

Q'nique19 *X*

Service Manual



Important Safeguards

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

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

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

- This appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children should be supervised to ensure that they do not play with the appliance. Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- Use this machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained within this manual.
- Never operate this machine if it has a damaged cord or plug, it is not working properly, or it has been dropped, damaged, or dropped into water. Return the machine to the nearest authorized dealer or service center for examination, repair, or electrical or mechanical adjustment.
- Never operate the machine with any air openings blocked. Keep ventilation openings of the quilting machine free from the accumulation of lint, dust, and loose cloth.
- Never drop or insert any object into any opening.
- The appliance is intended for indoor use only. Do not use outdoors.
- Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
- Connect this appliance to a properly grounded outlet only. See grounding instructions on next page.
- To disconnect, turn all controls to the off position, then remove the plug from the outlet by grasping the plug. Do not pull on cord. Always switch off or unplug the appliance when leaving it unattended.
- Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Keep fingers away from all moving parts. Special care is required around the quilting machine needle.
- Always use the proper needle plate. The wrong plate can cause the needle to break.
- Do not use bent or damaged needles.
- Do not pull or push fabric while stitching. It may deflect the needle, causing it to break.
- Switch the quilting machine off when making any adjustments in the needle area, such as threading the needle, changing the needle, or changing the presser foot, etc.
- Always unplug the quilting machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.
- CAUTION: In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

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

SAVE THESE INSTRUCTIONS!

Do not discard box or packaging.

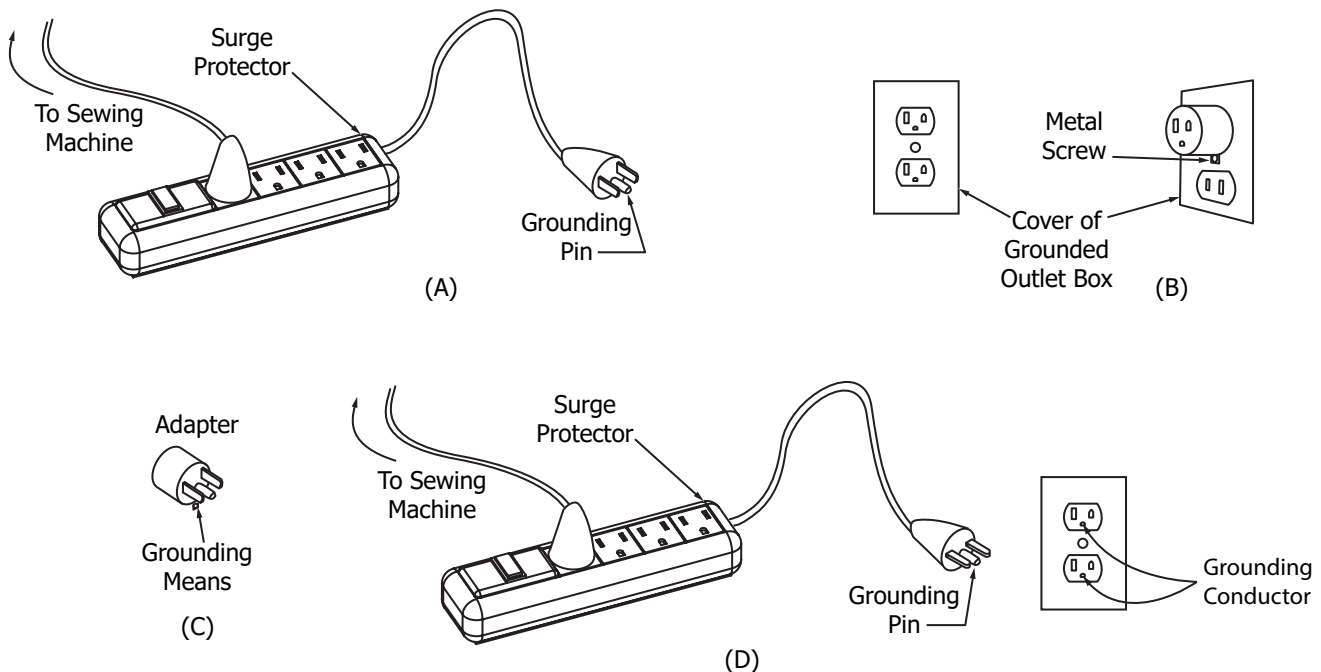
GROUNDING INSTRUCTIONS

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

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

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

Grounding Methods



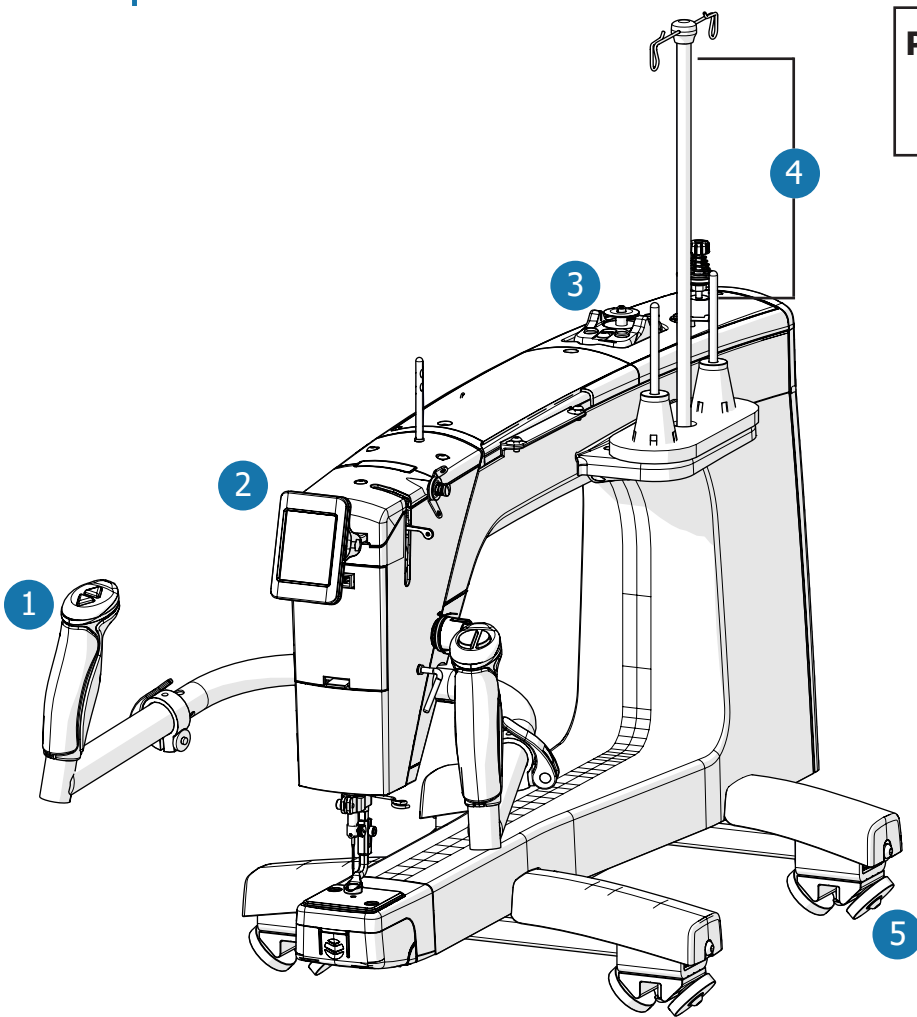
This product is for use on a nominal 120 V circuit, and has a grounding pin as illustrated above (A). A temporary adapter, shown in (B) and (C), may be used to connect this plug to a 2-pole receptacle (B) if a properly grounded outlet is not available. The temporary adapter should be used only until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

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

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Machine Specifications



Patent: WO 2013/070633 AI

Additional Patents Pending

Note: Use Lubriplate® FMO series oil (or similar clear mineral oil).

Product Dimensions

Body:

- Height: 680.2 mm, or 26.8 inches
- Width: 395.4 mm, or 15.6 inches
- Length: 831.9 mm, or 32.8 inches
- Weight: 18.8 kg, or 41.5 lbs

Quilting Arm:

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

Electrical

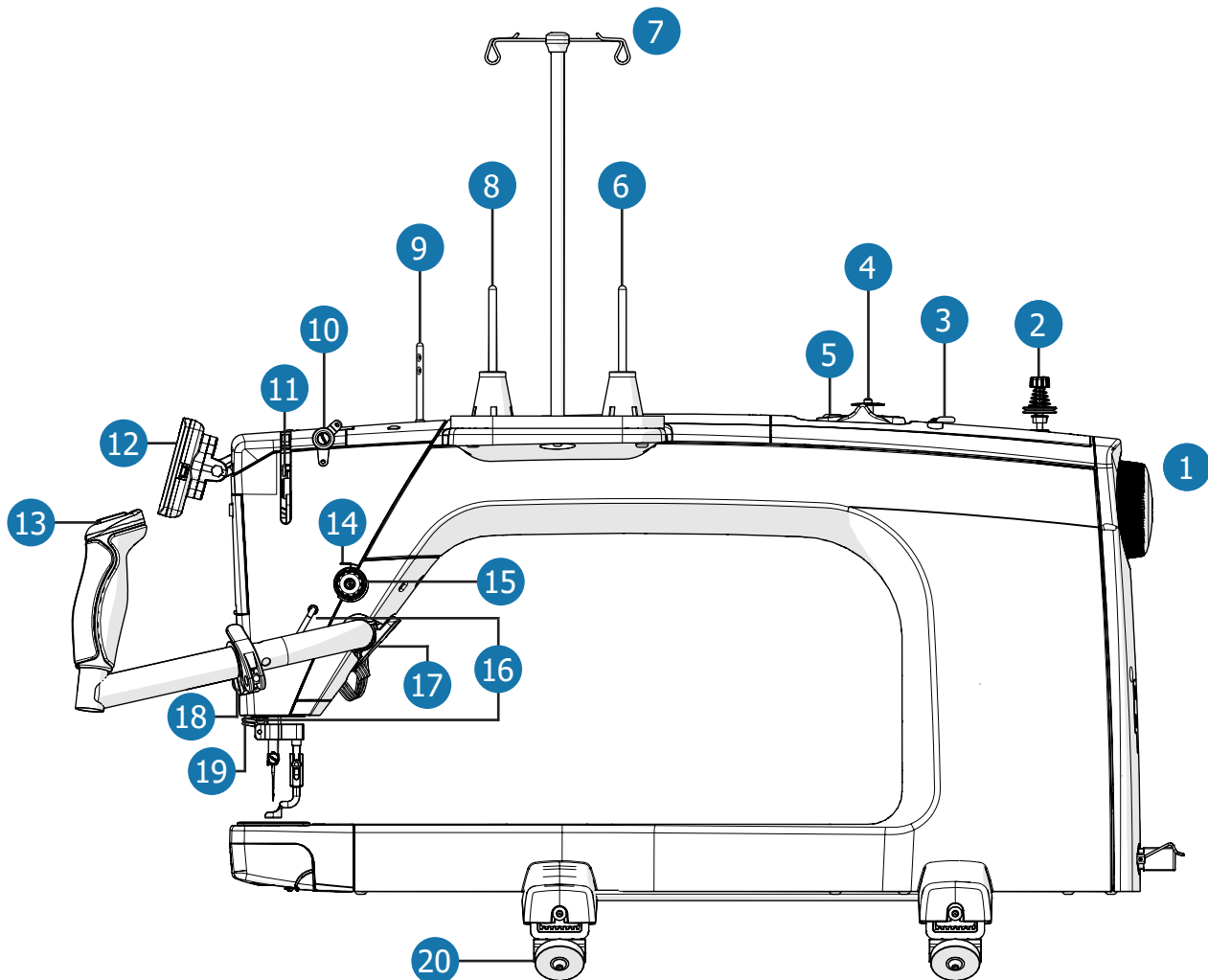
- Input Voltage: 85-264 VAC
- Input Frequency: 47-63 Hz
- Output DC Voltage: 24 V
- Output Rated Current: 14.5 A
- Output Rated Power: 350 W
- Accessory Ports: 12 V DC, 0.5 A

Features

- 1 Ergonomic handles and handlebars for efficient, extended use (page 17)
- 2 2.4" touch display (page 12)
- 3 Built in bobbin winder
- 4 Dual thread mast and stands for quilting and winding bobbin at the same time
- 5 Dual wheels for added stability (page 56)
- Edge warning system
- Range of 90 to 2000 stitches per minute
- Regulated stitching

Machine Layout

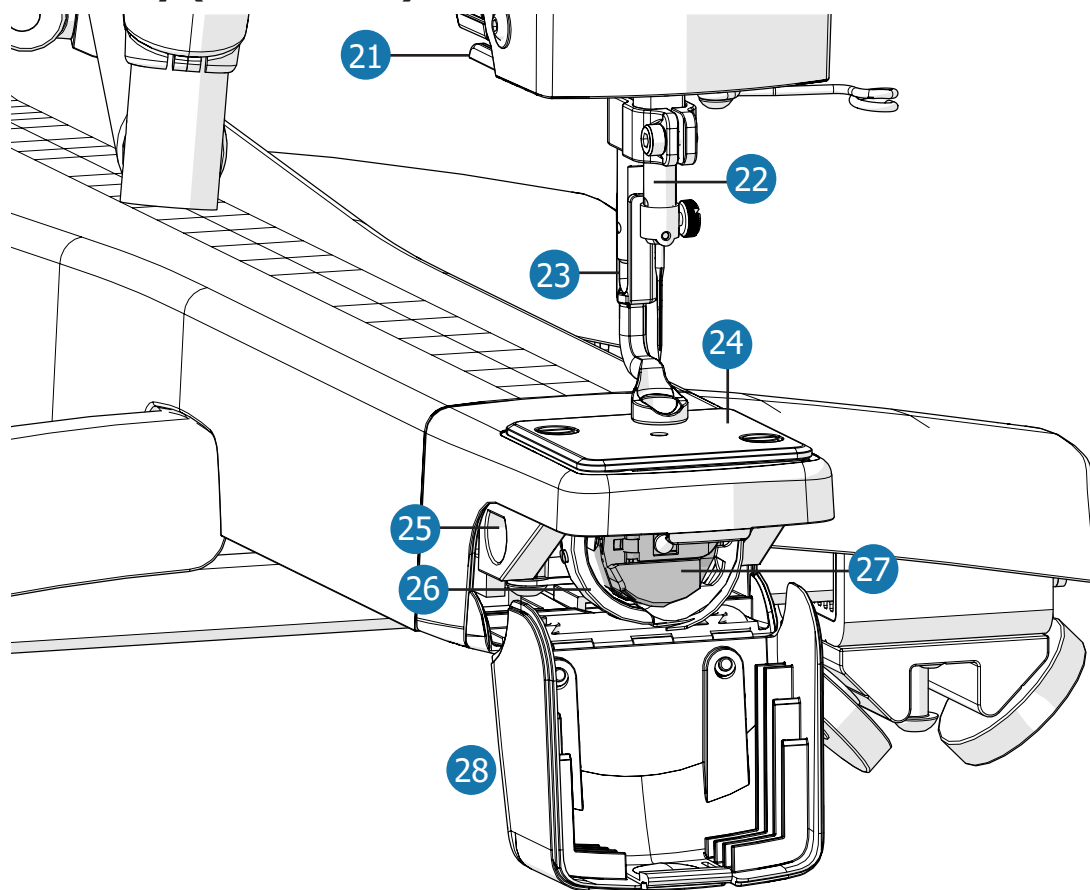
Quilting Machine (Side View)



- | | |
|---|---|
| 1 Hand Wheel Raises and lowers the needle bar. | 7 Thread Mast (page 10) Guides thread when quilting. |
| 2 Bobbin Thread Tensioner (page 14) Tensions thread when winding a bobbin. | 8 Top Thread Stand (page 11) Holds a thread cone for threading machine. |
| 3 Bobbin Thread Cutter (page 14) Cuts wound bobbin thread. | 9 Thread Guide Rod (page 37) Positions thread when quilting. |
| 4 Bobbin Stand (page 14) Holds the bobbin for winding. | 10 Small Thread Tensioner (page 30) Tensions thread when quilting. |
| 5 Bobbin Winder Buttons (page 14) Start and stop bobbin winding. | 11 Take-Up Lever Tensions thread when quilting. |
| 6 Bobbin Wind Thread Stand (page 11) Holds a cone of thread for winding bobbin. | 12 2.4" Touch Display (page 12) Provides access to quilting options. |

- 13 Handlebar Controls** (page 17)
Controls machine functions.
- 14 Tensioner Check Spring** (page 32)
Applies additional tension to thread.
- 15 Large Thread Tensioner** (page 32)
Tensions thread as adjusted when quilting.
- 16 Thread Guides** (page 37)
Positions thread when quilting.
- 17 Handle Bar Clamp** (page 17)
Used to adjust handlebar position.
- 18 Handle Bar Levers** (page 17)
Used to adjust handle position.
- 19 Lamp** (page 20)
Lights up needle area when machine is on.
- 20 Machine Wheels** (page 56)
Shuttles the machine up and down the bottom carriage.

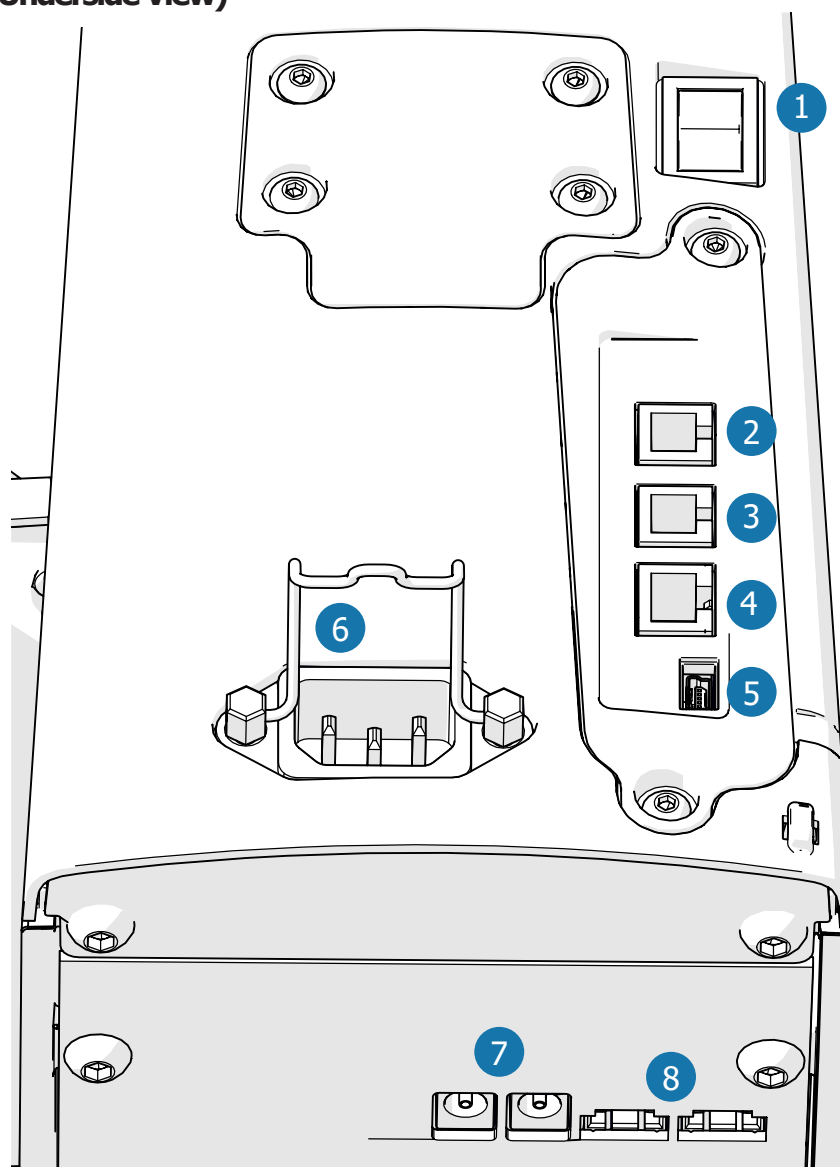
Hook Assembly (Front View)



- 21 Thread Cutter** (page 36)
Cuts excess thread from threading machine.
- 22 Needle Bar** (page 6)
Holds the needle when quilting.
- 23 Hopping Foot** (page 8)
Presses fabric down when quilting.
- 24 Needle Plate** (page 59)
Covers top of hook assembly.
- 25 Timing Cut-Out** (page 61)
Accesses hook assembly set screws.
- 26 Hook Assembly** (page 65)
Holds the bobbin case and hooks the top thread to create stitches.
- 27 Bobbin Case** (page 42)
Holds M-class bobbin and controls bottom thread tension.
- 28 Hook Assembly Cover**
Covers the hook assembly area.

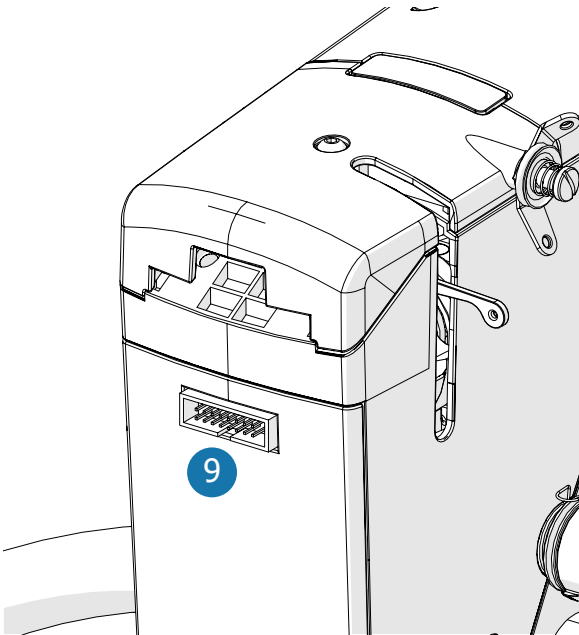
Ports and Plugins

Machine Rear (Underside View)



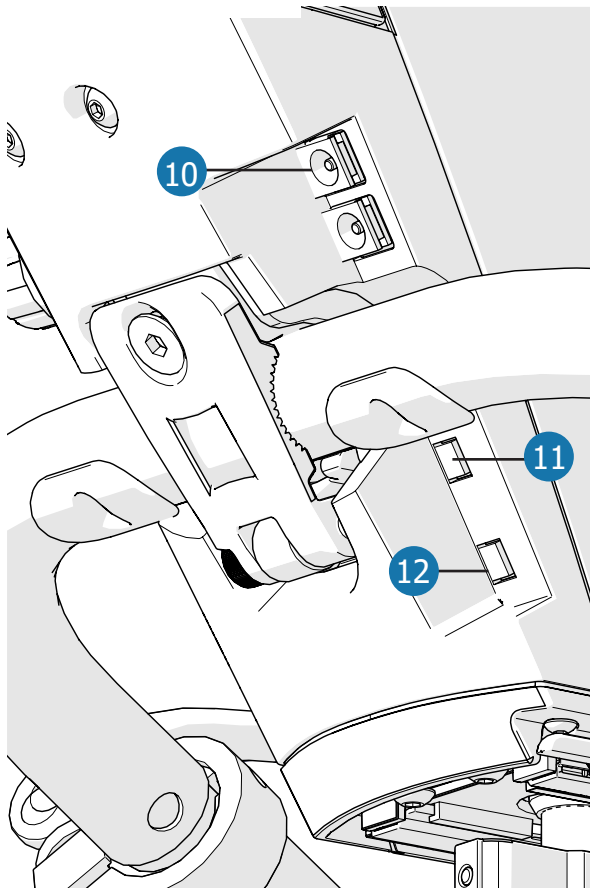
- | | |
|---|--|
| 1 Power On/Off Switch Turns machine on and off. | 5 USB Connector Port (page 71) For updating only. |
| 2 Upper Encoder Port (page 54) Connects encoders to machine. | 6 Power Port with Retainer (page 16) Connects and holds power cord to the machine. |
| 3 Lower Encoder Port (page 52) Connects encoders to machine. | 7 Accessory Ports For laser accessory. |
| 4 Quilt Motion Tablet Port For optional automation accessory. | 8 Back Handle Ports For back handle accessory. |

Machine Front



- 9 Display Cable Port** (page 12)
Connects display cable to machine.

Machine Throat

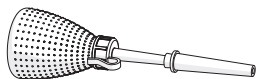


- 10 Accessory Ports**
For laser accessory.
- 11 Left Handlebar Port** (page 17)
Plug the left handlebar cable into the machine.
- 12 Right Handlebar Port** (page 17)
Plug the right handlebar cable into the machine.

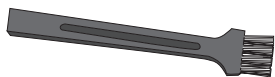
Oiling and Cleaning

Parts & Tools Needed:

Oil Bottle



Lint Brush (Tools Box)



• Compressed Air Can (optional; not included)

Note: Use Lubriplate® FMO series oil (or similar clear mineral oil).

Instructions

Oil and Clean:

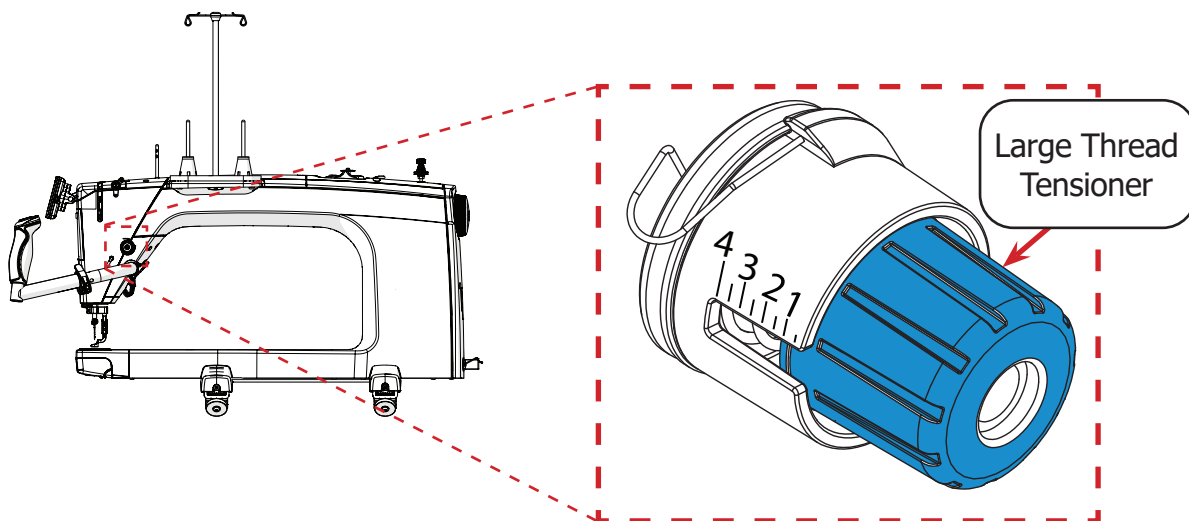
| | |
|----------------------|---|
| Machine | <ul style="list-style-type: none"> At the start of a new project After 20 hours of use After sitting without use for more than 30 days |
| Hook Assembly | <ul style="list-style-type: none"> Every other bobbin change |

Tip: The “Hours” counter on the Projects screen can be used to track hours of quilting time (see your machine manual for details).

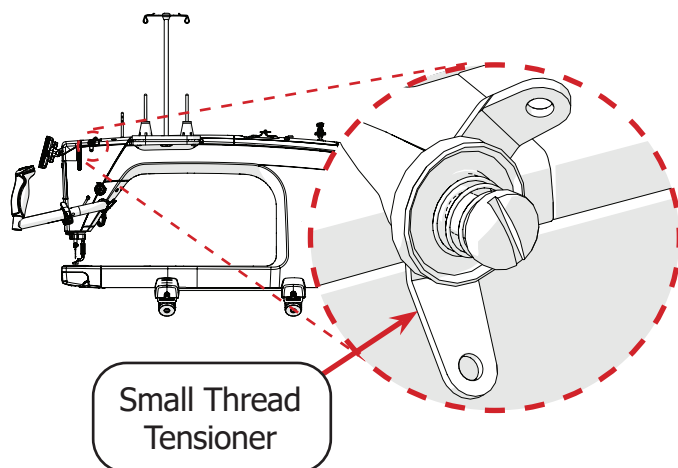
Take the following steps to clean and oil the machine:

- 1 Power off the machine.
- 2 Set the **large thread tensioner** to “1” to expose the tensioner discs. Use the lint brush or a can of compressed air to clear away lint and thread remnants.

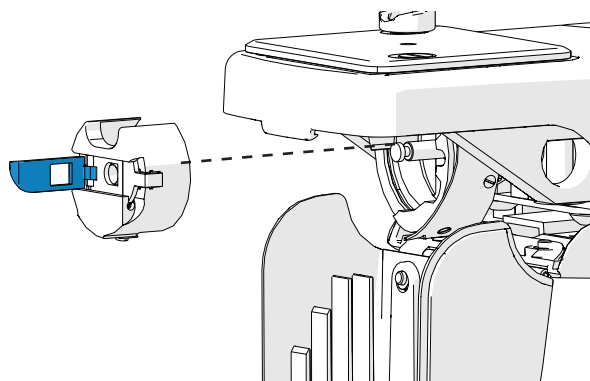
Note: Lint build-up between the tensioner discs can prevent proper thread tensioning.



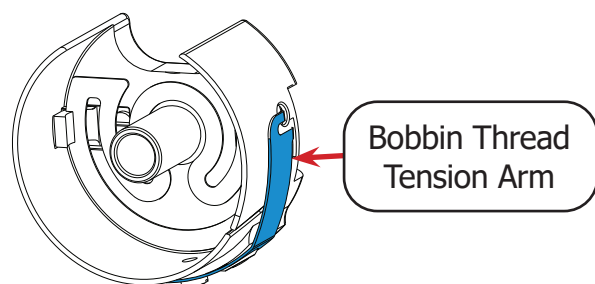
- 3 Clear debris from the spring and discs of the **small thread tensioner**.



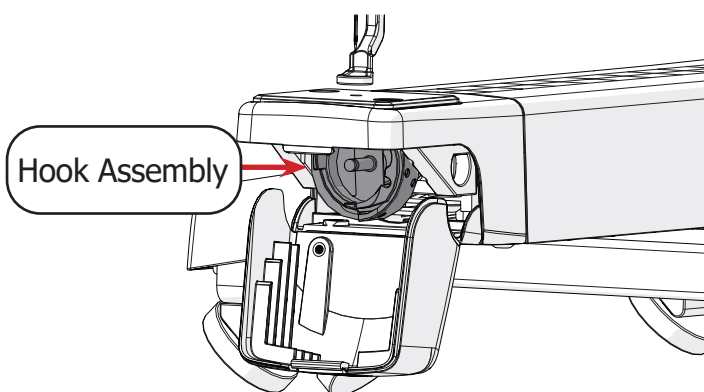
- 4 Pull the **release lever** (shown in blue) on the bobbin case to remove it from the hook assembly. If the case won't release, raise the needle with the hand wheel at the rear of the machine.



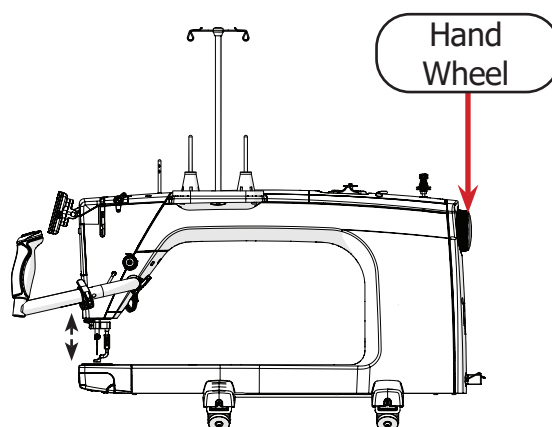
- 5 Set the bobbin aside. Clean the bobbin case with the lint brush or compressed air. Be sure to clean the area under the **bobbin tension thread arm**.



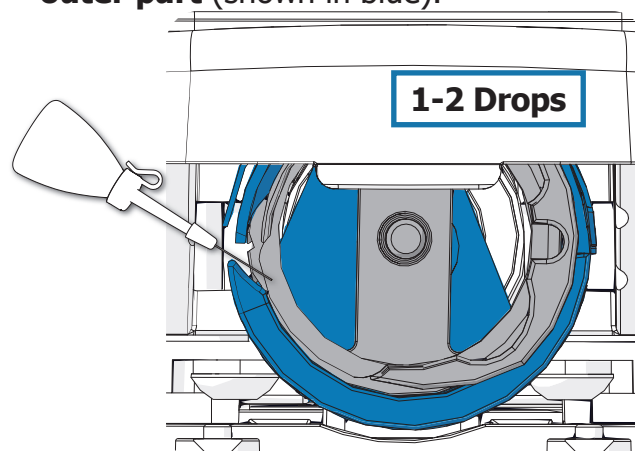
- 6 In and around the **hook assembly**, clear away any lint, cloth, and thread remnants.



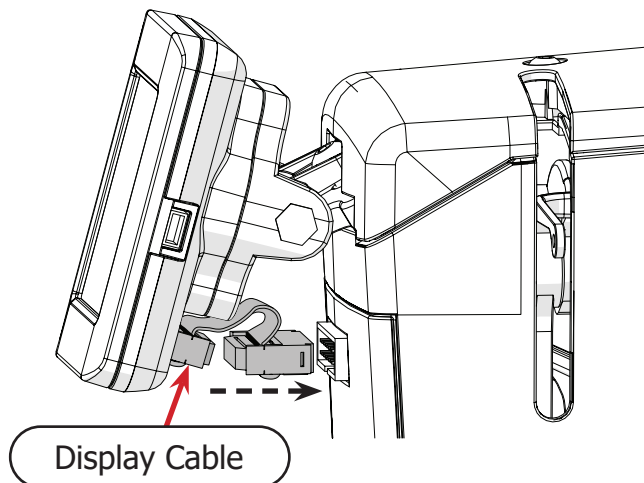
- 7 Rotate the **hand wheel** until the needle is halfway down. This will put the hook in the best position for oiling.



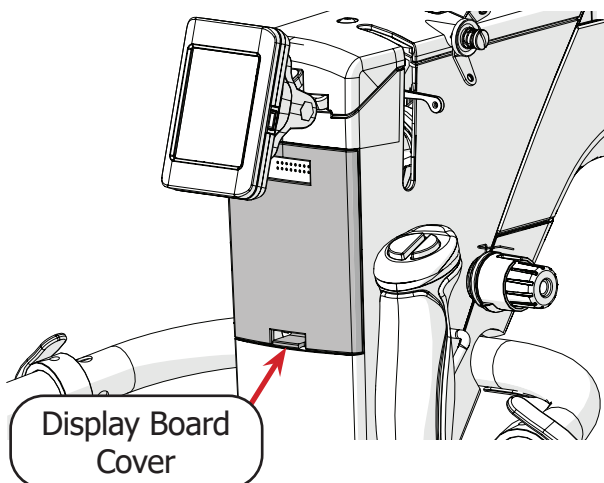
- 8 Place 1-2 drops of oil into the hook assembly between the **inner part** (shown in gray) and **outer part** (shown in blue).



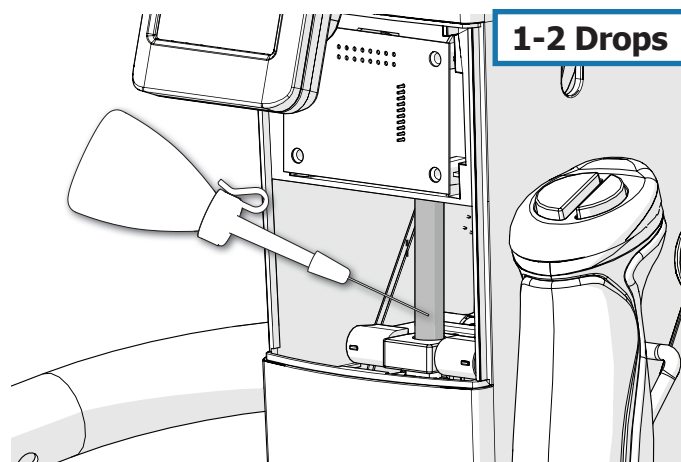
- 9 Unplug the **display cable** from the port on the machine.



- 10 Pull the tab on the **display board cover** to remove it from the machine.

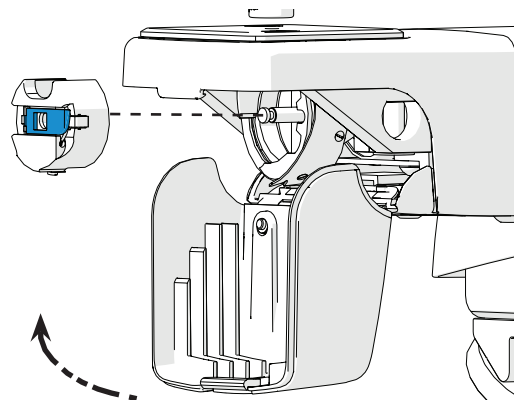


- 11 Place 1-2 drops of oil on the needle bar. Then replace the display board cover and plug the display back into the port.

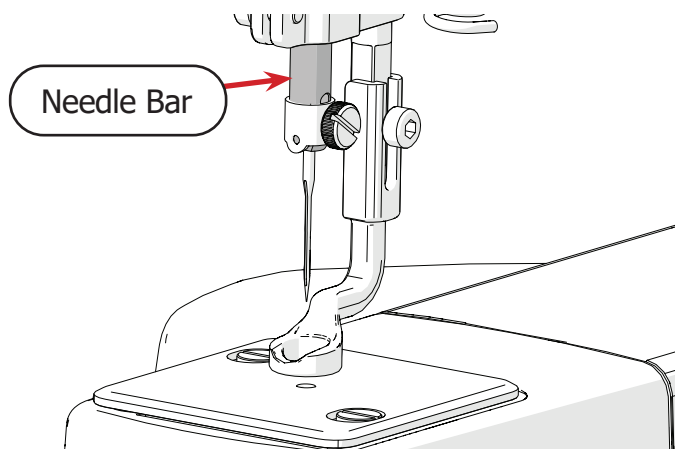


- 12 Power up the machine. Run the machine in manual or cruise stitching modes without a bobbin installed for about 10 seconds. This will distribute the oil in the hook assembly without getting oil on your bobbin thread.

- 13 Reload the bobbin case and return it to the machine (for detailed instructions on tensioning the bobbin case, see page 42). Close the hook assembly cover.



- 14 Wipe down the **needle bar** regularly to prevent oil from accumulating and dripping onto your quilt.



Choosing Your Needle

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

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

Needle Style

The following are the recommended needle styles for your machine:

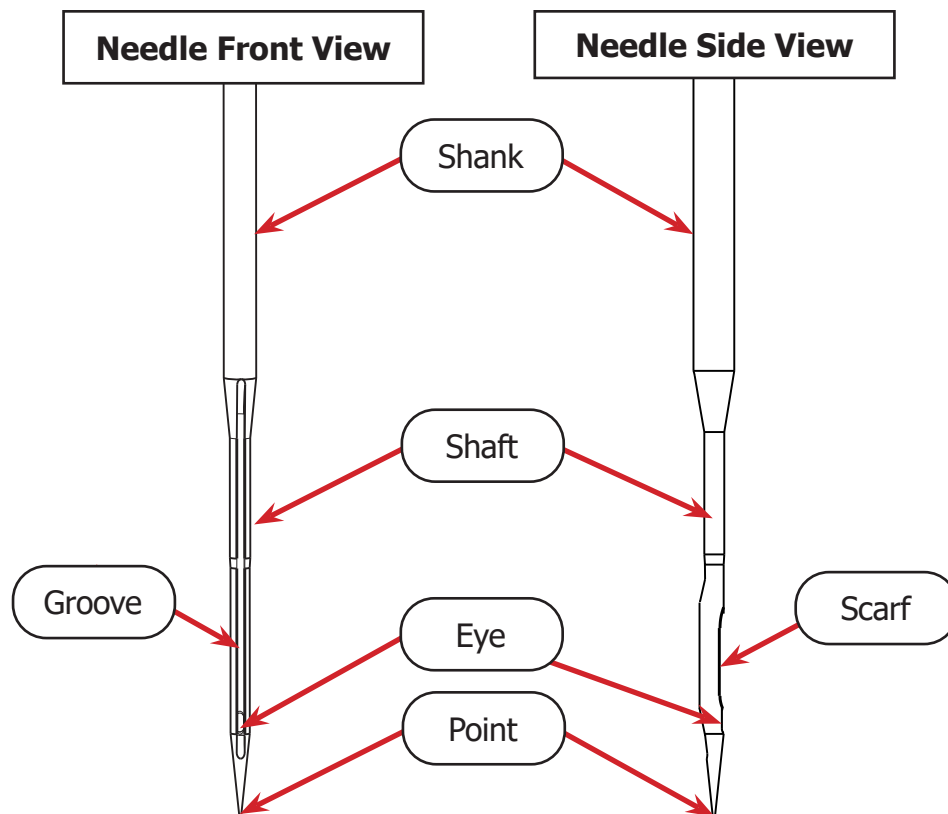
- DPX5 MR
- 134 MR
- 1955 MR

Needle Sizes

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

| Needle Size | Thread Size and Type |
|-------------|---|
| 14 / 90 | <ul style="list-style-type: none"> • mono-filament • 100 wt. silk • 60 wt. polyester |
| 16 / 100 | <ul style="list-style-type: none"> • mono-filament • 60 wt. polyester or cotton • 50 wt. cotton |
| 18 / 110 | <ul style="list-style-type: none"> • 50 wt. polyester • 40 wt. cottons and polyester • 30 wt. cotton and polyester |
| 20 / 125 | <ul style="list-style-type: none"> • 30 wt. or heavier of any thread |

Needle Diagram



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

Changing the Needle

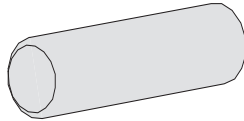
For information on selecting a needle, see page 4.

Parts & Tools Needed:

Needle

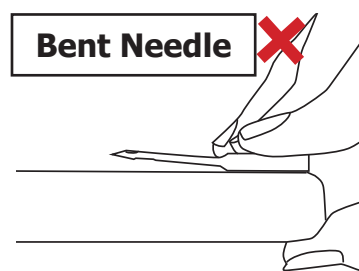
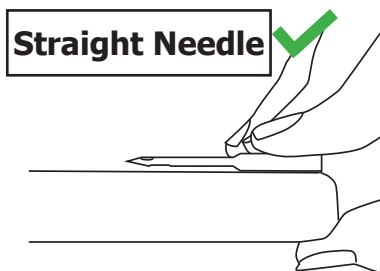


Needle Magnet



Instructions

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

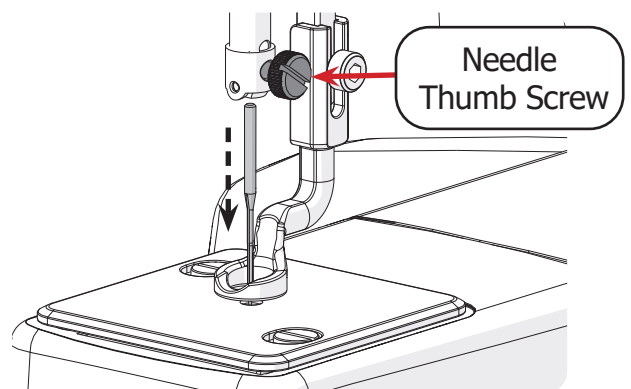
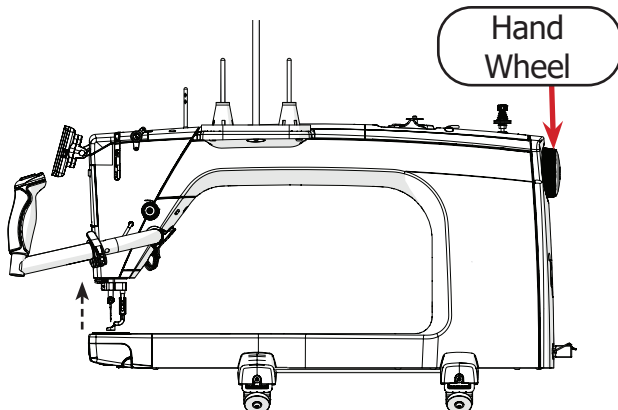


To avoid damage to the machine, please choose an approved needle style from the list below:

- DPx5 MR
- 134 MR
- 1955 MR

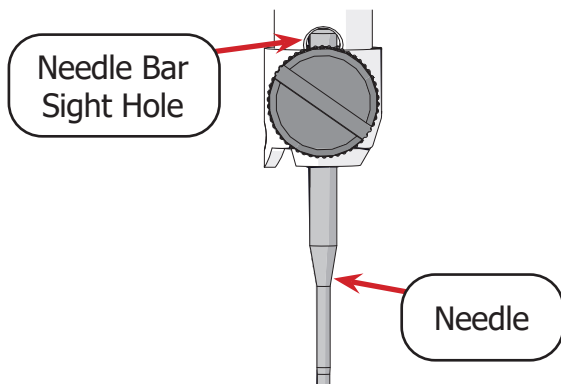
To change the needle, take the following steps:

- 1 Power off the machine.
- 2 With the **hand wheel**, raise the needle so it clears the hoop part of the hopping foot.
- 3 Loosen the **needle thumb screw** and pull down the needle. If needed, use a flat-head screwdriver.

