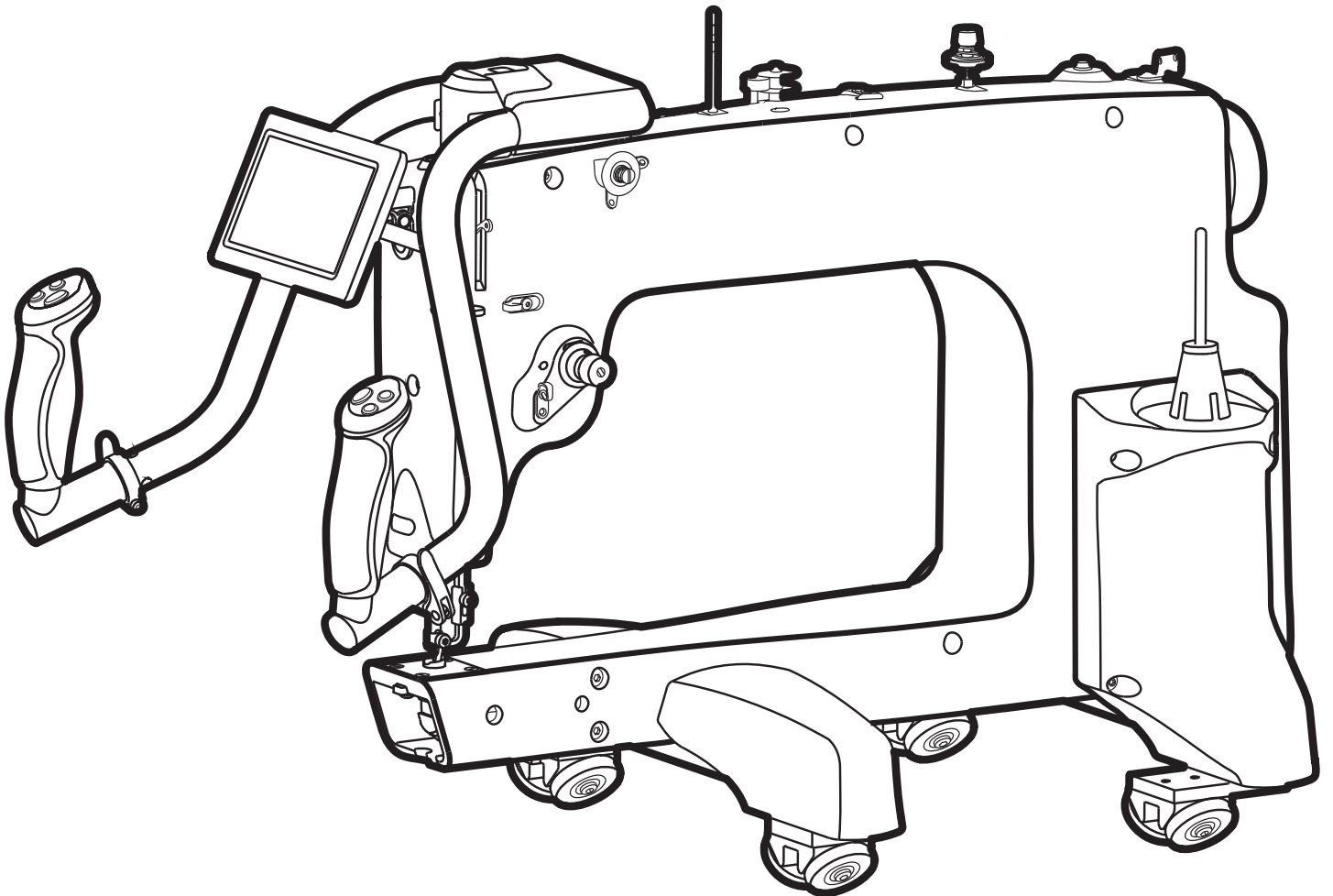


THE
dream
quilter™ 15
FOR BROTHER

Instruction Manual



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Jim M. Bagley, GraceWood, Inc
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Version 1.0

MADE BY
Grace

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IMPORTANT SAFETY INSTRUCTIONS

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:

1. 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.

ii) Keep fingers away from all moving parts. Special care is required around the sewing machine needle.

iii) Always use the proper needle plate. The wrong plate can cause the needle to break.

iv) Do not use bent needles.

v) Do not pull or push fabric while stitching. It may deflect the needle causing it to break.

vi) 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.

vii) 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

IMPORTANT SAFETY 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.

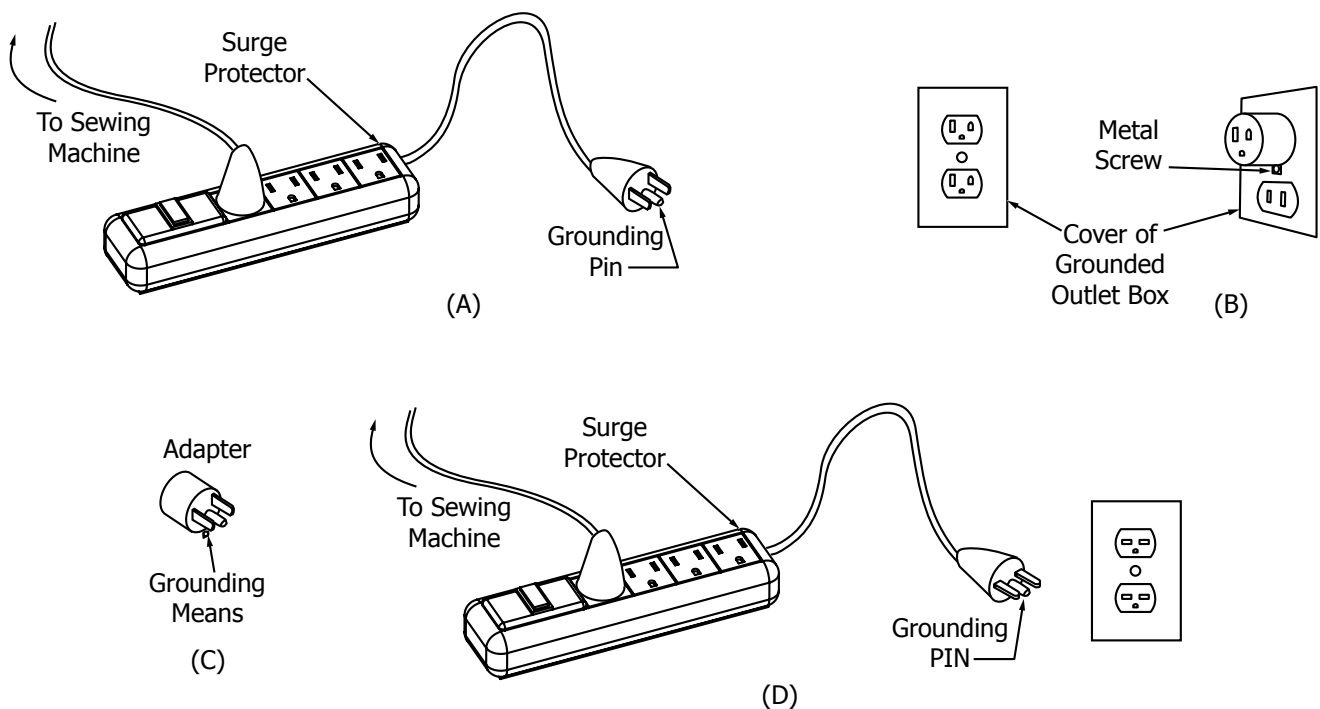
DANGER - Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, 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.

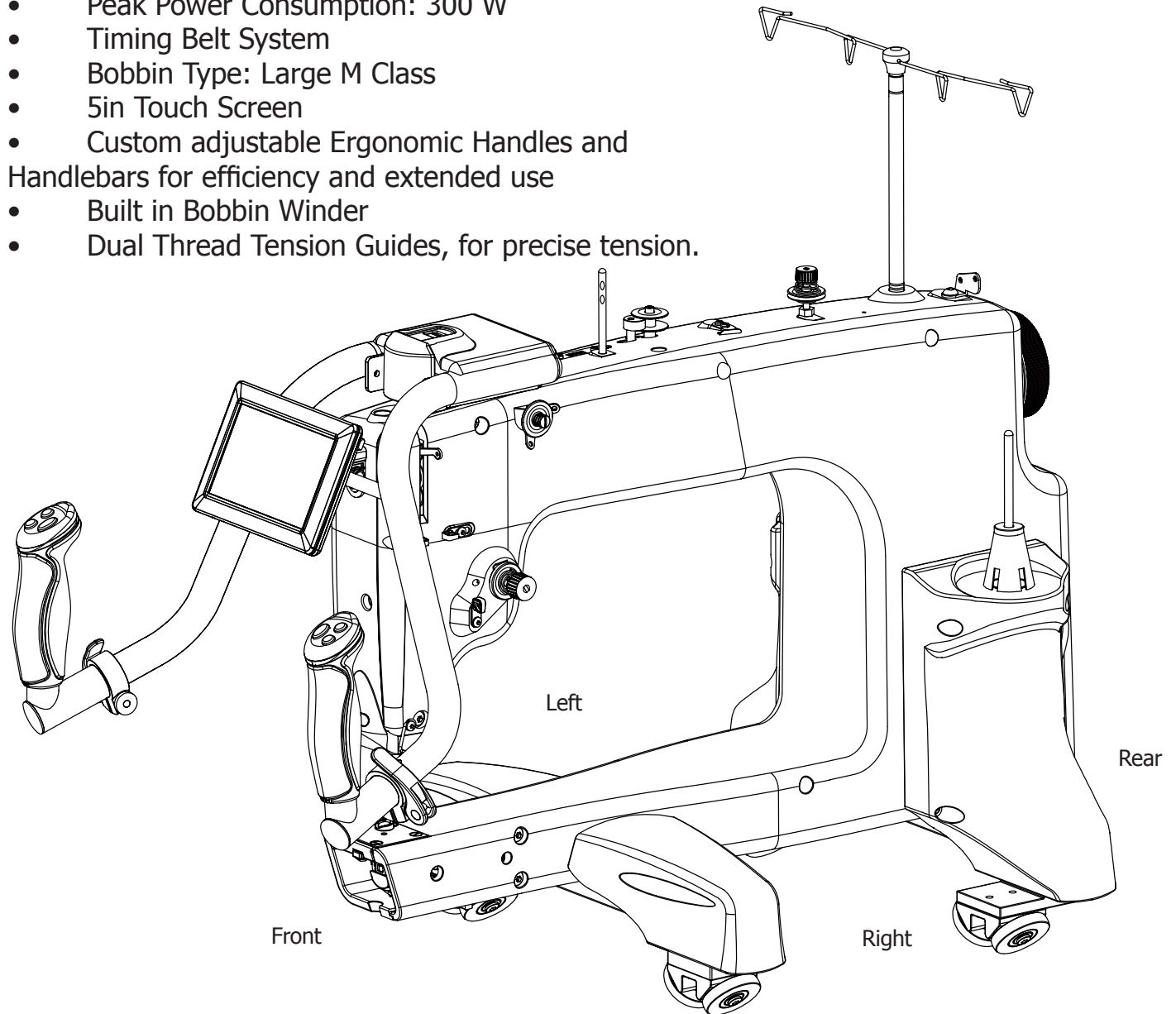
A qualified electrician should be consulted if there is any doubt as to whether an outlet box is properly grounded.

Grounding Methods
Figure 61.1

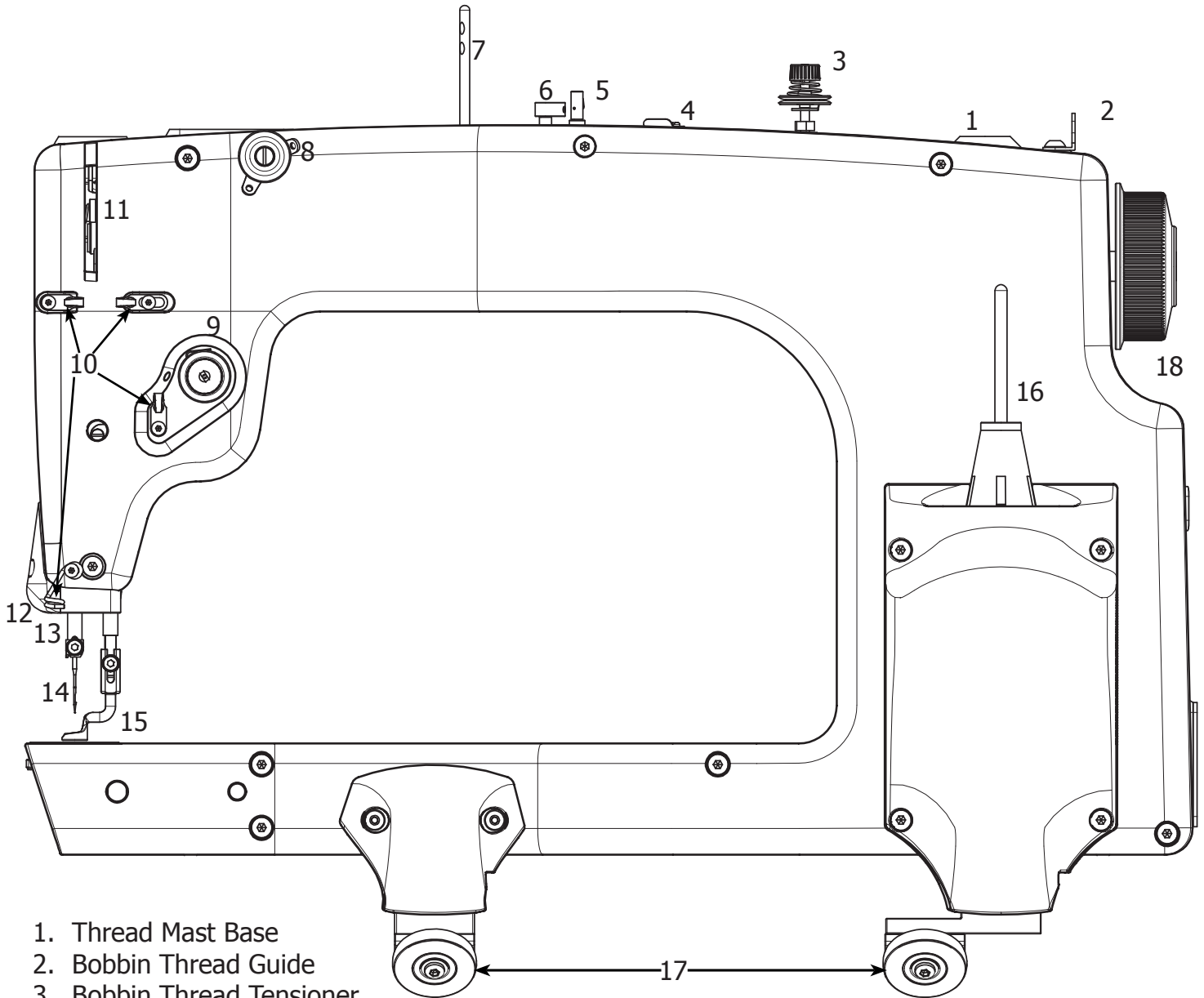


Specifications and Overview

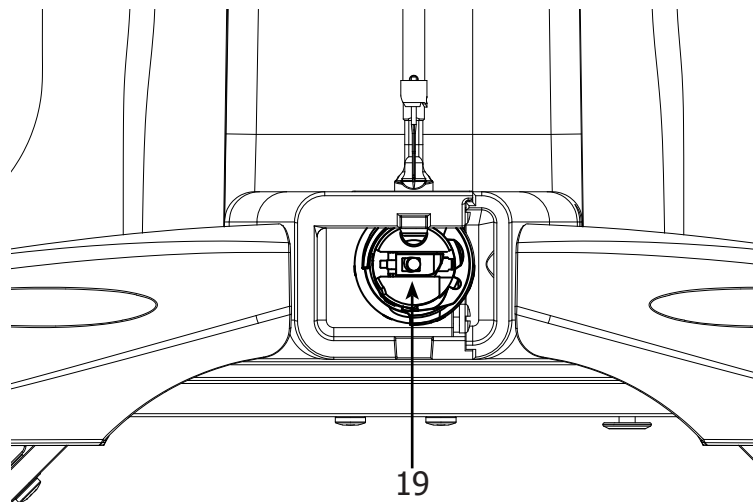
- Height: 480 mm, 19"
- Width: 395 mm, 15.5"
- Length: 585 mm, 23"
- Weight: 42 Lbs
- Quilting Arm Length: 15" W 8.5" H
- Maximum SPM: 1800
- Minimum SPM: 90
- Input Voltage: 110-220 VAC
- Peak Power Consumption: 300 W
- Timing Belt System
- Bobbin Type: Large M Class
- 5in Touch Screen
- Custom adjustable Ergonomic Handles and Handlebars for efficiency and extended use
- Built in Bobbin Winder
- Dual Thread Tension Guides, for precise tension.



