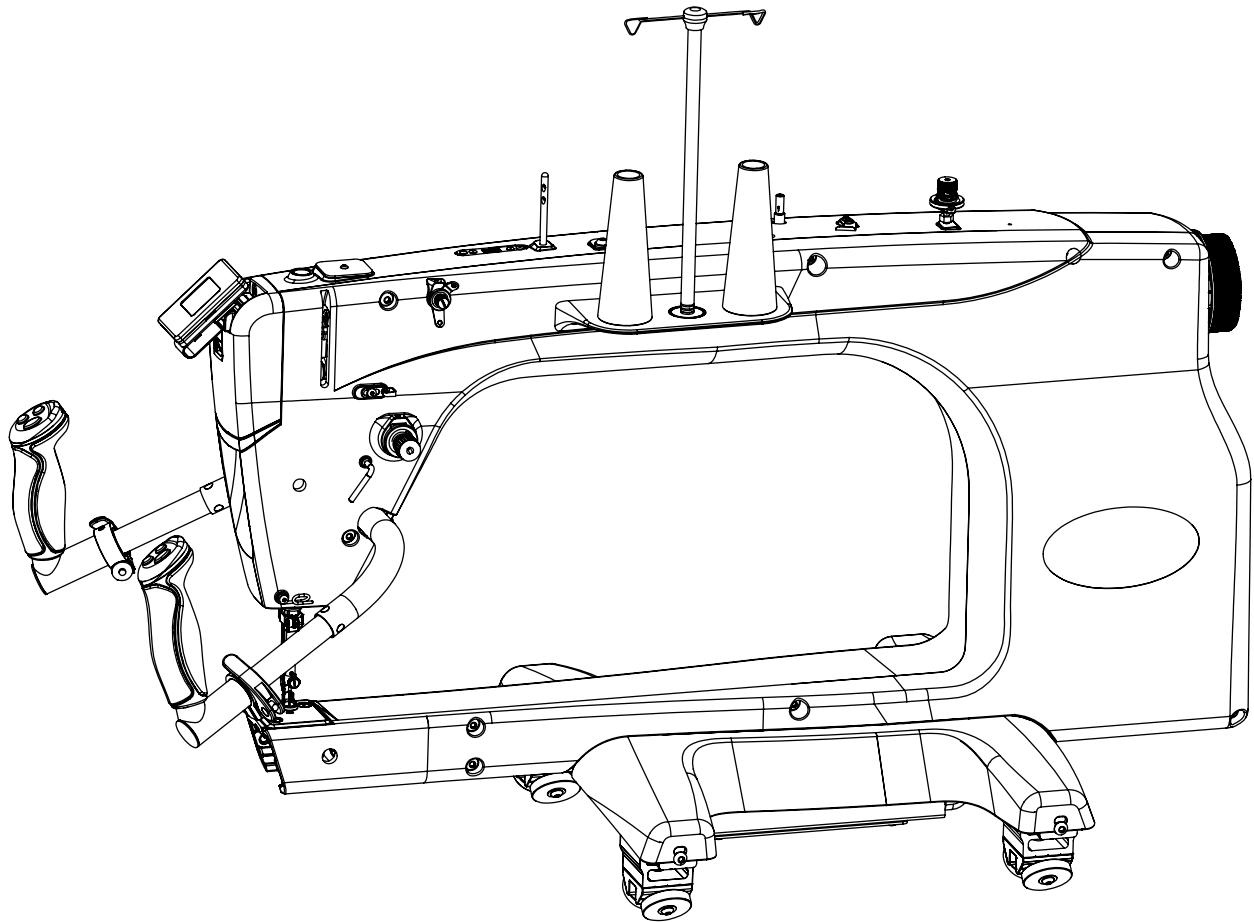


# Q'nique



## 21in Sewing Machine

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Jim M. Bagley, GraceWood, Inc  
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Version 1

MADE BY  
*Grace*

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# Safety Instructions | General Warnings

This appliance is not intended for use 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 by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

The instructions shall state the maximum power input of any lamp and its rated voltage if it is lower than the rated voltage of the appliance.

The instructions shall state the substance of the following

- Switch off or unplug the appliance when leaving it unattended
- Unplug the appliance before carrying out maintenance or replacing lamps.

The instructions for electrical sets shall indicate the sewing machines for which they are intended and shall state how they are to be installed. The appliance is only intended for the purpose described in user manual. Do not use appliance or any part of the appliance out of the intended use to avoid risk. The use of attachments which are not recommended or sold by the appliance manufacturer may cause a risk of injury to persons. Household and Indoor use only. To protect against the risk of electrical shock, do not immerse the unit, cord or plug in water or other liquid.

When using an electrical machine, basic safety precautions should always be followed, including the following:

Read all instructions before using this machine.

## **DANGER - To reduce the risk of electric shock:**

**The machine should never be left 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:**

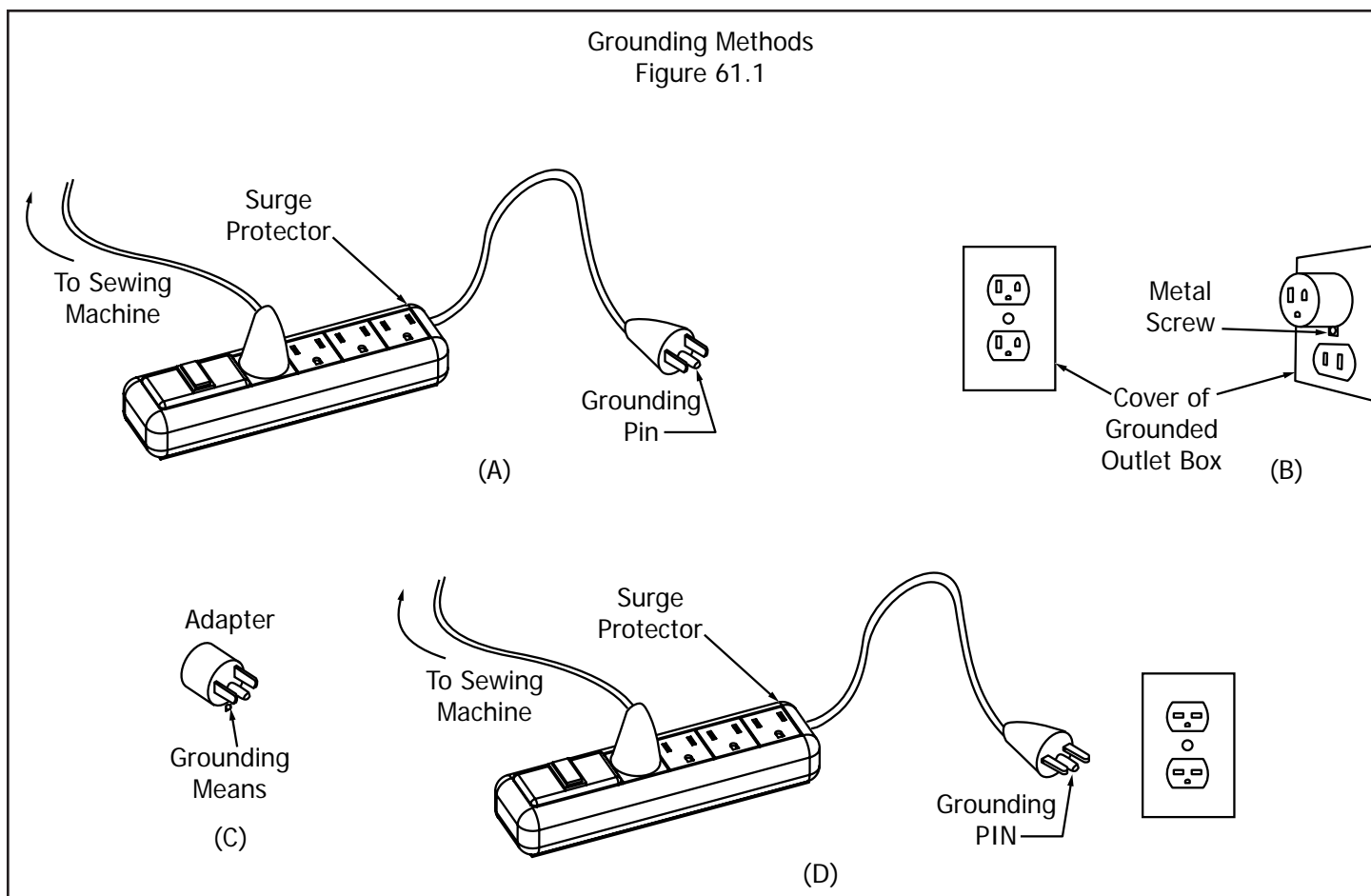
1. Do not allow this machine to be used as a toy. Close attention is necessary when this machine is used by or near children.
2. Use this machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
3. Never operate this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

**Connect this machine to a properly grounded outlet only. See Grounding Instructions.**

**SAVE THESE INSTRUCTIONS  
DO NOT DISCARD BOX OR PACKAGING**



# Safety Instructions | Grounding Instructions



## GROUNDING INSTRUCTIONS

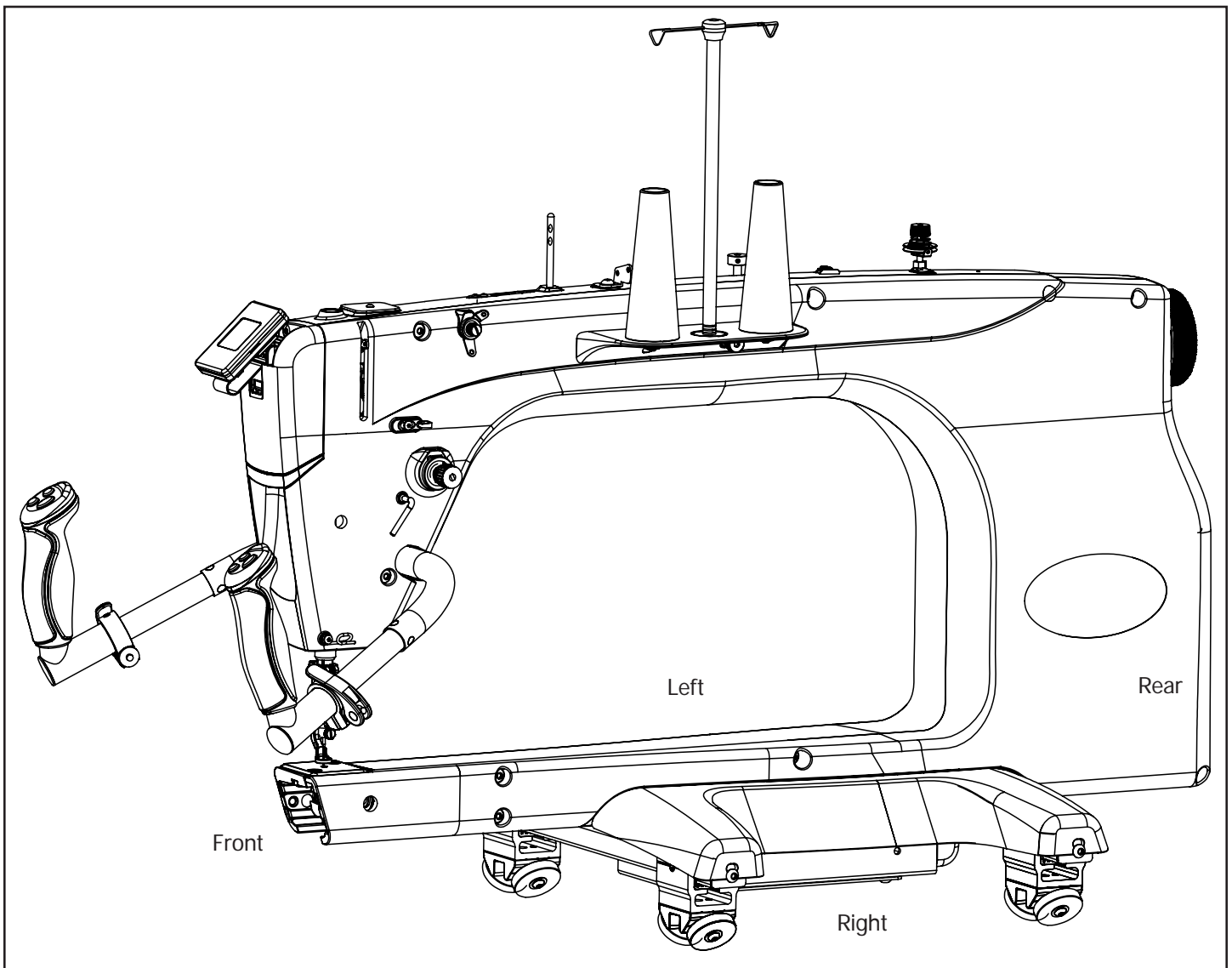
This product must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. Plug the cord from the quilting 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.

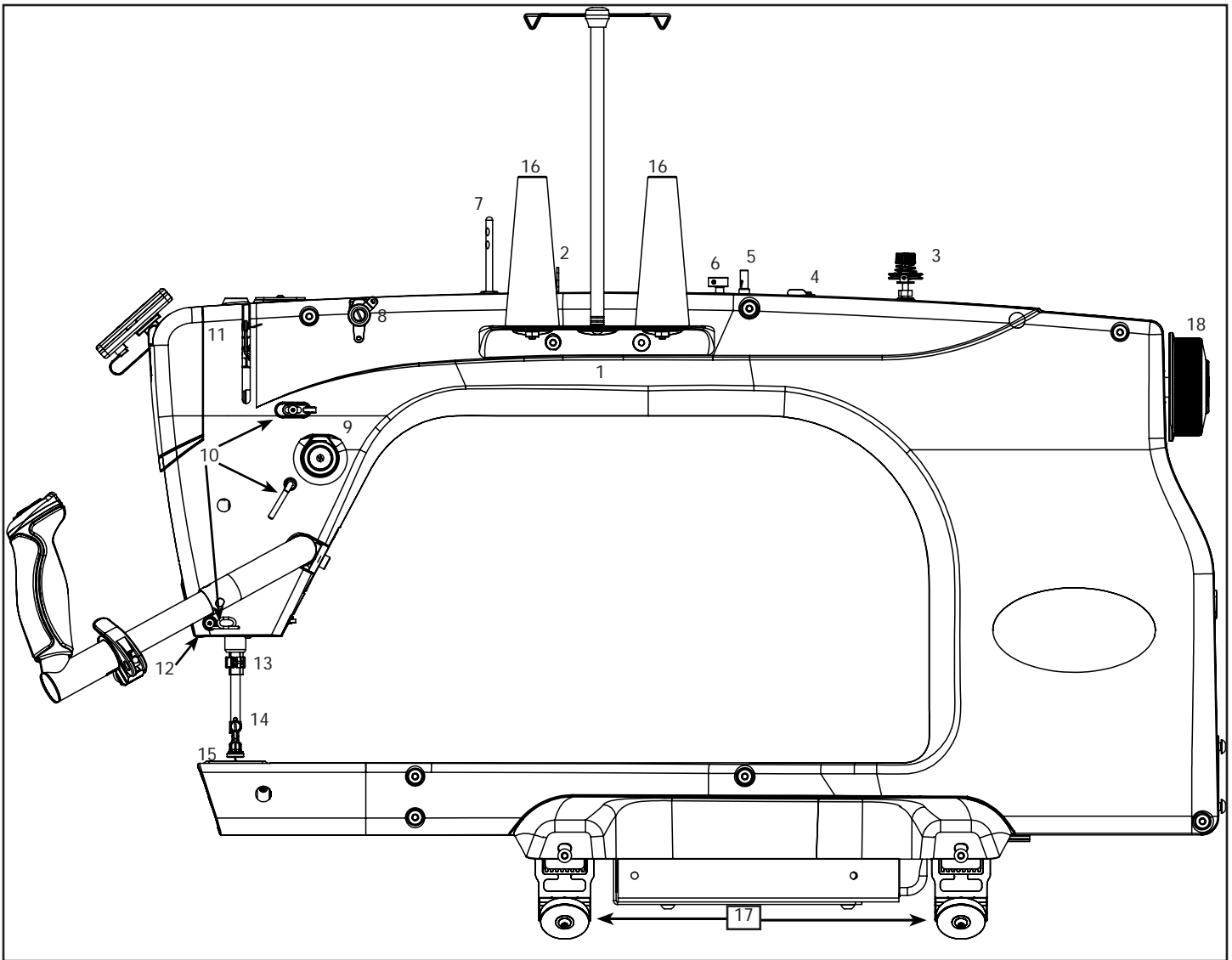
This product is for use on a nominal 120 V circuit, and has a grounding plug that looks like the plug illustrated in sketch A in Figure 61.1. A temporary adaptor, which looks like the adaptor illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adaptor 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 adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by the metal screw.

## Technical Data | Specifications

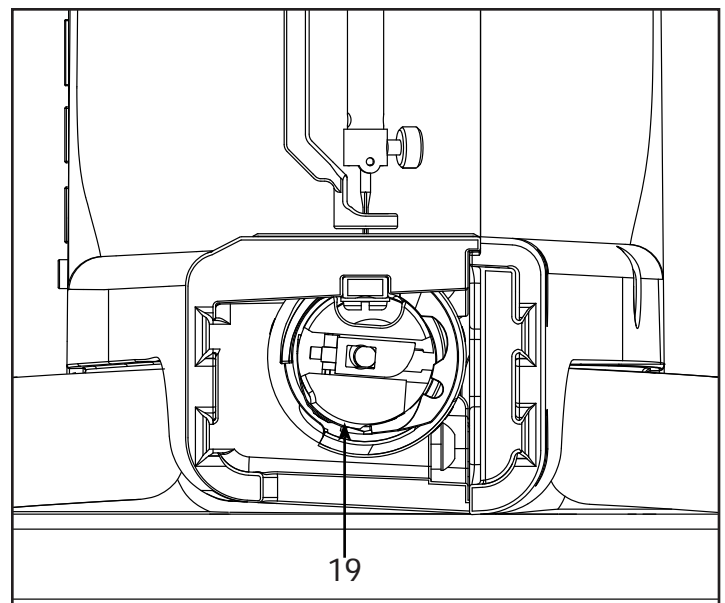


1. Height: 515 mm, 20.25"
2. Width: 395 mm, 15.5"
3. Length: 824 mm, 32.4"
4. Weight: 54 lbs.
5. Quilting Arm Length: 21" W 10.5" H
6. Maximum Stitches Per Minute: 1800
7. Minimum Stitches Per Minute: 90
8. Input Voltage: 110-220 VAC
9. Peak Power Consumption: 300 W
10. Timing Belt System
11. Bobbin Type: Large M Class
12. OLED Screen
13. Custom Ergonomic Handles and Handlebars for efficiency and extended use
14. Built in Bobbin Winder
15. Dual Thread Tension Guides, for precise tension.

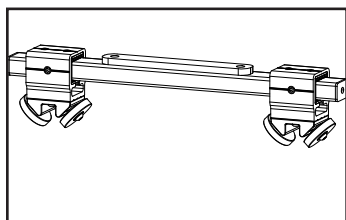
## Technical Data | Feature Overview



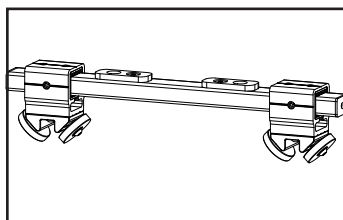
1. Thread Mast Base
2. Bobbin Thread Guide
3. Bobbin Thread Tensioner
4. Bobbin Thread Cutter
5. Bobbin Wind Stand
6. Bobbin Sensor
7. Dual Thread Tension Guide
8. Small Thread Tensioner
9. Large Thread Tensioner
10. Thread Guides
11. Take Up Lever
12. Lamp
13. Needle Bar
14. Needle
15. Hopping Foot
16. Thread Stand
17. Carriage wheels
18. Hand wheel
19. Bobbin Case



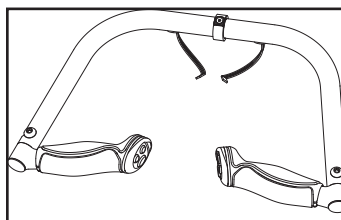
# Technical Data | Parts & Tools



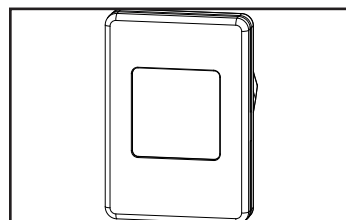
**Front Wheel Assembly**



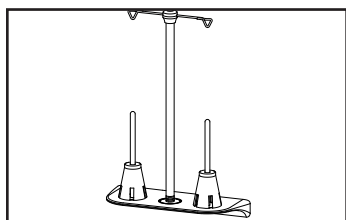
**Rear Wheel Assembly**



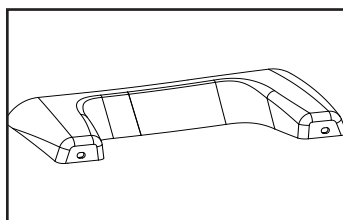
**Handle Assembly**



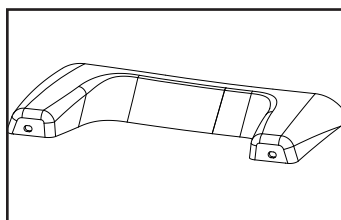
**OLED Screen with Cable**



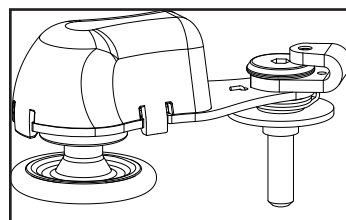
**Thread Mast Assembly**



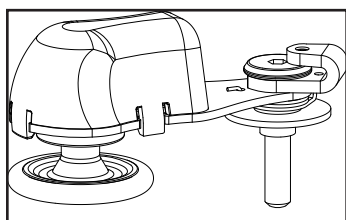
**Plastic Base - Right**



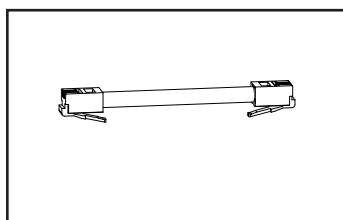
**Plastic Base Left**



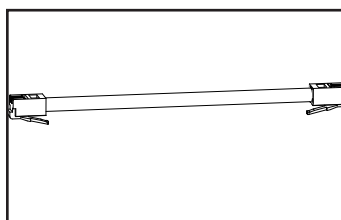
**Upper Encoder (Silver Spring)**



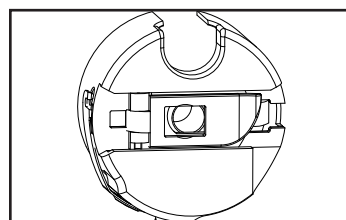
**Lower Encoder (Black Spring)**



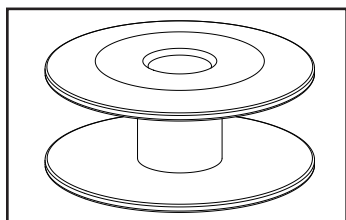
**Short Encoder Cable**



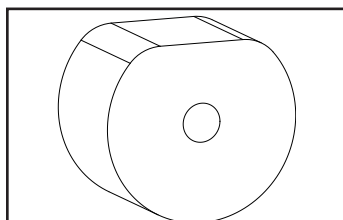
**Long Encoder Cable**



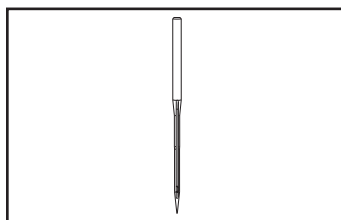
**Bobbin Case**



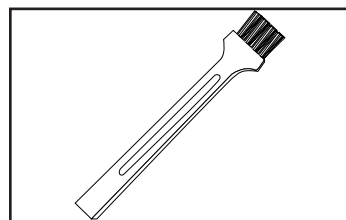
**Bobbin (3)  
(one in bag)**



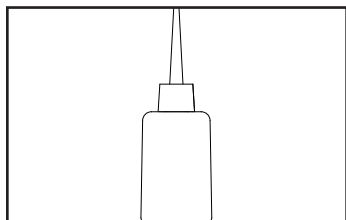
**Timing Spacer**



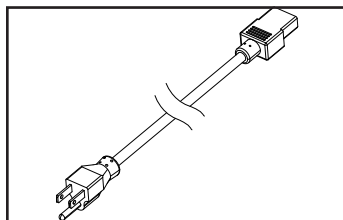
**Needle (10)**



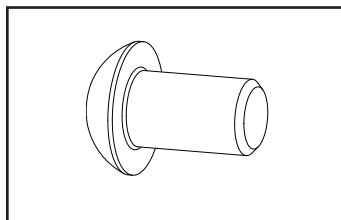
**Lint Brush**



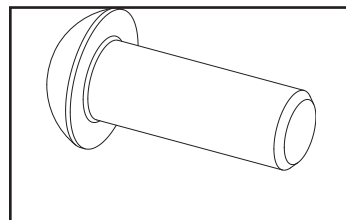
**Oil Bottle**



**Power Cord**

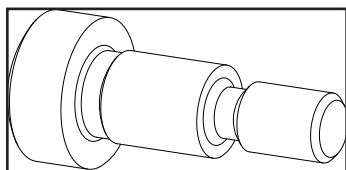


**M6 x 10mm  
SBHCS (6)**

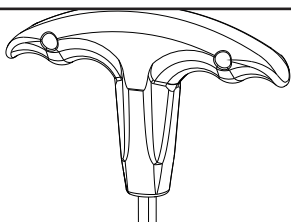


**M6 x 20mm  
SBHCS (2)**

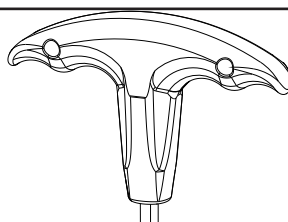
## Technical Data | Parts & Tools



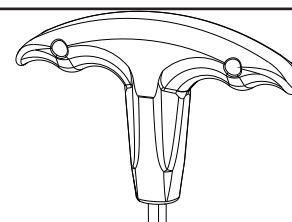
**M6 x 16mm  
Shoulder Bolt (2)**



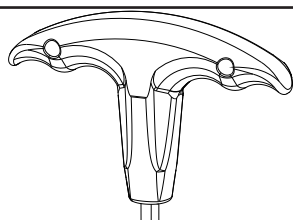
**2mm T-handle  
Allen Wrench**



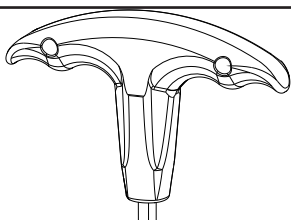
**2.5mm T-handle  
Allen Wrench**



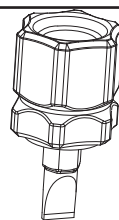
**3mm T-handle  
Allen Wrench**



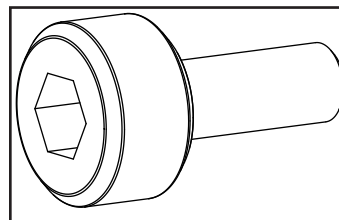
**4mm T-handle  
Allen Wrench**



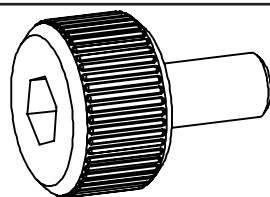
**5mm T-handle  
Allen Wrench**



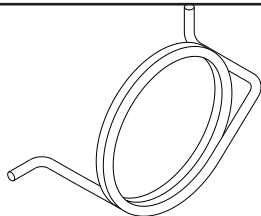
**Flat Head  
Screw Driver**



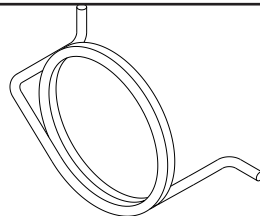
**M3 Hopping  
Foot Screw**



**M3 Thumb Screw  
(Needle Screw)**



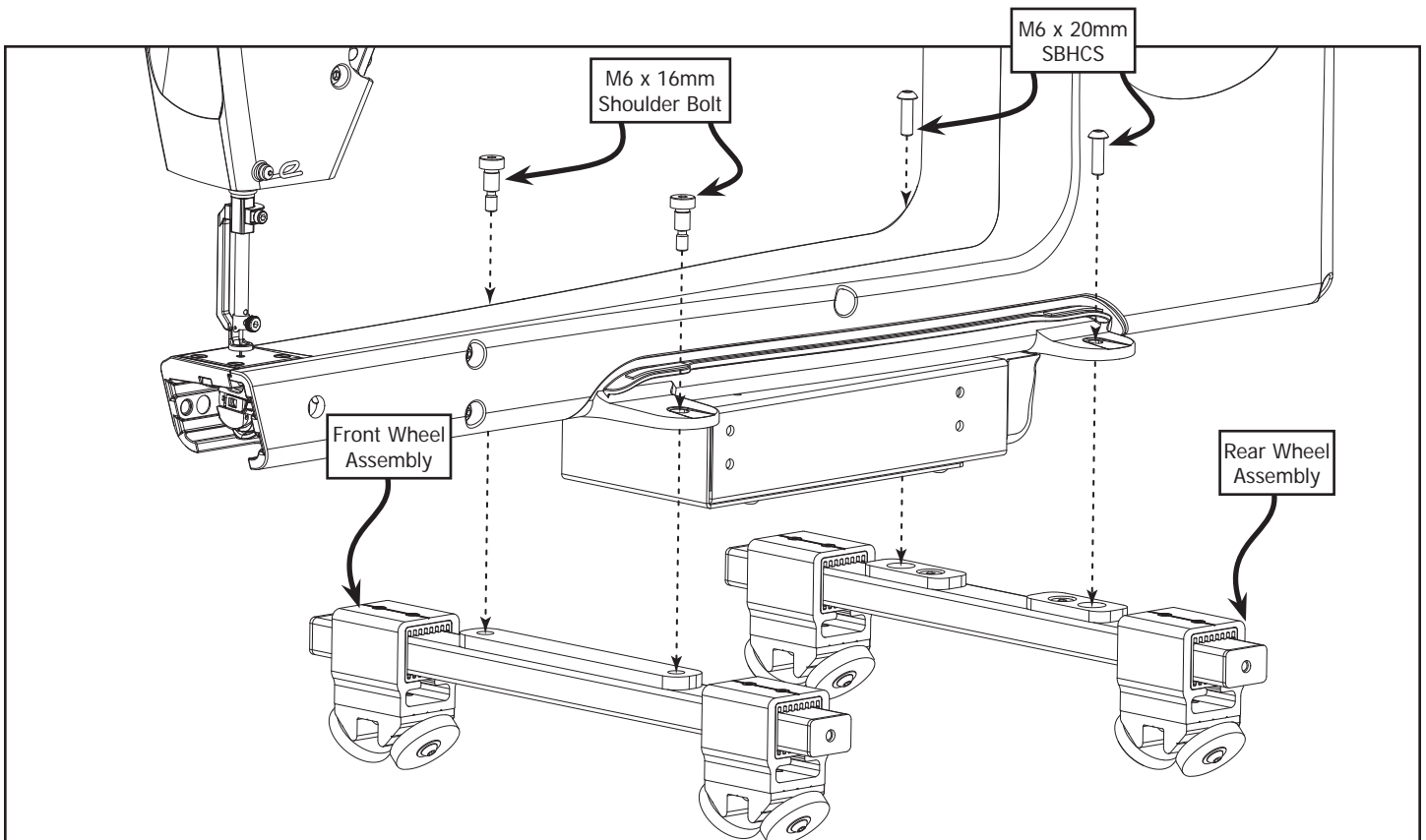
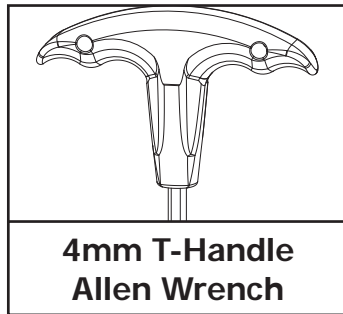
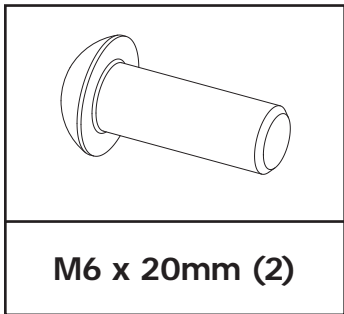
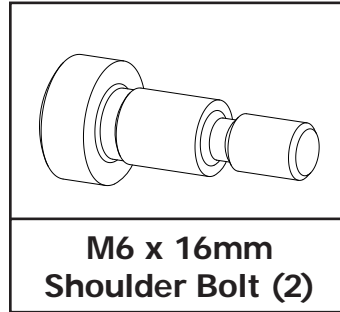
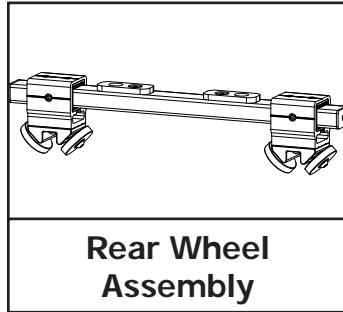
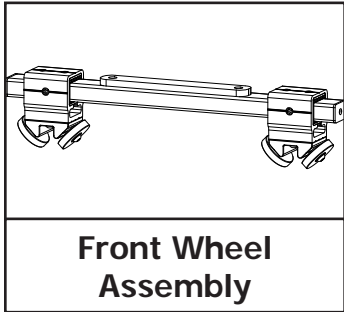
**Upper Encoder  
Spring (Silver)**



