EMBRACE EXCELLENCE

Q'nique® 21X ELITE



Assembly & Use

Grace COMPANY

Copyright June 16, 2022

Version 1.7

XE210

My Machine Details

Use this page to write down some information about your machine. This will be helpful if you ever need to call a Grace Company support technician.

Machine Type: Q'nique 21X Elite

Machine Serial Number: _____

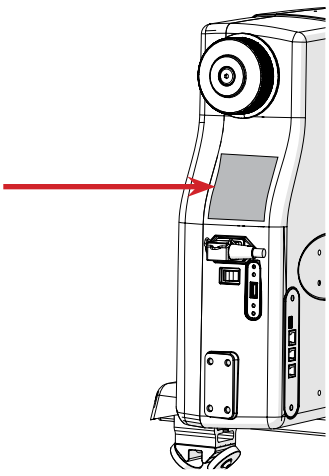
Date of Purchase: _____

What Frame are You Using? _____

Select Which Machine Accessories You Have Purchased:

- ☐ Quilter's Creative Touch
- ☐ Back Handles
- ☐ Q'nique Laser Stylus
- ☐ Ruler Base
- ☐ Quilt Perfect Ruler Feet Kit
- ☐ 360 Wonder Foot
- ☐ Q'nique Hopping Foot Set
- ☐ 9 Piece Accessory Hopping Foot
- ☐ Thread Spool Accessory

Find your serial number on the silver sticker on the back of the machine.



You might also be asked about your machine's firmware version. You can find this on the display after the machine is assembled and turned on. See page 86 for details.



Important Safeguards

When using an electrical appliance, basic safety precautions should always be followed, including the following.

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:

- This appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children should be supervised to ensure that they do not play with the appliance. Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- 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.
- The appliance is intended for indoor use only. Do not use outdoors.
- Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
- Connect this appliance to a properly grounded outlet only. See grounding instructions on next page.
- 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. Always switch off or unplug the appliance when leaving it unattended.
- Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- If the supply cord is damaged, it must by replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- 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.
- CAUTION: In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

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

In the instructions for electric sets shall indicate the sewing machine for which intended and how to be installed.

SAVE THESE INSTRUCTIONS! Do not discard box or packaging.

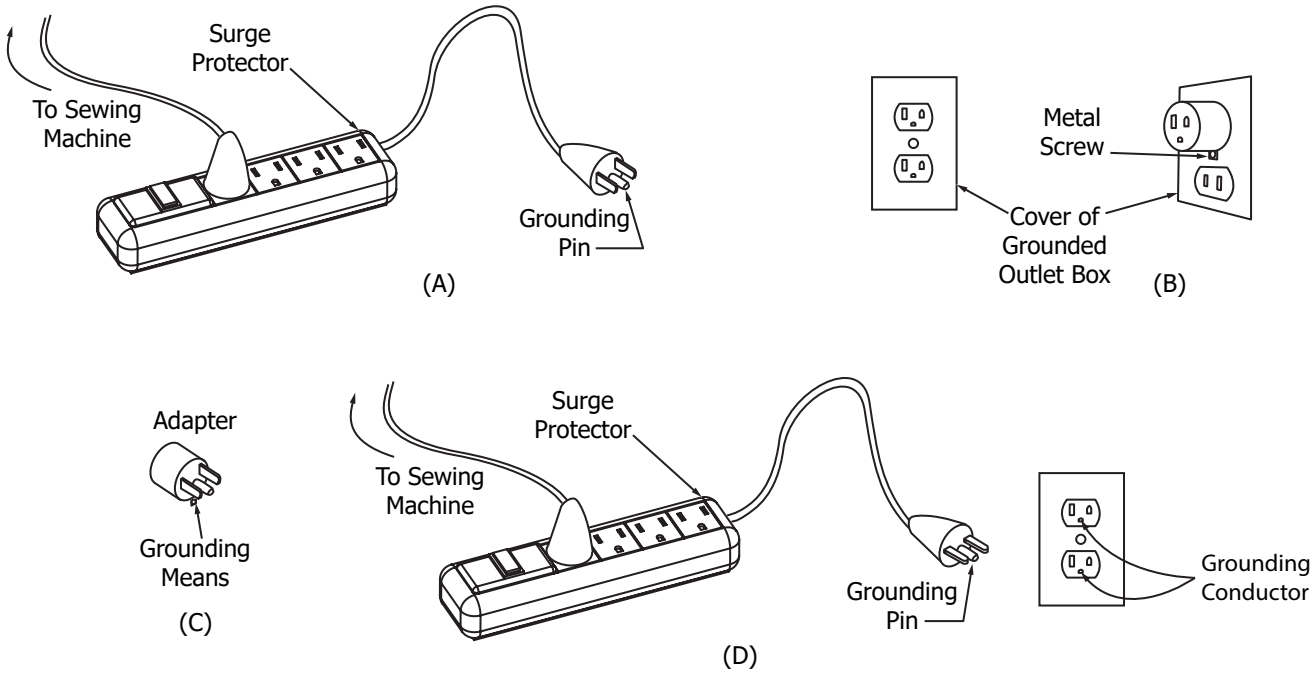
GROUNDING INSTRUCTIONS

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.

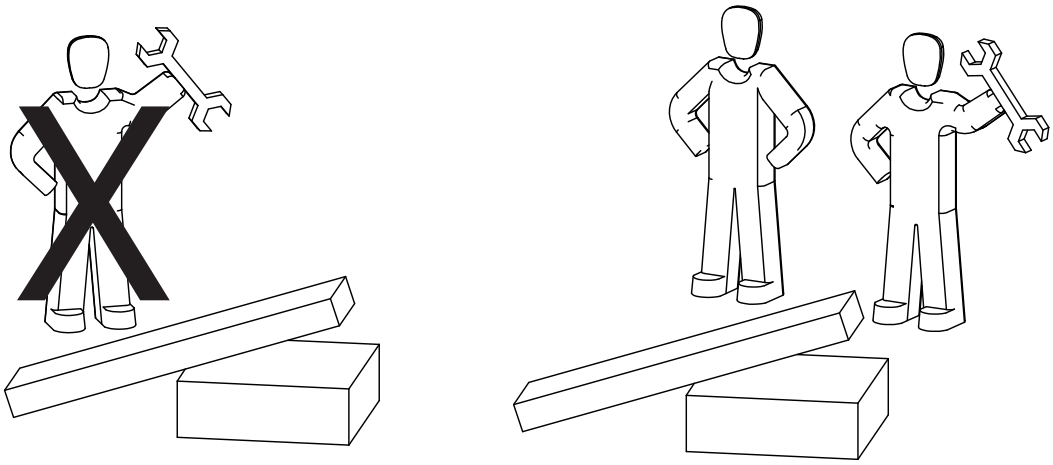
Warranty Information

The Q'nique 21X Elite has a two-year limited warranty on all parts and a five-year limited warranty on its cast metal body. Under these warranties, Grace Company will at its discretion repair or replace any part(s) with material or manufacturing defect. The customer is required to return the product to Grace Company in its original box. If the customer does not have their original quilting machine box, they will need to buy a box from Grace Company to return their machine in. The customer is responsible for all shipping costs. Upon receipt of the product, Grace Company will determine whether to repair or replace the defective product or part(s). These warranties do not cover parts that are damaged through misuse, improper storage, improper assembly, loss, natural events, or willful destruction.

All customers requesting support will be required to provide a proof of purchase and registration if no warranty card is present and applicable. Grace Company product warranties are still valid if bought from an authorized Grace Company dealer. Grace Company is not subject to dealer warranties. Warranties do not transfer over to a secondary owner.

For more warranty and registration information, visit:

https://graceframe.com/en/warranty/info.





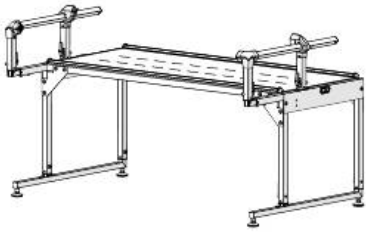
Welcome to Your Q'nique 21X Elite

We are pleased to introduce you to the newest part of your quilting setup. This machine has been especially designed to help quilters like you have the tools available to create quality projects.

This manual is broken into four sections (or parts). Notifications at the end of each section will direct you to switch to your frame manual or Quilter's Creative Touch (QCT, previously called QuiltMotion) manual for instructions on assembling those products. This creates a streamlined process of building a complete quilting setup. Use the following flowchart to guide you in navigating multiple manuals. If you are not using one of the products in the flowchart, just move to the next item in the chart.

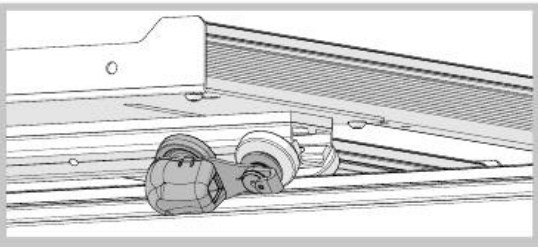
Thank you again for choosing us to help with your quilting projects. We look forward to working with you.

- Grace Company



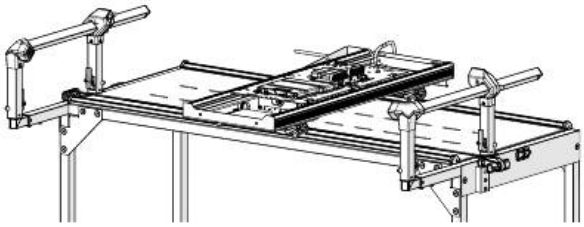
<u>Start Here:</u> Frame Manual: Part One

- Assemble the frame's legs, table, and sides.
- Install the channel lock onto the bottom carriage.
- Align your tracks.



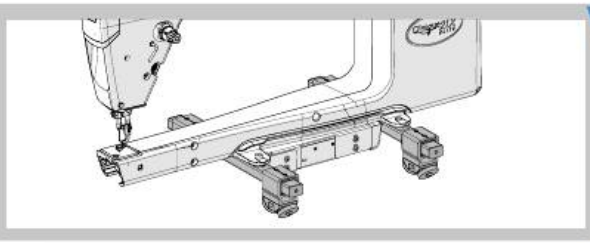
Quilting Machine Manual: Part One

- Install the lower encoder onto the bottom carriage.



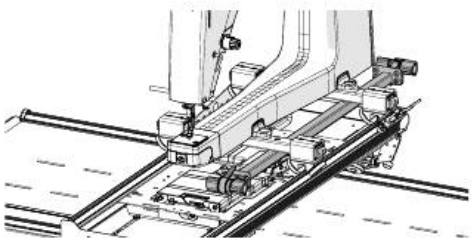
QCT Manual: Part One

- Prepare the bottom carriage.
- Install the long belt across the frame.



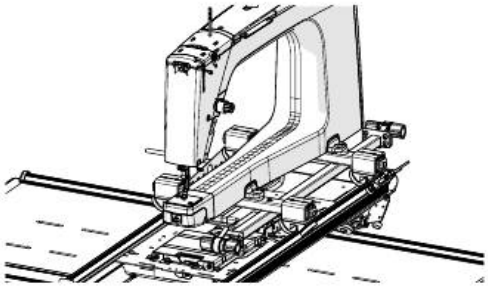
Quilting Machine Manual: Part Two

- Install your machine's wheels.
- Align your wheels.



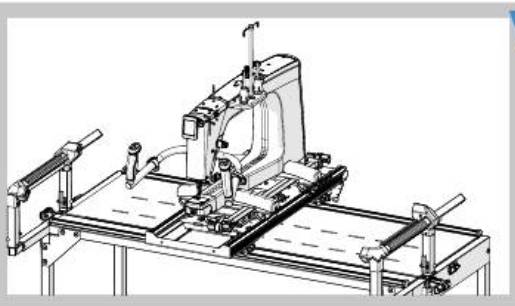
QCT Manual: Part Two

- Install the short belt.
- Tension the short belt.



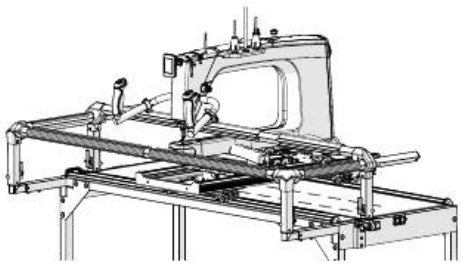
Frame Manual: Part Two

- Install the channel lock on the machine or top plate.
- Prepare the top plate and home sewing machine.
- Place the machine or top plate on the frame.



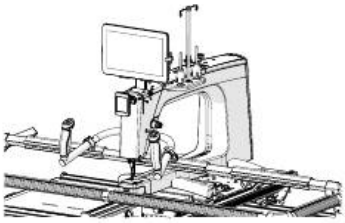
Quilting Machine Manual: Part Three

- Install the wheel covers, display, handles, thread mast.
- Install the upper encoder.



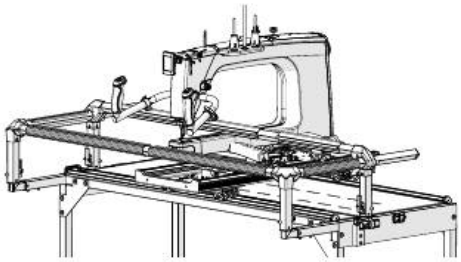
Frame Manual: Part Three

- Install the rails and fabric bungees.
- Position and adjust the rails.
- Adjust the carriage stop.
- Level the frame.



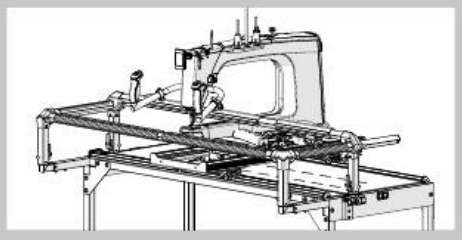
QCT Manual: Part Three

- Install the tablet bracket.
- Plug in Quilter's Creative Touch.



Frame Manual: Part Four

- Install the velcro tape.
- Install the cloth leaders.
- Attach the fabric.



Quilting Machine Manual: Part Four

- Use the quilting modes and settings in the display.
- Maintain the machine and perform repairs.

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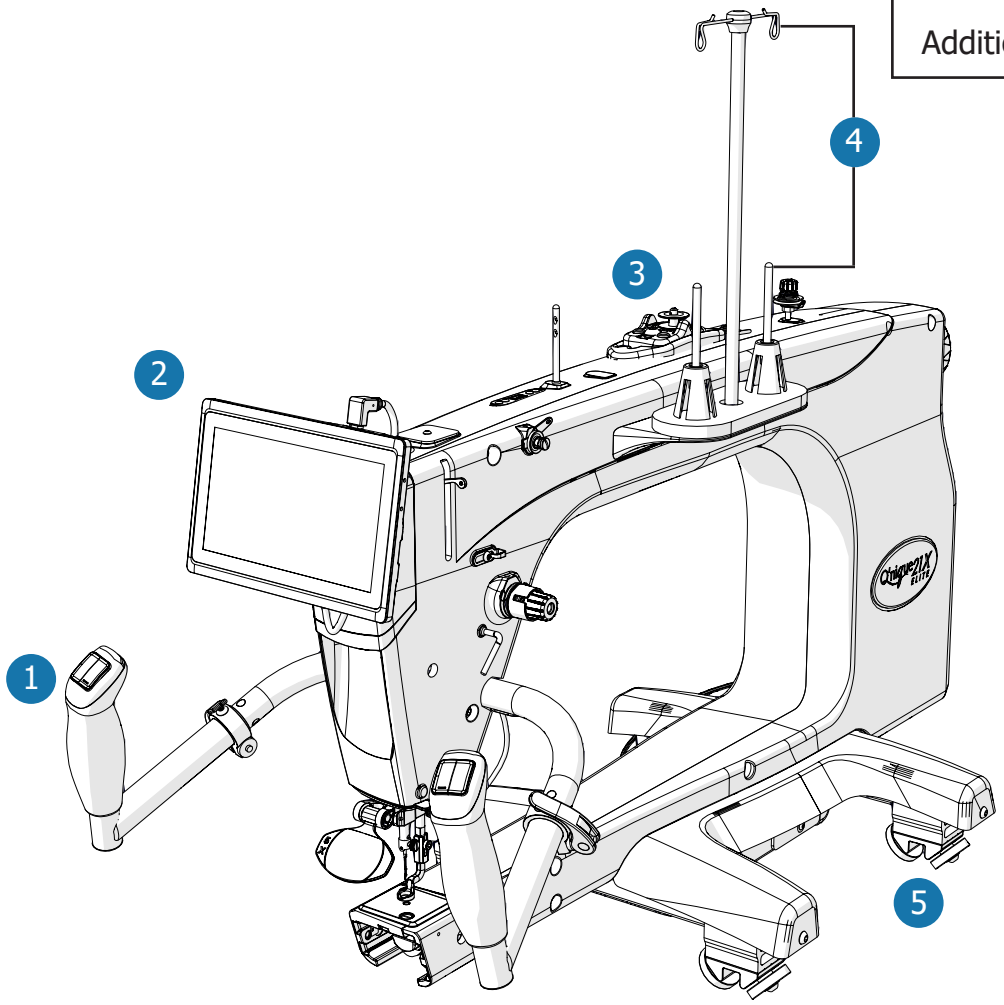
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Machine Specifications

Patent: WO 2013/070633 Al

Additional Patents Pending



Product Dimensions

Body:

- Height: 777.8 mm, or 30.6 inches
- Width: 395 mm, or 15.5 inches
- Length: 824 mm, or 32.4 inches
- Weight: 24.5 kg, or 54 lbs

Quilting Arm:

- Height: 266.7 mm, or 10.5 inches
- Length: 533.4 mm, or 21 inches

Electrical

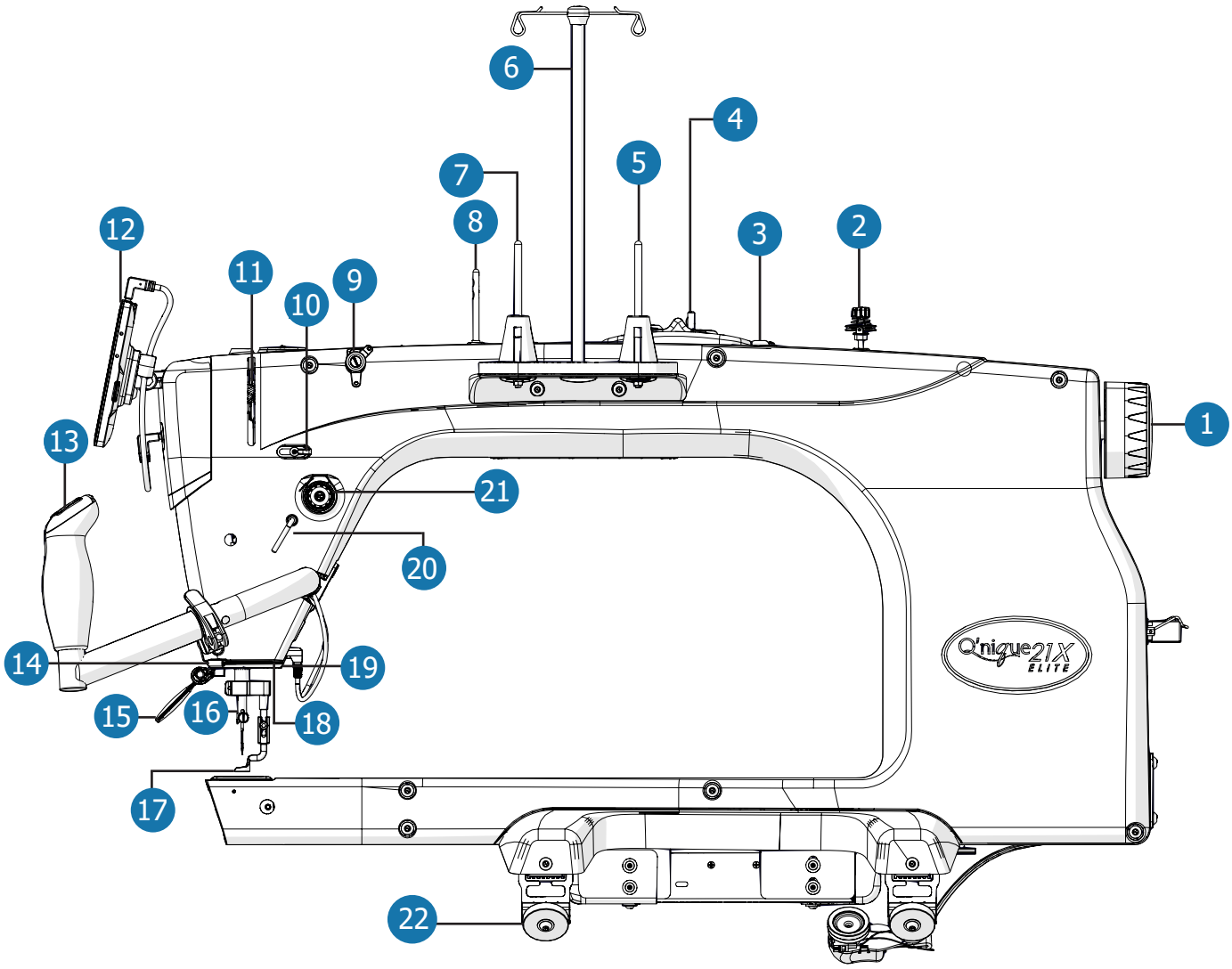
- Input Voltage: 110-220 VAC
- Peak Power Consumption: 450 W

Features

1. Ergonomic handles and handlebars for efficient, extended use (page 12)
2. 7” touch display (page 15)
3. Built in bobbin winder (page 28)
4. Dual thread mast and stands for quilting and winding bobbin at the same time
5. Dual wheels for added stability (page 2)
- Edge Warning System (page 54)
- Range of 130 to 2600 stitches per minute
- Regulated stitching

Machine Layout

Quilting Machine (side view)



1. **Hand Wheel**
   Raises and lowers the needle bar.
2. **Bobbin Thread Tensioner** (page 28)
   Tensions thread for winding a bobbin.
3. **Bobbin Thread Cutter** (page 28)
   Cuts wound bobbin thread.
4. **Bobbin Winding Station** (page 28)
   Positions bobbin for winding.
5. **Bobbin Wind Thread Stand** (page 28)
   Holds a cone of thread.
6. **Thread Mast** (page 28, page 32)
   Guides the thread for quilting.
7. **Top-Thread Thread Stand** (page 32)
   Holds a cone of thread.
8. **Thread Guide Rod** (page 32)
   Positions thread when quilting.
9. **Small Thread Tensioner** (page 32)
   Tensions thread when quilting.
10. **Thread Guide** (page 32)
    Positions thread when quilting.
11. **Take-Up Lever** (page 32)
    Tensions thread when quilting.
12. **Display** (page 15)
    Provides access to quilting options.

13 **Handlebar Controls** (page 43)
Controls machine functions.

14 **Bottom Thread Guide** (page 32)
Positions thread when quilting.

15 **Magnifying Glass** (page 21)
Enlarges view of needle area.

16 **Needle Bar** (page 73)
Holds the needle when quilting.

17 **Hopping Foot** (page 75)
Presses fabric down when quilting.

18 **Lamp**
Lights up needle area.

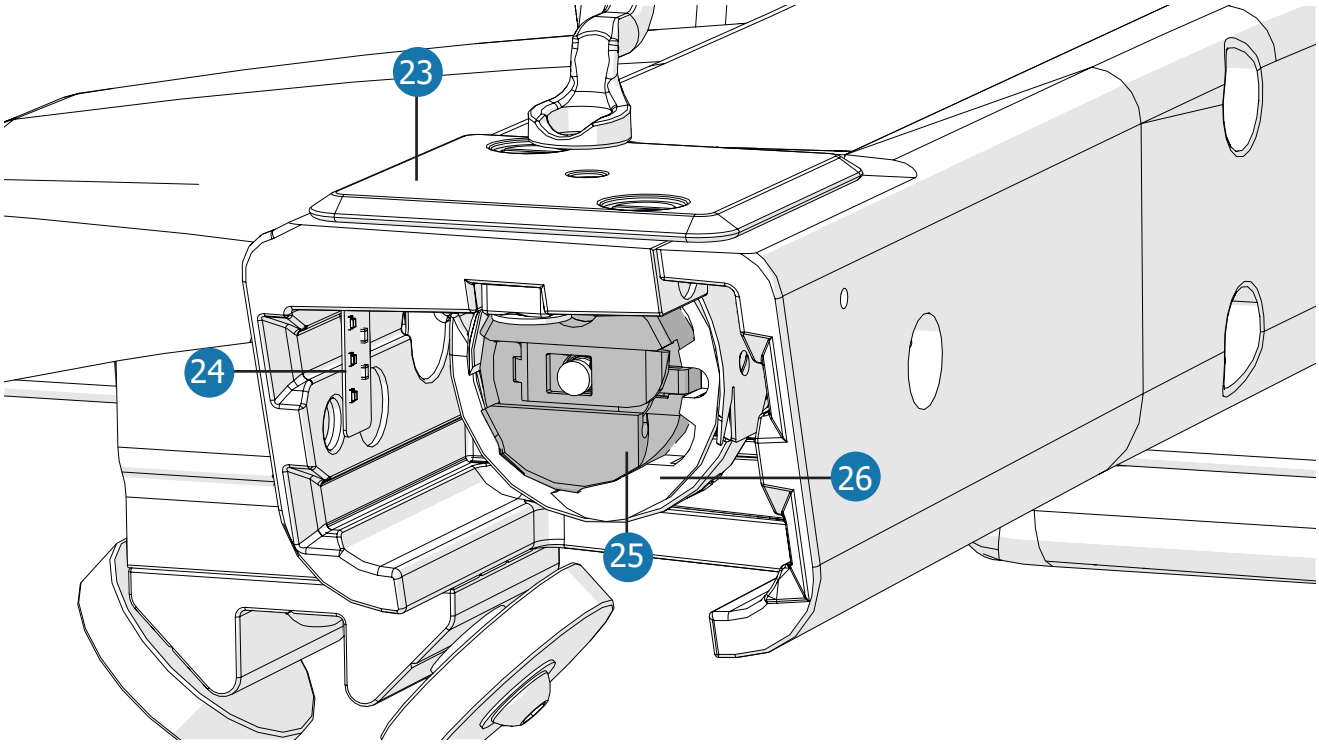
19 **Thread Cutter** (page 32)
Cuts excess thread after threading machine.

20 **Thread Guide** (page 32)
Positions thread when quilting.

21 **Large Thread Tensioner** (page 32)
Tensions thread as adjusted.

22 **Machine Wheels** (page 2)
Rides the bottom carriage rails to move the machine up or down on the quilting frame.

Hook Assembly (front view)



23 **Needle Plate** (page 80)
Covers top hook assembly access.

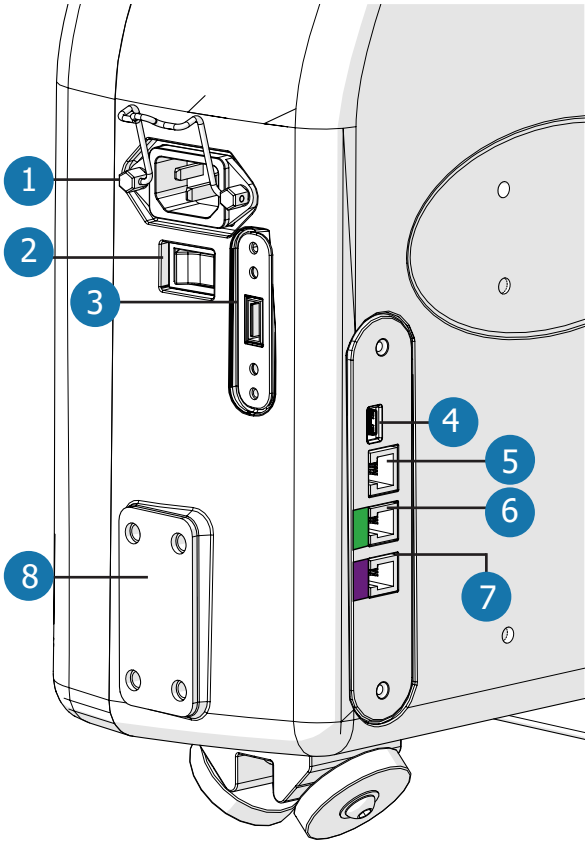
24 **Bobbin Area Lights**
Lights up the hook assembly area to make changing the bobbin easier.

25 **Bobbin Case** (page 30)
Holds M class bobbin and controls bottom thread tension.

26 **Hook Assembly** (page 30)
Holds the bobbin case and hooks the top thread to create stitches.

Ports and Plugins

Machine Rear



1 **Power Port with Retainer** (page 23)
Connects and holds power cable to the machine.

2 **Power On/Off Switch** (page 23)
Turns machine on and off.

3 **Quilter's Creative Touch (previously called QuiltMotion) Tablet Port**
For optional automation accessory.

4 **USB Connector Port**
For updating only.

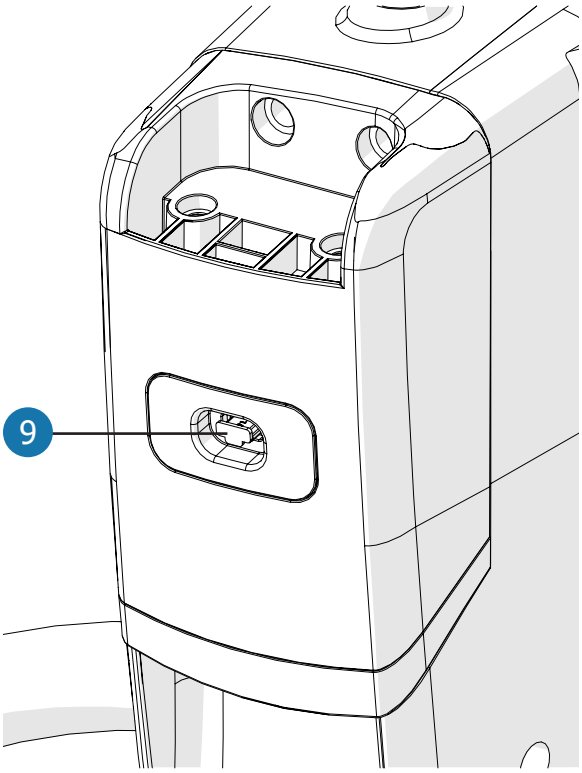
5 **Quilter's Creative Touch (previously called QuiltMotion) Port**
For optional automation accessory.

6 **Lower Encoder Port** (page 18)
Connects lower encoder to machine.

7 **Upper Encoder Port** (page 18)
Connects upper encoder to machine.

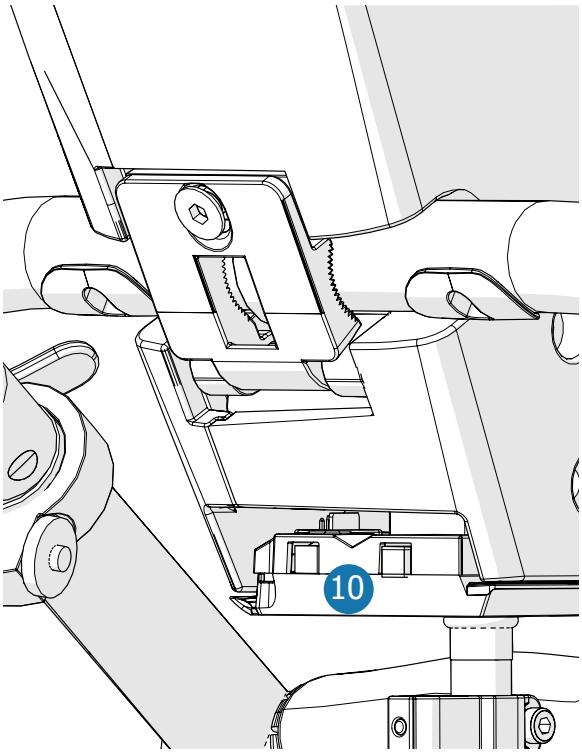
8 **Back Handle Port Cover**
For optional back handle accessory.

Machine Front View



9 **Display Cable Port** (page 19)
Connects display cable to machine.

Machine Throat



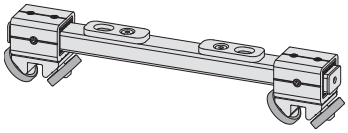
10 **Handlebar Ports** (page 12)
Connects handlebar controls to machine.

Included Parts and Tools

Tip: Parts are grouped together in the packaging for your convenience. For the best experience, do not remove parts from the packaging until instructed to do so.

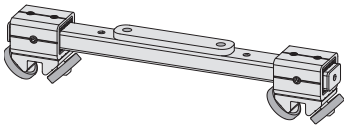
Level One (Workstation)

Back Wheel Assembly



SMP-09-13185
See page 2

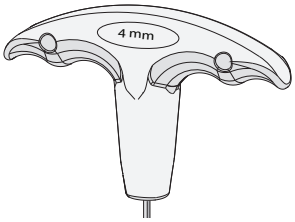
Front Wheel Assembly



SMP-09-13184
See page 2

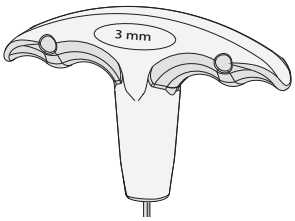
Tools Box

T-handle Allen Wrench 4 mm



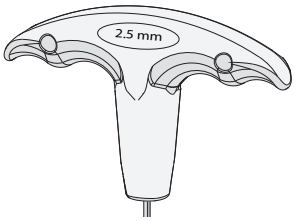
HDW-03-13114

T-handle Allen Wrench 3 mm



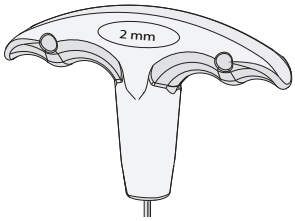
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T-handle Allen Wrench 2.5 mm



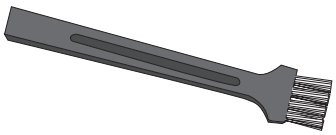
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T-handle Allen Wrench 2 mm



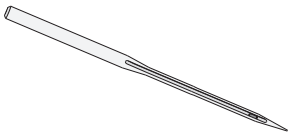
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Lint Brush



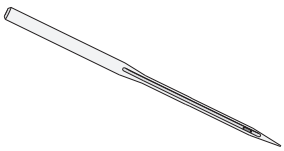
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See page 62

Needle Size 18
(one 10 pack)
(one pre-installed)



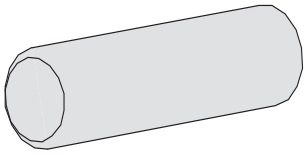
ACC-01-11025
See page 73

Needle Size 16
(one ten pack)



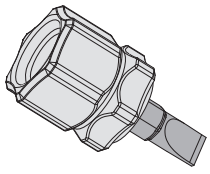
ACC-01-11024
See page 73

Needle Magnet



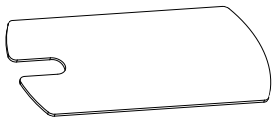
SMP-09-13837
See page 73

Flat-head Screwdriver



SMP-03-10169
See page 80

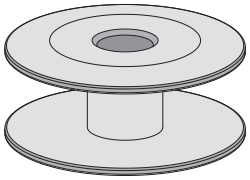
Hopping Foot Height tool



SMP-04-12171
See page 75

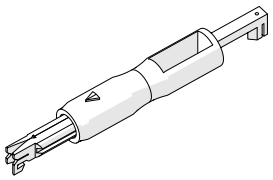
Tools Box (continued)

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



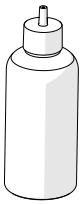
SMP-08-10070
See page 28

Needle Threader



SMP-08-17904
See page 36

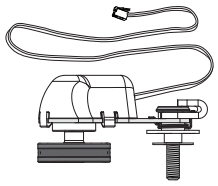
Oil Bottle



SMP-09-13888
See page 62

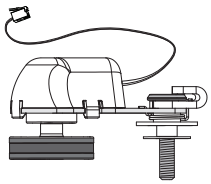
Encoder Box

Lower Encoder
(black spring)



SMP-09-15033
See page 2

Upper Encoder
(silver spring)



SMP-09-15024
See page 18

Zip Tie (x2)



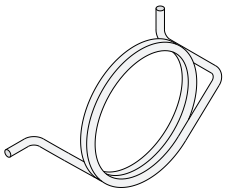
MIS-08-10804

Zip Tie Mount (x2)



MIS-08-10805

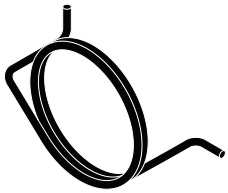
Upper Encoder Spring (silver)



HDW-03-10216
See page 72

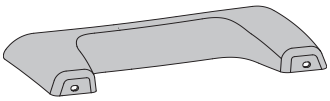
Wheel Base Cover Box

Lower Encoder Spring (black)



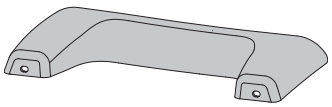
HDW-03-10671
See page 72

Right Wheel Cover



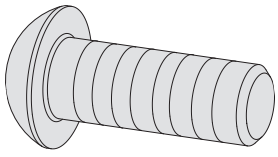
SMP-05-17365
See page 10

Left Wheel Cover



SMP-05-17364
See page 10

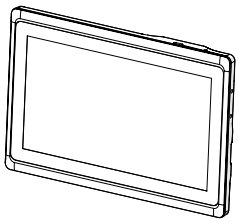
SBHCS Screw M6 x 14 mm (x4)



HDW-03-10221
See page 10

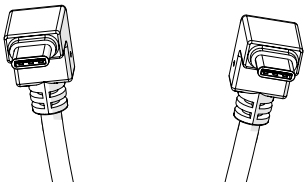
Display Box

7-Inch Touch Display



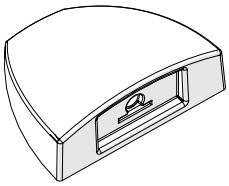
SMP-09-18807
See page 15

Display Cable



SMP-02-18854
See page 15

Adhesive Mount Assembly



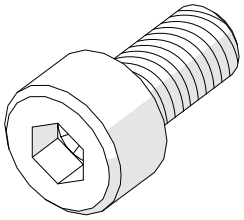
ACC-09-16158
See page 21

2X Magnifying Glass



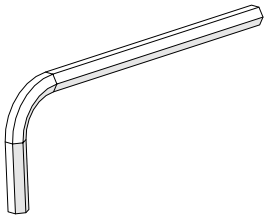
ACC-09-15455
See page 21

SHCS M4 x 8 mm



HDW-03-12208
See page 21

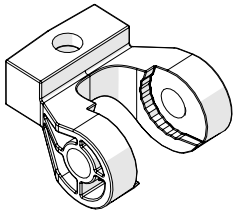
Allen Wrench 3 mm



HDW-03-10166
See page 21

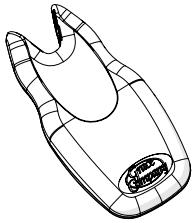
Magnifique Box

Right Angle Magnifier Mount



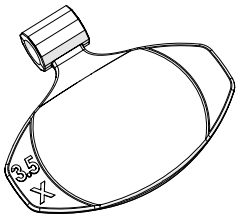
ACC-09-14234
See page 21

Magnifier Handle



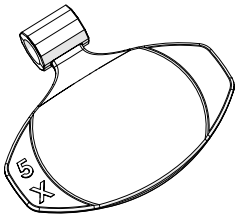
ACC-09-15460
See page 21

3.5X Magnifying Glass



ACC-09-15456
See page 21

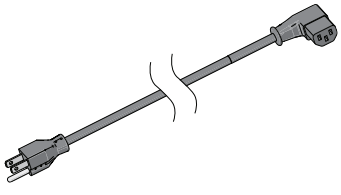
5X Magnifying Glass



ACC-09-15457
See page 21

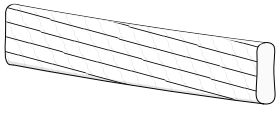
Installation Box

Power Cord



SMP-02-14466
See page 23

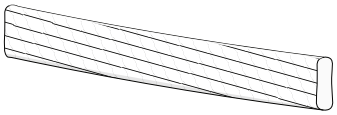
Thread Net 10 cm (x2)



SMP-08-17271
See page 26

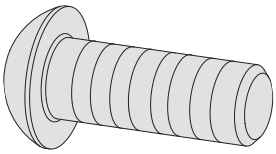
Installation Box (continued)

Thread Net
14 cm (x2)



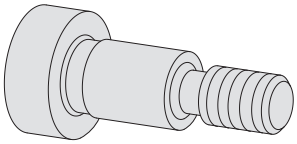
SMP-08-17313
See page 26

SBHCS Screw
M6 x 25 mm (x2)



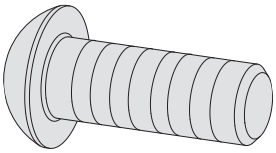
HDW-03-10215
See page 5

Shoulder Bolt
M6 (x2)



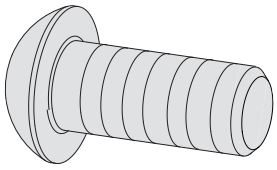
HDW-03-12292
See page 5

SBHCS Screw
M6 x 14 mm (x2)



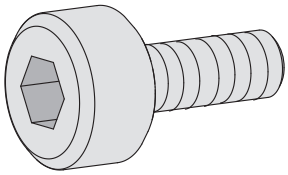
HDW-03-10221
See page 17

SBHCS Screw
M5 x 16 mm (x2)



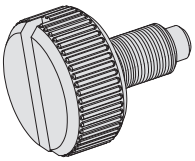
HDW-03-10857
See page 15

Hopping Foot
Screw



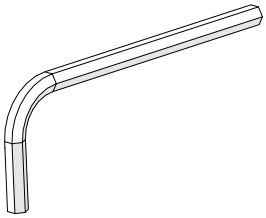
HDW-03-10966
See page 75

M3 Thumb Screw
(needle bar spare)



HDW-03-11736
See page 73

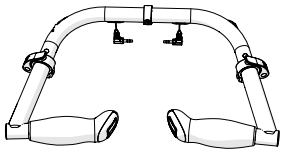
Allen Wrench 4 mm



HDW-03-10167
See page 5

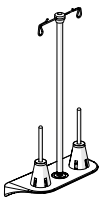
Level Two

Handlebar
Assembly



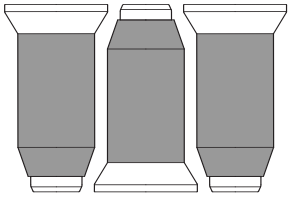
SMP-09-18927
See page 12

Thread Stand
Assembly



SMP-09-13183
See page 17

Sample Thread Kit



MIS-11-16122

Animated Instructions

To provide the best possible customer experience, we also offer animated video instructions for setting up this product. To view the animated instructions, visit our website at:

https://l.ead.me/21xelitestart

You can also use your smartphone to scan this QR code:

Out-of-the Box Assembly

This section of the manual covers all the steps to assemble the machine after you bring it home for the first time.

Task 1- Installing the Lower Encoder .....page 2

Task 2 - Installing the Wheels .....page 5

Task 3 - Installing the Wheel Covers.....page 10

Task 4 - Installing the Handlebars .....page 12

Task 5 - Connecting the Display .....page 15

Task 6 - Attaching the Thread Stand.....page 17

Task 7 - Installing the Upper Encoder .....page 18

Task 8 - Installing the Magnifying Glass .....page 21

Task 9 - Turning the Machine On/Off .....page 23

Part One

Before completing the tasks in Part One of your machine instructions, please complete Part One of your frame instructions.

Progress Checkpoint:

Have you:

- Assembled your frame's legs and table?
- Installed and align the frame tracks?
- Installed the channel lock on the bottom carriage?
- Installed the rail supports?

Note: Do not install the rails at this time.

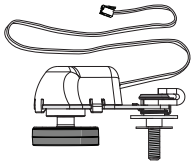
If you've already fully assembled your frame, uninstall your frame's take-up rail.

Task 1- Installing the Lower Encoder

Tip: For the best experience, do not remove parts from the packaging until instructed to do so.

