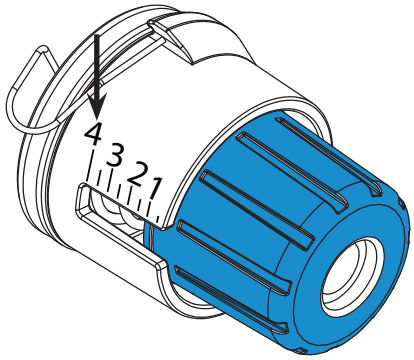
2 Slowly increase the tension while stitching into scrap material similar to your project. When the thread tension is balanced, the top and bottom thread (shown in blue and red) will knot in the middle of the fabric layers.



- If the **bobbin (bottom) thread** (shown in red) is pulled through the top layer of fabric, there is too much top tension. Loosen the tension by turning the large thread tensioner knob toward the setting "1."

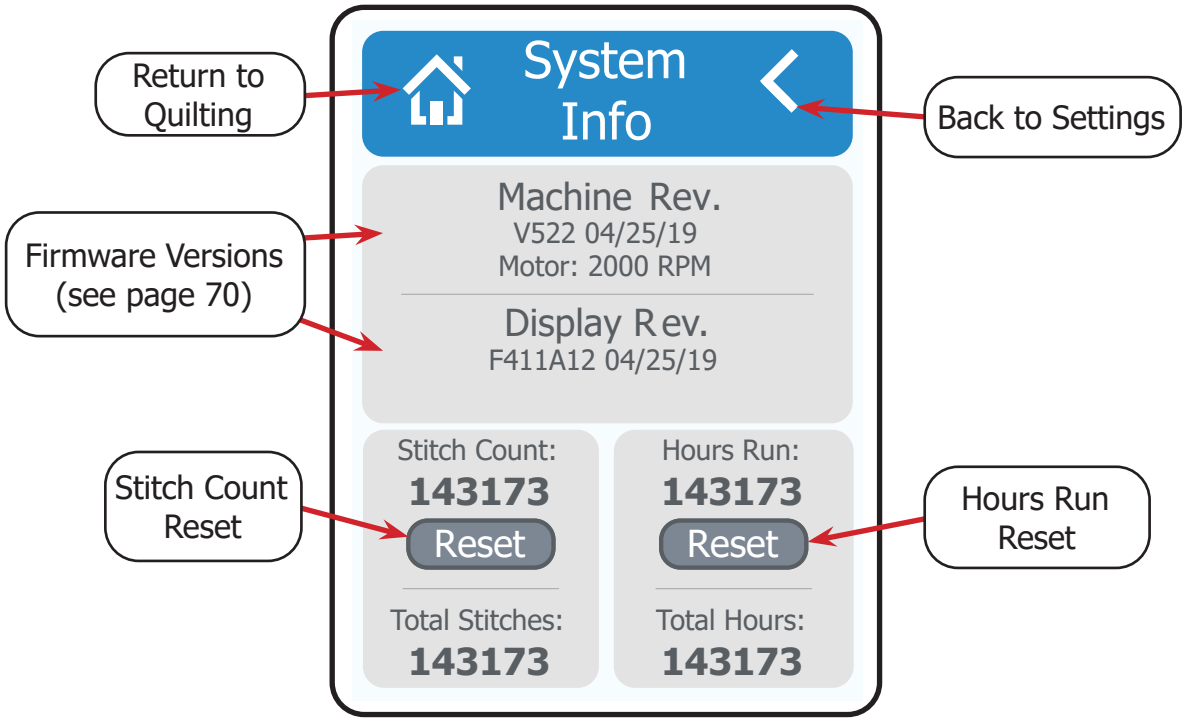


- If the **top thread** (shown in blue) is pulled down through the bottom layer of fabric, there is too little top tension. Increase the tension on the top by turning the large thread tensioner knob toward setting "4."



Tracking Stitch Count and Run Time

To track the number of stitches your machine has sewn or hours it has run, press the System Information icon from the Settings menu (see page 28).



- **Stitch Count:** Displays the number of stitches since the last reset.

  Reset Press to start the stitch count back at 0.

- **Hours Run:** Displays the number of hours run since the last reset.

  Reset Press to start the hour count back at 0.

- **Total Stitches:** Shows the total number of stitches since the machine was purchased. This cannot be reset.
- **Total Hours:** Shows the total number of hours the machine has run. This cannot be reset.

Tip: It's recommended to oil your machine after 20 hours of use. The "Hours Run" counter can help keep track of when your machine is due to be oiled.

1. After cleaning and oiling your machine (see page 55), press **Reset** underneath **Hours Run**. This will set the hour count back to 0.
2. Check the **Hours Run** count regularly. When it reaches 20 hours, it's time to clean and oil the machine again. Repeat from step 1.

Maintaining the Machine

Keep your machine at peak performance by practicing good machine maintenance habits.

Preparing the Oil Bottle ..... page 54

Oiling and Cleaning ..... page 55

Changing the Needle ..... page 58

Adjusting the Bobbin Cam ..... page 60

Adjusting the Hopping Foot ..... page 61

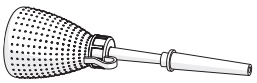
Reinstalling the Needle Plate ..... page 66

Calibrating the Touch Display ..... page 68

This section of the manual covers oiling the machine, changing the needle, adjusting the bobbin cam and hopping foot, reinstalling the needle plate, and calibrating the touch display.

Preparing the Oil Bottle

Parts & Tools Needed:



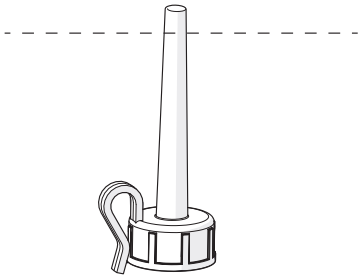
Oil Bottle

- Scissors (not included)

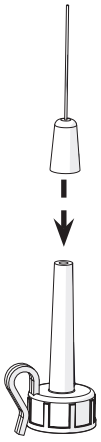
Instructions

Take the following steps to prepare the oil bottle for use in oiling the machine.

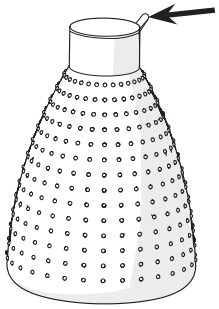
1. Snip off about 1/4th of an inch from the tip of the plastic lid with a pair of scissors.



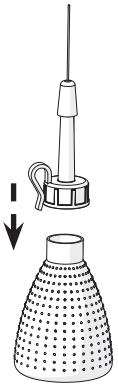
2. Place the applicator needle onto the top of the cap.



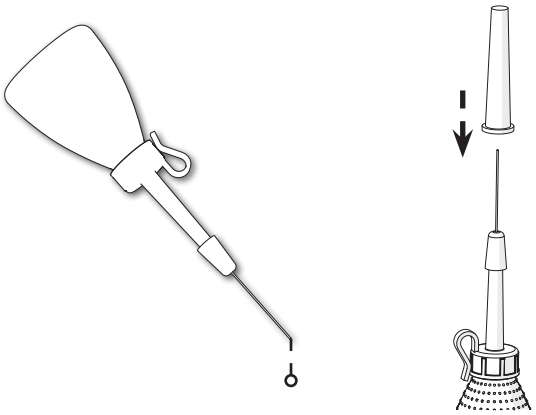
3. Peel the safety foil off the opening of the oil bottle.



4. Carefully screw the lid onto the oil bottle.

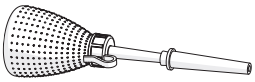


5. Hold bottle upside down and squeeze gently to apply oil. When not in use, cover the applicator needle with the safety cap.



Oiling and Cleaning

Parts & Tools Needed:



Oil Bottle



Lint Brush

- Compressed Air Can (optional; not included)

Instructions

Oil and Clean:	
Machine	• At the start of a new project • After 20 hours of use • After sitting without use for more than 30 days
Hook Assembly	• Every other bobbin change

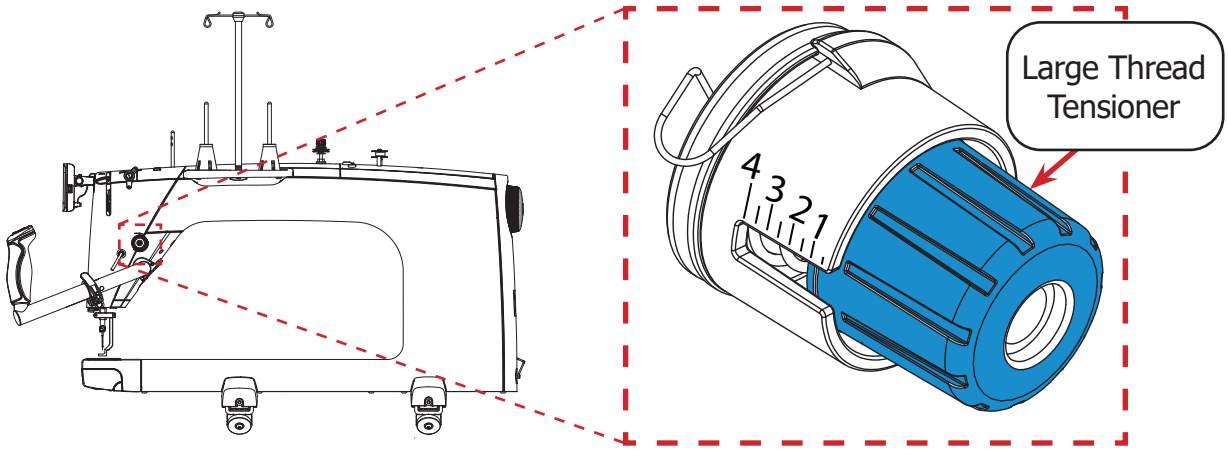
Tip: The "Hours Run" counter on the System Information page can be used to track hours of quilting time (see page 52).

Take the following steps to clean and oil the machine:

1. Power off the machine.

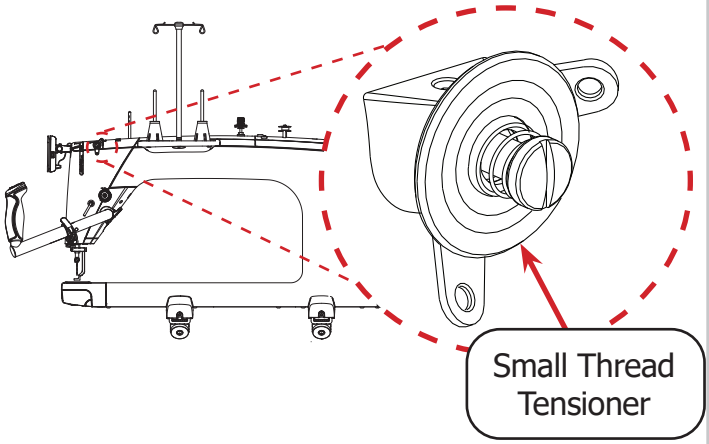
2. Set the **large thread tensioner** to "1" to expose the tensioner discs. Use the lint brush or a can of compressed air to clear away lint and thread remnants.

   Note: Lint build-up between the tensioner discs can prevent proper thread tensioning.

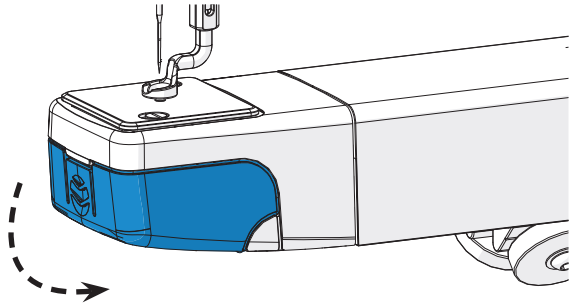


Oiling and Cleaning (Continued)

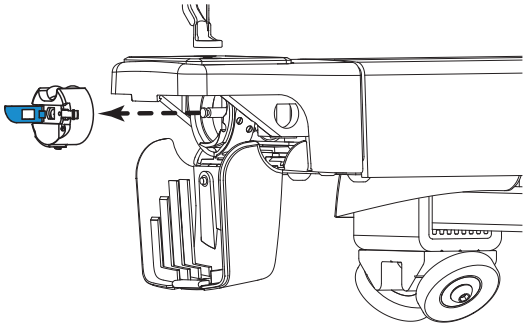
3 Clear debris from the spring and discs of the **small thread tensioner**.



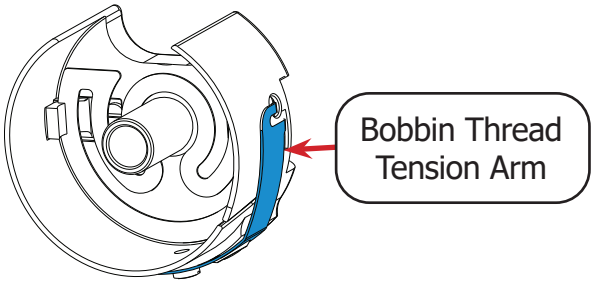
4 Press in on the hook assembly cover and push down to open it.



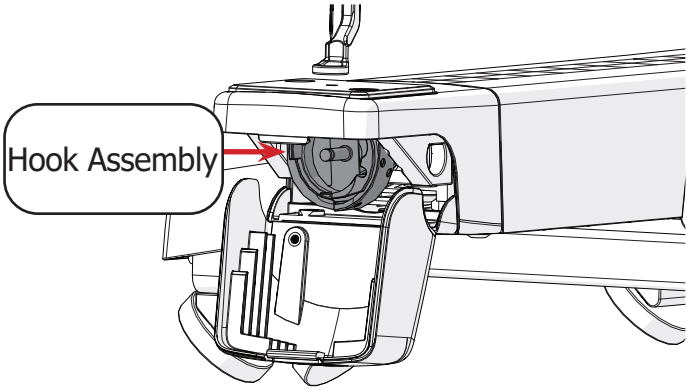
5 Pull the **release lever** (shown in blue) on the bobbin case to remove it from the hook assembly. If the case won't release, raise the needle with the hand wheel at the rear of the machine.