**Lower Encoder  
Spring (Black)**

# Setup & Assembly | Wheel Assembly

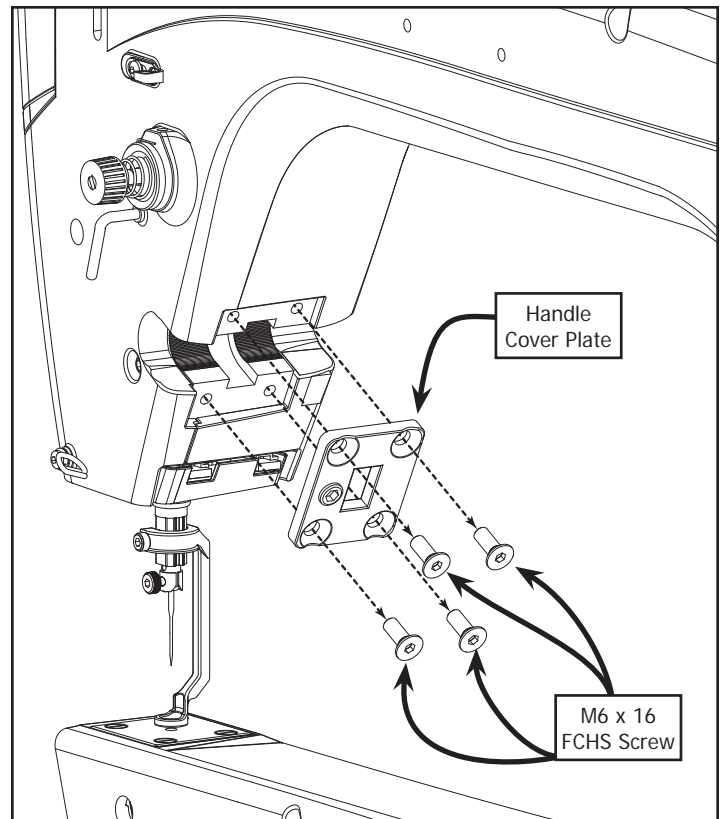
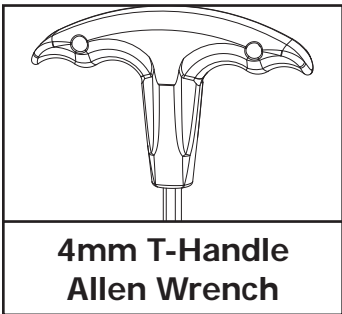
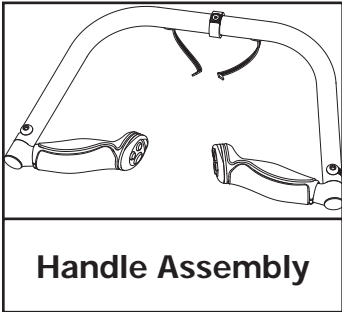
## Parts & Tools Needed:



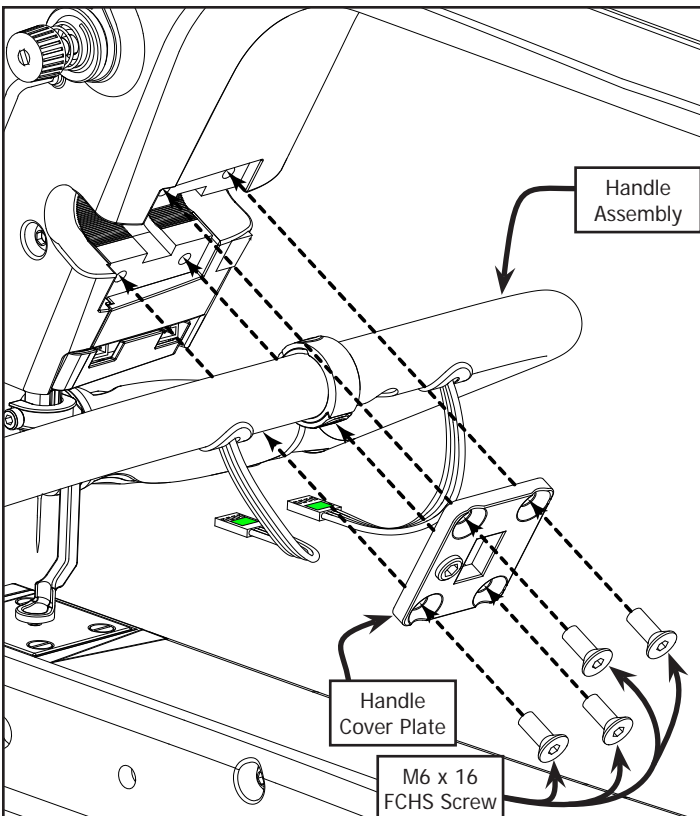
1. Attach the Front Wheel Assembly to the sewing machine using two M6 x 16mm Shoulder Bolts.
2. Attach the Rear Wheel Assembly using two M6 x 20mm SBHCS.

# Setup & Assembly | Handle Assembly

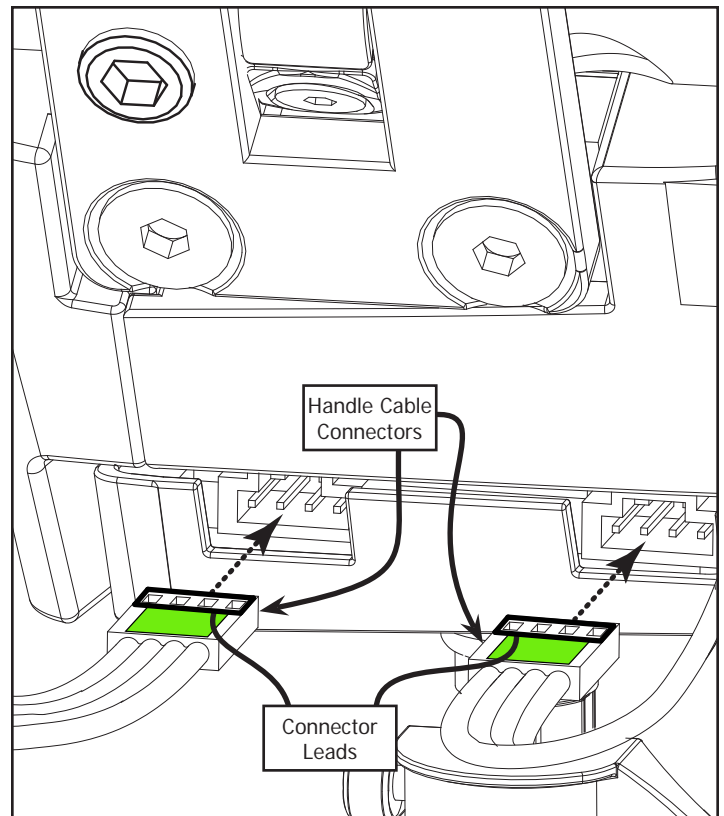
## Parts & Tools Needed:



1. Remove the Handle Cover Plate from the machine by unscrewing the four M6 x 16mm FCHS screws.



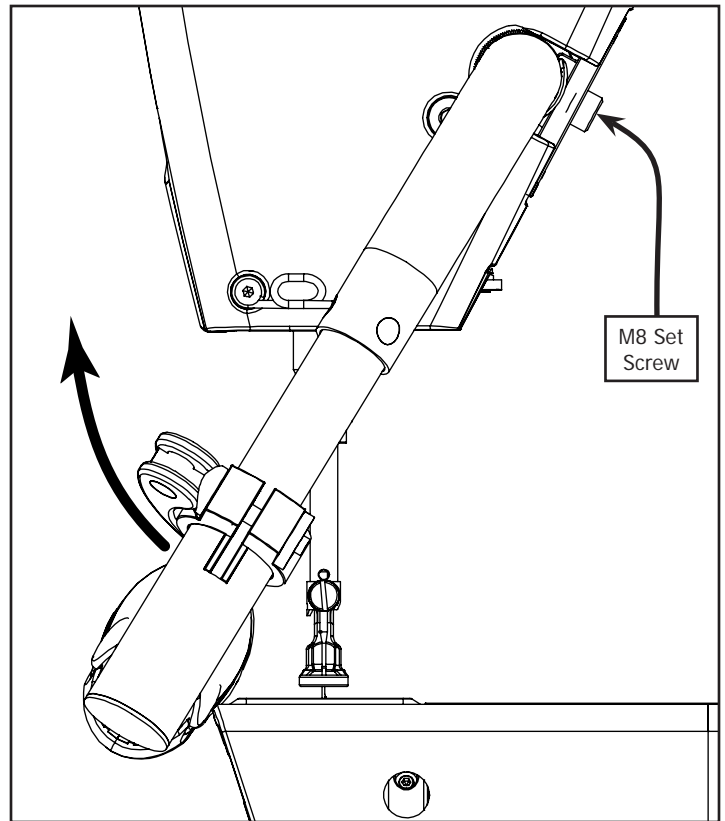
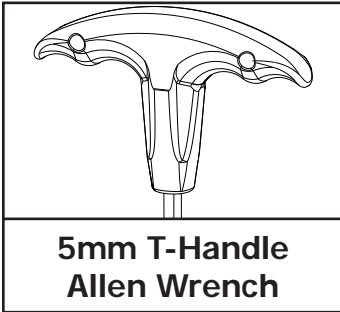
2. Place the Handle Assembly into the slot then replace the Handle Cover Plate and secure it in place with the M6 x 16mm FCHS screws



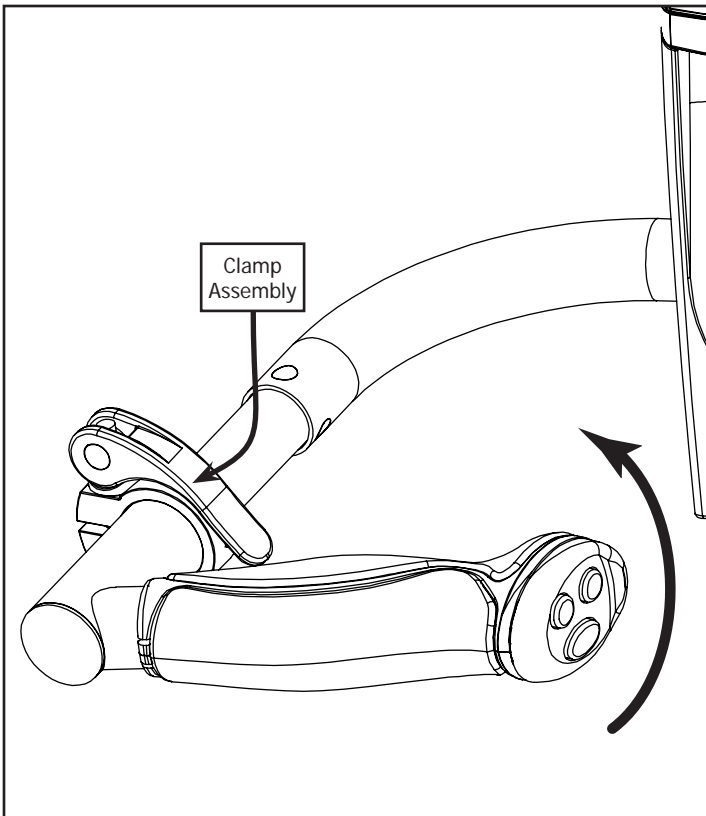
3. Insert the handle cables into the plugs. Make sure the cable connectors are plugged in so that the Green Stickers are facing up.

## Setup & Assembly | Handle Adjustment

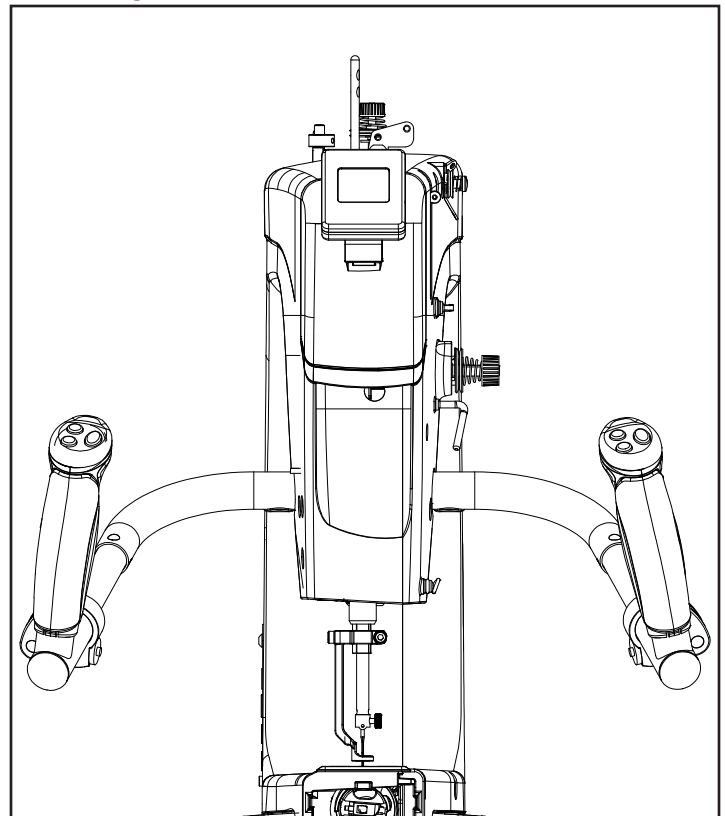
### Tools Needed:



1. Loosen the M8 set screw and lift the handles until they are at a comfortable angle, then retighten the set screw.



2. Loosen the Clamp Assembly and rotate the handle until it is in the desired position, then retighten the Clamp Assembly.

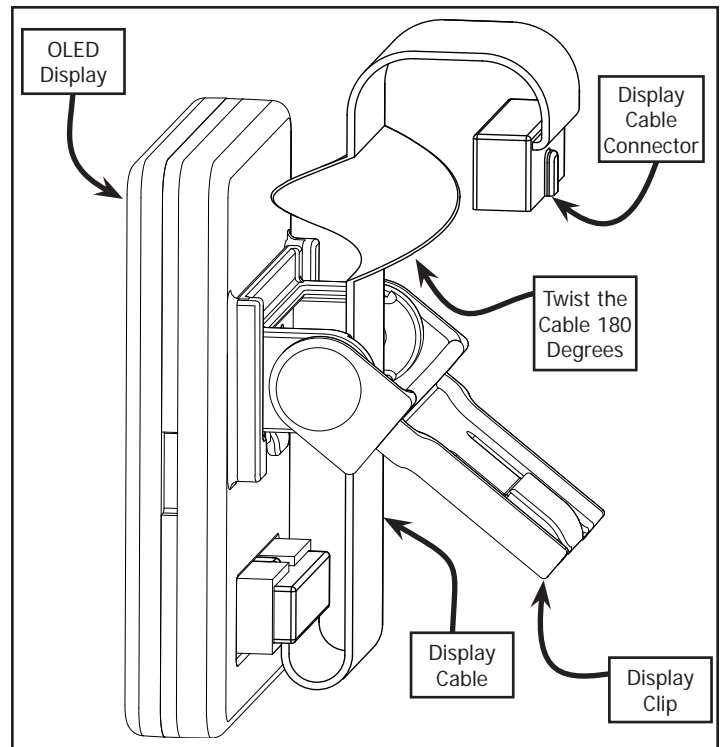
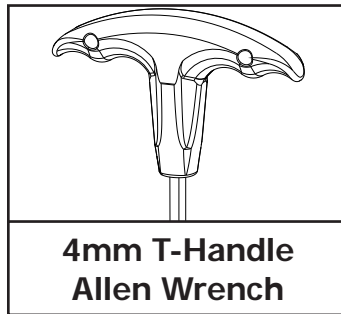
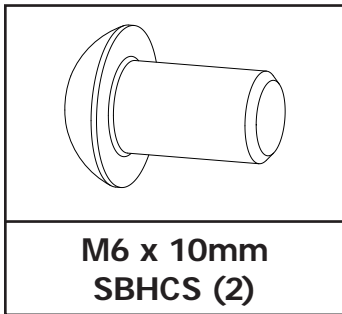
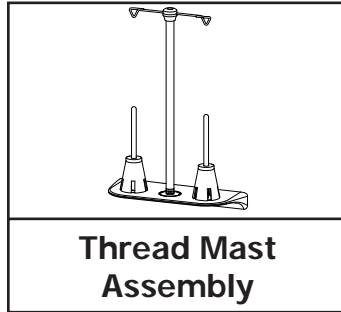
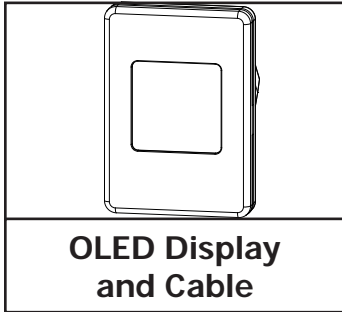


3. Repeat step 2 for the other handle.

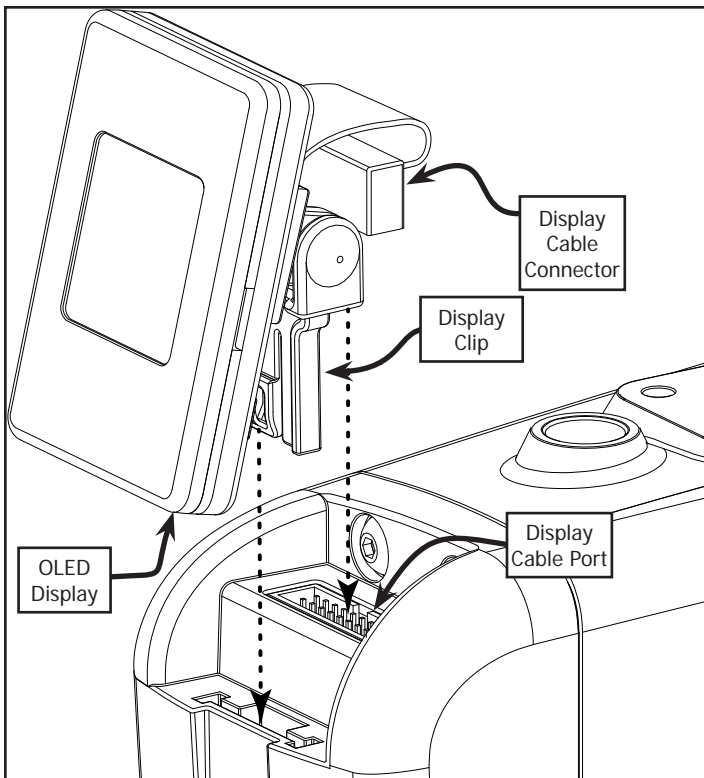


# Setup & Assembly | Display & Thread Mast Setup

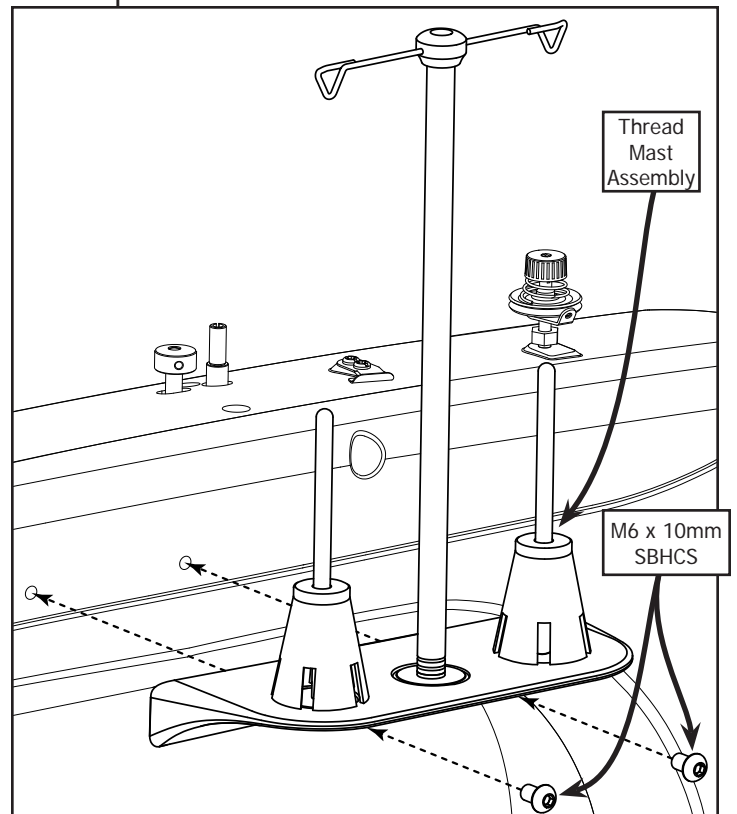
## Parts & Tools Needed:



1. Make sure that the Display Cable goes up through the gap between the Display Clip and the OLED Display and twist it 180 degrees so that the Display Cable Connector is positioned as shown above



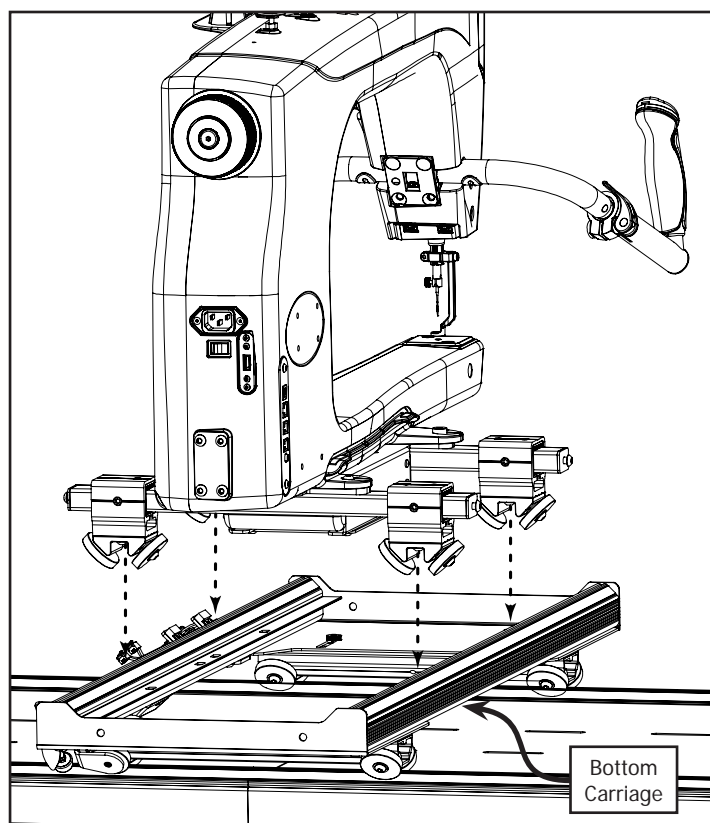
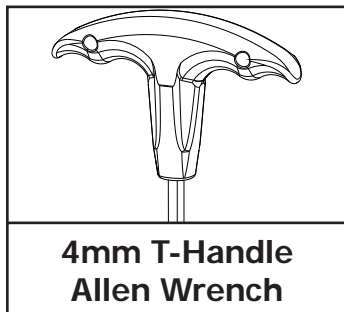
2. Install the display by pressing the display clip into the slot until it clicks into place, then plug the Display Cable Connector into the Display Cable Port.



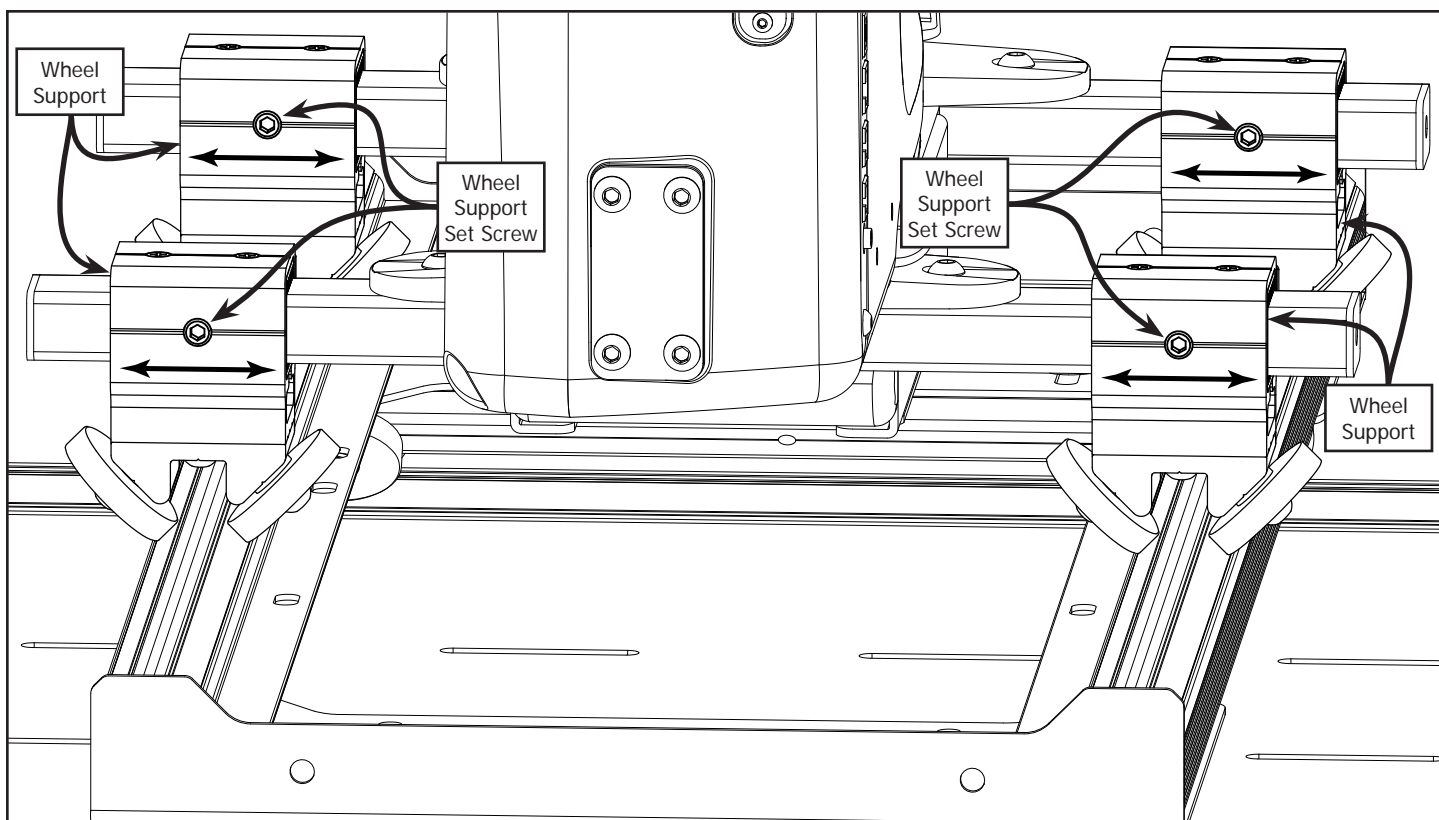
3. Attach the Thread Mast Assembly by screwing it to the side of the machine using two M6 x 10mm SBHCS

## Setup & Assembly | Carriage Adjustment

### Tools Needed:



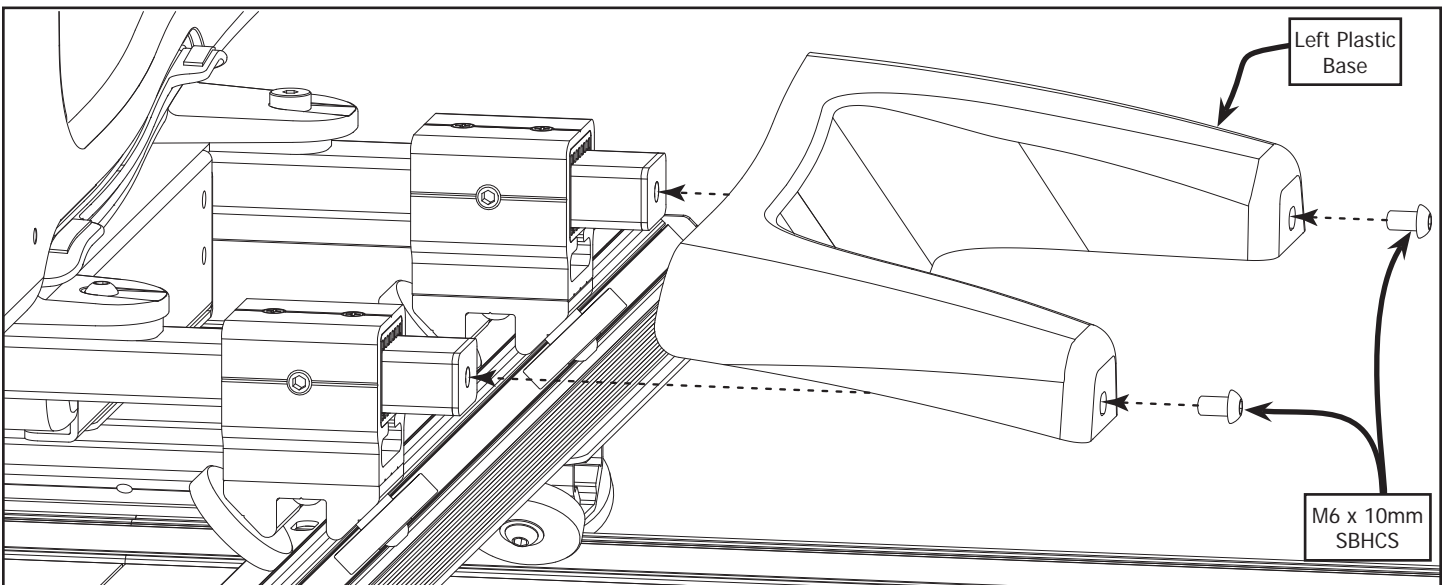
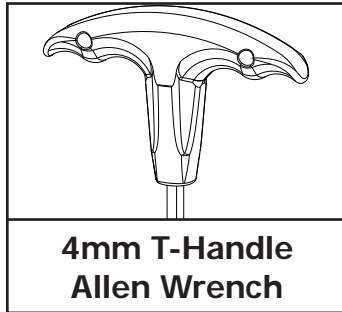
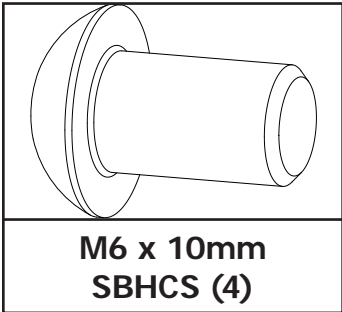
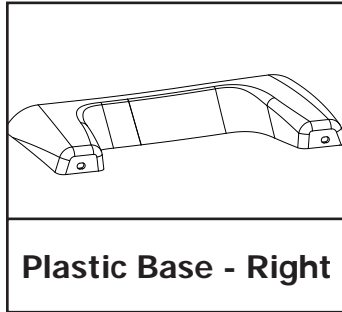
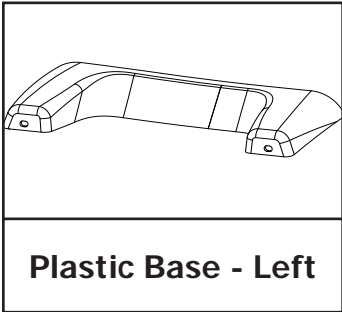
1. Place the Sewing Machine on to the quilting frame on the bottom carriage.