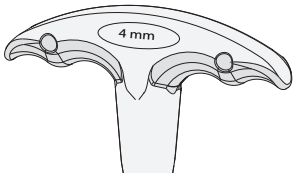
Parts & Tools Needed:

Lower Encoder (black spring)



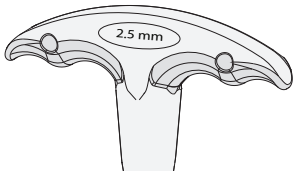
Encoder Box

T-handle Allen Wrench 4 mm



Tools Box

T-handle Allen Wrench 2.5 mm

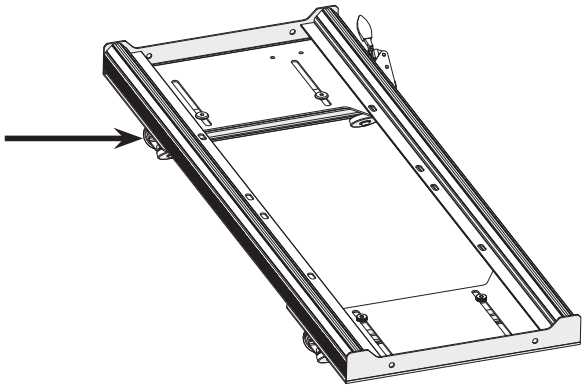


Tools Box

Instructions

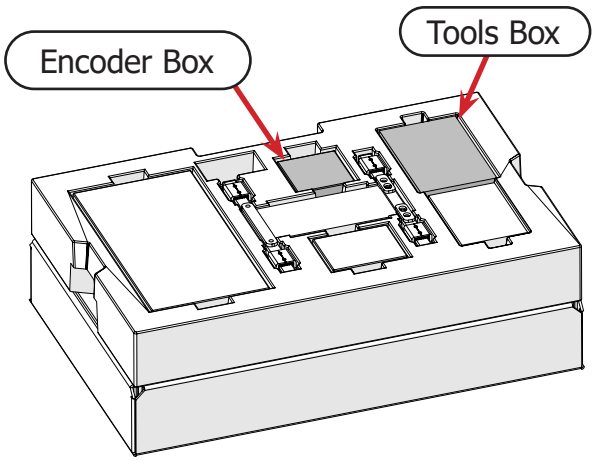
The encoders monitor the movement of the machine on the frame, allowing for regulated stitching. The lower encoder is installed on the left-rear wheel of the bottom carriage. Please take the following steps to install the encoder onto the bottom carriage:

1. Locate the left rear wheel of your bottom carriage.

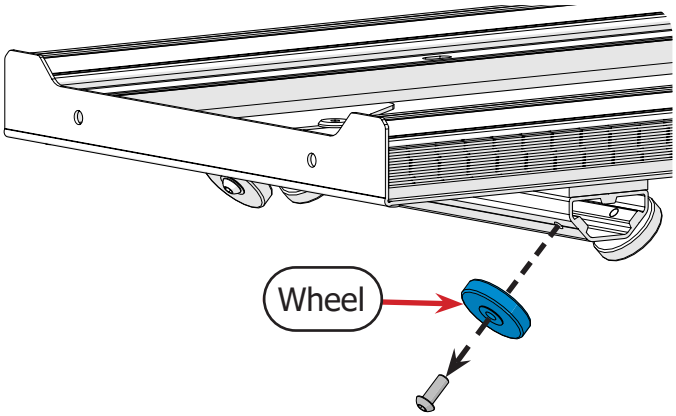


Note: If needed, review your frame assembly manual to determine the front of the bottom carriage.

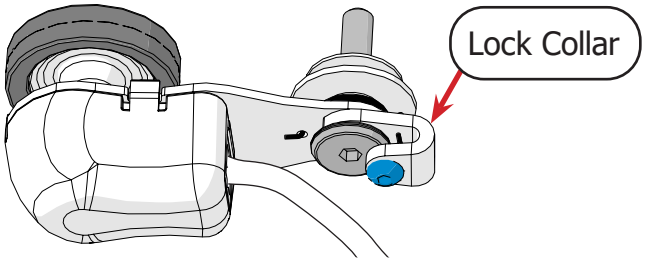
2. Take the parts and tools needed for this task from the **tools box** and the **encoder box**.



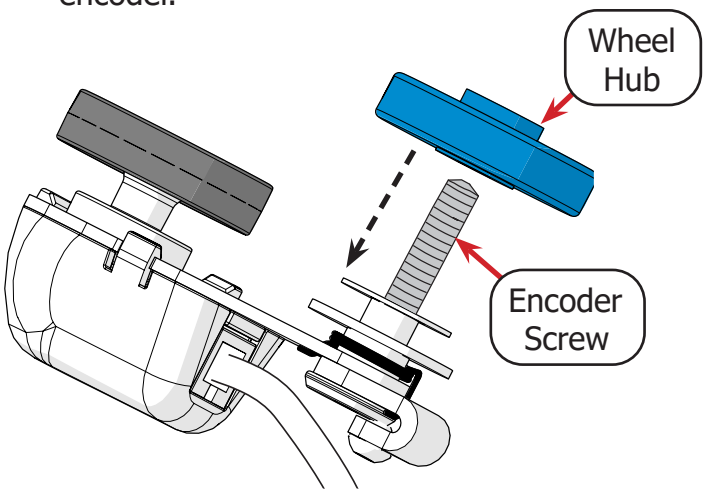
3. Use the 4 mm Allen wrench to remove the outward-facing, left rear **wheel** from the bottom carriage.



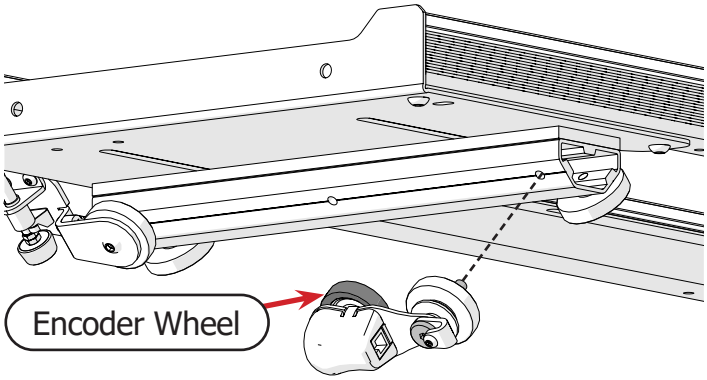
4. Loosen the **lock collar screw** (shown in blue) on the lower encoder with the 2.5 mm Allen wrench until the **lock collar** turns freely. The lower encoder has a black spring and a green sticker.



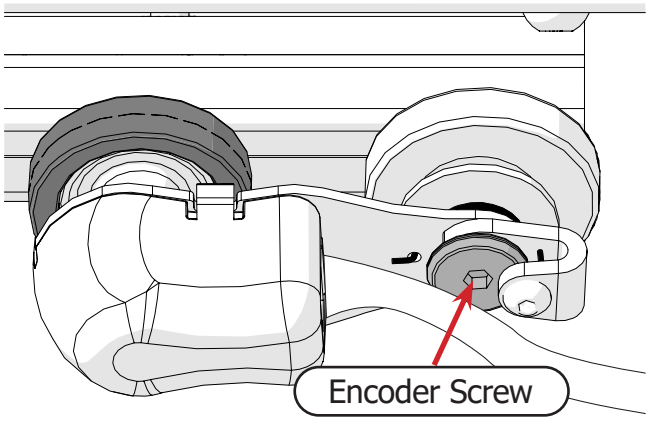
5 Slide the wheel onto the **encoder screw** with the **wheel hub** facing away from the encoder.



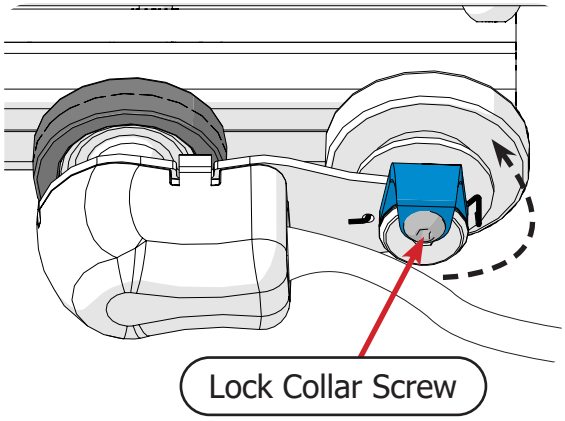
6 Place the encoder screw into the left rear wheel hole on the carriage so the **encoder wheel** is between the rear wheels.



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



8 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: Instructions for plugging the cable into the machine are covered in "Task 7" after the machine has been installed.

Congratulations! You have completed Part One of this manual.

If you are also installing Quilter's Creative Touch (previously called QuiltMotion), complete Part One of your Quilter's Creative Touch manual.

If you are not installing Quilter's Creative Touch at this time, continue to Part Two of this manual on page 4.

Part Two

Before completing the tasks in Part Two of your machine instructions, please complete Part One of your Quilter's Creative Touch (previously called QuiltMotion) instructions if you will be installing automation today.

Progress Checkpoint:

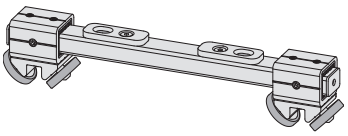
Quilter's Creative Touch Manual Part One (optional)
Have you:

- Installed the motor plate into your bottom carriage?
- Installed the long belt onto your frame?

Task 2 - Installing the Wheels

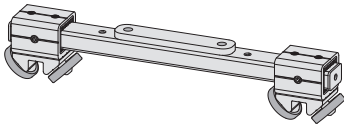
Parts & Tools Needed:

Back Wheel Assembly



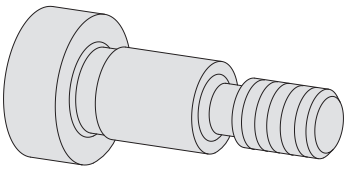
Packaging Level 1
(leave in packaging)

Front Wheel Assembly



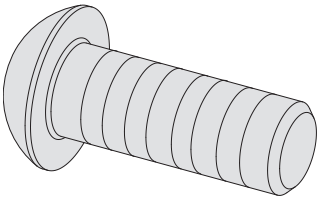
Packaging Level 1
(leave in packaging)

Shoulder Bolt
M6 (x2)



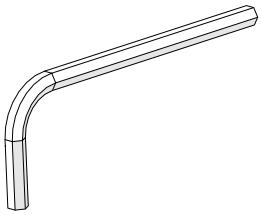
Installation Box

SBHCS Screw
M6 x 25 mm (x2)



Installation Box

Allen Wrench 4 mm



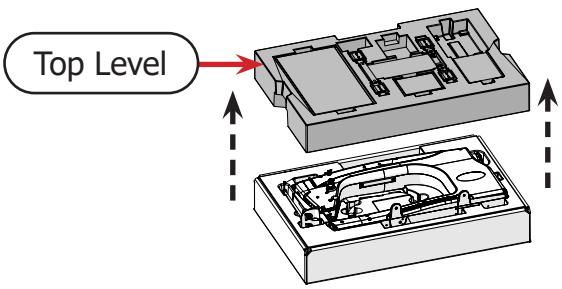
Installation Box

Instructions

The top level of packaging will serve as a workstation to install the wheels onto your machine. Do not remove the wheels from the packaging.

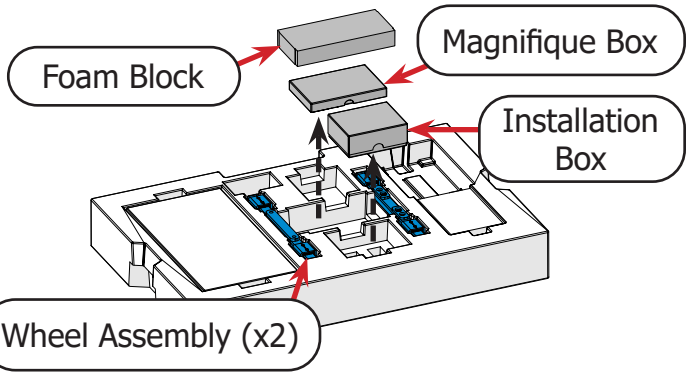
Take the following steps to install and adjust the machine wheels:

1. If you have not done so already, remove the **top level** of packaging and place it near the second level. The top level will serve as a workstation to install the machine wheels.



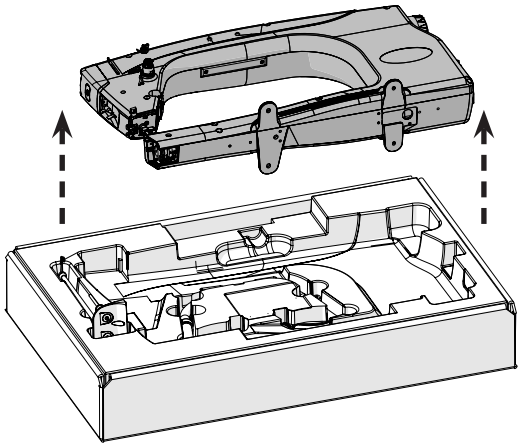
2. Remove the **foam block**, **Magnifique magnifying glass box**, and the **installation box**.

   Leave the **wheel assemblies** in the packaging.

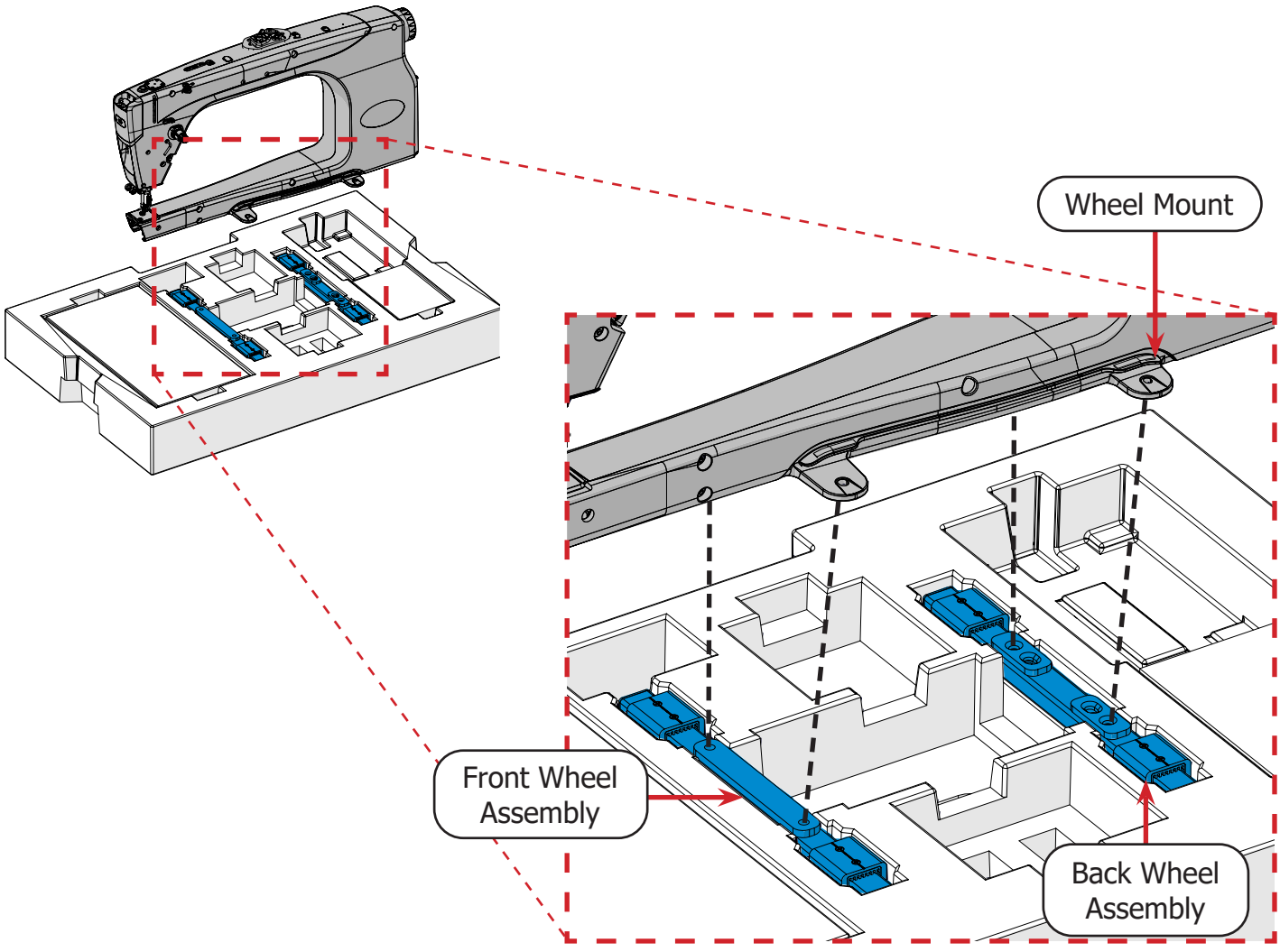


Installing the Wheels (continued)

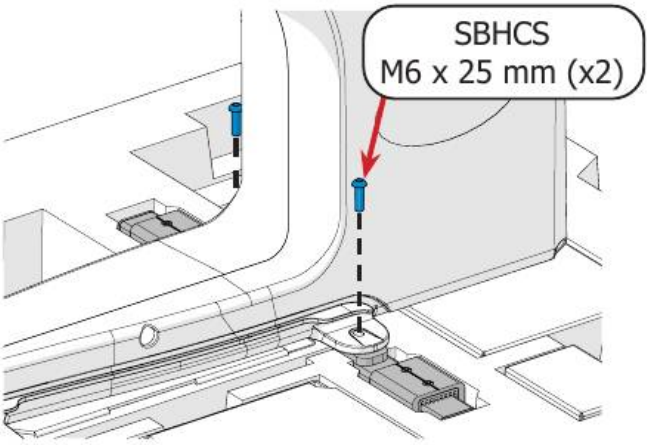
3 Remove the machine from the second level of packaging.



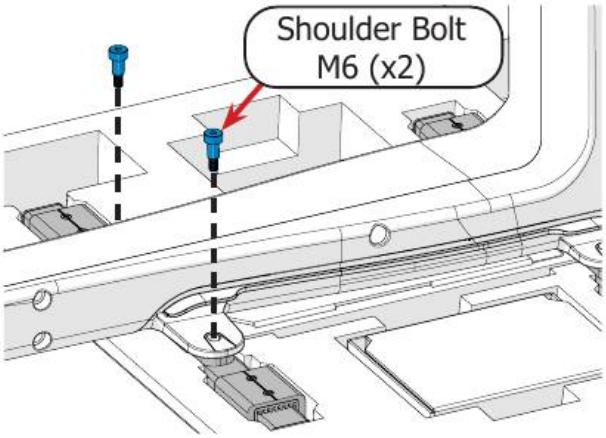
4 Place the machine on the wheels in level one of the packaging so that the holes in the **wheel mounts** align with the holes in the **front and back wheel assemblies**.



5 Use the L-shaped 4 mm Allen wrench and the two **M6 x 25 mm SBHCS** to attach the back wheel assembly to the machine.

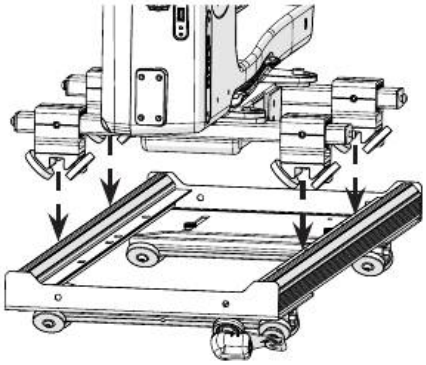


6 Use the L-shaped 4 mm Allen wrench and the two **M6 shoulder bolts** to attach the front wheel assembly to the machine.

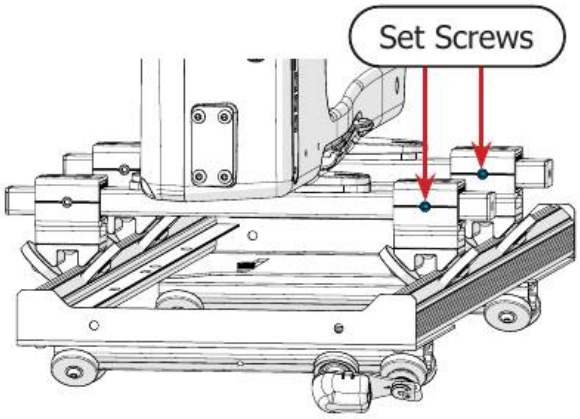


7 Place the machine onto the bottom carriage so that the wheels align with the carriage tracks.

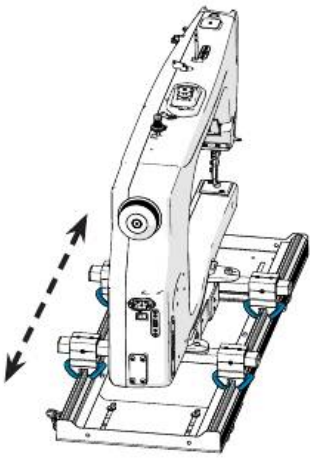
Tip: See your frame manual for bottom carriage orientation.



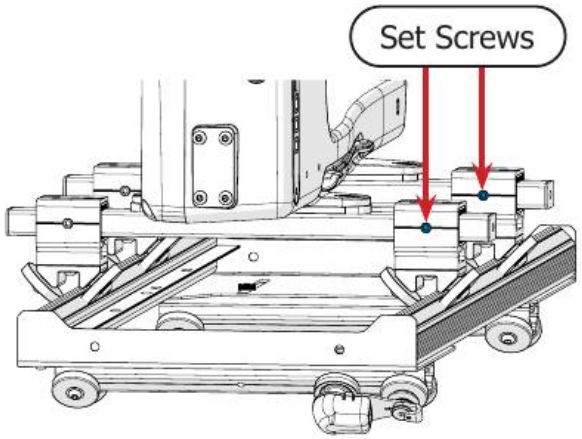
8 Loosen the **set screws** on one side of each of the wheel assemblies with the 4 mm Allen wrench.



9 Roll the machine up and down the bottom carriage tracks several times so that the machine can settle and ride smoothly.



10 Use the 4 mm Allen wrench to re-tighten the wheel assembly **set screws** you loosened earlier.



Congratulations! You have completed Part Two of this manual.

If you are also installing Quilter's Creative Touch (previously called QuiltMotion), complete Part Two of your Quilter's Creative Touch manual.

If you are not installing Quilter's Creative Touch at this time but are assembling a new frame, continue to Part Two of your frame manual. If the frame manual is not broken in to parts, follow the manual's directions to:

- Install the channel lock onto your machine.

If you are installing your machine onto a frame that is already fully assembled, continue to Part Three of this manual on page 9.

Part Three

Before completing the tasks in Part Three of your machine instructions, complete Part Two in your Quilter's Creative Touch (previously called QuiltMotion) manual (if setting up Quilter's Creative Touch at this time), and then Part Two of your frame manual.

Progress Checkpoint:

Have you:

- Completed Quilter's Creative Touch Part Two? (optional)

Have you:

- Installed the channel lock onto the quilting machine?

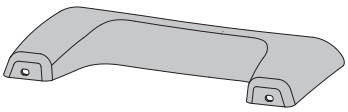
If you've already fully assembled your frame:

- Install the channel lock onto the quilting machine.

Task 3 - Installing the Wheel Covers

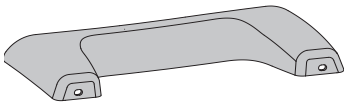
Parts & Tools Needed:

Right Wheel Cover



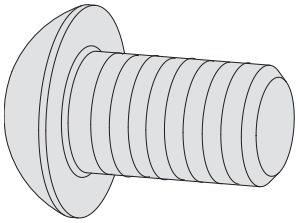
Wheel Base Cover Box

Left Wheel Cover



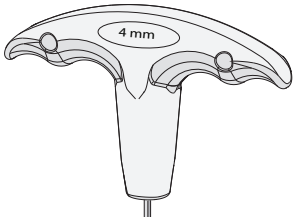
Wheel Base Cover Box

SBHCS Screw M6 x 14 mm (x4)



Wheel Base Cover Box

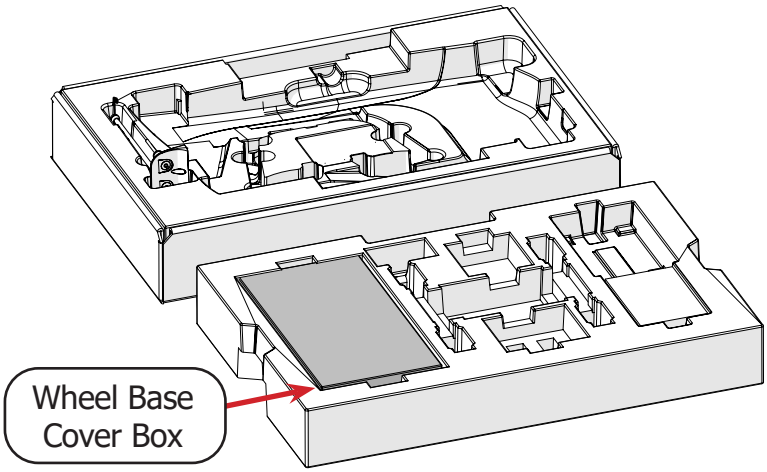
T-handle Allen Wrench 4 mm



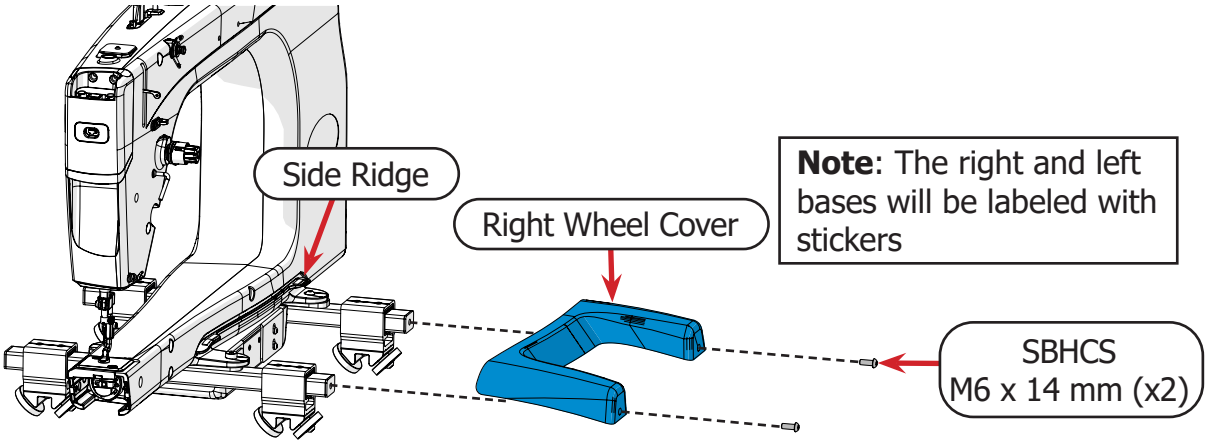
Instructions

Take the following steps to install the wheel covers onto the machine:

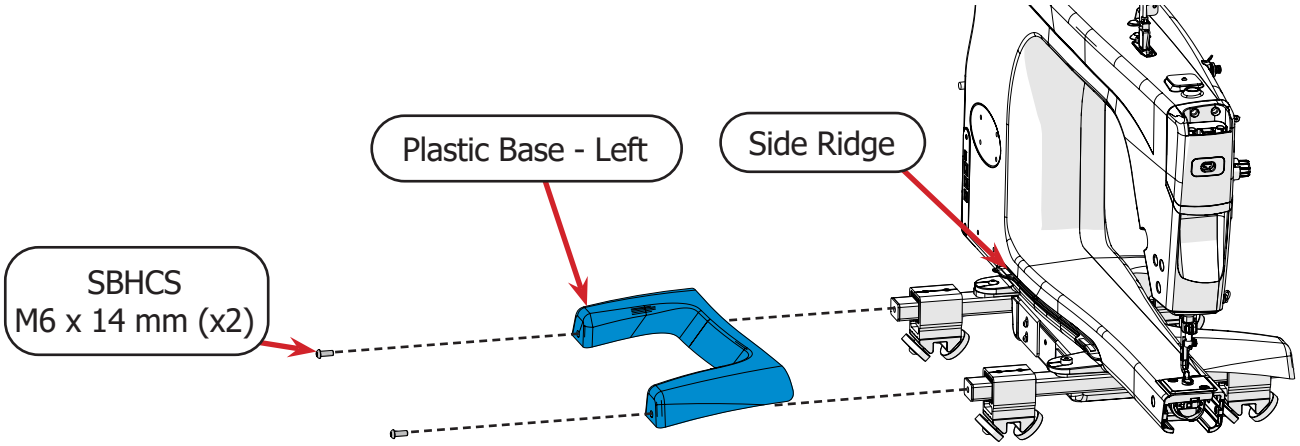
1. Find the parts needed for this task in the **wheel base cover box**.



2. Slide the **right wheel cover** onto the right side of the machine, over the **side ridge**. Screw in place with two **M6 x 14 mm SBHCS screws** and the 4 mm Allen wrench. Tighten until snug.



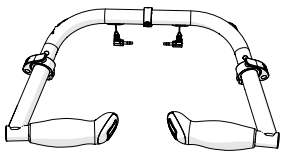
3 Slide the **left wheel cover** onto the left side of the machine, over the **side ridge**. Screw in place with two **M6 x 14 mm SBHCS screws** and the 4 mm Allen wrench. Tighten until snug.



Task 4 - Installing the Handlebars

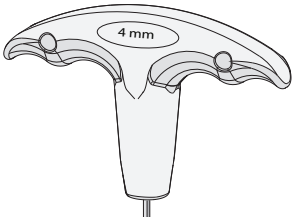
Parts & Tools Needed:

Handlebar Assembly



Packaging Level 2

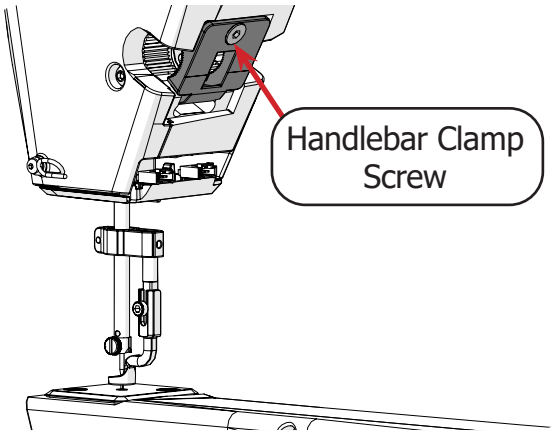
T-handle Allen Wrench 4 mm



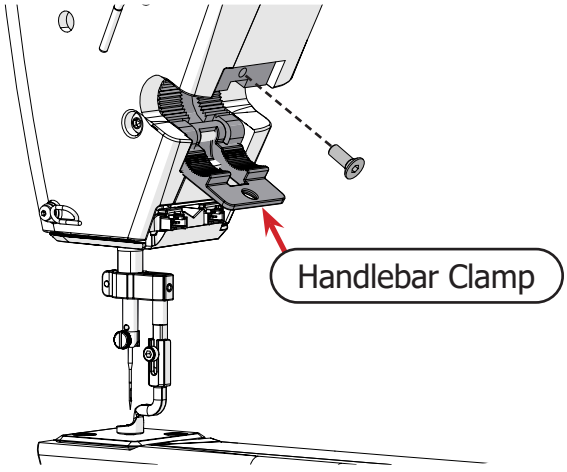
Instructions

Take the following steps to install the machine handlebars:

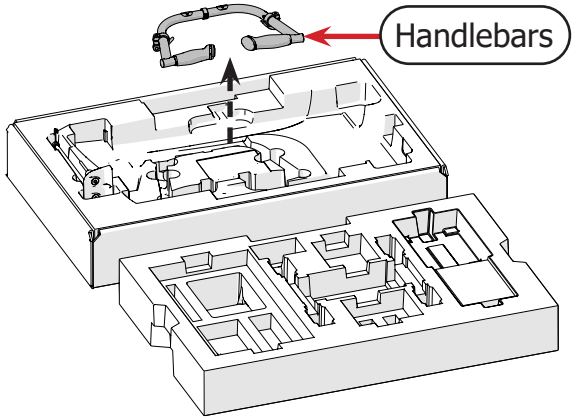
1. With the 4 mm Allen wrench, remove the **handlebar clamp screw**.



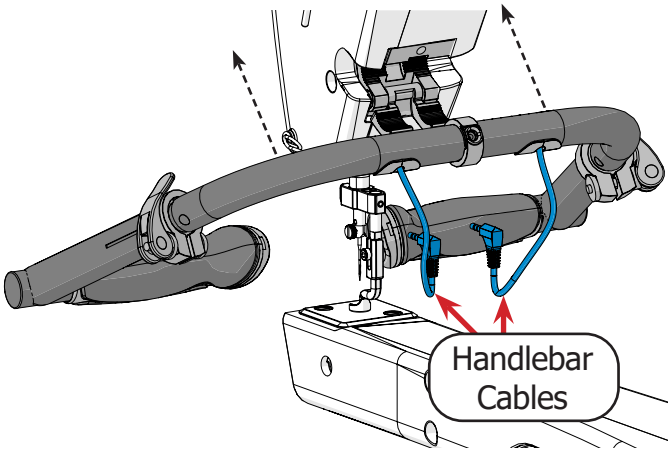
The **handlebar clamp** opens.



2. Remove the **handlebars** from the bottom level of the packaging.

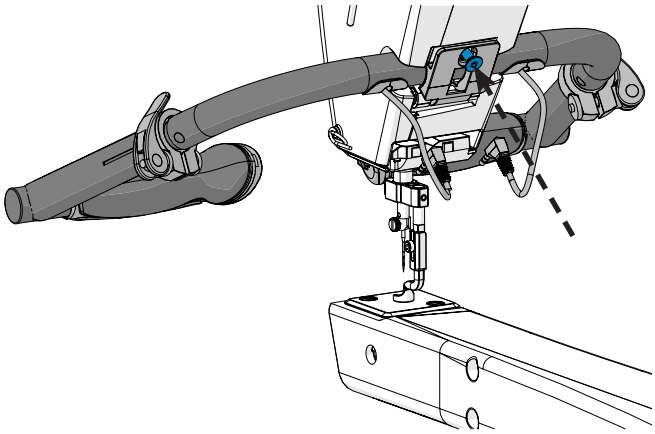


3. Slide the handlebars into the slot so the **handlebar cables** are on the bottom.

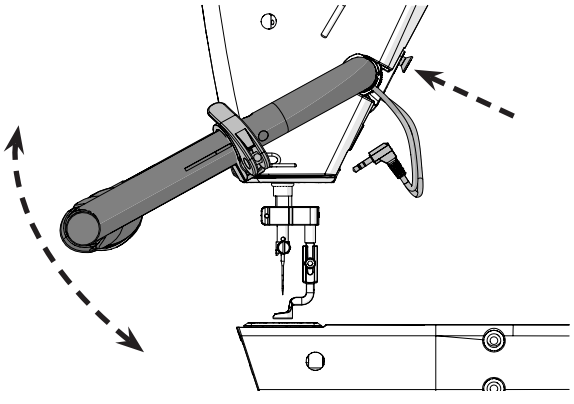


Tip: Some left-handed quilters prefer to reverse the handles so the buttons that are normally on the right side are on the left instead. If this is your preference, flip the handlebars so the cables come out the top. Later, when it's time to plug the cables into the machine, cross them over each other and plug them in to the port opposite of the side they're dangling from.

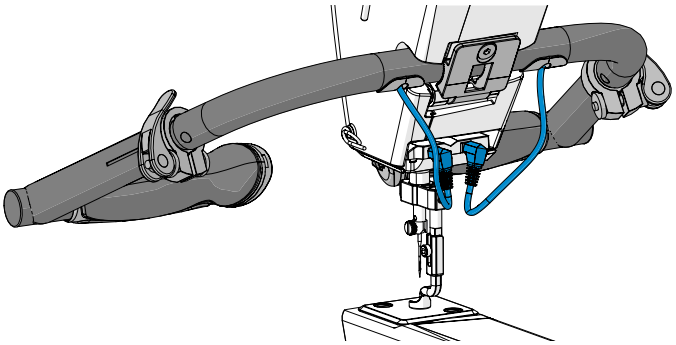
4 Close the cover and loosely screw in the cover screw.



5 Hold the handlebars at the desired angle and tighten the clamp screw.

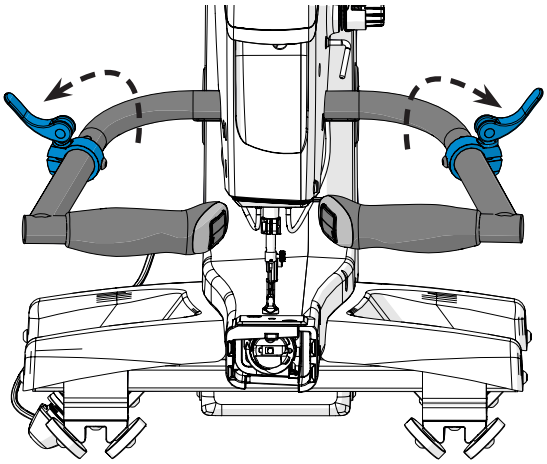


6 Plug the cables from the handlebars into the machine.

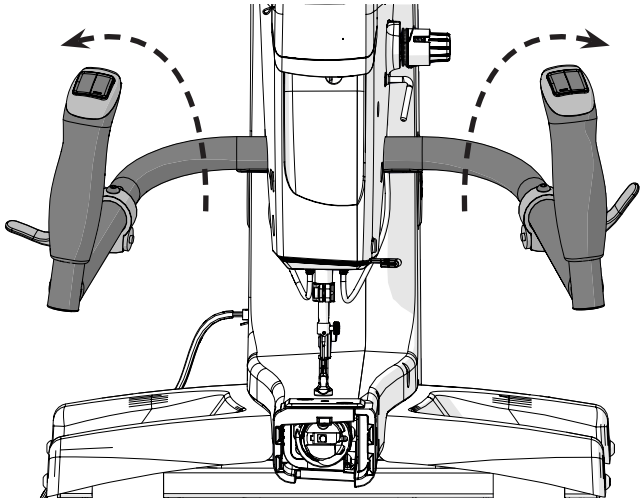


Note: If you reversed the handles for left-handed use, plug the right handle into the left port and the left handle into the right port.

7 Open the **handlebar levers** (shown in blue).

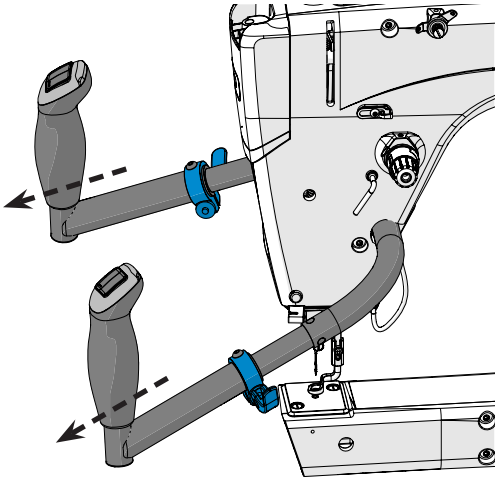


8 Twist the controls until they are comfortable to hold and operate.

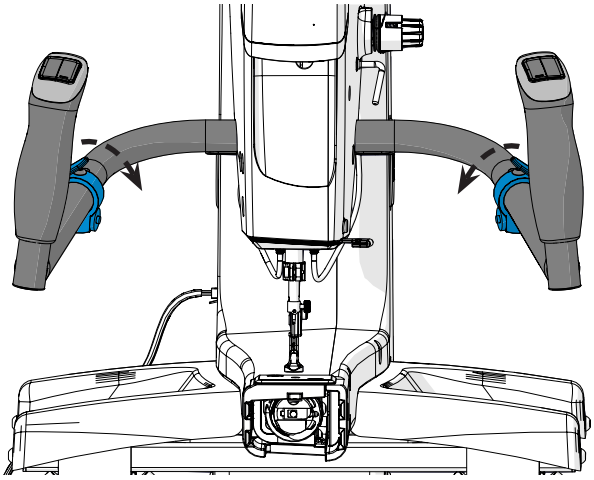


Task 4 - Installing the Handlebars (continued)

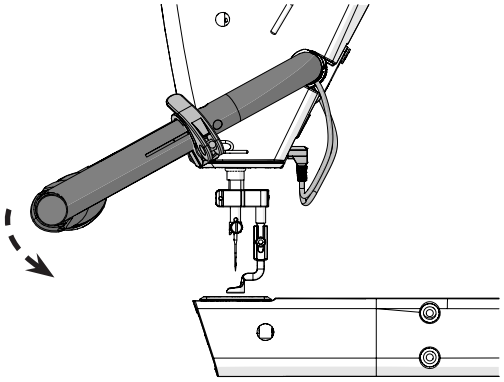
9 If desired, extend the handles outward to improve the reach of the machine.



10 Close the handlebar levers (shown in blue). If needed, repeat the steps in this task until you are happy with the position of the handles.



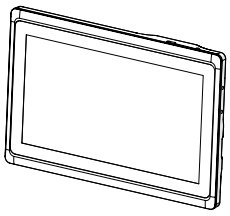
Tip: For micro-stippling, angle the handlebars down toward the needle plate in step 5, and leave the controls horizontal in step 8.



Task 5 - Connecting the Display

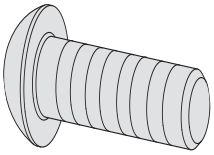
Parts & Tools Needed:

7-Inch Touch Display



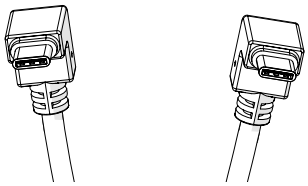
Display Box

SBHCS Screw
M5 x 16 mm (x2)



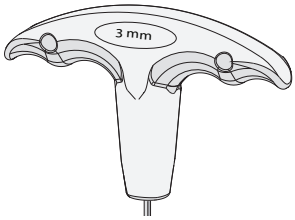
Installation

Display Cable



Display Box

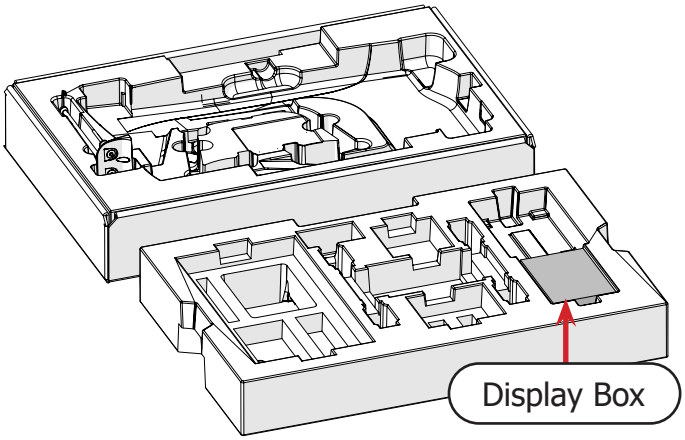
T-handle Allen
Wrench 3 mm



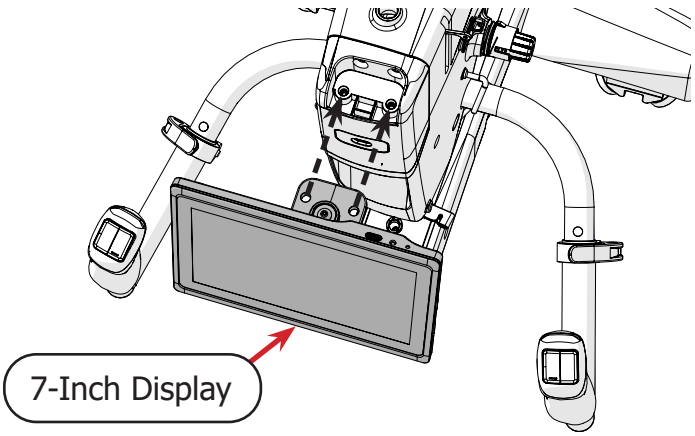
Instructions

Take the following steps to install the display:

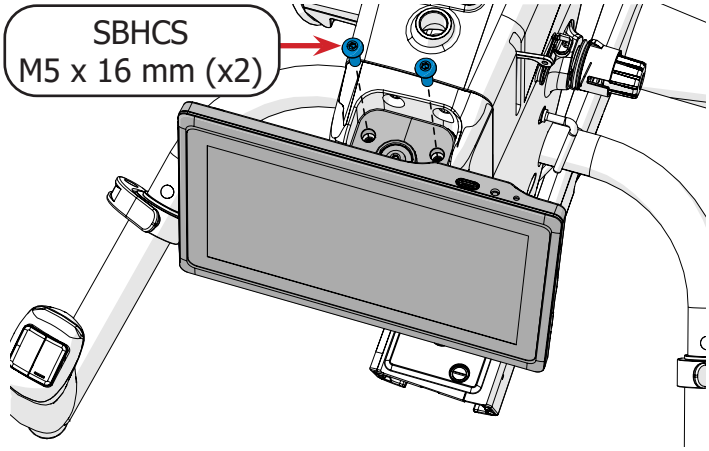
1. Find the parts needed for this task in the **display box** and the installation box.



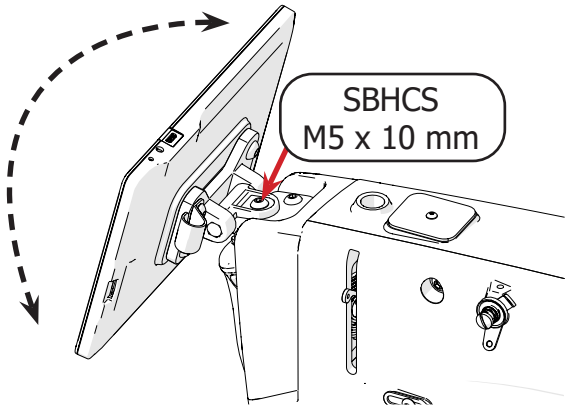
2. Place the **7-inch display** into the slot at the stop of the machine, lining up the holes for the screws.



