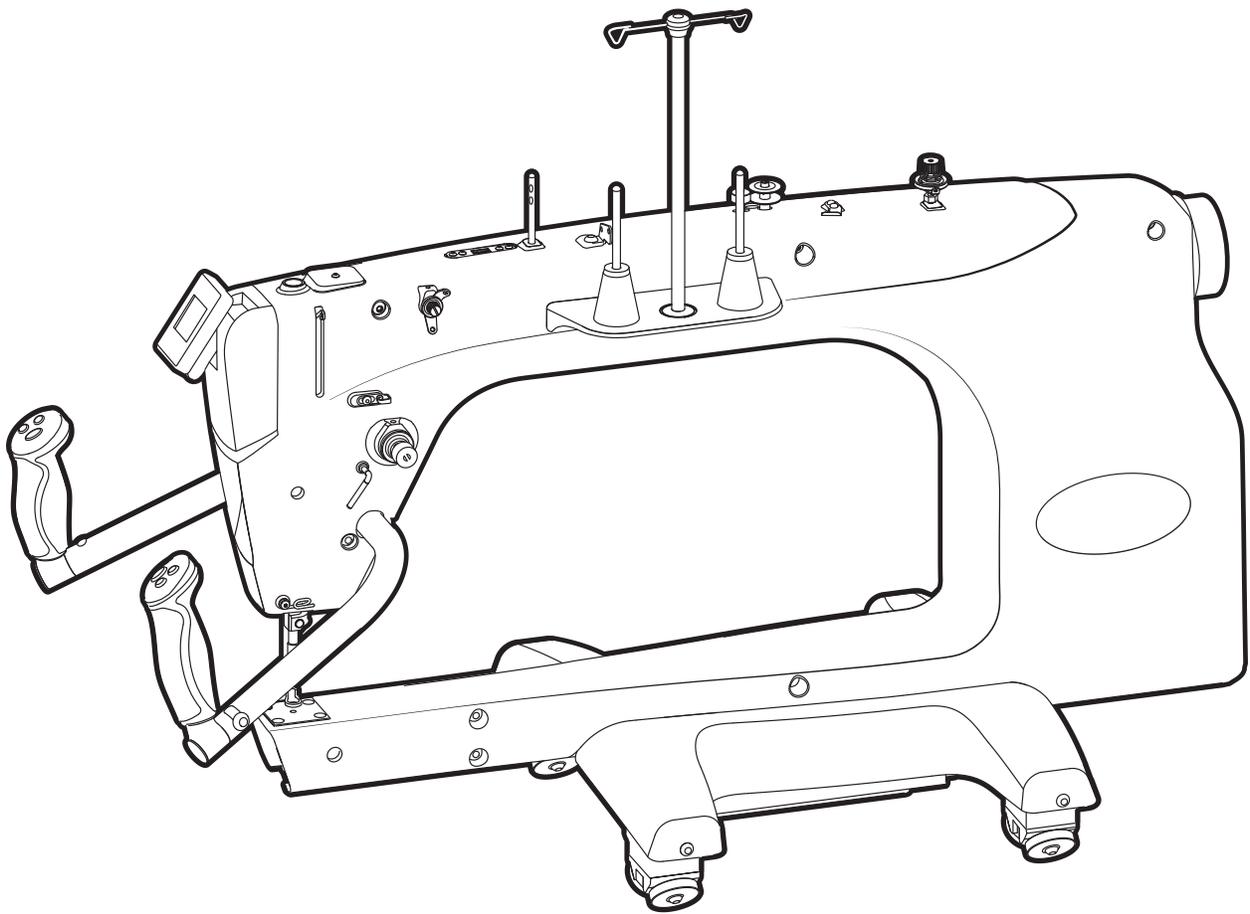


# Q'nique 21

Service Manual



The *Grace*  
*Company*  
Fine Quilting Frames

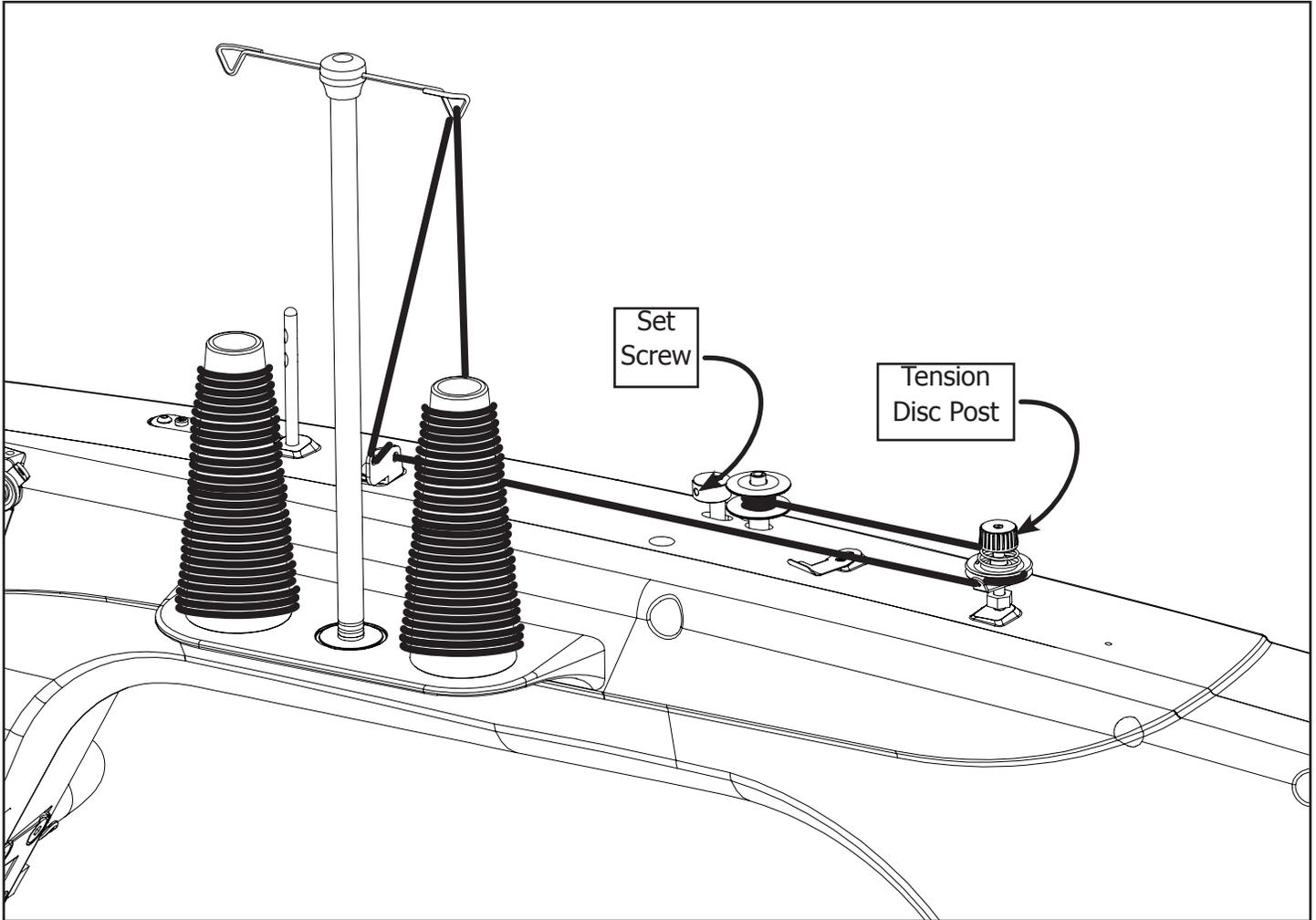
MADE BY  
*Grace*

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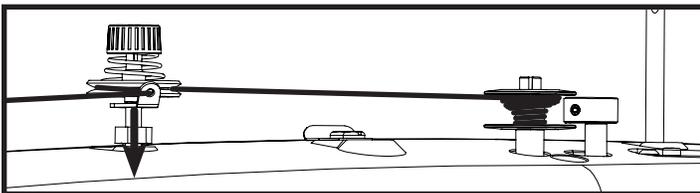
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## Tools Needed:

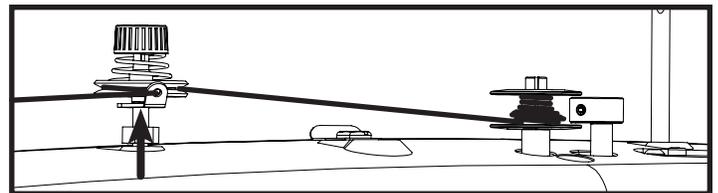
- 9mm Crescent Wrench
- 1.5mm Allen Wrench



1. Adjust the Bobbin Winder Cam to be centered to the Bobbin without touching it by loosening the Set Screw with the 1.5 mm Allen Wrench, adjusting the Cam, and retightening the Set Screw. If thread winds mostly on the top of the bobbin, the Tension Discs Post will need to be lowered by twisting the Tension Disc Post clockwise and retightening the hex nut.



2. If thread winds mostly on the top of the bobbin, the Tension Disc Post will need to be heightened by twisting the Tension Disc Post clockwise and retightening the hex nut.

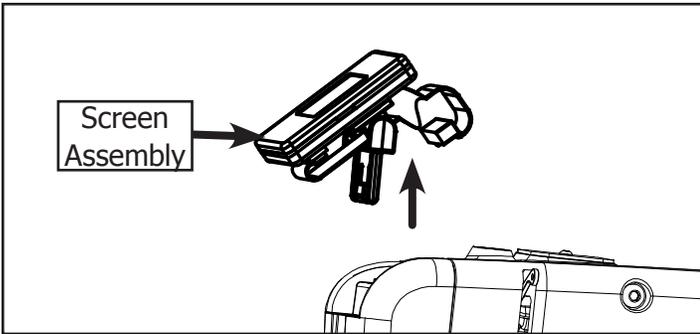
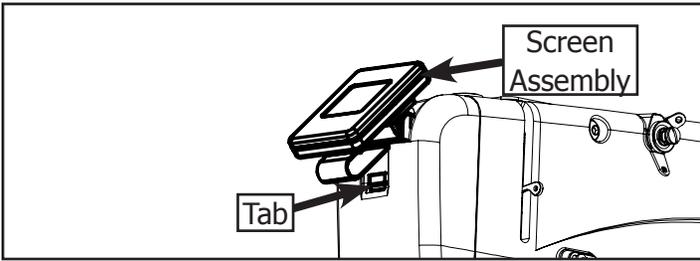


3. If thread winds mostly on the bottom of the bobbin, the Tension Disc Post will need to be heightened by twisting it counter clockwise and retightening the hex nut.

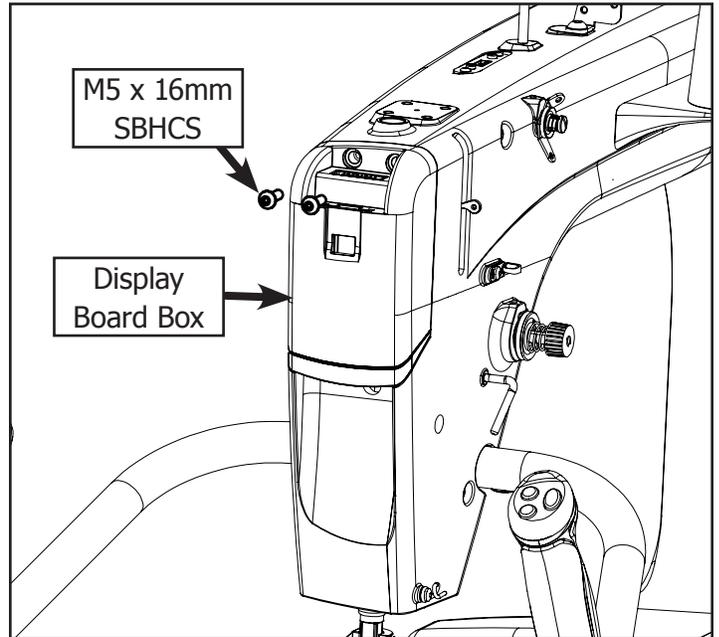
# Display Board Box | Q'nique 21: Service Manual

## Tools Needed:

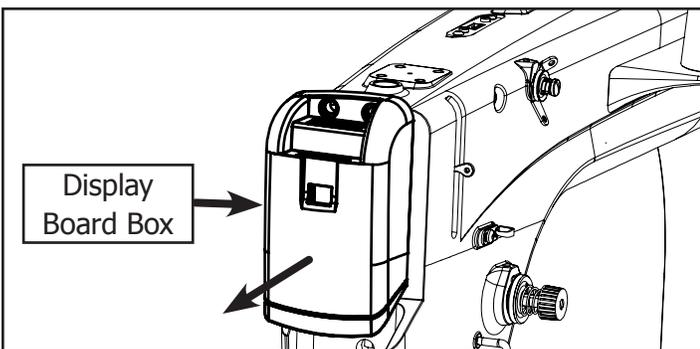
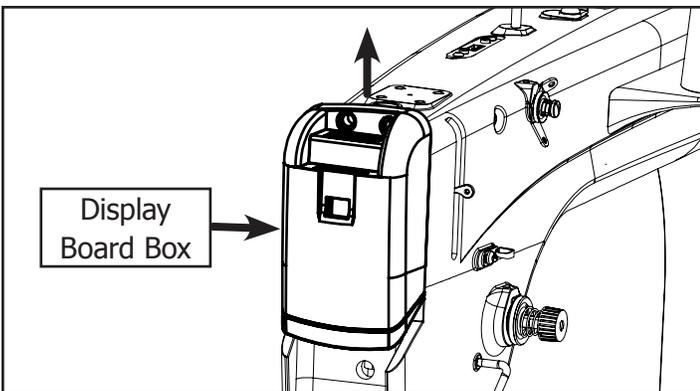
3mm Allen Wrench



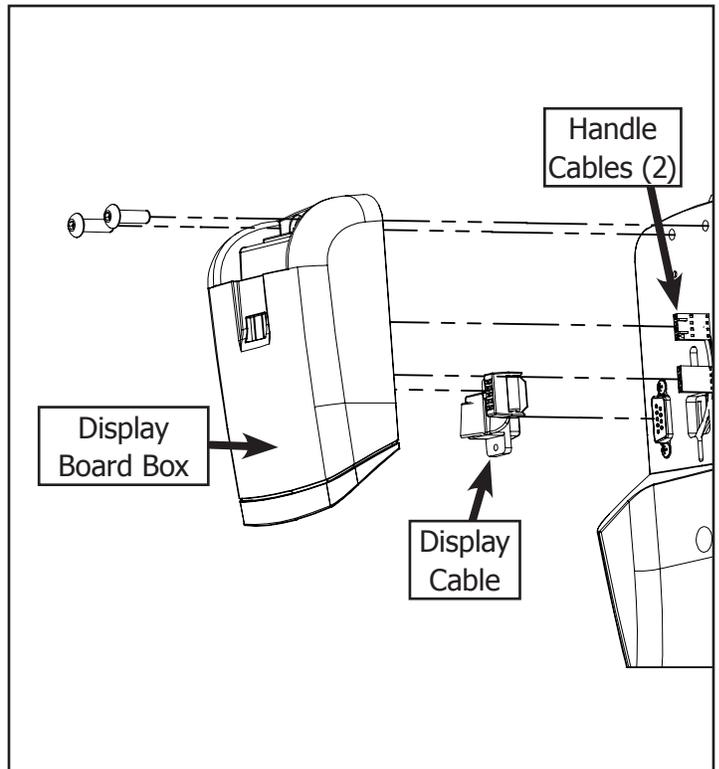
1. Press the Tab inward and pull the Screen Assembly up and unplug the LCD Cable.



2. Remove the (2) M5 x 16mm SBHCS holding the Display Board Box.



3. Pull the Display Board Box up and out.

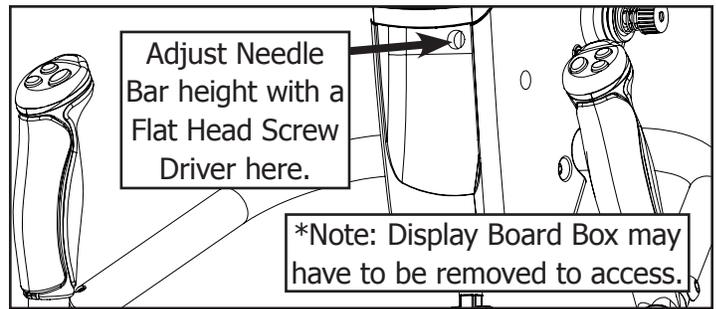


4. Unplug the Handle Cables and Display Cable and remove.

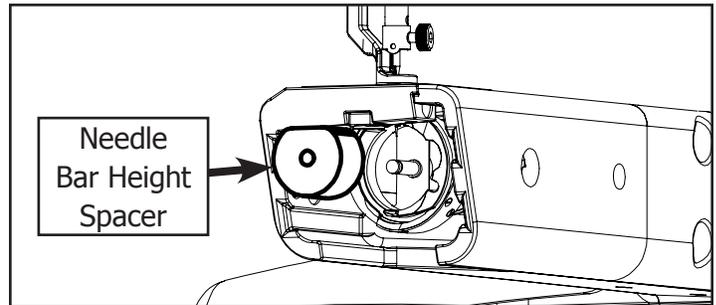
# Needle Bar Height | Q'nique 21: Service Manual

## Tools Needed:

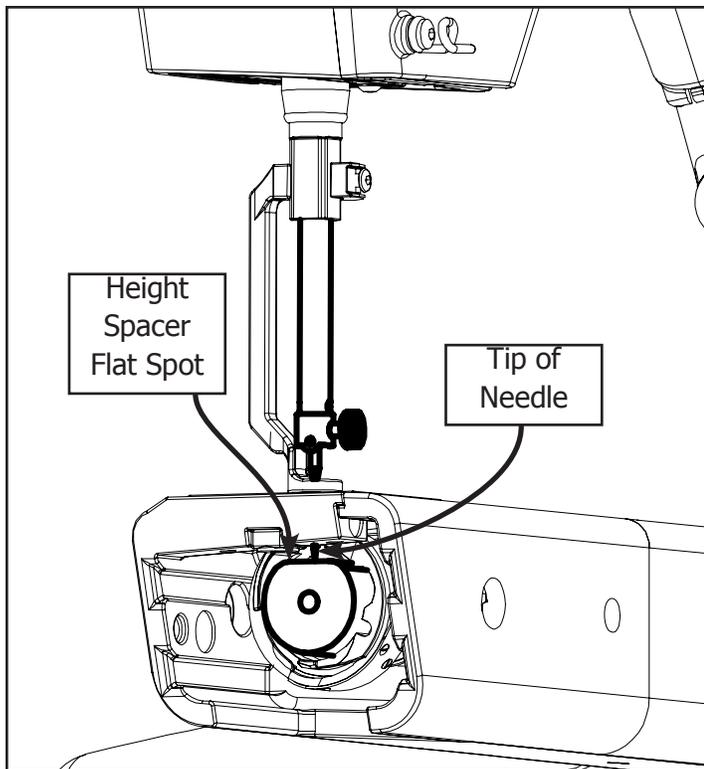
- Flat Head Screwdriver
- Needle Bar Height Spacer



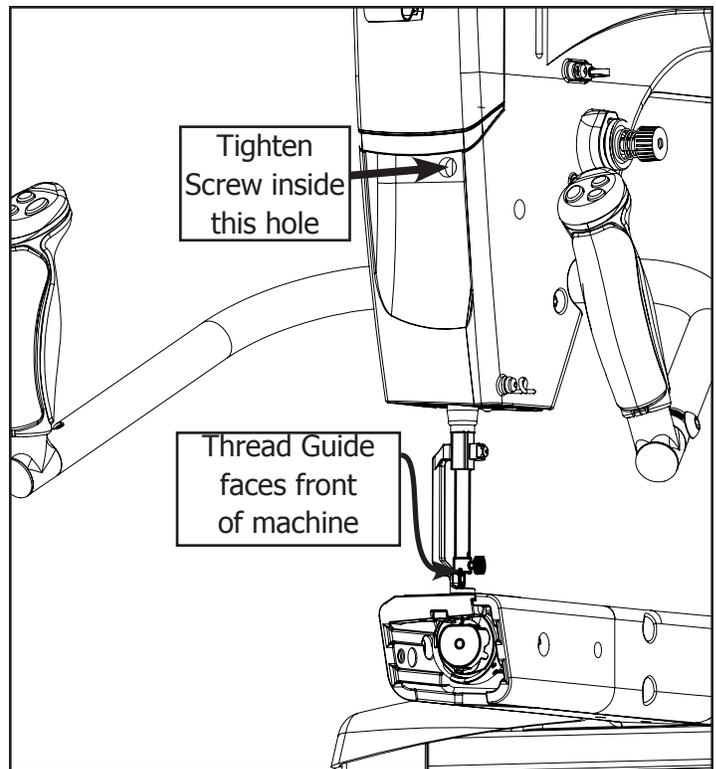
1. Rotate the hand wheel in the back of the machine until the Needle Bar is in the lowest position. Loosen screw inside sewing machine head using a flat head screw driver.



