

King Quilter  
special edition

# *Long arm Quilting Machine*



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First Print

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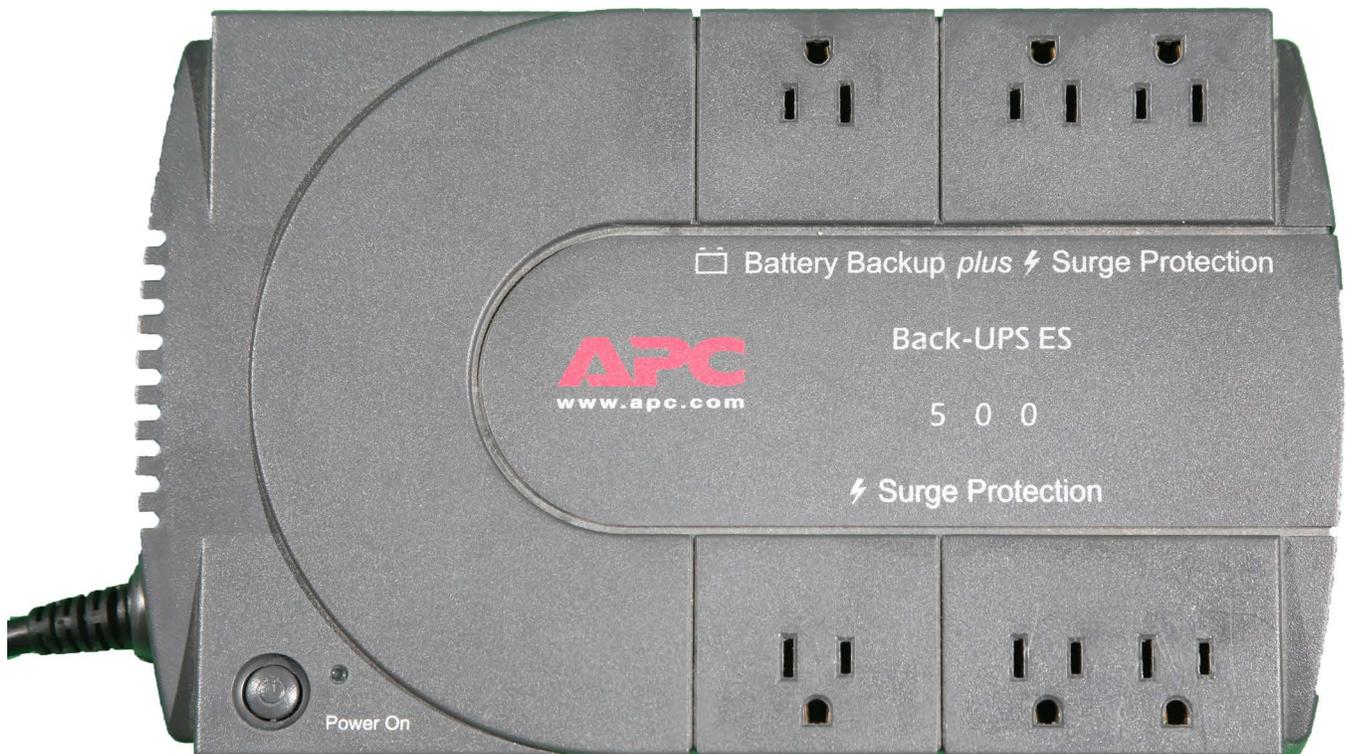
## Warranty

We believe that we have designed and are manufacturing the best long arm quilting machine available. **As you unpack your machine be sure to keep the box and packing materials designed to protect the machine during shipping. Should it become necessary for you to return the machine for warranty work please call us for specific instructions for packing and shipping your machine**

- Your Long arm Quilting Machine has a full labor warranty for one year from the day you receive your machine. We guarantee the machine parts for five years
- The machine must be cleaned and oiled regularly according to the instructions in this manual. Failure to properly maintain the machine will void this warranty.
- Your Long arm Quilting Machine must be plugged into a surge protected electrical outlet. We highly recommend using an Uninterrupted Power Supply (UPS) also known as a Battery Backup. This helps to ensure that you are getting a regulated 110 volts into your machine. See photo below of UPS Battery Backup.
- Should we mutually decide that your machine cannot be repaired using normal communications we will arrange for machine to be returned to the factory.

## Should you have a Problem

Please contact your selling dealership they are your servicing dealership.



# Diagram Showing the sides of the machine

## Left Side

**Bobbin Tension.**  
This is used to apply tension to the thread being loaded on the bobbin.

**Access Panel**  
Above the motor there is a panel that will give you access to the workings of the bobbin winder. There are five screws holding this on plus you have to remove the motor cover.

## Front

**Face Plate**  
Your handlebars attach to the face plate. There are 3 screws that hold this on to the machine.

## Back

## Right Side

**Needle Plate**  
2 screws hold this in place



## 1-2 Attaching the Handle Bars

You will need to attach your handle bars to the machine. The Handle Bars are adjustable with soft touch buttons on the end which can be configured to suit your needs. You can loosen the black knob at the side of the handles to adjust up or down and in or out.

**Step 1:** Locate your handles. *See figure 1-5*

**Step 2:** On the front of your machine you will find two screws that your handles are going to attach too. *See figure 1-6*

**Step 3:** Remove the screws on the front of the machine.

**Step 4:** Using the bottom set of holes on the handle bars attach the handle bar to the machine.

**Step 5:** Use the screws removed in step 3 to hold the handle bars in place. *See figure 1-7*



Figure 1-5



Figure 1-6



Figure 1-7

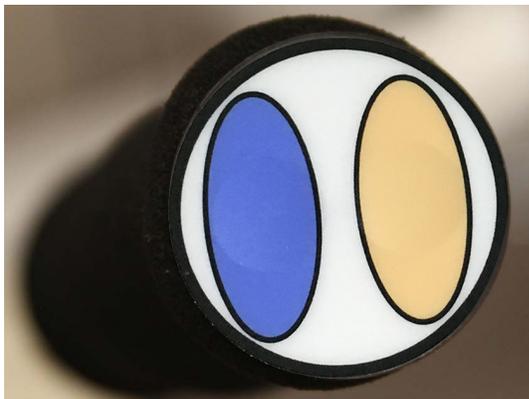


Figure 1-8

Left Handle

Soft touch buttons on the handle bars

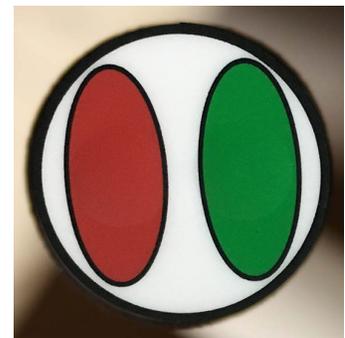


Figure 1-9 Right Handle

## Attaching the Rocker arm cover

Your Long arm Quilting Machine comes with a cover to place over the rocker arm and the cables coming out of the side of the machine. Care must be taken when attaching this cover to not damage the cables.

To help with attaching the Rocker arm cover you may need to remove three (3) of the screws holding the handle bar on and loosen the fourth screw so that you can swing the handles out of the way of the front two screws used to hold the rocker arm cover in place. Be sure to move carefully to prevent damage to the connecting cables.

**Step 1:** Locate the rocker arm cover

While checking out the cover notice the two cut outs at the top of the cover. These will go around the casting arms holding the rocker arm parts. Also notice the channel running along the bottom of the cover with the notch at the front for the cables to extend out of the cover to the handle bar and the display/control unit.

**Step 2:** The two (2) screws to the left of the cables when looking at the cables connected to the side of the machine. Also the two (2) screws towards the front of the machine.

**Step 3:** Slide the cover into place while ensuring that the cables are in the path and feed out the notch in the front. *See figure 8*

**Step 4:** Once in place replace the four (4) screws. Only snug into place as if you over tighten the screws they will crack the cover.

**Step 5:** Use the remaining three screws for the handle bar to secure the handle bar in place. This will ensure you have positive control of the machine when operating.



*Figure 5*



*Figure 6*



*Figure 7*



*Figure 8*

# Your Thread Stand

Your Long arm Quilting Machine comes with a four spool thread stand. This thread stand is connected to the side of your machine and can hold bobbin thread you are using to wind onto your bobbins and the top thread you are using to quilt. You can also have a second spool of thread on the stand if you are using two different threads on your quilt. This 4 spool thread stand has a telescoping thread holder which needs to be all the way up when you are quilting to help the thread come off the spool evenly and smoothly.

**Step 1:** Slide the telescoping thread tree into the hole provided between the tread holders.

**Step 2:** Using the supplied screw with washer insert from the bottom side to secure the telescoping thread tree in place.

**Step 3:** On the left side of your machine ( the left side of the machine is the side with the motor) you will see two screws not holding anything on yet.

**Step 4:** Loosen these two screws. You don't need to take them out but they do need to be loose so that you can slide the thread stand over them.

**Step 5:** On the thread stand you will see two holes on the underside which can be placed over the two screws and then drop into place.

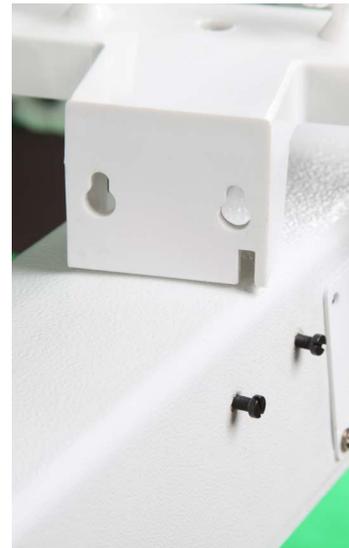
**Step 6:** Once you have the thread stand in place over the two screws tighten the screws to hold the thread stand in place.

**Step 7:** Locate the top thread tree guide and the plastic thread cones and position the tree on top of the upright shaft. Next place the 4 thread cones on the 4 post. These help keep the thread spools stable on the thread stand.

Remember to pull the telescoping thread tree to the full up position to use.



*Figure 10*



*Figure 11*



*Figure 12*

## Attaching the Rear Handle Bars

The following instructions will help you install the rear handle bars to your Long arm Quilting Machine

**Step 1:** Locate your rear handles. *See figure 13*

**Step 2:** These handles are going to connect to the handle bar knuckles on the back of the machine below the belt guard on the base of the machine.

*See figure 14*

**Step 3:** Remove the two screws holding the knuckles on the machine.

**Step 4:** Position the handle bar in between the two knuckles reattach with the two screws.

**Note:** ensure you are using the right handle on the right side and the left handle on the left side.

**Step 5:** Before securing the handle bar, position the handle bar so that you are able to use them and they will not hit anything as you move the machine along the frame.

Note: complete these steps for both sides.

**Step 6:** Connecting the cables. Each handle has a wire coming out of the handle with a label right (R) or left(L).

**Step 7:** Connect the right cable to the connector on the bottom of the power box closest to the machine. *See figure 17*

**Step 8:** Connect the left cable to the connector on the bottom of the power box next to the right one you plugged in already. *See figure 18*

**Step 9:** Your handle bars will be ready to use when you turn on the machine.



Figure 13



Figure 14



Figure 15



Figure 16



Figure 17



Figure 18

## Connecting your Long arm Quilting Machine to you Carriage Assembly (Deck)

You will need to attach the encoders with cables to the carriage. See the instruction for attaching the encoders. These cables are then connected to the back of your machine in the connectors provided on the power box. These cables and encoders are what sense the movement of the machine and transmit a signal to the controller board inside the power box to enable stitching when using the Auto or Idle Stitch mode.