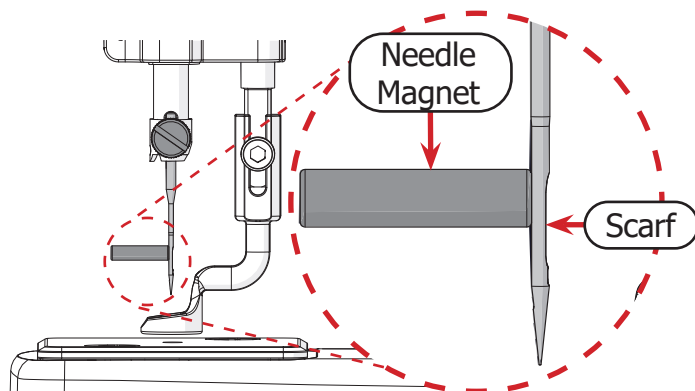


Changing the Needle (continued)

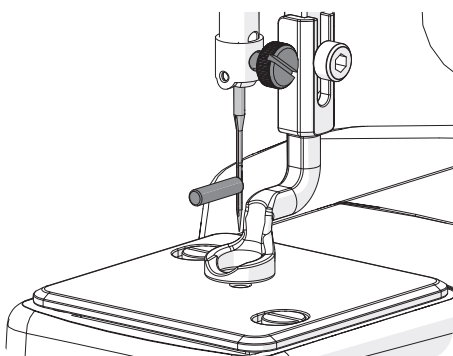
- 4 Insert the new **needle** all the way into the needle bar. Check the **needle bar sight hole** above the thumb screw to make sure the needle is inserted all the way.



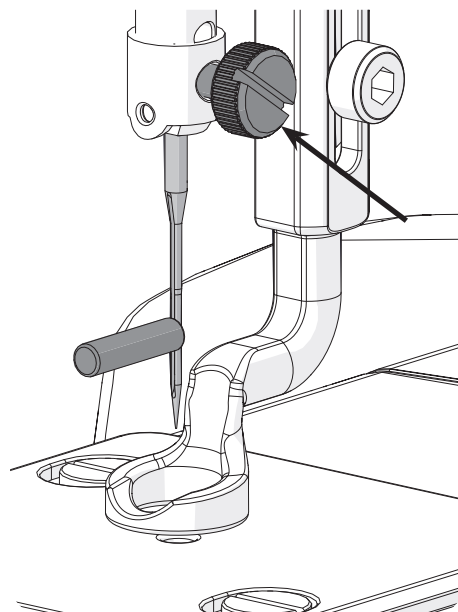
- 5 The **scarf**, a cut-out on the back of the needle, should face the throat of the machine. Place the **needle magnet** on the opposite side of the scarf.



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



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

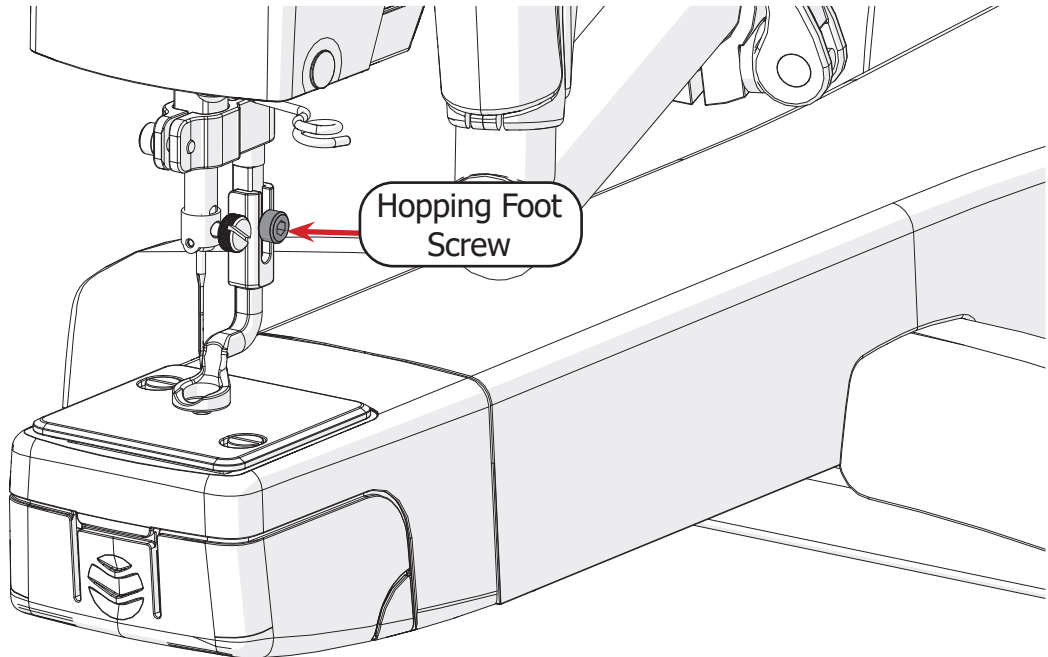


Changing the Hopping Foot

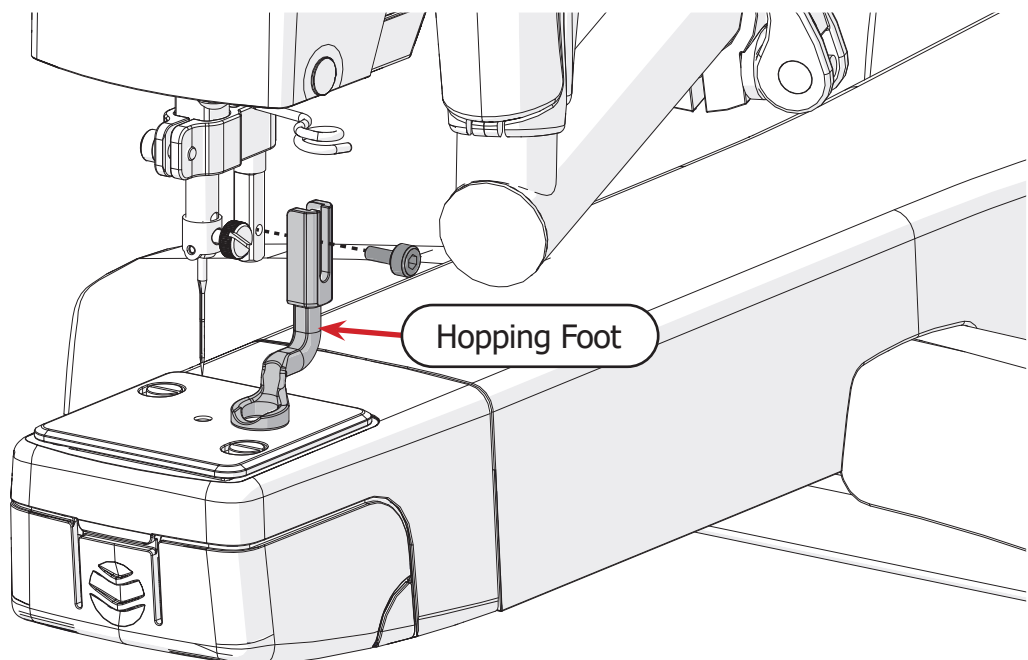
Removal Instructions

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

- 1 Power off the machine.
- 2 With the **hand wheel**, raise the needle so it clears the hoop part of the hopping foot.
- 3 Use the 3 mm Allen wrench to remove the **hopping foot screw**.



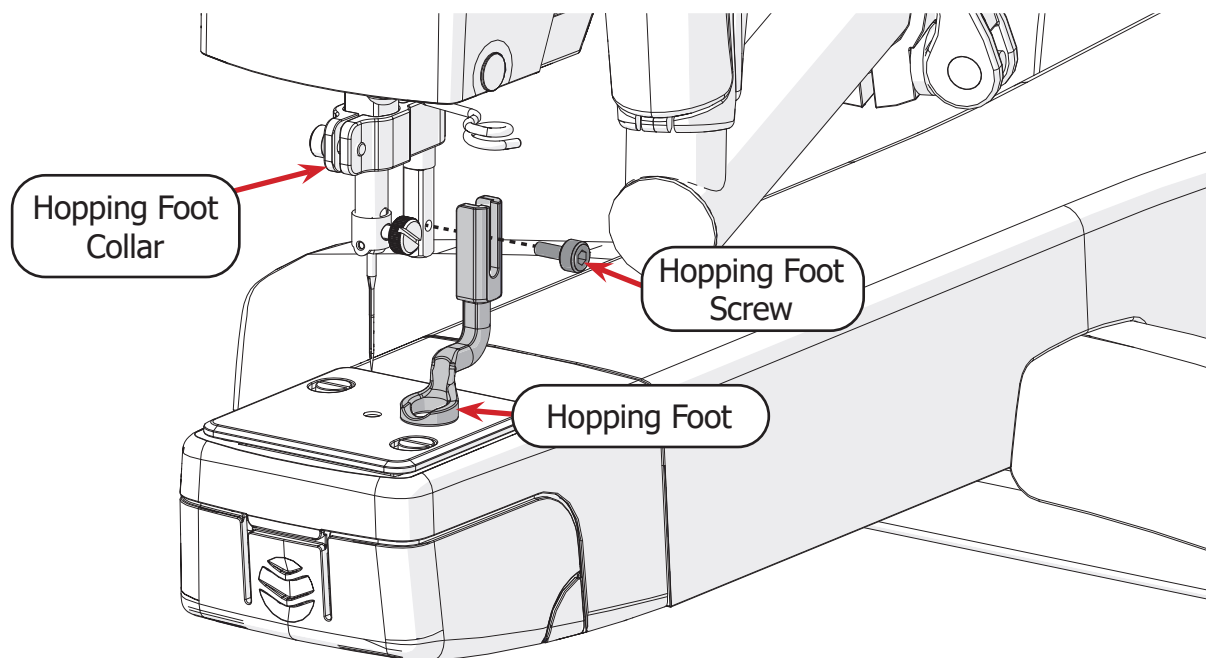
The **hopping foot** should now slide free from the presser bar.



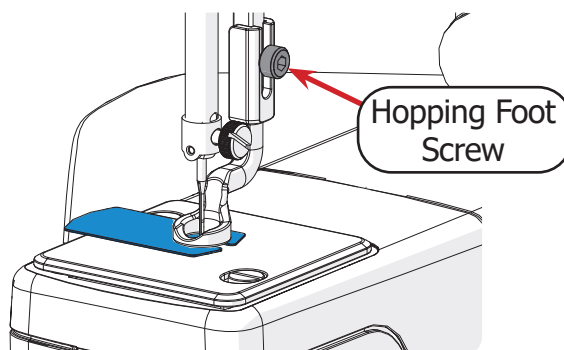
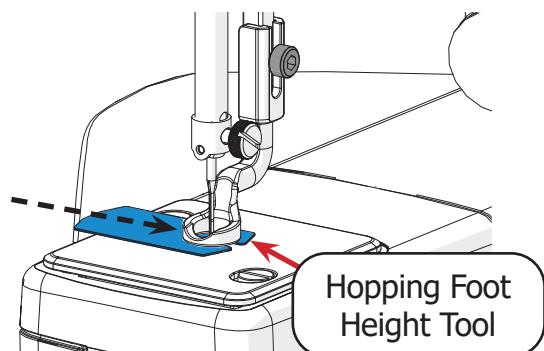
Installation Instructions

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

- 1 Power off the machine.
- 2 Slide the slot in the **hopping foot** onto the **hopping foot collar**. Use the 3 mm Allen wrench and **hopping foot screw** to hold the hopping foot in place, but do not tighten.



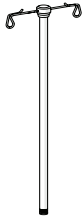
- 3 Slide the **hopping foot height tool** (shown in blue) underneath the hopping foot with the needle inside the slot.
- 4 Lower the hopping foot until it rests on the height tool. Tighten the **hopping foot screw** with the 3 mm Allen wrench.



Replacing the Thread Mast

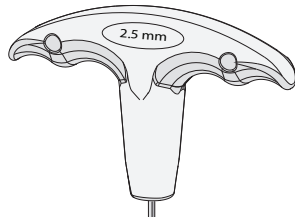
Parts & Tools Needed:

Thread Mast



SMP-09-14103

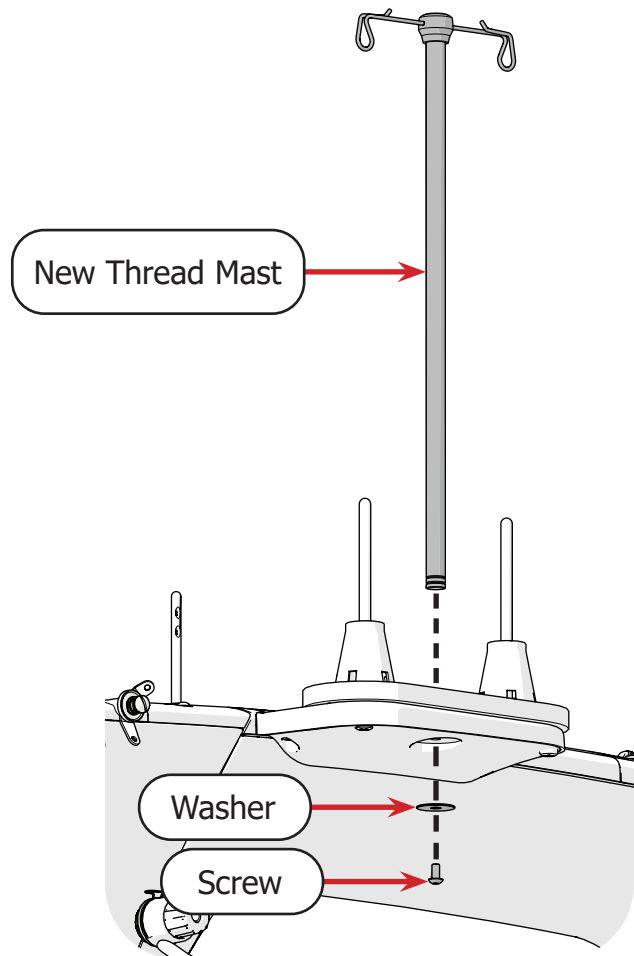
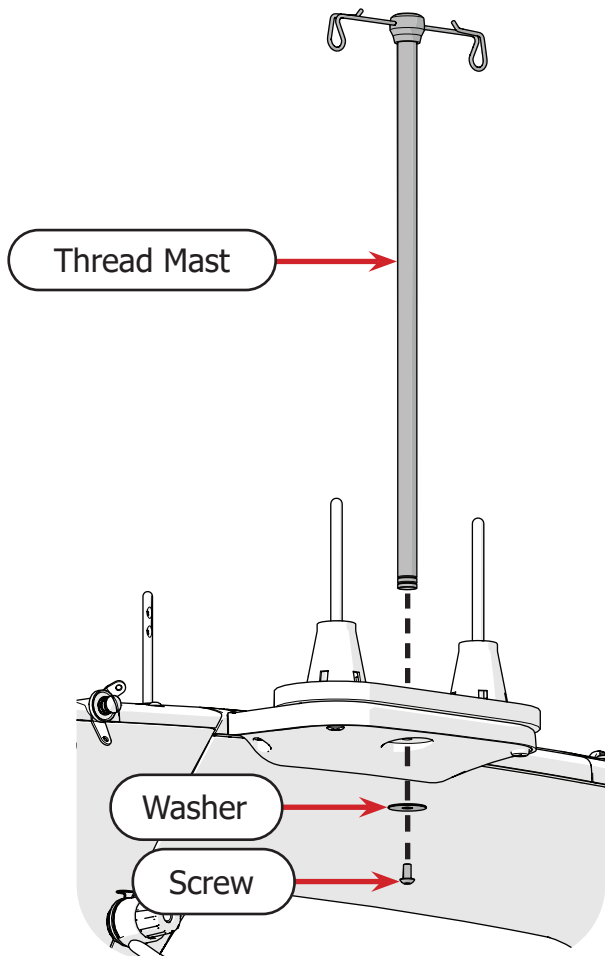
T-handle Allen Wrench 2.5 mm



Instructions

Take the following steps to replace the thread mast without replacing the entire thread stand:

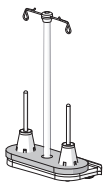
- 1 Use a 2.5 mm Allen wrench to remove the **screw** and **washer** holding the **thread mast** to the thread stand.
- 2 Install the **new thread mast** to the thread stand with the same **screw**, **washer**, and the 2.5 mm Allen wrench.



Replacing the Thread Stand

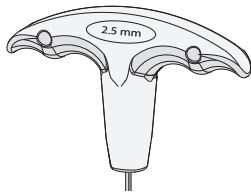
Parts & Tools Needed:

Thread Stand Assembly



SMP-09-13183

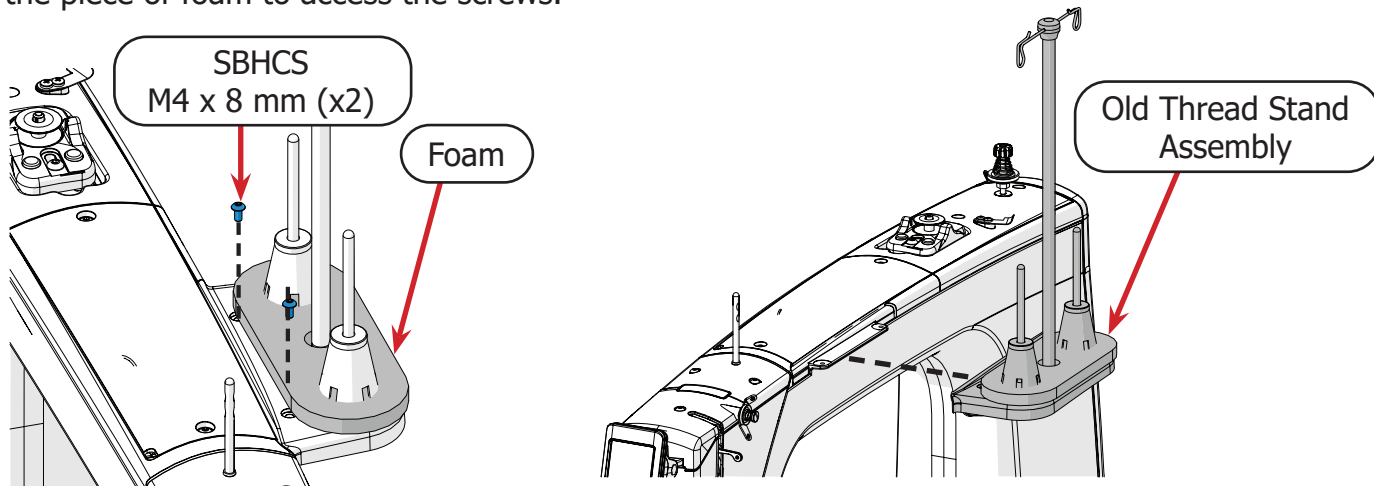
T-handle Allen Wrench 2.5 mm



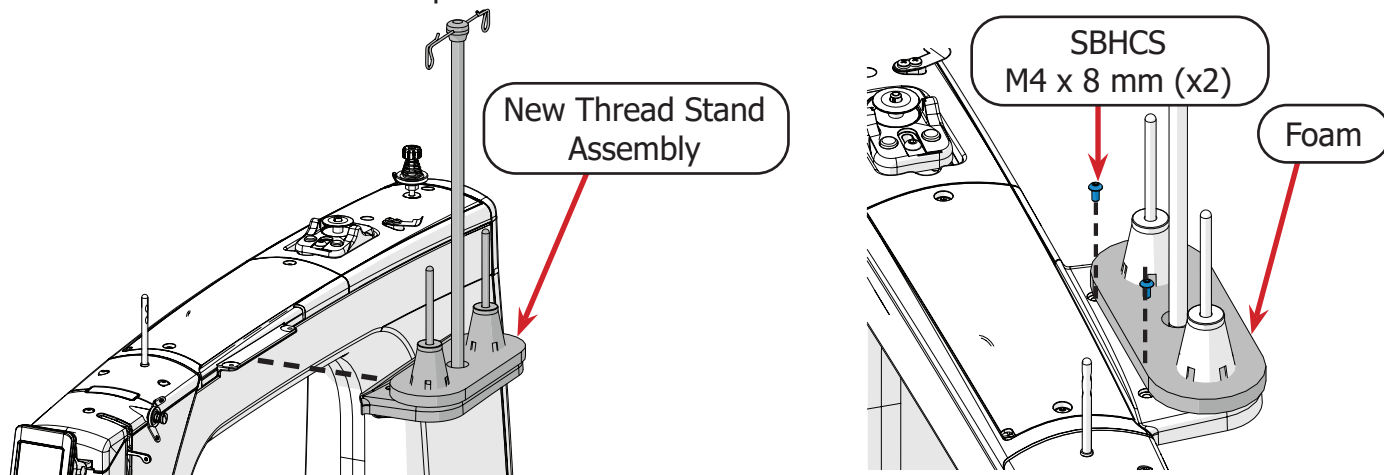
Instructions

Take the following steps to replace the thread stand assembly:

- 1 Use the 2.5 mm Allen wrench to remove the two **M4 x 8 mm SBHCS screws** and remove the **old thread stand assembly** from the right side of the machine. You may need to push aside the piece of foam to access the screws.



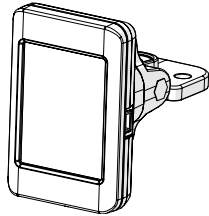
- 2 Slide the **new thread stand assembly** over the screw holes on the small lip on the right side of the machine and use the 2.5 mm Allen wrench and two **SBHCS M4 x 8 mm screws** to fasten the thread stand in place.



Replacing the Display

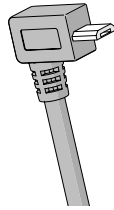
Parts & Tools Needed:

2.4-Inch Touch Display



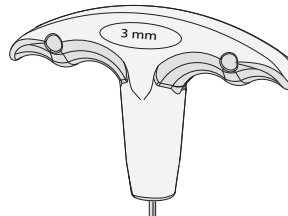
SMP-09-15716

Display Cable

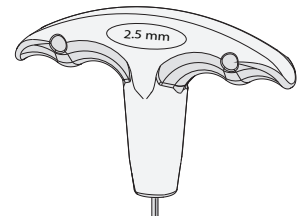


SMP-02-15727

T-handle Allen Wrench 3 mm



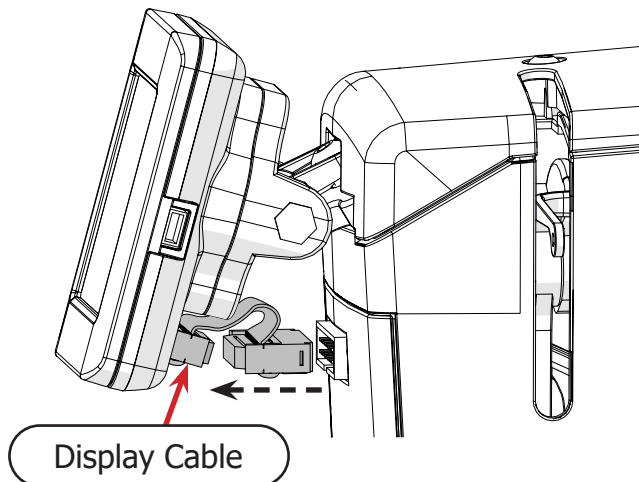
T-handle Allen Wrench 2.5 mm



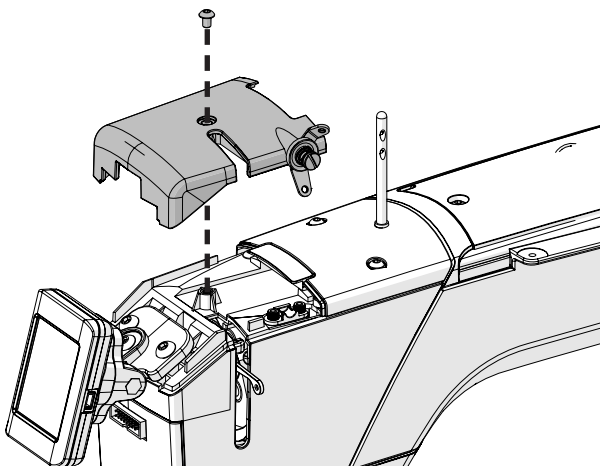
Instructions

Take the following steps to replace the display:

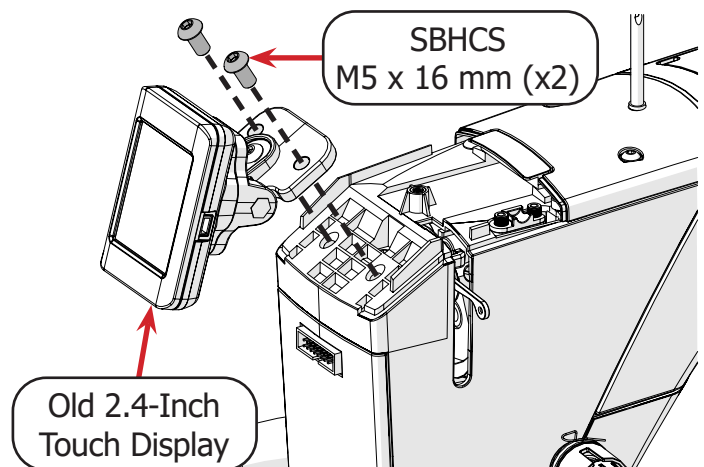
- 1 Turn off the machine and unplug the **display cable**.



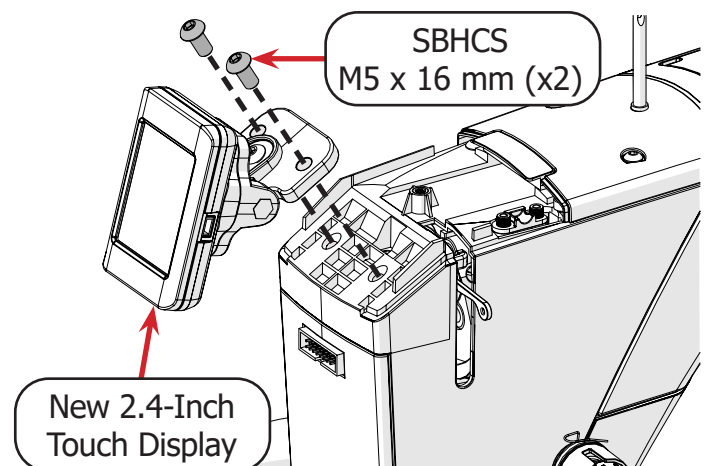
- 2 Use the 2.5 mm Allen wrench to remove the cover behind the display.



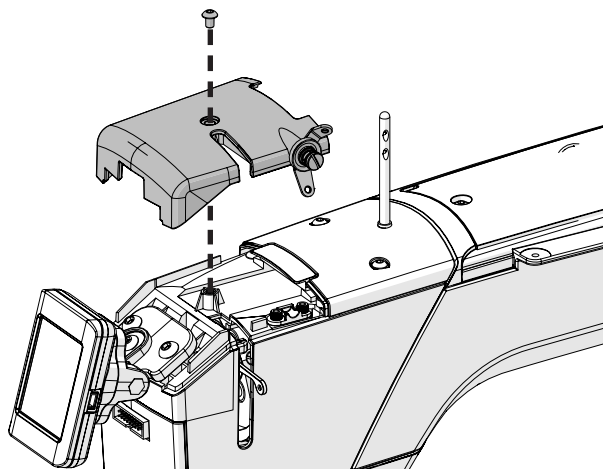
- 3 Use the 3 mm Allen wrench to remove the two **M5 x 16 mm SBHCS** and then remove the **old 2.4-inch touch display**.



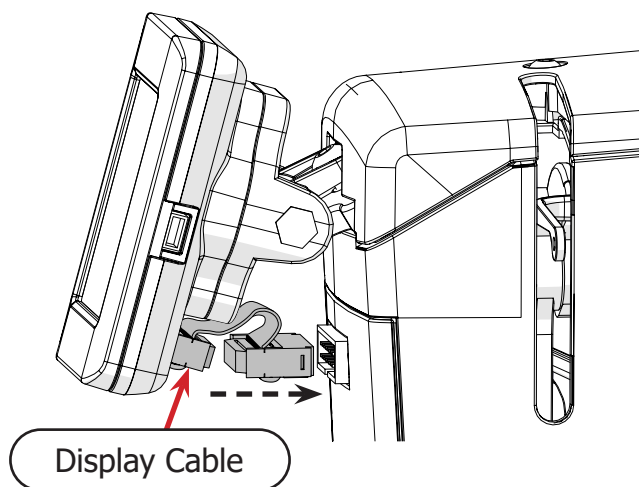
- 4 Attach the **new 2.4-inch touch display** with two **M5 x 16 mm SBHCS** and the 3 mm Allen wrench.



- 5 Re-attach the plastic cover with the 2.5 mm Allen wrench.



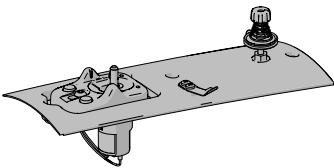
- 6 Plug the **display cable** back into the port behind the display.



Replacing the Bobbin Winder System

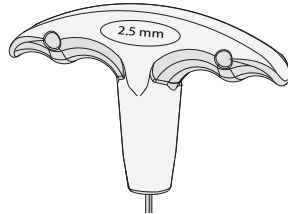
Parts & Tools Needed:

Bobbin Winder System



SMP-09-16394

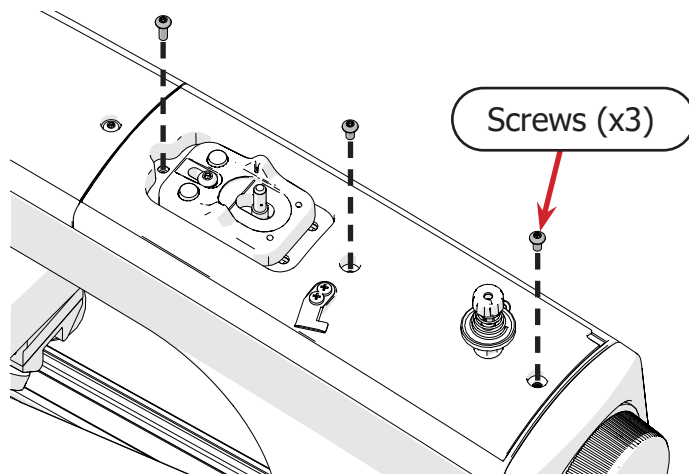
T-handle Allen Wrench 2.5 mm



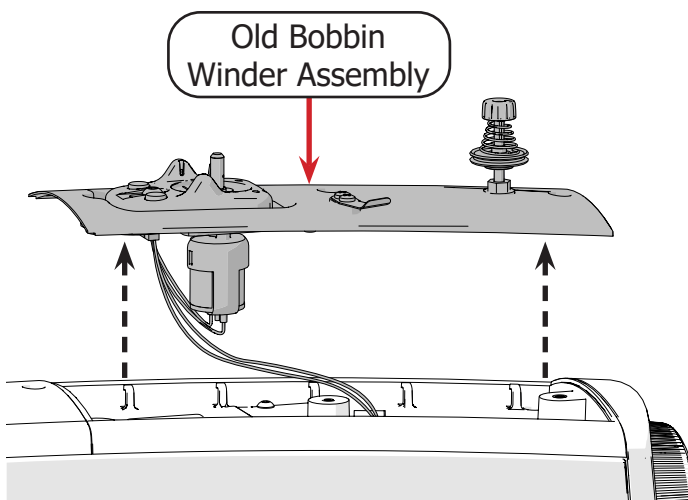
Instructions

Take the following steps to replace the bobbin winder:

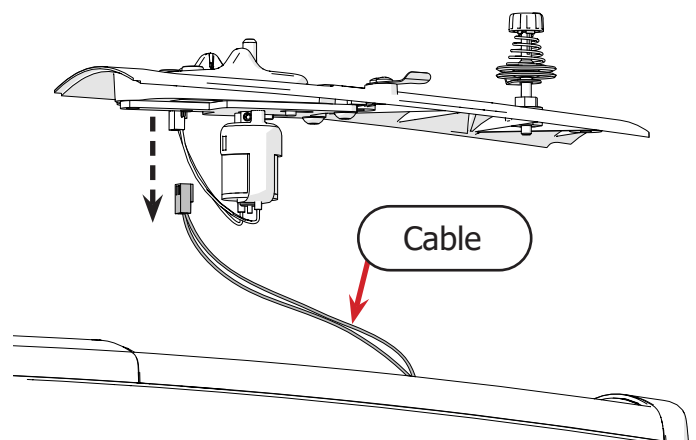
- 1 Use the 2.5 mm Allen wrench to remove the three **screws** holding the bobbin winder system to the machine.



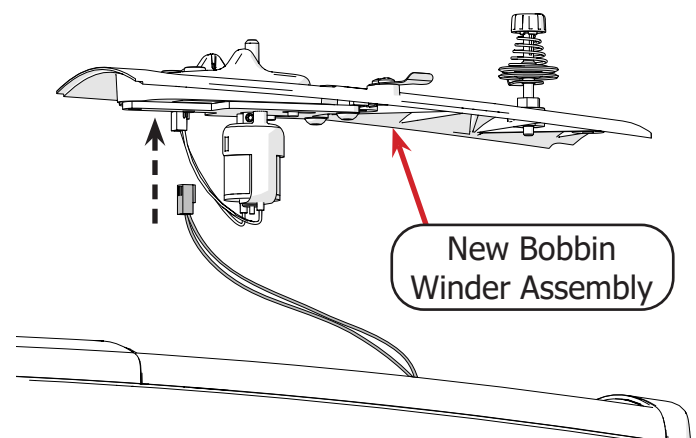
- 2 Lift the **old bobbin winder system** part way off of the machine.



- 3 Unplug the **cable** that is running down into the machine.

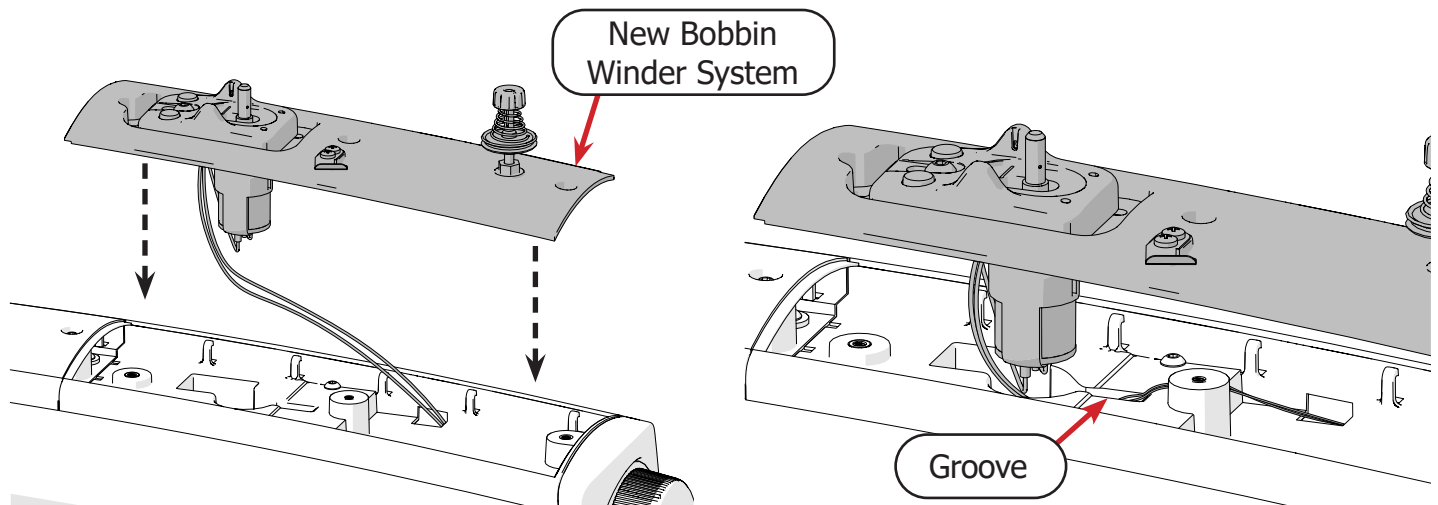


- 4 Plug the cable into the **new bobbin winder system**.

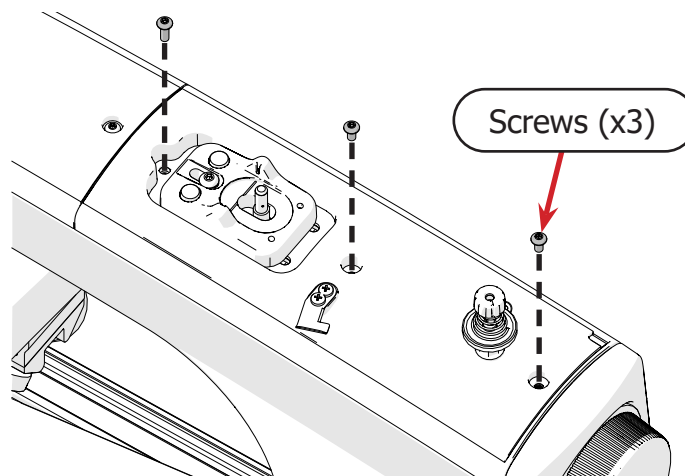


Replacing the Bobbin Winder System (continued)

- 5 Place the **new bobbin winder system** onto the back of the machine so that the cable goes through the **groove** behind the motor.



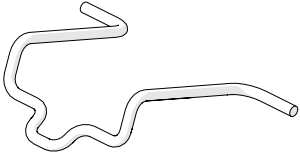
- 6 Use the 2.5 mm Allen wrench to secure the bobbin winder system in place with the three **screws** that were removed earlier.



Replacing the Power Cord Retainer

Parts & Tools Needed:

Power Cord Retainer

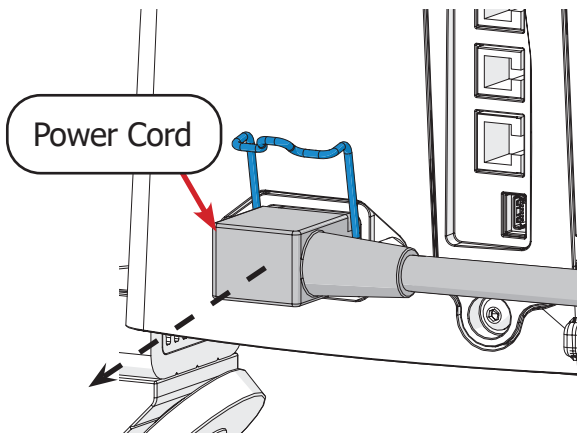


SMP-08-14475

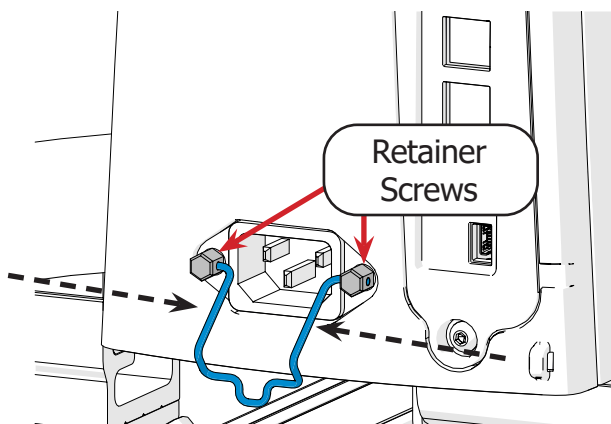
Instructions

Take the following steps to replace the power cord retainer:

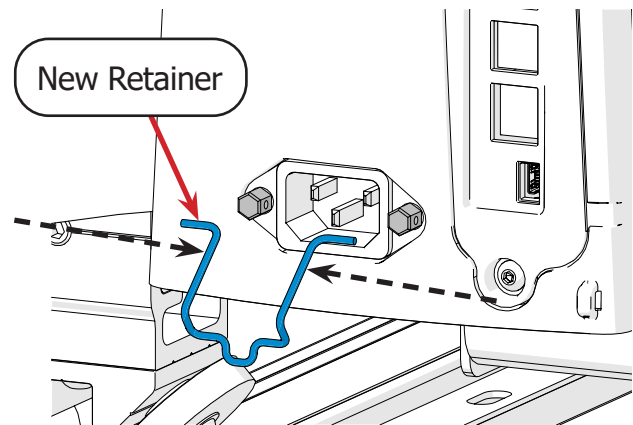
- 1 Turn off the machine and then lift the power cable retainer (blue) and unplug the **power cord** from the machine.



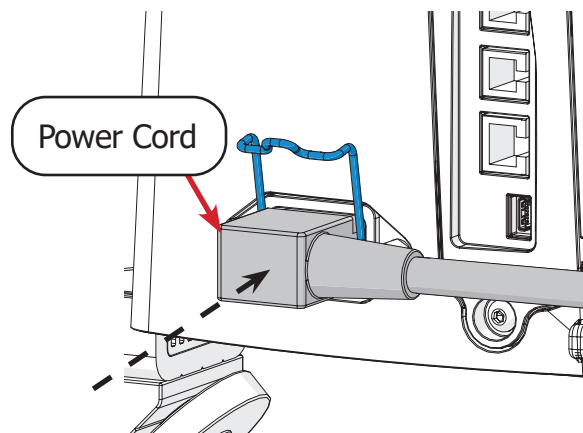
- 2 Remove the retainer by squeezing it on the sides near the retainer screws and pulling the ends out of the **screws**.



- 3 Install the **new retainer** by squeezing the sides and inserting the ends into the retainer screws.



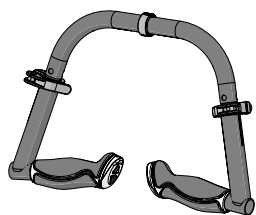
- 4 Lift the power cable retainer (blue) and plug the **power cord** into the machine.



Replacing the Handlebars

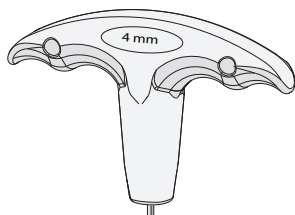
Parts & Tools Needed:

Handlebar Assembly



SMP-08-14066

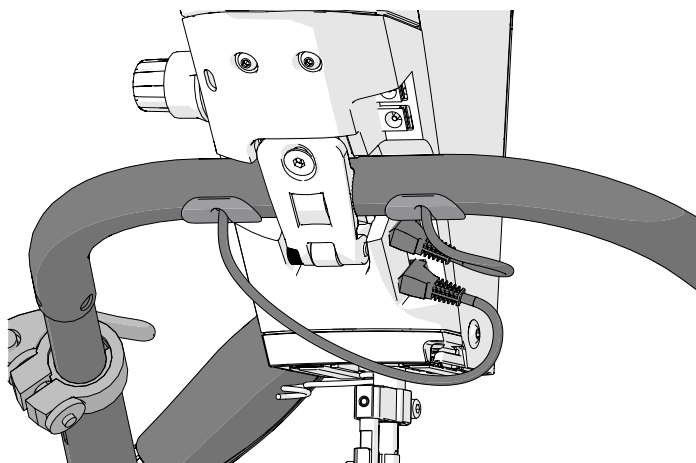
T-handle Allen Wrench 4 mm



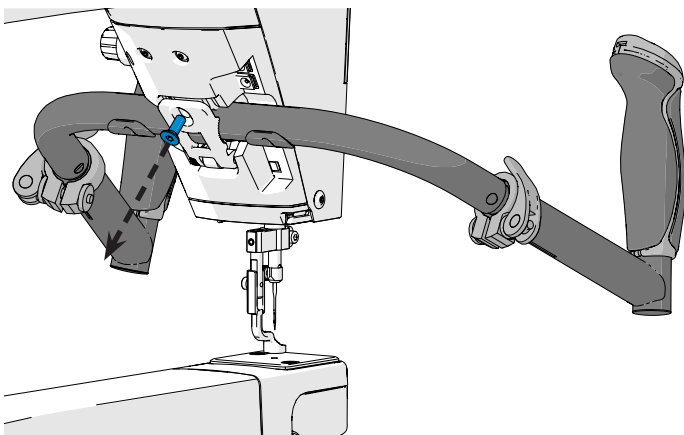
Instructions

Take the following steps to replace the handlebars:

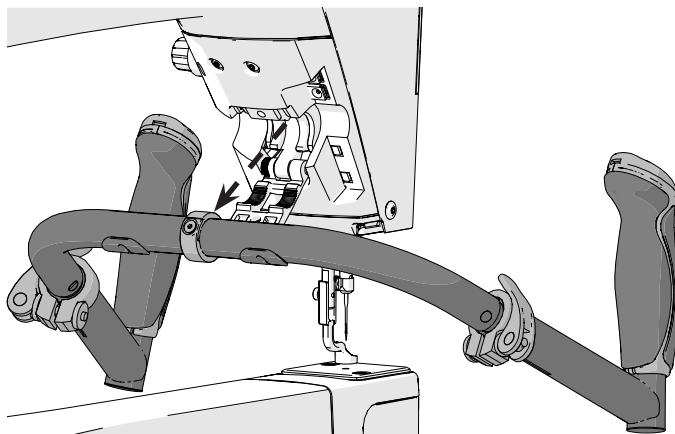
- 1 Turn off the machine and unplug the handlebar cables.