2. Place the Needle Bar Height Spacer into the Bobbin Case area.



3. Using a Needle Bar Height Spacer bring the Needle Bar down till the tip of the Needle is resting on the flat surface of the Needle Bar Height Spacer.

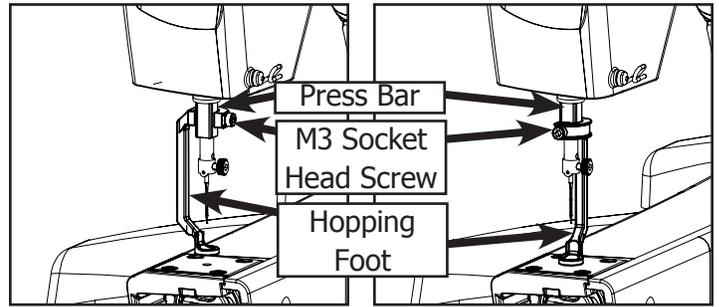


4. Tighten the screw inside the head of your machine with a flat head screw driver, make sure the Needle Bar is facing forward so the thread guide is in the front of your machine.

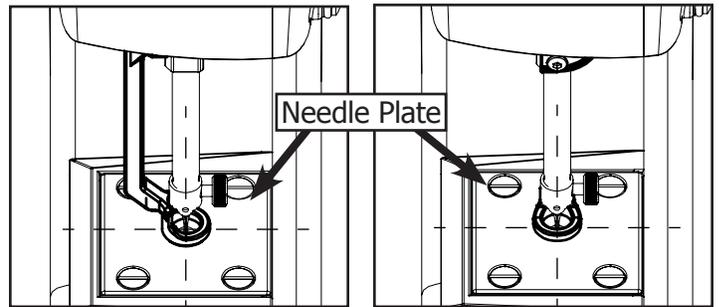
# Hopping Foot Height | Q'nique 21: Service Manual

Tools Needed:

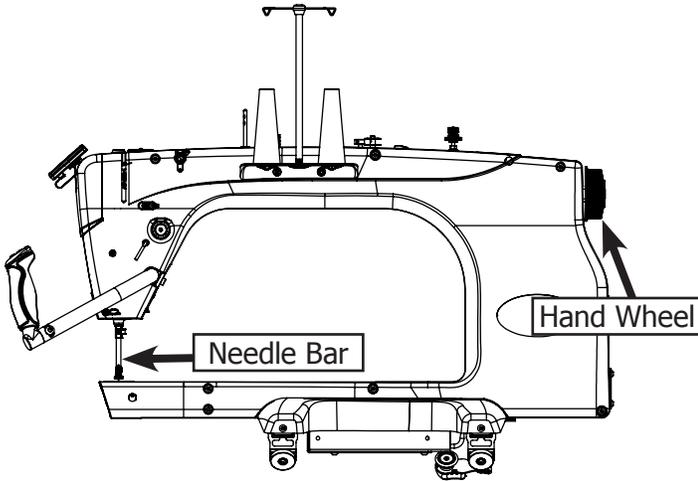
3mm Allen Wrench



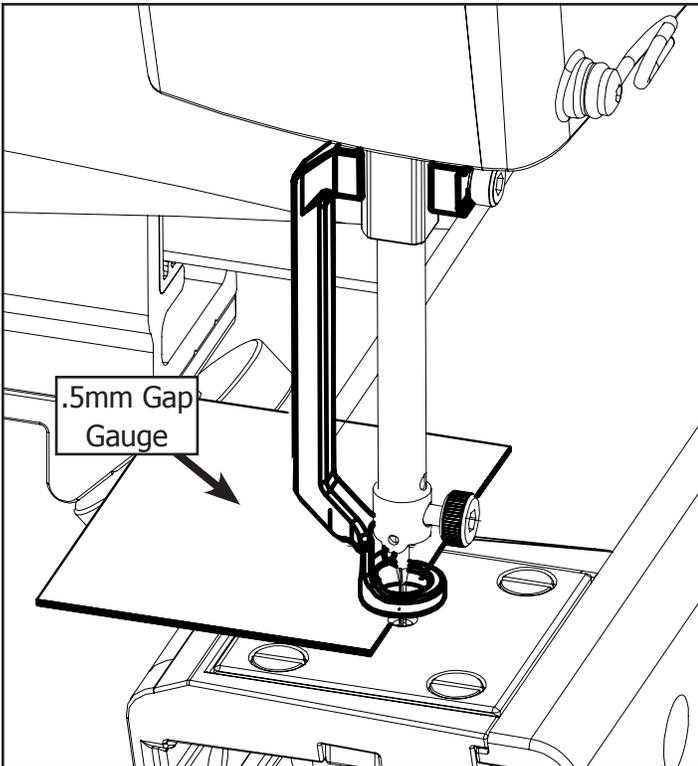
1. Attach your Hopping Foot to the press bar using a M3 Socket Head Screw (don't tighten during this step) in either of the configurations shown.



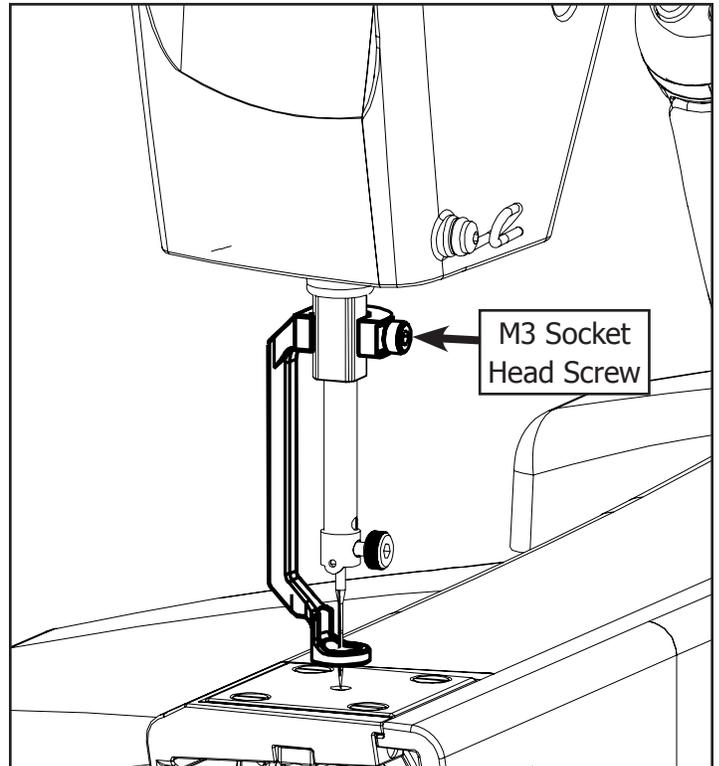
3. Using the hole in the Needle Plate, align the Hopping Foot so that it is centered.



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



4. Place 2-6 sheets of paper under the foot and lower the Hopping Foot to the top of the surface depending on the thickness of your project.



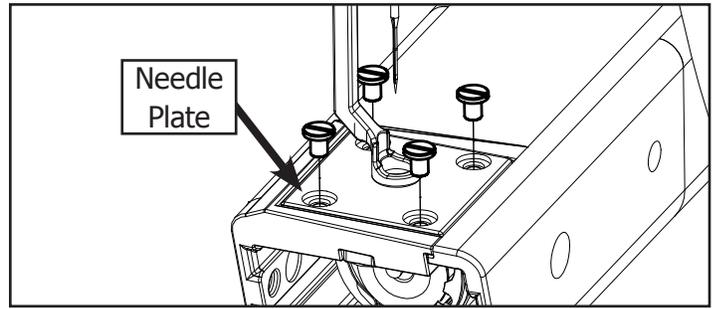
5. Tighten the M3 socket head screw using the 3 mm Allen wrench.

\*Note: Do not over tighten, this will cause sewing machine to bind.

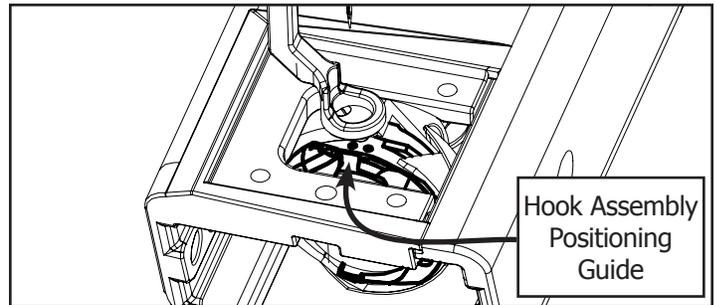
# Hook Holder | Q'nique 21: Service Manual

## Tools Needed:

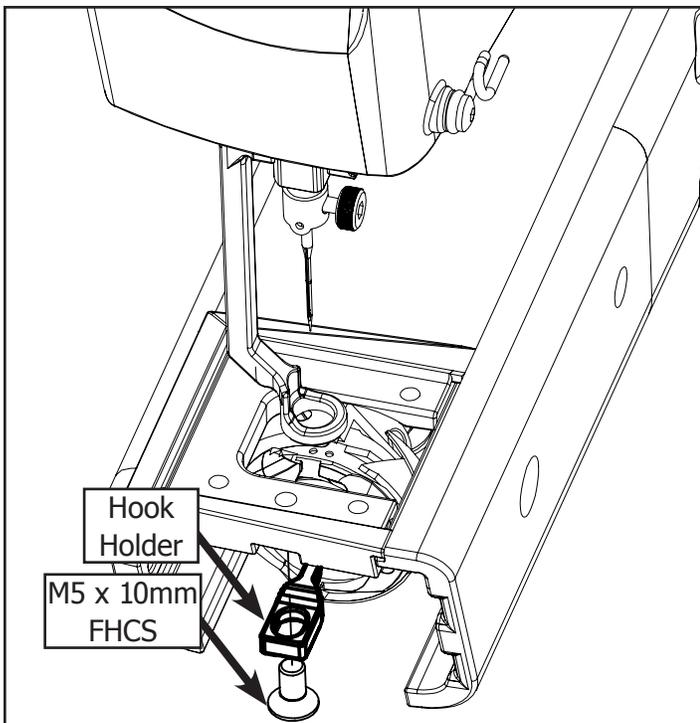
- 3mm Allen Wrench
- Flat Head Screwdriver



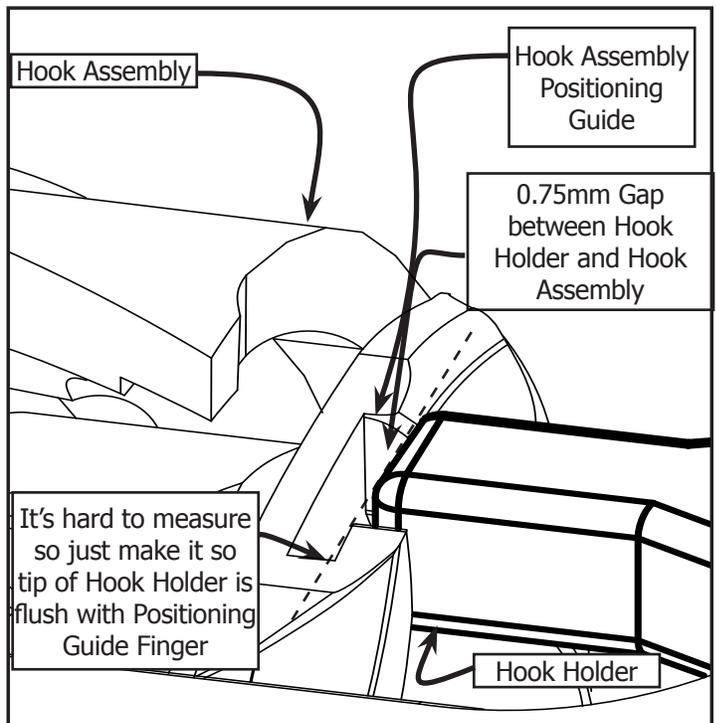
1. Remove the Needle Plate.



2. Rotate your Hook Assembly so that the positioning guide is at the highest point during rotation.



3. Attach your Hook Holder to your sewing machine with a M5 X 10mm 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.

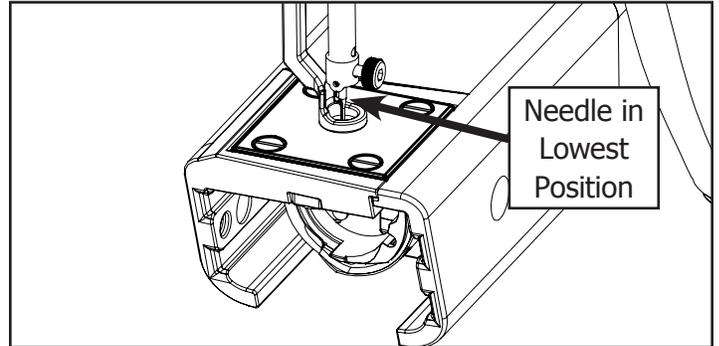
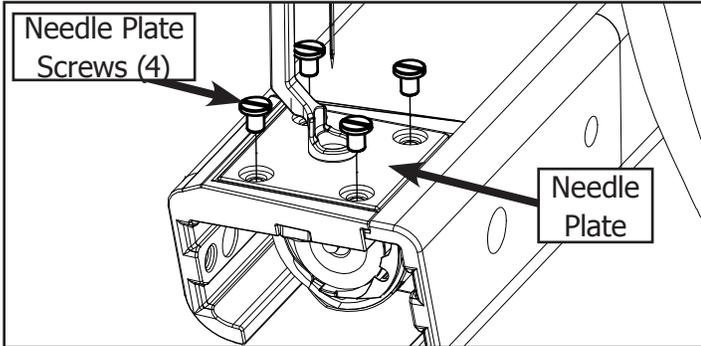


4. Slide your Hook Holder away from the Hook Assembly so there is about a 0.75mm gap between the Hook Holder and the Hook Assembly, and tighten the M5 X 10mm FHCS.

# Needle Plate | Q'nique 21: Service Manual

## Tools Needed:

Flat Head Screwdriver



1. Attach your Needle Plate using (4) Needle Plate Screws, don't tighten the screws during this step.

2. Rotate Hand Wheel until the Needle is in the lowest position. Move the Needle Plate until it is centered around the Needle and tighten all (4) Needle Plate Screws.

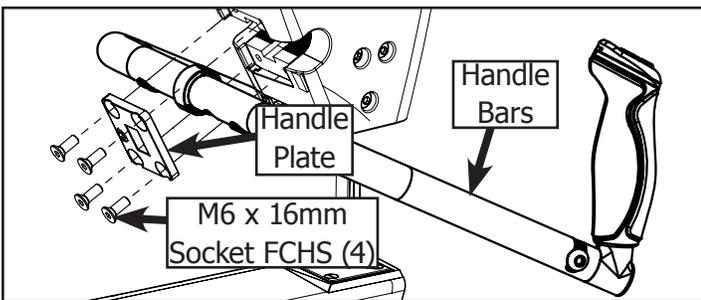
## Handle Bars

## Tools Needed:

5mm Allen Wrench

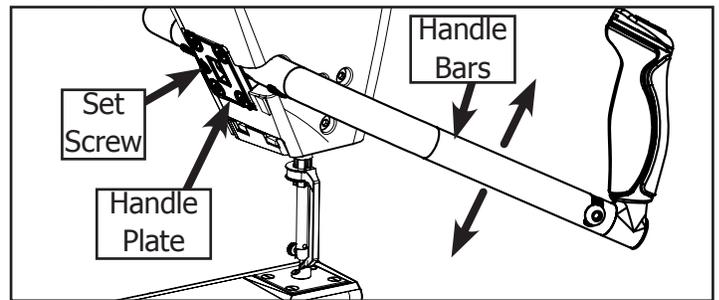
4mm Allen Wrench

### To Remove:



1. Using the 4mm Allen Wrench, remove the (4) Screws from the Handle Plate. Remove the Handle Plate and the Handle Bars

### To Adjust:

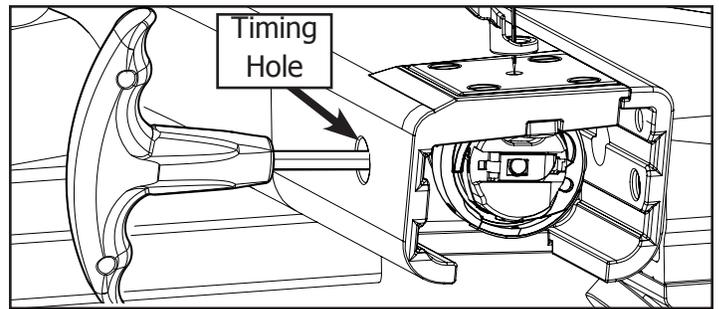


1. Adjust the Handles up and down by tightening and loosening the Set Screw on the back of the Handle Plate using the 5mm Allen Wrench.

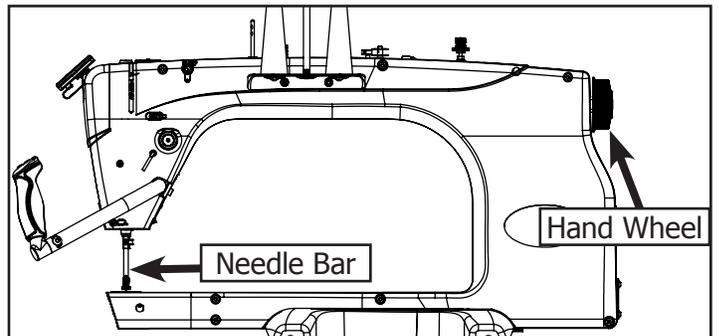
## Tools Needed:

- 2mm Allen Wrench
- Timing Spacer
- Flat Head Screwdriver

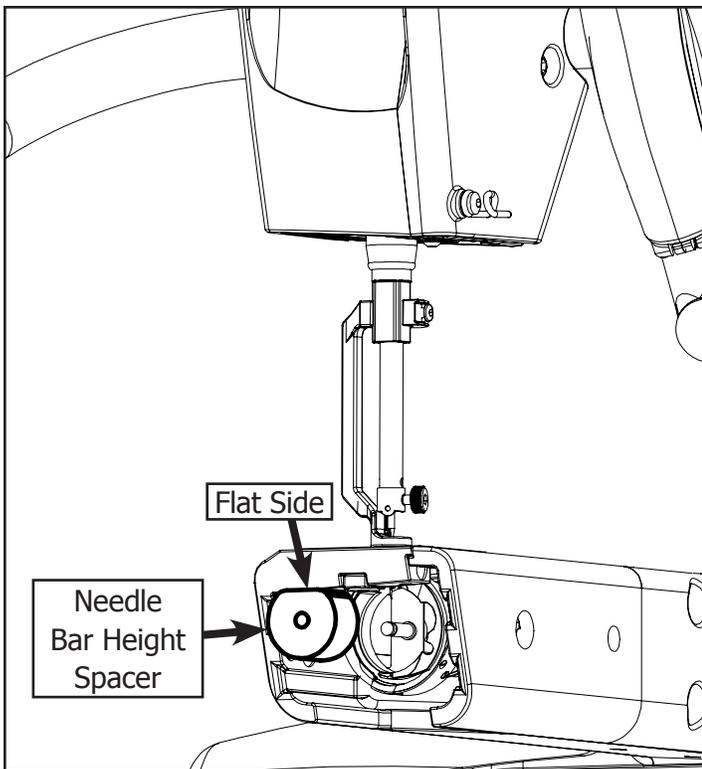
A timing tutorial is available on our website at:  
<http://www.qniquequilter.com/videos/tutorials/>



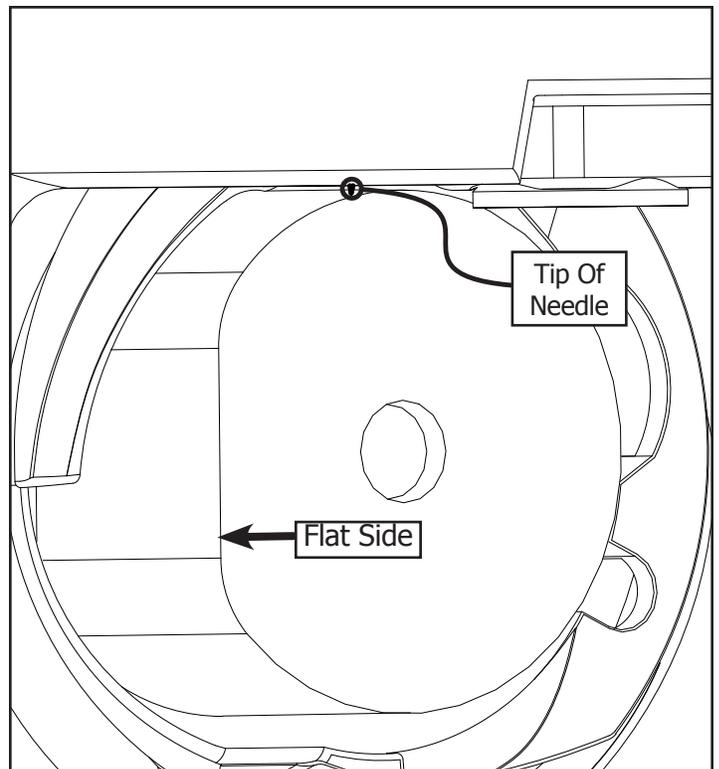
1. Loosen all 3 Hook Assembly Set Screws with a 2mm Allen Wrench by inserting the wrench into the Timing Hole when each Set Screw aligns with the hole.