2. Loosen the set screws on the Wheel Supports and adjust them by sliding them to the proper spacing to fit the top carriage, then retighten the set screws.

## Setup & Assembly | Plastic Base Assembly

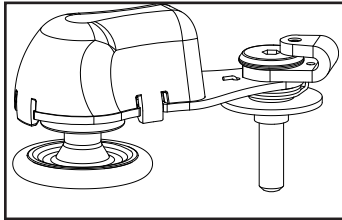
### Parts & Tools Needed:



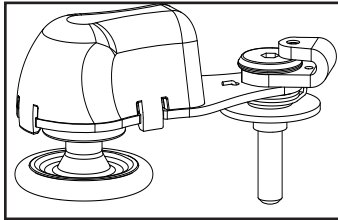
1. Attach the Plastic Base to the end of the Wheel Assemblies using M6 x 10mm SBHCS.
2. Repeat the same process for the other side.

# Setup & Assembly | Encoder Assembly

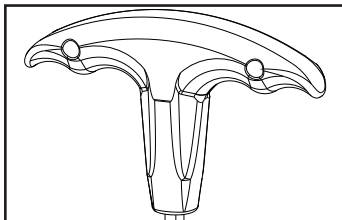
## Parts & Tools Needed:



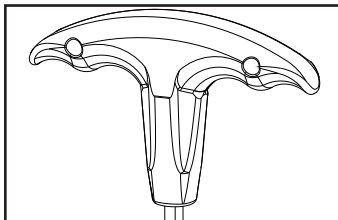
**Upper Encoder  
(Silver Spring)**



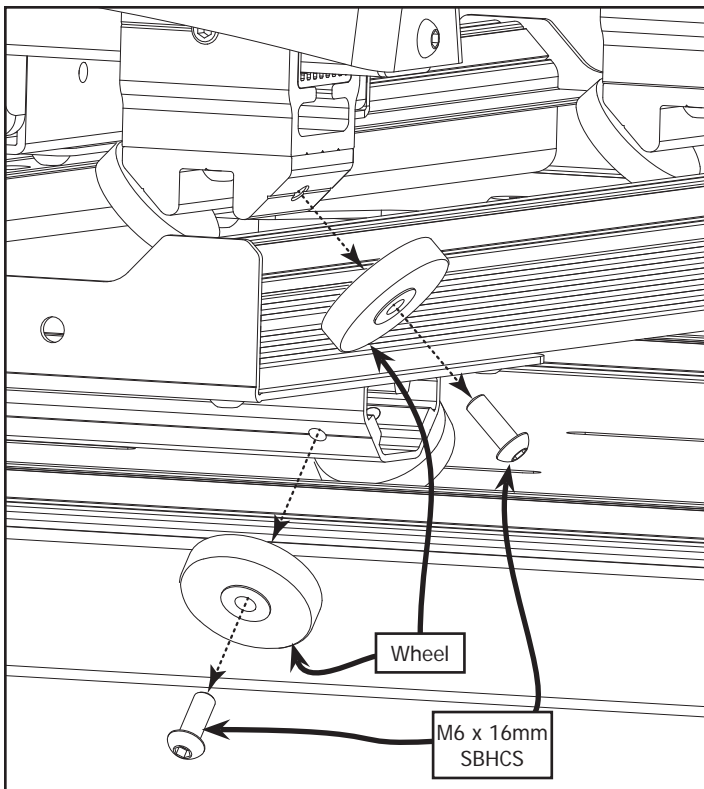
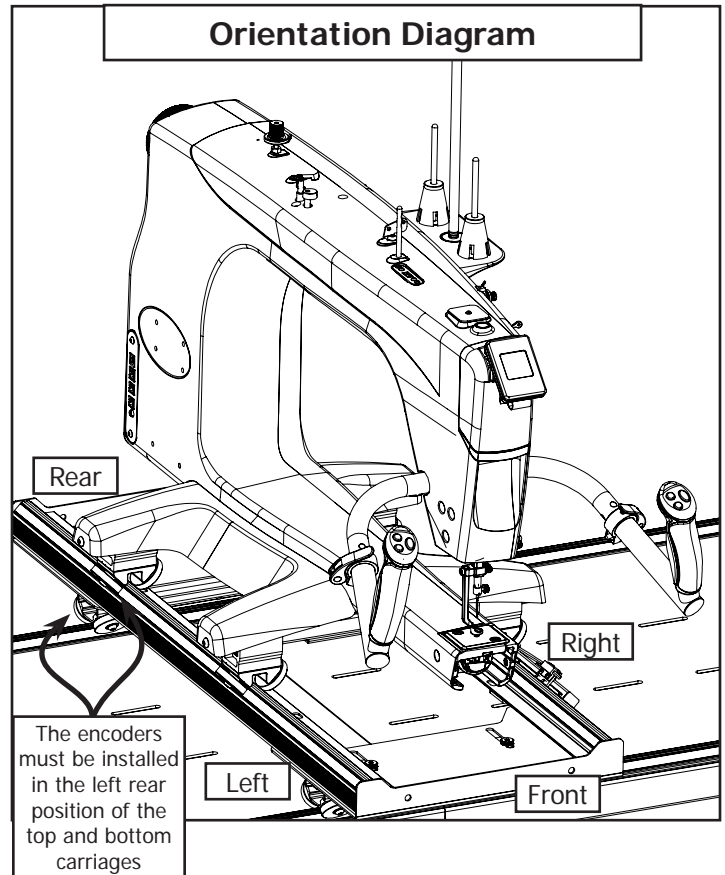
**Lower Encoder  
(Black Spring)**



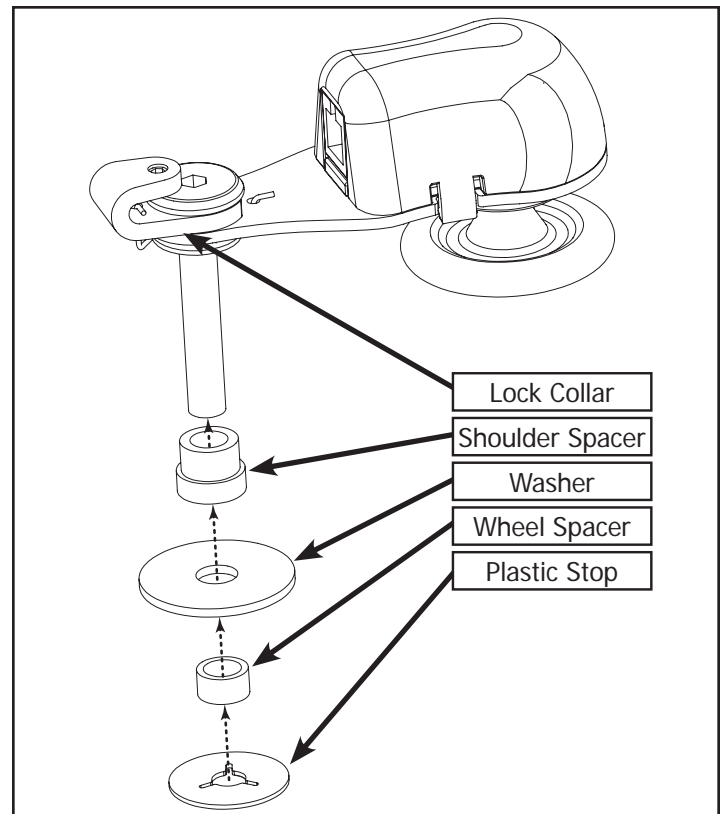
**4mm T-Handle  
Allen Wrench**



**2mm T-Handle  
Allen Wrench**

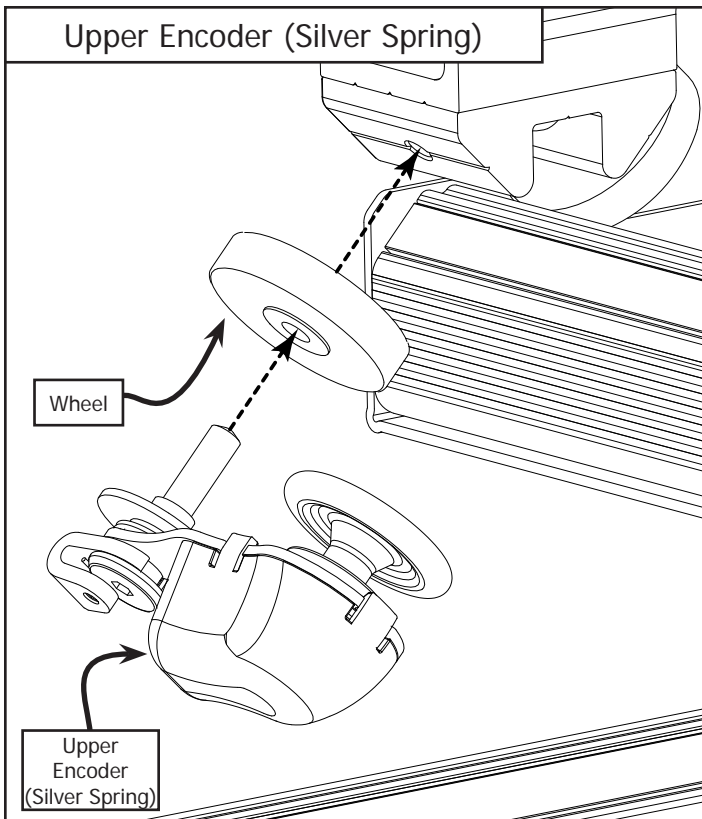


1. Remove the Left Rear Wheel (see orientation diagram above) from the Sewing Machine and the bottom carriage using the 4mm allen wrench. Set the wheels aside for now.

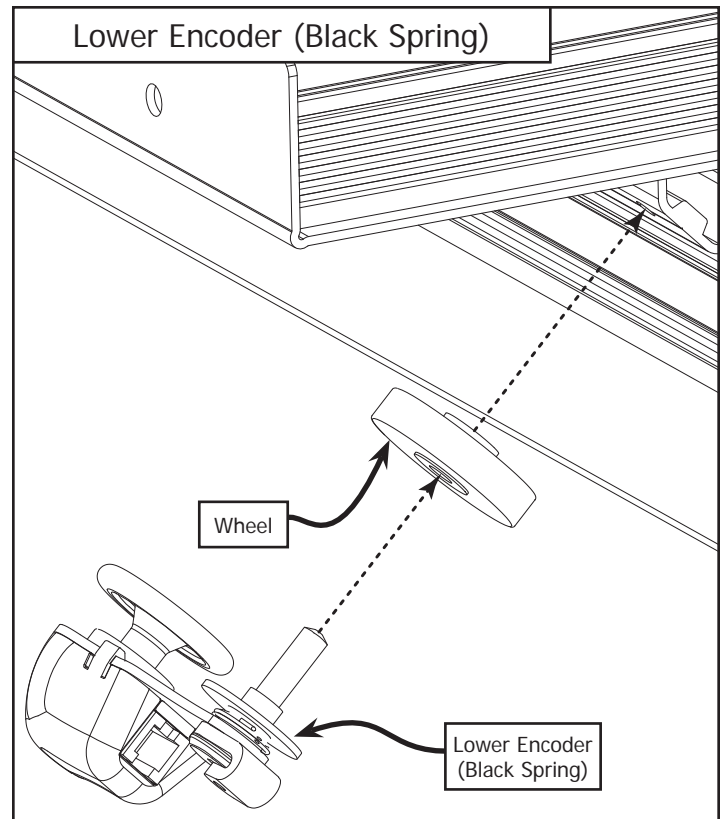


2. Check the encoders to ensure that they contain all of the necessary parts and that the lock collar is loose.

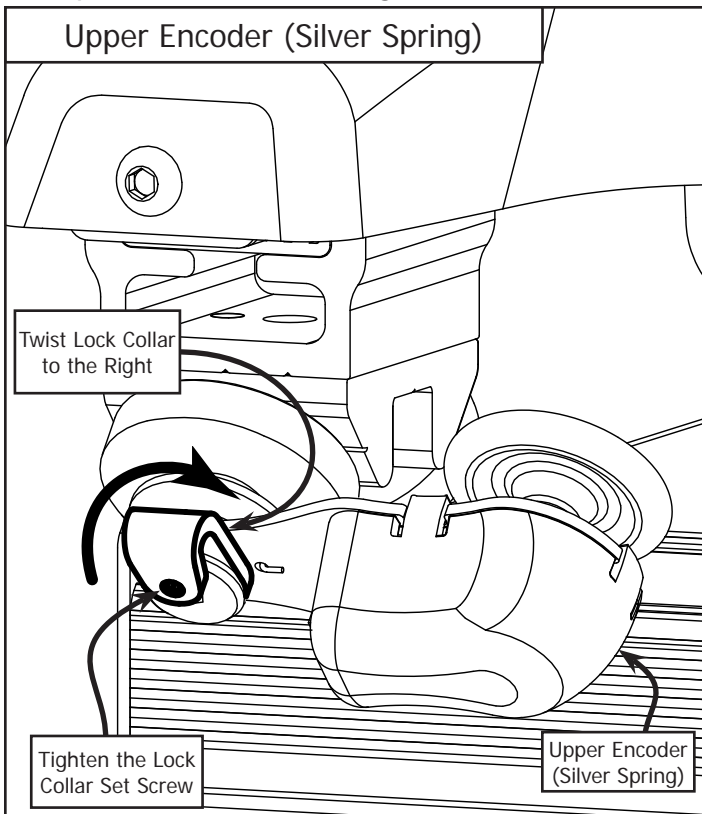
## Setup & Assembly | Encoder Assembly



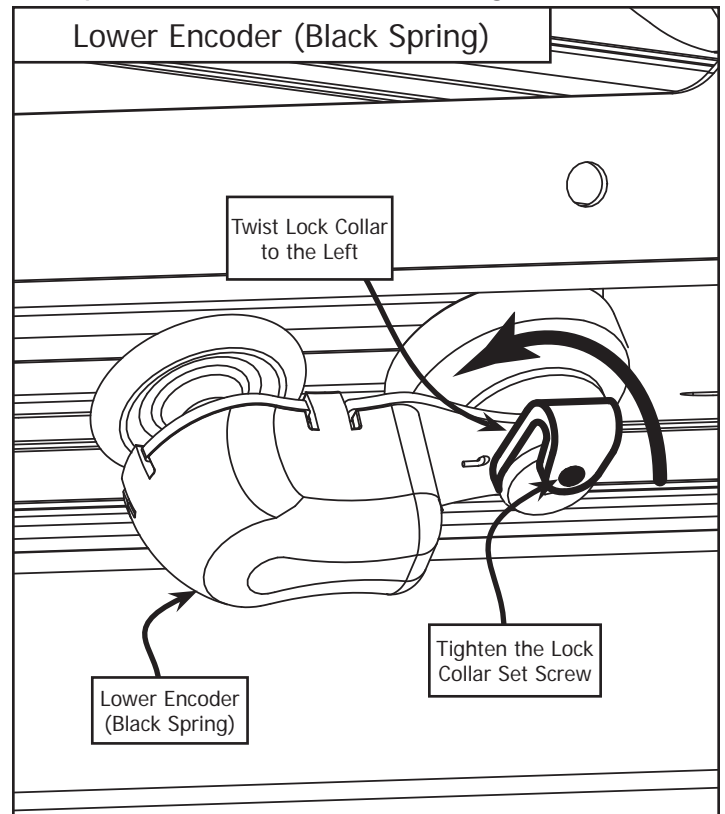
3. Place one of the wheels onto the Upper Encoder and screw it onto the left rear position on the Sewing Machine.



4. Place the remaining wheel onto the Lower Encoder and screw it in to the rear left position of the Bottom Carriage.



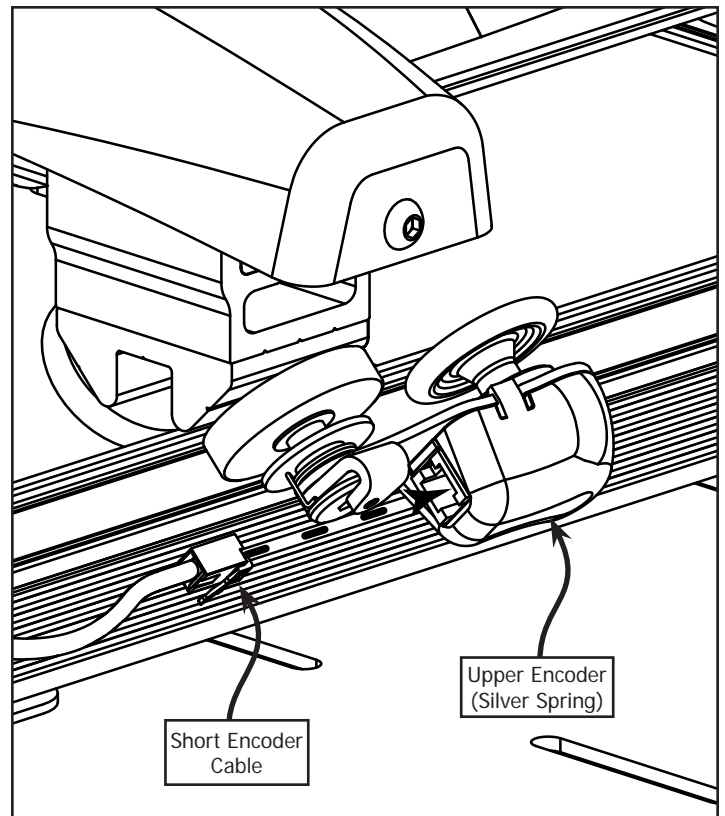
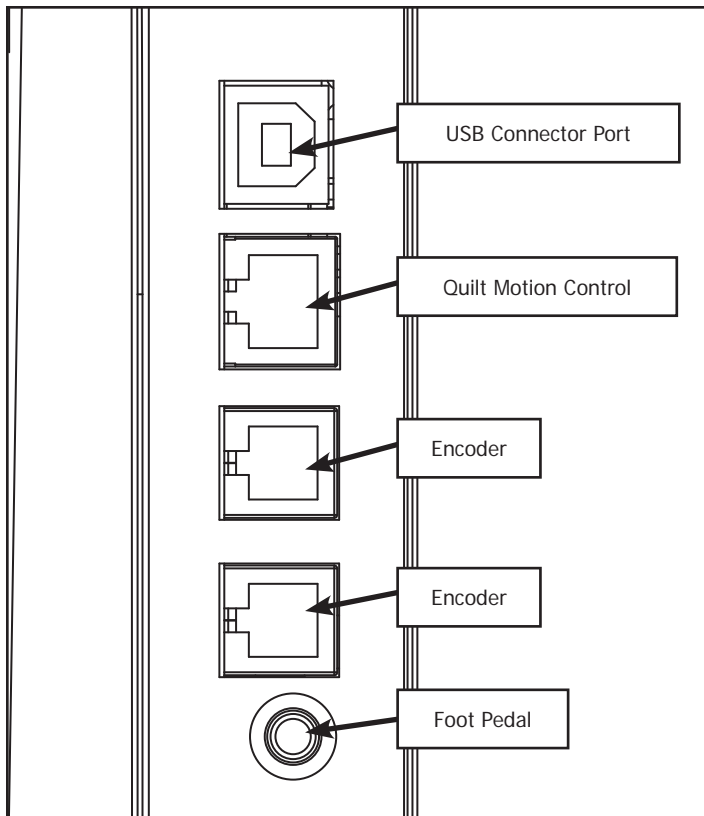
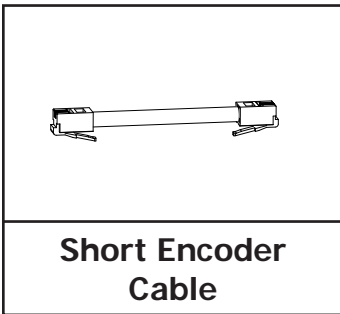
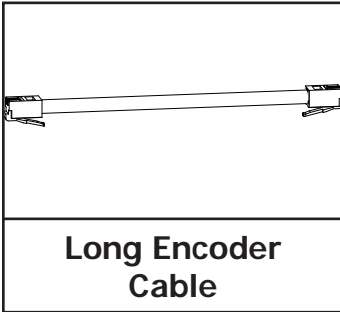
5. Twist the lock collar on the Upper Encoder to the right and tighten the set screw using the 2mm Allen wrench to tension the encoder.



6. Twist the lock collar on the Lower Encoder to the left and tighten the set screw using the 2mm Allen wrench to tension the encoder.

## Setup & Assembly | Encoder Cables

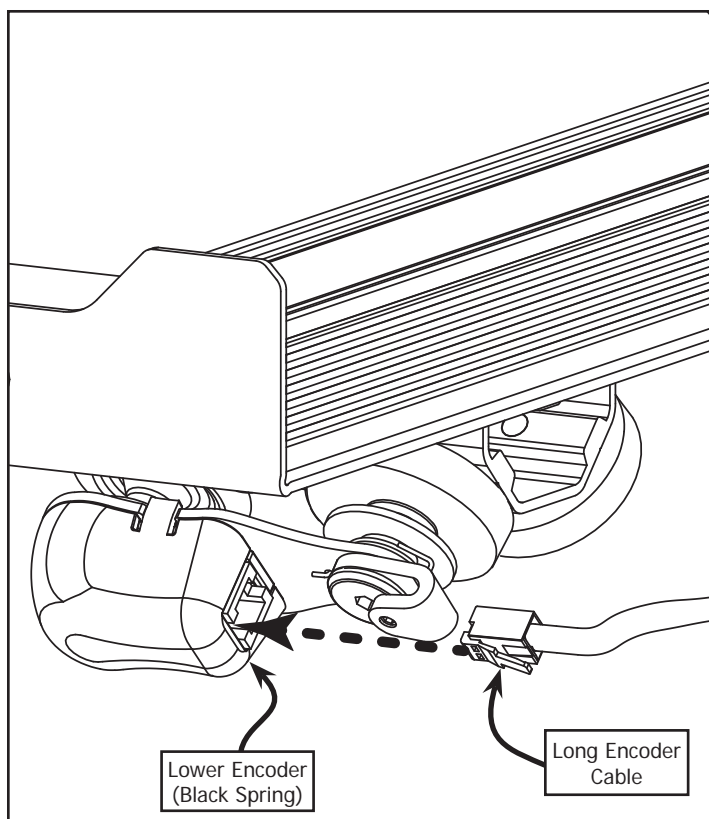
### Parts Needed:



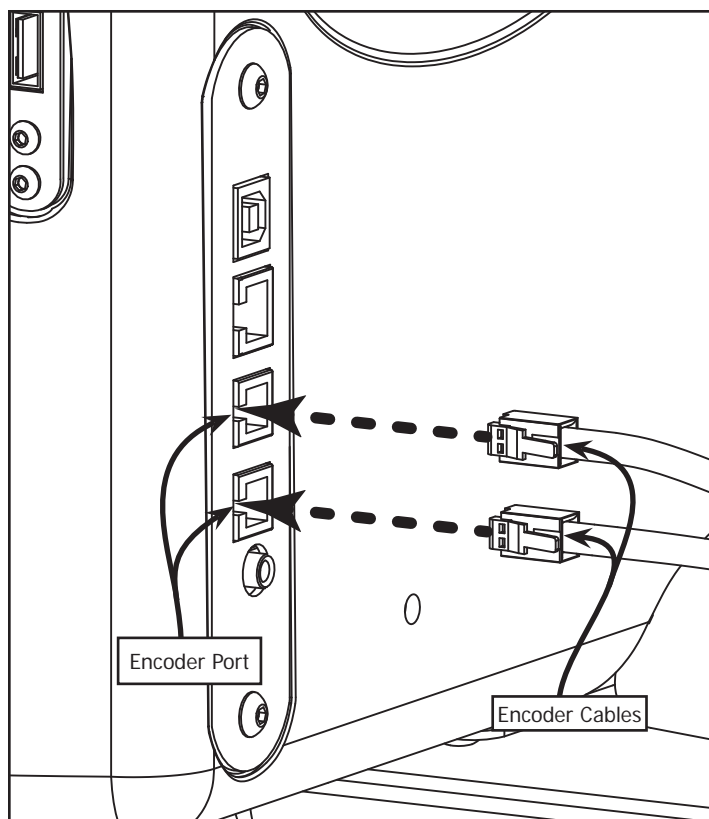
1. Plug the Short Encoder Cable into the Upper Encoder. The tab on the cables plug should face away from the encoder.



## Setup & Assembly | Encoder Cables

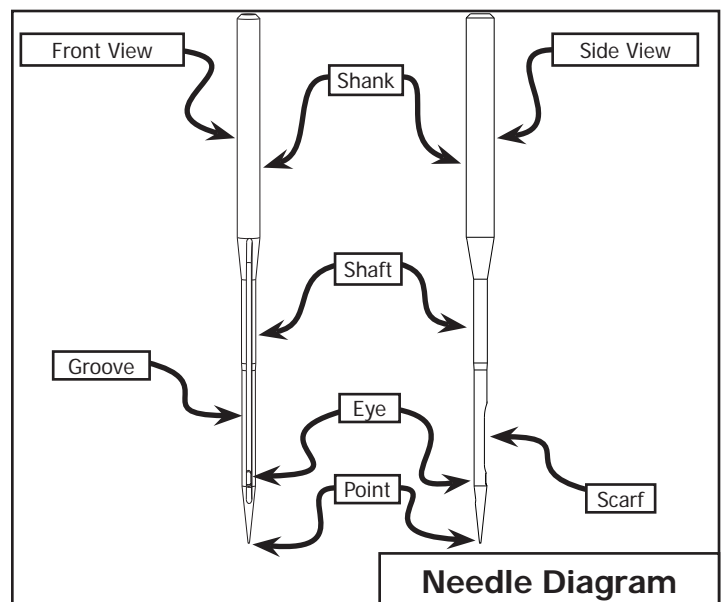
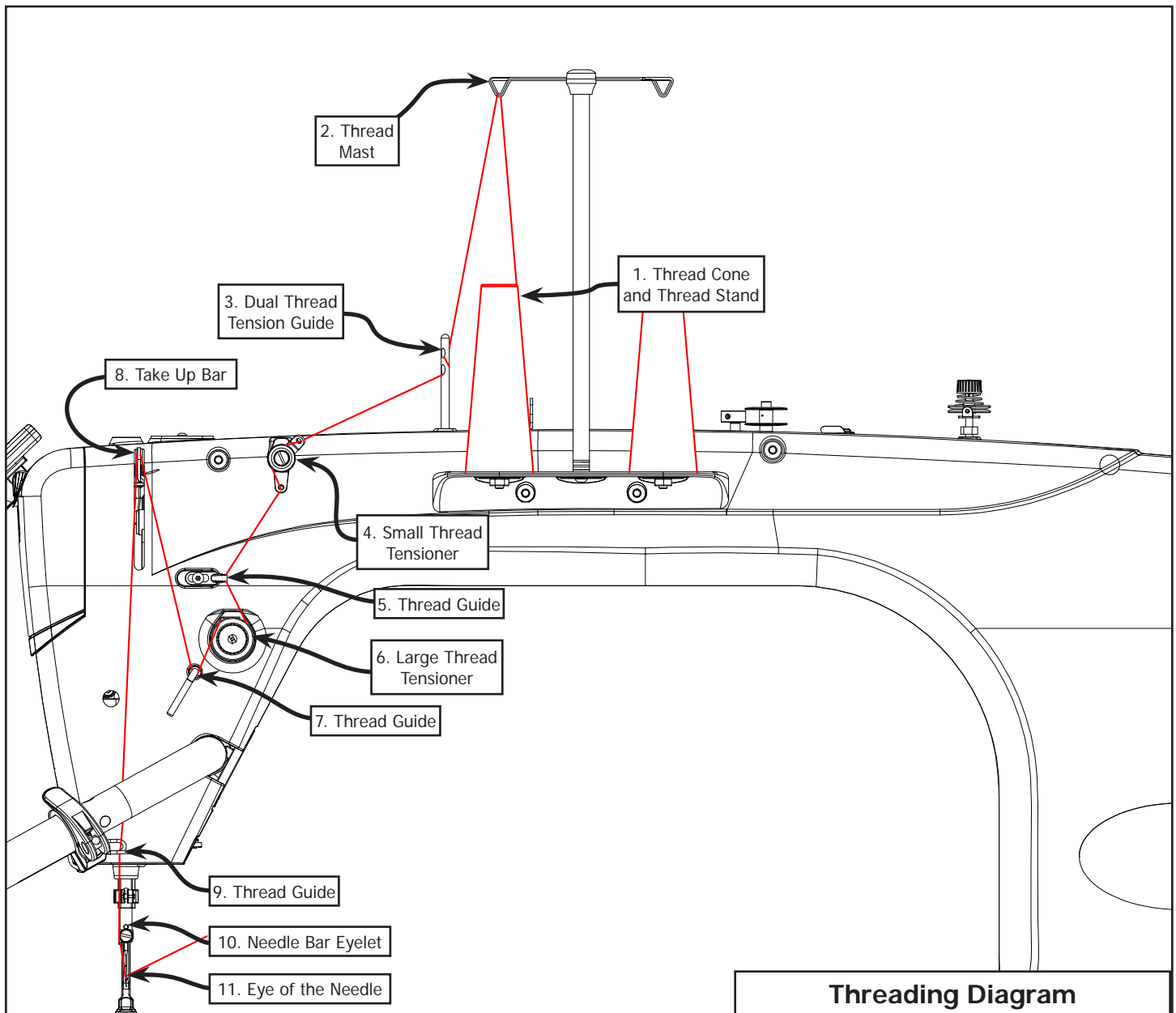


2. Plug the Long Encoder Cable into the Lower Encoder. The tab on the cables plug should face away from the encoder.



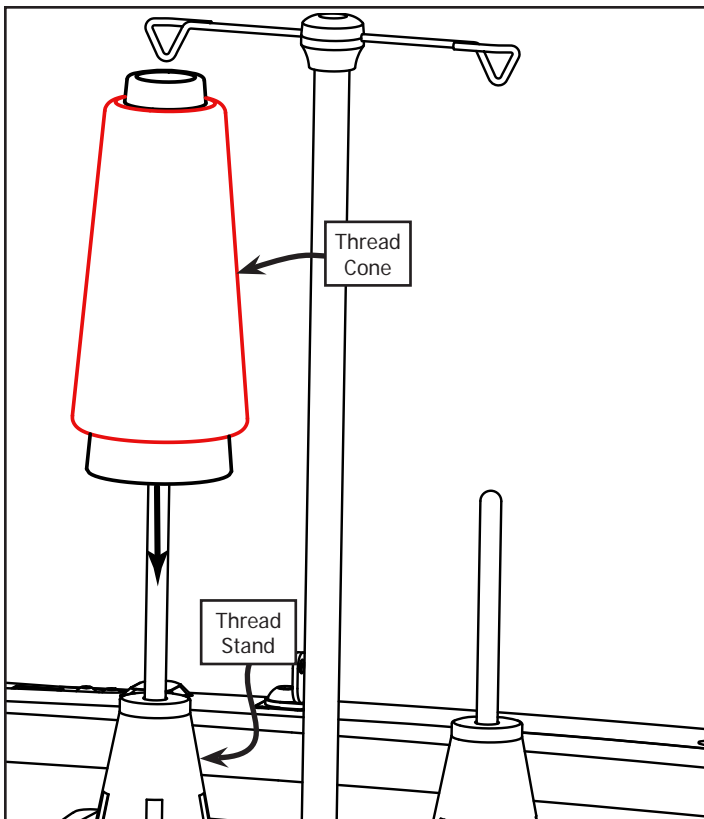
3. Plug both encoder cables into the encoder ports on the side of the sewing machine. Make sure all cables are firmly plugged in.