Specifications and Overview

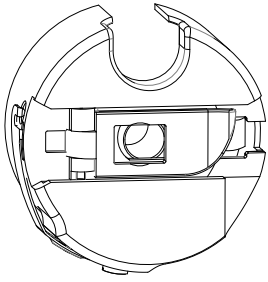


1. Thread Mast Base
2. Bobbin Thread Guide
3. Bobbin Thread Tensioner
4. Bobbin Thread Cutter
5. Bobbin Wind Stand
6. Bobbin Sensor
7. Dual Thread Tension Guide
8. Small Thread Tensioner
9. Large Thread Tensioner
10. Thread Guides
11. Take Up Lever
12. Lamp
13. Needle Bar
14. Needle
15. Hopping Foot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

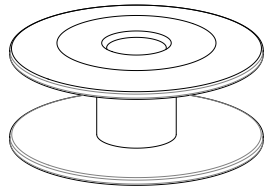


Parts List

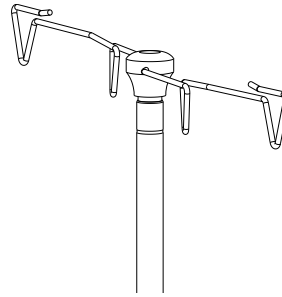
Please make sure all pieces were included in your kit



Bobbin Case (1)
(pre-installed)



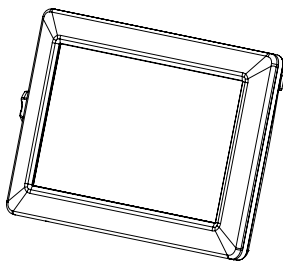
M Class Bobbin (3)
(2 pre-installed)



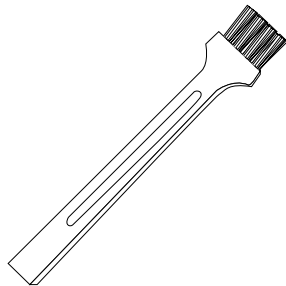
Thread Mast (1)



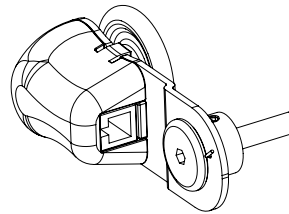
Needle (11)
(1 pre-installed)



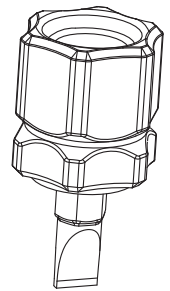
5in Screen with Cable
and Stylus (1)



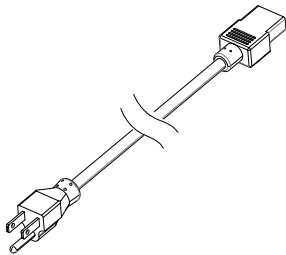
Lint Brush (1)



Encoder (2)
(Silver Spring - 1)
(Black Spring - 1)



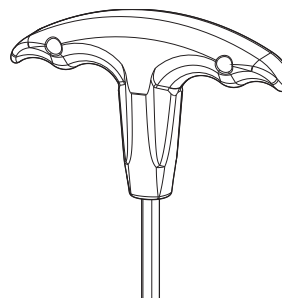
Flat Head Screw Driver
(1)



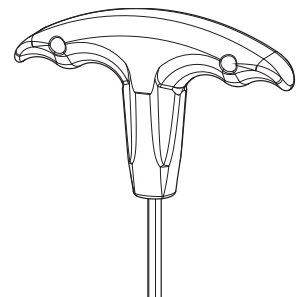
Power Cord (1)



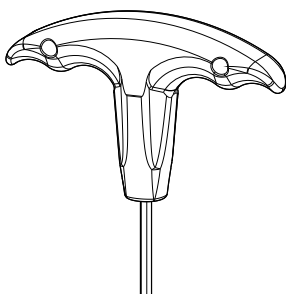
Laser (1)



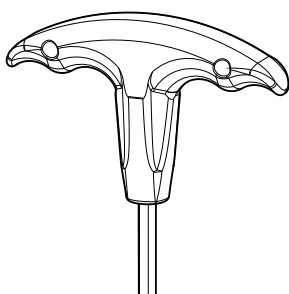
4mm Allen Wrench (1)



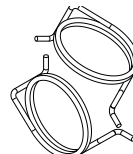
3mm Allen Wrench (1)



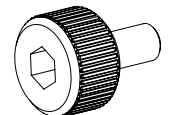
2.5mm Allen Wrench (1)



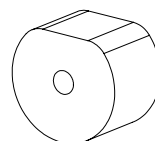
2mm Allen Wrench (1)



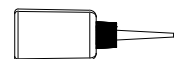
Encoder Springs (2)



M3 Thumb Screw (3)
(2 pre-installed)



Timing Spacer (1)



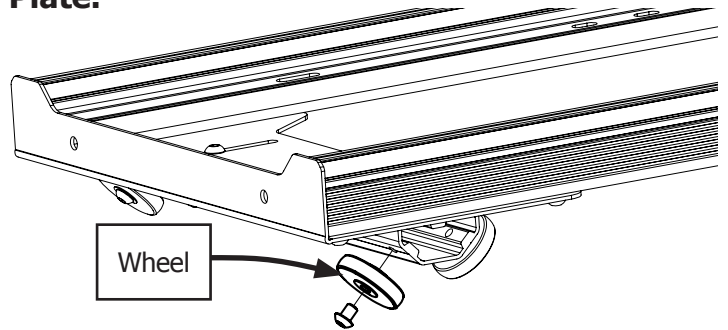
Oil Bottle (1)

Step 1: Installing the Encoder on the Carriage

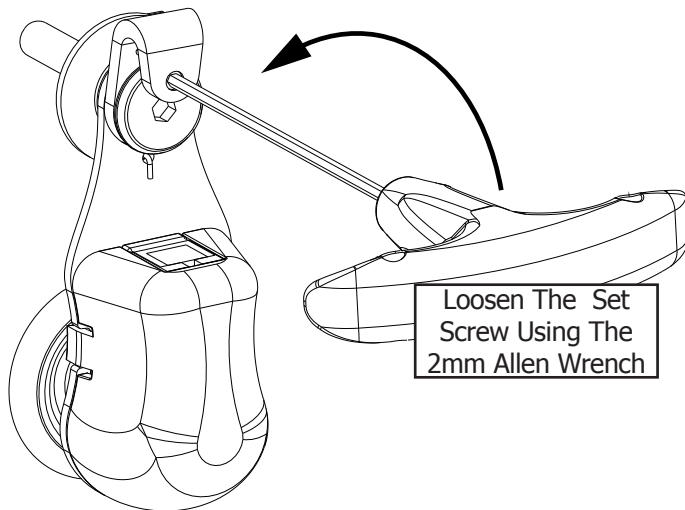
Parts Needed:

1. Encoder (1) (1 black spring)
2. 2mm Allen Wrench (1)
3. 4mm Allen Wrench (1)

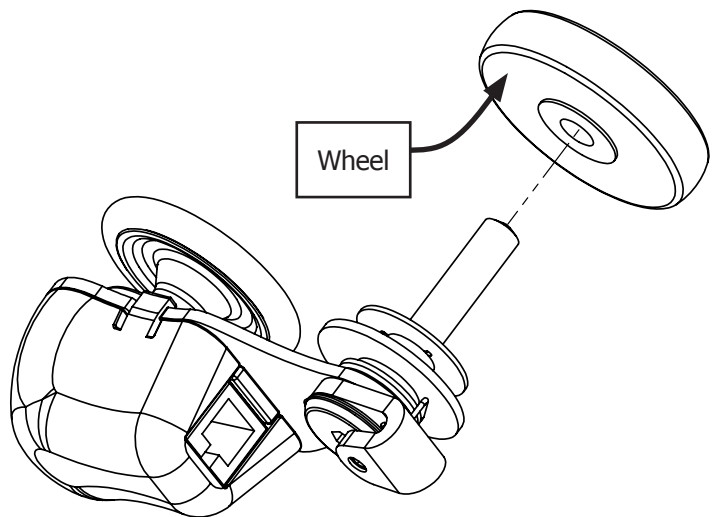
1-1 Remove the M6 x 16mm SBHCS from the outer, left, rear wheel, on the Bottom Plate.



1-2 Loosen the set screw in the lock collar, without removing it, so that the encoder wheel bolt can turn freely.

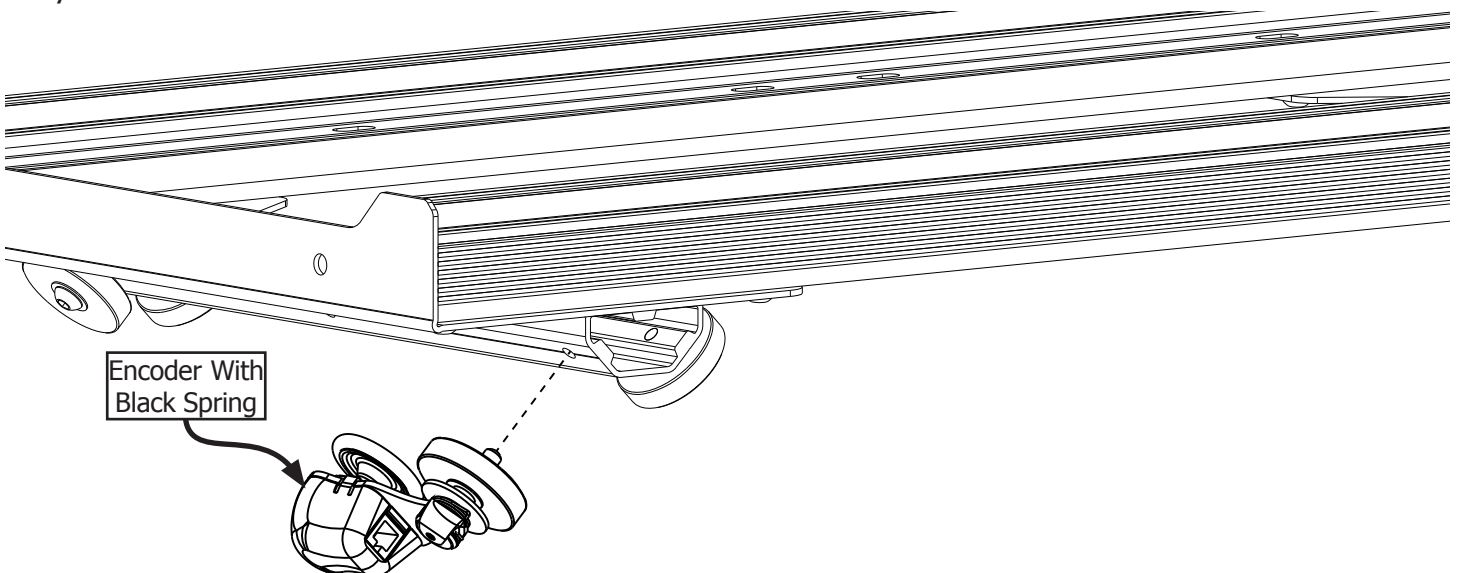


1-3 Slide the previously removed wheel onto the encoder with hub side out.



1-4 Fasten the encoder into the hole made available in step 1-1.

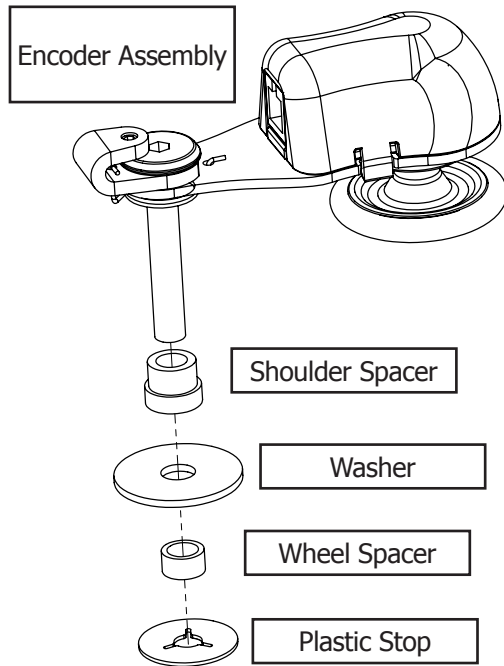
Note: Leave the encoder's set screw loose. They will be tightened after you place the sewing machine on your frame.



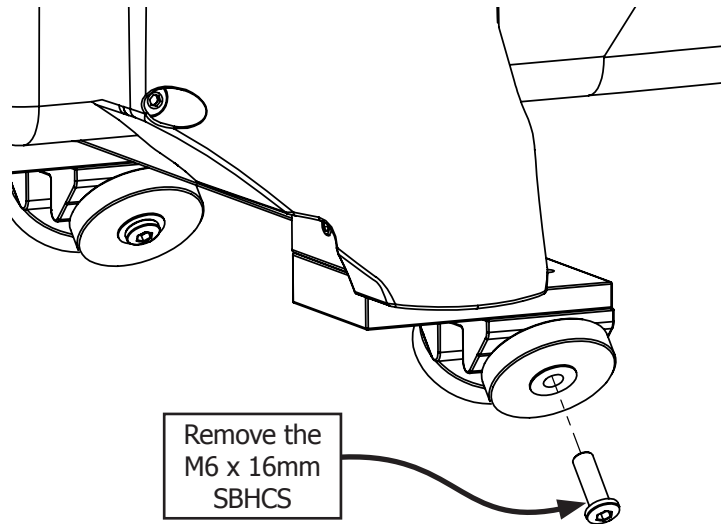
Step 2: Installing the Encoder on the Quilting Machine

Parts Needed:

1. Encoder (1) (1 Silver Spring)
2. 2mm Allen Wrench (1)
3. 4mm Allen Wrench (1)



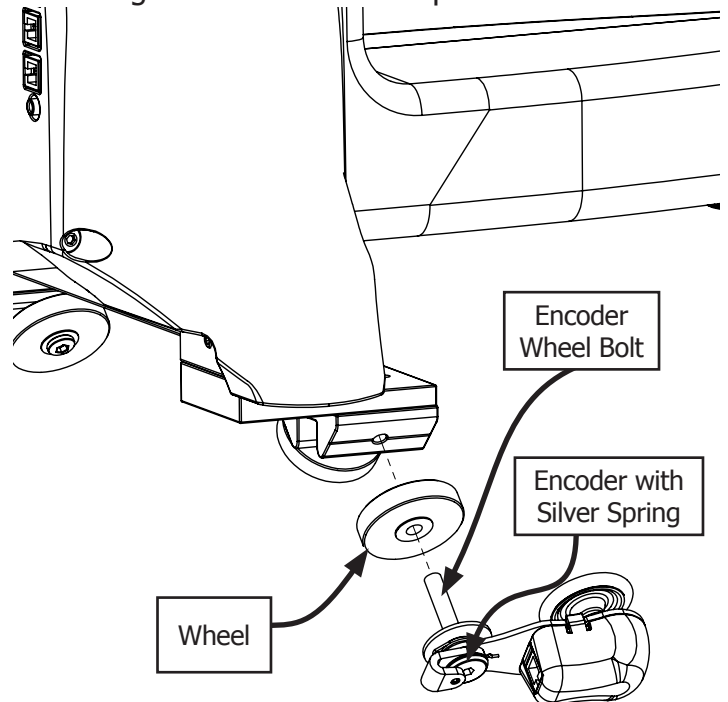
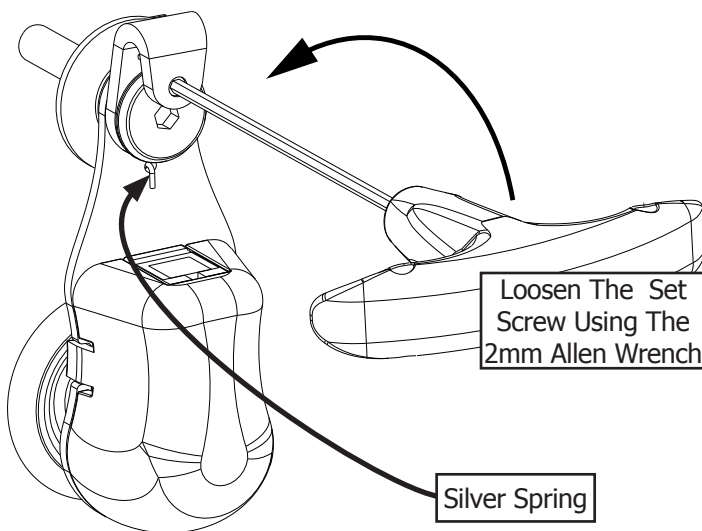
2-1 Remove the M6 x 16mm SBHCS from the outer, left, rear wheel, on the sewing machine.



2-2 Loosen the set screw in the lock collar, so that the encoder wheel bolt can turn freely.

2-3 Slide the previously removed wheel onto the encoder and the hole made available in step 3-1.

Note: Leave the encoder's set screw loose. They will be tightened in a later step.

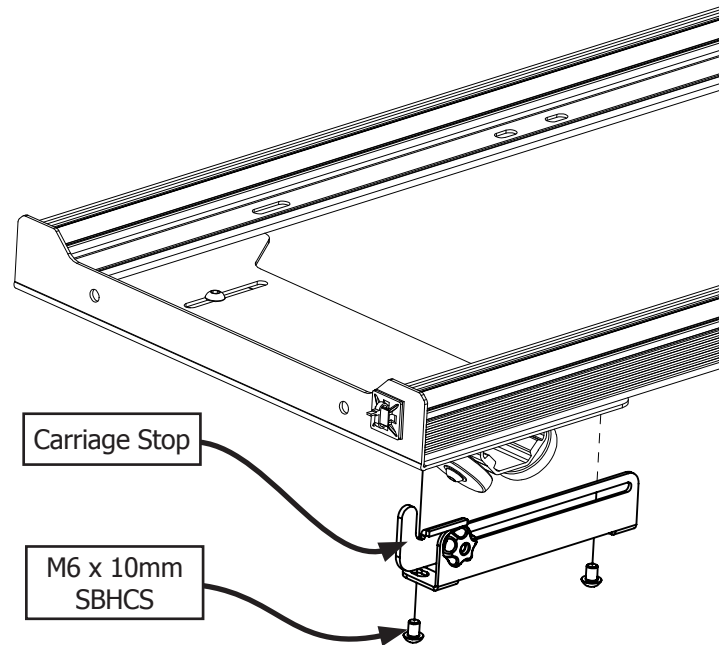


Step 3: Bottom Plate

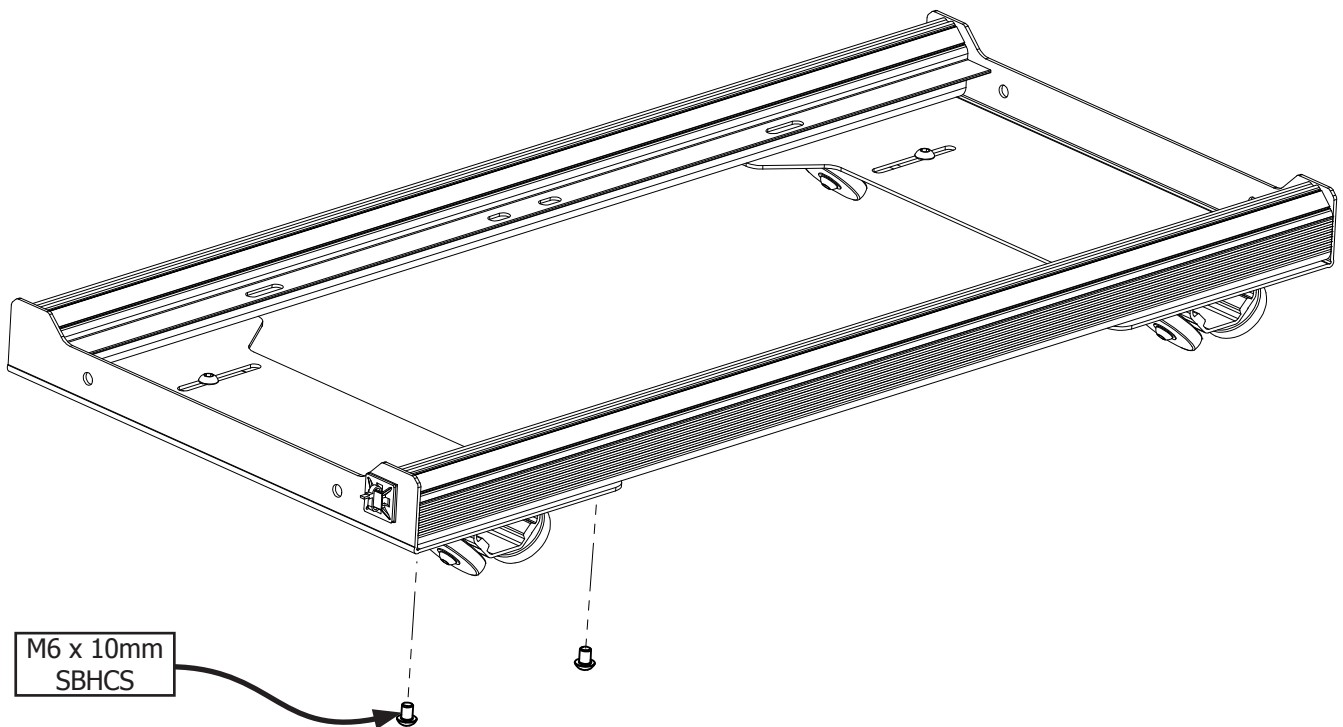
Parts Needed:

1. 4mm Allen Wrench
2. Bottom Plate

3-1 Remove Carriage stop from bottom plate, by removing (2) M6 X 10 mm SBHCS.