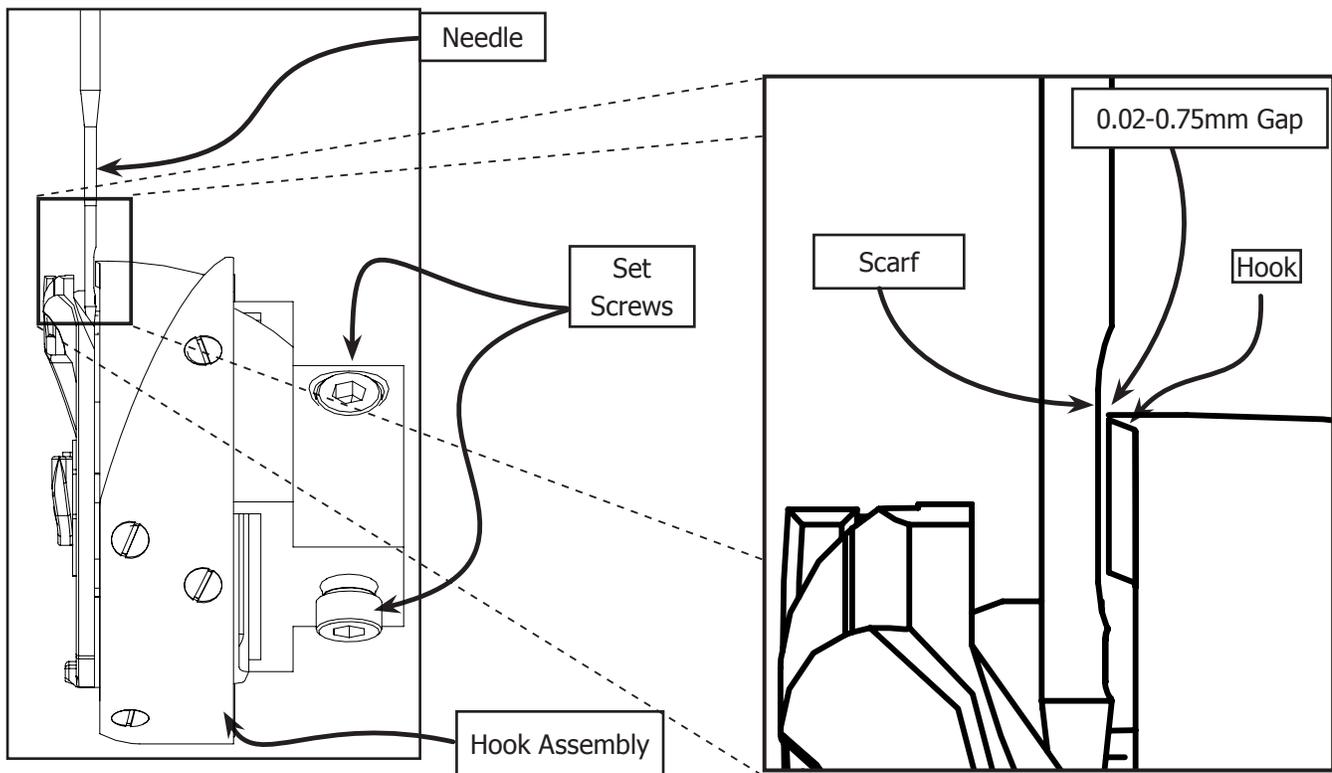
2. Rotate the hand wheel clockwise from the front of the machine so needle is rising out of the Hook Assembly.



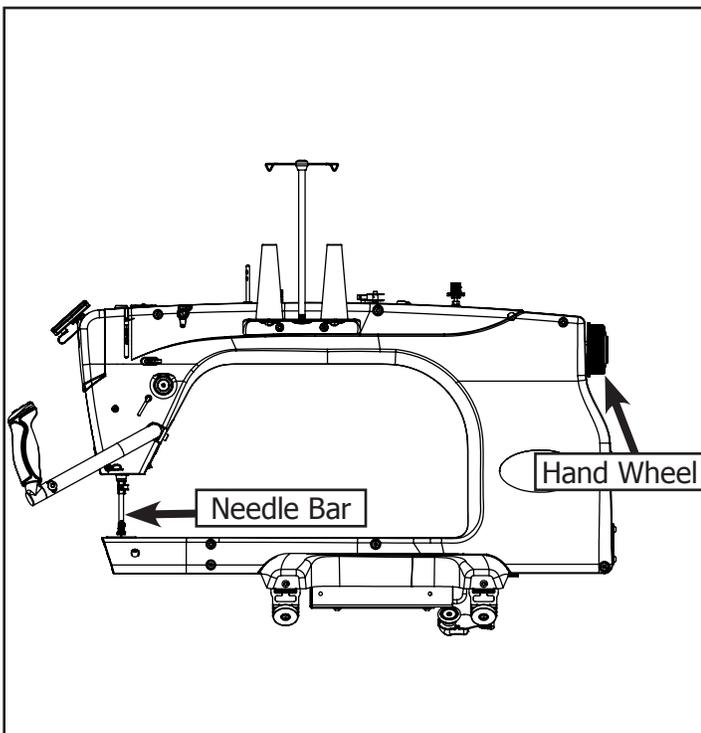
3. Place the Needle Bar Height Spacer into the Bobbin Case area and twist so that flat side is vertical.



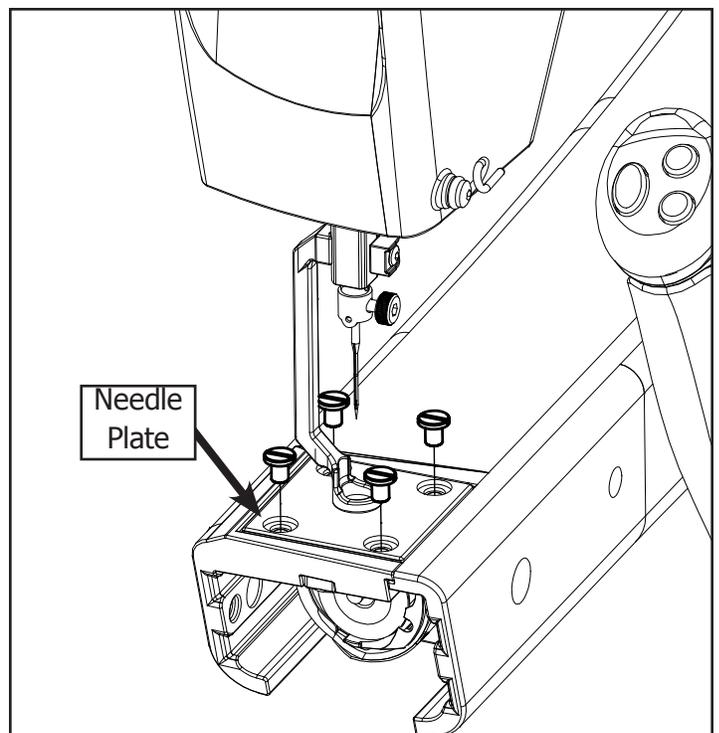
4. Bring the Needle so it rests on the top of the Needle Bar Height Spacer, so the groove in the needle aligns in the middle of the hook on the Hook Assembly.



5. The Needle should be as close as possible to the Hook Assembly without touching, roughly between 0.02mm and 0.075mm. Tighten the Set Screw which is currently aligned with the Timing Hole on the left side of the machine.



6. Rotate the hand wheel a full rotation. If the needle hits the Hook Assembly anywhere, the needle will bend or there will be a clicking noise. Adjust the needle height closer or farther off from the hook.

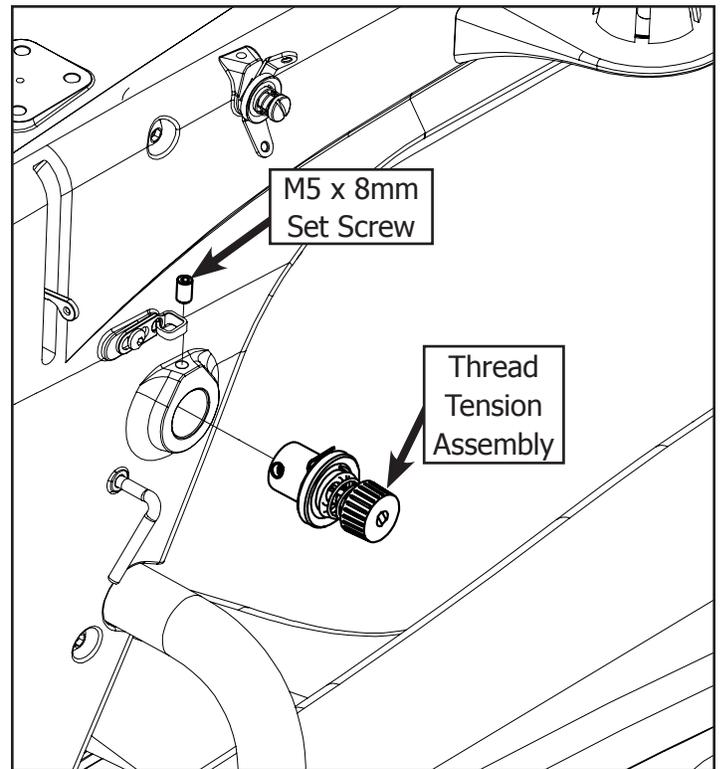


7. Tighten the two remaining set screws and reattach the Needle Plate.

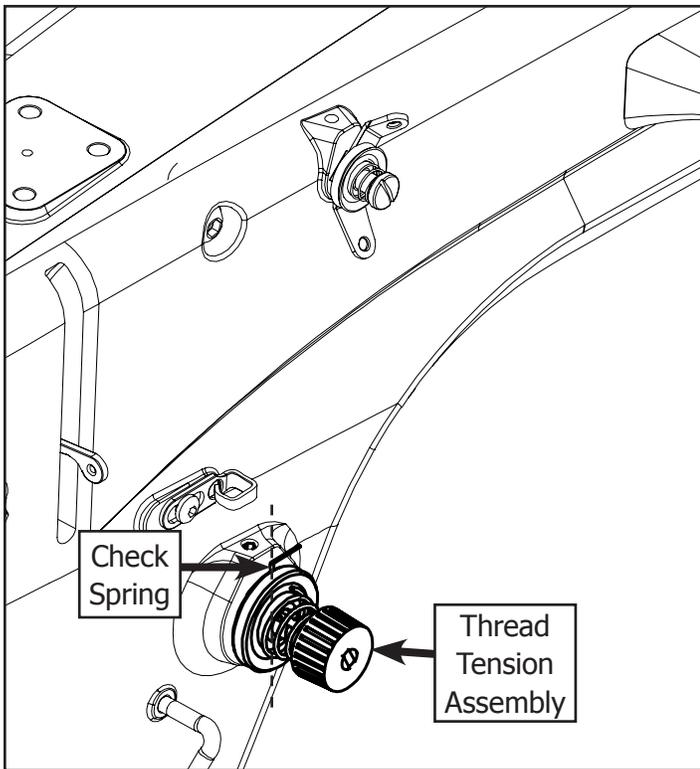
# Thread Tensioner | Q'nique 21: Service Manual

## Tools Needed:

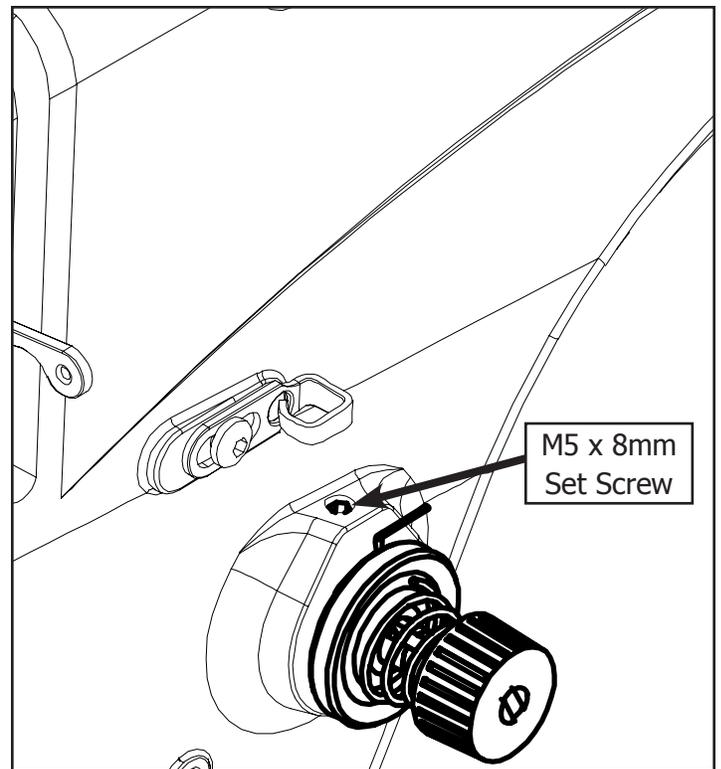
2.5mm Allen Wrench



1. Loosen the M5 X 8mm Set Screw to remove the Thread Tension Assembly.



2. Press the Thread Tension Assembly into the sewing machine body until it bottoms out. Orient the Thread Tension Assembly so that the check spring is Vertical.

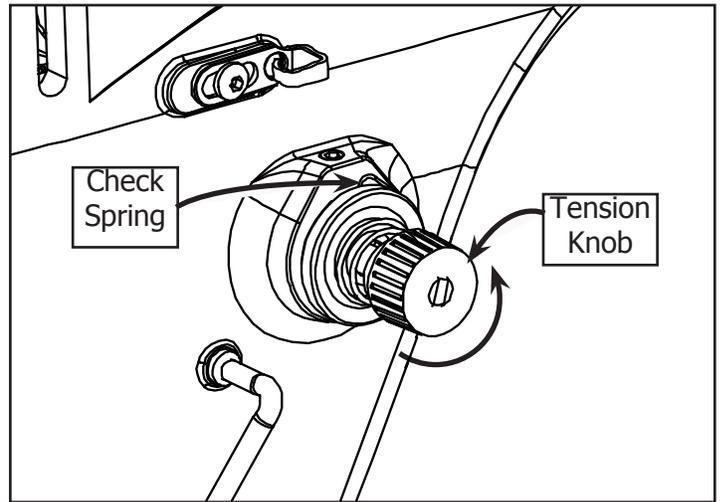


3. Tighten the M5 X 8mm Set Screw in the sewing machine body to tighten the Thread Tension Assembly into place.

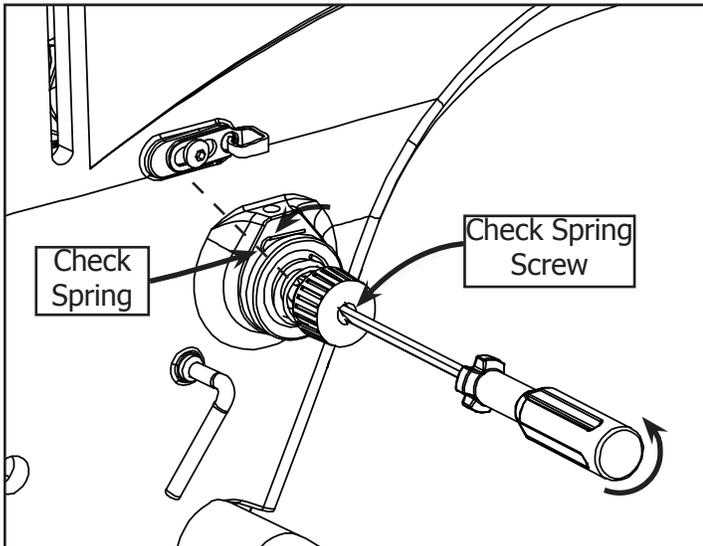
## Adjusting Thread Tensioner | Q'nique 21: Service Manual

Tools Needed:

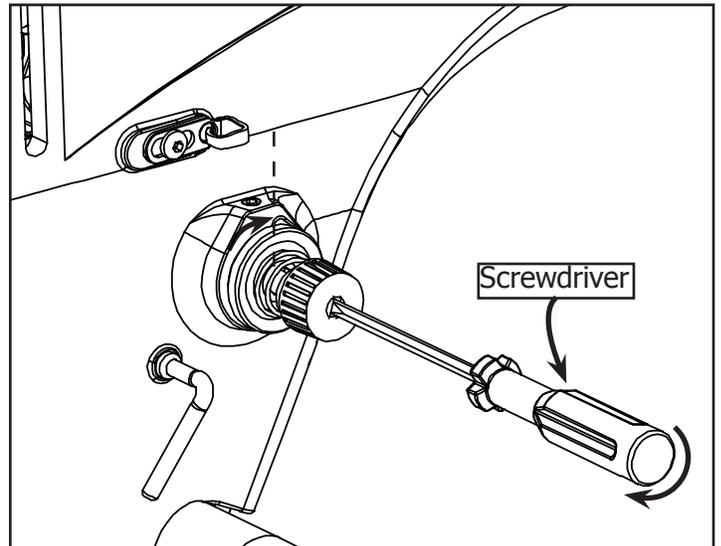
Flat Head Screwdriver



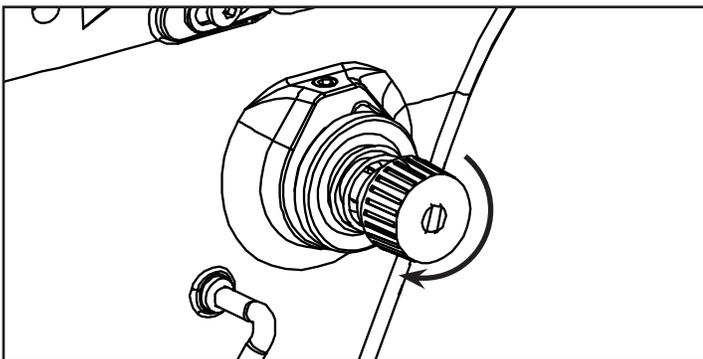
**1.** Loosen the Tension Assembly by turning the Tension Knob counterclockwise until the Tension Knob is flush with the end of the Check Spring Screw



**2.** Slowly loosen the Check Spring Screw with a screwdriver counterclockwise until the Check Spring is at 45 degrees from vertical.



**3.** Tighten the Check Spring screw until the Check Spring is back to vertical. Then continue rotation for an additional 1/4 turn.



**4.** Tighten Tension Knob until the thread is centered in the fabric layers.

**Note:** If you are breaking thread tighten Check Spring tension by turning Check Spring Screw.

If showing top thread on bottom you need to add more tension by turning the Tension Knob clockwise.