# Setup & Assembly | Threading The Sewing Machine

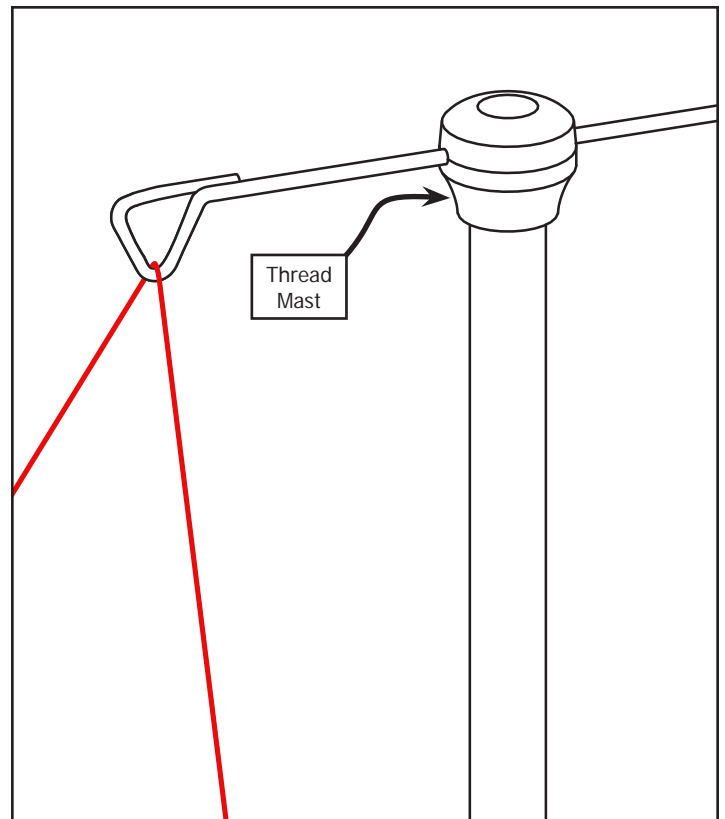




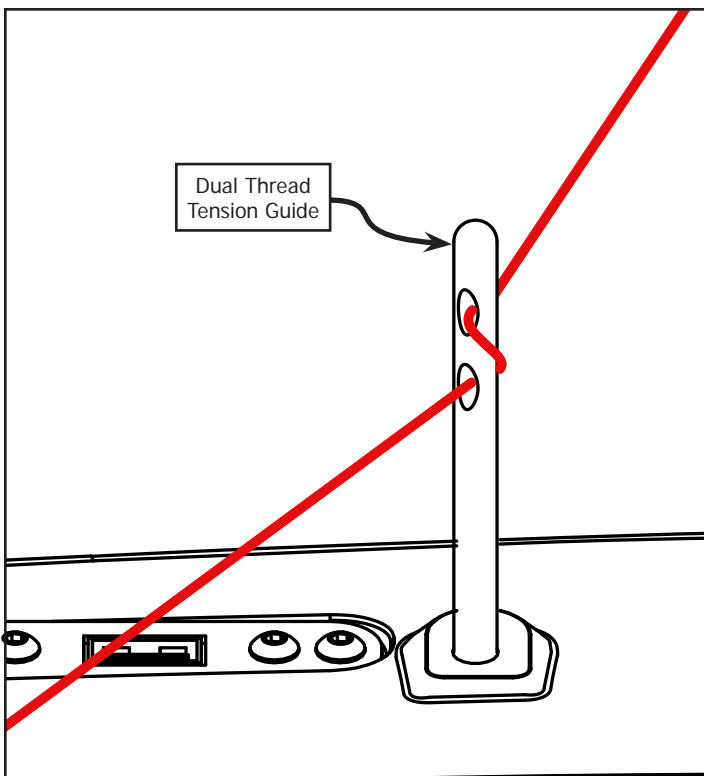
## Setup & Assembly | Threading The Sewing Machine



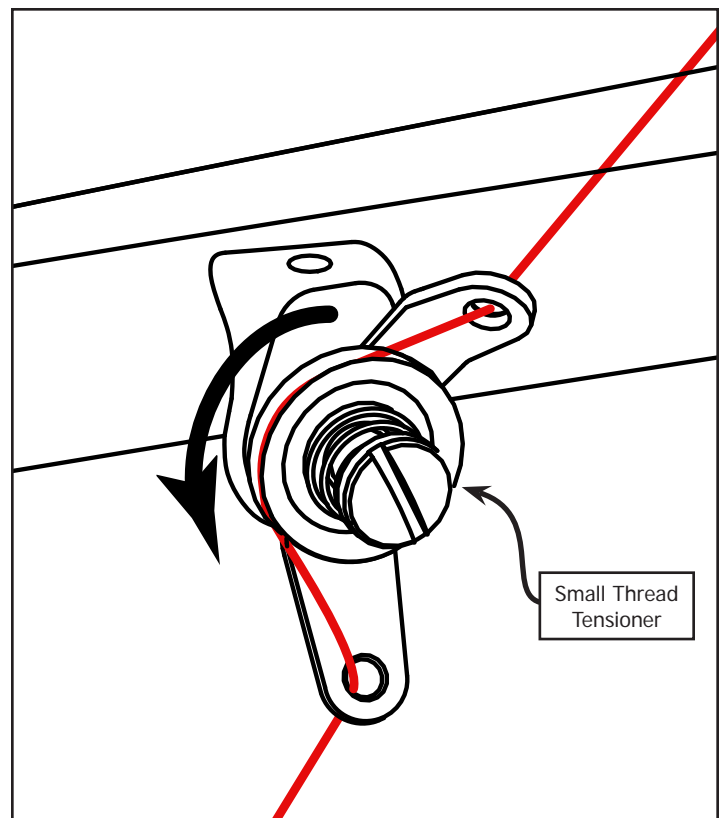
1. Place thread on the cone style thread stand.



2. Pull the thread through the loop of the thread mast.

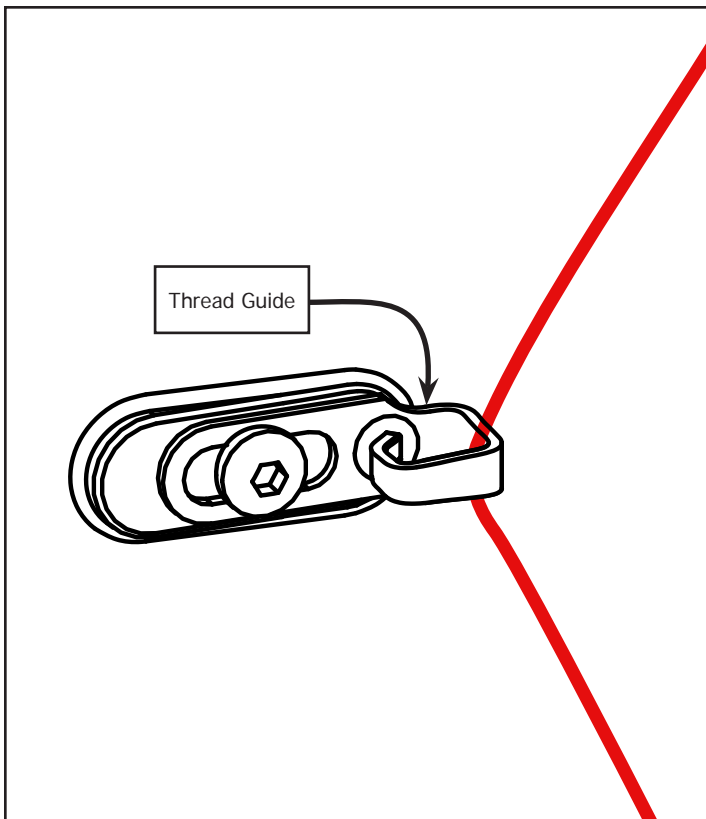


3. Put the thread through the top hole on the dual thread tension guide, wrap the thread around and through the bottom hole of thread guide.

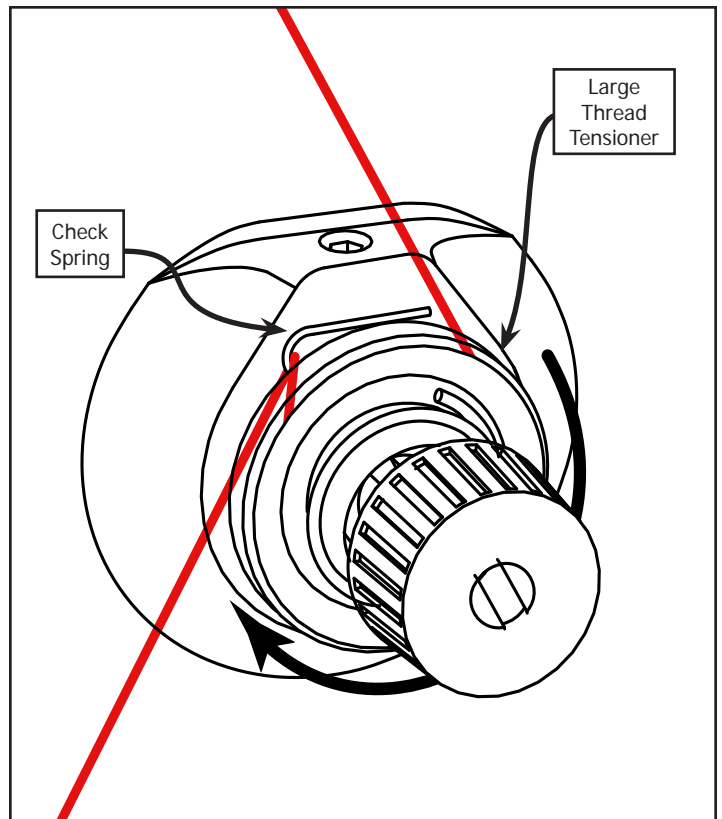


4. Take the thread through the small thread tensioner, between the two disks.

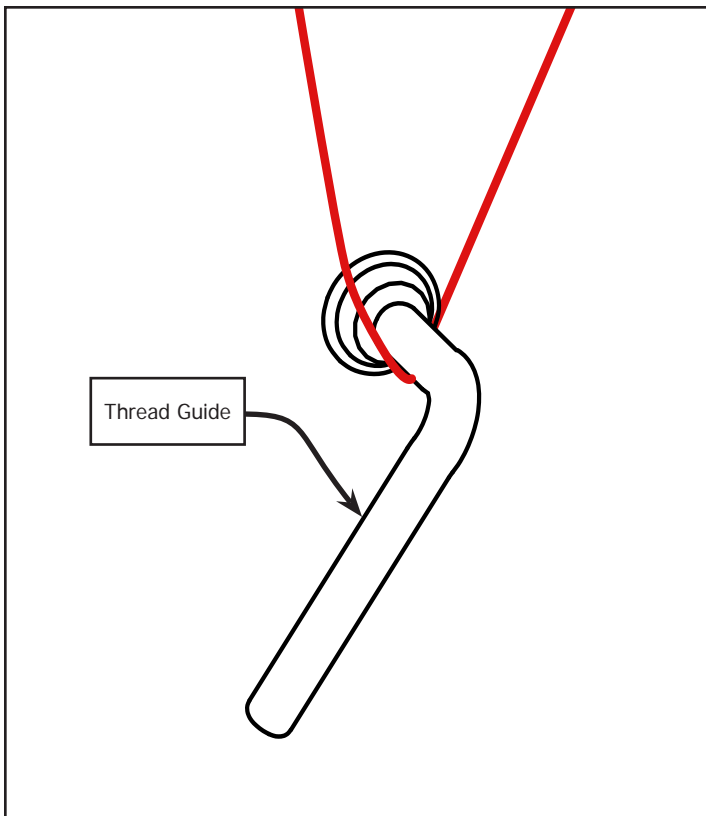
## Setup & Assembly | Threading The Sewing Machine



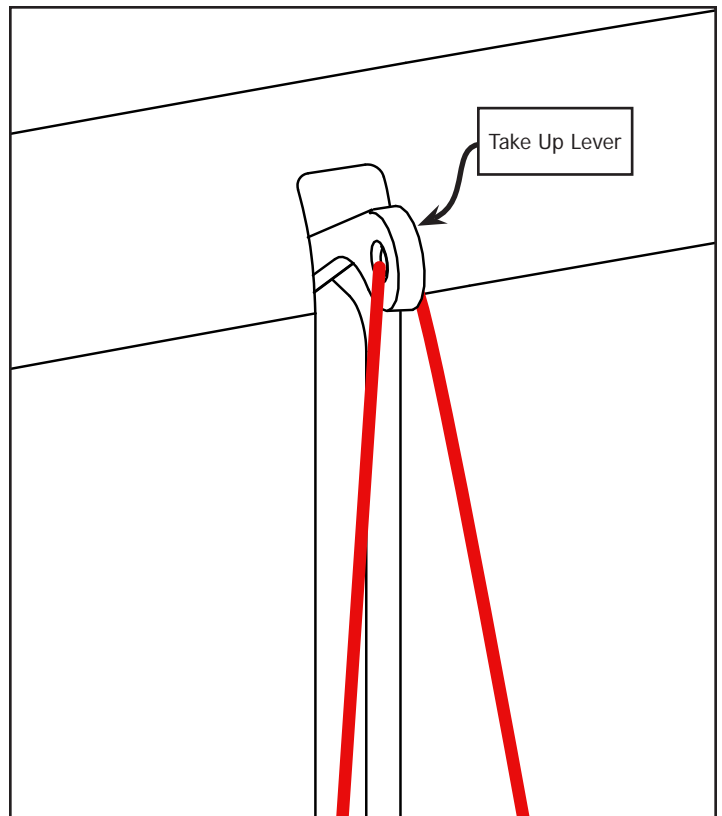
5. Feed the thread through the thread guide above the large thread tensioner.



6. Loop the thread down around the large thread tensioner and pull the thread through the tensioner disks and around the check spring.

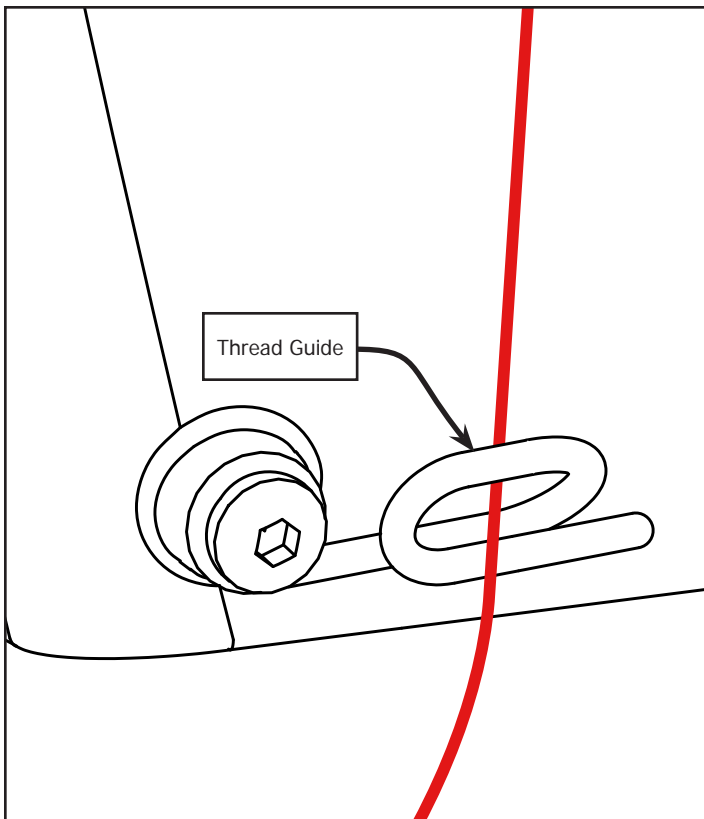


7. Loop the Thread around the thread guide below the large thread tensioner.

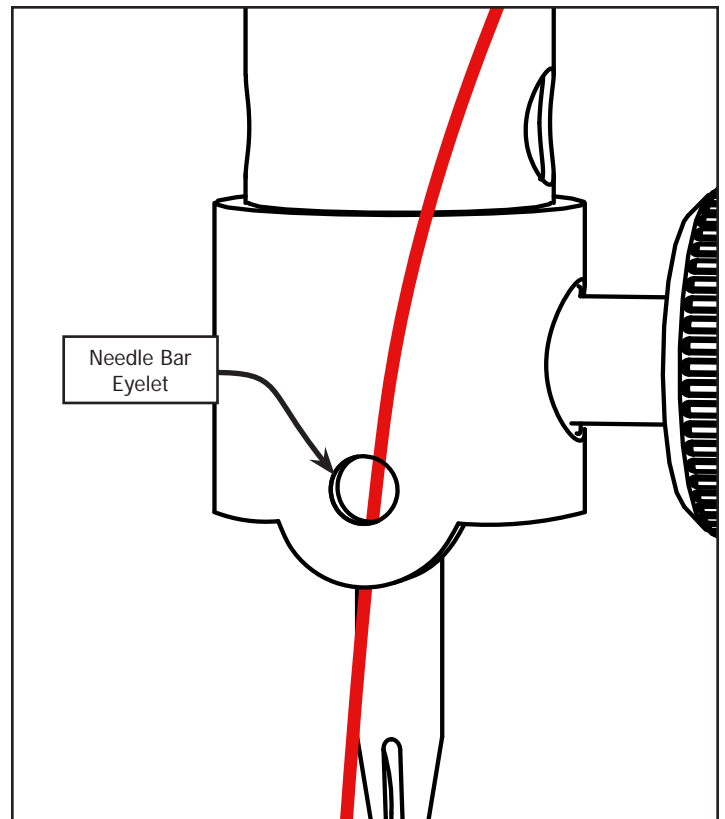


8. Pull the thread through the hole in the take up lever.

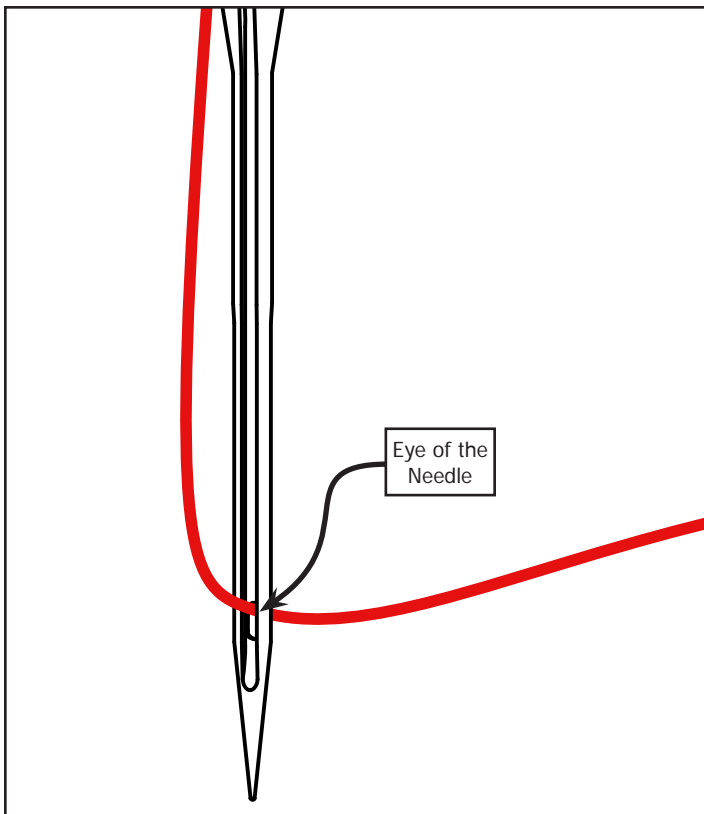
## Setup & Assembly | Threading The Sewing Machine



9. Pull the thread down towards the needle and through the bottom thread guide.

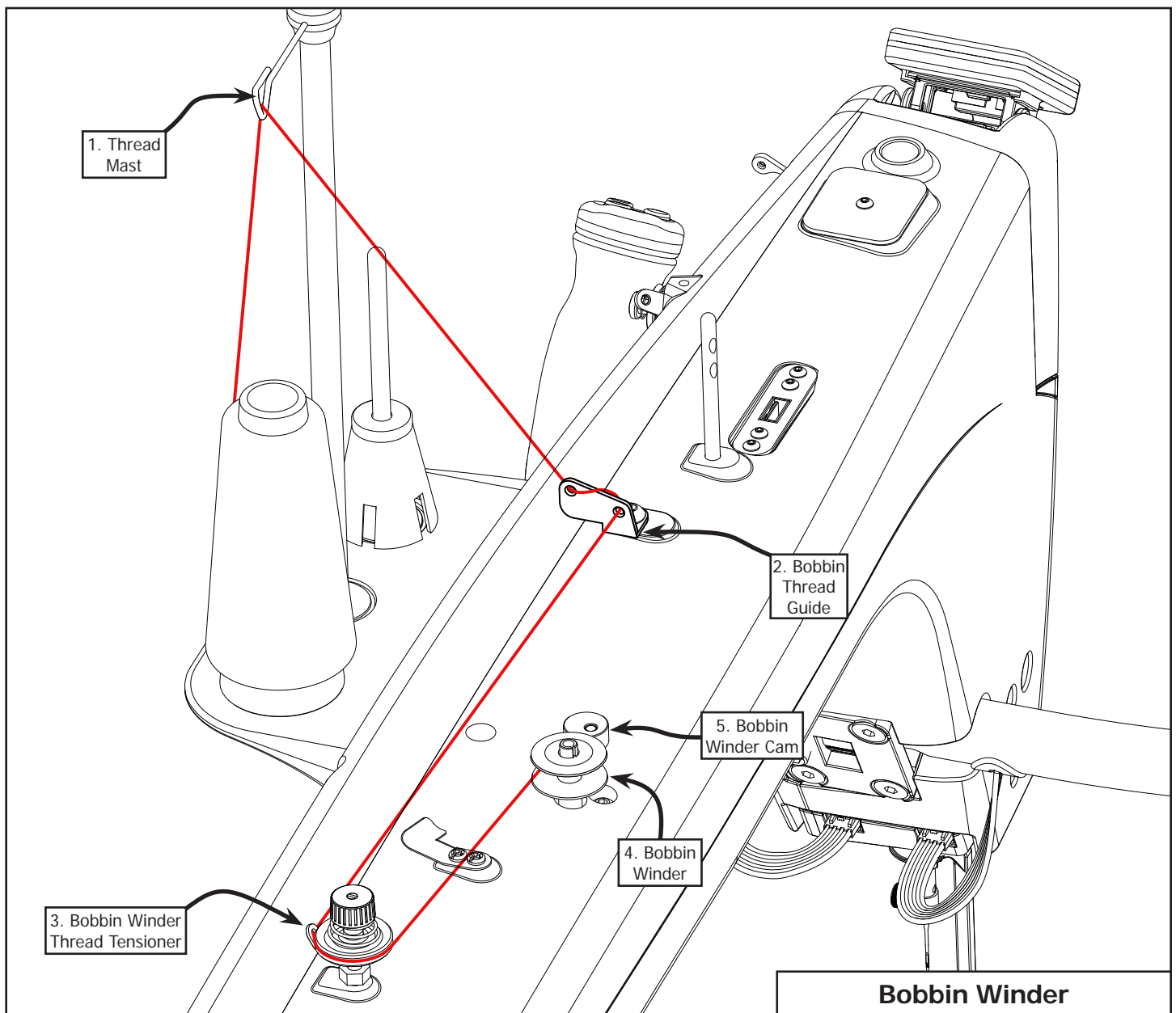


10. Feed the thread through the eyelet in the front of the needle bar.

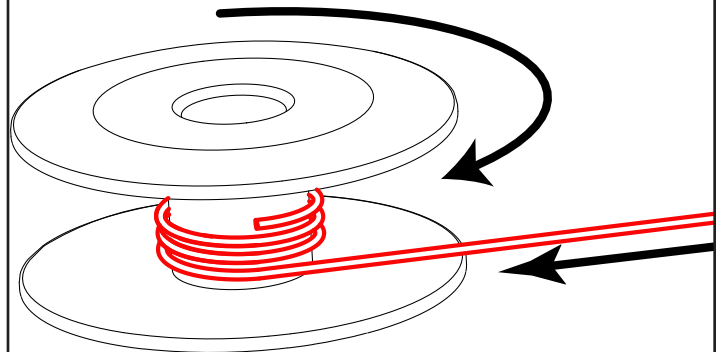


11. Feed the thread through the eye of the needle.

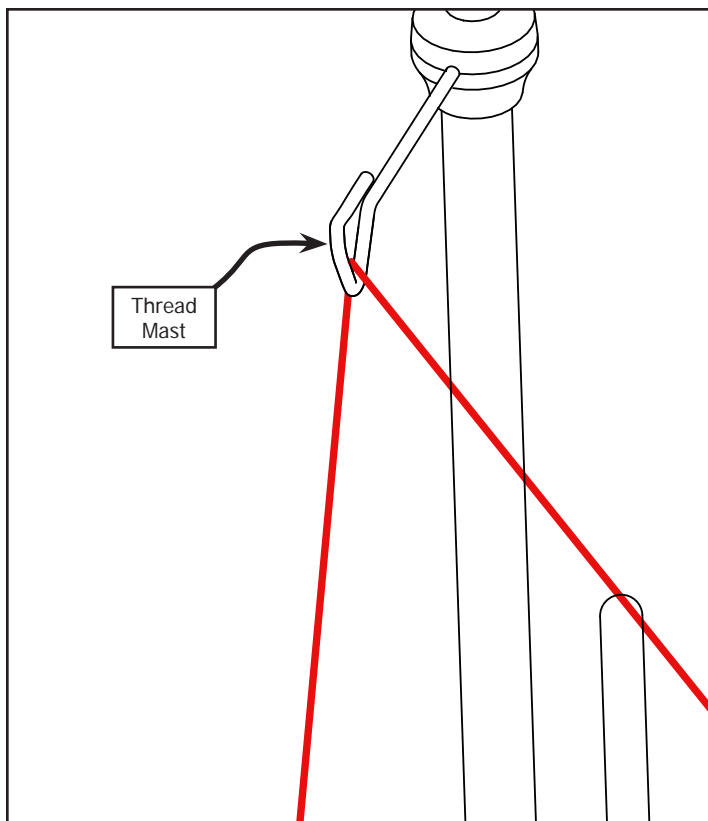
## Setup & Assembly | Winding The Bobbin



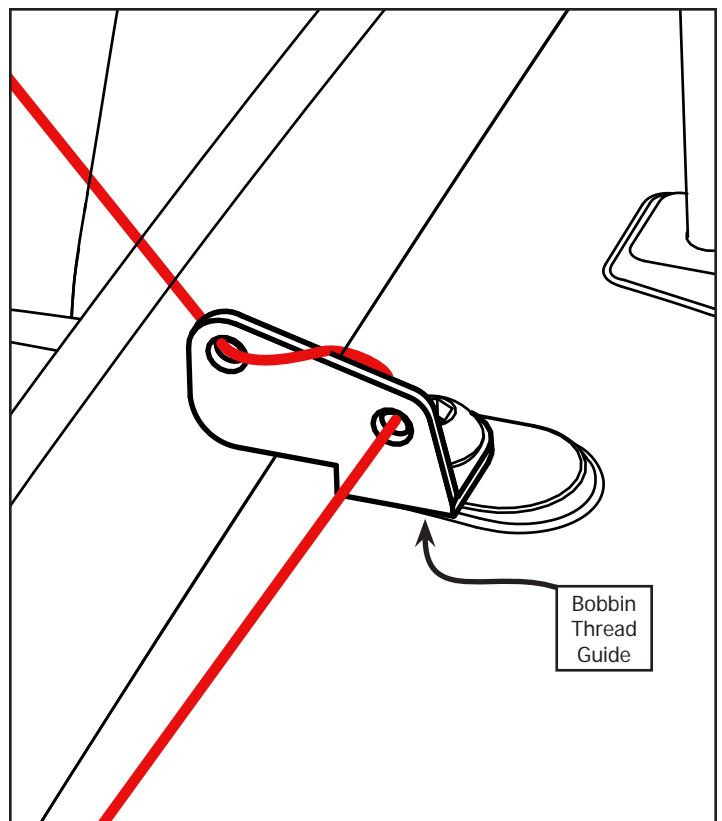
The thread winds in a clock-wise direction.