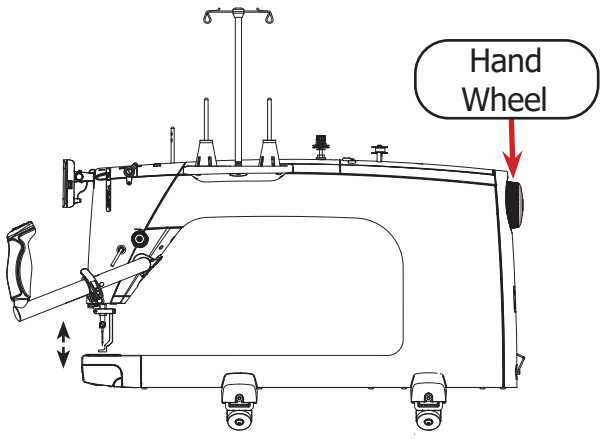
6 Set the bobbin aside. Clean the bobbin case with the lint brush or compressed air. Be sure to clean the area under the **bobbin tension thread arm**.



7 In and around the **hook assembly**, clear away any lint, cloth, and thread remnants.

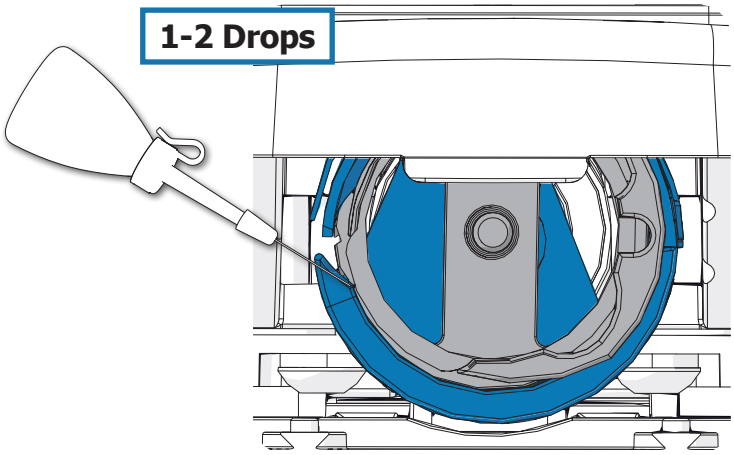


8 Rotate the **hand wheel** until the needle is halfway down. This will put the hook in the best position for oiling.

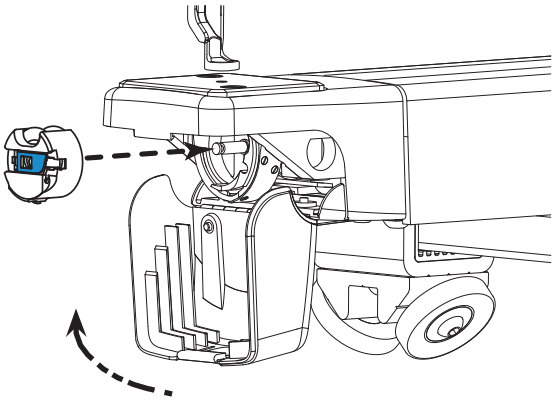


Oiling and Cleaning (Continued)

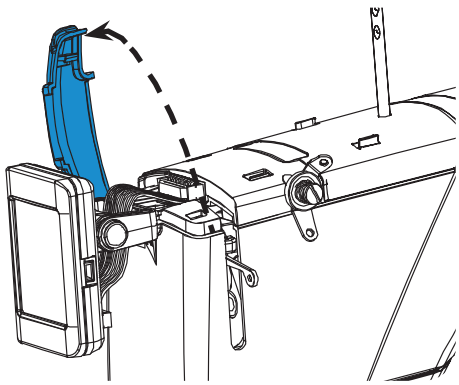
9 Place one to two drops of oil into the hook assembly between the **inner part** (shown in gray) and **outer part** (shown in blue).



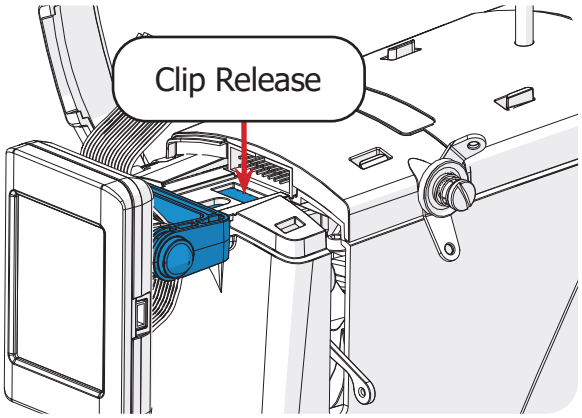
10 Reload the bobbin case and return it to the machine (for detailed instructions on tensioning the bobbin case, see page 32). Close the hook assembly cover.



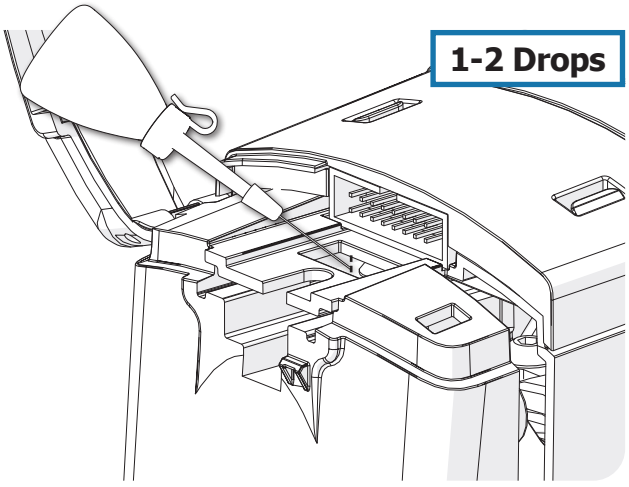
11 Open the display cover.



12 Unplug the display cable. Press down on the **clip release** and pull on the display to remove it from the machine.



13 Place 1-2 drops of oil down the machine.



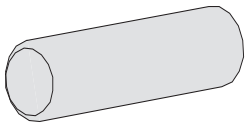
Changing the Needle

For information on selecting a needle, see page 82.

Parts & Tools Needed:



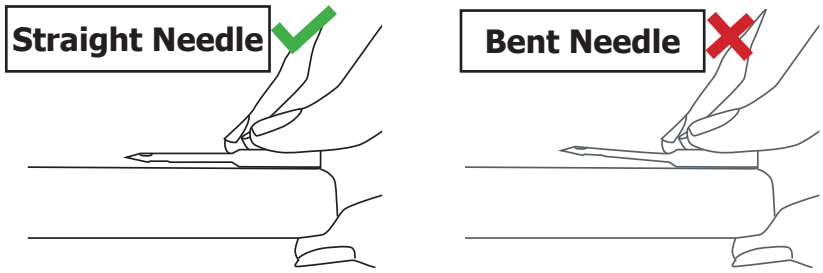
Needle



Needle Magnet

Instructions

A broken, bent, or burred needle may break thread, damage fabric, or even damage the machine. Always check that the needle is in good repair before starting a new project, and replace the needle after eight hours of use.



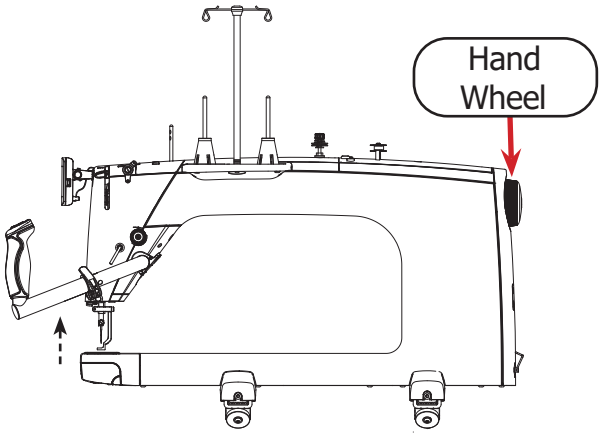
To avoid damage to the machine, please choose an approved needle style from the list below:

- DPx5 MR
- 134 MR
- 1955 MR

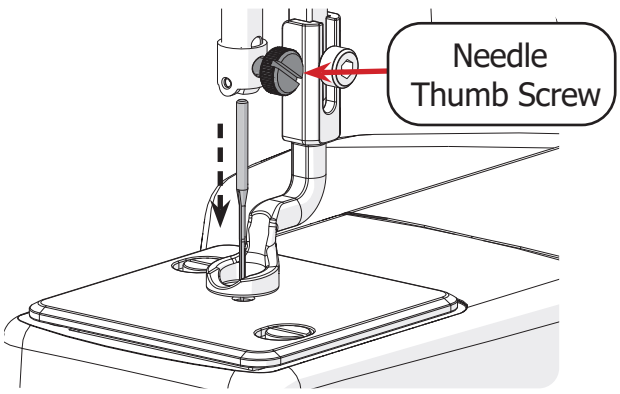
To change the needle, take the following steps:

1. Power off the machine.

2. Raise the needle to the highest position with the hand wheel.

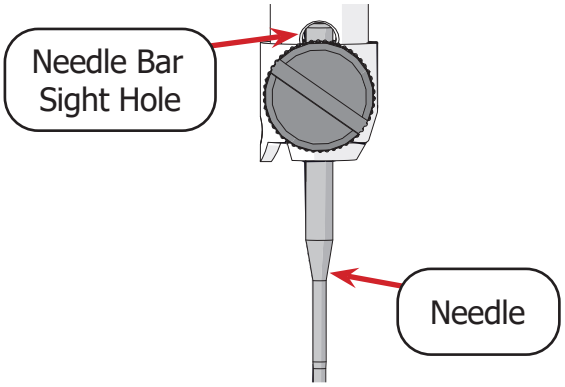


3. Loosen the **needle thumb screw** and pull down the needle. If needed, use a flat-head screwdriver

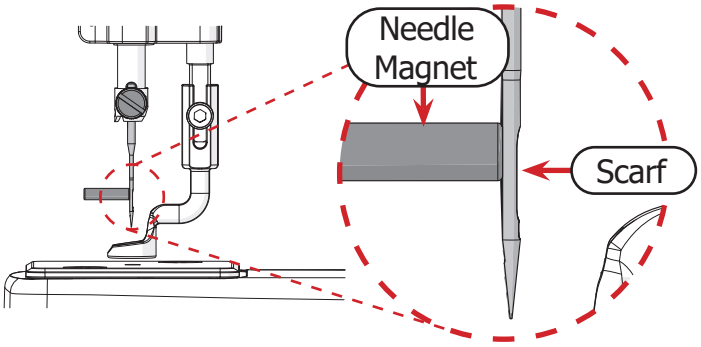


Changing the Needle (Continued)

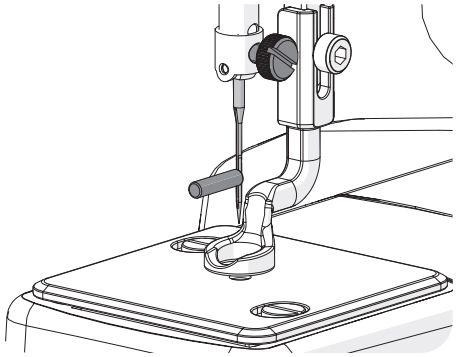
4 Insert the new **needle** all the way into the needle bar. Check the **needle bar sight hole** above the thumb screw to make sure the needle is inserted all the way.



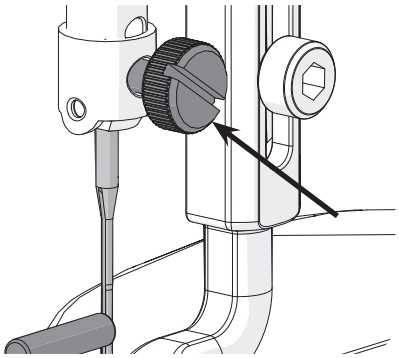
5 The **scarf**, a cut-out on the back of the needle, should face the throat of the machine. Place the **needle magnet** on the opposite side of the scarf.



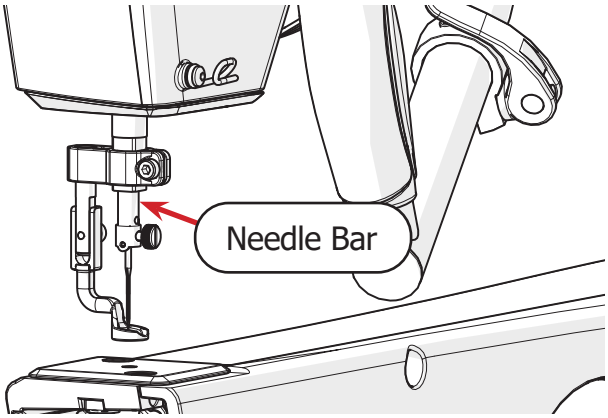
6 Use the needle magnet as a visual guide. Twist the needle until the magnet points as straight out from the machine as possible. **Note:** Do not attempt to adjust the needle by moving the magnet directly.



7 Hand-tighten the thumb screw. Do not over-tighten if using the flat-head screwdriver.



8 Regularly wipe down the **needle bar** to prevent the accumulation of oil that can stain your fabric.



Adjusting the Bobbin Cam

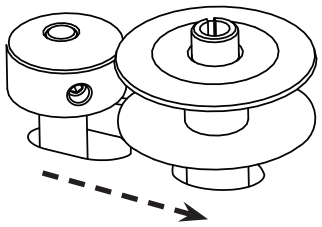
Parts & Tools Needed:

- 1.5 mm Allen Wrench (not included)

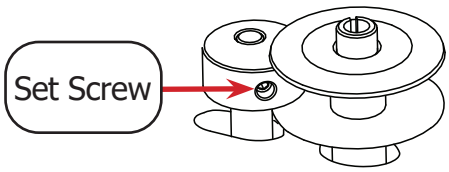
Instructions

The machine's bobbin cam is set so the bobbin will wind completely before the winder shuts off. To change how much the bobbin fills before the winding stops, take the following steps:

1. Power off the machine.
2. Place an empty bobbin onto the bobbin stand and flip the bobbin cam toward the bobbin. This will help estimate how far to adjust the bobbin cam.