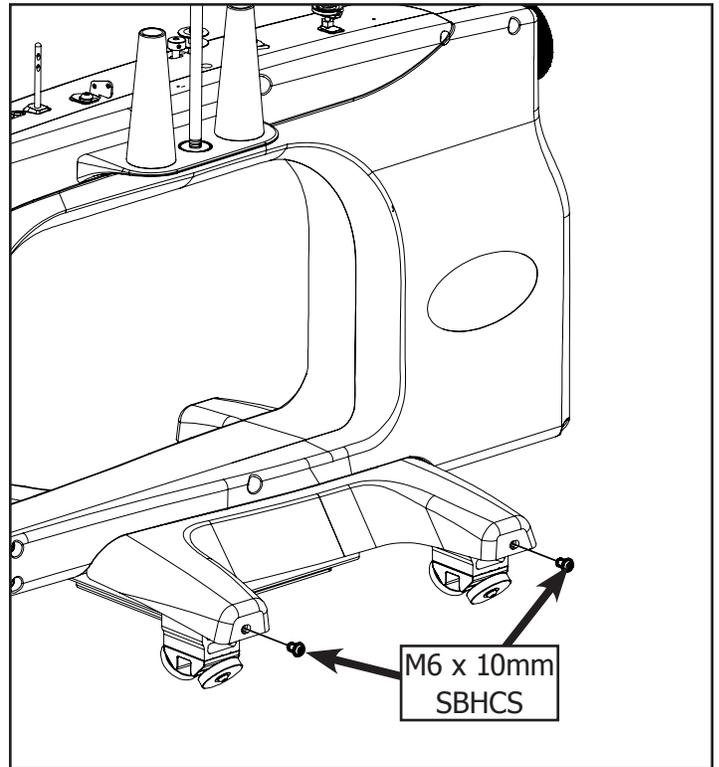
If you are bunching up in corners loosen Check Spring by turning Check Spring Screw.

If showing bottom thread on top you need to loosen the tension by turning the Tension Knob counterclockwise.

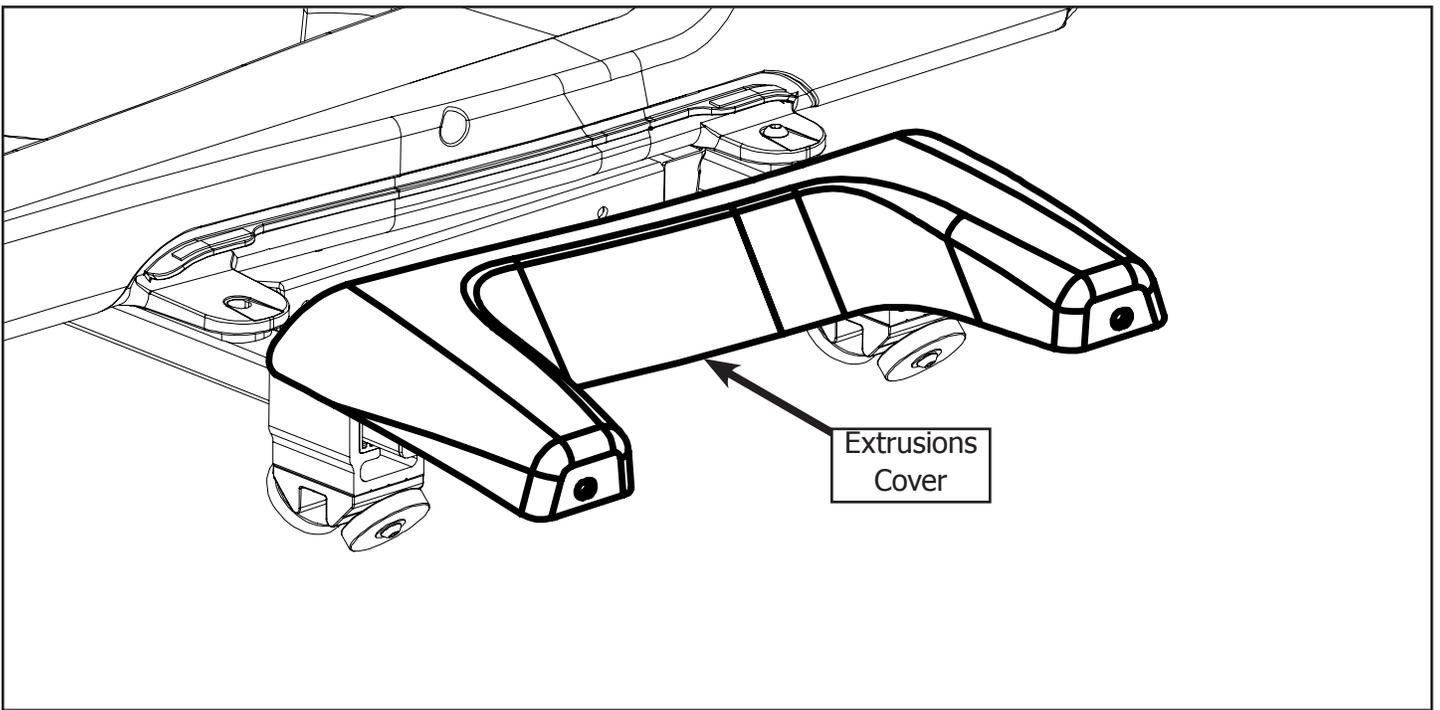
## Extrusions Cover | Q'nique 21: Service Manual

Tools Needed:

4mm Allen Wrench



1. Remove the (2) bolts on the side of the Extrusion Cover.

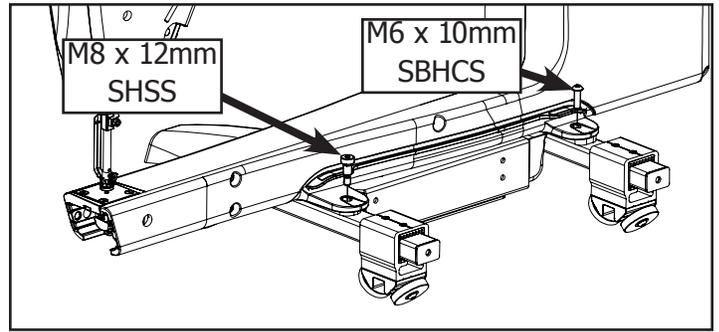


2. Remove Cover.  
3. Repeat for Left side if needed.

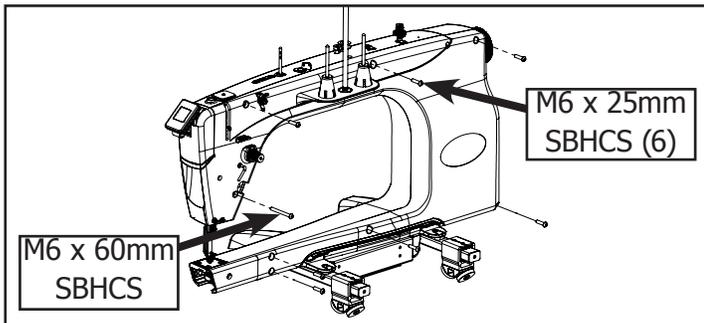
# Front Cover | Q'nique 21: Service Manual

## Tools Needed:

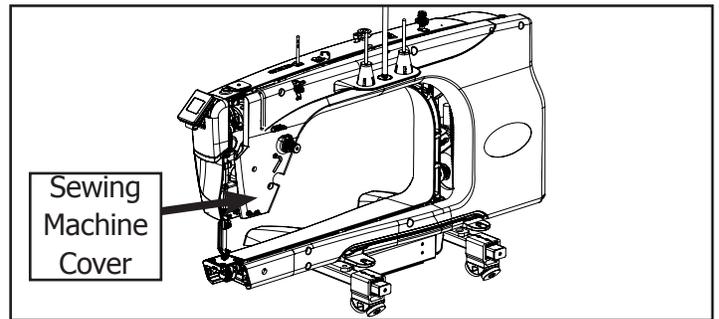
4mm Allen Wrench



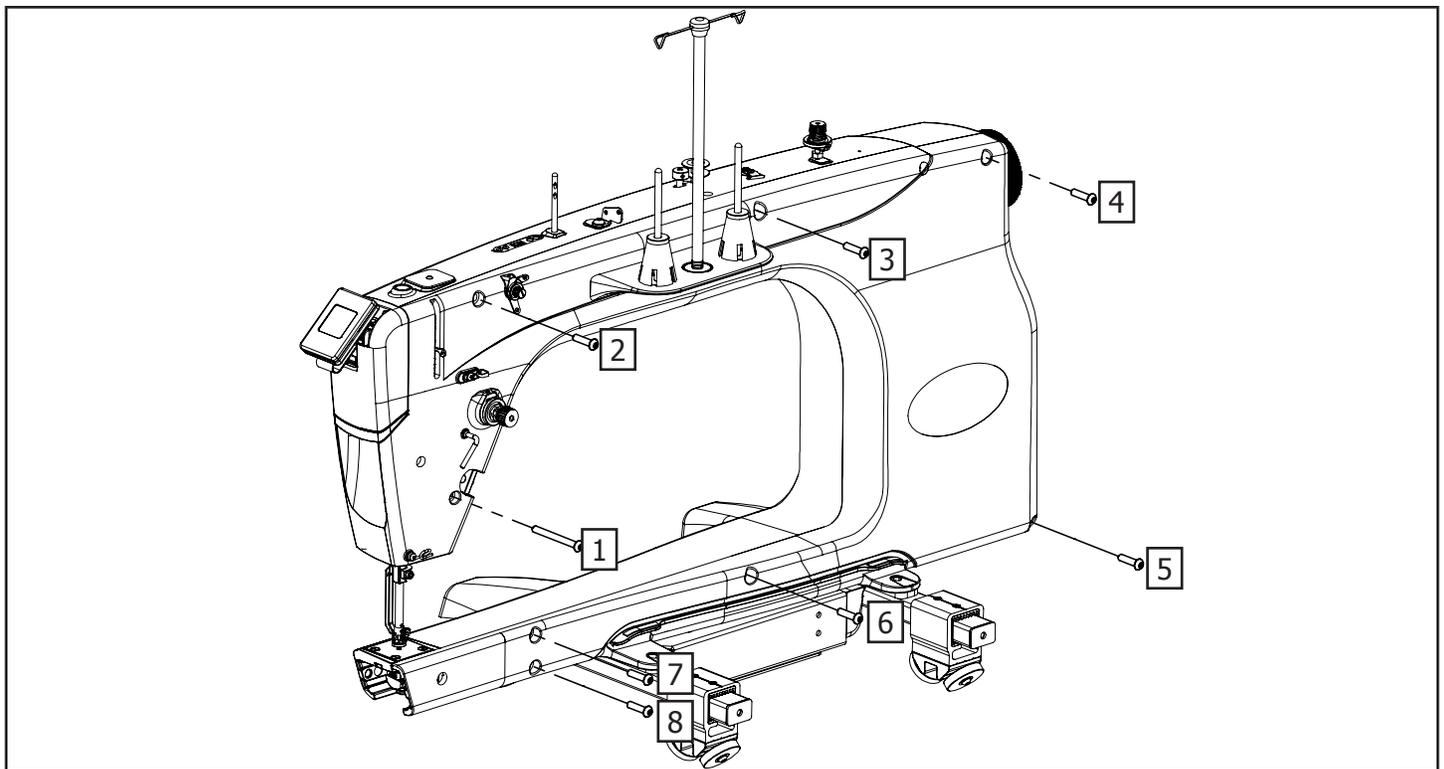
1. Remove Extrusions Cover and Handles, then remove (1) M6 x 10mm SBHCS and (1) M8 x 12mm SHSS attaching the Machine Body to the extrusions.



2. Remove (7) M6 x 25mm SBHCS and (1) M6 x 60mm SBHCS.



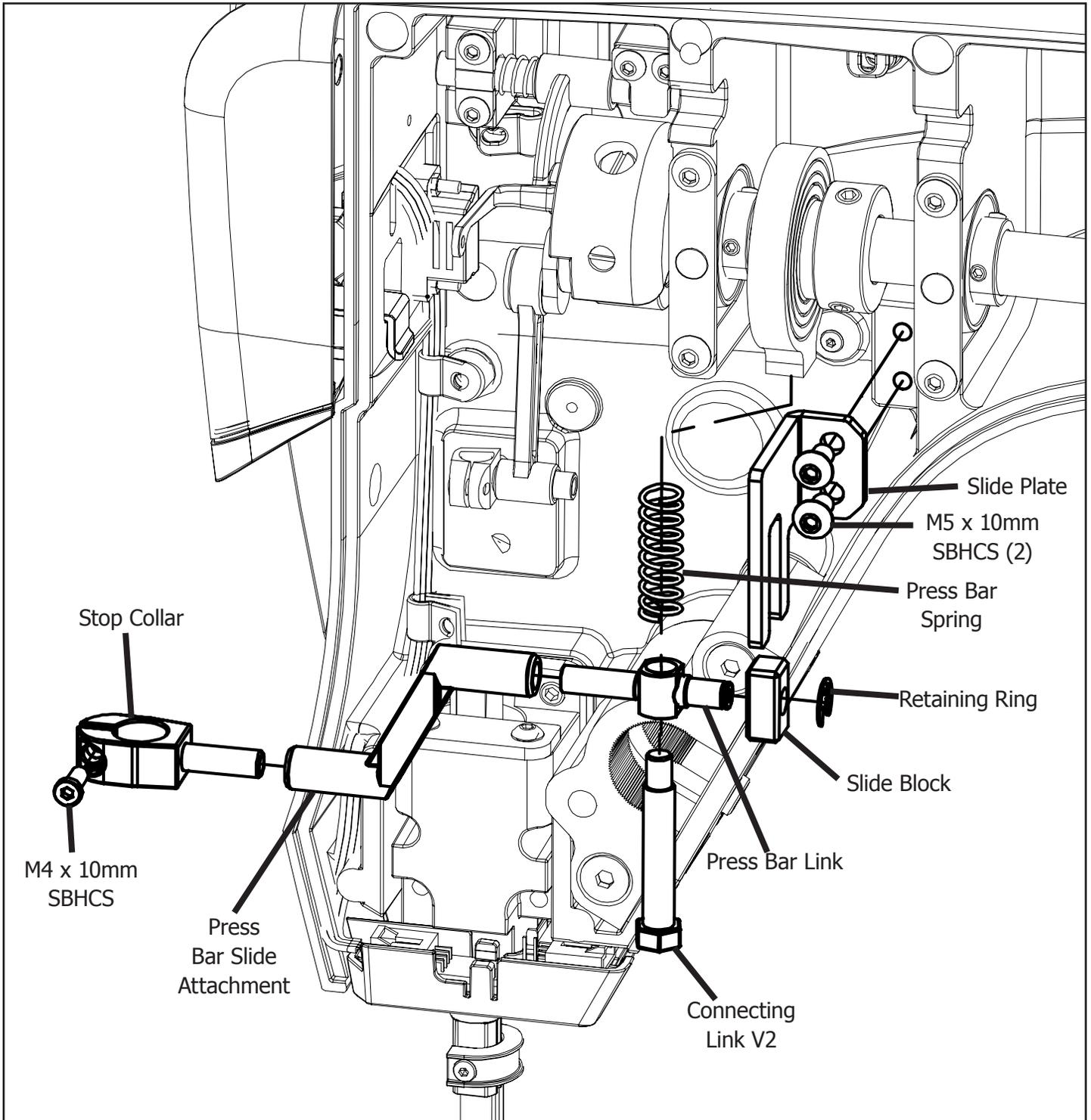
3. Remove Cover.



4. When re-installing front cover tighten the screws in the order shown above.

## Tools Needed:

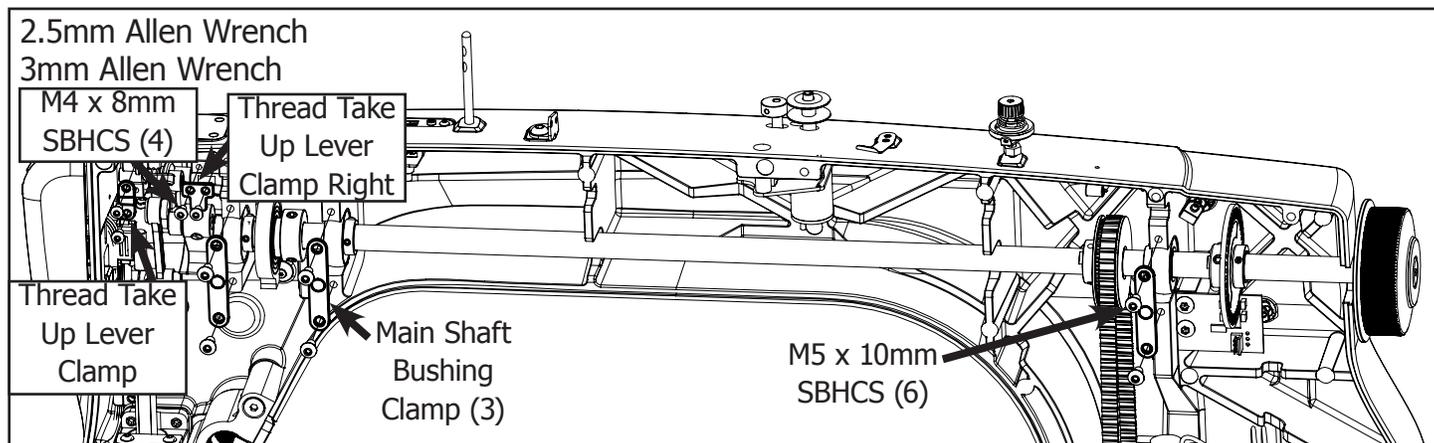
- 2.5mm Allen Wrench
- 3mm Allen Wrench
- 10mm Open End Wrench



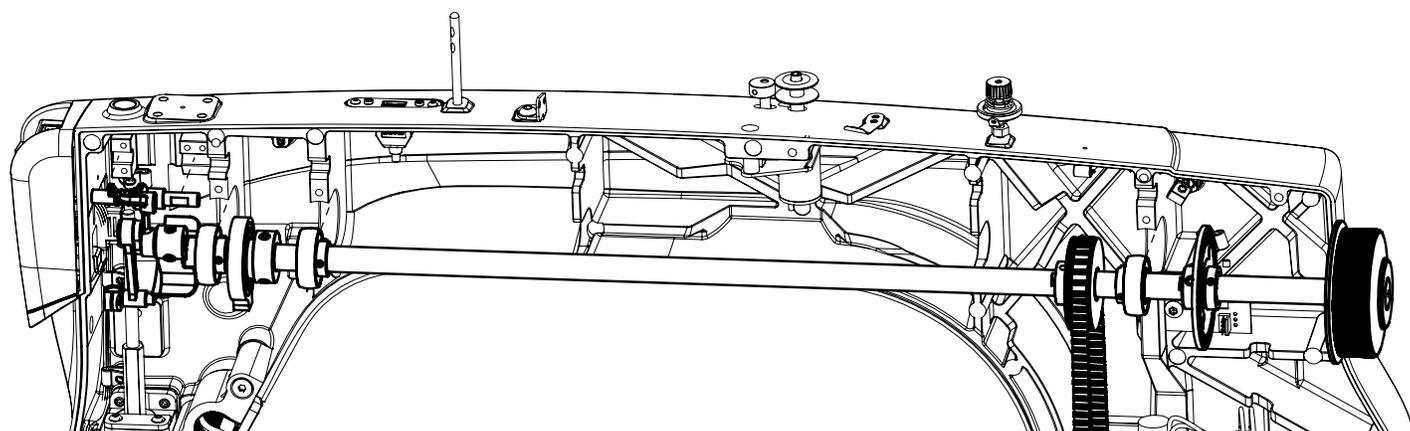
1. Slightly loosen M4 x 10mm SBHCS allowing Stop Collar to be loose from the Needle Bar.
2. Loosen Connecting Link V2 from Bushing Bearing. Remove Slide Plate from Sewing Machine using 3mm Allen Wrench to remove (2) M5 x 10mm SBHCS.
3. Remove Pressure Bar Assembly from Sewing Machine.