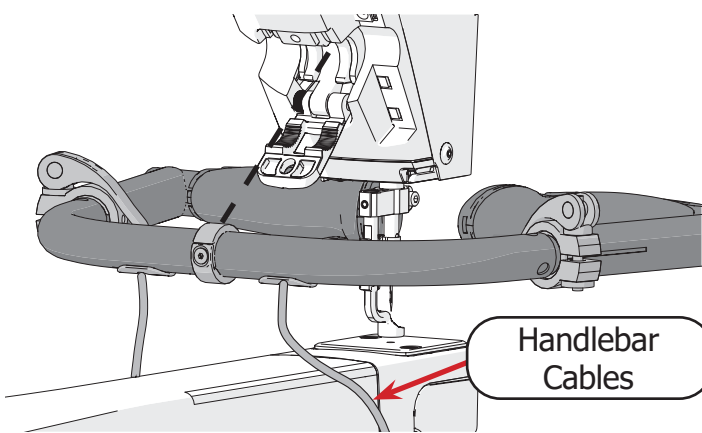
- 2 Use the 4 mm Allen wrench to remove the handlebar clamp screw



- 3 Remove the handlebars from machine.

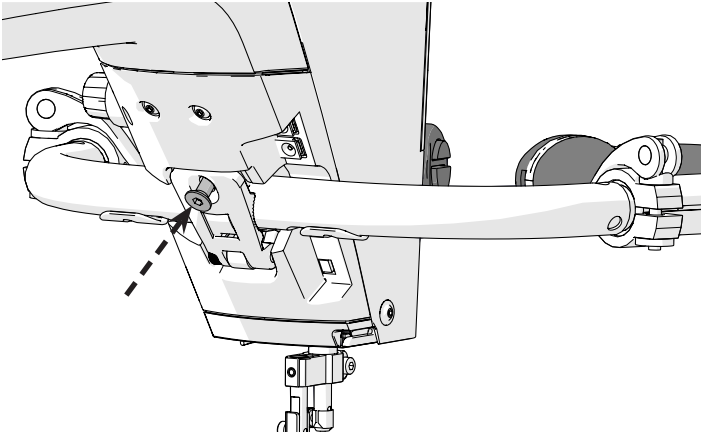


- 4 Slide the new handlebars into the slot so the **handlebar cables** are on the bottom.

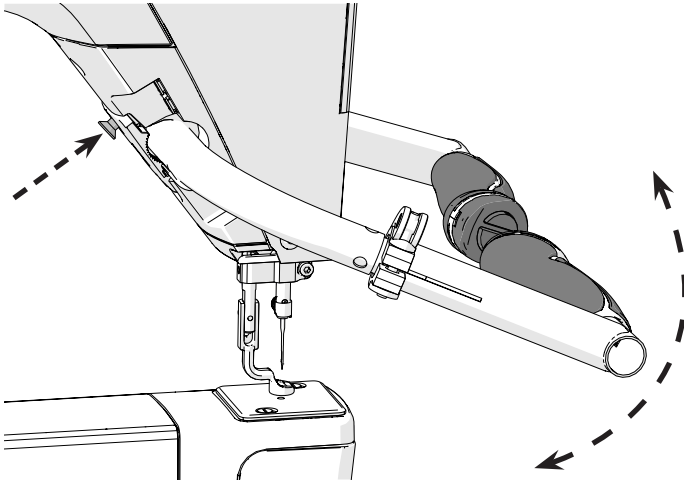


Replacing the Handlebars (continued)

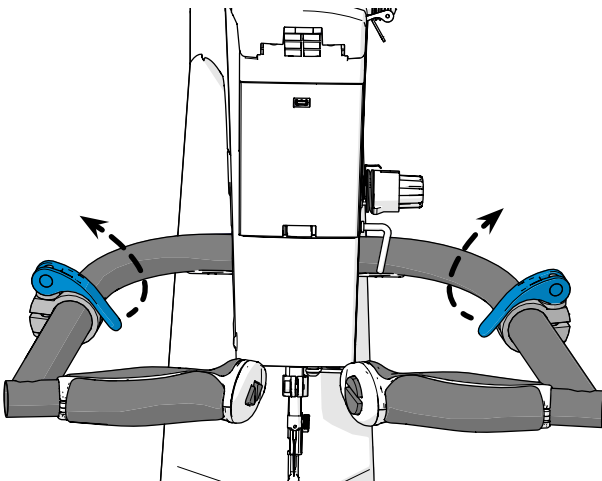
- 5 Close the cover and loosely screw in the cover screw.



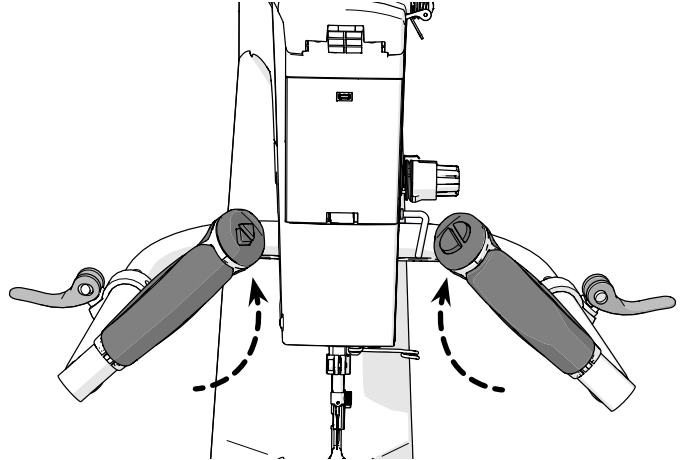
- 6 Hold the handlebars at the desired angle and tighten the clamp screw.



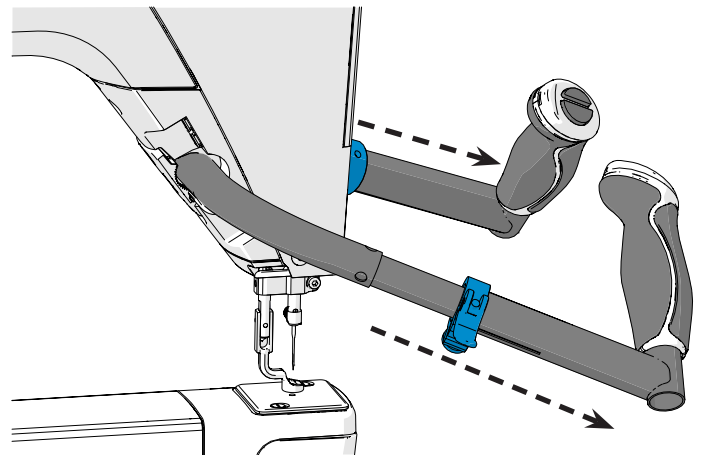
- 7 Open the **handlebar levers** (shown in blue).



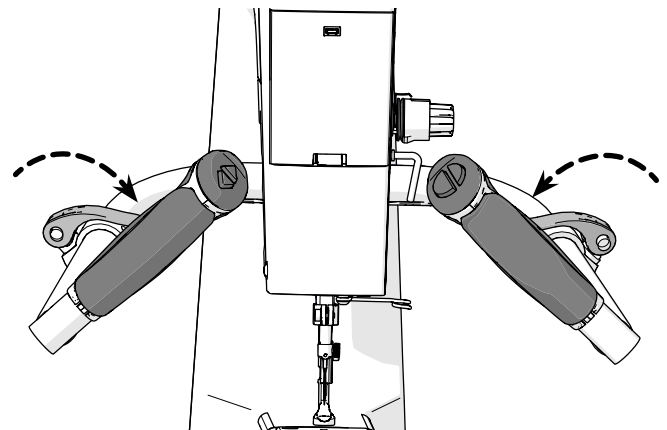
- 8 Twist the controls until they are comfortable to hold and operate.



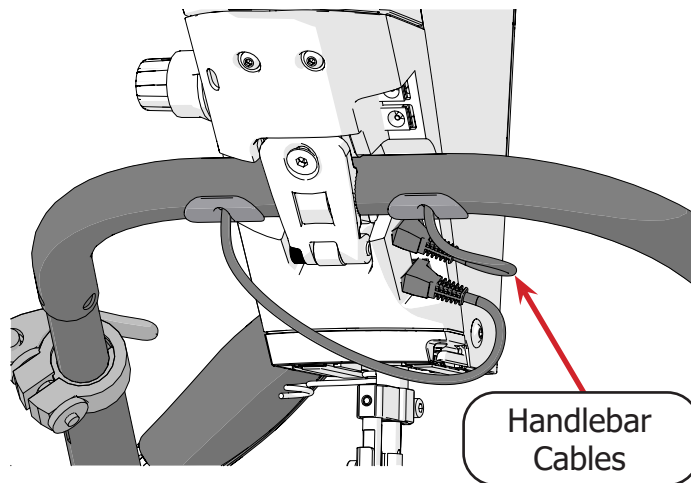
- 9 If desired, extend the handles outward to improve the reach of the machine.



- 10 Close the handlebar levers (shown in blue). If needed, loosen the clamp screw and repeat step 4.



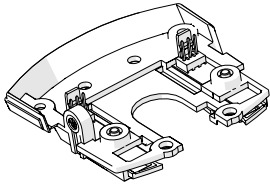
- 11 Plug the **handlebar cables** into the ports with the matching color.



Replacing the LED Lamp

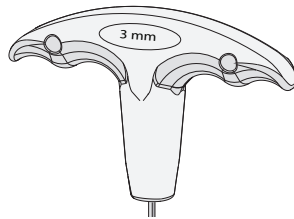
Parts & Tools Needed:

LED Lamp Assembly

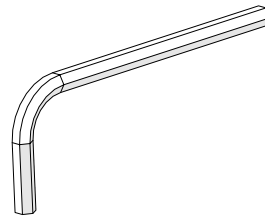


SMP-09-14863

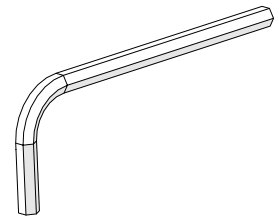
T-handle Allen Wrench 3 mm



L-shaped Allen Wrench 2.5 mm



L-shaped Allen Wrench 2 mm

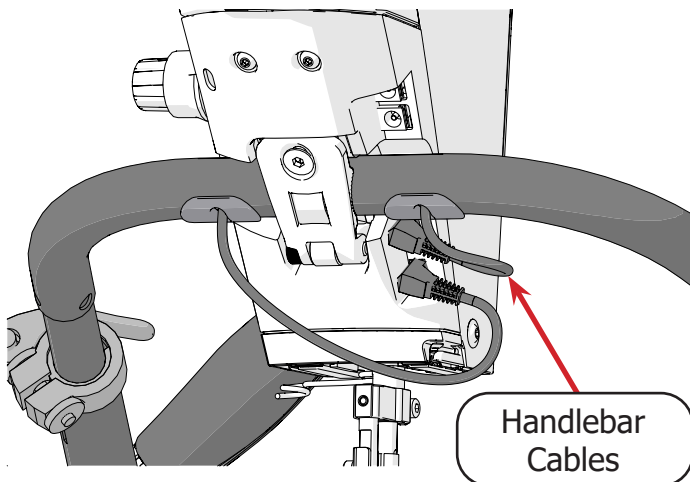


To avoid damaging the LED Lamp Assembly, keep it in the packaging until you are ready to install it.

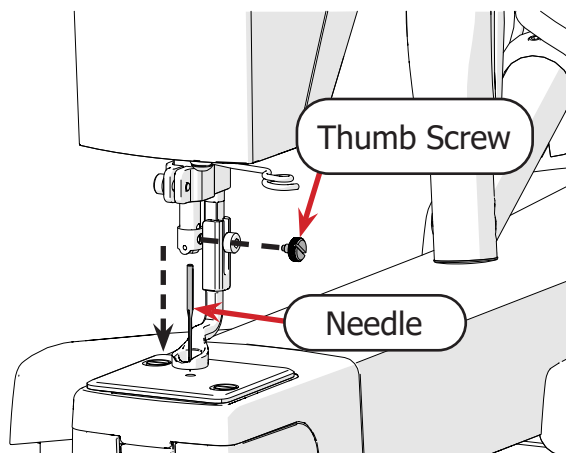
Instructions

Take the following steps to replace the LED Lamp:

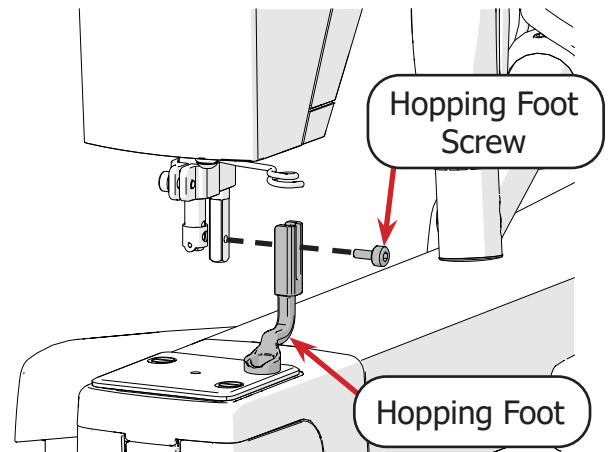
- 1 Turn off the machine and unplug the **handlebar cables**.



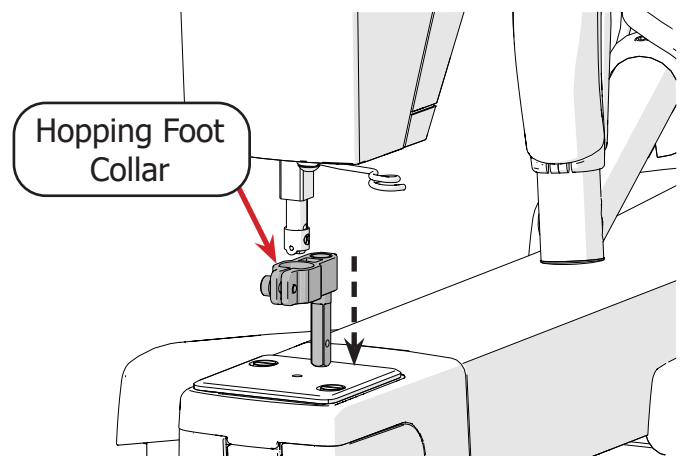
- 2 Use the flat head screwdriver to remove the needle **thumb screw** and the **needle**.



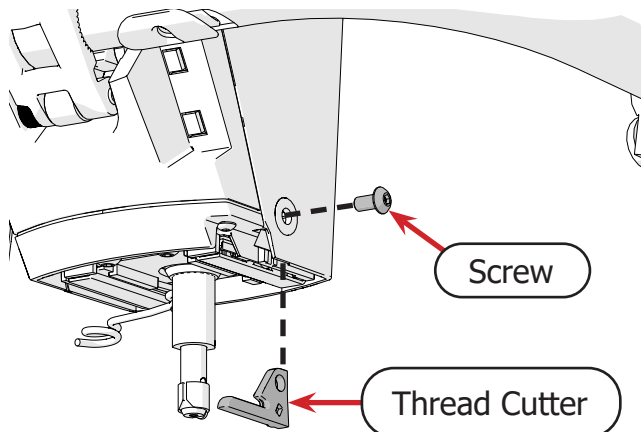
- 3 Use the 3 mm Allen wrench to remove the **hopping foot screw** and **hopping foot**.



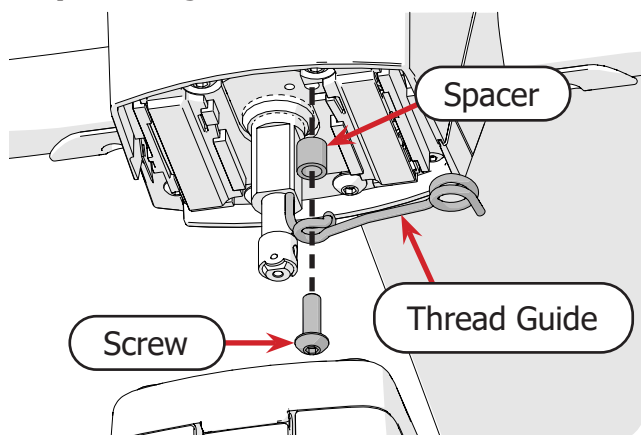
- 4 Use the 3 mm Allen wrench to loosen the screw in the **hopping foot collar** and remove the collar.



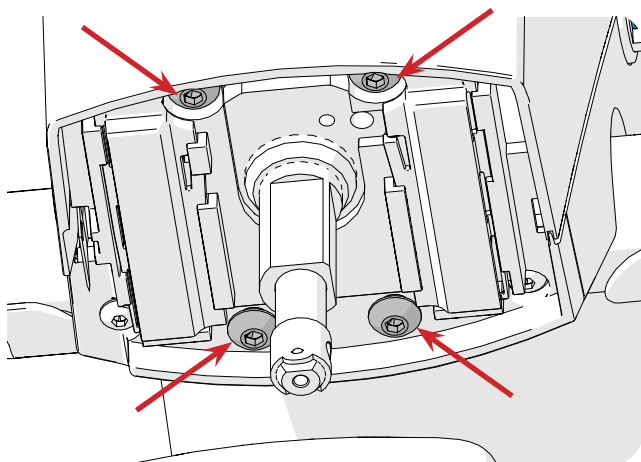
- 5 Use the 2.5 mm Allen wrench to remove the **screw** holding the **thread cutter** to side of the machine. Keep the screw and thread cutter together.



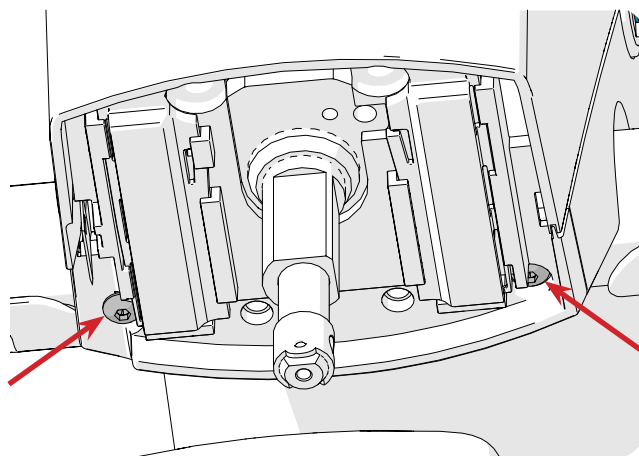
- 6 Use the 2.5 mm Allen wrench to remove the **screw** holding the **thread guide** to LED lamp. Keep the thread guide, screw, and **spacer** together.



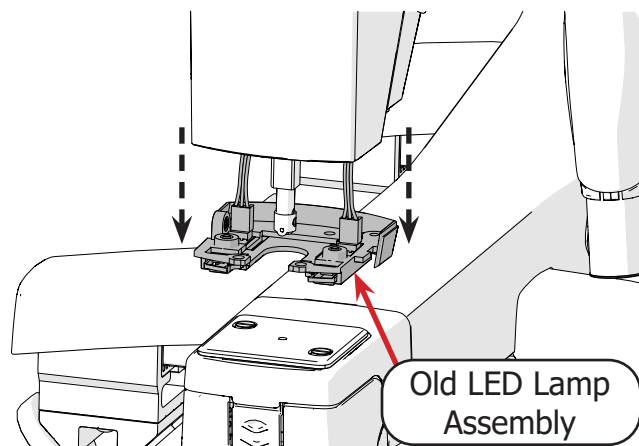
- 7 Use the 2.5 mm Allen wrench to remove the four **screws** around the needle bar.



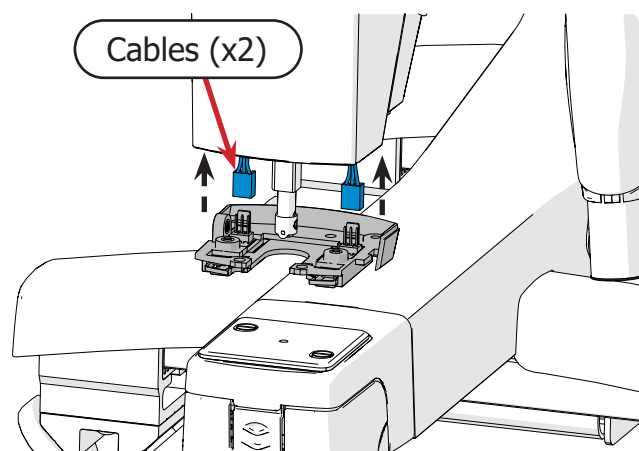
- 8 Use the 2 mm Allen wrench to remove the two smaller **screws** on the back of the LED lamp.



- 9 Pull the **old LED lamp assembly** down around the needle bar.

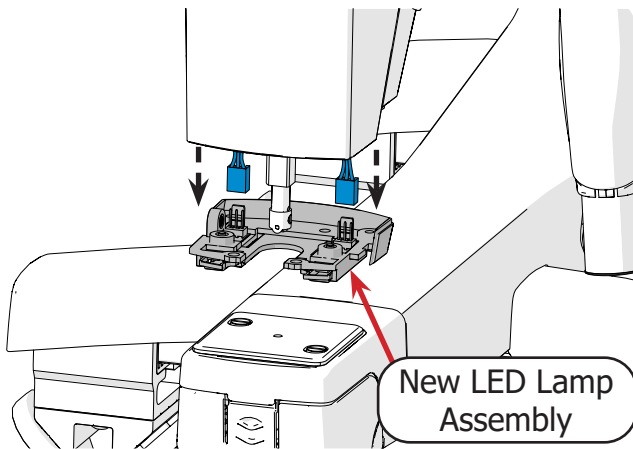


- 10 Unplug the two **cables** and remove the old LED lamp assembly.

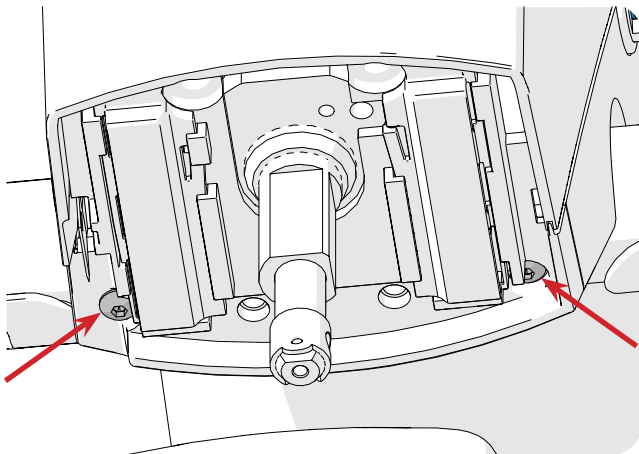


Replacing the LED Lamp (continued)

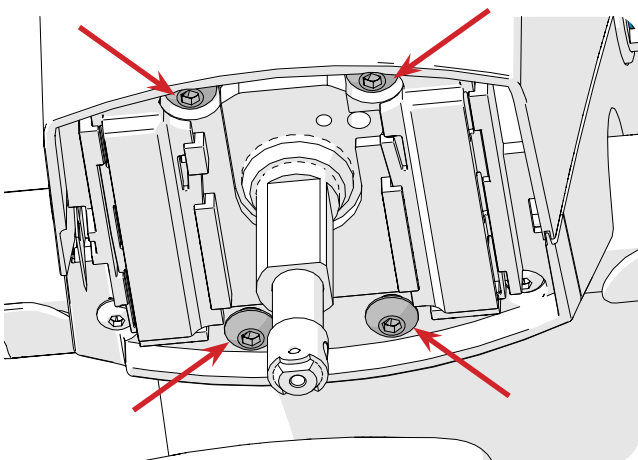
- 11 Plug the cables into the **new LED lamp assembly**.



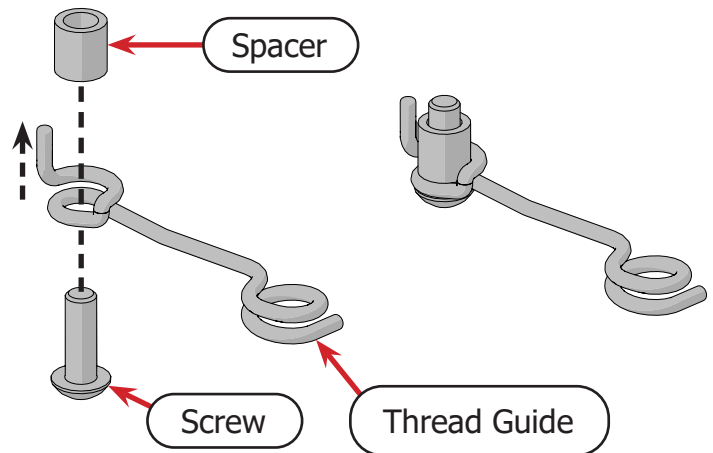
- 12 Attach the new LED lamp around the needle bar using the two smaller screws and the 2 mm Allen wrench.



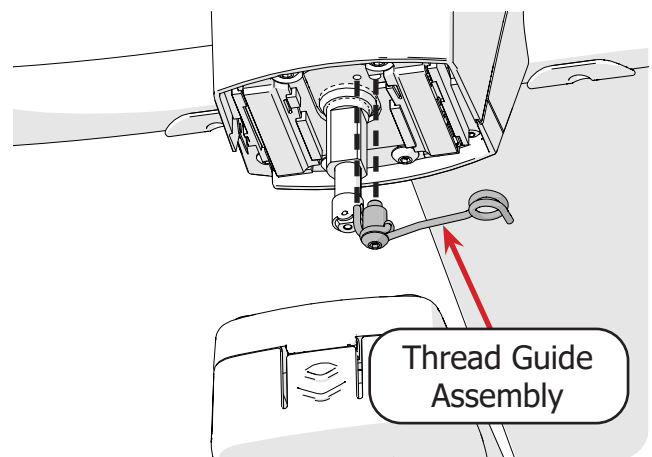
- 13 Use the 2.5 mm Allen wrench to reattach the four **screws** around the needle bar.



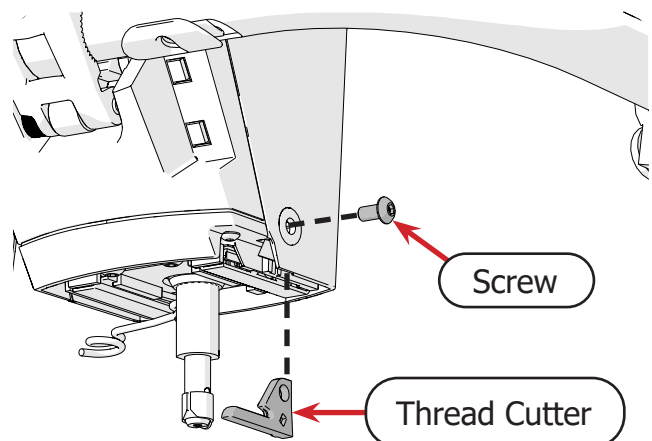
- 14 Assemble the **thread guide** with the **spacer** next to the wire that points up and then place the **screw** through the spacer.



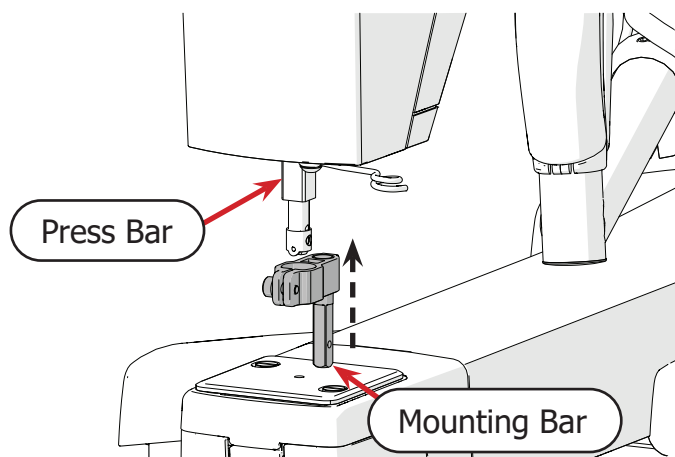
- 15 Use the 2.5 mm Allen wrench to reattach the **thread guide assembly** to the LED lamp.



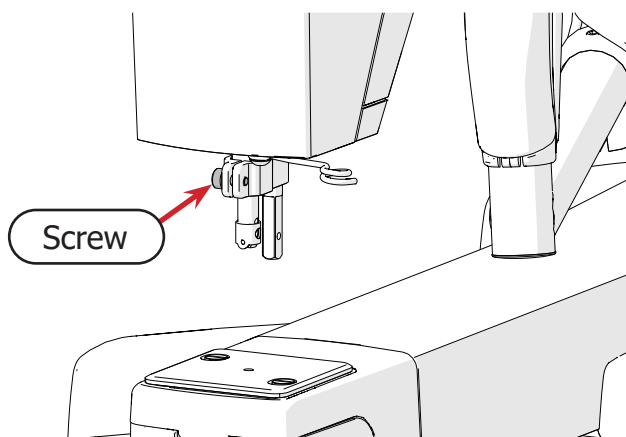
- 16 Reattach the **thread cutter** to side of the machine using the same screw and the 2.5 mm Allen wrench.



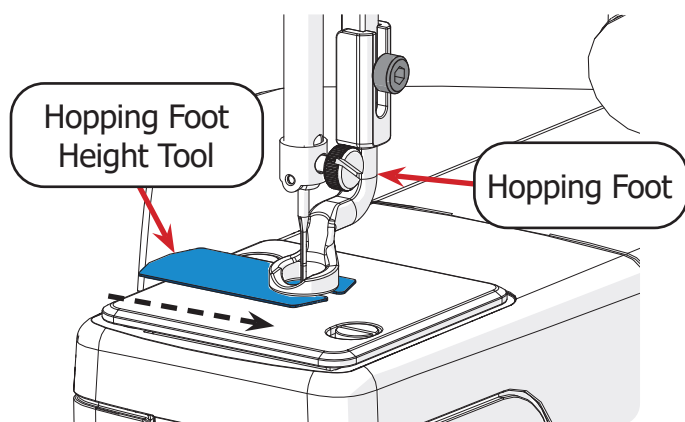
- 17 Return the hopping foot collar to the **press bar** with the **mounting bar** in the back.



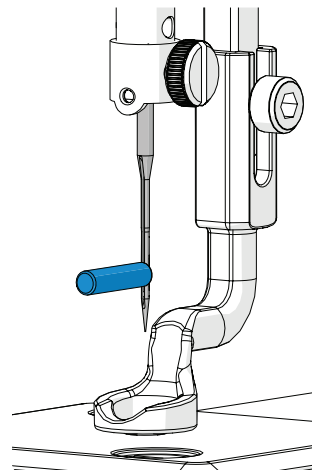
- 18 Secure the hopping foot collar by tightening the **screw** with the 3 mm Allen wrench.



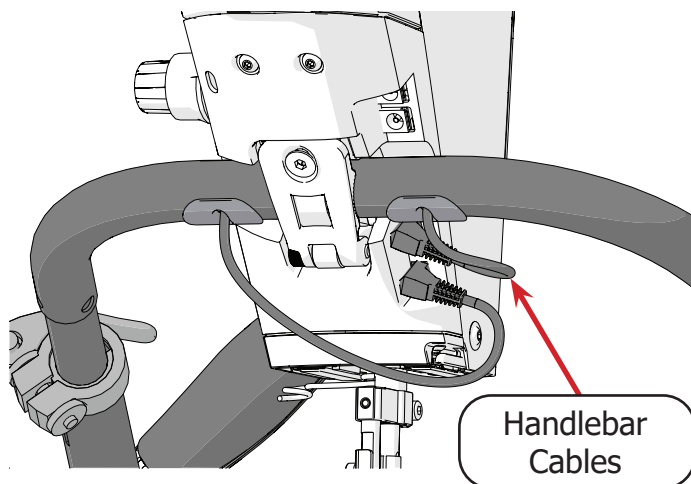
- 19 Replace the hopping foot adjust the hopping foot height (see "Changing the Hopping Foot" on page 8 for instructions).



- 20 Replace the needle (see "Changing the Needle" on page 6 for installation instructions).



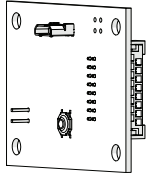
- 21 Plug the **handlebar cables** into the ports with the matching color sticker.



Replacing the Front Display Board

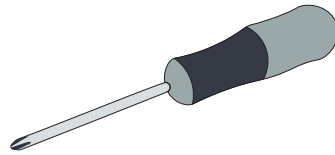
Parts & Tools Needed:

Front Display Board



SMP-02-16027

Phillip's Head
Screwdriver

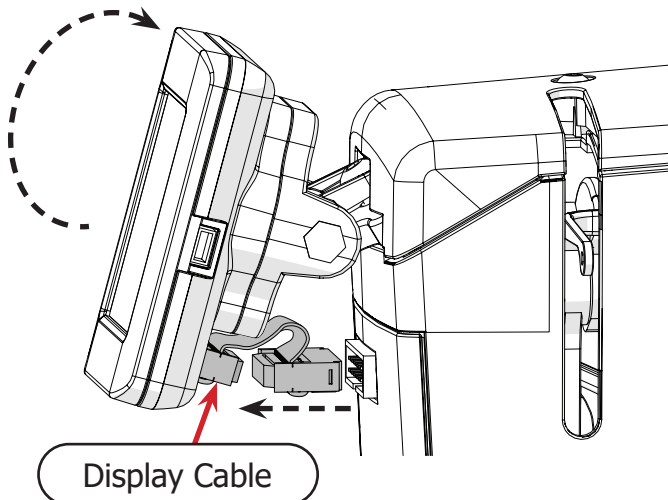


To avoid damaging the front display board circuitry, keep it in the packaging until you are ready to install it.

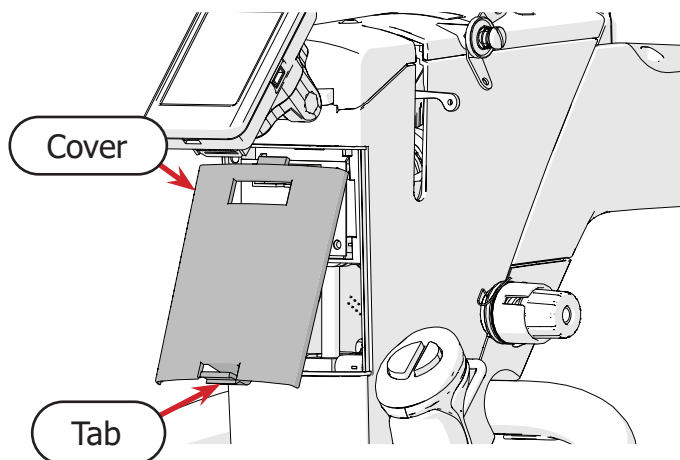
Instructions

Take the following steps to replace the front display board:

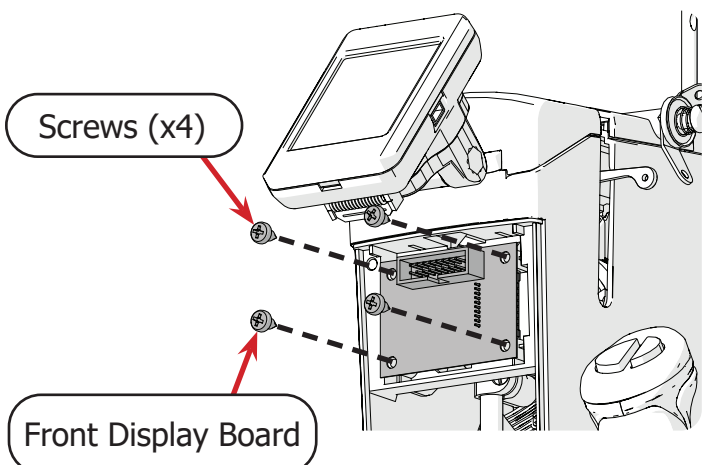
- 1 Tilt the display back and unplug the bottom of the display cable from the machine.



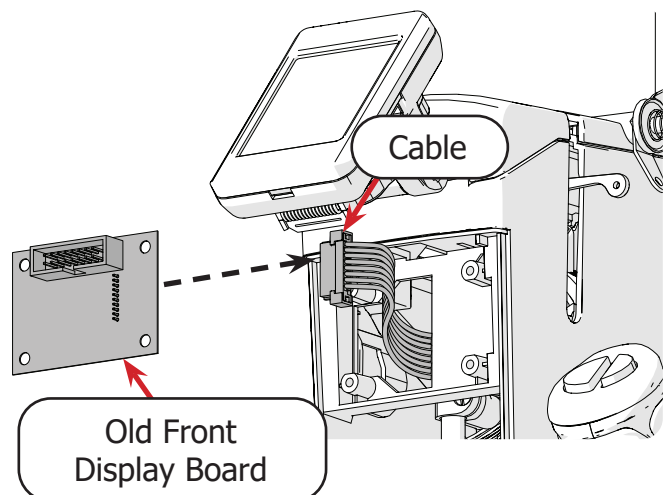
- 2 Remove the **cover** for the front display board by pressing up on the **tab** on the bottom and then pulling it out.



- 3 Use the Phillip's head screwdriver to remove the four **screws** holding the **front display board** in place.

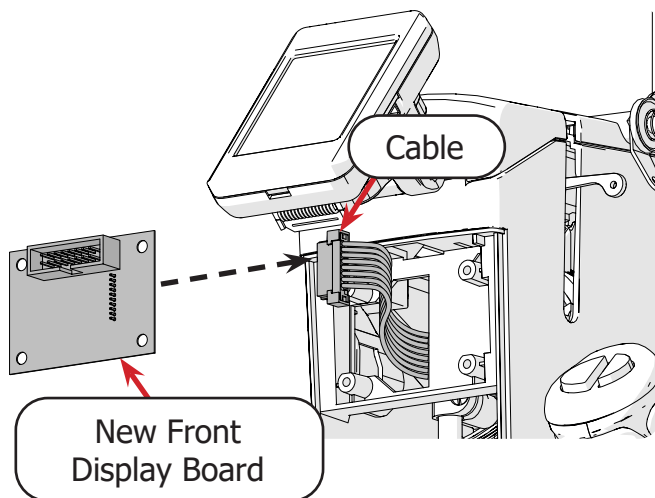


- 4 Unplug the cable from the back of the old front display board.

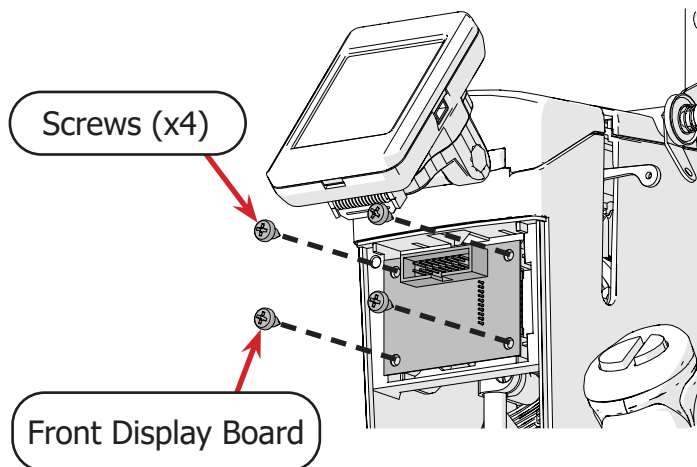


Replacing the Front Display Board (continued)

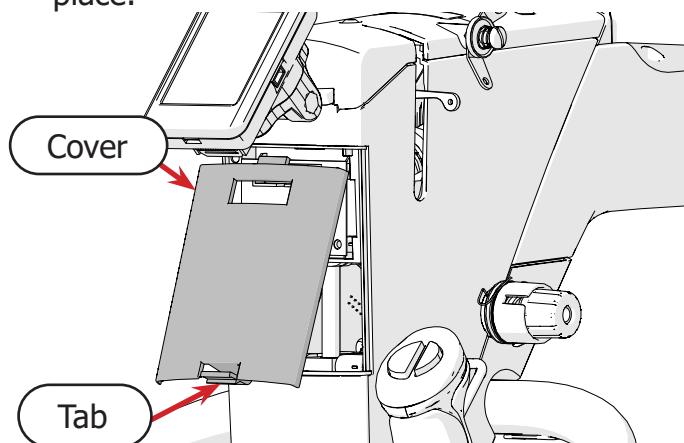
- 5 Plug the **cable** into the back of the **new front display board**.



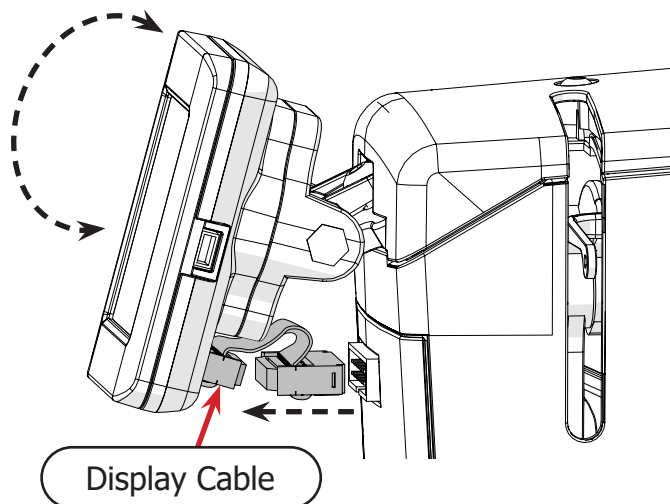
- 6 Use the Phillip's head screwdriver and the four **screws** to secure the front display board to the machine.



- 7 Replace the cover by placing the tab on the top of the cover in the slot above the front display board and pressing the cover in place.



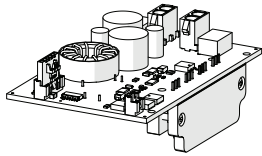
- 8 Plug the display back into the machine and adjust the display to a comfortable angle.



Replacing the Motor Driver Board

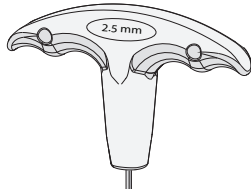
Parts & Tools Needed:

Motor Driver Board

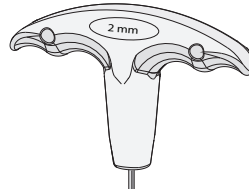


SMP-09-14161

T-handle Allen Wrench 2.5 mm



T-handle Allen Wrench 2 mm

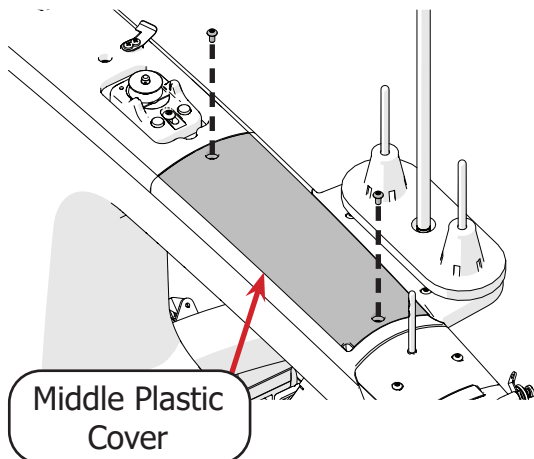


To avoid damaging the motor driver board circuitry, keep it in the packaging until you are ready to install it.

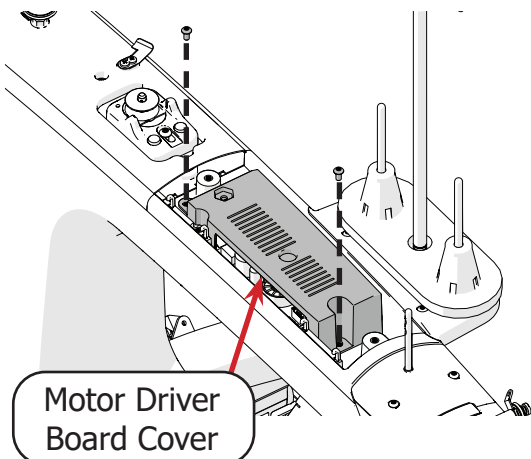
Instructions

Take the following steps to replace the motor driver board:

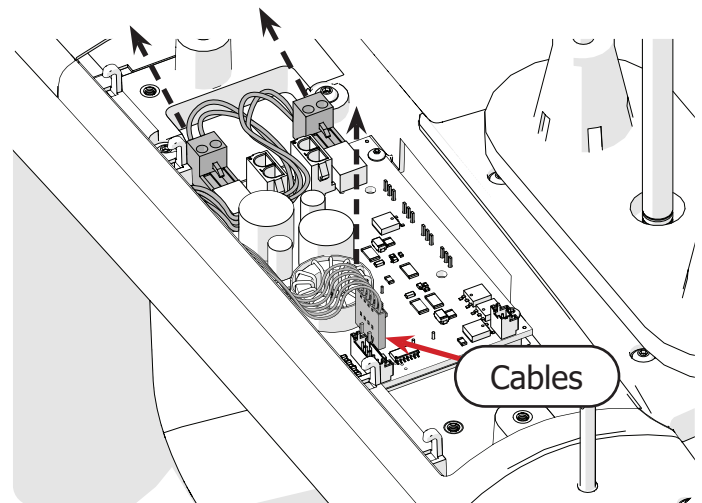
- 1 Use the 2.5 mm Allen wrench to remove the **middle plastic cover**.