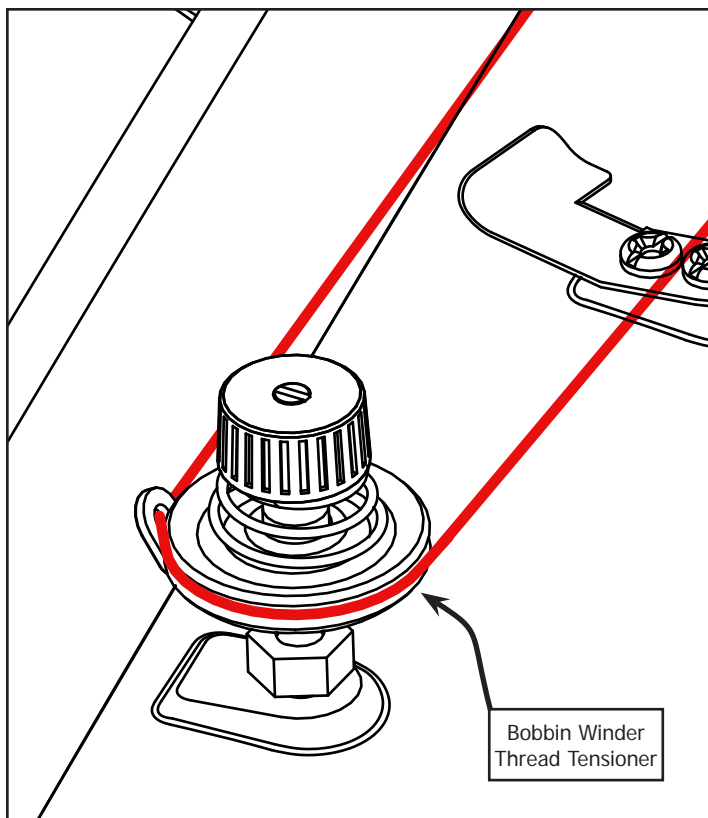
## Setup & Assembly | Winding The Bobbin



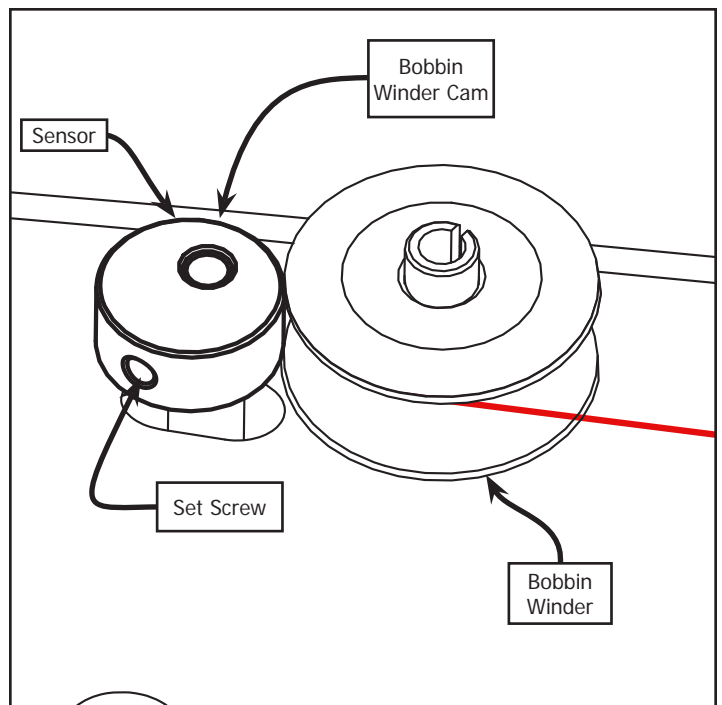
1. Pass the thread through the the thread mast.



2. Pull the thread through both holes in the bobbin thread guide.



3. Loop the thread around the spring hook and around the thread tensioner.

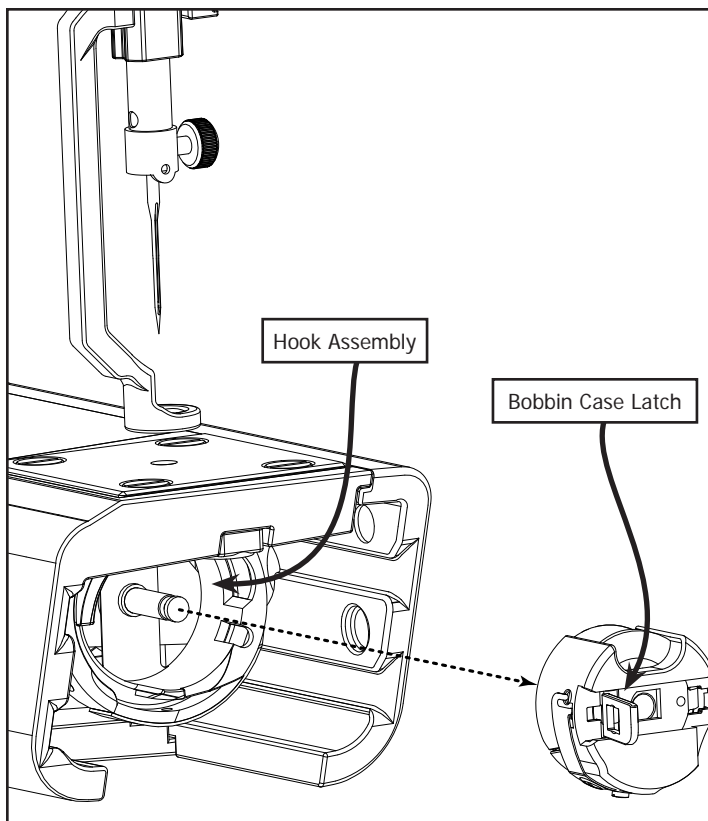


4. Wrap the thread around the bobbin as shown.

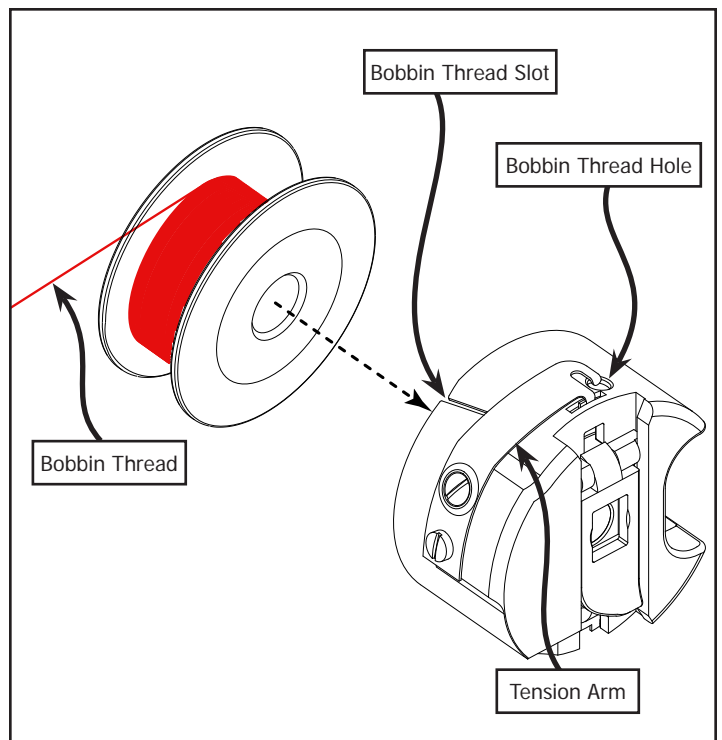
5. Start the bobbin winder by pushing the bobbin winder cam into the bobbin.

When the bobbin is full it will automatically stop.  
Adjust the sensor to adjust bobbin fill.

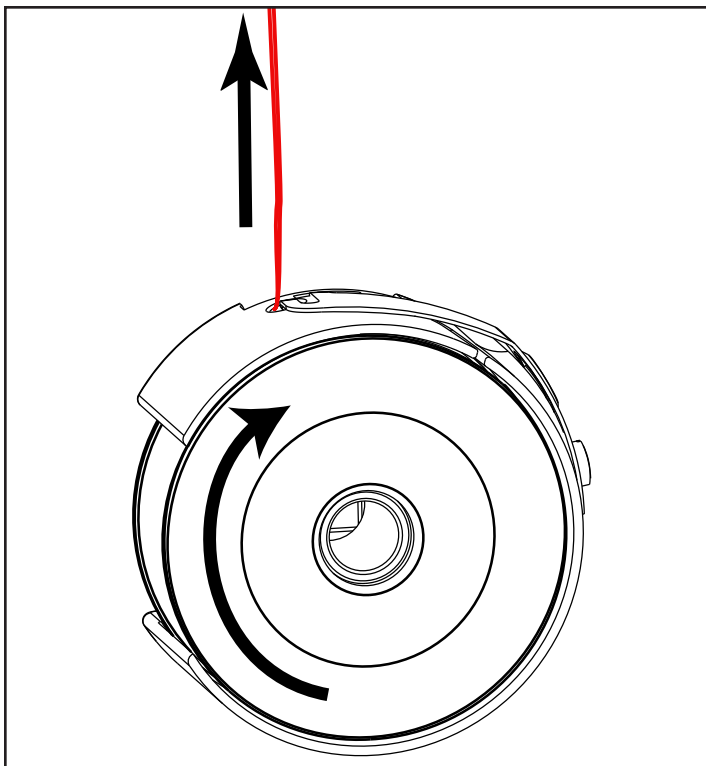
## Setup & Assembly | Installing The Bobbin Case



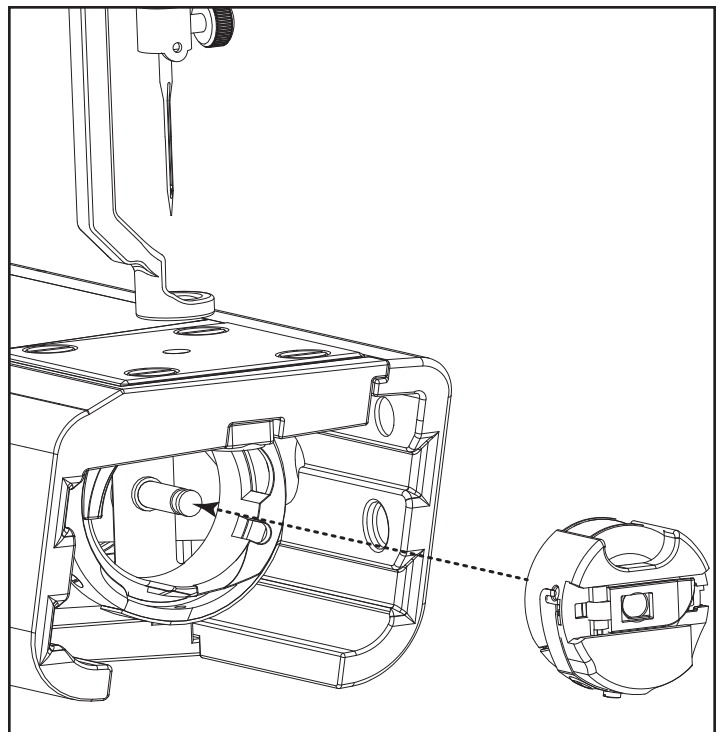
1. Remove the bobbin case by lifting the latch and pulling the bobbin from the hook assembly.



2. Place the full bobbin into the bobbin case. Pull the thread through the slot on the bobbin case. Pull the thread under the tension arm and out through the bobbin thread hole



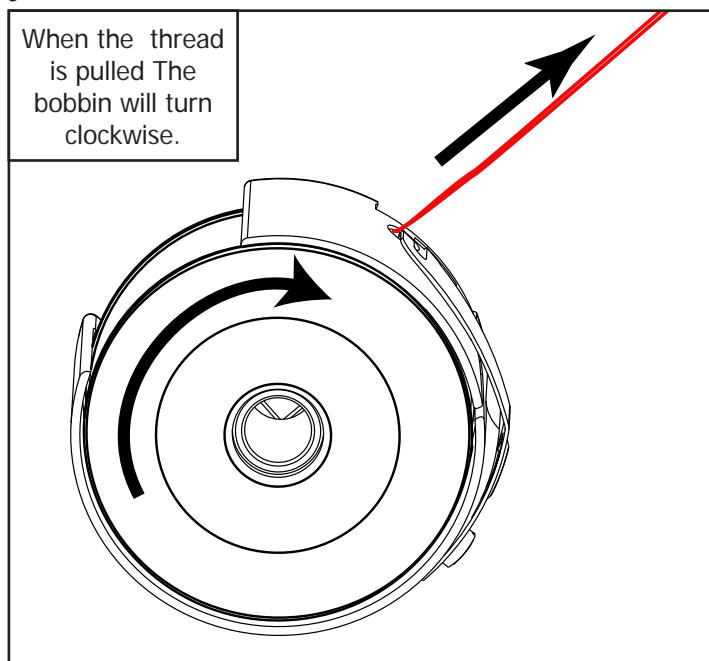
3. Pull the thread from the bobbin through the bobbin case. When the bobbin case faces as shown the bobbin should rotate in a clockwise direction when the thread is pulled.



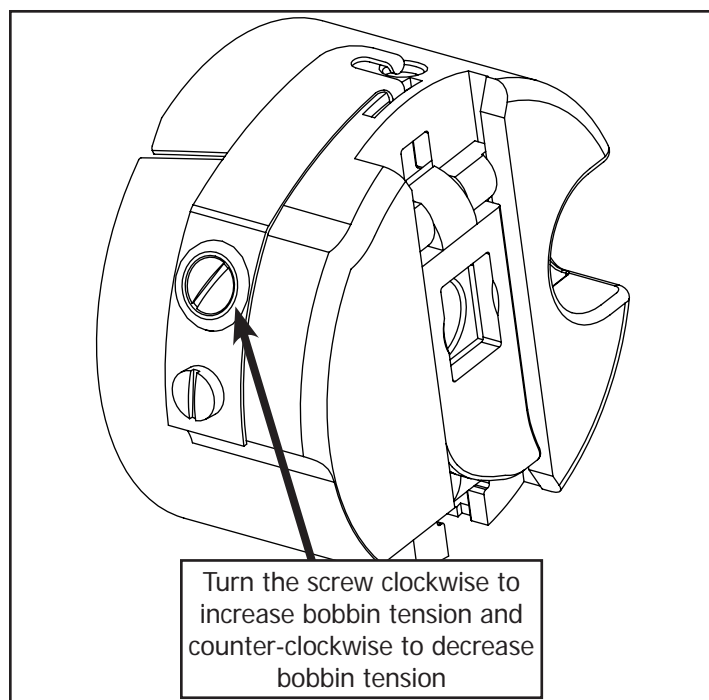
4. Place the bobbin case into the hook assembly with the lever arm in a horizontal position, and press it into place until it "clicks" in. Do not pull the latch when inserting the bobbin case into the hook assembly

## Setup & Assembly | Adjusting Thread Tension

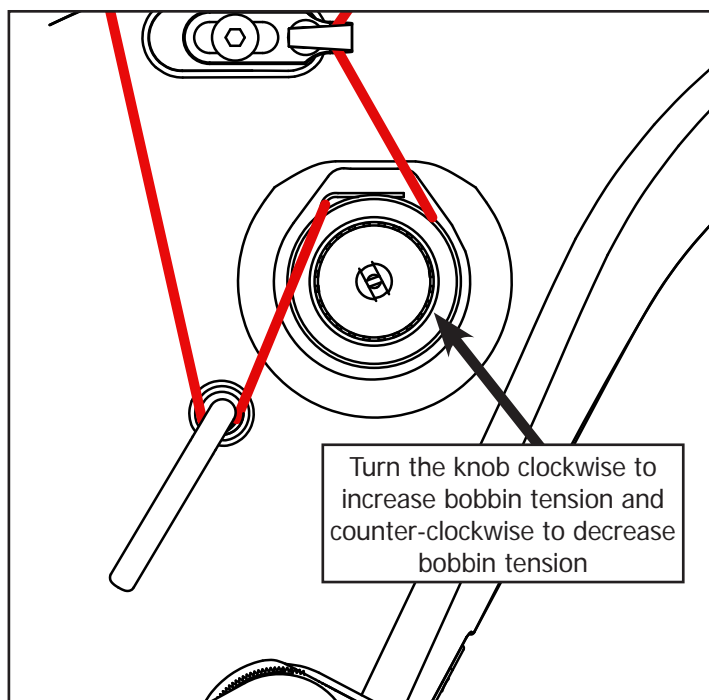
**Note:** The thread tension will need to be adjusted anytime the thread is changed. Follow the process below to adjust the thread tension for the thread you have selected.



1. Set the bobbin case, with the bobbin inside, in your hand on its side and pull up on the thread. The thread should pull the bobbin case vertical and the thread should flow out of the bobbin without lifting the bobbin off of your hand. If the bobbin pulls out of your hand, the tension is too tight and will need to be loosened. If the thread flows out of the bobbin on its side but does not pull the bobbin vertical the tension is too loose and will need to be tightened.

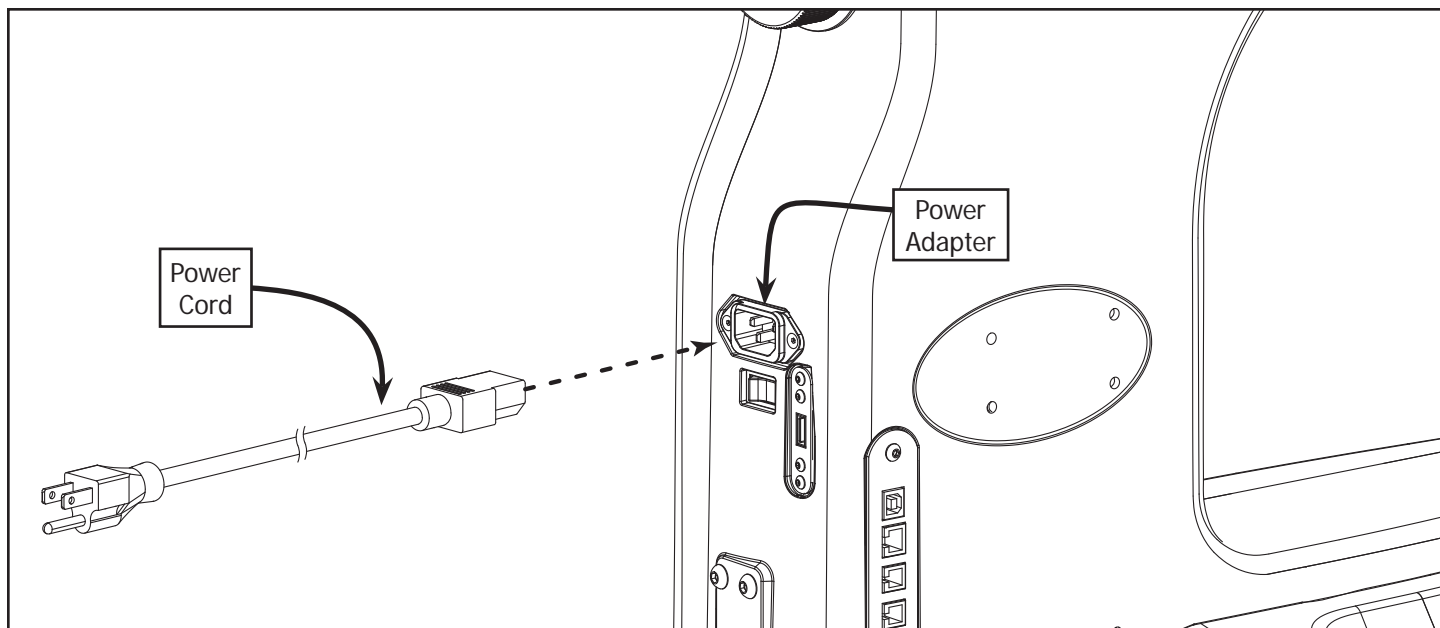
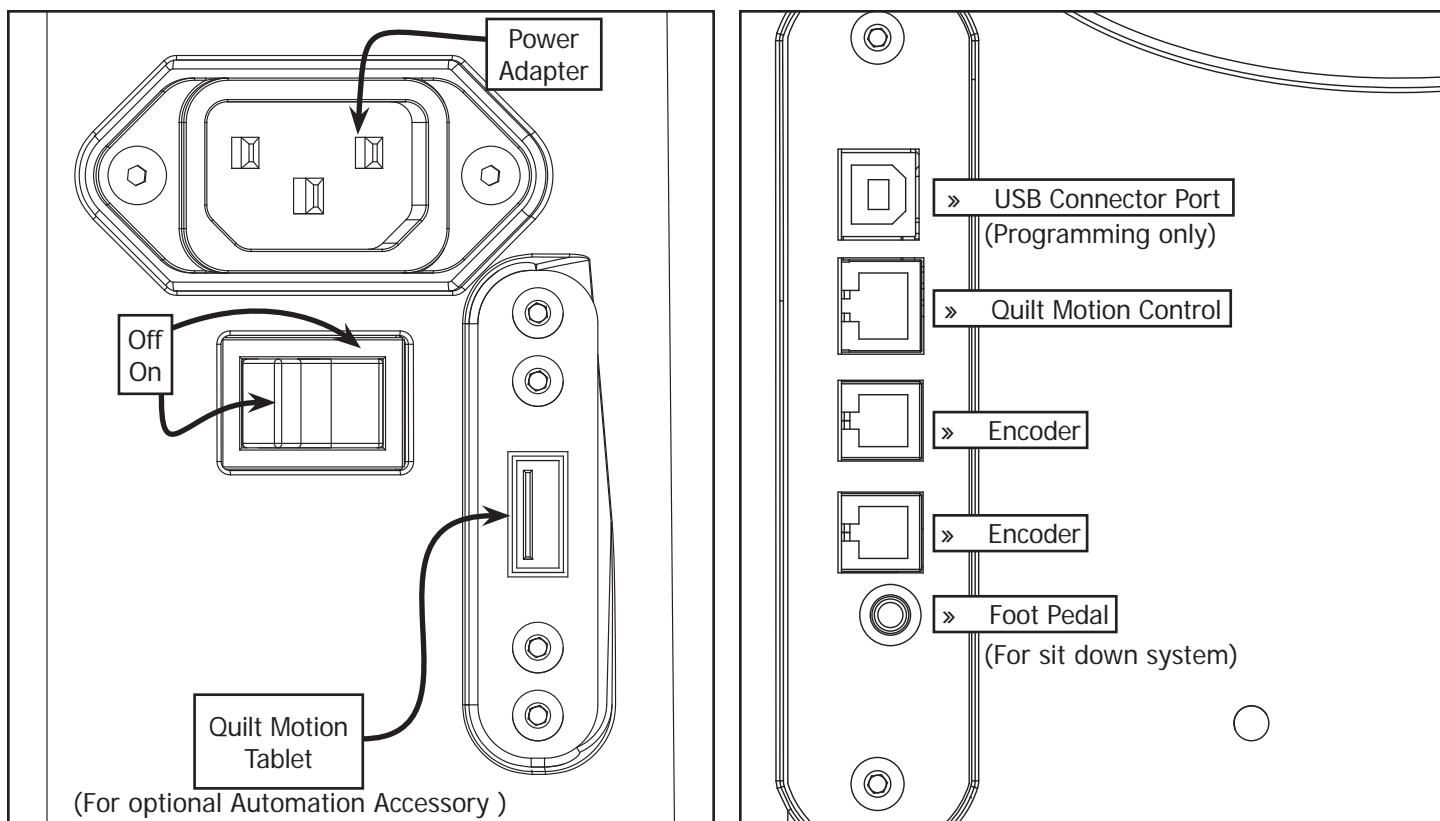


2. To adjust the bobbin tension, locate the larger of the two screws on the bobbin case. Increase the tension in minute adjustments by turning the large screw to the right (clockwise). Decrease the tension by turning the large screw to the left (counter-clockwise) minutely.



3. **Adjust the top thread tension after the bobbin tension is established.** Start with the knob loosened so that none of the screw is showing, then slowly increase the tension until the thread tension is balanced and the thread knots in the middle layers of your fabric.

## Setup & Assembly | Plugging In The Cables

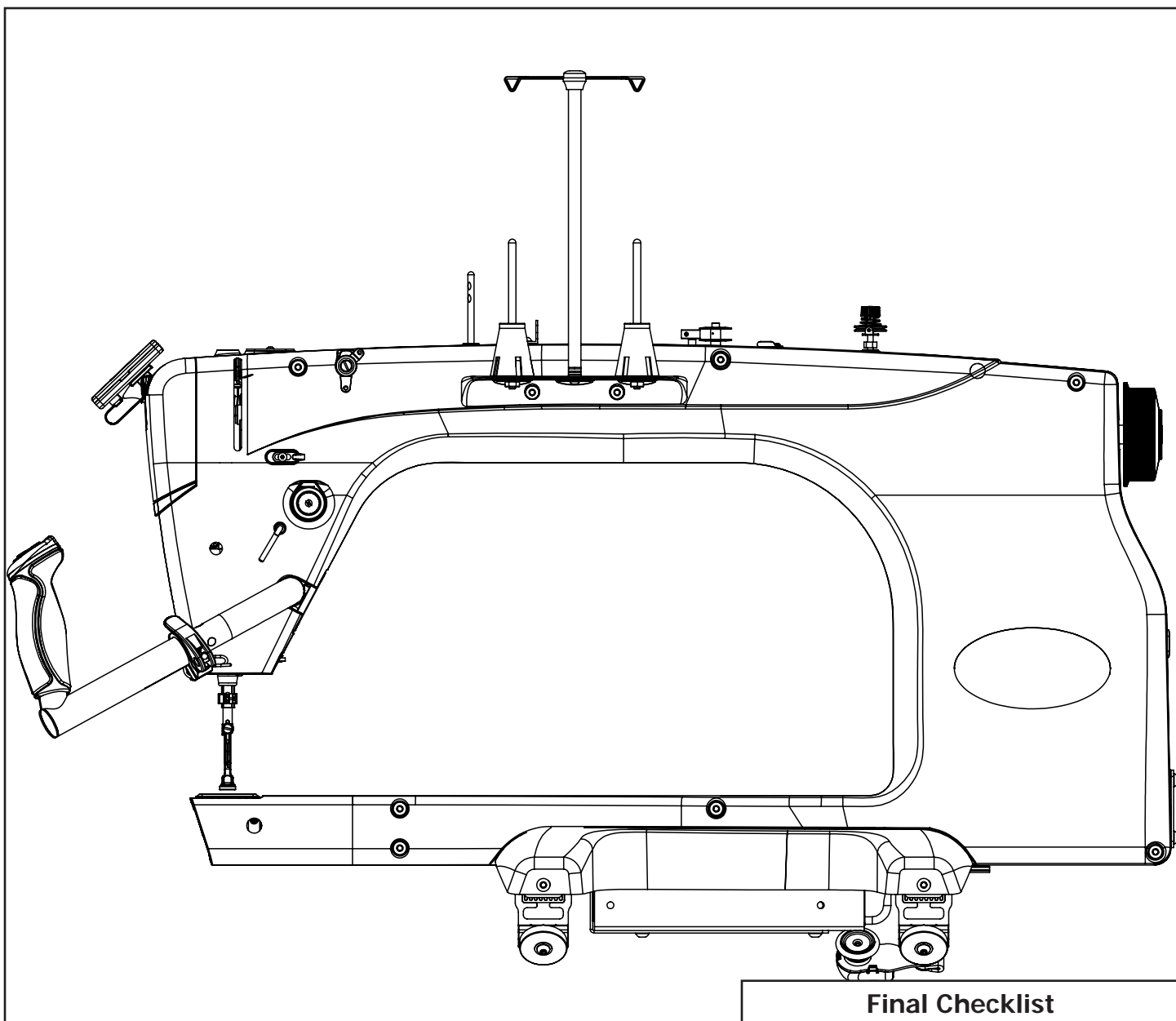


Once all the components are connected, you can attach the power cord to the sewing machine, then connect the power cord to an outlet.

When you are ready to begin sewing, turn on the machine using the power switch located on the back of the machine.



## Setup & Assembly | Final Checklist



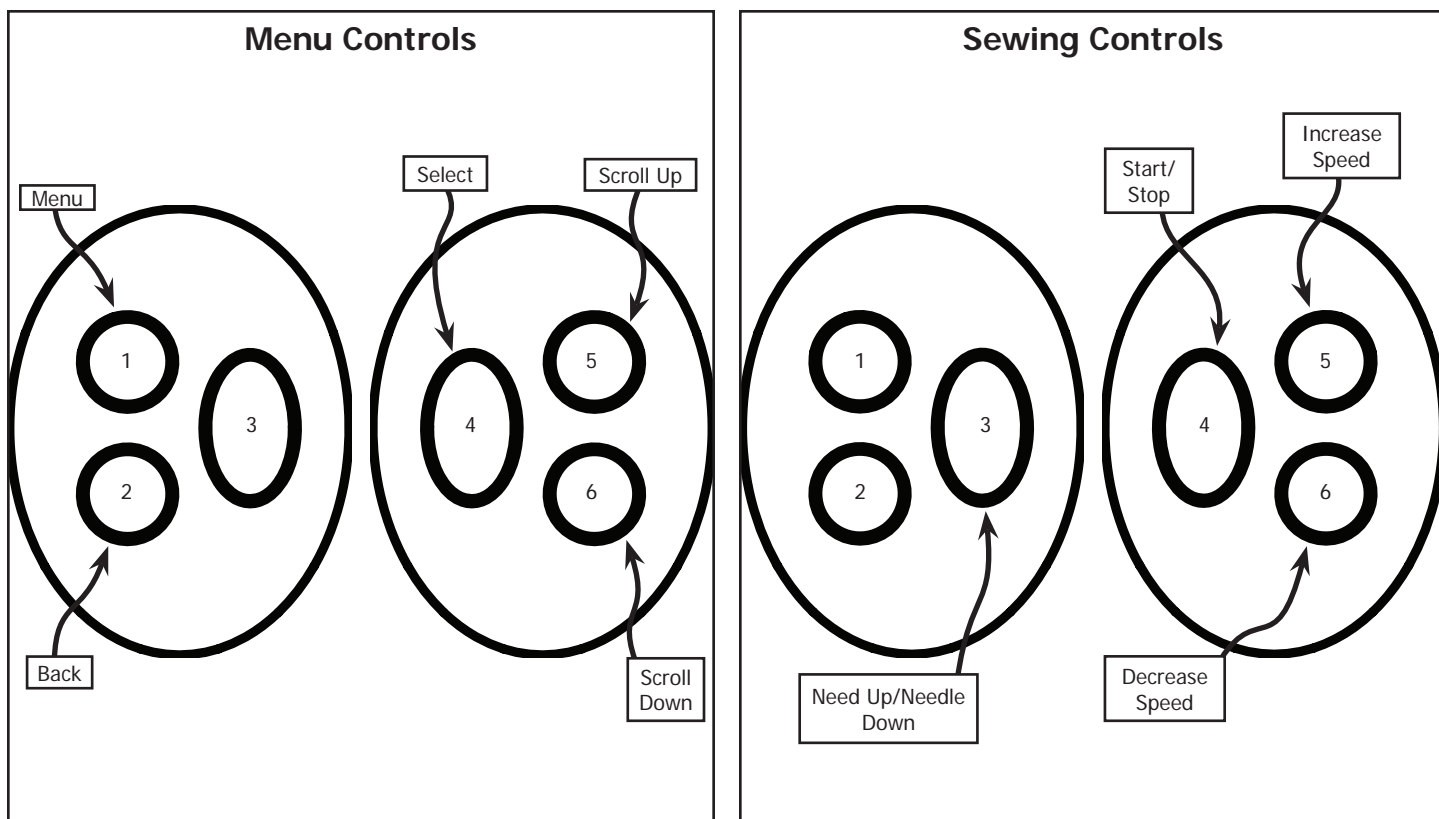
**Final Checklist**

### **Before you begin sewing make sure that:**

- The mast is attached and tightened securely.
- The bobbin winder was able to fill a bobbin and stops when full.
- The quilting machine is threaded correctly.
- The handle bars are not loose.
- The display hub is secured.
- The display powers on and displays the quilting settings.
- Check for bent needles.
- The needle is secured firmly into the needle bar and the scarf is pointed toward the throat of the machine.
- The Hopping Foot isn't overtightened on the press bar to prevent binding.
- The power cord is securely connected.