# Upper Shaft | Q'nique 21: Service Manual

Tools Needed:

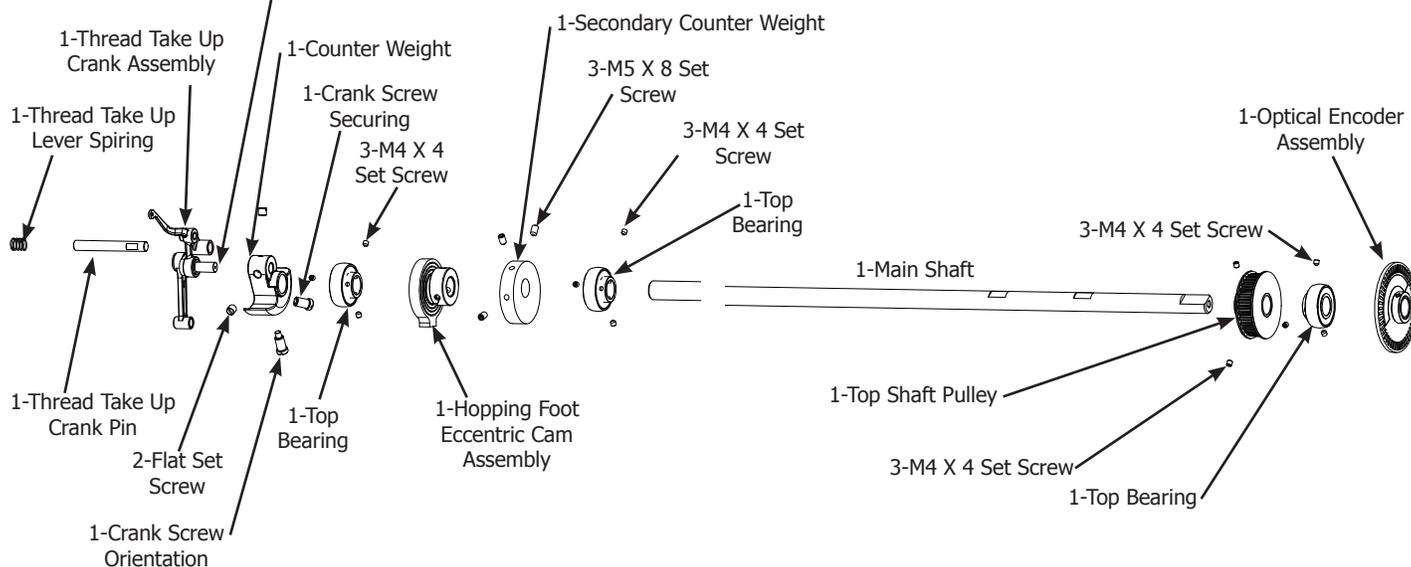


1. Remove (6) M5 x 10mm SBHCS and (3) Main Shaft Bushing Clamps using the 3mm Allen Wrench.



2. Remove Upper Shaft out of the Body.

**Note:** D-Key needs to be set in this orientation

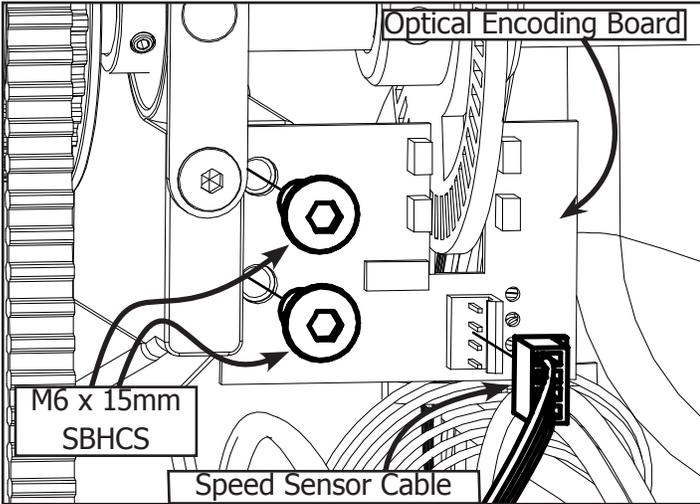


3. Top Shaft Assembly.

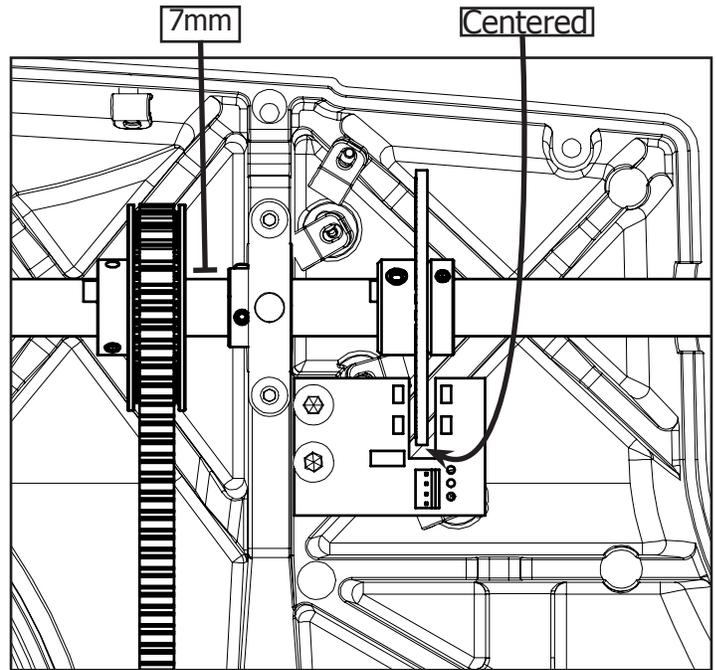
# Pulley and Optical Encoding Wheel | Q'nique 21: Service Manual

## Tools Needed:

- 4mm Allen Wrench
- 3mm Allen Wrench
- 2mm Allen Wrench



1. Install the Optical Encoding Board using (2) M6 x 15mm SBHCS and plug in the Speed Sensor Cable.

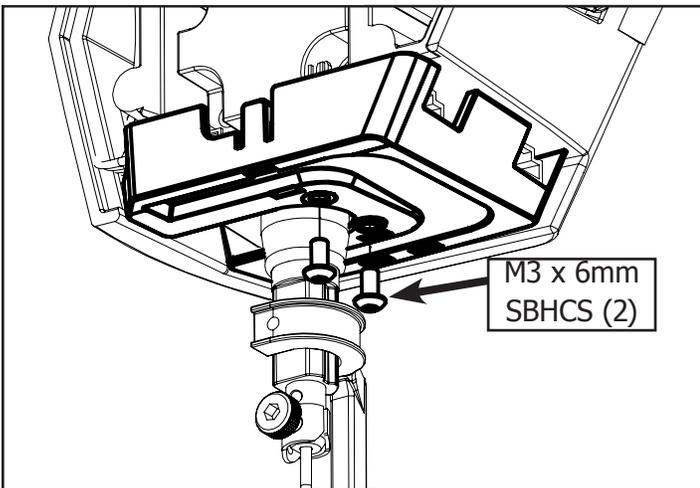


1. Top Shaft Pulley needs to be 7mm from Bearing Collar.
2. Optical Encoding Wheel needs to be centered in the Emitting Sensor on the Optical Encoding Board.

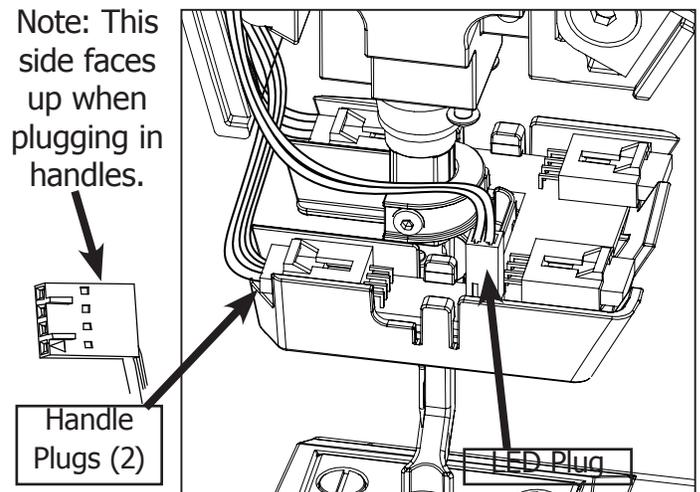
## LED Assembly

### Tools Needed:

- 4mm Allen Wrench



1. Remove (2) M3 x 6mm SBHCS.

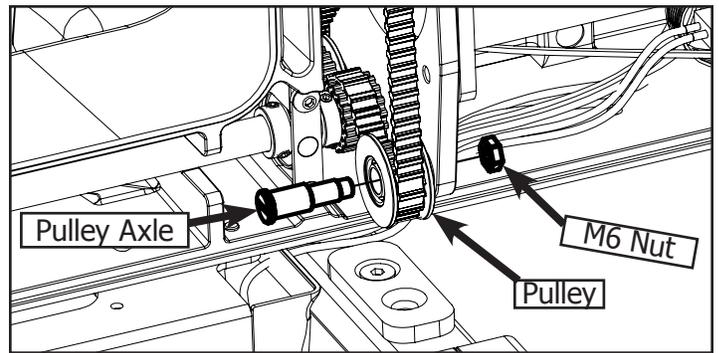


2. Unplug (2) Handle Plugs and (1) LED Plug.

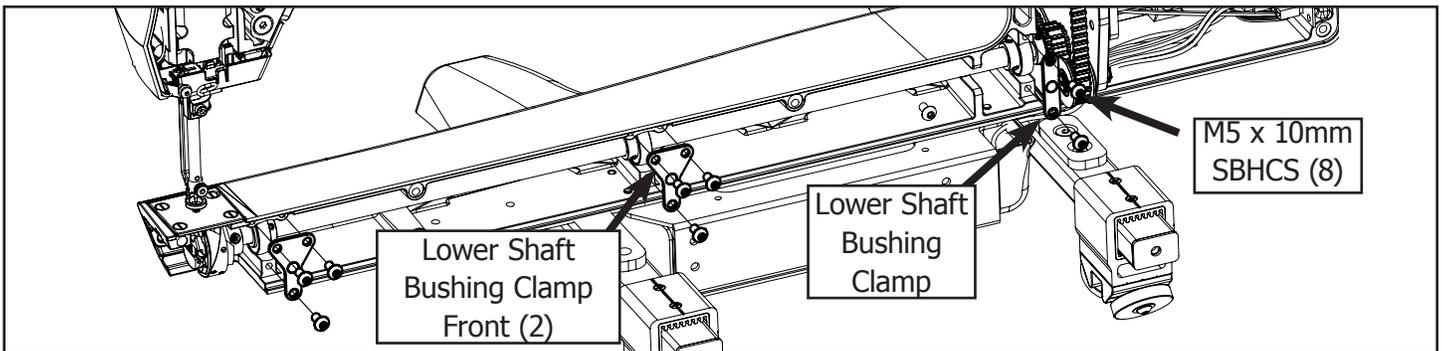
# Lower Shaft | Q'nique 21: Service Manual

## Tools Needed:

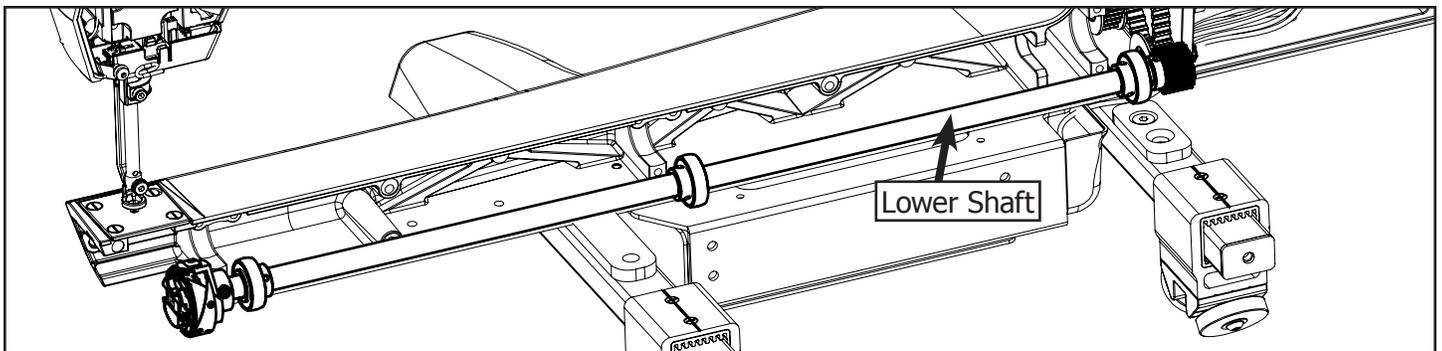
- 10mm Open End Wrench
- Flat Head Screw Driver
- 3mm Allen Wrench



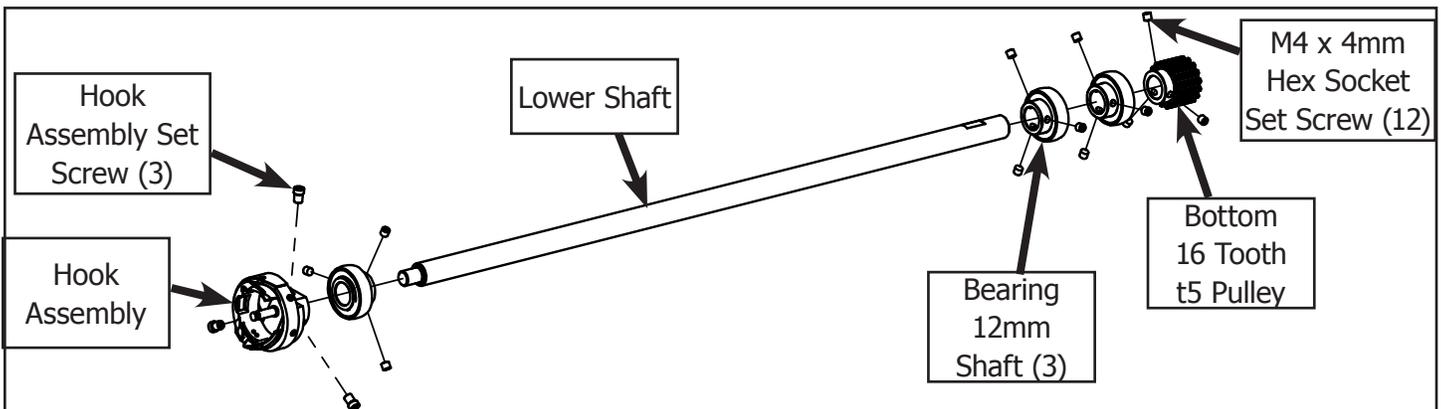
1. Remove Pulley Axle, Pulley, and M6 Nut



2. Remove (2) Lower Shaft Bushing Clamp Front and (1) Lower Shaft Bushing Clamp and (8) M5 x 10mm SBHCS.



3. Remove Lower Shaft.

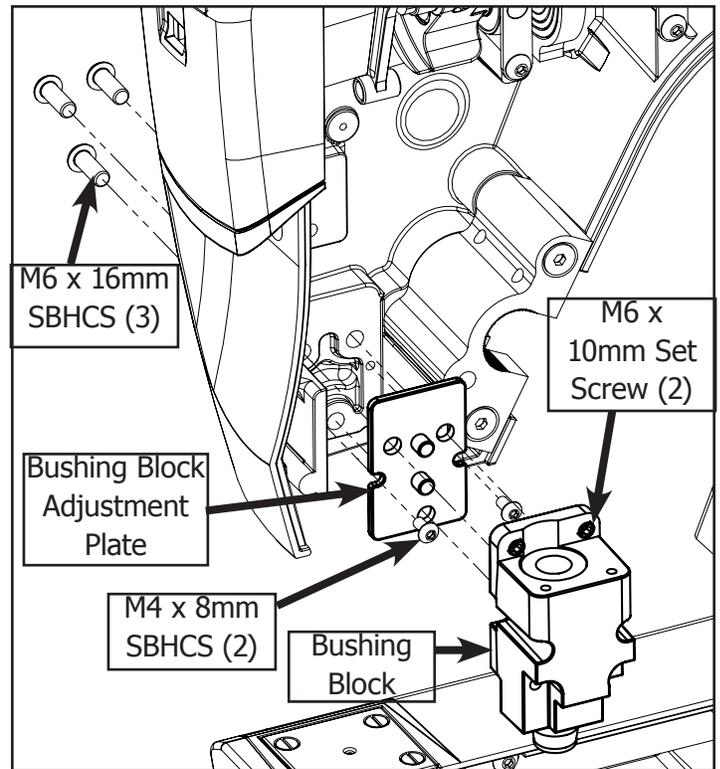


4. Lower Shaft Exploded View.

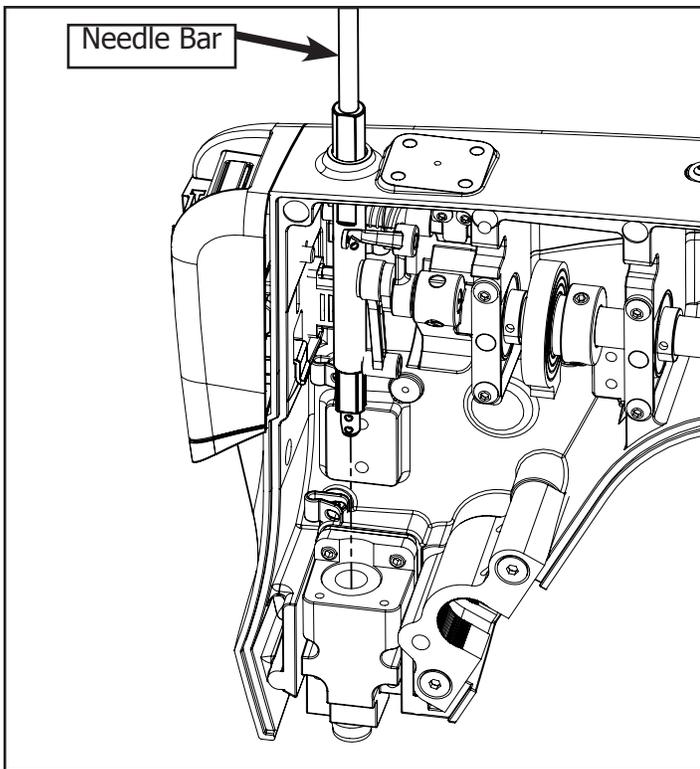
## Bushing Block | Q'nique 21: Service Manual

### Tools Needed:

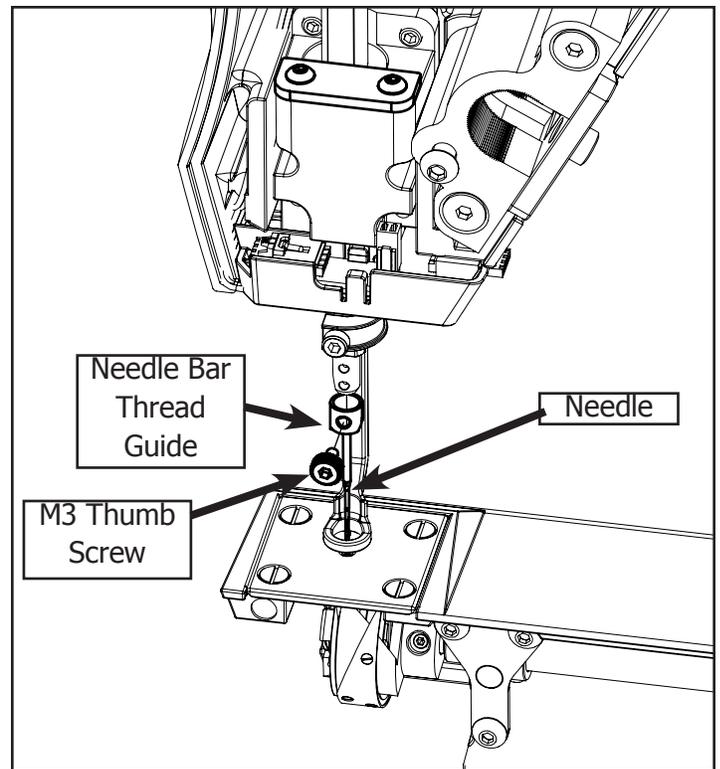
- 10mm Open End Wrench
- Flat Head Screwdriver
- 3mm Allen Wrench
- 2.5mm Allen Wrench



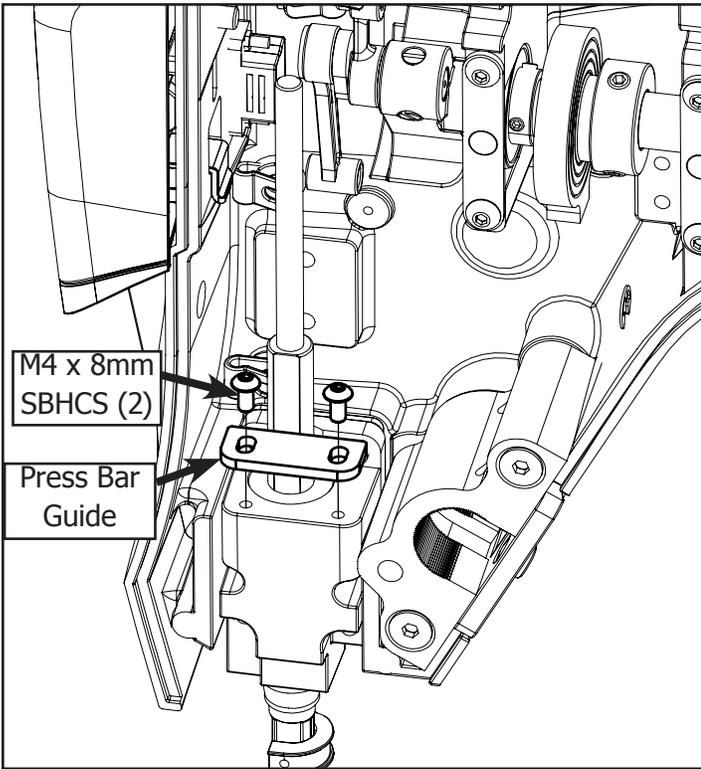
1. Attach the Bushing Block Adjustment Plate to the body with M4 x 8mm SBHCS. Leave the screws loose. Slide the Bushing Block over the Adjustment Plate and thread the M6 x 16mm SBHCS. Leave the screws loose.
2. Thread the M6 x 10mm Set Screws into the Bushing Block.