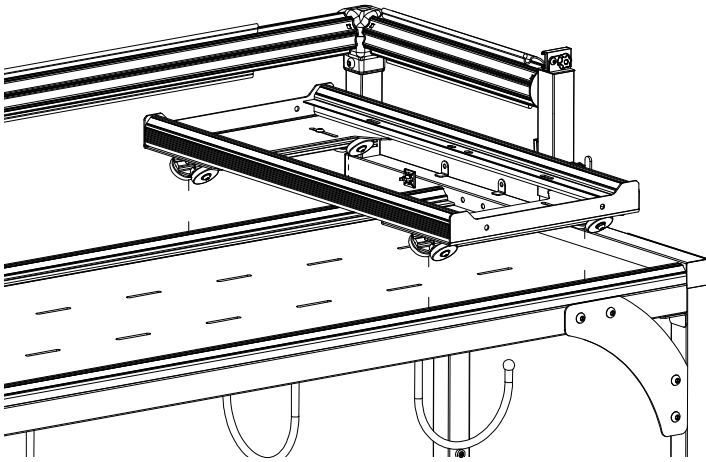


3-1 Re-install the (2) M6 X 10 mm SBHCS removed in step 3-1.

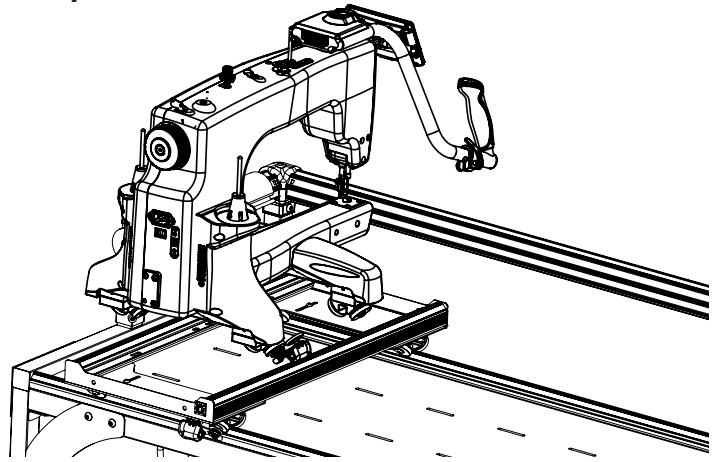


Step 4: Carriage and encoders

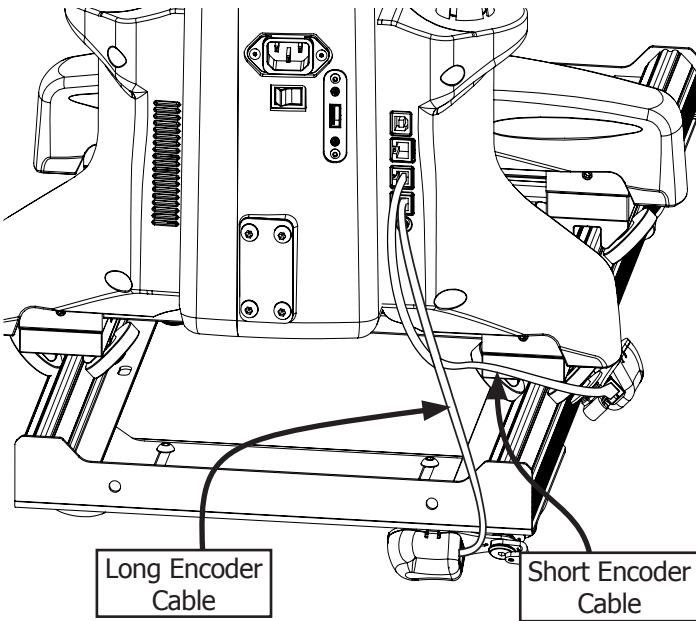
3-1 Place the bottom plate onto the quilting frame.



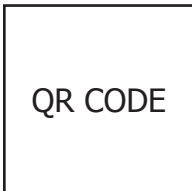
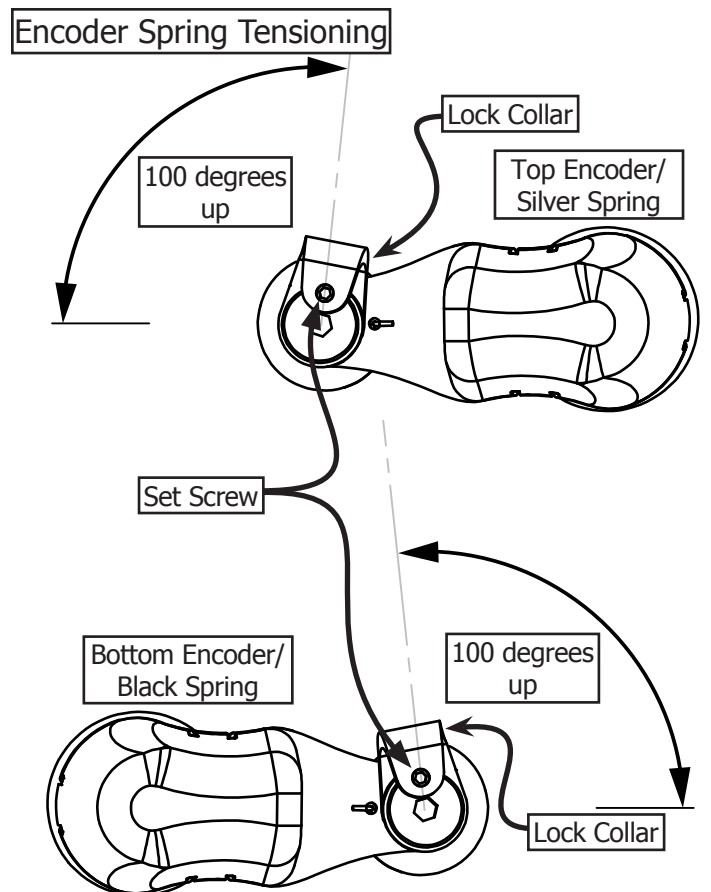
3-2 Place the sewing machine onto the bottom plate. Raise Back Rail on Frame to be 1/4" above the machine base.



3-3 Plug the encoder cables from each of the encoders into the sewing machine.
 Note: The longer cable is used for the encoder attached to the carriage, while the shorter cable is used for the encoder attached to the sewing machine.



3-4 Rotate the lock collar on the encoder up about 100 degrees or until you feel adequate push back from the spring. While holding the lock collar in that position, tighten each set screw.

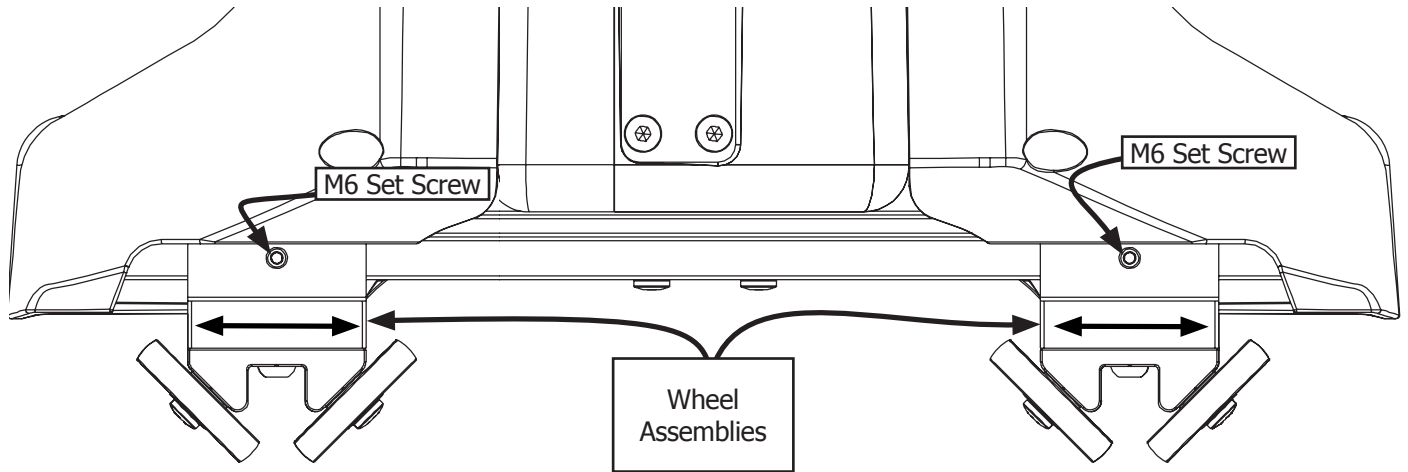


Step 4: Wheel Alignment

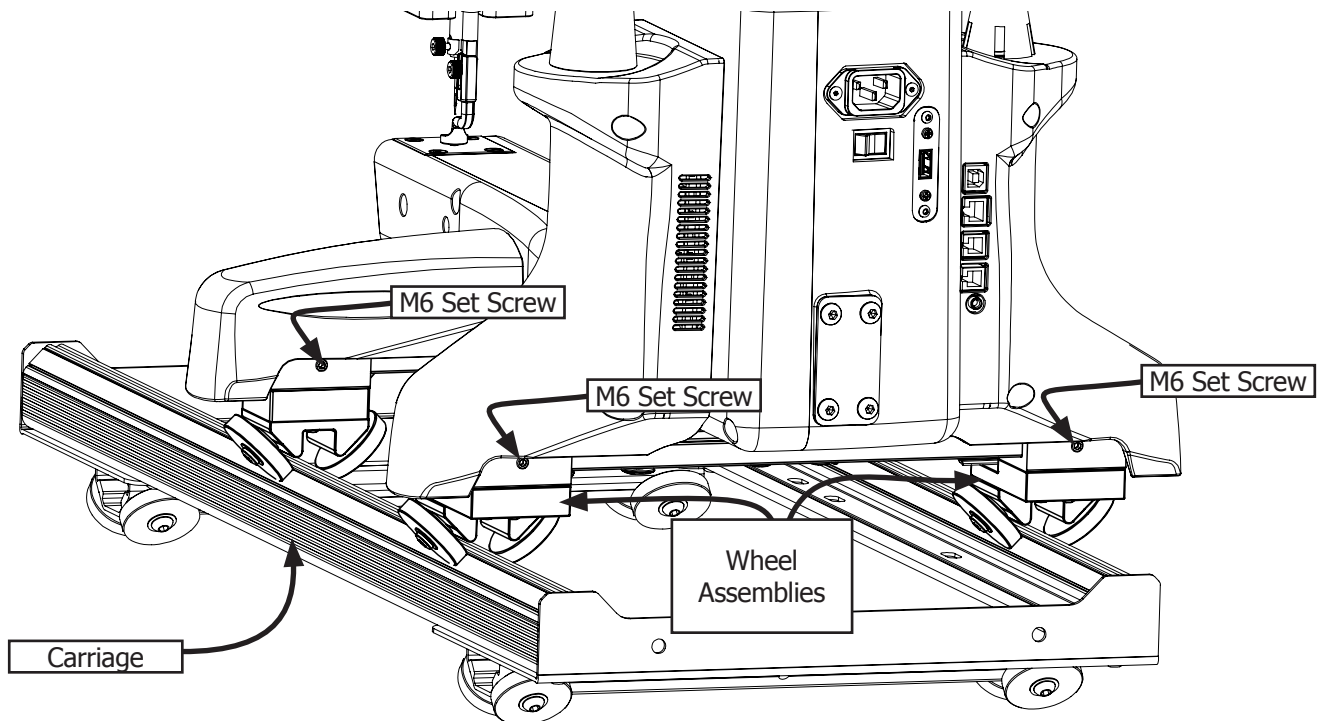
Parts Needed:

1. 3mm Allen Wrench (1)

4-1 Using the 3mm allen wrench, loosen the set screws located above each of the wheels on the machine.



4-2 Re-adjust the wheels as necessary while centering the machine between the left and right wheels and tighten the set screws. Make sure that the encoders ride on the track.

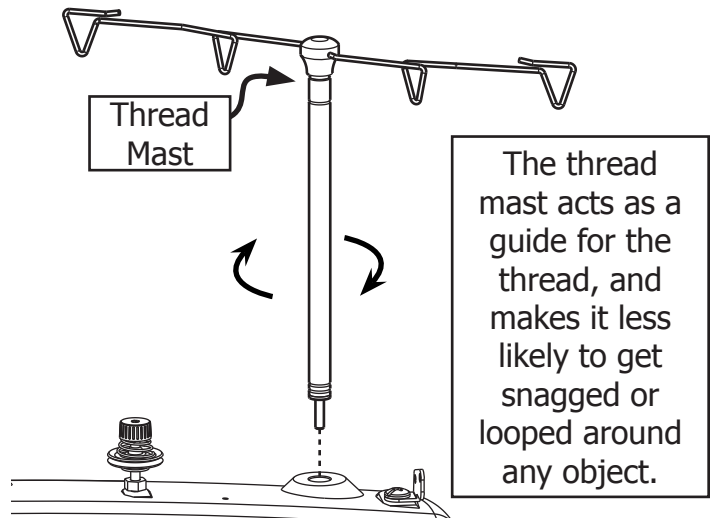


Step 5: Attaching the Thread Mast

Parts Needed:

1. Thread Mast (1)

5-1 Screw the Thread mast to the Sewing Machine.

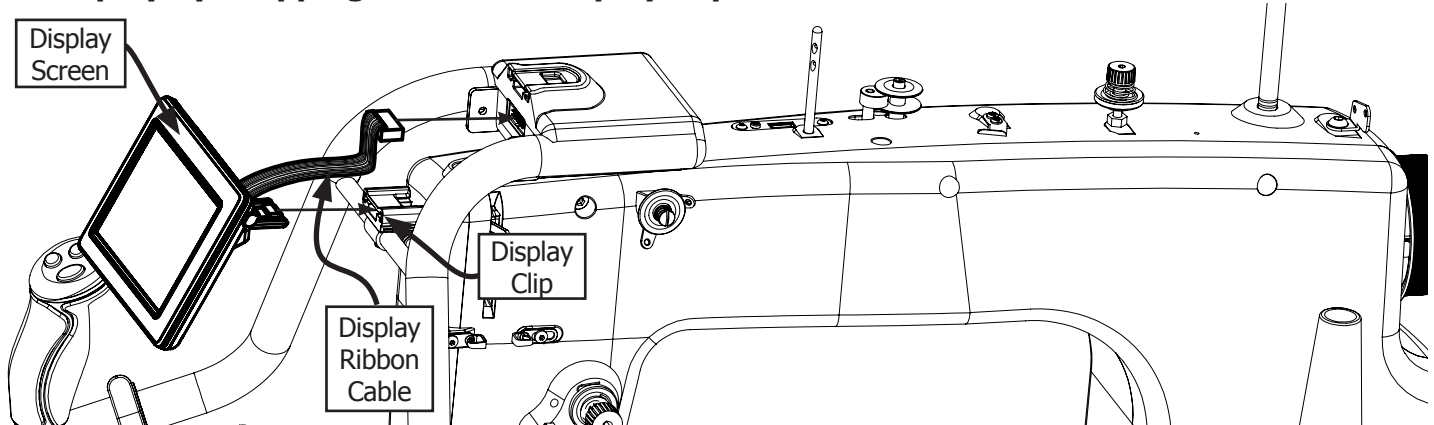


Step 6: Connecting the Front Display

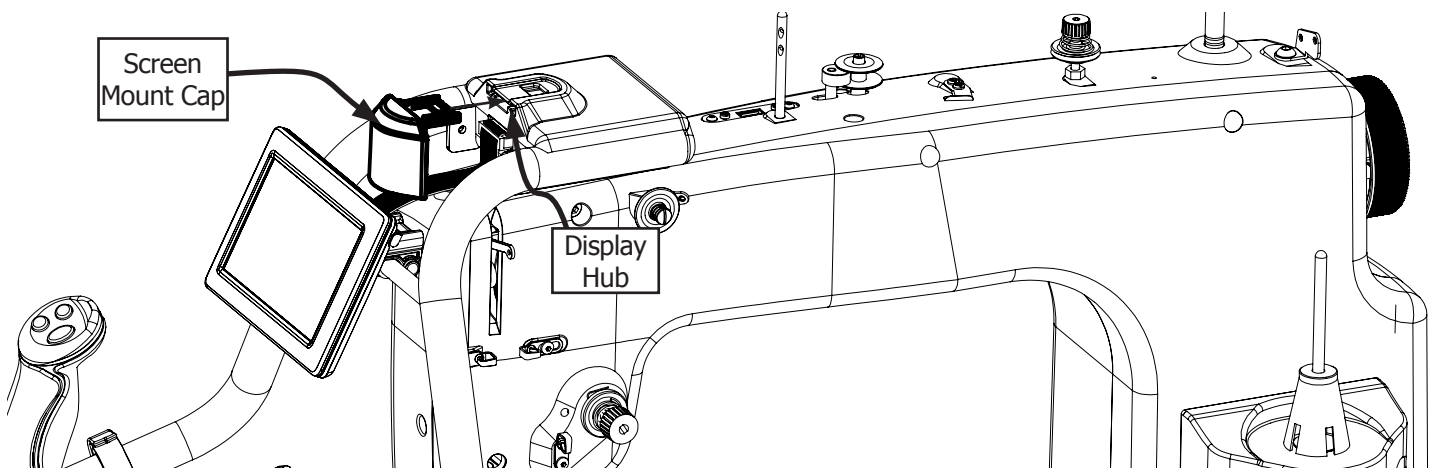
Parts Needed:

1. Display Screen (1) (with cable and clip)
2. Screen Mount Cap (1)

6-1 Connect the Display ribbon cable from the Display to the display mount, and attach the display by snapping it into the Display Clip.