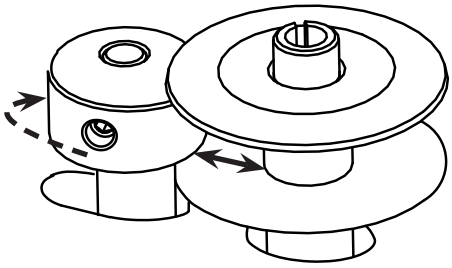


3. Loosen the **set screw** on the bobbin cam with a 1.5 mm Allen wrench until the top of the bobbin cam twists freely.

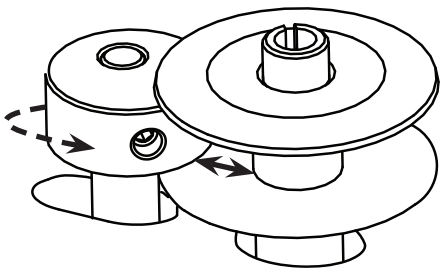


4. Point the set screw toward the bobbin to decrease the amount the bobbin will fill before the winder shuts off. Point the set screw away from the bobbin to increase the fill amount.

Point away from bobbin to increase fill.



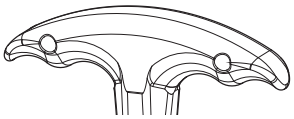
Point toward bobbin to decrease fill.



5. After choosing the desired distance, tighten the set screw with a 1.5 mm Allen wrench.

Adjusting the Hopping Foot

Parts & Tools Needed:



T-handle Allen Wrench 3 mm

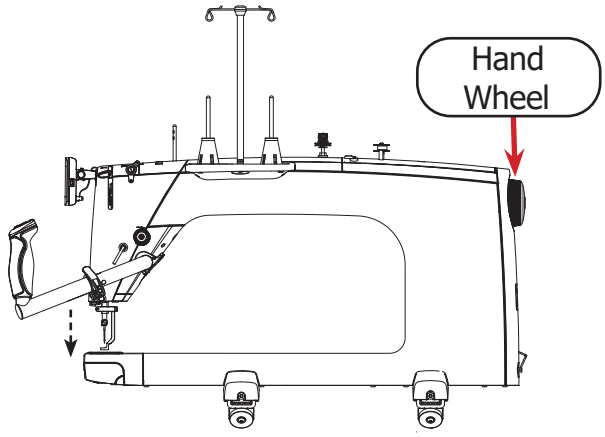


Hopping Foot Height Tool

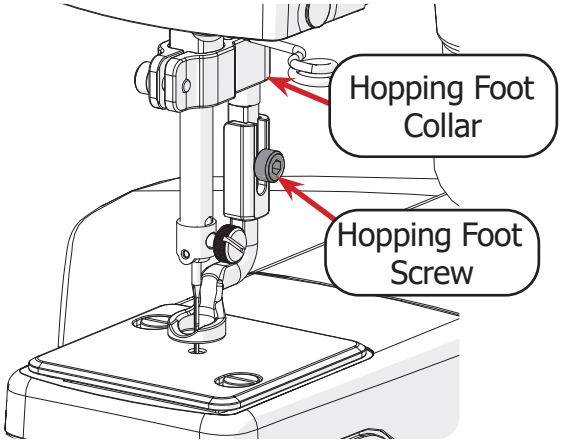
Height Adjustment

When quilting with thick fabric or batting layers, the hopping foot may pressing down on the quilt too tightly and begin to drag. Alternatively, if the hopping foot is set too high, skipped stitches can result. The hopping foot can be raised or lowered to correct these problems. To adjust the hopping foot height, take the following steps:

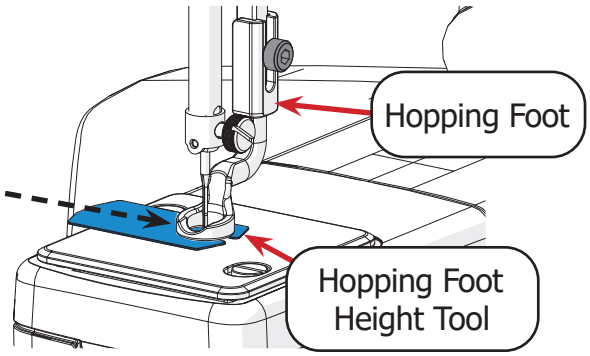
1. Use the **hand wheel** to drop the needle bar to the lowest position.



2. With the 3 mm Allen wrench, loosen the **hopping foot screw** that holds the hopping foot to the **hopping foot collar**.

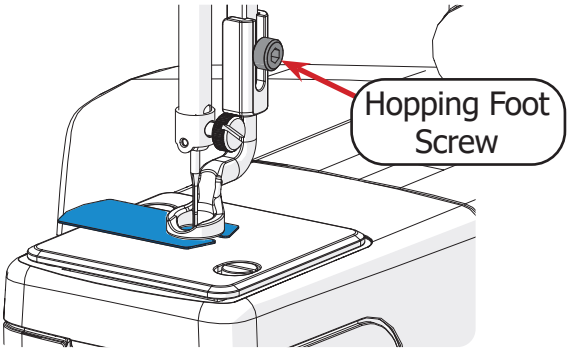


3. Slide the **hopping foot height tool** underneath the **hopping foot** so that the needle slides into the height tool groove.



Note: The height tool prepares the machine for standard sized quilt batting and two layers of fabric. For thicker quilts, stack sheets of printing paper over the gauge to increase room underneath the hopping foot.

4. Re-tighten the **hopping foot screw**.

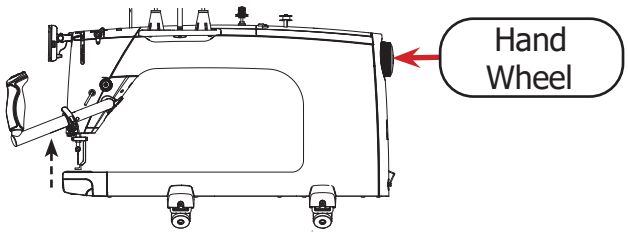


Adjusting the Hopping Foot (Continued)

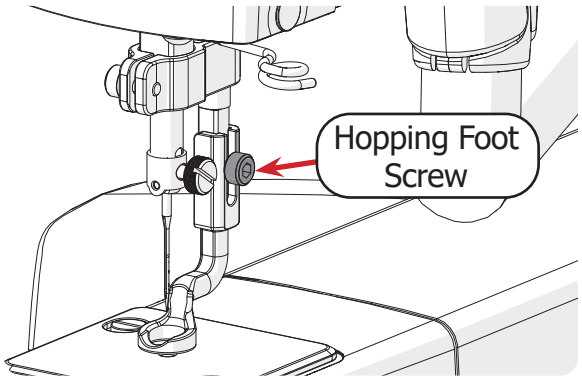
Rotation Instructions

The hopping foot can be rotated to improve line of sight. To rotate the hopping foot, please take the following steps.

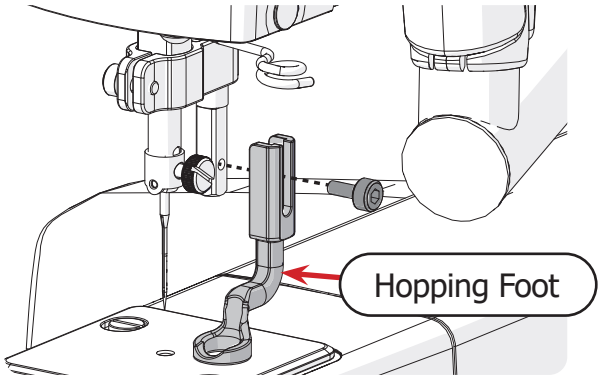
1. Power off the machine.
2. Rotate the **hand wheel** to lift the needle from the hopping foot.



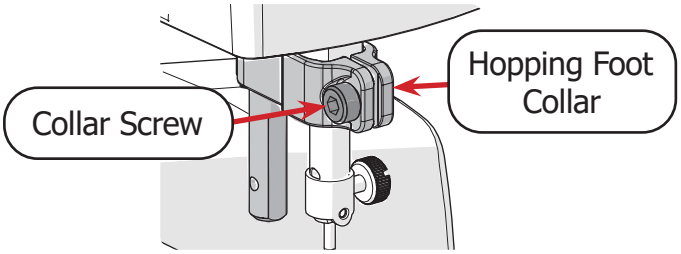
3. Use the 3 mm Allen wrench to remove the **screw** holding the hopping foot.



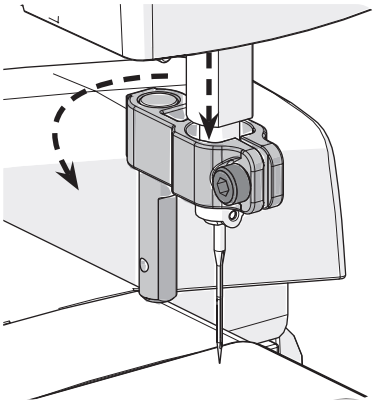
4. Slide the **hopping foot** from the presser bar.



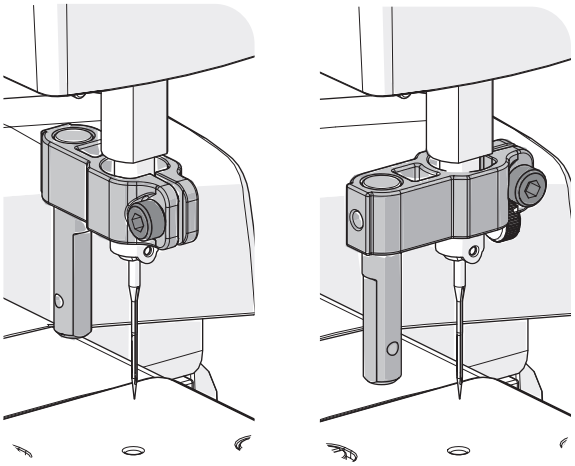
5. With the 3 mm Allen wrench, loosen the **collar screw** that holds the **hopping foot collar** to the presser bar.



6. Drop the hopping foot collar below the presser bar and turn it to the desired position.

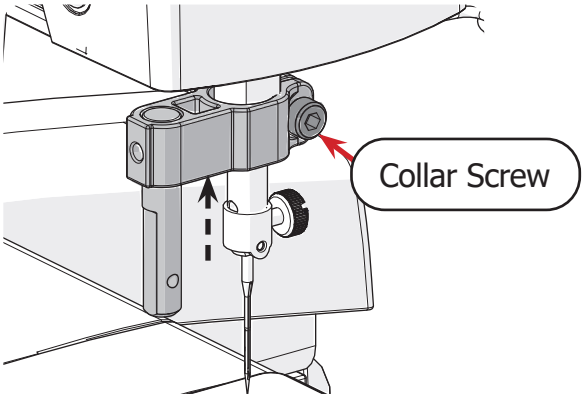


The hopping foot can be set to two positions:

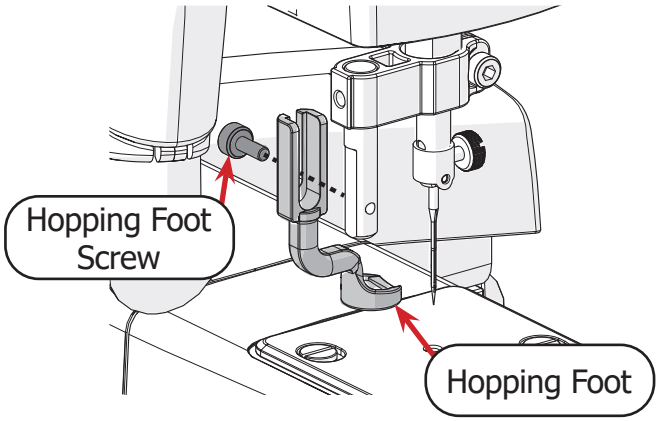


Adjusting the Hopping Foot (Continued)

7. Lift the hopping foot collar back up to the presser bar, and re-tighten the **collar screw**.



8. Slide the **hopping foot** into the collar and screw in place with the **hopping foot screw**.



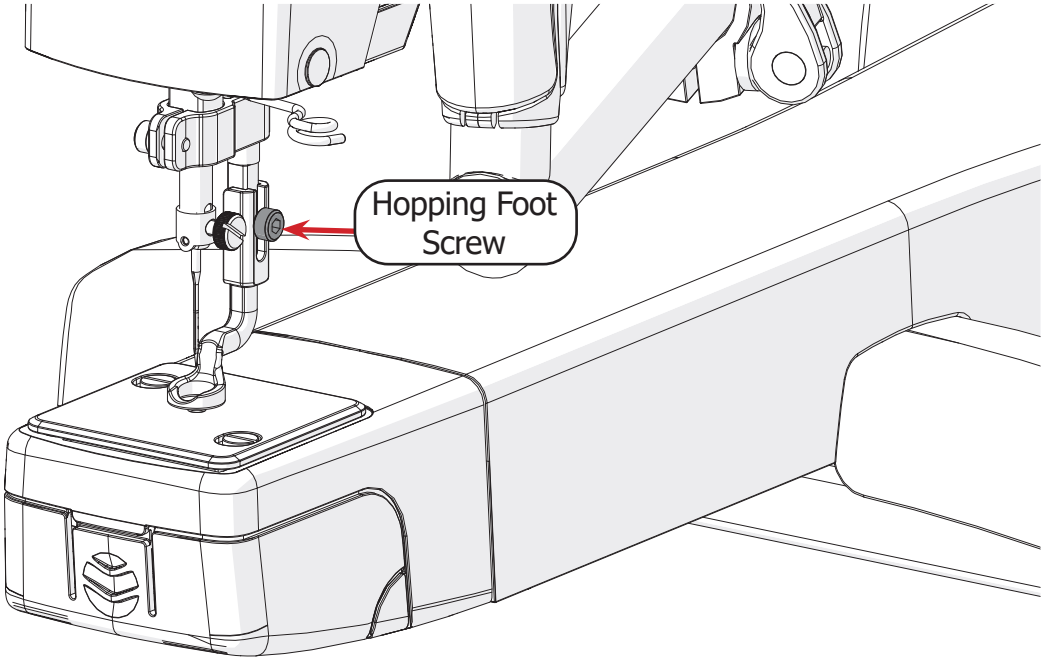
9. Set the hopping foot height (see page 61).