3. Attach in place with the 3 mm Allen wrench and the two **M5 x 16 mm SBHCS.**

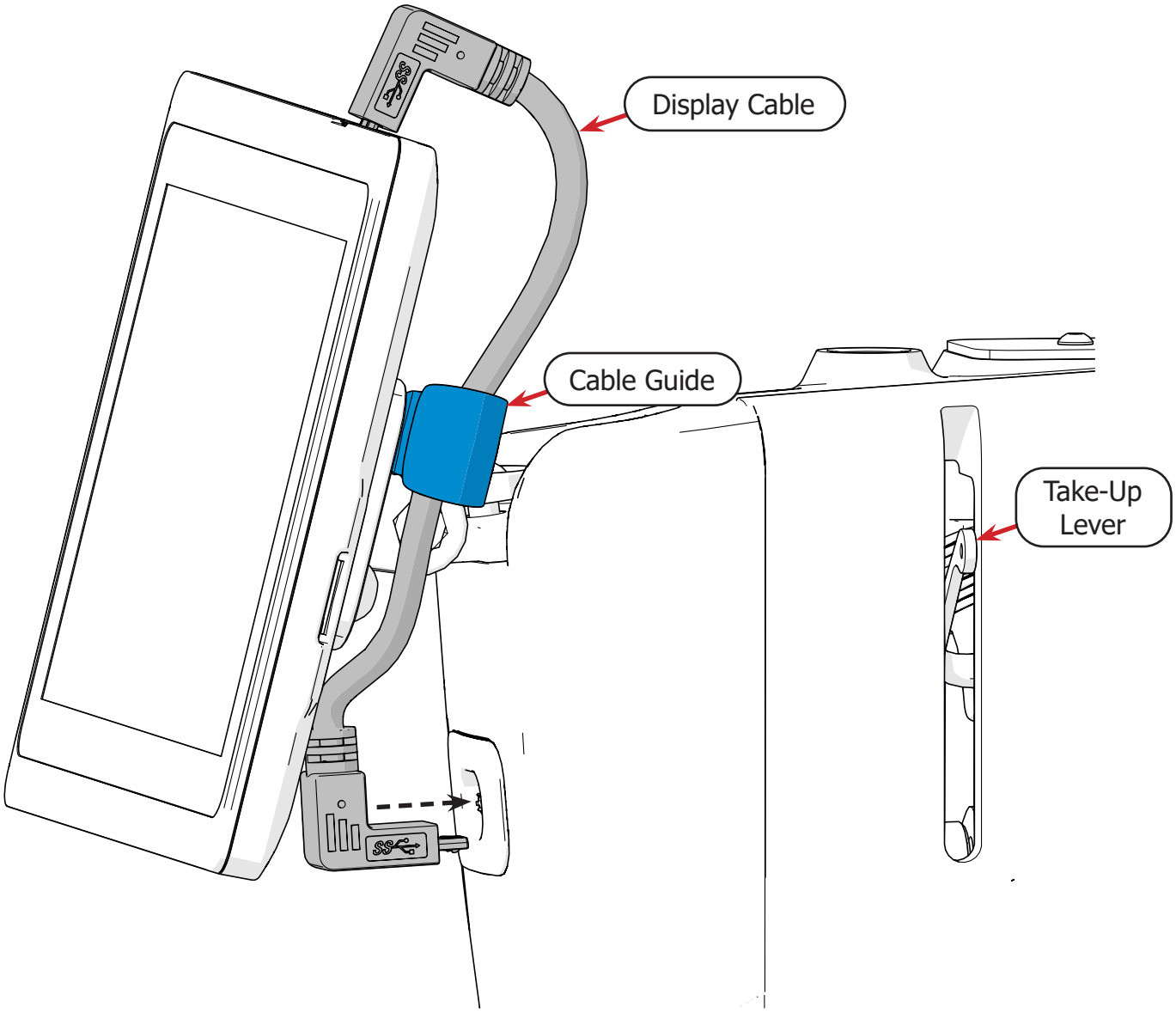


4. Tilt the display to the desired angle and use the 3 mm Allen wrench to tighten down the **M5 x 10 mm SBHCS** to secure it in place.



Task 5 - Connecting the Display (continued)

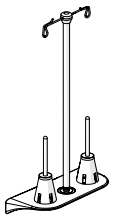
5 Connect the **display cable** into the port on the front of the machine behind the display.
Use the cable guide to keep the cable close to the tablet and away from the **take-up lever**.



Task 6 - Attaching the Thread Stand

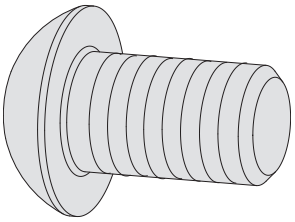
Parts & Tools Needed:

Thread Stand Assembly



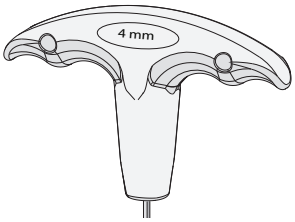
Bottom Level

SBHCS Screw M6 x 14 mm (x2)



Installation Box

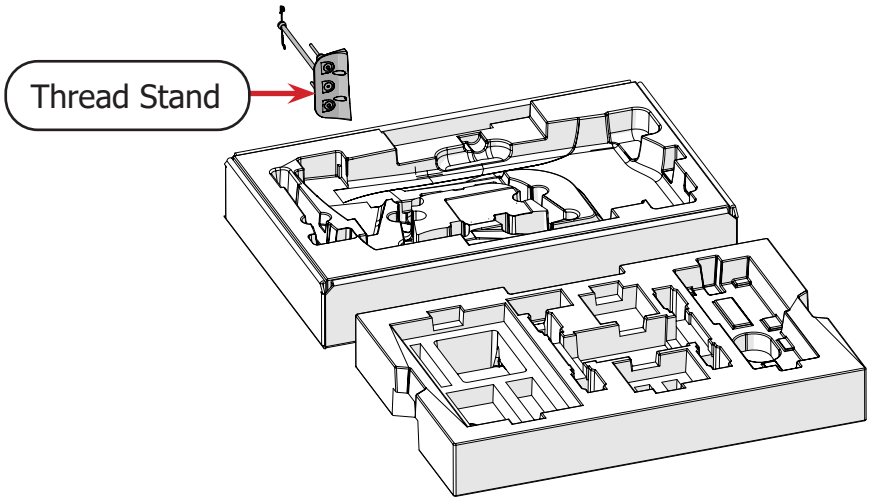
T-handle Allen Wrench 4 mm



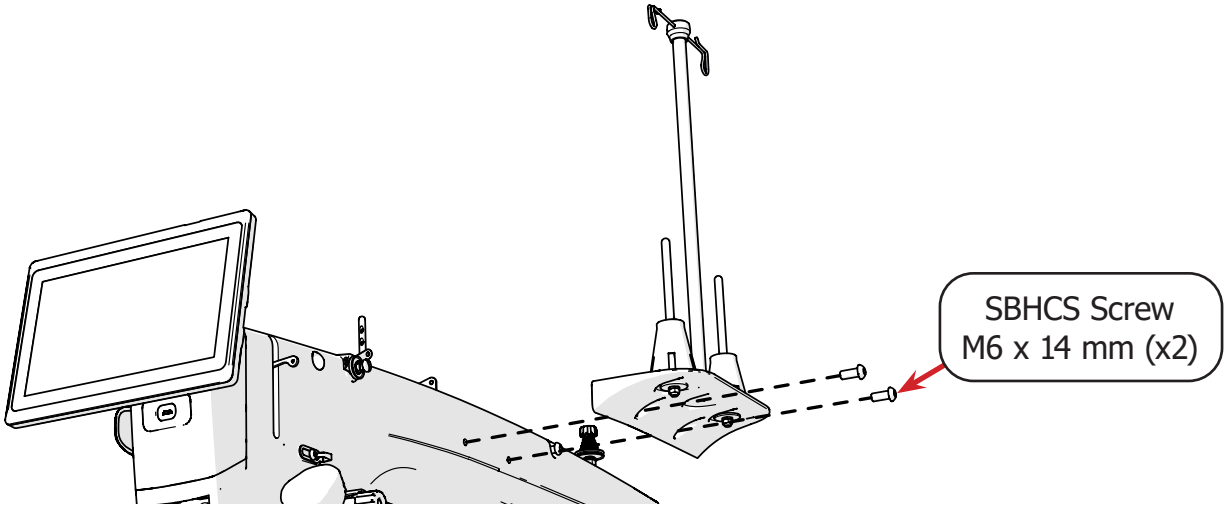
Instructions

To install the thread stand assembly:

1. Remove the **thread stand** from the packaging. Find the hardware needed for this step in the installation box.



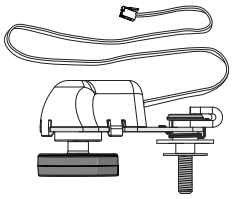
2. Use two **M6 x 14 mm SBHCS screws** and the 4 mm Allen wrench to install the thread stand assembly on the right side of the machine.



Task 7 - Installing the Upper Encoder

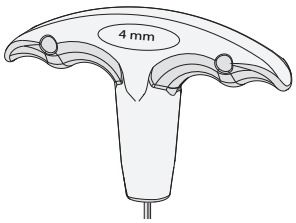
Parts & Tools Needed:

Upper Encoder (silver spring)

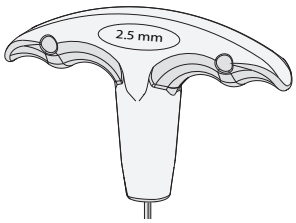


Encoder Box

T-handle Allen Wrench 4 mm



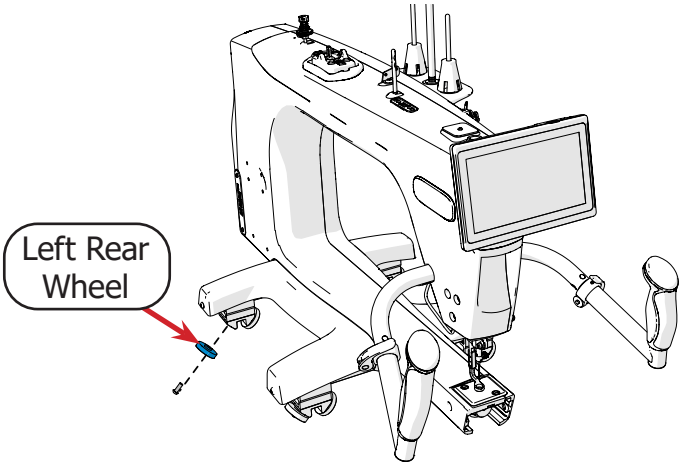
T-handle Allen Wrench 2.5 mm



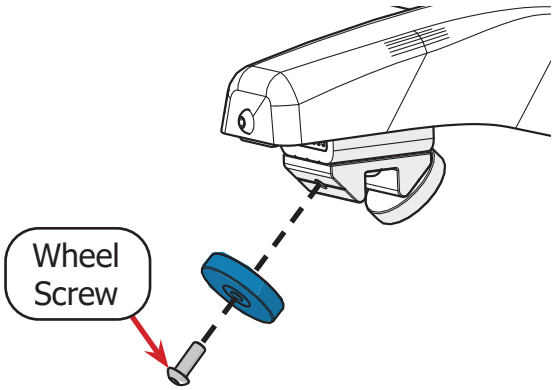
Instructions

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

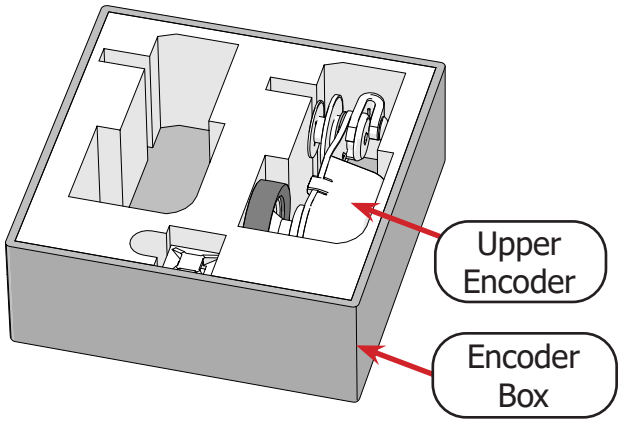
1. Use the 4 mm Allen wrench to remove the **left rear wheel** from the machine.



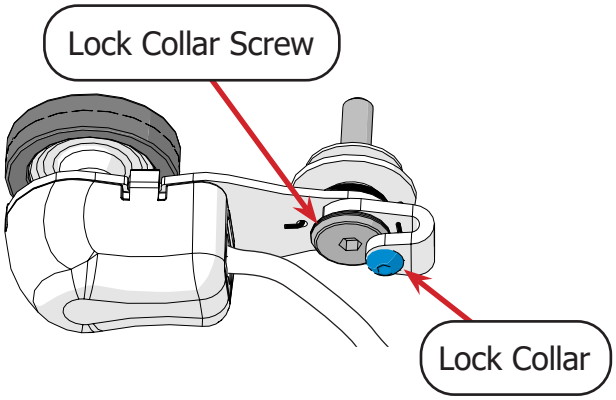
The **wheel screw** will not be needed again and can be stored with the packaging materials.



2. Find the **upper encoder** in the **encoder box**. The upper encoder has a silver spring and a purple sticker on the cable.

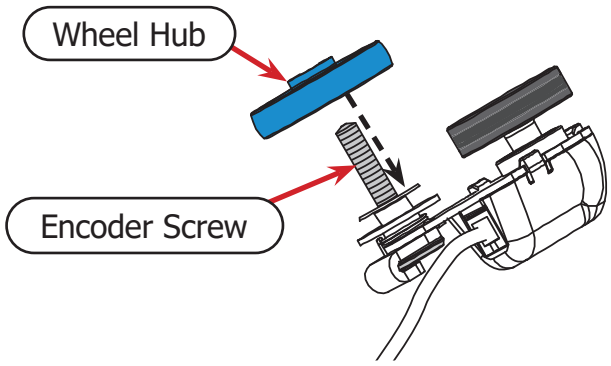


3. Loosen the **lock collar screw** on the upper encoder with the 2.5 mm Allen wrench until the **lock collar** turns freely.

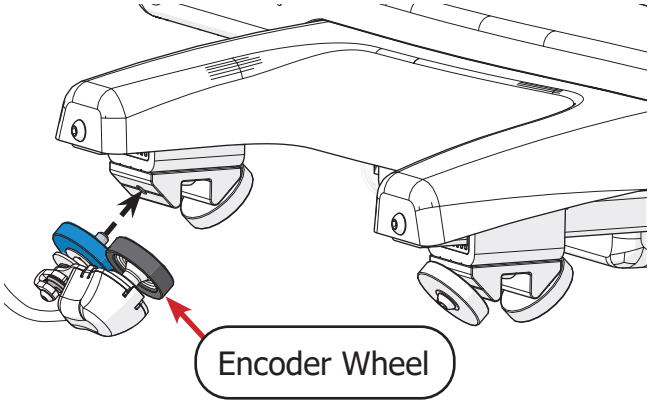


Task 7 - Installing the Upper Encoder (continued)

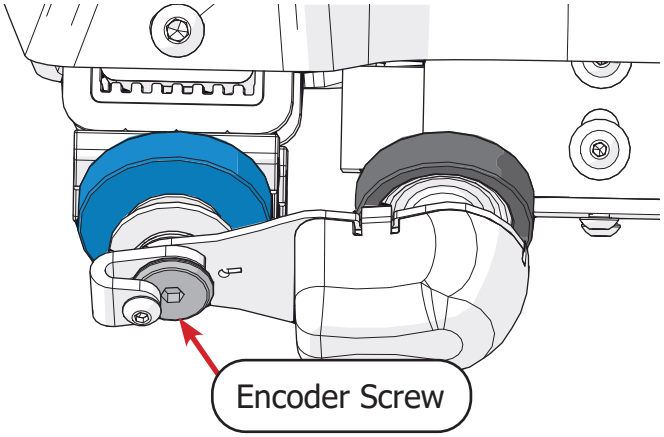
4 Slide the wheel onto the upper **encoder screw** so that the **wheel hub** faces away from the encoder.



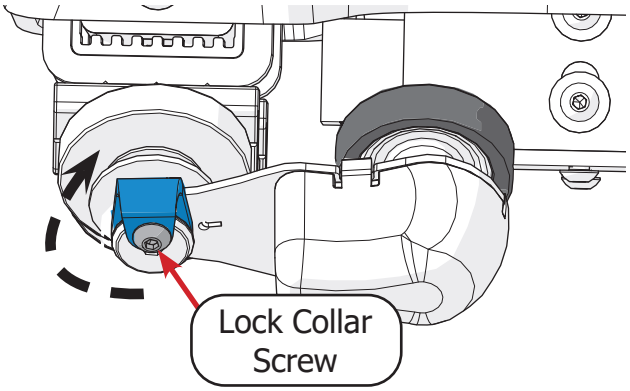
5 Place the encoder screw into the left rear wheel hole so the **encoder wheel** is between the two left machine wheels.



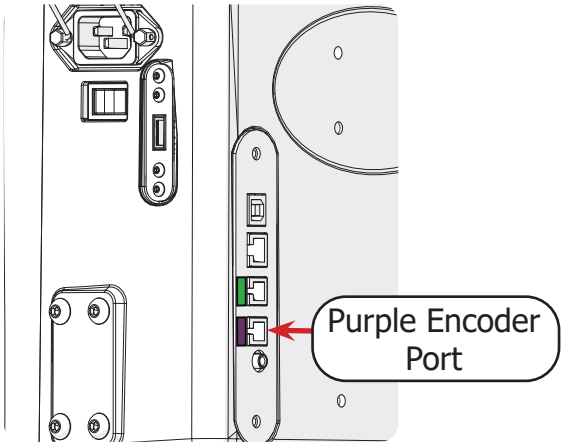
6 Tighten the **encoder screw** with the 4 mm Allen wrench.



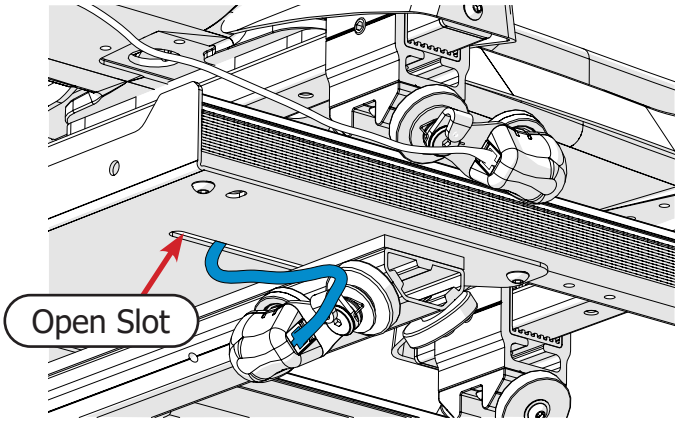
7 Turn the **encoder lock collar** (shown in blue) to point up and tighten the **lock collar screw** with the 2.5 mm Allen wrench.



8 Plug the upper encoder cable into the **purple encoder port** on the back left of the machine.

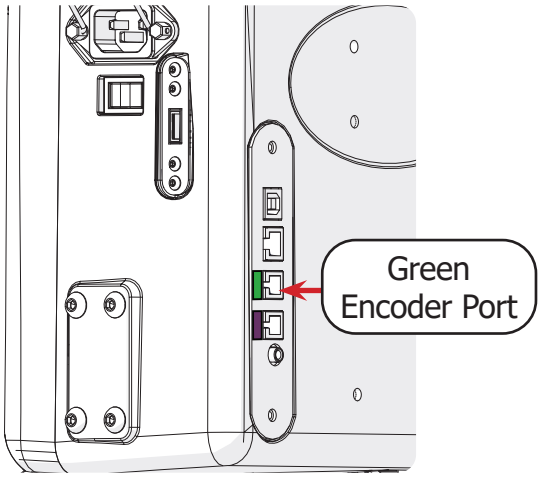


9 To plug in the lower encoder, take the free end of encoder cable (shown in blue) and pull it through the **open slot** in the bottom carriage behind the wheels.



Task 7 - Installing the Upper Encoder (continued)

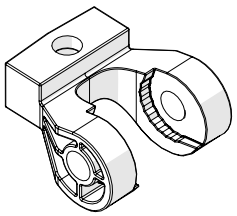
10 Plug the lower encoder cable into the **green encoder port** on the back left of the machine.



Task 8 - Installing the Magnifying Glass

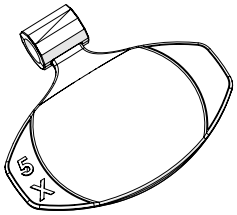
Parts & Tools Needed:

Right Angle Magnifier Mount



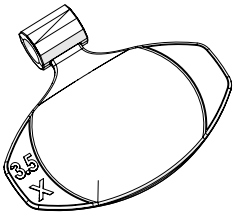
Magnifique Box

5X Magnifying Glass



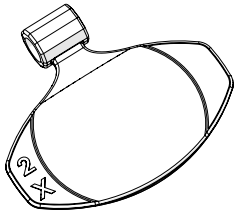
Magnifique Box

3.5X Magnifying Glass



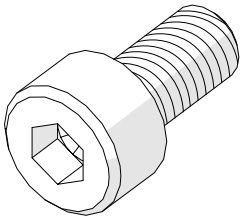
Magnifique Box

2X Magnifying Glass



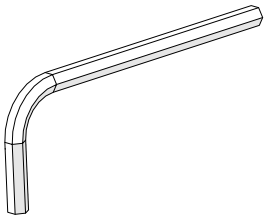
Magnifique Box

SHCS M4 x 8 mm



Magnifique Box

Allen Wrench 3 mm

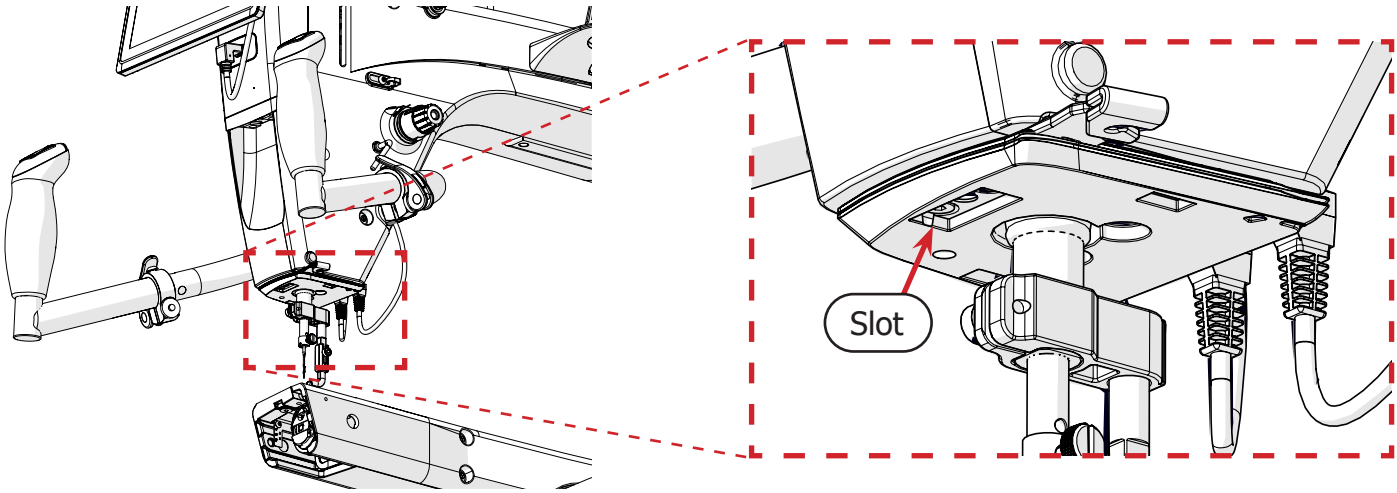


Magnifique Box

Instructions

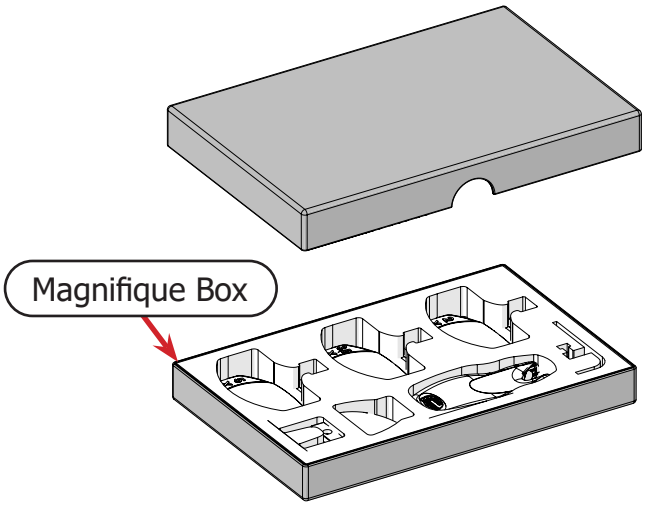
Take the following steps to install the magnifying glass to your machine:

1. Locate the rectangular **slot** at the front of the machine just above the needle.

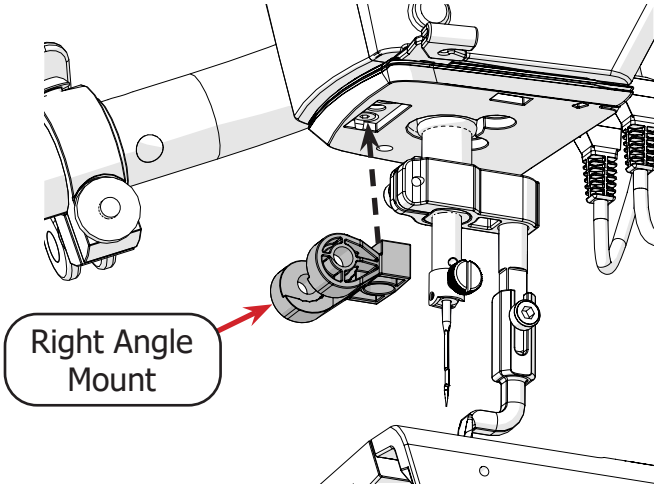


Installing the Magnifique Magnifying Glass (continued)

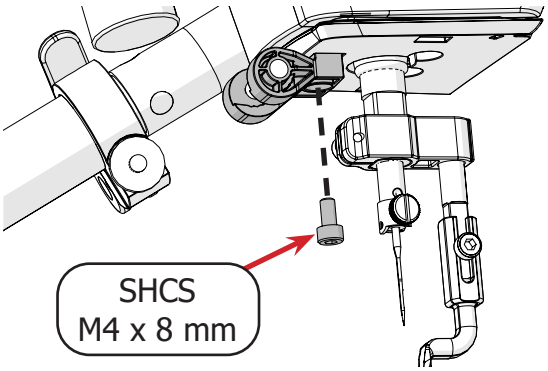
2 Open the **Magnifique box** that was set aside in task 2.



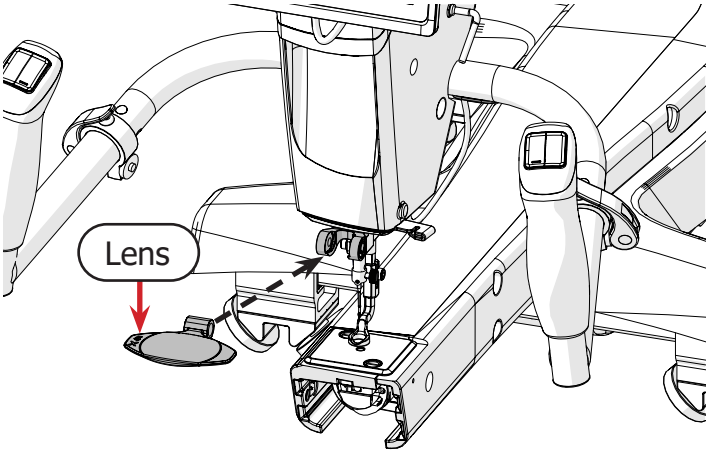
3 Slide the **right angle mount** into the slot.



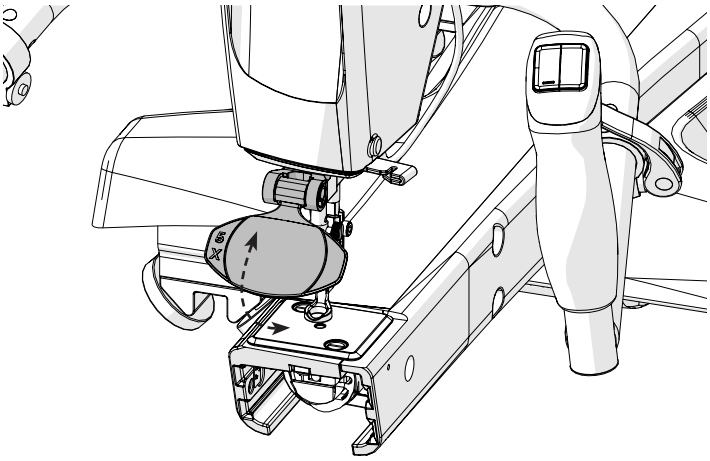
4 Secure in place with the **M4 x 8 mm SHCS** and the 3 mm Allen wrench.



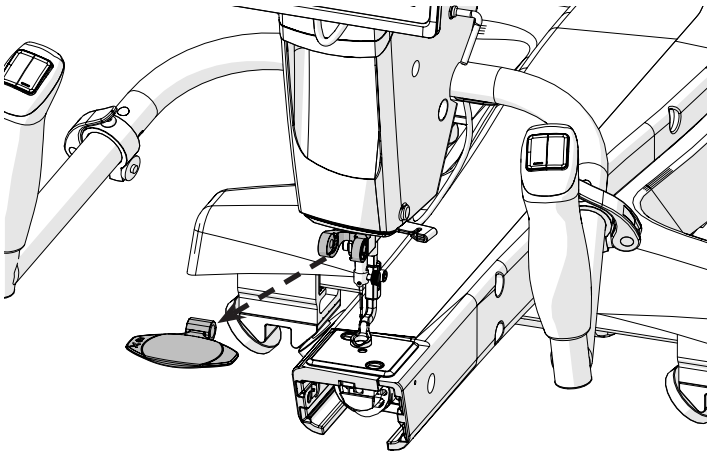
5 Select the **magnifying lens** you want to use and slide it into place in the right angle mount. The magnets will hold it in place.



6 Adjust the magnifying lens by rotating it until it gives you a clear view of the needle area.



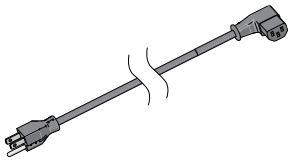
7 You can change the lens by lifting the lens out of the right angle mount and replacing it with a different magnification.



Task 9 - Turning the Machine On/Off

Parts & Tools Needed:

Power Cord

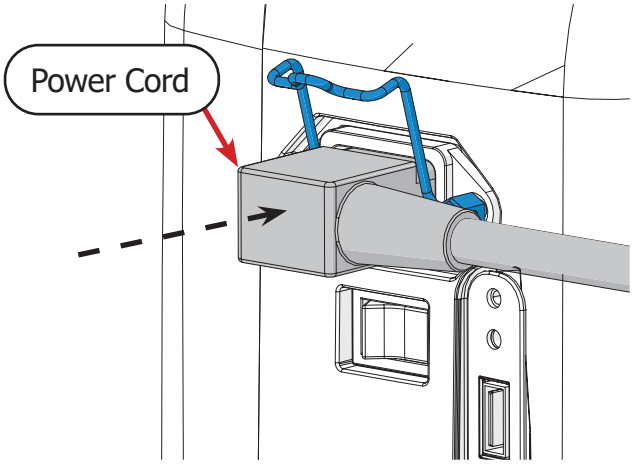


Installation Box

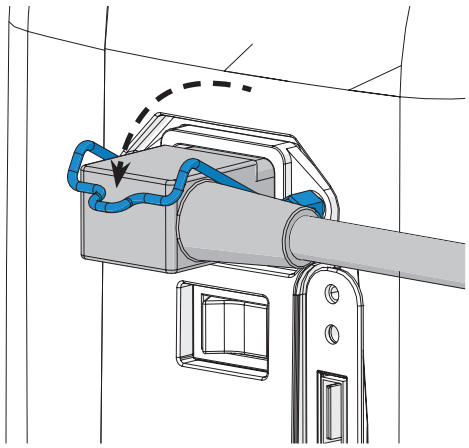
Instructions

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

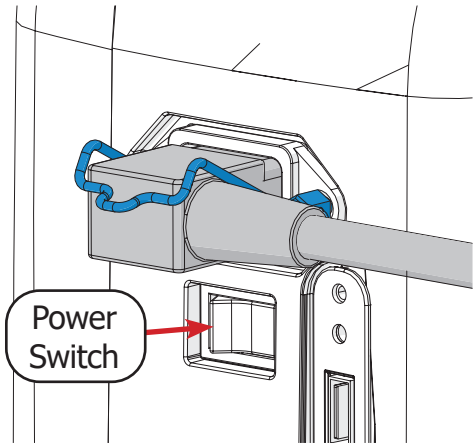
1. Lift the **power cable retainer** (shown in blue) and plug the **power cord** into the machine.



2. Press the retainer down firmly until it grasps the power cord.



3. Press the right side of the **power switch** to turn the machine on.



Preparing to Quilt

This section of the manual covers accessing help guides on your display, winding the bobbin, loading the bobbin case, and threading the machine.

Accessing the Help Guides .....page 25

Using the Thread Nets.....page 26

Task 10 - Winding a Bobbin .....page 28

Task 11 - Loading the Bobbin Case .....page 30

Task 12 - Threading the Machine .....page 32

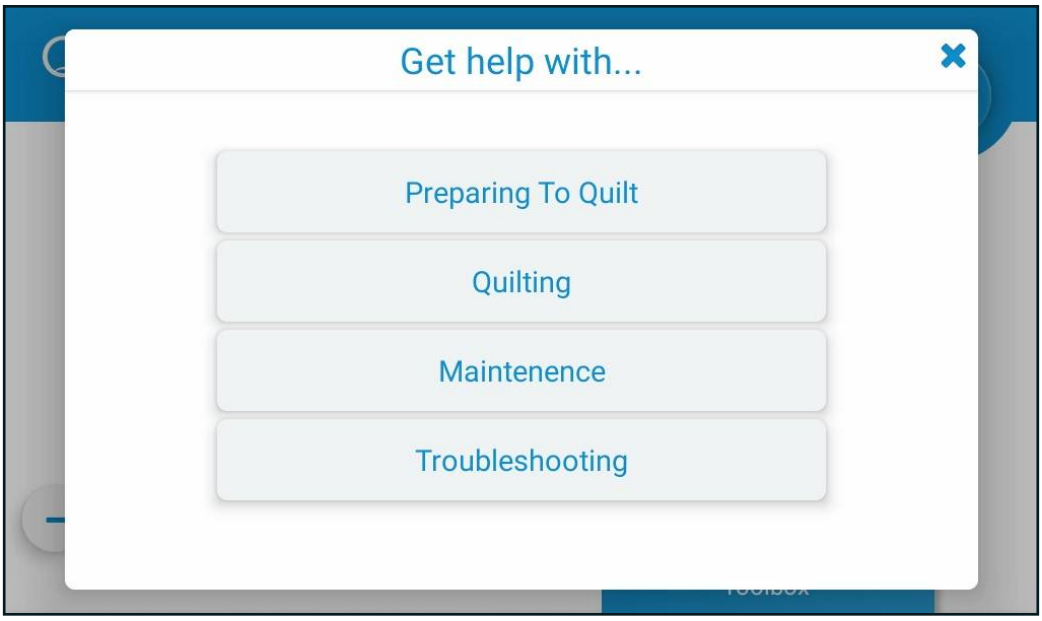
Accessing the Help Guides

Instructions for many of the remaining tasks in this manual can also be found in the **Help Guide** on your machine. To reach the help guides, take the following steps:

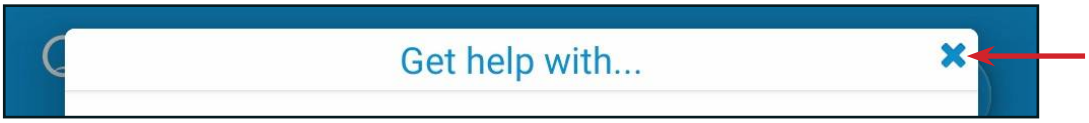
1. Press the **menu** icon in the top-right corner of the screen and select **Help**.



The Help Guide screen opens.



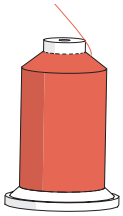
2. Select the item that you want help with from the menu.
3. When finished, tap the **X** in the top-right corner or tap outside of the help window to close it.



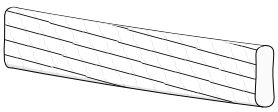
Using the Thread Nets

Parts & Tools Needed:

Thread Cone

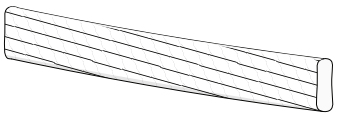


Thread Net
10 cm (3.9 inch)



Installation Box

Thread Net
14 cm (5.5 inch)



Installation Box

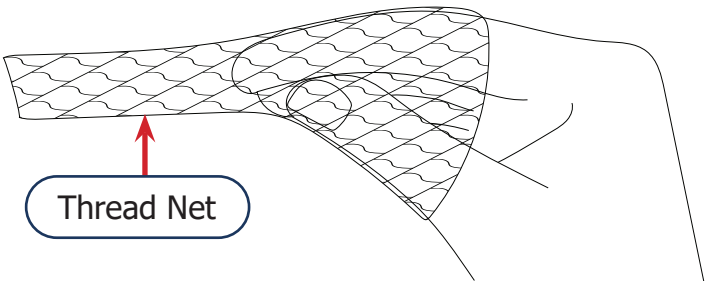
Instructions

Thread nets help thread cones unwind evenly on the machine and prevent them from becoming tangled while in storage. Take the following steps to place a thread net on a thread cone:

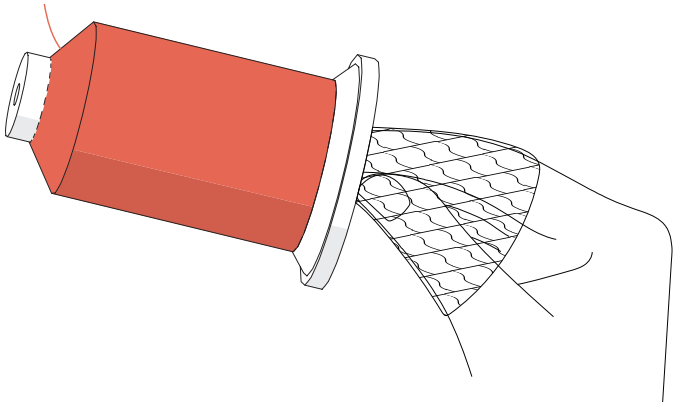
1. Measure the height of your thread cone and use the table below to determine which size of thread net to use.

Thread Cone Height	Thread Net Size
3.9 inches or shorter	3.9 in. (10 cm)
Taller than 3.9 inches	5.5 in. (14 cm)

2. Insert your thumb and a few fingers into one end of the **thread net**.

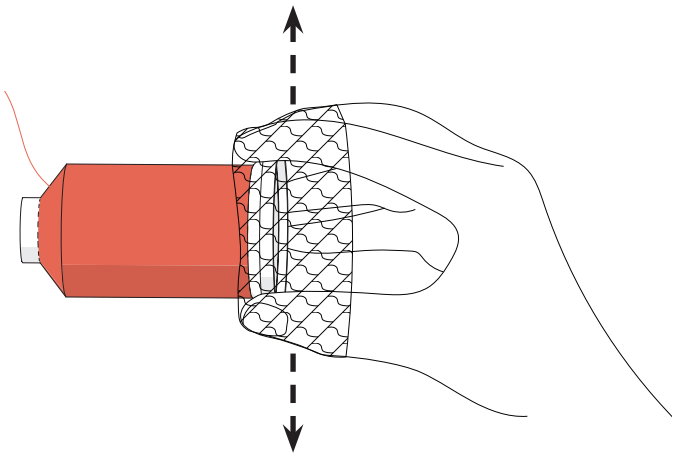


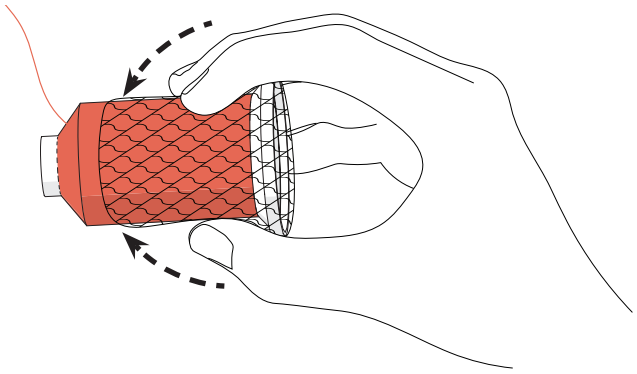
3. Insert the thread net about halfway into the underside of the thread cone.



Tip: If the machine is currently threaded, you don't need to unthread the machine. Just lift the thread cone from the thread stand and work with it while it is still attached to the machine.

4 Use your fingers to widen the thread net and push it over the base of the thread cone. Cover at least half of the cone with the net, and leave the rest of the net inside the cone.

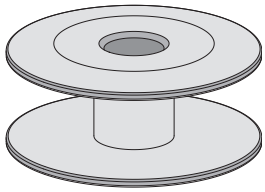




Task 10 - Winding a Bobbin

Parts & Tools Needed:

Bobbin (Class M)

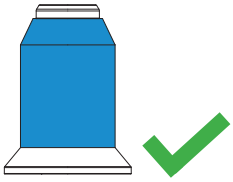


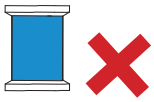
Box 1

Instructions

Your machine comes with an empty M-Class bobbin and two M-class bobbins pre-wound with 50 weight polyester thread. It's best to wind your bobbin with thread that is similar in type and weight as the top thread. For more details on choosing thread, see "Choosing Your Thread" on page 98.

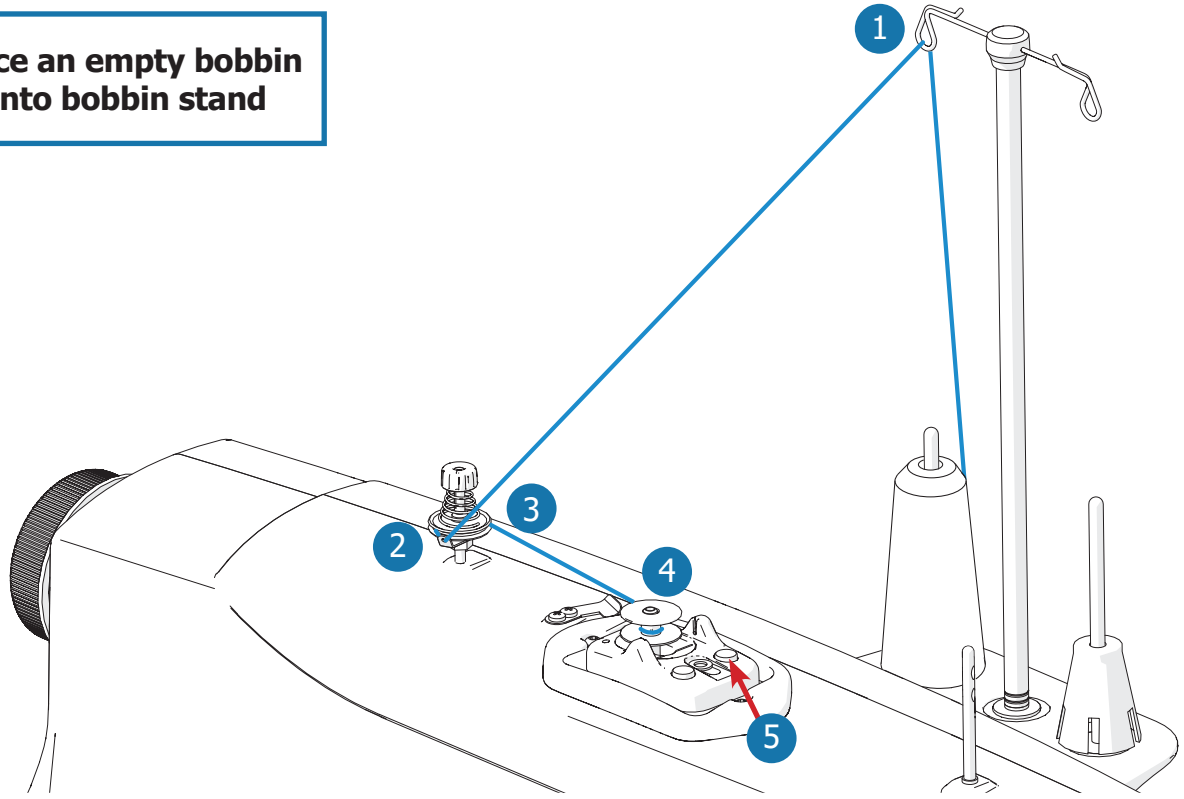
Note: This machine uses cone-style thread. Do not use a spool unless you have the spool accessory.





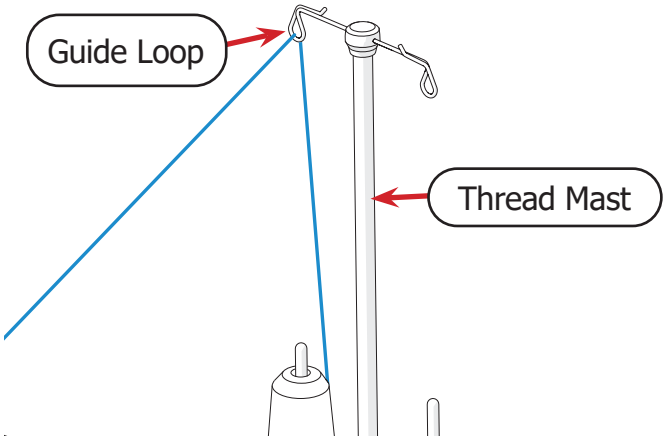
The following diagram outlines the path the thread (shown in blue) must take to wind the bobbin.