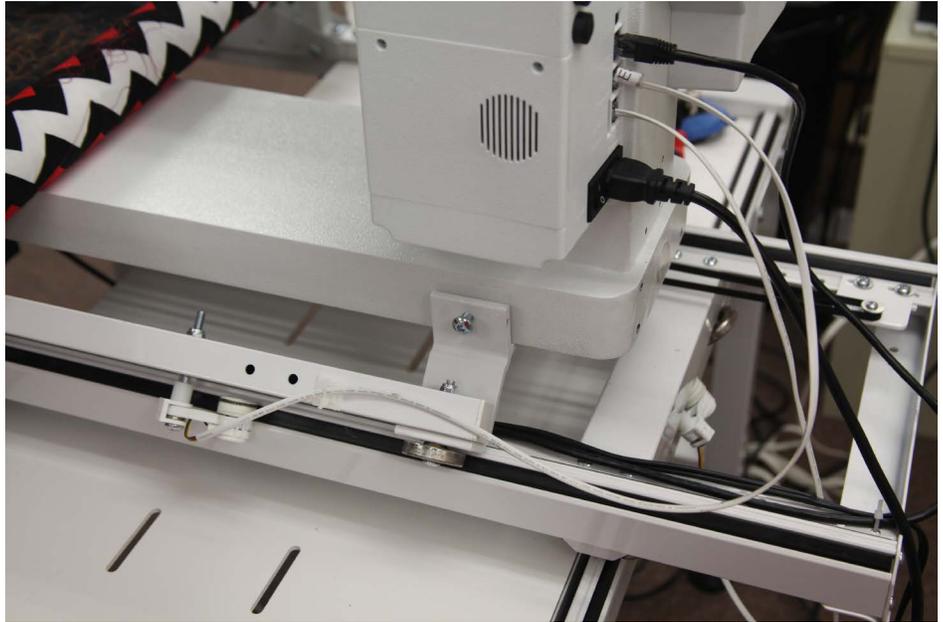


Figure 19

**Step 1:** Locate the encoders and cables on the carriage. Check them for damage prior to placing the machine onto the carriage. *See figure 19*

**Step 2:** Place the machine on the upper carriage. Check to ensure the machine is sitting centered on the carriage and not rocking.

**Step 4:** Locate the upper carriage encoder cable and connect it to the port marked Top Encoder *See figure 19 and 20*

**Step 5:** Locate the lower carriage encoder cable and connect it to the port marked Bottom Encoder *See figure 19 and 20*

**Step 6:** On the upper carriage where the machine sits you will find four screws to help secure the machine to the carriage. Use these to secure the machine to the upper carriage.

**Step 7:** Locate the power cord and connect to the wall and the machine.

**Note:** Check to ensure nothing is blocking your power cord from moving along the frame. This will ensure smooth operation while quilting.

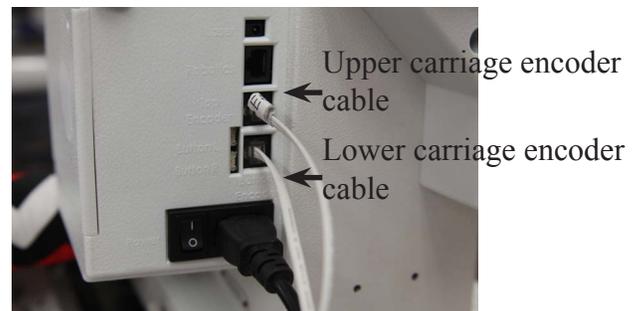
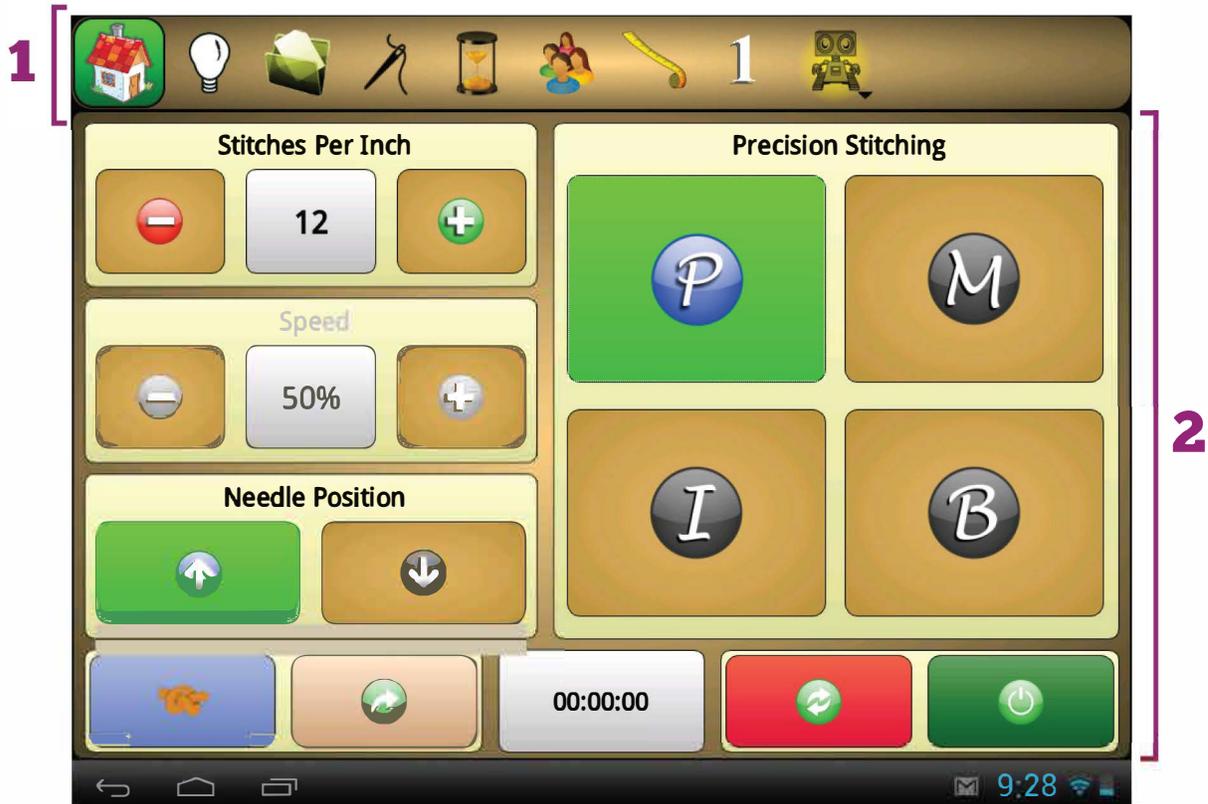


Figure 20

# TABLET USER INTERFACE

The Tablet UI is divided into two main parts: (1) **Navigation** and (2) **Display**.



## Navigation

### Icon Names

From left to right, the touchable icons in the navigation area are:

- » **HOME**
- » **COUNTERS**
- » **LIGHTING**
- » **PROFILE**
- » **FILE MENU**
- » **SETTINGS**
- » **SEWING**
- » **MEASURE**
- » **PARAMETERS**
- » **ROBOTICS**

### Active Navigation Menu

The active menu is indicated by a green box highlighting the navigation icon. In the screenshot above, **HOME** is the active menu.

### Non-menu Navigation

#### Icons

The number on the far right of the navigation is not a menu.

1

It displays the currently active quilter profile.

# Display

## Parts of a Menu

The display of each menu consists of areas, buttons, and fields.



### Area

An area is defined by a light tan box with rounded corners.

### Button

A button is anything that can be pressed to perform an action.

### Field

A field is where numeric data is displayed.

# HOME

The **HOME** menu consists of the (1) **counter** field and five areas: (2) **stitch spacing**, (3) **speed**, (4) **needle position**, (5) **stitching mode**, and the (6) **handlebar buttons**.



## Counter

### What It Does

The **Counter** displays your current total runtime. (See page 28 for more about the **COUNTERS** menu.)



**Counter**

### Counter Menu

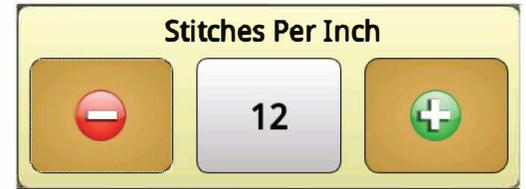
Tapping on the **Counter** field will take you to the **COUNTERS** menu.

## Stitches Per Inch (Stitch Spacing)

### What It Does

The **Stitches Per Inch** field shows you how many stitches per inch your machine is quilting.

To increase or decrease the stitch spacing, press the plus or minus button.



**Stitch Spacing**

### Quilter Profile Stitch Spacing

Any changes made to the **Stitches Per Inch** setting will also change the stitches per inch of the active quilter profile's stitches per inch settings.

### Units of Measurement

If Perfect Stitch is set to metric units, the stitch spacing is shown as millimeters per stitch.

## Speed

### What It Does

**Speed** adjusts the speed at which your machine stitches. It measures this as a percentage of the maximum speed, which is about 3,000 stitches per minute.



**Speed**

### Stitching Mode Speed

Only the Manual Stitching and Idle Stitching modes allow you to adjust stitching speed.

## Needle Position

### What It Does

**Needle Position** determines which position your needle will rest in once the machine arm has stopped.

The needle position is a general setting that applies to all stitching modes.

Use the up and down buttons to set your needle position setting.



**Counter**

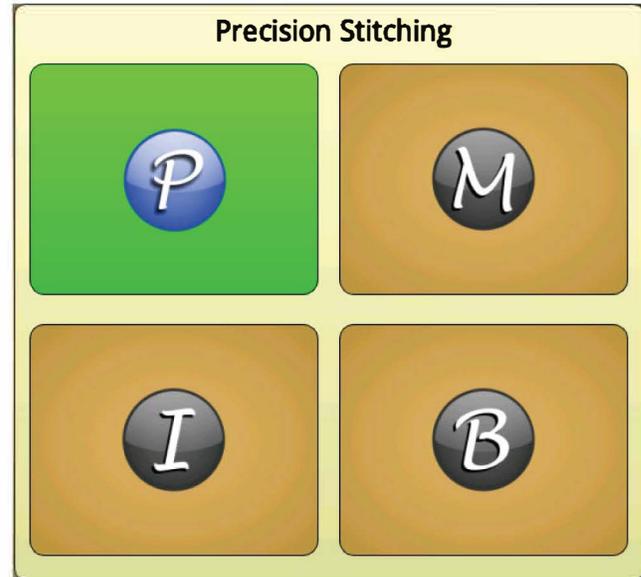
## Stitching Mode

### What It Does

Perfect Stitch has four (4) different stitching modes available for use:

- » Precision Stitching
- » Manual Stitching
- » Idle Stitching
- » Baste Stitching

The green button indicates the active stitching mode. To switch to a new stitching mode, tap the appropriate button.



**Stitching Modes**

### Stitching Mode Settings

There are two possible settings for each stitching mode: speed and stitch spacing (SPI).

You can adjust the stitching mode settings either by using the **Stitches Per Inch** and **Speed** on the **HOME** menu or by accessing **Settings** in the **PROFILE SETTINGS** menu.

### Stitching Mode Setting Restrictions

Adjusting stitching mode settings varies by stitching mode. The table at right indicates which settings can be adjusted for each stitching mode.

## Stitching Mode Settings

Stitching Mode	Adjust Speed	Adjust SPI
Precision Stitching	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Manual Stitching	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Idle Stitching	<input checked="" type="checkbox"/> *	<input checked="" type="checkbox"/>
Baste Stitching	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **Precision Stitching**

While in the Precision Stitching mode, the speed of the needle is regulated by how quickly or slowly you move the handlebars. To give you consistent, even stitches, the needle only stitches after you press the start button and move the handle bars.

### ***Speed Settings***

Because Precision Mode regulates the stitching speed to ensure consistent stitch spacing, you may not adjust the stitching speed.

### ***Stitch Spacing (SPI) Settings***

The stitch spacing can be set from 4 to 22 stitches per inch.

## **Manual Stitching**

While in Manual Stitching mode, the motor stitches the needle at a constant speed regardless of whether you move the handle bars or not.