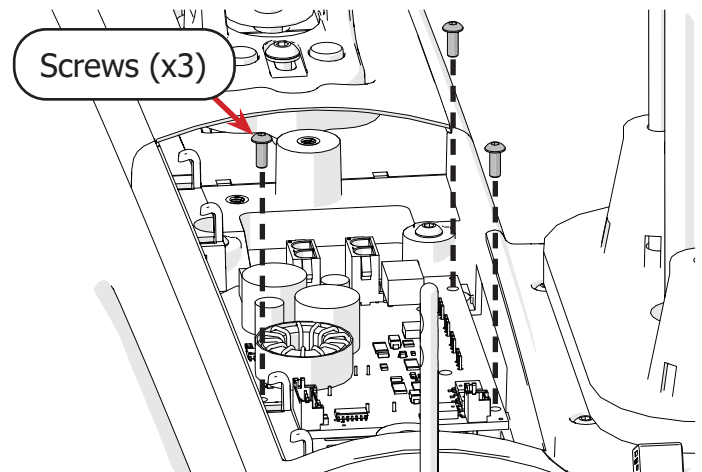
- 2 Use the 2.5 mm Allen wrench to remove the **motor driver board cover**.



- 3 Unplug the **cables** from the motor driver board.

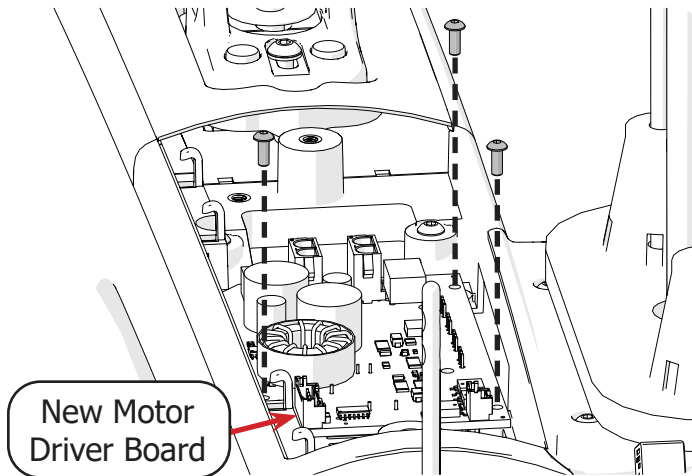


- 4 Use the 2 mm Allen wrench to remove the three **screws** securing the motor driver board.

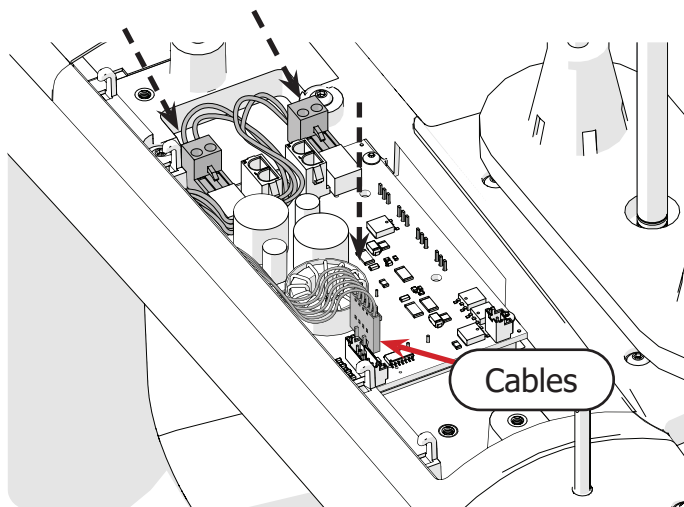


Replacing the Motor Driver Board (continued)

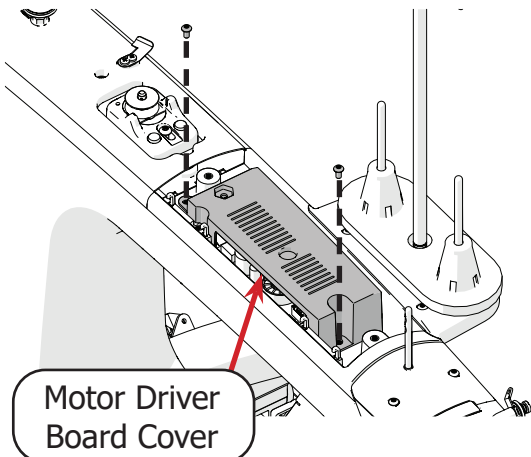
- 5 Use the 2 mm Allen wrench to secure the new motor driver board with the three screws.



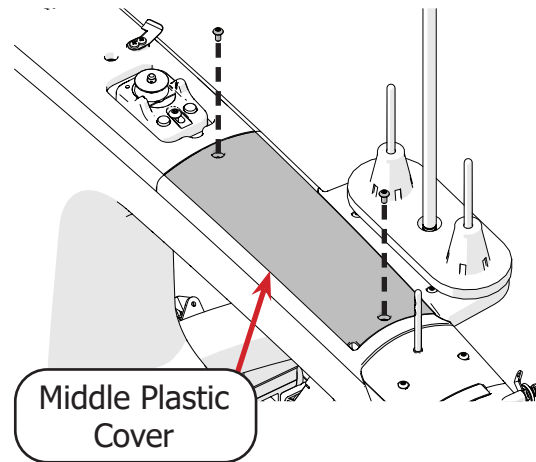
- 3 Plug the **cables** into the motor driver board.



- 2 Use the 2.5 mm Allen wrench to reattach the **motor driver board cover**.



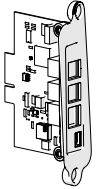
- 1 Use the 2.5 mm Allen wrench to reattach the **middle plastic cover**.



Replacing the Main Board

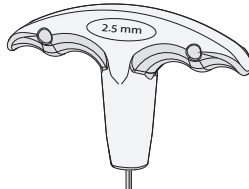
Parts & Tools Needed:

Main Board Assembly



SMP-09-14303

T-handle Allen Wrench 2.5 mm

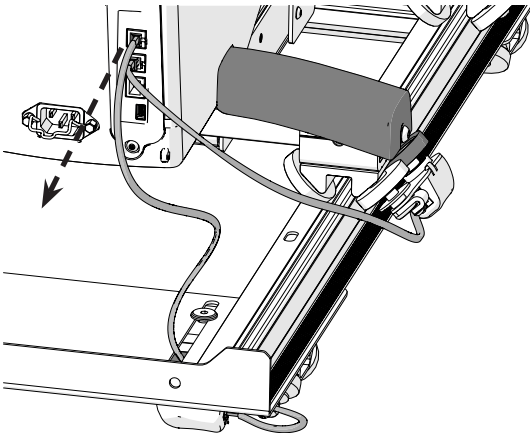


To avoid damaging the main board circuitry, keep it in the packaging until you are ready to install it.

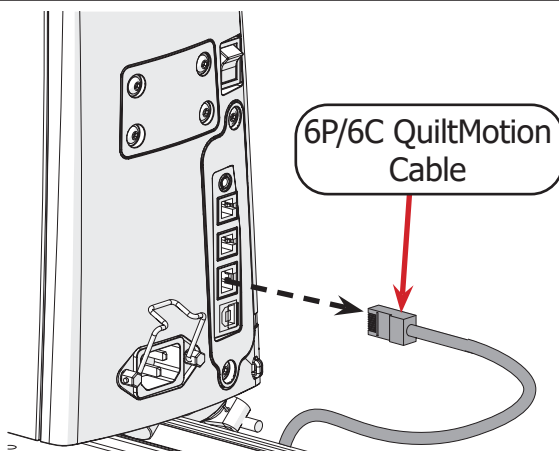
Instructions

Take the following steps to replace the main board:

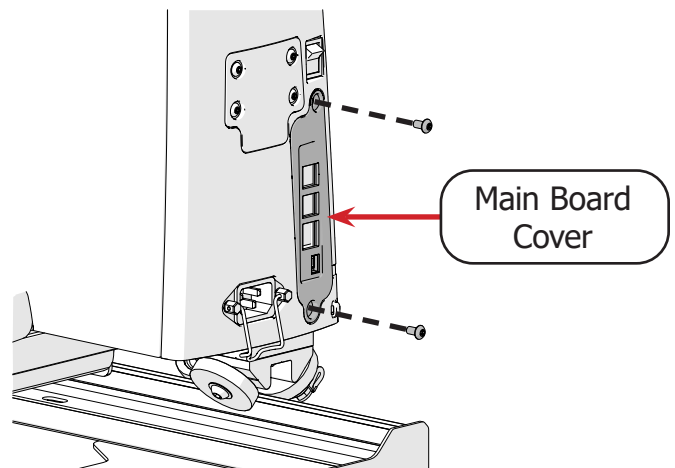
- 1 Power off the machine and unplug the encoders from the back.



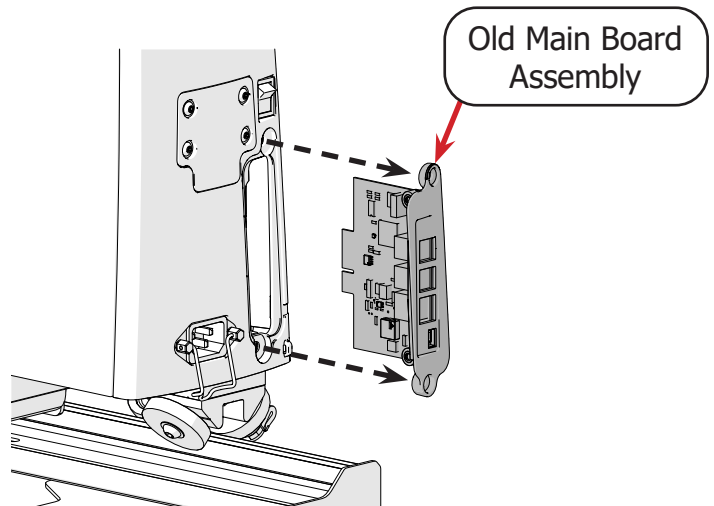
Note: If you have QuiltMotion installed, unplug the **6P/6C QuiltMotion cable** from the back of the machine.



- 2 Use the 2.5 mm Allen wrench to remove the two screws holding the **main board cover** in place.

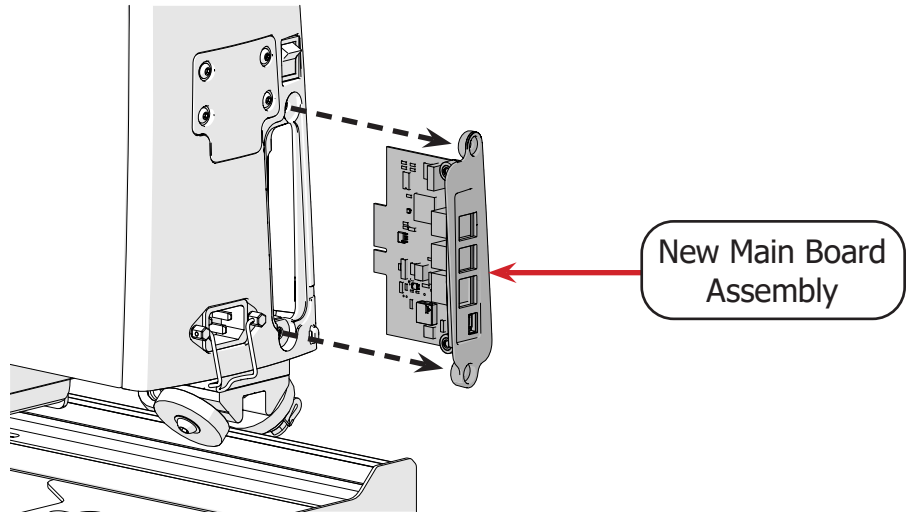


- 3 Remove the **old main board assembly** from the machine.

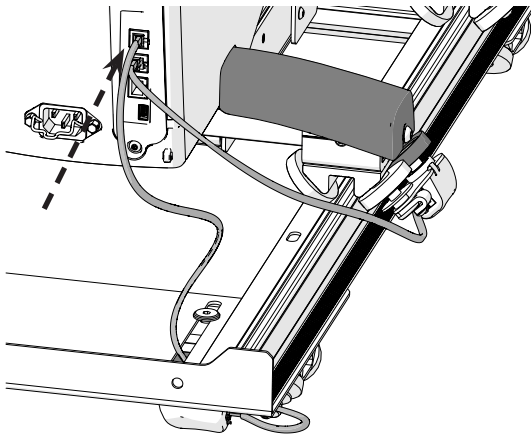


Replacing the Main Board (continued)

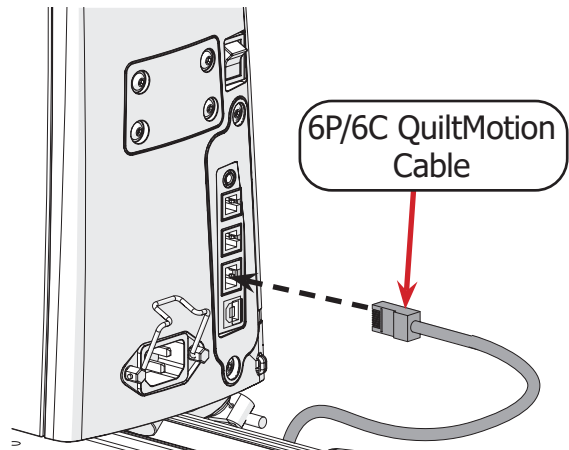
- Secure the **new main board assembly** in place using the two screws you removed earlier and the 2.5 mm Allen wrench.



- Plug the encoders back into the encoder ports with the matching sticker color.



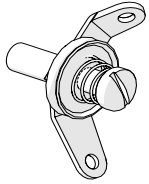
Note: If you have QuiltMotion installed, plug the **6P/6C QuiltMotion cable** back in as well.



Replacing the Small Thread Tensioner

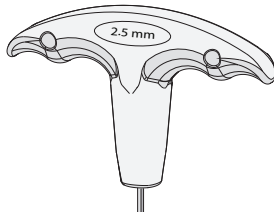
Parts & Tools Needed:

Small Tensioner

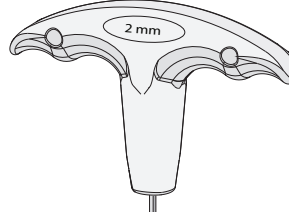


SMP-08-10015

T-handle Allen Wrench 2.5 mm



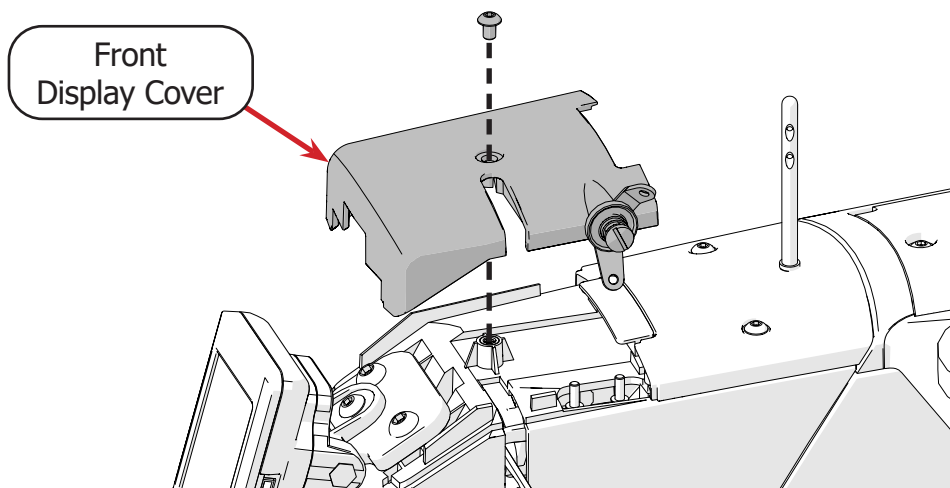
T-handle Allen Wrench 2 mm



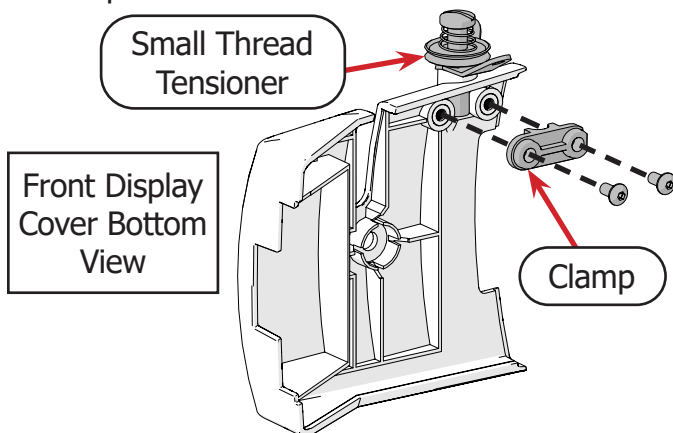
Instructions

Take the following steps to replace the small thread tensioner:

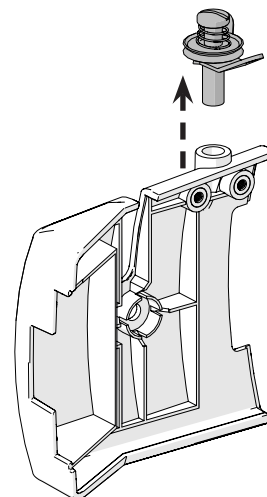
- 1 Use the 2.5 mm Allen wrench to remove the **front display cover** from the top of the machine.



- 2 Use the 2 mm Allen wrench to remove the **clamp** holding the **small thread tensioner** in place.

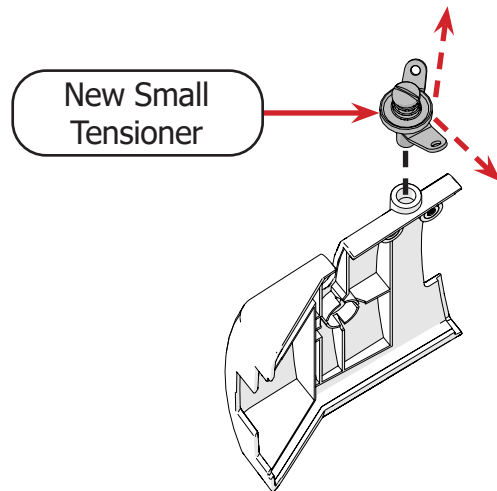


- 3 Remove the old small thread tensioner from the front display cover.

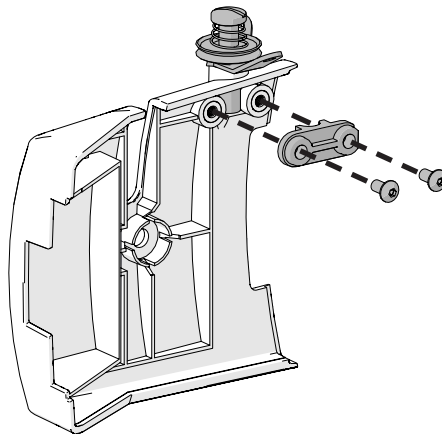


Replacing the Small Tensioner (continued)

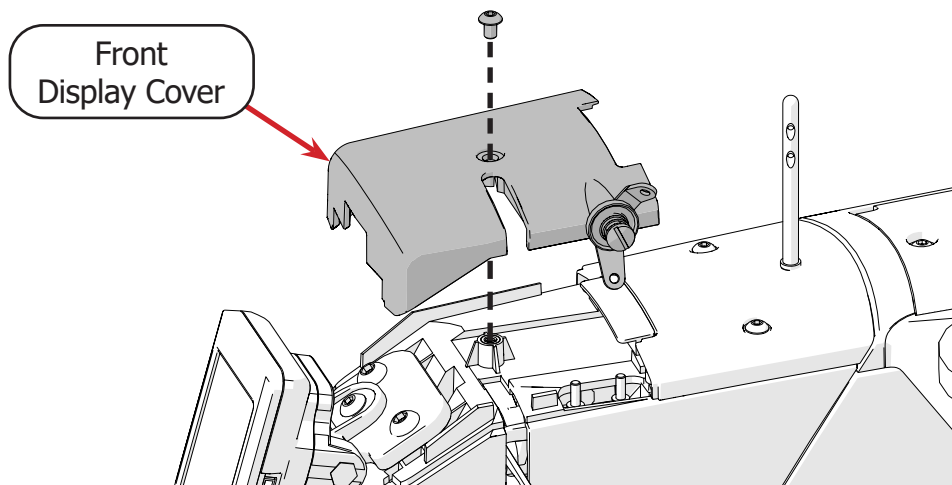
- 4 Place the **new small thread tensioner** in the front display cover with one thread guide pointing down and the other pointing up and to the right.



- 5 Tighten the clamp over the small thread tensioner using the 2 mm Allen wrench



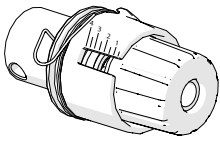
- 6 Replace the **front display cover** on the top of the machine using the 2.5 mm Allen wrench.



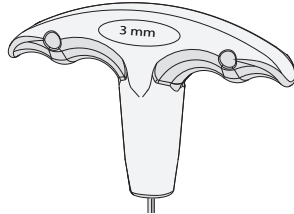
Replacing the Large Thread Tensioner

Parts & Tools Needed:

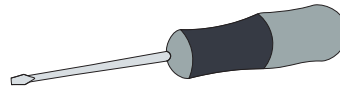
Large Tensioner



T-handle Allen Wrench 3 mm



Small Flat-Head Screwdriver

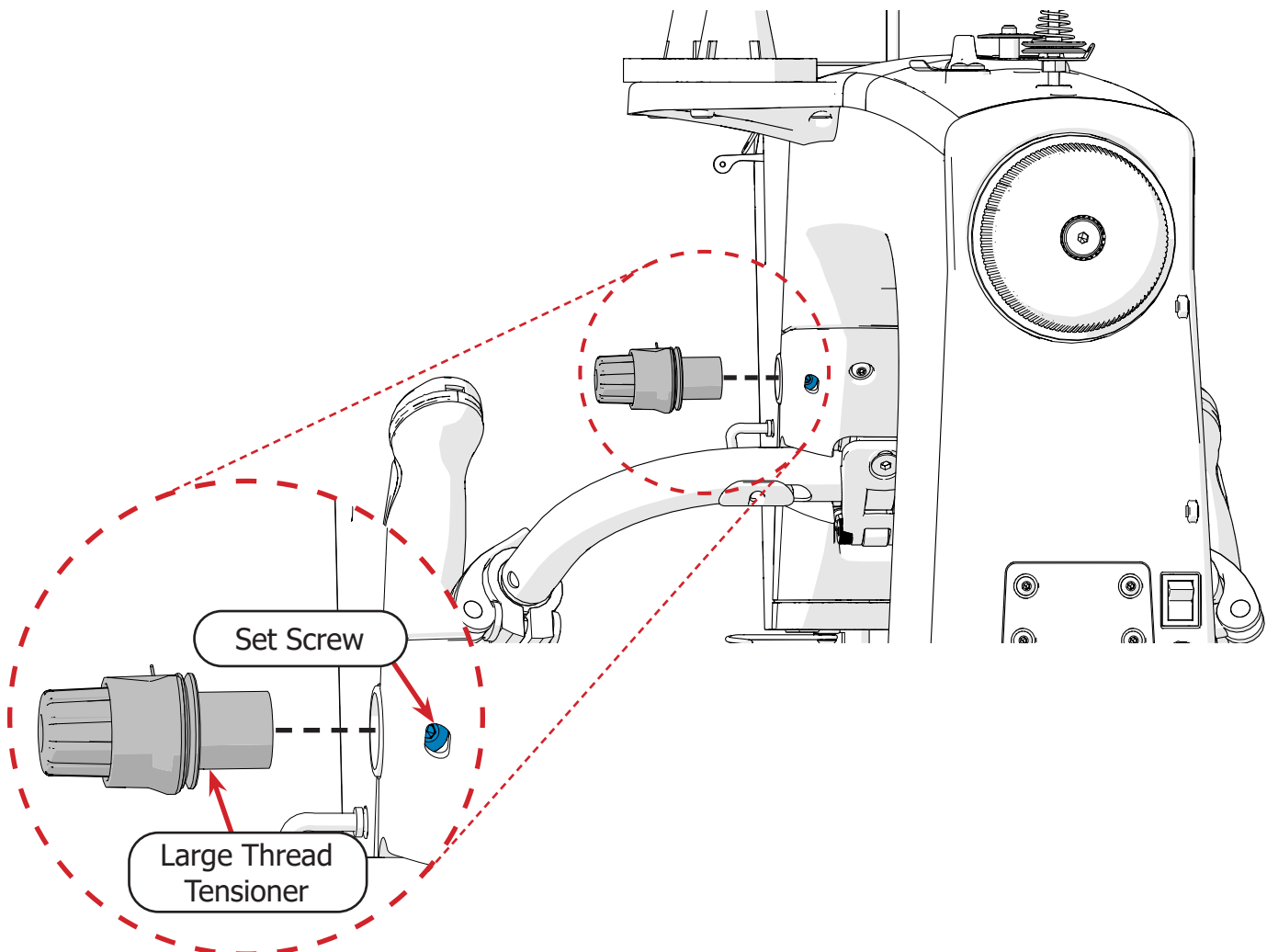


SMP-09-13180

Removal Instructions

Take the following steps to remove the large thread tensioner from the machine:

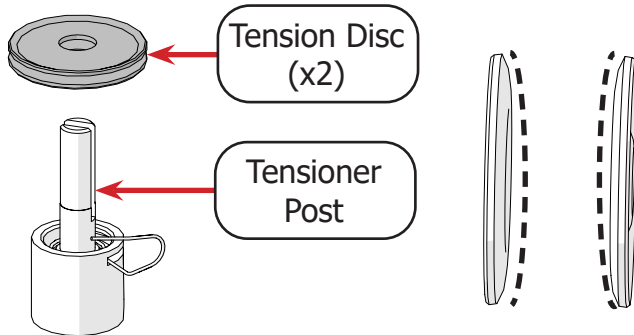
- 1 Use a 3 mm Allen wrench to loosen the **set screw** holding the **large thread tensioner** in place. Remove the tensioner from the machine.



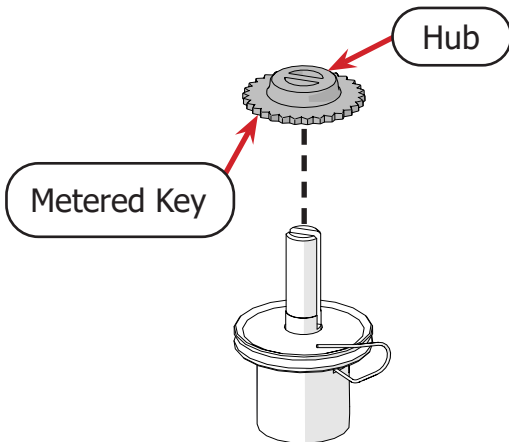
Reassembly Instructions

If your tensioner has fallen apart, take the following steps to reassemble the pieces:

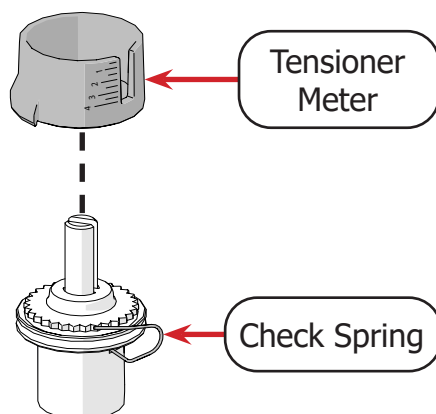
- 1 Place the **tension discs** on the thread **tensioner post**. Place the discs so the curved sides face each other.



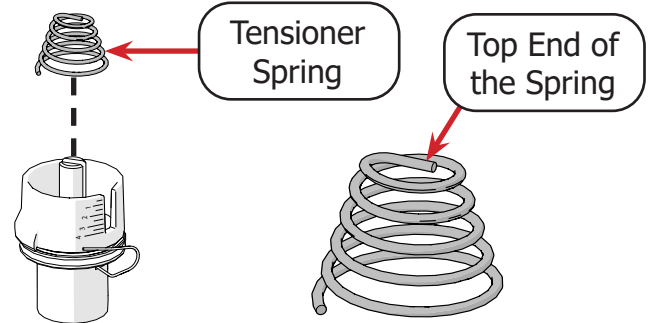
- 2 Place the **meter key** onto the tensioner post with the **hub** facing up.



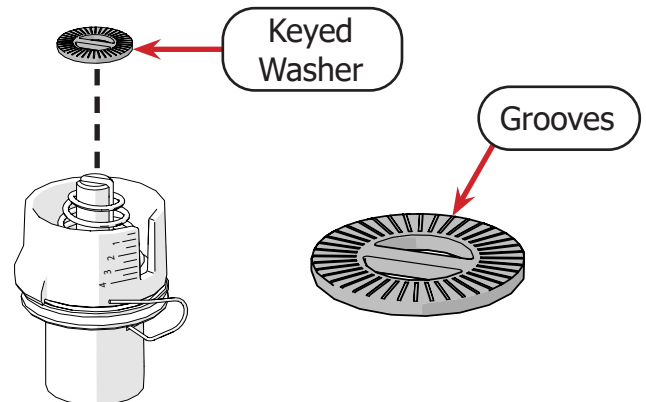
- 3 Place the **tensioner meter** on the tensioner post with the numbers near the **check spring**.



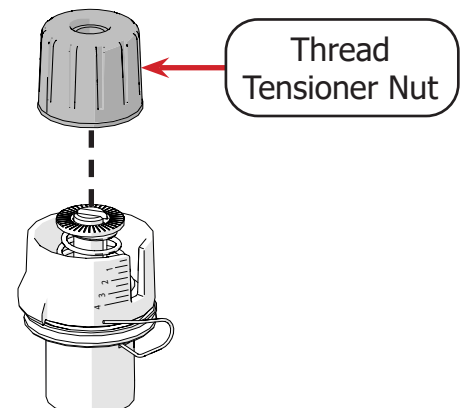
- 4 Place the **tensioner spring** on the tensioner post with the **top end of the spring** fitting in the slot in the post.



- 5 Place the **keyed washer** on the tensioner post so that the **grooved side** faces up.



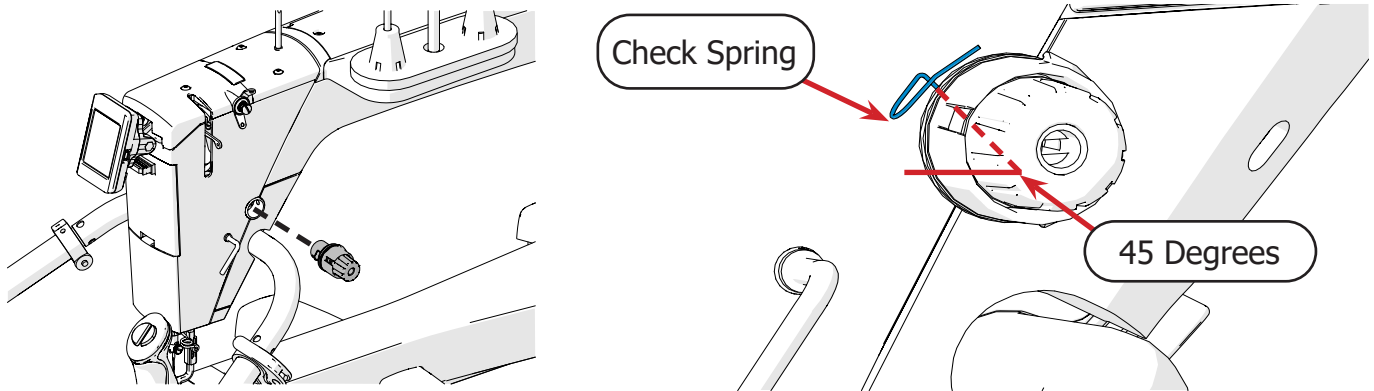
- 6 Screw the **thread tensioner nut** onto the end of the tensioner post.



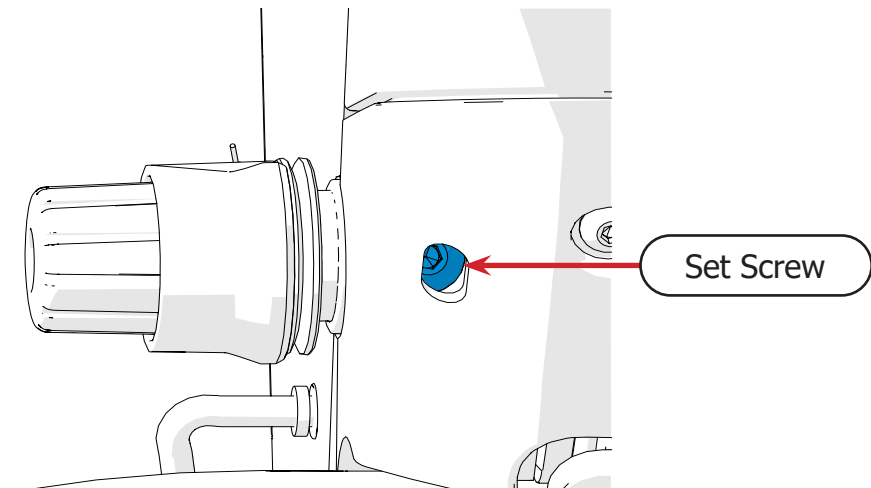
Installation Instructions

Take the following steps to install the thread tensioner to your machine:

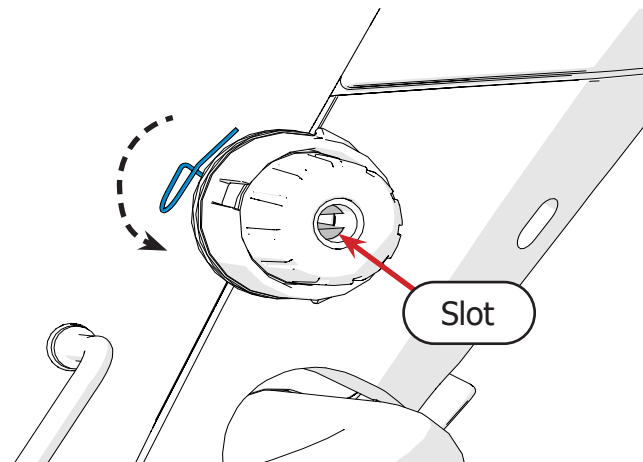
- 1 Insert the tensioner into the side of the machine with the **check spring** coming out of the tensioner at a **45 degree angle** to the ground.



- 2 Secure the tensioner in place with by tightening the **set screw** with the 3 mm Allen wrench.

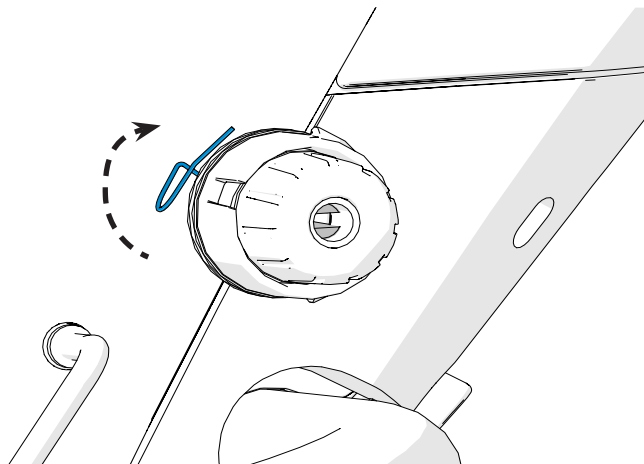


- 3 Set the check spring tension by inserting a small screwdriver into the **slot** on the inside of the tensioner knob and turning counter-clockwise until the check spring starts to turn down.



Replacing the Large Thread Tensioner (continued)

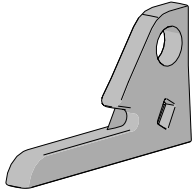
- 4 Turn the screwdriver clockwise until the check spring stops moving and then continue turning another 90 degrees. The check spring should still be at about a 45 degree angle to the ground.



Replacing the Thread Cutter

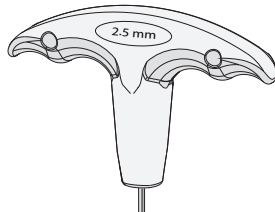
Parts & Tools Needed:

Thread Cutter



SMP-04-12082

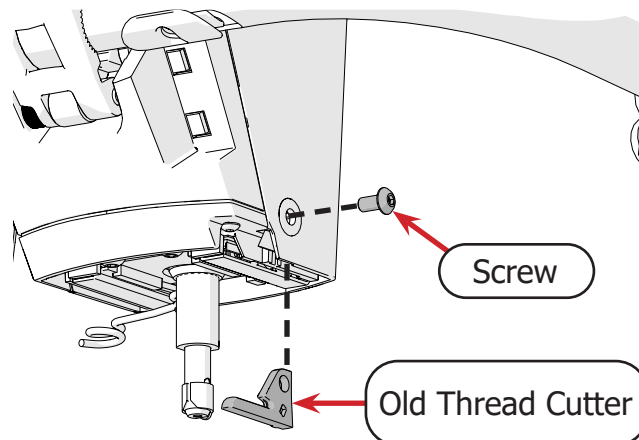
T-handle Allen Wrench 2.5 mm



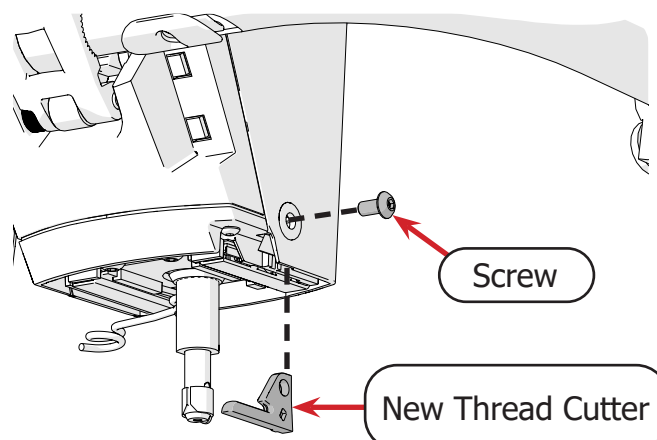
Instructions

Take the following steps to replace the thread cutter over the needle area:

- 1 Use the 2.5 mm Allen wrench to remove the **screw** holding the **old thread cutter** to side of the machine. Keep the screw and thread cutter together.



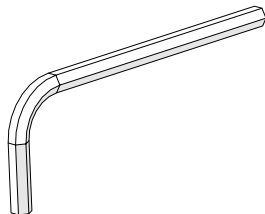
- 2 Attach the **new thread cutter** to side of the machine using the same screw and the 2.5 mm Allen wrench.



Checking the Thread Guides

Parts & Tools Needed:

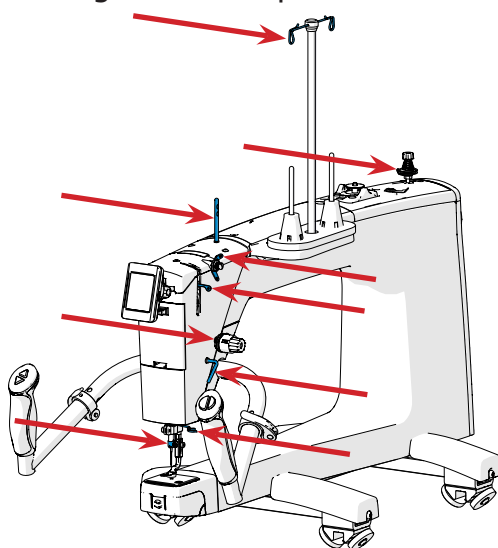
L-shaped Allen
Wrench 2.5 mm



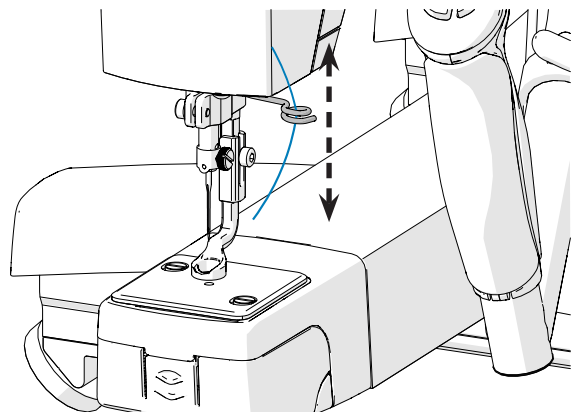
Instructions

A damaged thread guide is one possible cause of breaking thread when stitching or winding a bobbin. Take the following steps to inspect the thread guides and to replace them if needed:

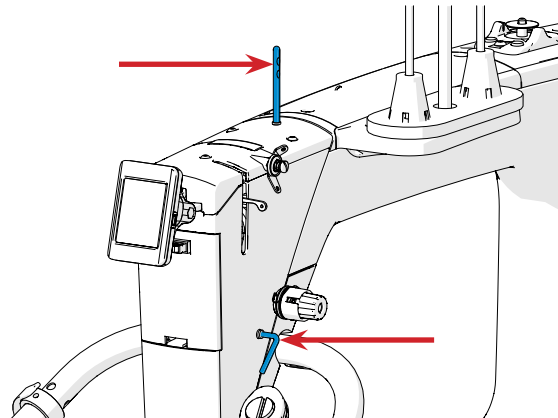
- 1 Locate the thread guides along the thread path.



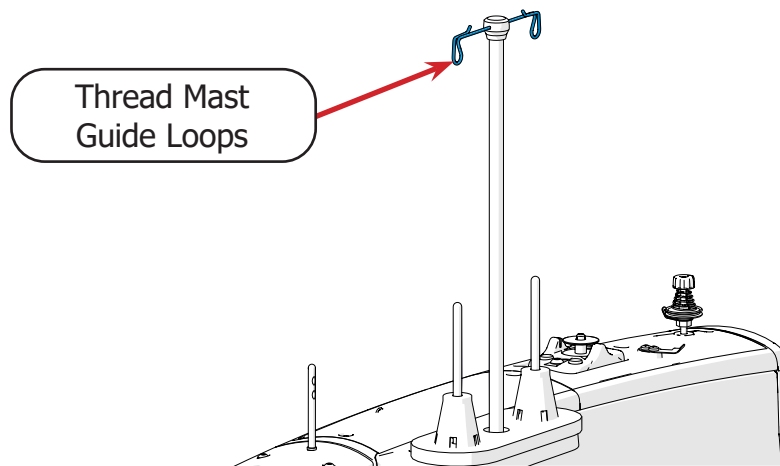
- 2 Use a piece of thread like floss to feel around the inside of the thread guides indicated in the previous step. Feel for any snagging or rough sections.



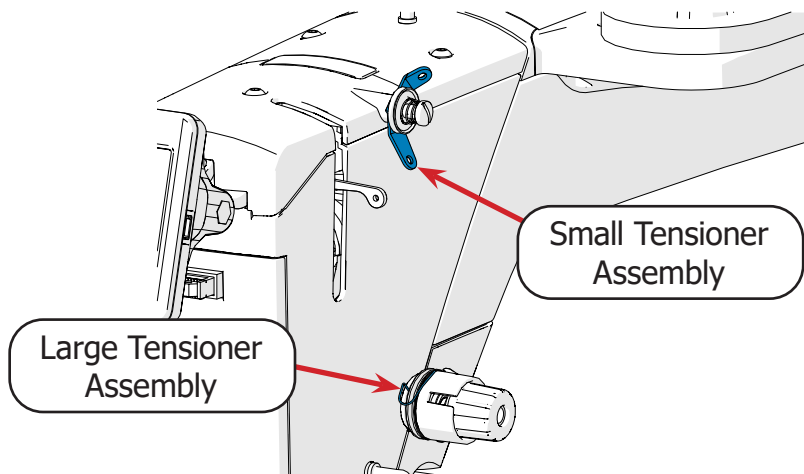
- 3 Some of the thread guides must be replaced by a certified technician. If you feel damage to one of these thread guides, contact The Grace Company or your local dealer.



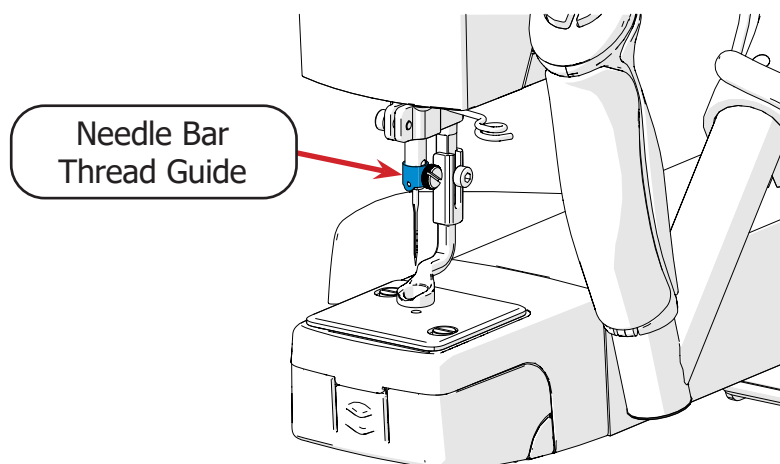
- 4 If you feel damage to the **thread mast guide loops**, you will need to replace the thread mast. See instructions for “Replacing the Thread Mast” on page 10.



- 5 If you feel damage to the guides that are part of the **tensioner assemblies**, you will need to replace the damaged part. See instructions for “Replacing the Large Thread Tensioner” on page 32, and “Replacing the Small Thread Tensioner” on page 30.