Adjusting the Hopping Foot (Continued)

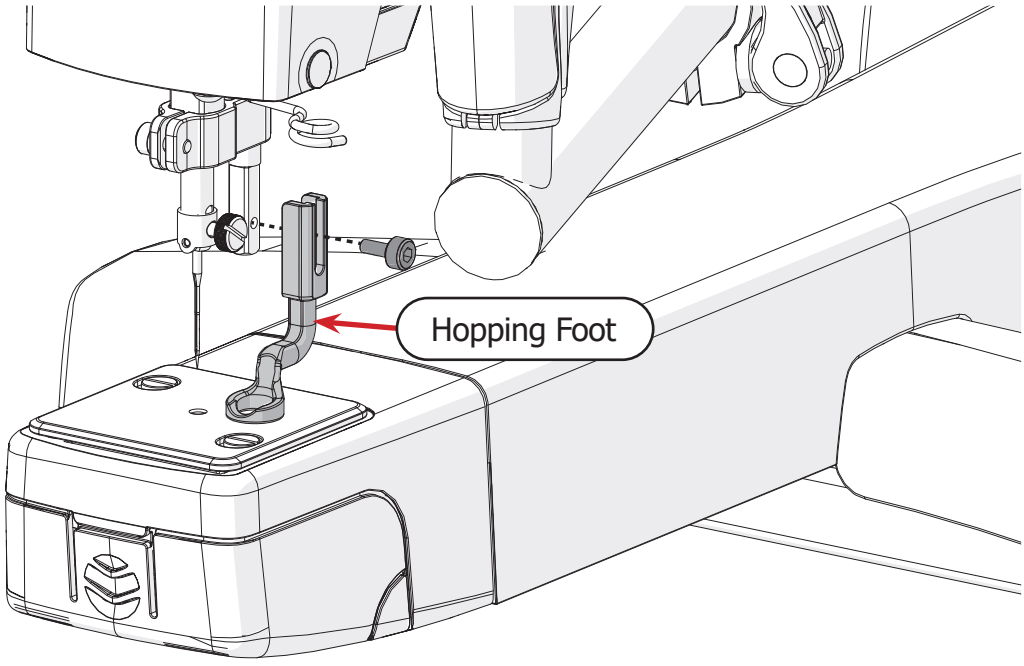
Removal Instructions

To remove the hopping foot for maintenance or to adjust the hopping foot angle, take the following steps:

1. Power off the machine.
2. Rotate the hand wheel to lift the needle from the inside of the hopping foot.
3. Use the 3 mm Allen wrench to remove the **hopping foot screw**.



The **hopping foot** should now slide free from the presser bar.

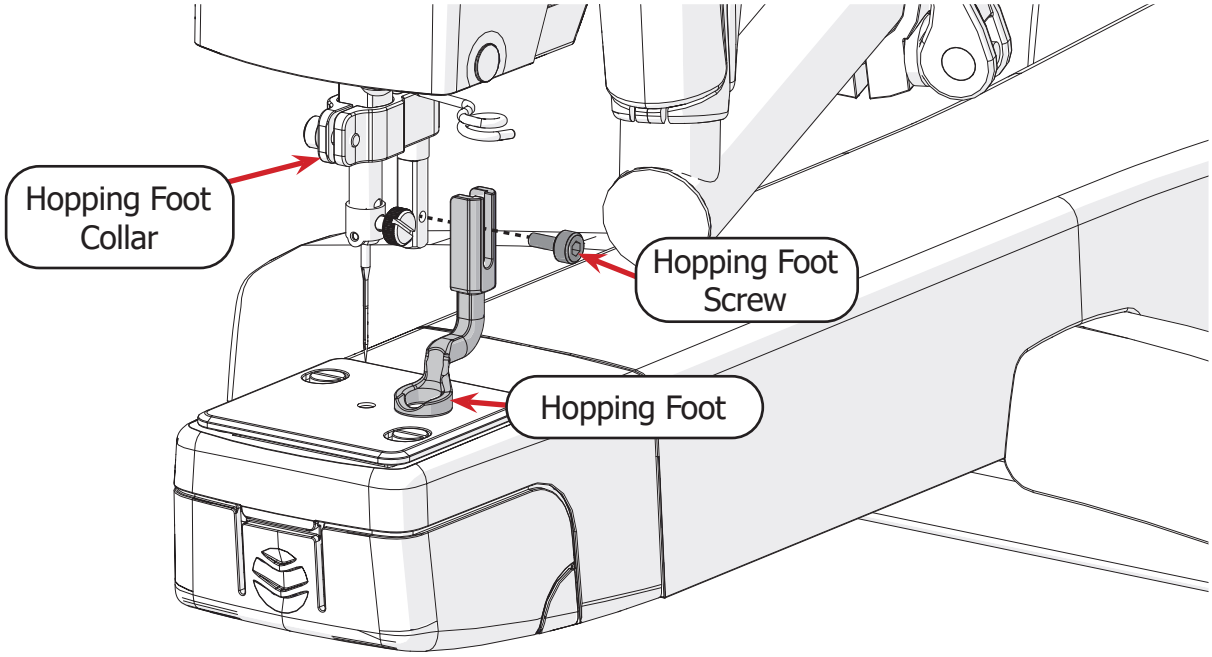


Adjusting the Hopping Foot (Continued)

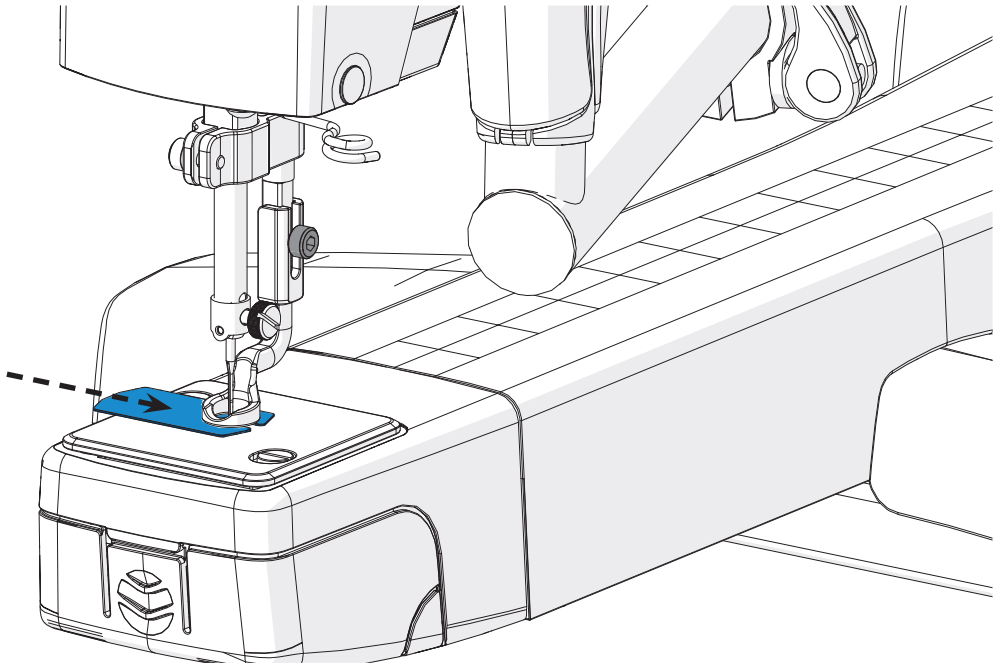
Installation Instructions

To install the hopping foot on your quilting machine, please take the following steps:

1. Power off the machine.
2. Slide the **hopping foot** to the slot in the **hopping foot collar.** Use the 3 mm Allen wrench and **hopping foot screw** to tighten in place.

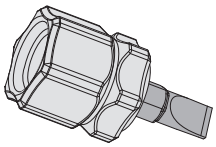


3. Adjust height as needed (see page 61).



Reinstalling the Needle Plate

Parts & Tools Needed:



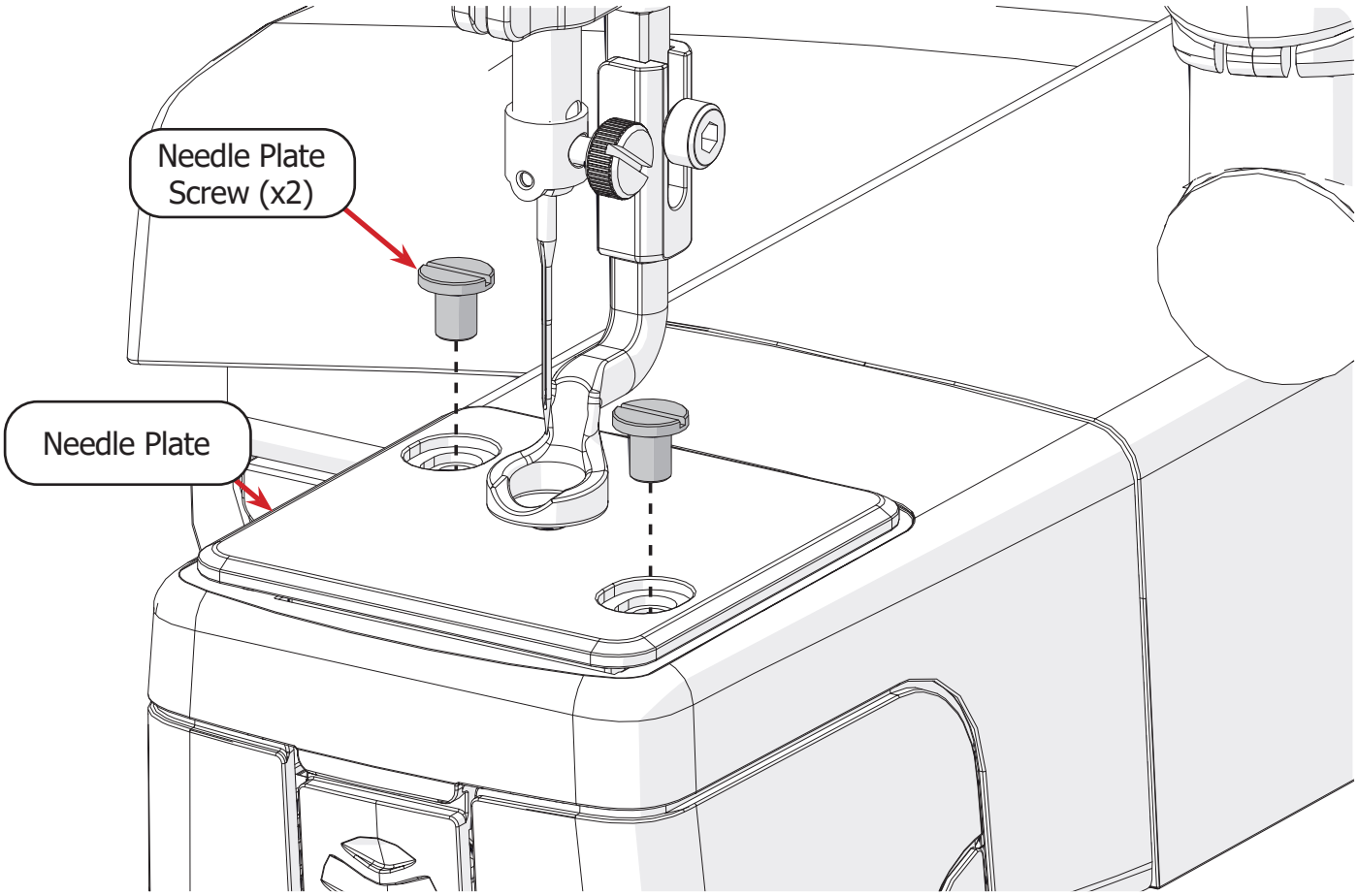
Flat-head Screwdriver

Removal Instructions

To remove the needle plate from the quilting machine, take the following steps:

1. Power off the machine and raise the needle to the highest position using the hand wheel.

2. Use the flat-head screwdriver to remove the two **needle plate screws**.



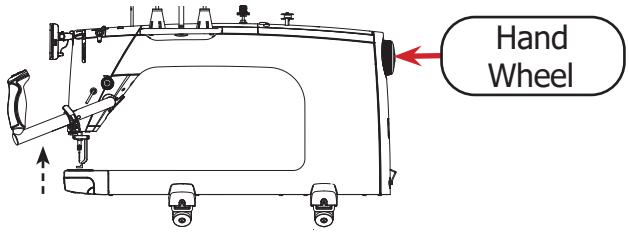
3. Slide the **needle plate** from the machine.

Reinstalling the Needle Plate (Continued)

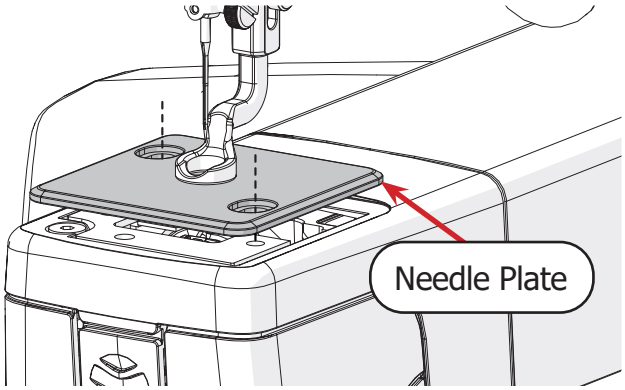
Installation Instructions

To install the needle plate onto the quilting machine, take the following steps:

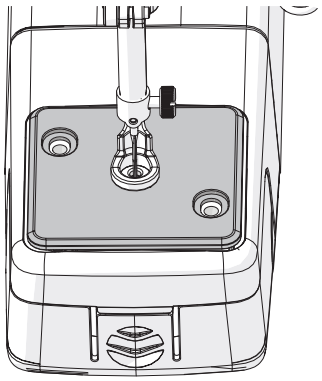
1. Power off the machine. Raise the needle to the highest position using the **hand wheel**.