### ***Speed Settings***

Because Manual Stitching is constantly stitching, you may set the speed of Manual Stitching mode.

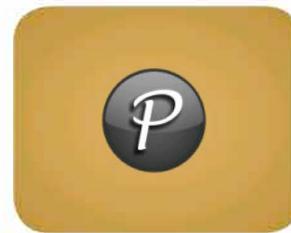
### ***Stitch Spacing (SPI) Settings***

Because Manual Stitching is constantly stitching, you may not set the stitch spacing of Manual Stitching mode.

## **Idle Stitching**

Idle Stitching is a hybrid of both Precision Stitching and Manual Stitching.

While in Idle Stitching mode, the speed of the motor driving the needle adjusts to how quickly or slowly you move the



**Precision Mode**



**Manual Mode**



**Idle Mode**

handlebars. When you are not moving the handle bars, the machine will idle and eventually time out.

### ***Speed Settings\****

In Idle Stitching Mode, the speed set controls the speed at which the needle idles. This speed can be set from 5% to 40%.

\*The speed setting for Idle Mode has no effect on the regulated stitching speed.

### ***Stitch Spacing (SPI) Settings***

Because the stitch spacing is regulated, you can set the Stitches Per Inch. Remember that when you aren't moving the handle bars, the needle will still stitch at an idle speed.

### **Baste Stitching**

Baste Stitching is used to baste your quilt layers together.

#### ***Speed Settings***

You may not adjust the stitching speed in Baste Stitching Mode.

#### ***Stitch Spacing (SPI) Settings***

You can adjust the stitch spacing as normal.



**Baste Mode**

# Handle Bar Buttons

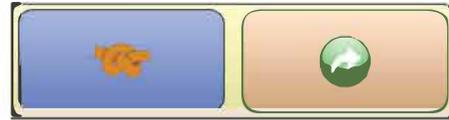
## What It Does

Each handle bar of your Perfect Stitch upgrade contains two programmable buttons. These four buttons can be programmed to perform functions. For more on programming handle bar functions, see **PROFILE SETTINGS** on page 30.

## Touchscreen Handle Bar Buttons

In addition to pressing the buttons on the handle bars, the programmed function for each button can be engaged by pressing the respective color key on the **HOME** menu display.

The blue and white buttons of the left handle bar are located in the lower-left corner of the **HOME** menu display, while the red and green buttons of the right handle bar are located in the lower right of the **HOME** menu display.



**Left Handle Bar**



**Right Handle Bar**

# LIGHTING

The **LIGHTING** menu controls the LED lights located under your handle bar cover. Perfect Stitch includes both a white light and a black light.



## Brightness Slider

### What It Does

The **Brightness Slider** adjusts the brightness of the white LED lights.

### Adjust Brightness

To adjust the brightness of the white LED lights, press the plus and minus buttons.

Pressing and dragging on the slider knob or tapping on the slider track will also adjust the brightness of the white LED lights.

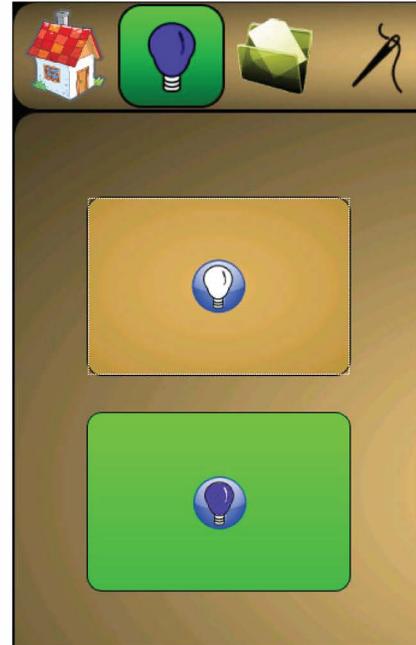
# White Light/Black Light

## What It Does

To activate or deactivate a light, press the white or black light button.

## Active Light

If the light button is green, then that light is activated. Also, the **LIGHTING** icon in the navigation menu changes to indicate which light is active.



**Right Handle Bar**

# FILE MENU

The **FILE** menu contains **Calculator**, **Save Settings**, **Advanced**, and **Diagnostics**.



## Calculator

### What It Does

**Calculator** can help you perform basic calculations. Any numbers in the number field will remain even after the calculator is closed.

### Calculator Memory

The calculator is able to store a number in the calculator memory for later use. Below is an explanation of the memory keys.

**MC – Memory Clear.** Clears out any number in the memory to be zero.

**MR – Memory Recall.** Recalls the number in memory as if you had keyed the number in.

**MS – Memory Store.** Stores the number in the number field in the calculator memory.

**M+ – Memory Add.** Adds the current number in the number field to the number in memory. Then, this sum becomes the new number in memory.

## Save Settings

### What It Does

Profile and machine settings are automatically saved every five minutes.

**Save Settings** saves all of the Perfect Stitch settings that are part of the quilter profile as well as global settings, such as the counter totals and the currently open menu. This is helpful if you have made changes to the settings but need to turn off your machine right away.

### Save Your Settings

Press the **Save Settings** button.

After pressing **Save Settings**, a window will appear confirming that your current settings have been saved.



### Save Settings

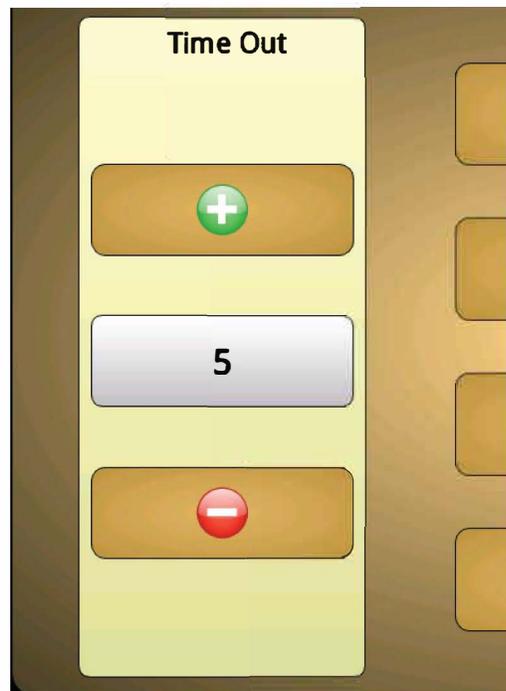
## What It Does

The **Advanced** button leads you to a second level menu. The options in this menu are system related, and won't be accessed often.

### Timeout

**Timeout** allows you to customize how many seconds Perfect Stitch will remain active without user input before becoming inactive.

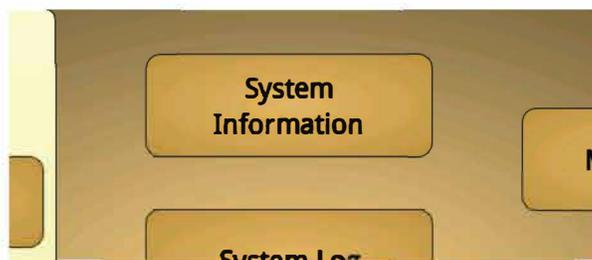
Perfect Stitch will not timeout if the encoders sense any movement. If Perfect Stitch is not timing out, make sure that nothing is causing the encoders to sense movement.



**Time Out**

### System Information

The **System Information** button displays information about your Perfect Stitch software. There are three layers of information: the Quilt EZ screen, the Qt Screen, and the License Information screen. These screens contain information about which version of software, robotics, and quilting machine you are currently using, as well as some licensing information.



**System Information**

### System Log

The **System Log** button displays a record of any errors that have occurred. When troubleshooting Perfect Stitch, you may be asked to provide information from the system log.

The system log contains the **Reset**, **Save**, and **Exit** buttons.



**System Log**

## *Reset*

The **Reset** button temporarily clears all of the recorded actions from your system log. The system log will be restored upon pressing the **Exit** button.

## *Save*

The **Save** button will save the contents of the system log to any currently inserted, compatible USB stick. Once the system log is saved, the system log contents are deleted from the tablet.

## *Exit*

The **Exit** button returns you to the previous menu.

## **Update System**

**Update System** is used to update your Perfect Stitch, which can include the stitching, tablet, and robotics systems. Pressing the **Update System** button while an update-loaded USB is inserted will lead you to an update menu.

## **Update Machine**

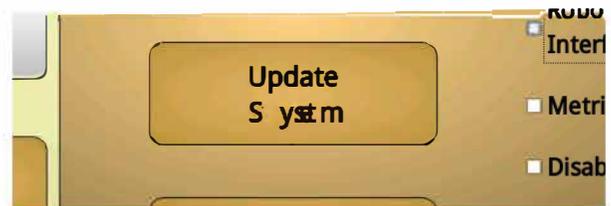
**Update Machine** is used to only update the firmware of the stitching system. Pressing the **Update Machine** button while an update-loaded USB stick is inserted will lead you to an update menu.

## **Maintenance**

The **Maintenance** button displays a reminder of when to next oil your machine. The **Maintenance** button records the total time your machine has been operating since it's last lubrication.

## *Reset*

If you service your machine before the end of the eight-hour countdown, you can reset the maintenance countdown by pressing the **Reset** button.



**Update System**



**Update Machine**



**Maintenance**

If you do not service your machine before the end of the 8 hour countdown, a maintenance reminder will display on the screen.

## Robot Demo Interface

**Robot Demo Interface** allows access to the robotics user interface. The features of the robotics interface can be explored without causing your machine to react by stitching.

The demo is used mostly by dealers as a way to explain the features of the robotics, and should never need to be engaged.

## Metric Units

If Perfect Stitch is set to metric units, the relation of stitches to units of measurement is inverted. In other words, it shows you the number of millimeters per stitch, not the number of stitches per millimeter. Also, measurements will be displayed in metric units.

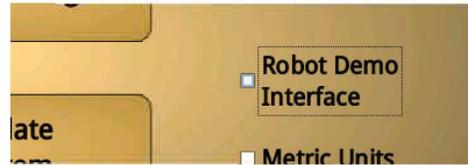
To enable metric units, tap on **Metric Units**.

## Disable Robot Port

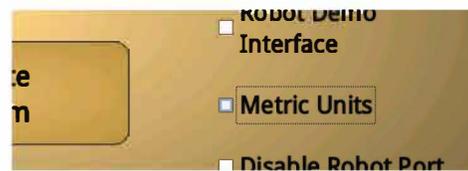
**Disable Robot Port** allows you to disable any robotics connected to your quilting machine. This is most often used to troubleshoot machine service issues and will not commonly be engaged.

## Disable Rear Port

**Disable Rear Port** allows you to disable the rear port of your quilting machine. This is most often used to troubleshoot machine service issues and will not commonly be engaged.



**Robot Demo Interface**



**Metric Units**



**Disable Robot Port**



**Disable Robot Port**

## What It Does

Diagnostics contains tools to determine if your quilting machine is operating optimally. These tools are the **Motor Index**, **Motor Encoder**, **Motor Settings**, **Temperature**, **Top Encoder**, **Bottom Encoder**, **Handle Bar Buttons**, **Needle Up/Down**, and the **Jog Dial**.

### Motor Index

The **Motor Index** measures the number of needle ups and tracks whether the needle is up or down.

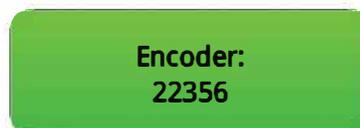
When the **Motor Index** button is pressed, it displays the total number of needle ups recorded on the index sensor board since the machine was last turned on.



### Motor Index

### Motor Encoder

The **Motor Encoder** measures your machine speed. It is used to test that the motor is operating at normal levels. The measurements in the Motor Encoder reset to zero every time you display them by pressing the **Motor Encoder** button.