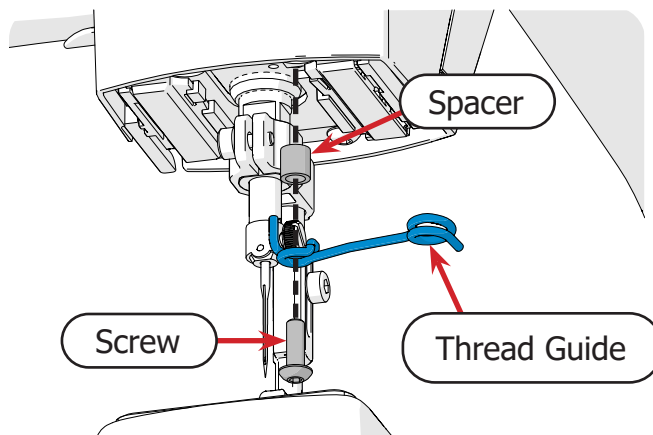


- 6 If you feel damage to the **needle bar thread guide**, you will need to replace it. See instructions for “Replacing the Needle Bar Thread Guide” on page 40.

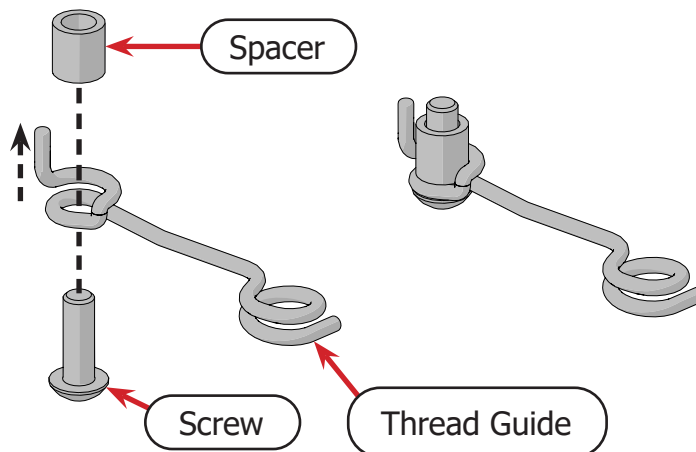


Checking the Thread Guides (continued)

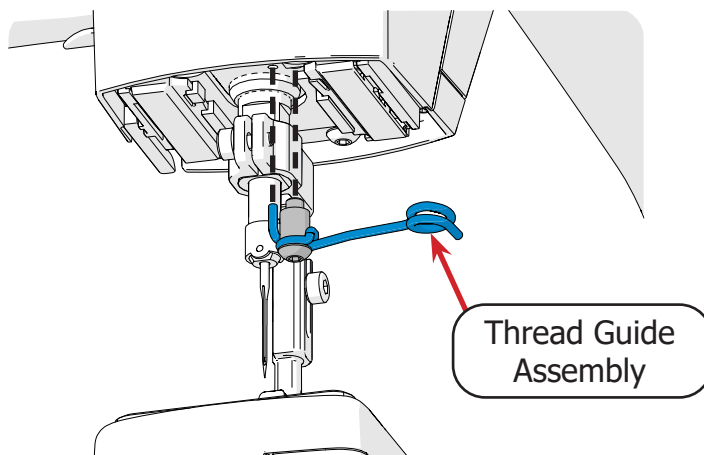
- 7 To change the bottom thread guide, use the 2.5 mm Allen wrench to remove the **screw** holding the **thread guide** and **spacer** to the LED lamp.



- 8 Assemble the **thread guide** with the **spacer** next to the wire that points up and then place the **screw** through the spacer.



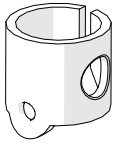
- 9 Use the 2.5 mm Allen wrench to reattach holding the **thread guide assembly** to LED lamp.



Replacing the Needle Bar Thread Guide

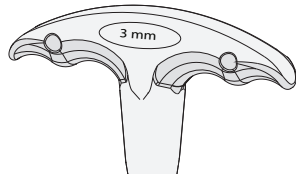
Parts & Tools Needed:

Needle Bar
Thread Guide

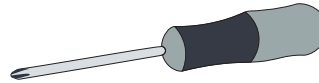


SMP-04-10039

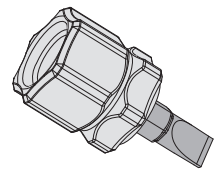
T-handle Allen
Wrench 3 mm



Large Screwdriver



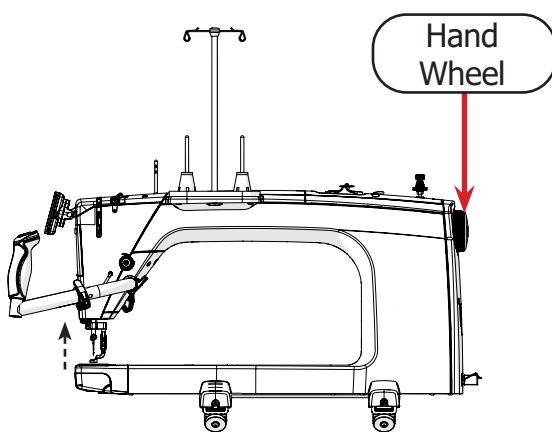
Flat-head
Screwdriver



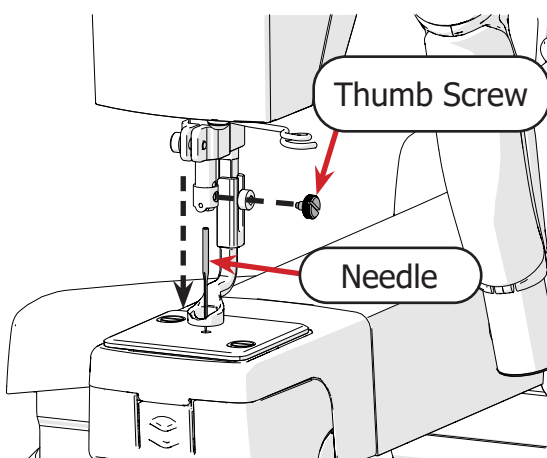
Instructions

Take the following steps to replace the needle bar thread guide:

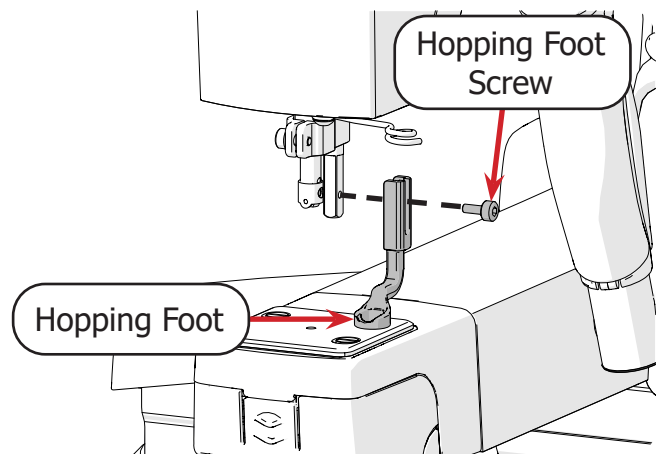
- 1 Power off the machine. Raise the needle to the highest position using the **hand wheel**.



- 2 Use the flat head screwdriver to remove the needle **thumb screw** and the **needle**.

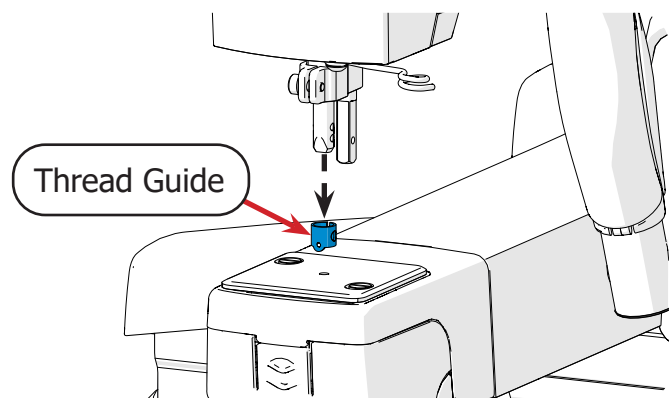


- 3 Use the 3 mm Allen wrench to remove the **hopping foot screw** and **hopping foot**.



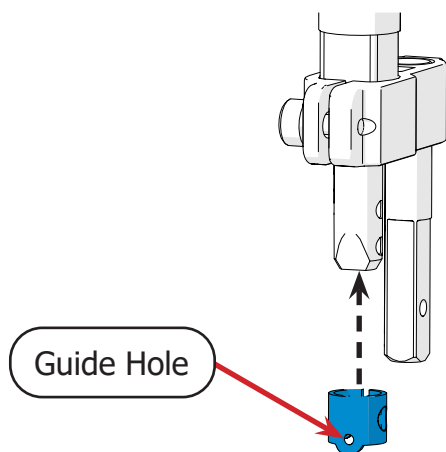
- 4 If the **thread guide** is still on the needle bar, pull it down to remove it.

Note: You may need to use a flat-head screwdriver to tap the thread guide down.

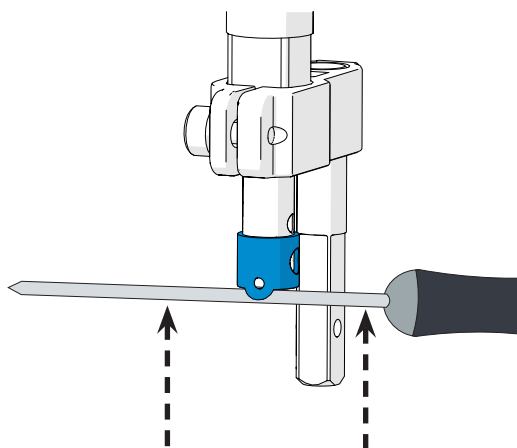


Replacing the Needle Bar Thread Guide (continued)

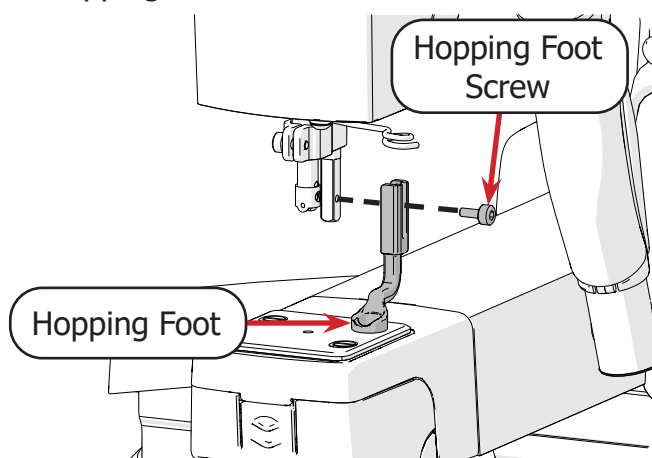
- 5 Place the new thread guide onto the end of the needle bar with **guide hole** facing the front.



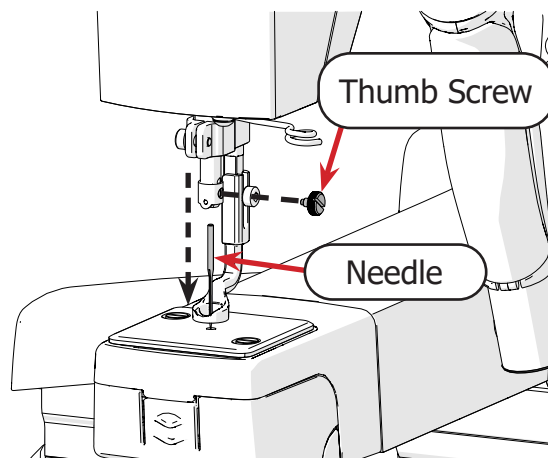
- 6 It may be helpful to place the bar of a large screwdriver underneath the thread guide to help push it onto the needle bar.



- 7 See "Changing the Hopping Foot" on page 8 for instructions on reinstalling the hopping foot.



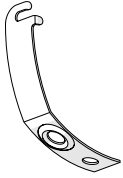
- 8 See "Changing the Needle" on page 6 for instructions on reinstalling the needle.



Replacing the Bobbin Case Springs

Parts & Tools Needed:

Thread Tension Spring



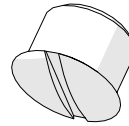
SMP-03-13101

Small Bobbin Case Screw



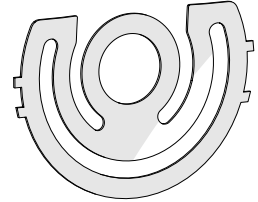
SMP-03-13102

Large Bobbin Case Screw



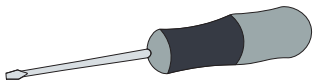
SMP-03-13103

Anti-Backlash Spring



SMP-03-13104

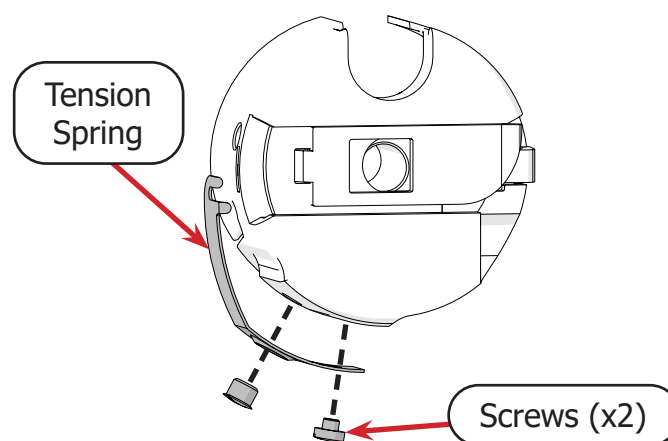
Small Flat-Head Screwdriver



Tension Spring Instructions

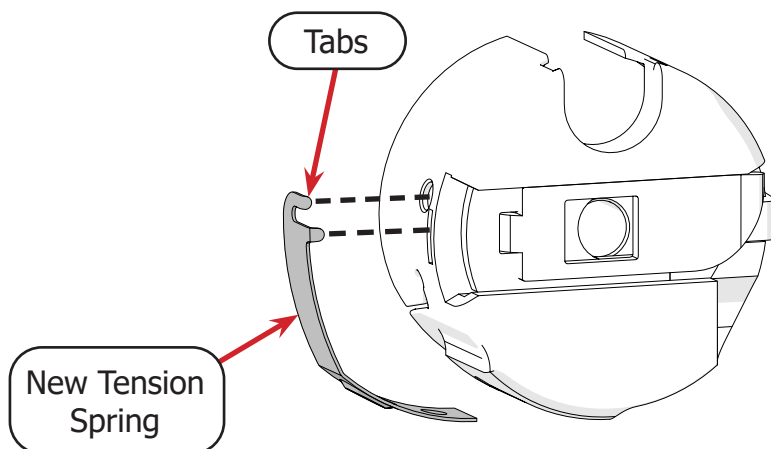
Take the following steps to replace the tension spring on the bobbin case:

- 1 Use the small flat-head screwdriver to remove the two **screws** holding the **thread tension spring** to the outside of the bobbin case.

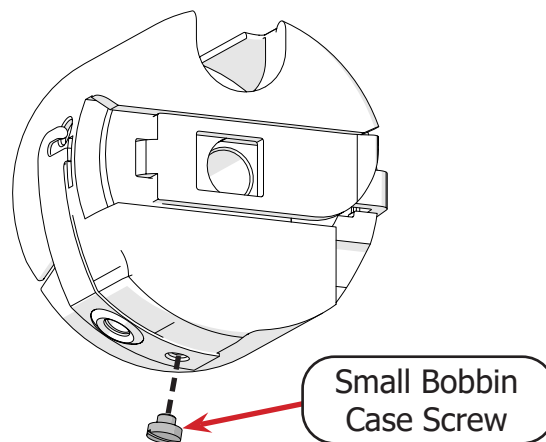


Replacing the Bobbin Case Springs (continued)

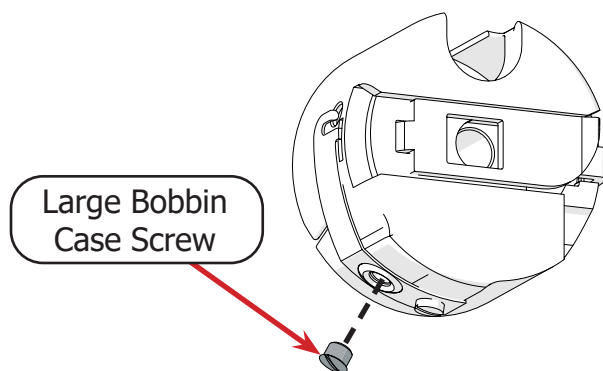
- 2 Place the **new tension spring** on the side of the bobbin case with the **tabs** going in the slots near the hinge for the lever.



- 3 Use the small flat-head screwdriver to attach the spring to the bobbin case with the **small bobbin case screw** in the screw hole at the end of the spring.



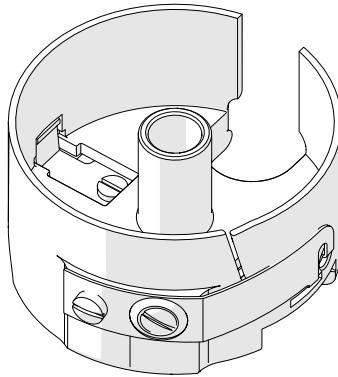
- 4 Insert the **large bobbin case screw** into the second hole and tighten loosely in place. See "Loading the Bobbin Case" in the user manual for instructions on adjusting the spring tension.



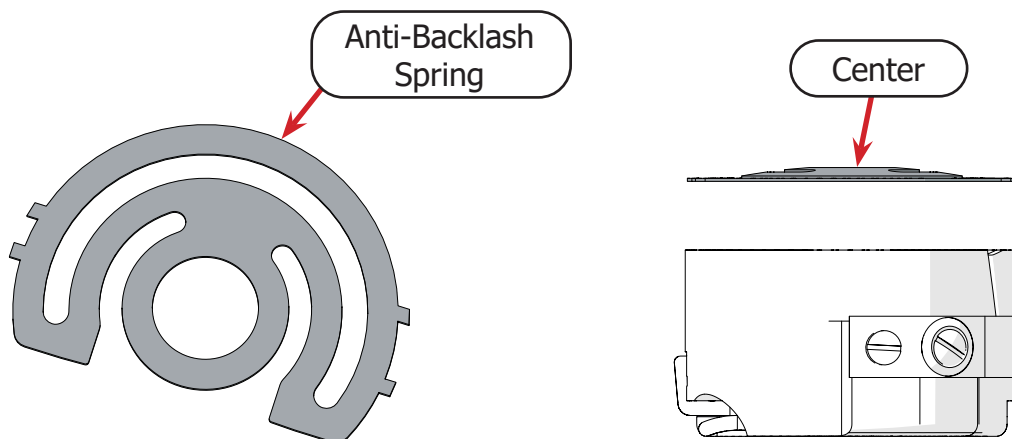
Anti-Backlash Spring Instructions

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

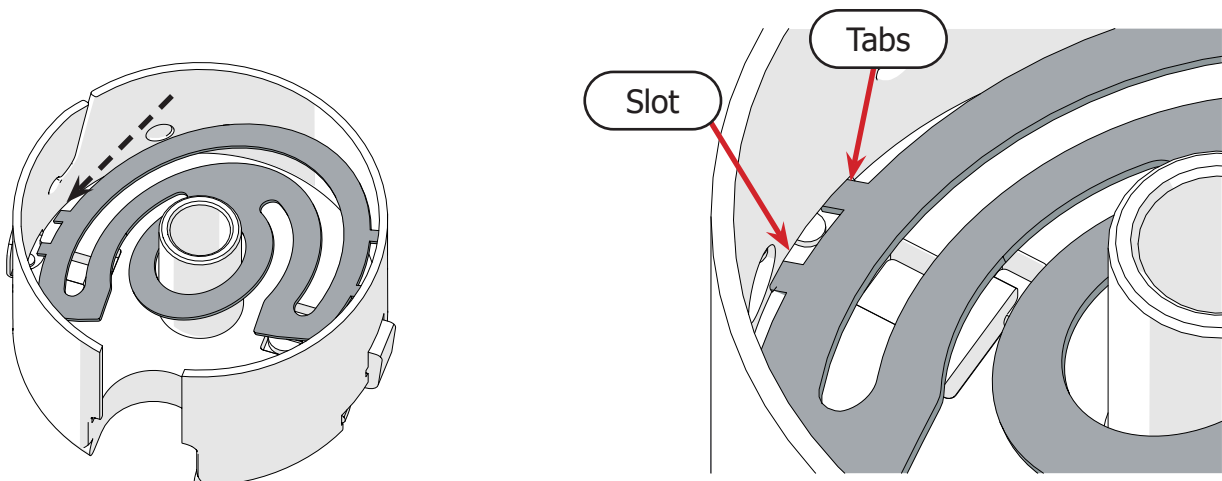
- 1 Lay the bobbin case face-down so that the opening is facing up.



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

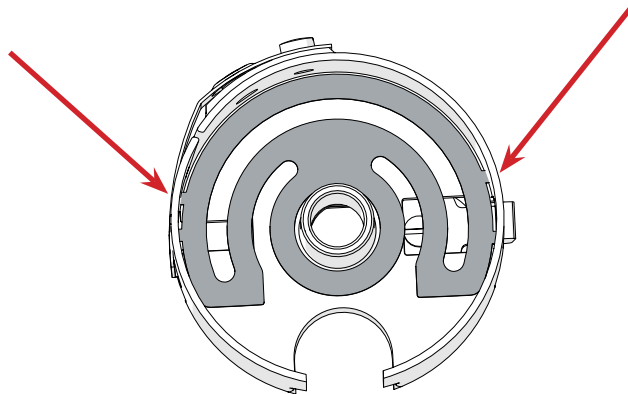


- 3 Place the spring inside the bobbin at an angle and press the **tabs** that are closer together into their **slot** on the side.

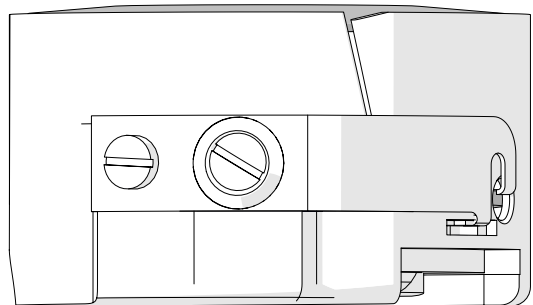
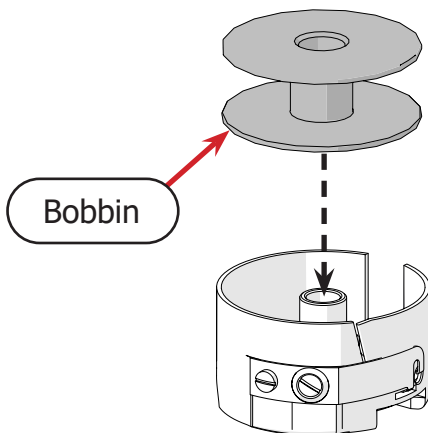


Replacing the Bobbin Case Springs (continued)

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



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

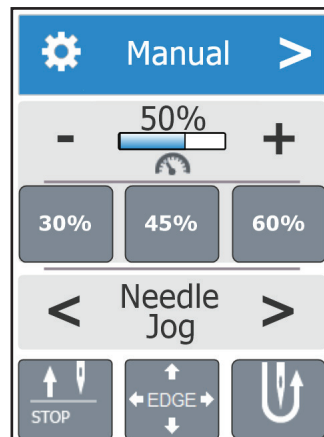


Troubleshooting the Encoders

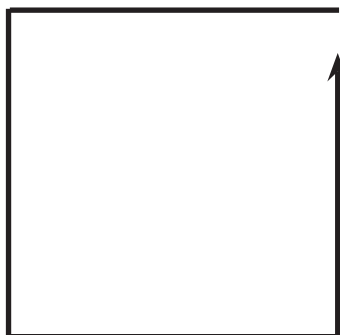
Instructions

There is a variety of encoder issues that could cause issues with your stitching. Take the following steps to determine if and how the encoders are not functioning correctly:

- 1 Try sewing in manual mode to see if the issue continues. This quilting mode is unregulated and does not use the encoders. If the issue does continue, the issue is likely caused by poor tension. If the issue does not continue in manual mode but still happens in precise mode, continue to the next step.



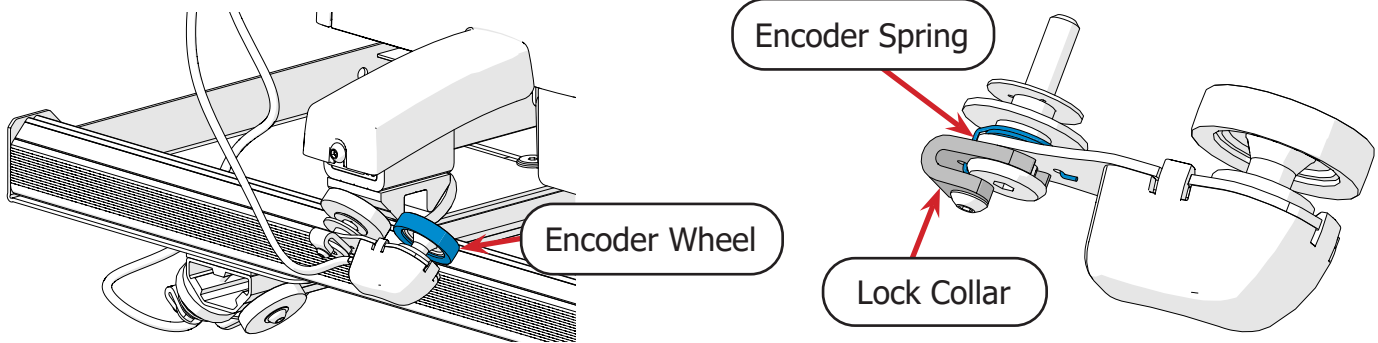
- 2 Use precise mode to stitch a square in order to test each direction. If you get long stitches or no stitches going left to right or right to left, check the lower encoder. If you get long stitches or no stitches going front to back or back to front, check the upper encoder.



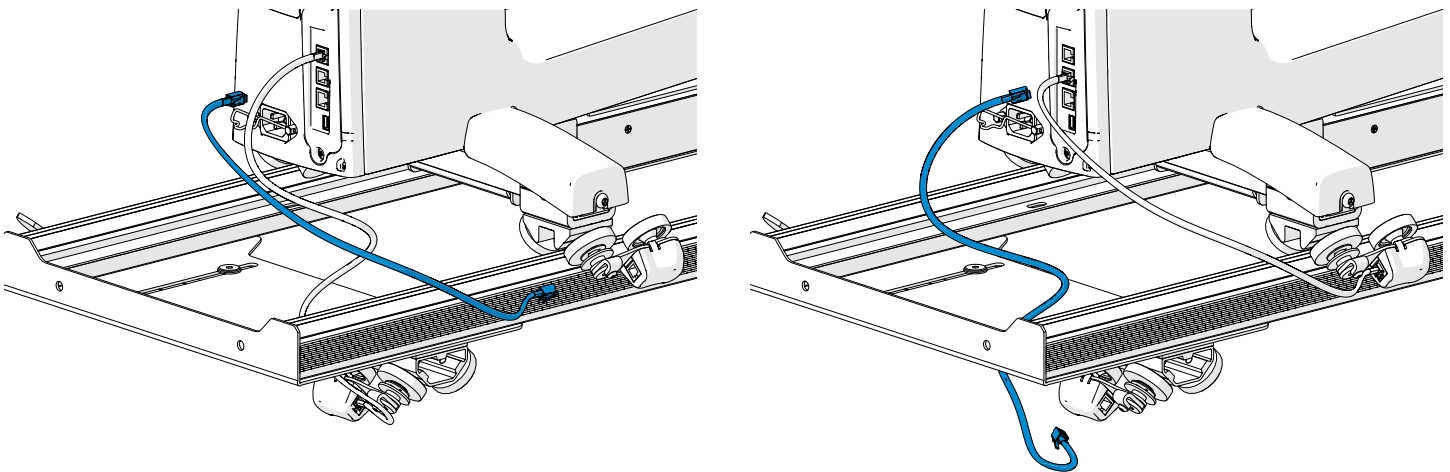
Troubleshooting the Encoders (continued)

- 3 Press the button on the display to start stitching in precise mode. Lift the **encoder wheel** off the tracks and spin it by hand and observe the needle. If the needle moves normally, check the **encoder spring** and **lock collar** and replace if needed. You may also need to clean the wheel and tracks.

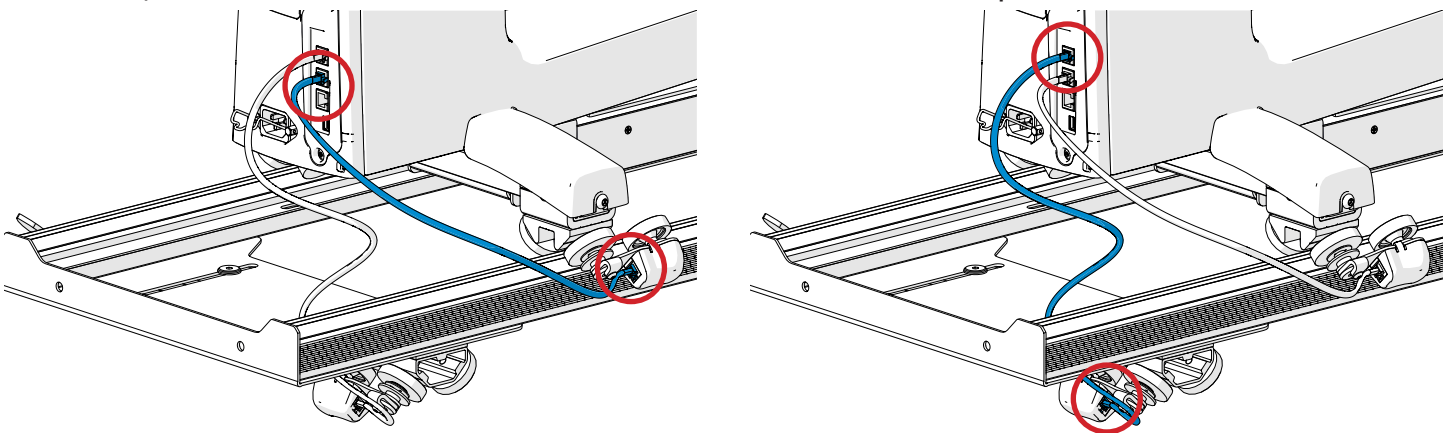
If the needle seems to hesitate or doesn't respond while you spin the wheel, continue to the next step.



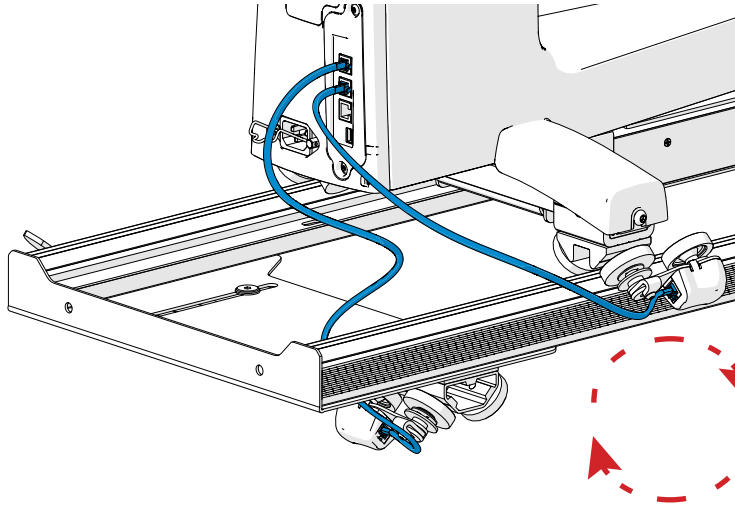
- 4 Unplug both ends of the encoder cable and then plug them back in. If both ends click into place again, continue to step 6. If one end doesn't click into place, turn the cable around and plug the opposite ends into the machine and the encoder.



- 5 If the same end of the cable does not click into either the machine or the encoder, the cable will need to be replaced. If the cable does not click into either the machine or the encoder both times, then the encoder or machine main board will need to be replaced.



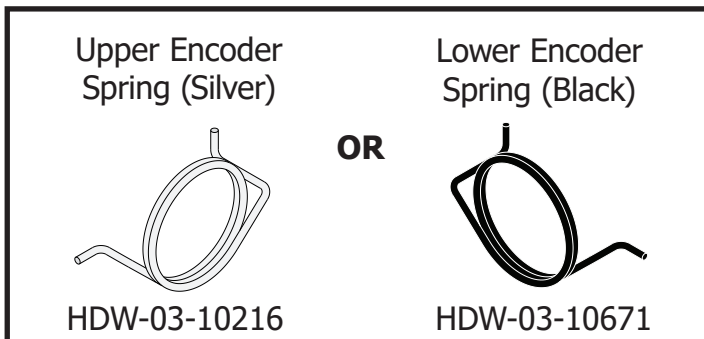
- 6 If both sides click into place, try stitching again to see if the issue continues. If it does continue, try swapping the upper and lower encoder cables and try stitching again.



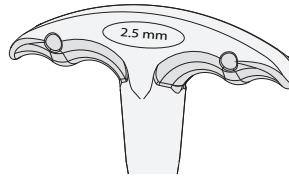
- 7 If the issue switches directions (for example, it was making long stitches going front to back but now makes long stitches going left to right) the cable will need to be replaced. If the issue stays in the same direction, the encoder will have to be replaced.

Replacing the Encoder Spring

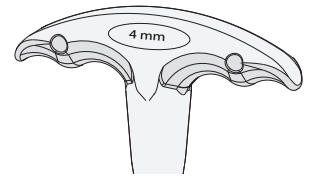
Parts & Tools Needed:



T-handle Allen Wrench 2.5 mm



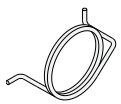
T-handle Allen Wrench 4 mm



Instructions

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

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

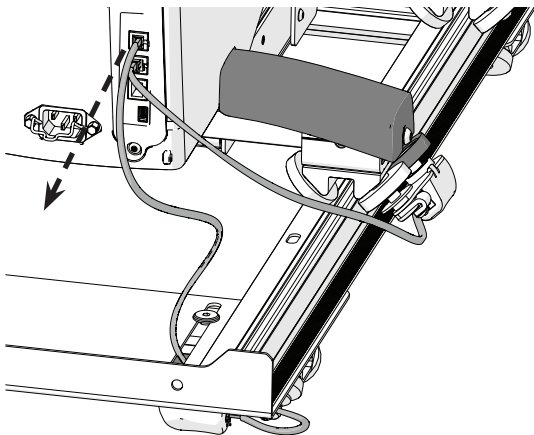


Upper Encoder: Attached to the wheel on the machine. Use the silver spring.

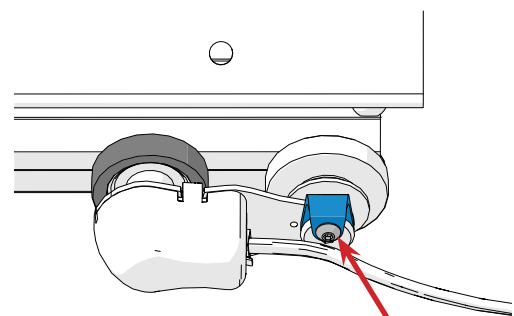


Lower Encoder: Attached to the wheel on the bottom carriage. Use the black spring.

- 2 Unplug the encoder cable from the machine.

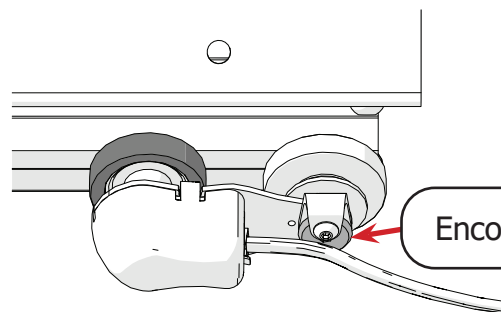


- 3 Loosen the **lock collar screw** with the 2.5 mm Allen Wrench until the **lock collar** (shown in blue) can twist freely.



Lock Collar Screw

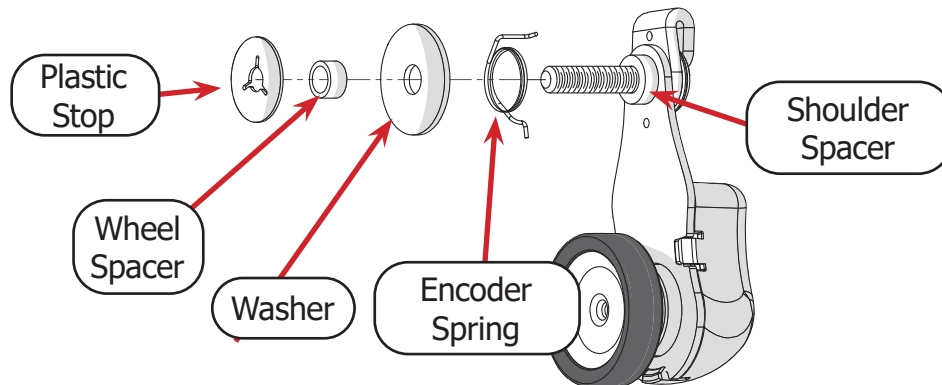
- 4 Use the 4mm Allen wrench to loosen the **encoder screw** and remove the encoder and wheel.



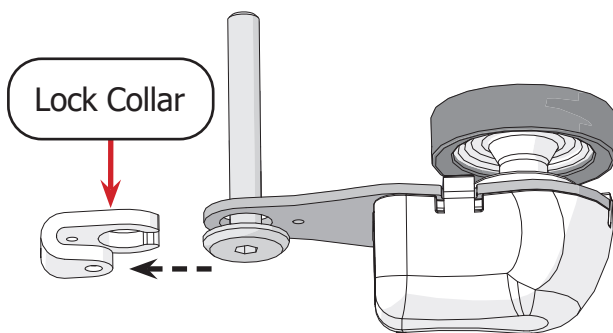
Encoder Screw

Replacing the Encoder Spring (continued)

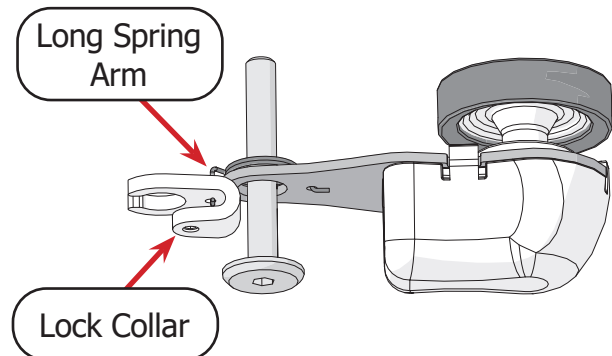
- 5 Remove the **plastic stop**, **wheel spacer**, **washer**, broken **encoder spring**, and **shoulder spacer** from the encoder.



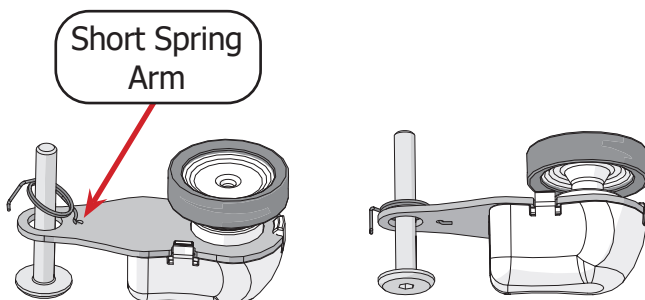
- 6 Pull on the **lock collar** to remove it from the encoder screw.



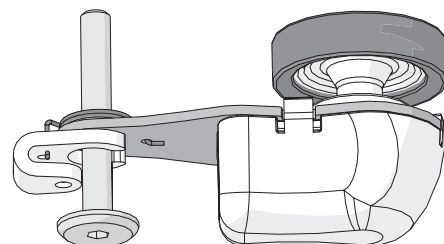
- 8 Place the **long arm** of the encoder spring arm into the hole on the encoder **lock collar**.



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

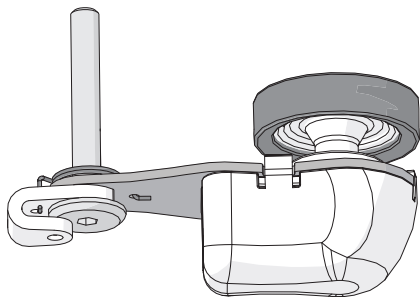


- 9 Without allowing the arm to slip out of the lock collar, rotate the collar until it wraps around the encoder bolt.

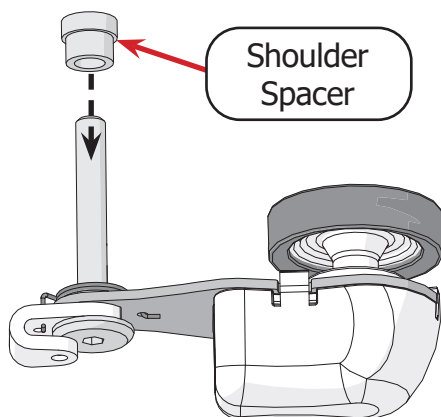


Replacing the Encoder Spring (continued)

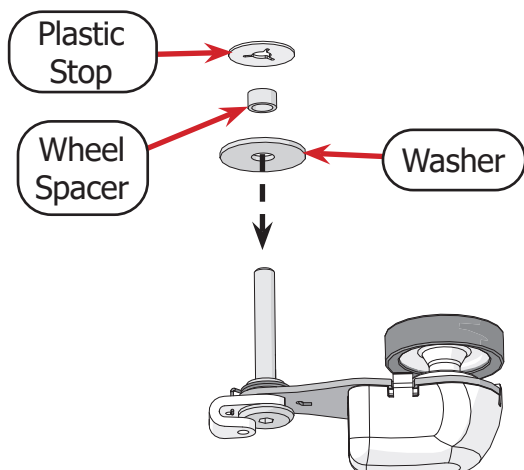
- 10 Adjust the screw and lock collar so the head of the screw slides in between the lock collar.



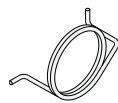
- 11 Slide the **shoulder spacer** onto the screw with the thinner side toward the head of the bolt.



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



- 13 Complete the installation instructions for the encoder you repaired.



For the upper encoder (silver spring) installation instructions, see page 52.

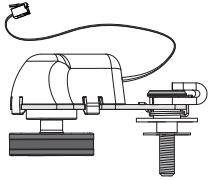


For the lower encoder (black spring) installation instructions, see page 54.

Replacing the Upper Encoder

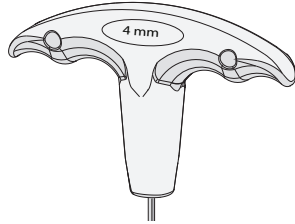
Parts & Tools Needed:

Upper Encoder
(silver spring)

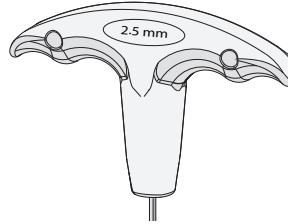


SMP-09-10668

T-handle Allen
Wrench 4 mm



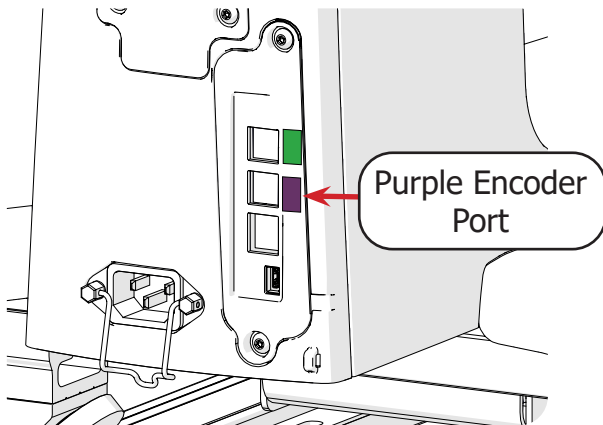
T-handle Allen
Wrench 2.5 mm



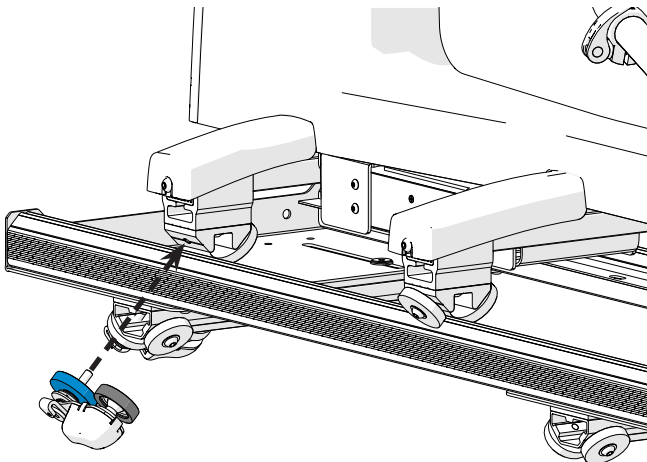
Instructions

Take the following steps to replace your upper encoder:

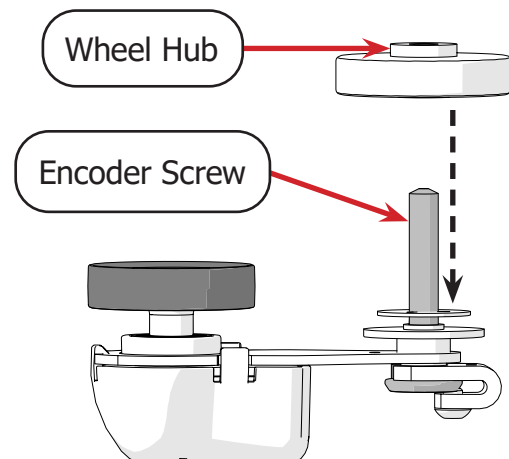
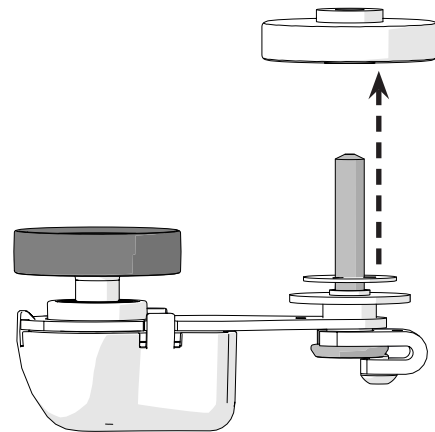
- 1 Unplug the encoder from the machine **encoder port**.