No objects other than quilting materials should be near the needle or quilting area of the quilting machine.

# Sewing | Basic Controls



**Menu** - This button returns the user to the main menu screen from any other screen.

**Back** - This button will return the user to the previously viewed screen.

**Needle Up / Needle Down** - A quick push and release of this button allows you to cycle the needle to the up or the down position. Holding this button for three seconds will change the default stop needle position. When the machine powers up the needle will always default to the up position.

**Start / Stop , Select** - This button will select the highlighted function icon. When in a sewing function menu such as regulate, manual or baste this button will cause the sewing machine to sew, or stop sewing.

**Increase , Scroll up** - When in a menu this button will scroll up for navigation of listed icon selections. When a variable window is highlighted, such as speed, stitches / inch, time or cycles, this button will allow the user to increment the value of the variable up.

**Decrease , Scroll down** - When in a menu this button will scroll down for navigation of listed icon selections. When a variable window is highlighted, such as speed, stitches / inch, time or cycles this button will allow the user to increment the value of the variable down.

# Sewing | Main Menu

The Main Menu provides access to the different sewing methods and access the tools menu.

## Regulated Precise -

In both regulated modes, the sewing machine will adjust its rate of stitching based on the speed at which the user moves the machine on the quilt frame, in order to maintain a constant stitch length. The screen will show you the current state, and sewing settings. In Precise Mode, the machine will stop sewing if it is not being moved.

## Regulated Cruise -

In cruise mode, the machine will not stop sewing if it is not being moved. The Stitch speed will not drop below 5%, even when the machine is at rest.

## Manual Mode -

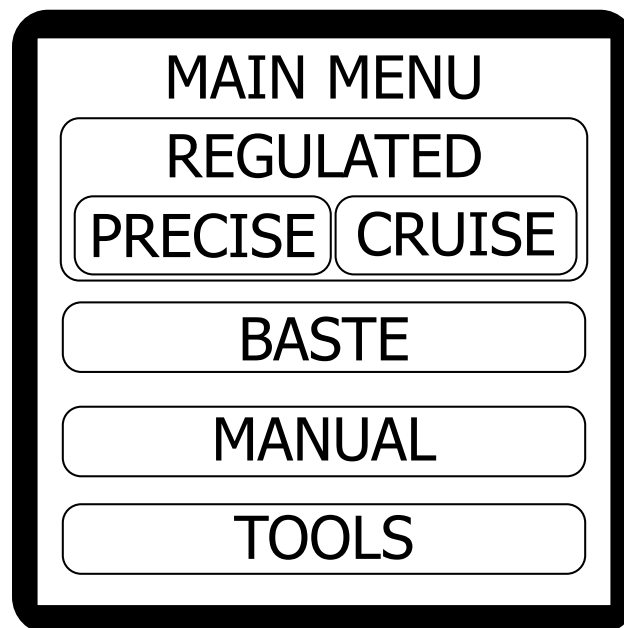
This mode allows you to set the speed of the machine. When sewing in this mode the machine speed is fixed. To get consistent stitch lengths you must adjust your movements to match the speed of the machine. This mode is especially useful for small continuous stippling type patterns, as opposed to regulated stitching functions.

## Baste -

The baste feature allow the user to place a temporary stitch at large intervals to secure fabric layers together.

## Tools-

The tools menu allows access to information regarding the sewing machine. You can also enter the diagnostics menu to test different aspects of the machine to identify issues.



# Sewing | Sewing Modes

## Over-speed Indicator -

This will be green when the sewing machine is being moved within the speed limit for sewing. When the indicator turns red and beeps it means the sewing machine is being moved more quickly than the sewing machine can stitch, and will be unable to maintain the SPI setting. In addition to the red indicator, an audible beep will sound until the speed is reduced sufficiently to allow the machine to regulate.

## Needle Position Indicator -

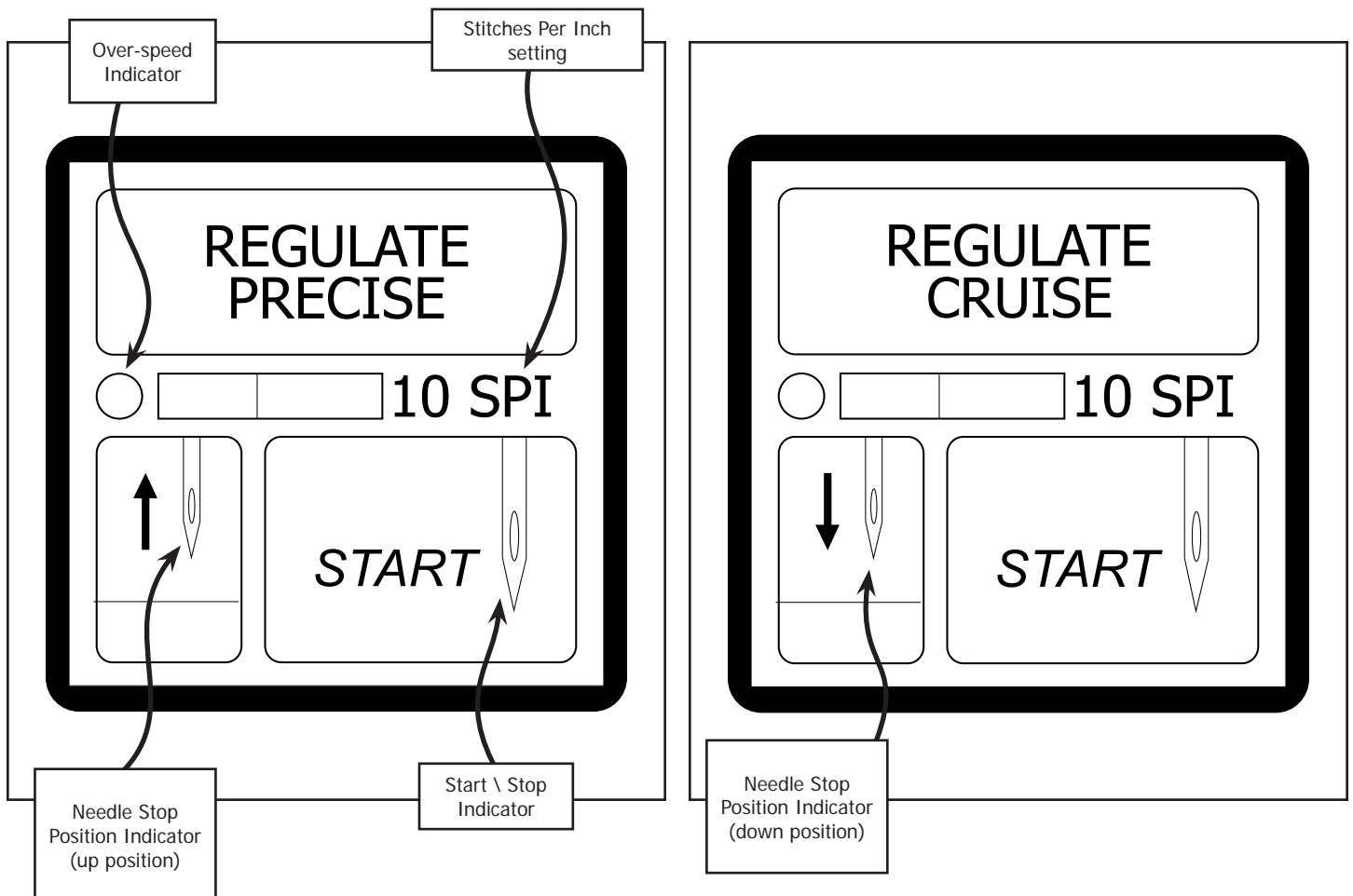
This is a visual representation for the default needle position when sewing is stopped. To change, hold the left needle up/down button for three seconds.

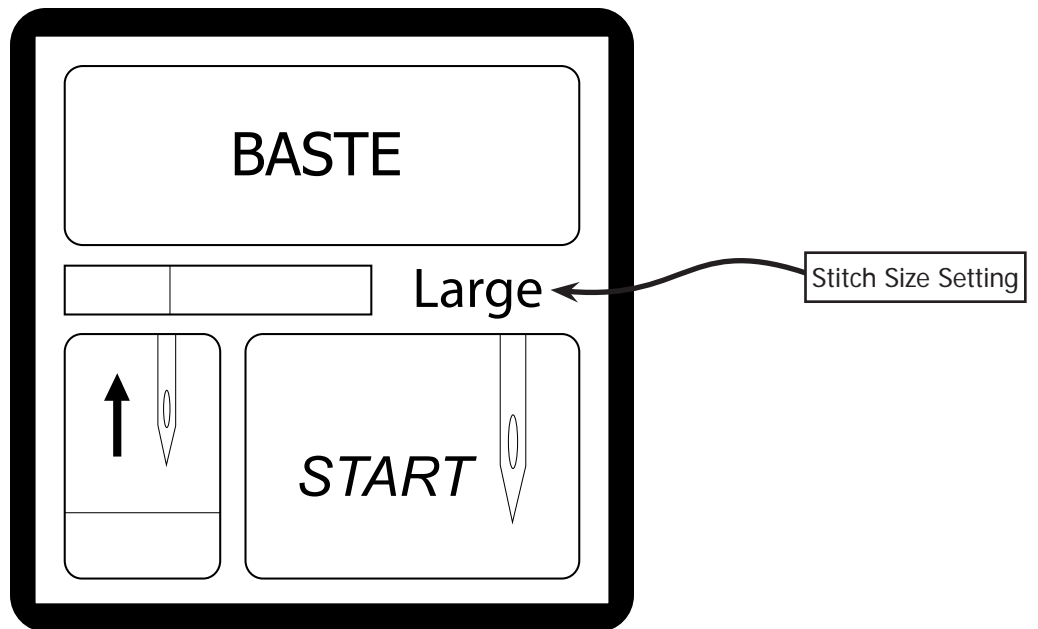
## SPI Setting (Stitch Per Inch) -

Shows the current SPI setting, the minimum is 4, and the maximum is 16.

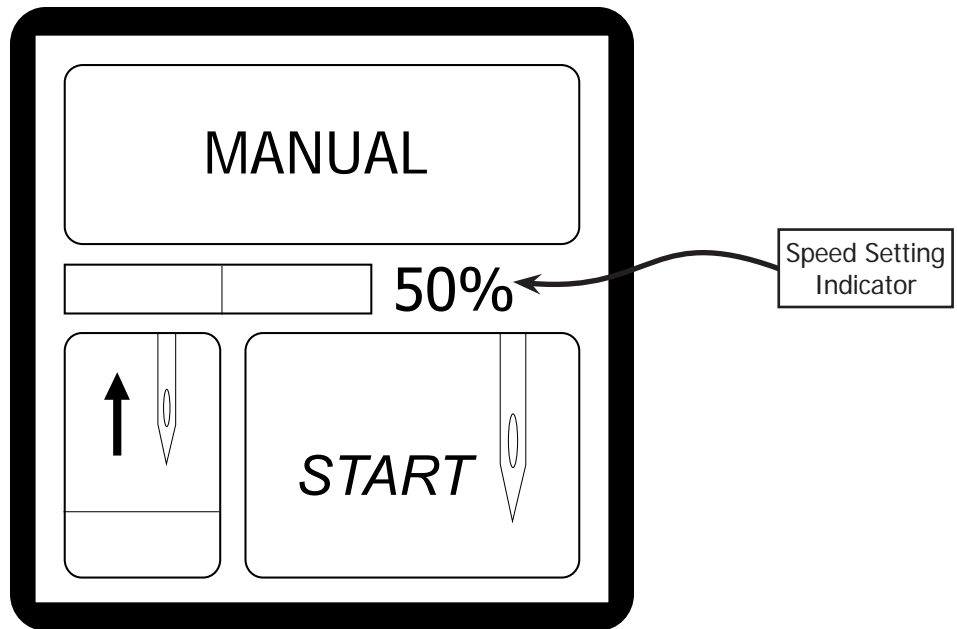
## Start / Stop Indicator -

This button indicates what action the sewing machine will take when the start/stop button is pressed.

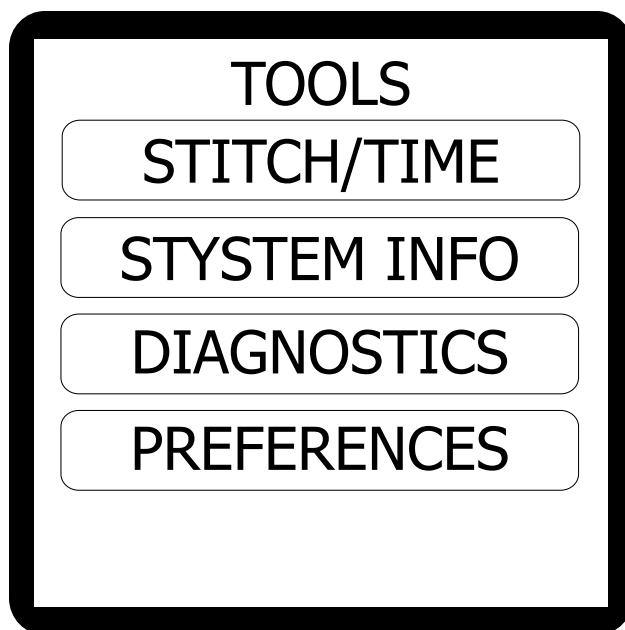




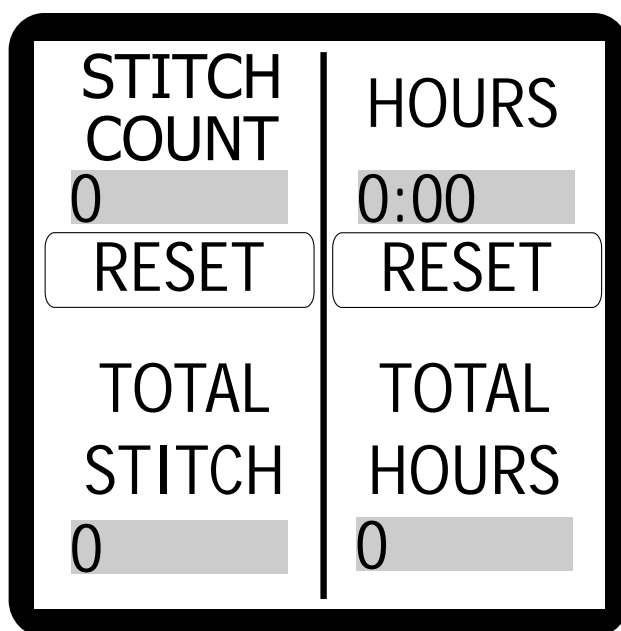
The baste stitch can be set to small, medium, or large.



The Speed indicator shows current sewing speed as a percentage of the maximum 1800 stitches per minute. The minimum being 5% and the maximum of 100%.



The tools menu allows access to information regarding the sewing machine. You can also enter the diagnostics menu to test different aspects of the machine to identify issues.

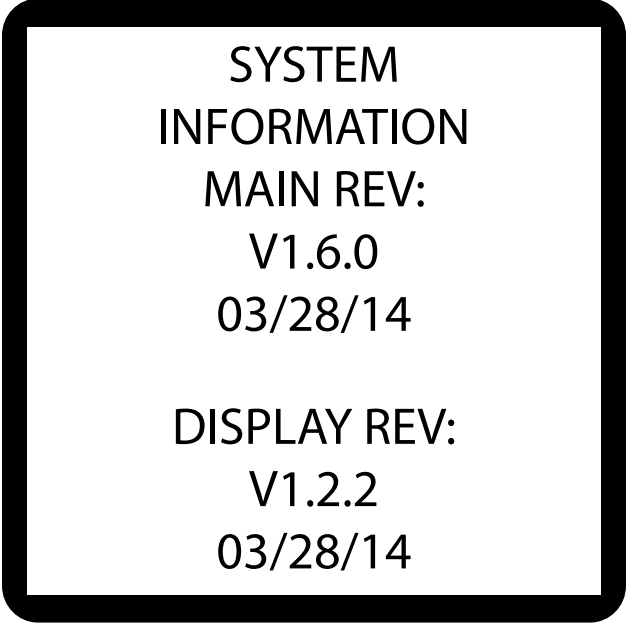


### Stitch / Time

This screen displays the number of stitches sewn and hours the machine has run. Hours and stitches can be reset individually. To reset either one, navigate to the option you wish to reset using the + or - keys and then press select.

### Total -

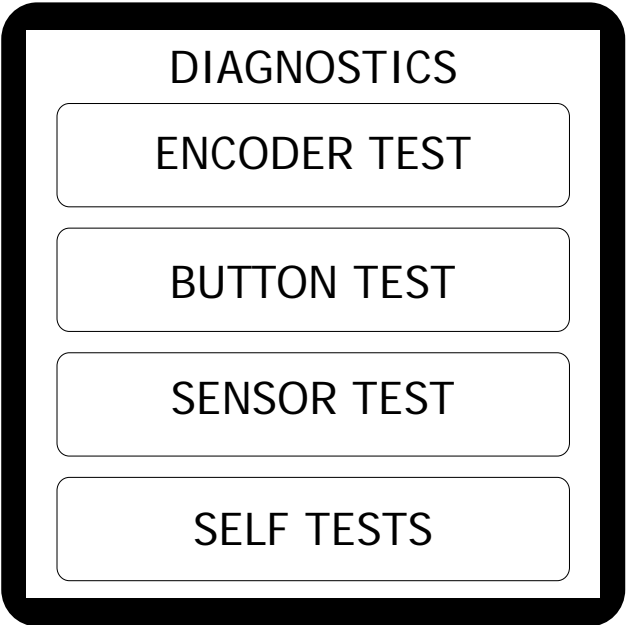
This area cannot be reset. The sewing machine will keep track of the total number of stitches sewn, and hours the machine has run.

A screenshot of a system information screen. It features a black rounded rectangular border. Inside, the text is centered and reads: 'SYSTEM INFORMATION', 'MAIN REV:', 'V1.6.0', '03/28/14', 'DISPLAY REV:', 'V1.2.2', and '03/28/14'.

SYSTEM  
INFORMATION  
MAIN REV:  
V1.6.0  
03/28/14  
  
DISPLAY REV:  
V1.2.2  
03/28/14

### System Information

This screen will display the motor control firmware version and the display control firmware version.

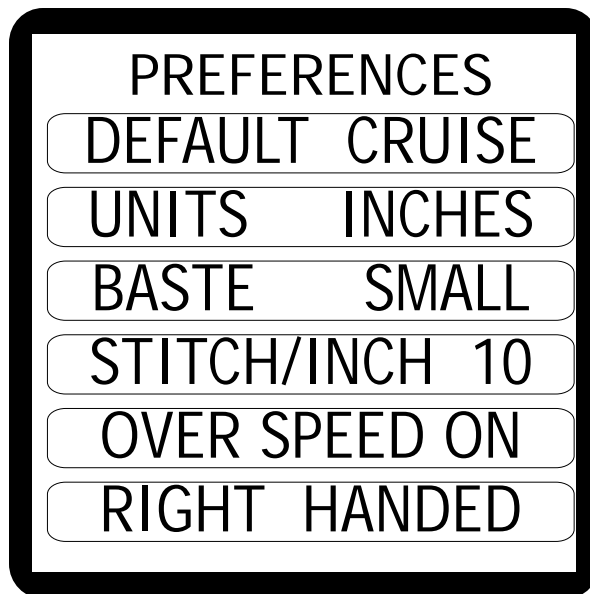
A screenshot of a diagnostics menu. It features a black rounded rectangular border. Inside, the text is centered and reads: 'DIAGNOSTICS', 'ENCODER TEST', 'BUTTON TEST', 'SENSOR TEST', and 'SELF TESTS'. Each option is enclosed in a white rounded rectangular button.

DIAGNOSTICS  
ENCODER TEST  
BUTTON TEST  
SENSOR TEST  
SELF TESTS

### Diagnostics

The diagnostics are used to identify where the sewing machine may be experiencing an issue. This will be very useful when working with a technician.

The diagnostics can be used to troubleshoot a machine. They provide a means to do testing, should a problem arise.



### Preferences

This screen will be used to change defaults for various options as follows:

Default: Precise/Cruise/Baste/Menu

Units: Inches/Metric

Inches/Baste: Small/Medium/Large

Stitch/Inch: 4-16.

Over Speed: On/Off

Left Handed/ Right Handed: This will reverse the buttons for right or left handed users.



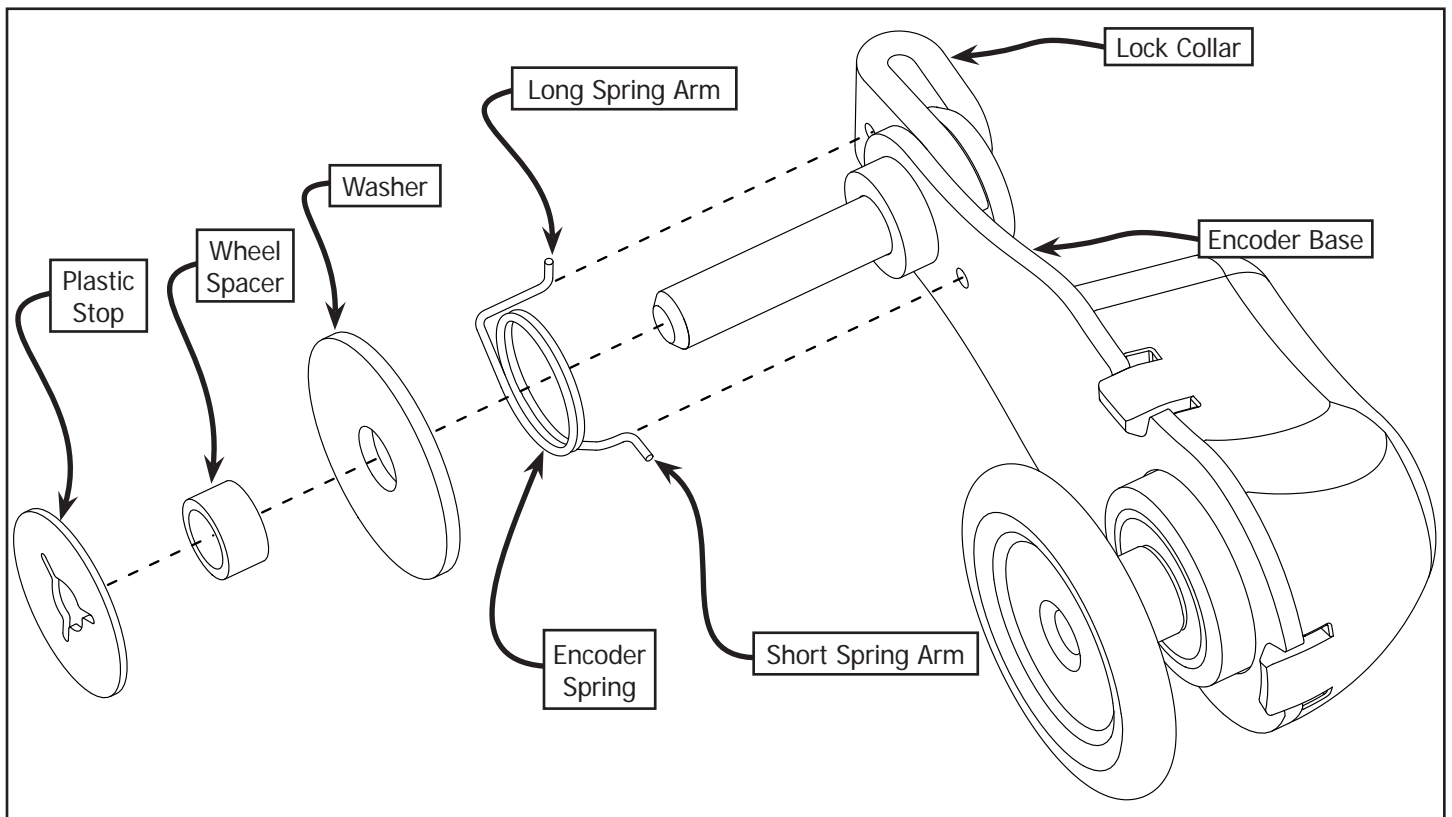
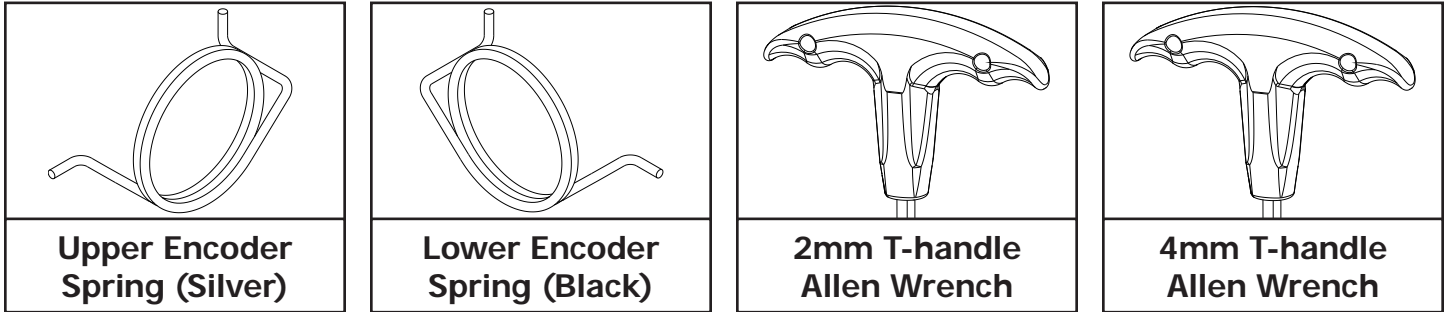
# Maintenance Guide

This section contains direction for cleaning and maintaining the quilting machine, and instruction to repair simple issues.

For trouble shooting refer to page 40.

## Maintenance | Replacing The Encoder Spring

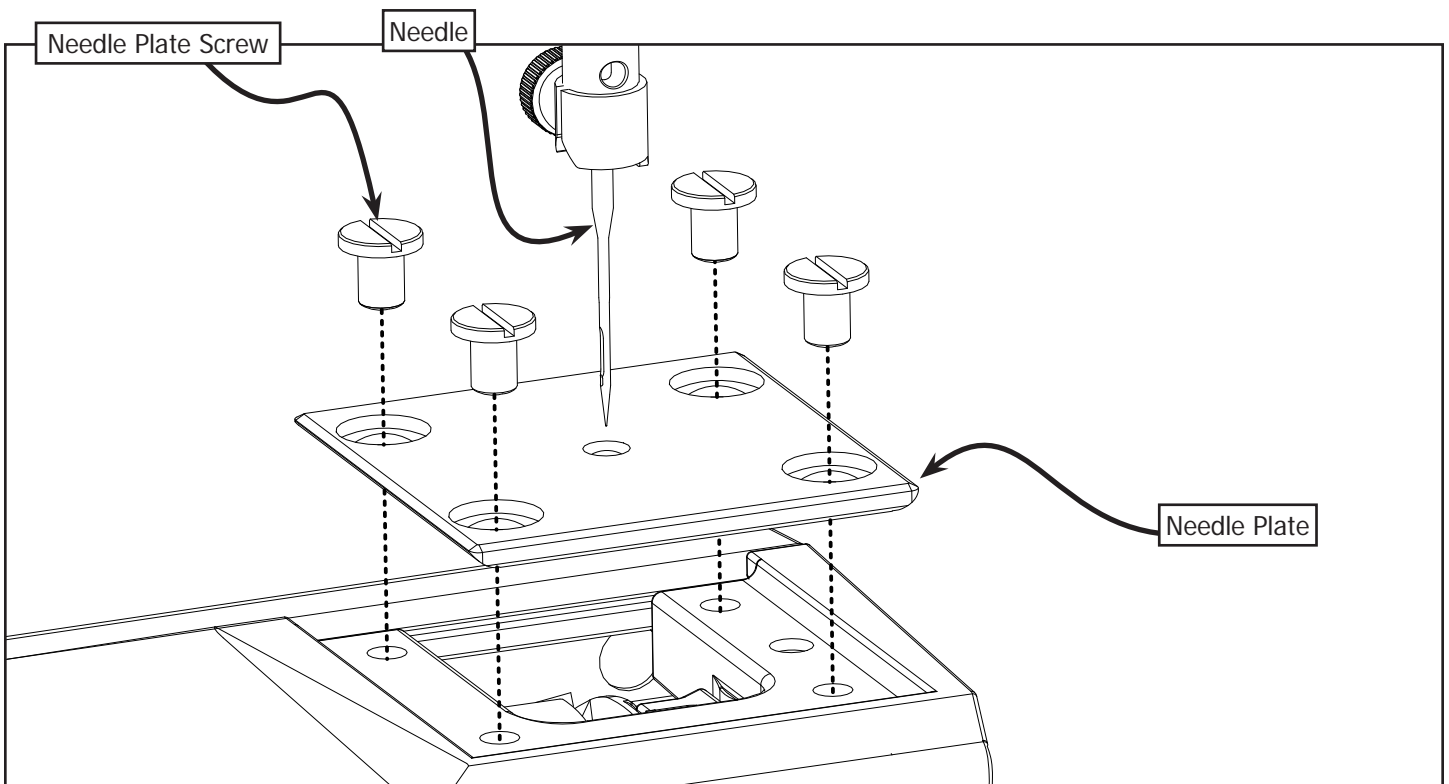
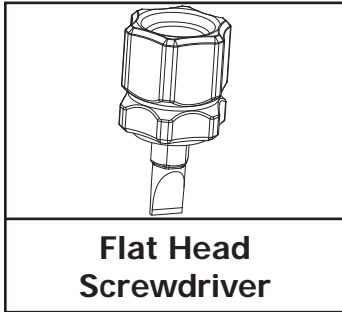
### Parts & Tools Needed:



1. Unplug the encoder cable then loosen the lock collar and remove the encoder from the carriage.
2. Remove the Plastic Stop, Wheel Spacer, and Washer from the encoder then remove the broken encoder spring.
3. Put the replacement spring on the encoder. Set the Long Spring Arm in the hole on the Lock Collar and set the Short Spring Arm in the hole on the Encoder Base.
4. Replace the Washer, Wheel Spacer, and Plastic Stop then reattach the encoder to the carriage.