### Motor Encoder

### Motor Settings

**Motor Settings** allows you to adjust performance settings of the motor. If improperly changed, these settings can damage your machine. Because of this, these settings are password protected. **ONLY ADJUST THE MOTOR SETTINGS UNDER THE DIRECTION OF TRAINED SUPPORT PERSONNEL.**



### Motor Settings

## Temperature

The **Temperature** button displays the current operating temperature of your motor. Safe levels of operation are under 100 degrees Celsius. If your motor exceeds safe levels, an error message will display on the tablet screen.

If your machine temperature displays above 100 degrees Celsius, contact your local dealer for support.



## Temperature

## Top Encoder

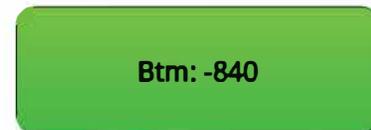
The **Top Encoder** button displays the Y coordinates of the stitching system. The number displayed should change when you push the handle bars away from or towards yourself.



## Top Encoder

## Bottom Encoder

The **Bottom Encoder** button displays the X coordinate of the stitching system. The number displayed should change when you push the handle bars to the left or to the right.



## Bottom Encoder

## Handle Bar Buttons

The **Handle Bar Buttons** can be tested from Diagnostics. To test the buttons, you must press the buttons on the handle bar. The handle bar buttons on the tablet screen are not functional.

Pressing a handle bar button while in Diagnostics will engage that button's programmed function. When a handle bar button is pressed, the corresponding button in Diagnostics will turn green to indicate that it is working properly (see the red button in the screenshots at right).

Unlike any other menu, pressing a handle bar button while in Diagnostics will not



## Handle Bar Buttons

return you to the **HOME** menu.

## Needle Up/Down

The **Needle Up/Down** area contains buttons to test the needle up and needle down function of your stitching system.

Press the up and down buttons to raise or lower the position of your needle.



**Needle Up/Down**

## Jog Dial

The dial button gives you access to the **Jog Machine** area.

From time to time, your machine may become bogged down to the point where the needle is stuck and refuses to move.

If this happens, it may be necessary to “jog” the machine.

## Jog Your Machine

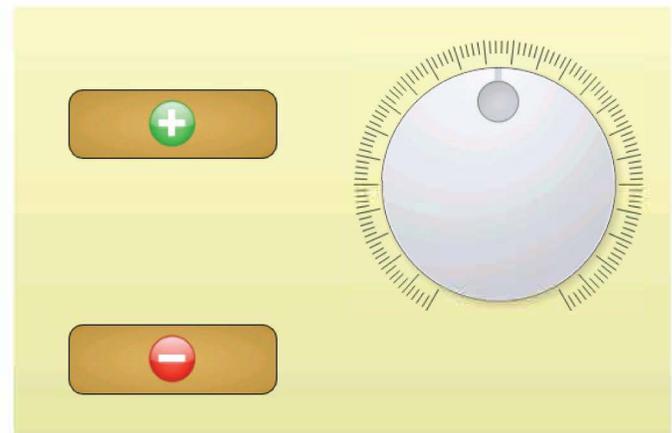
To jog your machine, select one of the two jog settings. After a setting is selected, use the plus or minus buttons or touch and drag the dial. The two jog settings are **Position Mode** and **Power Mode**.

### *Position Mode*

**Position Mode** will apply as much power as it needs to move the needle to the pre-determined up/down positions. Negative values run the motor in reverse, while positive values run the motor as normal.

### *Power Mode*

**Power mode** will send power directly to the motor of your stitching system. This mode is recommended to “jog” your machine.



**Jog Dial**



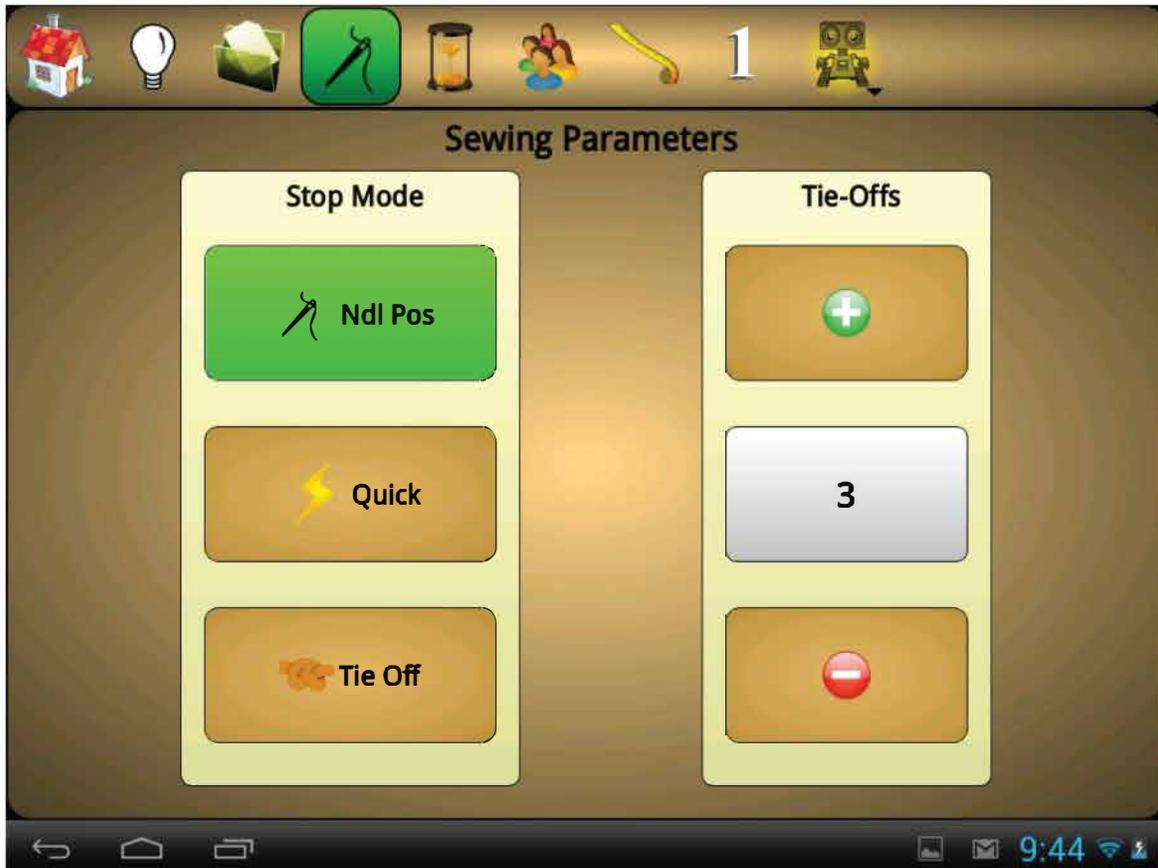
**Position Mode**



**Power Mode**

# SEWING PARAMETERS

The **SEWING PARAMETERS** menu contains **Stop Mode** and **Tie-Offs**. These are used to set what actions your machine will take whenever it stops stitching and how many stitches to use for a tie-off.



## Stop Mode

### What It Does

Stop Mode contains three buttons: **Ndl Pos**, **Quick**, and **Tie Off**. Only one button can be active at a time.

### Ndl Pos (Needle Position)

When the **Ndl Pos** button is selected, the stopped needle will return to the needle position of the currently active quilter profile. (For more on quilter profiles, see page 30.)



**Needle Position**

## Quick

When the **Quick** button is selected, whenever a needle is stopped using a handlebar button, it will stop immediately, regardless of its current needle position.



**Quick**

## Tie Off

When the **Tie Off** button is selected, the stopped needle will tie off the number of times specified in the **Tie-Offs** area.



**Tie Off**

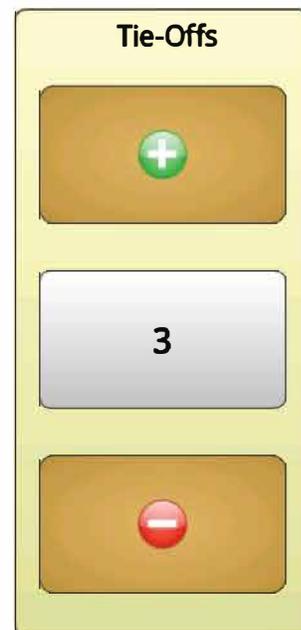
## Tie Offs

### What It Does

The **Tie-Offs** area sets how many stitches your machine will stitch to tie-off the thread.

### Adjust Tie-Offs

Press the plus or minus buttons to add or remove stitches to your tie off settings.



**Adjust Tie-Offs**

# COUNTERS

The Counters menu contains the **Run Time** and **Stitch Counter** areas.



## Run Time

### What It Does

Runtime is measured between pressing the start button and when Perfect Stitch times out. Turning the machine off and on will not reset the total recorded run time.

### Reset

To reset the recorded run time to 0, press the **Reset** button.



### Needle Position

# Stitch Counter

## What It Does

**Stitch Counter** displays the number of stitches the machine has completed. Turning the machine off and on will not reset the recorded number of stitches.

## Reset

To reset the recorded stitches to 0, press the **Reset** button.



**Needle Position**

# PROFILE SETTINGS

Profile Settings allows you to adjust your quilter profiles. Profile Settings contains **Profiles (1-5)**, **Stitching Mode Settings**, and **Handle Bar Buttons**.



## Profiles (1-5) //

### What It Does

There are five unique quilter profiles available in Perfect Stitch. Each profile can have unique settings from the other profiles. The active profile is displayed in the top right corner of the navigation. (Profile 1 shown above)

Any changes made here will be reflected in the corresponding stitching mode settings shown on the **HOME** menu.

The active profile is indicated by the green button color. To select a different profile, tap on a numbered profile button.

# Stitching Mode Settings

## What It Does

These are the settings for the currently selected quilter profile. Changes made from the profile settings affect their corresponding **HOME** menu settings, and vice versa. To change a setting, tap on its number field and use the plus and minus buttons above or below it.

### Prec SPI:

This adjusts the stitches per inch setting for Precision Mode. (For more information about Precision Mode, see page 13.)



### Precision Mode

### Baste SPI:

This adjusts the stitches per inch setting for Baste Mode. (For more information about Baste Mode, see page 14.)



### Baste Mode

### Idle SPI:

This adjusts the stitches per inch setting for Idle Mode. (For more information about Idle Mode, see page 13.)



### Idle Mode

### Idle Speed:

This adjusts the Idle speed setting for Idle Mode. (For more information about Idle Mode, see page 13.)



### Idle Speed

### Manual Speed:

This adjusts the stitching speed setting for Manual Mode. (For more information about Manual Mode, see page 13.)

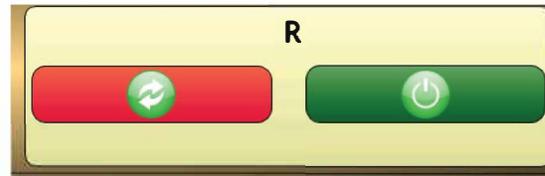
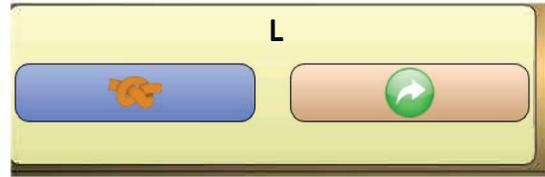


### Manual Speed

# Handle Bar Buttons

## What It Does

**Handle Bar Buttons** can be uniquely configured for each quilter profile. The blue and white buttons located in the **L** area program the left handle bar buttons, while the red and green buttons located in the **R** area program the right handle bar buttons.



## Handle Bar Functions

To program a button, tap on it. To replace the current function, Select a function for the handle bar button.

The table on the next page includes each function icon, it's name, and a description of what the function does.