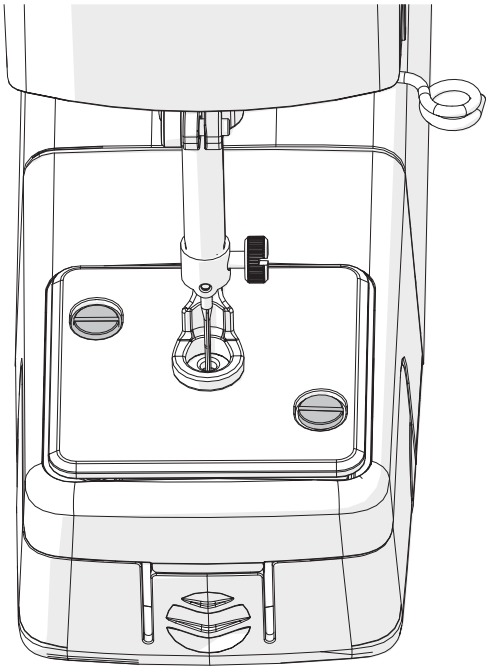
2. Align the screw holes on the **needle plate** with those on the machine.



3. Slowly lower the needle with the hand wheel. The needle should slide into the center hole of the needle plate without contacting the plate.



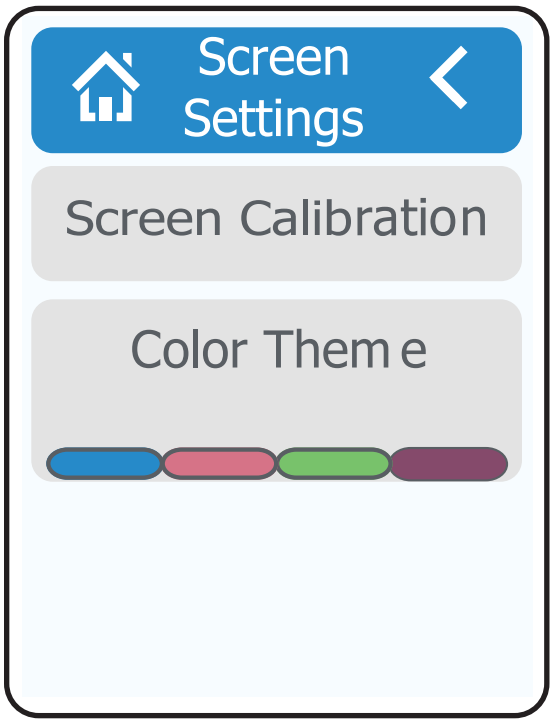
4. Place the two **needle plate screws** (shown in gray) into the plate. Make sure the needle plate is centered around the needle, and then tighten the screws with the flat-head screwdriver.



Calibrating the Touch Display

If the touch screen on the display is not working properly, the screen may need to be calibrated. Go to the Settings menu and press the Screen Settings icon 

.



1. Press Screen Calibration to open the Screen Calibration page.

   Note: For information about the Color Theme option, see page 28.

2. The Screen Calibration page displays with instructions on calibrating the screen. It is best to use the tip of a stylus or another object with a small point when following the instructions.

   a. Press the top right corner as close to the edge of the screen as possible.

   b. Press the bottom left corner as close to the edge of the screen as possible.

3. When the calibration is finished, the screen will close and return you to the Screen Settings menu.

Repairs and Diagnostics

The instructions in this section should only be taken at the direction of a Grace Company support technician. If you are experiencing problems with your machine, please contact our technical support team:

- **Phone:** (800) 264-0644
- **Email:** support@graceframe.com

Checking the Firmware ..... page 70

Replacing the Encoder Spring ..... page 71

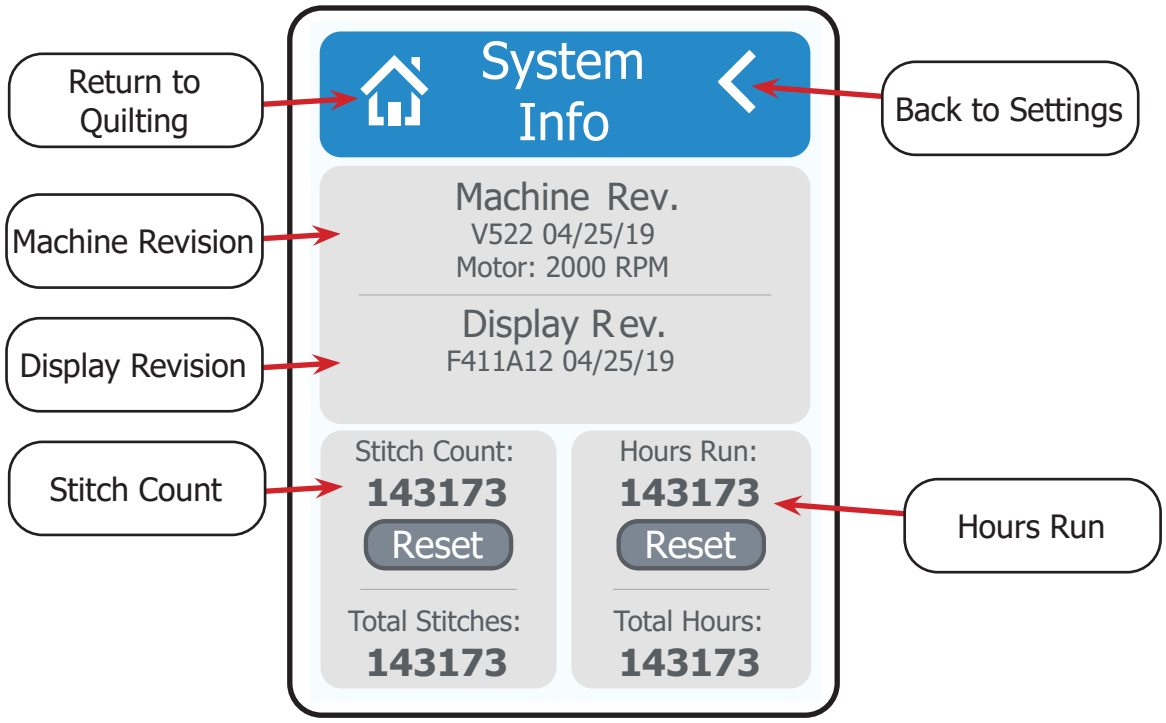
Reinstalling the Hook Holder ..... page 74

Timing the Machine ..... page 77

This section of the manual covers replacing the encoder spring, installing the hook holder, timing the machine, and checking the firmware versions of the machine and display.

Checking the Firmware

The control firmware versions for the machine motor and the touch display are found by pressing the System Information icon from the Settings menu (see page 28).



The following information and options display:

Return to Quilting: Press to leave the System Information page and go back to quilting.

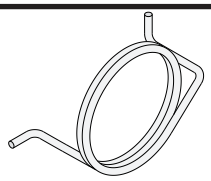
Back to Settings: Press to return to the Settings Menu.

- **Machine Revision:** Shows the latest firmware version for the machine.
- **Display Revision:** Shows the latest firmware version for the touch display.
- **Stitch Count:** Tracks stitches made (see page 52).
- **Hours Run:** Tracks hours that the machine has run (see page 52).

Replacing the Encoder Spring

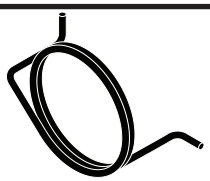
Please speak to a Grace Company support technician before attempting these instructions.

Parts & Tools Needed:

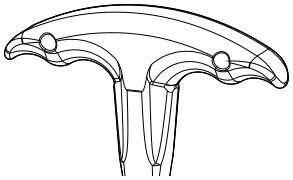


Upper Encoder Spring (Silver)

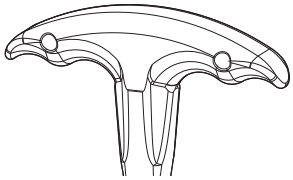
OR



Lower Encoder Spring (Black)



T-handle Allen Wrench 2.5 mm

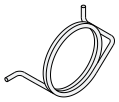


T-handle Allen Wrench 4 mm

Instructions

If the encoder spring is over-tensioned, it may break and need to be replaced. To replace the encoder spring, take the following steps:

1. Determine the correct spring to use in the repair:

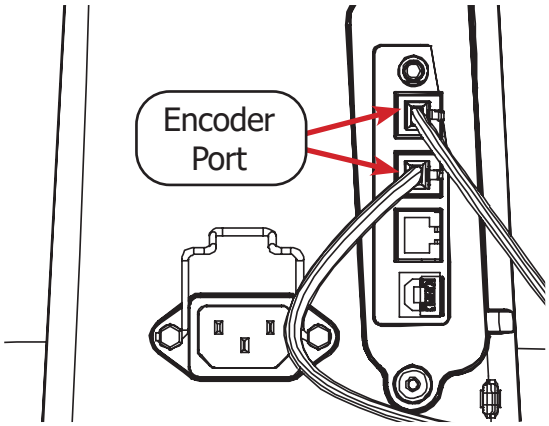


Upper Encoder: Attached to the wheel on the machine. Use the silver spring.

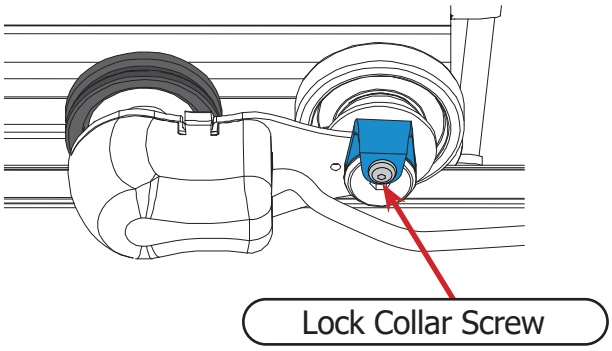


Lower Encoder: Attached to the wheel on the bottom carriage. Use the black spring.

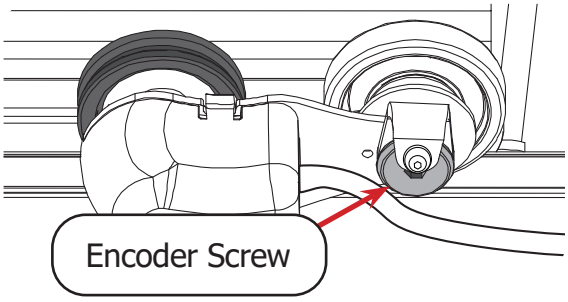
2. Unplug the encoder cable from the machine.



3. Loosen the **lock collar screw** with the 2.5 mm Allen Wrench until the **lock collar** (shown in blue) can twist freely. **Note:** Depending upon encoder models, this step may require a 2.0 mm Allen wrench.

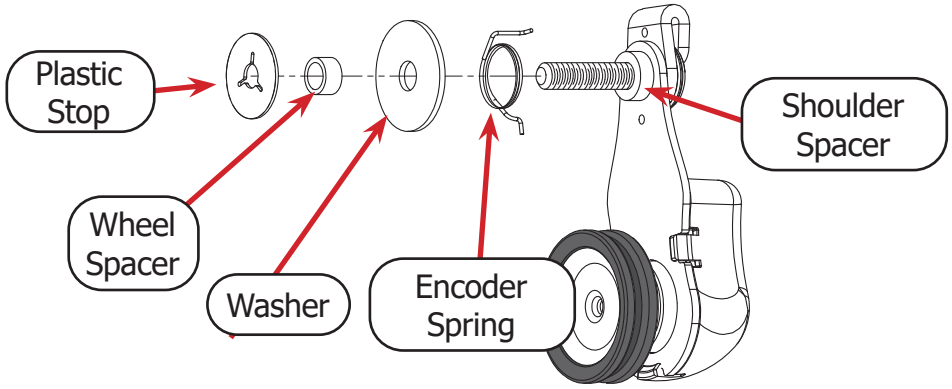


4. Use the 4mm Allen wrench to loosen the **encoder screw** and remove the encoder and wheel.

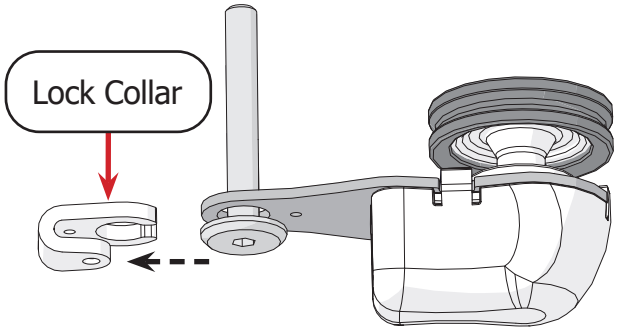


Replacing the Encoder Spring (Continued)

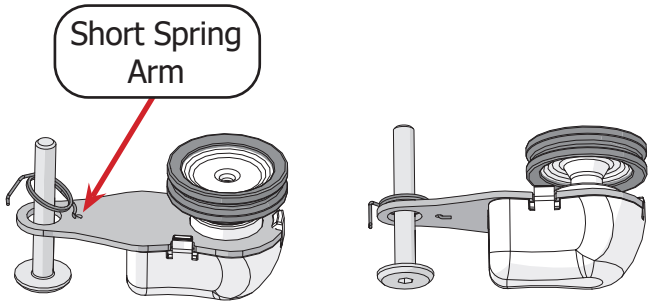
5 Remove the **plastic stop**, **wheel spacer**, **washer**, broken **encoder spring,** and **shoulder spacer** from the encoder.



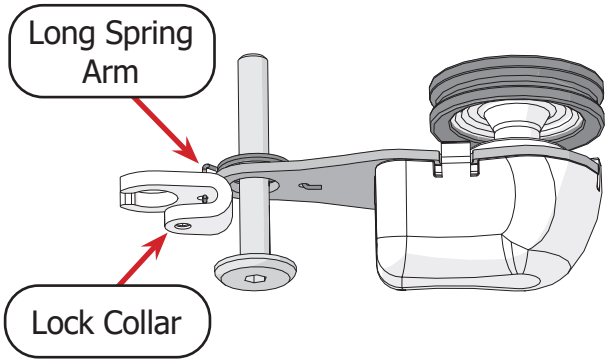
6 Pull on the **lock collar** to remove it from the encoder screw.



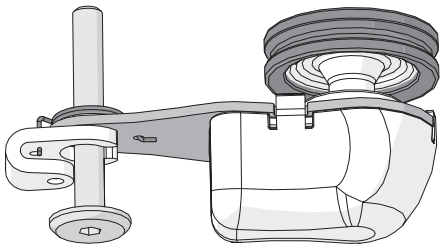
7 Place the replacement spring over the encoder screw, and insert the **short arm** of the spring all the way through the hole on the encoder base.