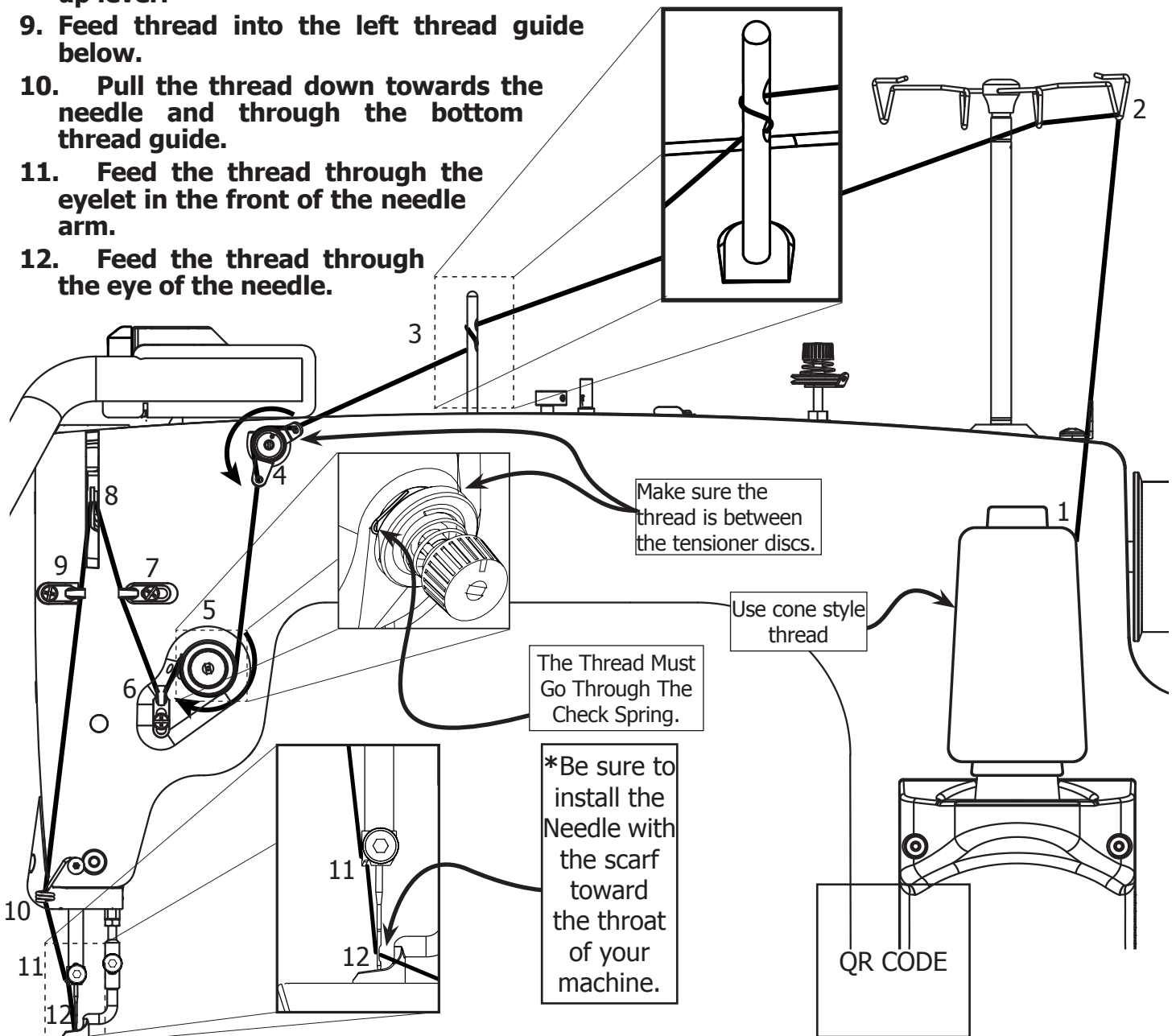
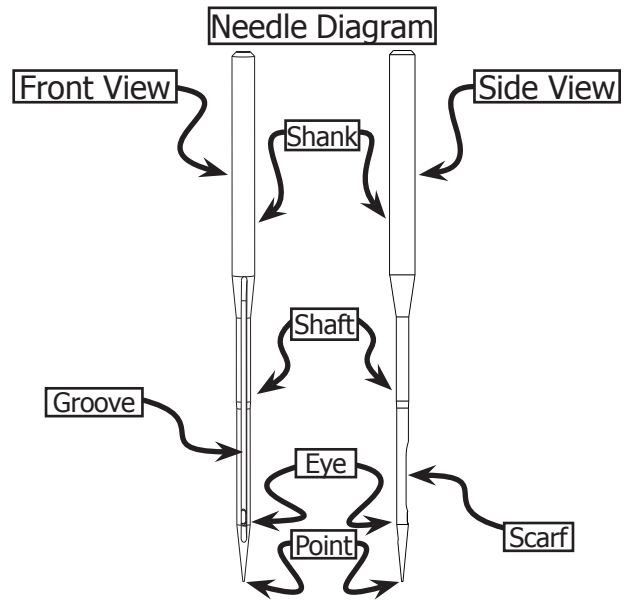


6-2 Attach Screen Mount Cap into the Display Hub.



Threading the Quilting Machine

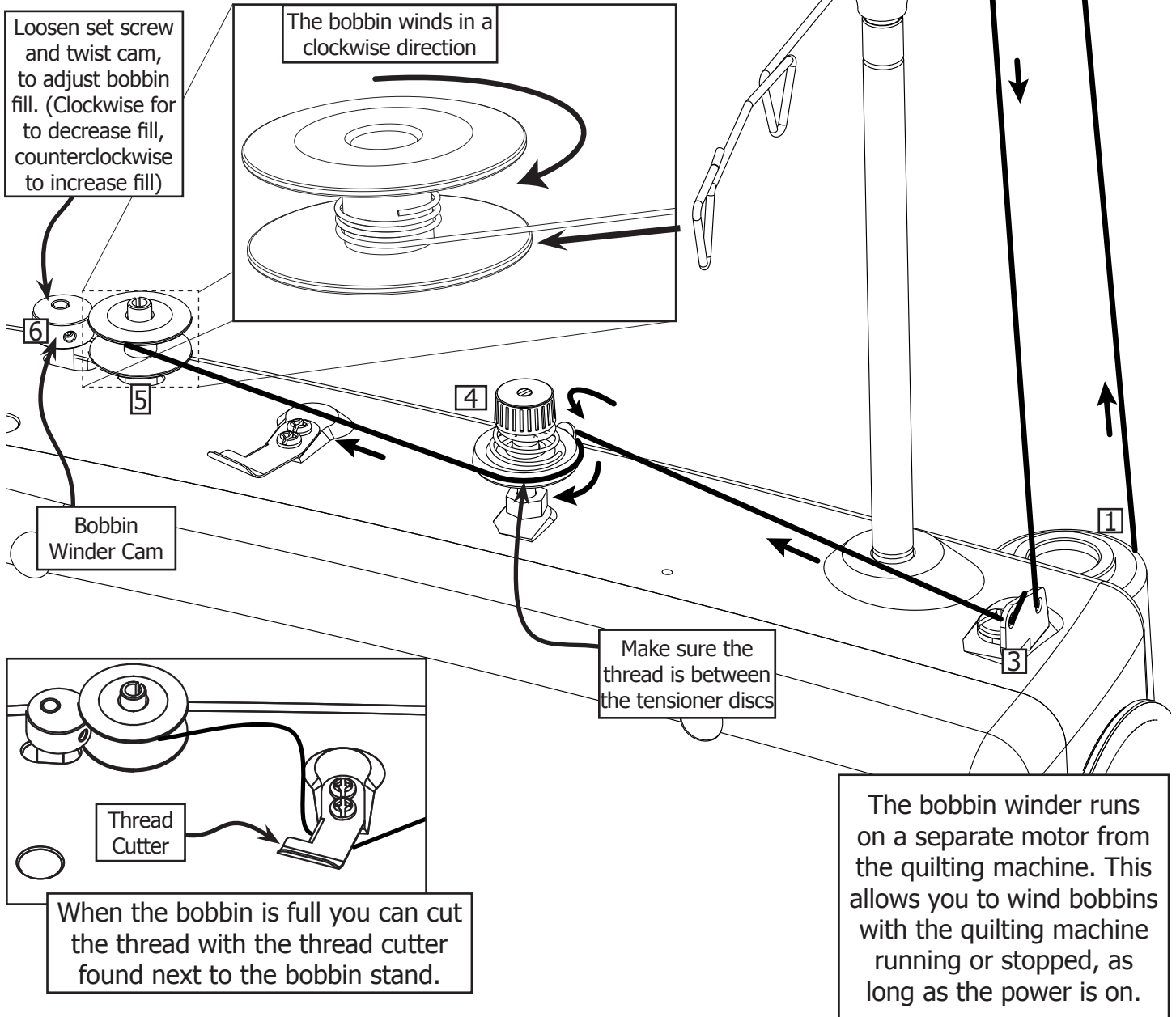
1. Place thread on the cone style thread stand.
2. Pull the thread through both loops of the thread mast.
3. Put the thread through the top hole on the thread guide, wrap the thread around and through the bottom hole of thread guide at the middle of the machine.
4. Take the thread through the first thread tensioner, between the two disks.
5. Loop the thread down around the second tensioner.
6. Pull the thread through the tensioner disks and around the spring hook.
7. Feed the thread through the right thread guide up to the take up lever.
8. Pull the thread through the hole in the take up lever.
9. Feed thread into the left thread guide below.
10. Pull the thread down towards the needle and through the bottom thread guide.
11. Feed the thread through the eyelet in the front of the needle arm.
12. Feed the thread through the eye of the needle.



Winding Bobbins

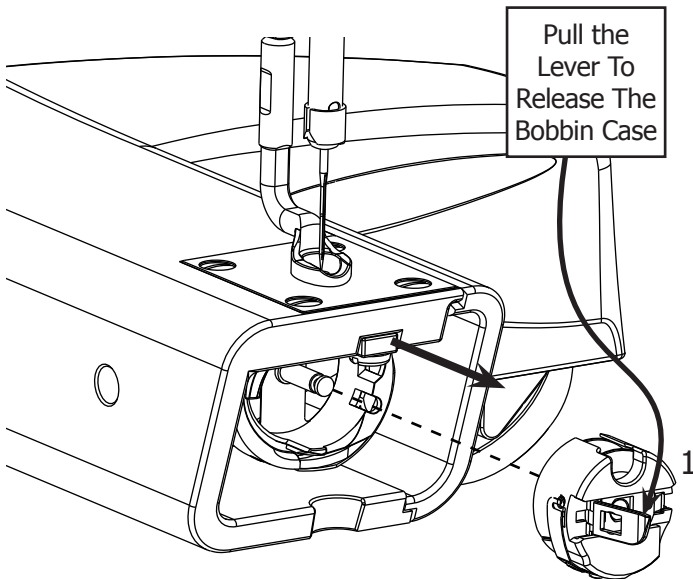
1. Place the thread on the thread stand.
2. Pass the thread through the hooks in the thread mast.
3. Pull the thread through the bobbin thread guide at the back of the quilting machine.
4. Loop the thread around the spring hook and around the thread tensioner.
5. Wrap the thread around the bobbin as shown.
6. Start the bobbin winder by pushing the bobbin winder cam into the bobbin.

Note: When the bobbin is full it will automatically stop.



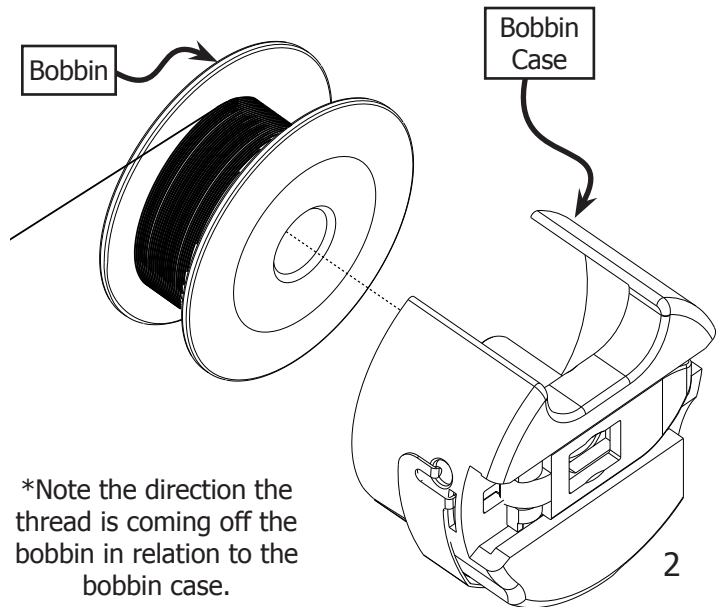
Installing the Bobbin Case

1. Remove the bobbin case by pulling on the lever.

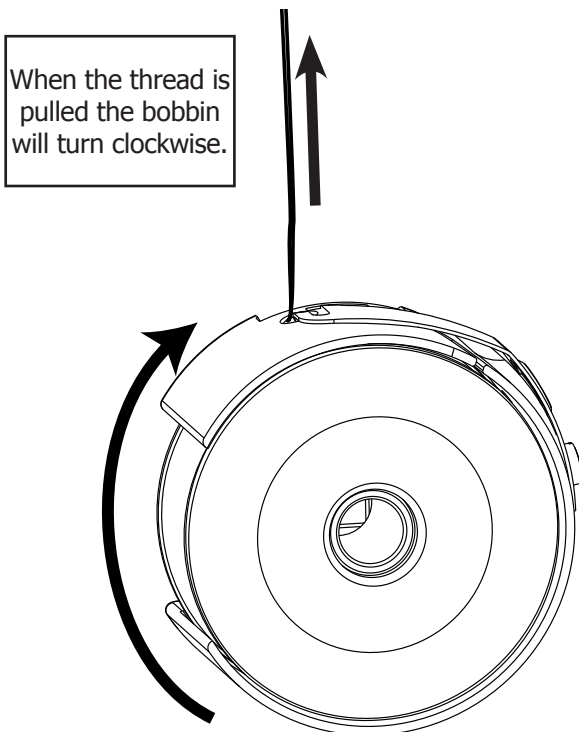


2. Place the full bobbin into the bobbin case.

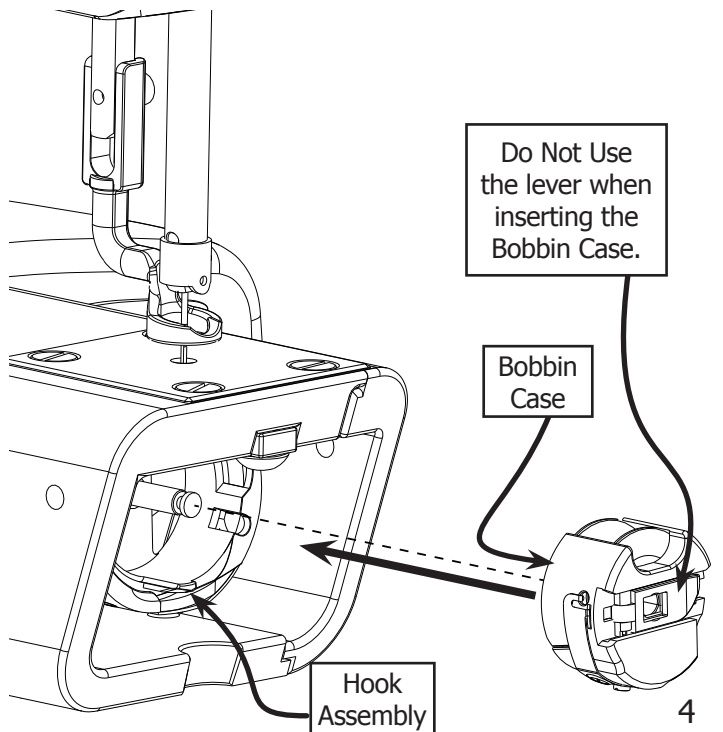
Note: The bobbin thread needs to slide into the slit on the bobbin case.



3. Pull several inches of thread from bobbin through the bobbin case.



4. Place the bobbin case into the quilting machine with the lever arm at the 3 o'clock position, and press it into place until it clicks in.

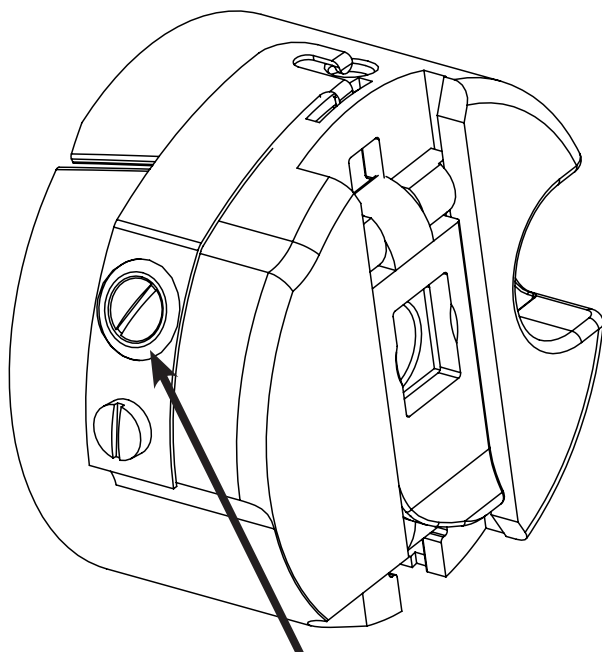
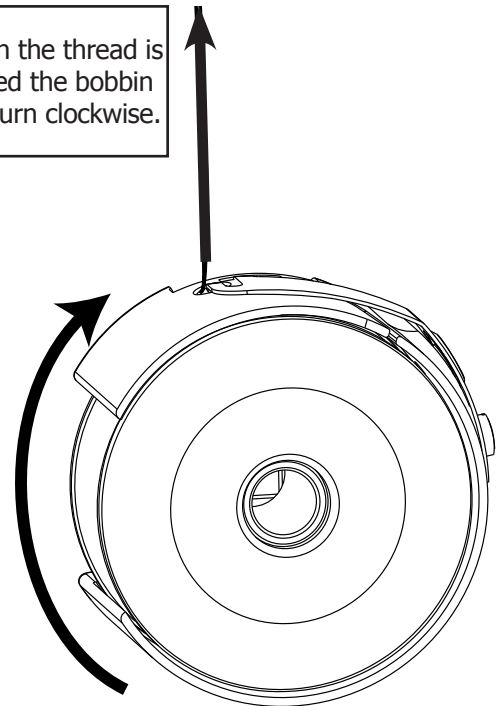


Adjusting Thread Tension

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. See page 30 for more information about properly tensioning your thread.

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.