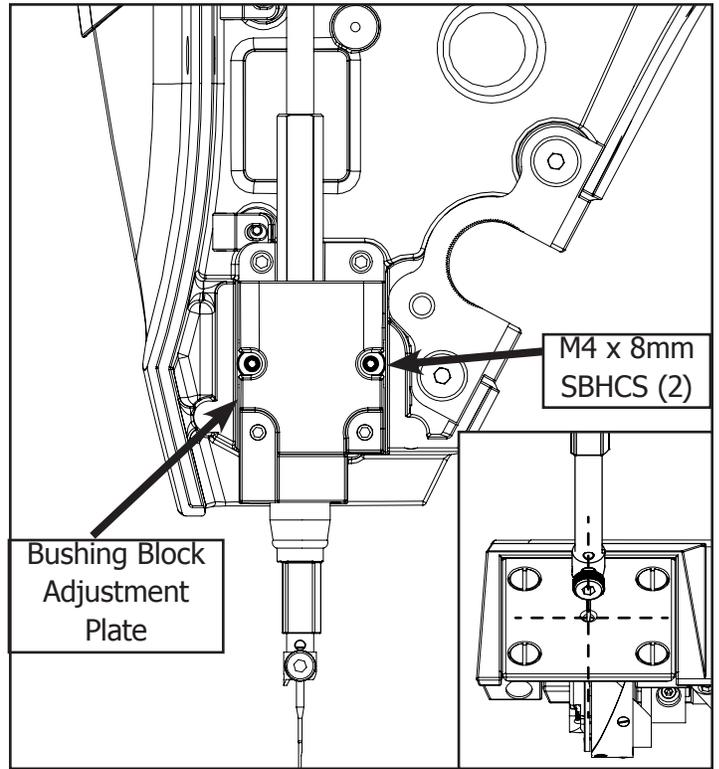
3. Slide the Needle Bar through the top of the machine and through the bushing block.



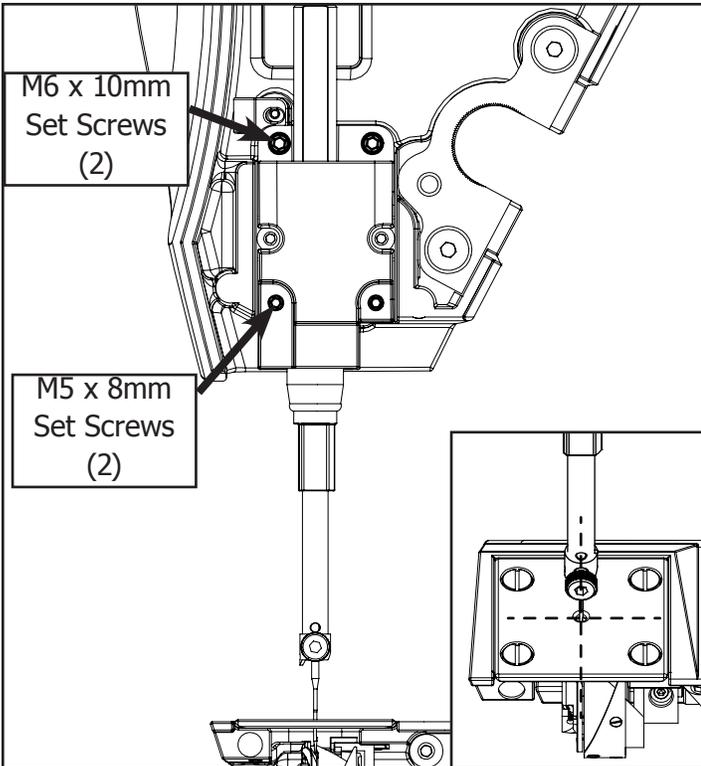
4. Attach the Needle Bar Thread Guide and secure a Needle in place using the M3 Thumb Screw.



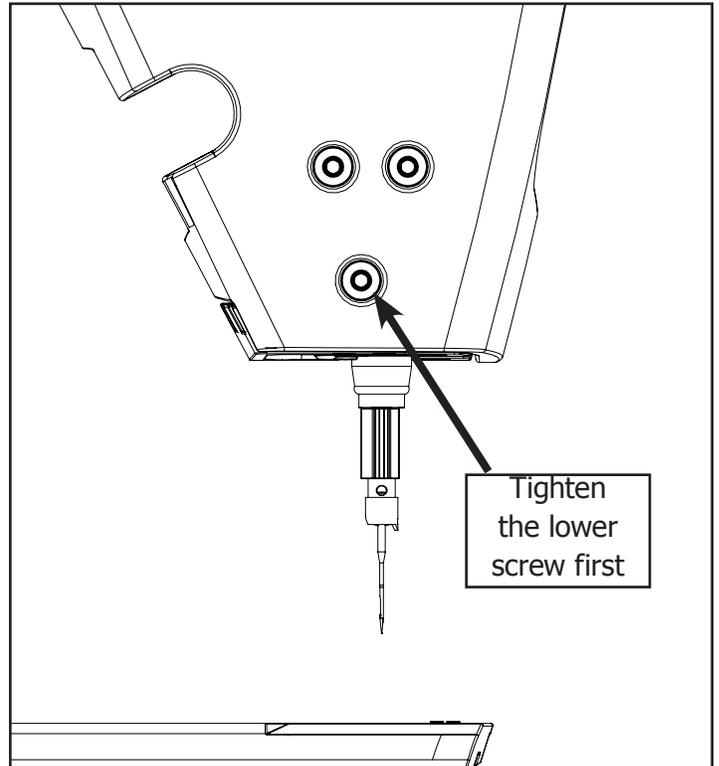
5. Attach the Press Bar Guide using (2) M4 x 8mm SBHCS.



6. Slide the Bushing Block Adjustment Plate so that the needle is in line with the hole on the Needle Plate then tighten the M4 x 8mm SBHCS to lock it in place.



7. Use the M6 x 10mm Set Screws to adjust the Bushing Block in and out so that the Needle is in line with the hole on the Needle Plate.

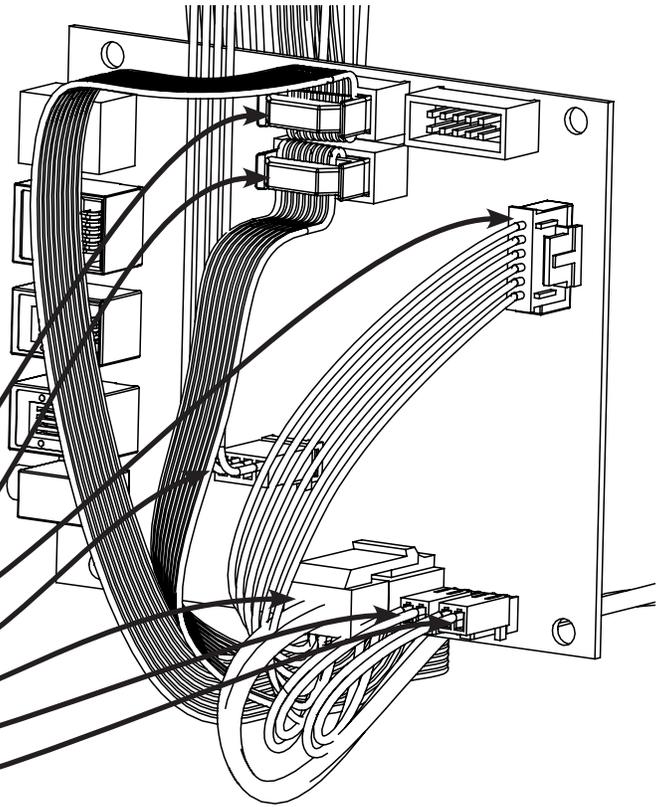


8. Tighten the M6 x 16mm SBHCS on the back of the machine. Tighten the lower screw first, then tighten the two upper screws.

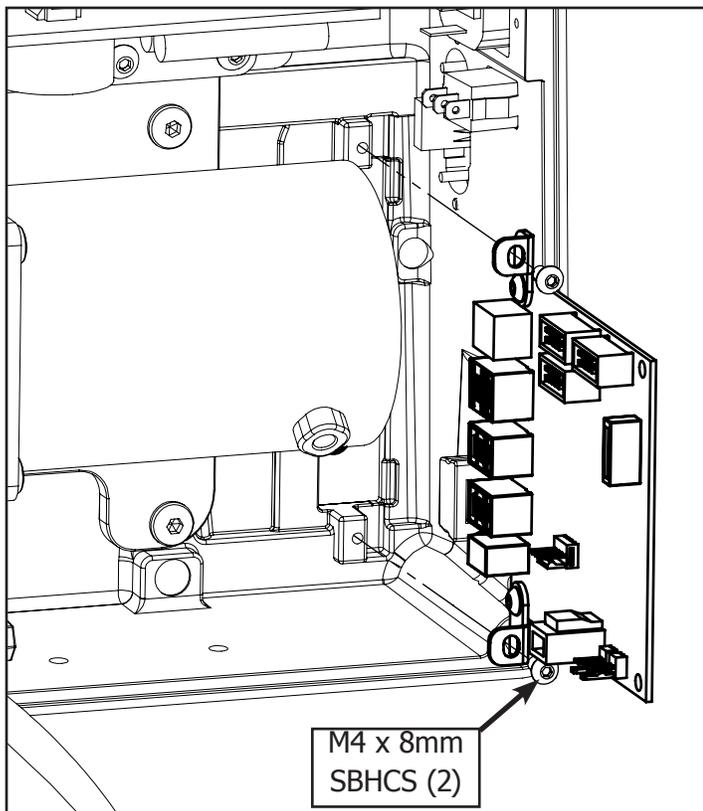
## Tools Needed:

- 8mm Open End Wrench
- 2.5mm Allen Wrench

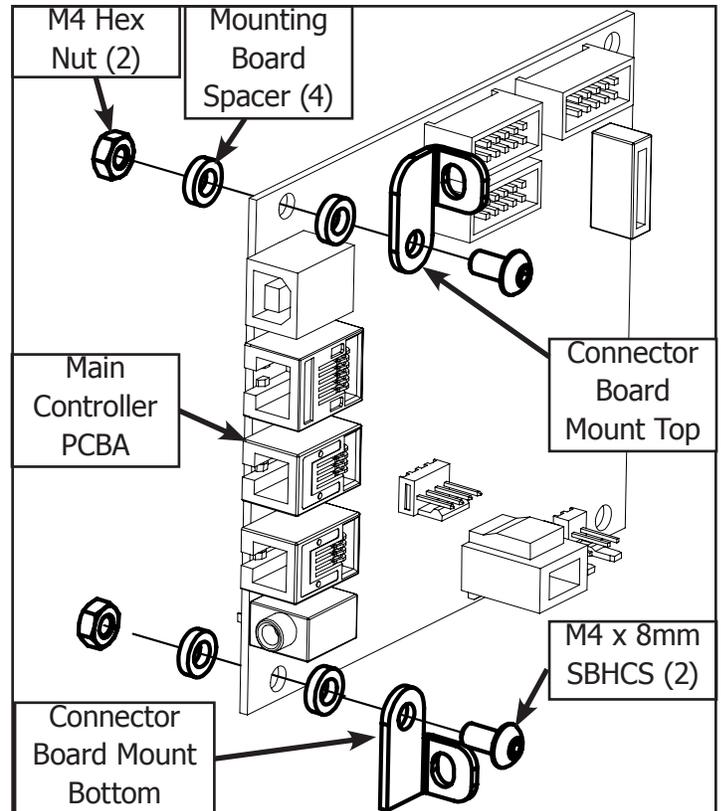
- Back Handle Cable or Front Handle Cable
- Back Handle Cable or Front Handle Cable
- Motor Driver Signal Cable
- Speed Sensor Cable
- 24V Power Supply
- LED Cable (2 wires together)
- Bobbin Winder Cable (2 separate wires)



## 1. Unplug Cables.



## 2. Remove Main Board.

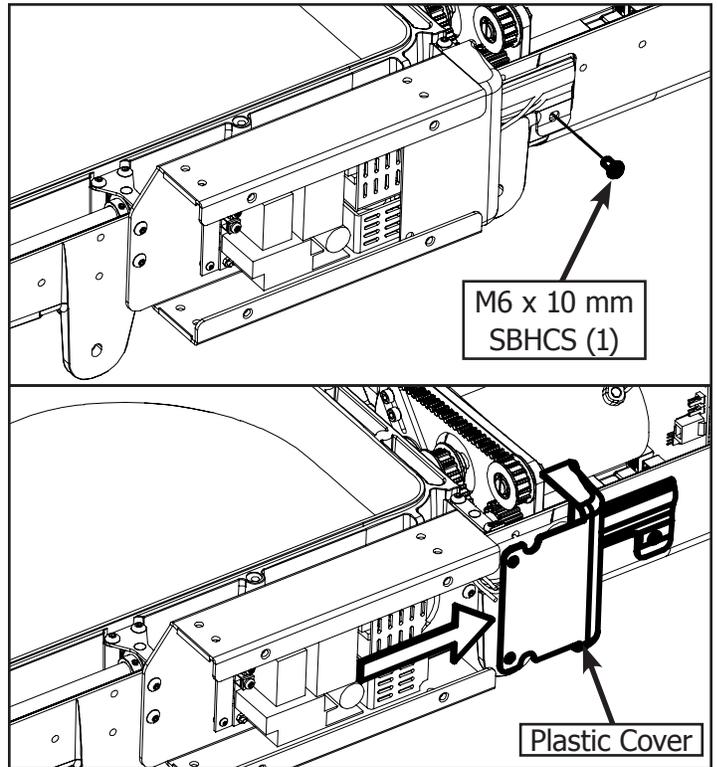


## 3. Remove Connector Board Mounts and replace onto new board.

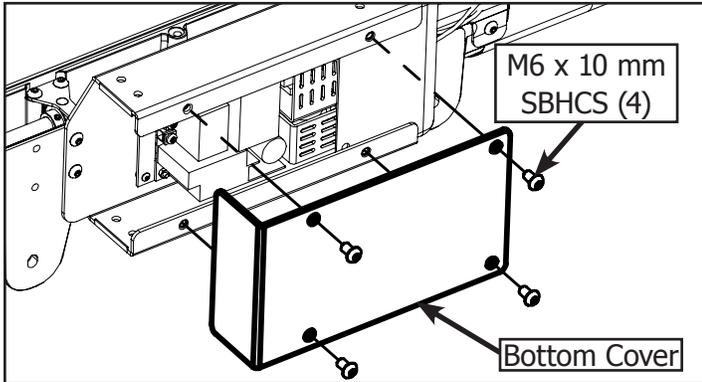
# Power Supply | Q'nique 21: Service Manual

## Tools Needed:

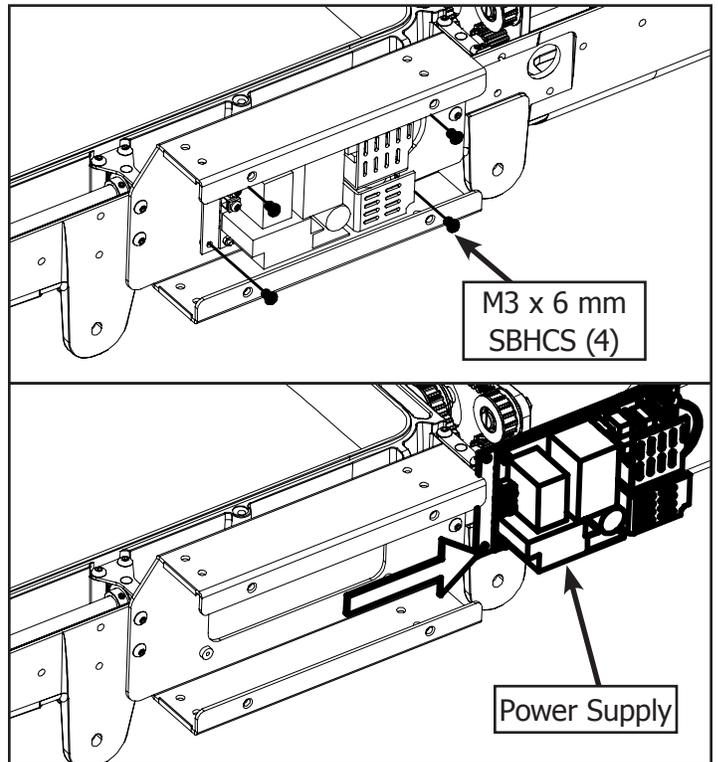
- 4 mm Allen Wrench
- Phillips Head Screw Driver



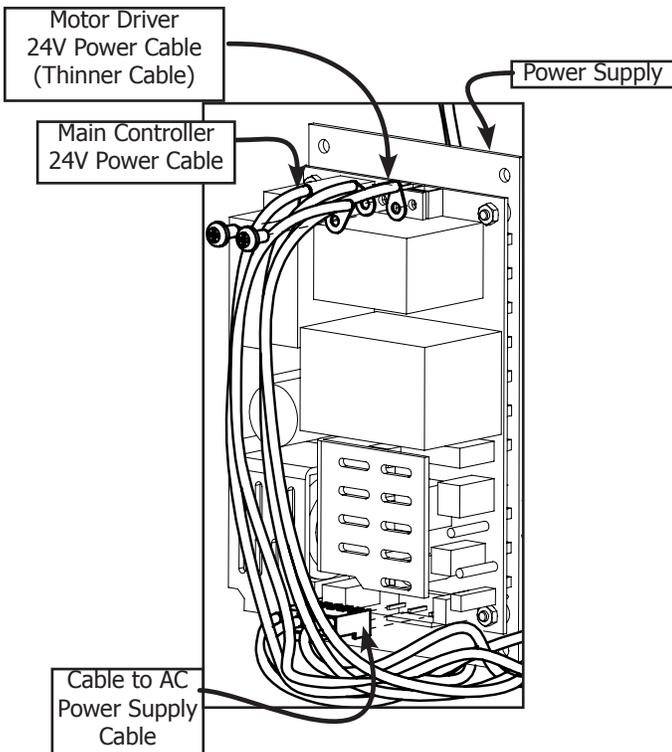
2. Remove the Screw from the Plastic Cover and Remove the Plastic Cover.