# Handle Bar Button Functions

Icon	Function	Description
	Full Stitch	Complete one full stitch (needle up and down)
	Half Stitch	Complete one half of a stitch (needle up or down)
	Start	Activate current Stitching Mode
	Precision	Switch to Precision Mode
	Idle	Switch to Idle Mode
	Tie Off	Tie Off the thread
	Baste	Switch to Baste Mode
	Manual	Switch to Manual Mode
	None	No function assigned to button

# MEASURE

The Measure Menu allows you to make quilt measurements using Perfect Stitch.



## Set Start/Stop

### What It Does

**Set Start/Stop** allows you to take measurements between two points on your quilt using hardware built into Perfect Stitch.

### Take a Measurement

To begin a measurement, position the needle directly over the start of where you would like to measure. Once the needle is positioned, press the set start button.

Perfect Stitch will now record the distance between wherever you move the needle and the start point. This distance will

display on the screen as you move the needle.

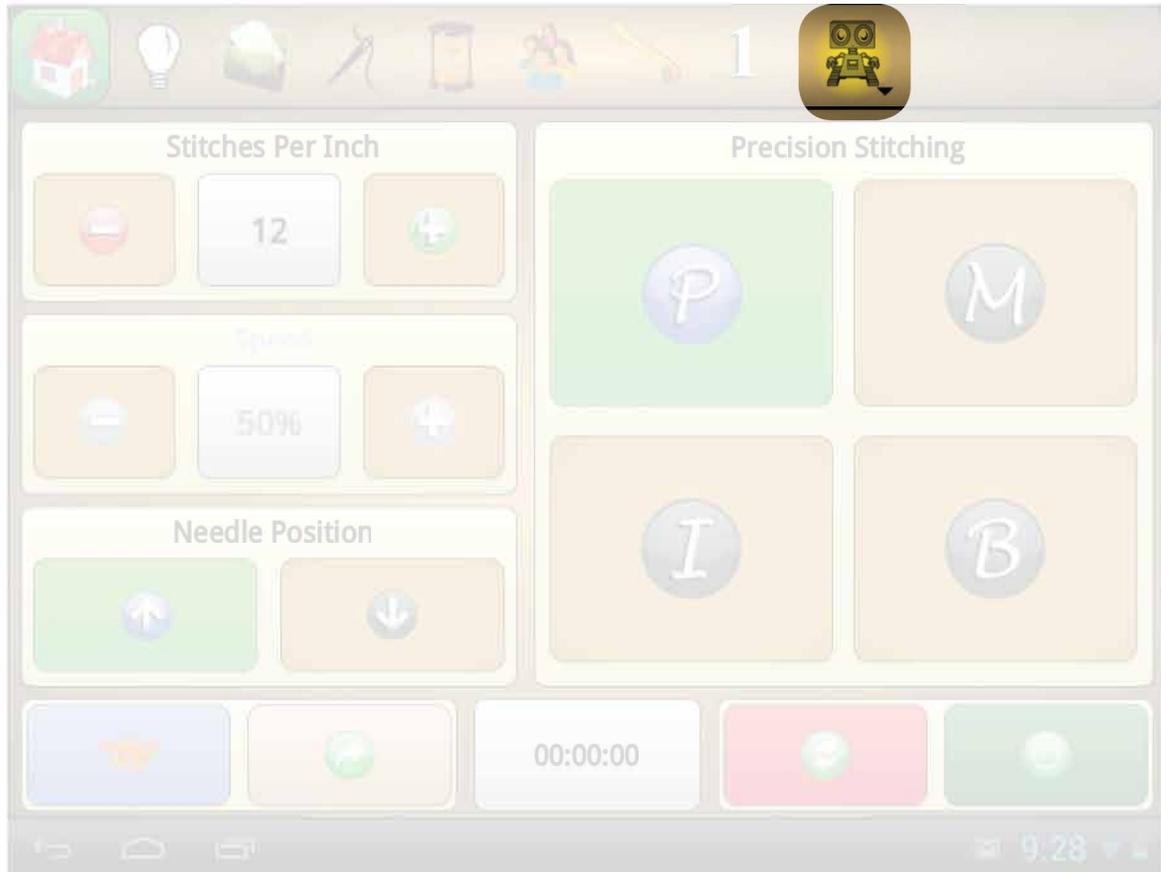
### **Stop Measuring**

To stop measuring, press the **Stop** button. Note that the last measurements taken will remain displayed until a new measurement is taken.



# ROBOTICS

The **ROBOTICS** Menu is a link to the robotic quilting system user interface. Tap the icon to navigate to the robotic quilting system user interface.



## Robotics

### No Robotics Connected

If your machine is not currently connected to a robotic quilting system, Then the icon will be colored grey, indicating it is inactive.



## Handle Bar soft touch key pads

At the end of each handle bar is a set of two soft touch buttons.

Right handle bar has buttons for Start/Stop and needle up.

Left handle bar has buttons for needle down and full stitch.

This is the same for both the front handles and the rear handles

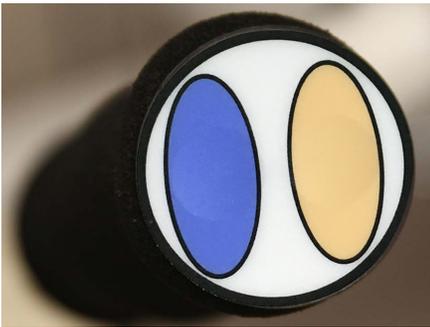


Figure 30

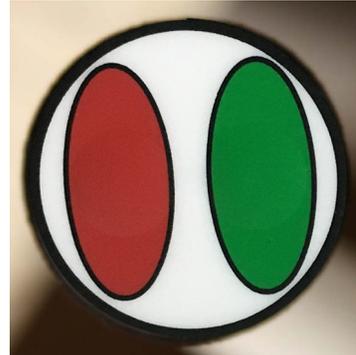


Figure 31

## What is the Tension Release Lever?

The tension release lever raises the hopping foot and releases the tension on the thread. *See figure 32*

You can watch the tension disc plates open (this is not a huge open gap) as you lift the lever.

NEVER start sewing with the lever up.

There will be no tension on the thread which will result in stitches on the bottom being bad with huge loops and other bad looking stitches.



Figure 32

## Adjusting the Height of the Hopping Foot

There are many reasons to adjust the height of the hopping foot. You could be using a thicker batting, quilting a quilt with thicker seams, or just need a little more clearance. You don't want the foot to be too high as that can cause strain on the thread, create flagging of the fabric while stitching, or just be too high if you put a ruler next to it.

To adjust the height of the hopping foot use these steps.

**Step 1:** Lower the needle into the fabric to get the hopping foot to its lowest position. (close to a seam is a good place then you can tell how high you need to be to clear the seam.)

**Step 2:** Loosen screw (A) on the side of the hopping foot (B). *See figure 33*

**Step 3:** Move the foot up or down to adjust for your project.

**Step 4:** While holding the hopping foot where you want it tighten the screw back down.

Factory setting for this is with needle down a dime should be able to pass below the foot and touch the foot as it passes under. *See figure 34*

## Adjusting the Stroke of the hopping foot

Factory setting is in the down position. The reason for less stroke is for better ability working with rulers. Adjustment of stroke is for going over thicker seams.

Note: For this you will need to remove 3 screws from the handlebar and loosen the 4th screw so you can pivot the handlebars to get to the front two screws for the rocker arm cover.

**Step 1:** Remove the four (4) screws (A) holding the Rocker arm cover (B) in place front left side of machine.

*See figure 35*

**Step 2:** Using a wrench loosen the bolt (C) on the link adjusting crank (D) slide up to increase the stroke down to decrease the stroke. *See figure 36*

**Step 3:** Use your wrench to tighten the bolt (C)

**Step 4:** For your safety replace the Rocker arm cover (B) prior to use. Using the four (4) screws (A)

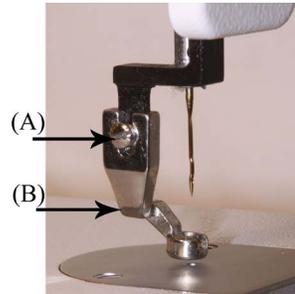


Figure 33



Figure 34

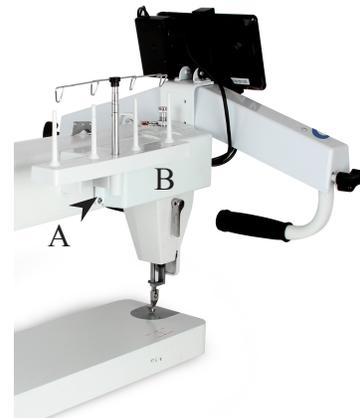


Figure 35

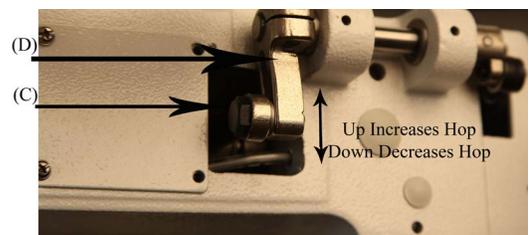


Figure 36

# Routine Cleaning and Oiling

Routine cleaning and oiling is very important to the longevity of your quilting machine. Brush out the fuzz from around the hook and foot. Change your needle regularly to avoid thread breakage, tension problems and needle breakage. A worn needle can mean skipped stitches, shredded thread and a weakening of the needle itself. These things can lead to stitch quality issues.

Lint has a tendency to build up in the bobbin case. A tiny amount of lint can cause poor stitches. Check the bobbin case each time you change the bobbin to keep it clean. We suggest using a soft bristle brush to wipe out the bobbin case and the bobbin area. Canned air only blows the lint around. By using a soft bristle brush you collect the dust on the brush. Occasionally, place a drop of machine oil on a cotton swab to wipe out the bobbin case.

Keep your table clean of dust and oil. Clean the bars and carriage regularly for smooth movement.

Oiling is extremely important to the longevity of your quilting machine. Failure to oil your machine regularly can void your warranty.

The one oiling spot marked with red arrow is marked with red paint on your machine. An oil bottle is included with your machine. The one oiling spot marked with a blue arrow contains a dip stick. Remove the dip stick by lifting it up with a finger nail or screw driver. Place drops of oil in this same hole only if you find no oil on the dip stick.

## Recommended oiling:

After every finished quilt place 3 to 4 drops of oil at the location with a red spot towards the front (needle side) of the machine. This is located on the top of the machine. *see figure 37* oil spot on top

The other location is the oil dip stick found just behind the needle. At this time make sure oil is present on dip stick. If not add 3-4 drops of oil where you pulled the dip stick out. Run machine to lubricate use a clear high grade sewing machine oil. (Note: the machine pictured here is before complete assembly from factory; your machine has more components attached.)



Figure 37 Oil Spot on top



Figure 38 Oil dip stick lifted



Figure 39 Oil Reservoir location

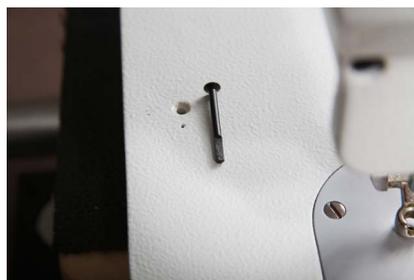


Figure 40 Oil Dip stick out

# Bobbin Winder and Bobbins

A bobbin winder is included with your machine. The thread on a properly wound bobbin should be snug and have even layers of thread. A sloppy or mushy wound bobbin will result in poor stitch quality.

How do I wind a Bobbin?

**Step 1:** Insert an empty bobbin on the bobbin winder spindle.

*See figure 41*

**Step 2:** Place a cone of thread on the holder.

**Step 3:** Bring the thread up through the guide over the cone of thread. *See figure 42*

**Step 4:** Insert the thread through the top guide hole on the bobbin tension post, then around the tension disk and through the bottom thread guide. *See figure 43*

**Step 5:** Wrap the thread around the bobbin clockwise three or four times

**Step 6:** Push trip mechanism forward until it snaps into position

*See figure 44*

Use step 7 if you plan to quilt while your bobbin is winding. or use step 8 if you are winding bobbins without quilting.