- 2 Use the 4 mm Allen wrench to remove the upper encoder and left rear wheel.

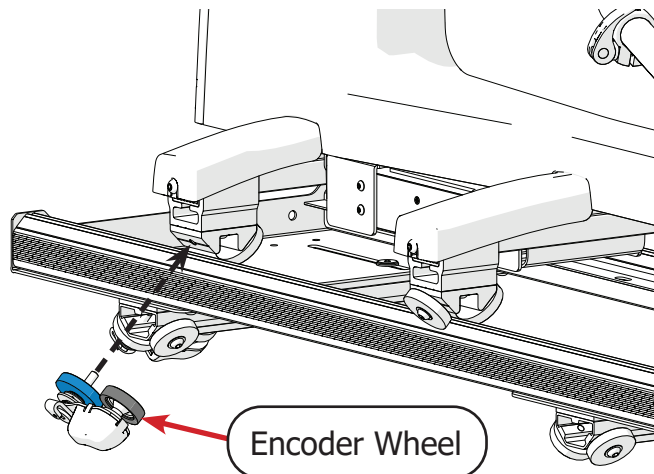


- 3 Remove the wheel from the old encoder. Place the wheel onto the encoder screw for the new encoder with the wheel hub facing away from the encoder.

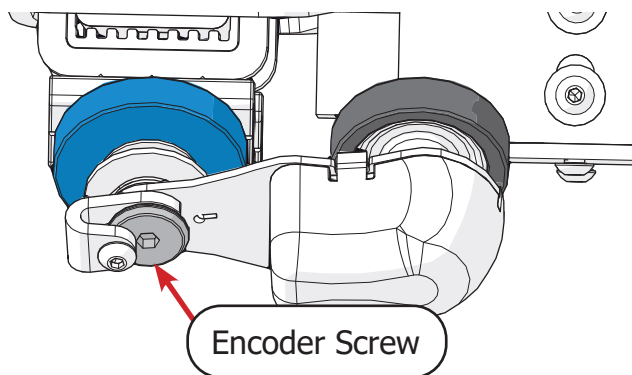


Replacing the Upper Encoder (continued)

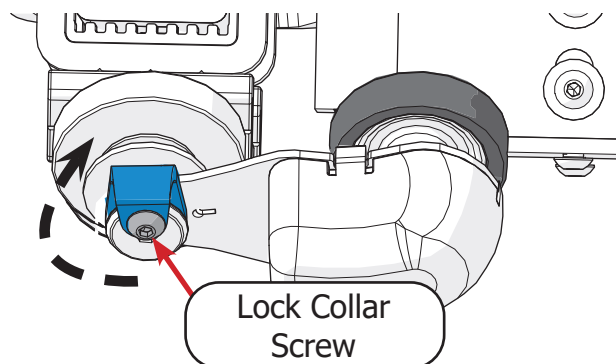
- 4 Place the encoder screw into the left rear wheel hole so the dark **encoder wheel** is between the two left machine wheels.



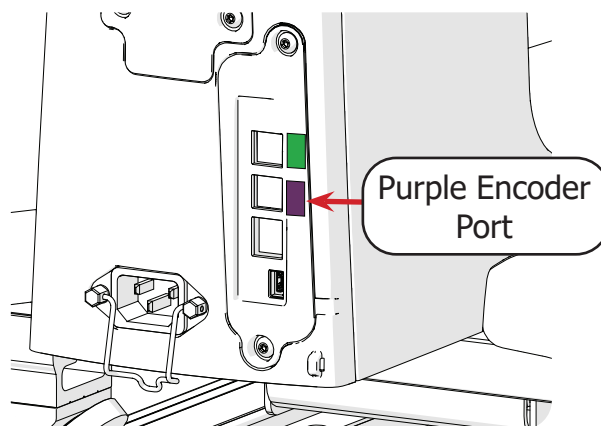
- 5 Tighten the **encoder screw** with the 4 mm Allen wrench.



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



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

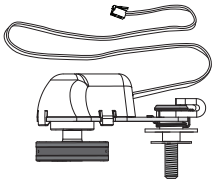


Note: Make sure the encoder is functioning correctly by following the instructions for the "Encoder Test" on page 79.

Replacing the Lower Encoder

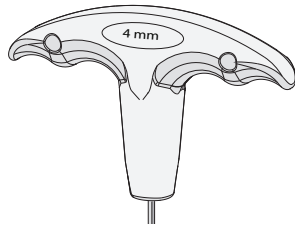
Parts & Tools Needed:

Lower Encoder
(black spring)

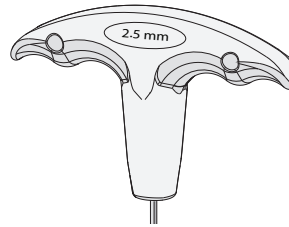


SMP-09-13427

T-handle Allen
Wrench 4 mm



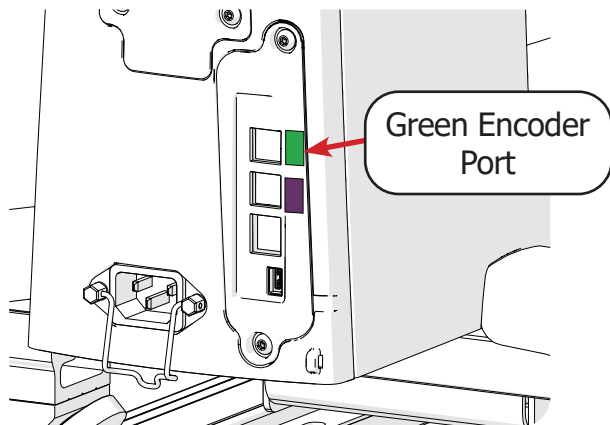
T-handle Allen
Wrench 2.5 mm



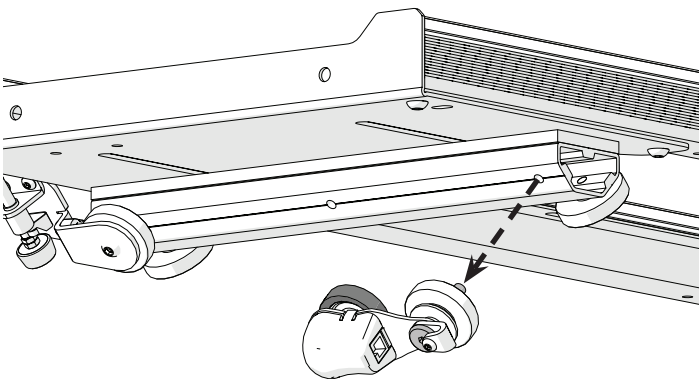
Instructions

Take the following steps to replace your lower encoder:

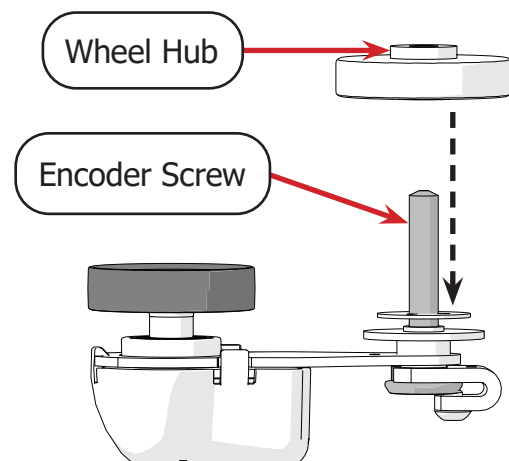
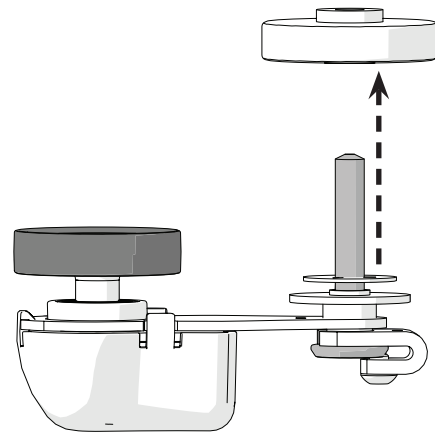
- 1 Unplug the encoder from the **green encoder port**.



- 2 Use the 4 mm Allen wrench to remove the upper encoder and left rear wheel.

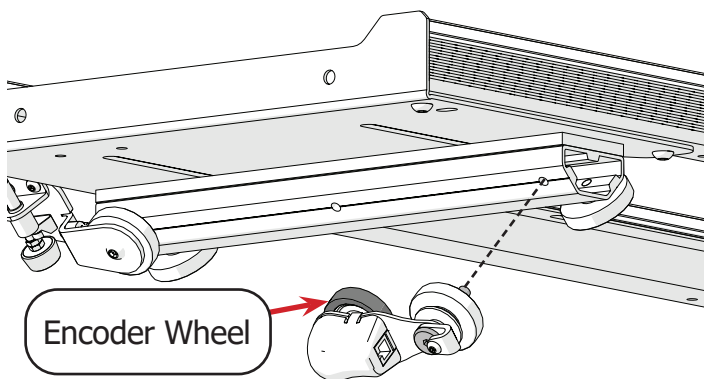


- 3 Remove the wheel from the old encoder. Place the wheel onto the **encoder screw** for the new encoder with the **wheel hub** facing away from the encoder.

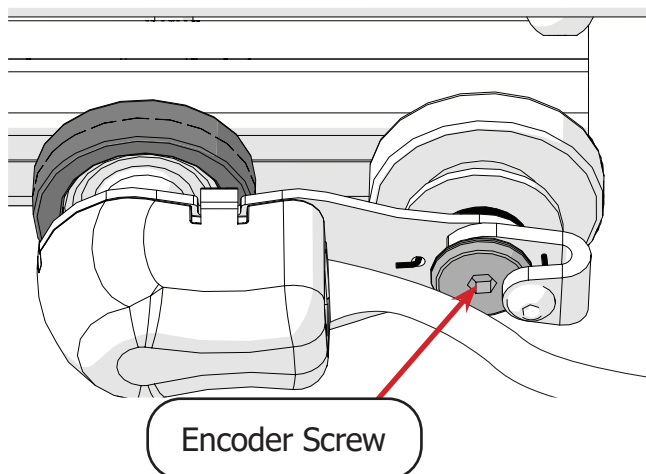


Replacing the Lower Encoder (continued)

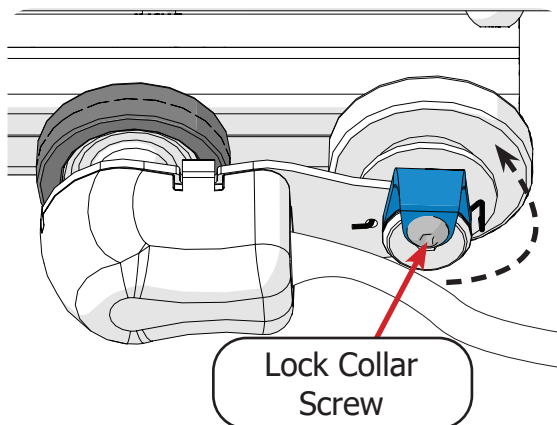
- 4 Place the encoder screw into the left rear wheel hole on the carriage so the **encoder wheel** is between the rear wheels.



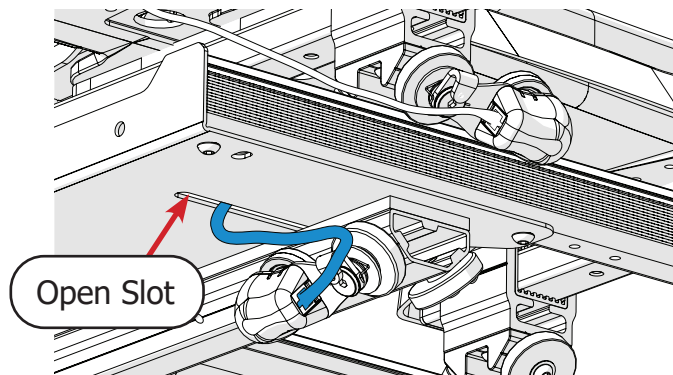
- 5 Tighten the **encoder screw** with the 4 mm Allen wrench.



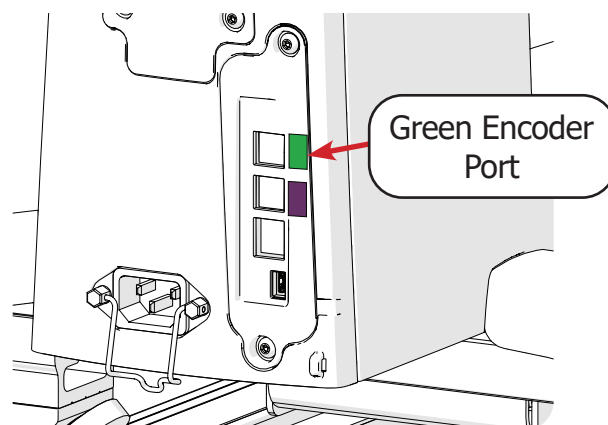
- 6 Turn the encoder **lock collar** (shown in blue) to point up. Then tighten the **lock collar screw** with the 2.5 mm Allen wrench.



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



- 8 Plug the lower encoder cable into the **green encoder port** on the left rear of the machine.



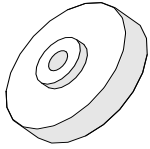
Note: Make sure the encoder is functioning correctly by following the instructions for the "Encoder Test" on page 79.

Replacing a Machine Wheel

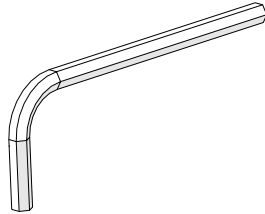
Parts & Tools Needed:

Wheel Bearing

Allen Wrench 4 mm



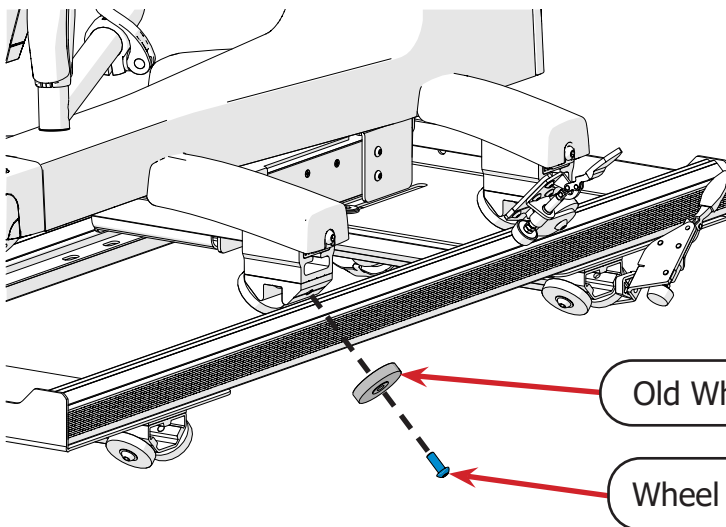
HDW-03-10126



Instructions

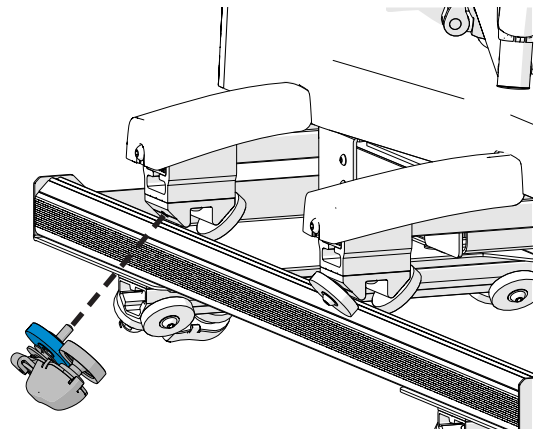
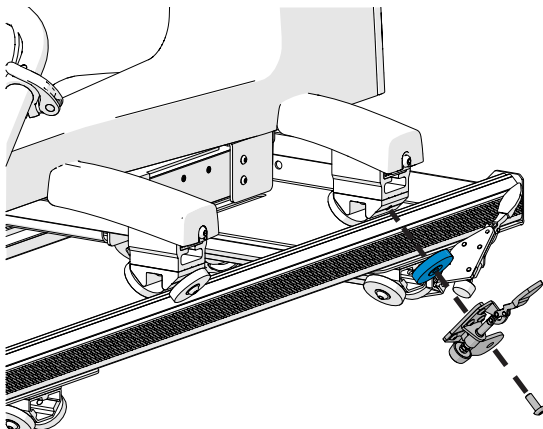
Take the following steps to replace a machine wheel:

- 1 Use the 4 mm Allen wrench to remove the **old wheel** and the **wheel screw**.



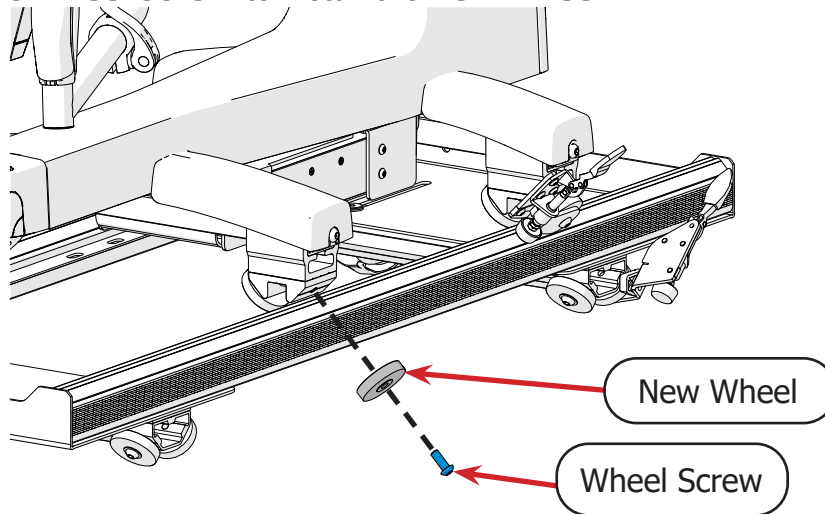
Note: If you are replacing an inside wheel and have QuiltMotion installed on your machine, you may need to remove the machine from the frame to access the inside wheel.

Note: If you are replacing a wheel with the machine channel lock or the upper encoder, remove them along with the wheel using the 4 mm Allen wrench.

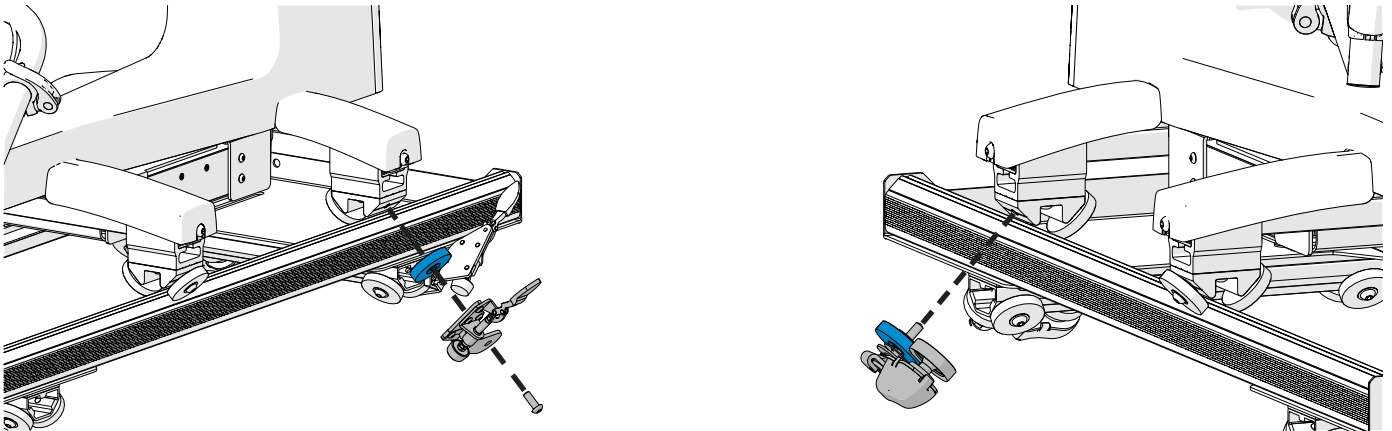


Replacing a Machine Wheel (continued)

- 2 If you are replacing a wheel without the machine channel lock or upper encoder, use the 4 mm Allen wrench and the **wheel screw** to install the **new wheel**.



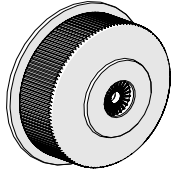
- 3 If you are replacing a wheel with the machine channel lock or the upper encoder, see your user manual for installation instructions.



Replacing the Hand Wheel

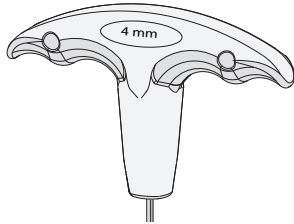
Parts & Tools Needed:

Hand Wheel



SMP-05-10026

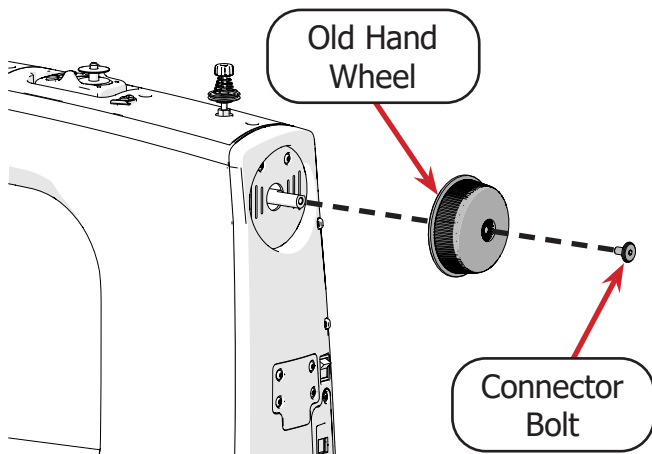
T-handle Allen Wrench 4 mm



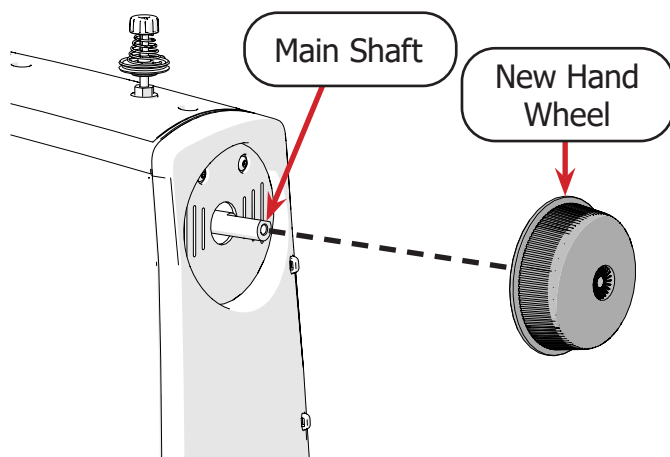
Instructions

Take the following steps to replace your hand wheel:

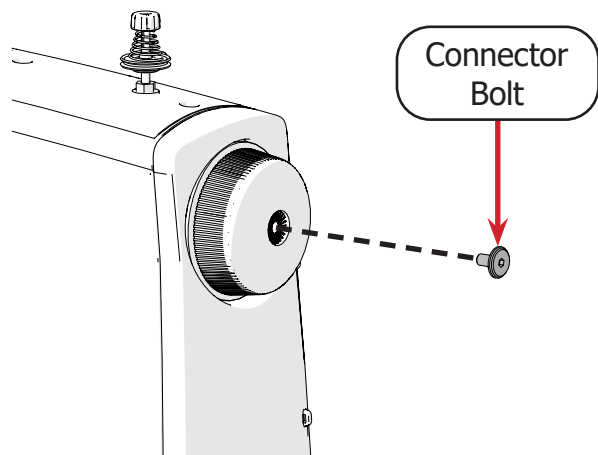
- 1 Use the 4 mm Allen wrench to remove the **old hand wheel** and the **connector bolt** connecting the hand wheel to the machine.



- 2 Place the **new hand wheel** on the end of the **main shaft** on the back of the machine.

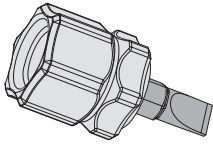


- 3 Secure the hand wheel in place with the **connector bolt** and the 4 mm Allen wrench.



Reinstalling the Needle Plate

Parts & Tools Needed:

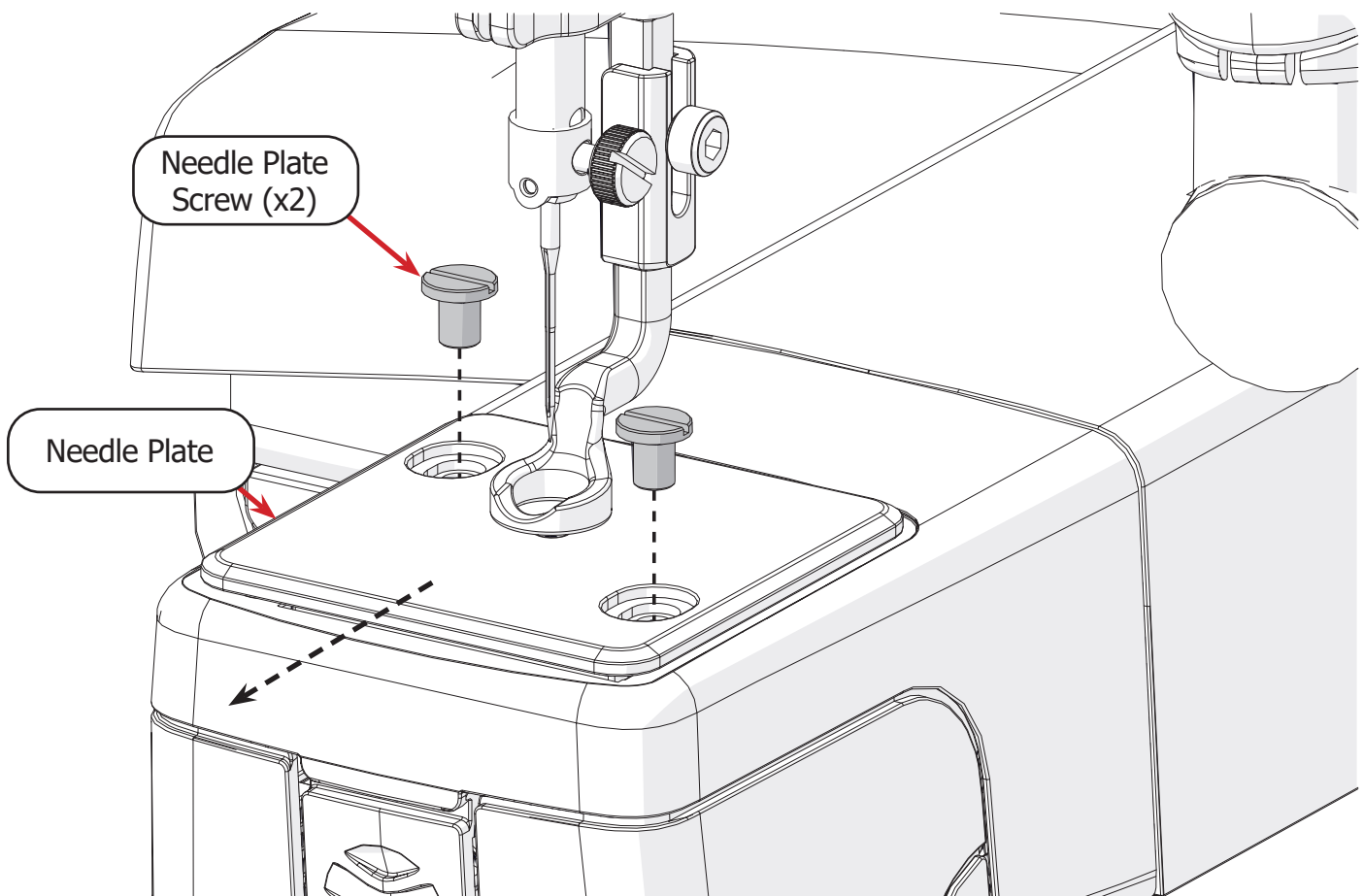


Flat-head Screwdriver

Removal Instructions

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

- 1 Power off the machine and raise the needle to the highest position using the hand wheel.
- 2 Use the flat-head screwdriver to remove the two **needle plate screws**.

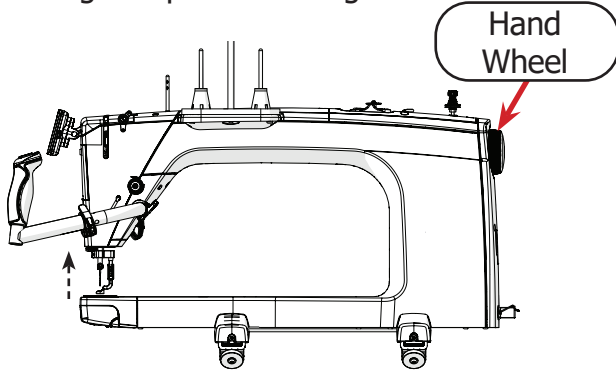


- 3 Slide the **needle plate** from the machine.

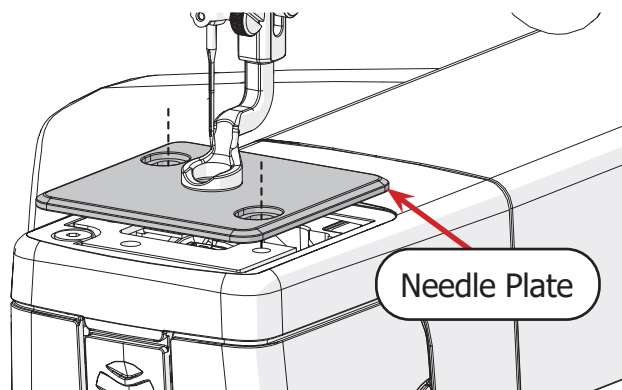
Installation Instructions

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

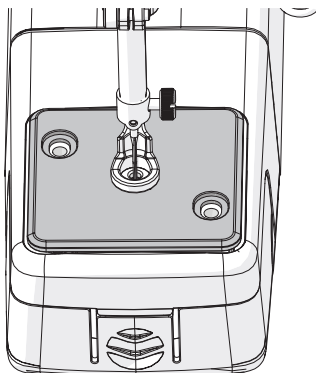
- 1 Power off the machine. Raise the needle to the highest position using the **hand wheel**.



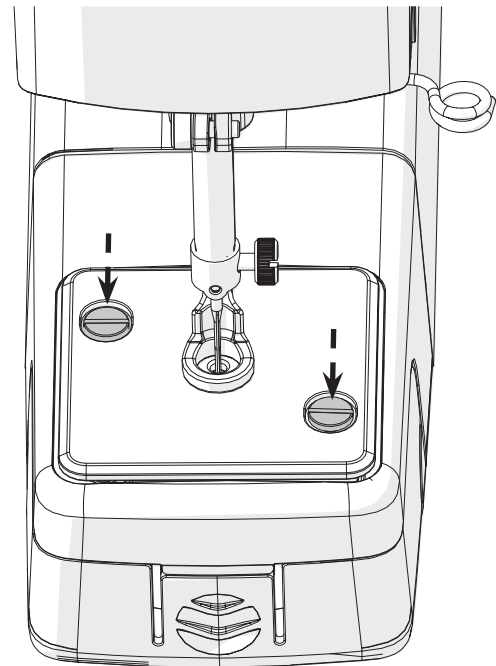
- 2 Align the screw holes on the **needle plate** with those on the machine.



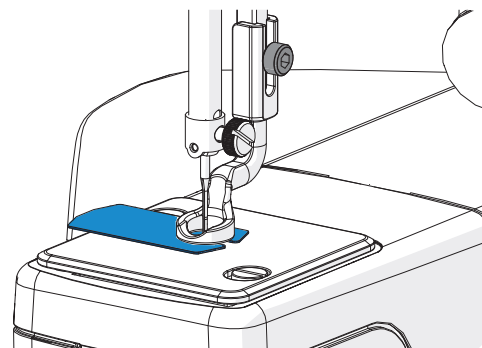
- 3 Slowly lower the needle with the hand wheel. The needle should slide into the center hole of the needle plate without contacting the plate.



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



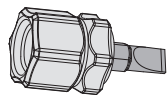
- 5 Reset the hopping foot height using the height gauge. See "Changing the Hopping Foot" on page 8 for instructions.



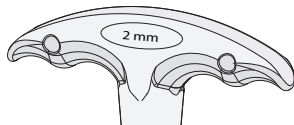
Timing the Machine

Parts & Tools Needed:

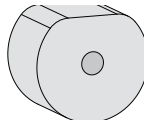
Flat-head Screwdriver



T-handle Allen Wrench 2 mm



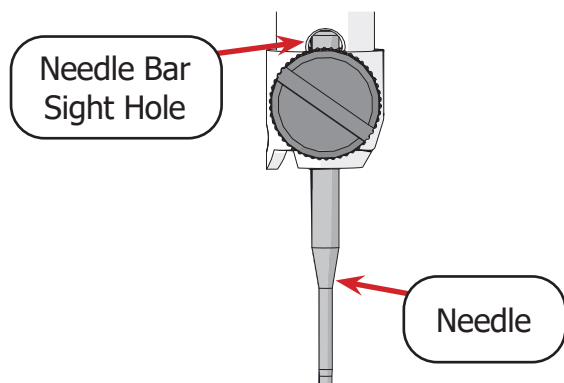
Timing Spacer Tool



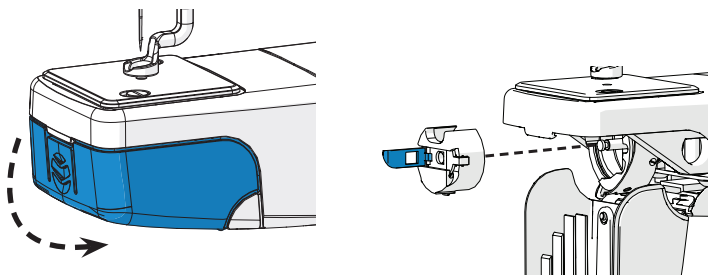
Instructions

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

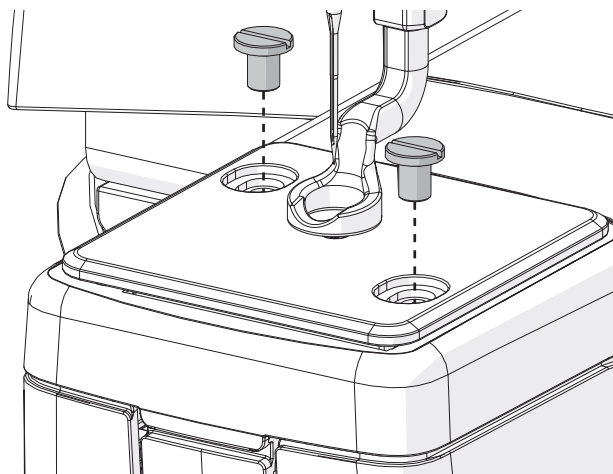
- 1 Turn off the machine.
- 2 Check that your **needle** is not bent or damaged, and that it is inserted all the way into the needle bar (see page 6).



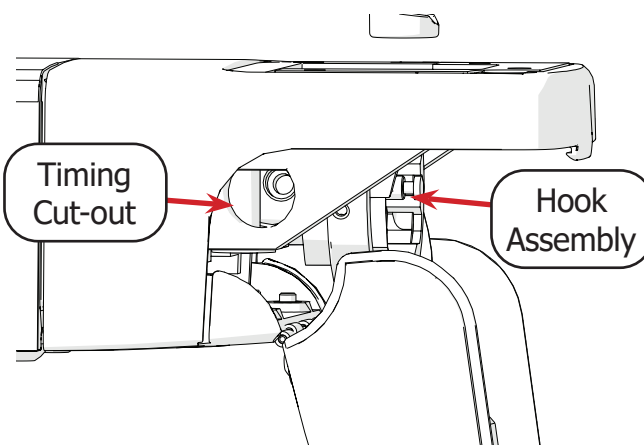
- 3 Remove the bobbin case from the hook assembly.



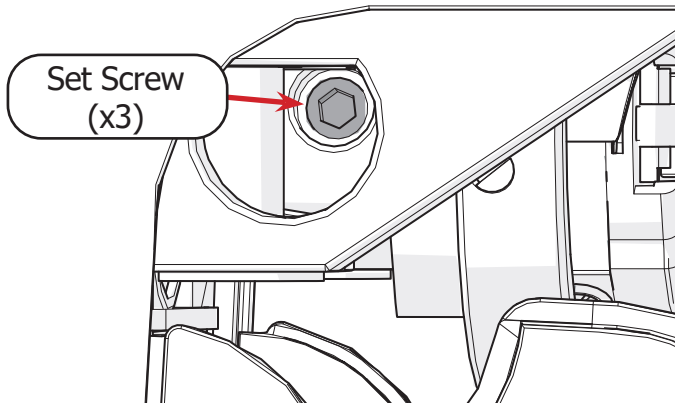
- 4 Remove the needle plate (see page 59).



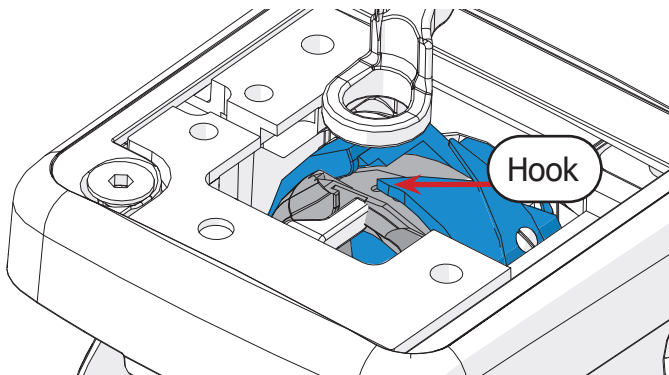
- 5 Look into the machine's **timing cut-out** and turn the hand wheel. The **hook assembly** will rotate.



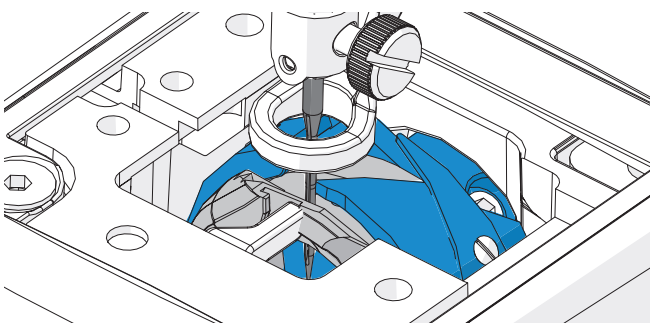
- 6 As each of the **3 set screws** aligns with the timing cut-out, loosen them with the 2 mm Allen wrench.



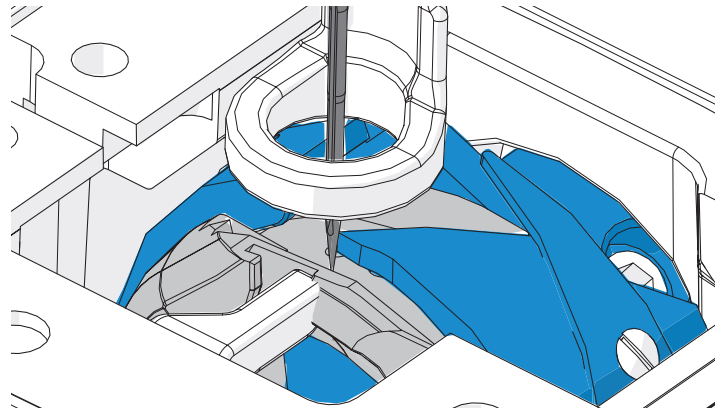
- 7 The **outside** part of the hook assembly (shown in blue) now rotates by hand. Turn the outside part of the hook assembly so that the **hook** is at the top.



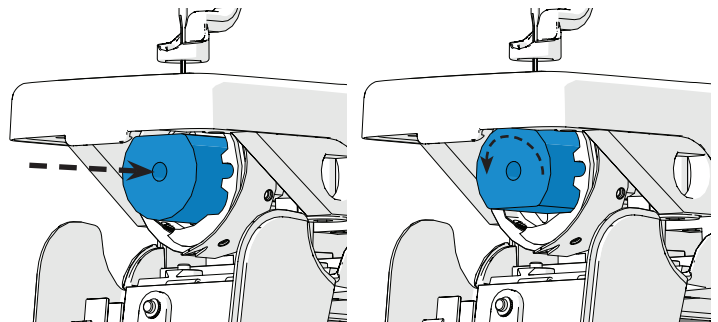
- 8 Hold the hook in place and carefully rotate the hand wheel counter-clockwise to drop the **needle** (shown in gray) to its lowest point. Continue rotating the hand wheel the same direction. The needle should begin to raise up.



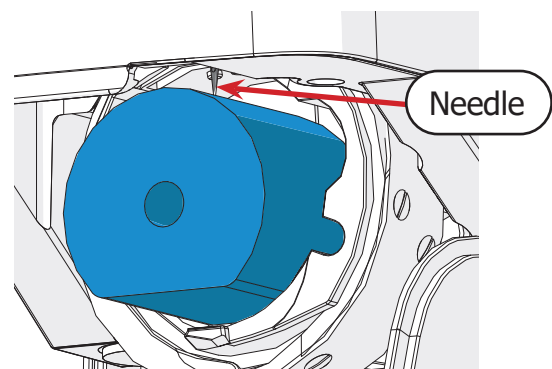
- 9 Stop raising the needle once the eye is about level with the **hook** (shown in blue). Do not continue to raise the needle. If the needle goes too high, start over at step 8.



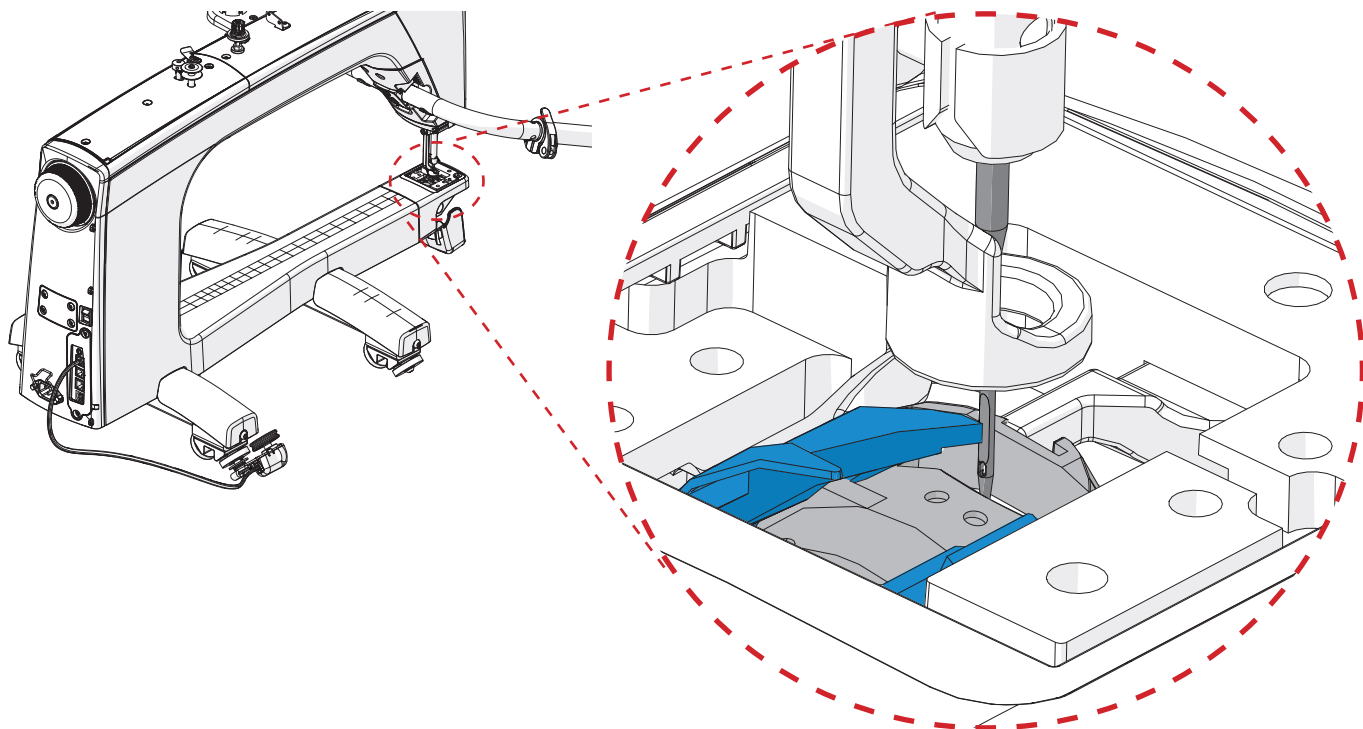
- 10 Slip the **timing spacer tool** (shown in blue) into the hook assembly with the flat side facing up. Then turn the timing tool until the flat side faces down.