Place an empty bobbin onto bobbin stand

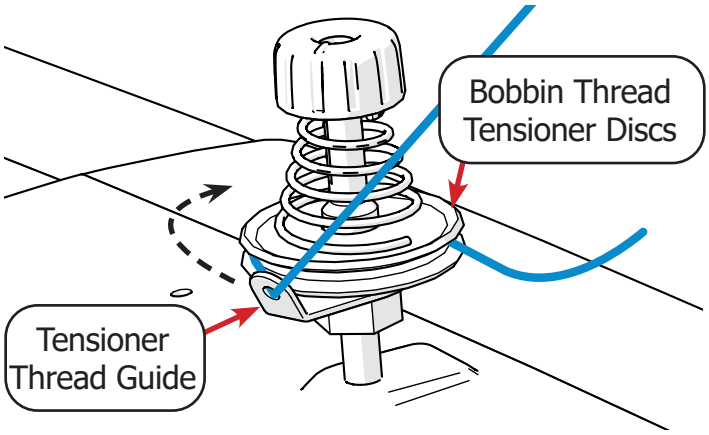


1 Thread Stand Guide Loop
2 Tensioner Thread Guide
3 Tensioner Discs
4 Bobbin Stand with Bobbin
5 Start Button

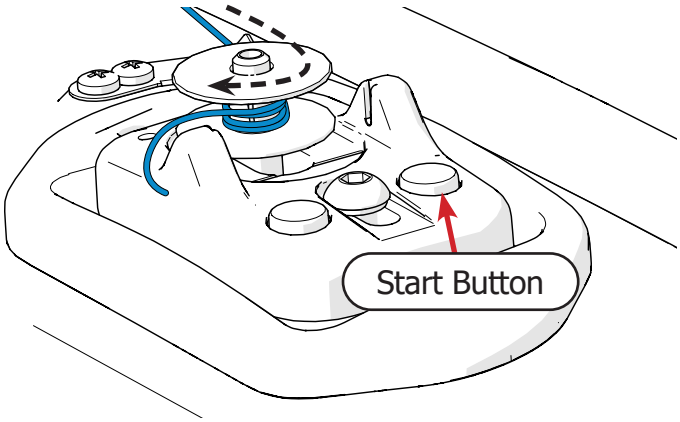
1 Run the thread through the **thread mast guide loop** directly above the thread cone.



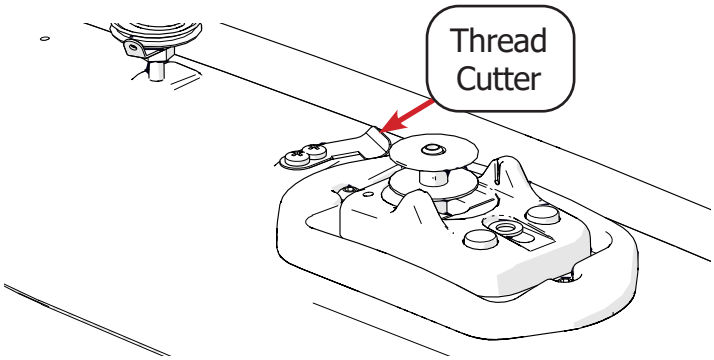
2 Pull the thread through the hole in the **tensioner thread guide** and then around the back of the bobbin thread tensioner. Floss between the two **discs**.



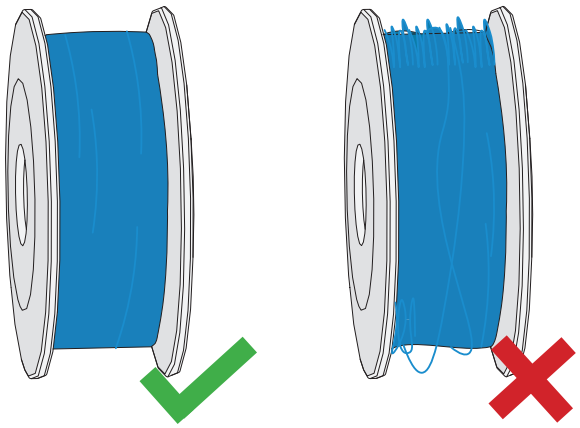
3 Tightly wrap the thread *clockwise* around the bobbin a few times to hold the thread in place. Push the **start button** to start winding.



4 Winding stops automatically when the bobbin is full. Cut the bobbin away from the machine with the **thread cutter** between the bobbin stand and tensioner.



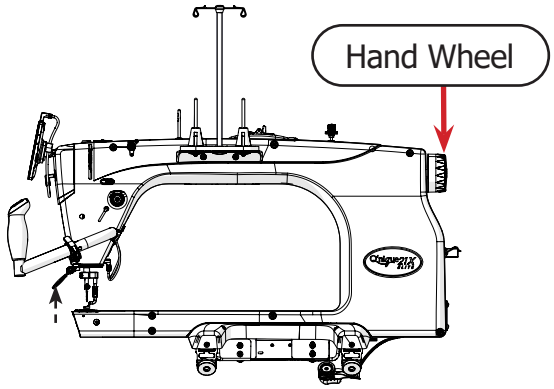
The bobbin thread should appear neat and smooth. If it is not, see page 87.



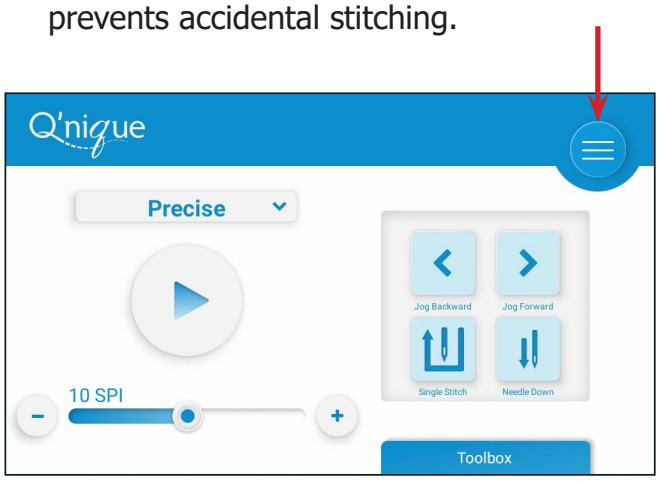
Task 11 - Loading the Bobbin Case

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

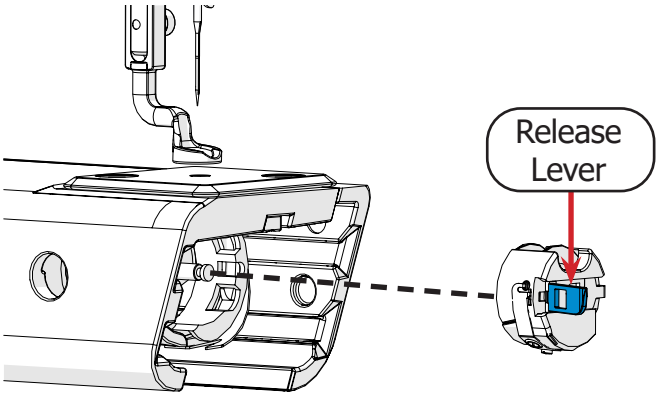
1. Check that the needle is up. If needed, rotate the **hand wheel** to raise the needle.



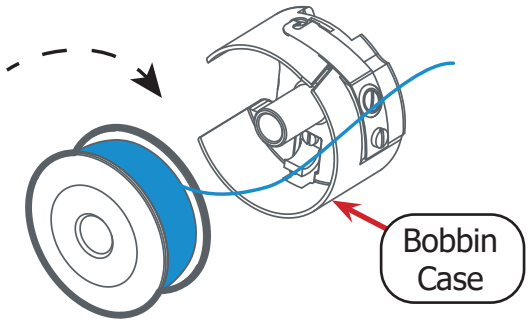
2. Open the Settings screen by clicking the **menu icon** and selecting **Settings**. This prevents accidental stitching.



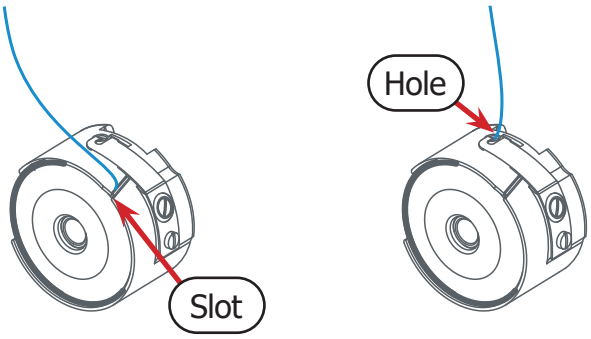
3. Pull on the bobbin case **release lever** to remove the bobbin case from the hook assembly.



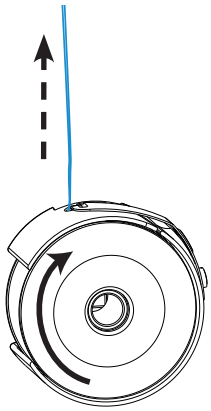
4. Place the wound bobbin into the **bobbin case**. Note the direction that the thread is coming off the bobbin in relation to the case.



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

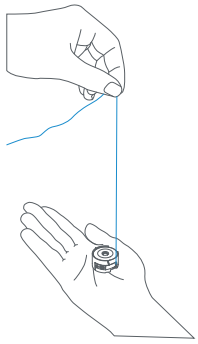


Note: If the bobbin is wound and inserted correctly it will turn clockwise when the thread is pulled.

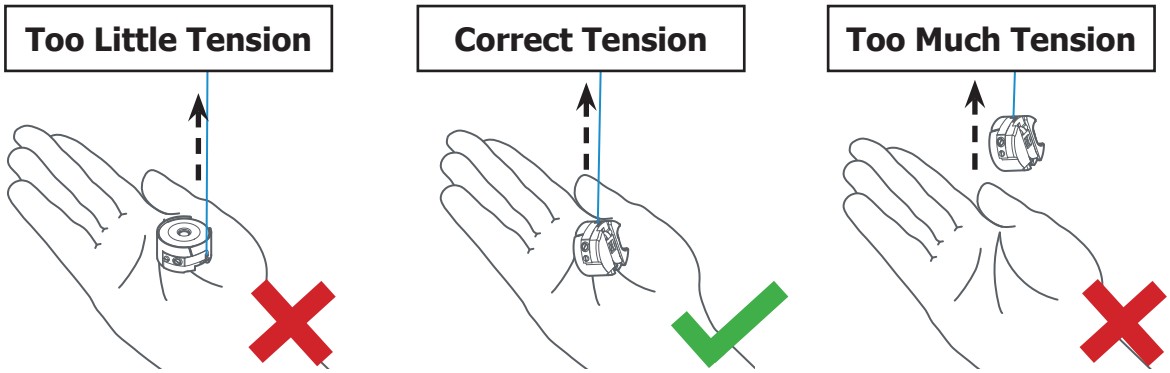


6 Test the tension of the bobbin case every time bobbin thread is changed; bobbin tension is the foundation for correct thread tension.

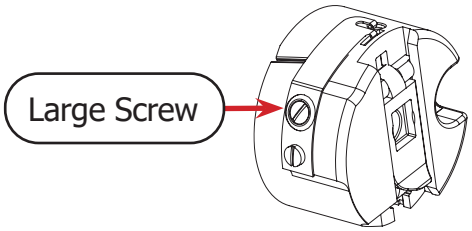
a Place the bobbin case flat on its side, on your palm.



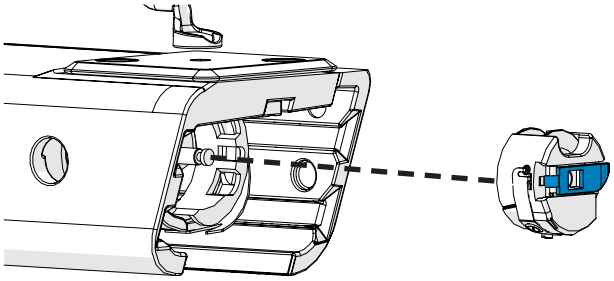
b Pull up on the thread. The thread should run freely and the bobbin case should rise into a vertical position without lifting off your hand.



- If the case remains on its side, there is too little tension. Turn the **large screw** clockwise.
- If the case lifts into the air, there is too much tension. Turn the **large screw** counter-clockwise.



7 You must press the bobbin case inside the machine with the **lever** (shown in blue) at the 3 o'clock position until the case clicks into place. Do not pull on the lever while inserting the bobbin case.



Task 12 - Threading the Machine

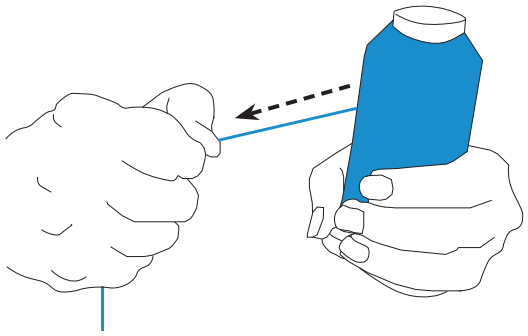
Before threading the machine, make sure you've selected quality thread for your project. Choosing the right thread for the machine can prevent the thread from breaking or tangling up under the needle plate. For more information on choosing thread, see page 98. Note the following:

- This machine uses cone-style thread, not thread from a spool. Do not use spool thread unless the spool accessory (not included in this kit) is installed.

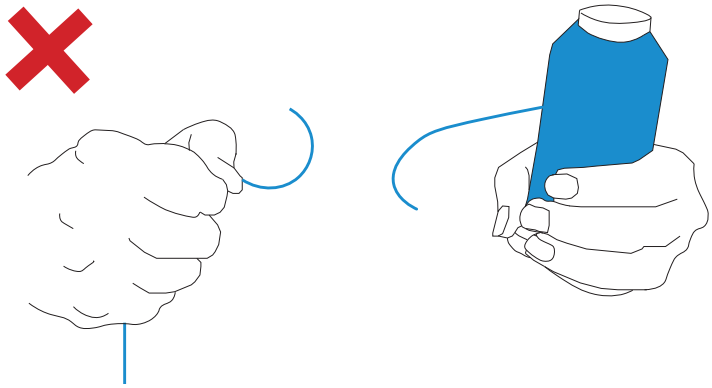


- Choose thread that is strong enough to pass the yank test (shown below), and re-test thread as it ages. Thread strength can diminish over time.

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

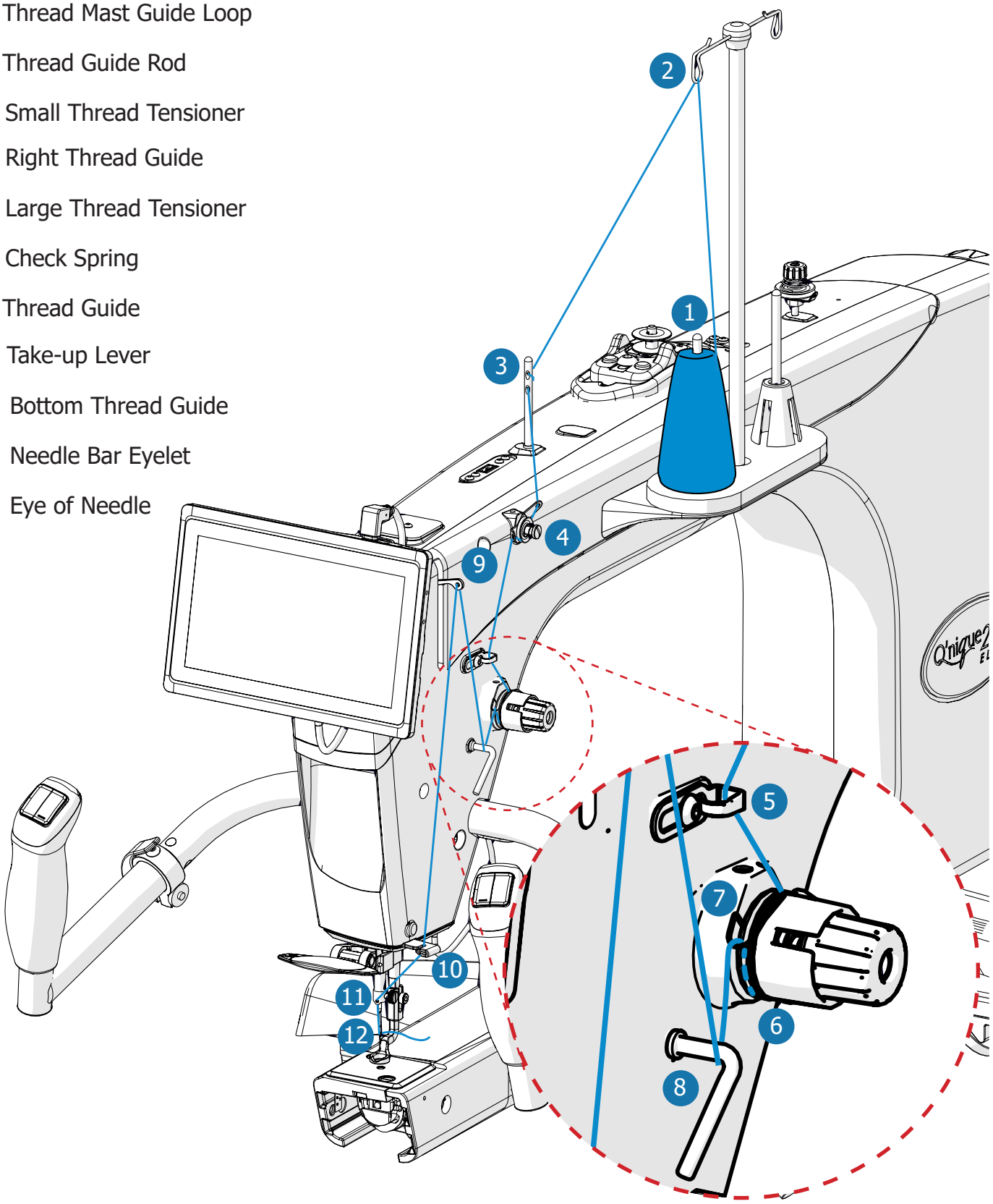


(b) Tug on the thread. If the thread snaps easily, it might be too brittle to use for quilting.



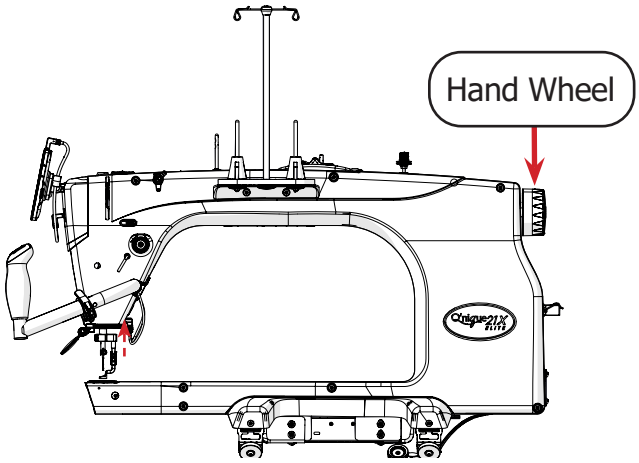
The following diagram outlines the path the thread (shown in blue) must take through the machine.

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

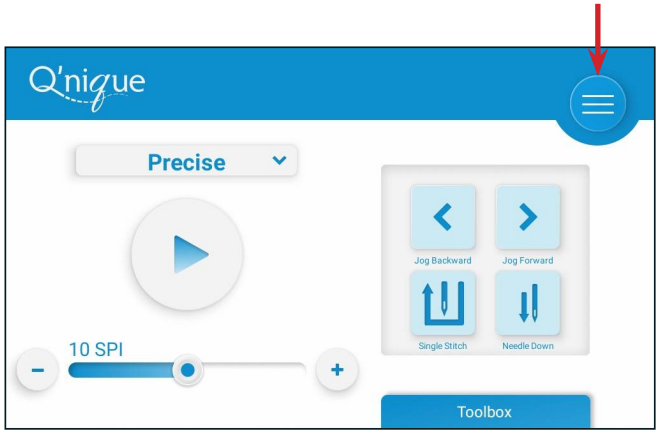


Task 12 - Threading the Machine (continued)

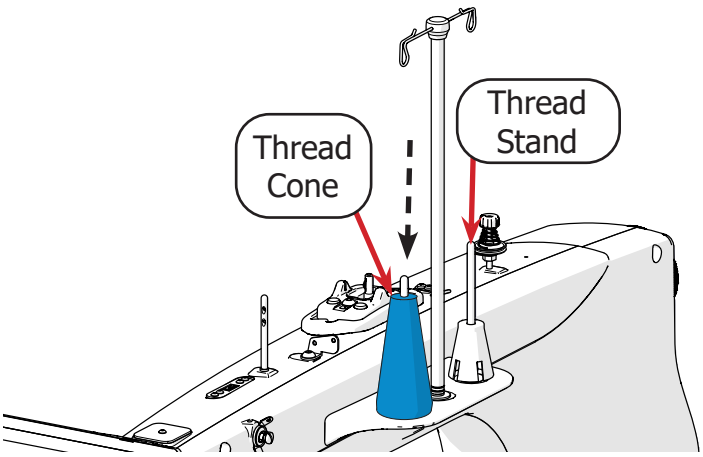
1 Rotate the **hand wheel** at the rear of the machine to raise the needle to the top position.



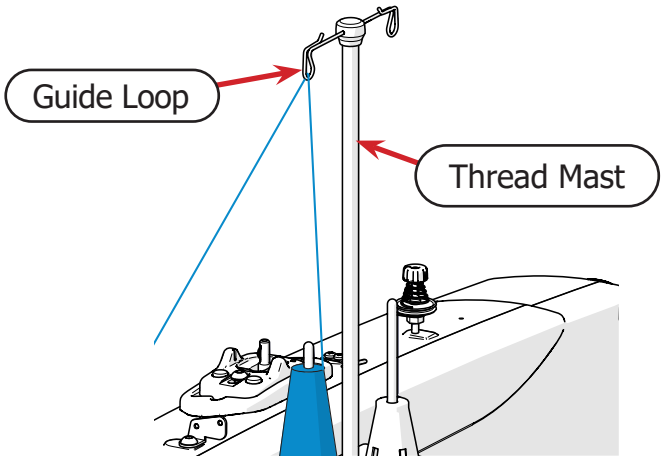
2 Open the Settings screen by clicking the **menu icon** and selecting **Settings**. This prevents accidental stitching.



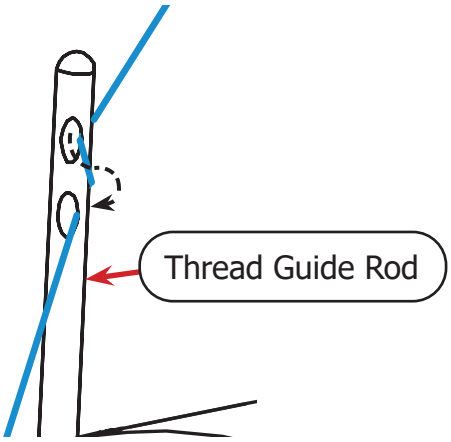
3 Place the **thread cone** on the **thread stand** toward the front of the machine.



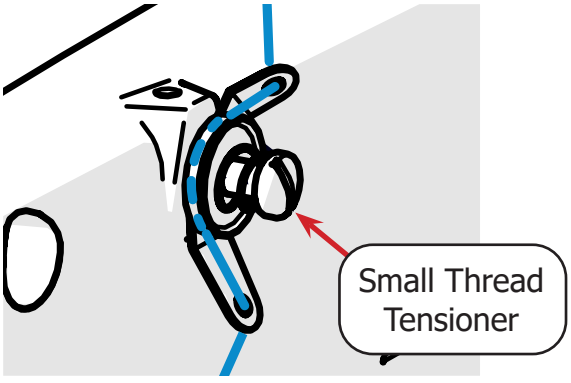
4 Pull the thread straight up, through the **thread mast guide loop** above the thread stand.



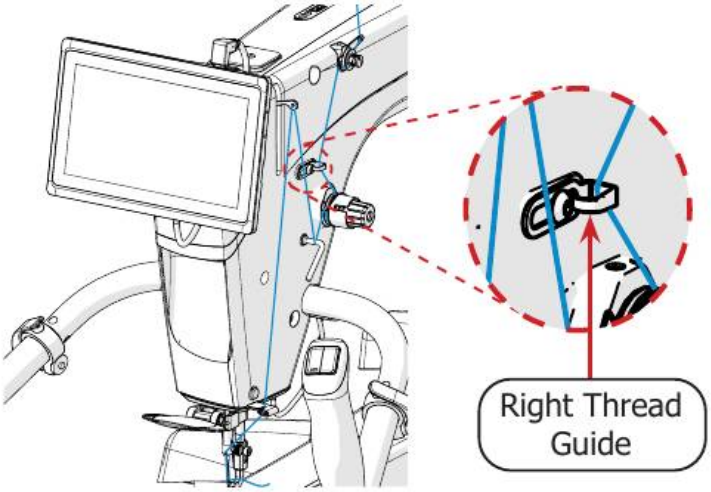
5 Feed the thread through the top hole of the **thread guide rod**. Wrap the thread around to the back of the guide and insert through the bottom hole.



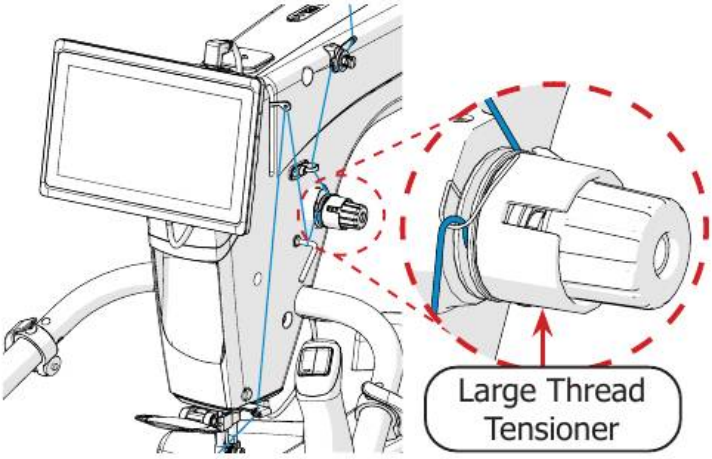
6 Run the thread through the top hole on the **small thread tensioner**. Floss the thread between the two discs, and then slip it through the bottom hole of the small thread tensioner.



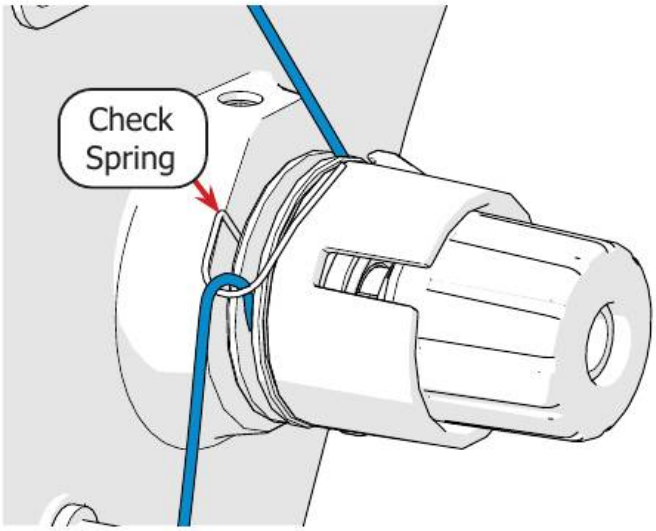
7 Feed the thread through the **right thread guide** above the large thread tensioner.



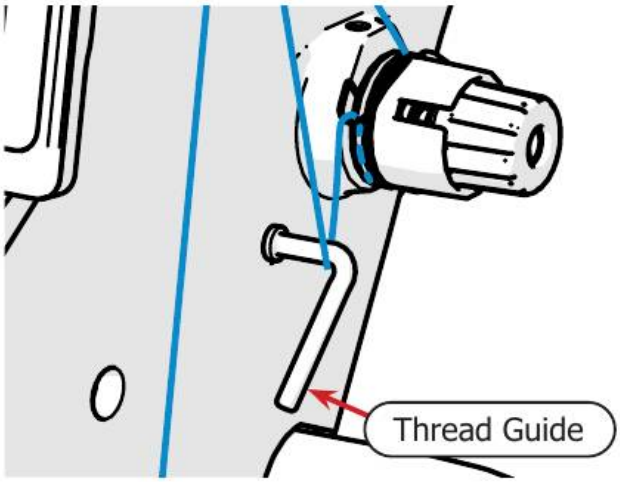
8 Pull the thread around the **large thread tensioner** and floss between the tension discs.



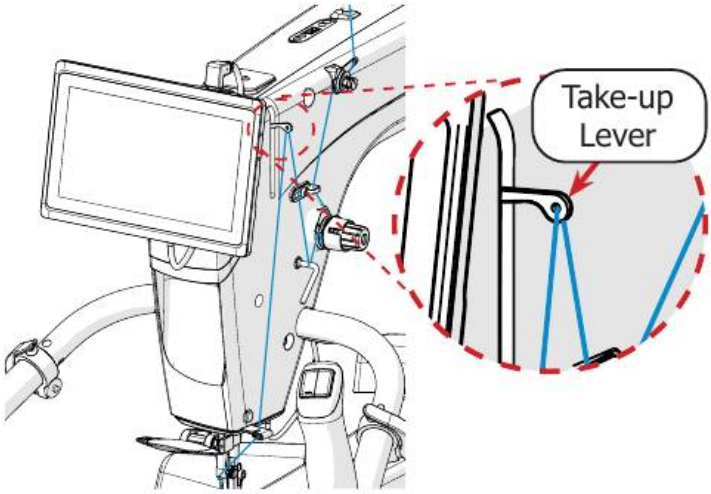
9 Wrap the thread over the **check spring**.



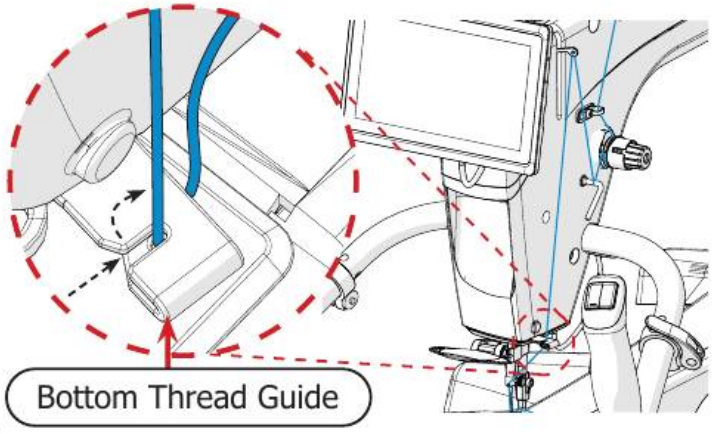
10 Next, pass the thread down and around the **thread guide** next to the large thread tensioner.



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



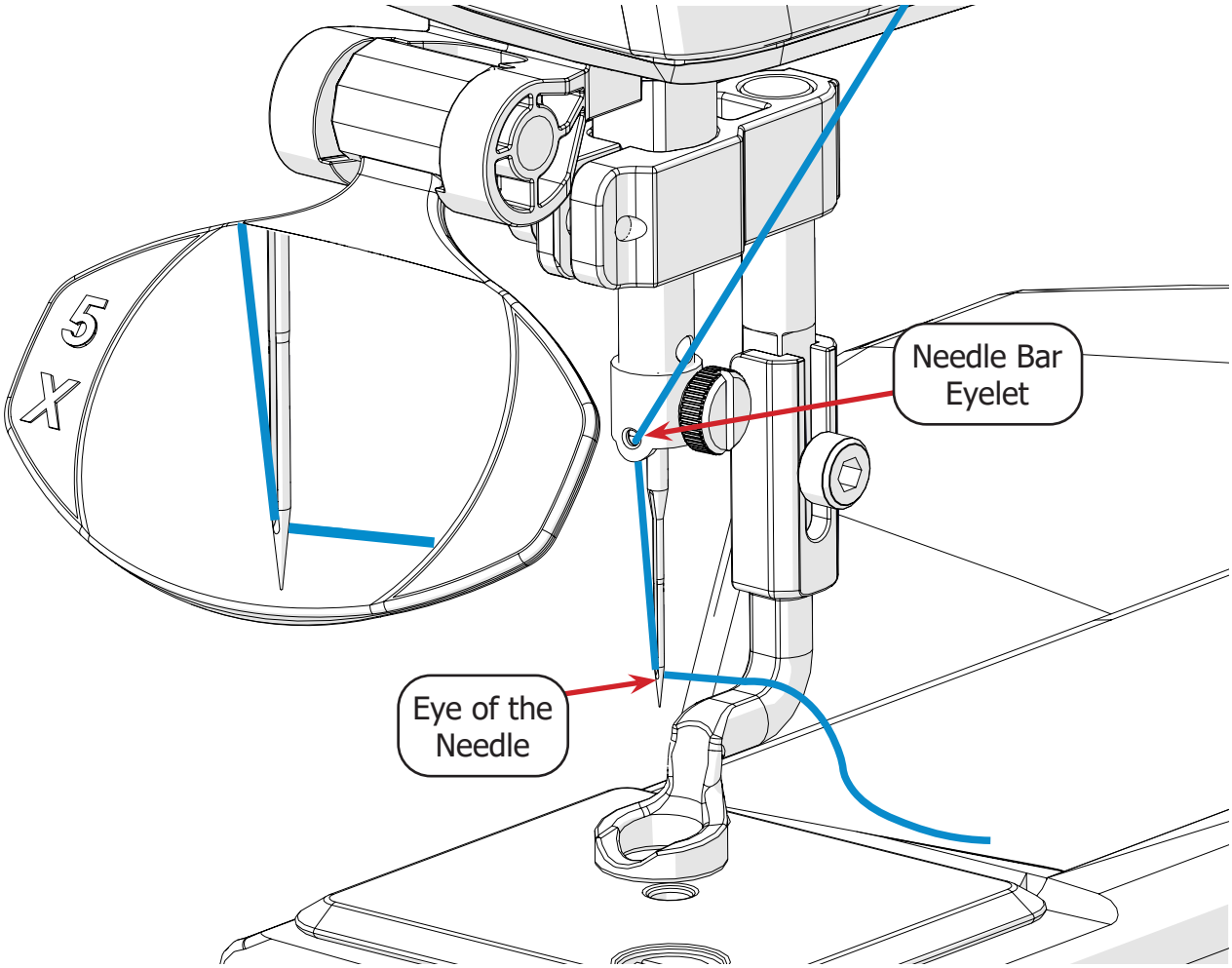
12 Then press the thread into the groove in the **bottom thread guide**. Pull the tail up and around the back of the guide so it passes through the hole.



Task 12 - Threading the Machine (continued)

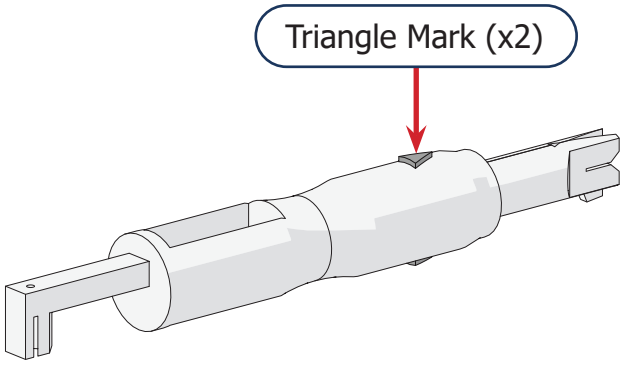
13 Now pass the thread through the front of the **needle bar eyelet**, located above the needle. Thread the **eye of the needle** from front to back.

Tip: Use the magnifying glass to enlarge your view of the needle area.

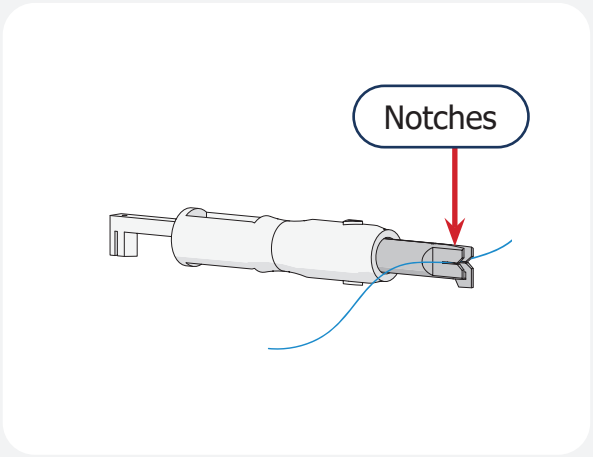


Tip: Use the needle threader (found in the tools box) to assist with this step:

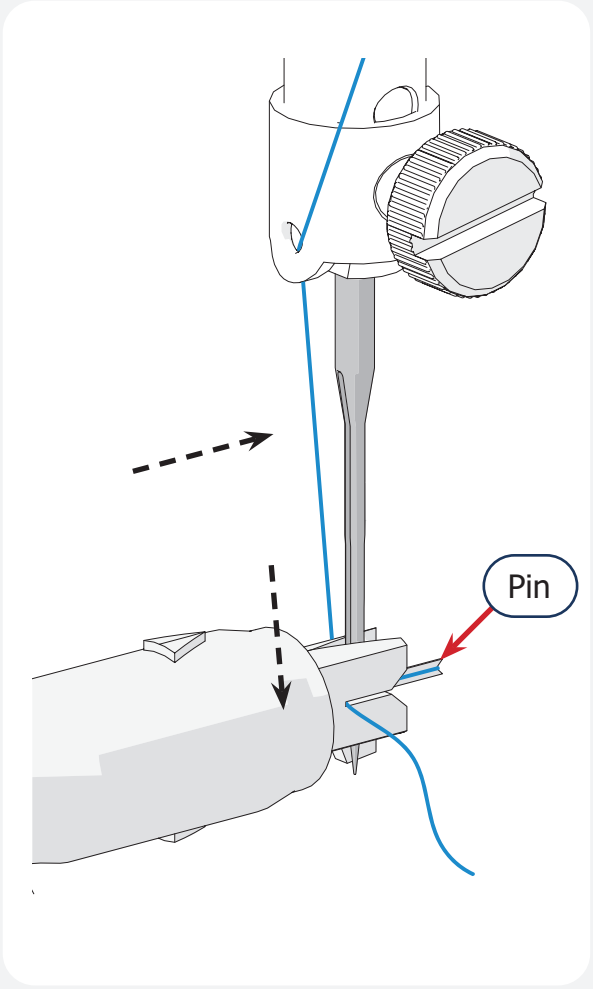
a Turn the needle threader so the **triangle marks** are on the top and bottom.



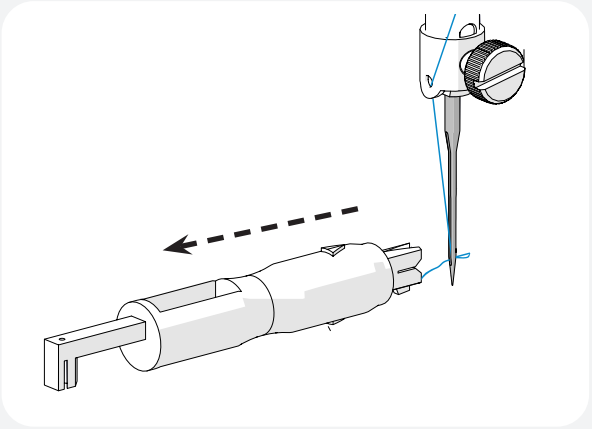
b Slot the thread horizontally into the **notches** on the tip of the threader.



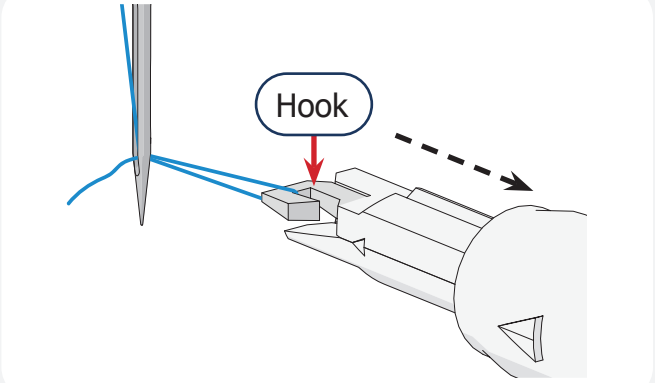
c Gently push the threader against the needle. Slowly slide it down the needle until the **pin** emerges, pushing a loop of thread through the needle's eye.



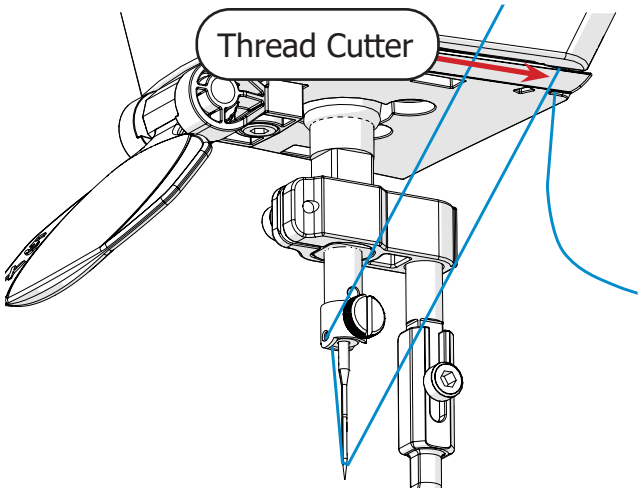
d Slowly pull the threader away from the needle. **Note:** If the thread comes back with the threader, try again more slowly.



e Use the **hook** to grab the loop and pull the rest of the thread through the eye.



14 Cut the excess thread with the built-in **thread cutter**.



Congratulations! You have completed Part Three of this manual.

If you are assembling a new frame, turn to Part Three of your frame manual. If your frame manual is not broken into parts, follow the manual's directions to:

- Install and adjust the rails
- Install frame handwheel (if applicable)
- Install the bungee clamps (if applicable)
- Level the frame

If you are not assembling a new frame but are installing Quilter's Creative Touch (previously called QuiltMotion) onto your frame, turn to Part Three of your Quilter's Creative Touch manual.

If you are installing your machine onto a frame that is already fully assembled and are not installing Quilter's Creative Touch at this time, continue to Part Four of this manual on page 39.

Part Four

If your frame isn't fully assembled at this time, it is recommended to complete Part Three in your frame manual, Part Three in your Quilter's Creative Touch (previously called QuiltMotion) manual (optional), and Part Four of your frame manual before you continue.

Progress Checkpoint:

Have you:

- Installed your frame's rails?
- Adjusted the rails to work with your machine?
- Installed frame handwheel (applicable frames only)?
- Installed bungee clamps (applicable frames only)?
- Leveled the frame (applicable frames only)?

Have you:

- Completed Quilter's Creative Touch Part Three (optional)?

Have you:

- Prepared your frame for fabric installation?
- Installed your quilt onto your frame?

Quilting

This section of the manual covers how to use the handlebar controls, the different quilting modes, and the tools on the display.

Choosing Machine Settings ..... **page 41**

Using Machine Handlebar Controls ..... **page 43**

Using Precise Quilting Mode ..... **page 44**

Using Cruise Quilting Mode ..... **page 46**

Using Manual Quilting Mode ..... **page 48**

Using Baste Quilting Mode ..... **page 50**

Estimating Bobbin Fill Levels ..... **page 52**

Using the Edge Warning ..... **page 54**

Adjusting Thread Tension ..... **page 57**

Taking Measurements ..... **page 60**

Making Calculations ..... **page 62**

Tracking Stitch Count and Run Time ..... **page 63**

Getting Started ..... **page 64**

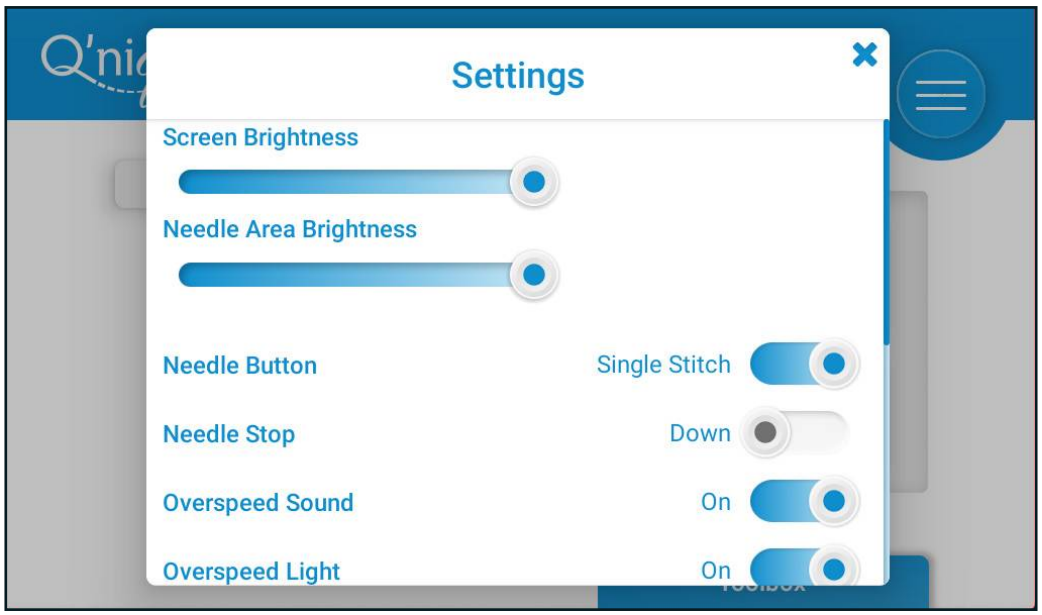
Choosing Machine Settings

To customize the settings for the handlebar controls, screen buttons, or warning icons, take the following steps:

1. Press the menu icon in the top right corner of the screen and select **Settings**.



The Settings screen opens.