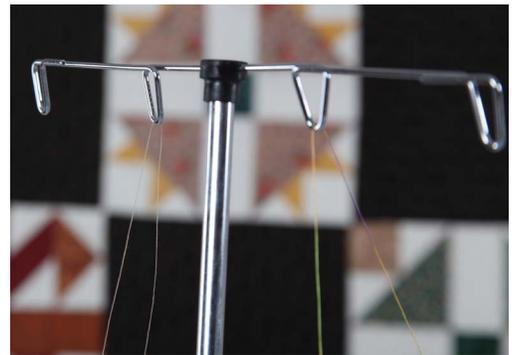
**Step 7:** Bobbin winder will start winding the bobbin once you press the start/stop key. You can quilt while your bobbin is winding once it is full it will stop.

**Step 8:** If you wind your bobbin only (When not quilting) ensure that you do not have thread in the needle to prevent jams. Also remove the bobbin and bobbin case to prevent damage. Select Manual stitch mode, then press and release the start/stop button. Once the bobbin is full press and release the start/stop button again to stop the machine. **Note: The Needle will continue to move up and down while you are filling the bobbin.**

The bobbin will fill until the trip mechanism is pushed out by the thread. It will then disengage the wheel. The bobbin should fill to just below the rim. Having the bobbin too full will cause tension problems.



*Figure 41*



*Figure 42*



*Figure 43*



*Figure 44*

Check the tension of the bobbin by holding the loaded bobbin case in one hand. With one hand under the bobbin case, hold the tail of thread and watch as the thread flows out of the bobbin case. A slight bounce should cause the bobbin case to slide down the thread. If the thread slides out of the case as you pick it up, it needs more tension. If it barely moves down the thread or doesn't move at all, it needs less tension.

*See figure 45*

**To adjust the tension:** *See figure 46*

Use a small screwdriver to turn the largest set screw on the bobbin case to adjust tension.

Make very small adjustments.

Be very careful not to remove the screw as it is very small and difficult to find if lost.

Remember, righty (clockwise) tighty, lefty (counter clockwise) loosey.

**To place the bobbin into the machine:**

**Step 1:** Insert the bobbin into the bobbin case. It does not matter which way you put the bobbin in but once you have it one way just keep doing it that way.

**Step 2:** Holding the bobbin case pull the thread through the slot. *See figure 47*

**Step 3:** Draw the thread down and under the tension spring, making sure the thread is in the highest position of the bobbin case. *See figure 47*

**Step 4:** Place the bobbin case in the machine. Always listen for the pop as it engages in the machine. *See figure 48*

We suggest using a soft bristle brush to wipe out the bobbin case and the bobbin area. Canned air only blows the lint around. By using the soft bristle brush you collect the dust on the brush.

Use a business or index card to clean under the tension spring on the bobbin case *see figure 49*

Each day before you start quilting, unthread your machine past the take up lever and remove the bobbin case, place a small drop of oil on a Q-tip and use this to clean out the fuzz and lint. Place a drop of oil in the bobbin hook area. Turn your machine on to run at the slowest setting. This will ensure that your race and hook are running smoothly.

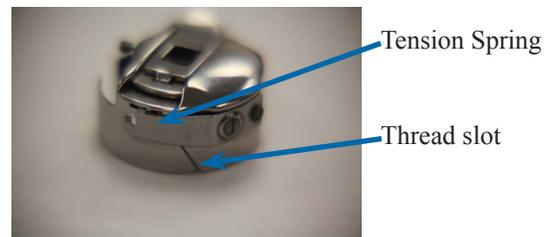
*TIP: Lint has a tendency to build up in the bobbin case especially with cotton threads. A tiny amount of lint can cause a huge headache! Check the bobbin case each time you change a bobbin to keep it clean.*



*Figure 45*



*Figure 46*



*Figure 47*



*Figure 48*



*Figure 49*

# Threading overview with names

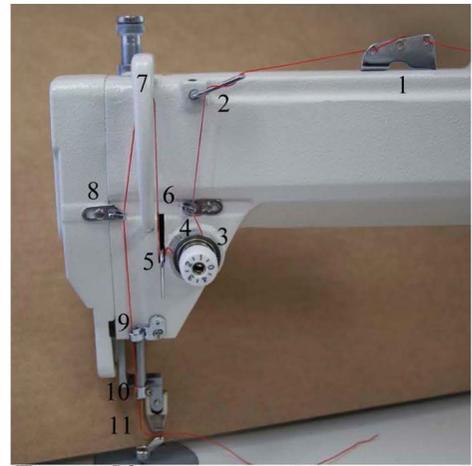
This is a diagram of the front side of your Long arm Quilting Machine

This is the side that faces the fabric. The back of your machine has the electrical outlet and stitch regulator connectors.

The numbers have been assigned in threading order.

*See figure 50*

1. Upper Thread Guide
2. Three Hole Thread Guide
3. Tension assembly disc
4. Check Spring
5. Silver Angle Bracket
6. Thread Guide
7. Take Up Lever



*Figure 50*

8. Thread Guide
9. Thread Guide
10. Thread Eyelet above the needle
11. Needle

## Threading Your Long arm Quilting Machine

Your Long arm Quilting Machine is capable of sewing with many types of threads. One thing to keep in mind is this machine is an industrial machine so very light threads will be harder to use than the more traditional machine quilting threads. Use of the other threads is alright as long as you adjust the tension and slow down. These machines are test sewn with Superior King Tut thread which has a long staple and is a machine quilting thread. When we are at quilt shows we use the King Tut on top with a So Fine on the bottom. The reason for this is two threads of equal size will ride on top of each other and fight rather than to interlock. When using a smaller thread in the bobbin you can get more thread on the bobbin and the threads will interlock faster and with less fighting as the smaller thread will nestle right down into the twist of the larger thread creating a better locking of the stitches.

**Lets get started threading the machine:**

**Step 1:** Place a cone of thread on the thread holder.

**Step 2:** Pull the thread through eyelet above the cone of thread. Make sure to use the eyelet directly above the cone of thread. *See figure 51*



*Figure 51*

**Step 3:** Thread upper thread guide as show in figure 52 (if you use all three holes it will add drag/tension to the thread)



Figure 52

**Step 4:** Weave thread as shown on the three hole thread guide. (if you use all three holes it will add drag/tension to the thread)



Figure 53

*See figure 53*

**Step 5:** Take thread between the two tension discs from back to front all the way around. *See figure 54* (release the tension on the tension disc using the tension release lever. This will help to ensure your thread gets between the disc easier.)



Figure 54

**Step 6:** While holding the thread up over the top of the tension hook the check spring. The check spring should come down as you pull thread.



Figure 55

**Step 7:** Thread now needs to run under the silver angle bracket *See figure 55* for details.

**Step 8:** Now bring the thread up to thread guide #6 above the tension assembly. You will be able to slide the thread into this thread guide. *See figure 56*

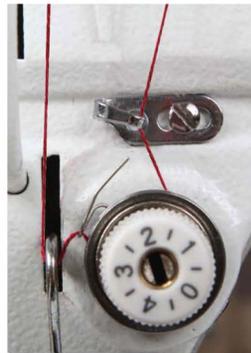


Figure 56

**Step 9:** The thread will now be threaded through the take up lever from the back towards the front. *See figure 57*



Figure 57

**Step 10:** Now bring the thread down the front of the machine snapping the thread into thread guide 8 and thread guide 9 on the *Figure 56* way down to the needle. *See figure 58 and figure 59*

**Step 11:** The thread will now go into the Thread eyelet above the needle. *See figure 60* This is a hole and you will need to thread this spot.

*(TIP: Use a dental floss threader to thread the guide above the needle. The threader will also help thread the needle.)*



Figure 58

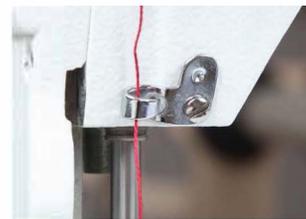


Figure 59

**Step 12:** Thread the needle from the front to the back of the needle. *See figure 61*



Figure 60



Figure 61

## How do I change the Needle?

A 134RSAN needle (size 18) will be installed on your Long arm Quilting Machine from the factory. When it is time to replace the needle you can easily install one. Be sure the power switch is off on the machine. Remove the bobbin case.

To remove the needle use the smaller screwdriver included with your machine.

**Step 1:** Loosen the screw just above the thread guide on the needle bar; the needle should fall out as you loosen the screw.

Look closely at the needle. Your home sewing machine needle shank (top of the needle) has a flat side. The top of the long arm machine needle is round. On the point end of the needle there is a scarf, or notch, in one side.

**The scarf must face the back of your machine.**

**The long groove at the eye of the needle faces you as you insert the needle.**

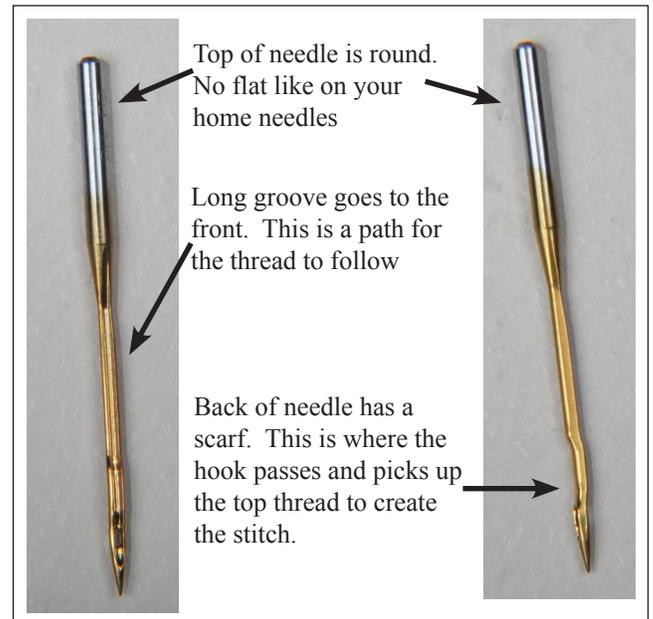


Figure 62

*Why does the scarf go to the back of the machine?*

When the needle goes down through the fabric into the bobbin case, the hook comes around behind the needle to pick up the thread. The scarf has to be there to provide a way for the hook to get between the needle and the thread in order to pick up the thread.

**Step 2:** Place the new needle up in the slot, **making sure the needle is up in the needle bar as far up as it will go.** Make sure the scarf is facing the back of your machine. Tighten the screw on the needle bar while holding the needle up.



Make sure before using your machine that you can see the needle through the hole on the side of the needle bar and the needle is pushed as far up as it can go.

**TIP:** Use the old needle to hold the new needle in place while you tighten the screw. By placing the point of the old needle into the eye of the new needle you can see how straight you are placing the scarf of the needle.

Before you turn your machine on go to the back of the machine and turn the hand wheel a complete turn making sure the needle goes down in the center of the throat plate and the hook in the bobbin area rotates with the needle smoothly. Put the needle down as far as possible. In the bobbin area, you should be able to see you the eye of the needle. When the hook rotates it picks up the thread at the back of the needle then the top thread pulls the bobbin thread up to create a stitch. The scarf must face the back of your machine.

## How do I make adjustments to make the perfect stitch?

Understanding how your long arm machine makes a stitch will help you make the proper adjustments to make the perfect stitch. The technique all long arm machines use to make a stitch is basically opposite of the home sewing machine. The home sewing machine is designed to press together two layers of fabric and sew while the fabric is held in place by the presser foot. Long arm machines are designed to press and sew multiple layers together while the machine head is moving. The difference is that there is practically no needle deflection on a standard sewing machine and a large amount of needle deflection on the long arm. The higher the tension, the more the needle will deflect. Another cause for the needle to deflect on a standard machine is the type of fabric being sewn. A tightly woven fabric tends to force the needle in different directions as it penetrates the fabric. This type of deflection depends greatly on the type of needle and type of point you use, such as a ball point or sharp point.