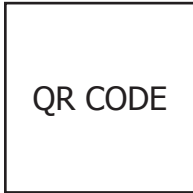
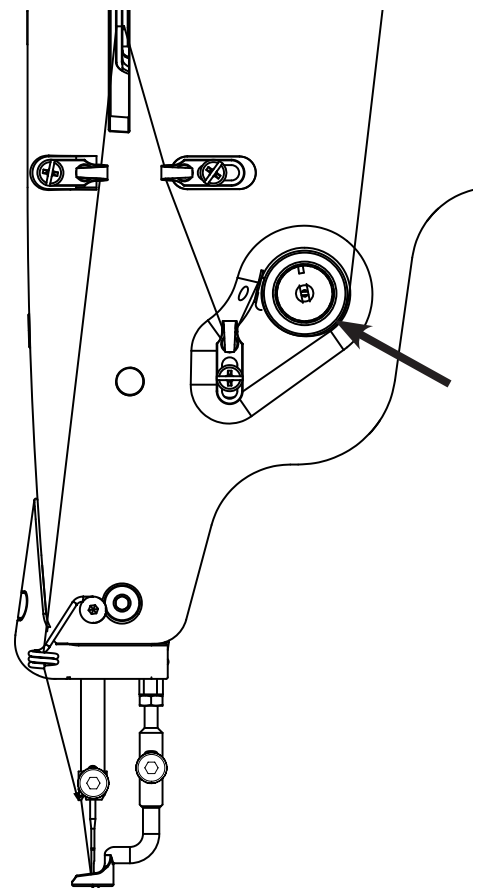
When the thread is pulled the bobbin will turn clockwise.



Turn the screw clockwise to increase bobbin tension and counter-clockwise to decrease bobbin tension.

2. To adjust the bobbin tension, locate the larger of the two screws on the bobbin case. Tighten the tension in minute adjustments by twisting the large screw to the right or clockwise. To loosen, twist the large screw to the left or counterclockwise minutely.

3. **Adjust the top thread tension after the bobbin tension is established.** Start with the knob loose, 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.



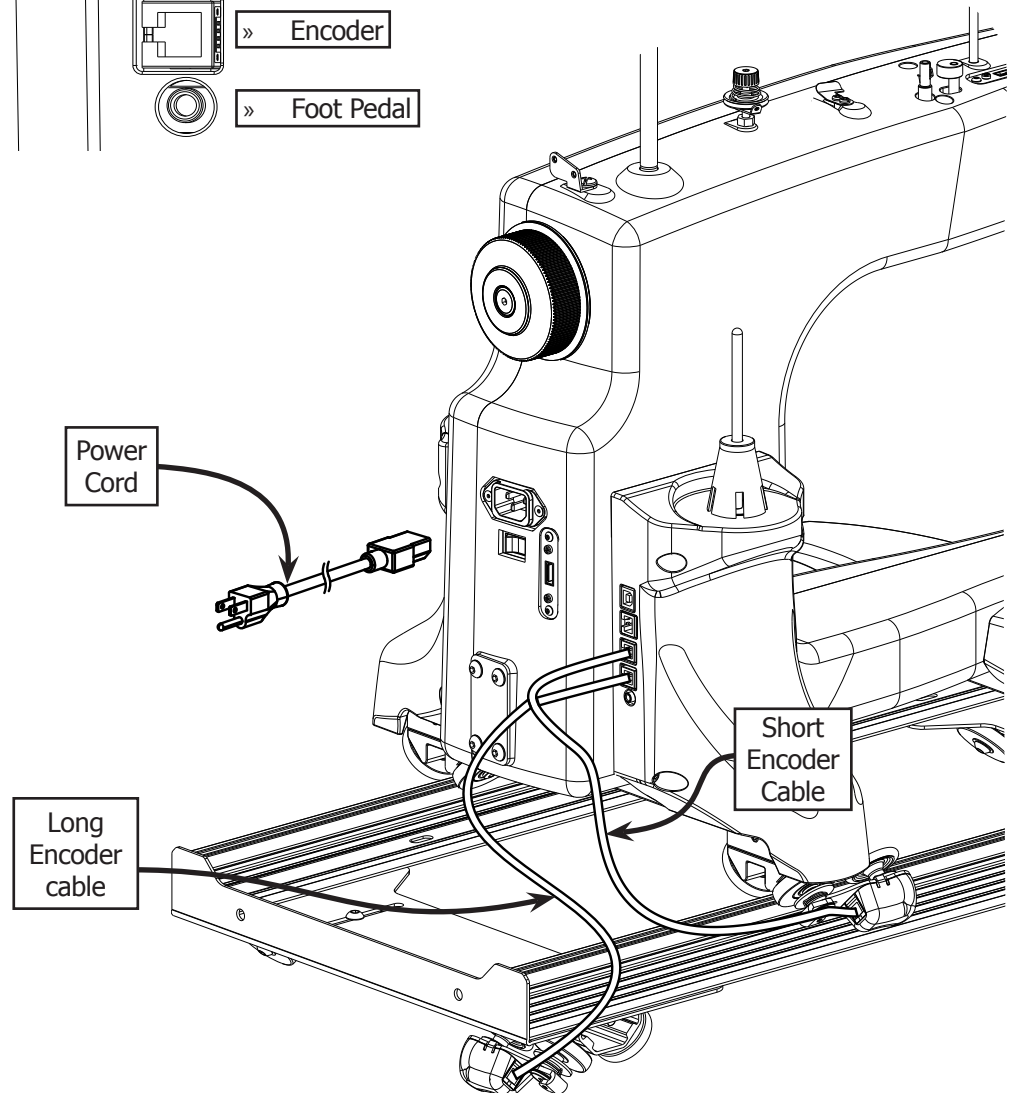
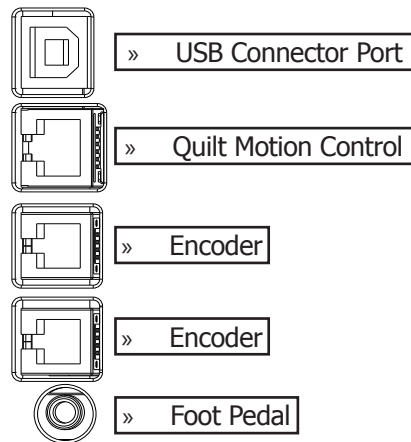
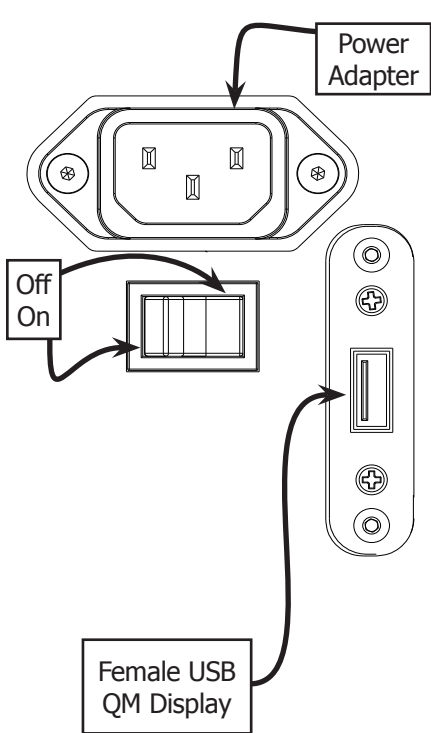
Plugging in the Cables

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.

Below is a reference of how the machine should be configured.

Note: check that cables are set up so they will not be run over during use.

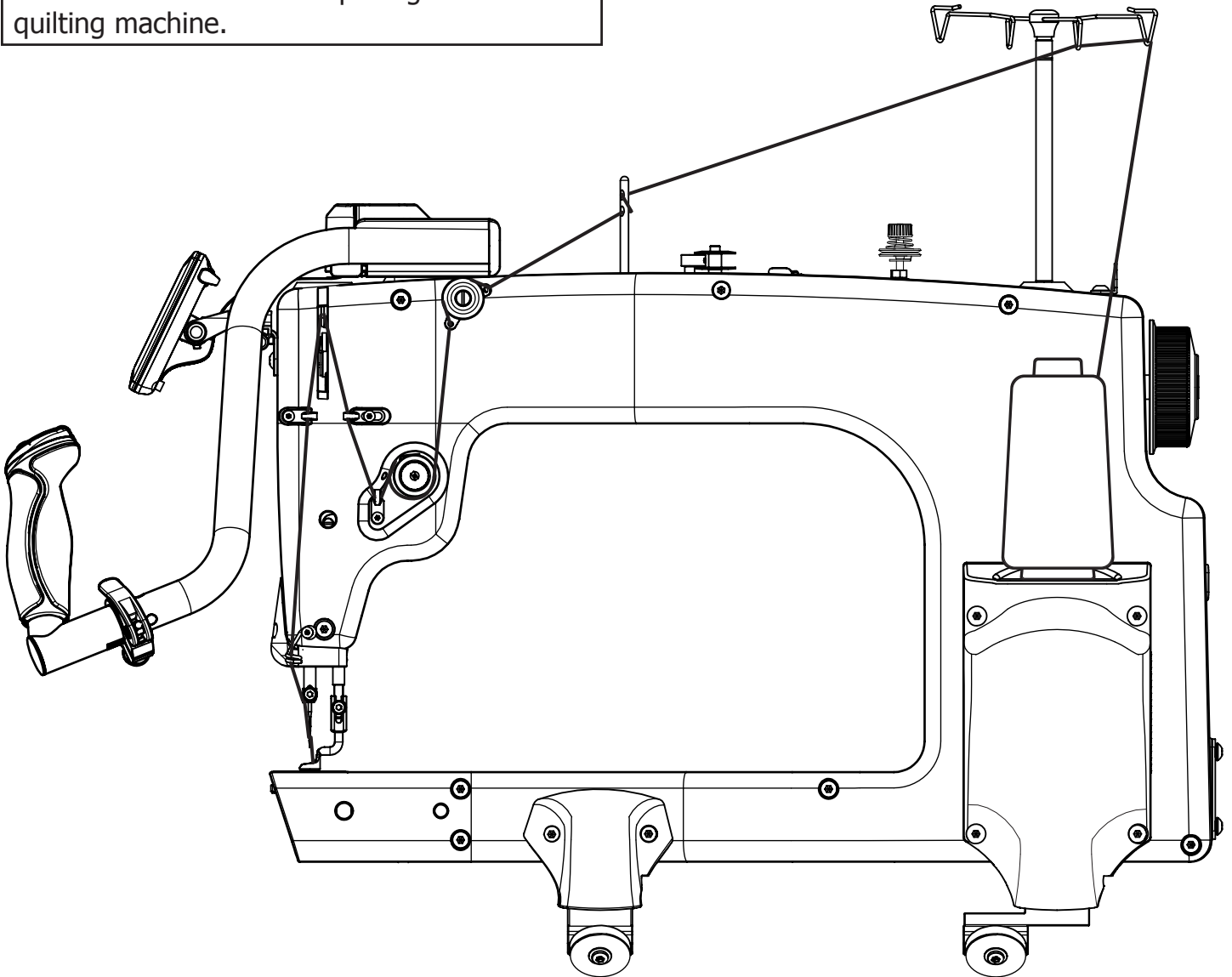


Final Checklist

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 to the handle bars
- The display powers on and displays the quilting settings
- Check for bent needles
- The needle is secured firmly into the needle bar
- The power cord is securely connected
- The Back Rail is 1/4" above Machine

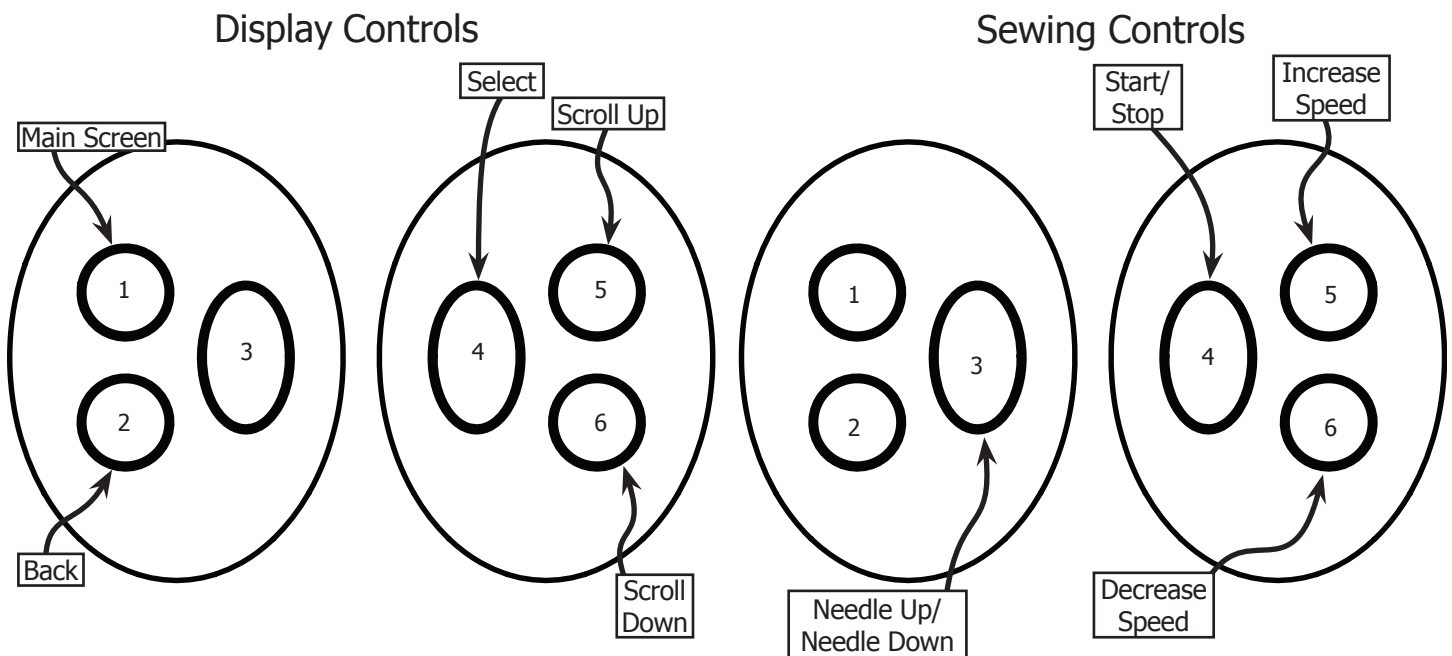
No objects other than quilting materials should be near the needle or quilting area of the quilting machine.



Basic Controls

Note: The default buttons can be changed in settings so the left and right handed buttons can be switched.

- 1. Main Screen** - This button will take the user to the main screen.
- 2. Back** - This button will return the user to the previously viewed screen.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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 decrement the value of the variable down.



Main Screen Options

The Main Screen provides access to the different sewing methods and access the Settings 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 the set minimum cruise speed, 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

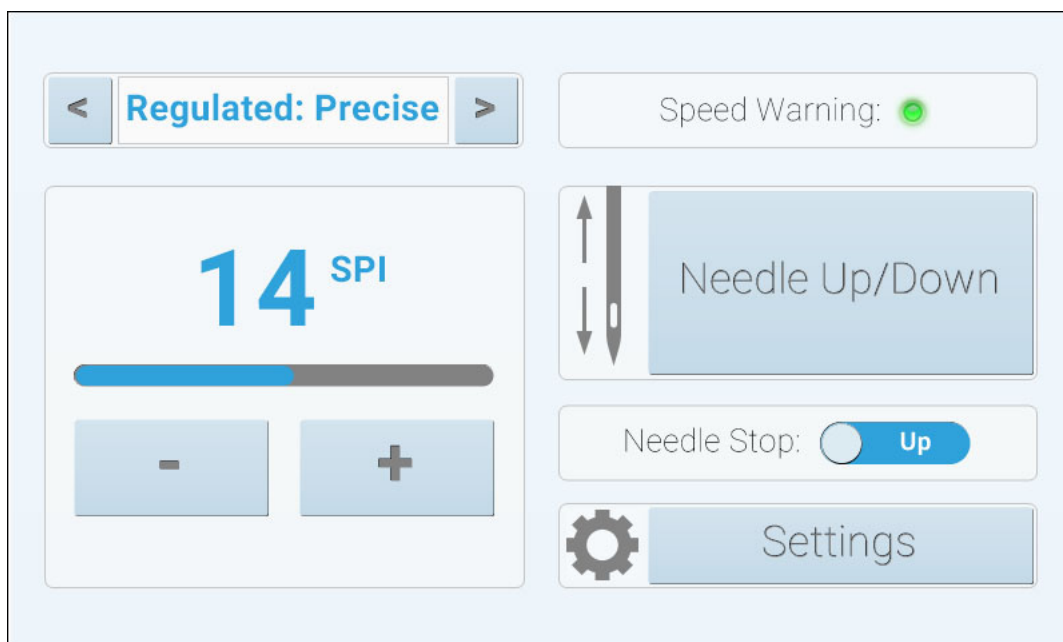
The baste feature allow the user to place a temporary stitch at large intervals to secure fabric layers together.

Needle Up/Down

The Needle Up/Down feature toggles the needle up or down depending on the last location the needle is in.

Settings

The Settings 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 Modes

Running Speed Indicator

The Running Speed Indicator will be gray when the machine is not in an active stitch mode. After selecting a stitch mode and pressing start, the indicator will turn green and will stay green while stitching within the speed limit for sewing. When the indicator turns red 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 button is for the default needle position when sewing is stopped. This can also be changed by holding the left needle up/down button for three seconds.

SPI Setting (Stitch Per Inch)

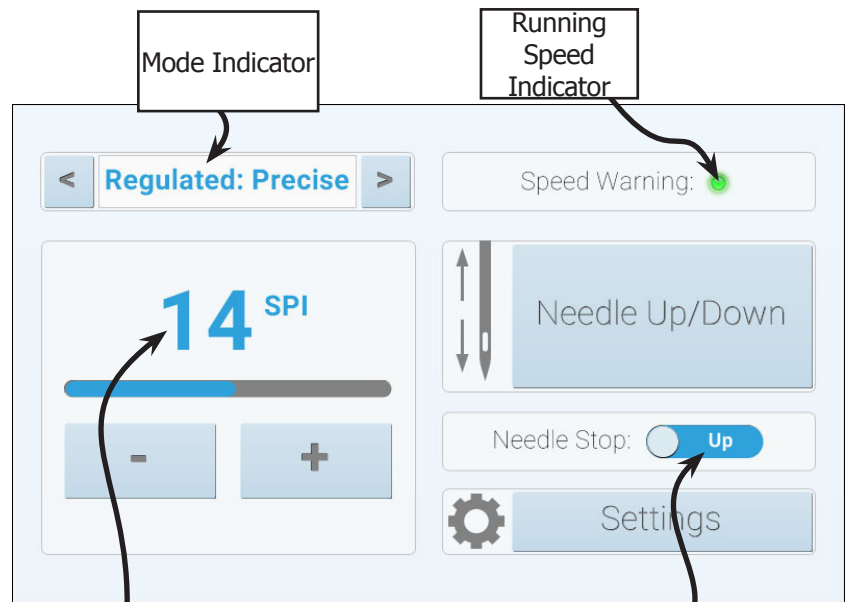
Shows the current SPI setting, the minimum is 4, and the maximum is 16.

Mode Indicator

This button indicates which sewing mode is currently active.