Note: The machine is unable to stitch while the Settings screen is open.

Choosing Machine Settings (continued)

2. Choose your desired settings:

- **Screen Brightness**: Use the sliding button to adjust the brightness of the display.
- **Needle Area Brightness**: Use the sliding button to adjust the brightness of the lamp over the needle area along with the throat lights.
- **Needle Button**: Choose whether the needle button on the handlebars creates a single stitch or drops or raises the needle when pressed:
    - **Single Stitch**: Complete motion of needle up and down.
    - **Needle Up/Down**: Move the needle either down into the fabric or up out of the fabric.
- **Needle Stop**: Choose whether the needle stops in the "up" or "down" position when stitching is stopped.
- **Overspeed Sound**: The overspeed alarm can be muted so that there is no beeping when the machine is moved more quickly than the regulated stitching can manage.
- **Overspeed Light**: The red overspeed warning light can be deactivated so that it won't turn on when the machine is moved more quickly than the regulated stitching can manage.
- **Edge Warning Sound**: The edge guard alarm can be muted so that there is no beeping when the machine reaches an edge of your set quilting area.
- **Edge Warning Light**: The red edge guard warning light can be deactivated so that it won't turn on when the machine reaches an edge of your set quilting area.
- **Click Sound:** Choose whether pressing on-screen buttons makes a sound or not.
- **Stitch Length Units**: Choose to display machine stitch length in stitches per centimeter or stitches per inch.

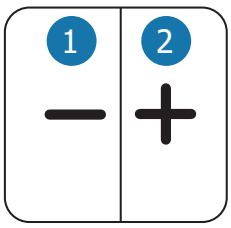
3. Press the **System Info** button to access the System Information screen. This screen shows the display and firmware versions for your machine (see page 86), along with the date of the last firmware update.

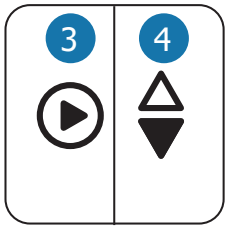
4. To return all settings to their original status, press the **Factory Reset** button.

5. To return to the main screen, press the **X** in the top right corner of the Settings screen or anywhere outside of the settings screen window.

Using the Handlebar Controls

When first powered up, the machine is in regulated precise quilting mode (see page 44) and can start quilting right away. Take a moment to review the handlebar controls. These controls are used when quilting. While in the Settings screen, some buttons have a different purpose or do not function (see "Choosing Machine Settings" on page 41 for details).



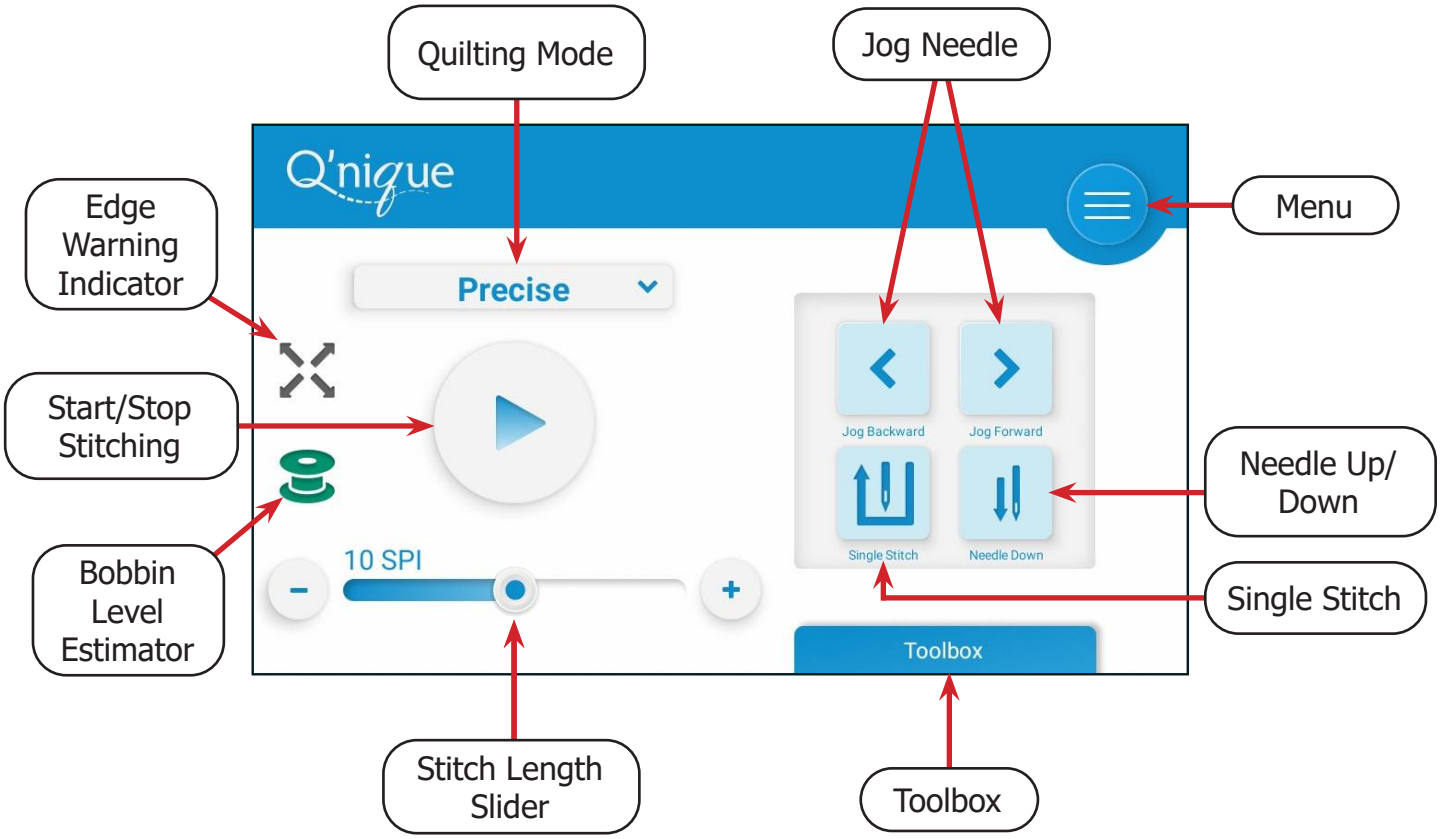


1. **Decrease:** This button decreases the number, size, or speed of the stitching depending on the quilting mode.
2. **Increase:** This button increases the number, size, or speed of the stitching, depending on the quilting mode. For example, in precise quilting mode, this button increases the number of stitches the machine makes in an inch (SPI) or in a centimeter (SPC).
3. **Start/Stop Quilting:** Press to start or stop stitching.
4. **Needle button**: Press to create a single stitch or to toggle the needle between the up and down positions, based on your settings (see "Choosing Machine Settings" on page 41 for details).

Using Precise Quilting Mode

In this regulated quilting mode, you select the stitch length you want and the machine adjusts to help make more consistent stitches as you move the machine faster or slower or change direction. It only stitches when you move the machine.

To reach this quilting mode, press the **quilting mode** button and select **Precise**.



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

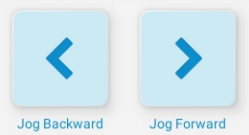
1. Confirm that the **stitch length**, measured in stitches per inch or stitches per centimeter, is the desired length. **Note:** To change the units, go to the Settings screen (see page 41).

   Use the – + **symbols** or the **sliding bar** to adjust the stitches per inch. Higher SPI means shorter stitch length.

2. When stitching is inactive, press the **Single Stitch** button or the **Needle Up/Down** button on the display to make single stitches. This action can also be done with the needle button on the right handle (or the left handle, if you installed the handles for left-handed use during assembly).

   Note: While stitching is active, the Single Stitch and Needle Up/Down buttons on the display and the needle button on the handlebar controls are disabled.

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

   Press 

   to move the needle up or down in small increments.

4. Moving the machine too quickly while quilting can reduce the quality of the stitch regulation. If the machine is moved too quickly, an alarm sounds, a red LED light shines on the needle area, and the **start/stop stitching** button on the display turns red. Slow the machine's movement to turn off the alarm, light, and display alert. Both the alarm and the display alert can be deactivated in the Settings screen.

5. When activated, the **bobbin level estimator** indicator appears on the left side of the display. For instructions on how to use the estimator, see page 52.

   - When the icon is green, the bobbin is estimated to be between 21% and 100% full.
   - When the icon is yellow, the bobbin is estimated to be between 11% and 20% full.
   - When the icon is red, the bobbin is estimated to be under 10% full.

6. When activated, the **edge warning** indicator displays on the left side of the screen. This indicator will turn red when you reach the edge of the set quilting area. For instructions on how to use the edge warning alert, see page 54.

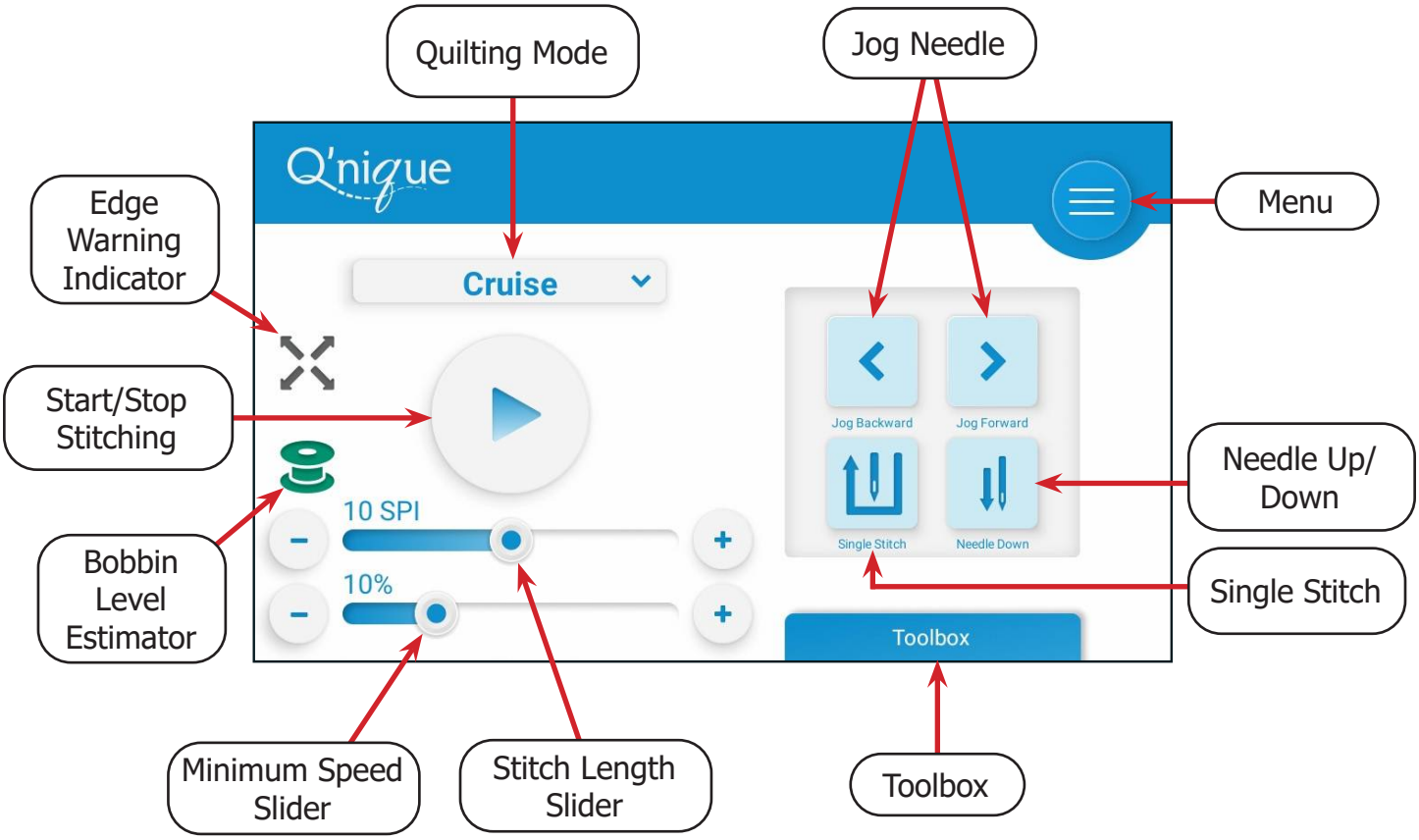
7. You might find that you need to take measurements or do quick calculations while you quilt. Press **Toolbox** to access the calculator and measure tools.

8. To stop stitching, press the **start/stop stitching** button on the display or the handlebars. The needle moves into the needle stop position indicated in the Settings screen (see page 41).

Using Cruise Quilting Mode

Cruise mode is a regulated mode. You select the stitch length you want and the machine adjusts to help make more consistent stitches as you move the machine faster or slower or change direction. The machine continues to stitch in place (at the minimum speed) if you stop moving the machine. This mode is helpful for continuous, smooth, or curvy designs, or for designs that have sharp corners. By pausing the movement of the machine at corners, you can create crisp points.

To switch to cruise quilting mode, press the **select quilting mode** button and select **Cruise**.



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

1. Confirm that the **stitch length**, measured in stitches per inch or stitches per centimeter, is the desired length. Note: To change units, go to the **Settings** screen (see page 41).

   Use the − + symbols or the sliding bar to adjust the stitches per inch. Higher SPI means shorter stitch length.

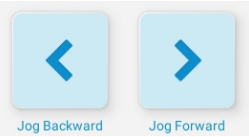
2. Determine the **minimum speed** the machine will stitch at when stitching is active but the machine is not being moved. This can be set from 5% to 25% of the machine's top speed of 2600 stitches per minute.

   Use the − + symbols or the sliding bar to adjust the minimum speed

3 When stitching is inactive, press the single stitch button or the needle up/down button on the display to make single stitches. This action can also be done with the needle button on the right handle (or left, if you installed the handles for left-handed use during assembly), depending on settings. To switch the type of stitch created with the handle button, go to the Settings screen (see page 41).

Note: While stitching is active, the **single stitch** and **needle up/down buttons** on the display and the **needle button** on the handlebar controls are disabled.

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

Press 

to move the needle up or down in small increments.

5 Moving the machine too quickly while quilting can reduce the quality of the stitch regulation. If the machine is moved too quickly, an alarm sounds, a red LED light shines on the needle area, and the **start/stop stitching** button on the display turns red. Slow the machine's movement to turn off the alarm, light, and display alert. Both the alarm and the display alert can be deactivated in the Settings screen.

6 When activated, the **bobbin level estimator** indicator appears on the left side of the display. For instructions on how to use the estimator, see page 52.

- When the icon is green, the bobbin is estimated to be between 21% and 100% full.
- When the icon is yellow, the bobbin is estimated to be between 11% and 20% full.
- When the icon is red, the bobbin is estimated to be under 10% full.

7 When activated, the **edge warning** indicator displays on the left side of the screen. This indicator will turn red when you reach the edge of the set quilting area. For instructions on how to use the edge warning alert, see page 54.

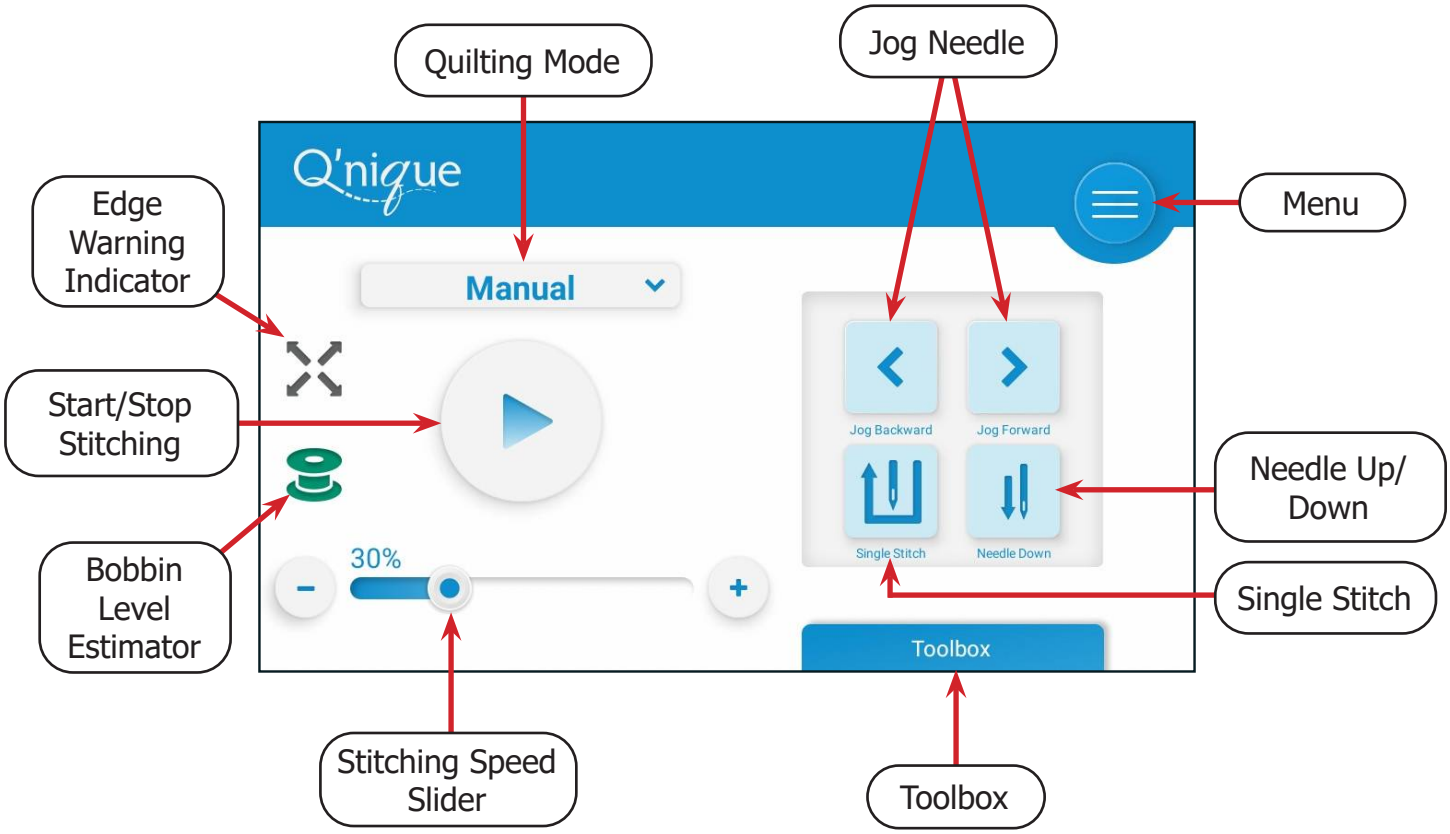
8 You might find that you need to take measurements or do quick calculations while you quilt. Press **Toolbox** to access the calculator and measure tools.

9 To stop stitching, press the **start/stop stitching** button on the display or the handlebars. The needle moves into the needle stop position indicated in the Settings screen (see page 41).

Using Manual Quilting Mode

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

To switch to manual quilting mode, press the **select quilting mode** button and select **Manual**.



To quilt in manual quilting mode, take the following steps:

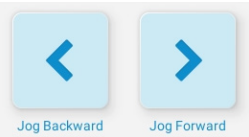
1. Confirm that the **stitch speed** is set to the desired speed. The speed is measured as a percentage of the machine's maximum speed of 2600 stitches per minute.

   Use the – + symbols or the sliding bar to adjust the machine speed.

2. When stitching is inactive, press the single stitch button or the needle up/down button on the display to make single stitches. This action can also be done with the needle button on the right handle (or left, if you installed the handles for left-handed use during assembly), depending on settings. To switch the type of stitch created with the handle button, go to the Settings screen (see page 41).

   Note: While stitching is active, the **single stitch** and **needle up/down buttons** on the display and the **needle button** on the handlebar controls are disabled.

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

Press 

to move the needle up or down in small increments.

4 When activated, the **bobbin level estimator** indicator appears on the left side of the display. For instructions on how to use the estimator, see page 52.

- When the icon is green, the bobbin is estimated to be between 21% and 100% full.
- When the icon is yellow, the bobbin is estimated to be between 11% and 20% full.
- When the icon is red, the bobbin is estimated to be under 10% full.

5 When activated, the **edge warning** indicator displays on the left side of the screen. This indicator will turn red when you reach the edge of the set quilting area. For instructions on how to use the edge warning alert, see page 54.

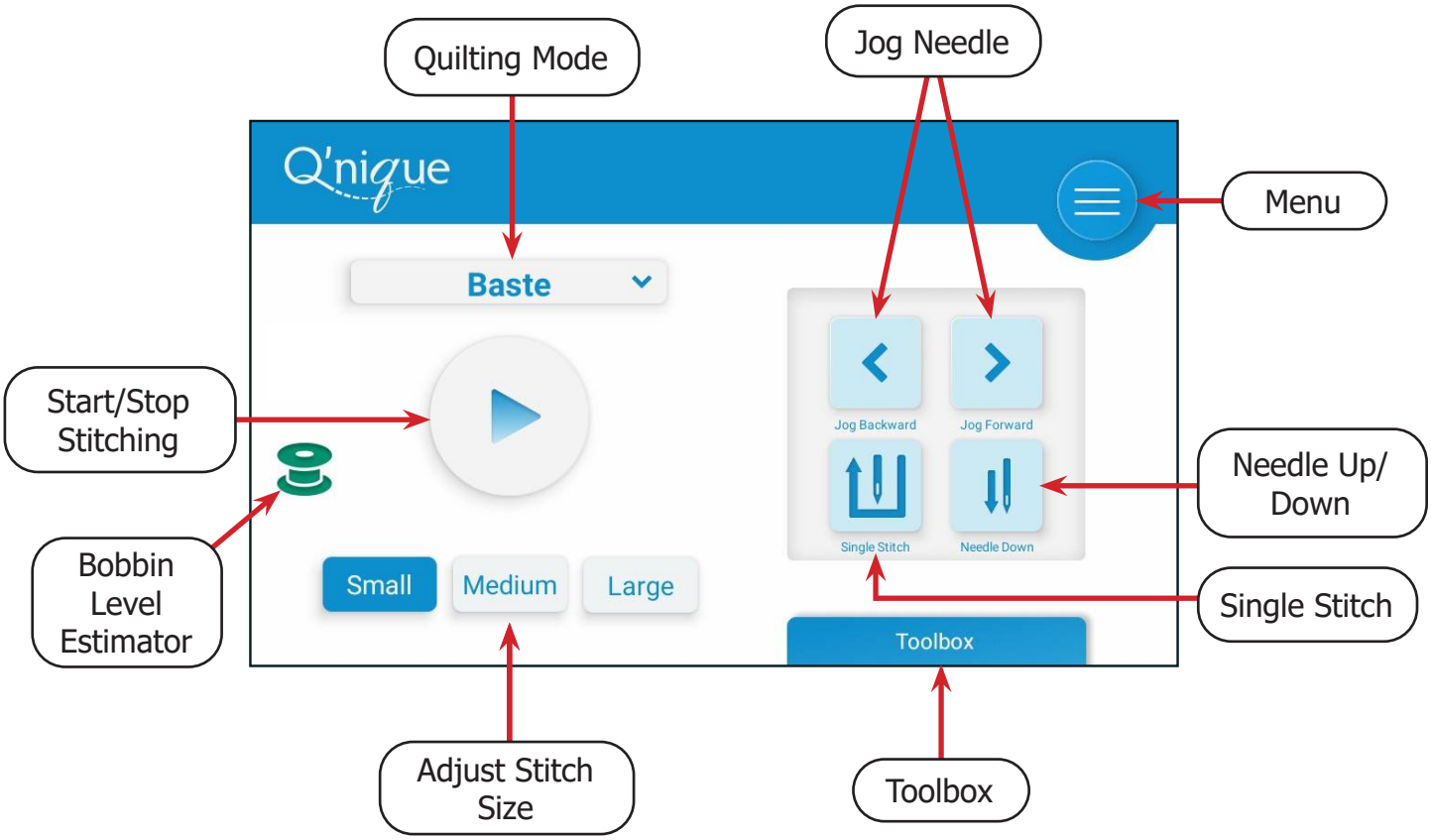
6 You might find that you need to take measurements or do quick calculations while you quilt. Press **Toolbox** to access the calculator and measure tools.

7 To stop stitching, press the **start/stop stitching** button on the display or the handlebars. The needle moves into the needle stop position indicated in the Settings screen (see page 41).

Using Baste Quilting Mode

Use baste mode to create loose, temporary stitches around the edge of your quilt top to hold layers of fabric together while quilting.

To switch to baste quilting mode, press the **select quilting mode** button and select **Baste**.



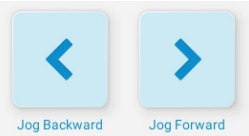
To quilt in baste quilting mode, take the following steps:

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

2. When stitching is inactive, press the single stitch button or the needle up/down button on the display to make single stitches. This can also be done with the needle button on the right handle (or left, if you installed the handles for left-handed use during assembly), depending on settings. To switch the type of stitch created with the handle button, go to the Settings screen (see page 41).

   Note: While stitching is active, the **single stitch** and **needle up/down buttons** on the display and the **needle button** on the handlebar controls are disabled.

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



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

4. Moving the machine too quickly while quilting can reduce the quality of the stitch regulation. If the machine is moved too quickly, an alarm will sound and the **start stitching button** on the display will turn red. Slow the machine's movement to turn off the alarm and display alert. Both the alarm and the display alert can be deactivated in the **Settings** screen.

5. When activated, the **bobbin level estimator** indicator appears on the left side of the display. For instructions on how to use the estimator, see page 52.

   - When the icon is green, the bobbin is estimated to be between 21% and 100% full.
   - When the icon is yellow, the bobbin is estimated to be between 11% and 20% full.
   - When the icon is red, the bobbin is estimated to be under 10% full.

6. You might find that you need to take measurements or do quick calculations while you quilt. Press **Toolbox** to access the calculator and measure tools.

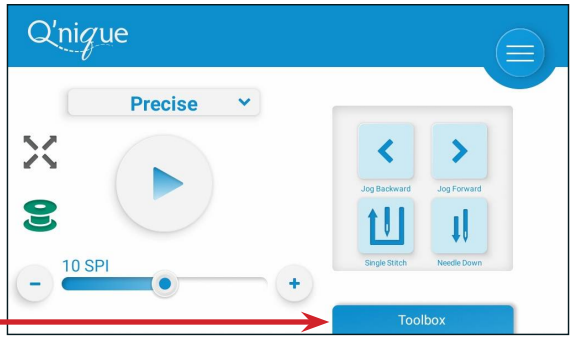
7. To stop stitching, press the **start/stop stitching** button on the display or the handlebars. The needle moves into the needle stop position indicated in the Settings screen (see page 41).

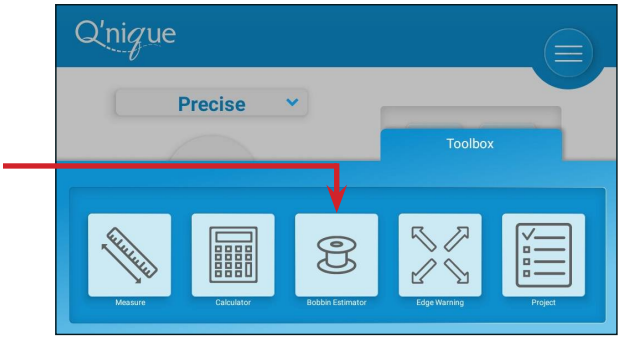
Note: Edge warning is inactive while in the baste quilting mode.

Using the Bobbin Estimator Tool

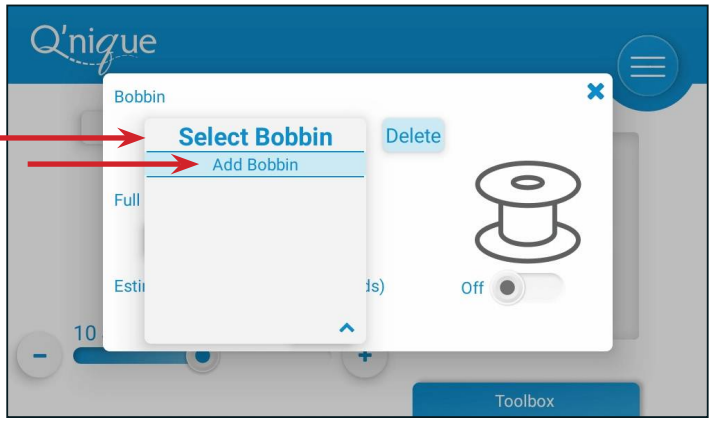
The bobbin estimator calculates the likely amount of thread remaining on the bobbin. To achieve the closest estimate, information must be accurately entered into the Bobbin Estimator screen. Take the following steps to use the bobbin estimator tool:

1. To access the bobbin estimator tool, tap on the **Toolbox** at the bottom of any quilting mode screen and select the **bobbin estimator**.





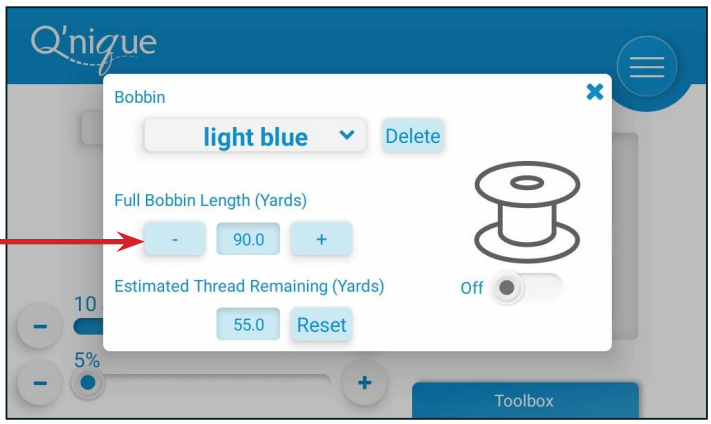
2. Press **Select Bobbin**. The drop-down list shows any bobbins you've added in the past. To add a bobbin, press **Add Bobbin**. An on-screen keyboard appears so you can name the new bobbin.



Tip: Choose a bobbin name that will make it easy to identify which bobbin you're using so that if you have to swap between partially used bobbins you can be sure to select the correct one from the list.

Name examples: "Ct Light Blue" for light blue cotton, or "Poly Wht 40 Wt" for 40-weight white polyester.

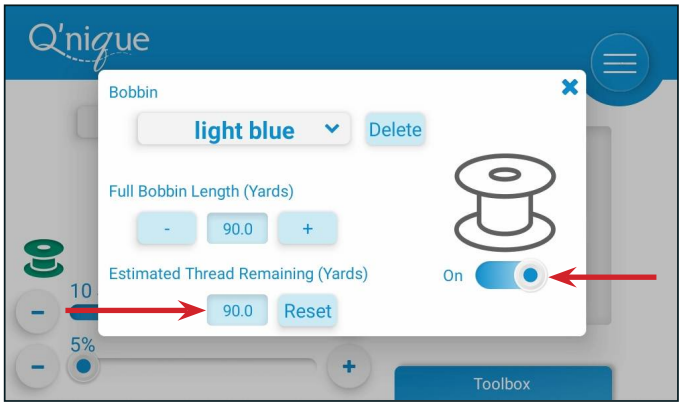
3. Enter the estimated number of yards on the bobbin. As a starting reference, an M-class bobbin fully wound with 40 wt cotton thread is approximately 90 yards. Yardage varies depending on the fiber and weight of the thread used.



Tip: It might take some practice to estimate the length of a fully wound bobbin. Keep a record of your starting estimate. When you run out of bobbin thread, open the estimator tool and see how much thread remains. Use this information to adjust your starting estimate next time you use the same type of thread.

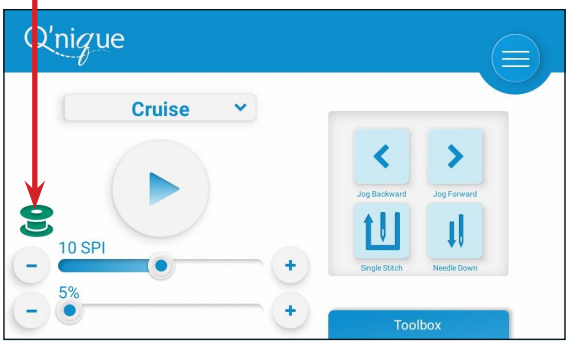
Using the Bobbin Estimator Tool (continued)

4 Turn on the bobbin estimator with the switch underneath the bobbin image. When **on**, any stitches the machine makes will subtract from the **estimated thread remaining**.



The **bobbin estimator symbol** also shows on the left side of the quilting mode screen when the estimator is on. Color changes notify you when the bobbin is estimated to be nearing the end of the thread.

Bobbin Estimator Symbol



21% - 100% remaining

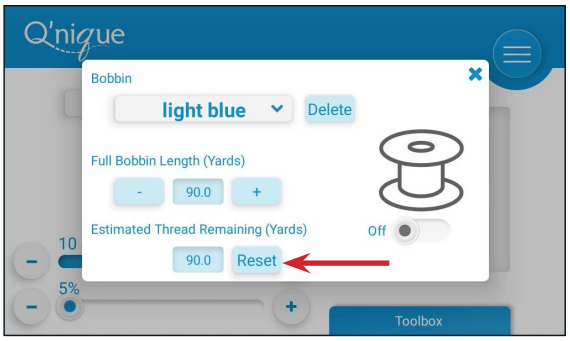
11% - 20% remaining

0% - 10% remaining

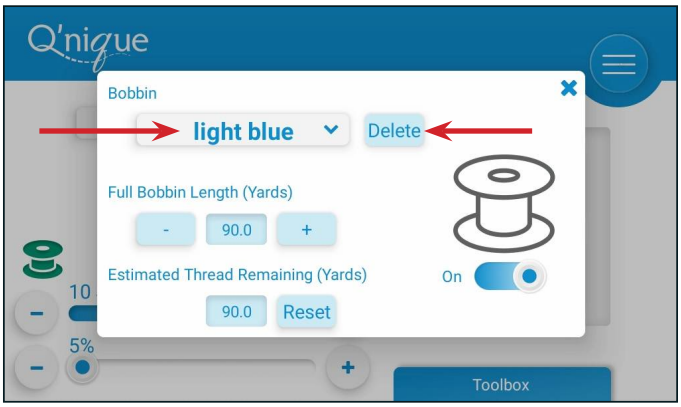
Note: Pressing this symbol on a quilting screen brings up the bobbin estimator tool.

5 When the bobbin thread is used up, you can either delete the record of the bobbin or reset it to be used again. **Reset** is recommended if you're planning on winding the bobbin back up with the same thread.

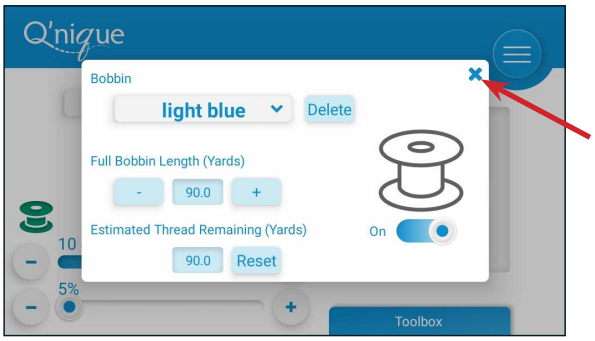
Press **Reset** to restore the estimated thread remaining to the full estimate.



To delete a bobbin, select it from the drop-down list and press **delete**.



6 To return to the main quilting screen, press the **X** in the top-right corner or press anywhere outside of the Bobbin Estimator screen.



Using the Edge Warning

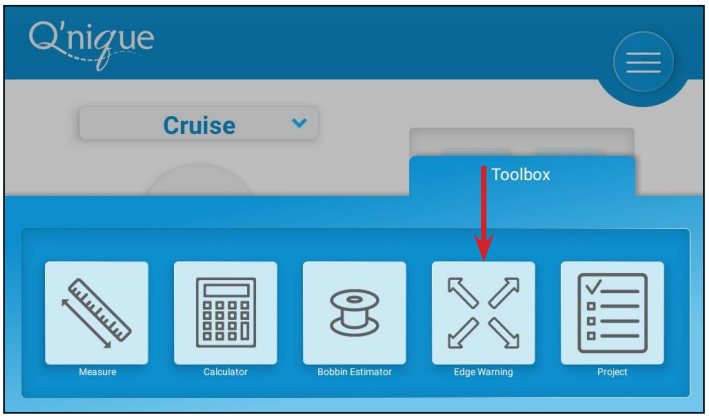
The edge warning alert system helps you stay within a safe area of your quilt by notifying you when you approach the edge of a set boundary. This warning helps prevent the machine from hitting the rails of the frame, but you can also set boundaries around a particular block or section of the quilt.

> **Note**: Edge Warning is automatically deactivated in Baste Mode, so the alarm doesn't bother you while tacking down your quilt.

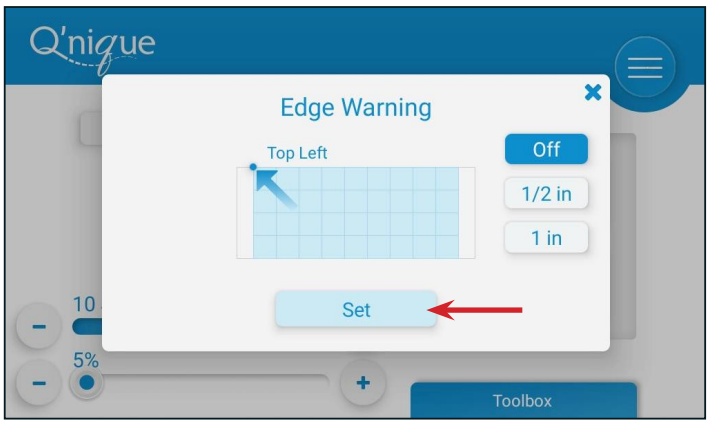
Take the following steps to use the edge warning tool:

1. To access the edge warning tool, tap the **Toolbox** at the bottom of any quilting mode screen and select **Edge Warning**.

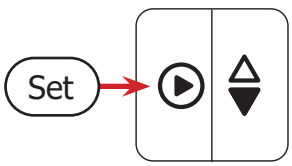




2. Move your machine so that your needle is at the top left corner of the area you want to mark as your safe area. Press the **set** button.



Tip: You can also use the start/stop quilting button on the right handlebar (or left, if you installed the handles for left-handed use during assembly) to **set** the corners of the safe area.

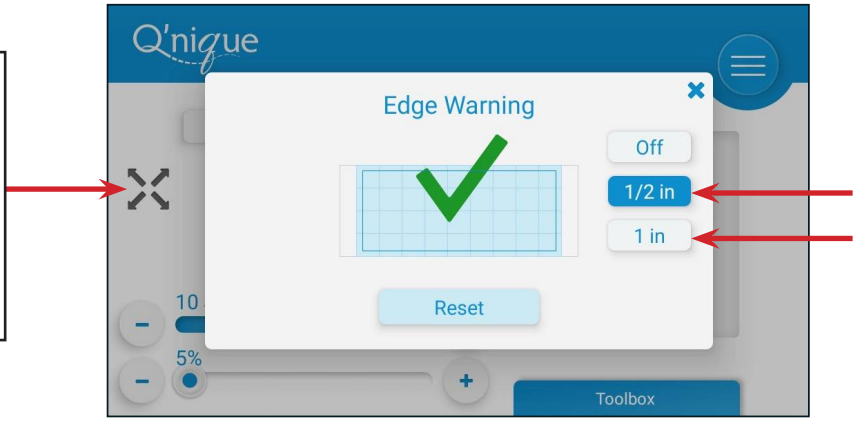


3 Move your machine so that your needle is at the bottom right corner of the area you want to mark as your safe area. Press the **set** button.

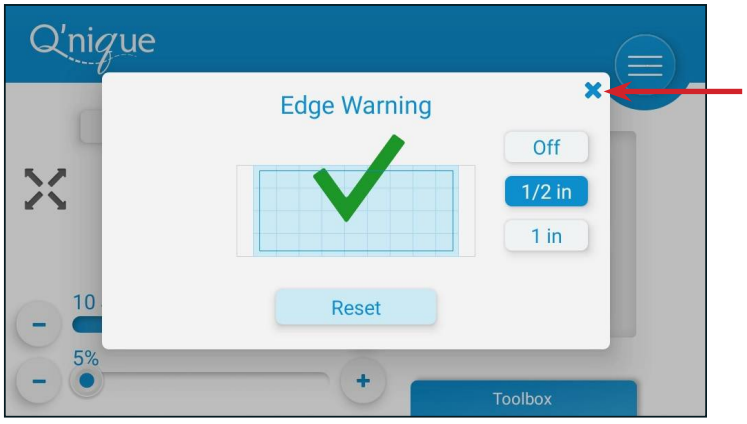


4 After marking your boundaries, set the machine to notify you when your needle is within 1/2 inch or 1 inch of any of those boundaries. Once this is set, a green check mark appears to confirm everything saved successfully.

Note: The edge warning symbol also appears on the main quilting screen. Press this symbol on the main quilting screen to open the edge warning tool.

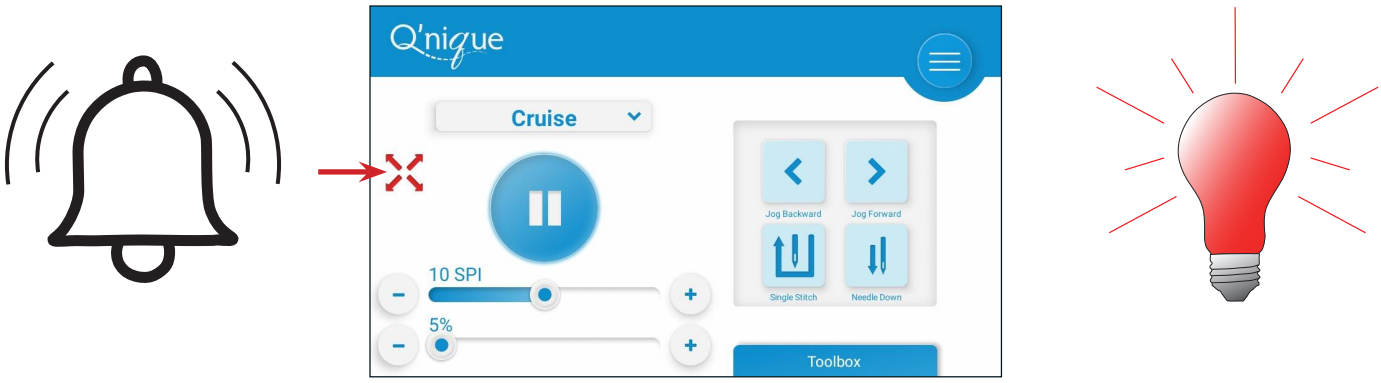


5 To return to the main quilting screen, press the **X** in the top-right corner or press anywhere outside of the edge warning tool.



Using the Edge Warning (continued)

6 Whenever you approach or cross the boundaries while quilting, an alarm sounds, a red LED light shines on the needle area, and the **edge warning indicator** on the left side of the main quilting screen turns red. These alerts persist until you return to the established safe area.

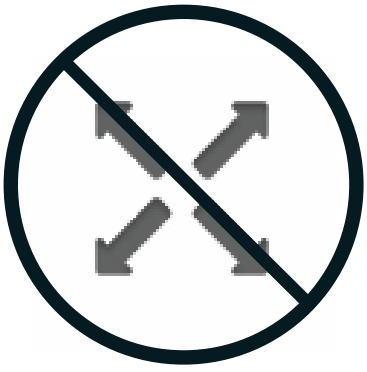


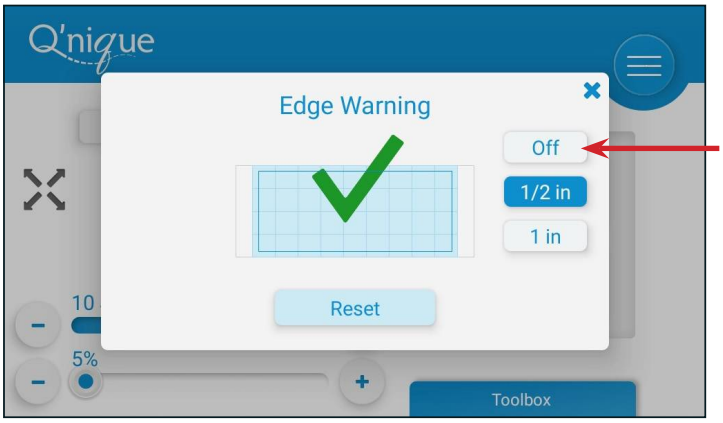
Note: Edge warning is automatically deactivated in baste mode.