## Maintenance | Needle Plate

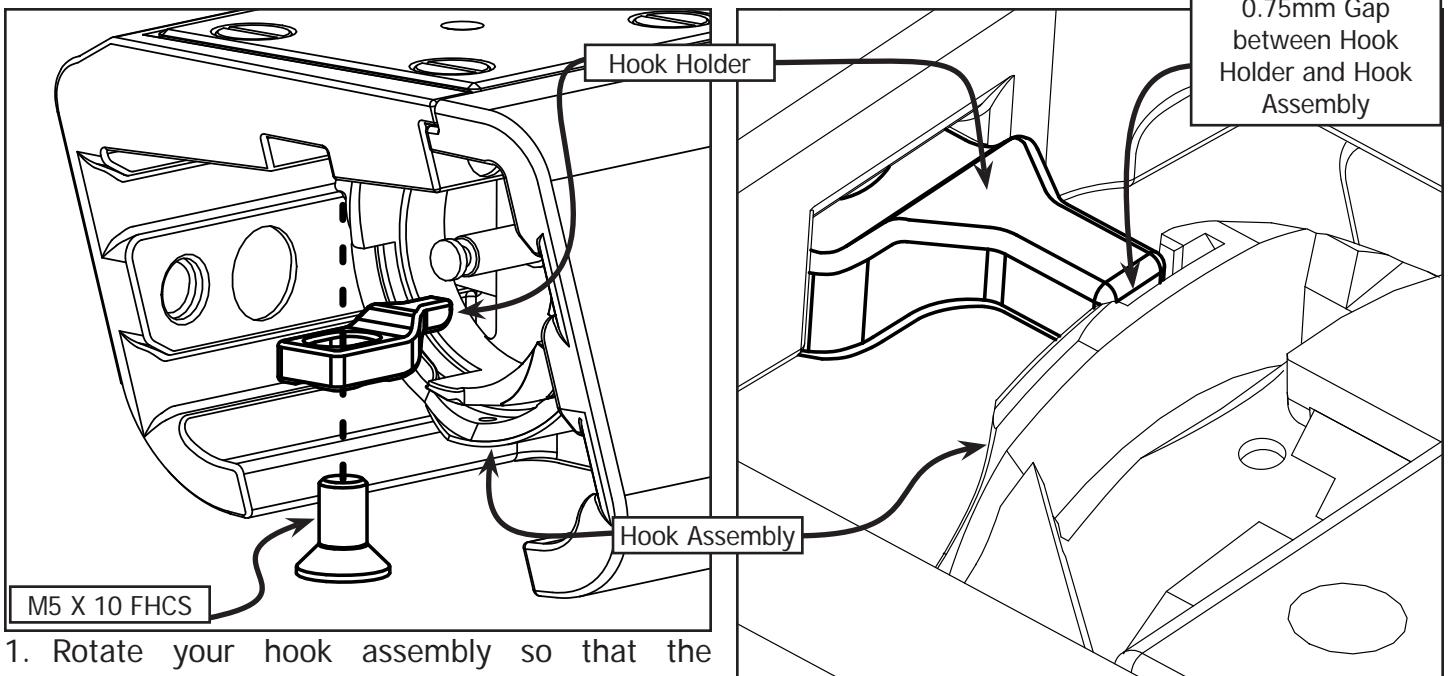
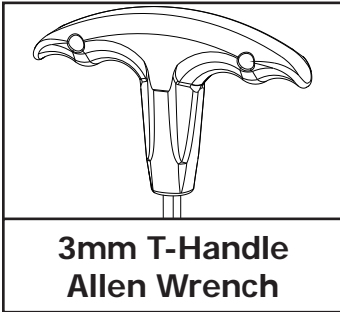
### Tools Needed:



1. Place your needle plate on your sewing machine and rotate hand wheel to ensure needle plate orientation so that all screw holes are visible and needle enters the middle of the needle plate without contacting the needle plate at any point.
2. Attach your needle plate using 4 needle plate screws, don't tighten the screws during this step.
3. Rotate hand wheel until the needle is in the lowest position move needle plate till it is centered around needle and tighten all 4 needle plate screws.

**Note:** Consult with technical support before attempting to adjust the hook holder.

### Tools Needed:

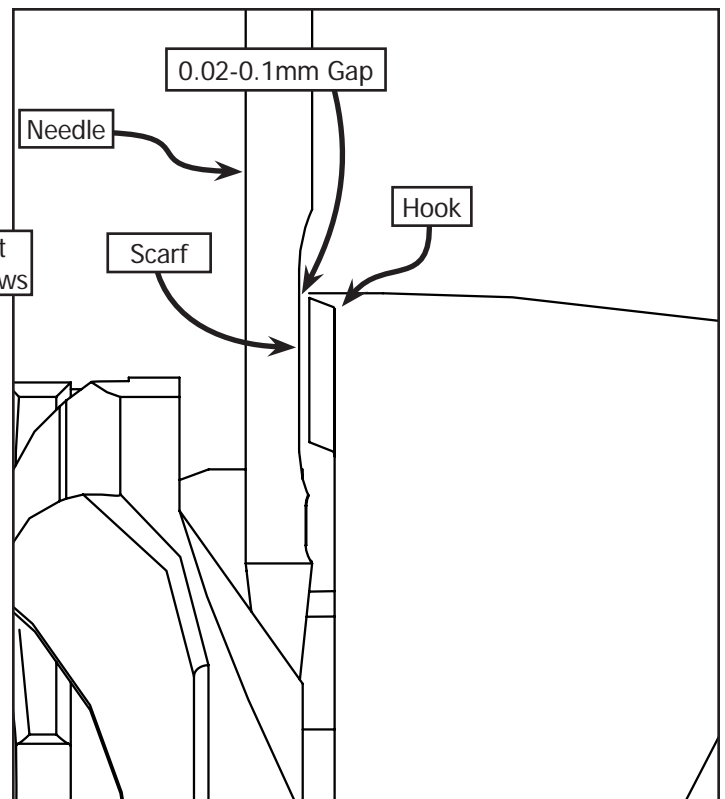
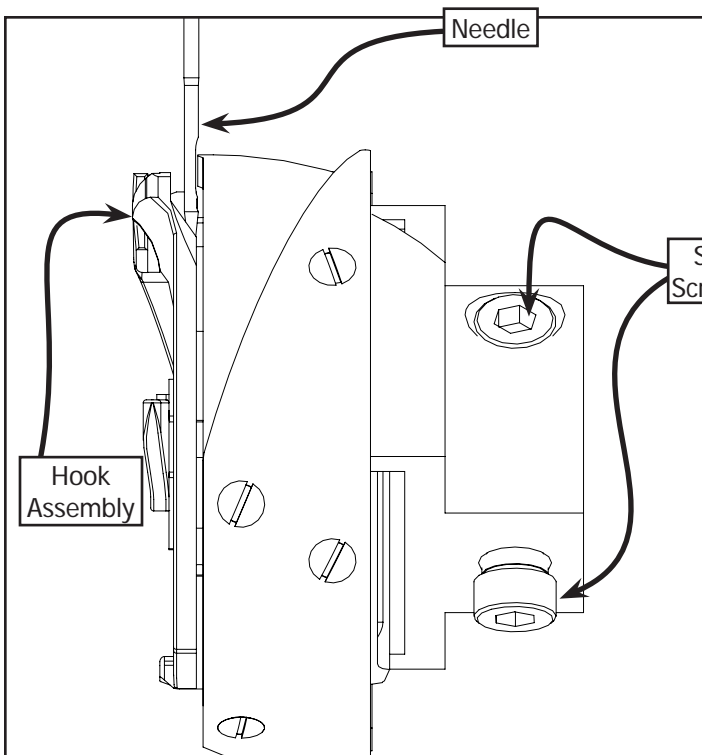
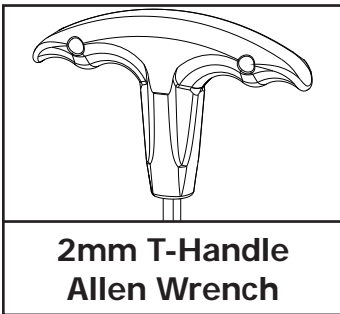
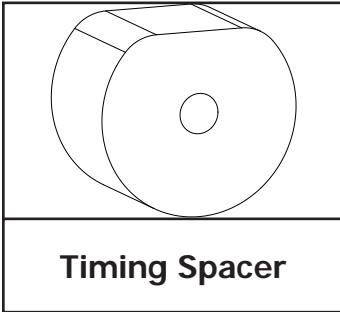


1. Rotate your hook assembly so that the positioning guide is at the highest point during rotation.
2. Attach your hook holder to your sewing machine with a M5 X 10 SBHCS (don't tighten the screw during this step) with the hook holder's finger in the middle of the hook assembly's positioning guide.
3. Slide your hook holder away from the hook assembly so there is about a 0.75mm gap (it's hard to measure so just make it as big of a gap as possible) between the hook holder and the hook assembly, and tighten the M5 X 10 SBHCS.

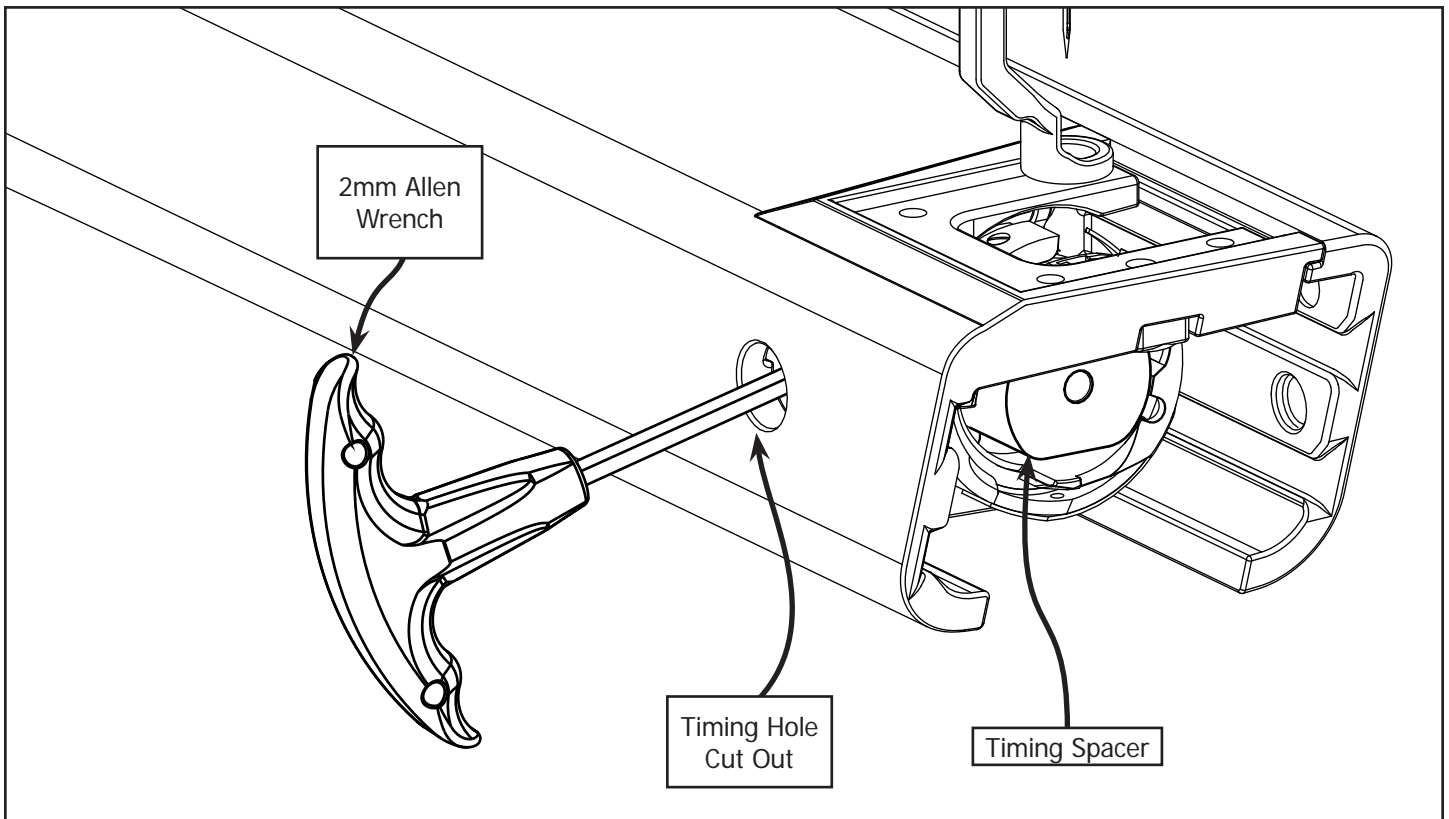
# Maintenance | Timing The Machine

**Note:** Consult with technical support before attempting to adjust the machine timing.

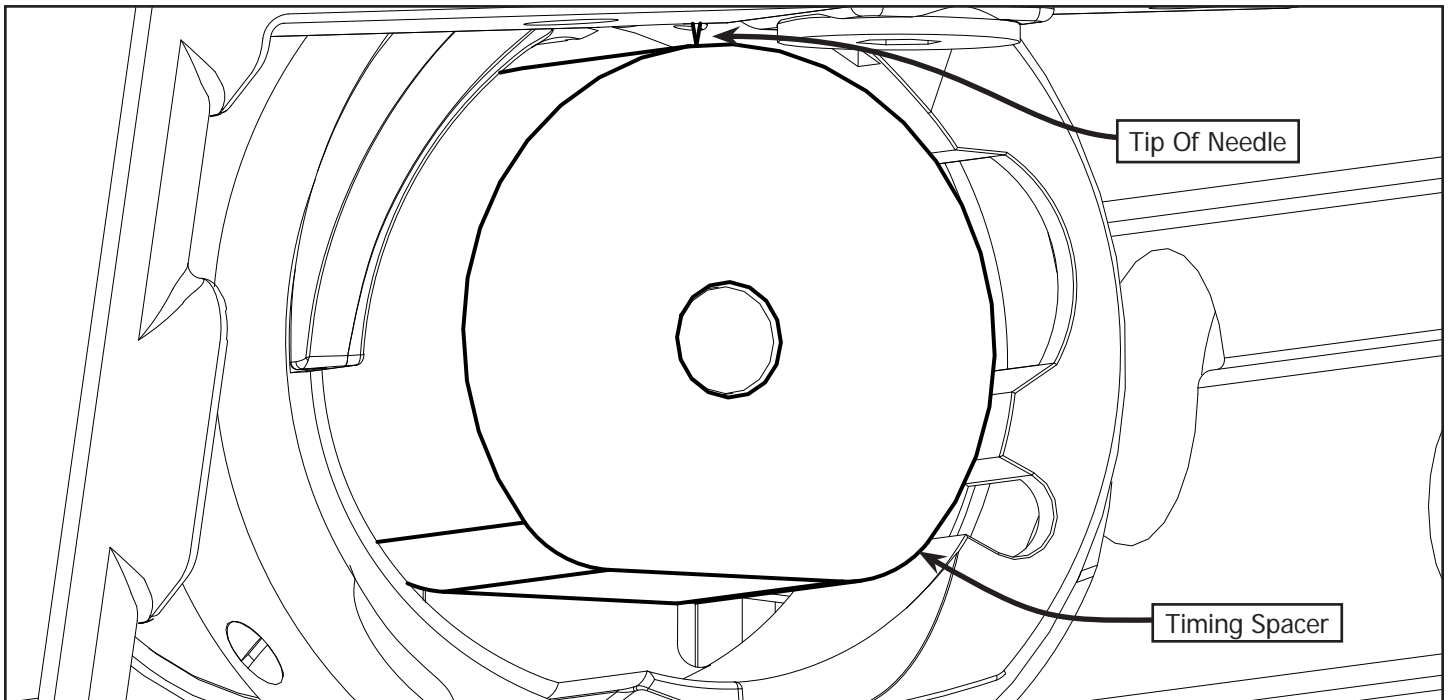
## Tools Needed:



1. Remove needle plate.
2. Loosen all three hook assembly set screws with a 2mm allen wrench by inserting the wrench into the machines timing hole cut out when each set screw aligns with the hole.
3. Rotate the hand wheel clockwise from the front of the machine so needle is raising out of the hook assembly.



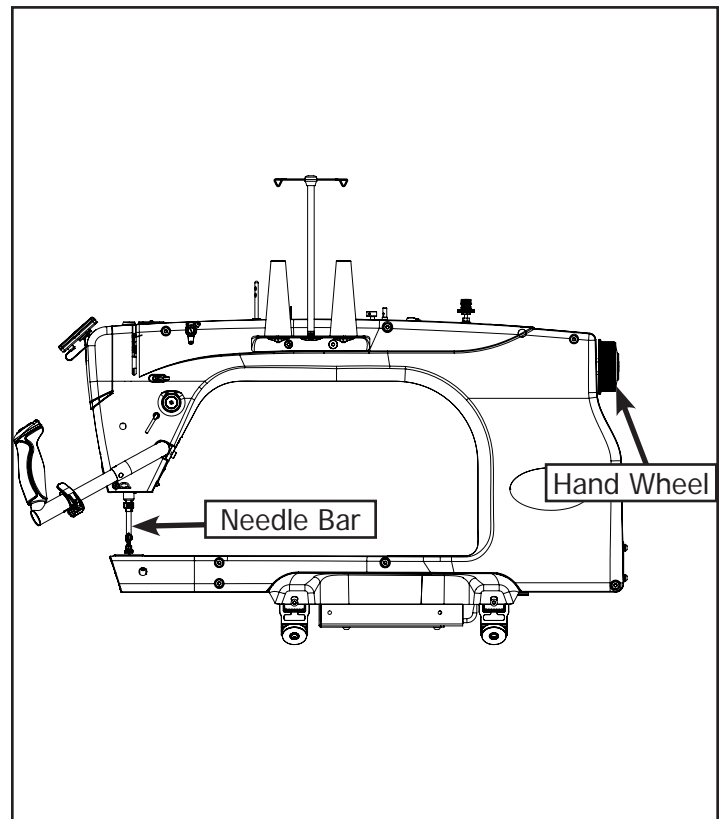
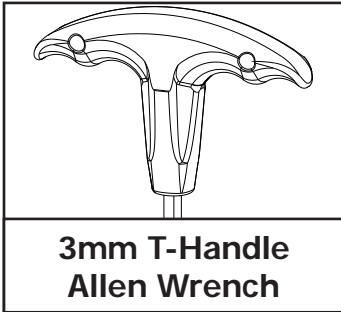
4. Bring the needle so it rests on the top of timing spacer, so the groove in the needle aligns in the middle of the hook on the hook assembly. The needle should be as close as possible to the hook assembly without touching, roughly between 0.02mm and 0.075mm.



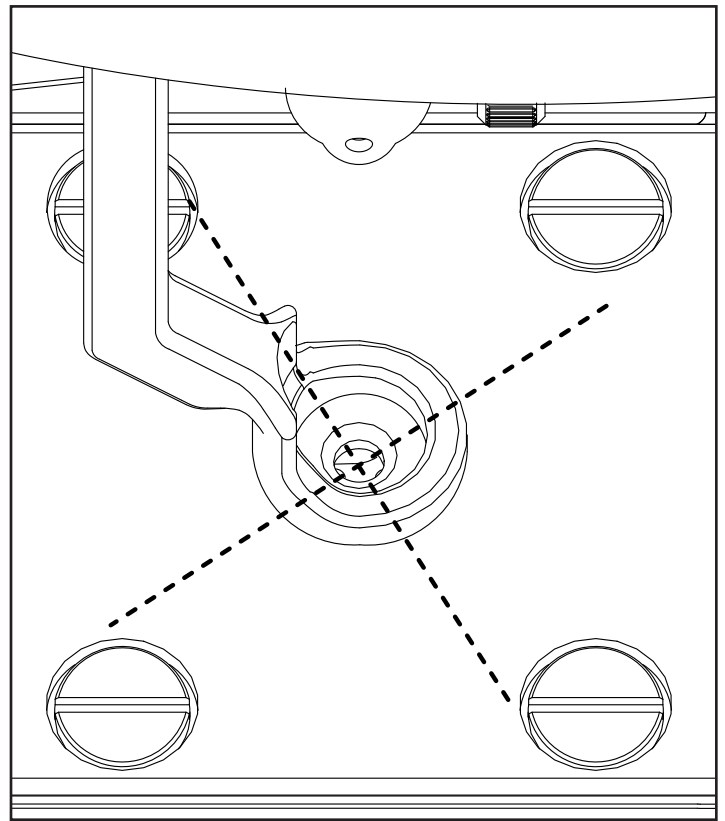
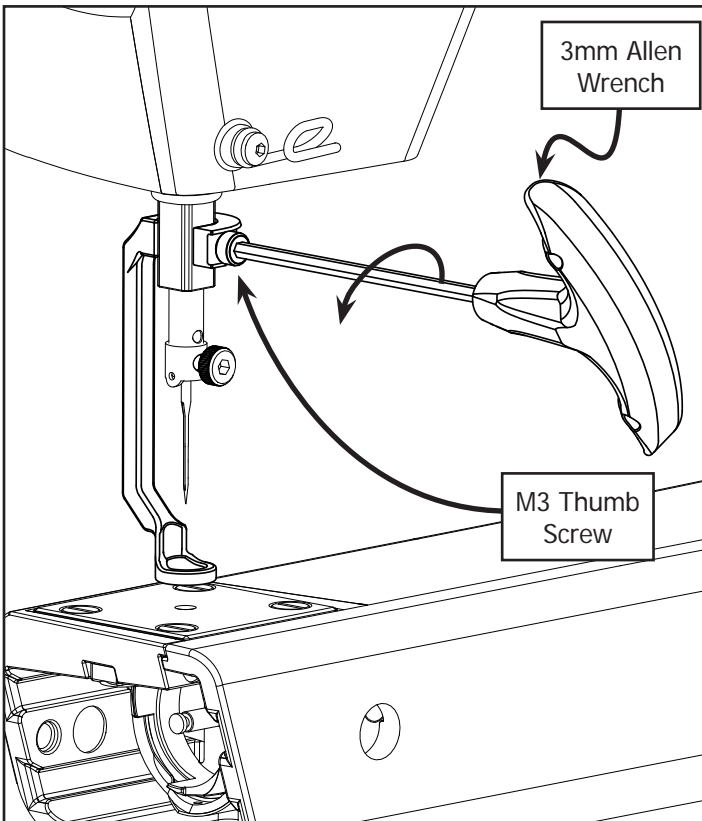
5. Tighten set screw, make sure needle doesn't hit hook by watching to see if the needle bends during rotation and there is no clicking noise. Rotate machine using the hand wheel a full rotation to ensure the needle doesn't hit anywhere during rotation. If needle hits the hook assembly anywhere during rotation adjust needle height up or down off center from hook in 0.25mm increments as appropriate to clear the collision.
6. Tighten the two remaining set screws and reattach the needle plate.

## Maintenance | Hopping Foot

### Tools Needed:

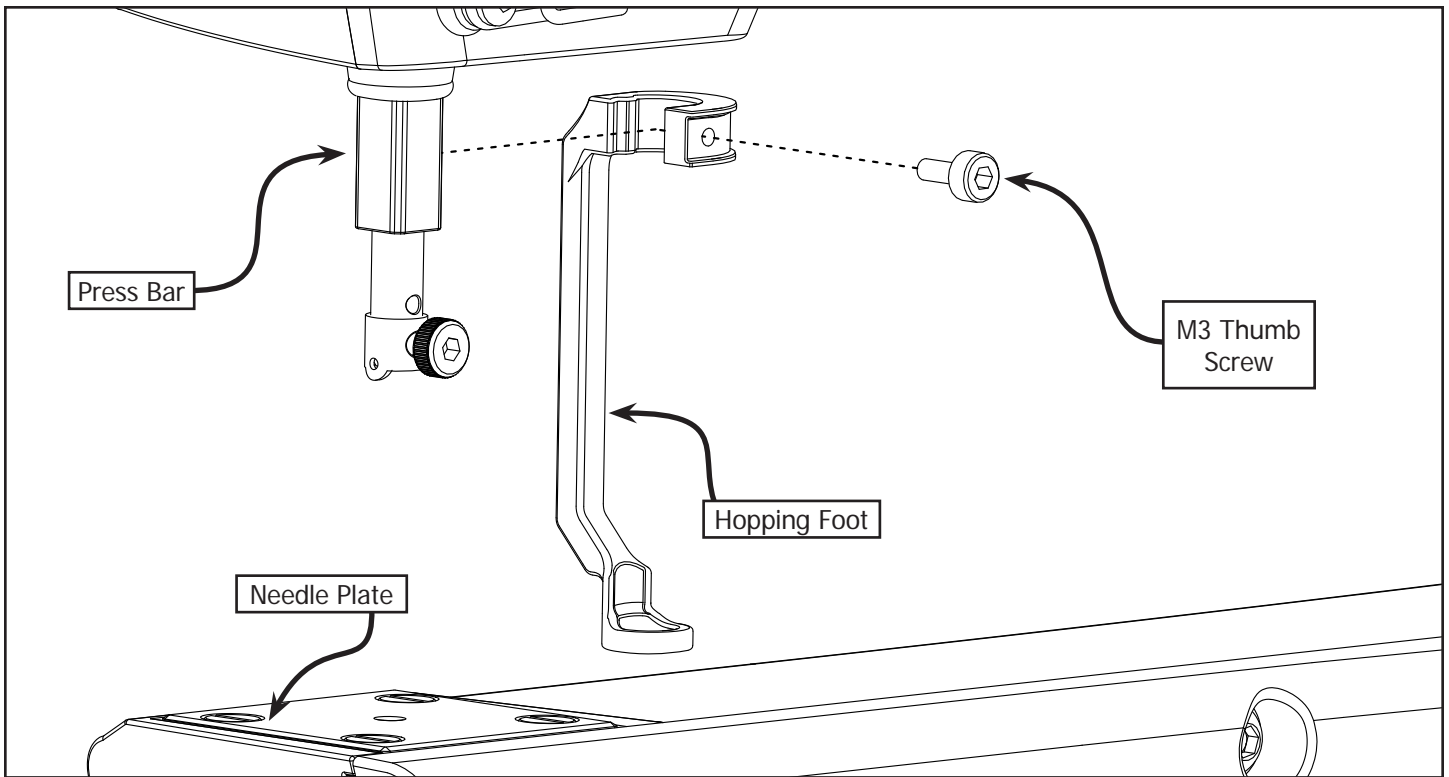


1. Using the Hand Wheel in the back of your machine, rotate your machine until the Needle Bar is in the lowest position.

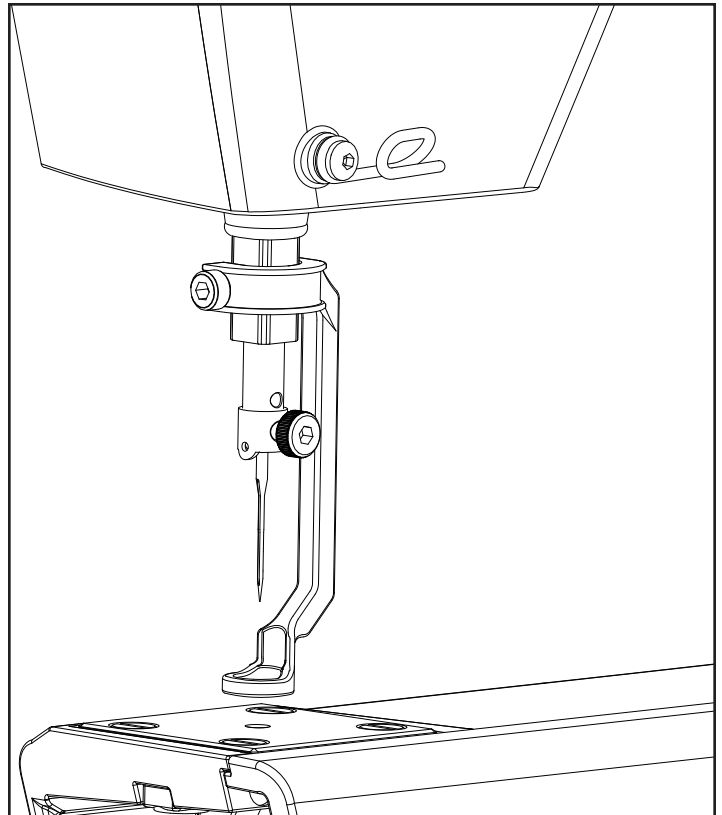
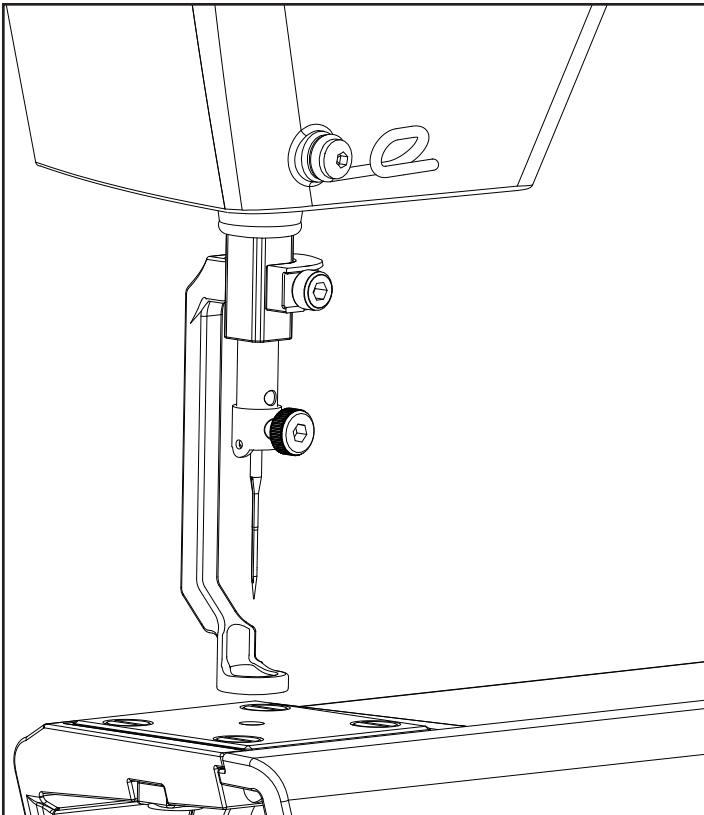


2. Attach your hopping foot to the press bar using a M3 Thumb Screw (don't tighten during this step).
3. Using the hole in the needle plate, align the hopping foot so that is centered.

## Maintenance | Hopping Foot



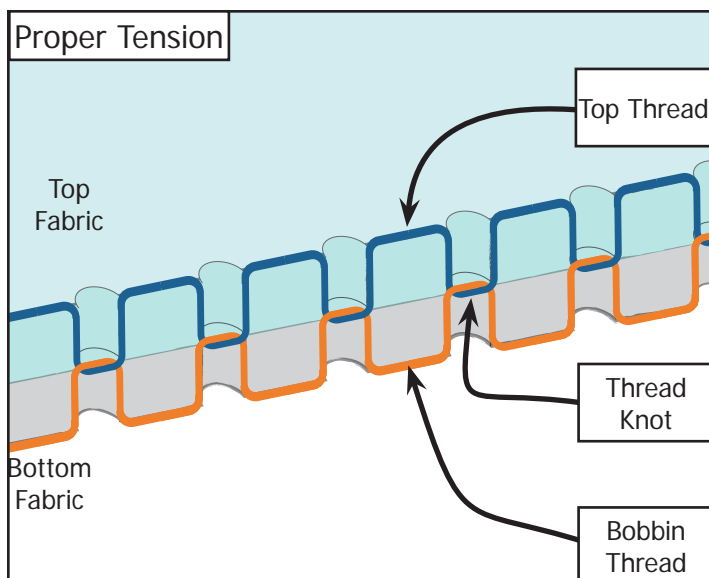
4. Place 4 sheets of paper under the foot and lower the hopping foot to the top of the surface. You may need to use 2 sheets more or less of paper if your project is particularly thick or thin.
5. Tighten the bolt using the 3mm Allen Wrench.