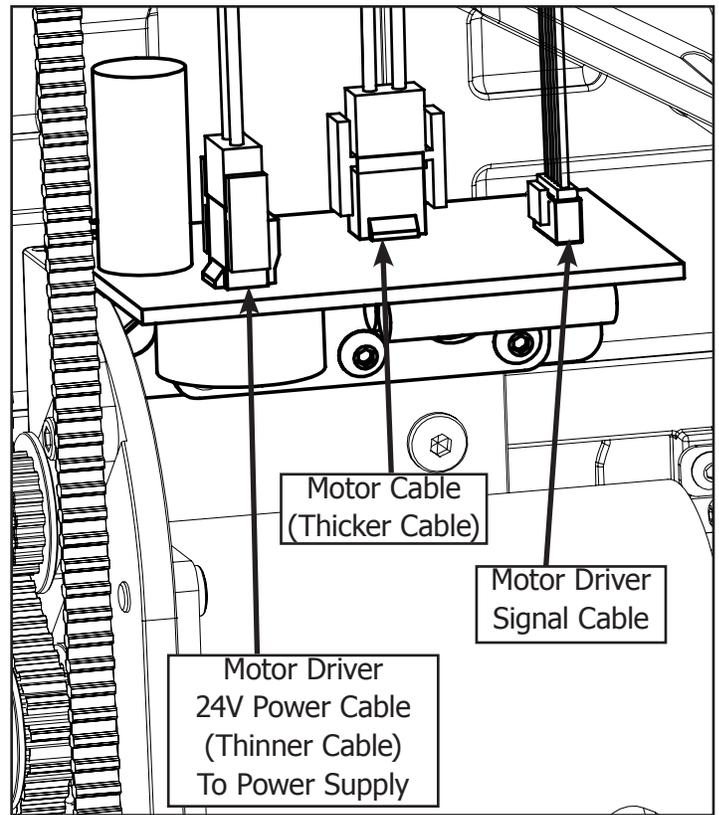
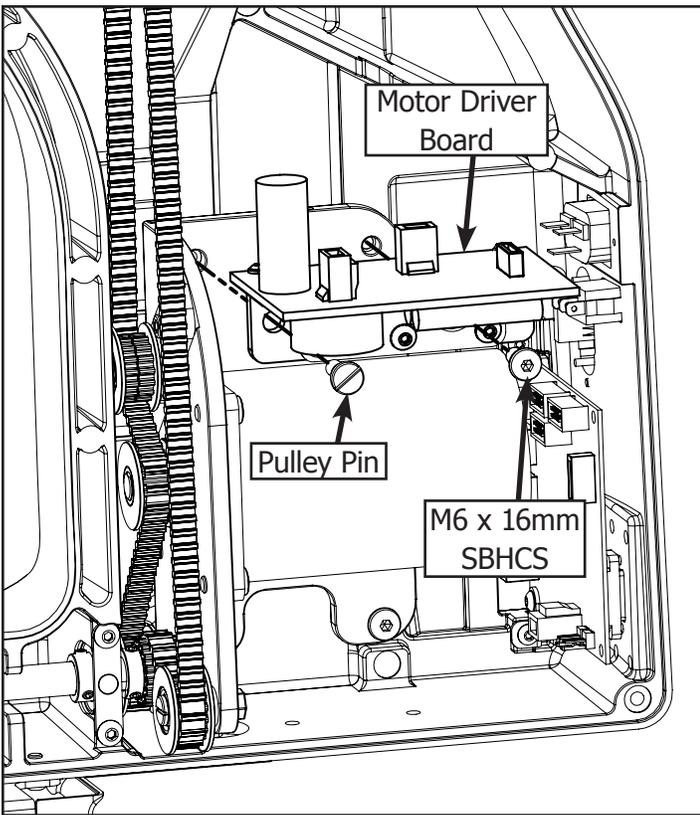
1. Use the 4 mm Allen Wrench to remove the screws from the Bottom Cover and remove the Bottom Cover.



4. Remove (4) Screws and slide out the Power Supply.



3. Detach the Cables from the Power Supply using the Phillips Head Screw Driver.

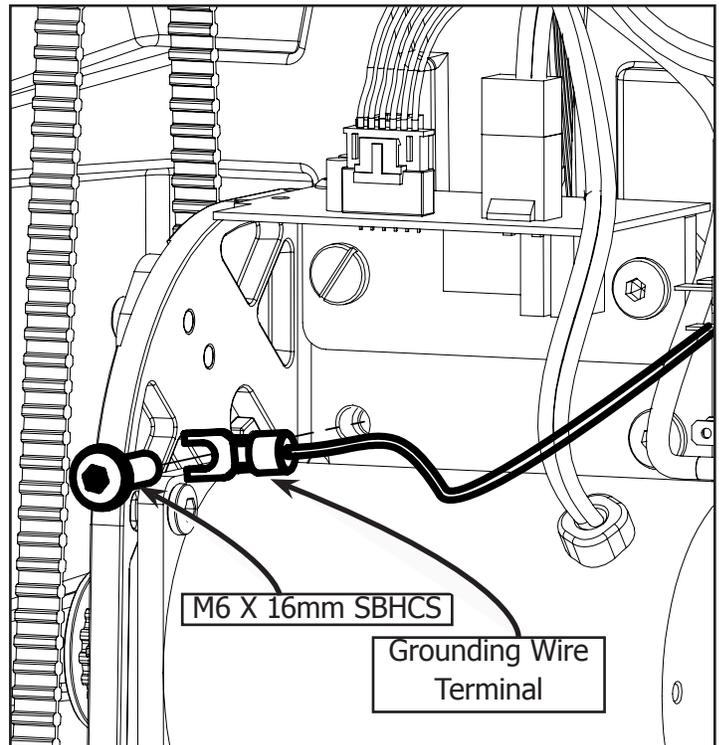
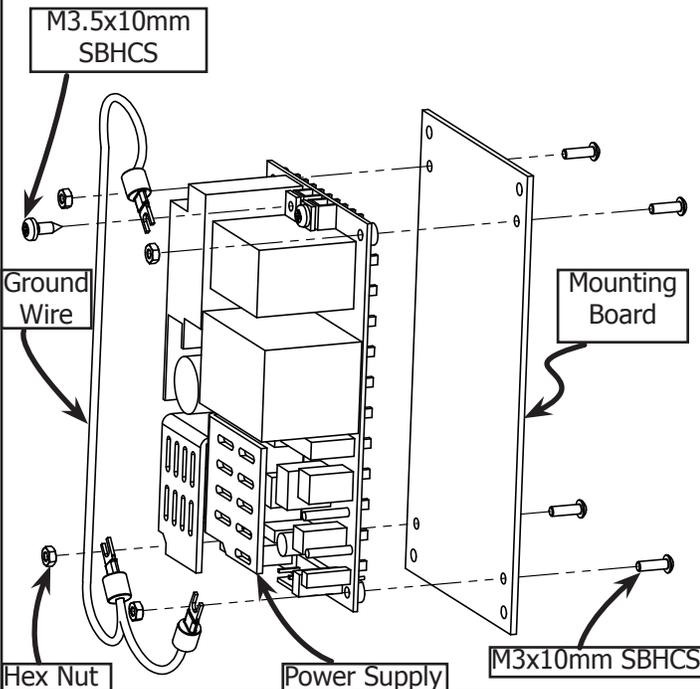


- \*Note: Do not confuse the Motor Cable and the Motor Driver Power Cable. If plugged in opposite it will burn out the board.

### Grounding Wire

**Tools Needed:**

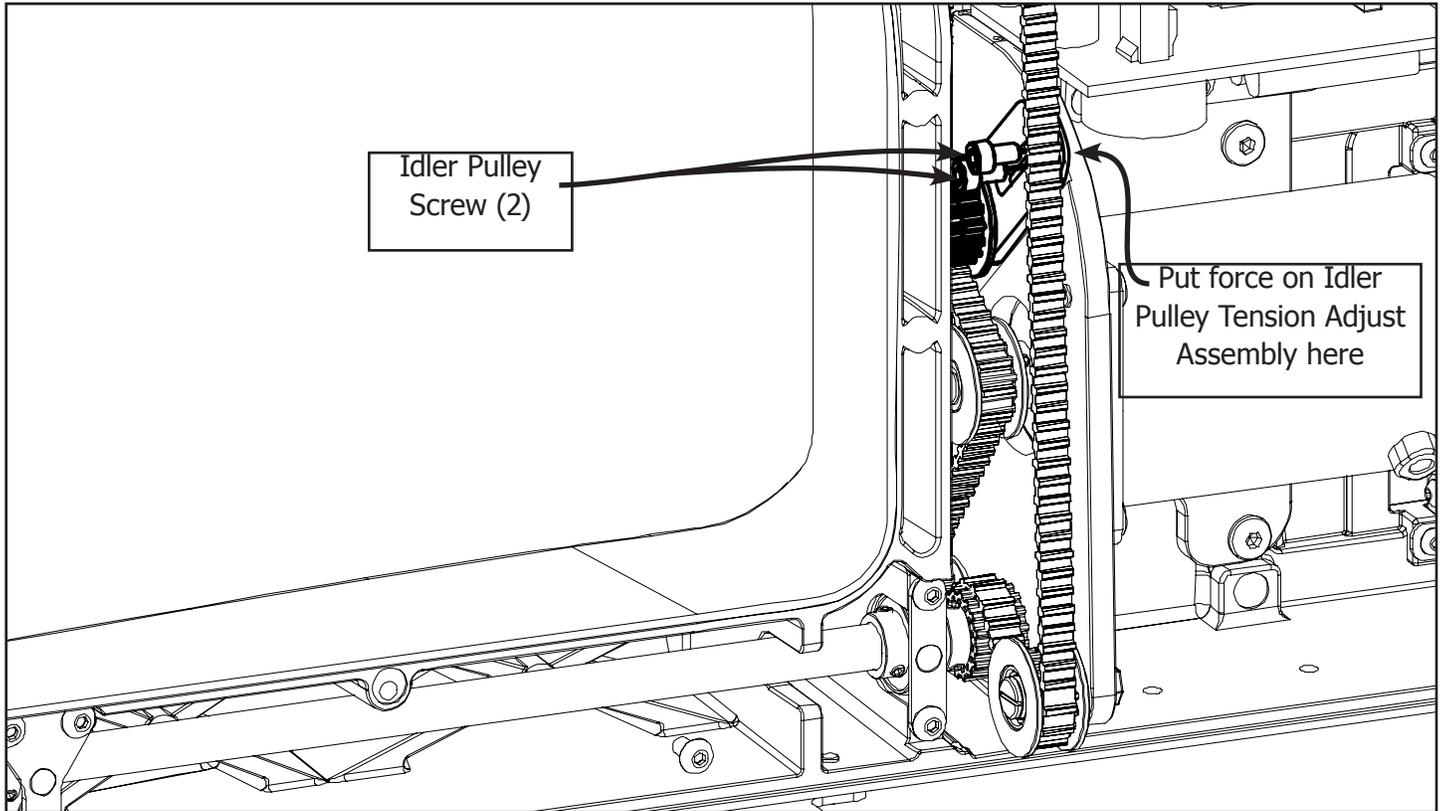
- 4mm Allen Wrench
- 2.5mm Allen Wrench
- Phillips Screw Driver



1. Attach the Grounding Wire Terminal with the M6 x 16mm SBHCS using the 4mm Allen Wrench.

**Tools Needed:**

- 4mm Allen Wrench
- Force Gauge

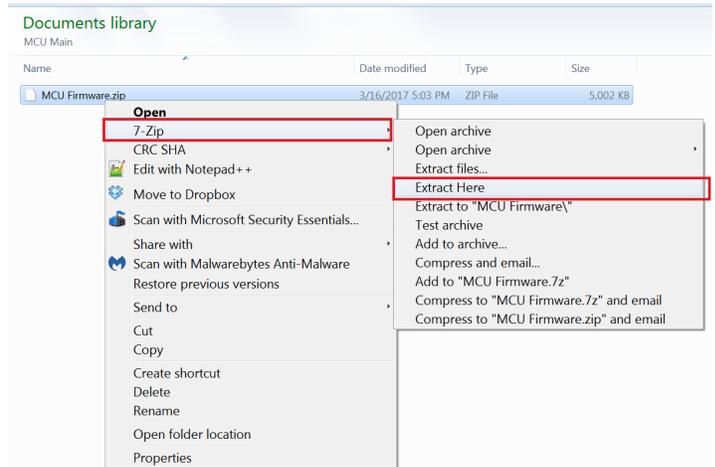
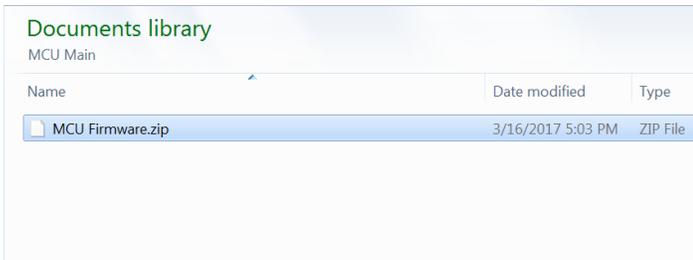


1. Use force gauge to set belt tension between 5-5.5kg or press so Belt slack is minimal, then tighten pulley screws.

# Sewing Machine MCU Update Instructions

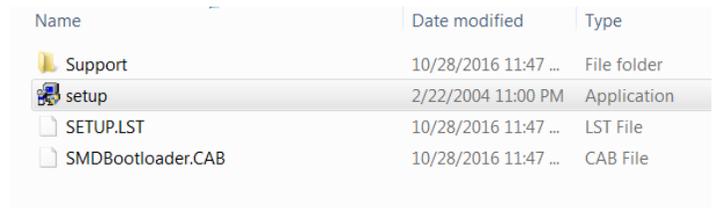
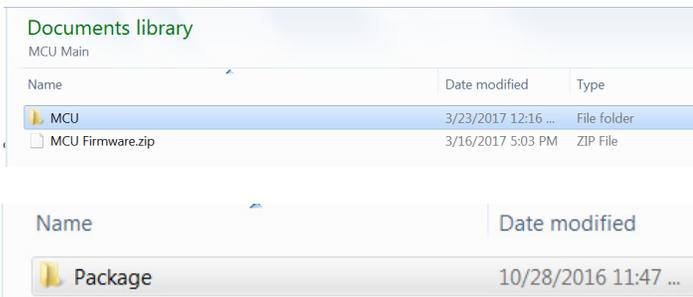
**1. Save the software file into a new folder.**

**2. Extract the zip file by right clicking on the file and extract contents into the new folder.**



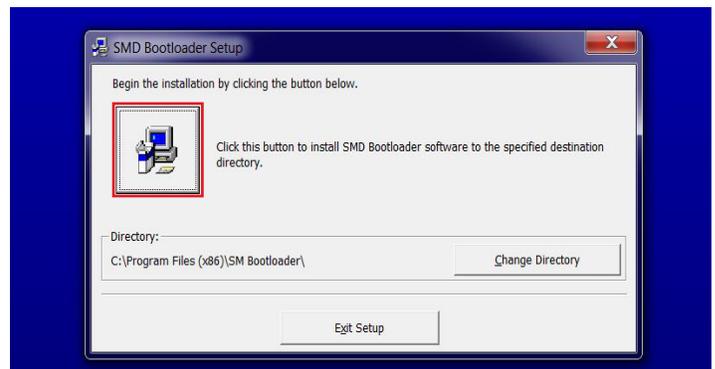
**3. Open up the folder named MCU and then the folder named Package, by double clicking.**

**4. Run the setup application by double clicking on the setup file.**

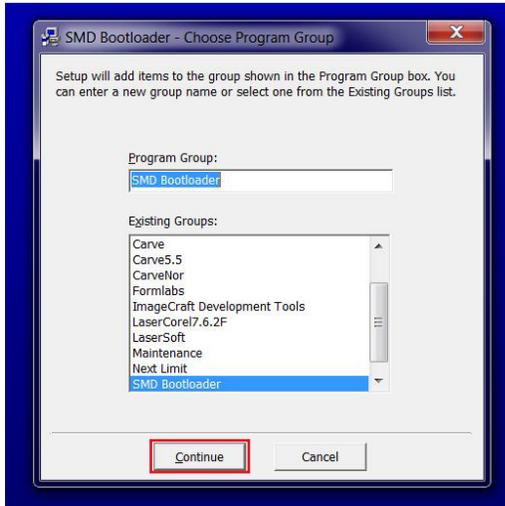


**5. Close any open applications and click OK.**

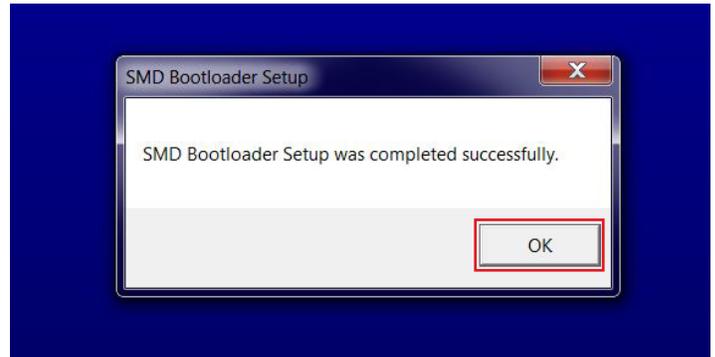
**6. Click the SMD Bootloader button to begin installation.**



**7. Choose SMD Bootloader and click continue.**

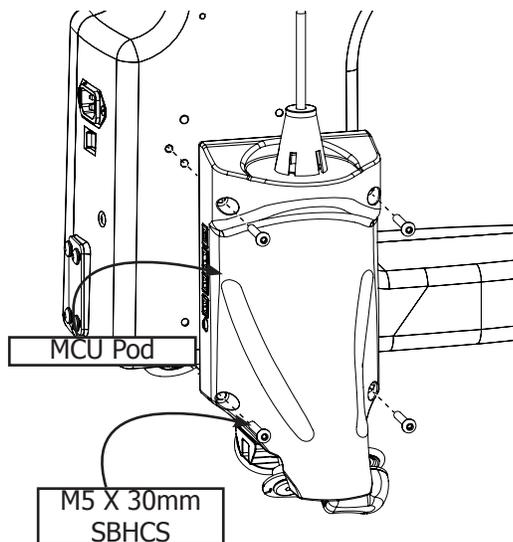


**8. Click OK. Installation of Bootloader is now complete.**

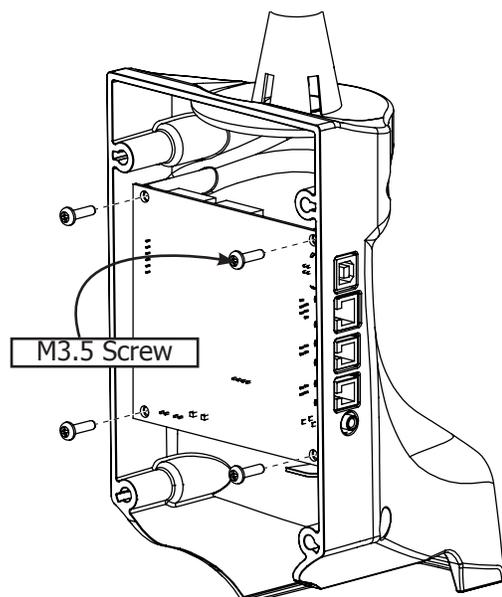


**9 Turn off sewing machine power.**

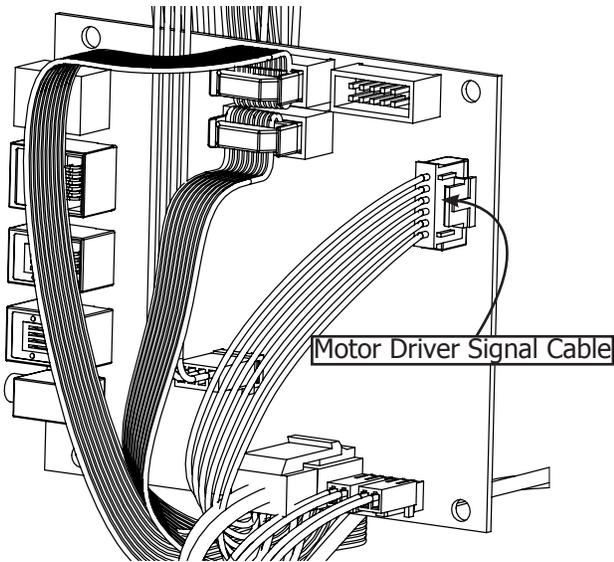
**10. Remove MCU Pod by removing (4) M5 X 30mm SBHCS.**



**11. Remove MCU Board from MCU Pod by removing (4) M3.5 Screws.**



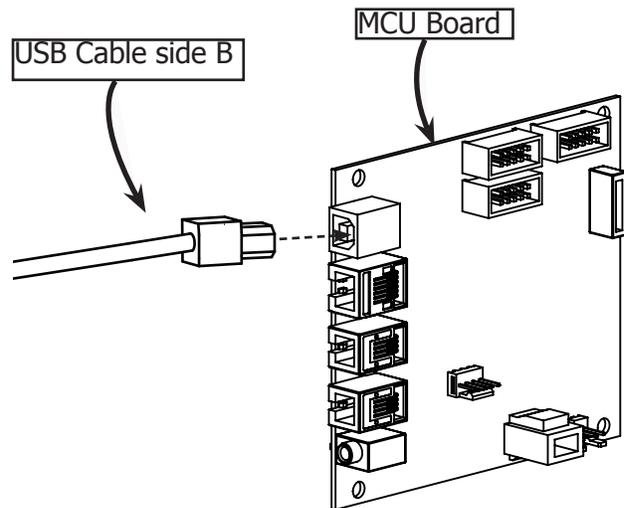
**12. Unplug the Motor Driver Signal Cable from the Motor Driver Board.**



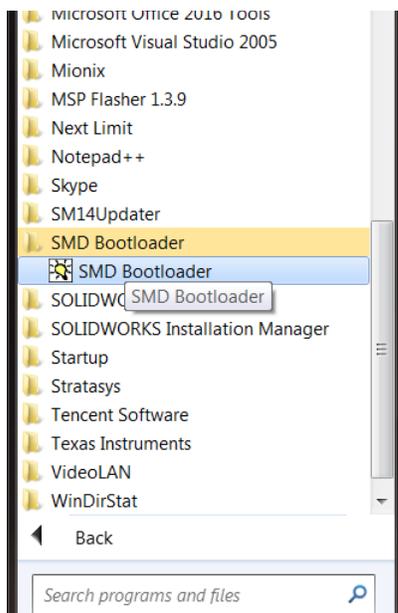
**13. Plug in USB cable side B into the MCU board USB Connector Port using USB A to B cable (printer style cable).**