7 The light and the alarm can each be deactivated in the Settings screen (see page 41).



To hide the edge warning symbol on the quilting screen, turn off the edge warning tool from the edge warning screen. This also deactivates the warning light and alarm.

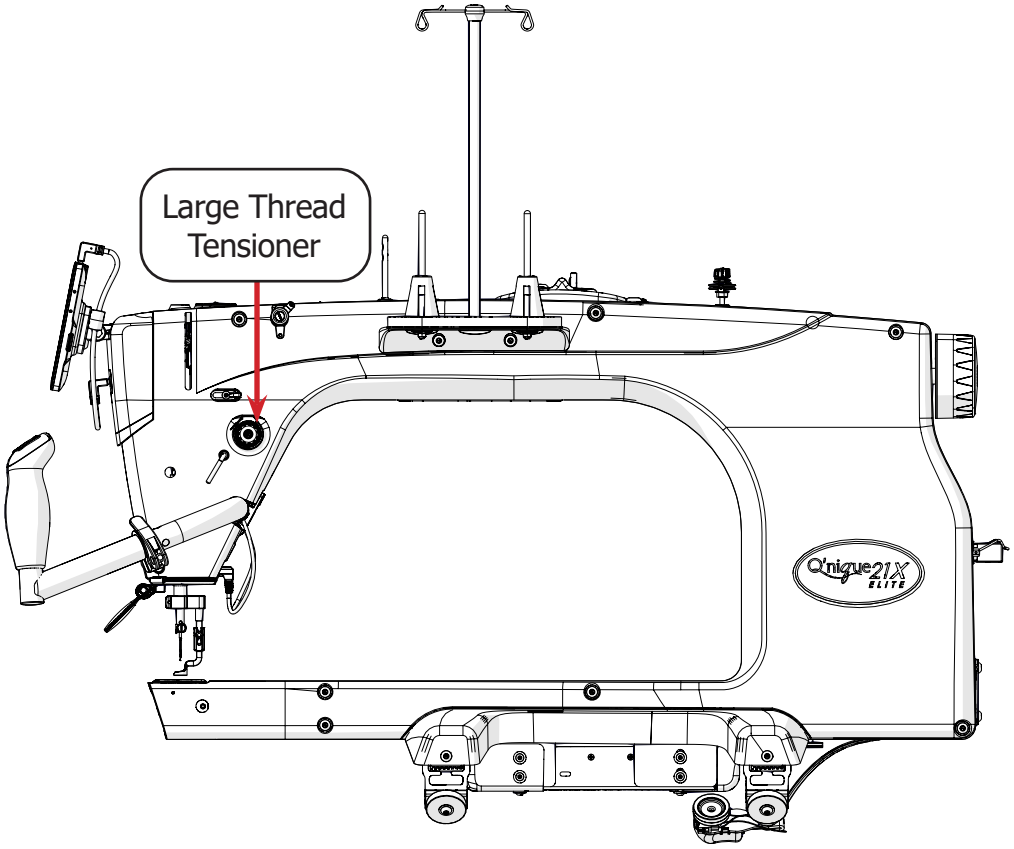




Adjusting Thread Tension

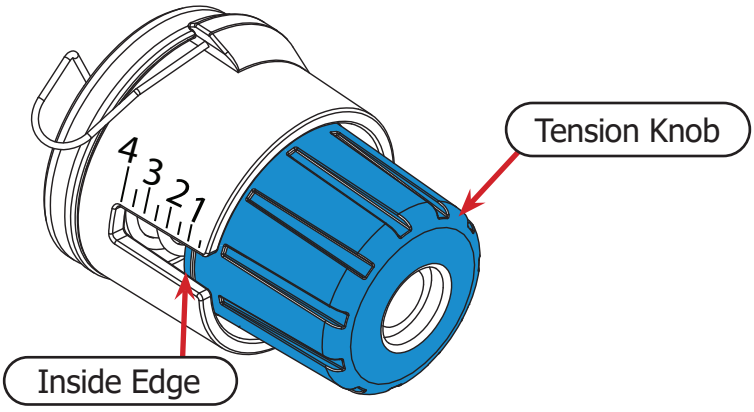
Proper thread tension prevents unwanted puckering, poorly-formed stitches, and malfunctions that can damage the fabric. Test your thread tension on extra materials before sewing on a project.

Tip: Bottom thread tension is the foundation for proper thread tension, and must be set first before setting top tension. Bottom tension is addressed in "Task 11 - Loading the Bobbin Case" (see page 30).



Take the following steps to adjust the top thread tension:

1. Loosen the **tension knob** on the large thread tensioner until the **inside edge** of the tension knob aligns with the 1.



Note: Setting "1" is the lowest tension for your machine, and is an ideal starting place to find the correct top tension. Do not over loosen: the tension knob can unscrew and fall off.

Adjusting Thread Tension (continued)

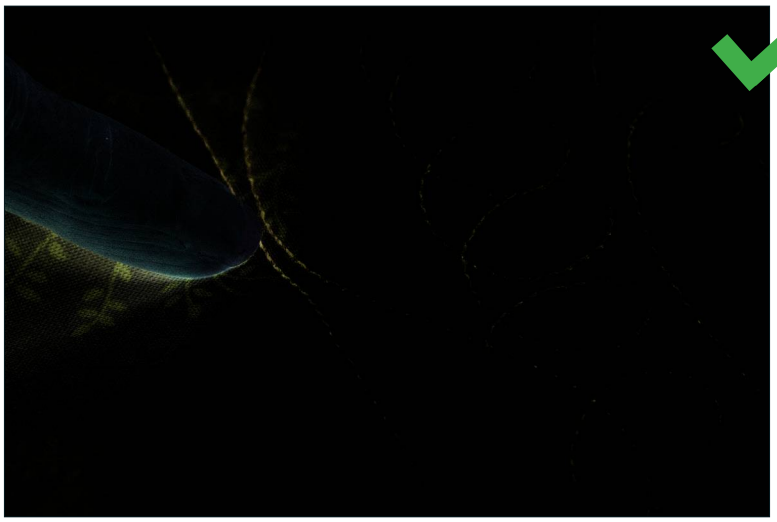
2 Slowly increase the tension while stitching into scrap material. When the thread tension is balanced, the top and bottom threads knot in the middle of the fabric layers.

Too Much Top Tension

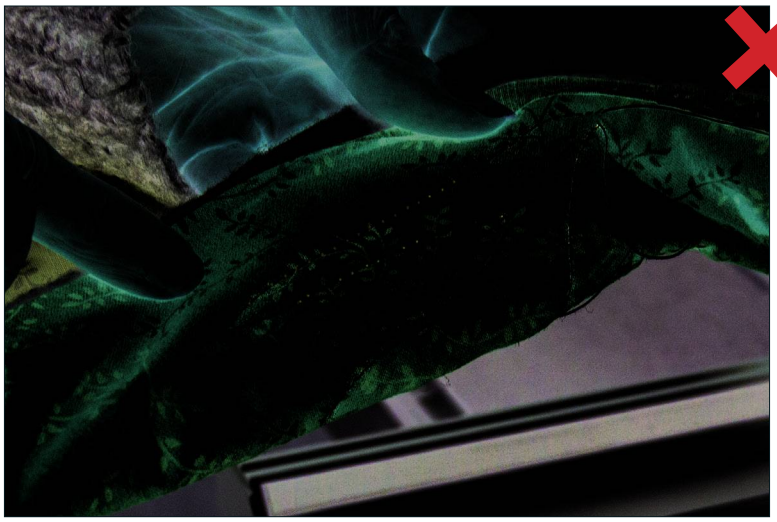


Bottom thread is pulled to the top of the fabric.

Balanced Tension

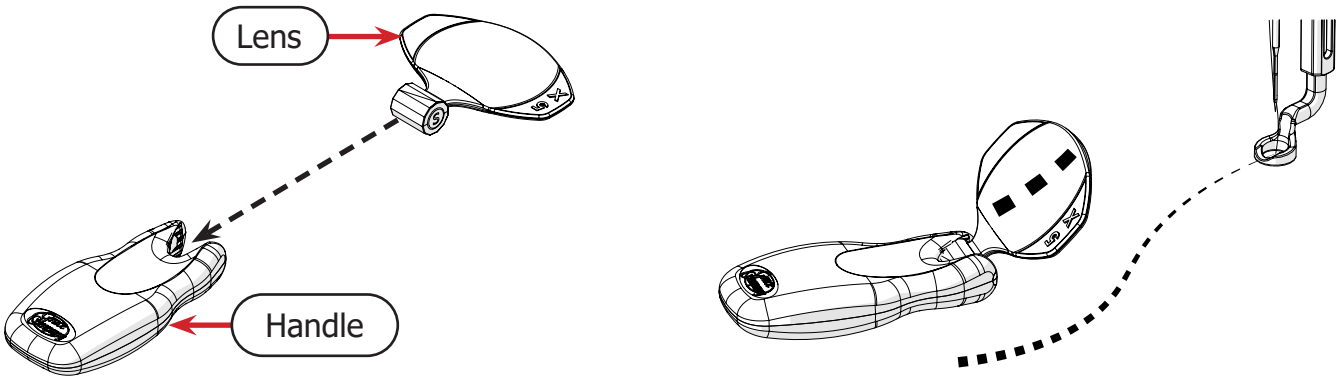


Too Little Top Tension

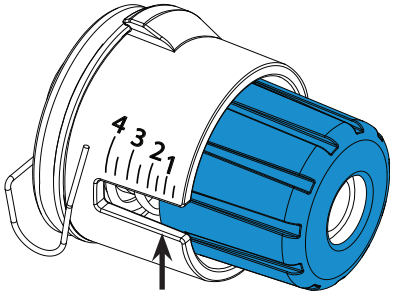


Top thread is pulled to the bottom of the fabric.

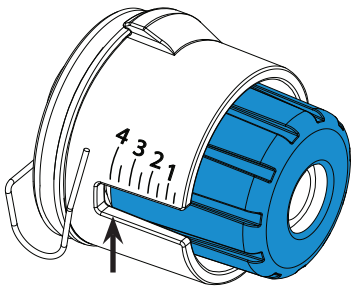
Tip: Use the magnifying glass **lens** with the **handle** to check your stitches.



- If the bobbin (bottom) thread 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." Stop turning the knob when desired tension is achieved.



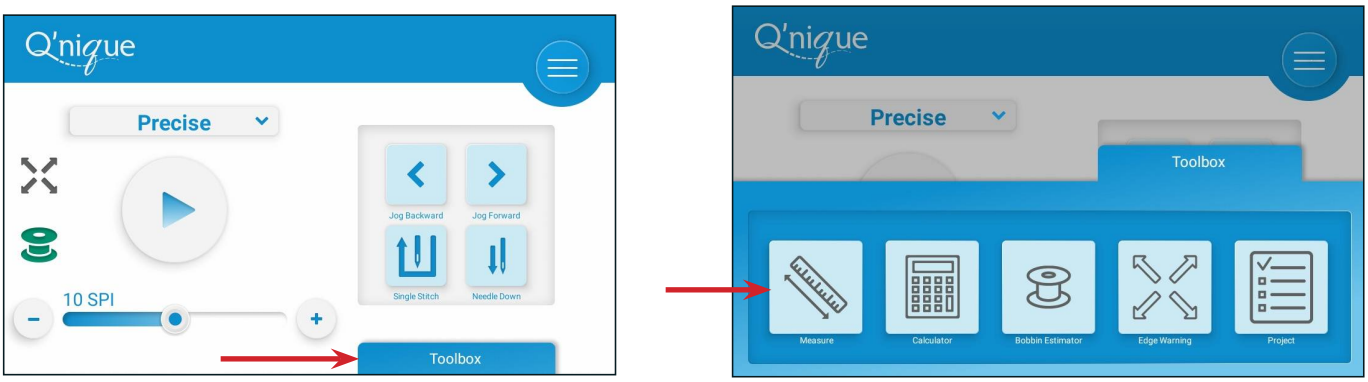
- If the top thread is pulled down through the bottom layer of fabric, there is too little top tension. Increase the tension on the top by slowly turning the large thread tensioner knob toward setting "4." Stop turning the knob when desired tension is achieved.



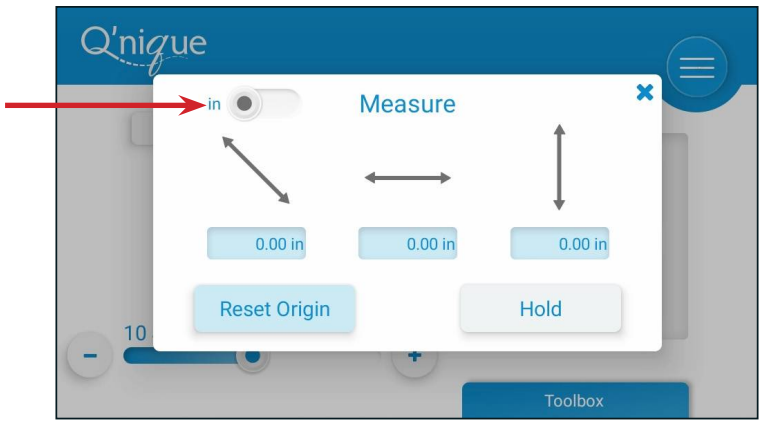
Taking Measurements

To use your machine to take measurements across the surface of your quilt:

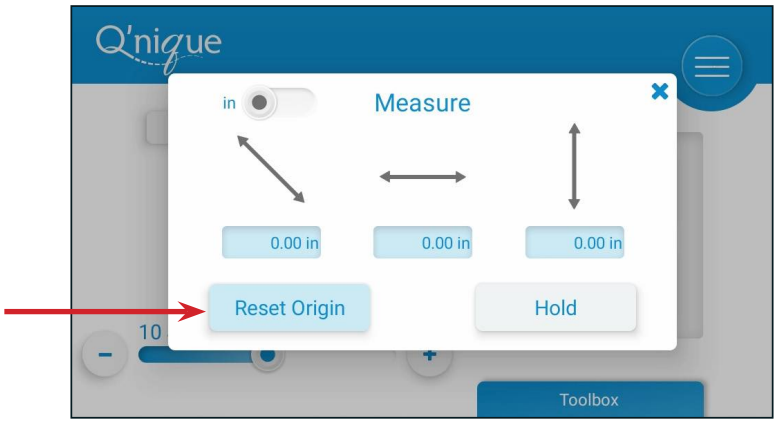
1. To access the measure tool, tap the **Toolbox** at the bottom of any quilting mode screen and select **Measure**.



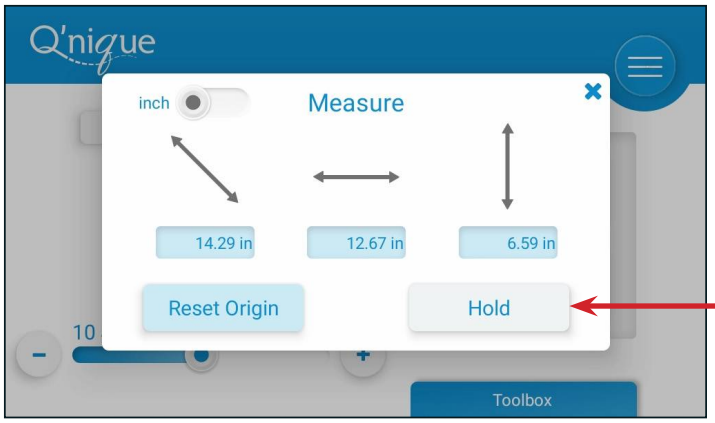
2. Select whether you want to measure using inches or centimeters.

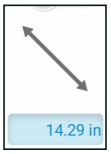


3. Move the machine so that the needle is at the position where you want to start your measurement and tap the **Reset Origin** button. This origin is saved until you reset it again.

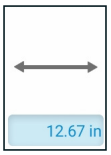


4 Move the machine so that the needle is at the end point of your measurement. Once at the end point, if desired, tap the **Hold** button to prevent the measurements on screen from changing again even if you move your machine.

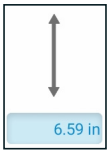




Measures the actual distance from the origin to the end point.

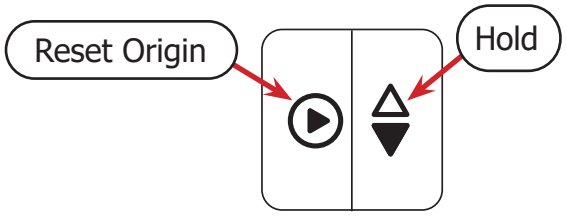


Measures the horizontal distance from the origin.



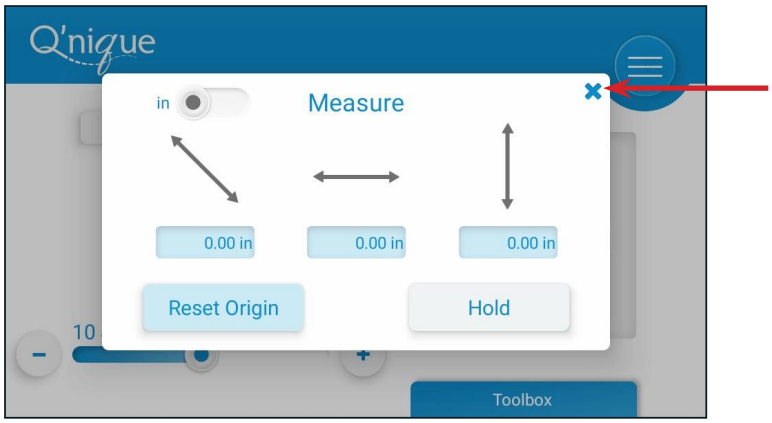
Measures the vertical distance from the origin.

Tip: You can also use the start/stop button (on the handles) to **reset the origin** and the needle button to **hold** the measurements.



5 To resume measuring, press **Hold** a second time.

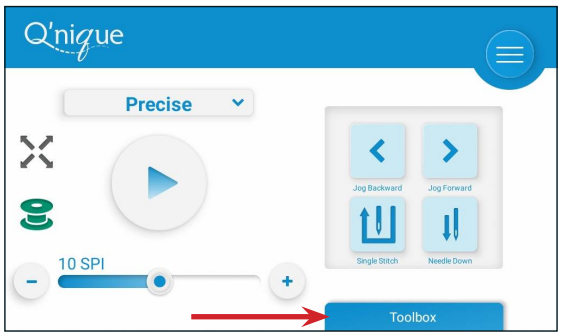
6 To return to the main quilting screen, press the **X** in the top right corner or press anywhere outside of the measure tool.

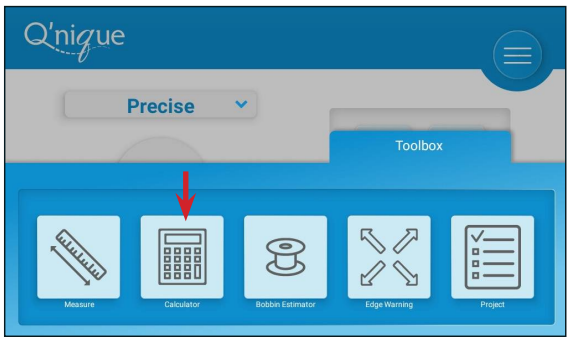


Making Calculations

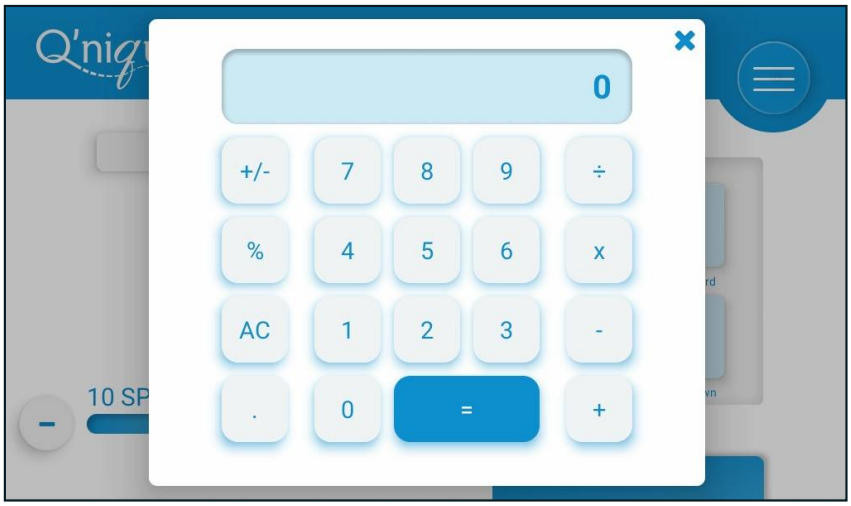
To use your machine to make quick calculations, take the following steps:

1. To access the calculator, tap on the **Toolbox** at the bottom of any quilting mode screen and select **Calculator**.

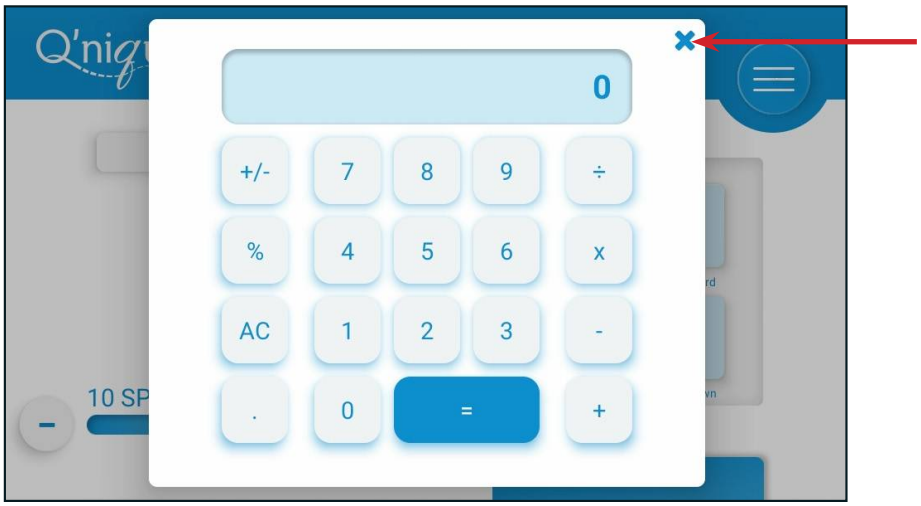




2. Use the calculator to add, subtract, multiply, divide, and find percentages.



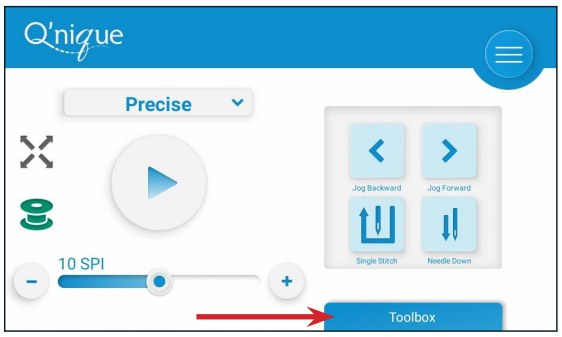
3. To return to the main quilting screen, press the X in the top right corner or press anywhere outside of the calculator tool.

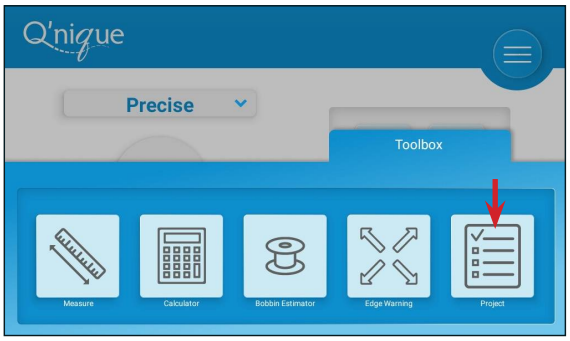


Tracking Stitch Count & Run Time

To track the stitch count and run time of both your current project and the lifetime of the machine, take the following steps:

1. To access the project tool, tap the **Toolbox** at the bottom of any quilting mode screen and select **Project**.

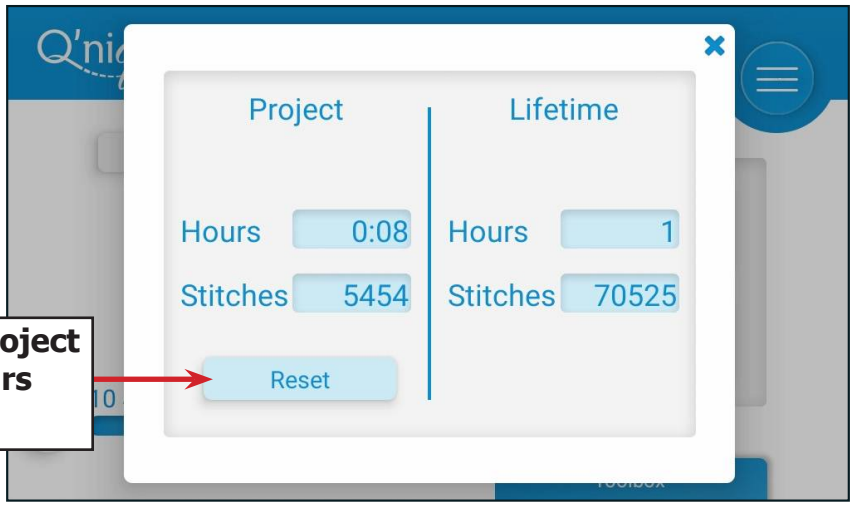




2. The project tool shows the run time and stitch data for both the current project and lifetime of the machine.

Project shows the total run time in hours and minutes along with the total stitches since the last reset.

Lifetime shows the total run time in hours along with the total stitches since the machine was purchased.



Press to reset project counter to 0 hours and 0 stitches.

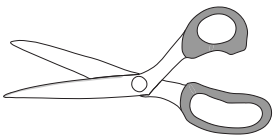
Tip: It's recommended to oil your machine after 20 hours of use. The Hours counters can help keep track of when your machine is due to be oiled. After cleaning and oiling your machine, press **Reset** to start the counters under Project back at zero. Or clean and oil your machine at intervals of 20 hours in the Lifetime Hours counter.

Note: The counters under Lifetime cannot be reset.

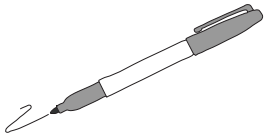
Getting Started

Parts & Tools Needed:

Scissors
(not included)



Washable Fabric
Marker/chalk
(not included)



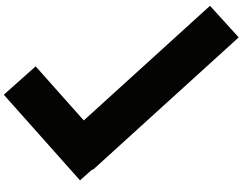
Instructions

With the machine fully assembled, you are ready to begin quilting. Practice on spare fabric to become familiar with the machine's settings and movements so you can start your projects with confidence. It is normal to make mistakes, so don't get discouraged if your stitches don't look perfect right away. Follow the steps in this section to get started and you'll be quilting in no time!

1. **Relax!** Take a deep breath and don't be afraid to take it slow.

   Make sure that the following items have been completed:

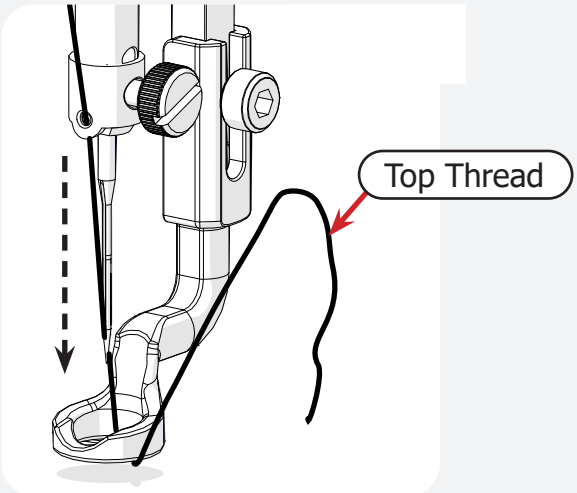
   - Your machine is threaded and tensioned.
   - Your practice fabric is attached to your frame.
   - You have established any machine settings you want to use.



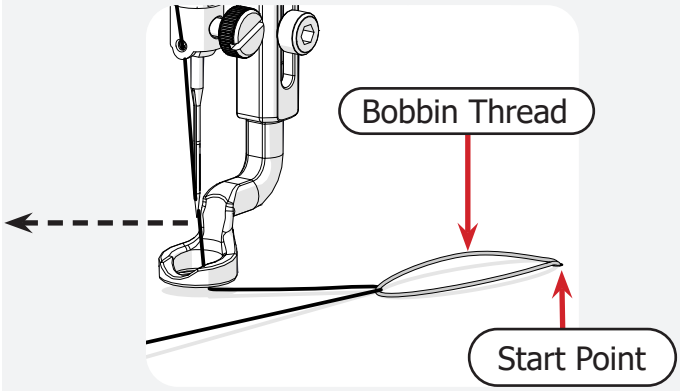
2. Before you begin stitching, pull up your bobbin thread to prevent the thread tail from dangling underneath the fabric as you quilt and getting sewn in place.

   a. First, position the needle directly above where you want to begin your pattern.

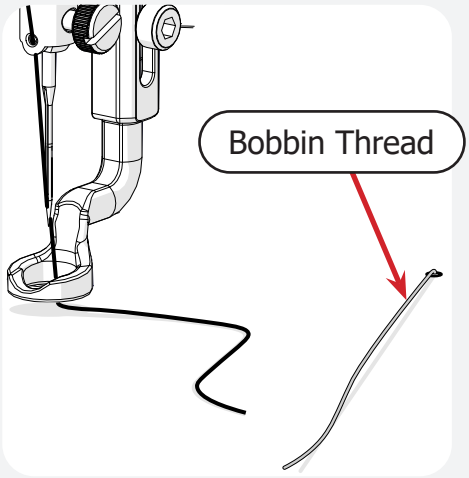
   b. Pull on the **top thread** so that it is tight and jog the needle up and down using the single stitch button on the display.



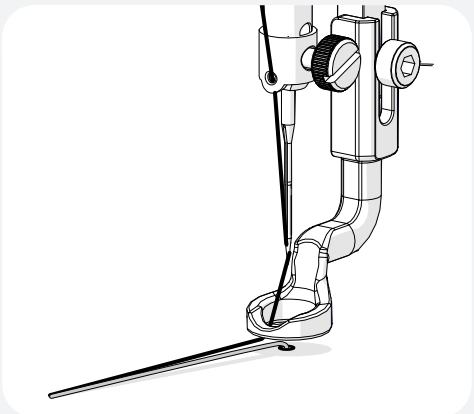
c While still tightly holding the top thread, move the machine several inches to the side. Your top thread should pull a loop of **bobbin thread** through the **start point** to the top of the fabric.



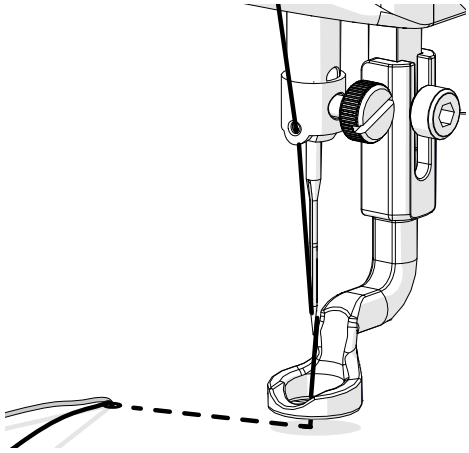
d Pull on the loop of **bobbin thread** until the loose end of the thread comes up from underneath the fabric.



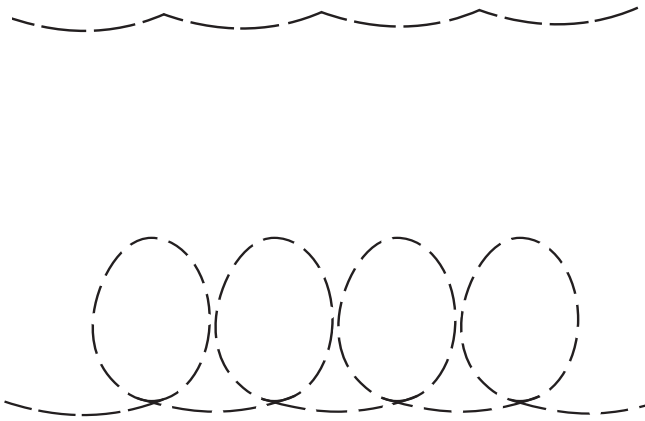
e Pull on the bobbin thread while moving the machine back to the start point. This makes sure that there is no loose thread underneath the fabric.



3 Begin stitching. Be sure to start your pattern as close as possible to the start point where you pulled out the bobbin thread.



4 With fabric chalk or a marker, draw a simple pattern or write your name on the fabric and then stitch over it to practice.





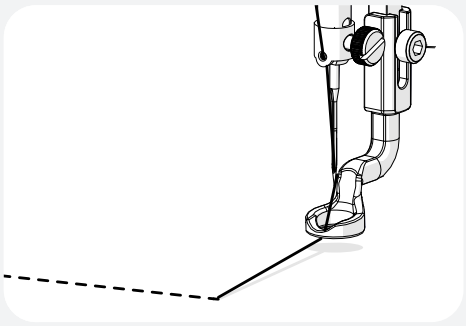
Getting Started (continued)

5 Complete the pattern by making a securing stitch. Use the single stitch button to make a few small stitches very close together.

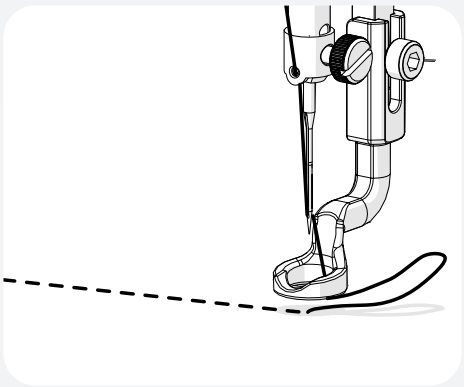


6 To pull up the bobbin thread after making a securing stitch, take the following steps:

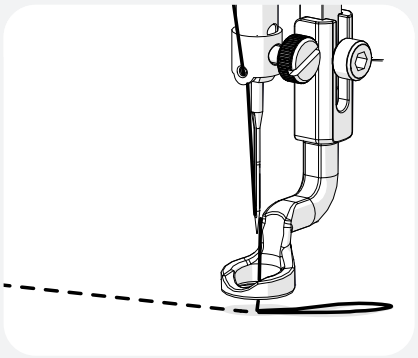
a Move the machine away from the securing stitch.



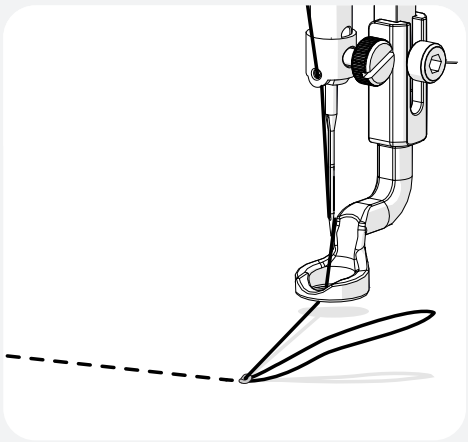
b Hold the thread to make a loop and return the machine to the last stitch.



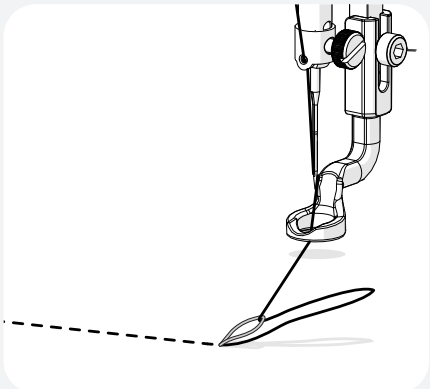
c Make a single stitch over the last stitch.



d Hold the loop and move the machine away from the stitch again.



e Keep moving away from the last stitch until a loop of bobbin thread is pulled up above the fabric. Cut all threads close to the stitches.



7 You may now cut the thread tails from the beginning of the pattern.

Practice! Keep trying different stitches until you feel comfortable with how your machine feels and moves.

Congratulations! Now that you have practiced and gotten used to the basic settings and movements of your machine, you are ready to begin your quilting journey.

Good luck, and thank you again for choosing Grace Company to help with your quilting needs.

Maintaining the Machine

Keep your machine performing at its peak by practicing good machine maintenance habits.

This section of the manual covers oiling the machine, changing the needle, adjusting the bobbin fill and hopping foot, reinstalling the needle plate, re-assembling the thread tensioner, and reinstalling the anti-backlash spring.

Preparing the Oil Bottle ..... page 69

Oiling and Cleaning ..... page 70

Changing the Needle ..... page 73

Adjusting the Bobbin Fill ..... page 75

Adjusting the Hopping Foot ..... page 75

Reinstalling the Needle Plate ..... page 80

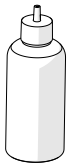
Re-assembling the Thread Tensioner ..... page 82

Reinstalling the Anti-Backlash Spring ..... page 83

Preparing the Oil Bottle

Parts & Tools Needed:

Oil Bottle



Tools Box

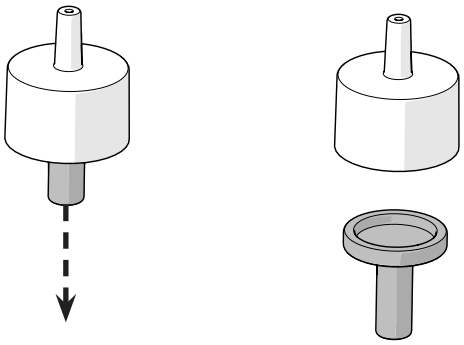
Instructions

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

1. Unscrew the cap.



2. Pull the black rubber seal away from the lid. The seal can be discarded.



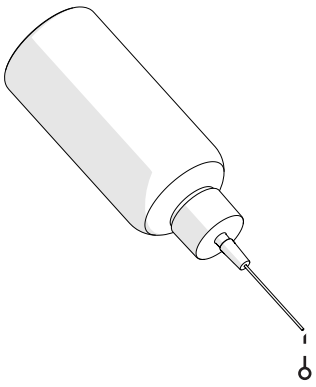
3. Screw the cap back onto the bottle.



4. Press the application needle onto the cap.



5. **To apply oil:** Hold bottle upside down and squeeze gently.



Oiling and Cleaning

Parts & Tools Needed:

Lint Brush



Tools Box

Oil Bottle



Tools Box

- 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	• Once every 4 bobbin changes

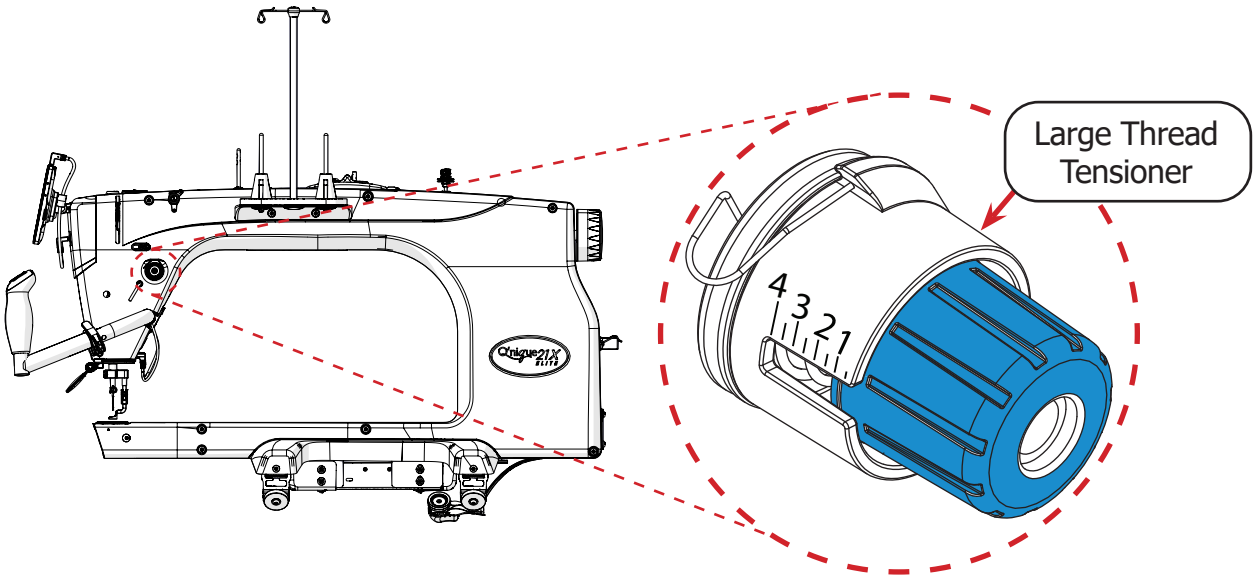
Tip: The Hours counter in the projects tool in the Toolbox on your display can be used to track hours of quilting time (see page 63).

Take the following steps to clean and oil the machine:

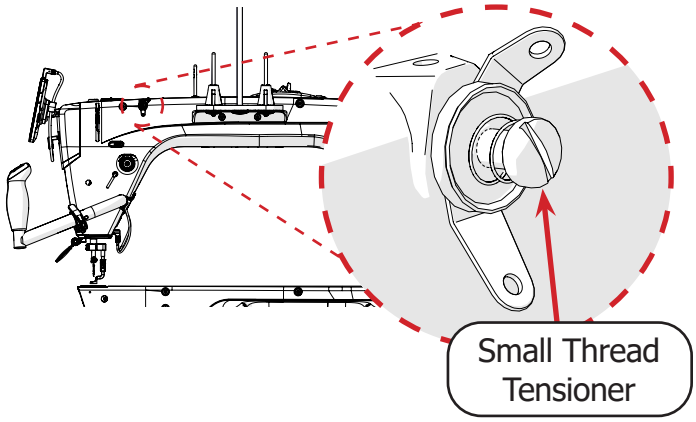
1. Power off the machine.

2. Set the **large thread tensioner** to "1" to expose the tensioner discs. Use the lint brush to clear away lint and thread remnants from between the discs.

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

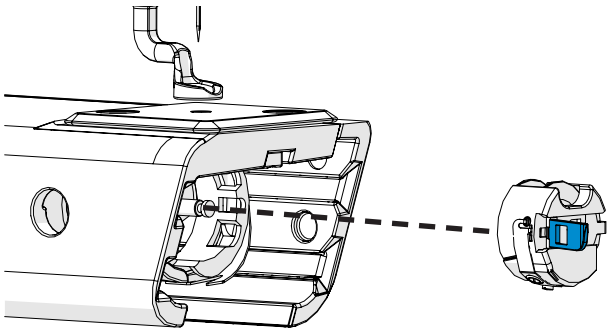


3 Clear debris from the spring and discs of the **small thread tensioner**.

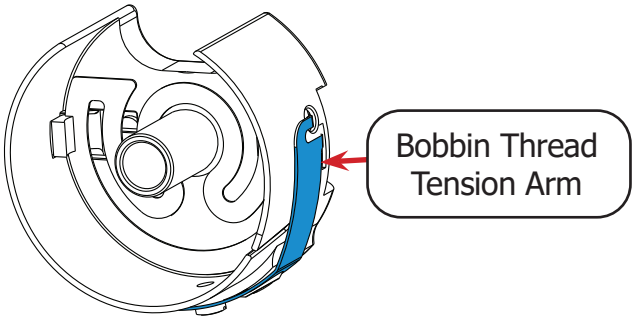


4 Pull the **lever** (shown in blue) on the bobbin case to remove it from the hook assembly.

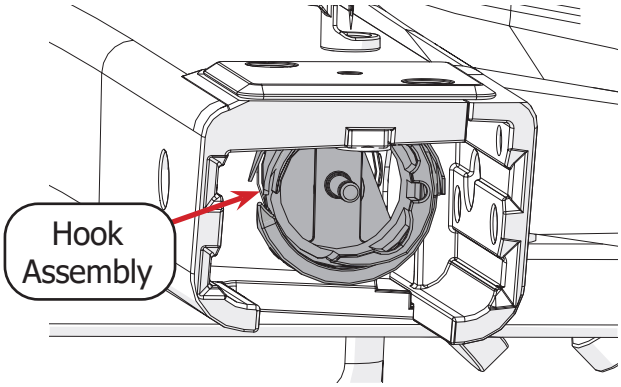
Note: If the case won't release, try raising the needle.



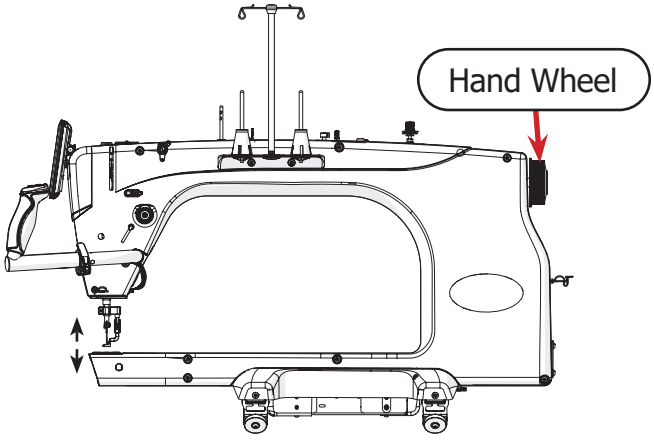
5 Take the bobbin from the case and set it aside. Clean the bobbin case with the lint brush or compressed air. Be sure to clean the area under the **bobbin tension thread arm**.