Minimum Cruise Speed

Controls the minimum speed the machine will run when the machine is not being moved quickly or is not being moved at all.



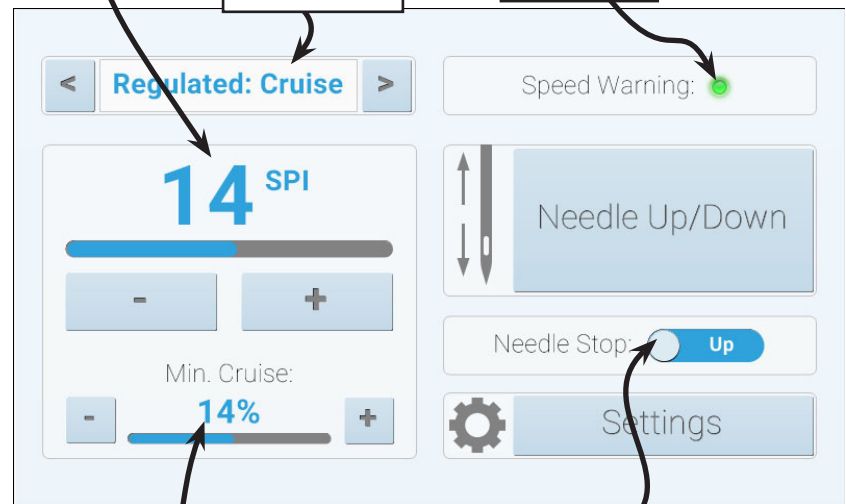
Stitches Per Inch setting

Needle Stop Position Indicator (up position)

Stitches Per Inch setting

Mode Indicator

Running Speed Indicator



Minimum Cruise Speed

Needle Stop Position Indicator (up position)

Sewing Modes Continued

Stitch Size Setting

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

Speed Setting Indicator

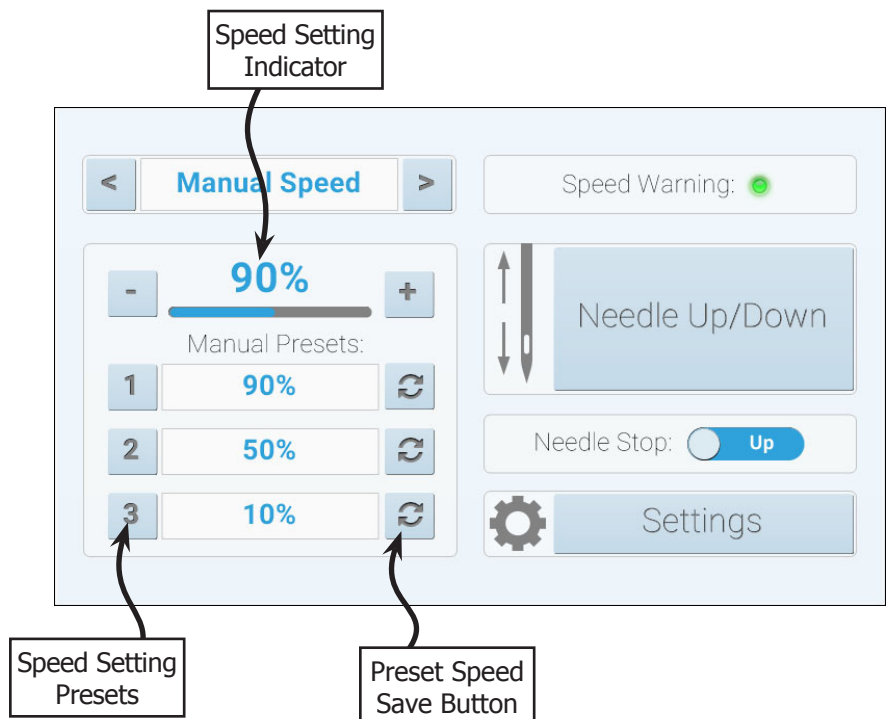
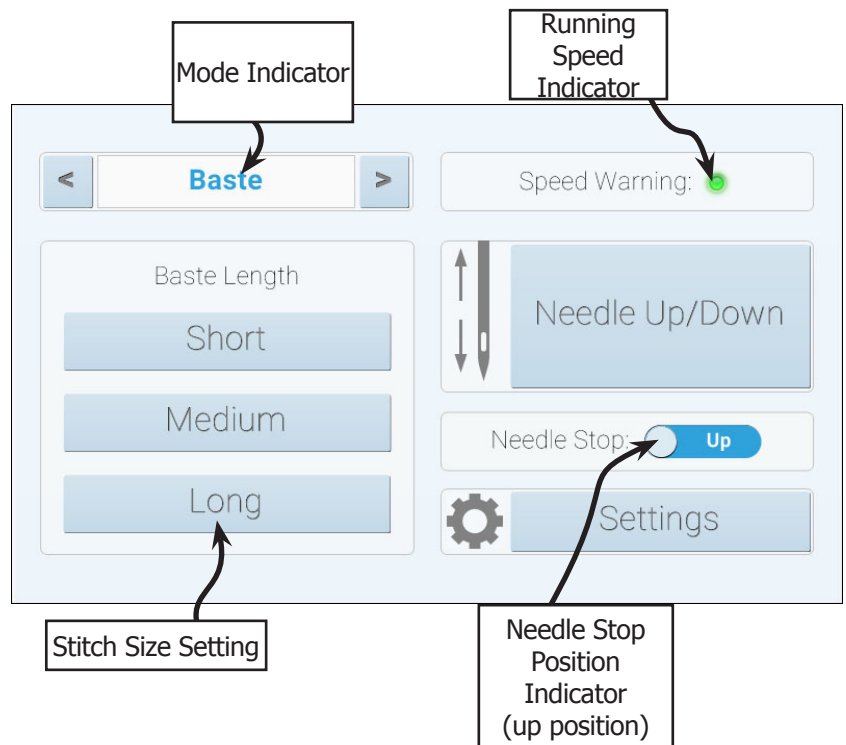
The Speed Indicator shows current sewing speed as a percentage of the maximum 1800 stitches per minute. The minimum being 5% and the maximum of 100%.

Speed Setting Presets

In Manual Mode three preset speeds can be set to quickly change speeds to a desired set speed.

Preset Speed Save Button

Saves a new preset speed to the current speed the machine is set to.



Settings

Settings

The settings menu allows access to information regarding the sewing machine.

System

This screen displays the number of stitches sewn and hours the machine has run.

Screen Calibration

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

Main Screen

Returns the user back to the Main Screen.

Lights

Turn the machine head LED lights on/off.

Handle Switch

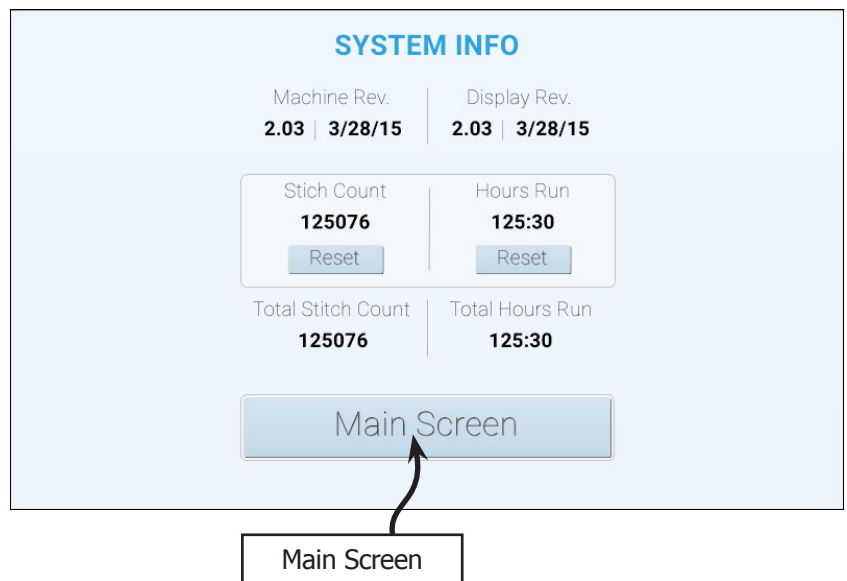
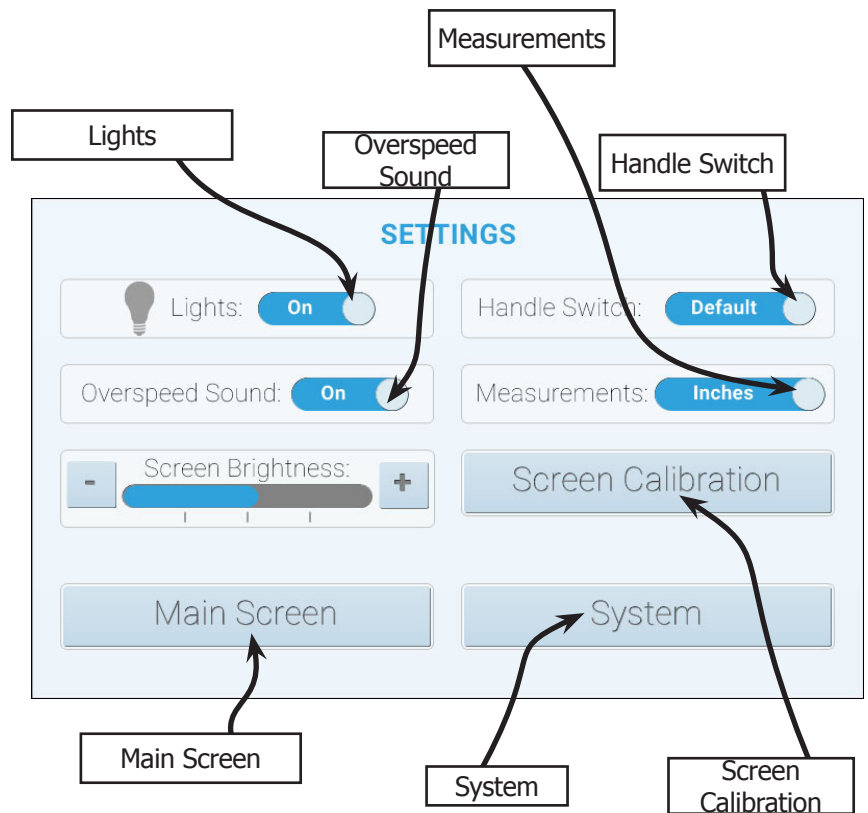
Switches the default handle buttons so sewing controls can be controlled with the left hand.

Overspeed Sound

Turns the Overspeed buzzer on/off.

Measurements

Switches between inches and cm for desired stitch lengths.



System Info

Machine Rev.

Machine software version current on users machine.

Display Rev.

Display software version current on users display.

Stitch Count

Number of stitches completed since the last reset.

Hours Run

Number of hours run since the last reset.

Total Stitch Count

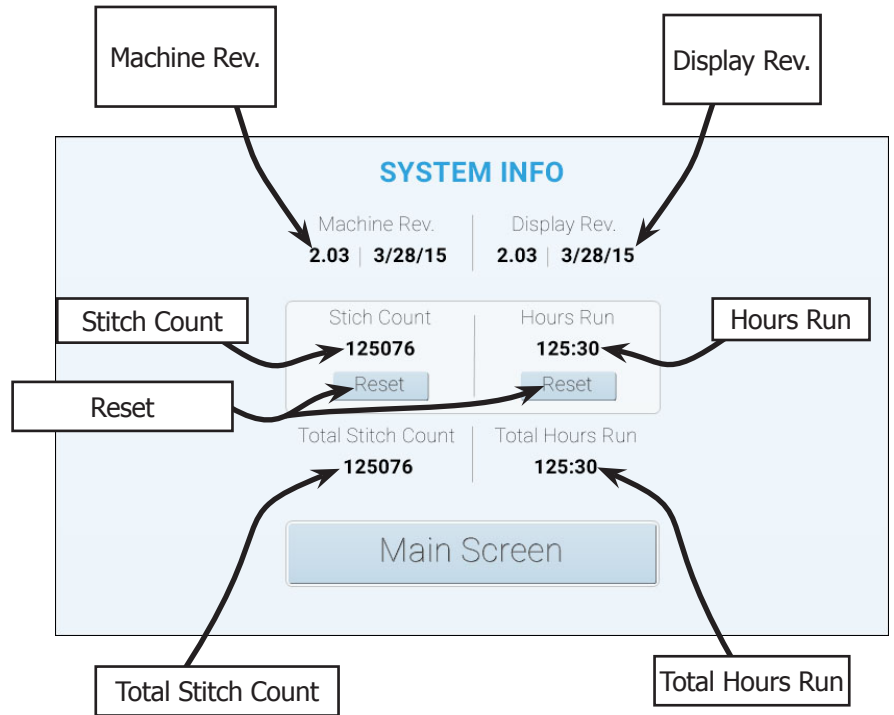
Number of stitches completed for the life of the machine.

Total Hours Run

Number of hours run for the life of the machine.

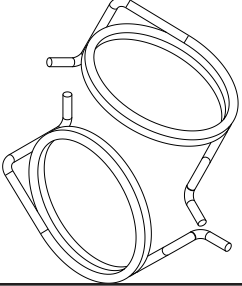
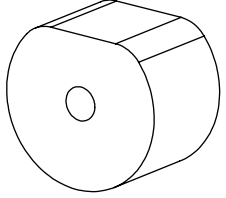
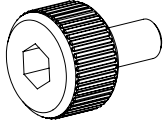
Reset

Restarts the counters so user can track number of stitches for a project or desired period of time.



Repair Kit

Every sewing machine includes a basic repair kit, which includes parts to make simple repairs to your machine.

<p>Encoder Springs - 1 Black/1 Silver Replacement springs for the encoders.</p>	
<p>If the encoder springs are over-tensioned they may break and must be replaced.</p>	
<p>Timing Spacer - 1 A tool to make timing your machine easier and more consistent.</p>	
<p>M3 Thumb Screw - 1</p>	

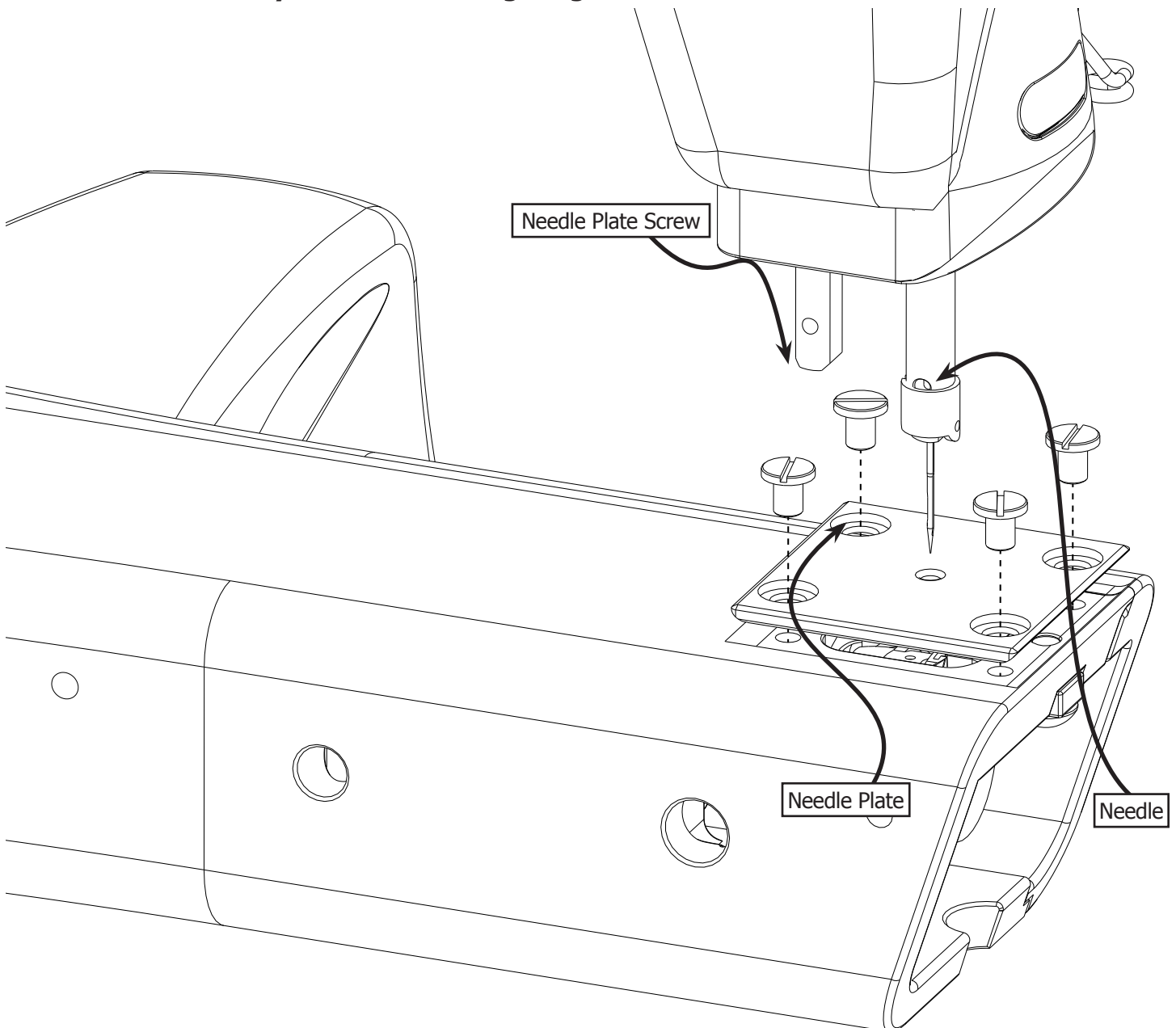
The Needle Plate

Parts Needed:

1. Flat Head Screw Driver

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: The Needle Plate can be removed for cleaning the hook assembly, checking timing of the Hook Assembly and for removing tangled thread.