**14. Turn on sewing machine.**

**Note:** Do not turn off power or unplug cable during update process.



**15. Open up the SMD Bootloader application to launch the software bootloader.**



**16. Check the port connection shows a number (if blank or zero click reconnect).**

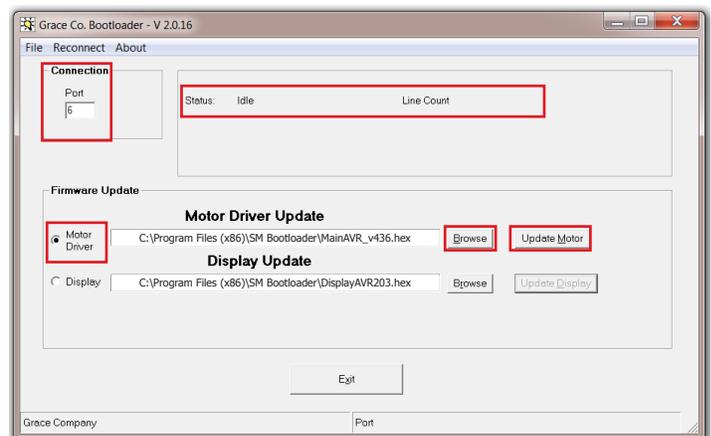
**17. Click browse under motor driver update and click on the MainAVR\_###.hex file and click OK.**

**18. Click on button next to motor driver.**

**19. Click Update Motor Button**

**20. Wait for line count to count down to zero and for bootloader to finish. After update is complete turn machine off and unplug USB cable.**

**21. Plug in the Motor Driver Signal Cable, and re-assemble MCU Board and MCU Pod to sewing machine.**

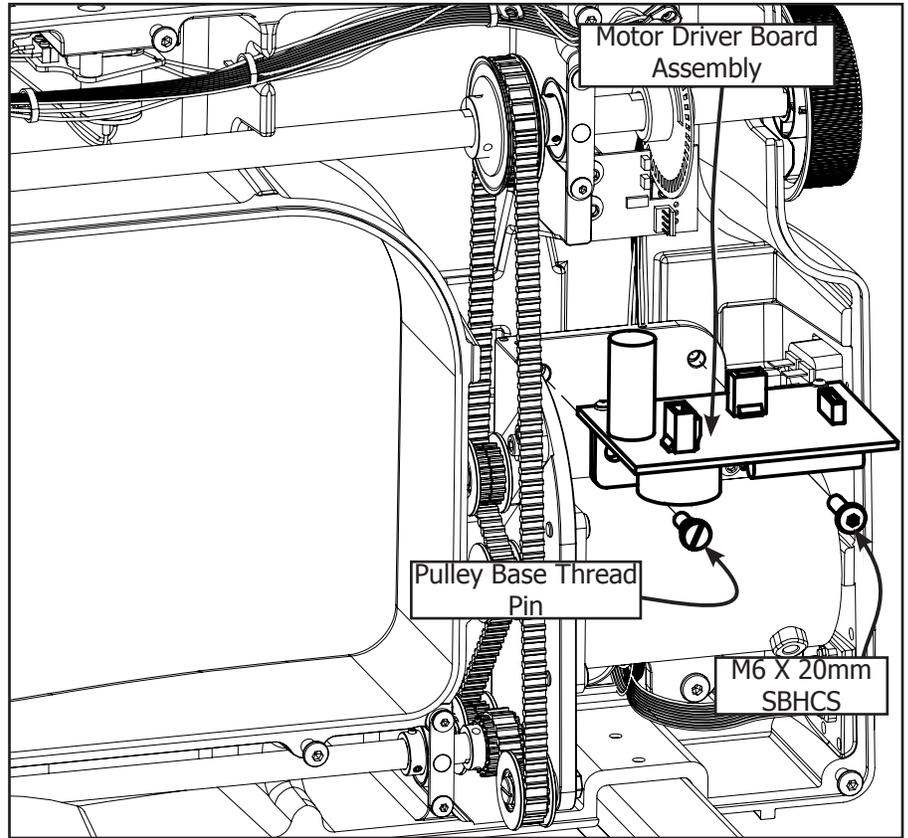


# Motor Driver Board

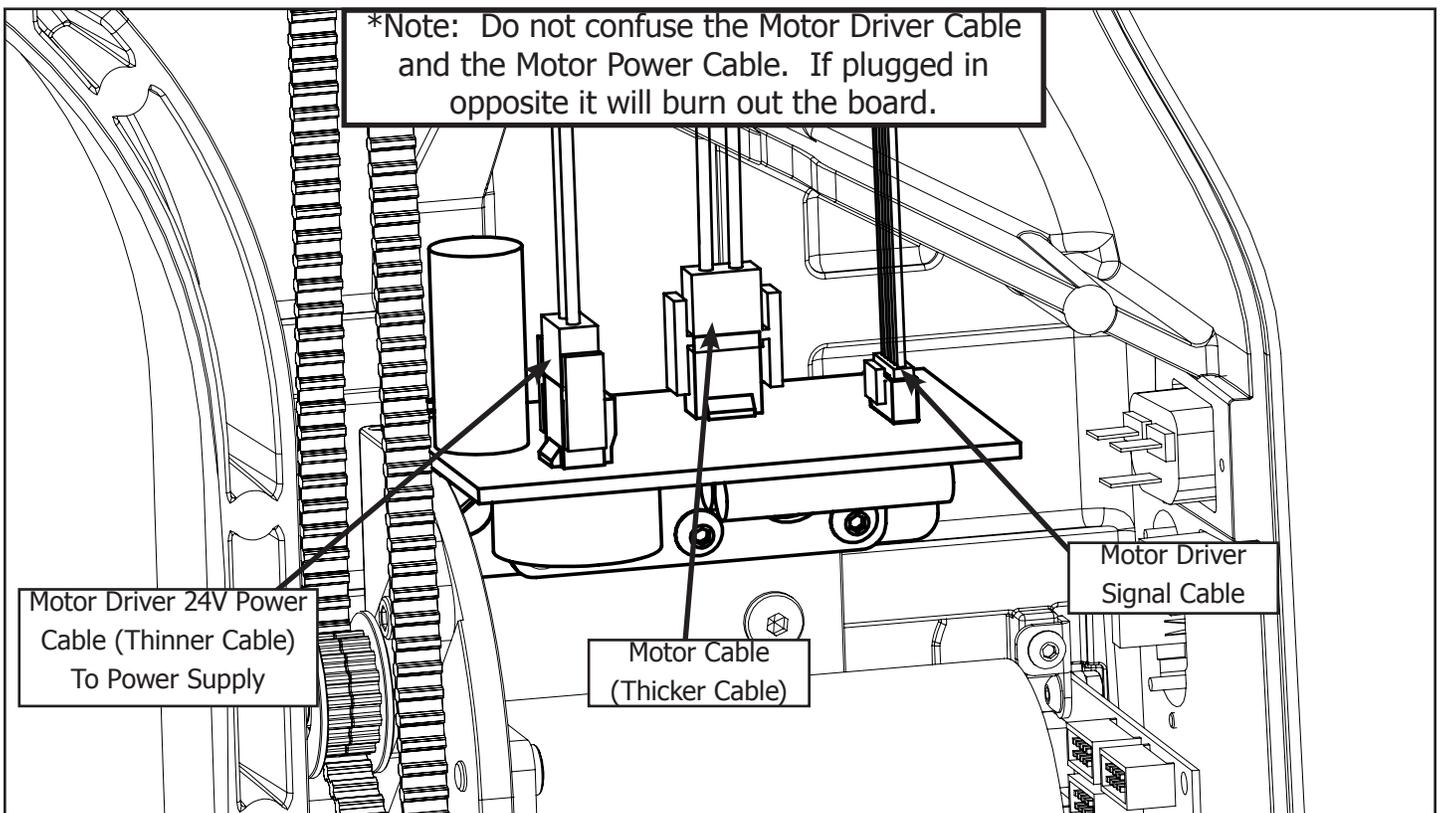
Before installing Version 3 Motor Driver Board update the main board software.

## Tools Needed:

- 4mm Allen Wrench
- Flat Head Screwdriver



## Motor Driver Board Plugs



# Self Calibration Instructions

\*NOTE: The Calibration is used to ensure that each machine runs at 1800 rpm. Each machine has already been calibrated and set at the factory and doesn't need to be changed regularly. Only run self calibration if you have recently updated your software and are having issues with your stitch regulation, baste, or your machine is running slow. For any questions call a Grace Company Tech at 1-800-264-0644.

1: If your machine hasn't been used for at least 10 min run your machine in manual mode for 5 min before beginning the Calibration process.

2: From the Main Menu on your sewing machine display choose Tools>Diagnostics>Self Test>Self Calibration.

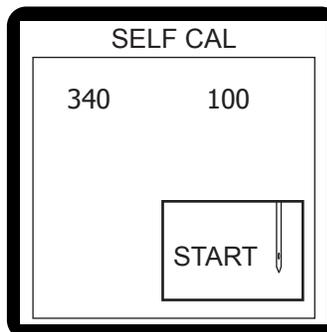
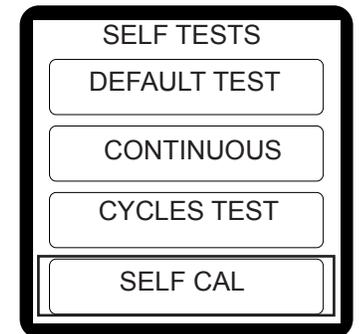
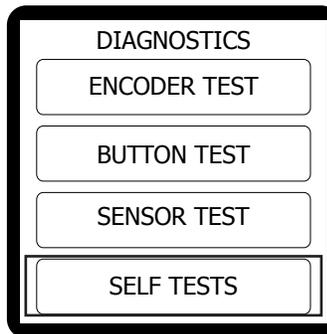
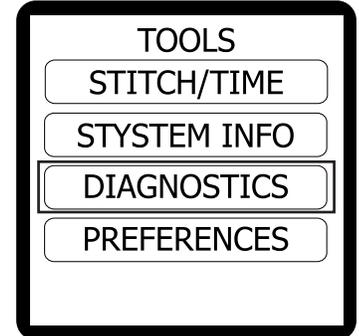
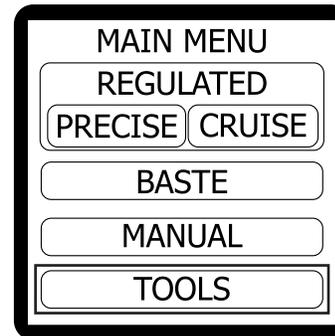
3: Move your machine so your needle is free from any fabric.

4: From the Self Calibration Menu press the start button on your machine to begin the calibration process.

\*Note: This process can take up to 10 min.

5: After your machine finishes running the display will show two numbers on the display. The number on the top left should fall between 290-340 for proper machine functionality.

\*Note: If the number on your machine falls outside of these parameters run the machine for a few minutes and run the test again.



# Window Offset Adjustment Instructions

\*NOTE: Only adjust the window if a Grace Company Tech tells you to when your needle stop position is incorrect. Do not adjust the window offset for a one time needle stop position bug. Do not adjust your window offset to fix your needle stop position in manual mode, precise mode or cruise mode. Only adjust your window stop position if your thread is snagging when pulling the bobbin thread up, or snagging in baste mode every time.

1: From the Main Menu on your sewing machine display choose Tools>Diagnostics>Self Test>Self Calibration.

2: From the Self Calibration Menu hold down the needle up/Down button until it beeps and a number appears in the middle of the display.

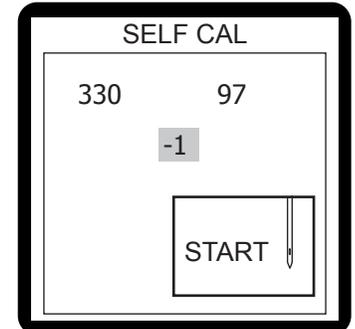
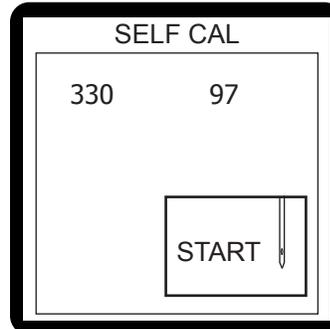
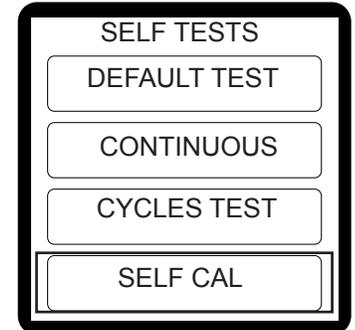
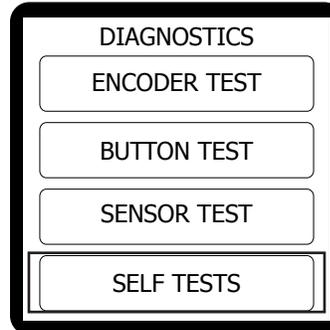
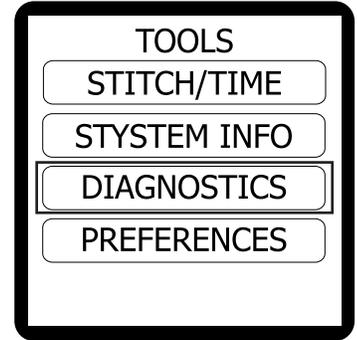
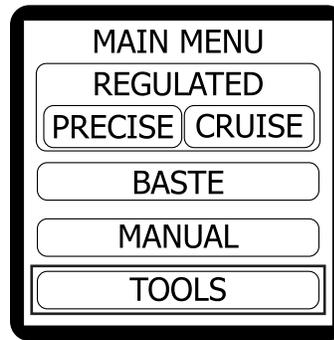
3: Adjust the window offset up or down as needed +/- one or two windows as needed.

4: Test the needle up and down to see if the bobbin can be pulled up without snagging on the hook.

5: Test Baste mode to verify baste mode works without thread snagging when moving the machine around.

6: Repeat adjusting the window offset as needed until both the needle up/down works without snagging and baste mode works without snagging.

\*NOTE: If the window has to be offset more than +/- ten call tech support.



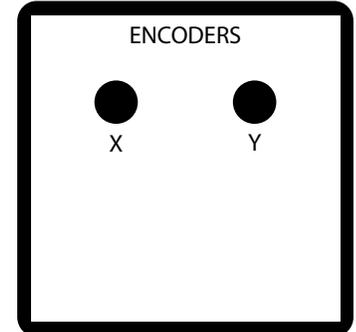
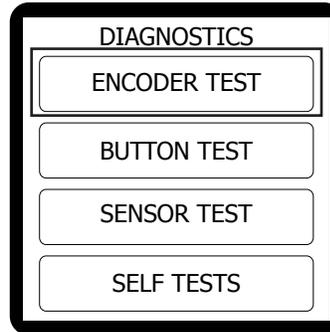
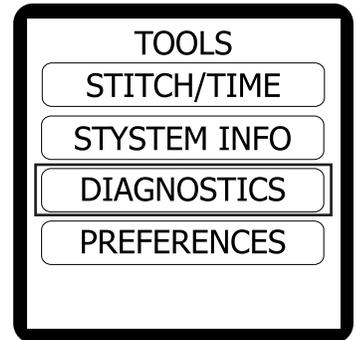
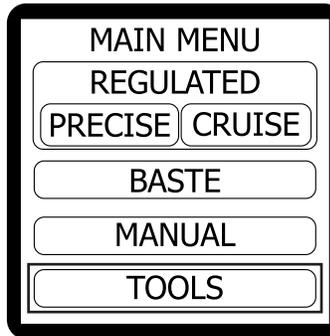
# Encoder Test

1: From the Main Menu on your sewing machine display choose Tools>Diagnostics>Encoder Test.

2: Move the sewing machine side to side and check one of the indicators turns green.

3: Move the sewing machine front to back and check that the other indicator turns green.

\*Note: If one of the indicators dose not turn green check both Encoders are plugged in. Check there is no lint on the track. Check that the Encoder Spring is pressing the Encoder into the track. Check that the Encoder Wheel is rolling. If none of these are the cause of the Encoder not working properly please contact tech support.

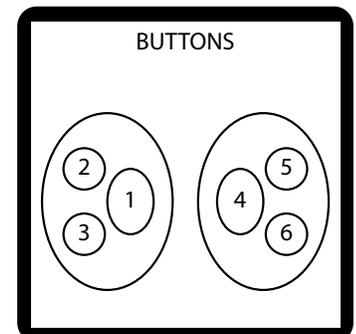
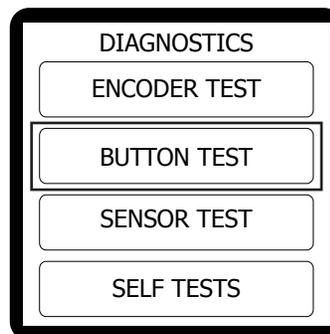
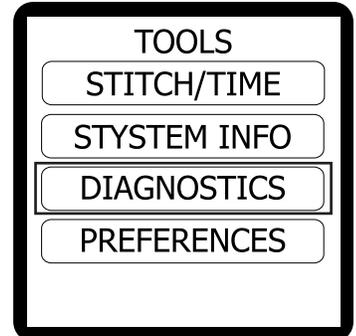
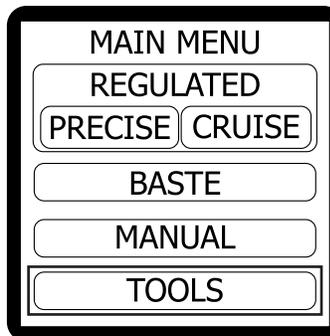


# Button Test

1: From the Main Menu on your sewing machine display choose Tools>Diagnostics>Button Test.

2: Press each button on the handles. Each button on the screen should light up green.

\*Note: If one of the buttons dose not light up check that both handles are plugged in. If the Buttons do not work after plugging them back in please contact tech support.



# Sensor Test

1: From the Main Menu on your sewing machine display choose Tools>Diagnostics>Sensor Test.

2: Press the main button on the left handle to move the needle up and down.

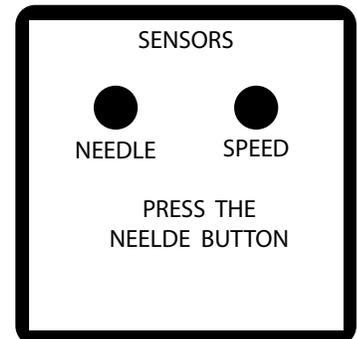
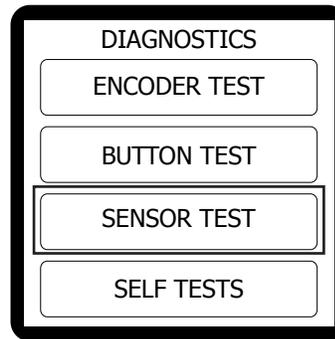
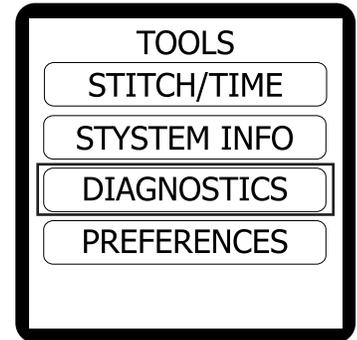
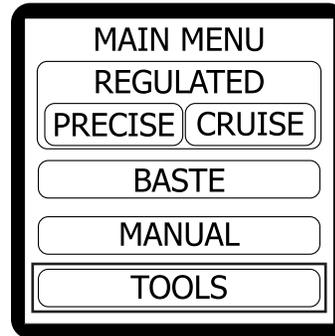
3: The needle indicator should turn green when the needle is up and should turn red when its down. The Speed indicator should turn green whenever the needle is moving.

\*Note: If the Speed indicator does not turn green while the needle is moving check the Optical Encoding cable inside the machine and in the MCU pod.

If the Needle is not moving rotate the hand wheel to check if the machine is bound.

If the machine has bound check hook for tangled thread.

If machine beeps when pressing needle toggle button but does not move call tech support 1-800-264-0644.



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Salt Lake City, UT 84119  
Phone: 1-800-264-0644  
Fax: 801-908-8888  
[www.graceframe.com](http://www.graceframe.com)