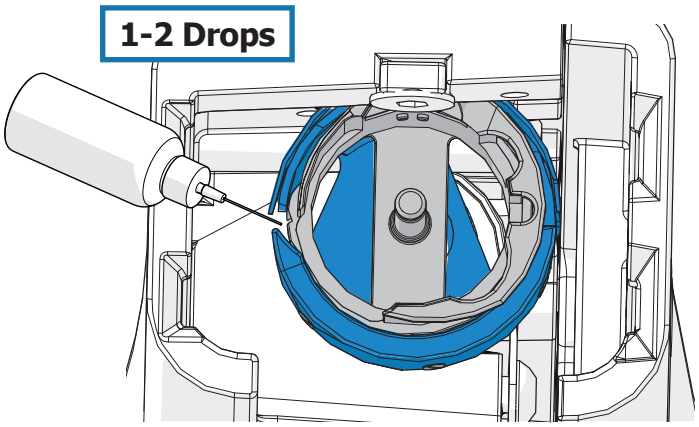
6 In and around the **hook assembly**, clear away any lint, cloth, and thread remnants using the lint brush or compressed air.



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

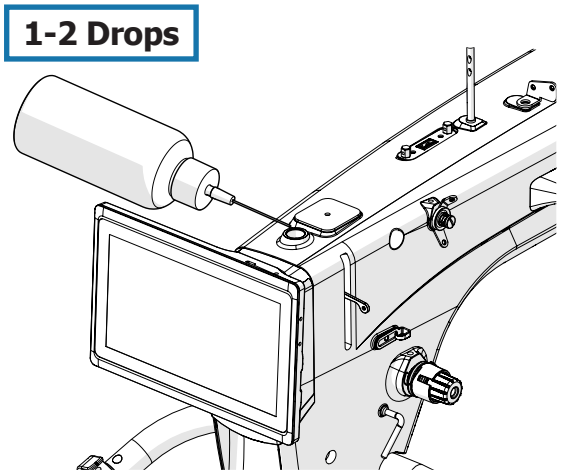


8 Place one to two drops of oil into the hook assembly between the **inner part** (shown in gray) and **outer part** (shown in blue).



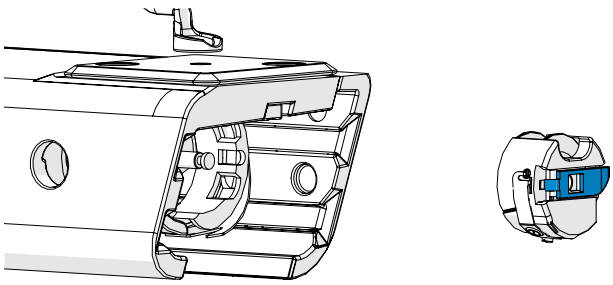
Oiling and Cleaning (continued)

9 Place one to two drops of oil down the hole at the top of the machine, near the display.

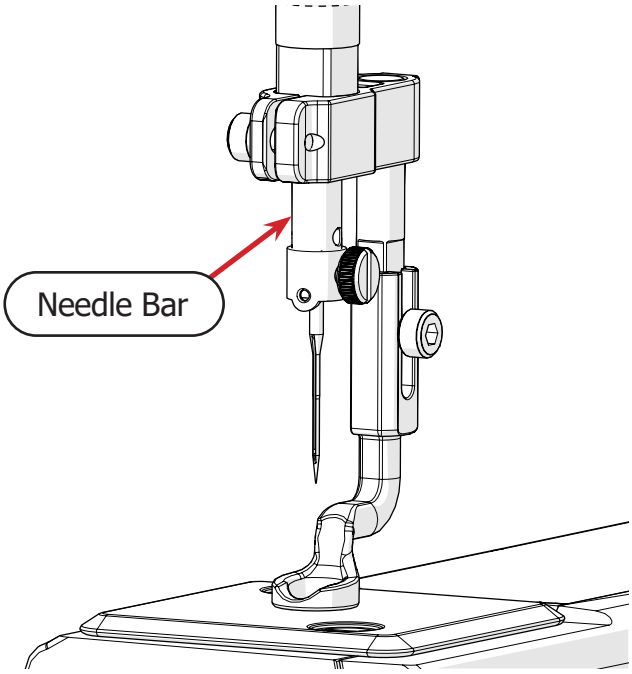


10 Power up the machine. Run the machine in manual or cruise stitching modes without a bobbin installed for about 10 seconds. This will distribute the oil in the hook assembly without getting oil on your bobbin thread.

11 Reload the bobbin case and return it to the machine. For detailed instructions, see "Task 11 - Loading the Bobbin Case" on page 30.



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



Changing the Needle

For information on selecting a needle, see "Choosing Your Needle" on page 96

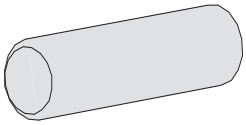
Parts & Tools Needed:

Needle



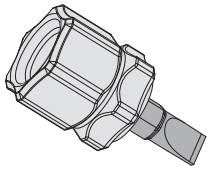
Tools Box

Needle Magnet



Tools Box

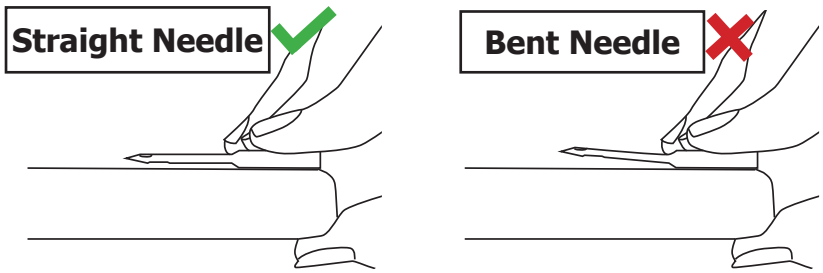
Flat-head Screwdriver



Tools Box

Instructions

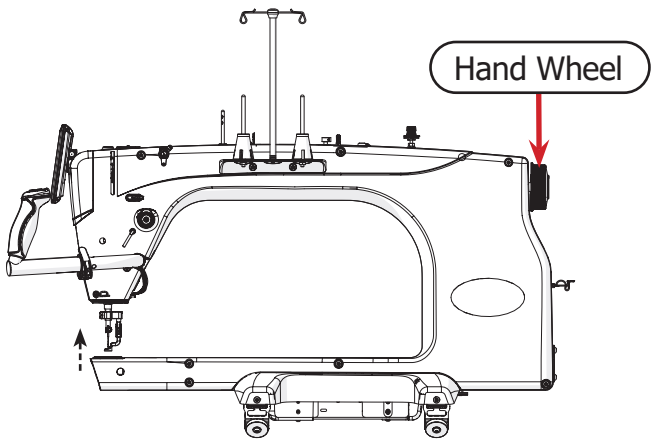
A broken, bent, or burred needle might break thread, damage fabric, or even damage the machine. Always check that the needle is in good condition before starting a new project, and replace the needle after eight hours of use.



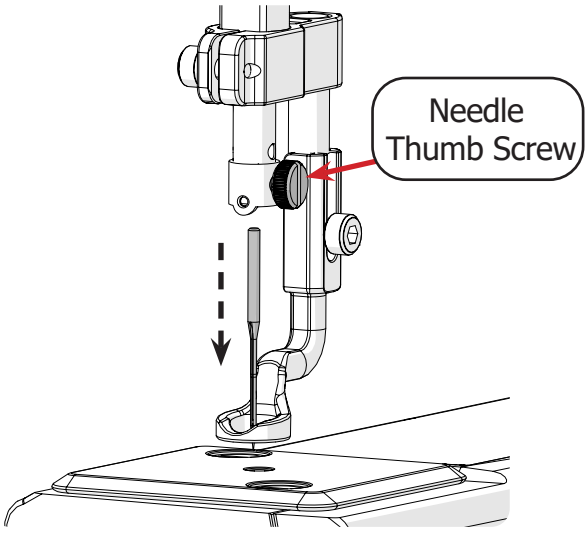
To avoid damage to the machine, choose an approved needle style from the list below:

- DPX5 MR
- 134 MR
- 1955 MR

1. Power off the machine.
2. With the **hand wheel**, raise the needle so it clears the hoop part of the hopping foot.

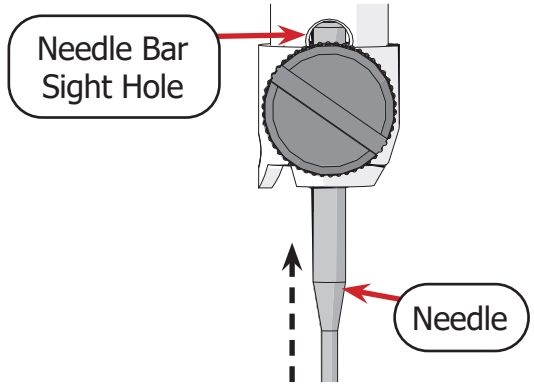


3. Loosen the **needle thumb screw** and pull out the needle. If needed, use the flat-head screwdriver to loosen the screw.

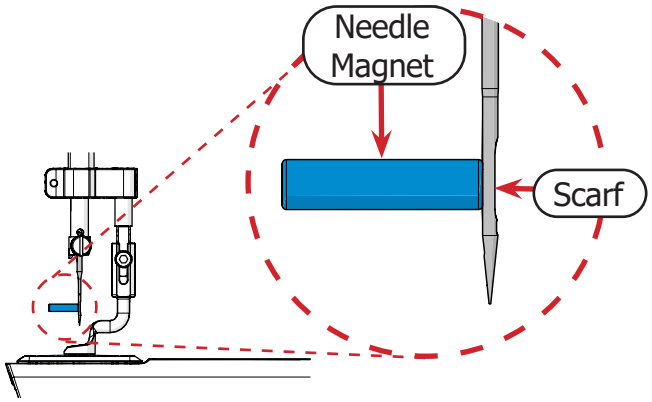


Changing the Needle (continued)

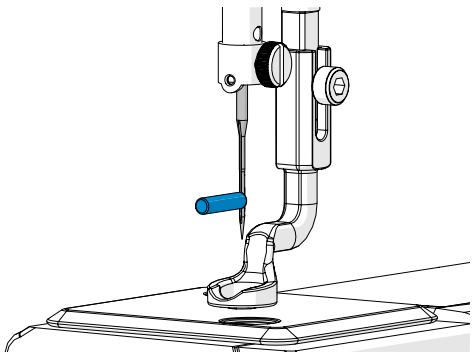
4 Insert the new **needle** all the way into the needle bar. Check the **needle bar sight hole** above the thumb screw to make sure the needle is inserted all the way.



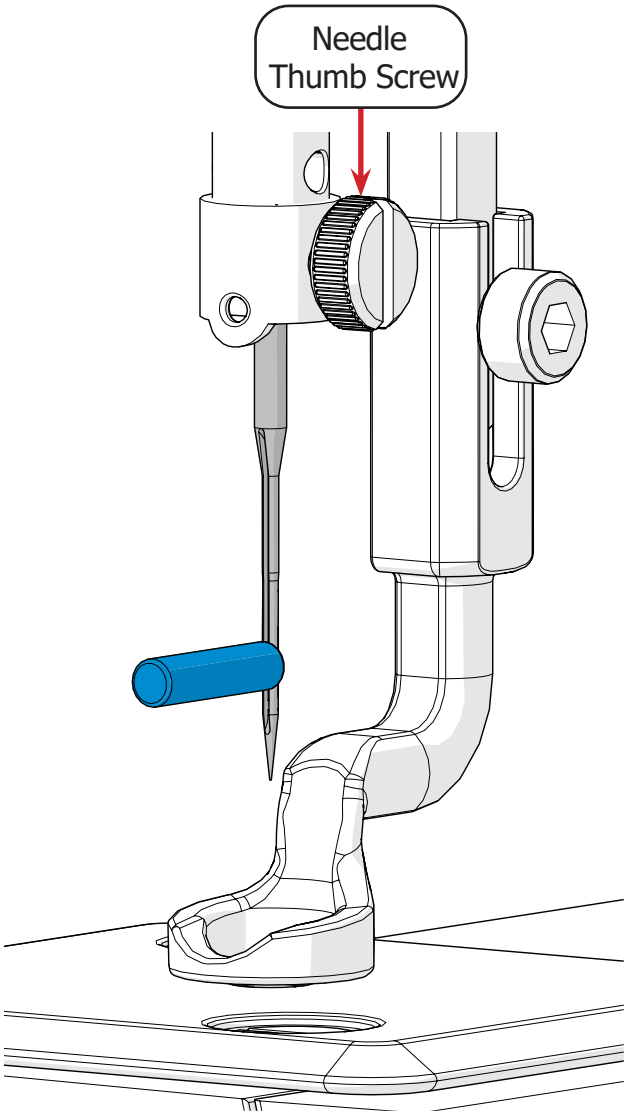
5 The **scarf**, a cut-out on the back of the needle, should face the throat of the machine. Place the **needle magnet** on the opposite side of the scarf.



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



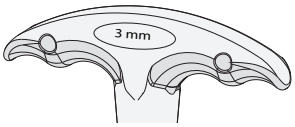
7 Hand-tighten the **needle thumb screw**. Do not over-tighten if using the flat-head screwdriver.



Adjusting the Hopping Foot

Parts & Tools Needed:

T-handle Allen Wrench 3 mm



Tools Box

Hopping Foot Height Tool



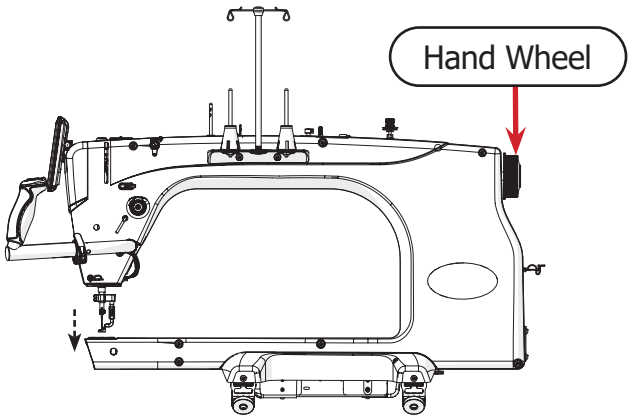
Tools Box

Height Adjustment

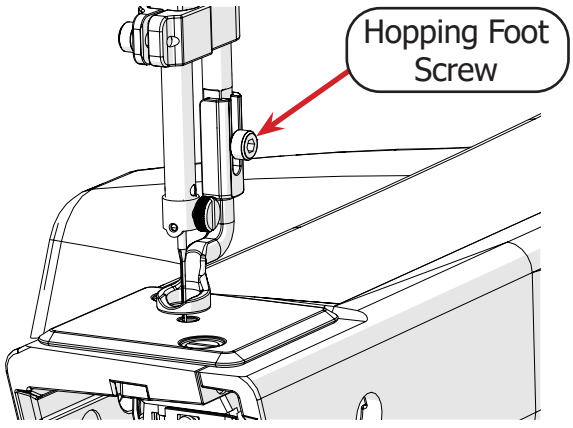
When quilting with thick fabric or batting layers, the hopping foot might press down on the quilt too tightly and begin to drag. Alternatively, having the hopping foot too high can result in skipped stitches. The hopping foot can be raised or lowered to correct these problems.

To adjust the hopping foot height, take the following steps:

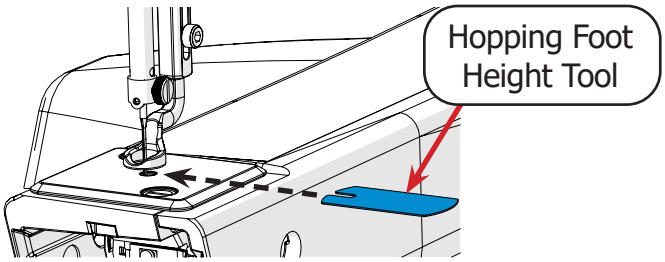
1. Move the machine so it is not over fabric. Then use the **hand wheel** to drop the needle bar to the lowest position.



2. Use the 3 mm Allen wrench to loosen, but not remove, the **hopping foot screw**.

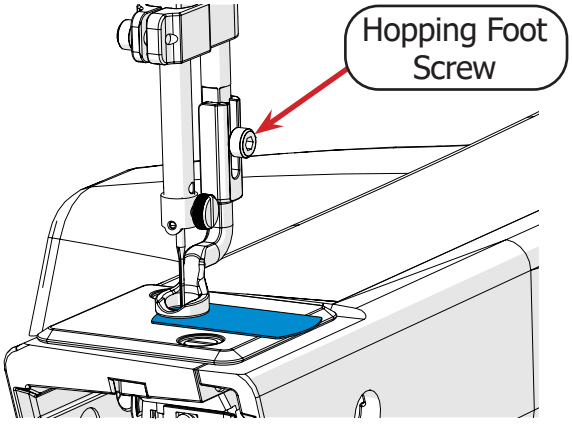


3. Slide the **hopping foot height tool** underneath the hopping foot with the needle inside the slot.



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

4. Lower the hopping foot until it rests on the height tool. Re-tighten the **hopping foot screw** with the 3 mm Allen wrench.

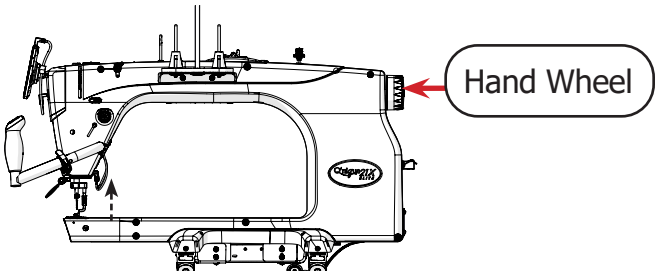


Adjusting the Hopping Foot (continued)

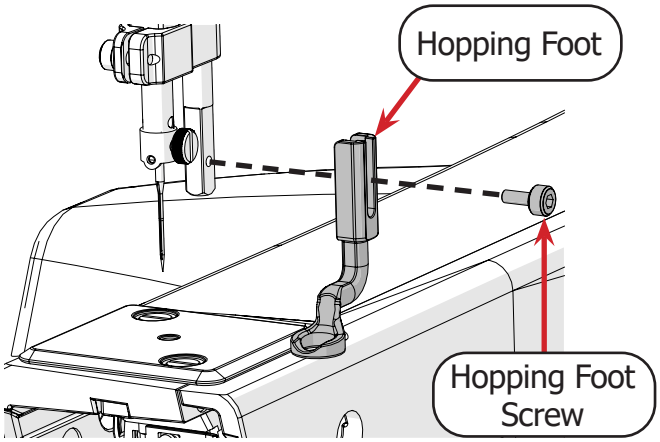
Rotation Instructions

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

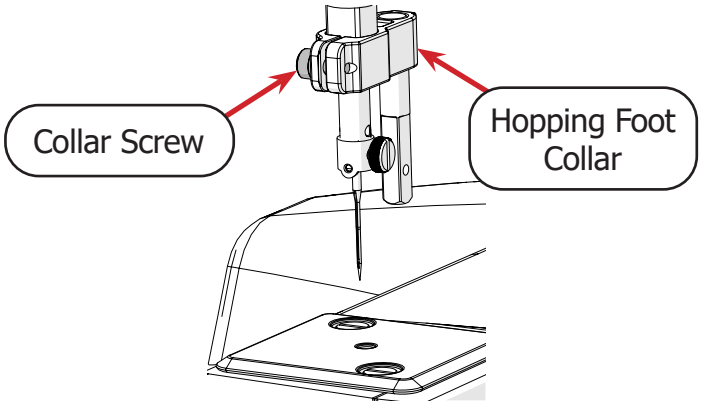
1. Power off the machine.
2. With the **hand wheel**, raise the needle so it clears the hoop part of the hopping foot.



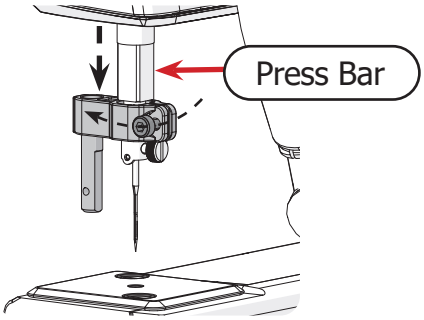
3. Use the 3 mm Allen wrench to remove the **hopping foot screw** and the **hopping foot.**



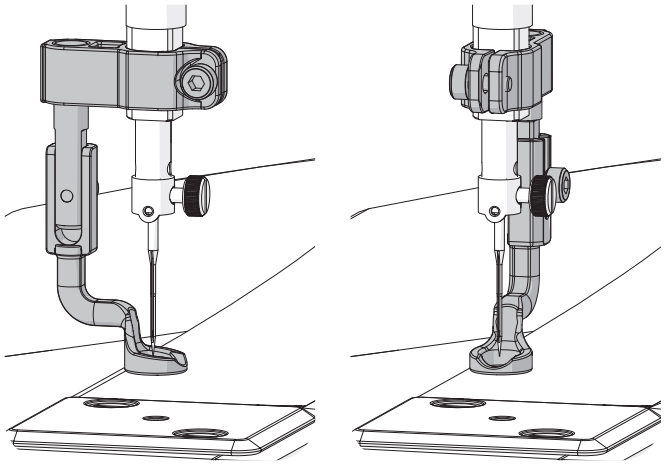
4. With the 3 mm Allen wrench, loosen the **collar screw** that holds the **hopping foot collar** to the press bar.



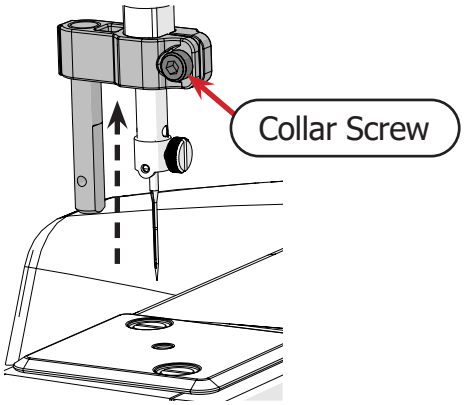
5. Drop the hopping foot collar below the **press bar** and turn it to the desired position.



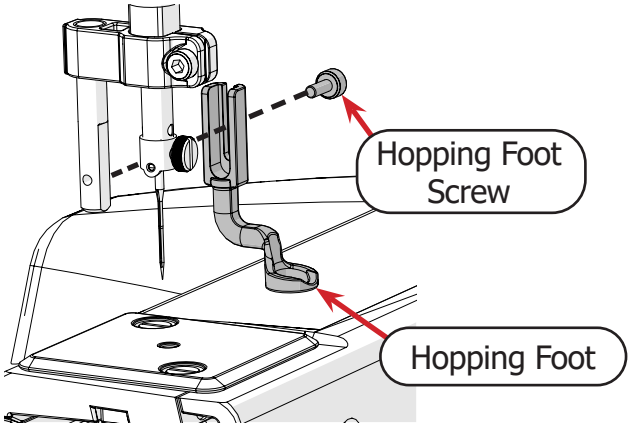
The hopping foot can be set to two positions:



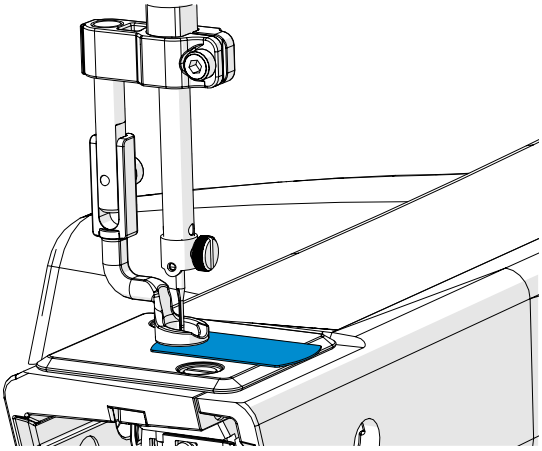
6. Lift the hopping foot collar back up to the press bar so that the bottom of the collar is even with the bottom of the press bar, and re-tighten the **collar screw**.



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



8 Double-check your hopping foot height (see page 75).

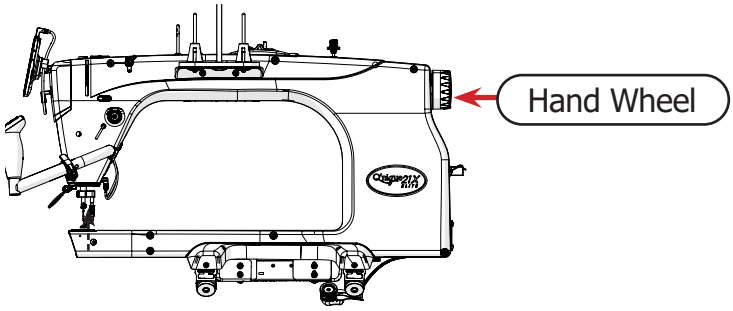


Adjusting the Hopping Foot (continued)

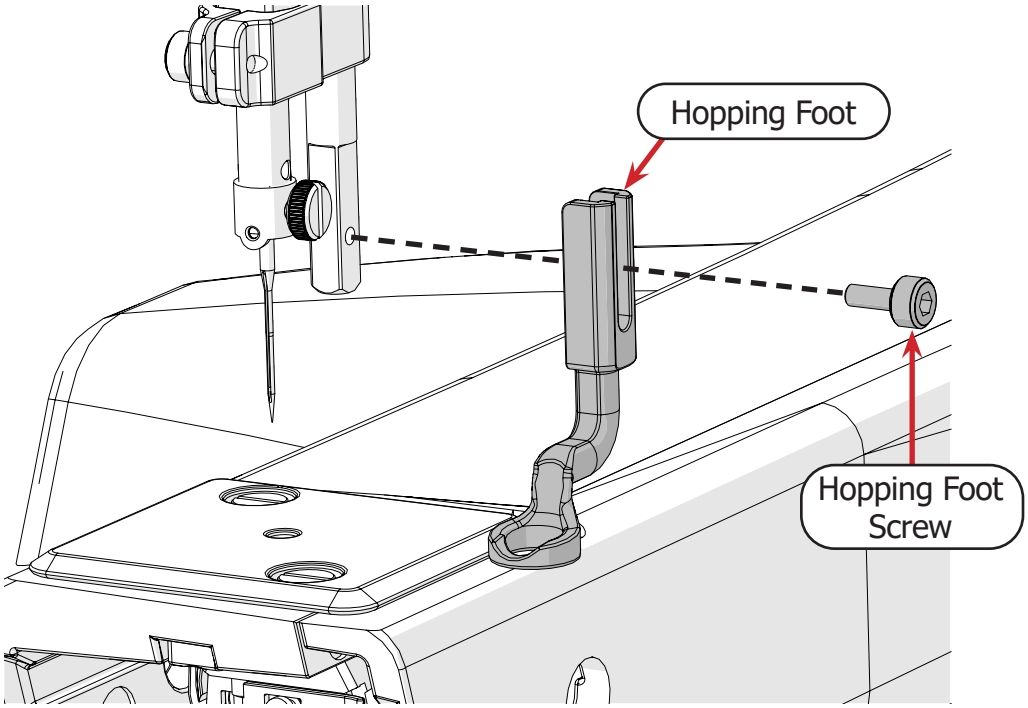
Removal Instructions

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

1. Power off the machine.
2. With the **hand wheel**, raise the needle so it clears the hoop part of the hopping foot.



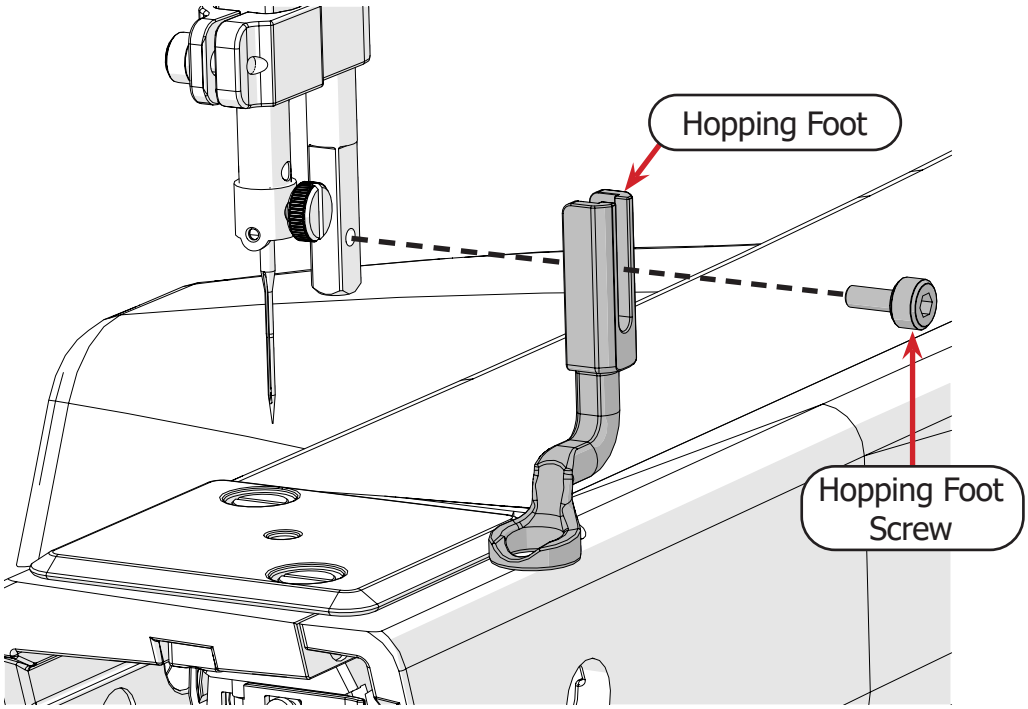
3. Use the 3 mm Allen wrench to remove the **hopping foot screw** and the **hopping foot.**



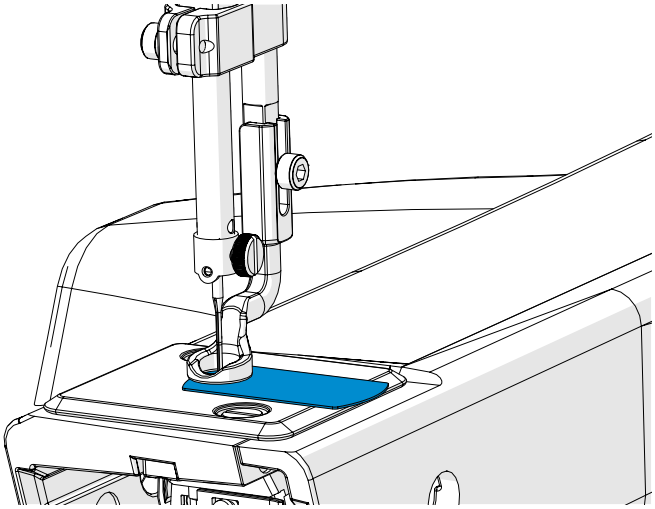
Installation Instructions

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

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



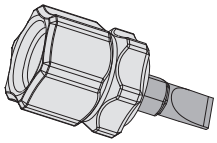
3. Adjust height as needed (see page 75).



Reinstalling the Needle Plate

Parts & Tools Needed:

Flat-head Screwdriver

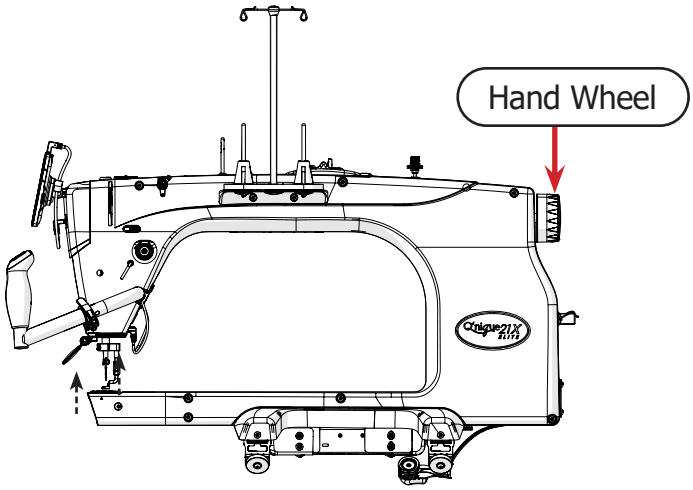


Tools Box

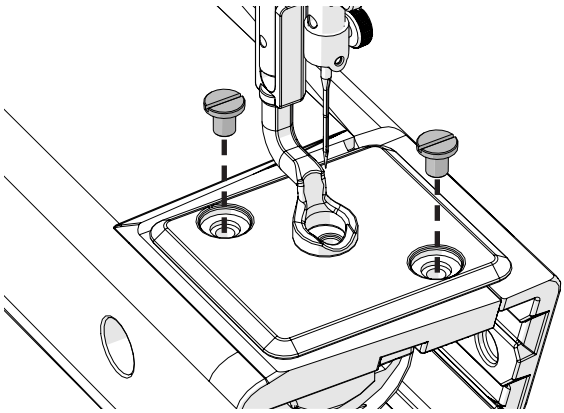
Removal Instructions

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

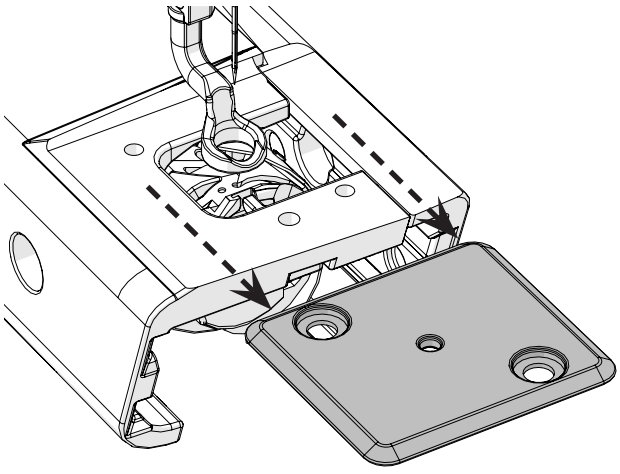
1. Power off the machine and raise the needle to the highest position using the **hand wheel**.



2. Use the flat-head screwdriver to remove the two **needle plate screws** (shown in gray).



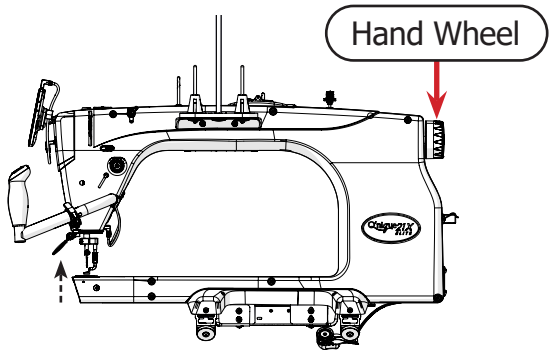
3. Slide the **needle plate** (shown in gray) from the machine.



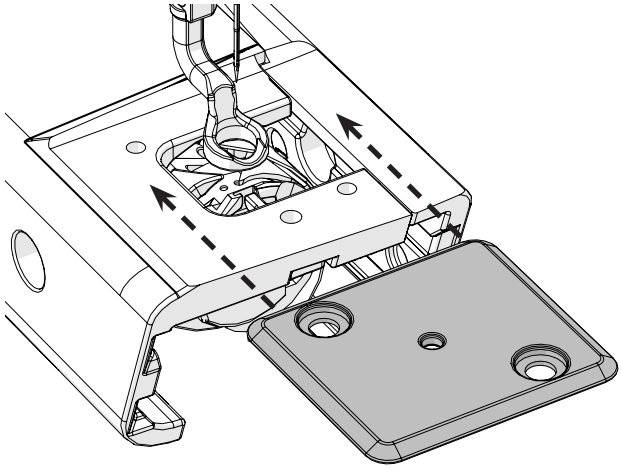
Installation Instructions

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

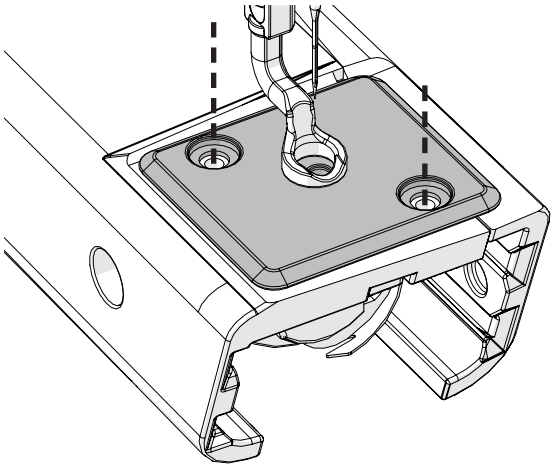
1. Power off the machine. Raise the needle to the highest position using the **hand wheel**.



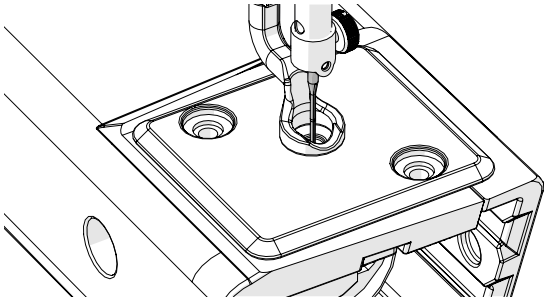
2. Slide the **needle plate** (shown in gray) onto the machine.



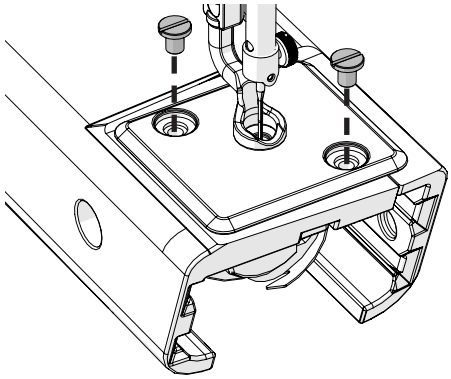
3. Align the screw holes on the needle plate with those on the machine.



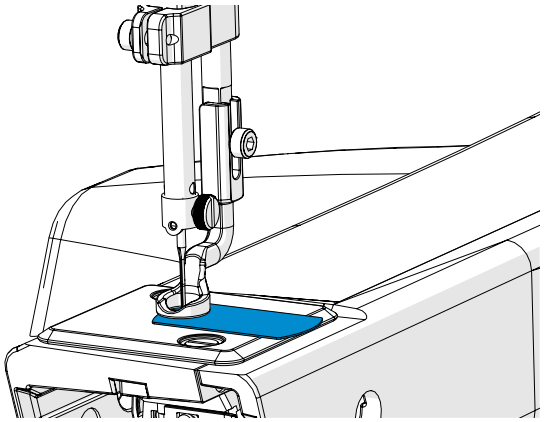
4. Slowly lower the needle with the hand wheel. The needle should slide into the center hole without contacting the needle plate.



5. 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.



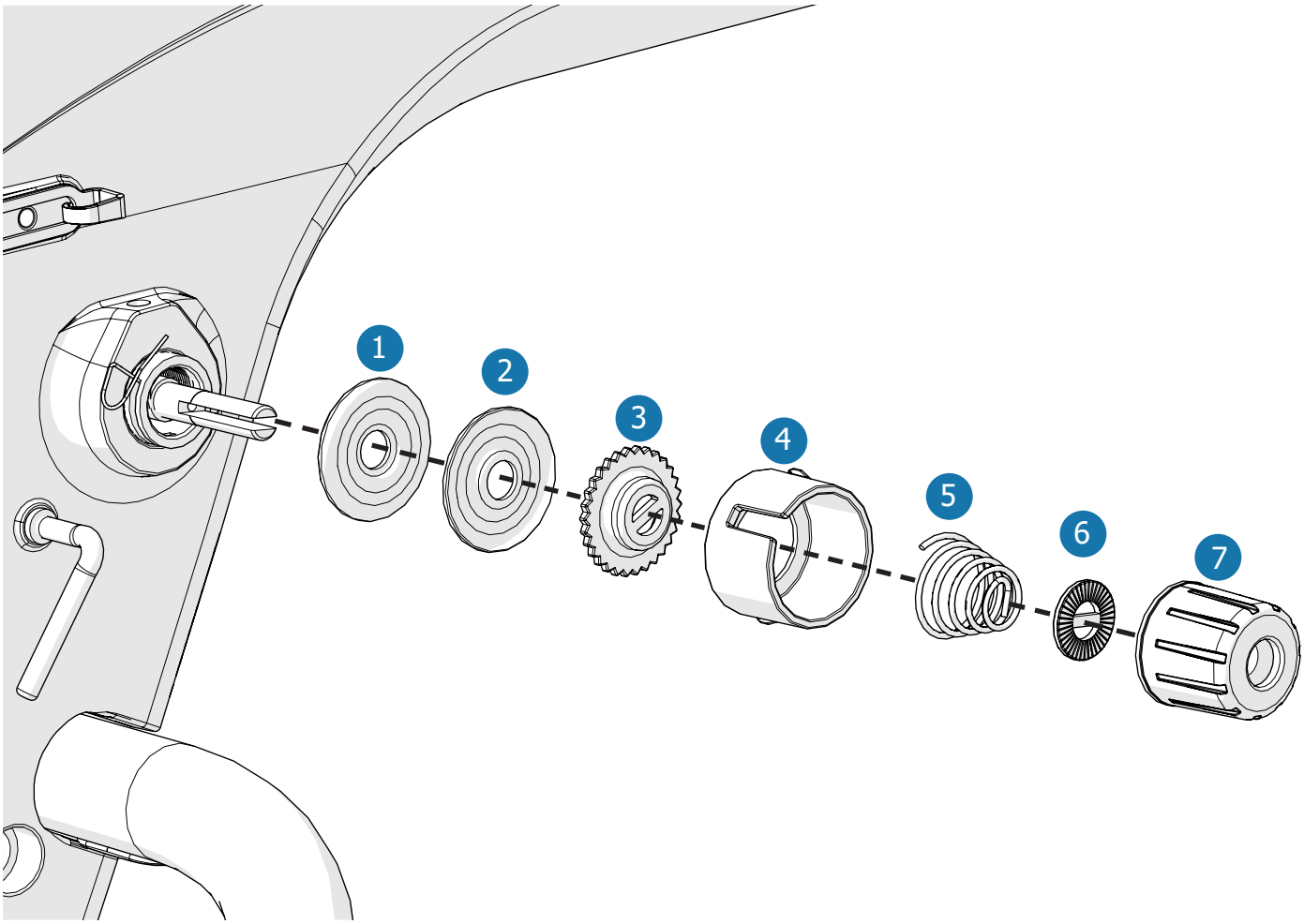
6. Adjust the hopping foot height by following the steps on page 75.



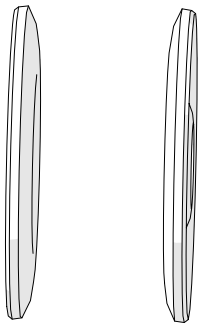
Re-assembling the Thread Tensioner

Instructions

If you over-loosen the large thread tensioner knob, the tensioner might come apart and need to be re-assembled. To reassembly the thread tensioner, line up the parts in the order shown below and screw the knob back onto the machine.



1. Tensioner Disc
2. Tensioner Disc
3. Meter Key
4. Meter
5. Spring
6. Keyed Washer
7. Knob



Note: Place the tension discs so the curved sides face each other.

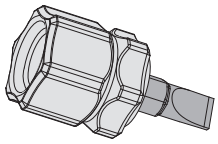


Note: Install the keyed washer so the grooved side faces toward the knob.