8 Place the **long arm** of the encoder spring arm into the hole on the encoder **lock collar**.

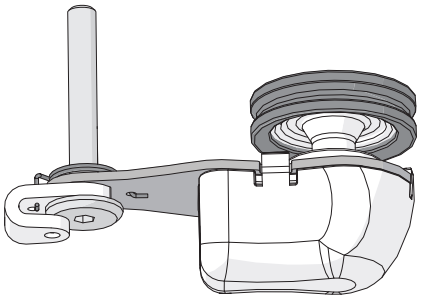


9 Without allowing the arm to slip out of the lock collar, rotate the collar until it wraps around the encoder bolt.

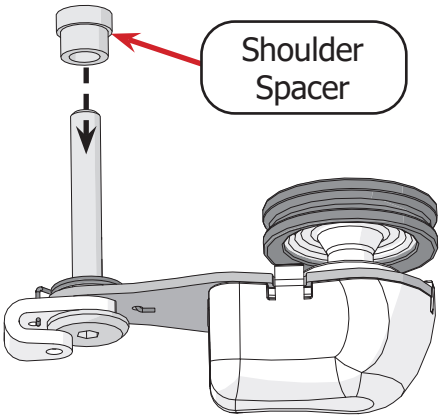


Replacing the Encoder Spring (Continued)

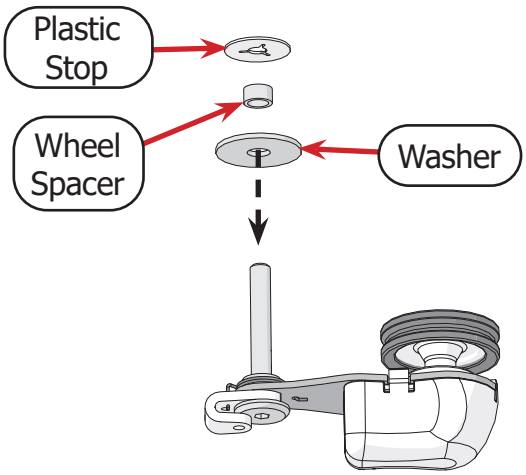
10 Adjust the screw and lock collar so the head of the screw slides in between the lock collar.



11 Slide the **shoulder spacer** onto the screw with the thinner side toward the head of the bolt.



12 Next, place the **washer**, **wheel spacer**, and **plastic stop** onto the encoder screw.



13 Complete the assembly instructions for the encoder you repaired.



For the upper encoder (silver spring) assembly instructions, see page 21.

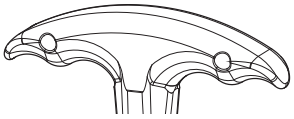


For the lower encoder (black spring) assembly instructions, see page 23.

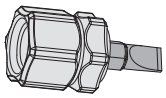
Reinstalling the Hook Holder

Please speak to a Grace Company support technician before attempting these instructions.

Parts & Tools Needed:



T-handle Allen Wrench 3 mm



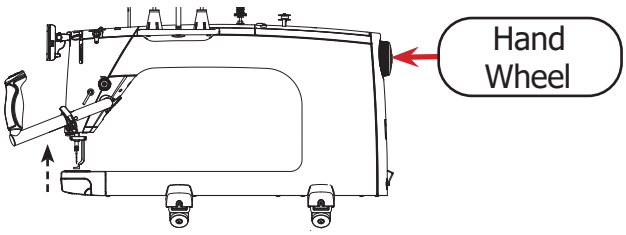
Flat-head Screwdriver

Removal Instructions

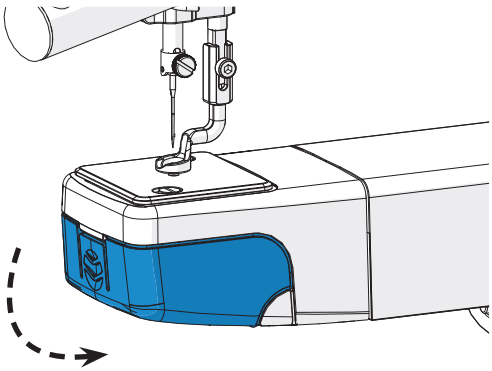
The hook holder keeps the hook assembly in place. The following procedure should only be attempted if determined necessary by a Grace Company support technician. If done incorrectly, major machine problems can result. Please call (800) 264-0644 before attempting this procedure.

1. Turn off the machine.

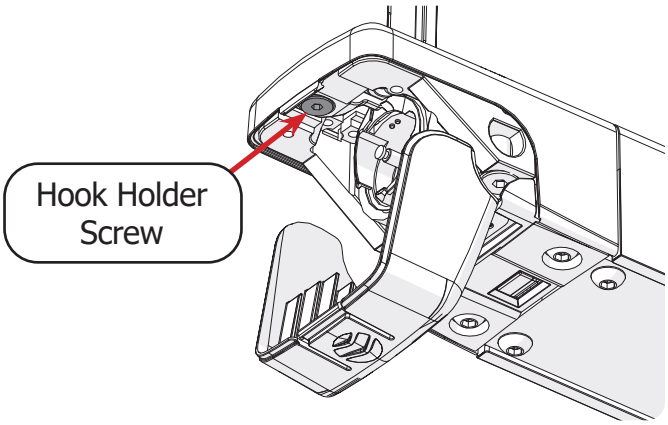
2. Rotate the **hand wheel** to raise the needle to the highest point.



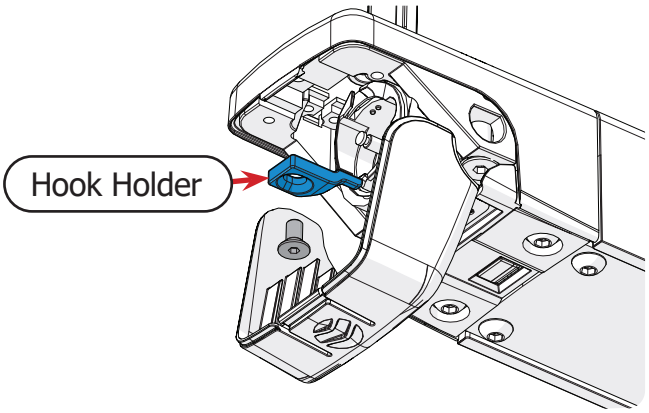
3. Press in on the hook assembly cover and down to open it.



4. With the 3 mm Allen wrench, remove the **hook holder screw** (shown in gray) that attaches the hook holder to the machine.



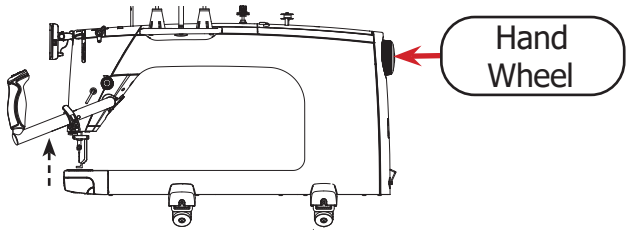
5. The **hook holder** will slide free of the machine.



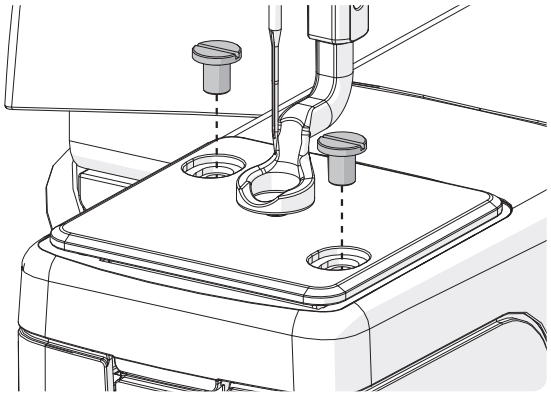
Installation Instructions

1. Turn off the machine.

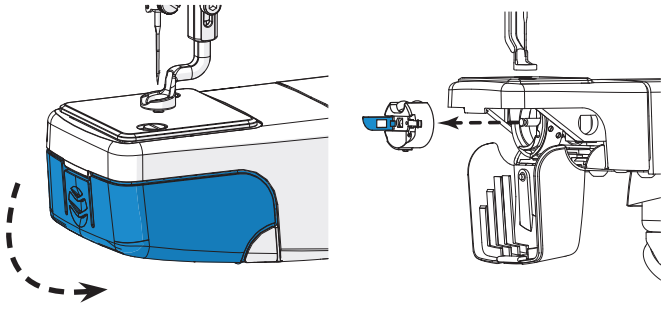
2. Rotate the **hand wheel** to raise the needle to the highest point.



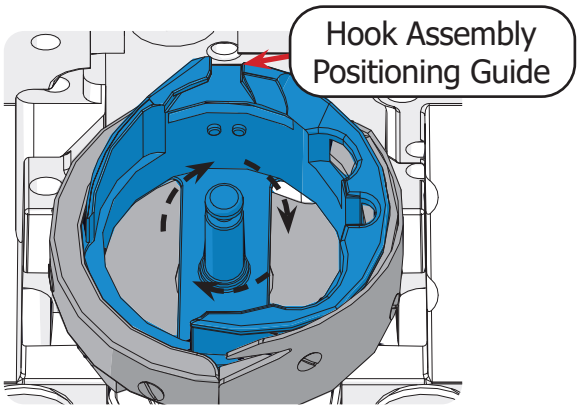
3. Remove the needle plate using the flat-head screwdriver (see page 66).



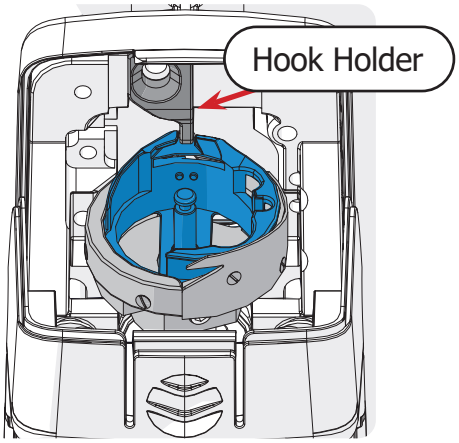
4. Remove the bobbin case from the hook assembly (see page 32).



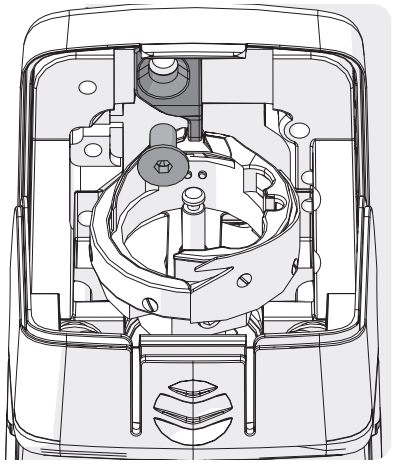
5. Turn the inside part of the **hook assembly** (shown in blue) so that the **positioning guide** is at the highest point.



6. Slide the finger of the **hook holder** into the middle of the **hook assembly's positioning guide**.

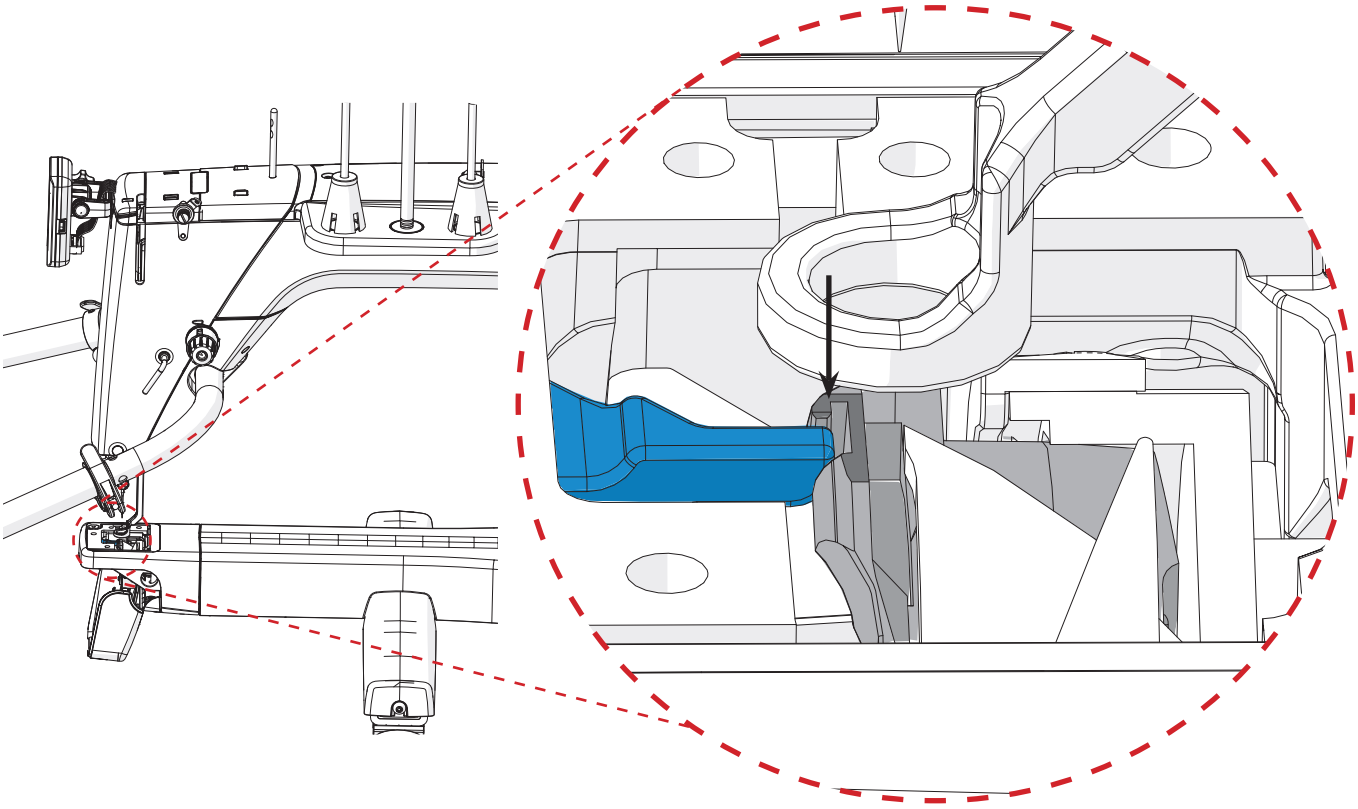


7. Attach loosely with the **hook holder screw**. Do not tighten.



Reinstalling the Hook Holder (Continued)

8 Align the **hook holder** with the inside edge of the **positioning guide**, as shown below.

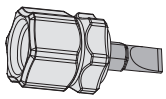


9 Tighten the hook holder screw to fasten the hook holder in place. The inside part of the hook assembly should no longer rotate freely by hand.