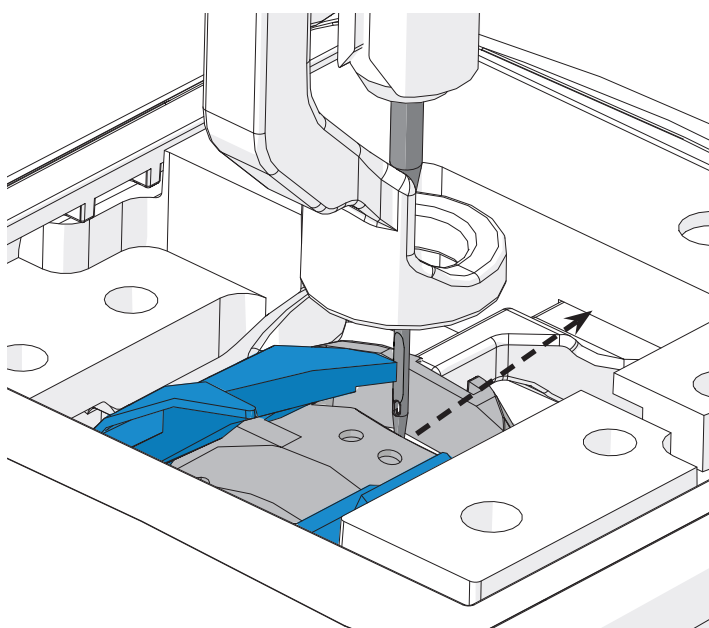
- 11 Turn the hand wheel the clockwise to bring the **needle** back down until it rests on top of the timing spacer. Do not let the needle rise to the top before bringing it back down or you will need to repeat steps 8-11.



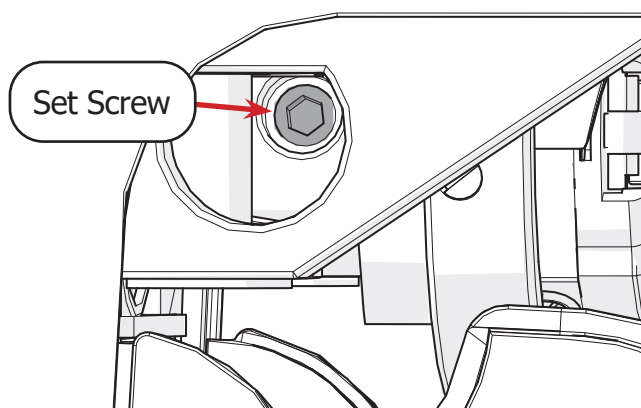
- 12 Position the tip of the **hook** (shown in blue) with the center of the **Needle Scarf** (shown in gray). This is easier to see from the back of the machine.



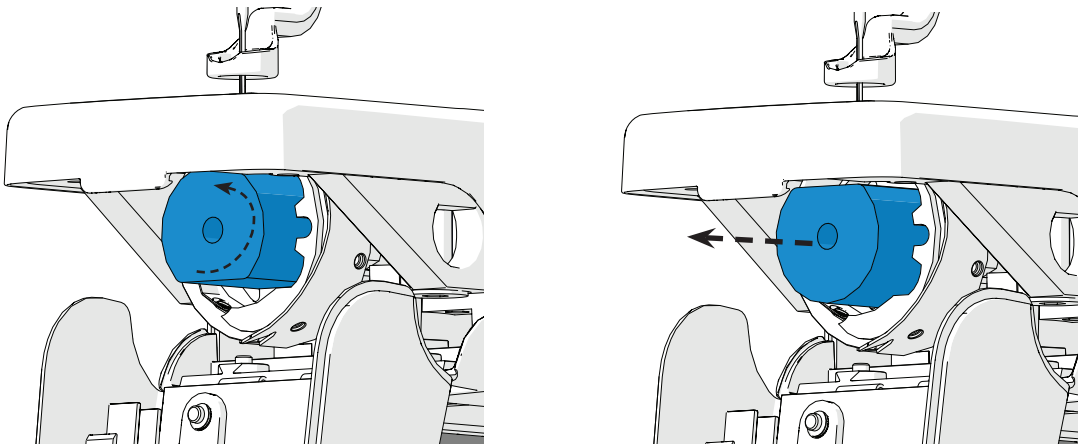
- 13 Pull the hook assembly toward the front of the machine until the hook is as close to the needle as possible without touching.



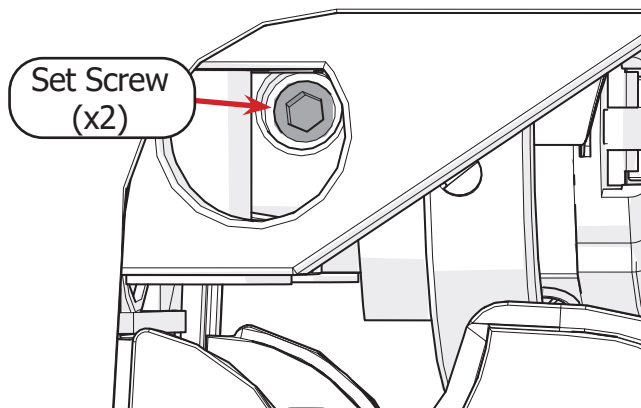
- 14 Use the 2 mm Allen wrench to tighten one of the three **set screws** through the timing cut-out window on the left.



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



- 16 Turn the hand wheel a full rotation to listen for clicking noises and to ensure the needle does not bend or hit the hook.
- 17 Tighten the two remaining **set screws** through the timing cut-out.



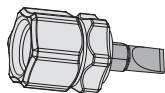
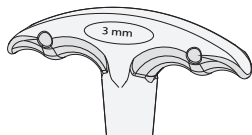
- 18 Replace and align the needle plate (see page 59).
- 19 Replace the bobbin case.
- 20 Test the machine and listen for any unusual noises. If there are any skipped stitches, the hook is too far away from the needle. If the thread breaks, the hook is too close to the needle.

Replacing the Hook Holder

Parts & Tools Needed:

T-handle Allen
Wrench 3 mm

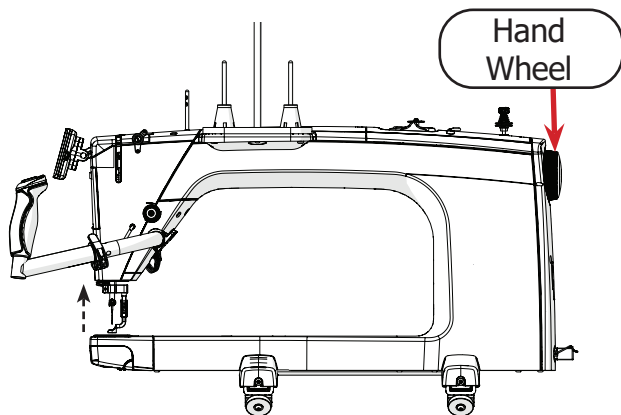
Flat-head Screwdriver



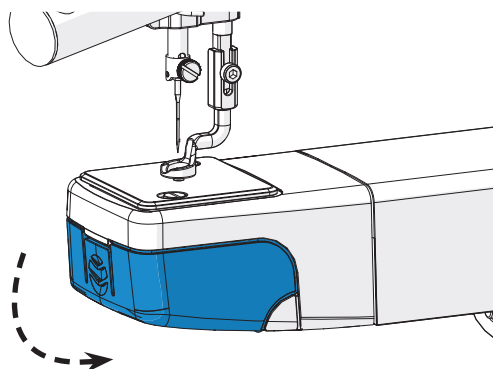
Removal Instructions

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

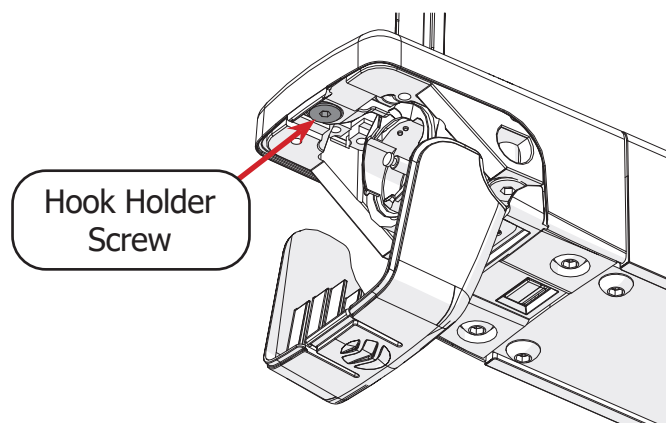
- 1 Turn off the machine.
- 2 Rotate the **hand wheel** to raise the needle to the highest point.



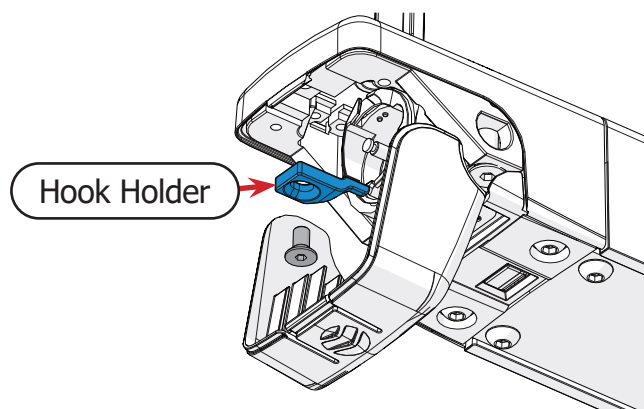
- 3 Press in on the hook assembly cover and down to open it.



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

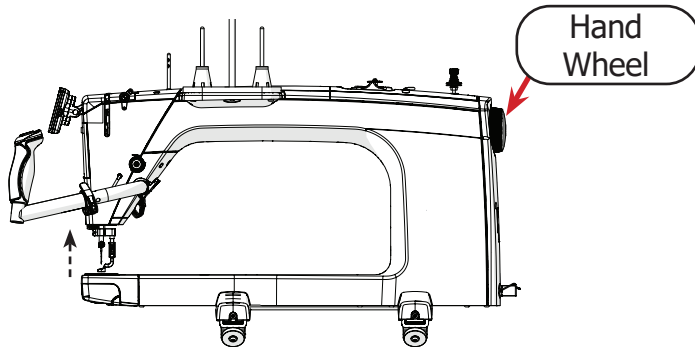


- 5 The **hook holder** will fall free of the machine.

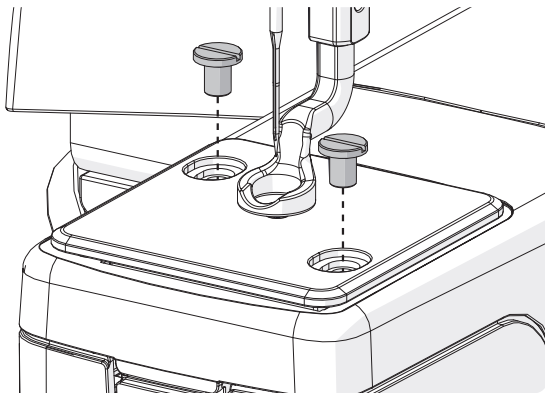


Installation Instructions

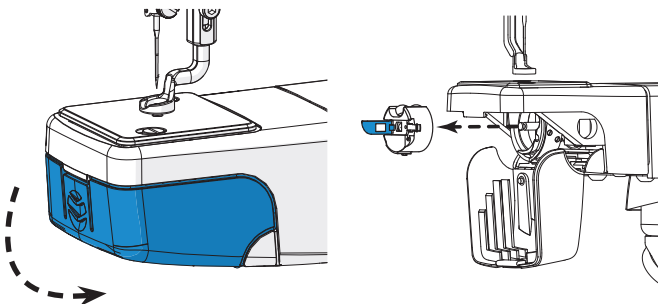
- 1 Turn off the machine.
- 2 Rotate the **hand wheel** to raise the needle to the highest point.



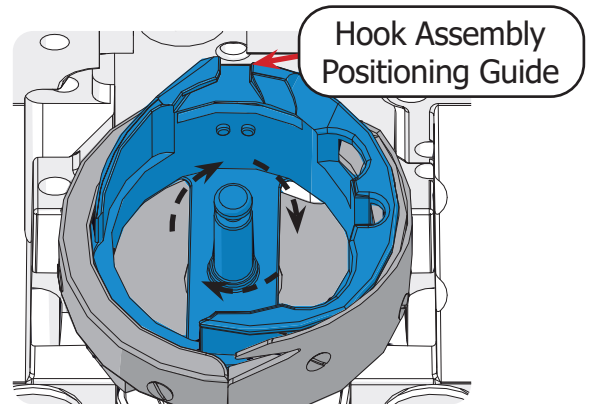
- 3 Remove the needle plate using the flat-head screwdriver (see page 59).



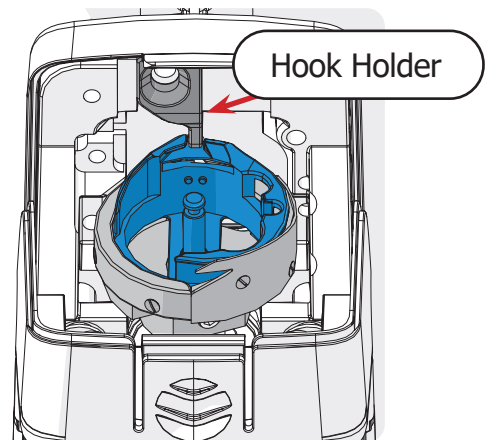
- 4 Remove the bobbin case from the hook assembly.



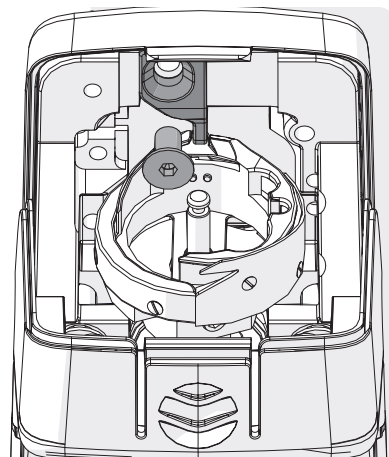
- 5 Turn the inside part of the **hook assembly** (shown in blue) so that the **positioning guide** is at the highest point.



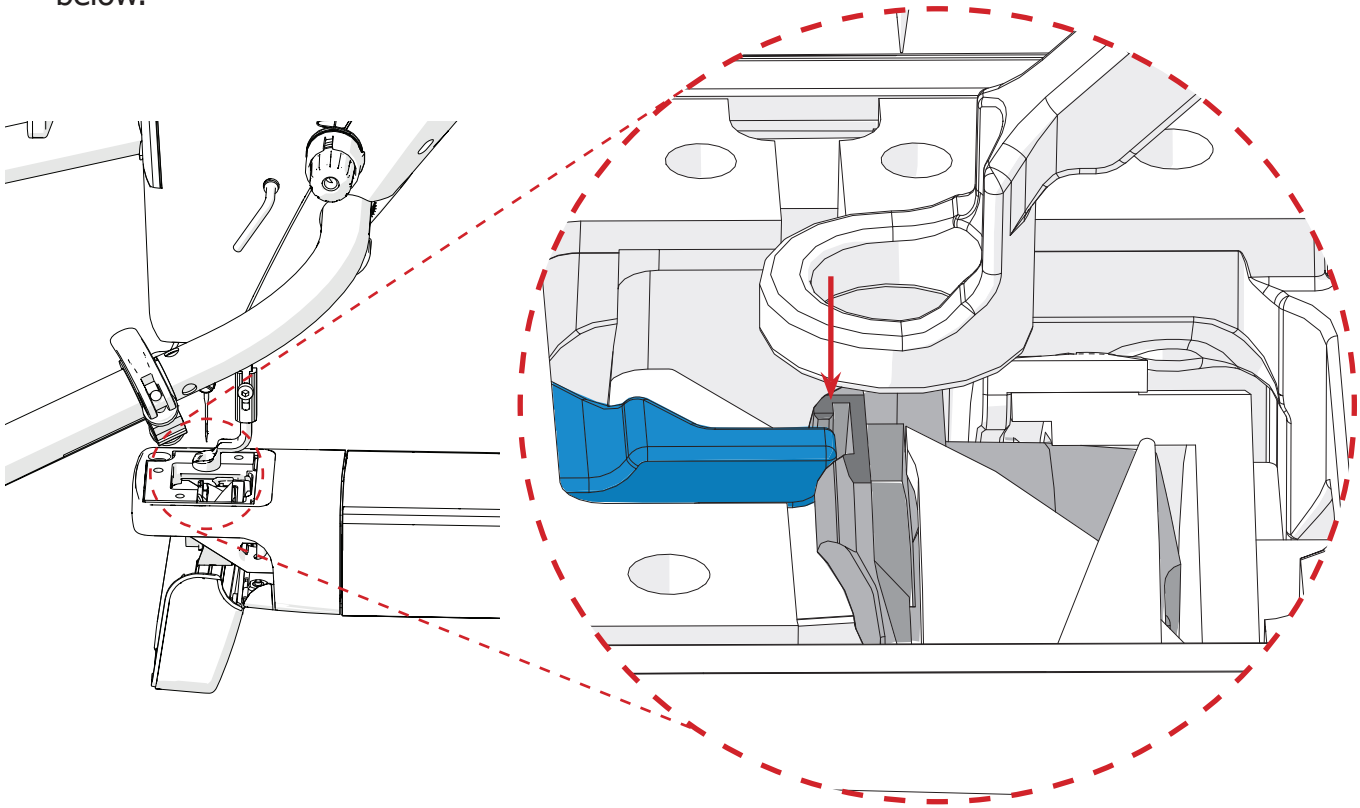
- 6 Slide the finger of the **hook holder** into the middle of the **hook assembly's positioning guide**.



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



- 8 Align the **hook holder** (blue) with the inside edge of the **positioning guide** (gray) as shown below.

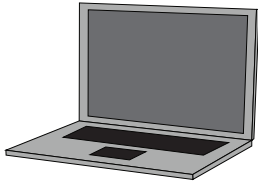


- 9 Tighten the hook holder screw to fasten the hook holder in place. The inside part of the hook assembly should no longer rotate freely by hand.
- 10 Re-install the needle plate. See page 59 for instructions.

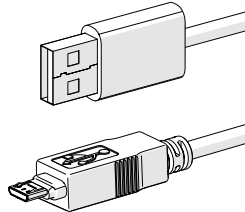
Updating Display Firmware

Parts & Tools Needed:

Desktop or Laptop
Computer



Mini USB cable



- 1 Use a desktop or laptop computer to download the **update** and the **DfuSe Demo app zip file** that were sent to your email.

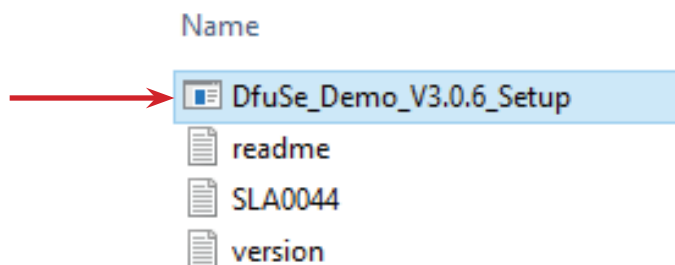


DfuSe Demo
App Zip File

Note: If you have already installed the DfuSe Demo app for a previous update you do not need to download it again. Download the update and continue to step 10 to install the update through the app.

Update

- 2 Open the zip file and select the file named **DfuSe_Demo_V3.0.6_Setup**. Then select **Extract all**.



Compressed (zipped) Folders



This application may depend on other compressed files in this folder.

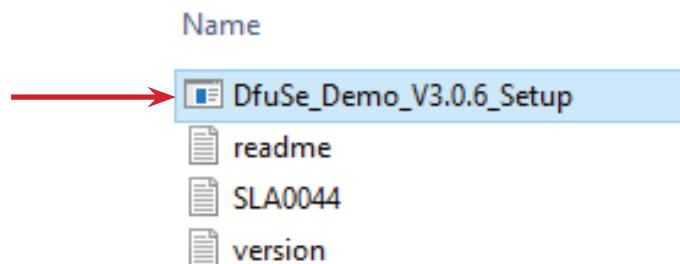
For the application to run properly, it is recommended that you first extract all files.

Extract all

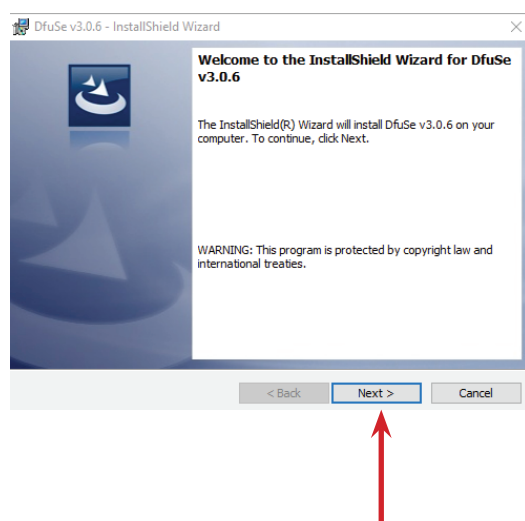
Run

Cancel

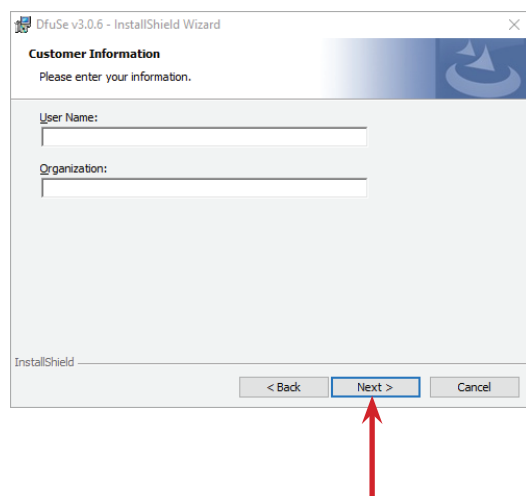
- 3 A new window will pop up with the now opened zip file. Select the file named **DfuSe_Demo_V3.0.6_Setup** again.



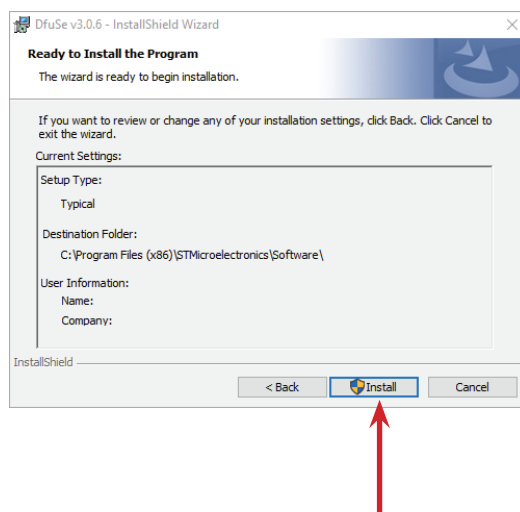
- 4 Select **Next**.



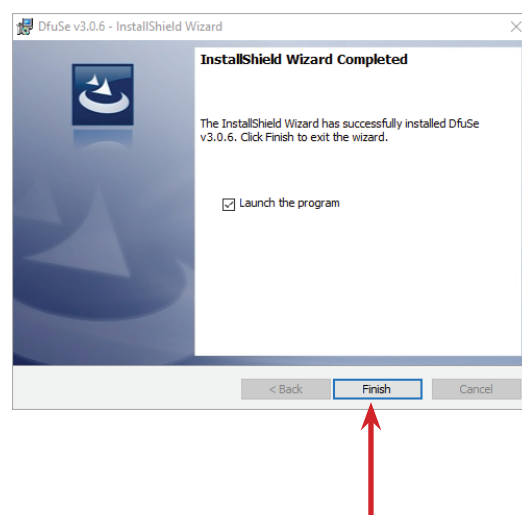
- 5 Select **Next** again. You do not need to fill out User Name or Organization.



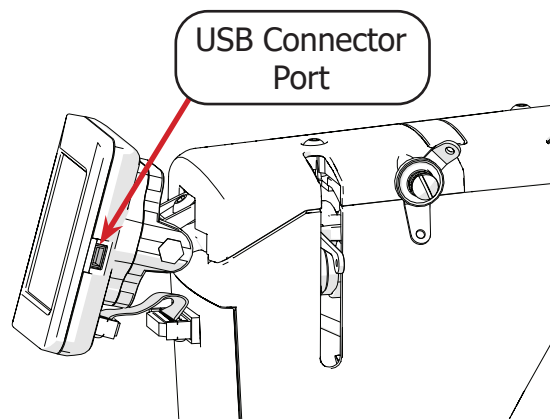
- 6 Select **Install**.



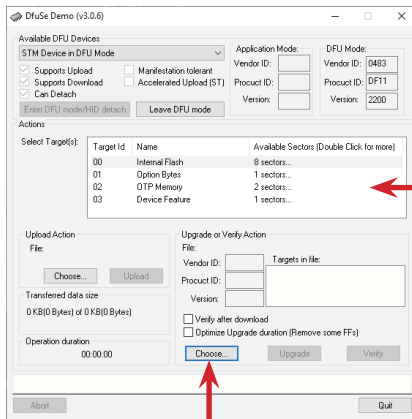
- 7 Select **Finish**.



- 8 Plug a mini USB cable into your computer and then plug the other end into the **USB connector port** on the side of the display.

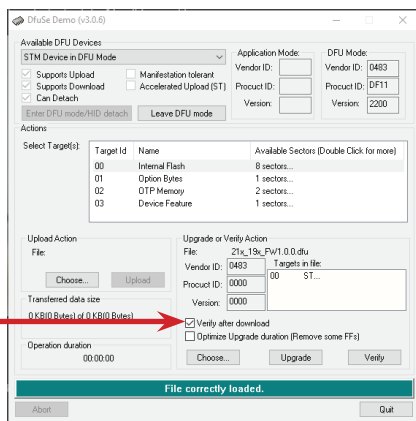


- 9 Open the DfuSe Demo program. Select **Choose** in the Upgrade or Verify Action section and then select the upgrade file you downloaded earlier.

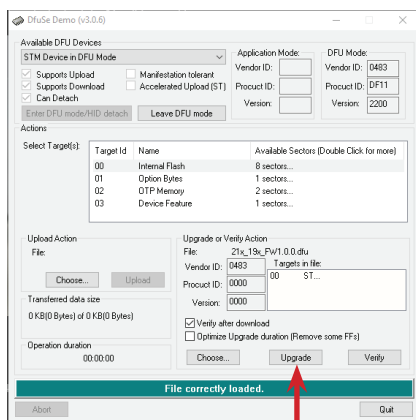


Note: If the machine is not properly connected to your computer, this section will be blank.

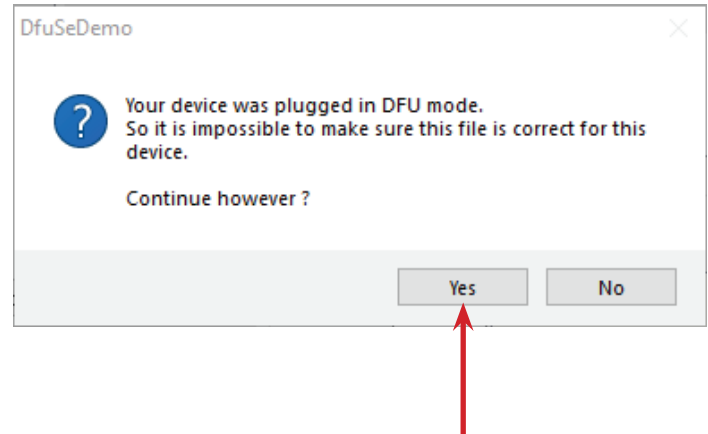
- 10 Check the box labeled **Verify after download**.



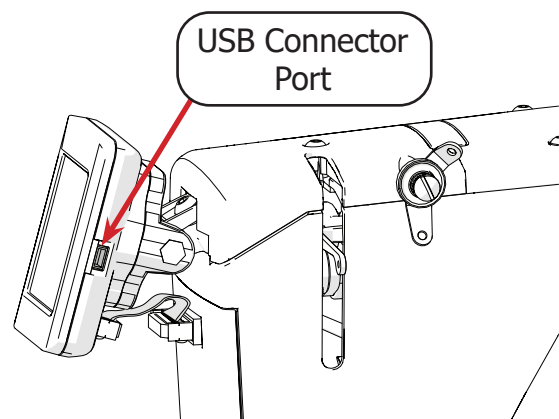
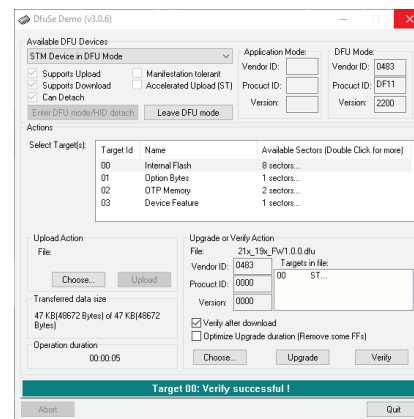
- 11 Select **Upgrade**.



- 12 Select **Yes**.



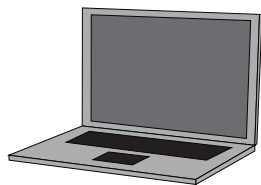
- 13 After the update is complete, close the app on your computer and unplug the mini USB from the **USB connector port** in back of the machine.



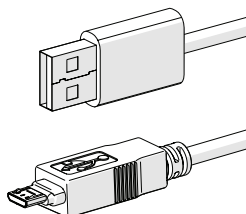
Updating Machine Firmware

Parts & Tools Needed:

Desktop or Laptop
Computer



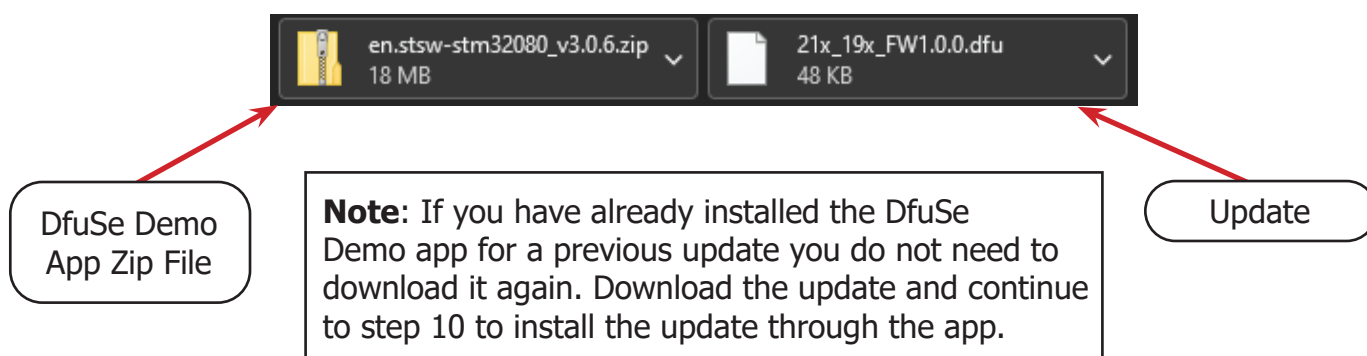
Mini USB cable



Instructions

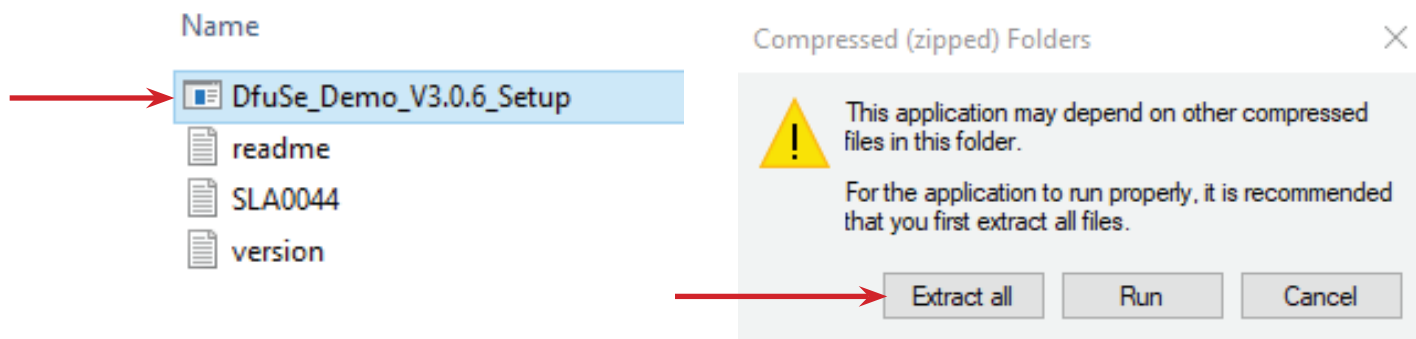
Take the following steps to update the display firmware:

- 1 Use a desktop or laptop computer to download the **update** and the **DfuSe Demo app zip file** that were sent to your email.



Note: If you have already installed the DfuSe Demo app for a previous update you do not need to download it again. Download the update and continue to step 10 to install the update through the app.

- 2 Open the zip file and select the file named **DfuSe_Demo_V3.0.6_Setup**. Then select **Extract all**.

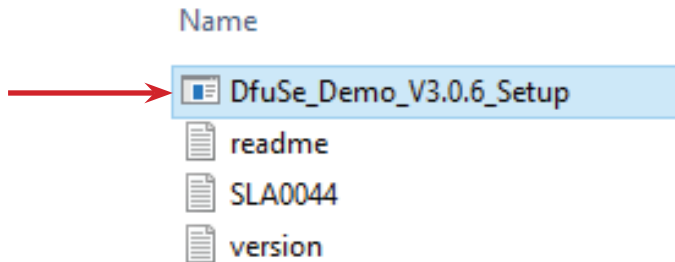


Compressed (zipped) Folders

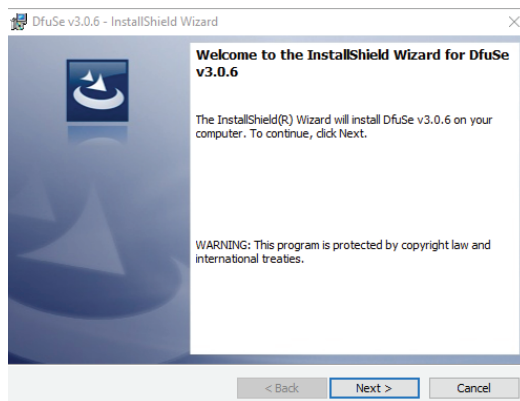
! This application may depend on other compressed files in this folder. For the application to run properly, it is recommended that you first extract all files.

Extract all Run Cancel

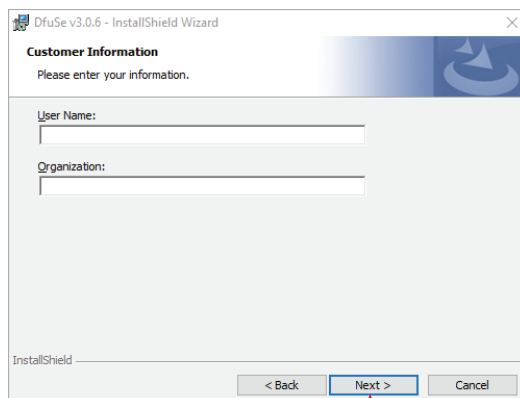
- 3 A new window will pop up with the now opened zip file. Select the file named **DfuSe_Demo_V3.0.6_Setup** again.



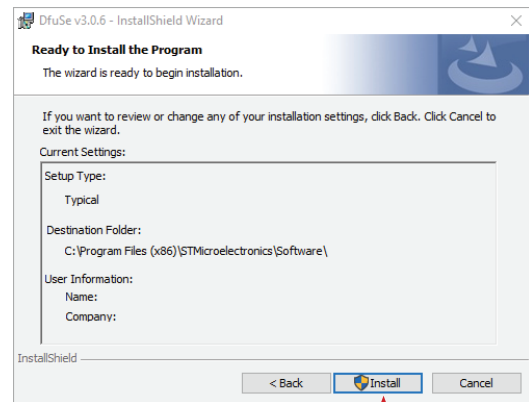
- 4 Select **Next**.



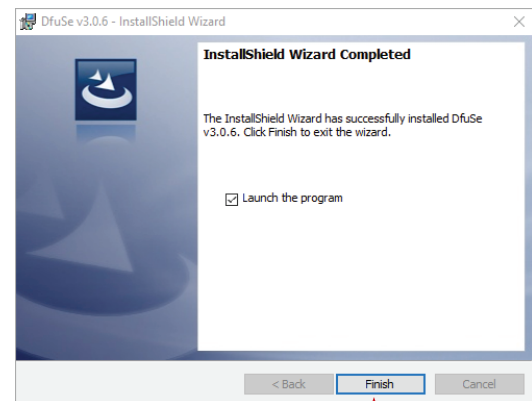
- 5 Select **Next** again. You do not need to fill out User Name or Organization.



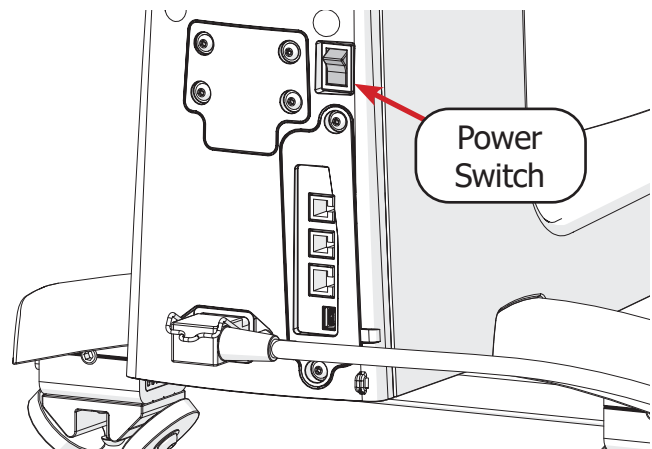
- 6 Select **Install**.



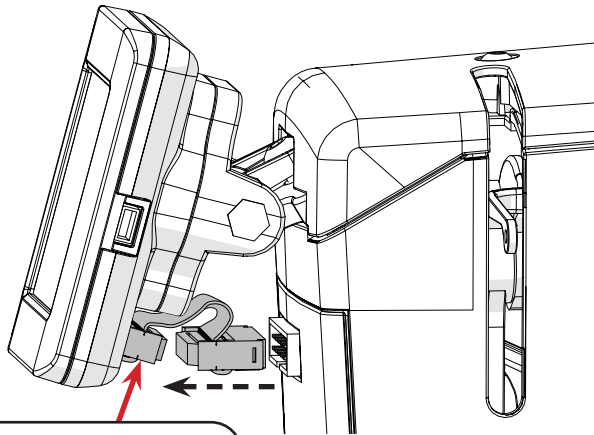
- 7 Select **Finish**.



- 8 Use the **power switch** on the back of the machine to turn the machine off.

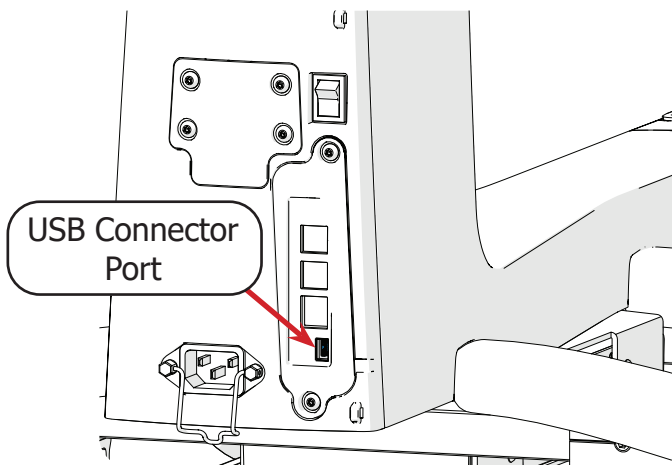


- 9 Unplug the **display cable**.

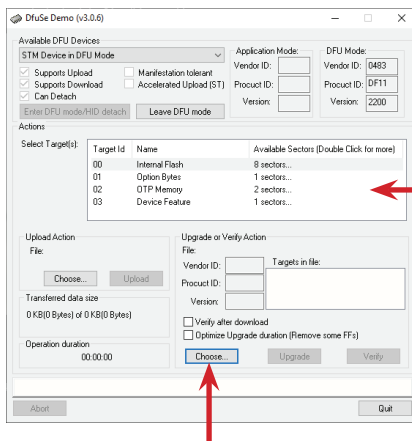


Display Cable

- 10 Plug a mini USB cable into your computer and then plug the other end into the **USB connector port** on the rear of the machine.

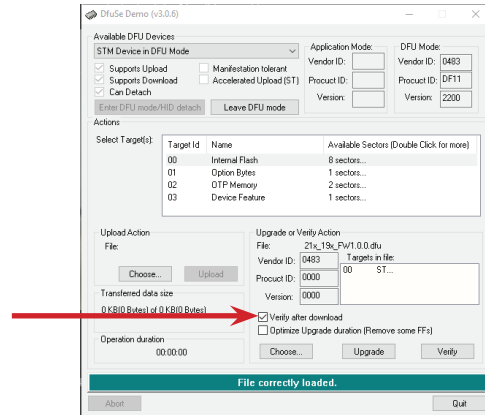


- 11 Open the DfuSe Demo program. Select **Choose** in the Upgrade or Verify Action section and then select the upgrade file you downloaded earlier.

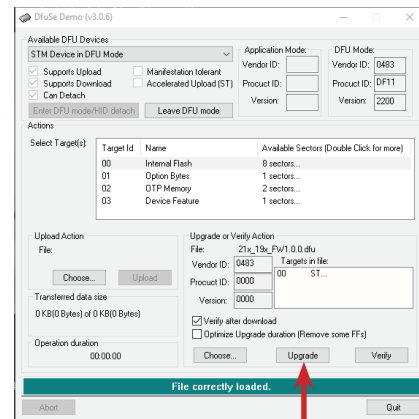


Note: If the machine is not properly connected to your computer, this section will be blank.

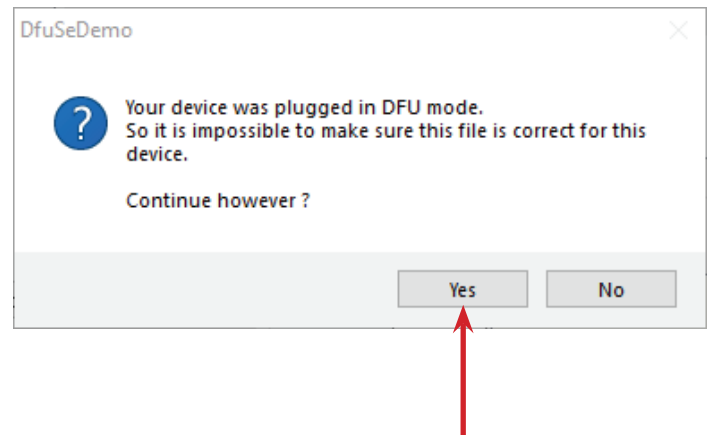
- 12 Check the box labeled **Verify after download**.



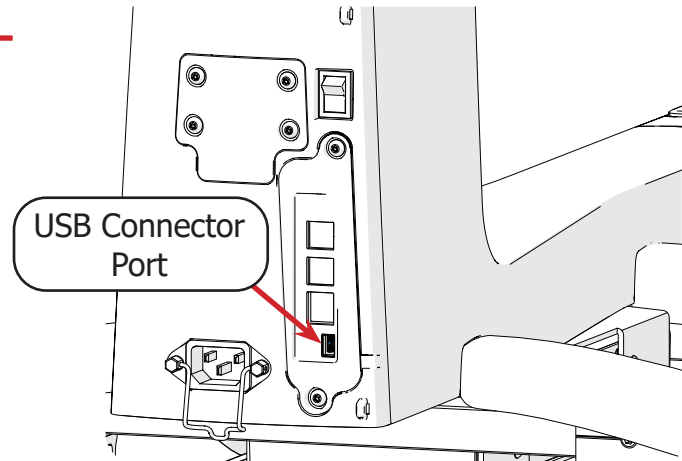
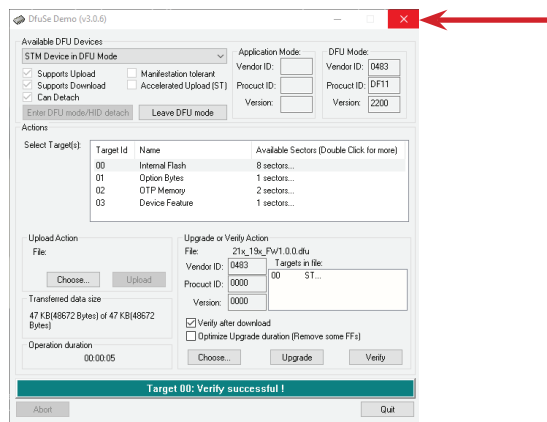
- 13 Select **Upgrade**.