### **Needle deflection, what is needle deflection? What causes needle deflection? How is needle deflection related to the stitches on my quilt?**

On a long arm quilting machine a stitch is mechanically created the same as a home sewing machine except the quilter is the feeddog moving the machine head over the fabric. The hopping foot presses the fabric together tighter and quicker than a home sewing machine presser foot because the fabric must be able to slide between the foot and the needle plate as the machine is sewing. This means that the machine is moving while the needle is in the fabric. The worst thing for a needle is to be in the fabric while the machine is moving which bends the needle, creating needle deflection

Good stitches will interlock in the batting between the quilt top and backing. In real life, this goal is rarely achieved. For this reason, you need to be aware that you will have “pokies” if you use different colors of thread on top and in the bobbin. Pokies are where you can see tiny dots of the contrasting thread where the bobbin catches the top thread. If there is slightly more tension on the top than on the bottom, then you will see the pokies on the top side of the quilt. If the greater tension is on the bobbin, then you will see the pokies on the back of the quilt. If the pokies are objectionable to you, use the same color thread on both top and bottom.

**TIP:** *A general rule of thumb is that if the stitch looks bad on the top it is the bottom tension. If the stitch looks bad on the bottom it is the upper tension. The upper and lower threads play tug of war with each other.*

## Tension, Tension, Tension ....

This probably causes more problems than anything else. You need correct tension on the top and bottom threads but you also must have correct tension on the quilt held between the bars. You should be able to gently rock the belly bar where the backing fabric is attached. This allows enough movement of your quilt layers for the needle to penetrate and make good stitches.

Before you start making adjustments to your machine ask yourself, “What changed?” If your machine was stitching great and all of a sudden it has loopies on the back or puckers, “What changed?” Did you just change the bobbin? Did you just lift the take up bar? Did you lower the take up bar after finishing your last quilt? Did you recently change the needle? Did you just roll the quilt?

If the take up bar with the quilted portion of your quilt is too high, it will result in poor stitch quality. You need a finger tip space between the quilt and the machine bed. Higher will result in poor stitch quality. Lower and the quilt will create a drag on your machine’s movement.

Look at your bobbin, a sloppy wound bobbin will not create a good stitch. Make sure that the threads on the bobbin are snug and evenly wound. Check to see if there is a piece of lint in the bobbin case.

### Tension Trouble shooting checklist

- Is the side tension lever down?
- Have I oiled my machine regularly?
- Is the quilt too tight on the frame?
- Is the thread coming off the cone freely?
- Has your thread jumped out of the tension discs?
- Check your threading. Has anything been missed or has the thread flipped itself around something increasing your tension?
- Is the hopping foot too high or too low?
- Is your take up bar too high? Did you lower the take up bar after your last quilt?
- Do you need to change your needle?
- Is your needle in properly?

### Top Thread Breaking

- Check to see that your thread is coming off the spool freely. The thread guide is centered over the spool and has not developed any burrs or catches.
- Check to see if the thread has looped itself around the spool pin.
- Check to see if the needle is in correctly, with the scarf facing the back of the machine.
- Have you recently changed the needle? Is it as high as it will go in the needle bar?

**The Stitch Regulator does not keep up with me?** Just like driving your car you need to make controlled starts and stops, practice being consistent in your movements.

### Eyelashes

Eyelashes on the back of the quilt can be caused by too little top tension. Turn the thread tension disk clockwise ¼ turn. Make small adjustments. Repeat until stitch quality is good. Remember the upper and lower thread play tug of war with each other.

### Loose Top Stitch

Is the tension lever handle down? It lowers the hopping foot and applies the tension disk.

Is the bobbin thread inserted in the slot of the bobbin case?

Adjust the tension disk small turns clock wise. Repeat until stitch quality if good.

### **Quilt Top Puckers**

Is your backing fabric stretched too tight? While the backing fabric needs to lie flat and without wrinkles, stretching it too tight can make the quilt top pucker. After stitching and releasing the backing fabric the top will pucker.

The top tension is too tight. Adjust the tension disc small turns counter clockwise. Repeat until stitch quality is good.

### **Stitches are Skipped**

Skipped stitches leave needle holes without thread while large and small stitches in regulated mode means the encoders are not picking-up the signal of your movements because of lint or thread stopping or slowing the reading.

First, check to see that your machine is threaded correctly. Look at the check spring, does the thread lay in the check spring? When properly threaded the check spring will move up and down as the machine is stitching and the thread is flowing freely.

Check the needle. Be sure it is all the way up into the shaft and the scarf is toward the back. If it has been used for some time, replace the needle. A blunt needle will make a popping sound as it penetrates the quilt sandwich.

### **Machine Drags Making it Difficult to Move**

Check to make sure the quilt on the take up bar is not dragging on the bed of the machine. A finger tip distance between the take up bar and the bed of the machine is all that is necessary. Elevating the take up bar too high can cause loopies on the back. Look for lint or thread that might be snagging as you move the machine.

### **Difficult to Control the Movement of the Machine**

Check for lint or other debris on the track and bars. Sometimes the smallest pieces of thread create the biggest headaches.

## Replacing the Fuse

For protection of the power supply and the electronics the power supply has two fuses. It has an 5 amp power fuse and 10 amp motor fuse. These two fuses are located on the back of the power supply box on the right side of the machine.

To Replace this fuse follow these steps

**Step 1:** Locate the two round fuse holders on the backside of the power supply box above and too the left of the power switch.

**Step 2:** Using a small flat tip screw driver gently twist the cover off the fuse holders

**Step 3:** Replace the bad fuse with a correct size new fuse.

**Step 4:** Replace the fuse cover back into the fuse holder.



Figure 63

# Check spring replacement/Tension Knob

From time to time you may need to replace the check spring. We will use a series of photos to help you.

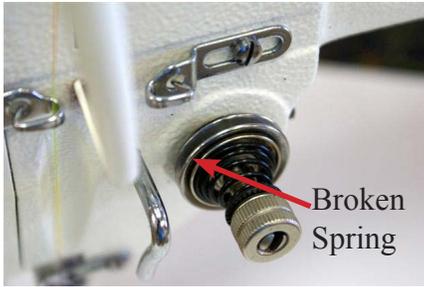


Figure 64

Tension Assembly with Broken Spring.  
(old tension knob)



Figure 65

Tension Assembly with good  
spring (new Tension knob)



Figure 66

Screw on inside of machine loosen  
only. **DO NOT REMOVE**



Figure 67

Remove assembly from machine  
Be careful of release pin



Figure 68

Machine with tension assembly re-  
moved



Figure 69

Tension assembly out of machine  
**DO NOT LOOSE PIN**

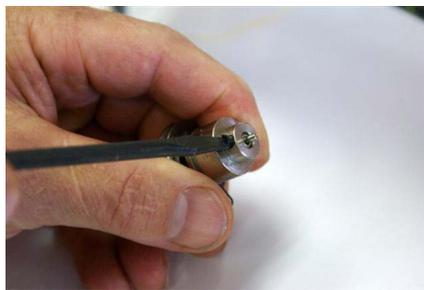


Figure 70

Loosen screw only  
**DO NOT REMOVE**



Figure 71

Remove tension assembly from barrel

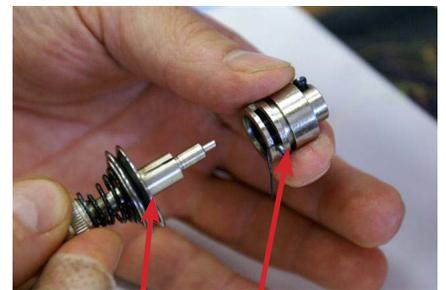


Figure 72

Tension assembly, Barrel



Figure 73

Remove spring



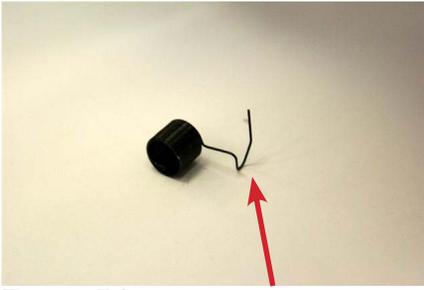
Figure 74

Spring Removal



Figure 75

Spring Removed



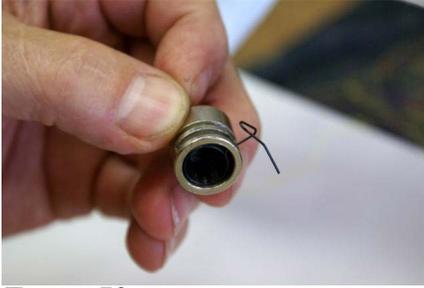
*Figure 76*  
New Spring, This tail is what was broken



*Figure 77*  
Insert the new spring



*Figure 78*  
Twist while inserting the new spring



*Figure 79*  
New spring in place



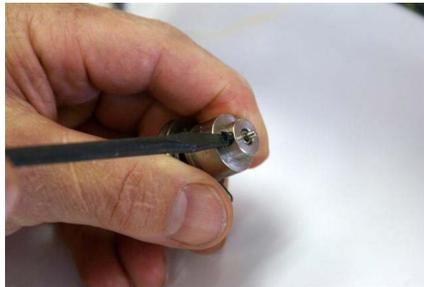
*Figure 80*  
Insert the tension assembly back into the barrel. REMEMBER DO NOT LOOSE THE PIN



*Figure 81*  
Insure that you are all the way in



*Figure 82*  
Give the tension assembly a twist until you feel resistance on the check spring



*Figure 83*  
Tighten screw. Make sure the pin is still there.



*Figure 84*  
Place the assembly back into your machine



*Figure 85*  
Once in insure that your check spring is at 11:00



*Figure 86*  
Press in and notice the tension disk opens



*Figure 87*  
Release and the disk will close; this is the proper place for your tension assembly



Figure 88

Tighten screw on your machine



Figure 89

Tension assembly back in place with new check spring at 11:00



Figure 90

For fine adjustment of check spring insert screwdriver turn clockwise for more tension

## Machine will not sew. I can not turn the hand wheel

No matter how hard you try to keep the bobbin area free of loose threads and lint we sometimes get a jam. Most jams start with the needle down as the jam is because something gets into the bobbin race. The bobbin race is a part of the bobbin hook which keep the hook rotating smoothly and no wandering as it rotates. **Don't panic this can be cleared it just sometimes take some work.**

**Step 1:** Turn the power off

**Step 2:** Remove the belt guard so that you can get a good grip on the hand wheel.

Normal sew rotation if you are standing at the back of the machine looking at the hand wheel is counter clockwise. If you turn the machine counter clockwise you will force what ever is jamming the machine deeper into the bobbin race.

**Step 3:** Rotate the hand wheel clockwise to back the jam out of the bobbin race. (This may take some work to get it worked free.) See figure 91

**Step 4:** Normally when you get it backed up it will fall out and you will be able to make a full rotation with the hand wheel.

Once it feels free take the needle plate off the machine and give it a good cleaning in the bobbin area. Prior to putting the needle plate back on rotate the hand wheel counter clockwise (normal machine rotation)

While rotating the hand wheel by hand ensure that you have free movement of the machine. If everything is working well you can put the needle plate back on and put the belt guard back on, You will be ready to start quilting again.

Figure 92 shows thread caught  
Figure 93 show the race



Figure 91



Figure 92

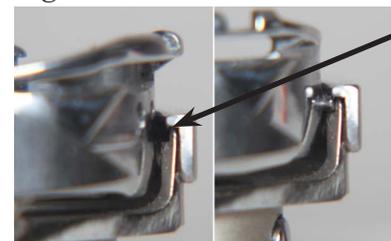


Figure 93

The Race is this small space here on the hook assembly

## Timing between needle and rotating hook

If you need to adjust the timing of the machine follow these steps to help get the proper timing on your machines.