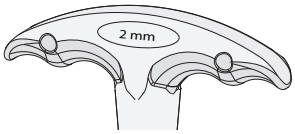
Timing the Machine

Please speak to a Grace Company support technician before attempting these instructions.

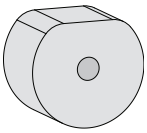
Parts & Tools Needed:



Flat-head Screwdriver



T-handle Allen Wrench 2 mm

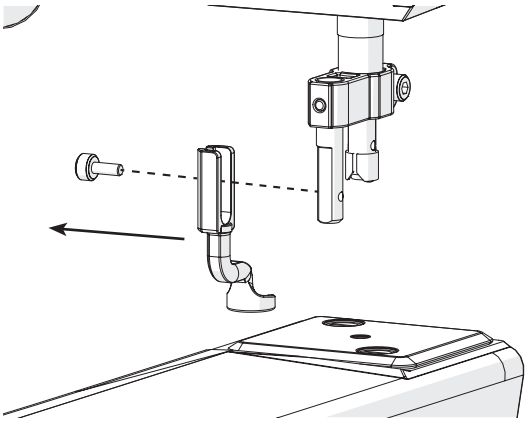


Timing Spacer Tool

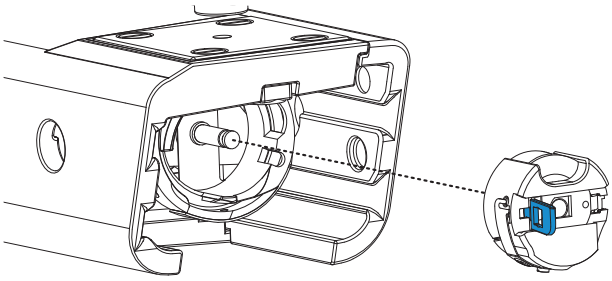
Instructions

Timing your machine aligns the needle and hook assembly so that they are in the correct places during the creation of a stitch. Improper timing can result in damage to the machine and needle, or make sewing impossible. Please consult with a Grace Company support technician before attempting to adjust the timing on your machine.

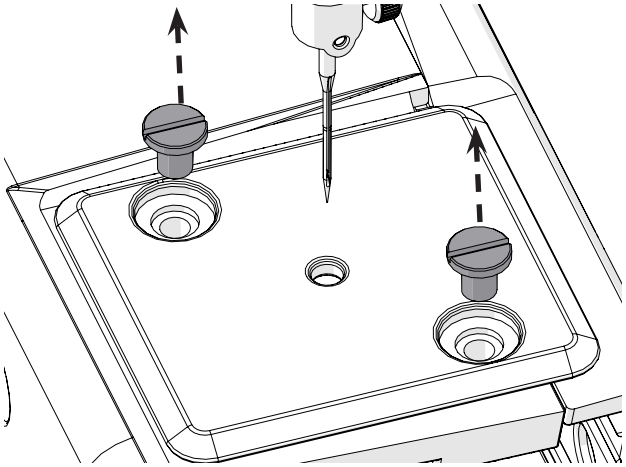
1. Turn off the machine.
2. Remove the hopping foot for better visibility (see page 64).



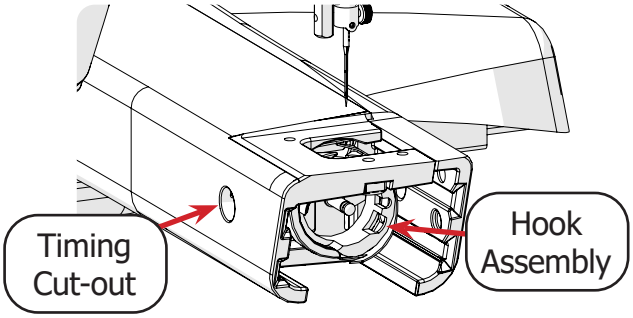
3. Remove the needle and replace if bent or damaged (see page 60).
4. Remove the bobbin case from the hook assembly (see page 31).



5. Remove the needle plate (see page 68).

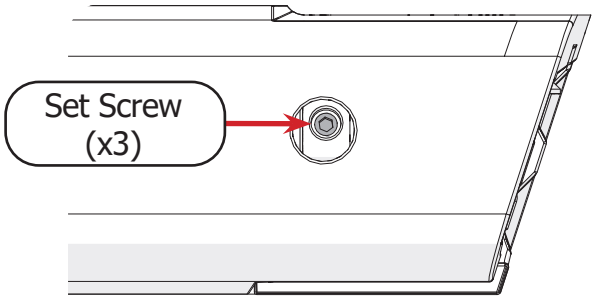


6. Look into the machine's **timing cut-out** and turn the hand wheel. The **hook assembly** will rotate.

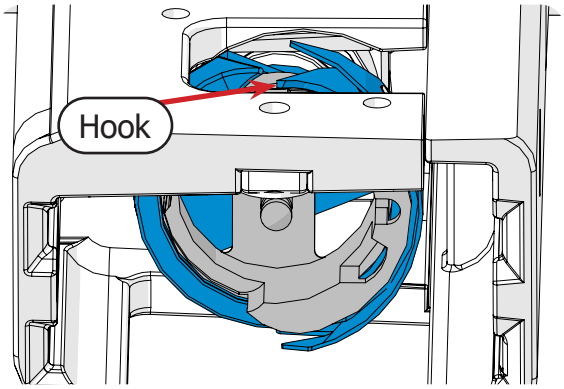


Timing the Machine (Continued)

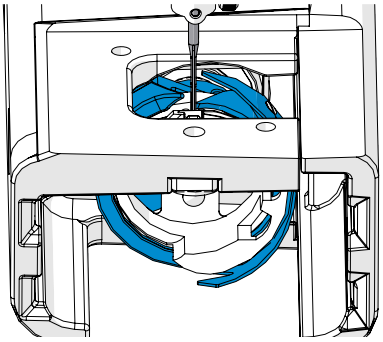
7. As each of the **3 set screws** aligns with the timing cut-out, loosen them with the 2 mm Allen wrench.



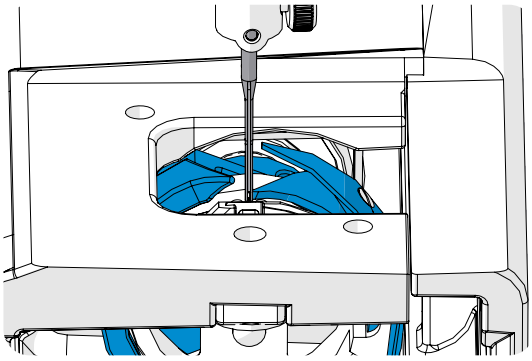
8. The **outside** part of the hook assembly (shown in blue) now rotates by hand. Turn the outside part of the hook assembly so that the **hook** is at the top.



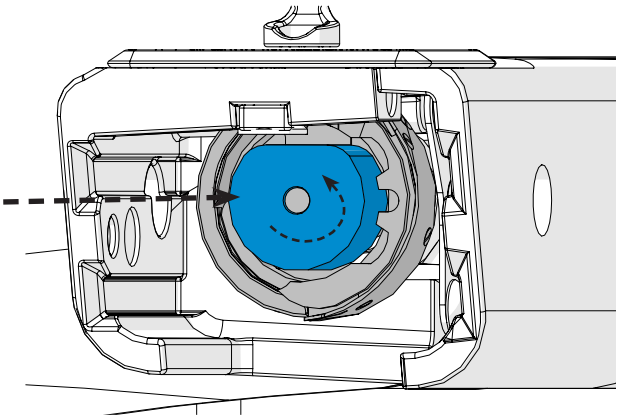
9. Hold the Hook Assembly and carefully rotate the hand wheel counter-clockwise to drop the **needle** (shown in gray) to its lowest point. Continue rotating the hand wheel the same direction. The needle should begin to raise up.



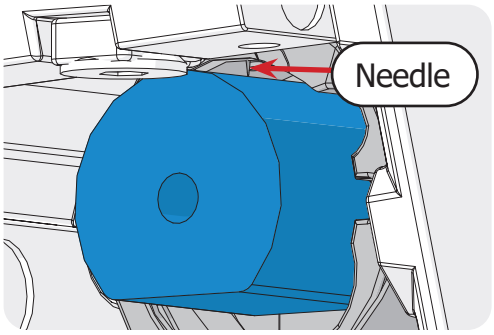
10. Stop raising the needle once the eye is about level with the **hook** (shown in blue). Do not continue to raise the needle. If the needle goes too high, start over at step 8.



11. Slip the **timing spacer tool** (shown in blue) into the hook assembly with the flat side facing up. Then turn the timing tool until the flat side faces down.

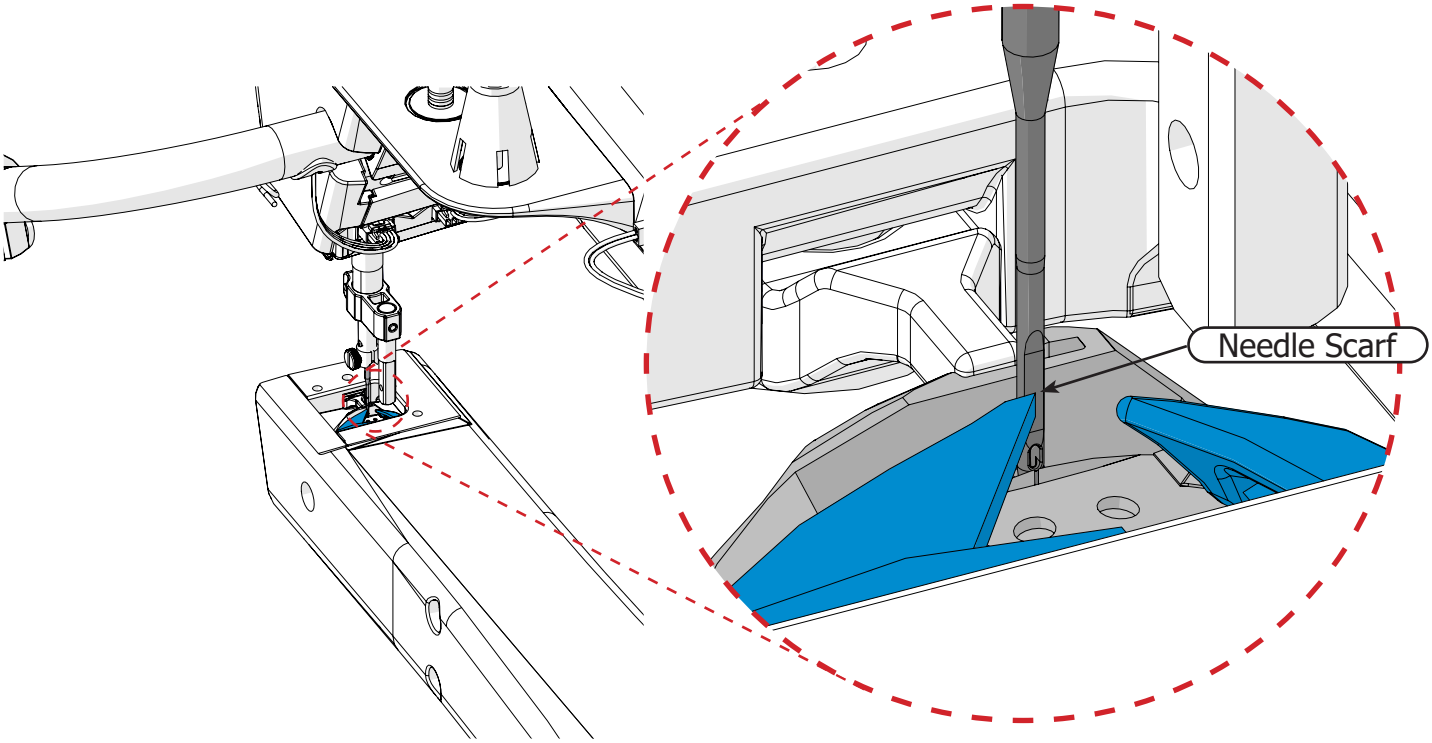


12. Turn the hand wheel the clockwise to bring the **needle** back down until it rests on top of the timing spacer. Do not let the needle rise to the top before bringing it back down or you will need to repeat steps 8-11.



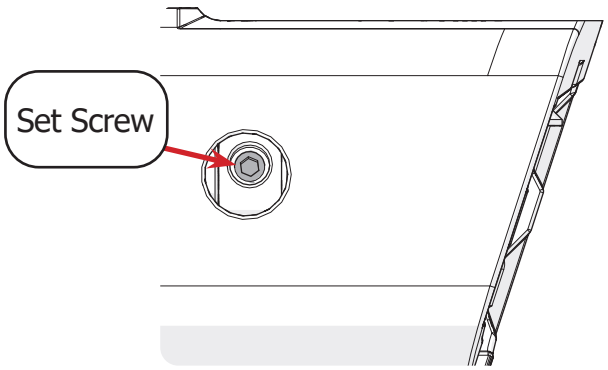
Timing the Machine (Continued)

13 Position the tip of the **hook** (shown in blue) with the center of the **Needle Scarf** (shown in gray). This is easier to see from the back of the machine.