Reinstalling the Anti-Backlash Spring

Parts & Tools Needed:

Flat-head Screwdriver

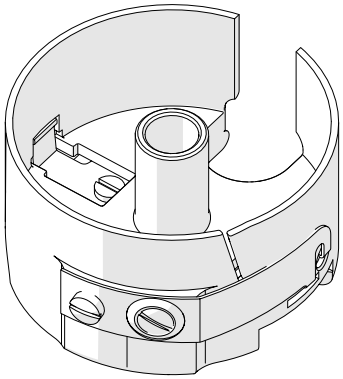


Tools Box

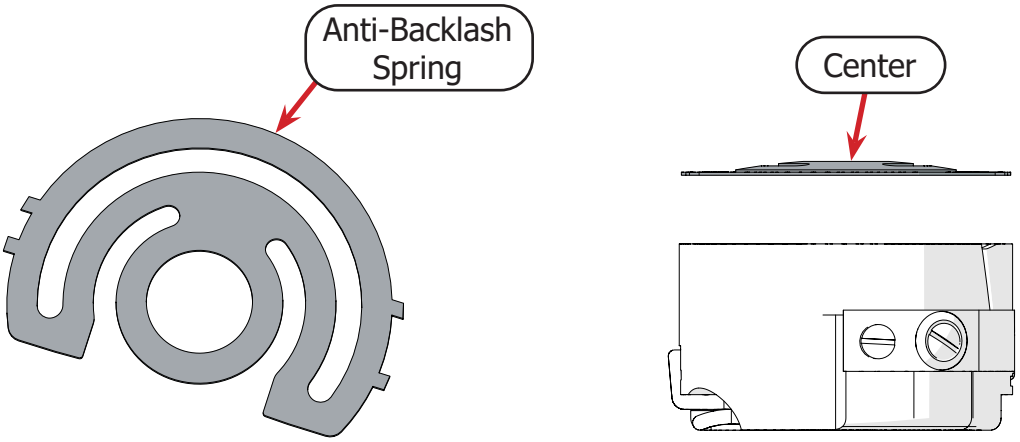
Instructions

Take the following steps to reinstall or replace the anti-backlash spring in the bobbin case:

1. Lay the bobbin case face down so that the opening is facing up.

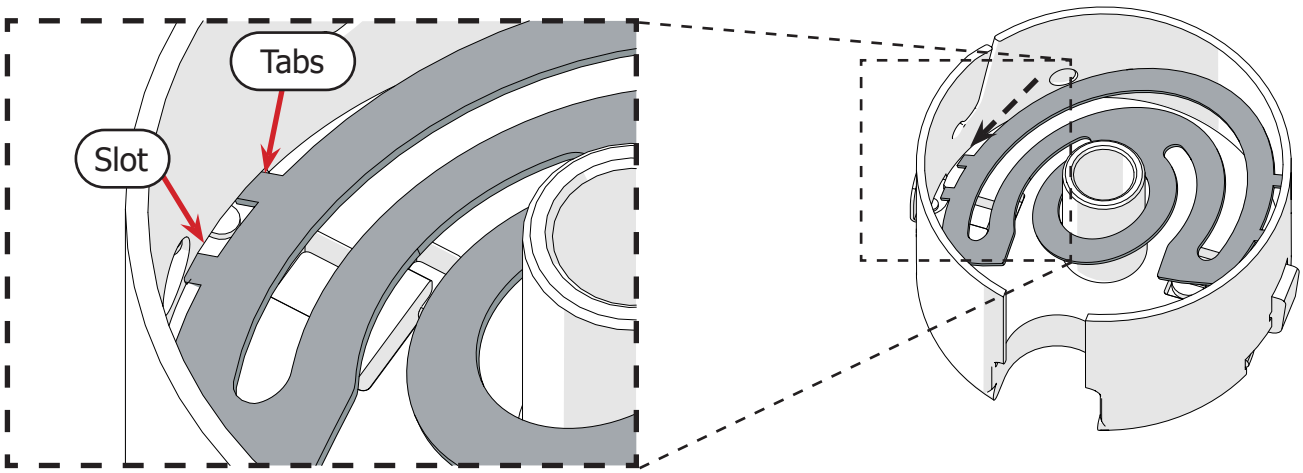


2. Position the **anti-backlash spring** so that the **center** section is raised above the outside of the spring.

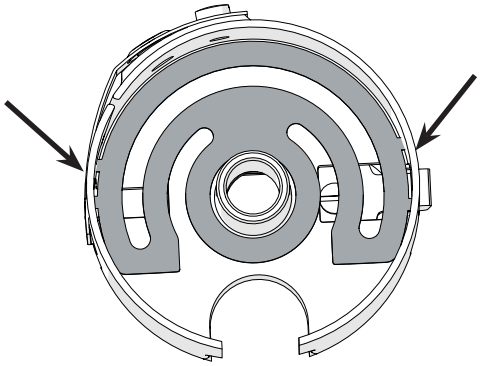


Reinstalling the Anti-Backlash Spring (continued)

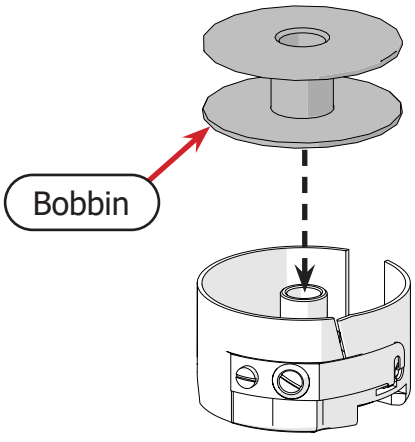
3 Place the spring inside the bobbin at an angle and press the **tabs** that are closer together into their **slot** on the side.

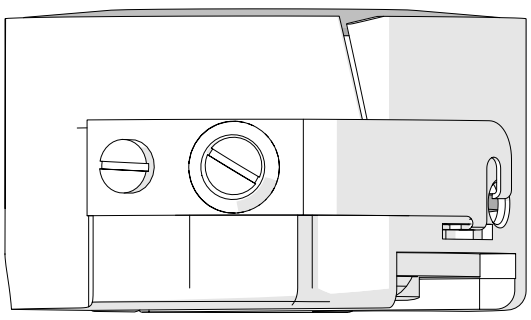


4 Press the other side of the spring down and insert the other tabs on the other side. Use the small flat-head screwdriver to make sure all four tabs are fully secured.



5 Place the **bobbin** in the bobbin case. The anti-backlash spring should hold the bobbin so that it barely pokes out of the opening of the bobbin case.





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:** 1-801-485-6688
- **Email:** support@graceframe.com

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

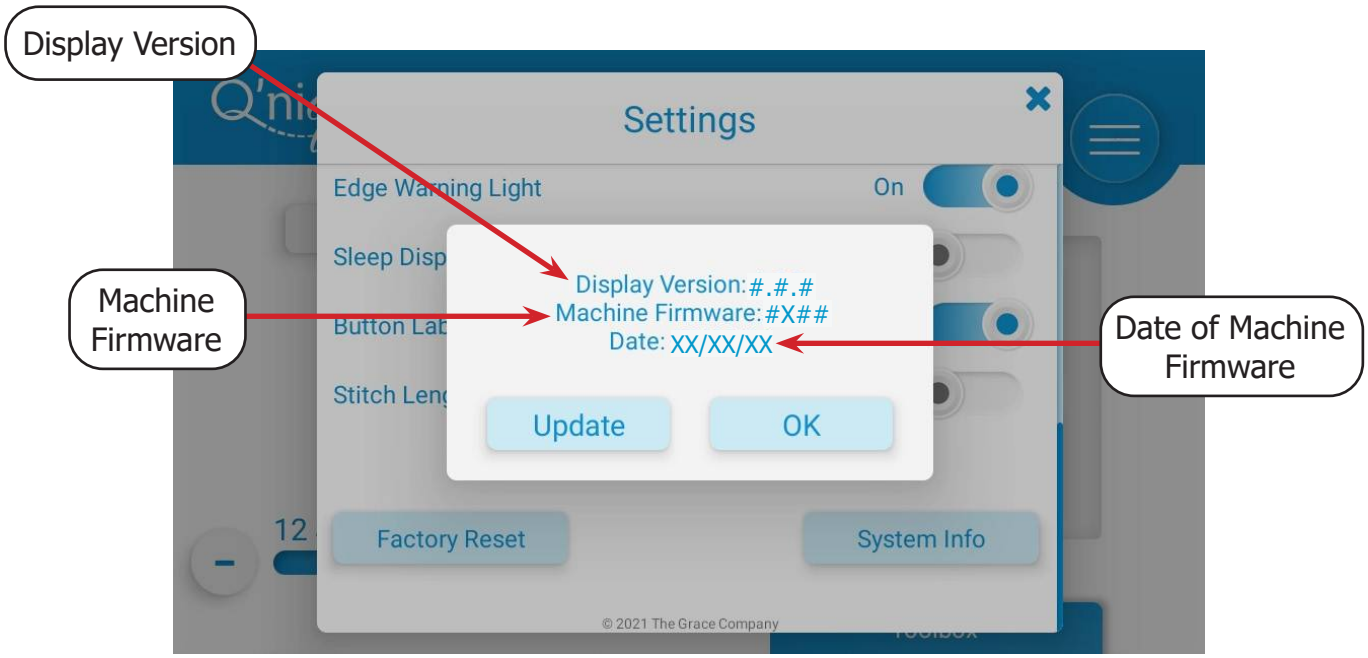
Updating the Software .....page 86

Replacing the Encoder Spring .....page 89

Reinstalling the Hook Holder .....page 92

Updating the Software

The firmware versions for the machine motor and the touch display are found by pressing the **System Info** button at the bottom of the Settings screen (see page 41).

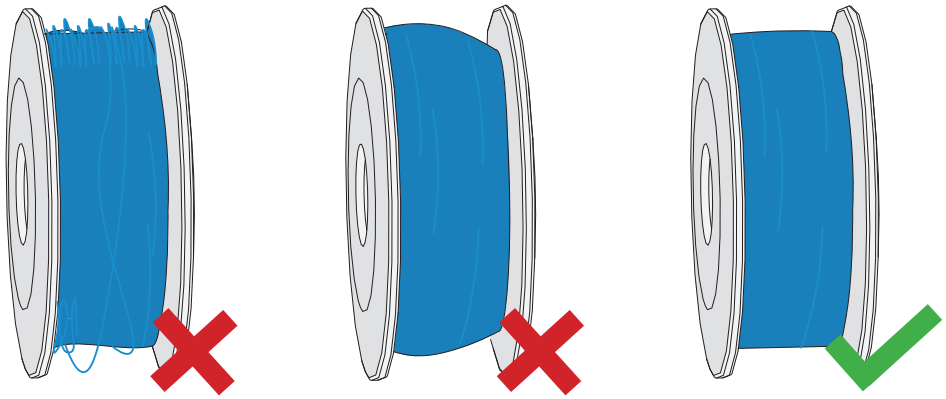


The following information and options appear:

- **Display Version:** Shows the latest software version for the touch display.
- **Machine Firmware:** Shows the latest firmware version for the machine.
- **Date:** Shows the date when the machine firmware was last updated.
- **Update Button:** Checks to see if an SD card with an available software update has been inserted into the display. If an update is detected, the display or machine updates to the newest version.
- **OK Button:** Closes the information window.

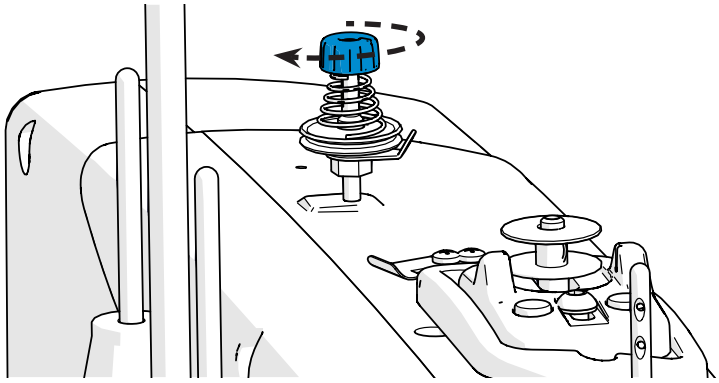
Troubleshooting the Bobbin Wind

A quality bobbin wind is essential for a properly functioning machine and for setting your baseline thread tension. The thread on the bobbin should be smooth and evenly wound. The threads should be tightly packed together.



Bobbin Wound Too Loose

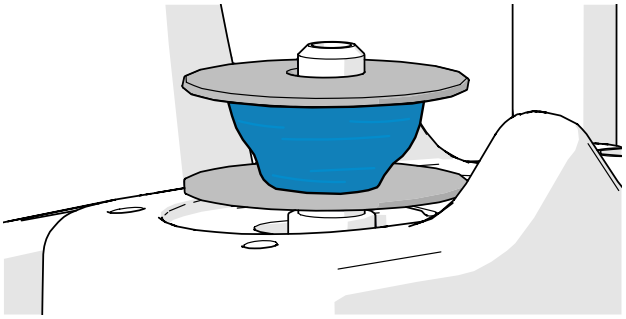
The tension of the bobbin wind is determined by the bobbin thread tensioner. Turn the knob one full rotation clockwise and test the bobbin wind. Repeat until the bobbin winds tightly and smoothly.

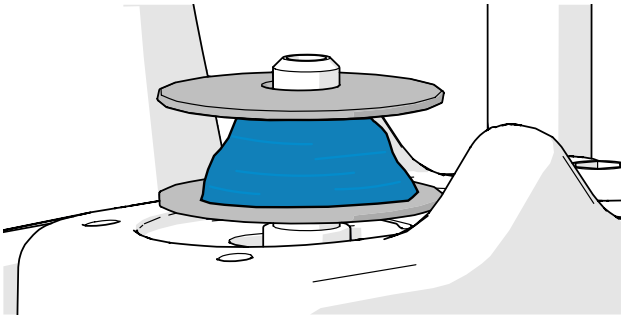


Bobbin is Filling to One Side

If the bobbin is filling to one side, the bobbin thread tensioner is positioned incorrectly and needs to be adjusted.

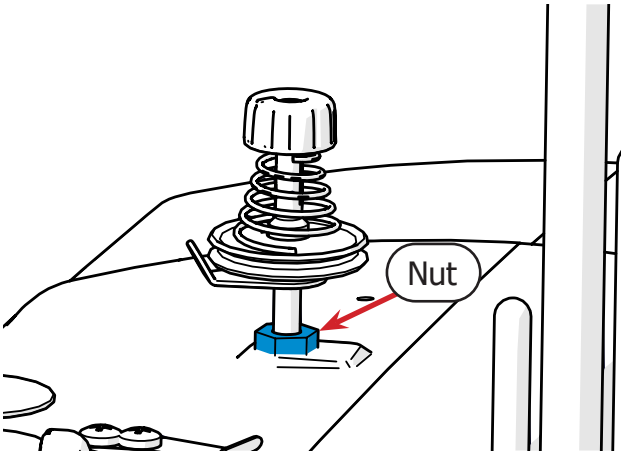
1. Determine the whether the bobbin is filling more toward the top or the bottom.



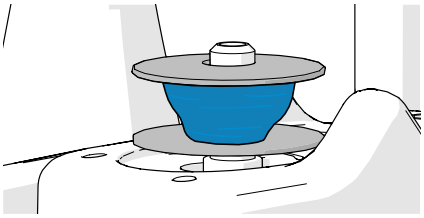


Troubleshooting the Bobbin Wind (continued)

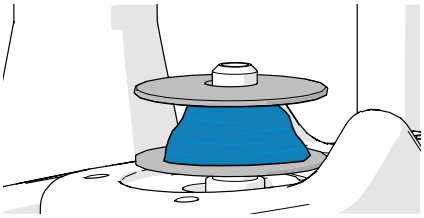
2 Unthread the bobbin thread tensioner. With a 7 mm wrench or needle-nose pliers, loosen the **nut** at the base of the tensioner.



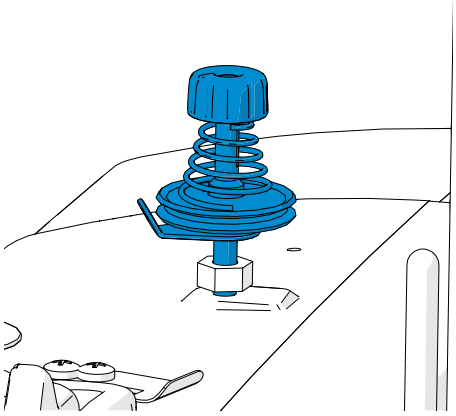
3 Turn the top part of the tensioner assembly (shown in blue) a full rotation to adjust the height of the tension discs.



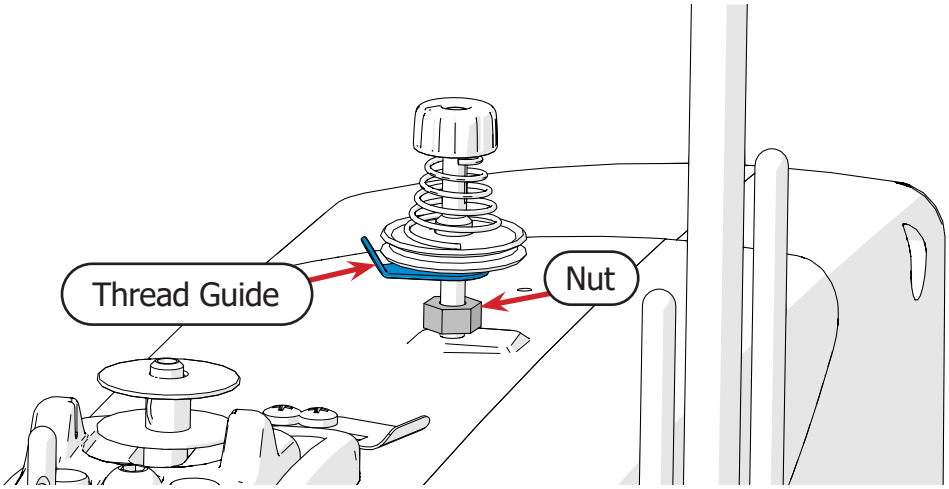
If the bobbin is filling more toward the top, turn the tensioner one full rotation clockwise and test.



If the bobbin is filling more toward the bottom, turn the tensioner one full rotation counter-clockwise and test.



4 Once the bobbin is filling correctly, re-tighten the **nut**. Make sure the **thread guide** is on the correct side of the tensioner assembly.

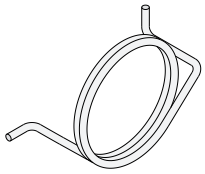


Replacing the Encoder Spring

Speak to a Grace Company support technician before attempting these instructions.

Parts & Tools Needed:

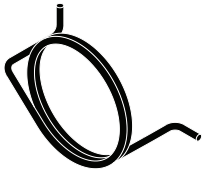
Upper Encoder Spring (Silver)



Encoder Box

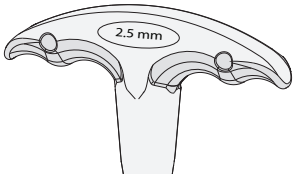
OR

Lower Encoder Spring (Black)



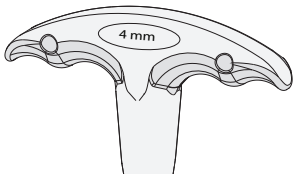
Encoder Box

T-handle Allen Wrench 2.5 mm



Tools Box

T-handle Allen Wrench 4 mm



Tools Box

Instructions

If the encoder spring is over-tensioned, it might 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:

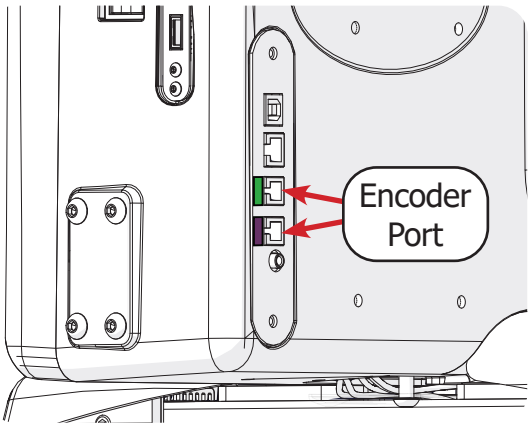


Upper Encoder: Attached to the wheel on the machine. Use the silver spring.

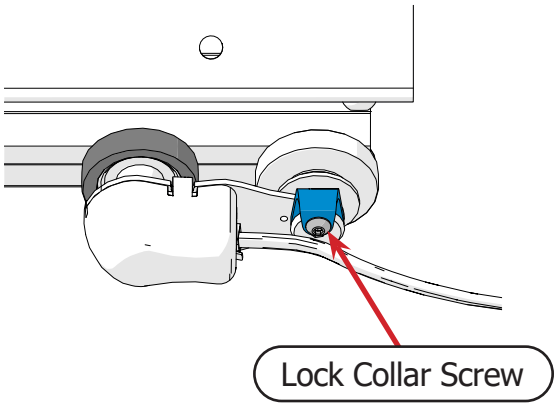


Lower Encoder: Attached to the wheel on the bottom carriage. Use the black spring.

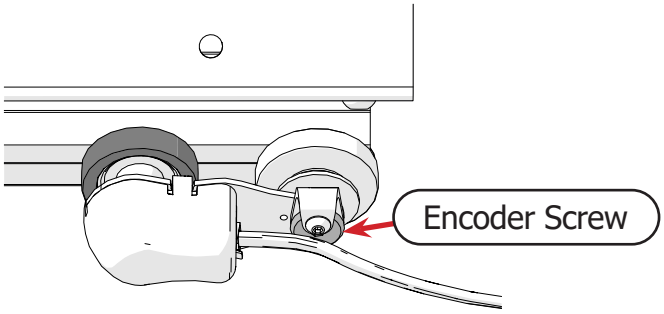
2. Unplug the encoder cable from the machine.



3. Loosen the **lock collar screw** with the 2.5 mm Allen Wrench until the **lock collar** (shown in blue) can twist freely.

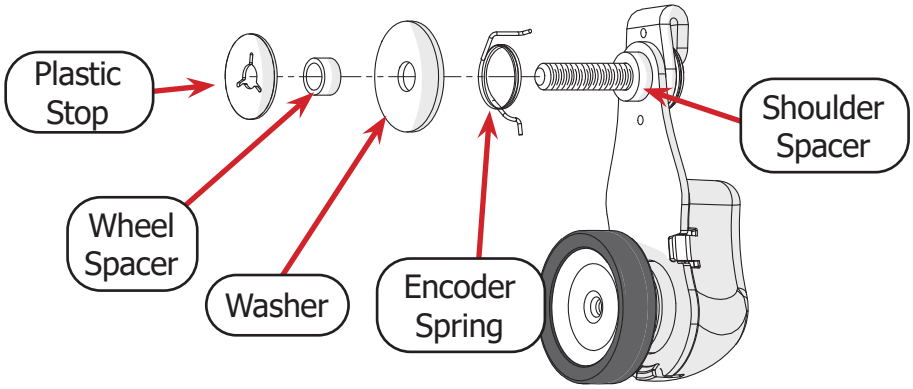


4. Use the 4mm Allen wrench to loosen the **encoder screw** and remove the encoder and wheel.

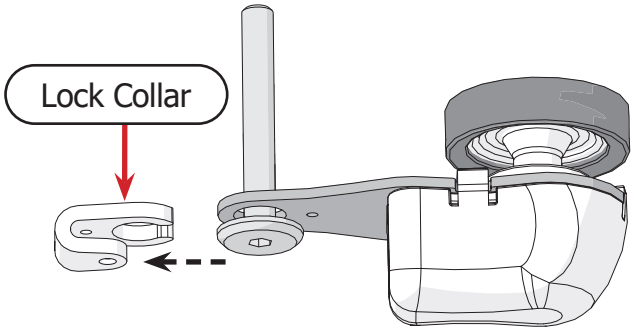


Replacing the Encoder Spring (continued)

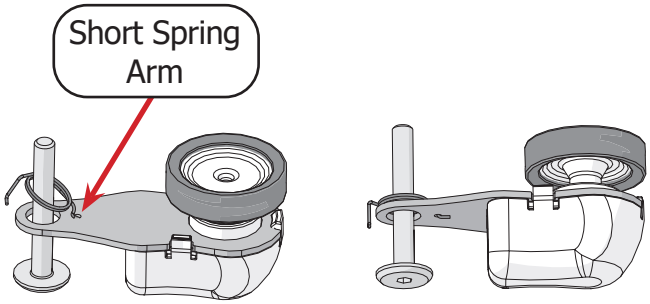
5 Remove the **plastic stop**, **wheel spacer**, **washer**, broken **encoder spring,** and **shoulder spacer** from the encoder.



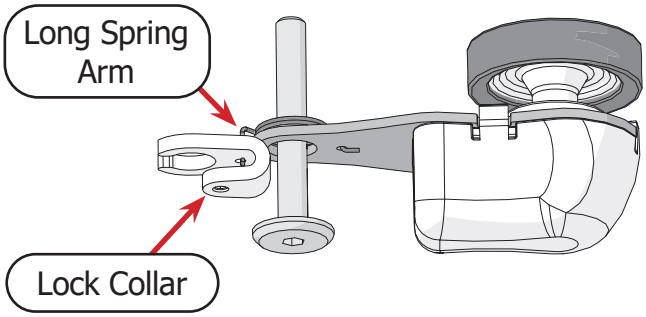
6 Pull on the **lock collar** to remove it from the encoder screw.



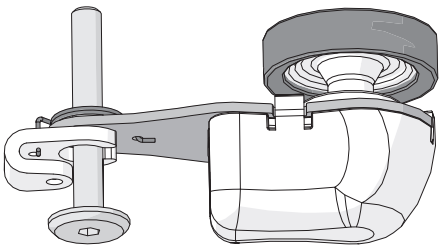
7 Place the replacement spring over the encoder screw, and insert the **short arm** of the spring all the way through the hole on the encoder base.



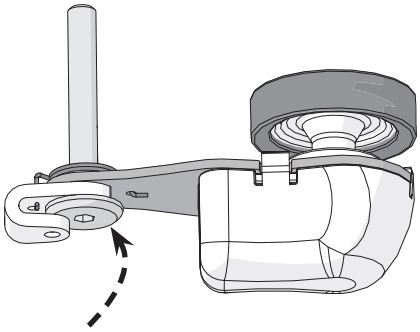
8 Place the **long arm** of the encoder spring arm into the hole on the encoder **lock collar**.



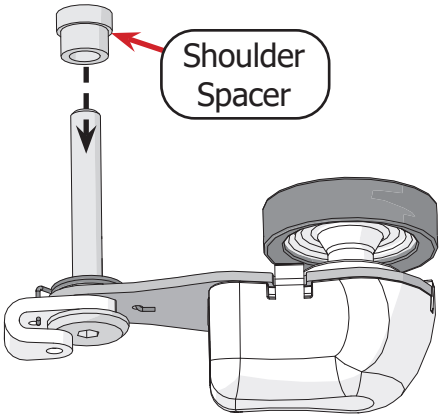
9 Without allowing the arm to slip out of the lock collar, rotate the collar until it wraps around the encoder bolt.



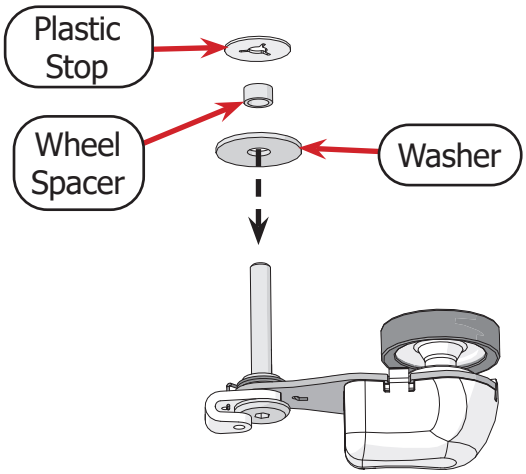
10 Adjust the screw and lock collar so the head of the screw slides in between the lock collar.



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 18.



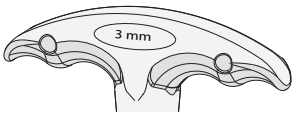
For the lower encoder (black spring) assembly instructions, see page 2.

Reinstalling the Hook Holder

Speak to a Grace Company support technician before attempting these instructions.

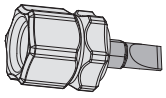
Parts & Tools Needed:

T-handle Allen Wrench 3 mm



Tools Box

Flat-head Screwdriver

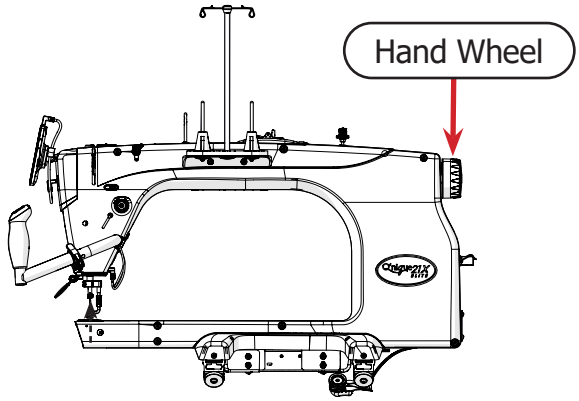


Tools Box

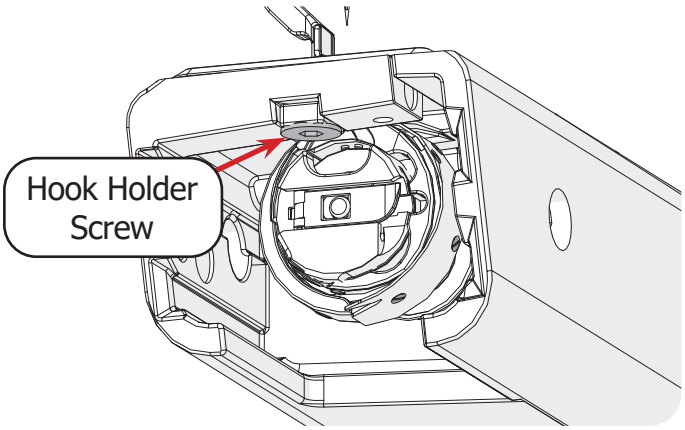
Removal Instructions

The hook holder keeps the hook assembly in place. Do not attempt to remove or reinstall the hook holder unless instructed to by a Grace Company support technician. If done incorrectly, major machine problems can result.

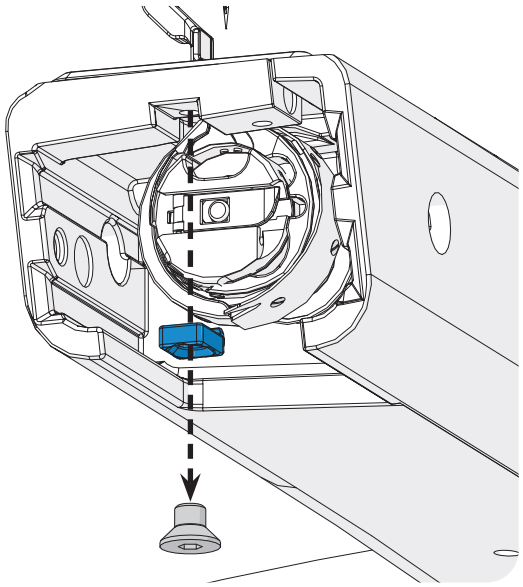
1. Turn off the machine.
2. Rotate the **hand wheel** to raise the needle to the highest point.



3. With the 3mm Allen wrench, remove the **hook holder screw** that attaches the hook holder to the machine.

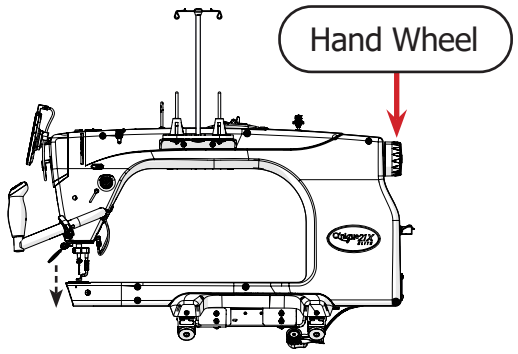


4. Remove the **hook holder** (shown in blue) from the hook assembly.

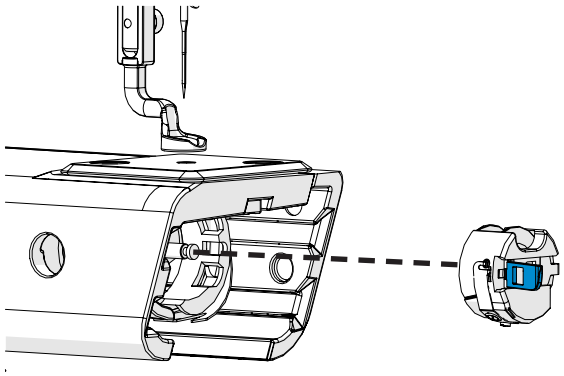


Installation Instructions

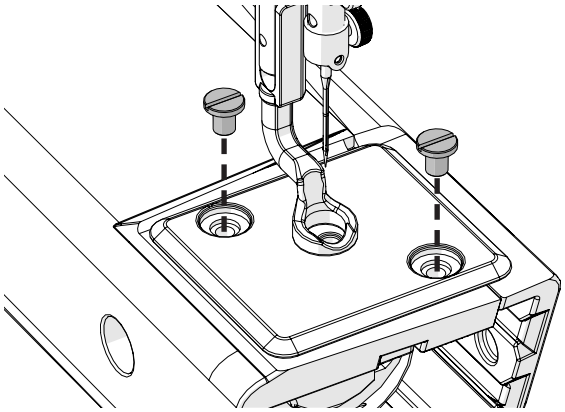
1. Turn off the machine.
2. Rotate the **hand wheel** to raise the needle to the highest point.



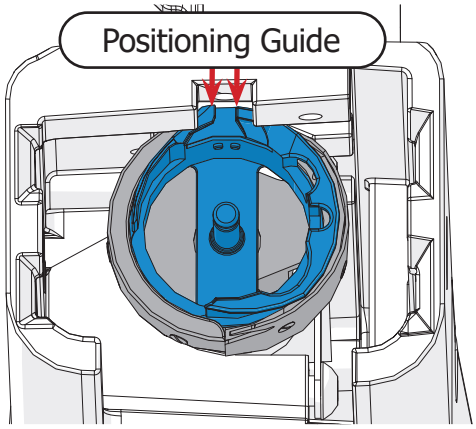
3. Remove the bobbin case (see "Task 11 - Loading the Bobbin Case" on page 30).



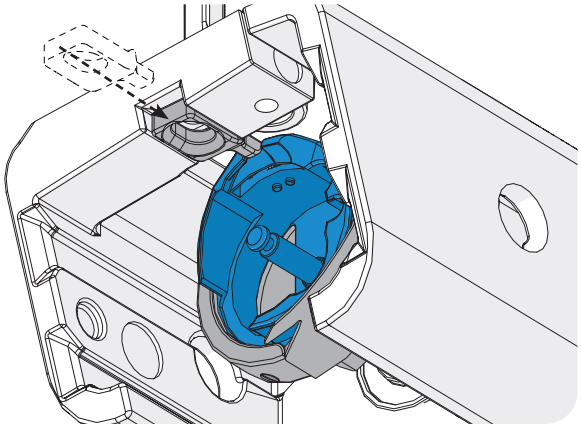
4. Remove the needle plate using the flat-head screwdriver (see "Reinstalling the Needle Plate" on page 80).



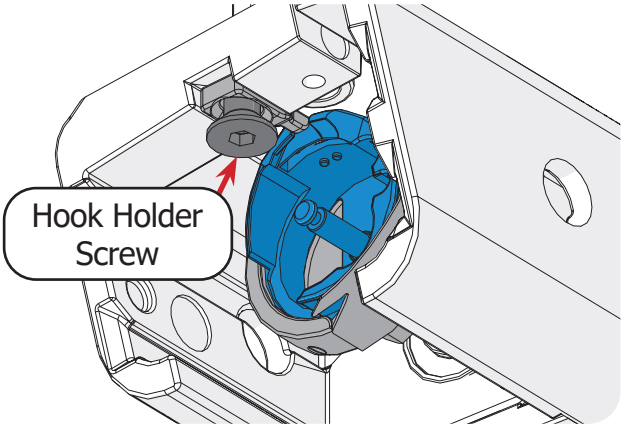
5. Turn the inside part of the **hook assembly** (shown in blue) so that the **positioning guide** is at the highest point.



6. Slide the finger of the **hook holder** (shown in gray) into the middle of the hook assembly's positioning guide.

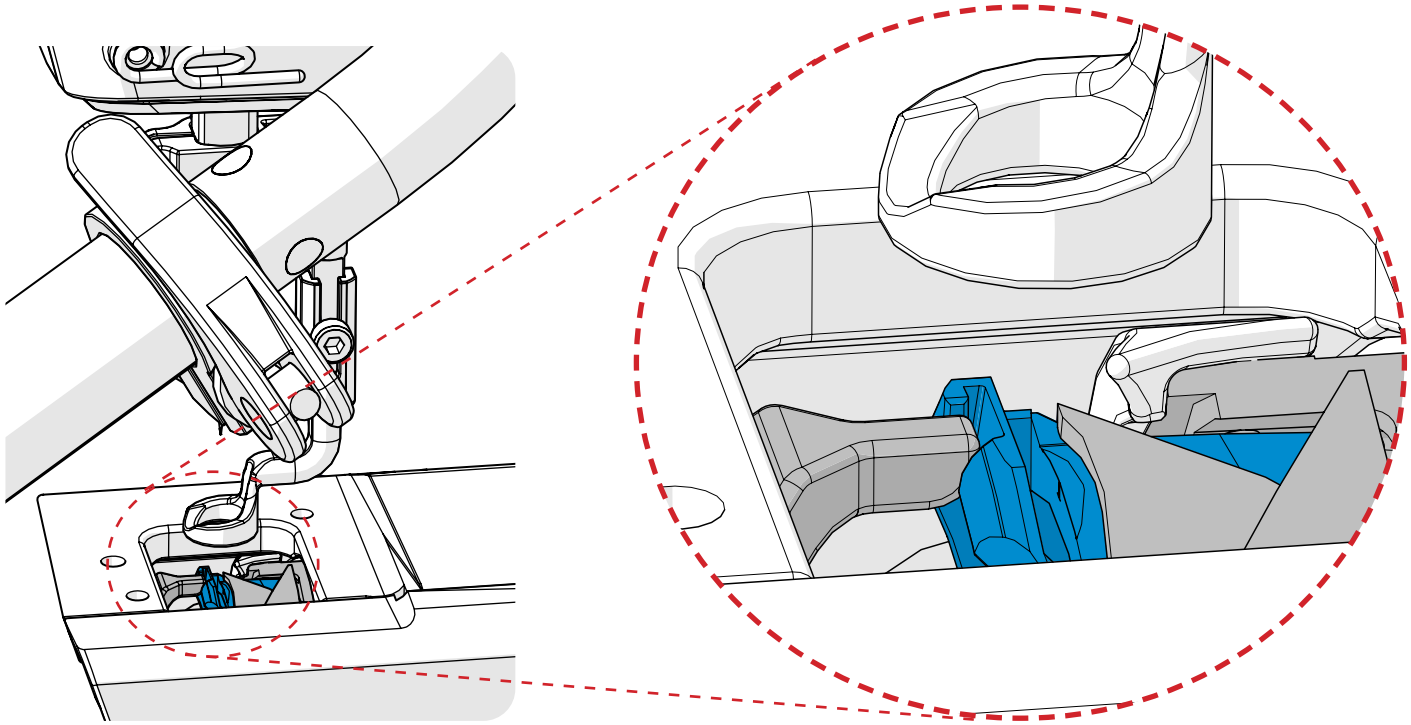


7. Attach the hook holder loosely with the **hook holder screw**. Do not tighten.

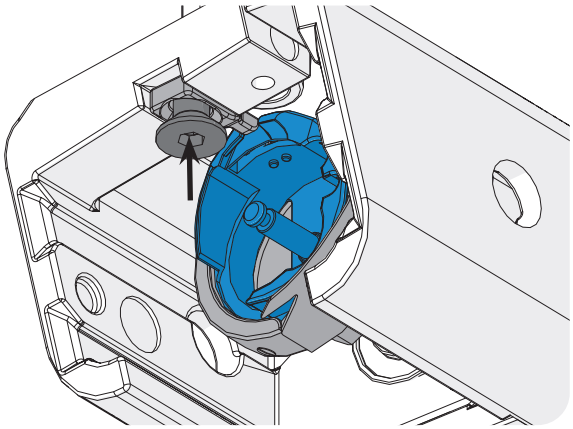


Reinstalling the Hook Holder (continued)

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

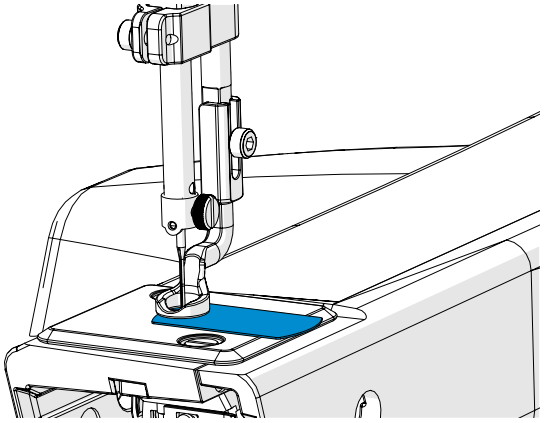


9 Tighten the hook holder screw to fasten the hook holder in place. The inside part of the hook assembly should no longer rotate freely by hand.



10 Reinstall the needle plate by following the steps on page 80.

Adjust the hopping foot height by following the steps on page 75.



Appendix

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

Choosing Your Needle ..... **page 96**

Choosing Your Thread ..... **page 98**

Choosing Your Fabric and Batting ..... **page 100**

Troubleshooting Guide ..... **page 101**

Index ..... **page 103**

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:

- Purchase needles directly from Graceframe.com. Needles from other sources might be poorly manufactured, leading to skipped stitches, breaking thread, and other thread tension problems.
- 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:

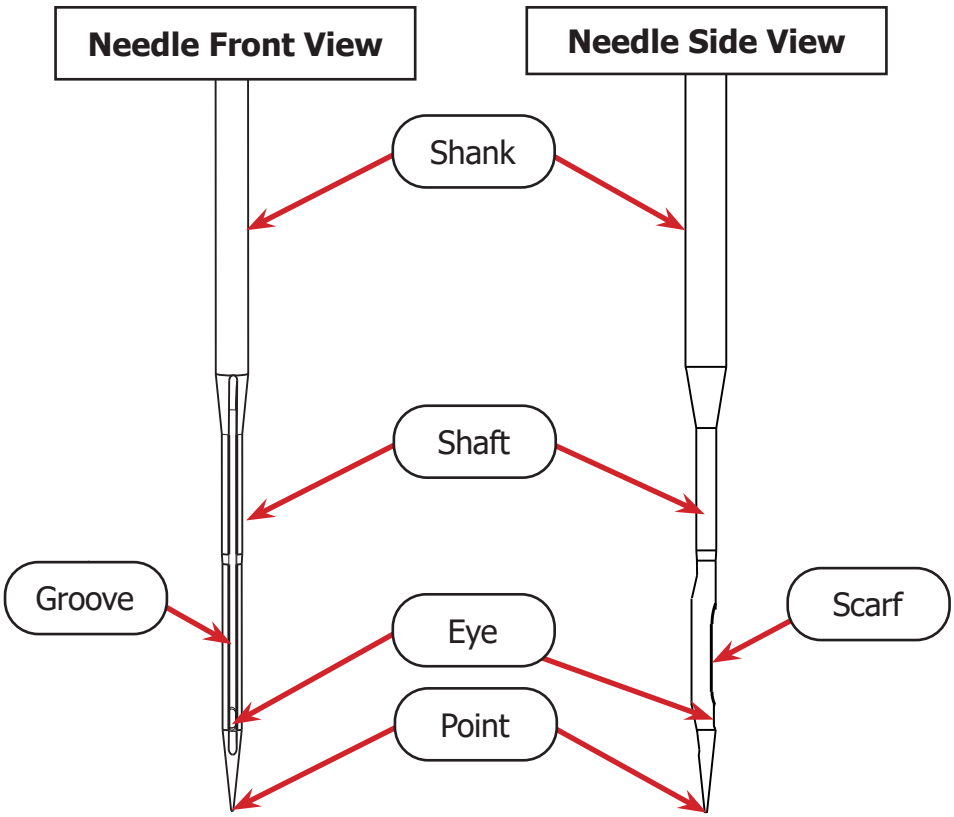
- DPX5 MR
- 134 MR
- 1955 MR

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

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 "Task 12 - Threading the Machine" on page 32). It holds its color well over time (colorfastness), and uses long fibers (extra-long staple) that resist pilling or 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 "Task 12 - Threading the Machine" on page 32).
- 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).
- Avoid using a different thread type for the top thread than you're using for the bottom thread.

Thread Type Guide

Threads can be multiple strands, called plies, spun together, or it can be a 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

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 blends in to the fabric.
- 40 weight: Thicker thread that shows up on the fabric.

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

Tip: Not all manufacturers 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 causes 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 might rub off and build up in the 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.

Choosing Your Fabric and Batting

Fabric

Some fabrics are not recommended for use with the 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 going for. 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 the goal.
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	Causes	Solutions
Machine won't turn on.	Loose cables	Check that all cables are securely plugged in (page 23).
	Machine is not turned on	Check power button is pressed down on right side (page 23).
	If the problem persists, contact a Grace Company support technician. Call **1-801-485-6688**.	
Stitches are skipped.	Damaged needle	Check needle (page 73).
	Machine improperly threaded	Check that all tensioners and guides were threaded correctly (page 32).
	Bobbin wound or threaded incorrectly	Check that the bobbin was inserted the correct direction in the case (page 30).
	Incorrect thread tension	Adjust top thread tension (page 57). Adjust bottom thread tension (page 28).
	Hopping foot incorrect distance from needle plate	Check hopping foot height distance with height tool (page 75).
	If the problem persists, contact a Grace Company support technician. Call **1-801-485-6688**.	
Thread is breaking.	Damaged needle	Check needle (page 73).
	Incorrect thread tension	Adjust top thread tension (page 57). Adjust bottom thread tension (page 28).
	Machine improperly threaded	Check guides and tensioners for accidental double-wrapping (page 32).
	Stitching in place too long	Keep machine moving to avoid stitch build-up in one place, or switch to regulated precise quilting mode (page 44).

Troubleshooting Guide (continued)

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 30).
	Debris on tension discs	Clean the machine (page 62).
	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 80).
	If the problem persists, contact a Grace Company support technician. Call **1-801-485-6688**.	
Machine is running loud.	Machine and/or hook assembly needs oiling	Oil the machine and hook assembly (page 62).
	Bobbin winder is on	Check that bobbin is off.
	If the problem persists, contact a Grace Company support technician. Call **1-801-485-6688**.	
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 28).
	Machine improperly threaded	Check that all tensioners and guides were threaded (page 32).
	Incorrect thread tension	Adjust top thread tension (page 57). Adjust bottom thread tension (page 28).
	Bobbin case has been damaged or is missing the anti-backlash spring	Check inside bobbin case to see spring (page 83). Contact your dealer to replace if needed.
	If the problem persists, please contact a Grace Company support technician. Call **1-801-485-6688**.	

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