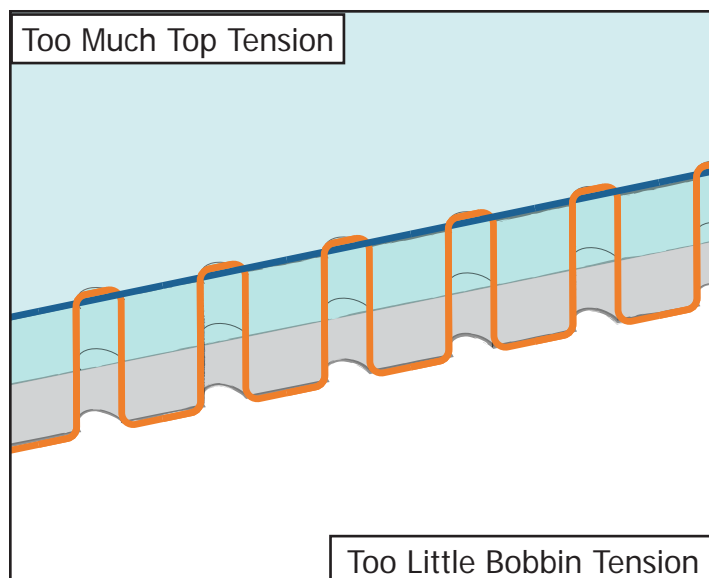
**Note:** The Hopping foot can be positioned in either of the positions shown. Make sure not to overtighten the Hopping Foot to prevent binding the Press Bar.



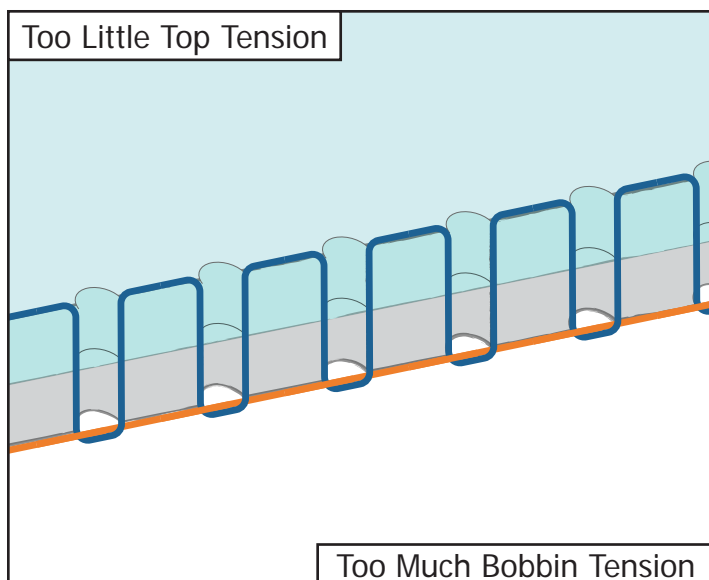
## Maintenance | Thread Tension



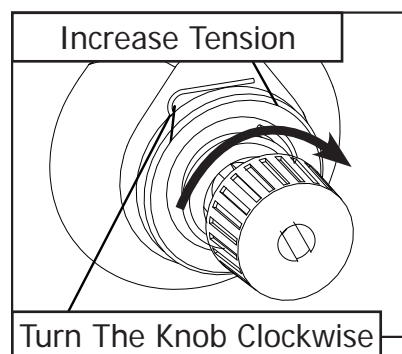
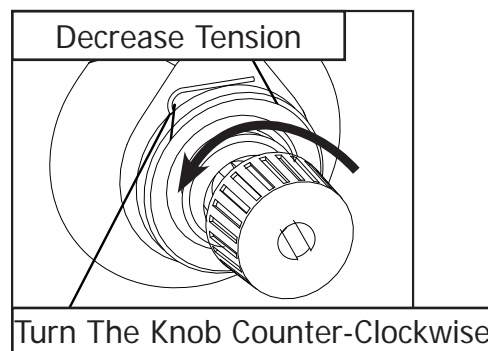
If the thread is properly tensioned the top thread and the bobbin thread will knot in the middle of the fabric layers.



If the bobbin thread is being pulled through the top layer of fabric you need to decrease the tension on the top thread by turning the top tension knob counter-clockwise.

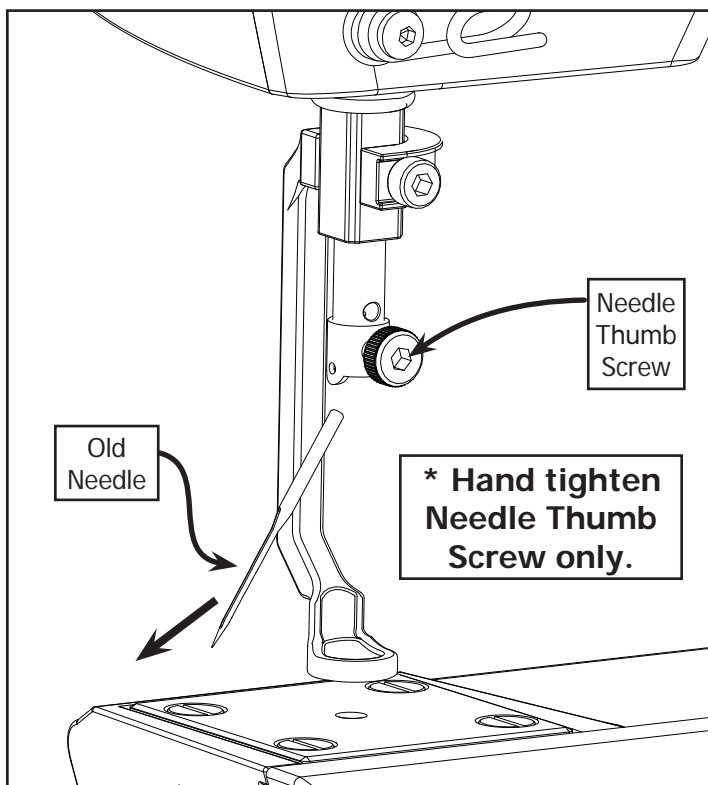


If the top thread is being pulled through the bottom layer of fabric you need to increase the tension on the top thread by turning the top tension knob clockwise.

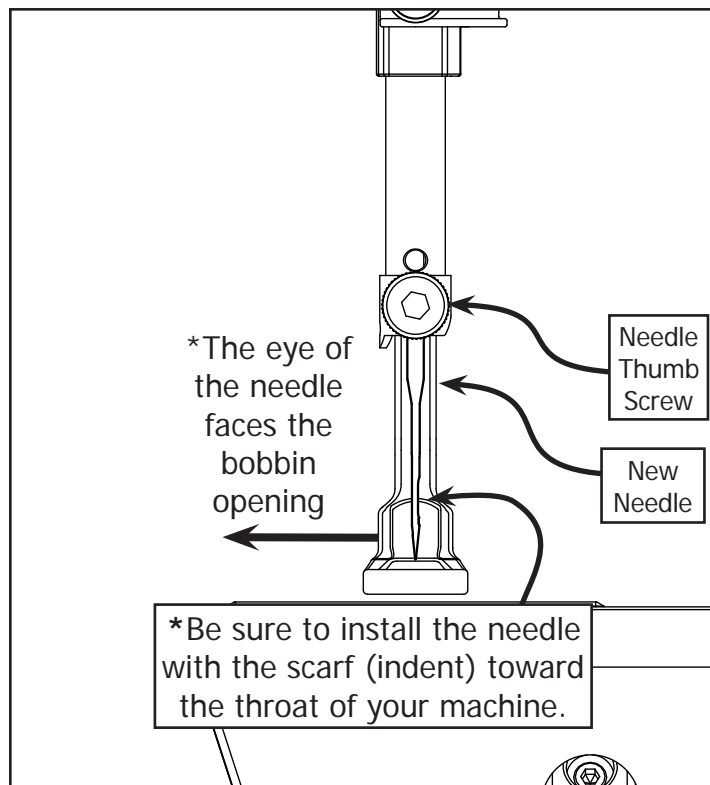


**It is very important to make sure that the bobbin tension is properly set first**, see the tension section for directions on setting the bobbin tension. As long as you have your bobbin tension correct, you should be able to fix the tension by adjusting only the top tension. If you are unable to fix you tension by only adjusting the top tension you may need to re-adjust the bobbin tension.

## Maintenance | Changing The Needle



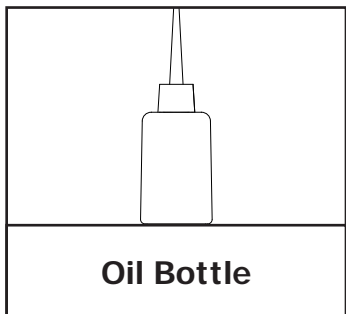
1. Power off the machine.
2. Raise the Needle to the highest point.
3. Loosen the thumb screw that secures the needle a quarter turn.



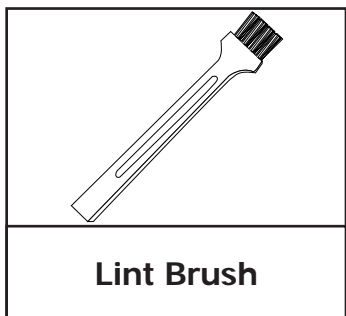
4. Remove old needle and insert the new one. Make sure the needle is fully inserted and properly aligned.
5. Hand tighten the thumb screw while holding the needle in place.

# Maintenance | Cleaning & Oiling The Sewing Machine

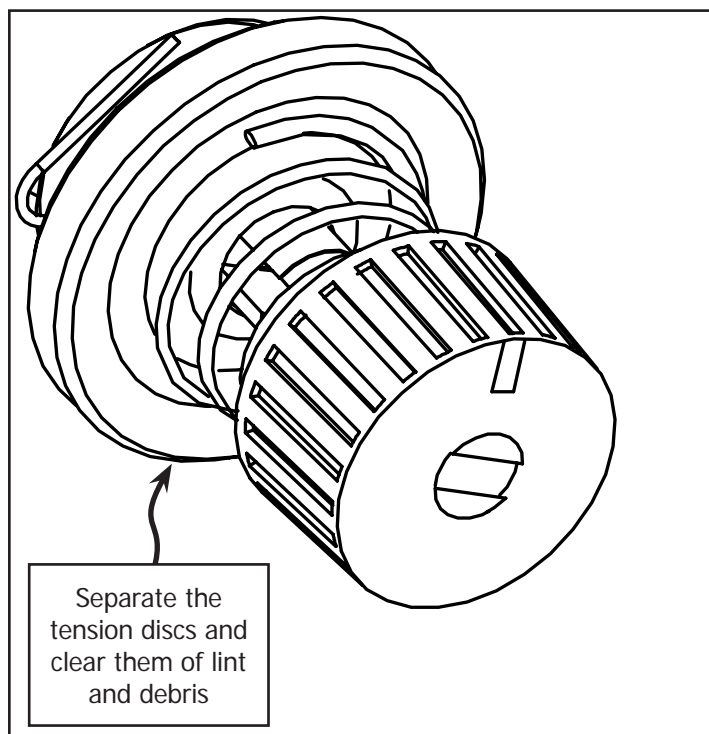
## Tools Needed:



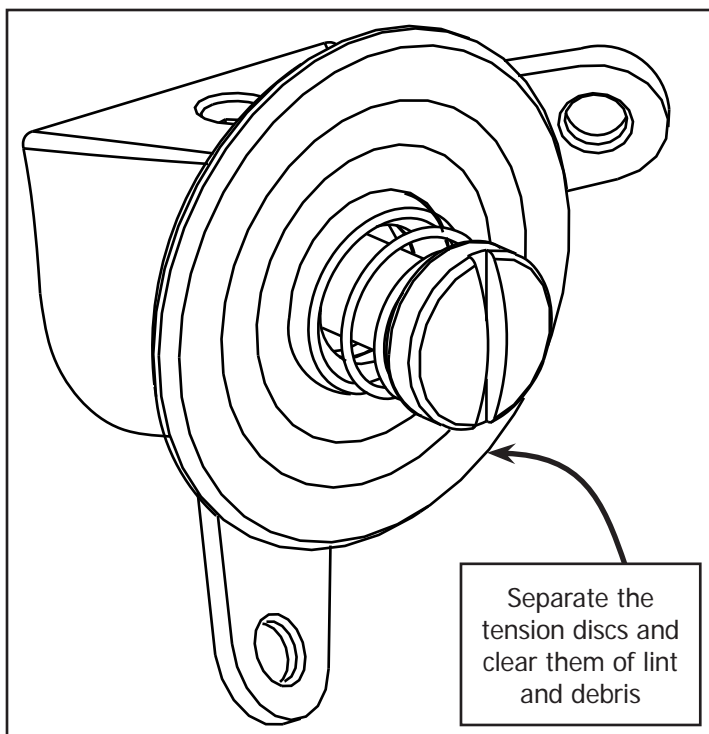
**Oil Bottle**



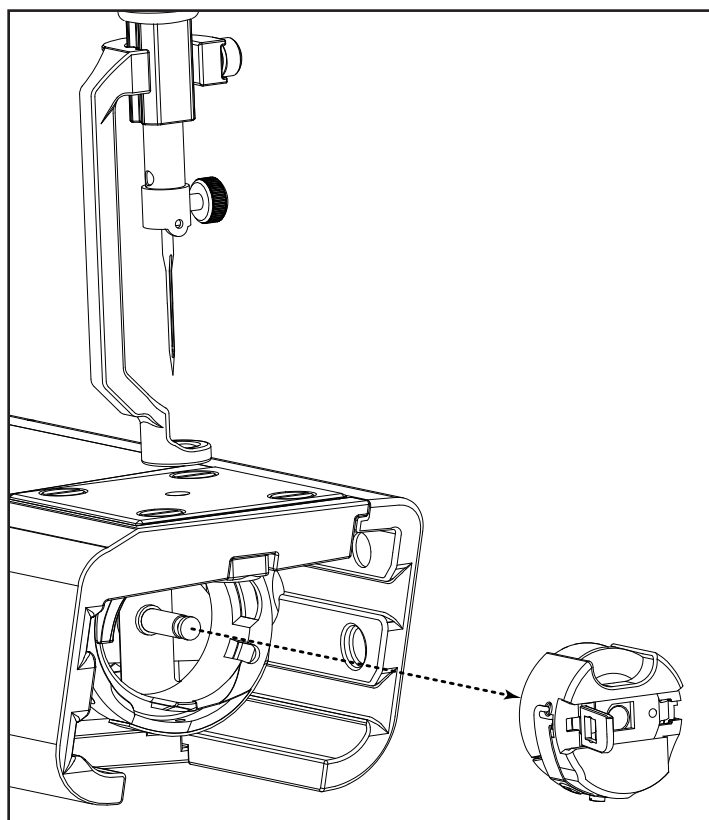
**Lint Brush**



1. Remove thread.
2. Remove all lint and thread remnants.
  - You can use canned/compressed air to clean this area.

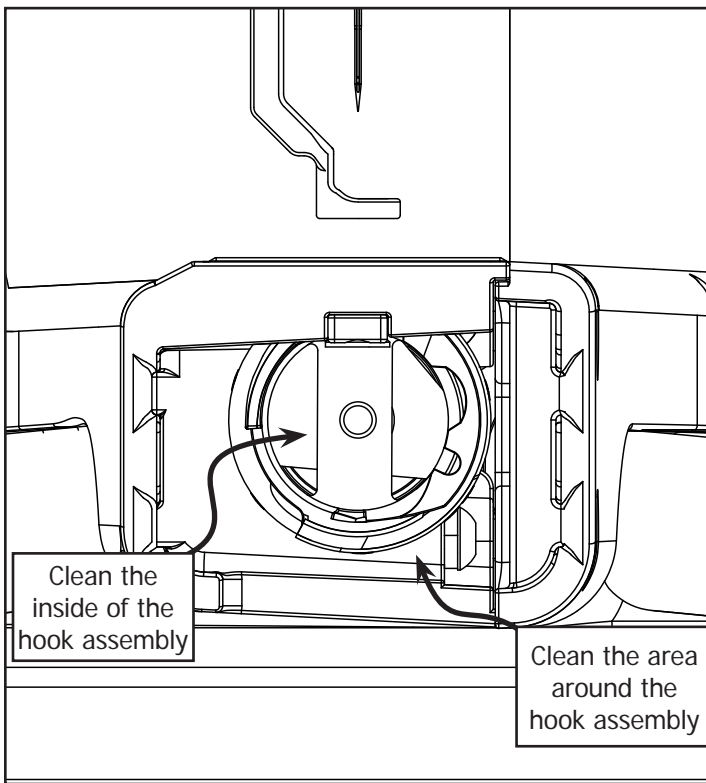


- Lint build up between the tension discs can prevent you from being able to properly tension your thread.

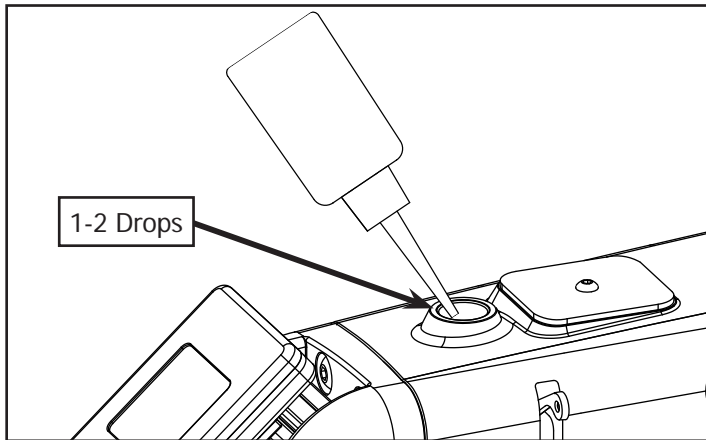


1. Remove the bobbin case.

## Maintenance | Cleaning & Oiling The Sewing Machine

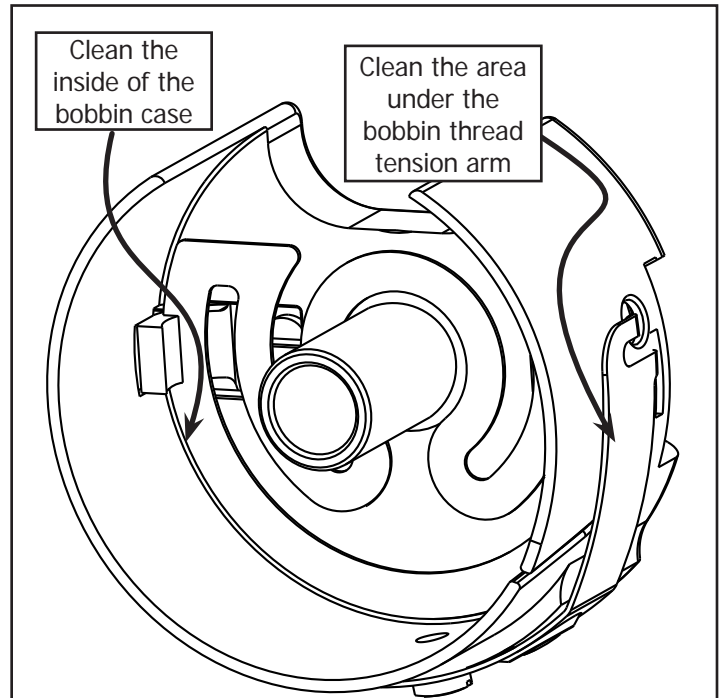


2. Remove all lint and any cloth and thread remnants.
- You can use canned/compressed air to clean this area out as well.

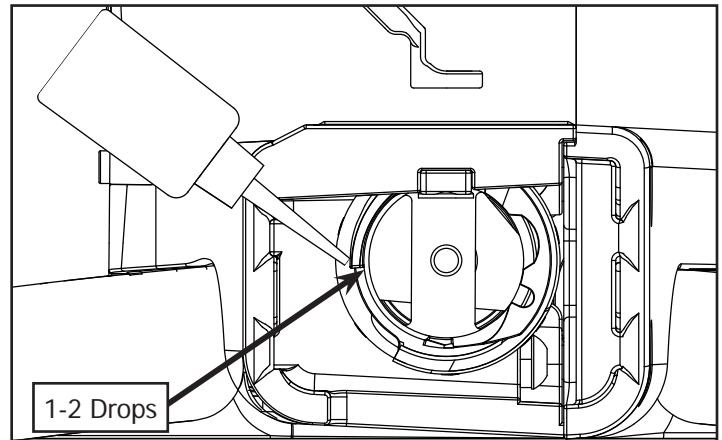


We recommend oiling your machine regularly to keep it operating smoothly. It is recommended that you oil your machine every 20 hrs of use. If you use the machine frequently, we recommend oiling at the beginning of each project. Oil before use if you have not used your machine for more than 30 days.

The head of the machine and the hook assembly are the only areas that require regular lubrication.



1. Remove the bobbin.
  2. Remove all lint and thread remnants.
  3. Place the bobbin back into the bobbin case.
- Once both components are clean reassemble the bobbin case and place it into the sewing machine.



Frequency: Once every other bobbin change.

1. Remove the bobbin case.
2. Ensure all lint and thread remnants have been removed.
3. Rotate the hand wheel so that the needle is halfway down, about a quarter turn. This will put the hook in the optimal position to be oiled.
4. Place 1 to 2 drops of oil on the hook assembly indicated by the arrow, pictured here.

After oiling, run the machine briefly to ensure all components receive lubrication.

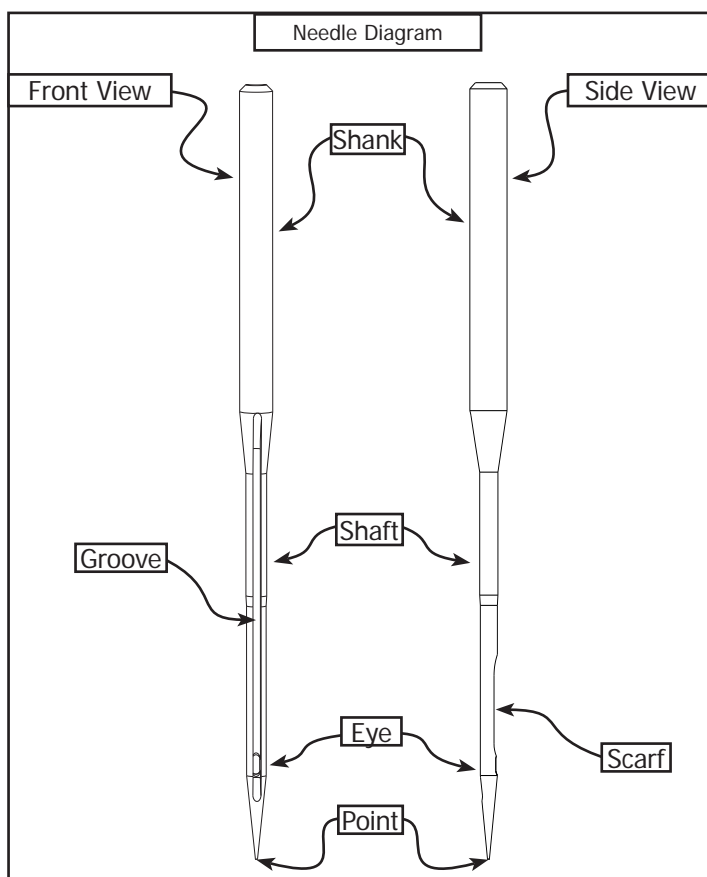
# Troubleshooting

Troubleshooting Instruction		
Issue	Cause	Solution
Troubleshooting Mechanics		
Critical distances check if not working/stitching properly or making noise	Hopping foot in lowest position .5mm away from needle plate	
	Make sure Timing is correct	See timing instructions
	Check there is a proper distance between hook holder and hook assembly	See hook holder instructions
Machine stitching troubleshooting		
Machine Power	Cable may be loose	Check all cables and ensure they are securely plugged in
Skipped Stitches	Machine may be improperly threaded	Check threading and make sure the thread passes through all tensioners and thread guides
	Hopping foot may be too close or too far from the needle plate	Check and adjust the hopping foot gap
	Machine may be improperly timed	Re-time the machine. See timing instructions
	The needle may be damaged	Check the needle and replace it if necessary
	Bobbin may be wound or threaded improperly	Check the bobbin to ensure that it is properly wound and that it is properly inserted into the bobbin case
	Thread may have too much or too little tension	Check and readjust your tension
Thread Bunches Up Or Is Getting Wrapped Around Hook Holder	Hook holder pressing against hook assembly	Loosen the hook holder and slide it as far away from the hook assembly as possible
	Bobbin threaded incorrectly	Check the bobbin to ensure that it is properly inserted into the bobbin case
	Machine threaded incorrectly	Check threading and make sure the thread passes through all tensioners and thread guides
	Bobbin case has a damaged or missing spring	Replace the bobbin case
	Bobbin is wound incorrectly	Check the bobbin to ensure that it is properly wound
	Thread tension is not correct	Check and readjust your tension
	Check timing is correct	Re-time the machine. See timing instructions

# Troubleshooting

Troubleshooting Instruction		
Issues	Cause	Solution
Machine stitching troubleshooting - continued		
Thread Breaking	Thread tension too tight	Decrease tension
	Machine not threaded correctly	Inspect for accidental double wrapping of thread on thread guides, make sure thread mast is directly over thread spool, make sure thread spool is correctly installed
	Hesitating too long at one point	Move machine quicker within speed limitations so stitches don't overlap or build up, sewing in one place will cause thread to break
	Bobbin has a burr on it	Check and replace the bobbin
	Bobbin not inserted correctly	Remove the bobbin and make sure that it clicks when you press it into the hook assembly
	Top thread and bobbin thread tensions not balanced	Make sure bobbin tension is adjusted correctly
	Debris on tension discs	Clean between and around the tensioner discs
	Hook holder pressing against hook assembly or doesn't have enough space	Readjust the hook holder
	Bobbin is not correctly wound	Check the bobbin to ensure that it is properly wound and that it is properly inserted into the bobbin case
	Timing needs to be adjusted	if needle is hitting the hook thread will break. Follow the timing instructions
	Needle bent or burred	Replace the needle
	Hook assembly needs to be replaced	Contact your Sewing Machine Dealer
	Needle plate off center rubbing needle	See needle plate instructions
Machine Is Running Loud	Hook assembly needs oil	Only one or two drops of oil see instructions under oiling my machine
	Needle bar and mechannics need oil	Only one or two drops of oil
	Bobbin winder is runnung	Make sure the bobbin winder cam is pushed out

## Appendix | Needle Information



**Shank** - The part of the needle that is held in the needle bar.

**Shaft** - The long narrow part of the needle. The diameter measurement is based on the shaft.

**Groove** - Allows the thread to pass through the fabric more easily.

**Eye** - The hole near the tip of the needle for the thread to pass through.

**Scarf** - A cut away on the back of the needle which allows the the hook on the bobbin assembly to move past the needle and "hook" the thread.

**Point** - The sharp end of the needle. There are different types of points for different applications. It's important that you change your needle when the point dulls or you may damage your fabric.

Recommended Needle Style- 135x5, DPX5 (Equivalent Needle Styles-134, 135x7, 797, SY 1955)	
Needle Size:	Thread Size and Type:
14/90	monofilament, 100 wt. silk, 60 wt. polyester
16/100	monofilament, 60 wt., 50 wt. polyester or cotton thread
18/110	40 wt. cotton and polyester, 30 wt. cottons and polyester
20/125	any thread 30 wt. or heavier

For the best results:

- Use the recommended needle style and make sure it is properly positioned.
- Change your needle after 8 hours of use and at the beginning of each project.
- Choose your needle size based on the weight and type of the thread that you use.
- Use a multidirectional needle.

Change your needle:

- If you can hear your needle popping into your fabric.
- If your thread is breaking.
- If you are getting skipped or uneven stitches.
- If you are getting puckered or damaged fabrics.
- If there is a popping or clunking sound made by the sewing machine, this may be a sign that the needle is bent.
- After 8 hours of use and at the beginning of each project.



# Appendix | Thread Information

Things to consider when choosing a thread:

- The manufacturer of the thread matters (for thread weights and quality of thread).
- The weight and ply of the thread. For example: 40/3 means 40 weight 3 ply.
  - Not every manufacturer uses the same sizing scales. Sometimes it is easiest to examine and compare threads to find the size you want.
    - Thread may be measured in weight, tex, denier, number or composition standards depending on the brand. Make sure that you know what scale the threads you are considering are measured by.
    - The ply is how many strands are twisted together to make the thread.
- The size of your thread is important because it will determine the appropriate needle size, effect your tension and how visible the thread will be on your projects.
- Needle sizes
  - Too small of a needle will shred medium and heavy threads.
  - Too large of a needle will cause inconsistent stitching.
- The processing and quality of thread. The following processes are the most commonly used:
  - Mercerized - Cotton thread that has been treated in a way that increases the strength, improves color quality and prevents fading.
  - Glazed - Mercerized thread that has then been waxed or treated in another way to give it a polished appearance. The coating may rub off and if this happens it may cause issues with your machine.
  - Gassed - Cotton thread that has been exposed to a high temperature gas flame very rapidly. This process removes fuzz and lint, giving the thread a smoother appearance.
  - Bonded - The thread is treated with a resin to increase its strength. Usually used for heavy-duty applications such as upholstery.
  - Length of Fibers - Also known as the staple. This is the length of the cotton fibers. Extra-long staple cotton thread is better because it has better strength and creates less lint.
  - Lubricants - Polyester threads generally will have a small amount of lubricant on them to reduce friction. If the thread feels oily it has too much lubricant and should be avoided. Cotton threads should not have lubricant on them.
  - Colorfastness - How well a thread will hold its color.

For the best results:

- Use a thread from a thread cone unless you have the thread spool accessory.
- It is recommended that you use a high quality thread when quilting with high quality fabric.
  - cotton thread works well with most cotton fabrics.
- Don't use old thread unless it will pass the yank test when pulling it off its cone.
  - If you can break the thread by sharply yanking it off the cone or spool then it will break in your machine and is not suitable.
- Slow down with specialty threads.
- Write down tension settings you like with each thread.
- An example of a recommended thread is an Extra-Long Staple 100% Egyptian Cotton Mercerized 40/3.
- Keep your thread out of direct sunlight, as this will cause the thread to fade and lose strength, and do not store near extreme temperatures.



# Appendix | Additional Information

## Thread

Thread weight is usually stamped on the edge of the spool or printed on the top or bottom of the spool. Thread becomes heavier as weight designations *decrease*.

- 60 weight, a very thin/fine thread
- 50 weight
- 40 weight

Heavier weight threads are more noticeable on the quilt. A 50 weight thread is a popular choice for quilting and 40 weight threads will be even more visible, while 60 weight versions will usually blend into the fabric.

Thread weight is only one of many factors to consider when selecting machine quilting thread. Will the thread's color blend with the fabric or stand out to make quilting an important part of the design? Consider whether you prefer the matte finish of a cotton thread, the shine of a rayon thread, or the glimmer of a metallic thread. Go with what you like, get the right needle for it, and give the thread a tryout. Remember to adjust the machine's thread tension settings based on the type of thread you are using.

## Needles

The size of the needle shows on the front of the package with 2 sizes, the larger number of the two is a metric designation and the smaller is the American standard equivalent. The larger the number, the larger the diameter of the shaft of the needle. As a general rule, the finer the fabric you use on the quilt, the finer the needle you should use as well.

## Batting

The weight and thickness of batting is measured by its loft. A low loft batting is thinner and lighter than a high loft batting. Low loft batting is used when a flatter appearance is the desired look for a quilt. High loft batting should be used if a fluffy full quilt is the goal. Typically, wool batting is the thickest of the various types of batting and bamboo is the lightest. Wool is known for providing the most warmth, followed by polyester and then cotton. Choose the batting that will provide you with the right look and feel for your project.

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**Fax: 801-908-8888**  
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