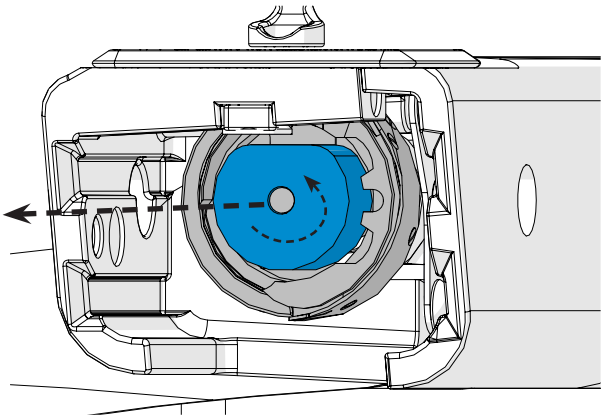


14 Pull the hook assembly toward the front of the machine until the hook is as close to the needle as possible without touching

15 Use the 2 mm Allen wrench to tighten one of the three **set screws** through the timing cut-out window on the left.

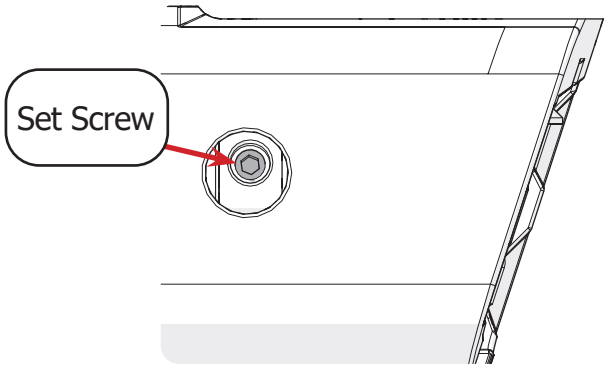


16 Turn the timing spacer tool until the flat side is facing up and then remove it from the machine.



17 Turn the hand wheel a full rotation to listen for clicking noises and to ensure the needle does not bend or hit the hook

18 Tighten the two remaining **set screws** through the timing cut-out.



19 Replace and align the needle plate (see page 69). Make sure the needle is in the center of the needle plate.

20 Replace the bobbin case (see page 31).

21 Replace the hopping foot and adjust hopping foot height (see page 67).

22 Test the machine and listen for any unusual noises. If there are any skipped stitches, the hook is too far away from the needle. If the thread breaks, the hook is too close to the needle.

Appendix

This section of this manual covers additional information on quilting with your machine.

Choosing Your Needle ..... page 82

Choosing Your Thread ..... page 84

Choosing Your Fabric and Batting ..... page 87

Troubleshooting Guide ..... page 88

Index ..... page 90

Choosing Your Needle

Using the wrong type of needle, or using a needle that is bent, broken, or blunt, can damage the fabric, the machine, and needle. For best results:

- Use the recommended needle style for your machine (see below).
- Use the needle size appropriate for the weight and type of thread you're using (see below).
- Never use a needle that is dull, bent, burred, or damaged.
- Use multi-directional needles.
- Change your needle after 8 hours of use and at the beginning of each project.

Needle Style

The following are the recommended needle styles for your machine:

- DPx5 MR
- 134 MR
- 1955 MR

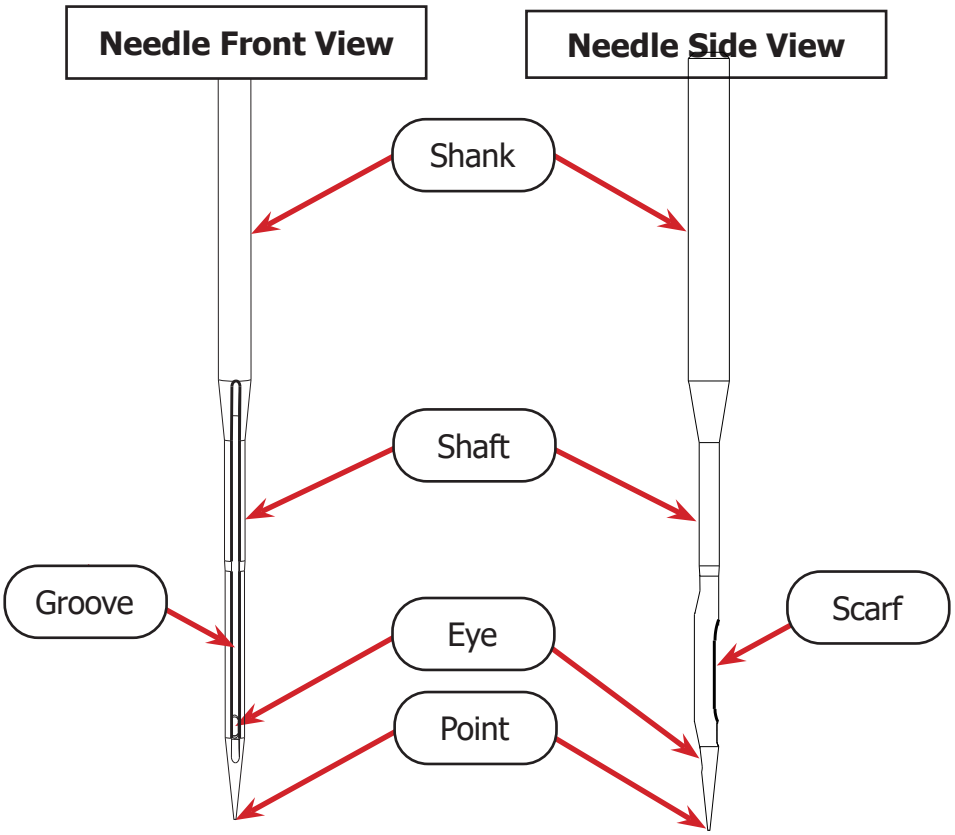
Needle Sizes

Choose the size of your needle based upon the thread you're using. Thicker thread requires a thicker needle. Remember, the thicker the thread, the lower the thread weight (wt.) number.

Needle Size	Thread Size and Type
14 / 90	• mono-filament • 100 wt. silk • 60 wt. polyester
16 / 100	• mono-filament • 60 wt. polyester or cotton • 50 wt. cotton
18 / 110	• 50 wt. polyester • 40 wt. cottons and polyester • 30 wt. cotton and polyester
20 / 125	• 30 wt. or heavier of any thread

Choosing Your Needle (Continued)

Needle Diagram



- **Shank:** Where the needle bar grasps the needle.
- **Shaft:** The long, narrow part of the needle. Needle size is based upon the diameter of the needle shaft.
- **Groove:** Reaching from the top to the bottom of the needle shaft, the groove allows thread to pass through the fabric more easily and without getting damaged.
- **Eye:** Hole near needle point where the needle is threaded.
- **Scarf:** A cut-away on the back of the needle that allows the needle to fit smoothly within the hook assembly when quilting.
- **Point:** The sharp end of the needle. Choose the type of needle point to fit your project, and always replace your needle once the point is dull.

Choosing Your Thread

Choosing the best thread for your project is just as important as choosing the correct needle. Good thread is strong and can pass the "Yank Test" (see page 35). It holds its color well over time (colorfast), and uses long fibers (extra-long staple) that resist creating lint.

Thread type and size determines not only which needle size to choose and what the thread tension must be set to on your machine, but also how visible the thread is on the project.

For best results:

- Use a cone-style thread unless you have the thread spool accessory for your machine.
- Test the strength of thread before use with the "Yank Test" (see page 35).
- Practice using new thread on spare quilting materials to find the ideal thread tension. Write this information down and store it with your thread for later reference.
- Keep thread out of sunlight to prevent fading, and do not store near extreme temperatures.
- Select thread that is ideal for the fabric you're using (see the chart below).
- Use similar thread for top and bottom thread.

Thread Type Guide

Threads can be multiple strands, called ply, spun together, or they can be single ply. The fibers that make up the ply can come from many sources, but the most common threads used in quilting are made from cotton, polyester, and silk. The unique properties of each material make some threads better suited for use on some fabrics than others.

Thread Type	Ideal Fabric
Cotton	• Cotton • Linen • Rayon
Polyester	• Knit or Stretch • Woven synthetic
Silk	• Silk • Wool • Basting thread for all fabrics

Choosing Your Thread (Continued)

Thread Size

The thickness of the thread is called the weight (wt.). This number is usually stamped on the edge of the top or bottom of the thread cone. Notice that as the thread becomes heavier and thicker, the weight decreases:

- 60 weight: Very thin, fine thread that will blend in to the fabric.
- 40 weight: Thicker thread that will show up on the fabric.

Note: choose matching weight and thread type when picking top and bottom (bobbin) threads.

Tip: Not all manufacturers will have the same sizing method for their thread. Threads can be measured by weight, tex, denier, or scaling that is unique to its brand. Take the time to understand how the sizing works for a brand you're considering, and keep a few common sewing rules in mind:

- The thicker the thread, the larger the needle required. A needle that is too thin can shred thread.
- The thinner the thread, the smaller the needle should be. A needle that is too large will cause uneven stitching and can leave holes in the fabric.

Thread Processing

Sometimes thread is processed to change its properties. The chart below lists the processes common to cotton and polyester. No extra processing or treatments are typical for silk.

Thread Type	Processing
Cotton	• **Mercerized**: Treated to improve strength and colorfastness. • **Glazed**: Waxed or coated to give a polished appearance. The coating may rub off and build up in machine. • **Gassed**: Exposed briefly to a gas flame to burn away fuzz and lint, giving a smooth appearance.
Polyester	• **Lubricated**: Treated with lubricant to reduce friction. Avoid thread that is oily to the touch. • **Bonded**: Treated with resin to increase strength. This is typically used for heavy-duty applications, such as upholstery.

Our Recommended Thread

Finesse thread is specially-designed for quilting by the Grace Company. It can be used with domestic (sewing) and quilting machines, and comes in 60 colors.

- 100% Polyester, 3-ply thread
- 1,500 yards mini-cone
- 50 wt.
- 110/18 or 100/16 quilting machine needle
- Topstitch 90/14 sewing machine needle

3283 Snow White	3293 Charcoal	2979 Rainbow	2989 Prism	2999 Cherry Blossom	3009 Deep Forest Green
3284 Pearl White	3294 Midnight Blue	2980 Sunny Spring Day	2990 Tropical Sunset	3000 Candy Apple	3010 Vintage Turquoise
3285 Light Wool	3295 Obsidian	2981 Strawberry Lemonade	2991 Aurora Lights	3001 Pomegranate	3011 Seaside Teal
3286 Ice Blue	3296 Marigold	2982 Pastels	2992 Mango Salad	3002 Dusk Rose	3012 Ocean Wave
3287 Pink Rose	3297 Leafy Green	2983 Raspberry Ice	2993 Camp Fire	3003 Cotton Candy	3013 Bright Blue Sky
3288 Lilac	3298 Blue Sapphire	2984 Circus Tent	2994 Mountain Jungle	3004 Tangerine Punch	3014 Lavender Blossom
3289 Light Sand	3299 Magenta	2985 Twilight Pink	2995 Desert Flower	3005 Grapefruit	3015 Amethyst
3290 Thicket Brown	3300 Amber	2986 Mauve Orchid	2996 Primary School	3006 Lemon Zest	3016 Mountain Mist
3291 Desert Tan	3301 Royal Purple	2987 Blueberries	2997 Mojito	3007 Light Spearmint	3017 Riverbed Slate
3292 Smokey Quartz	3302 Ruby Red	2988 King of Atlantis	2998 Florence	3008 Green Tea	3018 Canyon Shale

Choosing Your Fabric and Batting

Fabric

Some fabrics are not recommended for use with your quilting machine. Thick fabrics, such as denim or leather, have a lot of resistance that can bend or snap a needle, and misalign or break internal machinery. When quilting, avoid any fabrics that are difficult to pierce, and take care that the fabric layers of the quilt are well balanced.

Batting

To choose the best batting for your project, consider the look and feel of the quilt that you're making. Batting thickness is measured by its loft. A low loft batting is thinner and lighter, ideal for a quilt with a flatter appearance. High loft batting should be used if a fluffy, full quilt is desired.
Typically, wool batting is the thickest batting while bamboo is the lightest. Wool provides the most warmth, followed by polyester, and then cotton.

Troubleshooting Guide

Issue	Cause(s)	Solution
Machine won't turn on.	Loose cables	Check that all cables are securely plugged in (page 26).
	Machine is not turned on	Check power button is pressed down correctly (page 26).
	If problem persists, please contact a Grace Company support technician. Call **(800) 264-0644**.	
Stitches are skipped.	Damaged needle	Check needle (page 58).
	Machine improperly threaded	Check that all tensioners and guides were threaded correctly (page 35).
	Bobbin wound or threaded incorrectly	Check that the bobbin was inserted the correct direction in the case (page 32).
	Incorrect thread tension	Adjust top thread tension (page 50). Adjust bottom thread tension (page 32).
	Hopping foot incorrect distance from needle plate	Check distance with height gauge. Reinstall hopping foot if incorrect (page 61).
	If problem persists, please contact a Grace Company support technician. Call **(800) 264-0644**.	
Thread is breaking.	Damaged needle	Check needle (page 58).
	Incorrect thread tension	Adjust top thread tension (page 50). Adjust bottom thread tension (page 32).
	Machine improperly threaded	Check guides and tensioners for accidental double-wrapping (page 35).
	Stitching in place too long	Keep machine moving to avoid stitch build-up in one place, or switch to regulated precise quilting mode (page 42).

Issue	Cause(s)	Solution
Thread is breaking.	Bobbin inserted incorrectly	Check bobbin is the correct direction in the case and inserted firmly (clicked) into the machine (page 32).
	Debris on tension discs	Clean the machine (page 55).
	Burred bobbin	Check bobbin for sharp edges. Contact your dealer to replace if needed.
	Needle plate is rubbing needle	Check that needle plate is centered and does not hit needle (page 66).
	If problem persists, please contact a Grace Company support technician. Call **(800) 264-0644**.	
Machine is running loud.	Machine and/or hook assembly needs oiling	Oil the machine and hook assembly (page 55).
	Bobbin winder is on	Check that bobbin cam is in "Off" position (away from Bobbin stand).
	If problem persists, please contact a Grace Company support technician. Call **(800) 264-0644**.	
Thread is bunching up in hook assembly (bobbin case area).	Bobbin wound or threaded incorrectly	Check that the bobbin was threaded correctly and inserted the correct direction in the case (page 32.
	Machine improperly threaded	Check that all tensioners and guides were threaded (page 35).
	Incorrect thread tension	Adjust top thread tension (page 50). Adjust bottom thread tension (page 32).
	Bobbin case has damaged or missing spring	Check inside bobbin case to see spring. Contact your dealer to replace if needed.
	If problem persists, please contact a Grace Company support technician. Call **(800) 264-0644**.	

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