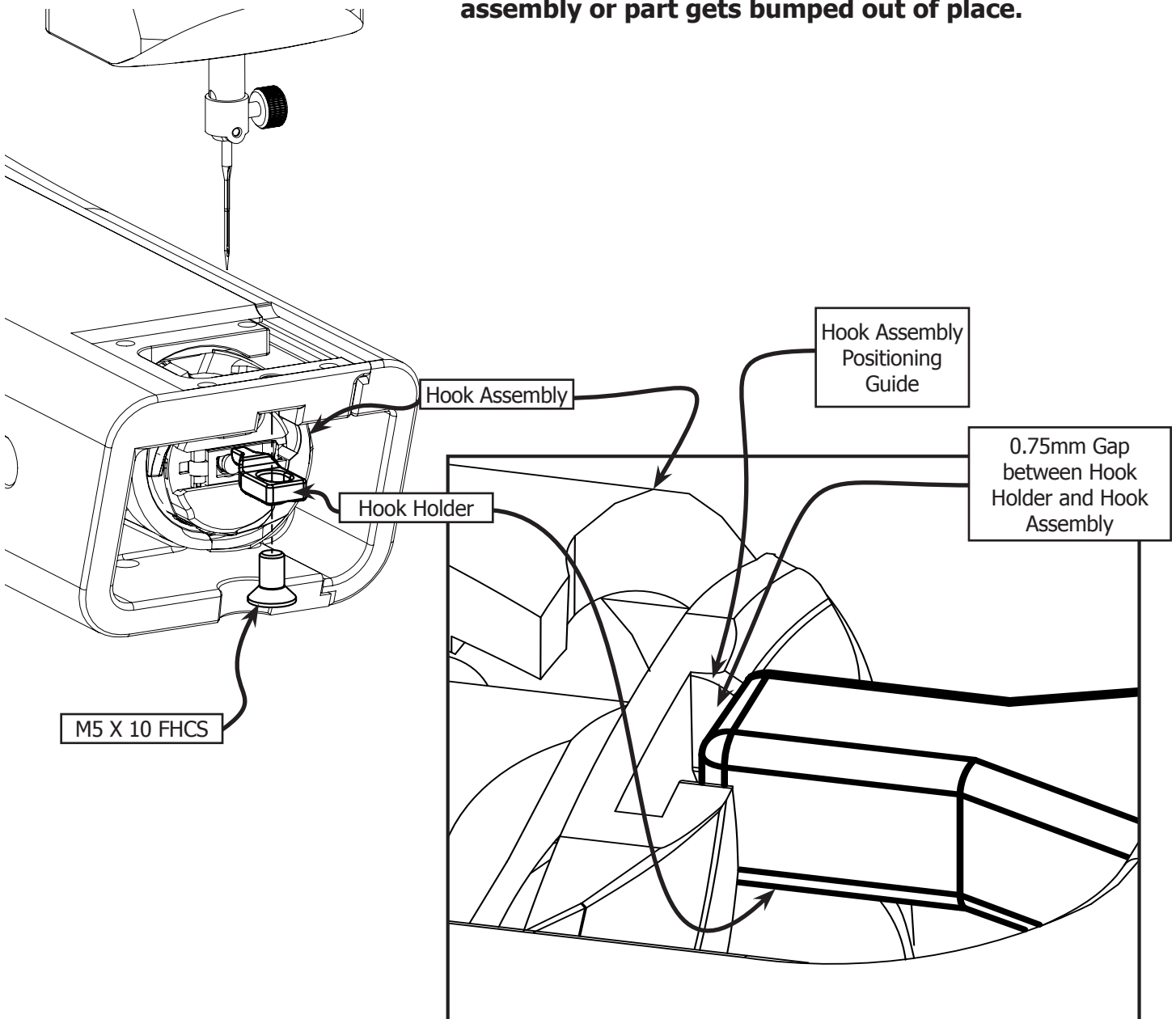
The Hook Holder

Parts Needed:

1. 3mm Allen Wrench

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 FHCS (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 (Make sure the hook holder is in the Hook Assembly Positioning Guide securely with a gap between hook holder and hook assembly) between the hook holder and the hook assembly, and tighten the M5 X 10 FHCS.

Note: Adjust the hook holder only if receiving a replacement part, removing your hook assembly or part gets bumped out of place.



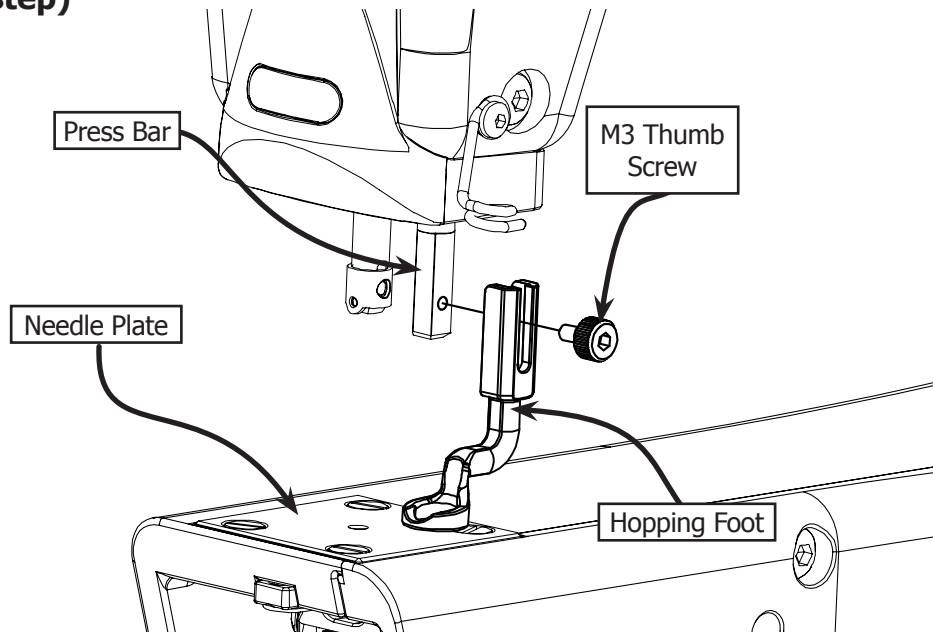
Hopping Foot Adjustment

Parts Needed:

1. 3mm Allen Wrench

1. Using the hand wheel on the back of your machine, rotate your machine until the needle bar is in the lowest position.

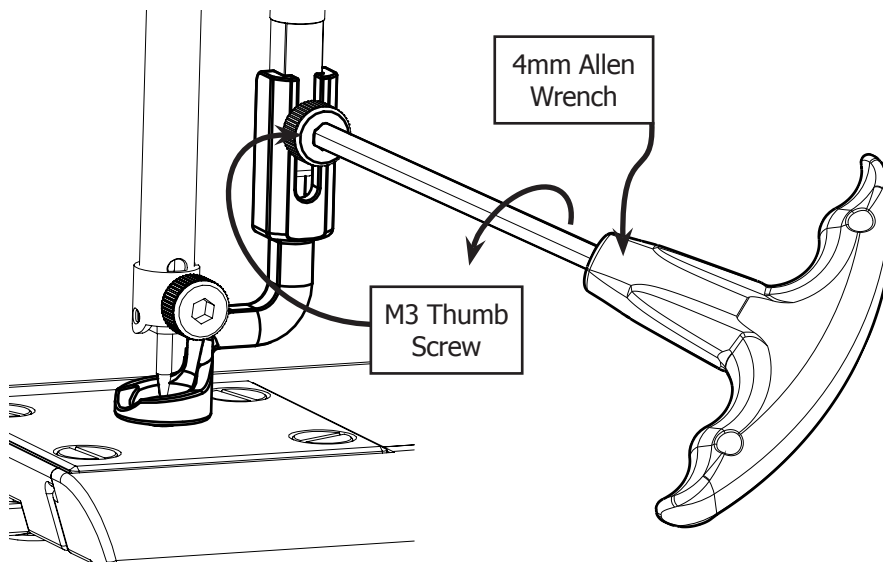
2. Attach your hopping foot to the press bar using a M3 Thumb Screw (don't tighten during this step)



3. Place 4-8 sheets of paper (approximately 0.5mm) under the foot and lower the hopping foot to the top of the surface. You may need to use more or less sheets of paper if your project is particularly thick or thin.

4. Tighten the bolt using the 3mm Allen Wrench.

Note: The Hopping Foot needs to be adjusted for thicker and thinner fabrics, if the machine is skipping stitches lower the hopping foot.



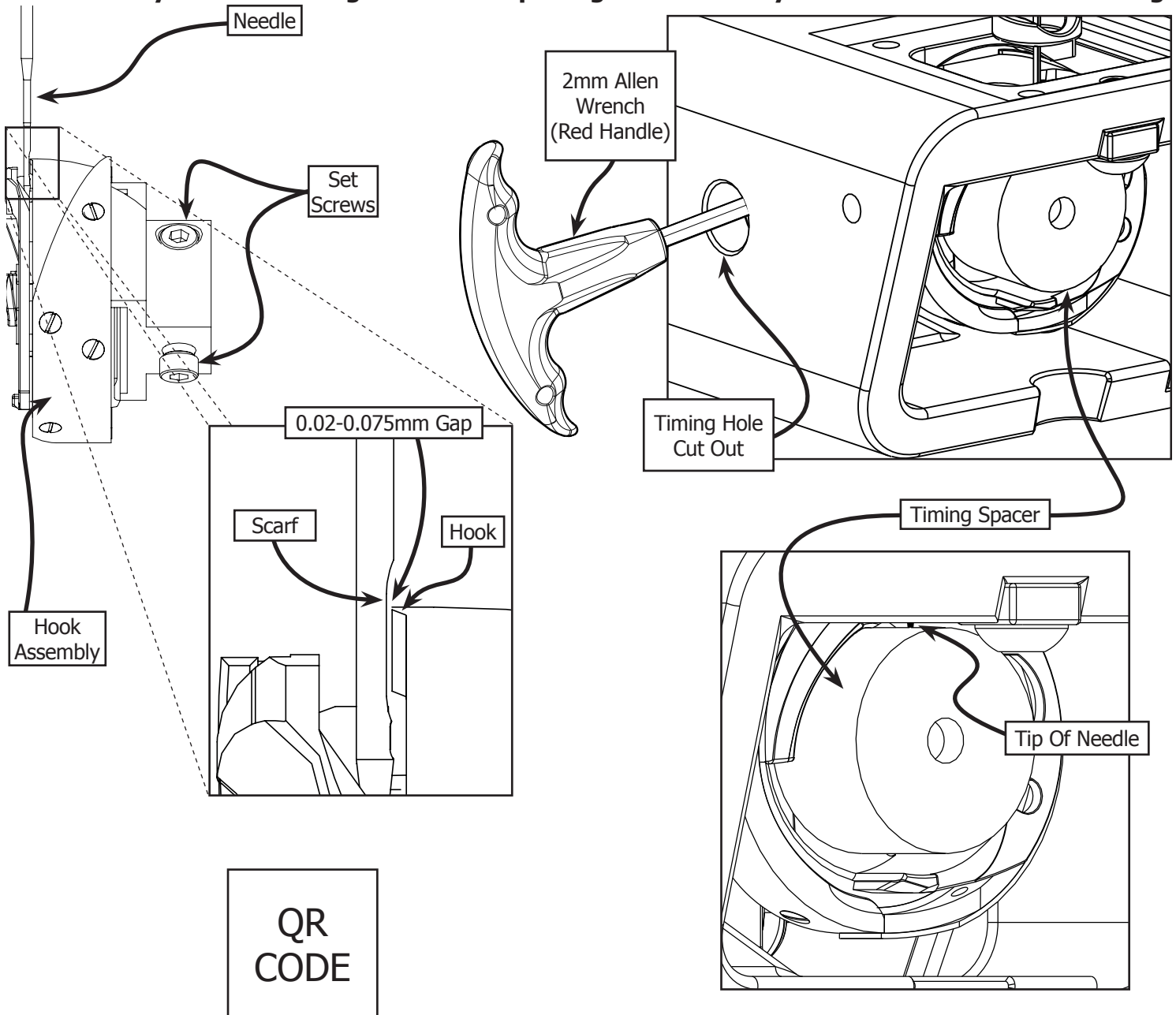
Timing The Machine

Parts Needed:

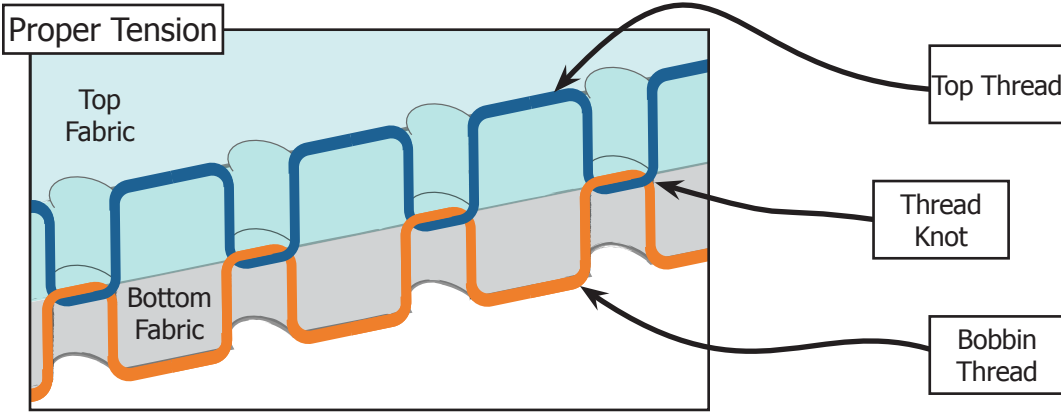
1. 2mm Allen Wrench
2. Timing Spacer

1. Loosen all three hook assembly set screws with a M2 allen wrench by inserting the wrench into the machines timing hole when each set screw aligns with the hole.
2. Rotate the handwheel clockwise from the front of the machine so needle is raising out of the hook assembly.
3. 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.
4. 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 handwheel 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.
5. Tighten the two remaining set screws.

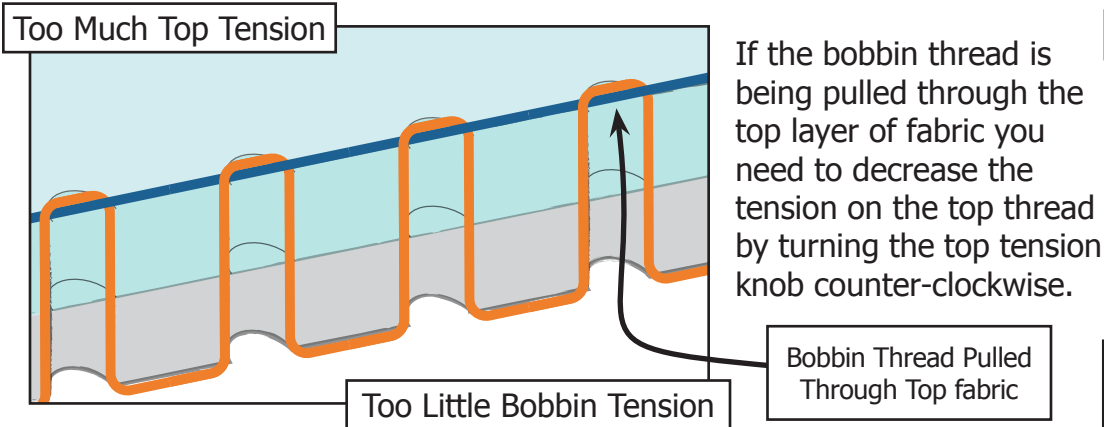
Note: Only time the sewing machine if replacing hook assembly or machine comes out of timing.



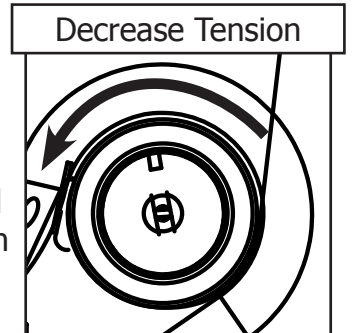
Thread Tension



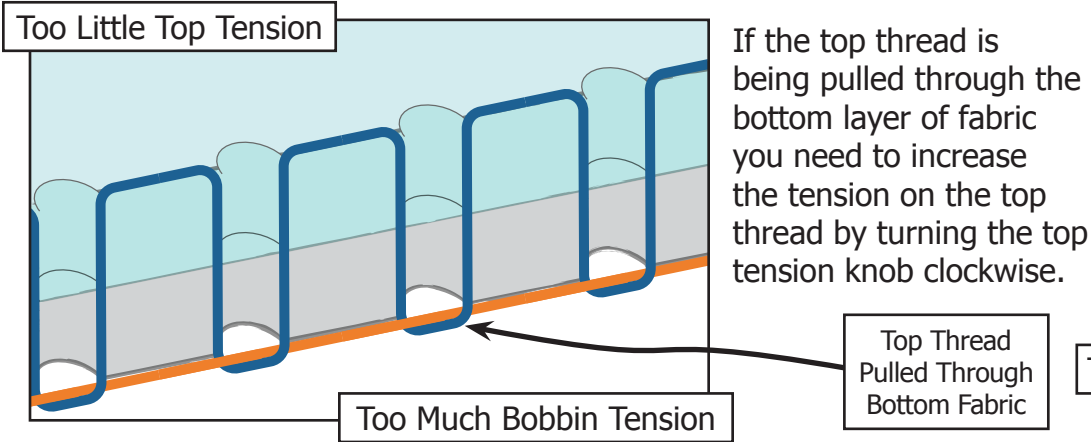
If the thread is properly tensioned the top thread and the bobbin thread will knot in the middle of the fabric layers.



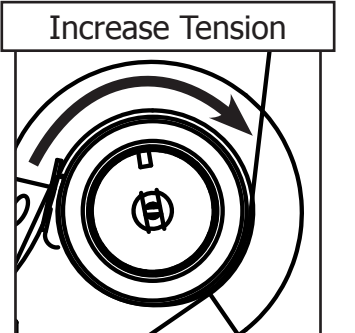
If the bobbin thread is being pulled through the top layer of fabric you need to decrease the tension on the top thread by turning the top tension knob counter-clockwise.



Turn the Knob Counter-Clockwise

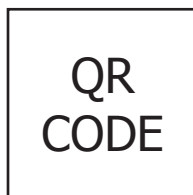


If the top thread is being pulled through the bottom layer of fabric you need to increase the tension on the top thread by turning the top tension knob clockwise.



Turn the Knob Clockwise

It is very important to make sure that the bobbin tension is properly set first, see page 16 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.

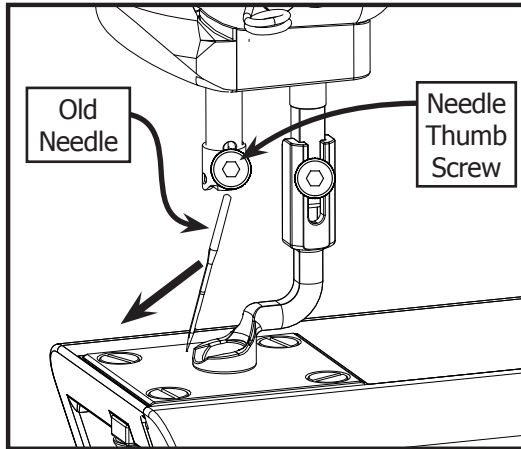


Changing A Needle

Parts Needed:

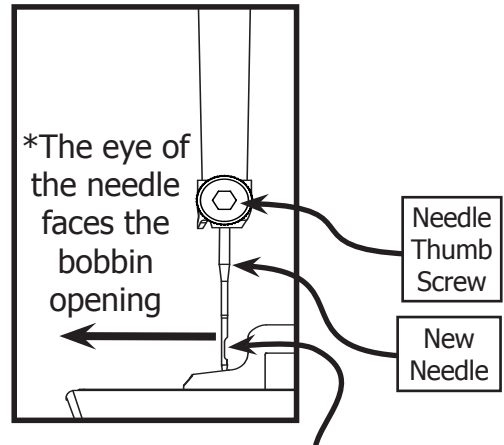
1. 1.5 mm Allen Wrench
2. New Needle

1. Raise the Needle to the Highest Point.
2. Loosen the thumb screw that secures the needle.
3. Remove the old needle and insert the new one.