**Step 1:** Remove the two needle plate screws from your machine and set the needle plate to the side

**Step 2:** Remove the two screws on the protection cover which attach it to the face plate of the machine.

*See figure 94*

**Step 3:** Remove the three screws holding the face plate to the machine. Remove the face plate and set this part aside.



*Figure 94*

**Step 4:** Check the protection flange of the position bracket (A). This should be engaged in the notch (B) of the bobbin case holder. (D) in the drawing shows the set screw to adjust hook timing. *See figure 95*

**Step 5:** Turn the hand wheel to locate the needle to its lowest position. Note: correct needle position is when you can see a small portion of the eye of the needle. *See figure 96*

**Step 6:** If the needle is not stopping in the correct position you will need to proceed to the next step. If it is in the correct position move to step 9

**Step 7:** Loosen Needle bar connecting screw (A) This will allow you to raise and lower the needle bar for correct location. NOTE: CHECK ALL PHOTOS BEFORE MAKING ANY ADJUSTMENTS *See figure 97*

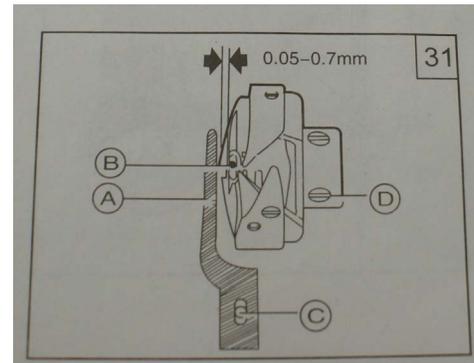
**Step 8:** Once you have the needle in the correct location tighten Needle bar connecting screw (A) to prevent the needle bar from moving out of position.

Adjusting rotating hook point timing with needle

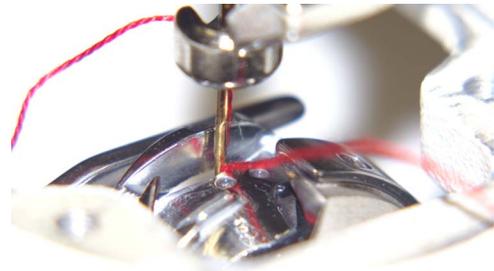
**Step 9:** Turn the hand wheel counter clockwise to locate needle to its lowest position.

**Step 10:** At lowest position turn the hand wheel Counter Clockwise to raise the needle 2.5 mm (1/8") *See figure 97*

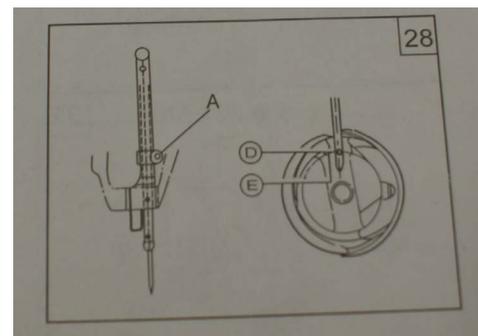
**Step 11:** Hook point should be just above eye of the needle. *See figure 99*



*Figure 95*



*Figure 96*



*Figure 97*

**Step 12:** If the hook point is in the correct position then move to step 18. If the hook point is past this point or not yet reached this position then you will need to follow the next few steps to adjust the hook so that when the hook point reaches this position it is just above the eye of the needle. Proceed to the next step.

**Step 13:** Refer to drawing 31 *see figure 95* for position of the three screws (D). Loosen the three screws holding the hook assembly to the shaft. (Note you will have to rotate the hand wheel to get to all three screws.)

**Step 14:** With the hook loose reposition the needle to the lowest position. Rotate the hand wheel counter clockwise to bring the needle up 2.5mm (1/8") *see figure 98*

**Step 15:** Now rotate the hook so that the point of the hook is just at the edge of the needle. *See figure 99*

**Step 16:** Lock one screw holding the hook into this position.

**Step 17:** Rock the hand wheel back and forth to ensure that you have the hook in the right position to pass the back of the needle just above the eye of the needle.

**Step 18:** When adjusting the rotating hook point timing also note that clearance between notch bottom of needle D and hook point C must be maintained. HOOK CAN NOT RUB AGAINST NEEDLE.

**Step 19:** Once you feel like everything is in the right place tighten all screws you loosened.

**Step 20:** Return all covers and screws back into place on your machine.

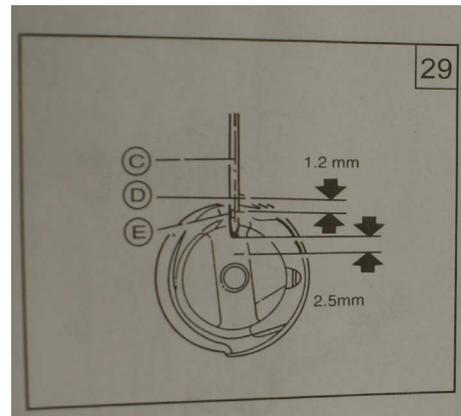


Figure 98

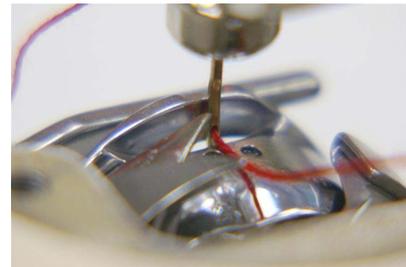


Figure 99

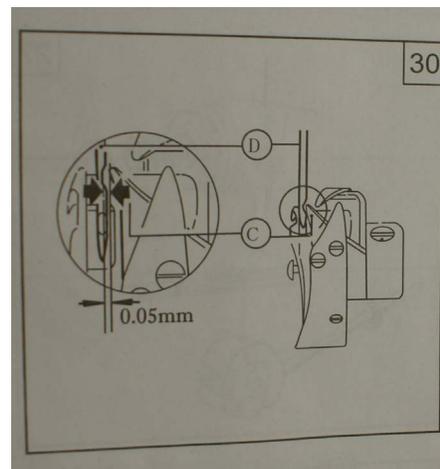


Figure 100

## Adjusting the bobbin winder lever (amount of fill on the bobbin)

**Step 1:** Using your allen wrench loosen the set screw (A) holding the Bobbin winder Lever (B) in place. *See figure 101 and 102*  
Note you do not need to pull the bobbin winder out to adjust this setting.

**Step 2:** Move the Bobbin winder lever in for less fill and out for more fil

**Step 3:** Tighten set screw (A) to prevent Bobbin winder lever (B) from moving

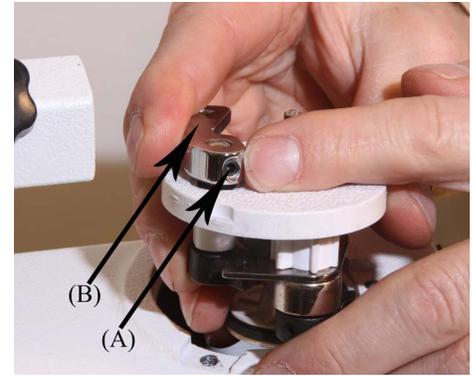


Figure 101

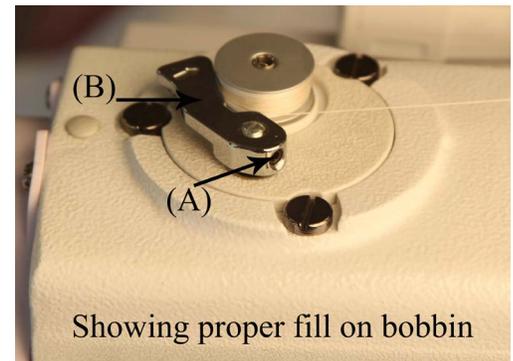


Figure 102

## Adjusting the tension assembly thread guides for proper fill.

**Step 1:** Loosen the set screw (D) so that you can adjust the tension assembly thread guides (E). Adjust tension assembly thread guides (E) up and down until bobbin fills evenly top to bottom  
*See figure 103*

**Step 2:** Tighten the set screw.

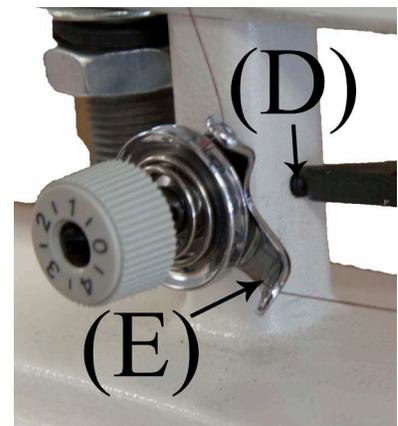


Figure 103

## Adjusting bobbin winder and contact with the shaft

**Step 1:** Loosen the three (3) screws (A) holding the bobbin winder in place but do not remove them. *See figure 104*

**Step 2:** Twist the bobbin winder (B) to the right for more contact with the inner shaft or move left for less contact.

Note: When twisting the bobbin winder (B) you need to stand on the motor side of the machine with an access panel. You will need to remove the motor plastics in order to open this access panel.

**Step 3:** The bobbin winder disk with the friction ring needs to contact the disk on the upper shaft when engaged. *See figure 105*

**Step 4:** Once done moving the bobbin winder retighten the screws to hold the bobbin winder in place.

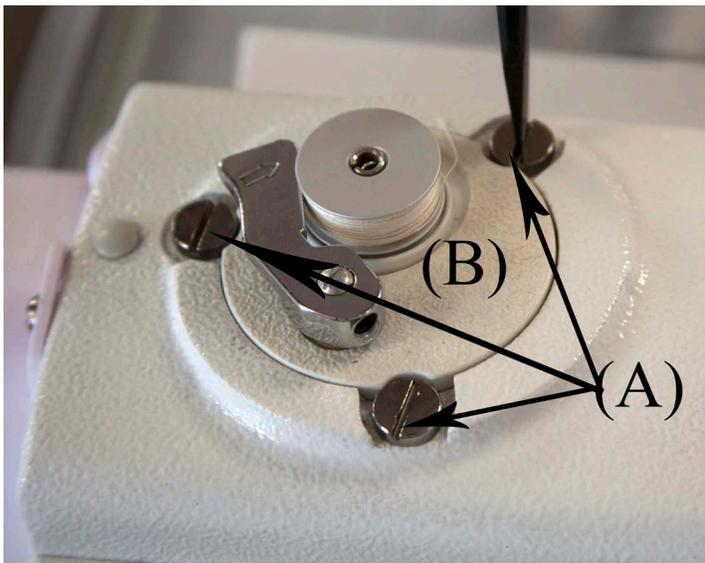


Figure 104

Turning the bobbin winder to the right will move the friction wheel closer

Turning the bobbin winder to the left will move the friction wheel away

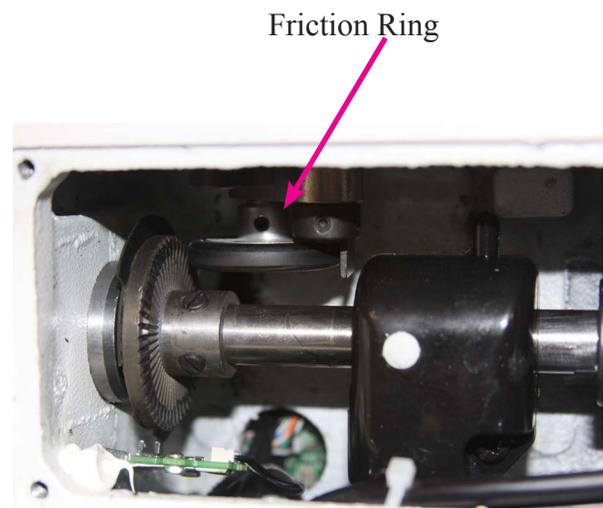


Figure 105



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IF YOU HAVE ANY QUESTIONS