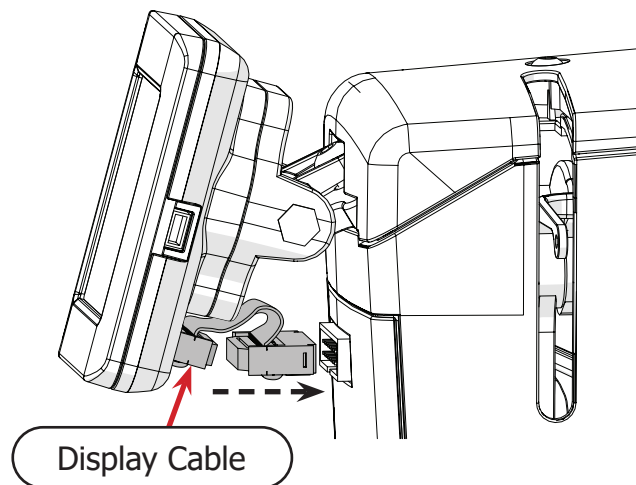
- 14 Select **Yes**.



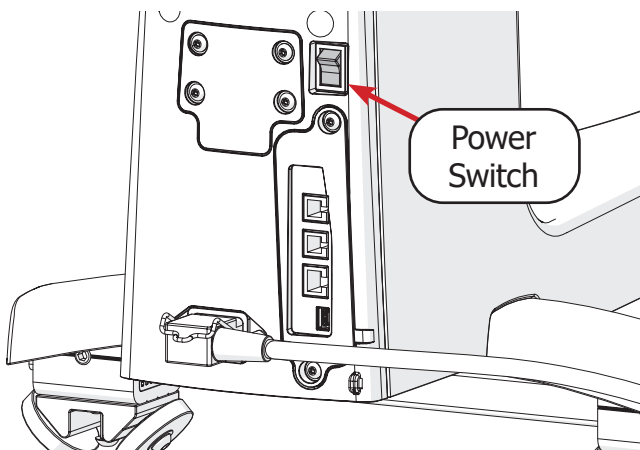
- 15 After the update is complete, close the app on your computer and unplug the mini USB from the **USB connector port** in back of the machine.



- 16 Plug in the **display cable**.



- 17 Turn the machine on with the **power switch**. The machine is now updated.



- 18 After updating the machine firmware, continue to the next page to calibrate the machine speed.

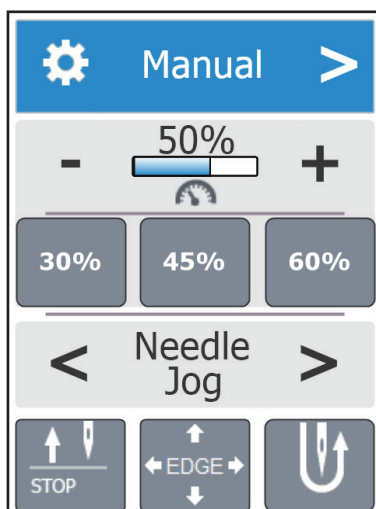
Calibrating the Machine Speed

Instructions

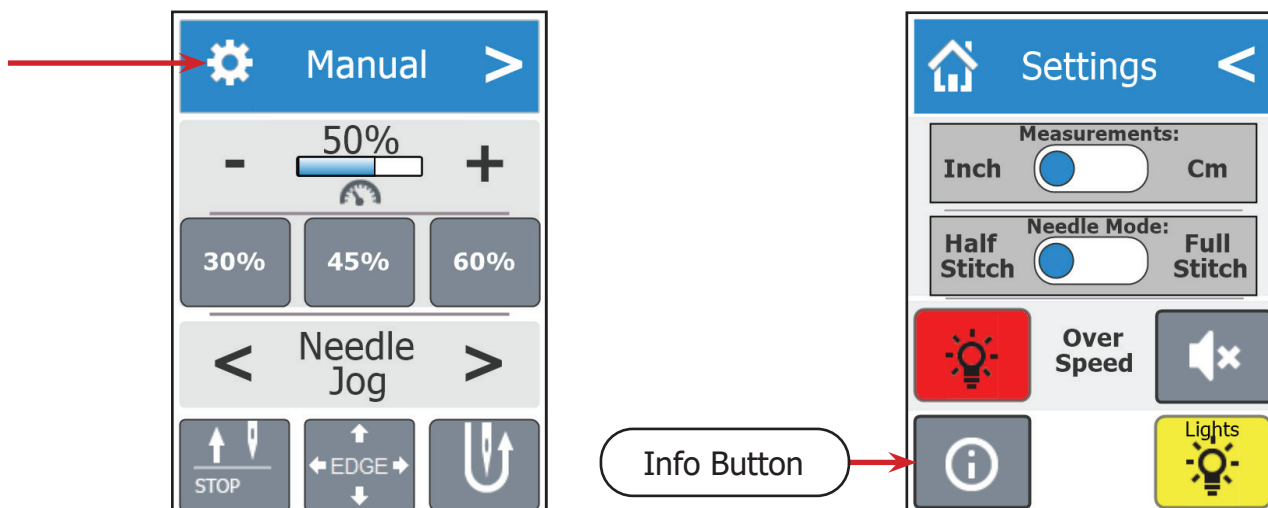
The self speed calibration is used to ensure that your machine is running at the correct speed. Each machine has already been calibrated and set at the factory and doesn't need to be changed regularly. Only run self speed calibration if you have recently updated your software and are having issues with your stitch regulation, baste, or your machine is running slow.

Take the following steps to access the testing menu and calibrate the machine speed:

- 1 If your machine hasn't been used for at least 10 min move your machine away from any fabric and run it in manual mode for 5 minutes before beginning the calibration process.

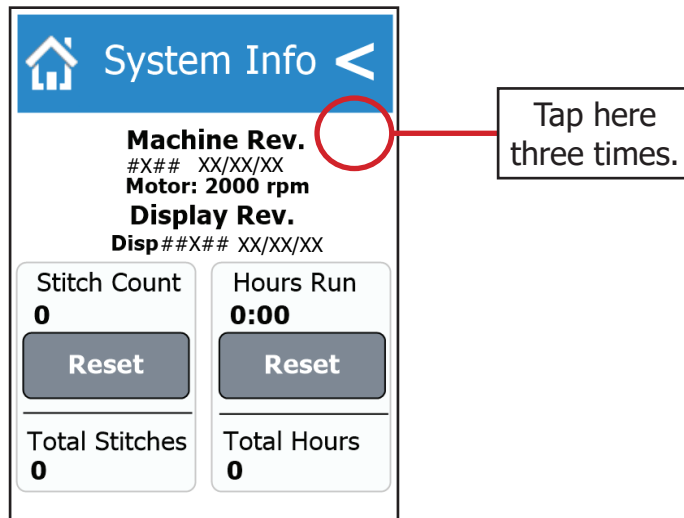


- 2 Open the settings menu and press the **info button** to access the System Info screen.

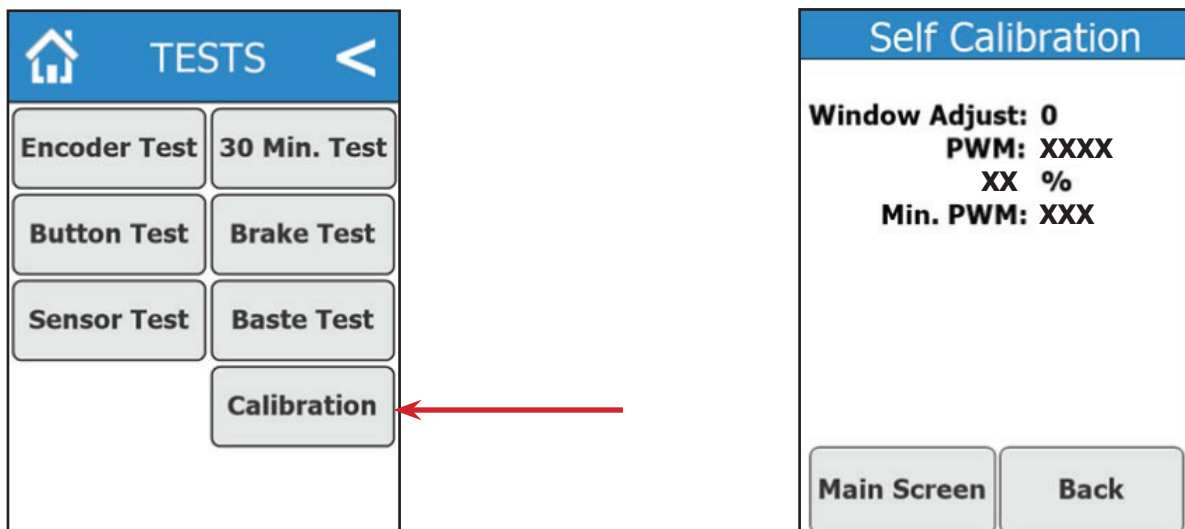


Calibrating the Machine Speed (continued)

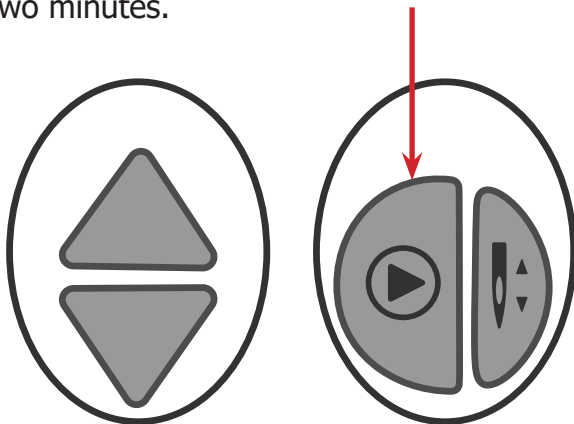
- 3 Tap three times on the blank space underneath the back arrow on the System Info screen to open the testing menu.



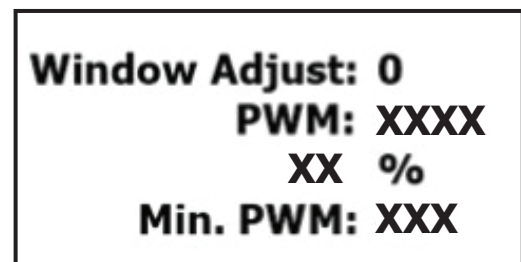
- 4 Select **Calibration** to open the **Self Calibration** screen.



- 5 After this screen is open, press the start/stop quilting button on the handlebars to start the calibration. The machine will run for up to two minutes.



- 6 The display will show the diagnostic results of the calibration.



Window Offset

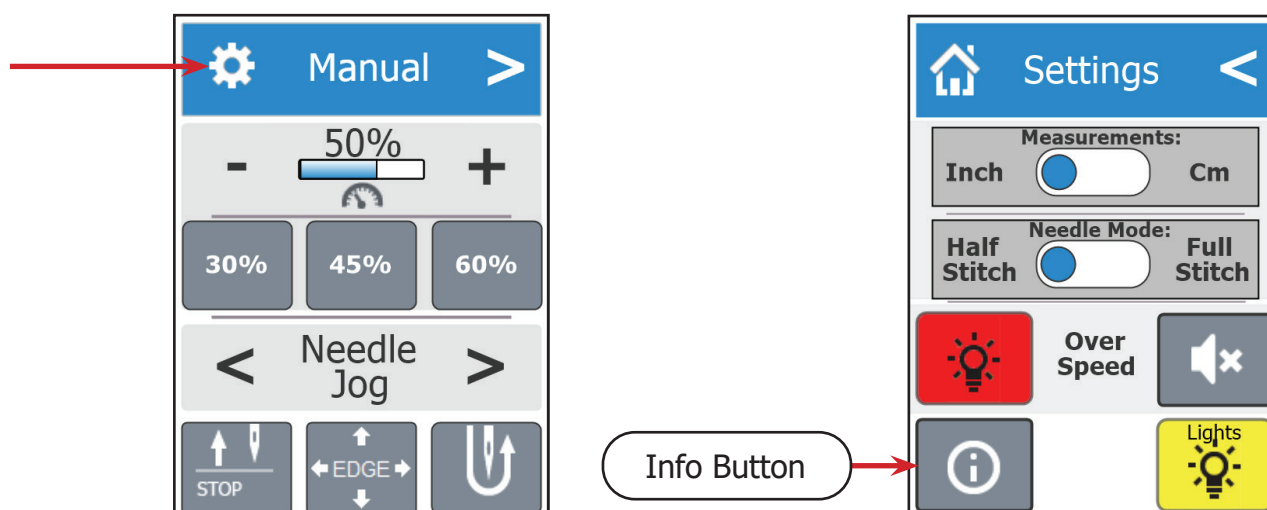
Instructions

If your needle stop is not stopping at the correct position, your top thread may not release from the hook assembly, causing your thread to snag. This snagging can also occur when stitching in Baste Mode. Your needle may also be stopping too low, potentially getting stuck in or damaging your fabric. You can address this issue by adjusting the window offset, which changes the position of the needle stop.

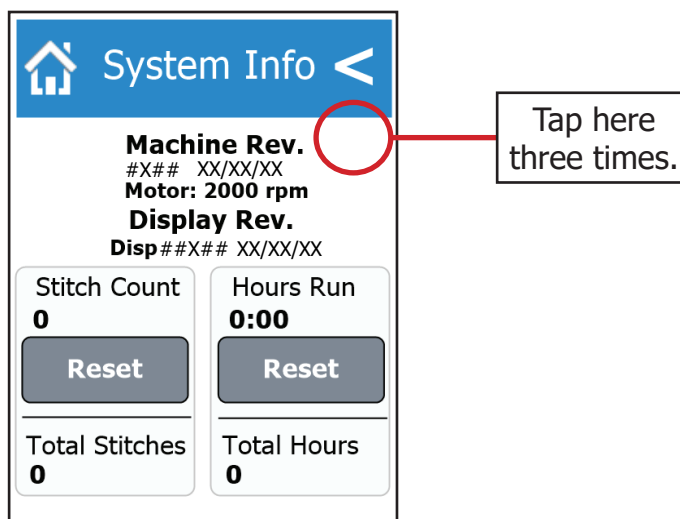
Only do this if a Grace Company technician advises you to do so.

Take the following steps to access the testing menu and adjust the window offset:

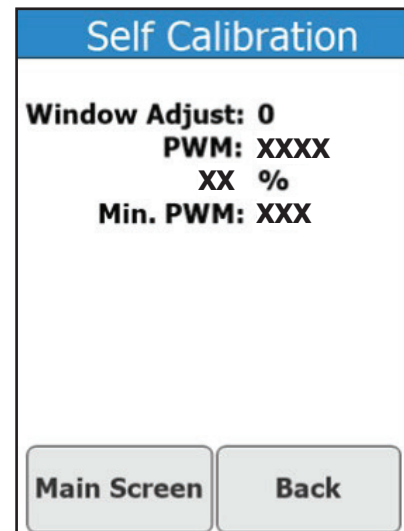
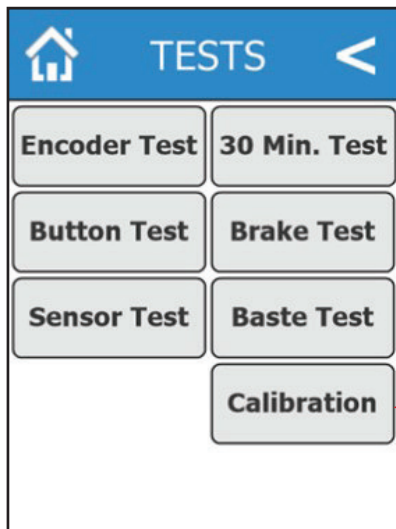
- 1 Open the settings menu and press the **info button** to access the System Info screen.



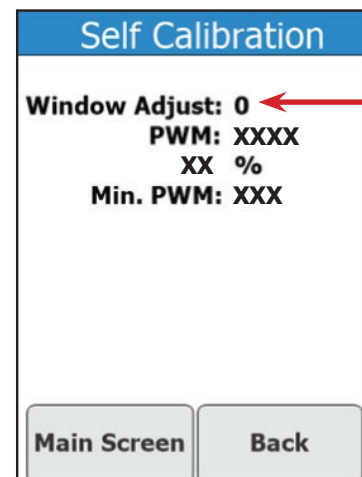
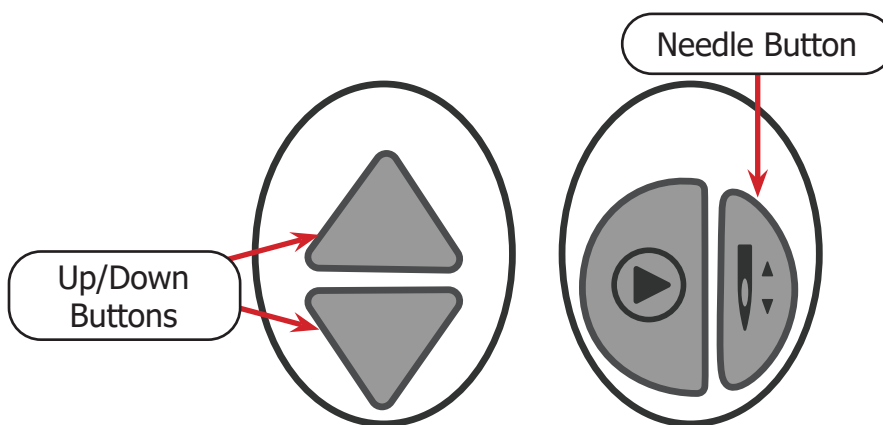
- 2 Tap three times on the blank space underneath the back arrow on the System Info screen to open the testing menu.



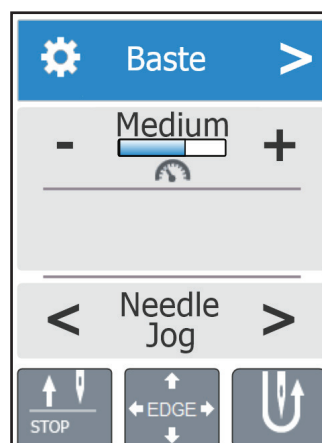
- 3 Select **Calibration** to open the **Self Calibration** screen.



- 4 Press the needle button to prepare the window offset to be adjusted. Then use the up and down buttons on the left handlebar to increase or decrease the window offset.



- 5 Test the machine by using the needle button and by stitching in baste mode to see if the thread is correctly released from the hook assembly without snagging. Repeat step 4 as needed until the thread no longer snags on the hook assembly.



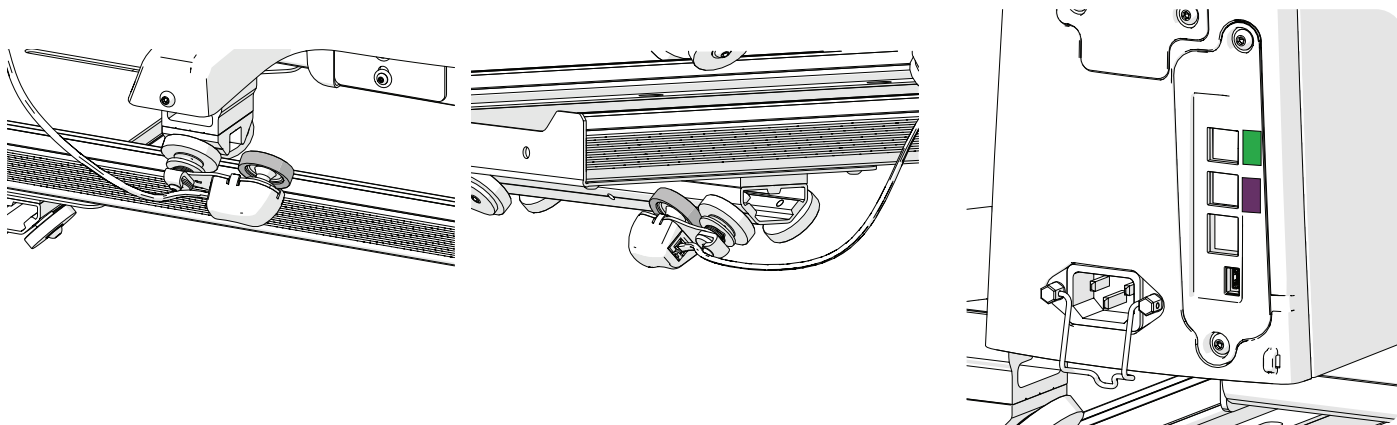
Encoder Test

Instructions

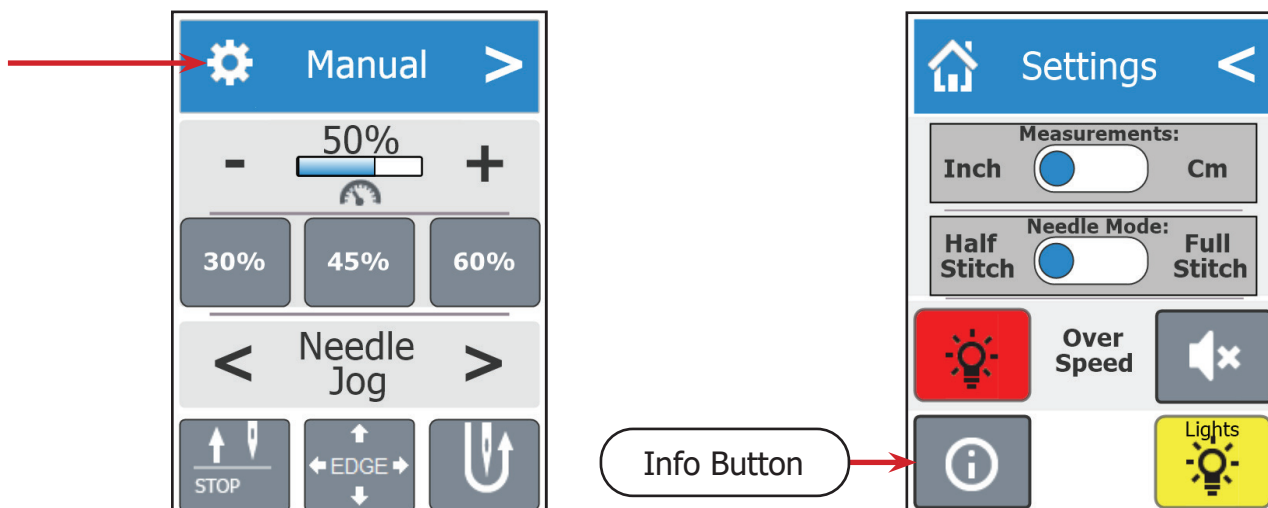
If you are concerned that your encoders are not functioning properly, you can use the encoder test in the testing menu to make sure the encoders are connected and correctly sending signals to your machine.

Take the following steps to test your encoders:

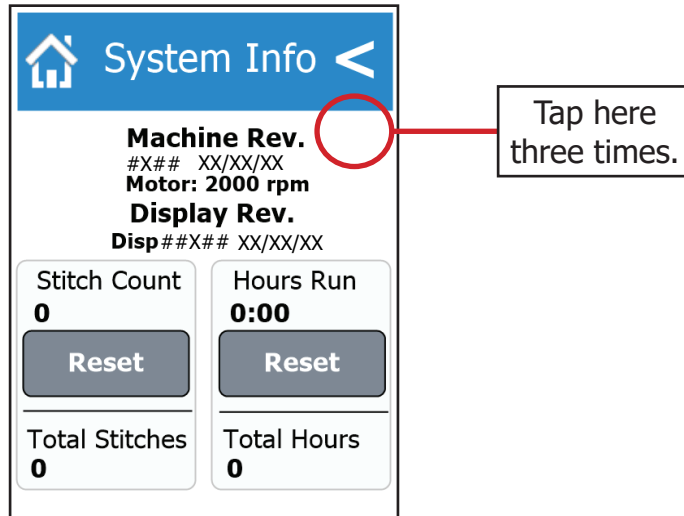
- 1 First, make sure your encoders are installed correctly and are plugged into the correct ports. Also make sure the tracks on your frame and bottom carriage are wiped down and clear of any debris.



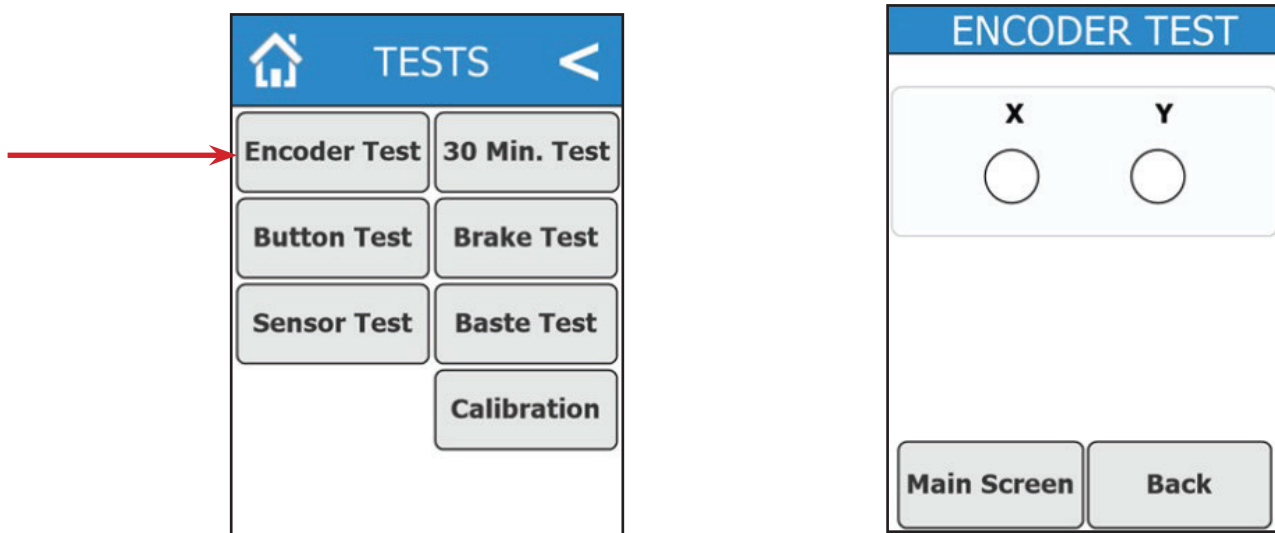
- 2 Open the settings menu and press the **info button** to access the System Info screen.



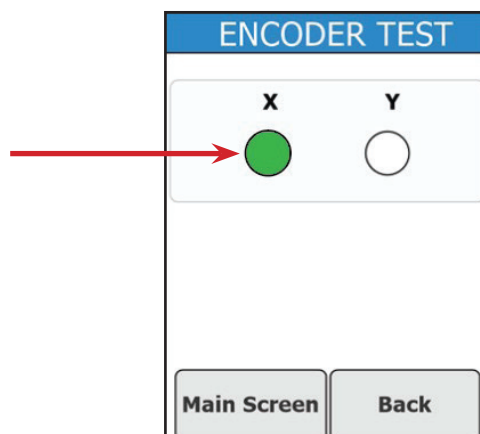
- 3 Tap three times on the blank space underneath the back arrow on the System Info screen to open the testing menu.



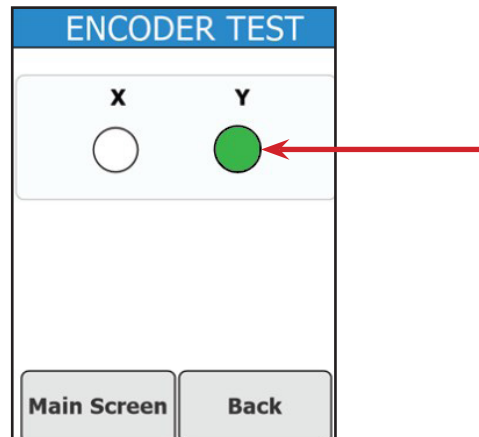
- 4 Select **Encoder Test** to open the **Encoder Test** screen.



- 5 Move your machine side to side on your frame. The lower encoder should register movement along the frame's tracks, also called the "X-axis" of your frame. If the encoder is correctly signaling this movement to your machine, the "X" on your display will turn green.



- 6 Now move your machine forward and backward on your bottom carriage. The upper encoder should register movement along the carriage's tracks, also called the "Y-axis" of your frame. If the encoder is correctly signaling this movement to your machine, the "Y" on your display will turn green.

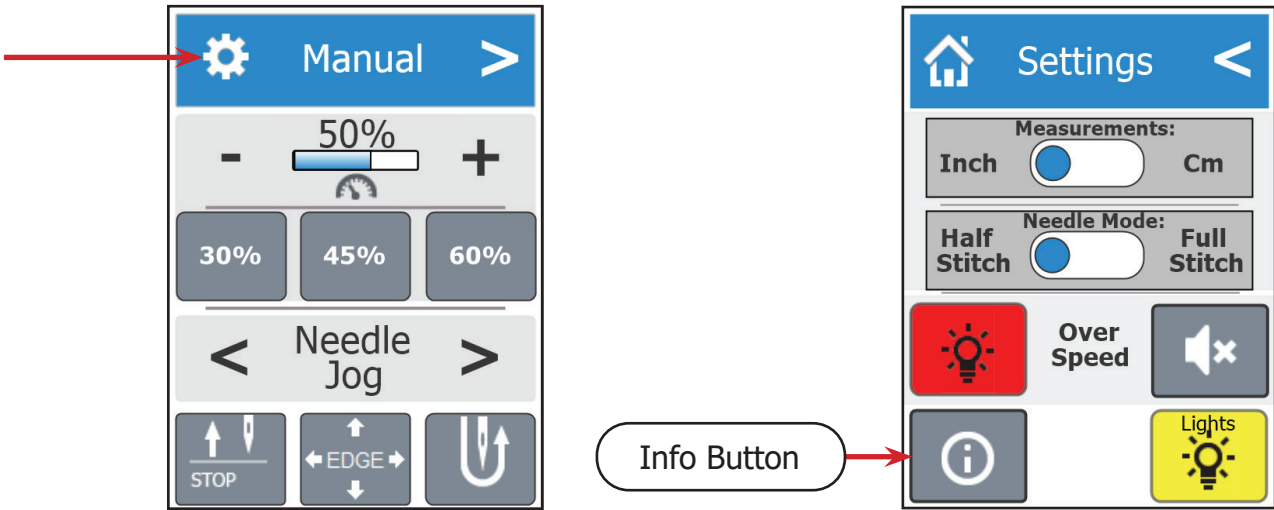


Button Test

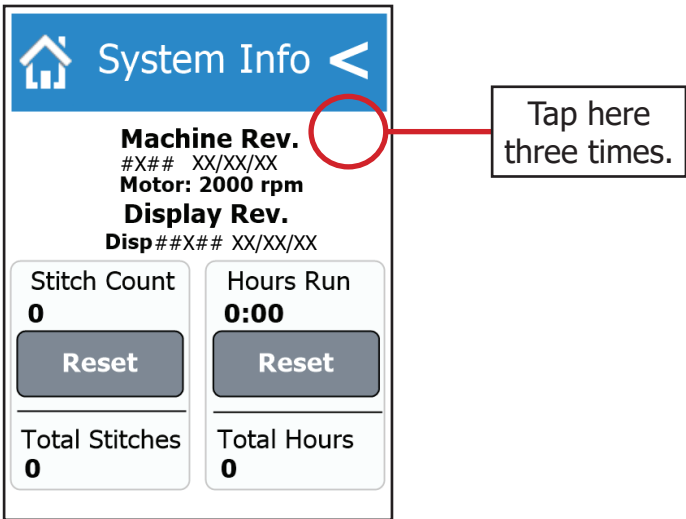
Instructions

Take the following steps to access the testing menu and perform a button test to make sure your handlebar buttons are functioning correctly:

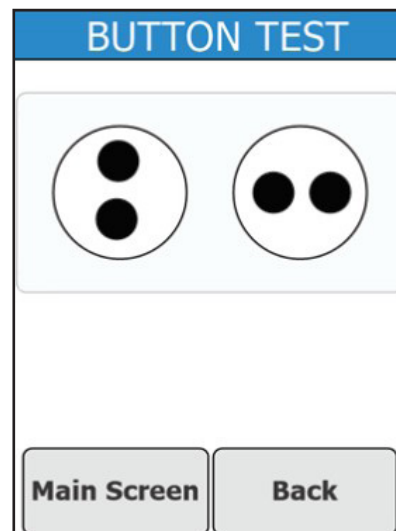
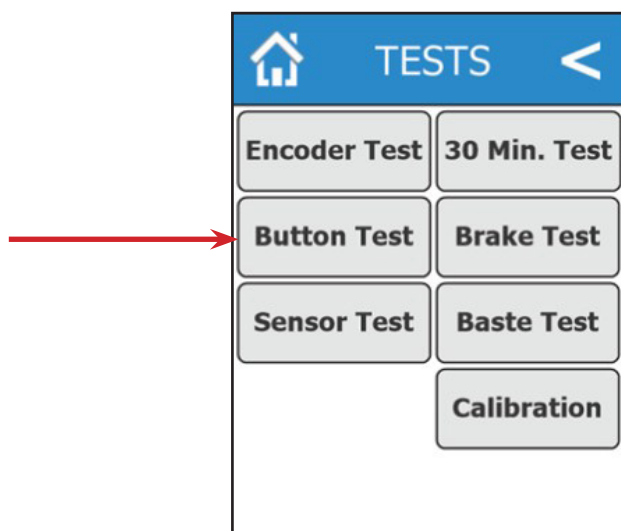
- 1 Open the settings menu and press the **info button** to access the System Info screen.



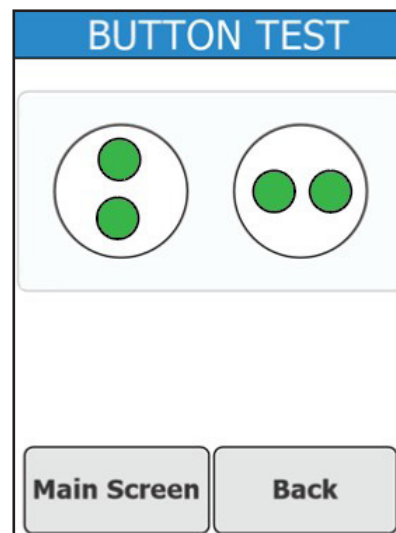
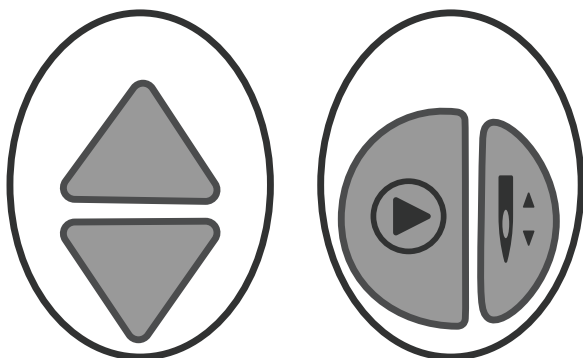
- 2 Tap three times on the blank space underneath the back arrow on the System Info screen to open the testing menu.



- 3 Select **Button Test** and the button test screen will appear.



- 4 Press the buttons on your handlebars one at a time. The corresponding buttons on the button test screen will turn green if the buttons are working correctly.



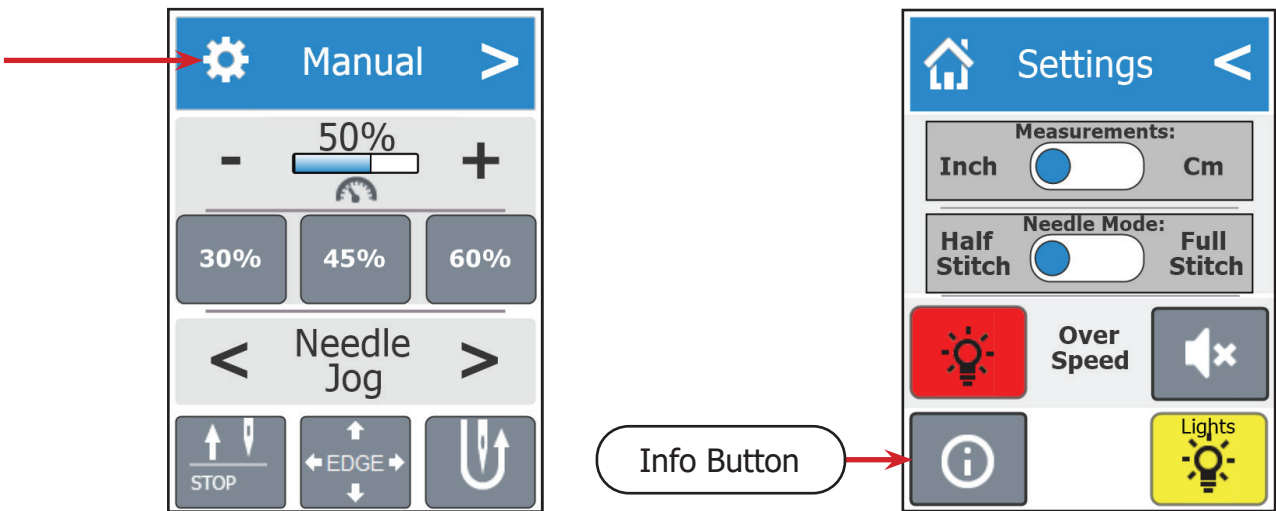
Needle Sensor Test

Instructions

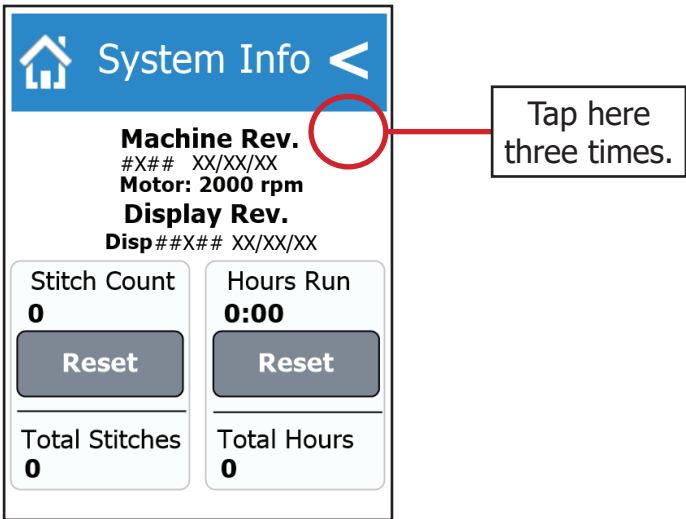
Your machine is equipped with an optical sensor that tells the machine’s computer if the needle is in the correct position and if it is moving at the correct speed.

Take the following steps to access the testing menu and perform a test to make sure this sensor is working properly:

- 1 Open the settings menu and press the **info button** to access the System Info screen.

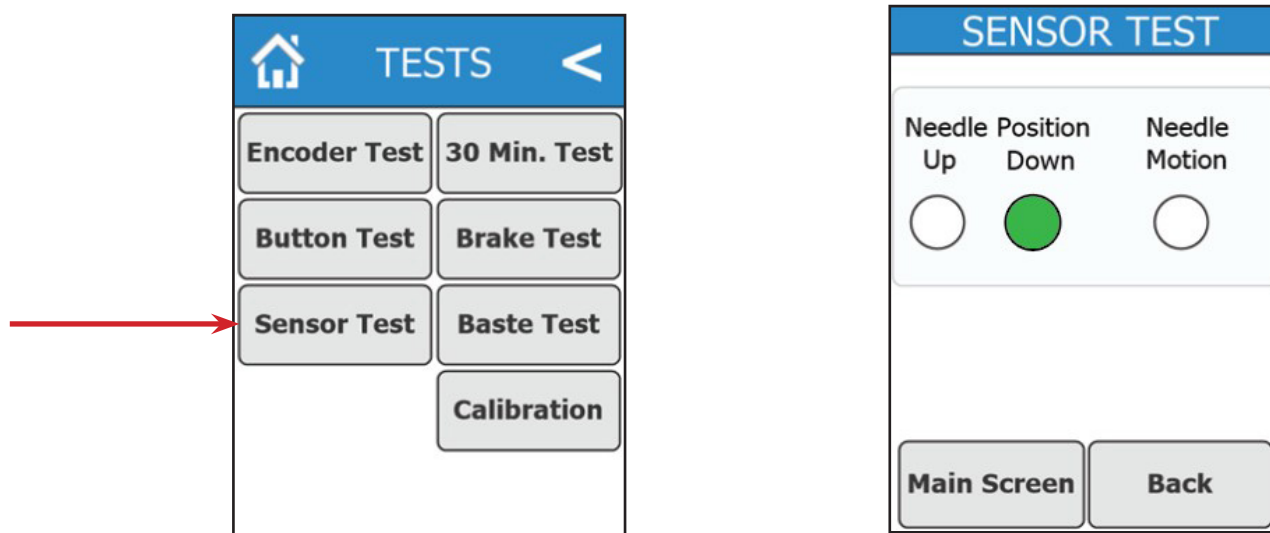


- 2 Tap three times on the blank space underneath the back arrow on the System Info screen to open the testing menu.

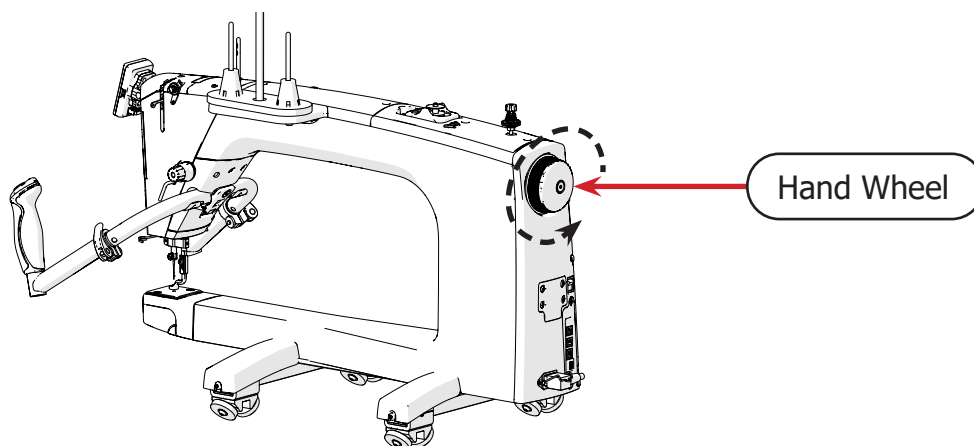


Needle Sensor Test (continued)

- 3 Select **Sensor Test** and the sensor test screen will appear.

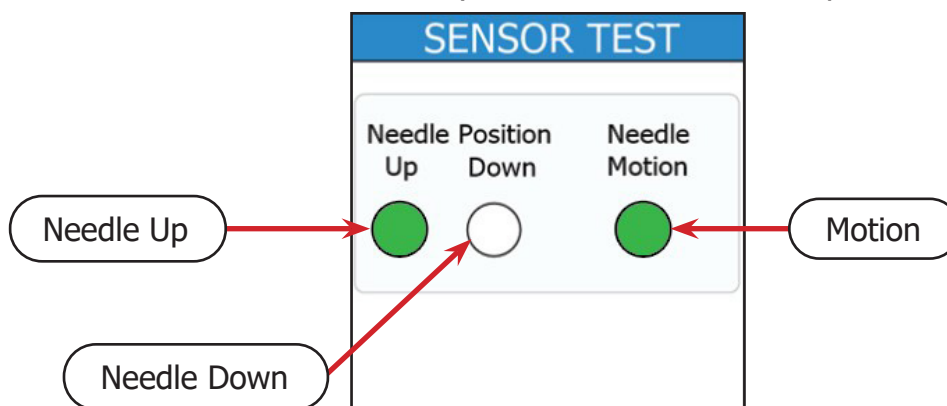


- 4 Rotate the **hand wheel** counter-clockwise on your machine.



- 5 The **motion** light should turn green as you turn the hand wheel.

The Needle Up and Needle Down lights should alternate so that the **Needle Up** light turns green when the needle is about halfway up to its highest position and the **Needle Down** light turns green when the needle is about halfway back down to its lowest position.



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Information on the disposal for Waste Electrical & Electronic Equipment (WEEE): This symbol on the products and accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper disposal for treatment, recovery and recycling, please take these products to designated collection points where they will be accepted on a free-of-charge basis. In some countries you may be able to return your products to your local retailer upon the purchase of a new product. Disposing of this product correctly will help you save valuable resources and prevent any possible effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest collection point for WEEE.



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