4. Tighten the thumb screw while holding the Needle in place.

Note: Change the machine's needle if the needle gets bent or if it begins to get dull. (refer to pg. 37 for Needle Info)



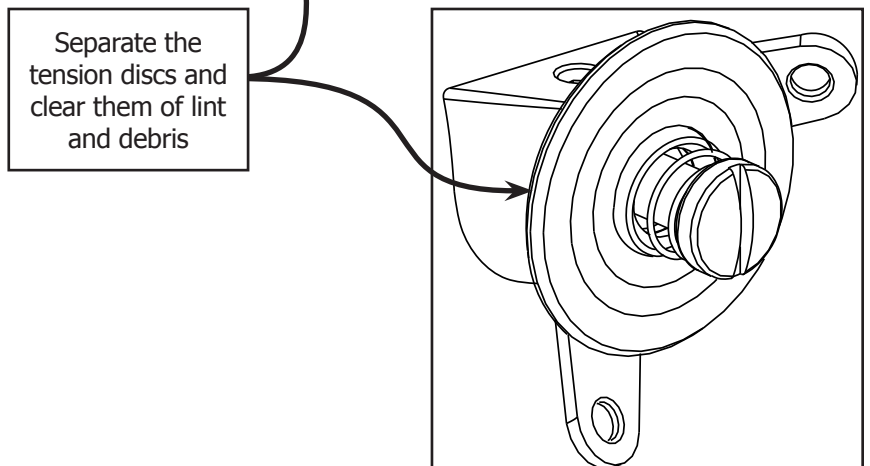
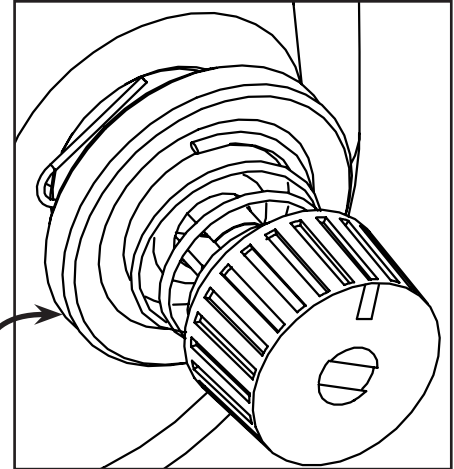
***Be sure to install the needle with the scarf (indent) toward the throat of your machine.**

Cleaning Tension Discs

1. Remove thread.
2. Remove all lint and thread remnants.

Note: You can use canned/compressed air to clean this area.

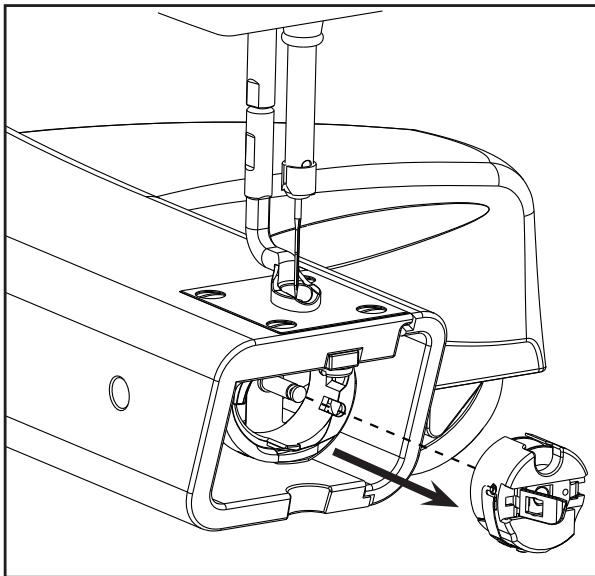
Note: Lint build up between the tension discs can prevent you from being able to properly tension your thread.



Cleaning Bobbin Area

1. Remove the bobbin case.
2. Remove all lint and any cloth and thread remnants.

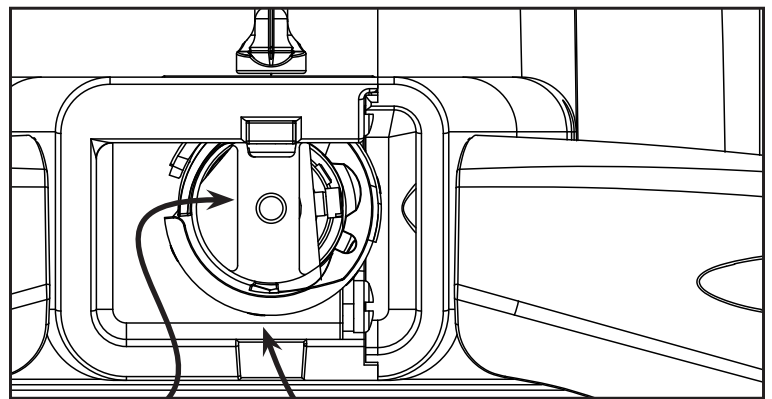
Note: You can use canned/compressed air to clean this area out as well.



Cleaning Bobbin Case

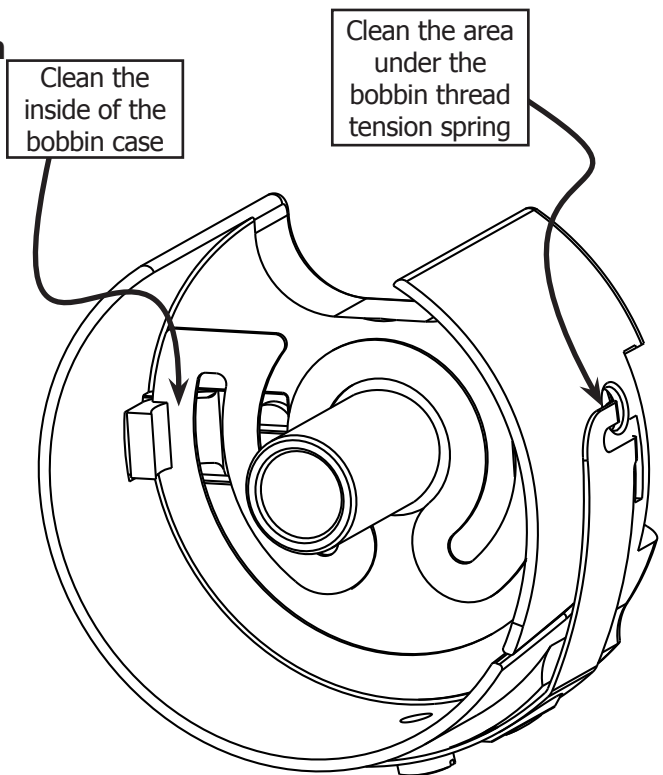
1. Remove the bobbin.
2. Remove all lint and thread remnants.
3. Place the bobbin back into the bobbin case.

Note: Once both components are clean reassemble the bobbin case and place it into the sewing machine.



Clean the inside of the hook assembly

Clean the area around the hook assembly



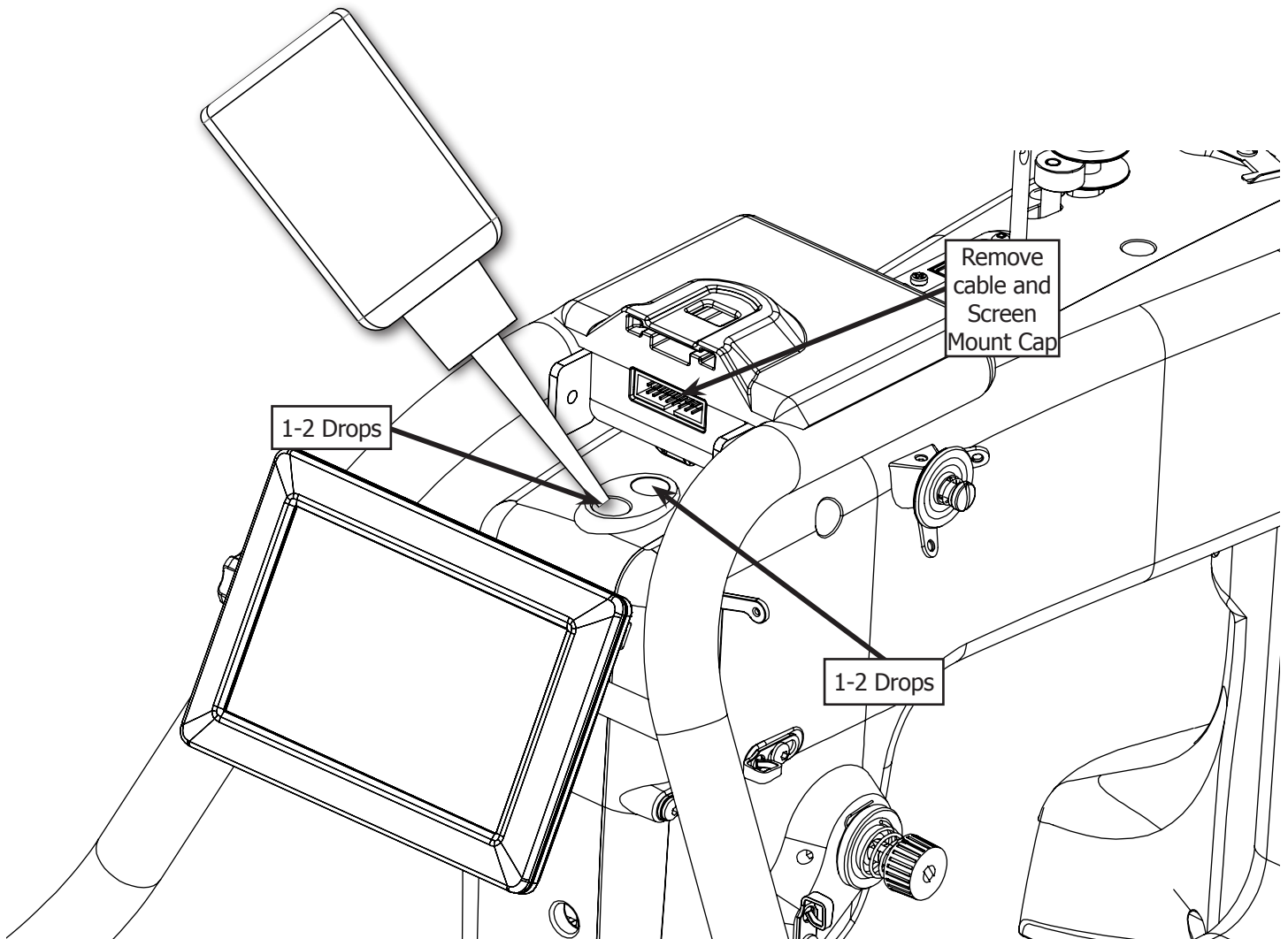
Clean the inside of the bobbin case

Clean the area under the bobbin thread tension spring

Oiling the Machine: Head

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. Place one to two drops of oil into the holes indicated with the arrows.



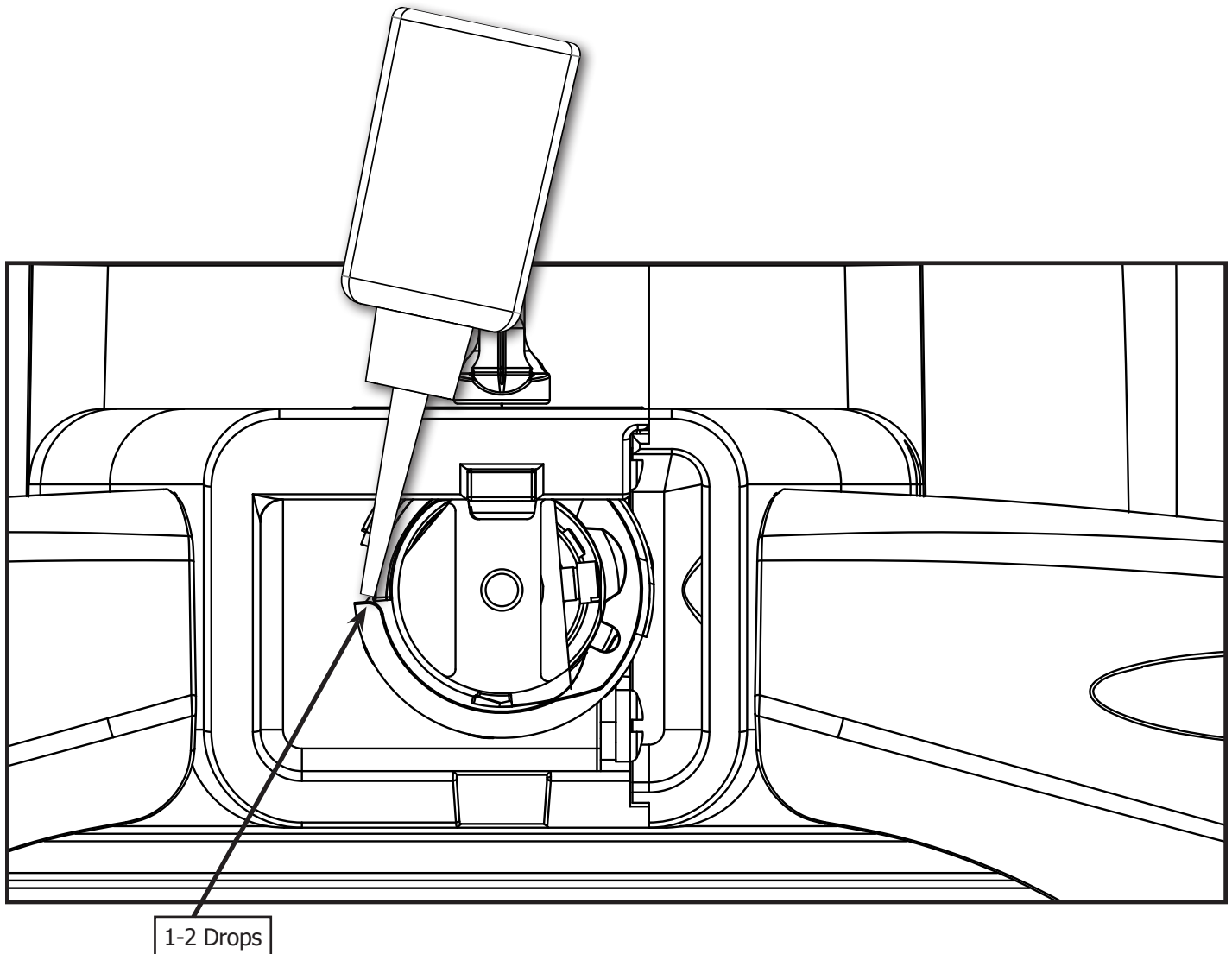
Keeping the machine well oiled will reduce wear and extend the life of the sewing machine.



Oiling the Machine: Hook

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 drop of oil on the hook assembly indicated by the arrow, pictured here.**
- 5. Rotate the hand wheel and place it into the 'needle Up' position.**



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

Troubleshooting

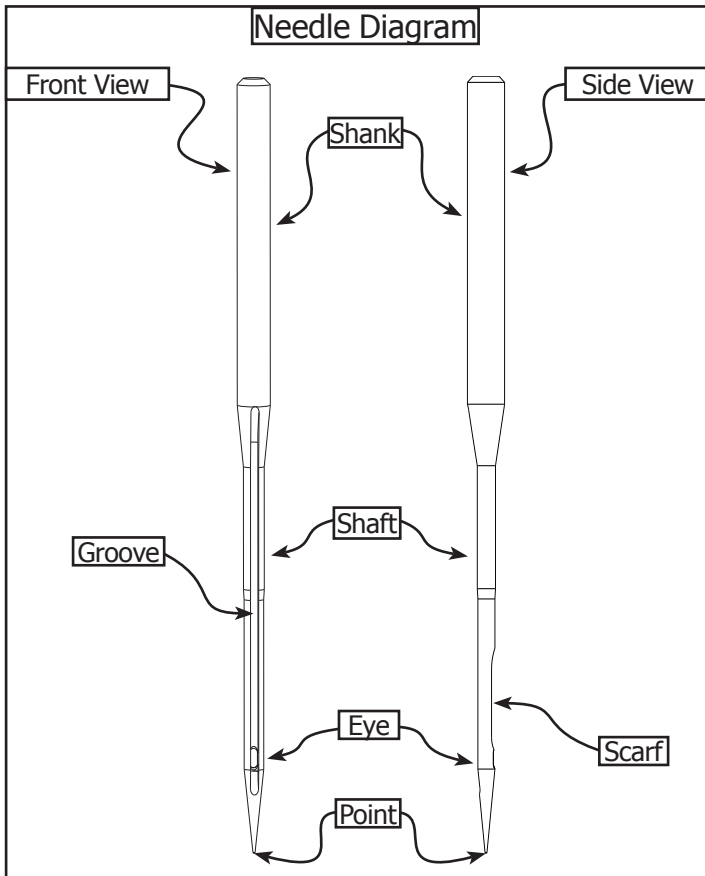
14+ Troubleshooting Instruction		
Issue	Cause	Solution
Troubleshooting Mechanics		
Critical distances check if not working/stitching properly or making noise	Hopping foot in lowest position 0.5mm away from needle plate	
	Make sure Timing is correct	See timing instructions
	Check there is a proper distance 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 (page 13)
	Hopping foot may be too close or too far from the needle plate	Check and adjust the hopping foot gap (page 28&30)
	Machine may be improperly timed	Re-time the machine. See timing instructions (page 29)
	The needle may be damaged	Check the needle and replace it if necessary (page 30)
	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 (page 15-16)
	Thread may have too much or too little tension	Check and re-adjust your tension (page 31)
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 (page 15-16)
	Machine threaded incorrectly	Check threading and make sure the thread passes through all tensioners and thread guides (page 13)
	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 (page 15-16)
	Thread tension is not correct	Check and re-adjust your tension (page 31)
	Check timing is correct	Re-time the machine. See timing instructions (page 29)
14+ Troubleshooting Instruction		

Troubleshooting

Issues	Cause	Solution
Machine stitching troubleshooting - continued		
Thread Breaking	Thread tension too tight	Decrease tension (page 31)
	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	Re-adjust the hook holder (page 28)
	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 (page 15-16)
	Timing needs to be adjusted	if needle is hitting the hook thread will break. Follow the timing instructions (page 30)
	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 (page 27)	
Machine Is Running Loud	Hook assembly needs oil	Only one or two drops of oil see instructions under oiling my machine
	Needle bar and mechanics need oil	Only one or two drops of oil
	Bobbin winder is running	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

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 know 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 Tips

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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